

2004

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GENERAL INFORMATION

To obtain top-flight performance and optimum productivity for cutlery, woodworking tools and other precision tools and instruments, their edge and finish requires proper maintenance with a quality sharpening product. Norton Abrasives offers the world's most comprehensive line of both natural and manmade oil stones, waterstones, diamond and coated abrasives products to meet the needs of all sharpening applications.



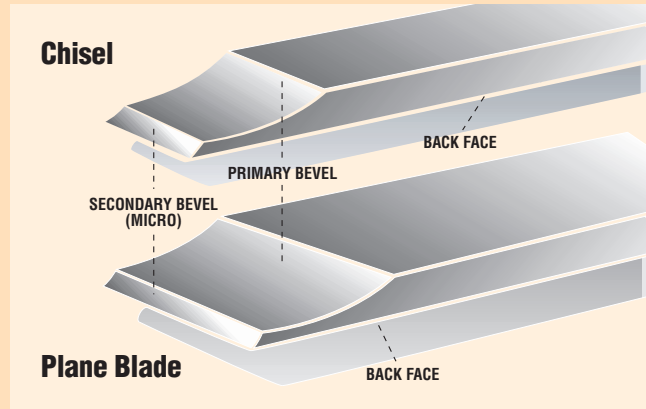
Relative Sharpening Comparisons for Norton Abrasive Products

CRYSTOLON (SILICON CARBIDE) INDIA (ALUMINUM OXIDE)	ARKANSAS (WASHITA, SOFT, HARD) WHITE, BLACK, TRANSLUCENT	DIAMOND STONES	WATERSTONES		COATED ABRASIVES (WATERPROOF SANDPAPER)		DIAMOND COMPOUND MICRON SIZE
			JIS (JAPAN)	CAMI (USA)	FEPA (EUROPE)		
					P100	141	
Coarse Crystolon		Diamond			P120	127	
Coarse India				120		116	
					P150	97	
Medium Crystolon				150	P180	93	
		Extra Coarse Diamond (220)	220	180	P220	78	
				220		65	
Medium India					P240	60	
				240		58	
					P280	53.5	
						52.5	
					P320	50	
Fine Crystolon						46	
		Coarse Diamond (325)		280		45	
					P360	43	
Fine India	Washita		360	320		40.5	
					P400	36	
				360		35	
					P600	29	
Ex. Fine India	Soft Arkansas	Fine Diamond (600)	600	400		25.8	
					P800	23	
						22	
				800	P1200	20	
			Norton 1000	700		16	
				800	P1500	14	
	Hard White Arkansas	Extra Fine Diamond (1200)	1200			12.6	
					P2000	11	
			1500	1000		10.3	
						9.2	
						9	
					P2500	9	
			2000	1500		8.4	
	Hard Black Arkansas Hard Translucent Arkansas					7.5	
			4000	2000		6	
						5	
			8000			3	
						1.2	
						1	
			15000			0.5	

SHARPENING PRODUCT BASICS

Woodworking Tools

The procedures and products used for sharpening straight edge woodworking tools are widely debated by woodworking experts. Today there are many combinations of products that can provide the finish and sharpness for every level of woodworking project. Norton Abrasives is the only company that can provide all the products for every method of choice. Outlined below are the basic procedures and product recommendations by steps.



