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NAMPOWER[™] Resource guide

Information on Tool Selection, Grit Selection, Suggested RPM's and More

BRUSHRESEARCH.COM

GENERAL APPLICATION AND SELECTION OF NAM POWER"

COMBINATION SILICON CARBIDE AND CERAMIC DISC BRUSHES

DOT STYLE

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Used for general purpose edge deburring and surface finishing applications. The Dot style is an economical choice for light deburring applications. Dot style brushes provide greater flexibility and allow entry into small holes and spaces with ease.

Brush Research Manufacturing is proud to offer the highest quality professional grade tools for deburring, edge radiusing and surface finishing applications on the market today: Nampower[™] Disc Brushes. Composed of flexible abrasive nylon filaments bonded to a fiber reinforced thermoplastic base, these abrasive disc brushes contain a unique combination of both ceramic and silicon carbide abrasive that produce maximum burr removal rates and provides an optimum surface finish at the same time. The brushes are available in 2 different styles: Dot Style for general purpose deburring and surface finish applications and the Turbine Style brush for medium and heavy deburring applications.

These high-performance tools create reliable, consistent and cost effective results. Nampower[™] Disc Brushes are easily integrated into today's automated machinery, CNC machining centers, transfer lines and robotic cells.



BRUSH SELECTION

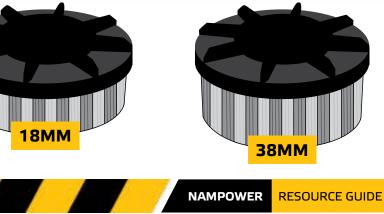
TURBINE STYLE



Ideal for medium and heavy deburring applications. The Turbine style brush has a high density fill that is ideal for short cycle times and long tool life.

TRIM LENGTH SELECTION

The larger diameter Nampower disc brushes (100mm, 125mm, and 150mm) are available in 18mm and 38mm trim lengths. Smaller diameter disc brushes (50mm, 60mm and 80mm) have an 18mm trim length. Trim length selection is about flexibility versus aggressiveness. Longer trim lengths are less aggressive and more flexible while shorter trim lengths are less flexible and more aggressive. Burr size, part shape and conformity, radius requirements and final finish requirements are all factors affecting trim length selection.



NAMPOWER BRUSHES

| DIAMETER | TRIM | GRIT | MSFS | PART # DOT | PART # TURBINE | |
|----------|------|------|-------|------------|----------------|--|
| | | | | | | |
| 50mm | 18mm | 80 | 6,500 | ADD501880 | ADT501880 | |
| 50mm | 18mm | 120 | 6,500 | ADD5018120 | ADT5018120 | |
| 50mm | 18mm | 180 | 6,500 | ADD5018180 | ADT5018180 | |
| 50mm | 18mm | 320 | 6,500 | ADD5018320 | ADT5018320 | |
| 60mm | 18mm | 80 | 5,500 | ADD601880 | ADT601880 | |
| 60mm | 18mm | 120 | 5,500 | ADD6018120 | ADT6018120 | |
| 60mm | 18mm | 180 | 5,500 | ADD6018180 | ADT6018180 | |
| 60mm | 18mm | 320 | 5,500 | ADD6018320 | ADT6018320 | |
| 80mm | 18mm | 80 | 4,000 | ADD801880 | ADT801880 | |
| 80mm | 18mm | 120 | 4,000 | ADD8018120 | ADT8018120 | |
| 80mm | 18mm | 180 | 4,000 | ADD8018180 | ADT8018180 | |
| 80mm | 18mm | 320 | 4,000 | ADD8018320 | ADT8018320 | |
| | | | | | · | |



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HOLDER FOR SMALL DISC BRUSHES

| PART # | SHANK DIAMETER | HOLDER TYPE |
|--------|----------------|---------------------------|
| ADH16P | | Standard Collet Flow Thro |

50mm, 60mm and 80mm brushes are designed to work with our small flow through coolant holder. The 16mm precision ground shank allows coolant to flow from the brush center. This results in better lubricant dispersion which permits the brush to run at greater cut depths and drastically reduces heat generation. These holders are made using a one-piece construction that results in greatly improved balance. All tool holders are heat treated and have a PVD coating for improved corrosion resistance and long life.



