

INDUSTRIAL BRUSHES

MICRO-BRUSHES FLEX-HONE®



Flex-Hone® since 1958
specialists in innovation



SYSTEMY TECHNOLOGIE MECHANICZNE

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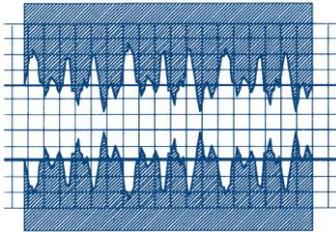
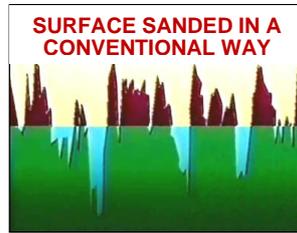
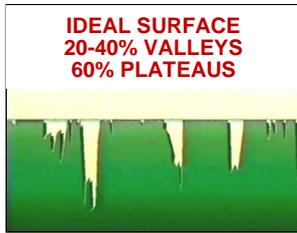
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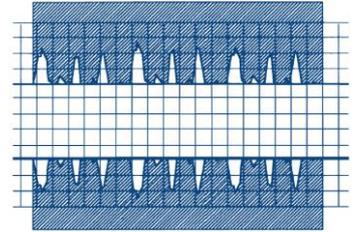
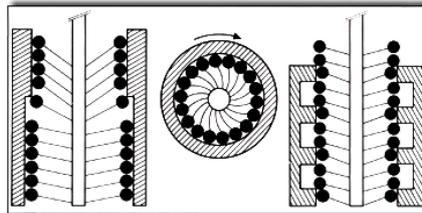
FLEX-HONE®

FLEXIBLE SANDER

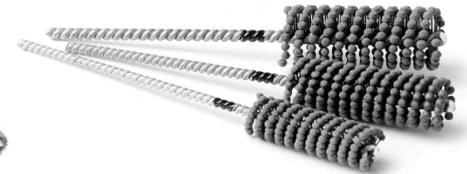
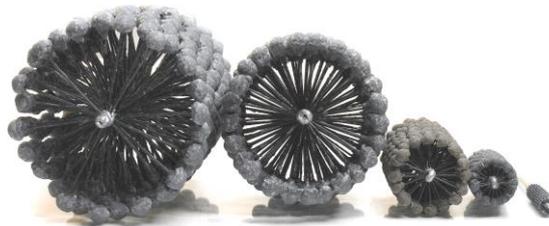
Deburring, Radiusing, Finishing, Superfinishing, Roughness Correction



BEFORE



AFTER



UNIQUE VERSATILITY AND FLEXIBILITY FEATURES

**INDEPENDENT ABRASIVE SPHERES - SELF-CENTERING - AUTOMATIC WEAR COMPENSATION
SPEED AND UNIFORMITY OF PROCESSING - SURFACE FINISH - GENTLE ACTION AT LOW TEMPERATURE**

CUTS PEAKS AND PRODUCES A CROSS-HATCH FINISH, WITH MANY "VALLEYS" AND FEW "PEAKS" FOR BETTER LUBRICANT FILM RETENTION, RESULTING IN SIGNIFICANT BENEFITS IN TERMS OF WEAR, SMOOTHNESS, AND SEALING.

**USABLE ON CNC MACHINES, TRANSFER MACHINES, COLUMN DRILLS, HAND DRILLS
AFTER AND/OR BEFORE DRILLING, BORING, TURNING, GRINDING, LAPPING, ROLLING, ETC.**

**SUCCESSFULLY USED IN THE FOLLOWING SECTORS:
GENERAL AND PRECISION MECHANICAL INDUSTRY, AUTOMOTIVE INDUSTRY, AEROSPACE, NAVAL, HYDRAULIC,
PNEUMATIC, FIREARMS, MILITARY, ETC.**

**FULL RANGE OF DIAMETERS FROM 4MM TO 914MM - 9 TYPES OF ABRASIVES AND 11 GRITS
POSSIBILITY OF PRODUCING SPECIAL FLEX-HONES**

THE RIGHT SOLUTION FOR EVERY PROCESSING NEED





LOW PRESSURE AND TEMPERATURE ABRASIVE PROCESS, WHICH, WITHOUT ALTERATIONS, PRODUCES A LONG-LASTING SURFACE. IT IS A METHOD TO DEVELOP A SURFACE FREE OF FRACTURES, DEFORMITIES, OR FOLDINGS AT THE MICROSTRUCTURE LEVEL OF THE METAL CAUSED BY PREVIOUS PROCESSING.

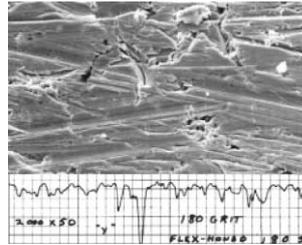
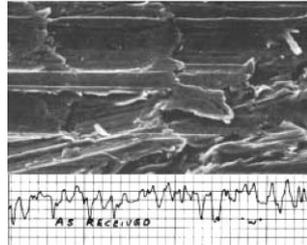
The Flex-Hone produces a surface finish with characteristics not achievable with other processes. This type of processing involves surface finishing, surface geometry, and metal structure. It achieves a "Plateau" finish with a surface free of ridges, tears, and metal folds. The Flex-Hone also deburrs passage holes while lapping the walls of the bore. In hydraulic or pneumatic applications, it extends the life of sealing gaskets and improves their sealing performance.

The Flex-Hone is a durable and flexible tool with a gentle cutting action. Each of the abrasive balls has independent suspension, allowing the Flex-Hone to be self-centering and self-aligning with respect to the bore and to self-compensate for wear. The Flex-Hone is suitable for all types of bores ranging from 4 to 914 mm in diameter.

Example of processing with a conventional sander

1000x magnification.

Spreadings and material folds on the surface, which will detach during use. Finish with many peaks. Characteristics due to the "rigid" sanding action.



After Flex-Hone® usage

Silicon carbide grit #180
1000x magnification

Uniform cross-hatch pattern. Clean and open appearance with spreadings and material folds removed. Excellent semi-plateau profile, with few peaks and many valleys for lubricant retention.

Advantages

- "Plateau" finish over 60%
- Cross-hatch pattern finish
- Better lubricant retention
- Reduction of Ra Rpk and Rvk values
- Increased contact surface
- Lower lubricant consumption
- Reduced Blow-By
- Reduce friction
- Improved surface retention

Processes examples

With the right choice of abrasive and grit from the wide range available, it is possible to achieve:

- **Polishing-Superfinishing-Surface Roughness Correction:** it is possible to reduce roughness and obtain a superfinish, achieving values below Ra 0.06 µm even on materials with a hardness exceeding 80Hrc. Alternatively, it is possible to provide the required roughness to a surface that is too smooth, up to values of approximately Ra 2 µm, still obtaining a surface with a cross-hatch "Plateau" finish. It is possible to standardize the surface finish by eliminating the marks from previous processes.
- **Deburring:** it is possible to achieve deburring or micro-deburring on the entry/exit edges of holes, intersecting holes, and channels, as well as edges of grooves or O-ring seats after drilling, turning, boring, grinding, lapping, etc.
- **Radiusing:** it is possible to round off the sharp edges that remain after boring, drilling, turning, grinding, etc.
- **Bore post-processing:** it can be used to uniformly remove material from a few microns or hundredths up to 0.1 mm on a bore without deforming it, and in certain cases, it can correct pre-existing deformations.
- **Cleaning, descaling:** thanks to its abrasive action, it is also an excellent tool for cleaning, deoxidizing, descaling, etc.



Some before-after examples



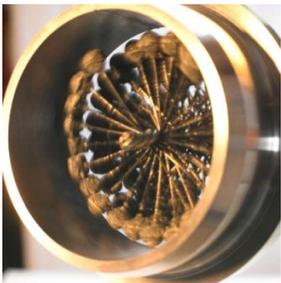
Flex-Hone usage

The Flex-Hone can be used manually with a regular drill, on a column drill, within the processing cycle of CNC machines as a tool, or on transfers for industrial applications, even with high production volumes.



- Using the Flex-Hone dry is not recommended as it significantly reduces its lifespan. It is advised to use whole oil with a viscosity between 10 and 30 or an emulsifiable cutting fluid for mechanical operations. A common spray lubricant can also be used, and when working on brake cylinders, hydraulic brake oil is recommended. Diesel, petroleum, or solvents-containing lubricants can be used but are not recommended as they reduce the Flex-Hone's lifespan by breaking down its abrasive balls more quickly.
- The Flex-Hone works under pressure, so its effective diameter is larger than the bore to be worked on.
- The Flex-Hone **MUST** enter and exit the bore in rotation.
- The Flex-Hone is **NOT** balanced; **DO NOT** spin it at maximum speed before it has entered the bore to be worked on.
- Consult the table for choosing the correct rotation speed in relation to the diameter; however, the rotation speed may vary depending on the application. It is recommended to conduct tests and use the Flex-Hone with the shortest contact time that achieves the desired result to maximize its lifespan. High speeds cause premature wear without achieving appreciable time reductions. **DO NOT** use high-speed tools. For manual use, use a regular electric drill.
- Operate with rapid reciprocating movements with a frequency of 60 to 120 strokes per minute depending on the rotation speed. Accelerate the alternation of strokes at the end of the operation to achieve a cross-hatch pattern of 30°-45°.
- The processing time should be approximately 20-45 seconds for each cylinder in the case of a motor application, but it may vary depending on the material, application, abrasive, grit, and lubrication.
- Wash the cylinders thoroughly after processing and lubricate with oil.
- The lifespan depends on various factors such as the abrasive used, lubrication, material being worked on, whether it is used with a machine or manually, the length of the bore, contact time, etc. Several hundred to over 1000 pieces can be processed with a single Flex-Hone.

Speeds and feeds



The Flex-Hone is a low-speed, high-feed tool. The rotation speed depends on the diameter and application. Below are indicative values, but some processing tests are still necessary to find the correct speed. The feed rate of the Flex-Hone depends on the diameter, working length, and desired cross-hatch angle in the typical cross-hatch finish. Indicative parameters can range from 2500-3000 mm/min for medium to large diameters up to 6,000 mm/min for small diameters. When used on CNC machines, a maximum indicative value can be taken as 5% of the diameter. Below is a table with some examples.



