

## INSERT GRINDING

# PARADIGM®

## DIAMOND WHEELS FOR INSERT FORM GRINDING



Fine Finish Radius and  
Plunge Forms – Fast!

Norton Winter Paradigm wheels create exceptional finish and edge quality on carbide and ceramic inserts – faster than ever.

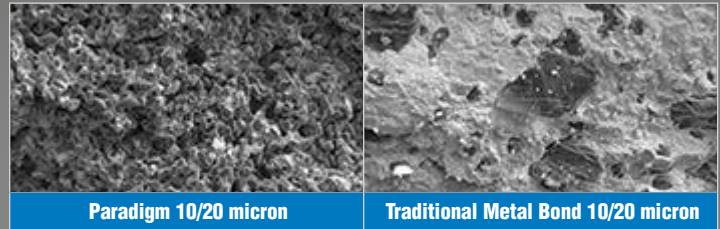
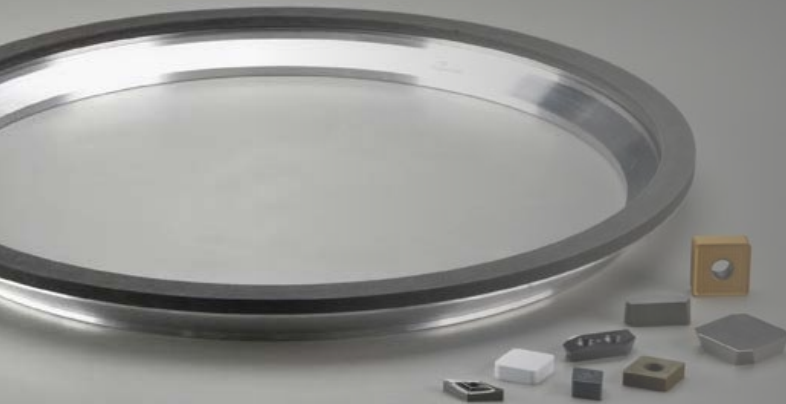
### FEATURES & BENEFITS

- Low cutting energy generates higher material removal rate
- Natural porosity increases chip clearance and coolant penetration
- Fine grit availability produces excellent finish and edge quality
- High diamond concentration increases parts per dress and form tolerance
- Truable bond technology reduces set-up time without sacrificing wheel life

ONLINE TRUING & DRESSING CAPABILITY  
LOWER TOOLING COST | BETTER EDGE QUALITY

A **PARADIGM SHIFT** IN CUTTING TOOL MANUFACTURING™





## THE PARADIGM SHIFT

Increase productivity/decrease costs:

- Up to 46% porosity
- + > 2:1 diamond to bond ratio
- + Metal matrix forms an ionic bond with the diamond particles
- + Finer grits and more working particles with higher exposure
- = Lower cutting energies with highest quality part edges and finish

### MADE-TO-ORDER AVAILABILITY

All Norton Winter Paradigm diamond wheels are made to your precise requirements.

Paradigm wheels for insert radius and plunge form grinding are available for all common machine wheel sizes including 200mm, 250mm, 350mm, and 400mm diameters in 2A2 and 11A2 wheel shapes.

#### GENERAL APPLICATION PARAMETERS FOR CARBIDE AND CERAMICS

Wheel Speed:	3,000-5,000 SFPM
Infeed Rate:	Up to 0.5" per minute
Depth of Cut:	up to 0.200"
Truing/Dressing Parameters:	Dresser and wheel surface velocity ratio approximately 3:1, infeed 0.0005" or less, plunge at 0.025" per minute. Use 220 grit or finer silicon carbide or aluminum oxide H grade or softer truing wheel.
Coolant:	Straight oil

#### DIAMOND STARTING SPECIFICATIONS FOR CARBIDE AND CERAMICS

DES20/30MIC-E160-P200C	Tungsten Carbide
DES10/20MIC-E160-P200C	Ceramic

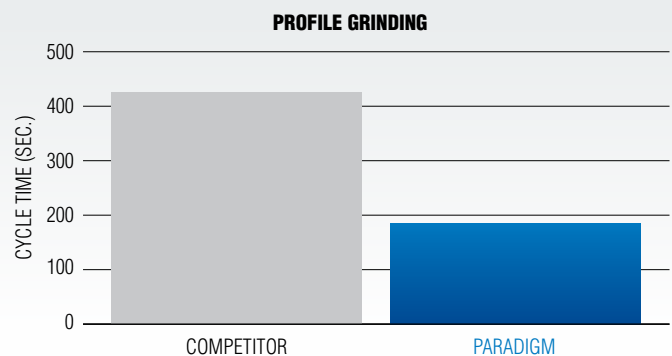
Prior to order entry, please contact your Norton representative for specification recommendations to ensure maximum grinding performance, quotations, and current lead-times.

### Case Study

**APPLICATION:** Grinding top notch insert  
**MACHINE:** CNC insert grinder  
**NORTON WINTER PRODUCT:** 2A2T wheel shape  
 250mm x 70mm x 50mm  
 Paradigm AD20/30MIC-E160-P200C

**INCUMBENT PRODUCT:** 150 grit diamond resin bond wheel

**RESULTS:** The Paradigm wheel reduced the total cost vs. the incumbent product by 47% reduction on cycle time for the form grind operation. Parts per dress were increased by 5X.



**BEST** – NORTON WINTER Paradigm | **BETTER** – NORTON WINTER G-Force and Series 700 | **GOOD** – NORTON WINTER B80 / B610 / B90

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