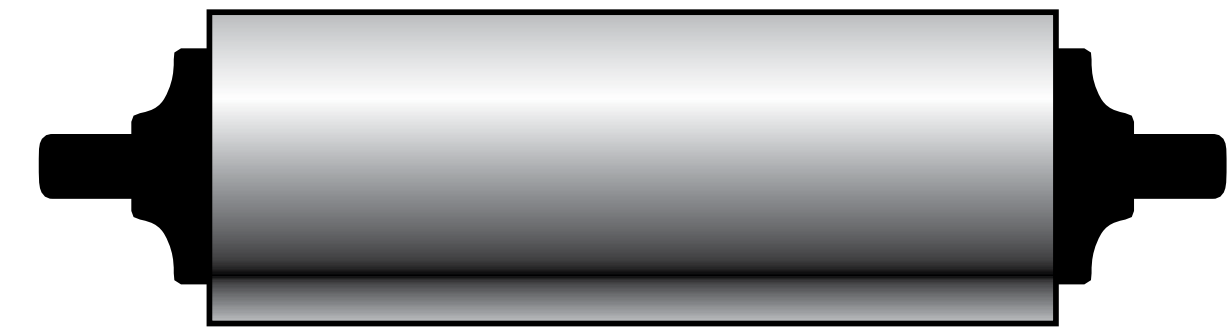


PRECISION ROLL GRINDING FOR OPTIMAL CEREAL AND FOOD PRODUCTION

PRECISION



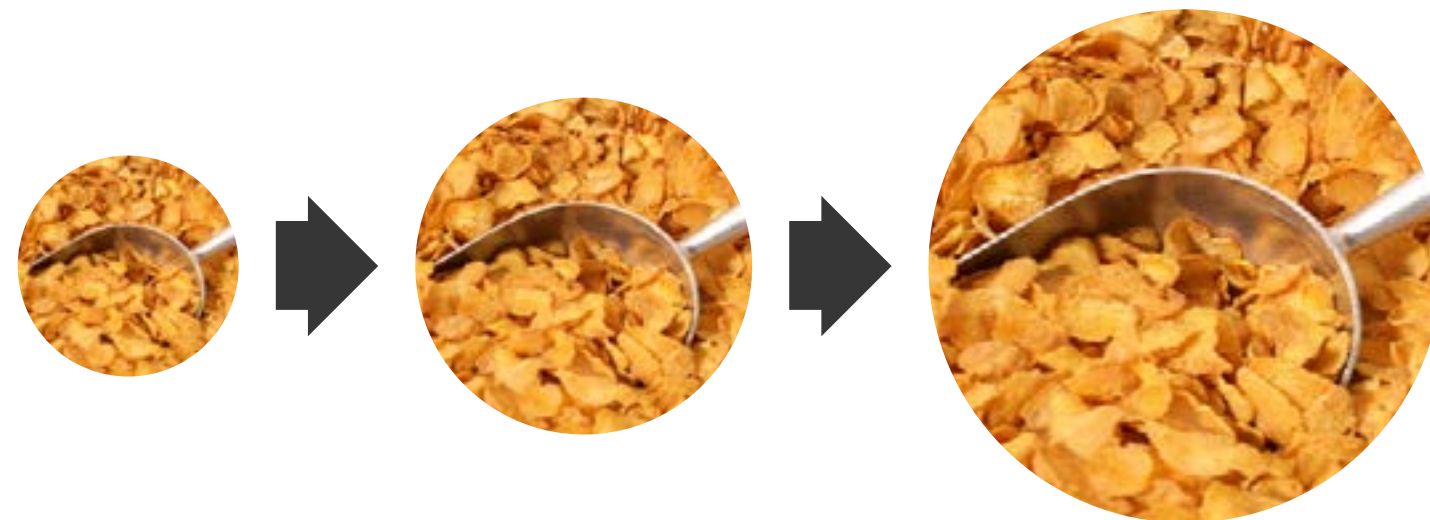
ROLL GRINDERS

Over 50 years of value-added service

**WEBINAR
SERIES**

precisionrollgrinders.com

MAKE YOUR MILLS MORE PRODUCTIVE WITH PRECISION-SERVICED ROLLS



High flake quality, high output and lower costs are achieved through precision roll grinds and roll finish, and consistent roll temperature:

- A precise gap between the rolls is maintained with precision grinds.
- Optimal shear in the nip is created due to very specific roll finishes.
- Roll surface temperature is maintained at a consistent temperature due to regular precision roll maintenance.



**THE FLAKER ROLLS ARE
THE HEART OF YOUR
CEREAL FLAKING MILL.**

High quality roll
condition and service
is a must for optimum
performance!

HOW CAN PRECISION ROLLS DRIVE OPTIMIZATION?