38mm

150mm

1,800

PART

320

ADHLWMP ADHLWMSL

> 100mm, 125mm and 150mm brushes are designed to work with our large flow though coolant holder. The 25mm shank is available is standard or side-lock configuration and allows coolant to flow from the brush center resulting in better lubricant dispersion which permits the brush to run at greater cut depths and drastically reduces heat generation. The large holder is made using a carbon fiber reinforced thermoplastic material bonded to a hardened and ground steel shank which results in a more rigid, well balanced and lighter weight holder.

NAMPOWER BRUSHES

| | PART # DOT | PART # TURBINE |
|---|-------------|----------------|
|) | ADD1001880 | ADT1001880 |
|) | ADD10018120 | |
|) | ADD10018180 | |
|) | ADD10018320 | ADT10018320 |
|) | ADD1003880 | ADT1003880 |
|) | ADD10038120 | ADT10038120 |
|) | ADD10038180 | ADT10038180 |
|) | ADD10038320 | ADT10038320 |
|) | ADD1251880 | ADT1251880 |
|) | ADD12518120 | ADT12518120 |
|) | ADD12518180 | ADT12518180 |
|) | ADD12518320 | ADT12518320 |
|) | ADD1253880 | ADT1253880 |
|) | ADD12538120 | ADT12538120 |
|) | ADD12538180 | |
|) | ADD12538320 | |
| | ADD1501880 | |
|) | ADD15018120 | |
|) | ADD15018180 | |
|) | ADD15018320 | |
| | ADD1503880 | |
| | ADD15038120 | |
| | ADD15038180 | |
| | ADD15038320 | ADT15038320 |

HOLDERS FOR LARGE DISC BRUSHES

SHANK DIAMETER

HOLDER TYPE

| 25mm | Standard Collet Flow Through |
|------|---------------------------------------|
| 25mm | Standard Sidelock Collet Flow Through |

GENERAL APPLICATION AND SELECTION OF

END BRUSHES

THE NAM

Brush Research's Nampower line of brushes have always stood for the best in abrasive finishing and deburring technology providing incredible performance and outstanding value. Now this high volume, production grade line is growing up and getting smaller. These all new brushes are available from 2" down to 1/2" (12.7mm), in a high density, solid end brush configuration that offers more cutting points for increased efficiency and performance. The machined aluminum and hard coat anodized cups hold state of the art ceramic abrasive filaments that have lasted 3-5 times longer than the competition during testing.

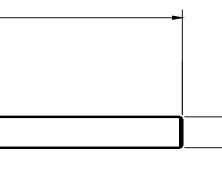
The wide range of grits available enable the tools to accomplish even the most challenging of deburring and surface finishing or prep applications. From removing extrusion type burrs, to achieving single digit Ra finishes. The long shank length lets you get down into the work wherever you need it and the tool is designed to be loaded directly into your automated machining center to get to work immediately with no special adaptors needed.

