

FEBURR

Unique Finisher



Overview of silicon carbide abrasive brushes

Nylon filaments co-extruded with an abrasive SiC grain act like flexible files precisely deburring, finishing and radiusing edges as they wipe across them. Because the cutting pressure with which the abrasive grains are applied against a broad surface is limited by the compliant nature of the filaments, Nylon abrasive brushes tend not to alter the overall dimensions or geometry of a part. This high degree of compliance allows them to conform to complex part shapes and reduces the need for ultra-precise programming and fixturing that is typically required with other deburring and finishing tools.

The compliant cutting action of Nylon abrasive brushes not only limits their ability to alter part dimensions, but it makes them an effective tool for refining surface texture characteristics without removing significant amounts of base material. Although they contain the same abrasive grain sizes, Nylon abrasive brushes will not generate the same prominent scratch pattern as a comparable coated abrasive product. Their limited aggression and flexible filing action also make them suitable for deburring a wider range of materials in comparison to wire filled power brushes.

Because the abrasive grain is evenly distributed throughout the durable nylon filament, Nylon abrasive brushes offer extremely consistent performance throughout their product life. Coupled with their extremely compliant nature, this makes them an ideal media for use in automated deburring and finishing processes involving either dedicated production equipment or flexible solutions such as robotic cells. Their use can also be directly integrated into the cycle of CNC machining centers to improve part quality and consistency while reducing direct labor costs. Brushes can be mounted on variety of machines as shown below.



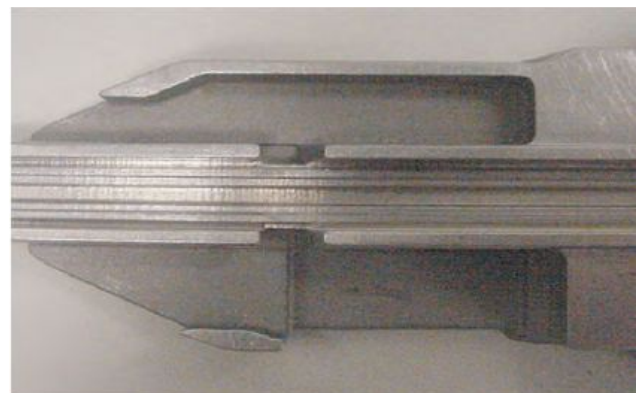
General applications include cleaning, deburring, polishing, reaming, finishing or removing debris or burrs and chips from components made of metallic and non-metallic materials. The use of coolant is highly recommended in order to achieve maximum surface finish improvement.

The following pictures portray the deburring, surface finishing and edge radiusing actions of our abrasive brushes on various components respectively.

Deburring and surface finishing:

Before

After

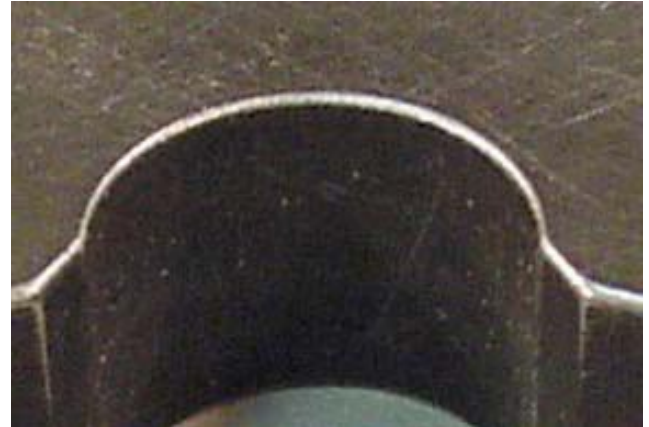


Edge radiusing:

Before



After



Advantages of SiC abrasive brush:

- ❖ These brushes are non oxidizing and maintains its shape. So there is no reaction with metal
- ❖ You have the ability to deburr and finish in one step
- ❖ Demonstrates up to 10 times the effective life of a wire brush.
- ❖ Will not puncture skin or surface.
- ❖ They are safer. Does not shed bristles. So no bristle fly out.
- ❖ They are fast working.
- ❖ They do not load
- ❖ Unlike Wire Brushes where the tips of the filament do all the work, Abrasive Nylon Brushes use both the tips and the sides of the filament to do the work.
- ❖ Abrasive Nylon Brushes have flexible filaments that conform to part geometry
- ❖ You have the ability to change cutting properties by changing grits
- ❖ They can be run wet or dry.
- ❖ Abrasive Nylon Brushes are ideal for automated processes!

