

# Ceramic Stone



# XEBEC Ceramic Stone™ Meister Finish

Stick type with cutting edges on the tip for mold polishing and deburring



## Stick type

Equivalent grit	#3000	#2000	#1500	#1200	#1000	#800	#600	#400	#300	#220	#120	
Color	Pink	Cream	Yellow	Red	White	Blue	Black	Orange	L. Brown	D. Brown	Violet	
Size (mm)	0.3 x 4 x 100	—	—	—	AR-0304M	AW-0304M	AB-0304M	AP-0304M	AO-0304M	AL-0304M	AD-0304M	—
	0.4 x 4 x 100	—	—	—	AR-0404M	AW-0404M	AB-0404M	AP-0404M	AO-0404M	AL-0404M	AD-0404M	—
	0.5 x 4 x 100	—	—	—	AR-0504M	AW-0504M	AB-0504M	AP-0504M	AO-0504M	AL-0504M	AD-0504M	—
	0.5 x 4 x 150	—	—	—	AR-0504L	AW-0504L	AB-0504L	AP-0504L	AO-0504L	AL-0504L	AD-0504L	—
	0.5 x 6 x 100	—	—	—	AR-0506M	AW-0506M	AB-0506M	AP-0506M	AO-0506M	AL-0506M	AD-0506M	—
	0.5 x 6 x 150	—	—	—	AR-0506L	AW-0506L	AB-0506L	AP-0506L	AO-0506L	AL-0506L	AD-0506L	—
	0.5 x 10 x 100	—	—	—	AR-0510M	AW-0510M	AB-0510M	AP-0510M	AO-0510M	AL-0510M	AD-0510M	—
	0.5 x 10 x 150	—	—	—	AR-0510L	AW-0510L	AB-0510L	AP-0510L	AO-0510L	AL-0510L	AD-0510L	—
	0.8 x 4 x 100	—	—	—	AR-0804M	AW-0804M	AB-0804M	AP-0804M	AO-0804M	AL-0804M	AD-0804M	—
	0.8 x 4 x 150	—	—	—	AR-0804L	AW-0804L	AB-0804L	AP-0804L	AO-0804L	AL-0804L	AD-0804L	—
	0.8 x 6 x 100	—	—	—	AR-0806M	AW-0806M	AB-0806M	AP-0806M	AO-0806M	AL-0806M	AD-0806M	—
	0.8 x 6 x 150	—	—	—	AR-0806L	AW-0806L	AB-0806L	AP-0806L	AO-0806L	AL-0806L	AD-0806L	—
	0.8 x 10 x 100	—	—	—	AR-0810M	AW-0810M	AB-0810M	AP-0810M	AO-0810M	AL-0810M	AD-0810M	—
	0.8 x 10 x 150	—	—	—	AR-0810L	AW-0810L	AB-0810L	AP-0810L	AO-0810L	AL-0810L	AD-0810L	—
	1.0 x 1 x 100	AS-1001M	AC-1001M	AY-1001M	AR-1001M	AW-1001M	AB-1001M	AP-1001M	AO-1001M	AL-1001M	AD-1001M	—
	1.0 x 2 x 100	AS-1002M	AC-1002M	AY-1002M	AR-1002M	AW-1002M	AB-1002M	AP-1002M	AO-1002M	AL-1002M	AD-1002M	AV-1002M
	1.0 x 4 x 100	—	—	AY-1004M	AR-1004M	AW-1004M	AB-1004M	AP-1004M	AO-1004M	AL-1004M	AD-1004M	AV-1004M
	1.0 x 4 x 150	—	—	—	AR-1004L	AW-1004L	AB-1004L	AP-1004L	AO-1004L	AL-1004L	AD-1004L	AV-1004L
	1.0 x 6 x 100	—	—	AY-1006M	AR-1006M	AW-1006M	AB-1006M	AP-1006M	AO-1006M	AL-1006M	AD-1006M	AV-1006M
	1.0 x 6 x 150	—	—	—	AR-1006L	AW-1006L	AB-1006L	AP-1006L	AO-1006L	AL-1006L	AD-1006L	AV-1006L
	1.0 x 8 x 100	—	—	—	AR-1008M	AW-1008M	AB-1008M	AP-1008M	AO-1008M	AL-1008M	AD-1008M	AV-1008M
