

NORTON

SAINT-GOBAIN

Transforming
surfaces
...and beyond

SURFACE SOLUTIONS

ORTHOPAEDIC IMPLANT GRINDING

HIGH-PERFORMANCE SOLUTIONS FOR ORTHOPAEDIC IMPLANT GRINDING

Precision and quality are critical when it comes to the production of surgical implants. While each step in manufacturing orthopaedic implants is important to their longevity, safety, and effectiveness, the surface finish is critical. It is the implants' first line of defence against fatigue and bacterial proliferation. Selecting the right abrasive and using it at the proper pressure and recommended cutting speed is a key for **improved process effectiveness**, resulting in **fewer grinding steps, less rework, faster turnaround** and **lower costs**.

With innovation as our driver, Norton offers **highly engineered abrasive tools for each step of the machining process for hip and knee joints**. Used by professionals around the world, our high-performance solutions are designed to deliver a **homogeneous and smooth surface finish** and **precise tolerances** while **improving repeatability and productivity**.



ORTHOPAEDIC KNEE AND HIP IMPLANTS ABRASIVE PROCESSING FROM FOUNDRY TO FINAL FINISH

REQUIREMENTS APPLICATION

SAINT-GOBAIN ABRASIVES SOLUTIONS

 CUT OFF CAST MATERIAL	 GATE REMOVAL AND PROFILE GRINDING	 CONTOURS GRINDING AND DEBURRING	 REFINING	 LINISHING
<p>Fast material removal after foundry</p>	<p>Rapid heavy-duty metal removal</p>	<p>Fast grinding of the entire knee profile Customised wheel for each application</p>	<p>Fast and burn-free grinding Durable and flexible belts for hard-to-reach areas</p>	<p>Perfect surface finish (no rework) Easy-to-use and durable</p>
<p>RESIN BONDED CUTTING DISCS</p> <p>Norton reinforced cutting discs meet the highest standards for cut quality and product life, even in the most complex applications.</p> <p>Discs are designed for safe and free cutting (no burrs, no burns) with maximum operating speed up to 100 m/s.</p> <p>TIP:</p> <ul style="list-style-type: none"> Experience outstanding performance with Norton NorZon blend. 	<p>NORTON RAZORSTAR™ R990S 36+</p> <p>Norton RazorStar™ belts, featuring engineered shaped ceramic grain, deliver unbeatable grinding performance on stainless steel, cobalt chrome and titanium. Extremely durable even under demanding conditions, the belts are the best choice for heavy and quick material removal on implants.</p> <p>TIP:</p> <ul style="list-style-type: none"> Use a hard contact wheel to increase the belt life. <p>OPTION 1</p>	<p>CBN VITRIFIED AND SINGLE LAYERED WHEELS</p> <p>Superabrasive wheels offer exceptional productivity and cost efficiency. Wheels are made-to-order to exact requirements and are available in a variety of profile shapes and sizes.</p> <p>TIP:</p> <ul style="list-style-type: none"> Dress the cBN vitrified Vitron7 wheels with Norton Winter CNC dresser. <p>OPTION 2</p>	<p>NORTON R946 CERAMIC GRAIN</p> <p>The unique combination of grains and poly-cotton backing provides high stock removal and superior surface finish while reducing the processing time.</p> <p>Thanks to its flexibility, the belt is a perfect solution for hard-to-reach areas.</p> <p>TIP:</p> <ul style="list-style-type: none"> Use a softer contact wheel or work on the slack of the belt for even more flexibility. 	<p>NORTON NORaX®</p> <p>NORaX belts with microstructured 3D pattern layers are engineered to achieve the highest quality, finest finishing and polishing results on orthopaedic implants.</p> <p>TIP:</p> <ul style="list-style-type: none"> For finishing complex shapes and rounded contours, use the highly flexible NORaX N889 belts.
				

NORTON RAPID FINISH CONVOLUTE WHEELS

Rapid Finish wheels generate uniform surface finishes.