Flex-Hone	∅ Hole (mm)	Feed (mm/rev)	Rotation (rpm)	Flex-Hone	∅ Hole (mm)	Feed (mm/rev)	Rotation (rpm)	Flex-Hone	∅ Hole (mm)	Feed (mm/rev)	Rotation (rpm)
BC 4mm	4	0.2 0.6	1.000 1.200	BC 20mm	20	1.0 2.4	900 1.000	BC/GBD 3"	76	3.8 4.8	600 900
BC 4.5mm	4.5			BC 7/8"	22			GB/GBD 3-1/4"	83		
BC 3/16"	4.75			BC 15/16"	23.8			GB/GBD 3-1/2"	89		
BC 5mm	5			BC 1"	25.4			GB/GBD 3-3/4"	95	4.8 10.0	400 600
BC 5.5mm	5.5			BC 1-1/8"	29			GBD 4"	101		
BC 6mm	6			BC 1-1/4"	31.8			GB 4-1/8"	105		
BC 6.4mm	6.4			BC 1-3/8"	35			GBD 4-1/4"	108		
BC 7mm	7			BC 1-1/2"	38			GBD 4-1/2"	114		
BC 8mm	8			BC 1-5/8"	41			GB 4-5/8"	118		
BC 9mm	9			BC 1-3/4"	45			GBD 5"	127		
BC 9.5mm	9.5	BC 1-7/8"	47.6	GBD 5-1/2"	140						
BC 10mm	10	BC 2"	51	GBD 6"	152						
BC 11mm	11	BC 2-1/8"	54	GBD 6-1/2"	165						
BC 12mm	12	BC 2-1/4"	57	GBD 7"	178						
BC 1/2"	12.7	0.6 1.0	900 1.000	BC 2-3/8"	60	2.4 3.8	600 900	GBD 7-1/2"	190	-	225-300 125-200 60-120
BC 14mm	14			BC 2-1/2"	64			GBD 8"	203		
BC 5/8"	16			BC 2-5/8"	67			GBD 8-1/2" - 11"	-		
BC 18mm	18			BC 2-3/4"	70			GBD 12" - 18"	-		
BC 3/4"	19			BC 2-7/8"	73			GBD 19" - 36"	-		

Abrasive and Grit Coding System



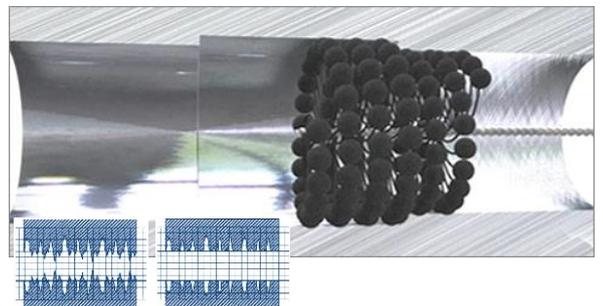
Flex-Hone is available in a complete range of abrasives and grits to meet every processing need. The Flex-Hone has a coding system that allows identification of the abrasive type and grit based on the color on the stem and tip.

Stem Color Abrasive code	Abrasive	Applicazione	Grit / Tip color												
			20	40	60	80	120	180	240	320	400	600	800		
SC <i>No color</i>	Silicon Carbide	Cast iron, ordinary steel, stainless steel	●	●	●	●	●	●	●	●	●	●	●	●	●
AO <i>Black</i>	Aluminum Oxide	Non ferrous (aluminum, brass, bronze, soft metals) Stainless steel for food/medical applications Cylinders with Nikasil or similar coating	●	●	●	●	●	●	●	●	●	●	●	●	●
Z25 <i>Red</i>	Zirconium 25% Alumina 75%	Low/medium carbon steels, cast iron High-production machining where greater durability than SC and AO is required	/	/	●	●	●	●	●	●	/	/	/	/	/
Z49 <i>White</i>	Zirconium 40% Alumina 60%		/	/	/	/	●	●	●	●	/	/	/	/	/
BC <i>Gold</i>	Boron Carbide	Medium/high carbon steels Hardened steel ~45/50 Hrc Titanium, Inconel, Monel	●	●	●	●	●	●	●	●	●	●	●	●	●
LA <i>White spheres</i>	Polished Alumina	Ultra-fine honing/lapping	● Extrafine grit only (~#1000)												
CD <i>Yellow</i>	Diamond	Hard metal, ceramic, hardened steel Materials with hardness even beyond 70-80 HRC	●	●	●	●	●	●	●	●	●	●	●	●	●
CCBN <i>Purple</i>	C.B.N.	Superalloys with high nickel content: Monel®, Inconel®, Incoloy®, Invar®, Rene®, Hasteloy®	●	●	●	●	●	●	●	●	●	●	●	●	●
CG <i>Pink</i>	Ceramic	Special Order Aggressive deburring	●	●	●	●	●	●	●	●	●	●	●	●	●

Grit / Finish selection table

The values are for informational purposes only, as the achievable Ra is influenced by multiple factors such as the nature and hardness of metals, type of lubricant used, contact time, previous machining, Ra before Flex-Hone, etc...

Grit	Ra (µm)	Steel Ductile cast iron	Aluminum Stainless steel Grey cast iron Non Ferrous	Above 60Hrc	Alloy steel	Ordinary steel Ductile cast iron	Grey cast iron AVP, Stainless	Aluminum Brass
# 20	3.2 – 6.3							
# 40	1.7 – 3.2							
# 60	1.5 – 2.0							
# 80	1.2 – 1.6	0.8 – 1.0	1.2 – 1.4		0.8	1.0	1.2	1.4
# 120	0.9 – 1.4	0.6 – 0.8	1.0 – 1.2		0.6	0.8	1.0	1.2
# 180	0.7 – 1.0	0.4 – 0.6	0.8 – 1.0	0.8 – 1.0	0.4	0.6	0.8	1.0
# 240	0.6 – 0.8	0.2 – 0.4	0.6 – 0.8		0.2	0.4	0.6	0.8
# 320	0.5 – 0.7	0.1 – 0.2	0.4 – 0.6		0.1	0.2	0.4	0.6
# 400	0.3 – 0.6	0.05 – 0.1	0.2 – 0.4	0.1 – 0.2	0.05	0.1	0.2	0.4
# 600	0.2 – 0.3	<0.05	<0.2		<0.05	0.05	0.1	0.2
# 800	0.05 – 0.2			<0.1		<0.05	0.05	0.1
# 1000	>0.1						<0.05	0.05



Conversion formulas

$$F = Ra \times \text{"Index"}$$

$$Ra = F / \text{"Index"}$$

F	Index	F	Index
Rt	8.7	Rp	3.6
Rz	7.2	RPM	2.9
Rz ISO	7.6	RMS(Rq)	1.1
Rmax	8.0		



Flex-Hone choice: Size, Abrasive, Grit

The choice of Flex-Hone diameter is determined by the diameter of the hole to be worked. The Flex-Hone is produced and used in oversized conditions compared to the diameter of the hole being worked on, which generates the right cutting pressure for processing. For example, to work on a 22mm hole, the BC7/8" (22mm) should be chosen, which has an actual diameter of 25mm (oversized). If the hole to be worked does not coincide with one of the standard Flex-Hone sizes because it falls between two of them, the larger one should be chosen. For instance, if the hole to be worked is 23mm, falling between BC7/8" (22mm) and BC15/16" (23.8mm), BC15/16" (23.8mm) should be chosen.

Ask our technicians for the right advice for your specific application; they will guide you to choose the right Flex-Hone to achieve the desired result. For a proper recommendation regarding size, abrasive, and grit to use, it is necessary to have various pieces of information:

- Hole diameter to be worked on
- Type of parts to be worked on
- Issue to be addressed with the Flex-Hone (deburring, finishing, superfinishing, etc.)
- Material (indicate if hardened or with surface treatment, preferably provide hardness information)
- Starting roughness (preferably in Ra) or the last machining operation performed (drilling, boring, reaming, etc.)
- Desired or required final roughness
- Quantity of pieces to be worked on
- Whether or not it is possible to use a lubricant (cutting oil or coolant emulsion)
- Whether it will be used manually, on a column drill, or on a machine (lathe, machining center, grinder, etc.)



The 3 pieces of information, usually sufficient in most cases to determine the choice:



Working diameter



Material to be worked on and its condition IF hardened: approximate indication of hardness IF treated: type of treatment and approximate indication of surface hardness (anodization, NiTemper, etc.)



IF Finishing: Target value in Ra or Rt or RZ to achieve, and starting value, i.e., the current state IF Deburring: Any value of Ra or Rt or RZ not to be altered or exceeded

Sizes & Types of Flex-Hone

Size and type Flex-Hone	Ø Hole (mm)	Working range (mm)	Effective Ø C (mm)	Abrasive L. B (mm)	Tot L. A (mm)
BC 4mm	4	3.5 - 4	4.5	21	152
BC 4.5mm	4.5	4 - 4.5	5	20	152
BC 3/16"	4.75	4.5 - 4.75	5.25	20	152
BC 5mm	5	4.75 - 5	5.5	38	203
BC 5.5mm	5.5	5 - 5.5	6	38	203
BC 6mm	6	5.5 - 6	6.5	38	203
BC 6.4mm	6.4	6 - 6.4	7	38	203
BC 7mm	7	6.4 - 7	8	57	203
BC 8mm	8	7-8	9	57	203
BC 9mm	9	8 - 9	10	57	203
BC 9.5mm	9.5	8.5 - 9.5	10.5	57	203
BC 10mm	10	9 - 10	11	57	203
BC 11mm	11	10 - 11	12	57	203
BC 12mm	12	11 - 12	13	57	203
BC 1/2"	12.7	12 - 12.7	14.5	64	203
BC 14mm	14	12.7 - 14	15.5	64	203
BC 5/8"	16	14 - 16	18	64	203
BC 18mm	18	16 - 18	20	64	203
BC 3/4"	19	18 - 19	21	64	203
BC 20mm	20	19 - 20	22	64	203
BC 7/8"	22	20 - 22	25	76	203
BC 15/16"	23.8	22 - 23.8	27	76	203
BC 1"	25.4	23.8 - 25.4	28	76	203
BC 1-1/8"	29	25.4 - 29	32	76	203
BC 1-1/4"	31.8	29 - 31.8	35	76	203
BC 1-3/8"	35	31.8 - 35	38.5	76	203
BC 1-1/2"	38	35 - 38	41.5	76	203
BC 1-5/8"	41	38 - 41	44.5	76	203
BC 1-3/4"	45	41 - 45	48	76	203
BC 1-7/8"	47.6	45 - 47.6	50.8	76	203
BC 2"	51	47.6 - 51	54	76	203
BC 2-1/8"	54	51 - 54	57.2	76	203
BC 2-1/4"	57	54 - 57	60.5	76	203
BC 2-3/8"	60	57 - 60	63.5	76	203
BC 2-1/2"	64	60 - 64	66.5	76	203
BC 2-5/8"	67	64 - 67	69.9	76	203
BC 2-3/4"	70	67 - 70	73	76	203
BC 2-7/8"	73	70 - 73	76.2	76	203
BC 3"	76	73 - 76	79.5	76	203

