



CUMI



## ABRASIVES SOLUTIONS FOR BEARING INDUSTRY

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

At CUMI, our vision of "Making Materials Matter" 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.

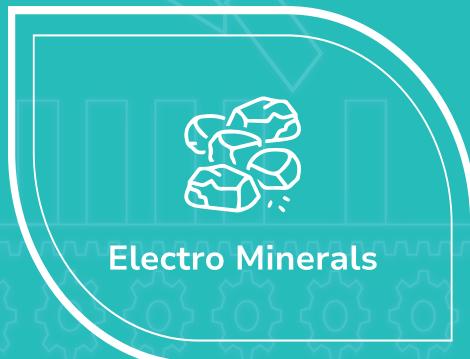


### **History of CUMI**

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



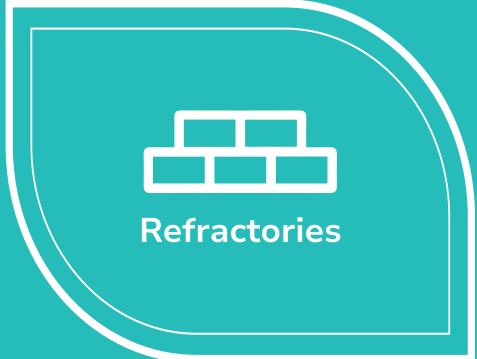
Electro Minerals



Ceramics



Abrasives



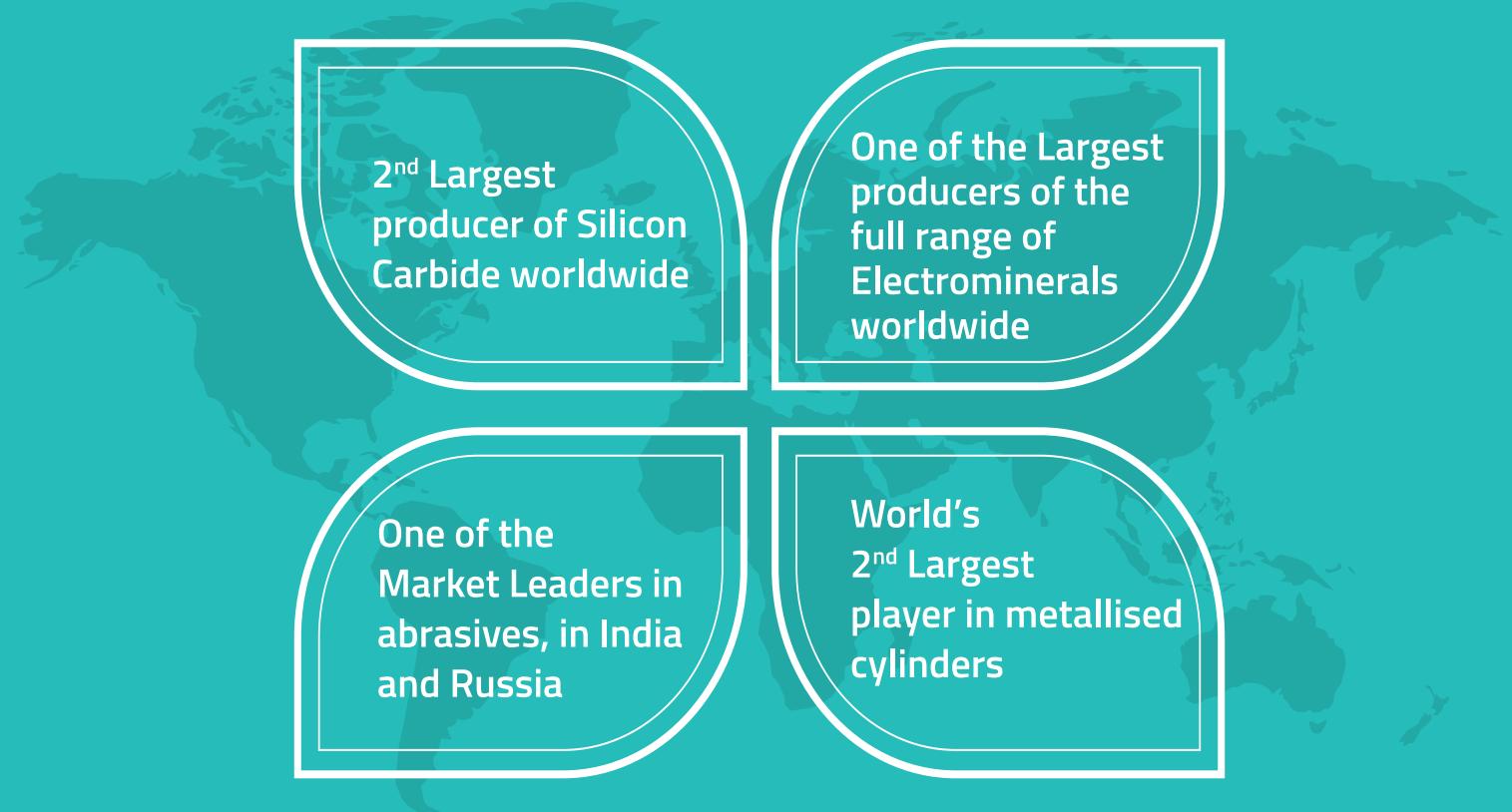
Refractories

Presence in  
**06**  
Continents

Over  
**10,000**  
Stock-Keeping Units

Sold in over  
**50**  
Countries

**04**  
Business  
Verticals



**07**  
Decades in Business

**10,000+**  
Stock-Keeping Units

**40+**  
Presence in Countries

Over  
**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

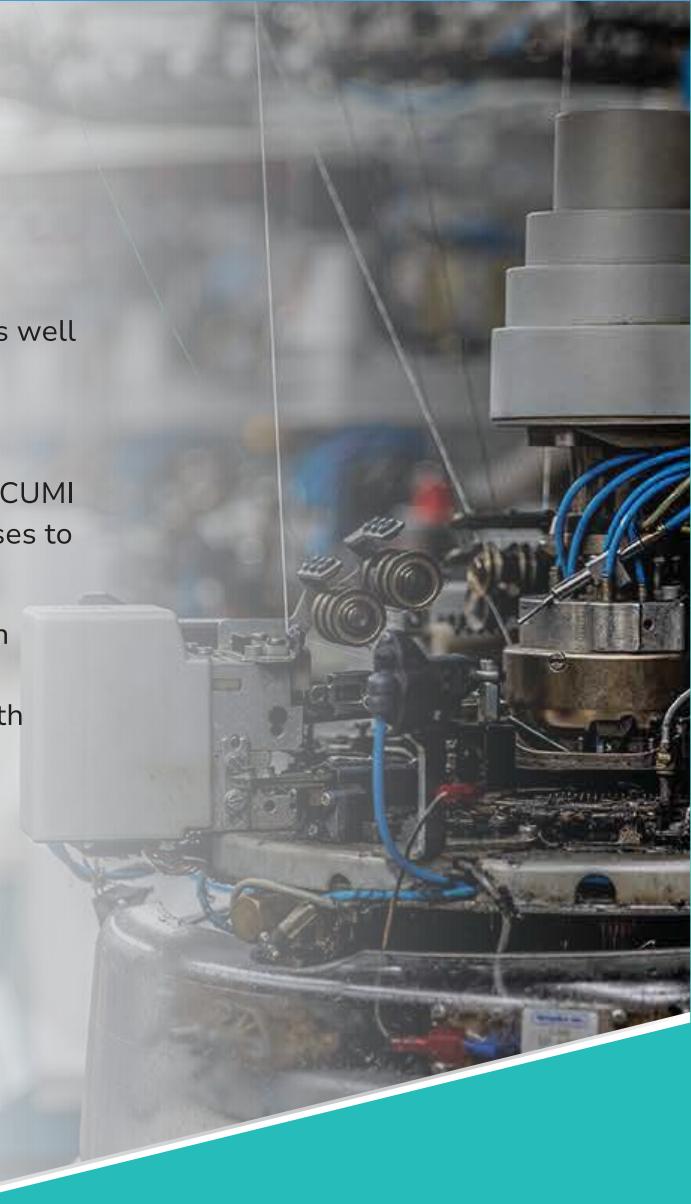
