



**IT'S TIME TO
CLEAR THE AIR**

CERAMIC ALUMINUM OXIDE NORGRIP MULTI-HOLE VACUUM DISCS & ROLLS

NEXT GENERATION DESIGN

- Create a cleaner work space with virtually dust-free sanding.
- Deliver more productivity with fewer product changes.
- Reduce labor costs per job with less sanding time.
- Generate more profit to the bottom line with longer product life, better surface quality, and higher sanding performance without loading.



www.nortonindustrial.com



IT'S NATURAL TO EVOLVE

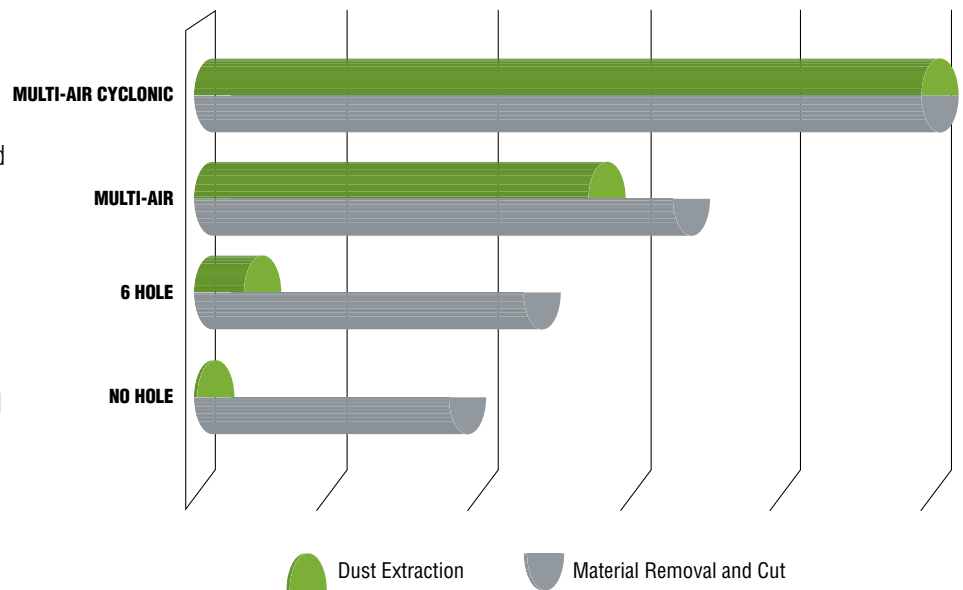
Nature has the ability to evolve and adapt as conditions change. To succeed in industry, the same applies. Evolution is necessary to survive and can be revolutionary in terms of productivity gains.

In the mid-80s, health, safety and environmental concerns motivated the government to enact rules and regulations to improve air quality. Central vacuum systems were installed and discs were die-punched with 6 holes for 6" and 5 holes for 5" in a circle for vacuum extraction to minimize dust and to extend disc life.

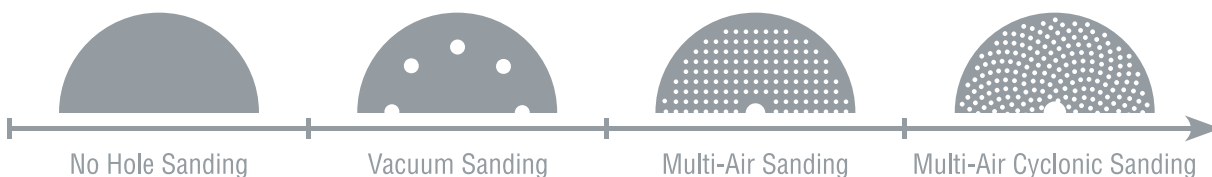
By the 21st century, EHS requirements became even more stringent related to reduction of airborne particulates making increased dust extraction critical, therefore, more holes were needed.