| DIAME | TER (A) | | NGTH (B) | 0/ | AL (C) | SHANK DIA | METER (D) | GRIT |
|--------|---|---|---|--|--|--|---|---|
| INCHES | MILLIMETERS | INCHES | MILLIMETERS | INCHES | MILLIMETERS | INCHES | MILLIMETERS | |
| 1/2″ | 12.7mm | 5/8″ | 16mm | 4.88″ | 124mm | 3/8″ | 9.5mm | .040/80 |
| 1/2″ | 12.7mm | 5/8″ | 16mm | 4.88″ | 124mm | 3/8″ | 9.5mm | .040/120 |
| 1/2″ | 12.7mm | 5/8″ | 16mm | 4.88″ | 124mm | 3/8″ | 9.5mm | .035/180 |
| 1/2″ | 12.7mm | 5/8″ | 16mm | 4.88″ | 124mm | 3/8″ | 9.5mm | .022/320 |
| | | L | | | | , , , | | , ! |
| 3/4″ | 19mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .040/80 |
| 3/4″ | 19mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .040/120 |
| 3/4″ | 19mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .035/180 |
| 3/4″ | 19mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .022/320 |
| | | | | | | | | ·! |
| 1″ | 25.4mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .040/80 |
| 1″ | 25.4mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .040/120 |
| 1″ | 25.4mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .035/180 |
| 1″ | 25.4mm | 3/4″ | 19mm | 5″ | 127mm | 3/8″ | 9.5mm | .022/320 |
| | | | | | | · | | ·! |
| 1-1/2″ | 38mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .040/80 |
| 1-1/2″ | 38mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .040/120 |
| 1-1/2″ | 38mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .035/180 |
| 1-1/2″ | 38mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .022/320 |
| | | | | | | | | ا ا |
| 2″ | 51mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .040/80 |
| 2″ | 51mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .040/120 |
| 2″ | 51mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .035/180 |
| 2″ | 51mm | 1″ | 25.4mm | 5-1/4″ | 133.4mm | 1/2″ | 12.7mm | .022/320 |
| | INCHES 1/2" 1/2" 1/2" 1/2" 3/4" 3/4" 3/4" 3/4" 1" 1" 1" 1" 1" 1" 1" 1" 1" 1 | 1/2" 12.7mm 1/2" 12.7mm 1/2" 12.7mm 1/2" 12.7mm 1/2" 12.7mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 1/2" 25.4mm 1" 25.4mm 1-1/2" 38mm 1-1/2" 38mm 1-1/2" 38mm 2" 51mm 2" 51mm | INCHES MILLIMETERS INCHES 1/2" 12.7mm 5/8" 3/4" 19mm 3/4" 3/4" 19mm 3/4" 3/4" 19mm 3/4" 3/4" 19mm 3/4" 1" 25.4mm 1" 1-1/2" 38mm 1" 1-1/2" 38mm 1" 1-1/2" 38mm 1" 2" 51mm 1 | INCHES MILLIMETERS INCHES MILLIMETERS 1/2" 12.7mm 5/8" 16mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 3/4" 19mm 1" 25.4mm 3/4" 19mm 1" 25.4mm 3/4" 19mm 1" 25.4mm 3/4" 19mm 1" 25.4mm 1" 25.4mm 1-1/2" 38mm 1" 25.4mm 1-1/2" 38mm 1" 25.4mm 2" 51mm 1" < | INCHES MILLIMETERS INCHES MILLIMETERS INCHES 1/2" 12.7mm 5/8" 16mm 4.88" 3/4" 19mm 3/4" 19mm 5" 3/4" 19mm 3/4" 19mm 5" 3/4" 19mm 3/4" 19mm 5" 1" 25.4mm 1" 25.4mm 5-1/4" 1-1/2" 38mm 1" | INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS 1/2" 12.7mm 5/8" 16mm 4.88" 124mm 3/4" 19mm 3/4" 19mm 5" 127mm 3/4" 19mm 3/4" 19mm 5" 127mm 1" 25.4mm 3/4" 19mm 5" 127mm 1" 25.4mm 3/4" 19mm 5" 127mm 1" 25.4mm 3/4" 19mm 5" 127mm 1" | INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS INCHES 1/2" 12.7mm 5/8" 16mm 4.88" 124mm 3/8" 3/4" 19mm 5/8" 16mm 5" 127mm 3/8" 3/4" 19mm 5" 127mm 3/8" 3/4" 19mm 5" 127mm 3/8" 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 1" <td>INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS 1/2" 12.7mm 5/8" 16mm 4.88" 124mm 3/8" 9.5mm 1/2" 12.7mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 3/4" 19mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1"</td> | INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS INCHES MILLIMETERS 1/2" 12.7mm 5/8" 16mm 4.88" 124mm 3/8" 9.5mm 1/2" 12.7mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 3/4" 19mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1" 25.4mm 3/4" 19mm 5" 127mm 3/8" 9.5mm 1" |

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BRUSH DIAMETER



DIAMETER (A) TRIM LENGTH (B) OAL (C) SHANK DIAMETER (D)

