



Geared Up For Superior Performance

Simply Worldclass

Dear Customer,

At the outset, we would like to thank you for the business association with us. We are the pioneer of total solutions in grinding technology, offering end to end abrasive technology through our products and value added services.

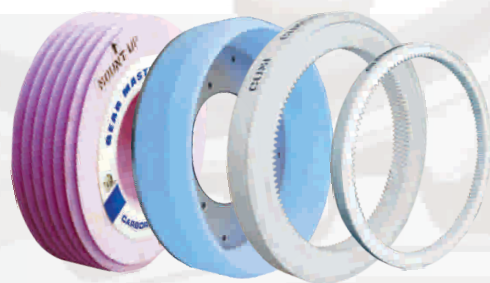
Gear grinding has made significant advances over the years. We have upgraded our product and process technology in order to meet the emerging trends. We have developed new generation Single Rib and Multi Rib grinding wheels with Micro-Crystalline abrasives (MSB,83R) along with our Krystal bonds (V500, V736). We have the state of art profiling facility to meet the single and multi start profile accuracy.

What we offer:

Products:

Grinding Wheels:

- Single Rib Wheel
Conventional and Micro - Crystalline abrasives
- Multi Rib Wheel
Conventional and Micro - Crystalline abrasives
- Gear Honing Wheel



Dressers:

- Stationary Dresser
For Single Rib Grinding Wheel
- Rotary Dresser
For Multi Rib Grinding Wheel



Neat Oil:

Very High Thermal Stability & Eco friendly

Value Added Services:

Faster Delivery
Profile Correction / Re-profiling
Value Projects for Grinding Cost Reduction
Process Monitoring and Optimization
Application Engineering Services & Training



CUMI Profiling Machine

With significant investments made in improving the capability and the capacity for producing world class gear grinding wheels, CUMI now is geared up to offer solutions that will significantly reduce your grinding costs.

Happy Grinding....

Sincerely,

Deepak Dorairaj

Deepak Dorairaj
Senior Vice President - Operations (Abrasives)



Profile Measurement



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Case Study 1 - Single Rib Gear Grinding

Gear Box Manufacturer

Parameters	CUMI	Imports
Machine	Gleason	Gleason
Wheel Size	350x50x127	350x50x127
Wheel Specification	3MSB601 G13 VCA2/45	SKA70GV
Module	12	12
Wheel Life	190 gears	160 gears
Grinding Cost / Gear	Rs 52	Rs 93.75
Gear Quality	DIN 6	DIN 6



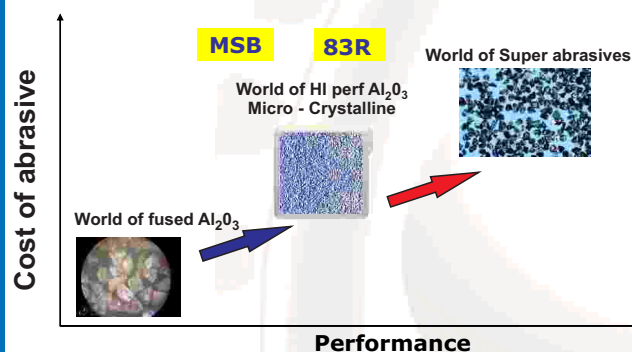
Case Study 2 - Multi Rib Gear Grinding

Car Manufacturer

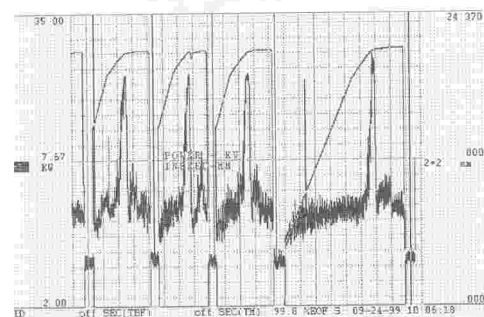
Parameters	CUMI	Imports
Machine	Reishauer	Reishauer
Wheel Size	300x145x160	300x145x160
Wheel Specification	83R80 I12 V736/60	93AN80J8V
Initial Truing Time	15 minutes	20 minutes
Wheel Life	12,000 gears	10,000 gears
Grinding Cost / Gear	Rs 2.50	Rs 4.40
Gear Quality	DIN 5	DIN 5



MSB and 83R Grinding Wheels



Process Optimisation



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murugappa



Abrasives for Gear Grinding Industry



Single Rib

Gear Grinding is a finishing *process* to remove considerable amount of metal after the heat treatment operation to obtain a predetermined quality gear. Gear Grinding – is done to meet the exact requirements of Form, Dimension and Surface Texture. Gear Grinding gives a very high degree of dimensional accuracy.

Methods of Gear Grinding

Form / Profile Grinding

- This process is normally used in Multi Rib Gear Grinding, for machine like Reishauer or Csepel
- In this process, the wheel is in constant touch with the workpiece.