	1.0 x 8 x 150	—	—	—	AR-1008L	AW-1008L	AB-1008L	AP-1008L	AO-1008L	AL-1008L	AD-1008L	AV-1008L
	1.0 x 10 x 100	—	—	AY-1010M	AR-1010M	AW-1010M	AB-1010M	AP-1010M	AO-1010M	AL-1010M	AD-1010M	AV-1010M
	1.0 x 10 x 150	—	—	—	AR-1010L	AW-1010L	AB-1010L	AP-1010L	AO-1010L	AL-1010L	AD-1010L	AV-1010L
	1.5 x 1.5 x 100	—	—	—	AR-15015M	AW-15015M	AB-15015M	AP-15015M	AO-15015M	AL-15015M	AD-15015M	—
	1.5 x 4 x 100	—	—	—	AR-1504M	AW-1504M	AB-1504M	AP-1504M	AO-1504M	AL-1504M	AD-1504M	AV-1504M
	1.5 x 4 x 150	—	—	—	AR-1504L	AW-1504L	AB-1504L	AP-1504L	AO-1504L	AL-1504L	AD-1504L	AV-1504L
	1.5 x 6 x 100	—	—	—	AR-1506M	AW-1506M	AB-1506M	AP-1506M	AO-1506M	AL-1506M	AD-1506M	AV-1506M
	1.5 x 6 x 150	—	—	—	AR-1506L	AW-1506L	AB-1506L	AP-1506L	AO-1506L	AL-1506L	AD-1506L	AV-1506L
	1.5 x 10 x 100	—	—	—	AR-1510M	AW-1510M	AB-1510M	AP-1510M	AO-1510M	AL-1510M	AD-1510M	AV-1510M
	1.5 x 10 x 150	—	—	—	AR-1510L	AW-1510L	AB-1510L	AP-1510L	AO-1510L	AL-1510L	AD-1510L	AV-1510L
	2.0 x 2 x 100	—	—	—	AR-2002M	AW-2002M	AB-2002M	AP-2002M	AO-2002M	AL-2002M	AD-2002M	—
	2.0 x 4 x 100	—	—	—	AR-2004M	AW-2004M	AB-2004M	AP-2004M	AO-2004M	AL-2004M	AD-2004M	AV-2004M
	2.0 x 4 x 150	—	—	—	AR-2004L	AW-2004L	AB-2004L	AP-2004L	AO-2004L	AL-2004L	AD-2004L	AV-2004L
	2.0 x 6 x 100	—	—	—	AR-2006M	AW-2006M	AB-2006M	AP-2006M	AO-2006M	AL-2006M	AD-2006M	AV-2006M
	2.0 x 6 x 150	—	—	—	AR-2006L	AW-2006L	AB-2006L	AP-2006L	AO-2006L	AL-2006L	AD-2006L	AV-2006L
	2.0 x 10 x 100	—	—	—	AR-2010M	AW-2010M	AB-2010M	AP-2010M	AO-2010M	AL-2010M	AD-2010M	AV-2010M
	2.0 x 10 x 150	—	—	—	AR-2010L	AW-2010L	AB-2010L	AP-2010L	AO-2010L	AL-2010L	AD-2010L	AV-2010L
	3.0 x 4 x 100	—	—	—	AR-3004M	AW-3004M	AB-3004M	AP-3004M	AO-3004M	AL-3004M	AD-3004M	AV-3004M
	3.0 x 4 x 150	—	—	—	AR-3004L	AW-3004L	AB-3004L	AP-3004L	AO-3004L	AL-3004L	AD-3004L	AV-3004L
	3.0 x 6 x 100	—	—	—	AR-3006M	AW-3006M	AB-3006M	AP-3006M	AO-3006M	AL-3006M	AD-3006M	AV-3006M
	3.0 x 6 x 150	—	—	—	AR-3006L	AW-3006L	AB-3006L	AP-3006L	AO-3006L	AL-3006L	AD-3006L	AV-3006L
3.0 x 10 x 100	—	—	—	AR-3010M	AW-3010M	AB-3010M	AP-3010M	AO-3010M	AL-3010M	AD-3010M	AV-3010M	
3.0 x 10 x 150	—	—	—	AR-3010L	AW-3010L	AB-3010L	AP-3010L	AO-3010L	AL-3010L	AD-3010L	AV-3010L	