DBC 1-1/2"	38	35 - 38	41.5	45	127
DBC 1-3/4"	45	41 - 45	48	45	127
DBC 2-1/8"	54	51 - 54	57.2	45	127
DBC 2-1/2"	64	60 - 64	66.5	45	127
DBC 2-3/4"	70	67 - 70	73	45	127
DBC 3-1/8"	79	74 - 79	82.5	45	127

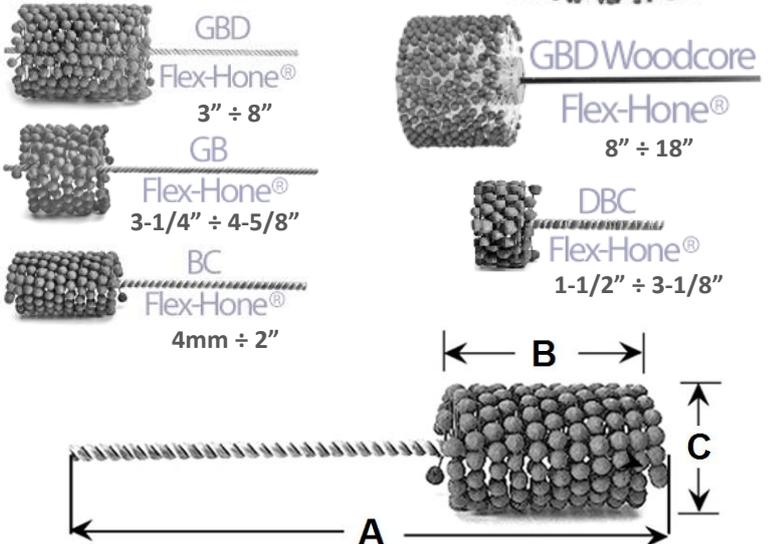
GB 3-1/4"	83	76 - 83	85.5	89	343
GB 3-1/2"	89	83 - 89	92	89	343
GB 3-3/4"	95	89 - 95	98.5	89	343
GB 4-1/8"	105	95 - 105	108	102	343
GB 4-5/8"	118	105 - 118	120.5	102	343

GBD 3"	76	73 - 76	79.5	127	343
GBD 3-1/4"	83	76 - 83	85.5	127	343
GBD 3-1/2"	89	83 - 89	92	127	343
GBD 3-3/4"	95	89 - 95	98.5	152	343
GBD 4"	101	95 - 101	108	152	343
GBD 4-1/4"	108	101 - 108	114.5	152	343
GBD 4-1/2"	114	108 - 114	120.5	152	343
GBD 5"	127	114 - 127	133.5	152	445
GBD 5-1/2"	140	127 - 140	146	152	445
GBD 6"	152	140 - 152	165	159	445
GBD 6-1/2"	165	152 - 165	178	159	445
GBD 7"	178	165 - 178	190.5	178	445
GBD 7-1/2"	190	178 - 190	202	163	445
GBD 8"	203	190 - 203	216	163	445

Size and type Flex-Hone	Ø Hole (mm)	Working range (mm)	Effective Ø C (mm)	Drum Ø (in-mm)	HEX Shaft Ø (in - mm)
GBDH 8"	203	190 - 203	216	3" - 76.2	1/2" - 12.7
GBD 8-1/2"	216	203 - 216	228	3" - 76.2	1/2" - 12.7
GBD 9"	228	216 - 228	241	3" - 76.2	1/2" - 12.7
GBD 9-1/2"	241	228 - 241	254	3" - 76.2	1/2" - 12.7
GBD 10"	254	241 - 254	267	3" - 76.2	1/2" - 12.7
GBD 10-1/2"	267	254 - 267	280	4" - 101.6	1/2" - 12.7
GBD 11"	280	267 - 280	292	4" - 101.6	1/2" - 12.7
GBD 11-1/2"	292	280 - 292	305	4" - 101.6	1/2" - 12.7
GBD 12"	305	292 - 305	318	4" - 101.6	1/2" - 12.7
GBD 12-1/2"	318	305 - 318	330	5" - 127	5/8" - 15.9
GBD 13"	330	318 - 330	344	5" - 127	5/8" - 15.9
GBD 13-1/2"	344	330 - 344	355	5" - 127	5/8" - 15.9
GBD 14"	355	344 - 355	368	5" - 127	5/8" - 15.9
GBD 15"	381	355 - 381	394	5" - 127	5/8" - 15.9
GBD 16"	406	381 - 406	419	5" - 127	5/8" - 15.9
GBD 17"	432	406 - 432	444	6" - 203.2	5/8" - 15.9
GBD 18"	452	432 - 452	470	6" - 203.2	5/8" - 15.9

Size and type Flex-Hone	Ø Hole (mm)	Number of Sections	Type of Section	Drum Ø (in-mm)	HEX Shaft Ø (in - mm)
GBDX 19"	483	22	A	11-1/2"-292	3/4"- 19
GBDX 20"	508	22	B	11-1/2"-292	3/4"- 19
GBDX 21"	533	22	C	11-1/2"-292	3/4"- 19
GBDX 22"	559	22	D	11-1/2"-292	3/4"- 19
GBDX 23"	584	29	A	15-1/2"-394	3/4"- 19
GBDX 24"	610	29	B	15-1/2"-394	3/4"- 19
GBDX 25"	635	29	C	15-1/2"-394	3/4"- 19
GBDX 26"	660	29	D	15-1/2"-394	3/4"- 19
GBDX 27"	686	36	A	19-1/2"-495	1" - 25,4
GBDX 28"	711	36	B	19-1/2"-495	1" - 25,4
GBDX 29"	737	36	C	19-1/2"-495	1" - 25,4
GBDX 30"	762	36	D	19-1/2"-495	1" - 25,4
GBDX 31"	787	36	E	19-1/2"-495	1" - 25,4
GBDX 32"	813	44	A	24-1/2"-623	1-1/4"-31,75
GBDX 33"	838	44	B	24-1/2"-623	1-1/4"-31,75
GBDX 34"	864	44	C	24-1/2"-623	1-1/4"-31,75
GBDX 35"	889	44	D	24-1/2"-623	1-1/4"-31,75
GBDX 36"	914	44	E	24-1/2"-623	1-1/4"-31,75

GBDX SECTIONS SPARE PARTS		
Type	inches	mm
GBDX-A	4-1/8"	105
GBDX-B	4-5/8"	118
GBDX-C	5-1/4"	133
GBDX-D	5-3/4"	146
GBDX-E	6-3/8"	162



FLEX-HONE CODE:

TYPE(BC, DBC, GB, GBD, GBDX) + SIZE(mm or inches) + GRIT + ABRASIVE CODE (SC, AO, AL, Z25, Z49, BC, CD, ..)



Diamond Flex-Hone



Ideal for finishing/superfinishing issues, micro-deburring, edge radiusing on hard materials, even beyond 80Hrc, carbide, hard anodizing, sintered materials, ceramics, alloys for aerospace applications, titanium, inconel, quenched steels, molds, etc.

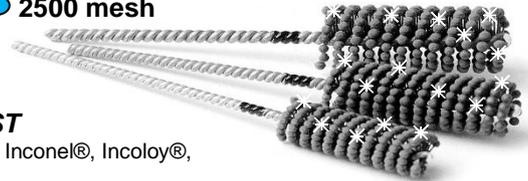
Type	Hole Ø (mm)	Working range (mm)	Final Ø (mm)	Abrasive L. (mm)	Total L. (mm)
Bc 4	4	3.5-4	4.5	20	152
Bc 4,5	4.5	4-4.5	5	20	152
Bc 3/16"	4.75	4.5-4.75	5.25	20	152
Bc 5	5	4.75-5	5.5	38	203
Bc 5,5	5.5	5-5.5	6	38	203
Bc 6	6	5.5-6	6.5	38	203
Bc 1/4"	6.4	6-6.4	7	38	203
Bc 7	7	6.4-7	8	57	203
Bc 8	8	7-8	9	57	203
Bc 9	9	8-9	10	57	203
Bc 9,5	9.5	9-9.5	10.5	57	203
Bc 10	10	9.5-10	11	57	203
Bc 11	11	10-11	12	57	203
Bc 12	12	11-12	13	57	203

Type	Hole Ø (mm)	Working range (mm)	Final Ø (mm)	Abrasive L. (mm)	Total L. (mm)
Bc 1/2"	12.7	12-12.7	14.5	64	203
Bc 14	14	12.7-14	15.5	64	203
Bc 5/8"	16	14-16	18	64	203
Bc 18	18	16-18	20	64	203
Bc 3/4"	19	18-19	21	64	203
Bc 20	20	19-20	22	64	203
Bc 7/8"	22	20-22	25	76	203
Bc 15/16"	23.8	22-23.8	27	76	203
<i>UPON REQUEST</i>					
Bc 1"	25.4	23.8-25.4	28	76	203
Bc 1"1/8	29	25.4-29	32	76	203
Bc 1"1/4	31.8	29-31.8	35	76	203
Bc 1"3/8	35	31.8-35	38.5	76	203
Bc 1"1/2	38	35-38	41.5	76	203

● 170/200mesh ● 800mesh ● 2500 mesh



It is possible to achieve a reduction in Ra from 0.7 to 0.05 µm on carbide.



C.B.N. UPON REQUEST

Specifically for high-nickel superalloys: Monel®, Inconel®, Incoloy®, Invar®, Rene®, Hasteloy®

Flex-Hone for Deburring/Micro-Deburring of Chamfers

These Flex-Hones have been specifically designed with a configuration of the abrasive spheres suitable for working on chamfers after deburring and/or chamfering operations done with chip removal tools such as retractable blade tools. The subsequent use of Flex-Hone allows for deburring, micro-deburring, edge radiusing, and cleaning of surfaces, enabling a uniform finish where the total absence of burrs is required, as in aerospace components. They are available as standard in #180 Silicon Carbide grit and can be customized in any abrasive and grit available for Flex-Hone, adapting to the required surface finish and the processing of aerospace alloys such as Titanium, Inconel, Super CVM, stainless steel alloys, etc.