PROCEDURE	OILSTONE SYSTEM	WATERSTONE SYSTEM
BACK FACE		
Steps 1-4 is only needed on new tools or damaged tools. The flatter and more polished the back is, the sharper the cutting edge will be and the longer it will stay sharp.		
Step 1*	Heavy stock removal	Crystolon - Coarse
Step 2*	Light stock removal	India - Medium or Fine
Step 3	Final finishing & polishing	Norton Hard Translucent Arkansas
Step 4	Highly reflective polishing	1 Micron Diamond Compound ***
PRIMARY BEVEL		
Step 5 is done on new tools or whenever a tool is damaged. Otherwise, this step is done every 10-15 resharpenings of the secondary (micro) bevel.		
Step 5 (Option 1)	Creating a concave primary bevel - Hollow grinding**	Bench wheel - 38A60-J
Step 5 (Option 2)*	Creating a flat primary bevel	India - Medium or Fine
SECONDARY (MICRO) BEVEL		
Steps 6-8 are done frequently to keep tools in excellent condition. Each step should be done until a burr or wire edge forms. This burr or wire edge is a signal that it is time to move to the next step. This wire edge must be removed and is done by alternately rubbing the backface and secondary angle of the tool on the finest stone until the wire edge falls off. If the wire edge does not fall off with this procedure, check the back of the tool for flatness.		
Step 6*	Initial sharpening or resharpening	India - Medium or Fine
Step 7	Final finishing & polishing	Norton Hard Translucent Arkansas
Step 8	Highly reflective polishing	1 Micron Diamond Compound***

* OTHER ABRASIVE PRODUCTS SUCH AS DIAMOND BENCHSTONES, DIAMOND COMPOUND AND COATED ABRASIVES WILL PERFORM STEPS 1, 2, 5 & 6. PLEASE SEE THESE SECTIONS FOR RECOMMENDATIONS.

** HOLLOW GRINDING IS DONE ON A BENCH GRINDER: 6" IS RECOMMENDED FOR A SLIGHTLY LARGER CURVATURE. (SEE PAGE 17)

*** DIAMOND COMPOUND MUST BE USED ON A VERY FLAT SURFACE TO ACHIEVE THE HIGHLY REFLECTIVE POLISH. (SEE PAGE 19)

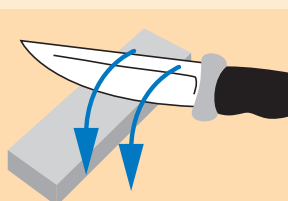
tip

Sharpness Testing – Woodworking Tools

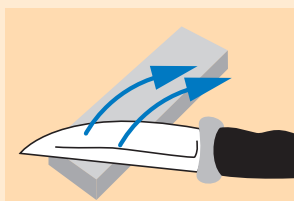
The first way to tell is visual, a sharp edge reflects no light. Once this is done, it is recommended that the tool be tested by slicing down on an end grain of soft pine. If the end grain is ragged, the tool is not sharp enough. If there are only scratches on the end grain, tiny fragments of the wire edge may be left and continued polishing is needed. A truly sharp blade will leave a cut on the end grain that looks almost burnished.

Knives and Blades

Most manufacturers ship their cutting tools without keen edges to avoid damage in transit. The blades will need a good sharpening to realize their full potential. Use the largest stone affordable for a straight edge as it allows use of full surface for wider tools.



DRAW BLADE ACROSS.



PUSH IN OPPOSITE DIRECTION.

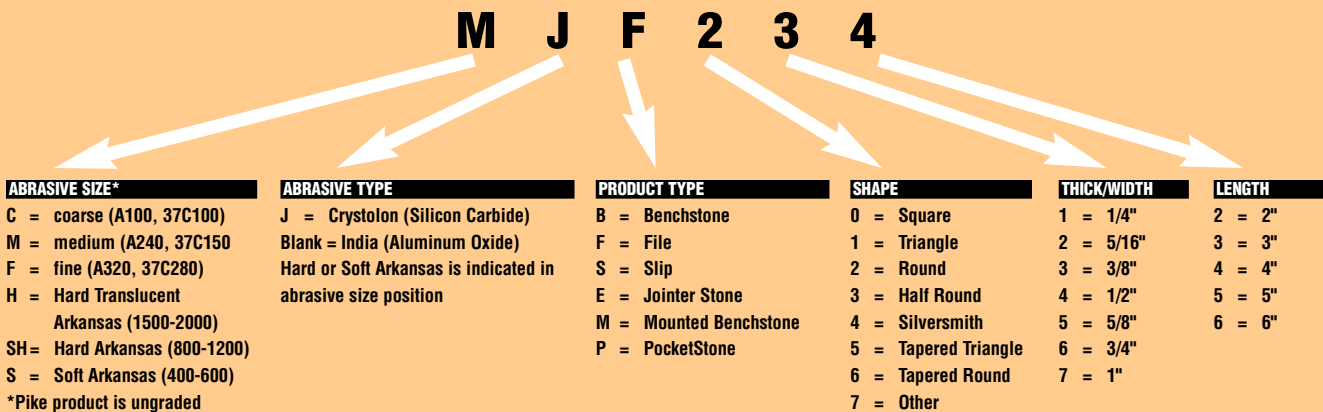
1. Place the heel of the blade flat on the stone in a perpendicular or slightly angled position.
2. Tilt the back of the blade up to the desired angle (15 to 30 degrees depending on the application: 15° for filet knives, 23° for kitchen or pocket knives, and 30° for cleavers).
3. Holding wrists rigid, draw the blade against the surface diagonally the length of the stone – like you were trying to take a thin slice of the stone – beginning at the heel of the knife and ending at the top.
4. Flip the blade over and repeat from the opposite end. Continue this action until a wire edge appears.
5. Then move to the next finer stone and repeat until sufficiently sharp.