NAMPOWER RESOURCE GUIDE

D

GRIT SELECTION

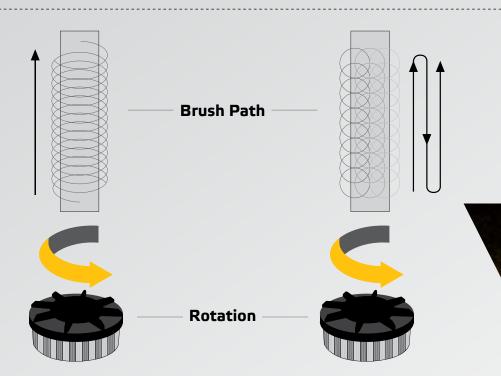
| GRIT SELECTION | STARTING RA |
|----------------|-------------|
| 80 | 50-60 |
| 120 | 40-50 |
| 180 | 30-40 |
| 320 | 20-30 |

Grit selection is highly dependent on the starting surface finish and the amount of material refinement required. The general rule of thumb is to choose the coarsest grit possible that will still yield the required surface finish. A fine grit tool used on a coarse starting finish will have less effect on the overall finish improvement as a coarse grit tool followed by a finer grit tool. Coarse grits are recommended for use on heavier burrs or where a fine surface finish is not required.

EASILY INTEGRATED INTO TODAY'S AUTOMATED MACHINERY, CNC MACHINING CENTERS, TRANSFER LINES AND ROBOTIC CELLS

SELECTING BRUSH DIAMETER, PART COVERAGE

The brush diameter should ideally be larger than the cutting tool used to machine the part. If a smaller brush is required due to fixture restrictions, the centerline of the brush tool should be aligned with the targeted edge with a minimum of 1" of overlap.



TOOL PATH ROTATIONAL DIRECTION

Tool Path: The brush should be rotating at full speed and start and finish its path completely off the part.

Rotational Direction: The brush should be rotated in the direction opposite of the cutting tool that created the burr on its initial pass.



SUGGESTED OPERATING PARAMETERS

BRUSH SPEEDS (RPM)

END BRUSHES

| Dia. (mm) | Dia. (in) | Trim (in) | 80 Grit | 120 Grit | 180 Grit | 320 Grit | Max RPM |
|-----------|-----------|-----------|---------|----------|----------|----------|---------|
| 12.7 | 1/2 | 0.625 | 6000 | 5500 | 5000 | 4000 | 10000 |
| 19.1 | 3/4 | 0.75 | 5000 | 4500 | 4000 | 3500 | 10000 |
| 25.4 | 1 | 0.75 | 4500 | 4000 | 3500 | 2500 | 10000 |
| 38.1 | 1-1/2 | 1.00 | 3000 | 2750 | 2500 | 2000 | 7000 |
| 50.8 | 2 | 1.00 | 2750 | 2500 | 2250 | 1750 | 7000 |

DISC BRUSHES

| Dia. (mm) | Dia. (in) | Trim (mm) | 80 Grit | 120 Grit | 180 Grit | 320 Grit | Max RPM |
|-----------|-----------|-----------|---------|----------|----------|----------|---------|
| 50 | 1.97 | 18 | 3250 | 3000 | 2750 | 2125 | 6500 |
| 60 | 2.36 | 18 | 3000 | 2750 | 2500 | 1875 | 5500 |
| 80 | 3.15 | 18 | × 2375 | 2375 | 2125 | 1625 | 4000 |
| 100 | 3.94 | 18 | ×1875 | ×1875 | 1875 | 1500 | 2200 |
| 100 | 3.94 | 38 | 1625 | 1500 | 1250 | 1000 | 2200 |
| 125 | 4.92 | 18 | * 1500 | *1500 | *1500 | 1375 | 2000 |
| 125 | 4.92 | 38 | 1375 | 1250 | 1125 | 875 | 2000 |
| 150 | 5.91 | 18 | ×1250 | ×1250 | ×1250 | 1250 | 1800 |
| 150 | 5.91 | 38 | 1250 | 1250 | 1125 | 875 | 1800 |

* Speeds capped due to SFM

The speeds listed in the table above are a guide to start setting up your application without coolant and minimal part engagement. Many factors affect optimum RPM including the brush diameter, trim length, filament diameter, fill pattern, cut depth, tool path, part engagement and if the brush is being run dry or with through spindle coolant. The maximum RPM marked on the brush may not be the optimum working speed. Excessive speed, especially with longer trim length, causes the filament to flair and bounces off the work piece. Filaments used with coolant can spin faster than dry applications without overheating and smearing. You should never exceed the max RPM.