GRINDING TO PROPER TOLERANCES AND SHAPE

- Reducing Variation



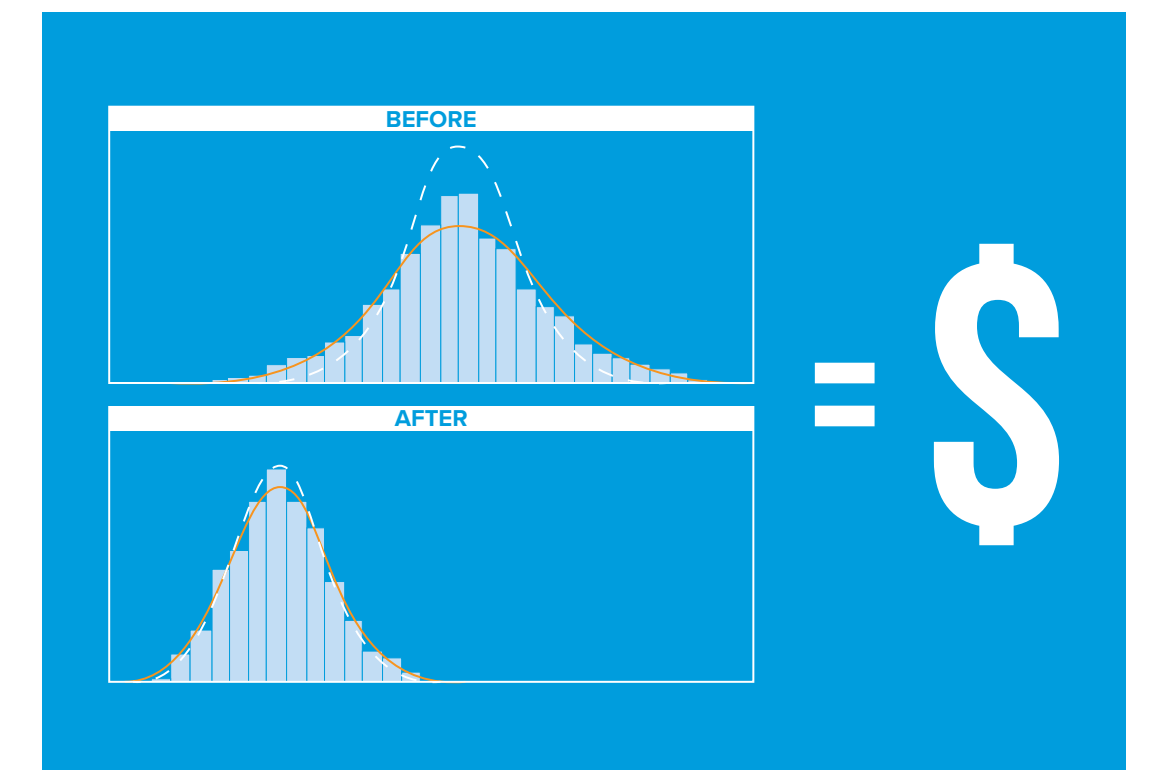
GRINDING ROLLS TO PROPER SURFACE FINISH

MECHANICAL AND MACHINING SERVICES TO MAXIMIZE PERFORMANCE AND ROLL LIFE

- Start-up and roll life performance



VALUE-DRIVEN RESULTS THROUGH MATERIAL SAVINGS

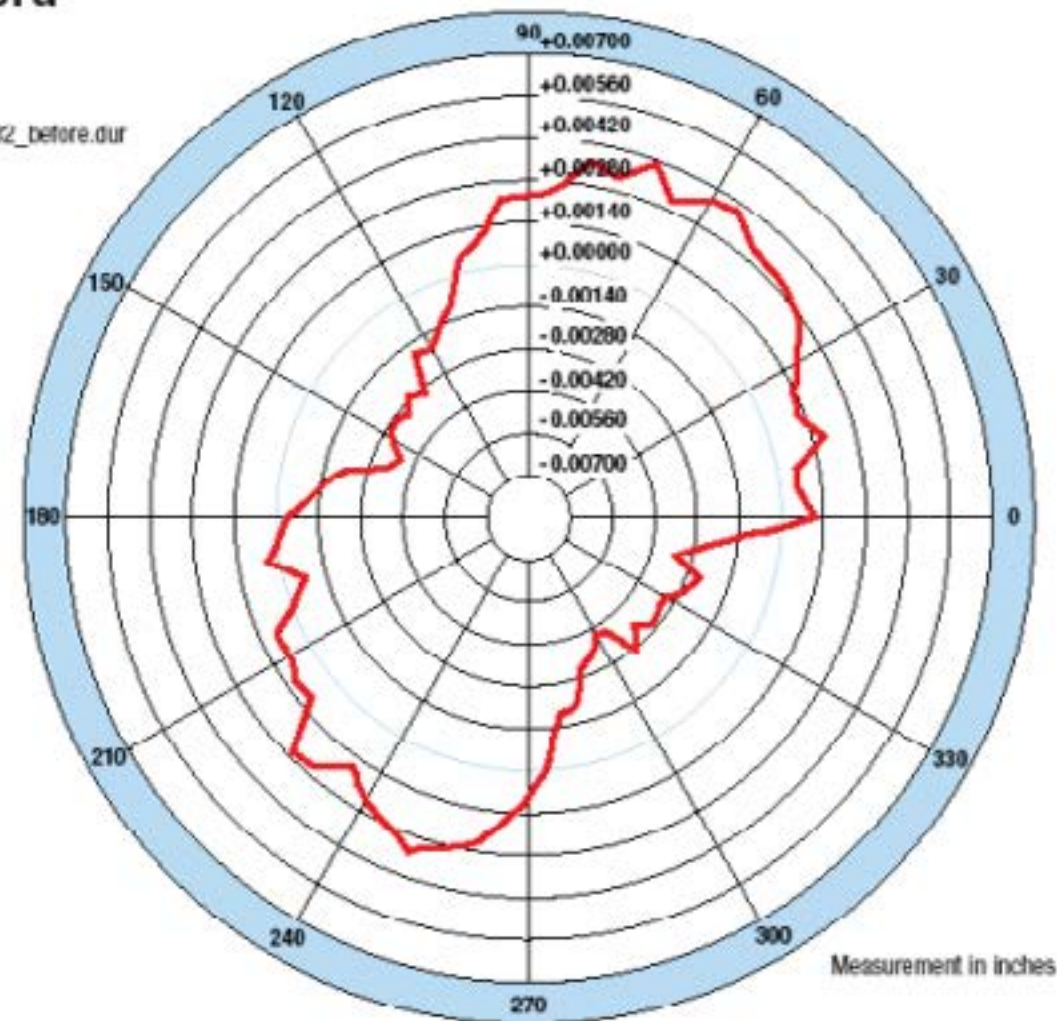


REDUCING VARIATION – ROLL TIR/ROUNDNESS

IMPROPERLY GROUND

Measurement Record

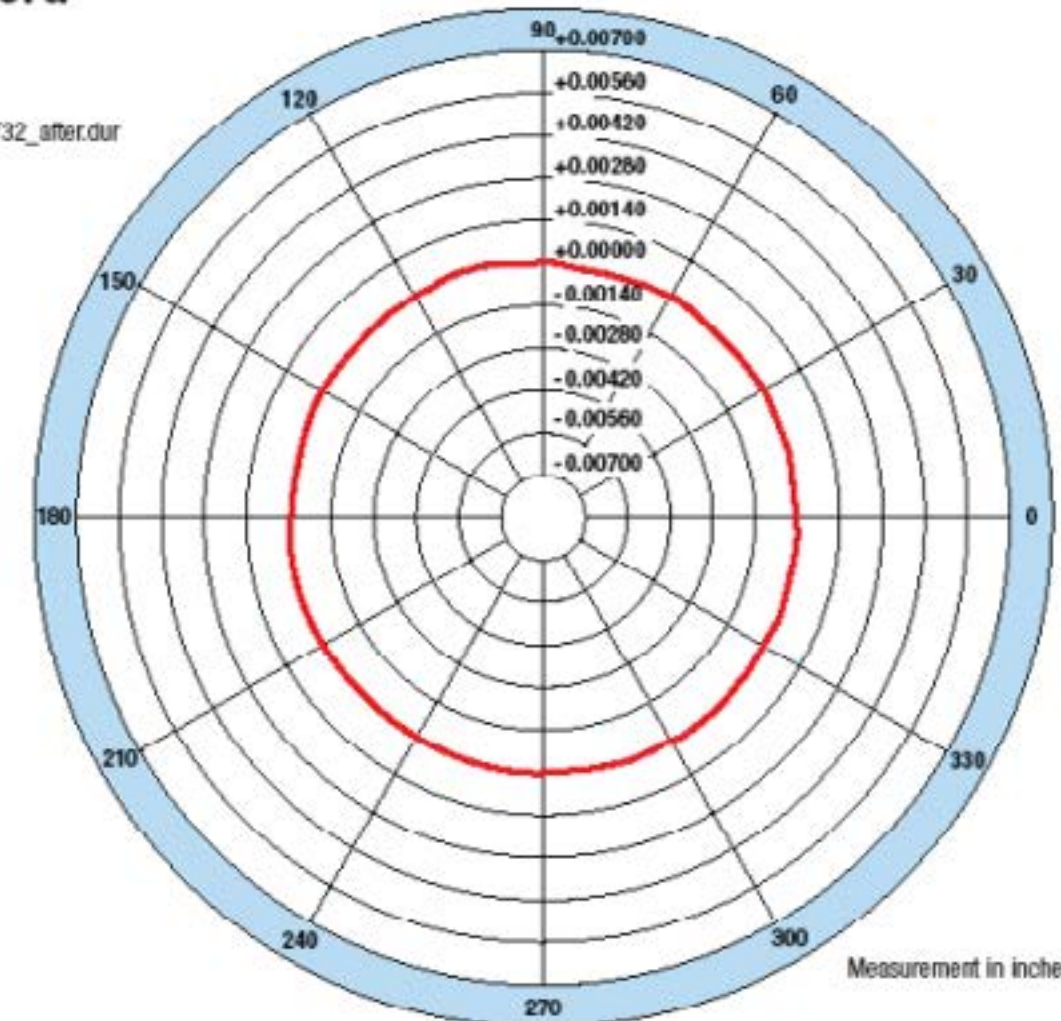
Customer: Confidential