JVs  
ASSOCIATES

## CUMI'S Manufacturing capabilities and R&D

CUMI Abrasives operates ten advanced manufacturing facilities in strategic locations such as Sriperumbudur, Thiruvottiyur, 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 center 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.



### We Promise Quality



## 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.



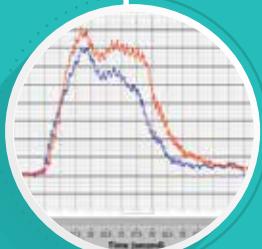
### Diamond Dressers

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



### Process Optimization

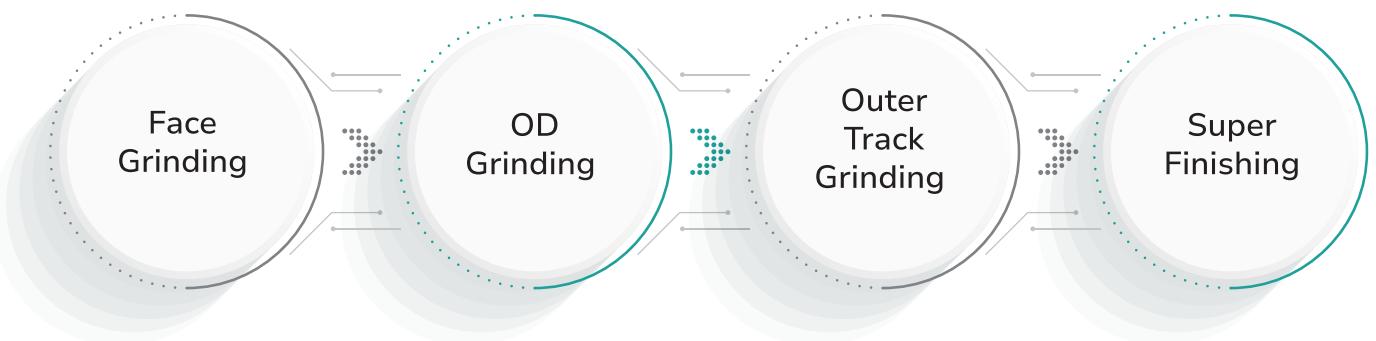
As a part of Integrated Grinding Solutions for Bearing Industries CUMI also provides Services in terms of Process optimisation and monitoring the health of Grinding process



# RINGS

RINGS

## Outer Ring



## Inner Ring





## CUMI Face Grinding Wheels

### Benefits



Free Cutting Action



More Parts/Dressing



Better OEE

### Diameter Range

100-800 mm

### Grit Range

60 - 100

### Hardness Range

H – N

### Wheel Speed

33, 45 m/s

### Bonds

Resinoid



CUMI F-Type wheels, with advanced grain-bond technology, provide free cutting action, more parts per dressing, and better OEE. They deliver exceptional performance in high feed rate and material removal applications, ensuring precise tolerances, controlled heat, superior finishes, and enhanced cutting efficiency.

**Common Machines:** Gardner, Diskus, Lidkoping, Hanbee

### GOOD

DA80 N7 B14F  
(DGBB)

A80 M7 BRT  
(TRB)

### BETTER

AA80 B14F  
(DGBB)

DA46 H5 B14F  
(TRB - Small face)

DA60 L5 B14F  
(TRB - Large face)