Hole Ø (mm)	Small chamfer 0.12-0.38 (mm)	Medium chamfer 0.38-0.76 (mm)	Large chamfer 0.76-1.27 (mm)
4	CHA4M	CHB4M	CHC4M
4.5	CHA45M	CHB45M	CHC45M
4.75	CHA316	CHB316	CHC316
5	CHA5M	CHB5M	CHC5M
5.5	CHA55M	CHB55M	CHC55M
6	CHA6M	CHB6M	CHC6M
6.4	CHA64M	CHB64M	CHC64M
7	BC7M	CHB7M	CHC7M
8	BC8M	CHB8M	CHC8M
9	BC9M	CHB9M	CHC9M
9.5	BC95M	CHB95M	CHC95M
10	BC10M	CHB10M	CHC10M
11	BC11M	CHB11M	CHC11M
12	BC12M	CHB12M	CHC12M
12.7	BC12	CHB12	CHC12
14	BC14M	CHB14M	CHC14M
16	BC58	BC58	CHC58
18	BC18M	BC18M	CHC18M
19	BC34	BC34	CHC34
20	BC20M	BC20M	CHC20M
22	BC78	BC78	CHC78



SPECIFY GRIT AND ABRASIVE

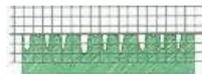
Flex-Hone Rotors

The "Flex-Hone for Rotor" utilizes Flex-Hone technology to produce an ideal cross-hatch finish on the surface of brake discs for cars and motorcycles. It can also be used on clutch discs or for any application requiring this type of surface finish..

- Low vibration
- NON-directional finish
- Ideal for either new or refurbished discs
- Abrasive: Zirconium #1525 Grits: 60,120,240



BEFORE



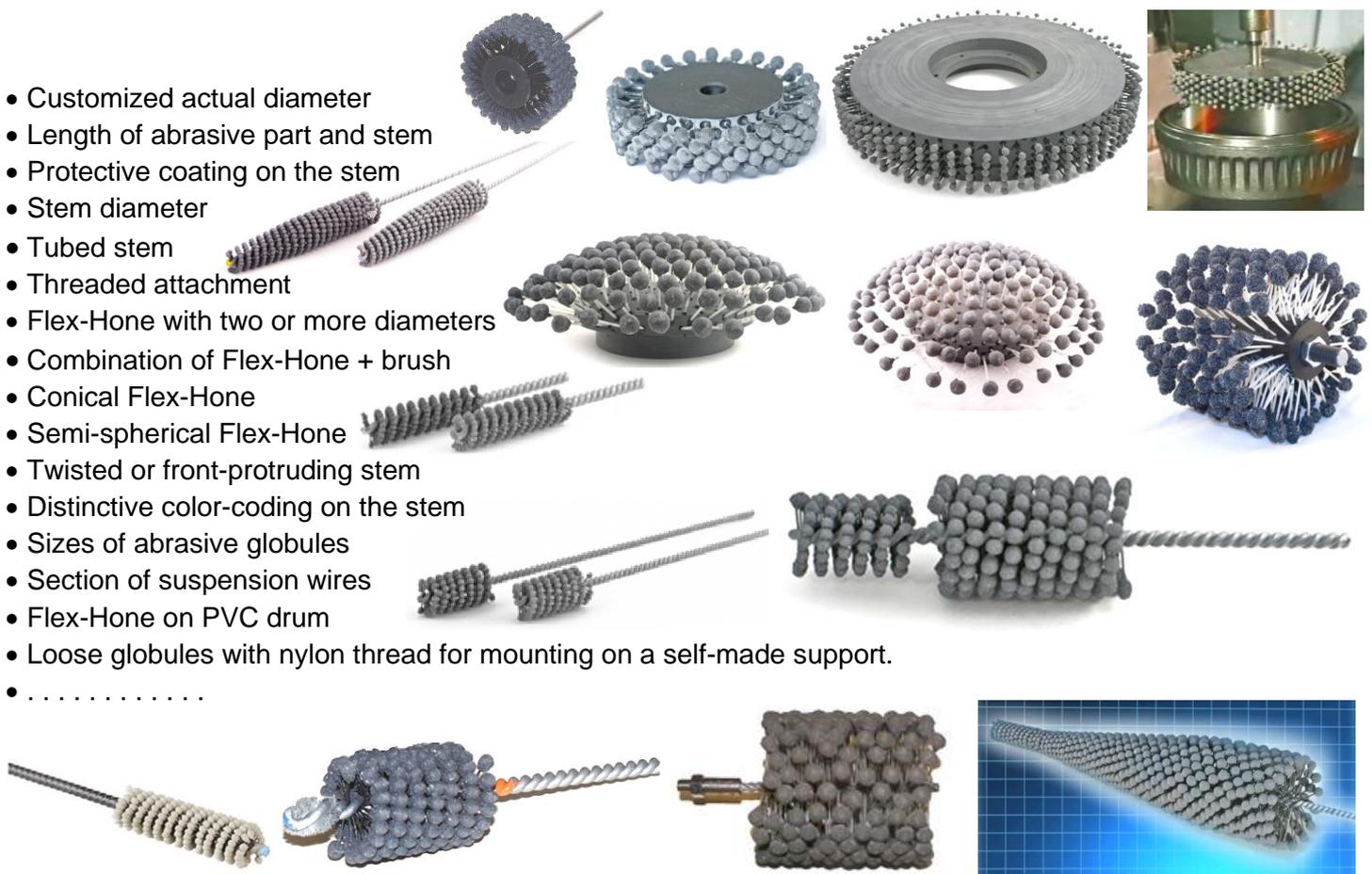
AFTER



Special Flex-Hone

Flex-Hone is produced in a wide variety of sizes, grits, and abrasives. However, it can be supplied in special configurations to address processing challenges that cannot be resolved with the standard range. Custom configurations can be requested by choosing:

- Customized actual diameter
- Length of abrasive part and stem
- Protective coating on the stem
- Stem diameter
- Tubed stem
- Threaded attachment
- Flex-Hone with two or more diameters
- Combination of Flex-Hone + brush
- Conical Flex-Hone
- Semi-spherical Flex-Hone
- Twisted or front-protruding stem
- Distinctive color-coding on the stem
- Sizes of abrasive globules
- Section of suspension wires
- Flex-Hone on PVC drum
- Loose globules with nylon thread for mounting on a self-made support.



The possibilities are numerous; consult us. Our technicians are always available to find new configurations that lend themselves to solving your issues.



FLEX-HONE®



For firearms



Dedicated Flex-Hones for firearms. Successfully used by manufacturers, gunsmiths, and hobbyists, these tools allow for improving the characteristics of firearms. Models for chambers, dies, barrels, etc.



FLEX-HONE®

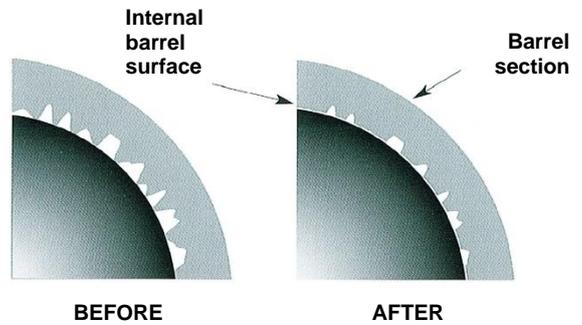
The use of Flex-Hone on firearms

The Flex-Hone quickly and easily creates an optimal "Plateau" surface finish on any type and size of cylinder, guide, chamber, magazine tube, or barrel. It has been in use for decades, and its benefits are proven. "Brush Research Manufacturing" produces a complete line of Flex-Hones for various firearm applications.

The Flex-Hone process is a low-temperature, low-pressure abrasive process that produces a long-lasting surface. This method achieves a surface that is free from metal fragments, smears, or folds, stains, and oxidation. The Flex-Hone creates this finish with minimal micron-level material removal, ensuring that the caliber of your firearms remains at the precise required dimensions. It is easily used with a regular hand drill or rotating spindle, is self-centering, and self-aligns with the bore. Using the Flex-Hone improves the performance and extends the life of your firearms.

The metal surface of your firearms contains microscopic "peaks" and "valleys." Corrosion formation is accelerated by residual stresses on the surface. The "Plateau" finish produced by the Flex-Hone refines the "peaks" and reduces surface tension by removing the most stressed areas. The "valleys" produced by the Flex-Hone enhance the surface's ability to retain oil. Many firearm manufacturers use the Flex-Hone for their final finishing needs.

Not only will your firearms be free of microscopic imperfections, but you will also notice the difference of a perfect finish.



Usage instructions

Always ensure that the magazine and chamber are empty before using the Flex-Hone.

Disassemble the firearm and mount the Flex-Hone on the chuck of a hand drill, a column drill, or a lathe. It is better to use the shortest stem possible compatible with your application.

Always use the Flex-Hone with a high-quality cutting oil or honing fluid to keep heat to a minimum and prevent clogging. We offer an oil specifically formulated for use with the Flex-Hone. However, many lubricants are satisfactory, including water-soluble cutting fluids. We recommend using "Flex-Hone Oil" for a better surface finish and long Flex-Hone life.

Rotate the Flex-Hone before it enters the bore and continue rotating it until it exits the hole being worked on. Advance the Flex-Hone gently at a steady speed. Clean the cylinder using an appropriate cleaner and a cleaning brush. Dry the cylinder and continue wiping it with a lint-free cloth soaked in oil. Continue until the cloth remains clean. Lightly lubricate the surface after cleaning to preserve it.



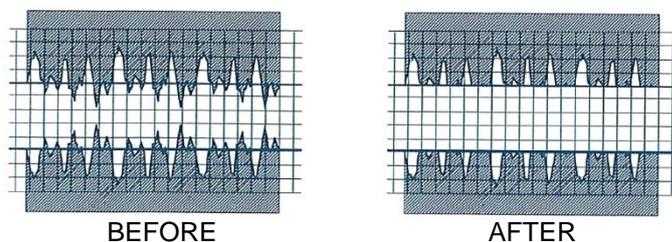
Flex-Hone is available in various sizes, grits, and abrasives



Smooth bore guns

Every bore on your firearms can benefit from a quick treatment with Flex-Hone, including the barrels and chambers of your guns. By using the Flex-Hone, you can rapidly, thoroughly, and safely clean any damage caused by oxidation and corrosion, remove scratches, and eliminate dents that cause plastic fouling.