Customer Roll Number: competition/q00732_before.dur
Roundness: 18-10-05, 21:07
Measure Time:
Probe Mode: T1+T2
Curve Zero Point: 77.0000 inch
Measurement Position: 263.5000 inch
Roundness: 0.00682



PRECISION GROUND

Measurement Record

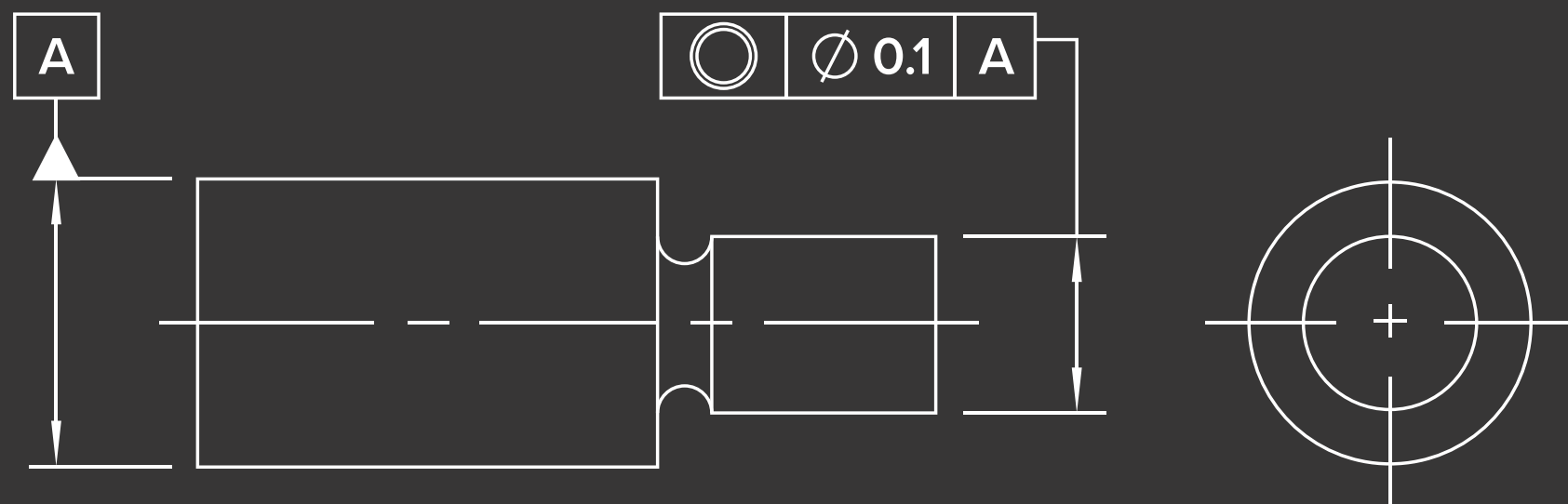
Customer: Confidential
Customer Roll Number: competition/q00732_after.dur
Roundness: 19-10-05, 09:13
Measure Time:
Probe Mode: T1+T2
Curve Zero Point: 77.0000 inch
Measurement Position: 263.5000 inch
Roundness: 0.00021