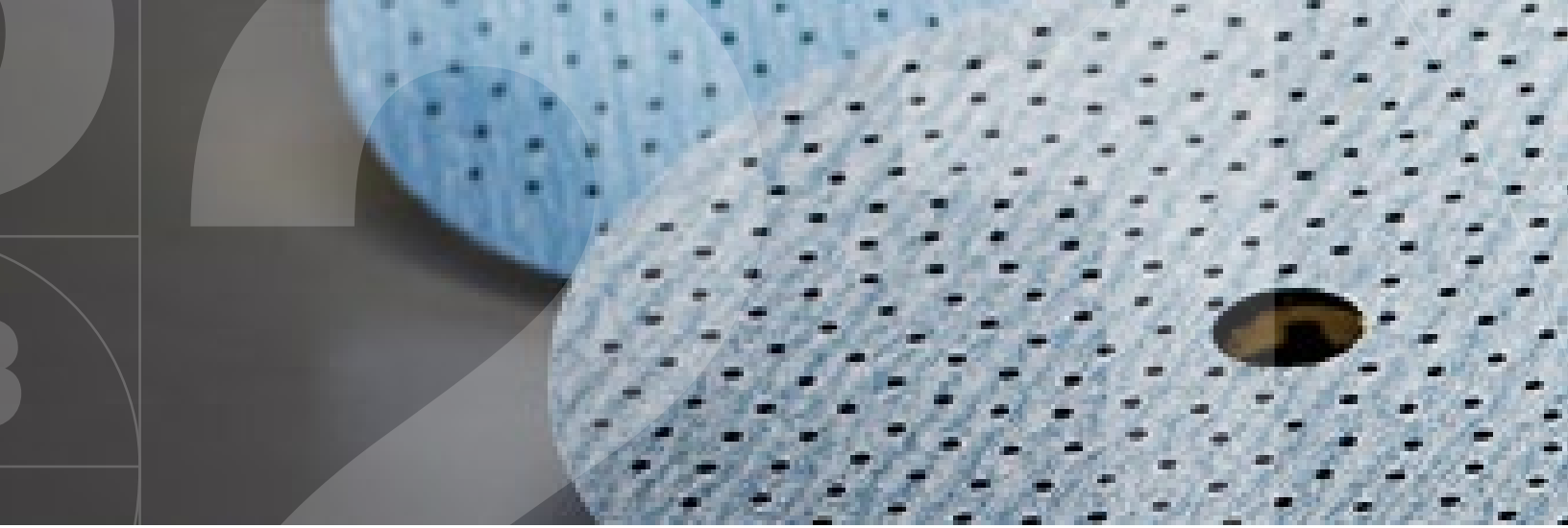
The first leap in multi-hole sanding went from 5 or 6 holes to the Norton Multi-Air System with 125 or 181 die-punched holes laid out in a grid. However, it was necessary to properly align the disc holes with the Norton Multi-Air back-up pad for optimal dust extraction. This unique system provided a massive increase in dust extraction and cut rate over the 6-hole configuration, but there was room for improvement.

Using Mother Nature as an evolutionary guide and using our latest manufacturing technology, Norton has developed the most advanced abrasive disc on the market. The patent-pending Multi-Air Cyclonic disc has 346 holes in a 6" disc that are precisely cut by a laser. Unlike a die-punched hole which causes deformation at the hole where dust can collect thereby reducing cut and the ability to extract dust, the precision laser cut holes are true and flat and aid in directing dust into the holes to reduce contamination in the shop. Multi-Air Cyclonic discs can attach to any multi-hole (54+ holes) back up pad since the holes in the disc do not have to be matched up with the holes in the pad, so changeover is fast and easy. This ingenious hole pattern was inspired by Mother Nature, developed by R&D scientists and can be explained using the Golden Ratio.



