

NORTON

SAINT-GOBAIN

ICP MOUNTED POINTS FOR AEROSPACE INVESTMENT CASTING APPLICATIONS

Reduce Your Investment Casting Mounted Point Costs

These ICP Norton mounted points are specifically engineered to be highly efficient and economical in investment casting foundry applications.

Offered in a broad range of shapes and spindle dimensions designed for these operations, they provide fast, free cutting, grinding, and finishing.

These attributes, along with their durability, reduce operator fatigue and down time associated with part changeover.



KEY MARKET/APPLICATIONS

- Turbine engine component manufacturing
- Grinding, creating final geometry, and uniform finishes on aerospace alloy castings, including Inconel



TM

NORTON

SAINT-GOBAIN



INVESTMENT CASTING VITRIFIED BOND ICP MOUNTED POINTS

FEATURES & BENEFITS

BEST - Norton Quantum Ceramic Alumina Blends - Green and Pink

- Unique engineered ceramic grain shape and chemistry, with proven bond technology make these the first choice for high-volume foundry applications
- Minimum loading and heat build-up
- 33%+ longer life and 30+ Higher MRR vs. competitive ceramic points
- Versatile; engineered for all low-, medium-, and high-force applications
- Highest productivity and exceptional life
- Green points contain a slightly more friable abrasive blend (cooler cutting) than Pink points

BEST - Norton SG Ceramic Alumina - Blue

- Most durable ceramic and aluminum oxide abrasive blend for high productivity and longest life on polishing applications

GOOD - Free-Cutting Aluminum Oxide - White

- Very versatile, and durable but friable; remain sharp to cut cooler and consistently

GOOD - Long-Lasting Aluminum Oxide - Gray





- Precision-engineered grit size and hardness maximize cut-rate, finish and life

MARKING SYSTEM AND ORDERING GUIDE

When ordering, please specify: ICP mounted point, and your shape, spindle dimensions, color, grit size, and grade requirements from the options in this chart.

	ICP	B97A	PINK	FINE	HARD	VS
PRODUCT NAME	SHAPE*	GRAIN BLEND		GRIT SIZE	GRADE	BOND
	B97A	<i>Ceramic Alumina</i>		Coarse	Soft	VS (Ceramic)
	B60	Green		Medium	Medium	VBE (Aluminum Oxide)
	A24	Pink		Fine	Hard	
	W154	Blue				
	W181 W/ Hub	<i>Aluminum Oxide</i>				
		White				
		Gray				

*SHAPE: Include spindle dimensions and point shape on order. These are commonly-found shapes in investment casting applications. A full range of additional common ANSI shapes and spindles are available in the Norton ICP line. Contact your Norton representatives with your requirements.

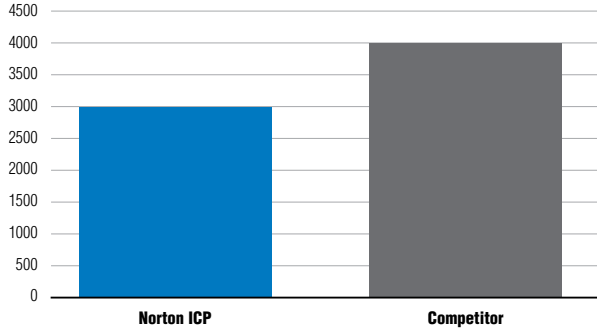
COMMON SHAPES	APPLICATION	AVAILABLE GRAIN		AVAILABLE GRIT	AVAILABLE GRADE	AVAILABLE SPINDLE			
						DIAMETER	LENGTH	SPINDLE	BLUEPRINT
 B97A 0.150" x 0.400"	Light Pressure/ Free Cut	Aluminum Oxide	WHITE - Higher MRR GRAY - Longer Life	Medium 100 Grit Fine 120 Grit	Soft Q Grade Medium R Grade Hard S Grade	3/32"	2-1/2"	E318149 510011310	ME167683
	Higher Removal/ Long Life	Ceramic Alumina	GREEN - Higher MRR PINK - Higher MRR BLUE - Longer Life			1/8"	1-1/2"	D5	ME167715
 B60 0.200" x 1/2"	Light Pressure/ Free Cut	Aluminum Oxide	WHITE - Higher MRR GRAY - Longer Life	Coarse 80 Grit Medium 100 Grit Fine 120 Grit	Soft Q Grade Medium R Grade Hard S Grade	1/8"	1-1/2"	F3	ME163397
	Higher Removal/ Long Life*	Ceramic Alumina	GREEN - Higher MRR PINK - Higher MRR BLUE - Longer Life			3/16"	1-1/2"	G5	ME167716
 A24 1/4" x 3/4"	Light Pressure/ Free Cut	Aluminum Oxide	WHITE - Higher MRR GRAY - Longer Life	Coarse 80 Grit Medium 100 Grit Fine 120 Grit	Soft Q Grade Medium R Grade Hard S Grade	1/8"	1-1/2"	J2	
							2-1/2"	J3	
	Higher Removal/ Long Life*	Ceramic Alumina	GREEN - Higher MRR PINK - Higher MRR BLUE - Longer Life			1/4"	1-1/2"	J6	
							2"	M8	
				2-1/2"	M5				
 W154 3/16" x 1/2"	Light Pressure/ Free Cut	Aluminum Oxide	WHITE - Higher MRR GRAY - Longer Life	Coarse 80 Grit Medium 100 Grit Fine 120 Grit	Soft Q Grade Medium R Grade Hard S Grade	1/8"	1-1/2"	G2	
	Higher Removal/ Long Life	Ceramic Alumina	GREEN - Higher MRR PINK - Higher MRR BLUE - Longer Life				3/16"	1-1/2"	G5
 W181 w/ Hub 1/2" x 1/8"	Light Pressure/ Free Cut	Aluminum Oxide	WHITE - Higher MRR GRAY - Longer Life	Coarse 80 Grit Medium 100 Grit Fine 120 Grit	Soft Q Grade Medium R Grade Hard S Grade	1/8"	1-1/2"	K2	
	Higher Removal/ Long Life*	Ceramic Alumina	GREEN - Higher MRR PINK - Higher MRR BLUE - Longer Life						