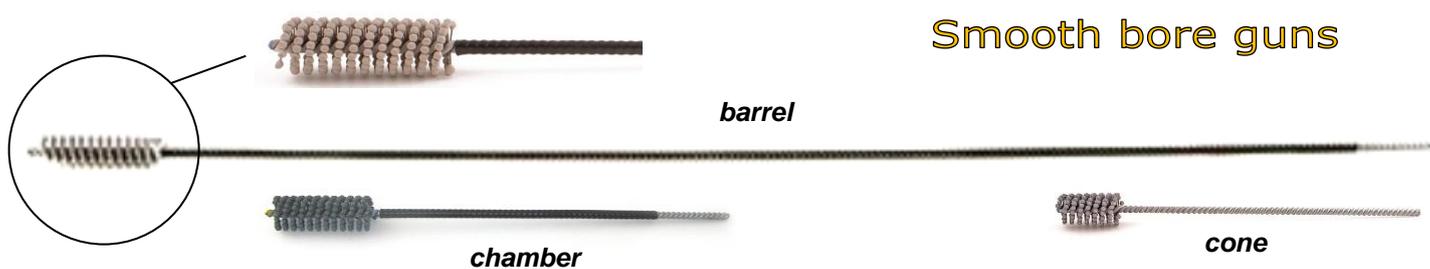
The Flex-Hone produces a smooth finish that prevents the rapid buildup of plastic or lead fouling. The abrasive spheres suspended on nylon filaments remove accumulated residues and leave a surface with superior accuracy, reduced wear, and extended life for your guns.



Barrels and chambers

Unloading and reloading your shotguns will be smoother and easier after working on the chambers with the Flex-Hone. The improved finish allows cartridges to enter the cylinder more easily and be ejected from the chambers without sticking issues. Reloading will be quicker and smoother without causing scratches.

A bore treated with the Flex-Hone will enable you to clean brass residues more frequently and in less time. With the Flex-Hone, you can clean and polish the internal surface of your dies or restore damaged dies, ensuring optimal reloading without marking the surface of the casings.



Smooth bore guns

Gauge	BARRELS			CHAMBERS		CONES		
	180SC restoring	400SC honing	800AO polishing	400SC honing	800AO polishing	180SC restoring	400SC honing	800AO polishing
10	00607	08260	00608	08301	00611	-	-	-
12	00048	05397	00049	06459	00054	02985	08004	02986
16	00050	08261	00051	08302	00055	05611	08264	05612
20	00052	08262	00053	08303	00056	05613	08265	05614
24	13518	13519	13520	-	-	-	-	-
28	11000	08362	11641	09828	03341	-	12241	12242
.410	00609	08263	00610	08304	00612	12764	12765	-
.69 17.5mm MUSKET	12030	-	-	-	-	-	-	-
	Abrasive length: 7,5cm Total length: 86cm Stem coated with sheath to prevent scratching the barrel			Abrasive length: 7,5cm Total length: 30cm Stem coated with sheath to prevent scratching the chamber		Abrasive length: 4cm Total length: 25cm Conical abrasive		

Chamber - Dies



Gauge	400 Grit	800 Grit	Caliber	400 Grit	800 Grit
.17CAL/.22MAG	06380	08305	30-30 Win	12764	-
.17 Hornet	11963	11958	.300 Win Mag	11396	11471
.204 Ruger	13682	13685	.300 Win Short Mag	11899	-
5.56 NATO	09246	09247	.300 AAC Blackout	12403	12404
.22 Hornet	09313	11521	7.62x39 SAAMI	08949	08960
.22 Long Rifle	12158	12159	7.62x51 NATO	09259	09250
.223 Rem	06262	06263	.303 Savage	-	13639
.223 Rem AR-15	12256	12257	.303 British	-	11934
.243	07643	08306	.308	04698	08041
25-06	07647	08307	.338 Win Mag	13026	13027
6.5x47 Lapua	-	11906	.338 Lapua Mag	09435	09436
6.5 Grendel	12809	12810	.357 Mag	08310	03309
6.8 Remington SPC	09478	09479	.416 Barrett	09437	09438
.270 Win	08351	08352	.44 Cal	06381	08311
.270 Weatherby Mag	13461	13462	.44 Mag	08312	03310
7MM Rem Mag	11638	13542	.45 Colt	03311	08313
7MM-08 Rem	13686	13687	.458 SOCOM	13228	13229
.284 Win	-	11896	.50 Muzzle Load	12658	12659
30-06	07409	08308	.50 BMG	07410	07411
.30 Carabine	13224	13225			

Available on request for any gauge



Gauge	400 Grit	800 Grit	Gauge	400 Grit	800 Grit
.32 Tamburo revolver	05470	05471	.41 Mag Revolver drum	00901	00902
9x18 Makarov	13234	13235	.44 Mag Revolver drum	00903	00904
9MM	07584	08309	.45 Colt Revolver drum	00907	00908
.357Mag/.38 Tamburo revolver	00899	00900	.45 ACP	00905	00906
.380 ACP	13321	13322	1911 spring housing	00909	00910
10mm AUTO	12739	12740	1911 Main Lug Area	-	BC18M800
.40 S&W	13236	13237	S&W, Beretta, SIG slide	-	BC12800

Available on request for any gauge

	180SC	400AO	600AO	800AO	AL (#1000)
.68 Paintball					
Rear hole	-	00642	00733	-	-
Chamber	00750	-	00733	00734	01199

Other brushes

12 gauge chamber brass brush	06629	Shotgun Port Ø 3.2mm	06632
20 gauge chamber brass brush	06630	Shotgun Port Ø 4.75mm	06633
Gas ring	06631	Metal brush, horsehair bristles 9.5mm	#1
		Metal brush, horsehair bristles 12.7mm	#2

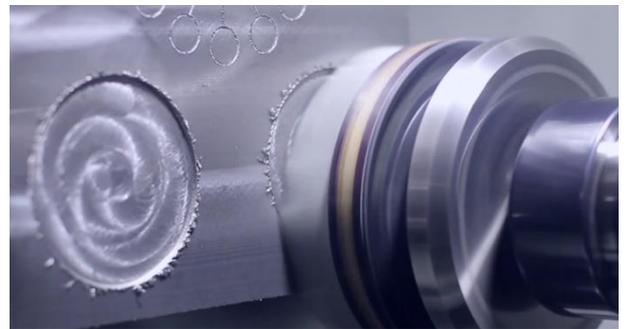
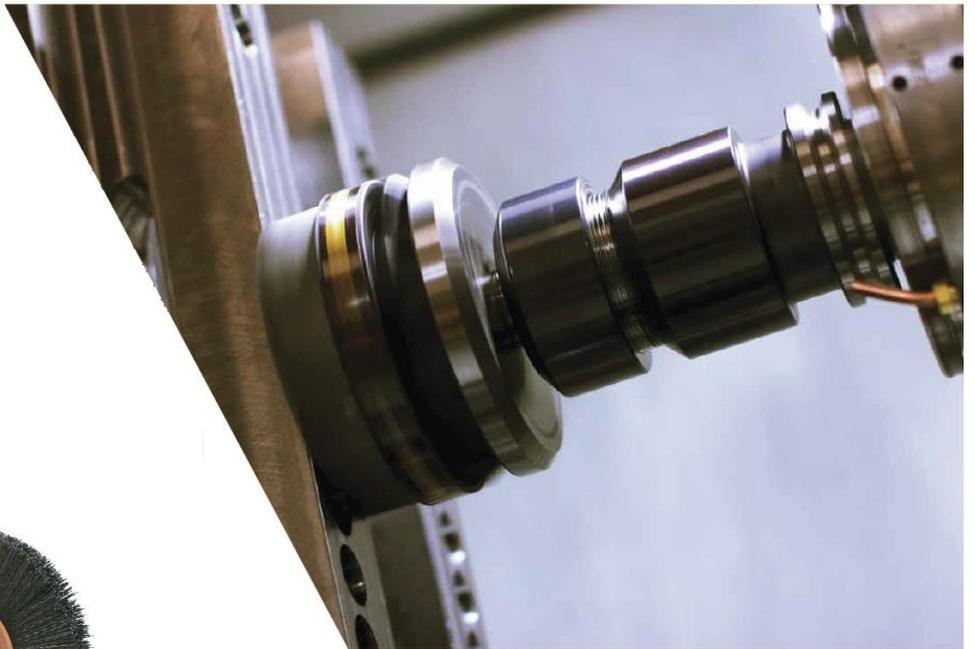
Handle Material	Code	Bristles
Plastic	93-AP	.006-0.15mm Stainless
	93-APB	.006-0.15mm Brass
	93-APH	Horse hair
	93-APP	.006-0.15mm Bronze
	93-APN	.012-0.3mm Nylon



Packaging: 12pcs bags



**BRUSH RESEARCH
MANUFACTURING**



ROD BRUSHES

Brush diameter

Type in Abrasive Nylon, *coded AY or AD*, are indicated with the nominal working diameter, so the actual diameter is larger as they are designed to work in compression or oversize compared to the bore.

Other types (stainless steel, steel, brass, nylon, bristle) *coded A, S, C, B, N, H, Butterfly* are indicated with the actual diameter of the brush. Any increase in diameter compared to the hole to be worked on must be calculated based on the application. Generally, an increase of around 20% compared to the diameter is recommended.

Threads

In the case of working on threads, the brush diameter should be equal to the maximum diameter of the thread. Therefore, if using Abrasive Nylon, verify the actual diameter and not the nominal one.

For example, for an M8 stainless steel thread, you should choose a brush like 85S312, and for Abrasive Nylon, a brush like 85AY281. The brushes 81A and 85S already have a medium-soft filament up to a diameter of 12.7mm. For larger diameters, the recommended stainless steel brushes are Butterfly or the models 85Sx and 85Sxx with fine and extra-fine wire.

CIRCULAR DISC BRUSHES

Circular disc brushes are often an excellent tool for deburring operations, both manual and with CNC or robots, if the correct choice of diameter and filament is made. For use on CNC, we suggest models C and CY and CG (Ceramics) with adapter stems UA1 and UA4, which allow the installation of two brushes side by side to achieve a higher density of filaments. They can be used on external or internal surfaces or complex surfaces. The working pressure depends on various factors such as the type of operation, the material being worked, the brush diameter, etc. In case of doubts, consult our technicians.