## XEBEC Ceramic Stone™ Meister Finish

Rod type with cutting edges on entire surface for use with rotating tools



### Rod type

Equivalent grit		#1200	#1000	#800	#600	#400	#300	#220
Color		Red	White	Blue	Black	Orange	L. Brown	Gray
Size (mm)	φ1 x 50	PR-10S	PW-10S	PB-10S	PP-10S	PO-10S	PL-10S	PM-10S
	φ1 x 100	PR-10M	PW-10M	PB-10M	PP-10M	PO-10M	PL-10M	PM-10M
	φ1.5 x 50	PR-15S	PW-15S	PB-15S	PP-15S	PO-15S	PL-15S	PM-15S
	φ1.5 x 100	PR-15M	PW-15M	PB-15M	PP-15M	PO-15M	PL-15M	PM-15M
	φ2 x 50	PR-20S	PW-20S	PB-20S	PP-20S	PO-20S	PL-20S	PM-20S
	φ2 x 100	PR-20M	PW-20M	PB-20M	PP-20M	PO-20M	PL-20M	PM-20M
	φ2.34 x 50	PR-234S	PW-234S	PB-234S	PP-234S	PO-234S	PL-234S	PM-234S
	φ2.34 x 100	PR-234M	PW-234M	PB-234M	PP-234M	PO-234M	PL-234M	PM-234M
	φ3 x 50	PR-30S	PW-30S	PB-30S	PP-30S	PO-30S	PL-30S	PM-30S
	φ3 x 100	PR-30M	PW-30M	PB-30M	PP-30M	PO-30M	PL-30M	PM-30M
	φ3 x 150	PR-30L	PW-30L	PB-30L	PP-30L	PO-30L	PL-30L	PM-30L
	φ6 x 50	—	—	—	—	—	—	PM-60S
	φ6 x 100	—	—	—	—	—	—	PM-60M

## XEBEC Ceramic Stone™ Heat-Resistant

Heat resistant up to 200 °C and suitable for continuous use with an ultrasonic tool

Equivalent grit		#1200	#800	#400	#220	#120
Color		Red	Blue	Orange	D. Brown	Violet
Size (mm)	1 x 4 x 100	HR-1004M	HB-1004M	HO-1004M	HD-1004M	HV-1004M
	1 x 6 x 100	HR-1006M	HB-1006M	HO-1006M	HD-1006M	HV-1006M
	1 x 10 x 100	HR-1010M	HB-1010M	HO-1010M	HD-1010M	HV-1010M
	2 x 4 x 100	HR-2004M	HB-2004M	HO-2004M	HD-2004M	HV-2004M
	2 x 6 x 100	HR-2006M	HB-2006M	HO-2006M	HD-2006M	HV-2006M
	2 x 10 x 100	HR-2010M	HB-2010M	HO-2010M	HD-2010M	HV-2010M



## XEBEC Ceramic Stone™ Diamond

Suitable for materials harder than HRC57 such as cemented carbide and hardened steel



### Stick type

Equivalent grit		#1200	#800	#400	#200
Color		Moss Green	Gray	Blue Green	Black
Size (mm)	1 x 4 x 100	DU-1004M	DS-1004M	DF-1004M	DM-1004M
	1 x 6 x 100	DU-1006M	DS-1006M	DF-1006M	DM-1006M
	1 x 10 x 100	DU-1010M	DS-1010M	DF-1010M	DM-1010M

### Rod type

Equivalent grit		#400
Color		Blue Green
Size (mm)	φ3 x 50	PDF-30S
	φ3 x 100	PDF-30M

## XEBEC Ceramic Stone™ Soft

Rubber binder allows soft contact and fits into a workpiece

### Stick type

Equivalent grit	Size (mm)	Product code
#1200	2 x 6 x 100	BS-2006M

### Rod type

Equivalent grit	Size (mm)	Product code
#1200	φ3 x 100	PBS-30M

### Precautions for Use

The tool may break when:

- twisted.
- mounted on a rotary tool, ultrasonic tool or vibratory tool.



