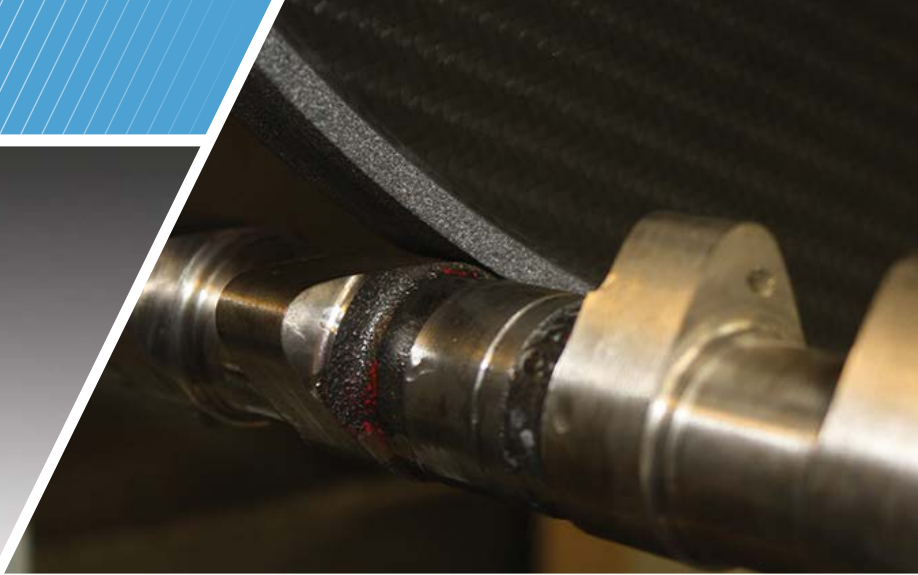
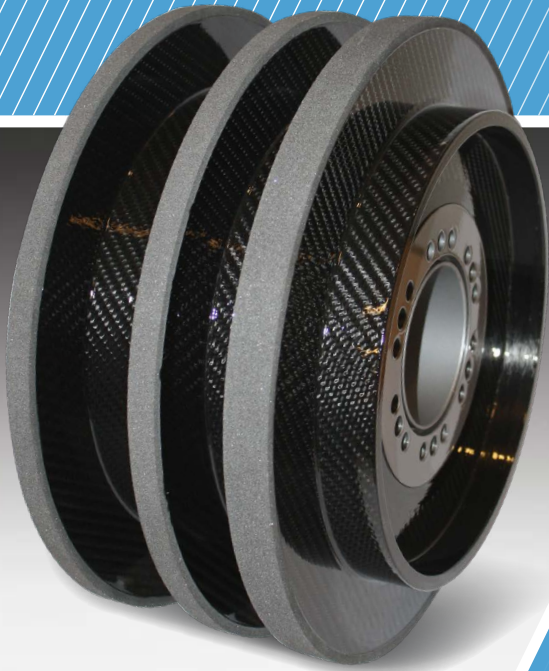


NORTON

SAINT-GOBAIN®

WINTER



**CARBON
FORCE™**

FORGET ABOUT THE BRAUN;
CORE STRENGTH
IS THE REAL BEAUTY

INTRODUCING NORTON WINTER CARBONFORCE VITRIFIED CBN WHEELS

Lifting is believing! These wheels will truly reinvent the way you OD grind. Our new Norton Winter CarbonForce vitrified cBN wheels, with surprisingly lightweight, proprietary carbon fiber cores, give you all the safety- and performance-enhancing benefits of a precision superabrasive wheel – without the negative drawbacks of a heavier (up to 75% heavier!) steel-hubbed wheel.

Operators can safely pick up these lightweight wheels with their robust, form-holding carbon fiber cores – reducing cycle time, changeover, and labor costs. Achieve superior finished parts and longer machine life due to reduced grinding forces on your machine and workpiece, courtesy of their light weight. The wheels are made to tight tolerances for lowest total cost per component ground.