A NATURAL PROGRESSION IN DUST EXTRACTION TECHNOLOGY





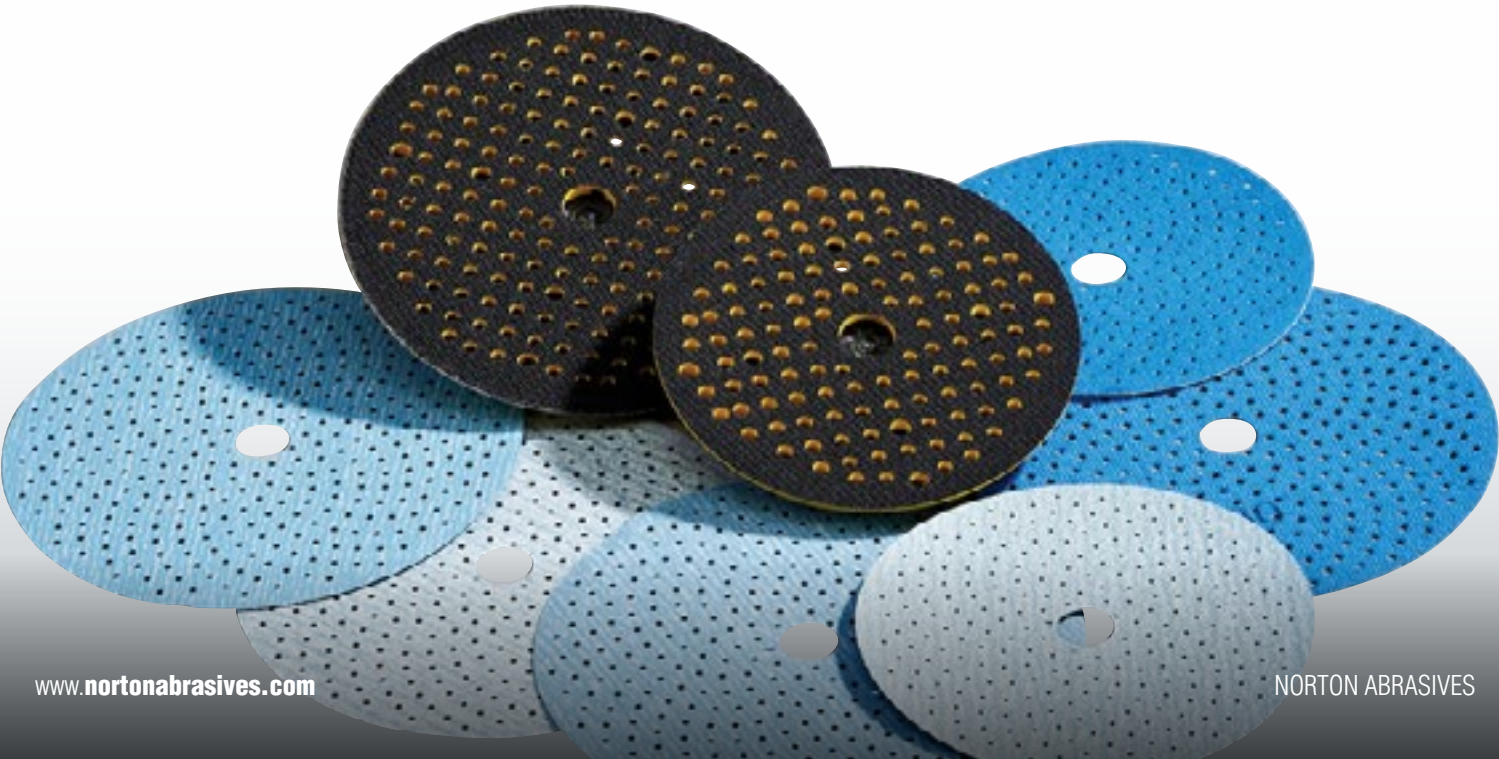
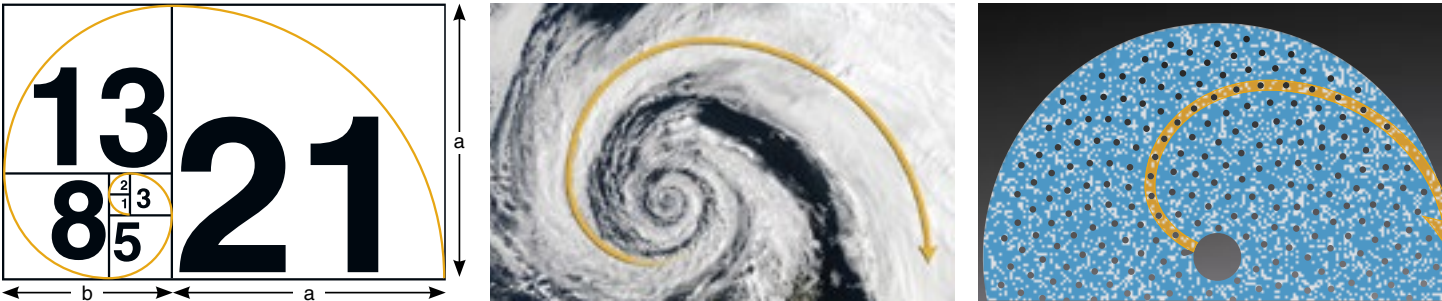
THE SCIENCE BEHIND THE DESIGN