BRUSH FLARE

Brush flare should always be kept to less than 10 degrees to ensure filaments properly wipe across the surface of the part for effective surface finishing and deburring action. Coarse grit filaments, shorter trim lengths, and higher density brushes can spin faster than fine grit filaments, longer trim lengths, and less dense brushes, without flaring.



WEAR COMPENSATION

It is possible to automate wear compensation on dedicated equipment, by using electronic controls to monitor the load on drive motors to adjust the position of the brushing tool to maintain a relatively consistent amount of pressure. Standard CNC machines which do not have the possibility of automated load adjustments need to try other methods like automatic indexing, probe control or manual setting.

BRUSH DEPTH

| BRUSH STYLE | INTERFERENCE |
|----------------------------|--------------|
| Dot Style Disc Brushes | .015 – .150 |
| Turbine Style Disc Brushes | .004 – .093 |
| AEB End Brushes | .004 – .093 |

Depth of interference (DOI) should be set up to 10% penetration of the available trim length on the finer filament grits (180, 320) and up to 5% penetration on coarser grit filaments (80, 120). Dot Style brushes can be set for a deeper penetration than Turbine Style and End brushes. Spindle speed is usually decreased with increased depth of interference so the filaments can conform smoothly to part contours.

For More Aggression

- + Use coarser grit size
- Use ADT (Turbine Style) or Nampower Brush
- + Decrease trim length
- + Increase brush diameter
- + Increase depth of interfere
- + Decrease feed rate

For Less Aggression

- + Use finer grit brush
- + Use ADD (Dot Style) Namp
- + Increase trim length
- + Decrease brush diameter
- + Decrease depth of interfe
- + Increase feed rate

For Contouring

- + Use finer grit size
- + Use ADD (Dot Style) Nam
- + Increase trim length
- + Increase depth of interfere
- + Decrease spindle speed (R

FEED RATE

| FEED RATE | |
|-------------|--|
| 80 in./min. | |
| 60 in./min. | |
| 50 in./min. | |
| 30 in./min. | |
| 30 in./min. | |
| | |

Feed rate is affected by many factors including burr size, work piece material, surface contours and finish requirements. Contoured surfaces are processed at slower speeds and greater depth of interference than flat surfaces. Starting feed rates between 30ipm and 80ipm are recommended but the final feed rate is application specific and must be developed through deburring trial.

APPLICATION OPTIMIZATION

| | For Finer Finishing |
|-----------------|---|
| | + Use finer grit size |
| AEB (End Style) | + Increase trim length |
| | + Increase brush diameter |
| | + Decrease depth of interference |
| | + Increase feed rate |
| ence | |
| | For Coarser Finishing |
| | + Use coarser grit size |
| | + Decrease trim length |
| | Decrease brush diameter |
| oower Brush | + Increase depth of interference |
| | + Decrease feed rate |
| | |
| ence | For Smear Reduction |
| | Decrease brush diameter |
| | + Decrease depth of interference |
| | + Decrease spindle speed (RPM) |
| · · · · · | + Increase coolant |
| oower Brush | |
| | |
| ence | |
| PM) | |

NAMPOWER APPLICATIONS

| 6.1 | | |
|-----|---|--|
| A | | |
| | U | |

COMMON MATERIALS

| ALUMINUM | |
|--------------------|--|
| CARBON STEEL | |
| STAINLESS STEEL | |
| BRASS AND BRONZE | |
| HIGH NICKEL ALLOYS | |
| TITANIUM | |
| CAST IRON | |

TYPICAL APPLICATIONS

| FINISHING |
|---------------------------|
| DEBURRING |
| SURFACE PREP |
| BLEND OUT MACHINING MARKS |
| HOMOGENIZE PART SURFACE |
| RADIUSING |
| EDGE BREAKING |

SANDING FIBERGLASS

Sea Ray, a prestigious boat manufacturer, uses Nampower tubine style disc brushes in their robotic sanding cell to minimize manual function and increase efficiencies. To read the article, go to: http://info. brushresearch.com/nampower-disc-brushes-sea-ray

"OVERALL IT WILL BE MORE EFFICIENT, FASTER, AND WILL RESULT IN SIGNIFICANT REDUCTION IN THE LABOR INVOLVED."