ABRASIVE NYLON BRISTLES

The cross-sectional diameter of the abrasive nylon bristles varies depending on the grit, below are some examples:

Abrasive	Abrasive Nylon bristle (#grit / diameter)							
	#800 0.25mm .01"	#600 0.3mm .012"	#500 0.5mm .018"	#320 0.6mm .022"	#180 0.9mm .035"	#120 1.0mm .04"	#120 0.6mm .022"	#80 1.0mm .04"
Aluminum Oxide		o	o	o	o	o		o
Silicon Carbide			o	o	o	o	o	o
Ceramic				o	o	o	o	o
Diamond	o							
Silicate	Extra-fine grit – Bristle Ø 0.2mm .008"							

BRUSH CHOICE

Steel Cast iron Stainless steel	Deburring	Finish not important	Aggressive brush – Steel or stainless Abrasive nylon brush – coarse grit SC from #80 to #180
		Medium finish	Medium/soft brush – Steel or stainless Abrasive nylon brush – medium grit SC from #180
	Finishing, cleaning	Extra-fine brush – Steel or stainless	Abrasive nylon brush – medium/fine grit AO, SC from #180 to #320
		Superfinishing	Abrasive nylon brush – fine grit AO, Diamond from #600 to #800 or Silicate
Aluminum Brass Non Ferrous	Deburring	Finish not important	Abrasive nylon brush – coarse grit AO from #80 to #180
		Medium finish	Abrasive nylon brush – medium grit SC from #180 to #320
	Finishing, cleaning	Superfinishing	Abrasive nylon brush – fine grit AO, Diamond from #600 to #800 or Silicate
		Superfinishing	Abrasive nylon brush – fine grit AO, Diamond from #600 to #800 or Silicate

MICROBRUSHES 81 A/B

Deburring, cleaning, finishing
Bristles & Stem Stainless steel

Protruding stem
 single spiral
 (through holes)



TYPE	Brush Ø		Bristle Ø	Brush length	Stem Ø	Total length	Pack. Pcs
	mm	Inches	mm		mm		
81-A .024"	0.6	.024	0.076 .003"	6.4 1/4"	0.4 .015"	76.2mm 3"	12
81-A .032"	0.8	.032		15.9 5/8"	0.4 .016"		
81-A 1.0 mm	1.0		0.05 .002"	19 3/4"	0.7 .026"		
81-A .047"	1.2	.047		15.9 5/8"	0.7 .026"		
81-A .054"	1.4	.054	0.076 .003"	19 3/4"	0.9 .034"		
81-A 1.5 mm	1.5						
81-A .063"	1.6	.063					
81-A 2.0 mm	2.0						
81-A .079"	2.0	.079					
81-A .094"	2.4	.094					
81-A 2.5 mm	2.5			25.4 1"	1.1 .043"		
81-A .109"	2.8	.109					
81-A 3.0 mm	3.0						
81-A .125"	3.2	.125					
81-A 3.5 mm	3.5						
81-A .142"	3.6	.142					
81-A .156"	4.0	.156	38.1 1-1/2"	2.1 .083"			
81-A 4.0 mm	4.0						
81-A .172"	4.4	.172					
81-A 4.5 mm	4.5						
81-A .189"	4.8	.189					
81-A 5.0 mm	5.0						
81-A 5.5 mm	5.5		0.1 .004"	3.2 .125"			
81-B 7/32"	5.5	.219					
81-A 6.0 mm	6.0						
81-B 1/4"	6.4	.250					
81-A 6.5 mm	6.5						
81-B 5/16"	7.9	.312					
81-B 3/8"	9.5	.375	0.13 .005"	3.6 .140"			
81-B 7/16"	11.1	.437					
81-B 1/2"	12.7	.500					
			38.1 1-1/2"	4.3 .168"			



81AKIT – 81AYKIT*
 .032-.047-.054-.079-.094-.109-.125-.142-.156-.172-.189

81AMMKIT – 81AYMMKIT*
 1-1.5-2-2.5-3-3.5-4-4.5-5-5.5-6-6.5

*81AY kits come in #600AO grit



For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

Abrasive Nylon bristles

Code	Diameter				Silicon Carbide Grit					Aluminum Oxide Grit				Diamond Grit	Silicate Grit	Brush length mm	Total length mm	Stem Ø mm	Max rotation speed Rpm		
	Hole		Brush		80	120	180	320	500	80	120	180	320							500	600
	inch	mm	Inch	mm																	
81AY032	.032	0.8	.035	0.9												15.9 5/8"	76.2 3"	0.40 .016"	800		
81AY 1.0		1.0	.043	1.1												19 3/4"		0.7 .026"			
81AY047	.047	1.2	.052	1.3												15.9 5/8"		0.9 .034"			
81AY054	.054	1.4	.059	1.5												19 3/4"		1.1 .043"			
81AY 1.5		1.5	.065	1.7												25.4 1"		1.4 .055"			
81AY063	.063	1.6	.069	1.8												38.1 1-1/2"		1.8 .072"			
81AY 2.0		2.0	.079	2.2												25.4 1"		2.1 .083"			
81AY079	.079	2.0	.087	2.2												38.1 1-1/2"		2.8 .110"			
81AY094	.094	2.4	.103	2.6												25.4 1"		2.5 .097"			
81AY 2.5		2.5	.108	2.7																	
81AY109	.109	2.8	.120	3.0																	
81AY 3.0		3.0	.130	3.3																	
81AY125	.125	3.2	.138	3.5																	
81AY 3.5		3.5	.152	3.8																	
81AY142	.142	3.6	.156	3.9																	
81AY156	.156	4.0	.172	4.4																	
81AY 4.0		4.0	.173	4.4																	
81AY172	.172	4.4	.189	4.8																	
81AY 4.5		4.5	.195	5.0																	
81AY189	.189	4.8	.208	5.3																	
81AY 5.0		5.0	.217	5.5																	
81AY 5.5		5.5	.238	6.0																	
81AY7/32	.219	5.6	.241	6.1												38.1 1-1/2"					
81AY 6.0		6.0	.260	6.6												25.4 1"					
81AY1/4	.250	6.4	.275	7.0												38.1 1-1/2"					
81AY 6.5		6.5	.281	7.1												25.4 1"					
81AY5/16	.312	7.9	.344	8.7																	
81AY3/8	.375	9.5	.413	10.5																	
81AY7/16	.438	11.1	.481	12.2																	
81AY1/2	.500	12.7	.550	14.0																	
Package:					12pcs										6pcs	12pcs					

For holes choose the specified hole diameter, for threads choose effective brush diameter equal to thread max Ø

● Standard ● Semi-Standard ● Upon request

SERIES 85 BRUSHES – Blind holes and through holes

Single spiral twisted stem (blind holes)

Deburring, cleaning, finishing, also suitable for honing machines

Standard: short

Upon request: With ring handle (RH) or wooden handle (WH)



Stainless steel – Carbon steel – Brass 80/20 – Nylon 6-12 bristles

Stainless steel 302	Bristle Ø mm	Carbon steel	Bristle Ø mm	Brass 80/20	Brass bristle Ø mm	Nylon 6-12	Nylon bristle Ø mm	Natural bristle	Brush Ø		Brush length mm	Total length mm	Package pcs
									mm	inches			
85-S2-125	0.05 .002"	/	/	/	/	/	/	/	3.2	1/8	25.4 1"	101.6 4"	12
85-S3-125	0.076 .003"	/	/	85-B125	0.076 .003"	85-N125	0.13 .005"	85-H125	3.2	1/8			
85-S156		/	/	85-B156		85-N156		85-H156	4.0	5/32			
85-S187		/	/	85-B187		85-N187		85-H187	4.8	3/16			
85-S219		/	/	85-B219		85-N219		85-H219	5.6	7/32			
85-S250	0.1 .004"	85-C250	0.15 .006"	85-B250	0.13 .005"	85-N250	0.2 .008"	85-H250	6.4	1/4	31.6 1-1/4"	114.3 4-1/2"	
85-S281		85-C281		85-B281		85-N281		85-H281	7.1	9/32			
85-S312		85-C312		85-B312		85-N312		85-H312	7.9	5/16			
85-S344		85-C344		85-B344		85-N344		85-H344	8.7	11/32			
85-S375		85-C375		85-B375		85-N375		85-H375	9.5	3/8			
85-S406		85-C406		85-B406		85-N406		85-H406	10.3	13/32			
85-S437		85-C437		85-B437		85-N437		85-H437	11.1	7/16			
85-S469		85-C469		85-B469		85-N469		85-H469	11.9	15/32			
85-S500	0.13 .005"	85-C500	85-B500	85-N500	85-H500	12.7	1/2						
85-S562	0.15 .006"	85-C562	85-B562	85-N562	85-H562	14.3	9/16	38.1 1-1/2"	127 5"				
85-S625	0.2 .008"	85-C625	85-B625	85-N625	85-H625	15.9	5/8						
85-S687		85-C687	85-B687	85-N687	85-H687	17.5	11/16						
85-S750		85-C750	85-B750	85-N750	85-H750	19.1	3/4						
85-S812		0.25 .010"	85-C812	85-B812	85-N812	85-H812	20.6	13/16					
85-S875	85-C875		85-B875	85-N875	85-H875	22.2	7/8						
85-S937	85-C937		85-B937	85-N937	85-H937	23.8	15/16						
85-S1000	85-C1000		85-B1000	85-N1000	85-H1000	25.4	1						
85-S1250	0.25 .010"	85-C1250	85-B1250	85-N1250	/	31.8	1-1/4	63.5 2-1/2"	165.1 6-1/2"				
85-S1500		85-C1500	85-B1500	85-N1500	/	38.1	1-1/2						
85-S1750	0.3 .012"	85-C1750	85-B1750	85-N1750	/	44.5	1-3/4	76.2 3"	177.8 7"				
85-S2000		85-C2000	85-B2000	85-N2000	/	50.8	2						
85-S2500		85-C2500	85-B2500	85-N2500	/	63.5	2-1/2						
85-S3000		85-C3000	85-B3000	85-N3000	/	76.2	3						

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

Abrasive Nylon bristles

Code	Diameter			Silicon Carbide Grit					Aluminum Oxide Grit					Pack. Pcs	Diamond Grit		Brush length mm	Total length mm	Stem Ø mm	
	Hole Inches	Hole mm	Brush mm	80	120	180	320	500	80	120	180	320	500		600	400				800
85AY 125	.125	3.2	3.5			●	●	●			●	●	●	●		●	12	25.4 1"	101.6 4"	1.9 .073"
85AY 156	.156	4.0	4.4			●	●	●			●	●	●	●		●				
85AY 187	.187	4.7	5.2	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 219	.219	5.6	6.1	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 250	.250	6.4	7.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 281	.281	7.1	8.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 312	.312	7.9	8.7	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 344	.344	8.7	9.6	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 375	.375	9.5	10.5	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 406	.406	10.3	11.3	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 437	.437	11.1	12.2	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 469	.469	11.9	13.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 500	.500	12.7	14.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 562	.562	14.3	15.7	●	●	●	●	●	●	●	●	●	●	●		●	6	38.1 1-1/2"	127 5"	4.8 .190"
85AY 625	.625	15.9	17.5	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 687	.687	17.4	19.2	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 750	.750	19.1	21.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 812	.812	20.6	22.7	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 875	.875	22.2	24.4	●	●	●	●	●	●	●	●	●	●	●		●				
85AY 937	.937	23.8	26.2	●	●	●	●	●	●	●	●	●	●	●		●				
85AY1000	1.000	25.4	28.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY1250	1.250	31.8	35.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY1500	1.500	38.1	42.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY1750	1.750	44.5	49.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY2000	2.000	50.8	56.0	●	●	●	●	●	●	●	●	●	●	●		●	3	76.2 3"	177.8 7"	5.6 .220"
85AY2500	2.500	63.5	70.0	●	●	●	●	●	●	●	●	●	●	●		●				
85AY3000	3.000	76.2	84.0	●	●	●	●	●	●	●	●	●	●	●		●				