Generating Type Method

- This process is normally used in Single Rib Gear Grinding for machines like Niles, Maag, Hoefler Machines
- In this process, the wheel progressively approaches the root of the gears from the tip of the gear tooth.

Single Rib Gear Grinding Machine Niles Machine

Parameters	CUMI regular RA60 H7 VF8 RAA60 J6 V206	CUMI new Wheels RA46 H8 V736	CUMI new wheels RA46 H 10 V736
Gear Module	6.0	6.0	Above 6.0 Module
No. of Teeth	15	15	12
Depth of Cut / Flank (R/SF/F)	0.10 / 0.08 / 0.03 mm	0.15 / 0.06 mm	0.15 / 0 / 06 mm
No. of Passes	3	2	2
Dressing Freq.	Once in 15 Teeth	Once in 15 Teeth	Once in 15 Teeth
Dressing Depth	0.05 mm	0.03 mm	0.03 mm
Quality Profile Error / Lead Error	OK	OK	OK

Single Rib

Single Rib Gear Grinding – CNC M/c – Mega Hoefler / Gleason

Parameters	Burka Kosmos EKW70/80 / SK13W 70/80	CUMI New Wheels RA 60 H 10 V736 /45	CUMI New Wheels 3MSB 60 G12 VCA2/45
Gear Module	Upto 18	Upto 12 Modules	Above 12 Modules
No. of Teeth	35	35	35
Depth of Cut / Flank (R/ F)	0.25/0.1 mm	0.2/0.1 mm	0.25/0.1 mm
No. of Passes	2	2	2
Dressing Freq. Roughing Finishing	Once in 5 Teeth Once in 9 Teeth	Once in 5 Teeth Once in 9 Teeth	Once in 5 Teeth Once in 9 Teeth
Dressing Depth	0.05 mm / 0.05 mm	0.05 mm / 0.05 mm	0.05 mm / 0.05 mm

Recommendation Chart – Single Rib

Machines	For Modules Upto 10	For Modules Above 10
Conventional Machines Niles, Hoefler, Maag	RA46 H8 V736	RA46 H10 V736
CNC Machines Hoefler, Gleason Pfauter	RA46 H10 V736	3MSB60 G12 VCA2/45



Multiple Rib

Multirib Gear Grinding Wheels

For Conventional Machines : AZA, NZA, ZB etc.

a) Conventional Abrasives Range

SA80 TDV 677G/45	For 2.25 Modules to 4.0 Modules
SA60 TDV 677G/45	For 4.25 Modules & above
SA100 TDV677G/45	For 1.75 to 2.25 Modules
RA280 TDV 547 / 45	For 1.0 Module to 1.5 Module

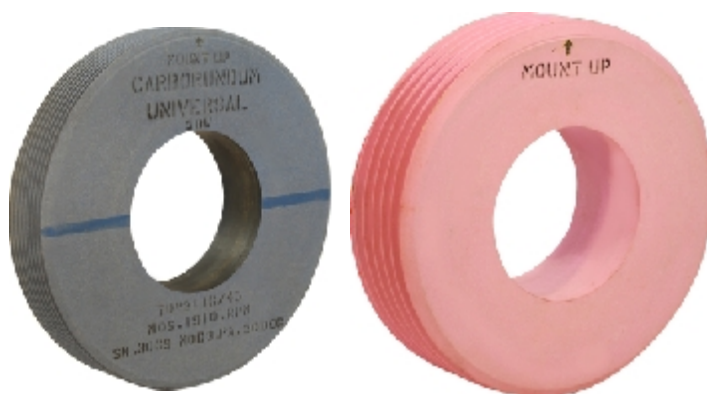
b) Conventional Premium Abrasives Range

SA80 TDV 211 G/45	For 2.25 Modules to 4.0 Modules
SA60 TDV 211 G/45	For 4.25 Modules & above
SA100 TDV 211 G/45	For 1.75 to 2.25 Modules

For C NC Machines : RZ362A, RZ 301S etc

3MSB60 K8 TDV829G/45	For 4.25 Modules and Above
3MSB80 K8 TDV829G/45	For 3.5 to 4.0 Modules
3MSB 10 0 J8 TDV829G/45	For 2.0 Modules to 3.75 Modules
3MSB120 J8 TDV829G/45	For 1.25 to 1.75 Modules

For C NC Machines – High Speed : RZ150 , RZ 400 etc – 60 MPS Creep Feed Wheel
83R80 I12 V736/60





Features

- . **The wheels are been** developed with new specifications with Imported grains and new bond systems, which is formulated in such a way that it will accommodate a wide range of module gears, with one grading.
 - . The new grading will reduce the dressing depth and dressing frequency, there by increasing the wheel life.
 - . . Due to reduction in dressing depth and dressing frequency, the dresser life will be increased.
 - . The form retention will make the gear quality superior.
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