APPLICATION-TO-PRODUCT STARTING RECOMMENDATION GUIDE

APPLICATION	BEST	GOOD
For Larger Parts/ More Aggressive Stock Removal Jobs	Quantum Ceramic Blend: ICP Green-Medium Grit-Medium Grade	Free-Cutting Aluminum Oxide: ICP White-Medium Grit-Medium Grade Longer-Lasting Aluminum Oxide: ICP Gray-Medium Grit-Hard grade
For Small and Narrow Parts/ Light Stock Removal Jobs	Quantum Ceramic Blend: ICP Pink-Fine Grit-Medium Grade Norton SG Ceramic Blend: ICP Blue-Fine Grit-Medium Grade	Free-Cutting Aluminum Oxide: ICP White-Fine Grit-Medium Grade

CASE HISTORIES - HIGH NICKEL ALLOY - INCONEL

Average Mounted Wheels Used Per Month



APPLICATION:

Offhand polishing of turbine blades

NORTON POINT:

ICP Pink (Ceramic)-Medium Grit-Medium Grade

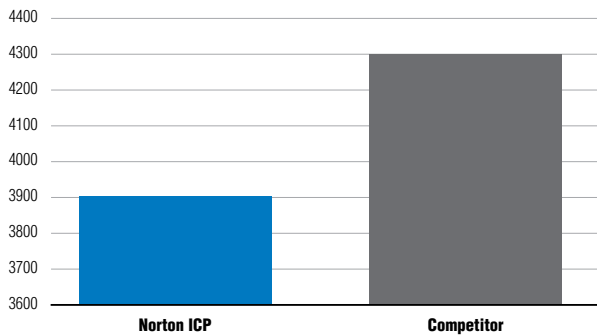
INCUMBENT POINT:

Gray Aluminum Oxide

RESULTS:

3,000 Norton points vs. 4,000 competitive points were used in a one-month period, generating 25% abrasive cost savings.

Mounted Wheels Used Per Finishing Hours Ground



APPLICATION:

Offhand polishing of turbine blades

NORTON POINT;

ICP Pink (Ceramic)-Fine Grit-Medium Grade

INCUMBENT POINT:

Blue Ceramic Alumina

RESULTS:

3,900 Norton points used vs. 4,300 competitor points to grind the same amount of parts. With an annual usage of 1,000,000 mounted points, this yields over \$35,000 abrasive cost savings

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	PROBLEM	POSSIBLE CAUSE
Scratching of work	Wheel too soft Wheel too coarse	Burning of work	Wheel too hard Wrong abrasive blend
Wheel glazing (shiny appearance)	Wheel too hard Wheel too fine Grinder RPM too high Dressing required	Wheel wearing too quickly	Wrong wheel size Wheel too soft Material removal too high

BEST

Quantum, Norton SG

GOOD

Aluminum Oxide

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