REDUCING VARIATION – ROLL CONCENTRICITY MATTERS

CONCENTRICITY

Concentricity is a tolerance that controls the central axis of the referenced feature, to datum axis.



Concentricity must be attained in pre-grind to ensure chrome substrate is concentric with bearings.

Non-concentric substrate can lead to pre-mature failure due to inconsistencies in the surface.

Often overlooked.

REDUCING VARIATION – GRINDING ON BEARINGS



- Roll “moves” when ground
- Roll moves in and out with defects
- True concentricity is not possible
- Shape is not attainable
- Proper surface finish is not possible
 - *critical* for producing consistent cereal/food flakes

GRINDING RESULTS — EXAMPLES

OUR TYPICAL TOLERANCE IS 5 UM
10% OF OUR WORK HAS TOLERANCES LESS THAN 2.5 UM

	Diameter	Face Length	Tolerances	Finish
Battery	400	420	2 um	0.05
Battery	320	280	2 um	0.05
Battery	445	305	1 um	0.025
DOD	880	990	1 um	0.1
Coating	365	610	1.3 um	0.15
Coating	305	460	1 um	0.15
DOD	320	280	2 um	0.05
Plastics	610	1730	1.5 um	0.15
Plastics	610	1820	1 um	0.05
Plastics	610	1830	2 um	0.1
Plastics	720	2690	2 um	0.02

REDUCING VARIATION IN PRODUCT QUALITY

UNIFORM FLAKE PRODUCTION DUE TO ROUNDNESS, CONCENTRICITY, SHAPE AND *SURFACE FINISH*

- Improved consistency of flake thickness
- Reduction or elimination of “ribbons” and off-quality by-product
- Improved flaker production due to proper and consistent surface finish
 - Surface properties must be integral to roll finishing and built to last the life of the roll

COST OF IMPROPERLY GROUND ROLLS

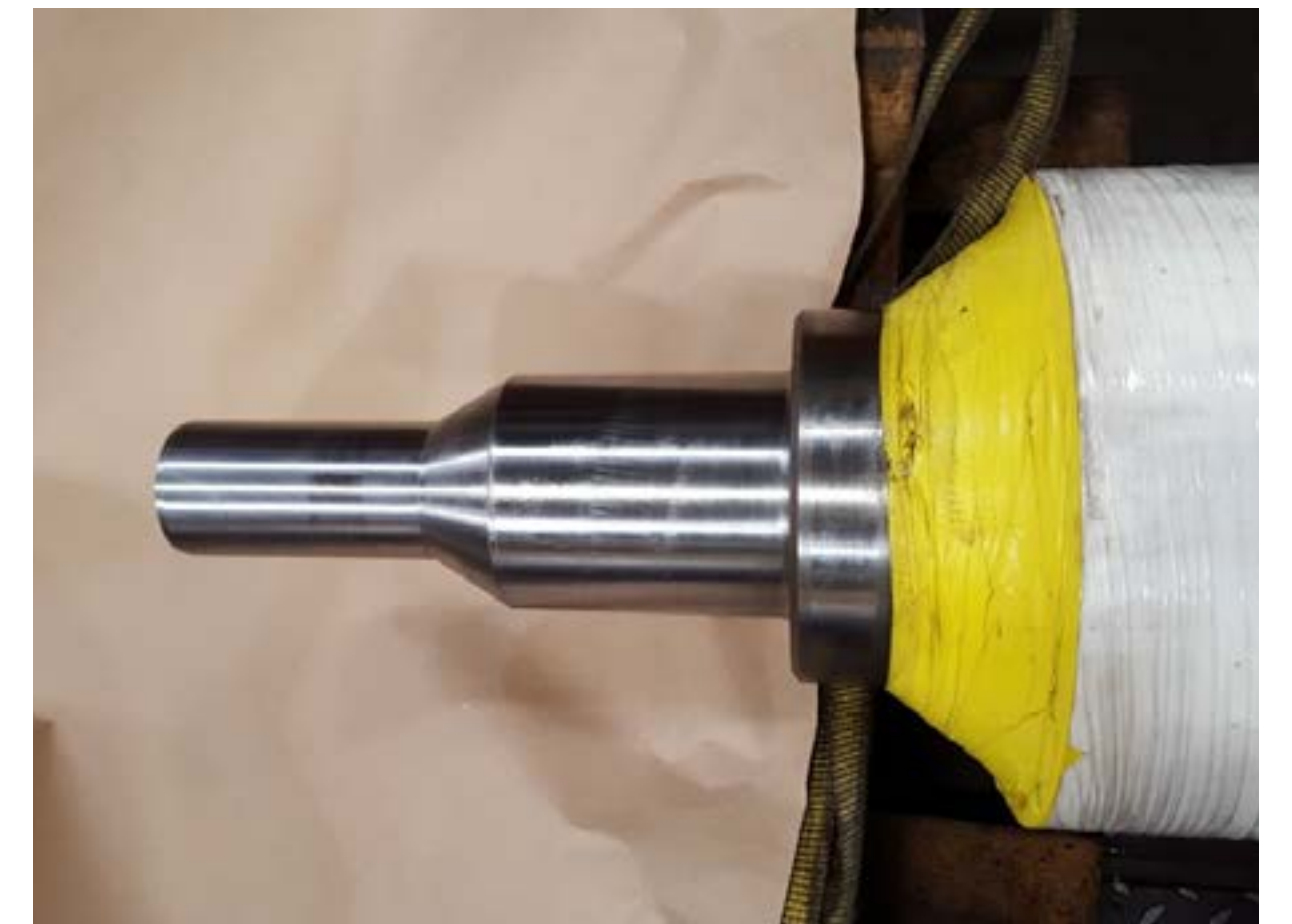
DESCRIPTION	VARIABLE	AMOUNT
PRG Grind Cost	\$20,000.00	
PRG Roll Life (months)	14.00	
Competitor's Grind Cost	\$10,000.00	
Competitor's Roll Life (months)	6.00	
Annual Savings due to Extended Roll Life		\$2,857.14
Production Hours Lost due to Improperly Ground Roll	2.00	
Lost Revenue Per Hour	\$3,500.00	
Total Lost Revenue due to Improperly Ground Roll		\$7,000.00
Scrap While Running Improperly Ground Roll (pounds)	50.00	
Cost per pound	\$50.00	
Total Scrap Cost due to Improperly Ground Roll		\$2,500.00
Revenue Per Hour at Normal Production Speed	\$3,500.00	
Percent Production Lost due to Degraded Speed	0.10	
Hours Run at Degraded Speed	24.00	
Revenue Lost Due to Degraded Speed		\$8,400.00
TOTAL COST OF IMPROPERLY GROUND ROLL		\$17,900.00