SiC filaments:

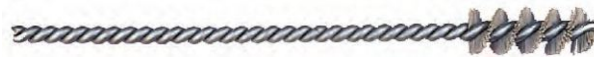


The random distribution of the SiC abrasive particles, combined with a unique blend of polymer (Nylon 612) in our abrasive filaments are the main determining factors of their performance. These filaments are known for their sturdiness and durability. Our abrasive brush filaments can be used at any angle required in order to maintain contact with the surface to be worked. Our filaments have improved properties of temperature resistance, tensile strength and bend recovery for deployment in both dry and wet applications. This flexibility in the nature of the polymer has further improved its resistance to chemicals with the end result of a longer product life span. Subsequently our brushes filled with these filaments lend themselves to wide areas of applications, especially at stronger forces. Our normally available SiC impregnated filaments in stock are in the diameter range of 0.35mm to 1.9mm and in grit sizes from a extremely fine SiC 1000 to a very aggressive SiC 36 as per the following chart.

Grit range in SiC filaments:

Grit	Diameter(mm)	Grit load
36	1.9 & 2.40	25%
46	1.60	30%
60	1.50	30%
80	1.20 & 1.40	30%
120	1.10 & 0.60	30%
180	1.00	30%
240	0.90 & 0.75	30%
320	0.60	30%
500	0.50 & 0.25	20%
600	0.25	20%
800	0.25	20%
1000	0.25	20%

1. Twisted in wire brush or Bore Brush :



Abrasive nylon twisted in wire brushes are ideal for deburring, finishing and cleaning internal holes. Twisted in brushes can be made by custom dimensions. Abrasive nylon twisted-in-wire brush diameters range from 8mm to 60mm.



Applications:

Can be used in tubular component parts, drilled and tapered holes, machined bores and passages by holding in power tools including drills, drill presses and CNC machining centers.

Specific applications:

- ❖ Deburring and cleaning threaded holes, O-ring slot, keyways and grooves
- ❖ Deburring cross hole intersections in machined valve bodies and manifolds
- ❖ Finishing and polishing small inside diameter holes on machined parts
- ❖ Deburring and cleaning inner walls of tubes and pipes
- ❖ Carbon Removal
- ❖ Preparing Surfaces for Soldering, Brazing and Welding
- ❖ Removal of small imperfections

Note:

Reversing a twisted-in-wire brush may loosen the stem wire, causing a loss of fill bristles. Always rotate the brush in a clockwise direction when the brush points away from the user. This will tighten the brush construction.



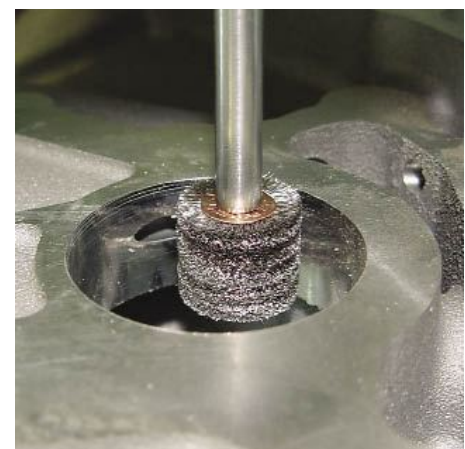
2. Cross hole wheel brush:



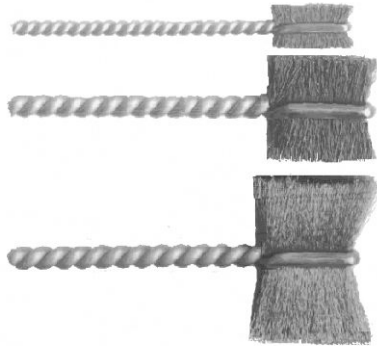
Crosshole brushes are ideal for surface conditioning larger internal holes. In high production applications, reusable arbors reduce manufacturing costs by allowing the use of inexpensive brush head replacements. Diameter of abrasive nylon crosshole brushes ranges between 25mm to 100mm.