The Golden Ratio

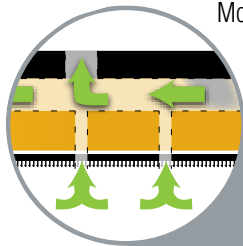
If you divide a line into two parts so that:
the longer part divided by the smaller part
is also equal to
the whole length divided by the longer part
then you will have the golden ratio.

$$\frac{a}{b} = \frac{a+b}{a} = 1.618... = \varphi$$

Cyclones, galaxies, and sea shells all have inherent spiral shapes that conform almost perfectly to the ‘Golden Spiral’, which is a logarithmic spiral based on a series of identically proportioned golden rectangles, each having a golden ratio of 1.618 of the length of the long side to that of the short side of the rectangle.



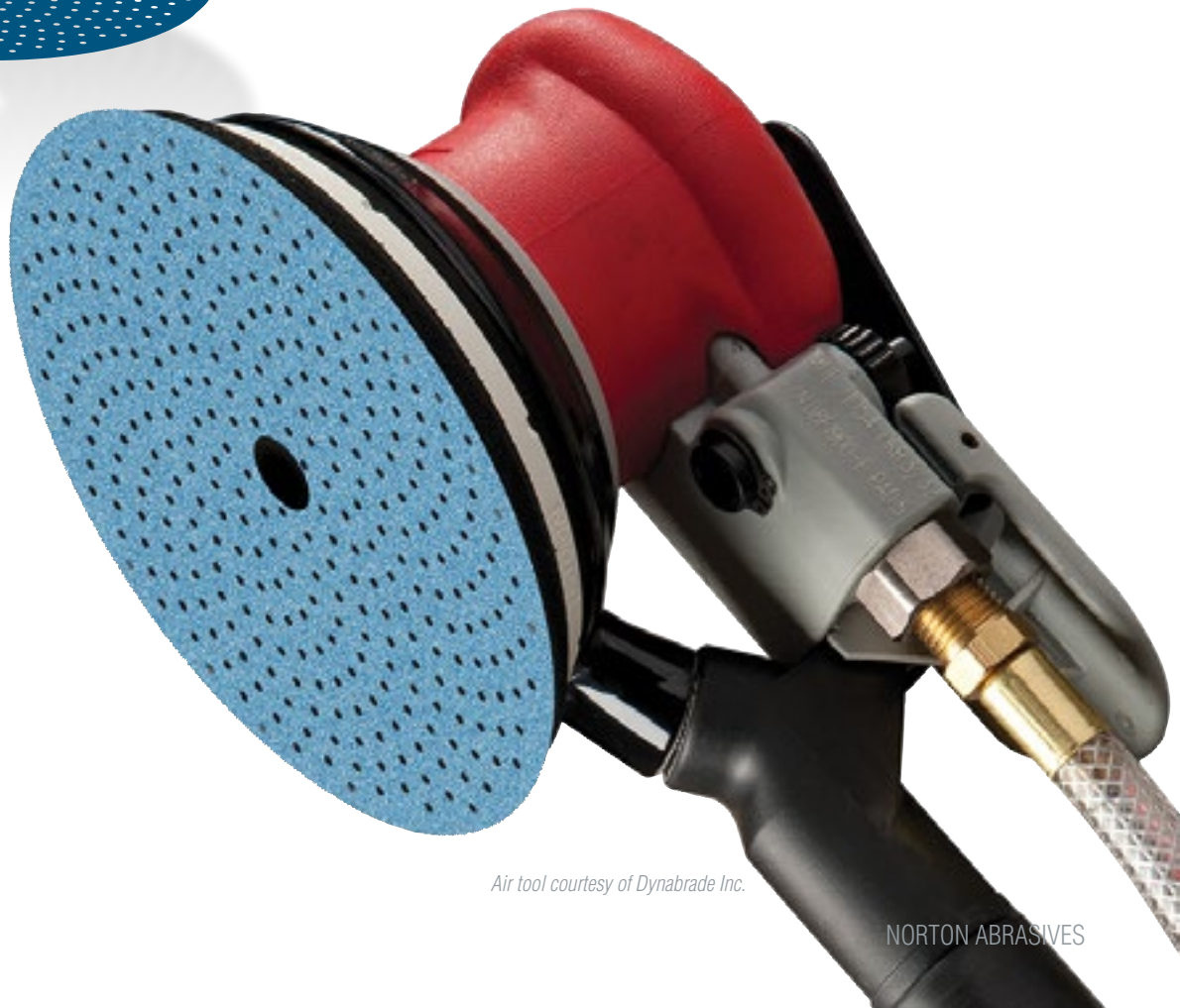
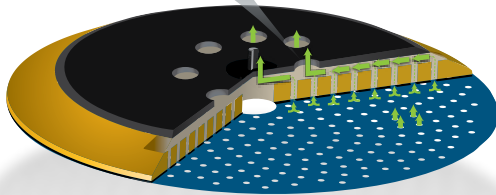
WHAT DOES A CYCLONE HAVE TO DO WITH SANDING?