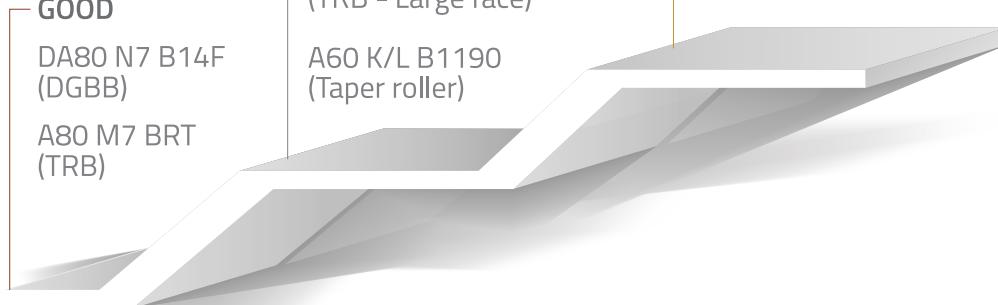
A60 K/L B1190  
(Taper roller)

### BEST

55A80 N7 BRT  
(DGBB)

55A46 H5 BRT  
(TRB - Small face)

55A60 L5 BRT  
(TRB - Large face)



# CENTERLESS GRINDING OUTER RING



## CUMI Centerless Grinding Wheels

### Benefits



Higher Stock Removal



Higher Through Feed Rate



Better Geometry Control & Better OEE

### Diameter Range

350-610 mm

### Grit Range

46-60 (Rough)  
60-80 (Semi Finish)  
80 & above (Finish)

### Hardness Range

I to M

### Wheel Speed

33 to 60 m/s

### Bonds

Vitrified



CUMI centerless grinding wheels, with premium abrasive grains and specially designed vitrified, resin, and rubber bond systems, offer higher stock removal per pass, increased through-feed rate, better geometry control, and improved OEE for optimal performance in through-feed, end-feed, and in-feed processes.

**Common Machines:** Cincinnati, Lidkoping, WMW, Mikrosa, Micron

### GOOD

A60 L5 V10C

### BETTER

5SBA80 J5 V45C

### BEST

1MSB601 J6 VCAE





## CUMI Track Grinding Wheels

### Benefits



Wheel Speeds up to 100 MPS



More Parts Dressing



Superior Surface Finish

### Diameter Range

350-610 mm

### Grit Range

80 to 120

### Hardness Range

I - L for TRB  
J-L for Ball brg

### Wheel Speed

45 to 80 m/s

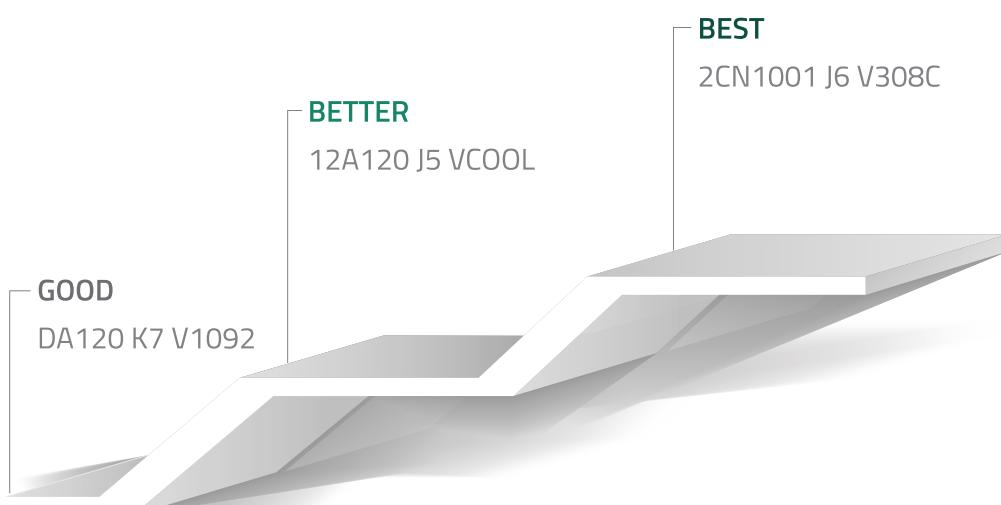
### Bonds

Vitrified



CUMI Track Grinding Wheels are crafted with a specialized fusible glassy bond and sharp abrasive grains, ensuring exceptional form retention and efficient material removal in high-contact applications. The advanced manufacturing process guarantees consistent hardness, delivering reliable performance and safety throughout the wheel's lifespan.