DEBURRING COMPLEX PARTS

A machine shop in Houston, Texas, had issues removing large burrs from machined holes in an extremely hard 4140 steel alloy part used as a muzzle brake for firearms. Nampower Composite Wheels provided the ideal solution. Read the article at: http:// info.brushresearch.com/nampower-wheel-brushes-article



AFTER

A vise manufacturer produces vises in a variety of different sizes with different heat treatments. The hardened surfaces, measuring as high as 50 to 60 HRc, required grinding because milling cutters would wear out too quickly. Learn how Nampower brushes improved the process. To read the article, go to: http://info.brushresearch.com/ orange-vise-nampower-brushes

GRINDING WOULD BE SO MUCH MORE WORK. WITH THE BRUSHES IT REALLY DOESN'T TAKE ANY EXTRA EFFORT AT ALL. IT ADDS MAYBE 30 SECONDS TO THE PROCESS."

FINISHING KNIFE BLADES AND HANDLES

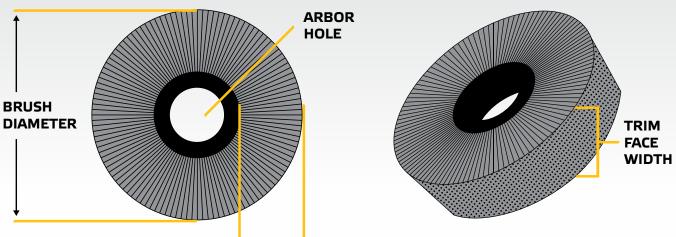
A California knife maker uses Nampower brushes on many components to deburr, clean and polish. To learn more, read the article here: http://info. brushresearch.com/nampower-zodiac-article

> **"I CAN DEBURR AND SURFACE FINISH THE POCKETS IN A KNIFE FRAME WITH A NAMPOWER BRUSH IN 8 TO 12 SECONDS."**



GENERAL APPLICATION AND SELECTION OF **NANDAU Selection**

COMPOSITE HUB WHEEL BRUSHES Standard Nampower Composite Hub Wheels come in 6 inch and 8 inch diameters. Diamond wheel brushes are available in 4 inch (100mm), 6 inch (150mm) and 8 inch (200mm) diameters. Larger diameter brushes are less aggressive and more flexible while shorter smaller diameter brushes are less flexible and more aggressive. Burr size, part shape and conformity, radius requirements, final finish requirements and the machinery the brush is used on are all factors affecting brush diameter selection.



Brush Research's NamPower[™] composite hub wheel brushes are abrasive nylon brushing tools for machine-based and offhand deburring, surface finishing, and edge radiusing. These safe, dependable radial wheel brushes feature molded cores that allows higher filament density which results in better brush performance. Their unique, balanced construction puts more cutting tips at the point of attack. As a safer alternative to wire wheels and with a performance advantage over non-woven abrasive brushes, NamPower composite hub wheel brushes are used in the production of turbine blades, steel gears, machine parts, extrusion cut-offs and shaft finishing. Diamond filament wheel brushes are used to produce an edge radius on cutting tool inserts and to polish the flute relief on drills and end mills. When selecting composite hub wheel brushes, as with all industrial brushes, it is important to consider the proper diameter, face width, and trim length. The brush's face width must be wide enough to deburr a wide edge but also narrow enough to access part recesses that may also need finishing. The abrasive grit selected will affect cutting and finish. Grit selection influences flexibility as well. The coarser the abrasive grit (lower number), the larger the filament diameter is which results in a less flexible, more aggressive brush.