Mother Nature has had millions of years to fine tune sea shells, galaxies and cyclones to be as perfect as can be. Norton applied the laws of nature to create the most perfect and powerful sanding disc.

The power and velocity of air movement in a cyclone is hard to conceive. Yet, the A975 Norton Multi-Air Cyclonic disc is designed on the same cyclone pattern using the Golden Spiral which is why it is the most effective disc when it comes to keeping your work area free of contaminants.

Dust is constantly being pulled away through multi-holes (5" 246 holes, 6" 346 holes) for more controlled sanding, which is critical for thinner waterborne coatings. The Golden Spiral configuration of the holes allows the vacuum to pull the dust through the pad creating an upward force, like a cyclone, and the random orbital motion of the sander provides the lateral force creating an ideal balance between the abrasive surface and the dust-extraction holes.



Air tool courtesy of Dynabrade Inc.

CERAMIC ALUMINUM OXIDE NORGRIP MULTI-HOLE VACUUM DISCS

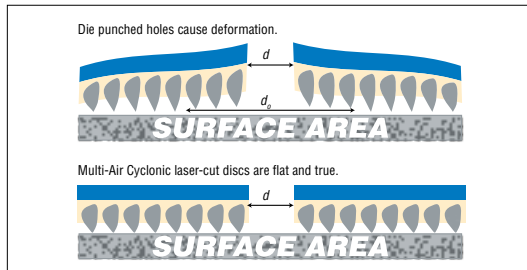
FASTER CHANGEOVER

With Norton Multi-Air Cyclonic, there's no need to align disc and back-up pad holes as the disc design does the work, resulting in quicker and simpler handling of disc changes.

Multi-Air Cyclonic discs are compatible with any 54+ multi-hole pad, but they are recommended for use on the Norton Multi-Air back-up pad as a total system.



IMPROVED DUST EXTRACTION



The original Multi-Air design had 181 die punched holes in a 6" disc yet retained 90% abrasive surface coverage. While there was plenty of abrasive to sand the surface, the action of the die punch caused deformation and captured dust around the hole rather than cleanly extracting it through the vacuum system.

Because the hole placement of the Multi-Air Cyclonic discs are optimized based on the Golden Spiral, they are 89% more effective than conventional 6" x 6-hole and 42% more effective than the original Multi-Air design in targeting dust. Multi-Air Cyclonic discs offer clear pathways to effectively suction dust through the holes and out of the shop.

INCREASED PRODUCTIVITY

The upgrade to precise, flat, laser-cut holes instead of die-punched holes, dramatically increases surface area contact allowing Multi-Air Cyclonic to improve productivity by 32% versus conventional multi-hole sanding and by 60% versus non-vacuum sanding.

Amazingly, the laser-cut 346 hole count in a Multi-Air Cyclonic 6" disc is almost double that of the original Multi-Air disc; however, the abrasive surface coverage is higher at 93% versus 90%. The end result is more holes for dust extraction, more abrasive coverage for a better cut and no deformation for full surface contact utilizing all the cutting power of the premium ceramic grain.



Die punched holes cause deformations which collect dust and reduces sanding performance.



Laser cut holes keep the disc completely flat which maximizes cut rate, disc life and dust extraction.