**Common Machines:** Izumi, Cincinnati, Nova





## CUMI Internal Grinding Wheels



### 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 are precision-engineered for critical bearing manufacturing, tackling challenges like glazing, rubbing, and reduced grain fracturing while addressing taper, chatter, size variation, and surface finish issues to ensure consistent and superior performance.

**Common Machines:** Jung, Izumi, Bryant, Nova

**BEST**

CN100 J8 VF920

**BETTER**  
55A80 J7 VC500

**GOOD**

AA80 J5 V8



## CUMI Track Grinding Wheels

### Benefits



Lower Grinding Cost



Better Size Control



Lower Cycle Time

### Diameter Range

10-150 mm

### Grit Range

80 to 120

### Hardness Range

J to M

### Wheel Speed

45 to 80 m/s

### Bonds

Vitrified



CUMI Track Grinding Wheels are optimized for efficient material removal in outer race track grinding, using straight or angular plunge grinding based on ring type, while maintaining high-quality standards and enhancing wheel life.

**Common Machines:** Jung, Izumi, Bryant, Nova

### GOOD

SA120 J7 TDV144  
(DGBB)

SA80 J7 TDV144  
(TRB)

### BETTER

55A120 J7 VC500  
(DGBB)

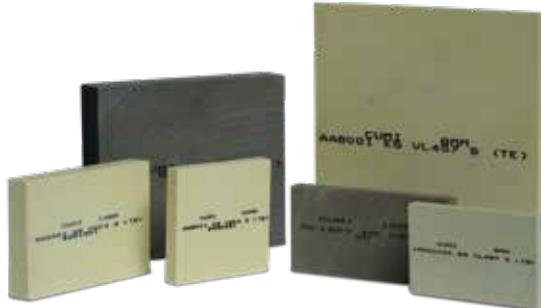
55A80 J7 VC500  
(TRB)

### BEST

CN120 J8 VF920  
(DGBB)

CN80 J8 VF920  
(DGBB)





## Super Finishing

### Benefits



Better  
Size Control



Lower  
Cycle Time

### Diameter Range

25-150 L  
5-150 W  
5-20 Thickness

### Grit Range

600-1200

### Hardness Range

E to J

### Bonds

Vitrified



CUMI Super Finishing Stones are designed to achieve surface finishes of (less than 0.02 µm). Available in square, rectangular, or custom shapes, they are used in 2 to 3 stages. Roughing is done with Aluminium Oxide ( $\text{Al}_2\text{O}_3$ ) stones (grit size – 800, 1000) followed by finishing with Silicon Carbide (SiC) stones (grit sizes 800, 1000, 1200).

### BETTER

Roughing - AA  
Finishing - CGC

### BEST

Roughing - MCA  
Finishing - MCA



ROLLERS

# ROLLERS

## Taper Roller Bearing



## Cylindrical Roller Bearing



## Spherical Roller Bearing



# CENTERLESS GRINDING TAPER ROLLER BEARING



## CUMI Centerless Grinding Wheels

### Benefits



Higher Stock Removal



Higher Through Feed Rate



Better Geometry Control & Better OEE

### Diameter Range

350-610 mm

### Grit Range

60 (Roughing)

60-80 (Semi Finishing)

80 & above (Finishing)

### Hardness Range

I to M

### Wheel Speed

33 to 60 m/s

### Bonds

Rubber/Resin



CUMI's OD and Centerless grinding wheels ensure precise geometry, superior surface finish, and uniform wear, delivering exceptional performance in through-feed, end-feed, and in-feed applications tailored to stringent bearing industry standards.

