

CASE STUDIES

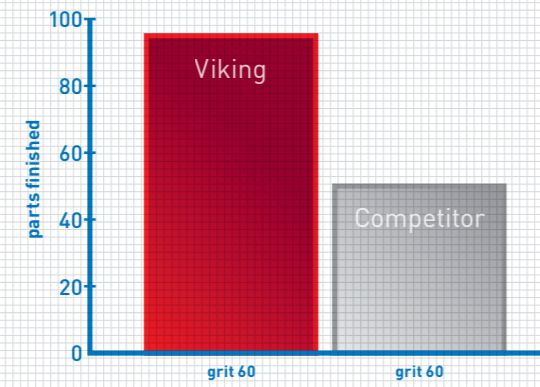
VIKING GRIT 60 VS COMPETITOR

Part information

Market: Energy generation
Application: Gate grinding on gas turbine
Workpiece material: High vacuum inconel 738
Machine: Backstand
Pressure: High off-hand
Contact wheel: 70sh, serrated
Speed: 30 m/s
Belt size: 75 x 2500 mm
Competitor: Ceramic belts grit 60

Performance

Competitor: 50 parts finished
Viking grit 60: 90 parts finished
Reduces: Process time, abrasive cost per part
Increases: Production, life improvement 80%



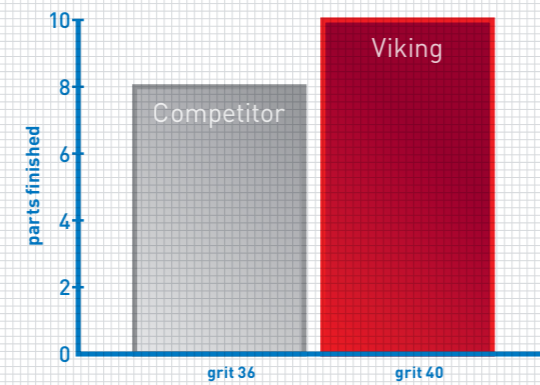
VIKING GRIT 40 VS COMPETITOR

Part information

Market: Aerospace
Application: Turbine blades
Workpiece material: High nickel steel
Machine: Backstand blade radius shaping
Pressure: Medium off-hand
Contact wheel: 60sh, serrated
Speed: 30 m/s
Belt size: 50 x 3450 mm
Competitor: Ceramic belt grit 36

Performance

Competitor: 8 parts finished
Viking grit 40: 10 parts finished
Reduces: Cost, process time
Increases: 25% parts finished, Excellent cut



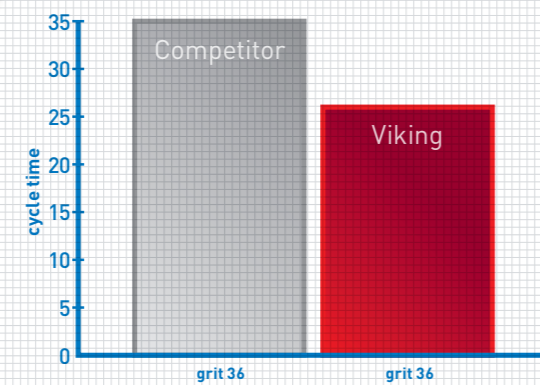
VIKING GRIT 36 VS COMPETITOR

Part information

Market: Aerospace
Application: Turbine blades
Workpiece material: High nickel steel
Machine: Backstand
Pressure: High off-hand
Contact wheel: 90sh, serrated
Speed: 32 m/s
Belt size: 100 x 2740 mm
Competitor: Ceramic belt grit 36

Performance

Competitor: 35 seconds per part
Viking grit 36: 26 seconds per part
Reduces: 25% cycle time, pressure, process time
Increases: Productivity, Free cutting



CASE STUDIES

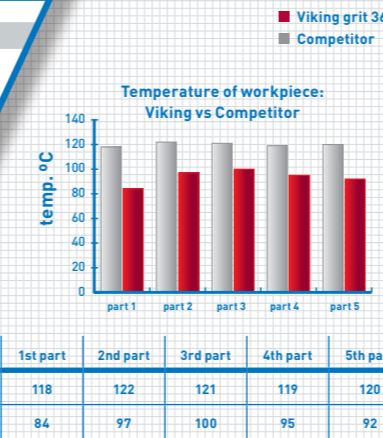
VIKING GRIT 36 VS COMPETITOR

Part information

Market: Aerospace
Application: Gate grinding on ring piece
Workpiece material: H-stellite 31
Machine: Surface grinder, automatic in-feed
Pressure: High
Contact wheel: Steel
Infeed: Steps of 0.5mm
Belt size: 50 x 4000 mm, one belt per part
Competitor: Ceramic belt grit 36

Performance

Reduces: 22% reduction in average temperature. Excellent cut with less thermal damage



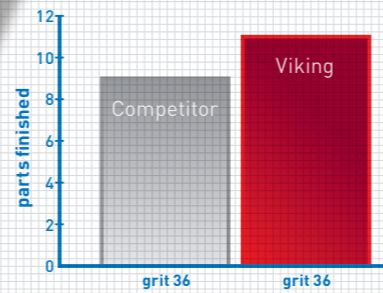
VIKING GRIT 36 VS COMPETITOR

Part information

Market: Automotive
Application: Investment castings
Workpiece material: Stainless steel 309
Machine: Backstand (off-hand)
Pressure: High off-hand
Contact wheel: 80sh, serrated
Speed: 28 m/s
Belt size: 100 x 3000 mm
Competitor: Ceramic belt grit 36