Applications:

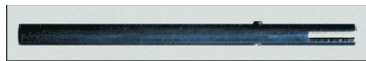
They are ideal for removing burrs from internal edges and finishing bores.



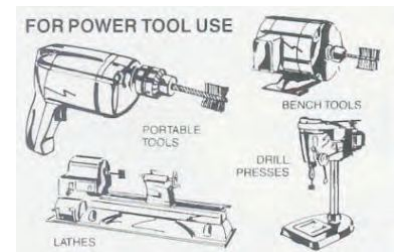
3. Side Tuft brush:



For cleaning, deburring, and polishing threads, inner walls of tubes and cylinders. Advisable for use in power tools. Provides a high degree of bristle stiffness with minimal flexing. Abrasive nylon side tuft brush diameters range from 8mm to 75mm. Side tuft holders are available separately for higher speed operation.



Holder



4. End Brush :

Chennai brushware custom manufactures end brushes with a variety of abrasive nylon filament options. Trim length can be modified. Brush filament can be encapsulated to decrease flare, maintain profile and increase life of brush. Featuring an integral stem for convenient mounting into a tool holder or collet, abrasive nylon end brushes are suitable for delivering a targeted brushing action to a specific area on a part. All end brushes are designed with your application in mind.

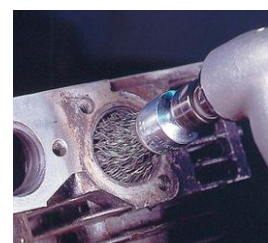
Specific Applications:

- ❖ Machined Parts
- ❖ Blending Tool Marks
- ❖ Finishing Surfaces in Confined Areas
- ❖ I.D. Pipe Cleaning
- ❖ Spot Facing Drilled Holes

Flared end brush:



Flared end brushes are ideal for surface conditioning recessed areas. Work well for cross-hole deburring, blending tool marks and breaking sharp edges. Custom diameters from 15mm to 35mm can be made.



Controlled flare end brush:



The unique trim of a controlled flare end brush is designed specifically to address hard-to reach areas, reducing filament fatigue and breakage typically associated with a standard end brush when cleaning corners and fillet welds. Custom diameters from 15mm to 35mm can be made.



Ferule brush:



Our abrasive ferrule brushes are ideal deburring tools used for confined and extremely small surface areas. Diameter varies from 8mm to 20mm.



5. Cup brush:



Abrasive nylon brushes are excellent for light deburring, edge blending and general surface finishing. Abrasive nylon cup brushes are safe, non-reactive and offer an excellent alternative to traditional steel filament brushes. They are ideal for both hand operations and for use in automated and CNC equipment.

Our brushes can also be used for the removal of rust or paint. Custom dimensions are available ranging from 45mm to 80mm.



Specific Applications: -

- ❖ Deburring complex and Contoured Parts
- ❖ Deburring Recesses of Machined Parts
- ❖ For Use With Automated Equipment or Low Speed Portable Tools
- ❖ Narrow Grooves or Recessions



6. Mini disc brush:



Featuring a precision machined aluminum cup, Chennai Brushware's mini-disc brushes are designed to be the most cost-effective media for applications requiring a smaller brushing tool. Smaller disc brushes can be used on hand tools for surface preparation. Custom diameter from 50mm to 100mm can be done.



Specific applications:

- ❖ Deburring flat surfaces on machined components
- ❖ Deburring face milled castings or forgings
- ❖ Improving texture characteristics on machines or ground surfaces



7. Disc brush:



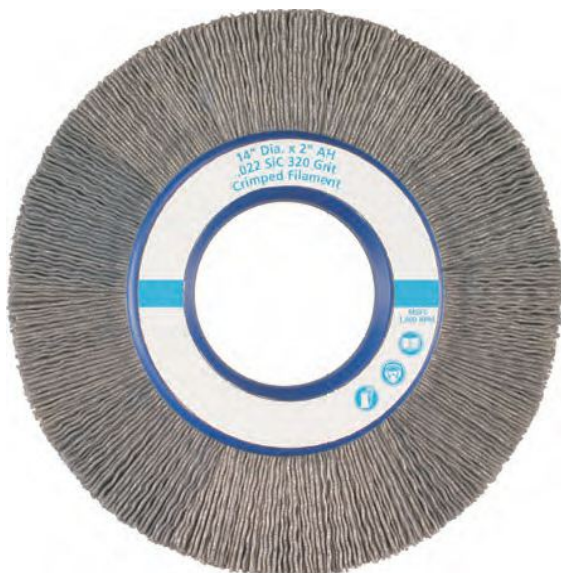
Disc brushes are designed to be power driven on CNC machinery and custom-designed machines used in automotive, extrusion, fine blanking, powdered metal, steel processing, woodworking, concrete and other industrial deburring applications. We manufacture disc brushes in diameters ranging from 100mm to 500mm.