**Common Machines:** Cincinnati, Lidkoping, Mikrosa, Micron, Nissin

### GOOD

A80 L RT1/DA80 K5  
V2020 (OD Roughing)

A80 L RT1  
(OD Semi Finishing)

A100 M RT1  
(OD Finishing)

### BETTER

A80 L RT30  
(OD Roughing)

A80 L RT30  
(OD Semi Finishing)

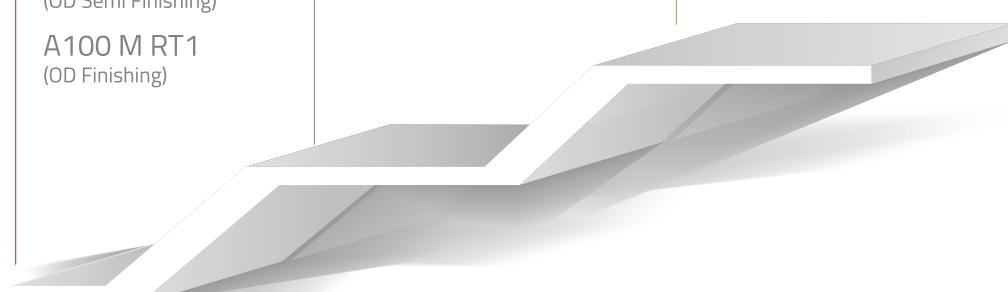
A100 M RT30/DA100 K5  
V202 (OD Finishing)

### BEST

53MA80 L7 B600/45  
(OD Roughing)

53MA80 L7 B600/45  
(OD Semi Finishing)

65MA100 M RT1/45  
(OD Finishing)



# FACE GRINDING TAPER ROLLER BEARING



## CUMI Face Grinding Wheels

Benefits
High Profile Accuracy
Form Retention
Better Surface Finish and Geometry

### Diameter Range

150 - 350 mm

### Grit Range

150, 280, 320

### Hardness Range

P

### Wheel Speed

33, 45 m/s

### Bonds

Resinoid



CUMI's face grinding wheels for taper roller bearings provide high stock removal, tight size tolerances, and fine surface finishes while effectively managing heat dissipation, resulting in excellent performance in demanding bearing industries.

**Common Machines:** Modler, Seibu



# FACE GRINDING (BOTH CYLINDRICAL & SPHERICAL ROLLER BEARING)



## CUMI Face Grinding Wheels



### Benefits



Higher Stock Removal



Higher Through Feed Rate



Better Geometry Control & Better OEE

### Diameter Range

355 - 600 mm

### Grit Range

60 - 100

### Hardness Range

J - M

### Wheel Speed

33 m/s

### Bonds

Resinoid/Epoxy

CUMI's face grinding wheels ensure precise flatness, superior surface finish, and high stock removal, meeting stringent tolerances with advanced grain-bond technology for unmatched performance in demanding bearing applications.

**Common Machines:** Modler, Seibu



# CENTERLESS GRINDING (CYLINDRICAL ROLLER BEARING)



## CUMI Centerless Grinding Wheels



### Benefits



Higher Stock Removal



Higher Through Feed Rate



Better Geometry Control & Better OEE

### Diameter Range

350 - 610 mm

### Grit Range

60 (Roughing)  
60-80 (Semi finishing)  
80 & above (Finishing)

### Hardness Range

I to M

### Wheel Speed

33 to 60 m/s

### Bonds

Rubber/ Resin

CUMI's OD and Centerless grinding wheels offer accurate dimensions, uniform wear, and exceptional surface polish, and are designed to fulfill the severe requirements of high-performance bearing applications using sophisticated bond systems and premium grains.