Performance

Competitor: 9 parts finished
Viking grit 36: 11 parts finished
Reduces: Abrasive cost per part
Increases: 44% parts finished



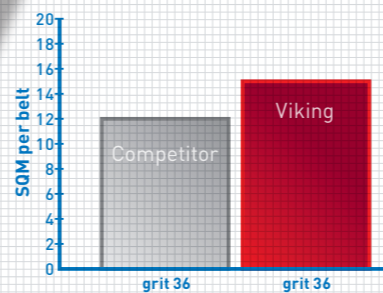
VIKING GRIT 36 VS COMPETITOR

Part information

Market: Steel mill
Application: Plate cleaning
Workpiece material: Martensitic steel S410
Machine: Johansson grinding machine
Pressure: Medium 1-2 kg/cm²
Metal removal: 0.4mm (in several passes)
Belt size: 200 x 16500 mm
Competitor: Ceramic belt grit 36

Performance

Competitor: 12sqm finished
Viking grit 36: 15sqm finished
Reduces: Abrasive cost per part, process time
Increases: 25% longer belt life



SAINT-GOBAIN
ABRASIVES

Saint-Gobain Abrasives
 European Headquarters
 Rue de l'Ambassadeur - B.P.8
 F78702 Conflans-Saint-Honorine
 France
 Tel: +33 (0) 134 90 40 00
 Fax: +33 (0) 139 19 89 56
 www.saint-gobain.com
 form #1587

Performs in
 the toughest
 environments

NORTON

VIKING

THE NEW GENERATION ABRASIVE TECHNOLOGY

NORTON

VIKING

Viking R996 belts are a unique concept from Norton specifically designed to perform in the toughest environments. Offering high metal removal with a faster cutting action, Viking can provide an 80% increase in parts finished and 22% reduction in grinding temperature.



MARKETS

- Investment casting foundries (stainless steel, cobalt chromium)
- Aerospace foundries
- Medical prosthesis (casting)
- Forged parts (tools, turbine blades)
- Steel mills (plate grinding)
- General engineering (heavy stock removal operations)

FEATURES

- New generation SG[®] ceramic grain
- New formulation of Supersize layer
- High performance resin system
- YY polyester backing for coarse grits (36-50).
- Available in grits 36, 40, 50, 60
- Usable width 1500mm
- Available in narrow and wide belts and rolls

BENEFITS

- Longer belt life
- Advanced cooling system
- Fast and consistent cut rate
- High stock removal
- Maximum performance
- Cost reduction per part
- Reduced heat generation
- Process improvement
- Less off hand pressure required to cut

INNOVATION

Viking R996 belts are made from a new generation of ceramic grain with innovative bonds specially developed to enhance grain performance offering high stock removal and longevity at high pressure.



- **A new generation** Seeded Gel (SG[®]) ceramic grain, needle like and very sharp, encourages a fast cutting action with low heat generation.
- The formula of the Supersize layer offers the **most advanced cooling system available**, aiding cutting and reducing friction, protecting the material integrity.
- **High performance resin** system works together with the SG[®] ceramic grain improving cutting action and grain retention under severe work conditions.
- YY polyester backing on coarse grits supports the high performance grain avoiding slipping and allowing a **consistent aggressive cutting action**.
- A generation of technology that **maximises efficiency** helping achieve the best from both the workforce and automated machinery.
- For grinding materials ranging from **stainless steel to cobalt chromium** used in a range of markets from plate grinding to turbine blades.

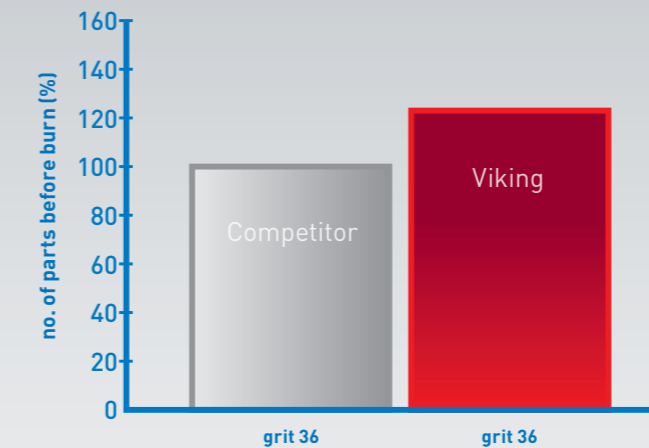
MAXIMUM POTENTIAL

PROBLEM	VIKING SOLUTION
At full capacity and not keeping up with demand. Considering adding new machines and increasing manpower.	Higher stock removal reduces cycle times and improves processes.
High material scrap rate due to heat deformation and burn issues. Increase down time / process time due to work piece overheating.	Less friction enables free cutting and long lasting SG grains.
Looking to increase belt life.	Specifically designed bonds makes belt life longer.
Looking for overall cost reduction.	Excellent cost / performance ratio reduces cost per part.

INTERNAL TESTING

Viking Performance vs Competitor Performance

Application: Robotic grinding on backstand
Belt speed: 38 m/s
Contact wheel: Hard contact wheel 90sh, serrated
Material: Stainless steel 304SS
Constant in-feed: 2 mm/s
Performance: Viking grinds 25% more parts before burns begin to appear



Viking Performance vs Competitor Performance

Application: Offhand grinding on backstand
Belt speed: 34m/s
Contact wheel: Hard contact wheel 90sh, serrated
Material: Stainless steel 304SS
Applied pressure: High 'constant' pressure
Performance: Viking showed a life 2-3 times superior to VSM and 3M