TRIM LENGTH

BRUSH DIAMETER SELECTION



Composite hub brush construction features abrasive filled filaments set into molded cores that allows higher filament density. This unique, balanced construction puts more cutting tips at the point of attack which results in better brush performance, less filament breakage and more even brush wear. Composite hub wheel brushes are a safer alternative to wire wheels and with a performance advantage over non-woven abrasive brushes. **NAMPOWER** WHEEL BRUSHES

| FACE WIDTH | TRIM LENGTH | ARBOR HOLE | GRIT | PART NUMBER |
|---------------|-----------------------------------|--|---|---|
| āmm | 12.5mm | 20mm | .012/600 | DW100X5X600 |
| I0mm | 19mm | 3-¼" | .012/600 | DW150X10X600 |
| l 5mm | 19mm | 3-1⁄4" | .012/600 | DW150X15X600 |
| I0mm | 30mm | 3-1⁄4" | .012/600 | DW200X10X600 |
| l 5mm | 30mm | 3-1⁄4" | .012/600 | DW200X15X600 |
| | WIDTH 5mm 0mm 5mm 0mm | WIDTH LENGTH 5mm 12.5mm 0mm 19mm 5mm 19mm 0mm 30mm | WIDTH LENGTH HOLE Smm 12.5mm 20mm 0mm 19mm 3-¼" 5mm 19mm 3-¼" 0mm 30mm 3-¼" | WIDTH LENGTH HOLE GRIT Smm 12.5mm 20mm .012/600 0mm 19mm 3-¼" .012/600 5mm 19mm 3-¼" .012/600 5mm 19mm 3-¼" .012/600 0mm 30mm 3-¼" .012/600 |

ABRASIVE NYLON WHEELS

| DIAMETER | FACE WIDTH | TRIM LENGTH | ARBOR HOLE | GRIT | PART NUMBER |
|------------|---------------|----------------------|---------------|-------------|---------------|
| 6″ (152mm) | 1/2″ | 1 - 1/2" | 2" | .040/80 SC | CW612805C |
| 6″ (152mm) | 1/2″ | 1 - ¹ /2″ | 2" | .022/120 SC | CW612022120SC |
| 6″ (152mm) | 1/2″ | 1 - ¹ /2″ | 2" | .040/120 SC | CW612040120SC |
| 6″ (152mm) | 1/2″ | 1 - ¹ /2″ | 2" | .035/180 SC | CW612180SC |
| 6″ (152mm) | 1/2″ | 1 - ¹ /2″ | 2" | .022/320 SC | CW6123205C |
| 6″ (152mm) | 1/2″ | 1 - ¹ /2″ | 2" | .018/500 SC | CW612500SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .040/80 SC | CW6180SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .022/120 SC | CW61022120SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .040/120 SC | CW61040120SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .035/180 SC | CW61180SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .022/320 SC | CW61320SC |
| 6″ (152mm) | 1" | 1 - ¹ /2″ | 2" | .018/500 SC | CW61500SC |
| 8″ (203mm) | 1/2″ | 2 - 1/2" | 2" | .040/80 SC | CW81280SC |
| 8″ (203mm) | 1/2″ | 2 - 1/2" | 2" | .022/120 SC | CW812022120SC |
| 8″ (203mm) | 1/2″ | 2 - 1/2" | 2" | .040/120 SC | CW812040120SC |
| 8″ (203mm) | 1/2″ | 2 - ¹ /2″ | 2" | .035/180 SC | CW8121805C |
| 8″ (203mm) | 1/2″ | 2 - ¹ /2″ | 2" | .022/320 SC | CW8123205C |
| 8″ (203mm) | 1/2″ | 2 - ¹ /2″ | 2" | .018/500 SC | CW812500SC |
| 8″ (203mm) | 1" | 2 - 1/2" | 2" | .040/80 SC | CW8180SC |
| 8″ (203mm) | 1" | 2 - ¹ /2″ | 2" | .022/120 SC | CW81022120SC |
| 8″ (203mm) | 1" | 2 - 1/2" | 2" | .040/120 SC | CW81040120SC |
| 8″ (203mm) | 1" | 2 - 1/2" | 2" | .035/180 SC | CW81180SC |
| 8″ (203mm) | 1" | 2 - 1/2" | 2" | .022/320 SC | CW81320SC |
| 8″ (203mm) | 1" | 2 - 1/2" | 2" | .018/500 SC | CW81500SC |

1



43,5*

, C

20

45°

90°

*8,911

- + Balanced construction that reduces machine fatigue

NAMPOWER WHEEL BRUSHES

DIAMOND WHEELS



For machine based or off-hand deburring processes, Nampower™ Composite Hub radial wheels offer a safe, durable alternative to wire wheels or nonwoven abrasives. Their construction and flexibility provide a long lasting wheel with less filament breakage and superior performance.

