



MAXIMIZE DRESSING EFFICIENCY WITH NORTON E-FORM FREE-CUTTING ROLLS

Norton E-Form reverse-plated dressing rolls use controlled exposure of the diamond matrix to create a more free-cutting roll. This results in reduced dressing forces which in turn helps reduce vibration and improve part finishes, particularly when dressing vitrified cBN grinding wheels in aerospace and many bearing applications.

KEY APPLICATIONS/MARKETS

CREEPFEED | AEROSPACE | PRECISION AUTOMOTIVE COMPONENTS | BEARING

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FEATURES & BENEFITS

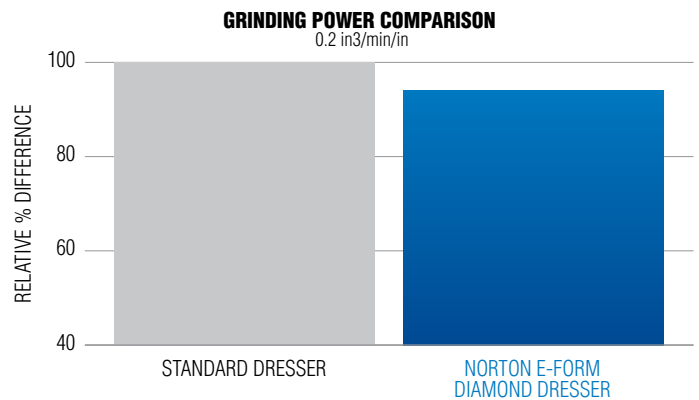
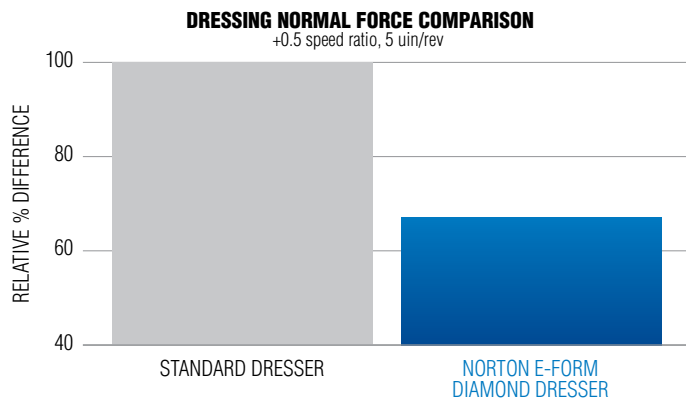
- Dressing of complex, intricate forms (i.e. fuel injection, thread, and aerospace root and tree forms) at realistic, low cost
- The controlled exposure of the diamond matrix, in a precise profile, creates a more free-cutting dressing roll, increases cutting speeds, and ensures smoother contact between diamond and wheel face
- Improved chip clearance promotes better grinding wheel swarf removal
- Decreased grinding power during material removal
- Decreased normal forces during dressing results in reduced vibration, improved size-holding, and improved finished part quality
- Uniformly distributed, high diamond concentration extends diamond dressing roll form-holding and life
- The precise diamond profile needs little or no lapping; close tolerances are achieved "out of the mold" ($\pm 0.005\text{mm}$ / $\pm .0002$ ")
- These sharp natural points provide a superior dressing action, resulting in an open grinding wheel and lower grinding forces

CASE STUDIES

Studies show that both dressing normal forces and resulting grinding power are lower when using our free-cutting Norton E-Form diamond dressing roll with controlled exposure of the diamond matrix vs a standard dressing roll.

Abrasive Product: Vitrified cBN Grinding Wheel

Workpiece Material: Inconel 718



CUSTOM-ENGINEERED AVAILABILITY

All Norton reverse-plated dressing rolls are custom-engineered to your precise requirements. A Norton representative will analyze your facility's grinding and dressing processes and recommend the most cost-effective, optimum-performing solution. Feature descriptions and tolerances are dependent on specific geometries.



DIAMOND ROLL GEOMETRIC AVAILABILITY

Diameter:

2.000" - 12.000" [50.80mm - 304.80mm]

Width:

1.000" - 8.500" [25.40mm - 215.90mm] (one piece)

Form Tolerances:

Profile: +/- 0.000080" [0.002mm]

Radius: +/- 0.0002" [0.005mm]

Step Relationship: +/- 0.00005" [0.0013mm]

Profile Angularity: +/- 0.00005" [0.0013mm]

Concentricity Band to Bore TIR:

0.00008" [0.002mm]

Diamond to Bore TIR:

0.0002" [0.005mm]

Bore Diameter Tolerance:

(+0.0001", -0.0000") [+0.004mm, -0.000mm] up to 4" length

* Availability listed above may not be available for certain diamond roll forms or diamond roll types. All availability is subject to review by the Norton design engineering team.

ORDERING ROTARY DRESSING TOOLS

Please provide the following information to your local sales representative or customer service representative.

Legible blueprint of roll, wheel, or part with the following geometry:

- Overall diameter
- Overall length
- Bore size and tolerances required
- Mounting pattern
- Any feature with tolerances less than 0.0002" (5 µm) must be clearly defined for engineering review
- If designing from a part, a fully dimensioned part drawing is required
- Abrasive type (natural diamond, synthetic diamond, CVD stones, etc.)
- Specification of wheel to be dressed (need at least the grit type and size)
- Dressing type (Plunge or CNC Profiling)



**NORTON**

SAINT-GOBAIN

PSP *process
solutions
program***Delivering added value**
(cost savings)**Strategic partnership****Professional**
systematic, disciplined,
documented

We understand that to maintain the competitive advantage in tough economic times you have to be leaner and more productive than ever before. Through the Norton | Saint-Gobain Process Solutions Program (PSP) we can analyze your grinding and dressing operation to significantly reduce rejection and scrap rates.

Assessing cost, quality, safety, and service with our PSP Program will show you how to produce parts faster with fewer rejections and substantially drive down costs to make your operation more profitable.

For more information on rotary dressing products and applications contact your local Norton representative or authorized distributor. Our technical account managers are trained in the Norton Process Solutions Program to identify potential cost saving opportunities in your rotary dressing applications.

To learn more about our Norton PSP Program see <http://www.nortonindustrial.com/psp.aspx>

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