Specific applications:

- ❖ Surface preparation and finishing on metal and wood
- ❖ Deburring and finishing cast aluminum wheel
- ❖ Deburring and edge radiusing aluminum engine heads
- ❖ Removing burrs and sharp edges on machined flat surfaces of cast aluminum engine intake manifolds
- ❖ Surface finish and removing burrs on hydraulic components
- ❖ Rust and scale removal
- ❖ Scrubbing and cleaning steel and aluminum sheets
- ❖ Clean pre-cast concrete molds
- ❖ Finishing surfaces prior to painting, plating or powder coating
- ❖ Sanding and texturing wood surfaces
- ❖ Surface finish and removing burrs on hydraulic components
- ❖ Rust and scale removal
- ❖ Scrubbing and cleaning steel and aluminum sheets
- ❖ Clean pre-cast concrete molds
- ❖ Finishing surfaces prior to painting, plating or powder coating
- ❖ Sanding and texturing wood surfaces



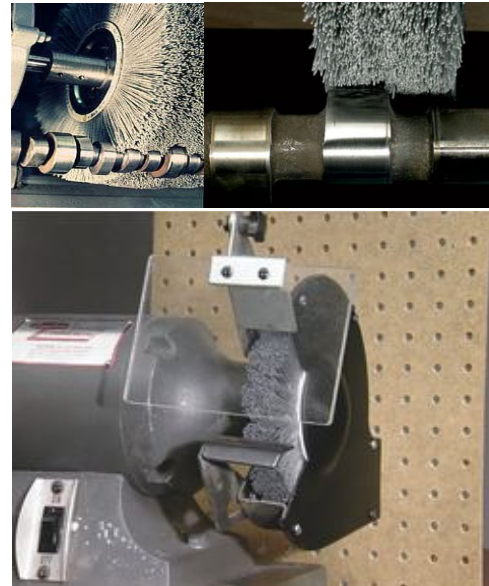
8. Wheel brush:



Abrasive Nylon Wheels are excellent for light deburring and decorative metal finishing. They can be used in either wet or dry application. The conformability of nylon wheels makes them an excellent tool for deburring and finishing highly contoured parts like forged camshafts. Brush diameter ranges between 50mm to 500mm.

Specific Applications:

- ❖ Deburr edges in aluminium extrusion, machined and powered metal components
- ❖ Edge blending of ferrous and non-ferrous parts
- ❖ Surface refinement of stainless steel, aluminium and brass
- ❖ Transmission Valve Bodies
- ❖ Turbine Blades
- ❖ Pump Gears
- ❖ Alloy wheels
- ❖ Honing cutting tools and generating specific edge profiles and radii



