



# Abrasives for Bearing Industry



# INTRODUCTION

CUMI - one of the leading abrasive manufacturers is specialized in all grinding & super finishing applications in Bearing Industries.

CUMI the solution provider to Bearing industries include

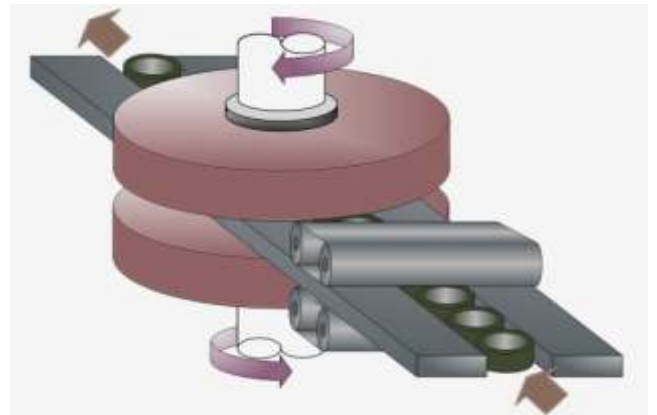
1. Products for all kind of grinding applications
2. Wheel speed upto 100 MPS
3. Optimization of grinding cost by a strong technical and application engineering team
4. Continuous product upgradation to meet customers future needs
5. Grinding System Engineering
6. Abrasive Management System

# Face Grinding

Face Grinding is a process of material removal from a part with parallel surfaces. This is usually done using Two grinding wheels at a time with material removal on both sides of the job occurring simultaneously. Wheels are attached to the machine spindles by nuts inserted on the back of the wheel thereby calling it also “Nut Inserted Wheels” The important criteria in face grinding is to achieve a good Parallelism (< 5Microns) and Flatness (< 1 Micron).

## Applications

1. Ring Face ( Soft & Hard stage)
2. Roller Face (TRB, CRB, SRB)



## Product Range

### Rings:

Type of Abrasive	Wheel Dia	Grit Size	Hardness	Structure	Bond
AA, SG, DA, A,SA	400 - 762	46 - 100	G to N	5 - 11	BRT, B14, SPL

### Taper Rollers:

Type of Abrasive	Wheel Dia	Grit Size	Hardness	Structure	Bond
A, AA	150 - 500	220 - 400	K to P	7 - 19	BRT, BCC, RT1

# Face Grinding

## Cylindrical & Spherical Rollers :

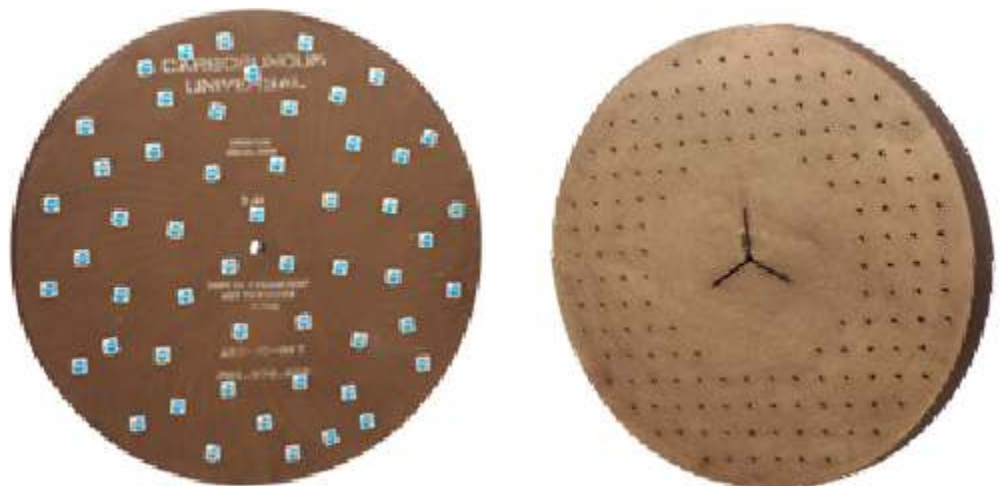
Type of Abrasive	Wheel Dia	Grit Size	Hardness	Structure	Bond
A, AA	400 - 762	60 - 100	K to O	5 - 7	BRT, B14, SPL

## Popular machines

1. Diskus Werke
2. Gardner
3. Daisho
4. Landis
5. Rabbit

## Benefits

1. Burn Free Cutting
2. More Parts per dress
3. Higher Material Removal Rate
4. Consistent Geometrical Accuracies

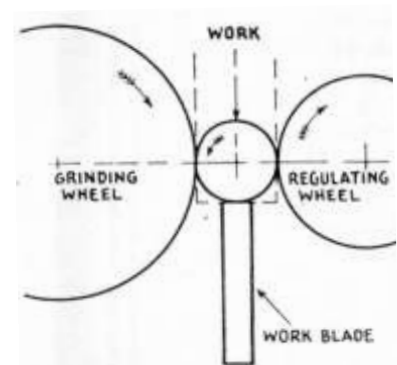
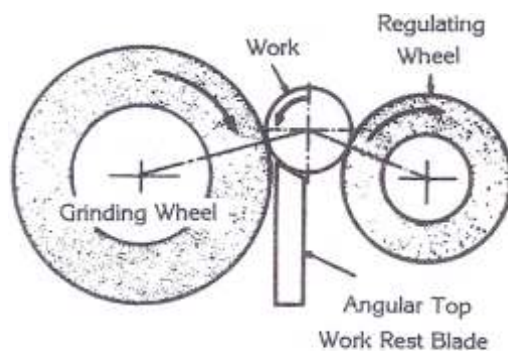


# Centreless Grinding

CUMI's range of Centreless grinding wheels include the versatile and time tested bond systems V10C, V45C, V2016, V1092, besides the high performance, special bonds VK12, V500, VCAE . It is available in different sizes and grit combinations which are used in wide application in all centreless grinding operations, these give safety tolerances of upto 60 mps.