This total cost calculator tool will allow you to project the operational cost of an improperly ground roll and potential savings with an investment in PRG grinding services.

[CLICK HERE](#) to access your own fully functional calculator as a Microsoft Excel file. Simply insert your values within the green cells and your projected savings will be automatically calculated.

ROLL LIFE AND START-UP — MECHANICAL EXCELLENCE

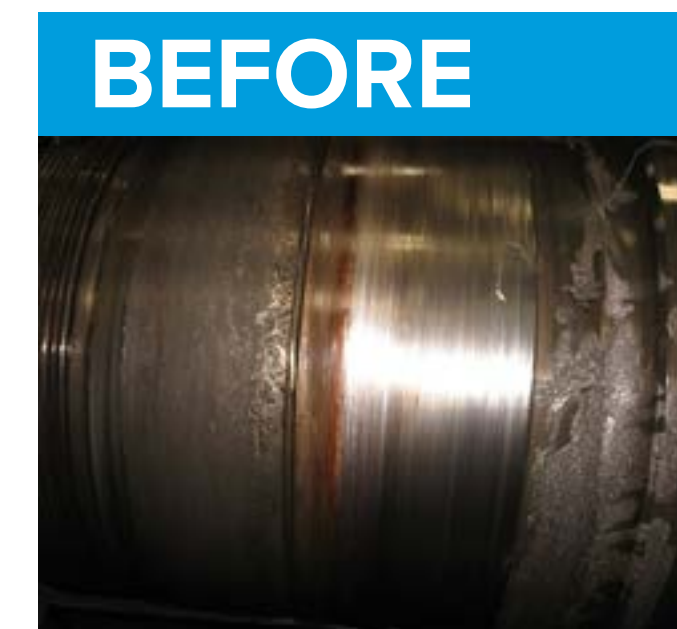
- Bearing Inspection
- Bearing Seat Grinding
- Bearing Replacement
- Complete Roll Inspection
- Complete Rebuilds/
Reconditioning
- Dynamic Balance
- Dynamic Leak Test
- Grinding
- Head Fit Repairs
- Journal Repairs
- NDT
- New Housings
- New Journals
- New Rolls
- Roll Modifications
- Vacuum Testing
of Suction Rolls



ROLL LIFE AND START-UP — MECHANICAL EXCELLENCE

PRECISION MAINTENANCE IS MORE THAN JUST PRECISION GRINDING

- Thorough inspection of bearings and housings
- Proper assembly of bearings and housings
- Replacing worn or damage bearings and bushings
- Journal repair and replacement
- On-time start-up and profitable production



ROLL LIFE AND START-UP — MECHANICAL EXCELLENCE

UNIFORM ROLL SURFACE TEMPERATURE: TEMPERATURE TRANSFER AND ROLL TIR

- Temperature control
- Reduce sheet scorching and hot spots
- Prevent “thermal” runout (TIR) due to plugged passage
 - Can cause machine direction material variation
- Increase production speeds