9. Roller brush:



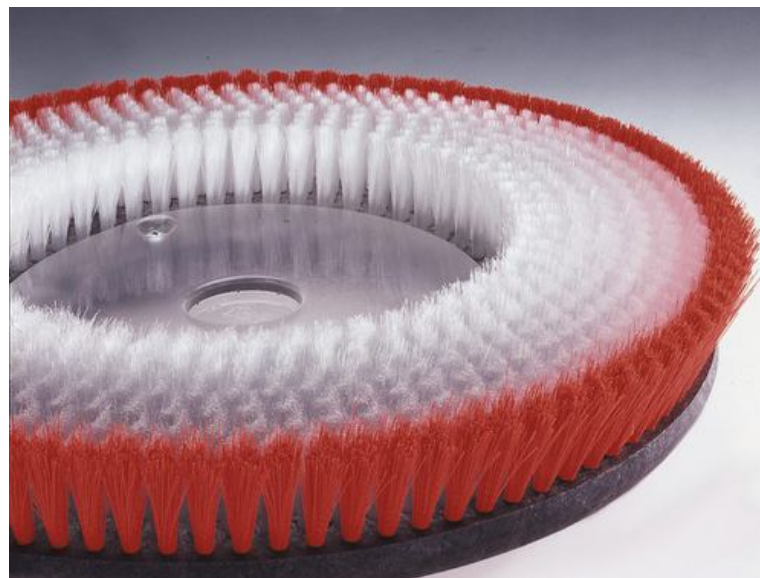
Roller Brushes are used for scrubbing, cleaning, deburring, grinding, and dust removing in wide face areas, circuit board, steel sheets annealing and pinking, defatted processing, electrolysis cleaning processing and many other production line applications. It includes shaft, brush material filaments and balancing test. We also provide repairing, regrinding and recovering for used roller brushes. We provide the production service from custom design to manufacturing of nearly any length or diameter.

**Specific applications:-**

- ❖ Cleaning conveyor belting and chain
- ❖ Scrubbing PCB board
- ❖ Debris removal
- ❖ Material transporting
- ❖ Product positioning
- ❖ Panel dusting
- ❖ Sanding and texturing wood surfaces
- ❖ Glass washing
- ❖ Screen cleaning
- ❖ Material handling (as screws and augers)
- ❖ Lint removal
- ❖ Fruit and vegetable washing



10. Floor cleaning:



Both nylon and abrasive nylon floor cleaning and scrubbing brushes are available with us. A complete line of rotary floor machine brushes, featuring grit-filled brushes and general scrubbing brushes are available for varied customer needs. We also do rebristling of worn out brushes for reuse.

Daily scrubbing brush:

Offers the durability of grit brushes with minimum aggression. For daily scrubbing of a variety of tiles, marble, terrazzo and non-slip epoxy finishes. Tynex A nylon fibers impregnated with 500 grit silicon carbide. This brush replaces red floor pads.

Mildly Scrubbing Brush:

For Medium to Mildly Aggressive Scrubbing of Brick & Stone, Ceramic Tile, Sealed or Unsealed Concrete, Non-Slip Resilient Floors, Non-Slip Rubber Floors, Quarry Tile, Rubberized Sports Floors, Slate, Terrazzo, Vinyl and Grout. Tynex A nylon fibers impregnated with 180 grit silicon carbide. This brush replaces green or blue floor pads.

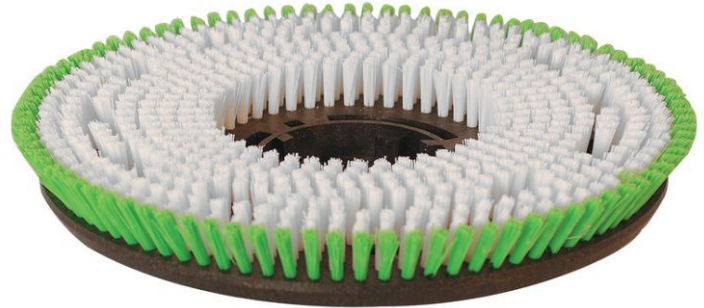
Aggressive brush for general scrubbing brush:

An aggressive brush for general scrubbing or stripping finishes from hard surfaces. Effectively cleans wide grout lines. Excellent for scrubbing of concrete and stripping of quarry tile, terrazzo, and VCT irregular bristle length to assure cleaning on uneven surfaces. Tynex A nylon fibers impregnated with 80 grit silicon carbide.

Most aggressive scrubbing brush:

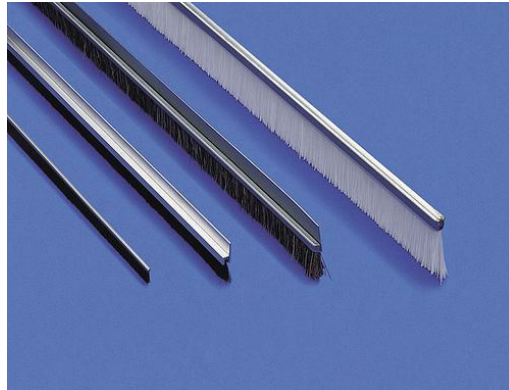
The most aggressive scrubbing brush available. This heavy gauge nylon with larger grit is used for stripping heavily soiled floors, such as concrete floors in an industrial setting.