## XEBEC Ceramic Stone™ Pencil

Ideal for polishing and deburring engraved and narrow details of mold

### Stone refills

Equivalent grit Color	Product code	Size (mm)	Quantity per pack	Matching pencil
#1200 Red	3PACK-AR-0505S	0.5 x 0.5 x 50	3	PCL-5
	3PACK-AR-0909S	0.9 x 0.9 x 50	3	PCL-9
#800 Blue	3PACK-AB-0505S	0.5 x 0.5 x 50	3	PCL-5
	3PACK-AB-0909S	0.9 x 0.9 x 50	3	PCL-9

### Pencil

Product code	Refill size (mm)	Matching refill
PCL-5	φ0.7	AR-0505S
		AB-0505S
PCL-9	φ1.3	AR-0909S
		AB-0909S



## Stick holder for XEBEC Ceramic Stone™

Designed for XEBEC Ceramic Stone™ Meister Finish Stick type and Rod type

### Stick type

Product code	Thickness (mm)	Width (mm)
SSH-1	0.5 - 3.0	1
SSH-2		2
SSH-4		4
SSH-6		6
SSH-8		8
SSH-10		10

### Rod type

Product code	Rod diameter (mm)
SNH-20	φ2 - 2.34
SNH-30	φ3



## Mobile Micromotor System

Battery-powered rotary tool for use at workstations where power supply is unavailable. The handpiece is ultra-lightweight, ideal for manual operation without causing fatigue.

Product code	Matching shank size	Max. rotational speed	Standard components
		(min-1)	
M2P33STX	φ3 mm shank	30000	Handpiece with stand, controller, ON/OFF foot switch, power cable for charging

- Capable of about 5 hours of continuous use on a single charge.



# No breaking, cracking or chipping

XEBEC Ceramic Stone uses a unique abrasive ceramic fiber instead of abrasive grains.

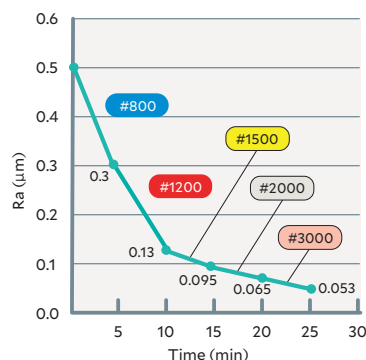


## How to select ceramic grinding stones

Product name	Target material	Applications [Features]
XEBEC Ceramic Stone™ Meister Finish Stick type and Rod type	≤ HRC57 Resin, mold steel, carbon steel, etc.	<ul style="list-style-type: none"> <li>■ Mold polishing and deburring</li> <li>■ EDM scale removal</li> </ul>
XEBEC Ceramic Stone™ Pencil		<ul style="list-style-type: none"> <li>■ Mold polishing and deburring (narrow sections)</li> <li>■ Polishing and deburring of small parts</li> </ul>
XEBEC Ceramic Stone™ Heat-Resistant		<ul style="list-style-type: none"> <li>■ Polishing of deep slits in ribs</li> </ul> <p><i>[Heat resistant up to 200 °C]</i> <i>[Ideal for continuous use with an ultrasonic polisher]</i></p>
XEBEC Ceramic Stone™ Diamond	> HRC57 Cemented carbide, hardened steel, etc.	<p><i>[Has grinding power on both tip and sides]</i> <i>[Can be used with a vibratory tool for greater polishing efficiency]</i></p>
XEBEC Ceramic Stone™ Soft	Non-ferrous metals Aluminum, copper, etc.	<p><i>[Rubber binder provides soft contact with workpiece]</i> <i>[Avoids scratching and provides a glossy finish]</i></p>