### GOOD

A60 K5 V2020  
(OD Rough Centerless)

A100 J5 V2020  
(OD Finish Centerless)

### BETTER

DA80 K5 V2020  
(OD Rough Centerless)

DA100 J5 V2020  
(OD Finish Centerless)

### BEST

1CSA80 J6 VC500  
(OD Rough Centerless)

1CSA100 J6 VC500  
(OD Finish Centerless)



# OD PROFILE GRINDING (SPHERICAL ROLLER BEARING)



## CUMI OD Profile Grinding Wheels

ROLLERS

### Benefits



Higher Stock Removal



Higher Through Feed Rate



Better Geometry Control & Better OEE

### Diameter Range

455 - 610 mm

### Grit Range

60 - 120

### Hardness Range

J - K

### Wheel Speed

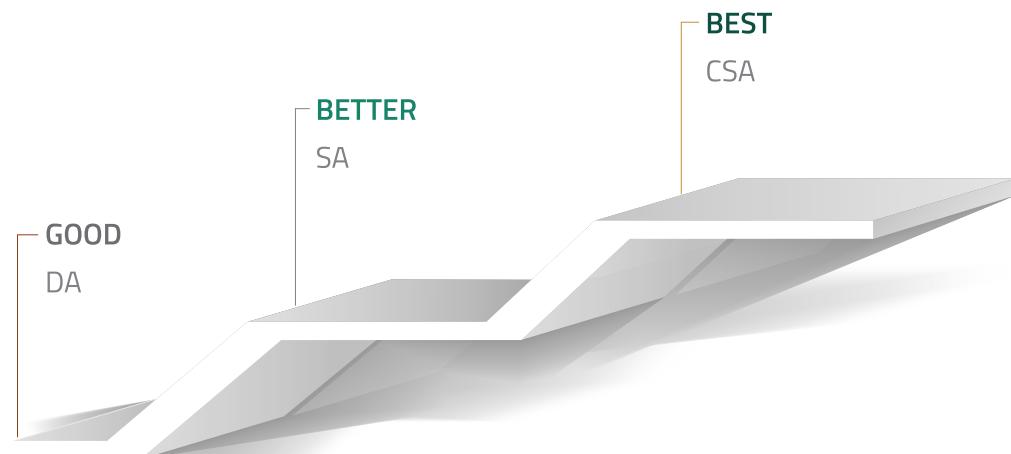
45 - 80 m/s

### Bonds

Vitrified



CUMI's OD profile grinding wheels provide consistent profiles, high surface quality, and consistent performance, satisfying the stringent requirements of spherical roller bearing applications with revolutionary grain-bond technology.





## CUMI Ball Grinding Wheels

Benefits
Consistent Quality Layer to Layer
Superior Ball Quality
Overall Low Grinding Cost Per Ball

### Diameter Range

660 - 1000 mm

### Grit Range

80 - 400

### Hardness Range

X - Z

### Wheel Speed

33 m/s

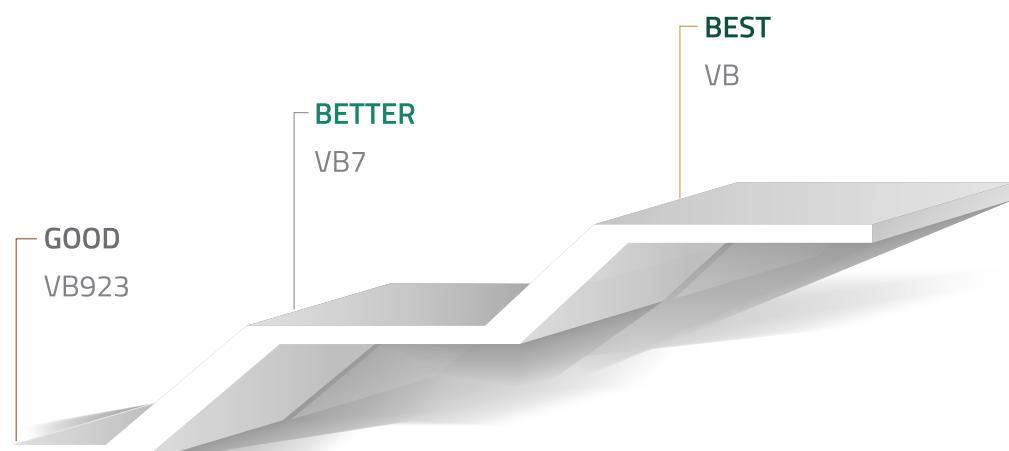
### Bonds

Vitrified



CUMI delivers premium ball finishing solutions for the bearing industry, designed to meet exacting standards and ensure superior quality. Our High-Density Vitrified Grinding Wheels feature specially conditioned raw materials, a unique bond system for flawless surfaces, and precision-controlled processes for unmatched consistency across layers and wheels.