For Aggressive Scrubbing of Brick & Stone, Rough or Unsealed Concrete, and aggressive Stripping of Sealed Concrete and Terrazzo Floors. Tynex A nylon fibers impregnated with 46 grit silicon carbide. 1-3/4" trim.



- ❖ Our most aggressive brush for scrubbing heavy soil from concrete in industrial applications.
- ❖ Irregular bristle length to assure cleaning on uneven surfaces.

11. Industrial strip brush:



Brush strips are used to sweep, wipe, seal, transfer, meter, cushion, contain, scrub, spread, etc. Combinations of various fill materials held in different size and type of metal channels offer an endless choice of brushing characteristics to accommodate any application. Strips can be formed into various shapes to meet specific needs.

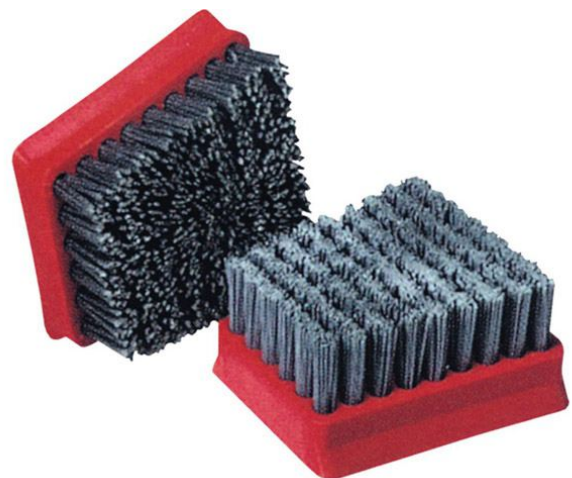


12. Stone polishing brushes:

It is an abrasive brush that gives antique, leather & lappato finish on various granite, ceramic, marble and composite stone surfaces. Archaized effect on stone surface is possible.

Frankfurt:

Frankfurt shape abrasive brushes are available with us. It is an abrasive brush that gives antique, leather and lappato finish on natural and composite stone surfaces. Offers long life and good performance. Wide range of grit mesh from 36 to 1000 is possible. Diamond filaments for fine leather finish are also available with us.



Fickert:

Used for polishing granite, artificial granite and ceramic. It is an abrasive brush that gives antique, leather and lappato finish on natural and composite stone surfaces. Offers long life and good performance. Wide range of grit mesh from 36 to 1000 is possible. Diamond filaments for fine leather finish are also available with us.



Tips & troubleshooting Abrasive Nylon Brush Guide:

Problem	Recommended Solutions
Brush not aggressive enough	<ul style="list-style-type: none"> • Increase filament diameter and/or grit size • Increase filament density by using round straight rather than round crimped • Increase surface contact by using rectangular rather than round • Increase pressure/depth of interference • Increase surface speed by increasing spindle RPM • Use a larger diameter brush • Reduce trim length or feed rate
Brush too aggressive	<ul style="list-style-type: none"> • Reduce filament diameter and/or grit size • Reduce filament density by using round crimped rather than round straight • Reduce surface contact by using round rather than rectangular • Reduce pressure/depth of interference • Reduce surface speed by reducing spindle RPM • Use a smaller diameter brush • Increase trim length or feed rate
Brush not conformable enough	<ul style="list-style-type: none"> • Increase trim length • Reduce filament diameter • Reduce filament density by using round crimped rather than round straight or rectangular • Reduce surface speed by reducing spindle RPM • Reduce feed rate
Finer final finish required	<ul style="list-style-type: none"> • Increase surface speed by increasing spindle RPM • Decrease grit size • Use brush with a coolant
Coarser final finish required	<ul style="list-style-type: none"> • Reduce surface speed by reducing spindle RPM • Increase grit size • Use brush without a coolant
Filaments melt/smear on workpiece	<ul style="list-style-type: none"> • Reduce surface speed by reducing spindle RPM • Use a smaller diameter brush • Use brush with a coolant
Short brush life	<ul style="list-style-type: none"> • Increase filament density • Reduce pressure/depth of interference



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