AVAILABILITY

The Norton SG ceramic aluminum oxide A975 grain is available in the entire grit range, P80–P1000. The sharp, cool-cutting ceramic grain performs well on conventional paints and primers as well as hard-to-sand surfaces like ceramic clears, E-coated panels, aluminum and composites. The strong, yet flexible backing provides long life and resists tearing to get the full life out of the product.

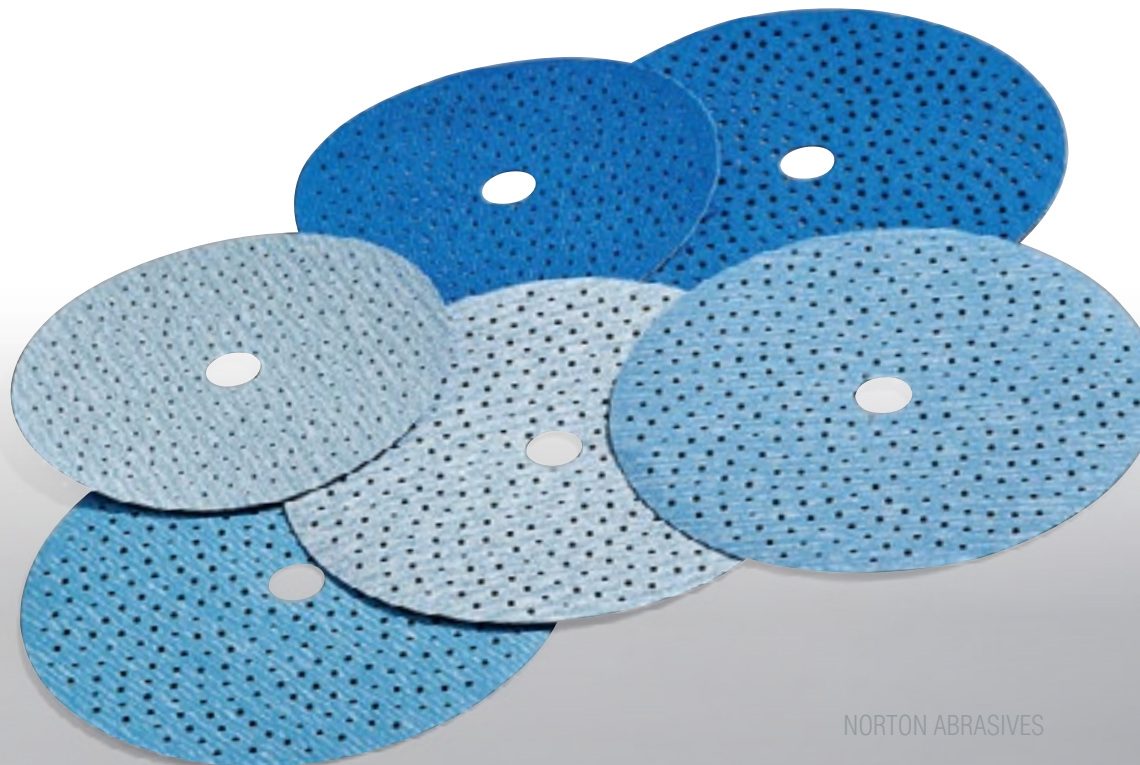
Watch the technology come to life.



Norton Multi-Air Cyclonic Dry Ice NorGrip Discs

Norton Dry Ice Premium ceramic A975 NorGrip (Hook and Loop) discs offer the longest life, fastest cut and maximum dust extraction for any sanding job.

GRIT	3" DISCS	5" DISCS	6" DISCS	QTY. PER PK.	PKS. PER CASE
P1000B	776960- 95016	776960- 07795	776960- 07788	50	4
P800B	776960- 95015	776960- 07793	776960- 07787	50	4
P600B	776960- 95014	776960- 07791	776960- 07786	50	4
P500B	776960- 95013	776960- 07768	776960- 07785	50	4
P400B	776960- 95012	776960- 07765	776960- 07784	50	4
P320B	776960- 95011	776960- 07763	776960- 07781	50	4
P280B	—	776960- 07762	776960- 07778	50	4
P240B	776960- 95010	776960- 07760	776960- 07777	50	4
P220B	776960- 95009	776960- 07757	776960- 07776	50	4
P180B	776960- 95008	776960- 07756	776960- 07775	50	4
P150B	776960- 95007	776960- 07755	776960- 07774	50	4
P120C	776960- 95006	776960- 07753	776960- 07773	50	4
P80C	776960- 95005	776960- 07745	776960- 07770	50	4



NORTON MULTI-AIR CYCLONIC DRY ICE DISCS & ROLLS

A perfect combination of abrasive grain innovation, design technology and specialized laser cutting for maximum productivity.