KEY APPLICATION

OD GRINDING OF CAM- AND CRANKSHAFTS (VEHICLE, POWER GENERATION, AND GEAR) | CENTERLESS GRINDING

nortonabrasives.com


SAINT-GOBAIN

Introduce these CarbonForce wheels into your applications to achieve their productivity-maximizing, cost-minimizing benefits:

- Maximize operator safety when mounting and changing over these lightweight wheels; reduced changeovers further improve working environment
- Prolong wheel life (and reduce costs) with our core robustness and reduced dressing frequency
- Dramatically reduce cycle times; simultaneously grind multi lobes in one operation by mounting more than one of these extremely lightweight wheels
- Increase the life of your valuable machinery with CarbonForce wheels' lightweight technology; reduce energy draw/consumption as well due to lighter weight

CarbonForce Core Benefits:

Maximize operator safety; our lightweight wheels are THE safest vitrified cBN wheels in the market today.

- Our lightweight carbon fiber core reduces strain on the operator and often eliminates the need for a crane; lightweight CarbonForce wheels meet most safe lifting weight limits
- These wheels exhibit high strength vs. centrifugal force and have been qualified to safely run at MOS of 160 m/s, for wheels with an OD > 200mm
- All wheels are subjected to extensive spin and safety testing
- The low thermal expansion of the carbon fiber core increases safety and performance

Properties of Superabrasive Wheel Hub Materials

HUB MATERIAL	CENTER DENSITY (g.cm ⁻³)	CTE (x10 ⁻⁶) HUB
Steel (EN24T)	7.84	12.2
Mild steel (EN3B in P condition)	7.84	12.2
Aluminum (2014A-TF)	2.8	22
Aluminum (7075-TF)	2.8	23.5
Carbon-med weave from EM composites	1.5	2.5

TECH TIP

- An ANSI safe wheel mounting guide is included in each wheel-safe shipping box. Please read it before mounting.
- CarbonForce cBN wheels require a rotary dressing system, guaranteed to prolong the life of your wheels. Your Norton representative will be pleased to work with you to create the optimum rotary dressing set-up.

Prolong wheel performance with the perfect combination of robust, lighter weight core with vibration-dampening technologies AND advanced vitrified cBN bond system.

- Less operator intervention to control part quality
- Aluminum-cored products are heat sensitive. At higher temperatures, aluminum will expand and will adversely affect part geometry; carbon fiber hubbed wheels are thermally stable.
- This dynamic combination reduces dressing frequency and thus, increases wheel life
- Dynamic Balance to ISO G -0.4 @ 125m/s
- Our CarbonForce wheels may be returned for re-coating
- Premium product-dedicated transport boxes are provided for a life time of numerous safe, inexpensive shipping to and from your facility

Capitalize on the ability to mount multiple wheels on a multi-operation machine: grinding more than one lobe at a time dramatically decreases cycle times and changeovers.

- Due to their exceptionally light weight, four CarbonForce wheels (vs. one steel rim wheel) can be mounted onto a four-phase cam shaft grinding operation to grind all four lobes at once
- Cycle time, changeover, dressing frequency, and labor costs can be reduced by approximately 75% by swapping out all four wheels together

Increase the life of your valuable machinery.

- These lighter-weight wheels will reduce impact on your machine, increasing bearing, spindle, and overall machine life
- All wheels are equipped with a steel bushing to promote long life of wheel bore
- Power draw and energy consumption for acceleration and deceleration in linear and rotary movements are also reduced due to the lighter weight

AVAILABILITY

All CarbonForce vitrified cBN wheels are made-to-order to your exact specification.

Please contact your local Norton representative or a Customer Service Team member at the number provided below to discuss details and cost-saving solutions for your operation.

Dimensions:

- Max. Ø: 1000 mm
- Max width: 650 mm
- Large, complex wheel set designs are available due to our compact lightweight core