ROLL LIFE AND START-UP — MECHANICAL EXCELLENCE

PRECISION MAINTENANCE IS MORE THAN JUST PRECISION GRINDING

CLOSURES

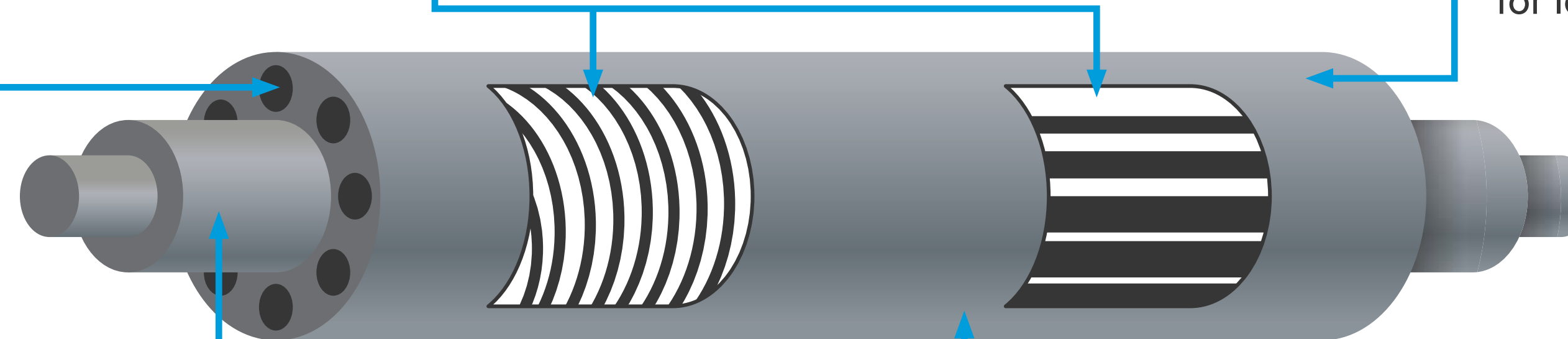
Thoroughly inspect all closures and repair or replace where needed. Replace gaskets. Retorque closures to specifications and pressure-check for safety.

INTERNAL

Clean all interior fluid passages to eliminate cold- or hot-spot potential caused by blockages. Inspect for build-up and proper flow rates.

SURFACE

Grind (cold or hot grinding methods), rechrome and patch-plate repair roll surfaces as required. Carbide recoating option available for longer life between regrinds



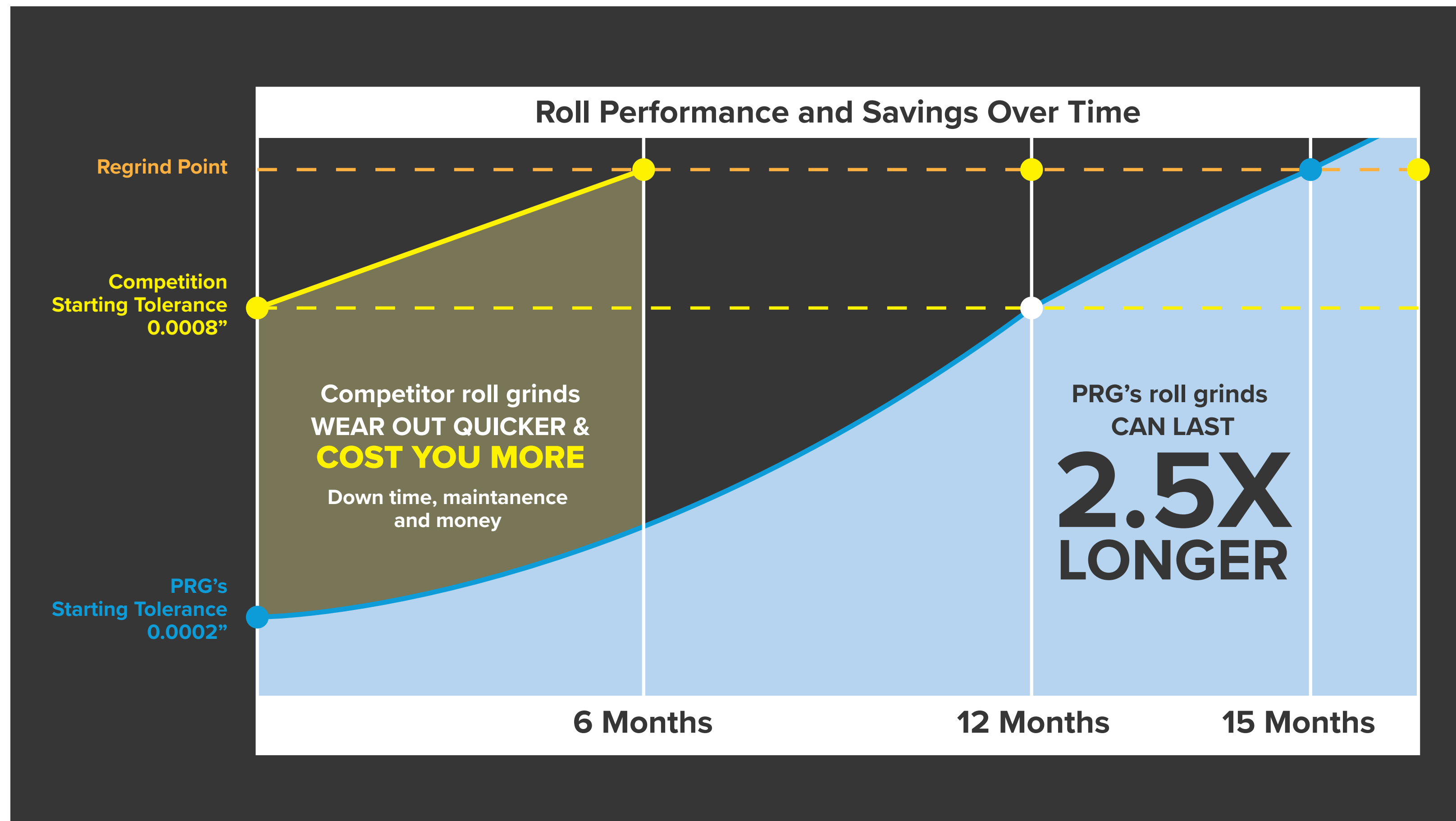
JOURNALS

Complete repairs available from brush grinding, and chrome and nickle plating ... to replacement of inner race, or other components, as required. Future journal replacement option is also available.