+ Higher filament density for longer brush life

- + Wider hub thickness with uniformly distributed filaments

ARBOR ADAPTERS

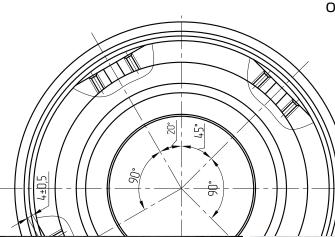
| COMPOSITE WHEEL ADAPTER | DIAMOND WHEEL ADAPTER |
|----------------------------|--|
| CWA2-12 | DWA314-12 |
| CWA2-58 | DWA314-58 |
| CWA2-34 | DWA314-34 |
| CWA2-20MM | DWA314-20MM |
| CWA2-78 | DWA314-78 |
| CWA2-1 | DWA314-1 |
| CWA2-114 | DWA314-114 |
| CWA2-112 | DWA314-112 |
| | ADAPTER CWA2-12 CWA2-58 CWA2-34 CWA2-20MM CWA2-78 CWA2-1 CWA2-114 |

Brush Research produces arbor adapters in a variety of sizes. The adapters are reusable and machined from solid aluminum and designed to offer increased brush support, less brush vibration and longer brush life. DWA adapters are designed for diamond wheels and CWA adapters are designed for standard composite hub wheels.

SUGGESTED OPERATING PARAMETERS

| WHEEL DIAMETER | | RPM | |
|----------------|------|------|---------|
| | DRY | WET | NOMINAL |
| 4″ / 100mm | 3400 | 2400 | 2800 |
| 6″ / 150mm | 1500 | 2250 | 1750 |
| 8″ / 200mm | 1250 | 1650 | 1500 |

* It is suggested to stay under 2,500 SFPM in dry applications and 3,500 SFPM in wet applications



Once brush diameter, grit selection, RPM and depth of cut are established the feed rate can determined empirically. Set the feed rate at the fastest rate that will produce the desired level of deburring/ edge radiusing.

DIAMETE

Optimal brush life and finishing properties are obtained by finding the proper balance between brush speed (RPM), part penetration, and line speed. Lower speeds and lighter pressure give longer brush life, generate less heat, and require less power. Where higher brush speeds and pressures are required, it is recommended to use a more aggressive brush tool. Heat adversely affects the life and performance of the nylon filaments. Applying coolant whenever available is recommended.

NAMPOWER WHEEL BRUSHES ARE IDEAL FOR REMOVING SHARP EDGES FROM METAL PARTS AND CREATING A DESIRED EDGE RADIUS.

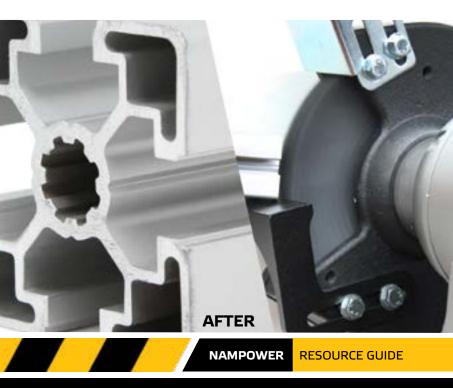
BEFORE

CUT DEPTH

| TER/GRIT | 4" WHEEL | 6" WHEEL | 8" WHEEL |
|----------|----------------|----------|----------|
| .012/600 | 0.050 | 0.070 | 0.110 |
| .018/500 | | 0.150 | 0.250 |
| .022/320 | | 0.150 | 0.250 |
| .022/120 | | 0.150 | 0.250 |
| .035/180 | | 0.075 | 0.125 |
| .040/80 | | 0.075 | 0.125 |
| .040/120 | | 0.075 | 0.125 |
| | | | |

*Standard setup is 10% penetration of the available trim length on the smaller diameter filaments and 5% penetration on larger diameter filaments.

FEED RATE



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