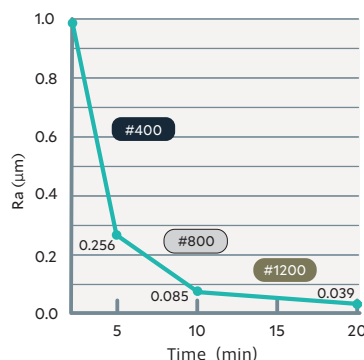
## Machining examples

### HRC: 40



Ceramic stone: XEBEC Ceramic Stone™ Meister Finish  
 Material: Plastic mold steel (JIS NAK55)  
 Polished area: 30 mm x 15 mm  
 Polishing method: Manual polishing with lubricant

### HRA: 90

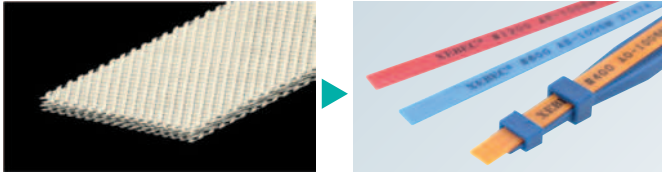


Ceramic stone: XEBEC Ceramic Stone™ Diamond  
 Material: D20 after wire cutting  
 Polished area: 30 mm x 15 mm  
 Polishing method: Pneumatic tool with lubricant

## Features

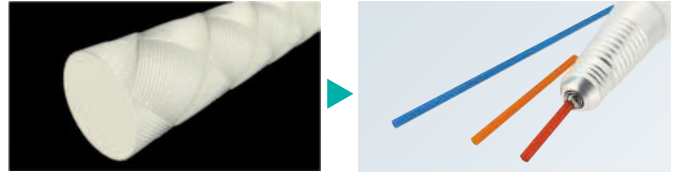
### Stick type

Ceramic fibers arranged in two directions form minute cutting edges at the tip. This strengthens the grinding stone and makes the polishing process more efficient.



### Rod type

Ceramic fibers arranged in a unique braided structure provide cutting edges over the entire surface. This means both the tip and sides can be used for grinding.



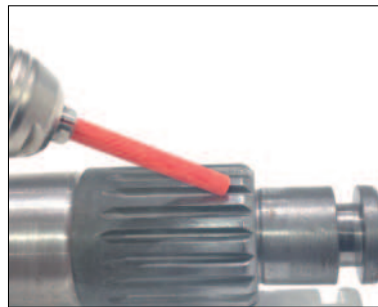
## Applications

XEBEC Ceramic Stone™ is used for a variety of polishing, deburring, honing and scaling operations. For example, tool preparation such as honing of edges to increase the cutting edge strength, tool life, and reduce fracturing. Rust removal from hard to reach areas such as the thread of a metal screw.

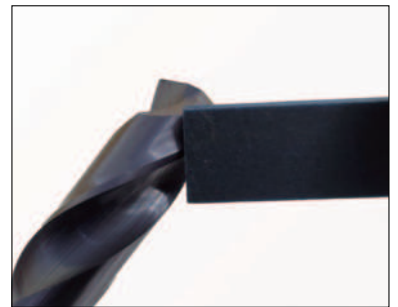
### Mold polishing



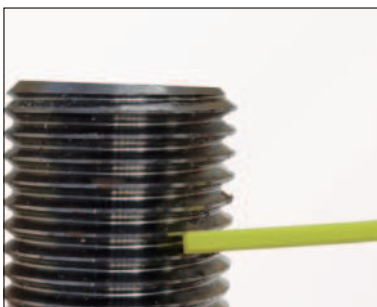
### Deburring



### Tool preparation



### Rust removal



## How to use

- Use of grinding fluid is recommended to prevent clogging and improve grinding efficiency.
- Stick and rod types can be held directly or placed in the optional stick holder for easier use.
- A diamond disk blade or grinder should be used to even up the tip when it is worn. The same method can also be used to customize the tip profile for specific applications or workpiece geometry.
- The rod type can be mounted on a rotary tool and rotated to form a finer tip.
- XEBEC Ceramic Stone™ must only be cut using a diamond cutting disk to make cuts in both sides. The ceramic fibers will be crushed if pliers are used.

### Tool tip customization examples



Meister Finish Stick type customized to deburr a key groove in a thread.