PROFILE

Computer-controlled profiling is available to produce the specific roll shape required to optimize your production process and improve product quality.

ROLL LIFE AND START-UP

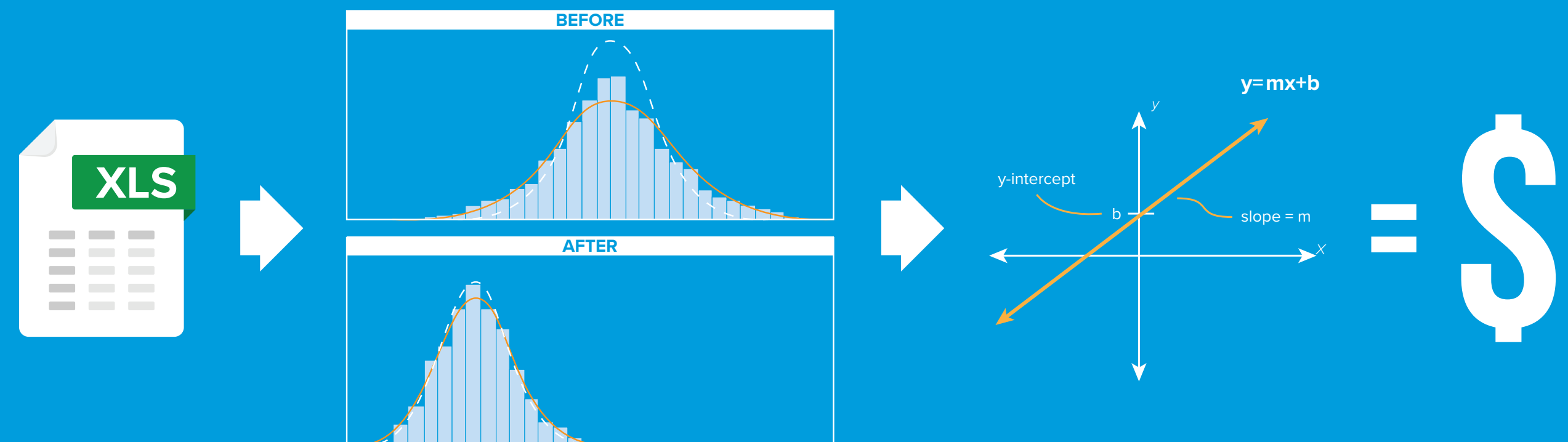


ROLLS THAT
**START CLOSER
TO PERFECTLY
ROUND START
UP FASTER &
RUN LONGER!**

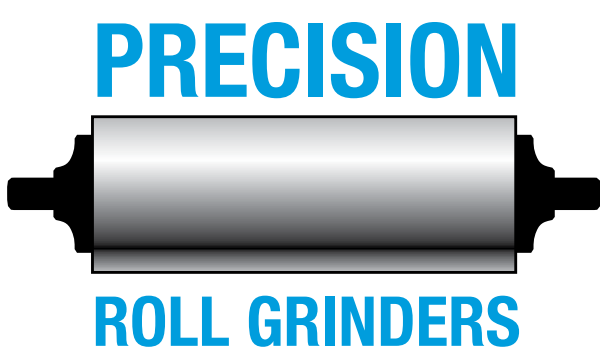
PRG PROMISE TO PROVIDE VALUE

**WE ARE COMMITTED TO HELPING YOU REDUCE
PROCESS VARIATION AND INCREASE YOUR PROFITS!**

- Any troubleshooting on rotational equipment (video, pics)
- Data analysis on current process
- Joint Design of Experiment to reduce variation




PRG'S PROMISE TO PROVIDE VALUE — CASE STUDY



50 Years

PRG has been the premier cylindrical shaft and roll grinding company in the Western hemisphere with over half a century of experience.

Your Production Line Could be Saving Money and Time with Increased Quality.



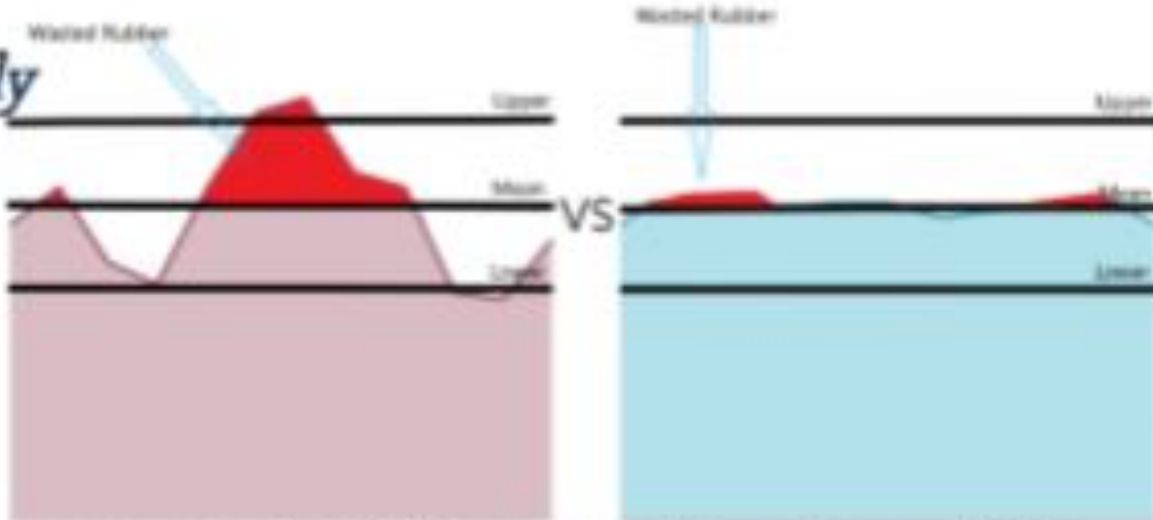
"PRG can grind to tolerances as small as 0.00002 or 20 millionths of an inch"

Your production line may be experiencing excessive material use, unplanned shutdowns, and even poor quality. Many of these problems could be improved or even avoided with something as simple as a high quality grind for your rolls.