**Common Machines:** MRB Romania, SLM, Lipkoping, Blanchard





## CUMI Ball Lapping Wheels



### Benefits



Unique Process for Product Consistency



Excellent Surface Finish



Higher Productivity due to High Material Removal Rate

### Diameter Range

400 - 915 mm

### Grit Range

320 to 2000

### Hardness Range

Z+

### Wheel Speed

33 m/s

### Bonds

Resinoid

CUMI provides premium ball finishing solutions for the bearing industry with Micro-Grit Resinoid Lapping Wheels. Designed for excellence, these wheels feature closely graded aluminum oxide grains, advanced hot press technology, and modified resins to ensure superior surface quality, high material removal rates, and minimal wear.

**Common Machines:** Giles of Sweden, AKS Japan, XINJI, GEISS

### BETTER

CA600 Z4 BL393SC,  
CA12001 Z4 BL393SC

### BEST

CWA 4001 Z+4 BL15,  
WFA 1500 Z+4 BL15 ,  
WFA 2000 Z+4 BL15





# METAL WORKING FLUIDS

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## CUMI 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.

Metal Working Fluid	Grinding Application	Bearing Part
<b>Low Viscous Neat Oil</b>	Super Finishing	Rings
<b>Water Soluble Semisynthetic</b>	Centerless	Rings
		Roller
	Disc Grinding	Roller
	Disc Rough Grinding	Ball
	Face Grinding	Rings
		Roller
	OD Grinding	Rings
		Roller
<b>Water Soluble Semisynthetic Emulsion</b>	ID Grinding-Traverse	Rings
	ID Grinding-Plunge	Rings
<b>Water Soluble Synthetic/Semisynthetic</b>	Disc Rough Grinding	Ball

# DIAMOND DRESSERS

## CUMI Diamond Dressers

Diamond dressers, crafted using the reverse plating method, offer exceptional performance and durability due to the active involvement of diamond grains in the dressing action. This design ensures an extended service life, making these tools ideal for intricate profiles, tighter tolerances, and applications that demand superior surface finishes across various profile types.



### Benefits



Capability To Manufacture Dressing Complex & Intricate Profiles



High Precision Rolls With Pt Value Up To 1.5 Microns And Best In Class On Tolerances



Controlled Exposure Of Diamond Grits, Creates A Free Cutting Dressing Roll



Better Form Holding

# 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:

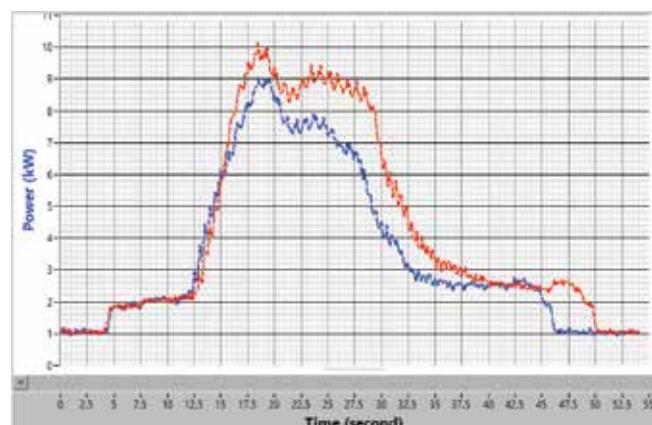
Cycle time reduction

### TRIALS:

Higher feed rates with  
existing stock removal  
with progressive cutting action

### RESULT:

Reduced cycle time by 10%  
with lower power drawn





Scan to Know More

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