## Functions of Regulating Wheel

- . Supplies uniform pressure and holds the work during grinding process.
- . Applies brake and maintain the work RPM to its own speed of rotation.
- . It helps and maintain the through feed movement as is tilted towards exit.
- . Almost no slippage during grinding



## Grinding Wheel Product Range

### For Rings

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
A, DA, AA, MSB, SA	350 - 610	75 - 610	46 - 120	1 to N	5 - 7	V390, V500, V2020 VCAE, BRT VK12

### For Taper, Cylindrical and Needle Rollers

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
A, DA, AA, RA	350 - 610	75 - 300	60 - 220	L, M	5 - 7	RT1, RTN

# Centreless Grinding

## For Spherical Rollers

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
A, AA, SG, RA	300 - 600	20 - 100	60 - 120	J - L	5 - 7	V10, V223, VCAE, V308C

## Regulating Wheel

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Bond
A	200 - 330	75 - 610	80, 120	R	R

## Benefits

1. Burn free cutting
2. More parts per dress
3. Higher material removal rate
4. Consistent geometrical accuracies
5. Longer wheel life
6. Good surface finish



# Inner ring grinding

## Inner Ring Track Grinding

Inner ring track grinding is a type of cylindrical grinding where grinds the outside track of Bearing, inner ring and it revolves between centers and held in a carbide shoes

## Product Range

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
AA,MSB , 83A	450 to 600	6 - 50	60 - 120	J - L	5 - 7	VF8,VCAE, V308C

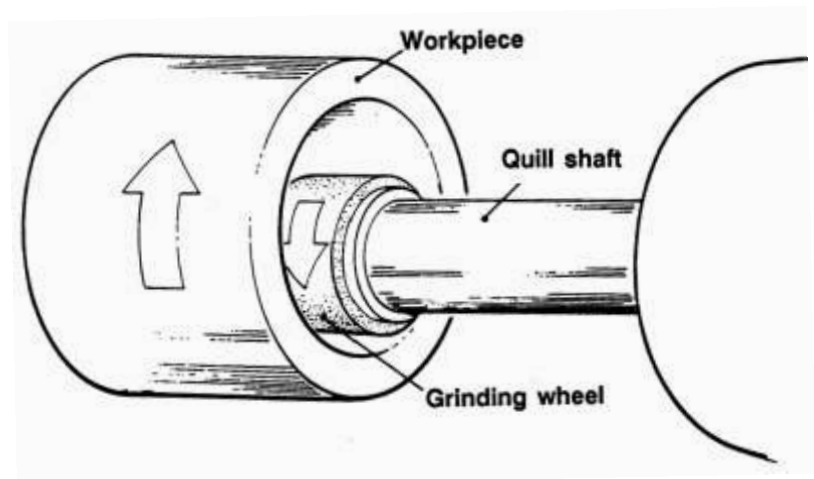


## Internal Grinding

Internal grinding is a process of enlarging the inside diameter of the component to an accurate size and desired finish

### Types of Internal grinding:

- 1.Traverse grinding
- 2.Plunge Grinding



## Product range

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
AA, RA, MSB	10 - 150	Upto 50	60 to 120	I - L	5 - 7	V8, VF8, VCAE

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
AA, DA,MSB, 80A	100 - 300	10	80 - 120	I - L	5 - 7	V45, VF8, VCAE, V308C

## **Outer Ring Track Grinding**

### Product Range

Type of Abrasive	Wheel Dia	Thickness	Grit Size	Hardness	Structure	Bond
AA, RA, MSB	10 -300	Upto 50	60 to 120	I - L	5 - 7	V8, VF8, VCAE

## Benefits

1. Burn Free Cutting
2. More Parts per dress
3. Consistent Geometrical Accuracies
4. No Grinding Noise
5. Better Form Holding
6. Reduction in Cycle Time
7. Longer Wheel Life
8. Good Surface finish





# Super Finishing

Super finishing is the application of producing a very high finishes, as high as 0.02 um, on the outside diameters of components and inside diameters of bearing inner rings, outer rings and Rollers where friction is to be reduced to the barest minimum. Super finishing stones are generally designed in the form of square, rectangular or specially shaped sticks or blocks. Super finishing is generally done in 2, 3 or multiple stages. Roughing operation is done with White Aluminium Oxide stones of grit sizes 400, 600 and 800. The finishing operation is done with Silicon Carbide stones of grit sizes 800, 1000 and 1200. Super finishing stones used in bearing industries are treated with sulphur to increase stone life, prevent loading and to achieve better surface finish.

## Product Ranges:

Application	Type of Grain	Stone Size in MM			Grit	Hardness	Structure	Bond System
		Length	Width	Thickness				
Super Finishing	AA	25 - 150	5 - 150	5 - 20	600 - 1200	E- J	5	V204, VK3
	C, GC	25 - 150	5 - 150	5 - 20	600 - 1200	E- J	5	V91, VK3

## Benefits

1. Excellent Surface Finish
2. Very good form holding