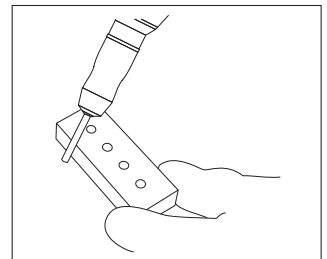
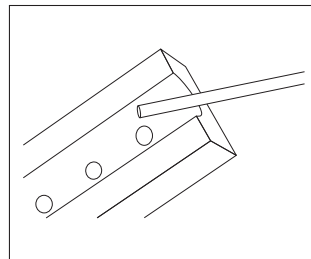
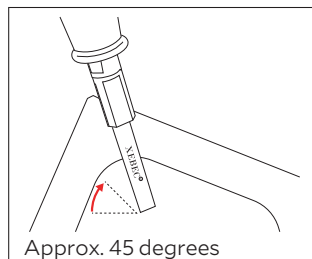
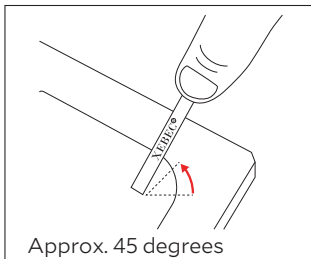
Meister Finish Rod type customized to deburr a rounded groove in a spline.

### Stick type

- Hold the stone at approximately 45 degrees to the surface being polished.
- The stick type can be used with a vibratory tool (electric, ultrasonic or pneumatic) for improved efficiency.
- XEBEC Ceramic Stone™ Diamond is impregnated with diamonds. Therefore, both the sides and tip can be used for grinding.
- XEBEC Ceramic Stone™ Heat-Resistant can be used with an ultrasonic vibratory tool.

### Rod type

- The entire surface of the rod type has grinding power. Therefore, both the sides and tip can be used for grinding.
- The rod type can be used with a rotary tool (electric or pneumatic) for improved efficiency.
- The rod type should be cut to less than 50 mm in length when mounted on a rotary tool.
- Recommended rotational speed is 7000 min<sup>-1</sup>.
- Maximum rotational speed is 30000 min<sup>-1</sup>.



# Safety Measures

## [Use of protective clothing and equipment]

Wear safety glasses, protective gloves and masks when using the tools. Wear long sleeves, tight cuffs or other clothing that minimizes skin exposure.

## [Cutting dust and particles]

Cutting dust and burrs are scattered into the air as tools rotate.

## [Work surroundings]

Flying pieces of fiber rods and cutting particles make the workplace a hazardous area. Enclose the work area to prevent other persons from entering or have other persons wear protective clothing as well.

# Operating Precautions

## [Read the manuals of vibratory or rotary tools used]

Carefully read the instruction manual and operating precautions for any vibratory or rotary tool used.

## [Prepare the correct tool length and use the appropriate rotational speed]

When using small diameter rods (viz.  $\phi 2.34$  mm,  $\phi 3$  mm) with a rotary tool, use the tool at less than the maximum rotational speed ( $30000 \text{ min}^{-1}$ ) and cut the tool to less than 50 mm in length.

## [Using an ultrasonic polisher]

When using with an ultrasonic polisher:

- Check the appropriate power output. Tools may break or generate heat when overloaded.
- Check the appropriate length. If the length is inappropriate, tools may not vibrate correctly or be overloaded, resulting in excessive heat generation.
- Clamp the tool securely. Poor clamping may overload the tool, resulting in excessive heat generation.
- Carefully read the instruction manual of an ultrasonic polisher to understand suitable clamping methods. Polishing performance differs depending on the type of clamping used.

## [XEBEC Ceramic Stone™ Soft]

XEBEC Ceramic Stone™ Soft cannot be used with either rotary or ultrasonic tools.

*Ignoring the aforementioned warnings may result in the following:*

- *Tool fragments and cutting particles may penetrate the skin and enter the eyes, causing loss of sight in severe cases.*
- *Cutting dust resulting from tool use may irritate the skin, cause allergic reactions and damage lungs.*
- *Incorrect operation may result in tools breaking, fragmenting or distorting.*

Visit our website for details.

[www.xebec-tech.com/en/](http://www.xebec-tech.com/en/)



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