PRG can significantly increase your material savings.

Sheet Profile (Standard Grind)

Sheet Profile (PRG Grind)



With the higher tolerances and quality at PRG, your rolls will always be ground to the proper specifications. The results that can be seen in your plant is a far superior rubber sheet profile. This leads to significant savings in material and more of your product falling within your desired tolerances.

See the other side to learn more

Tighter Tolerances Means Bigger Savings

Parameter	Value
W = Sheet Width (in)	48
S = Sheet Speed (FPM)	130
D = Days/Year in Operation	250
C = Avg. Cost in \$ per lb (Mat'l & Labor)	1.5
SG = Specific Gravity of Material	1.2
PPI = Calculated lbs/in	0.04332
T = Tolerance With Current Grinding Method (+/- inches)	0.0004
PRGT = Tolerance with PRG Grinding Method (+/- inches)	0.0002
Average Annual Savings	\$525,496

Calculation:
 $W \times (S \times 12 \text{ in/ft}) \times (D \times 1440 \text{ min/day}) \times (C \times PPI) \times (T^2 - PRGT^2) \times 50\%$

1/10,000 inch may sound unimportant in an industry that creates thousands of feet of product a day in large scale operations, but the impact on the material savings is tremendous. The model to the left demonstrates the possible savings that our tolerances can achieve. As small as only a 2/10,000 inch difference can result in over a half million dollars in savings every year!

We Do More Than Just Roll Grinds



- Brush Electroplating
- Calendar Rolls
- Coatings
- Chrome Plating
- Custom Grinding
- Descaling
- Dynamic Balancing
- Dynamic Leak Testing
- Heat Grinding
- Journal Repair
- Media Blasting

- Metal Industry Mill Rolls
- Metal Spraying
- Mirror Polishing
- New Chilled Iron Rolls and Shafts
- Regrooving Rubber and Polyurethane
- Roll Fabrication
- Section Roll Rebuilds
- Turning
- Variable Crown (VC) Roll Rebuilds


Want to Find Out More?

Contact Precision Roll Grinders to Get a Free Quote!

Proud to Partner With



Locations



Allentown, PA
(610) 395-6966
6356 Chapmans Rd

Lewisport, KY
(270) 295-4990
200 Industrial Park Rd


Carrollton, GA
(770) 830-6323
400 Barnes Dr


Texarkana, AR
(870) 216-4000
4000 E 19th St


Visit our Website Below

www.precisionrollgrinders.com

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precisionrollgrinders.com

CONTACT US

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LEWISPORT, KENTUCKY

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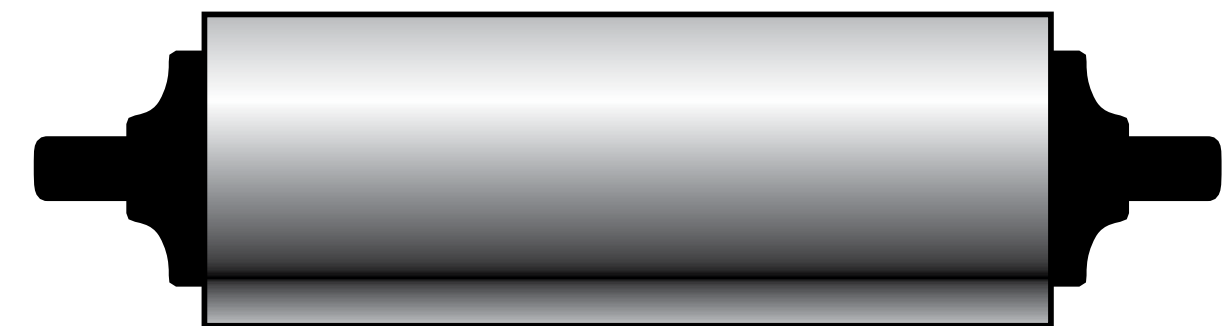
TEXARKANA, ARKANSAS

(870) 216-4000



QUESTIONS?

PRECISION



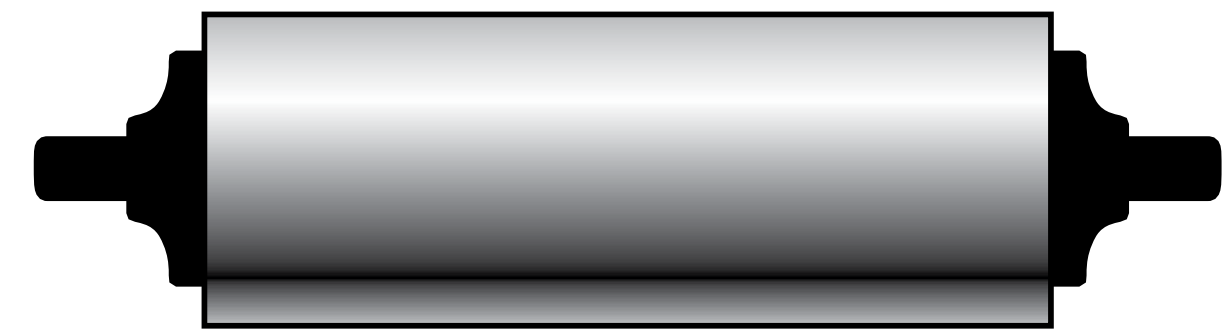
ROLL GRINDERS

Over 50 years of value-added service

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**THANK YOU FOR
YOUR TIME.**

PRECISION



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Over 50 years of value-added service

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