NOTE: IT IS VERY IMPORTANT THAT THE ANGLE PRESENTED TO THE STONE AT THE BEGINNING OF THE PROCESS BE MAINTAINED THROUGHOUT THE SEQUENCE.

Norton Sharpening Stones Marking System Guide

EXAMPLE: **MJF234** = MEDIUM CRYSTOLON FILE, ROUND, 3/8" X 4"

NOTE: This chart is intended as a reference guide only. Not all products will meet this convention.



The Norton Pike Story



The birth of the sharpening stone industry in the United States dates back to 1823 in a small village of New Hampshire, when a farmer discovered that stones in his pasture were ideal for sharpening scythes and axes. This excellent deposit of mica schist became the foundation for the Pike Company - the first supplier of commercially

available natural sharpening stones in North America.

Using the nearby Connecticut River for transportation, the Pike Company was able to distribute the ever-growing product of its quarries to a broad regional, national and eventually world market. As time went on, the company expanded its original product offering to include over twenty varieties of natural stone, including the Arkansas line. Quarried from the novaculite

deposits near Hot Springs, AR, stones soon replaced mica schist as the quality standard in premium natural sharpening stones. They remain so today - no other stone can approach their fine performance characteristics.

As Norton Abrasives developed its position in synthetic abrasives, Pike Company complemented its natural stone line with the new aluminum oxide and silicon carbide bonded abrasives. This strengthened its position in that portion of the market requiring fast-cutting, heavy stock removing sharpening stones.

During this period, the Pike Company consolidated its operations in Littleton, New Hampshire. In 1932, after years of close association, Norton Company purchased the Pike Company, but the headquarters of the newly formed Norton Pike Company remain nestled in the White Mountains where it continues to serve world markets with the broadest line of natural and synthetic sharpening stones available.

Stock and Non-Stock

All standard stock items are assigned a UPC number in compliance with the Universal Product Code System. The UPC number is comprised of two parts: a six-digit vendor code and a five-digit item code. The combined 11-digit number is preferred when ordering as all possibility of product number duplication is eliminated. The last digit in this catalog is a check-digit.

If our standard stock line does not provide a completely suitable product offering for individual needs, different grades, shapes and dimensional tolerances can be manufactured on special order. All non-stock requests should be referred to Customer Service Sharpening Stones 1 800 848-7379.

Trademarks

The following names and designs are trademarks used by Norton:

- ALUNDUM®
- CRYSTOLON®
- INDIA®
- MULTI-OILSTONE®
- NORTON®
- NORTON HARD ARKANSAS®
- NORTON HARD BLACK ARKANSAS®
- NORTON HARD TRANSLUCENT ARKANSAS®
- NORTON SOFT ARKANSAS®
- NORTON WASHITA®
- TUFBAK®

SHARPENING PRODUCTS



2004

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A TOOL IS ONLY AS GOOD AS ITS EDGE

THE NORTON NAME IS YOUR ASSURANCE OF GETTING THE FINEST SHARPENING PRODUCT AVAILABLE.



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FORM #7825