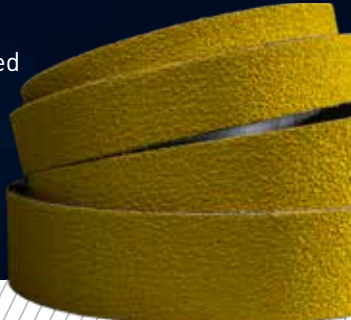
TIPS:

- The Rapid Finish wheels are used both on the sides and on the periphery for deburring and polishing on and between the condyles.
- Use SiC convolute wheels like General Purpose and Series 1000-Long Life for the best results.
- For the final finishing step, finer grits are recommended.

PRODUCT FOCUS

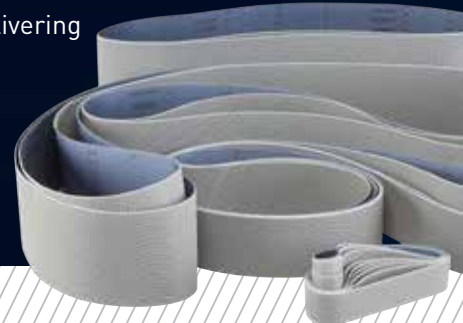
Norton RazorStar™ R990S 36+ belts are specifically designed to perform in both manual applications and in machine-assisted or fully robotic grinding operations, particularly at medium to high material removal rates.

Featuring engineered shaped ceramic grain the belts deliver unbeatable grinding performance on stainless steel, cobalt chrome and titanium.



PRODUCT FOCUS

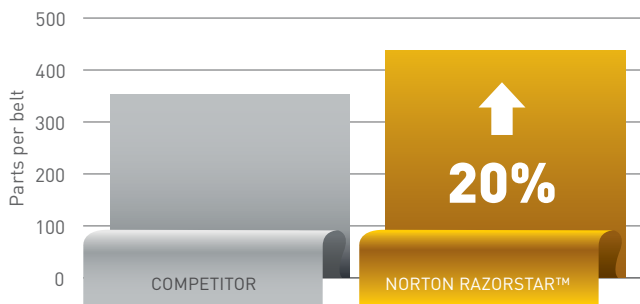
NEW Norton NORaX® belts are known to provide performance polishing in many markets, including Medical. Now, the latest generation NORaX® (N889) range of micron-graded aluminium oxide abrasive belts has even more to offer, delivering **high flexibility, more consistent cut-rate and longer life.**



CASE STUDY: MEDICAL GATE REMOVAL AND PROFILE GRINDING



WORKPIECE	Cobalt chrome alloy
PART	Orthopedic knee implant
INCUMBENT PRODUCT	Competitive shape-grain belt
NORTON BELT	RazorStar™ R990S C36
MACHINE	Robotic cell
BELT SPEED	35 m/sec

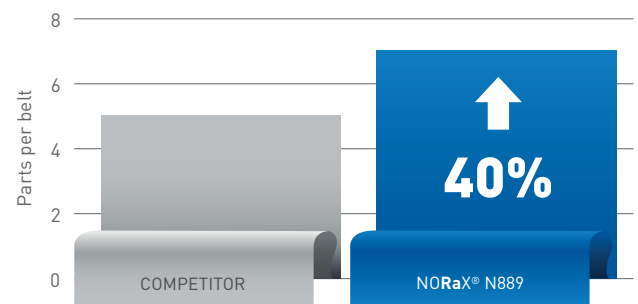


RESULT: +20% MATERIAL REMOVAL
with more parts processed per belt

CASE STUDY: MEDICAL REFINING



WORKPIECE	Cobalt chrome alloy
PART	Orthopedic knee implant
INCUMBENT PRODUCT	Competitive engineered belt
NORTON BELT	NORaX® N889 X45 belt
MACHINE	Manual backstand
BELT SPEED	12 m/sec



RESULT: +40% IMPROVEMENT
in number of parts per belt



Saint-Gobain Abrasifs
European Headquarters
251 Rue de l'Ambassadeur
78700 Conflans
France

Tel: +33 (0)1 34 90 40 00
Fax: +33 (0)1 34 90 43 97

www.nortonabrasives.com

www.saint-gobain-abrasives.com
www.youtube.com/NortonAbrasiveEMEA

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