FEATURES

- Precision laser-cut, spiral-hole design based on the Golden Ratio
- Norton SG ceramic aluminum oxide grain for the entire grit range
- Unique fiber-reinforced latex/paper backing
- Water-based stearate coating (No-Fil)

BENEFITS

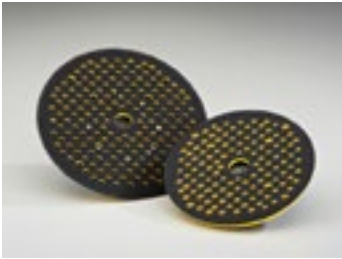
- Maximum dust extraction for cleaner work environment and less potential for contamination in the shop.
- Consistent cut throughout the life of the product
- Superior cut on difficult to sand surfaces
- Substantially longer life and faster cut than conventional abrasives
- Quick/cool cut
- Flexible, strong and tear resistant
- Load resistant for extended product life

Norton Multi-Air Cyclonic NorGrip Perforated Rolls

The innovative laser converted rolls feature the same Cyclonic spiral hole-design found on the Multi-Air Cyclonic disc range which optimizes dust extraction while reducing surface imperfections. Another benefit of the new hole-design is that it does not need to be lined up with the holes on the vacuum file boards or vacuum hand blocks to achieve optimal performance so changeover is fast and easy. In addition the rolls are perforated every 2-3/4" to allow it to be torn easily to fit multiple file board lengths.

GRIT	2-3/4" x 13 YDS. W	QTY. PER PK.	PKS. PER CS.
P600B	636425- 06124	1	4
P500B	636425- 06123	1	4
P400B	636425- 06122	1	4
P320B	636425- 06121	1	4
P240B	636425- 06120	1	4
P220B	636425- 06119	1	4
P180B	636425- 06118	1	4
P150B	636425- 06117	1	4
P120C	636425- 06114	1	4
P80C	636425- 06113	1	4





Norton Multi-Air NorGrip Back Up Pads

Innovative design optimized for maximum air flow and powerful dust extraction. The medium pads are engineered with a durable urethane foam, heat-resistant plastic, a molded-in 5/16"-24 spindle, and hooked face.

Multi-Air Cyclonic discs can attach to any multi-hole (54+ holes) back up pad since the holes in the disc do not have to be matched up with the holes in the pad, so changeover is fast and easy. However, we do recommend the Norton Multi-Air pad for optimal results.

PART #	DIAMETER x THREAD	DENSITY	COLOR	QTY. PER PK.	PKS. PER CASE	RPM
666233- 76000	5" x 5/16-24	Medium	Yellow	1	5	15,000
636425- 06160	6" x 5/16-24	Medium	Yellow	1	5	15,000



Norton Multi-Air NorGrip Interface Pads

Designed for use with fine grit Multi-Air Cyclonic NorGrip sanding discs to improve both surface finish and cut rate. Use with Multi-Air NorGrip Disc Back-Up Pads. Align the interface pad with the Multi-Air back up pad then simply attach the disc to the interface pad as the holes do not have to be lined up.

PART #	DIAMETER	THICKNESS	QTY. PER PK.	PKS. PER CASE
636425- 85864	5"	1/2"	8	1
076607- 19359	6"	1/2"	12	1



Norton Multi-Air Hand Blocks

Designed for use with Multi-Air Cyclonic NorGrip perforated rolls. The ergonomic dust free hand blocks are easy to hold and move in any position. Each block comes with a regulator adapter to control air flow and a reducer to connect to a standard vacuum hose line.

PART #	SIZE	QTY. PER PK.	PKS. PER CASE
699573- 96648	2-3/4" x 16-1/2"	1	1
699573- 96646	2-3/4" x 8"	1	1
699573- 96645	2-3/4" x 5"	1	1

BEST
NORTON A975 Multi-Air Cyclonic

BETTER
NORTON A275 OP

GOOD
NORTON A290 Gold

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