For holes choose the specified hole diameter, for threads choose effective brush diameter equal to thread max Ø

● Standard ● Semi-Standard ● Upon request



SERIES 83 BRUSHES– Through holes

Single spiral protruding stem (through holes)

Stainless steel – Carbon steel – Brass – Nylon bristles



Stainless steel	Bristle Ø mm	Carbon steel	Bristle Ø mm	Brass 80/20	Bristle Ø mm	Nylon 6-12	Bristle Ø mm	Brush Ø		Brush length mm	Total length mm	Pack. pcs
								mm	inch			
83-S250	0.1	83-C250	0.13	83-B250	0.13	83-N250	0.2 .008"	6.4	1/4	38.1	114.3	12
83-S312	.004"	83-C312		83-B312		83-N312	0.25	7.9	5/16			
83-S375	0.13	83-C375		83-B375		83-N375		9.5	3/8			
83-S437	.005"	83-C437		83-B437		83-N437		11.1	7/16			
83-S500	0.15	83-C500		83-B500		83-N500		12.7	1/2			
83-S562	.006"	83-C562		83-B562		83-N562		14.3	9/16			
83-S625	0.2	83-C625	0.2	83-B625	0.2	83-N625		0.3 .012"	15.9	5/8	44.5	152.4
83-S750		83-C750		83-B750		83-N750	0.35	19.0	3/4			
83-S875		83-C875		83-B875		83-N875	.014"	22.2	7/8			
83-S1000		83-C1000		83-B1000		83-N1000	.017"	25.4	1			
83-S1250	0.25	83-C1250	0.25	83-B1250	0.25	83-N1250	0.56	31.8	1-1/4	63.5	177.8	6
83-S1500		83-C1500		83-B1500		83-N1500		38.1	1-1/2			
83-S1750		83-C1750		83-B1750		83-N1750		44.5	1-3/4			
83-S2000		83-C2000		83-B2000		83-N2000		50.8	2			

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

SERIES 84 BRUSHES – Long

Single spiral protruding stem (through holes)

Stainless steel – Carbon steel – Brass – Nylon bristles



Stainless steel 302	Bristle Ø mm	Carbon steel	Bristle Ø mm	Brass 80/20	Bristle Ø mm	Nylon 6-12	Bristle Ø mm	Natural bristle	Brush Ø		Brush length mm	Total length mm	Pack. pcs	
									mm	pollici				
84-S125	0.076	84-C125	0.076	84-B125	0.076	84-N125	0.13	84-H125	3.2	1/8	31.8	203.2	12	
84-S187	.003"	84-C187	.003"	84-B187	.003"	84-N187	.005"	84-H187	4.8	3/16	38.1			8"
84-S250	0.1	84-C250	0.15	84-B250	0.13	84-N250	0.2	84-H250	6.4	1/4	50.8	254	6	
84-S312		84-C312		84-B312		84-N312	.008"	84-H312	7.9	5/16				
84-S375		.004"		84-C375		84-B375	84-N375	0.25 .010"	84-H375	9.5				3/8
84-S437		84-C437		84-B437		84-N437	0.3	84-H437	11.1	7/16				
84-S500		0.13 .005"		84-C500		84-B500	84-N500	.012"	84-H500	12.7				1/2
84-S562		0.15 .006"		84-C562		84-B562	84-N562	0.35	84-H562	14.3				9/16
84-S625	0.2	84-C625	0.2	84-B625	0.2	84-N625	.014"	84-H625	15.9	5/8	76.2	304.8	6	
84-S750		84-C750		84-B750		84-N750	0.43	84-H750	19.0	3/4				
84-S875		84-C875		84-B875		84-N875	.017"	84-H875	22.2	7/8				
84-S1000		84-C1000		84-B1000		84-N1000	0.56	84-H1000	25.4	1				
84-S1125	0.25	84-C1125	0.25	84-B1125	0.25	84-N1125	0.56	84-H1125	28.6	1-1/8	88.9	457.2	3	
84-S1250		84-C1250		84-B1250		84-N1250		31.8	1-1/4					
84-S1375		84-C1375		84-B1375		84-N1375		34.9	1-3/8					
84-S1500		84-C1500		84-B1500		84-N1500		38.1	1-1/2					
84-S1625		84-C1625		84-B1625		84-N1625		41.3	1-5/8					
84-S1750		84-C1750		84-B1750		84-N1750		44.5	1-3/4					
84-S2000	0.3	84-C2000	0.3	84-B2000	0.3	84-N2000	0.63	84-H2000	50.8	2	101.6	18"	3	
84-S2250		84-C2250		84-B2250		84-N2250		57.2	2-1/4					
84-S2500		84-C2500		84-B2500		84-N2500		63.5	2-1/2					
84-S2750		84-C2750		84-B2750		84-N2750		69.9	2-3/4					
84-S3000		84-C3000		84-B3000		84-N3000		76.2	3					

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

SERIES 90 AY BRUSHES

Double twisted stem - double spiral

Abrasive Nylon bristle



TYPE	Diameter			Abrasive											Brush length mm	Stem Ø mm	Total length mm	Pack. pcs		
	Hole		Brush mm	Silicon Carbide					Aluminum Oxide											
	Inches	Mm		80	120	180	320	500	80	120	180	320	500	600						
90-AY 750	0.750	19.1	21	●	●	●	●	●	●	●	●	●	●	●	●	●	38.1	7.1 .280"	152.4	6
90-AY 875	0.875	22.2	24.5	●	●	●	●	●	●	●	●	●	●	●	●	●	1-1/2"			
90-AY 1000	1.000	25.4	28	●	●	●	●	●	●	●	●	●	●	●	●	●	50.8	2"	203.2	8"
90-AY 1250	1.250	31.8	35	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 1500	1.500	38.1	42	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 1750	1.750	44.5	49	●	●	●	●	●	●	●	●	●	●	●	●	●	76.2	3"	254	10"
90-AY 2000	2.000	50.8	56	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 2250	2.250	57.2	63	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 2500	2.500	63.5	70	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 2750	2.750	69.9	77	●	●	●	●	●	●	●	●	●	●	●	●	●	101.6	4"		
90-AY 3000	3.000	76.2	84	●	●	●	●	●	●	●	●	●	●	●	●	●				
90-AY 3500	3.500	88.9	98	●	●	●	●	●	●	●	●	●	●	●	●	●				

For holes choose the specified hole diameter, for threads choose effective brush diameter equal to thread max Ø

BUTTERFLY SERIES – Thread cleaning

Adapters: brushes BR-8H 2.4mm(3/32") stem / brushes BR-12H 3.2mm(1/8") stem

Stainless steel – Carbon steel – Brass – Nylon bristle



Stainless steel	Bristle Ø mm	Carbon steel	Bristle Ø mm	Brass 80/20	Bristle Ø mm	Nylon 6-12	Bristle Ø mm	Brush Ø		Brush length mm	Stem Ø mm	Pack. pcs		
								mm	Inch					
BS 250	0.13 .005"	BR 250	0.076 .003"	BB 250	0.076 .003"	BN 250	0.25 .010"	6.4	1/4	14.3 9/16"	2.4 3/32"	12		
		BR 281		7.2				9/32						
BS 312	0.15 .006"	BR 312	0.15 .006"	BB 312	0.15 .006"	BN 312	7.9	5/16						
		BR 344		8.8			11/32							
BS 375	0.076 .003"	BR 375	0.076 .003"	BB 375	0.13 .005"	BN 375	9.5	3/8						
		BR 406		10.3			13/32							
BS 437	0.15 .006"	BR 437	0.15 .006"	BB 437	0.13 .005"	BN 437	11.1	7/16						
		BR 469		11.9			15/32							
BS 500	0.2 .008"	BR 500	0.2 .008"	BB 500	0.13 .005"	BN 500	12.7	1/2						
BS 562		14.3		9/16										
BS 625	0.15 .005"	BR 625	0.15 .005"	BB 625	0.13 .005"	BN 625	15.9	5/8	15.9 5/8"				3.2 1/8"	12
BS 750		19.0		3/4										
BS 875	0.15 .006"	BR 875	0.15 .006"	BB 875	0.13 .005"	BN 875	22.2	7/8						
BS 1000		23.8		15/16										
BS 1250	0.2 .008"	BR 1000	0.2 .008"	BB 1000	0.13 .005"	BN 1000	25.4	1						
		BR 1063		27.0			1-1/16							
BS 1250	0.15 .006"	BR 1125	0.15 .006"	BB 1125	0.13 .005"	BN 1125	28.6	1-1/8						
		BR 1188		30.2			1-3/16							
BS 1250	0.15 .006"	BR 1250	0.15 .006"	BB 1250	0.13 .005"	BN 1250	31.8	1-1/4						
		BRR 375		9.5			3/8							
BS 1250	0.15 .006"	BRR 437	0.15 .006"	BB 437	0.13 .005"	BN 437	11.1	7/16						
		BRR 500		12.7			1/2							

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

SERIES 90 BRUSHES

Quattro fili – double spiral – Available with or without threaded adapter:

1/2" to 3/4" brush → 1/8" external thread

7/8" brush and above → 1/4" external thread

Provided with threaded attachment unless otherwise specified



Stainless steel 302	Bristle Ø mm	Stainless steel	Bristle Ø mm	Carbon steel	Bristle Ø mm	Brass 80/20	Bristle Ø mm	Nylon 6-12	Bristle Ø mm	Brush Ø		Brush length mm	Total length mm					
										mm	Inches							
90-SS500	0.2 .008"	90-S500	0.2 .008"	90-C500	0.2 .008"	90-B500	0.2 .008"	90-N500	0.4 .016"	12.7	1/2	101.6 4"	177.8 7"					
90-SS625	0.25 .010"	90-S625	0.25 .010"	90-C625	0.25 .010"	90-B625	0.25 .010"	90-N625		15.9	5/8							
90-SS750		90-S750		90-C750		90-B750		90-N750		19.0	3/4							
90-SS875		90-S875		90-C875		90-B875		90-N875		22.2	7/8							
90-SS1000	0.3 .012"	90-S1000	0.3 .012"	90-C1000	0.3 .012"	90-B1000	0.3 .012"	90-N1000	0.56 .022"	25.4	1	114.3 4-1/2"	190 7-1/2"					
90-SS1250		90-S1250		90-C1250		90-B1250		90-N1250	31.8	1-1/4								
90-SS1500		90-S1500		90-C1500		90-B1500		90-N1500	38.1	1-1/2								
90-SS1750		90-S1750		90-C1750		90-B1750		90-N1750	44.5	1-3/4								
90-SS2000		90-S2000		90-C2000		90-B2000		90-N2000	50.8	2								
90-SS2250		90-S2250		90-C2250		90-B2250		90-N2250	57.2	2-1/4								
90-SS2500		90-S2500		90-C2500		90-B2500		90-N2500	63.5	2-1/2								
90-SS2750		90-S2750		90-C2750		90-B2750		90-N2750	69.9	2-3/4								
90-SS3000		0.35 .014"		90-S3000		0.35 .014"		90-C3000	0.35 .014"	90-B3000	0.35 .014"			90-N3000	0.8 .032"	76.2	3	
90-SS3500				90-S3500				90-C3500		90-B3500				90-N3500	88.9	3-1/2		
90-SS4000		0.4 .016"		90-S4000		0.4 .016"		90-C4000	0.4 .016"	90-B4000	0.46 .018"			1.1 .045"	101.6	4	127 5"	203.2 8"

SERIES 92 BRUSHES 8-32 threaded adapter

Stainless steel	Carbon steel	Brass 80/20	Nylon 6-12	Brush Ø		Pack. pcs
				mm	Inch	
92-S312	92-C312	92-B312	92-N312	7.9	5/16	12
92-S344	92-C344	92-B344	92-N344	8.7	11/32	
92-S375	92-C375	92-B375	92-N375	9.5	3/8	
92-S437	92-C437	92-B437	92-N437	11.1	7/16	
92-S500	92-C500	92-B500	92-N500	12.7	1/2	
92-S562	92-C562	92-B562	92-N562	14.3	9/16	
92-S594	92-C594	92-B594	92-N594	15.0	19/32	

SPECIAL UPON REQUEST

SERIES 86

SERIES 87

SERIES 88

SERIES 89



SERIES 85Sx – 85Sxx

Code	Stainless steel 302	Bristle Ø mm	Brush Ø		Brush length mm	Total length mm	Pack. pcs
			mm	Inches			
08409	85Sx562	.004 0.1mm	14.3	9/16	1" 25.4mm	4" 101.6mm	6
11275	85Sx625		15.9	5/8			
11276	85Sx687		17.5	11/16			
08410	85Sx750		19.1	3/4			
08411	85Sx812		20.6	13/16			
08412	85Sx875		22.2	7/8			
08413	85Sx937		23.8	15/16			
08414	85Sx1000		25.4	1			
08163	85Sx1125	.005 0.13mm	29	1-1/8	38mm	127mm	
09917	85Sx1250		31.8	1-1/4			
09918	85Sx1500		38.1	1-1/2			
14197	85Sx1750		44.5	1-3/4			
12443	85Sxx562		14.3	9/16			
16460	85Sxx750	19.1	3/4				
12442	85Sxx1000	.003 0.075mm	25.4	1	76mm	165mm	
16655	85Sxx1125		28.5	1-1/4			
07636	85Sxx1500		38.1	1-1/2			
03656	85Sxx2000		50.8	2			76mm



Brushes with high-density filling of Fine (Sx) and Extra Fine (Sxx) Stainless Steel wire. Soft but compact, excellent for cleaning residues from heat treatments, galvanizing, or other processes. Polish surfaces and threads on ferrous materials, steel, and cast iron. They have a more aggressive cutting action than abrasive nylon brushes but less aggressive than traditional steel brushes. Their longer lifespan is due to the higher filament density. They provide excellent results in light deburring applications where a medium surface finish is also required. Upon request, different diameters and sizes can be provided, with finer or coarser filling wire sections, and wire made of different materials.

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

SERIES 85Sb

Stainless steel 302	Bristle Ø		Brush Ø mm	Stem Ø mm	Brush length mm	Total length mm	Pack. pcs
	.003 0.076mm	.005 0.13mm					
85-Sb6M	11100	11026	6	1/8" 3.2mm	1" 25.4mm	3-1/2" 89mm	6
85-Sb8M	09867	11027	8				
85-Sb10M	11101	11102	10				
85-Sb13M	11093	10031	13				
85-Sb14M	-	10032	14				
85-Sb16M	11061	13492	16				
85-Sb18M	-	13493	18				
85-Sb22M	-	11431	22				



Similar to the 85Sx brushes but with lower density, the front part is designed to reach the bottom of blind holes. Different diameters and/or finer or coarser filling wire sections can be provided upon request.

For holes choose diameter up to +20% larger, for threads choose diameter equal to thread max Ø

SERIES RF-AY Rectangular bristle

Abrasive Nylon bristle

Code		Diameter				Brush length mm	Total length mm
#120 SC	#320 SC	Hole		Brush			
		min	max	inches	mm		
14691	14650	32	45	2	51	51mm - 2" 76mm - 3"	254mm 10"
14692	14693	45	57	2-1/2	64		
14694	14695	57	70	3	76		
14696	14697	64	76	3-1/2	89	101mm - 4"	356mm 14"
14639	14698	76	89	4	101		
14637	14699	89	101	4-1/2	114		
14635	14700	101	114	5	127	127mm - 5"	
14701	14702	114	127	5-1/2	140		



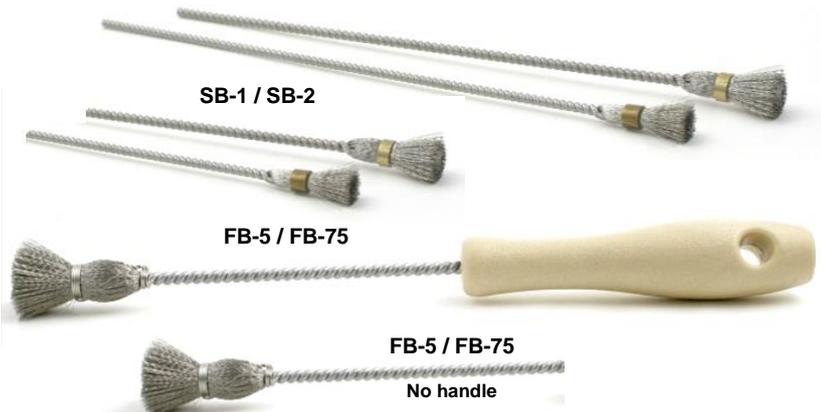
Blind holes

Code			Diameter		Total length		Body
Steel bristles	#120SC	#320AO	inches	mm	inches	mm	
DEB-1	12012	12013	1/4"	6.4	4"	101	Brass tube
DEB-2	12014	12015	3/8"	9.5	6"	152	Brass tube
DEB-5	12016	12017	1/2"	12.7	2-1/2"	64	Spring
-	14119	-	1/2"	12.7	-	-	Short version

DEB-1/2 the bristles extend for the whole length of the body. Cut the worn part to expose a fresh section.



Code	Diameter		Features
	inches	Mm	
SB-1	1/4"	6.4	SB-1 L.220mm Stainless steel bristles
SB-2	5/16"	7.9	SB-2 L.220mm Stainless steel bristles
16487	1/4"	6.4	SB-1 L.150mm Reinforced stem
16488	5/16"	7.9	SB-2 L.150mm Reinforced stem
FB-5	1/2"	12.7	FB-5 SS bristles 0.13mm.005" handle
FB-75	3/4"	19	FB-75 SS bristles 0.13mm.005" handle
16485	1/2"	12.7	FB-1 L.150mm No handle
16486	3/4"	19	FB-2 L.150mm No handle



CY – NY Circular

Abrasive Nylon (ceramic upon request)

Cod	Brush Ø mm	Hole Ø mm	Silicon Carbide					Aluminum Oxide					Bristles length		Brush width mm	Max Rotation speed rpm	Pcs	
			Grit					Grit										
			80	120	180	320	500	80	120	180	320	500	600	mm				Inches
CY1"	25.4	9.5 3/8"	●	●	●	●	●	●	●	●	●	●	●	3.2	1/8"	7	20.000	6
CY1 1/4"	31.8		●	●	●	●	●	●	●	●	●	●	●	6.4	1/4"			
CY1 1/2"	38.1		●	●	●	●	●	●	●	●	●	●	●	9.5	3/8"			
CY2"	50.8	●	●	●	●	●	●	●	●	●	●	●	12.7	1/2"				
CY2 1/2"	63.5	●	●	●	●	●	●	●	●	●	●	●	19.0	3/4"				
CY3"	76.2	●	●	●	●	●	●	●	●	●	●	●	25.4	1"				
CY3 1/2"	88.9	12.7 1/2"	●	●	●	●	●	●	●	●	●	●	●	30.2	1-3/16"			
CY4"	101.6	15.9 5/8"	●	●	●	●	●	●	●	●	●	●	●	36.5	1-7/16"			
NY6"	152.4	50.8 2"	●	●	●	●	●	●	●	●	●	●	●	38.1	1-1/2"	1/2"	6.000	1
NY8"	203.2	82.6 3-1/4"	●	●	●	●	●	●	●	●	●	●	●	47.6	1-7/8"		5.000	

● Standard - ● Upon request

CY



NY



Adapters Page 38



BMC – BMF Circular with stem

Abrasive Nylon Max rotation speed: 25.000 rpm

Code	Brush Ø		Stem Ø mm	Silicon Carbide					Aluminum Oxide					Bristles length		
	mm	inches		Grit					Grit							
				80	120	180	320	500	80	120	180	320	500	600	mm	inches
BMC 12 AY	31.8	1-1/4"	6.4 1/4"	●	●	●	●	●	●	●	●	●	●	●	3.2	1/8"
BMC 13 AY	34.9	1-3/8"		●	●	●	●	●	●	●	●	●	●	●	4.8	3/16"
BMC 14 AY	38.1	1-1/2"		●	●	●	●	●	●	●	●	●	●	●	6.4	1/4"
BMC 16 AY	44.5	1-3/4"		●	●	●	●	●	●	●	●	●	●	●	9.5	3/8"
BMC 20 AY	50.8	2"		●	●	●	●	●	●	●	●	●	●	●	12.7	1/2"
BMC 25 AY	63.5	2-1/2"		●	●	●	●	●	●	●	●	●	●	●	17.5	11/16"
BMC 30 AY	76.2	3"	●	●	●	●	●	●	●	●	●	●	●	20.6	13/16"	
BMF 14 AY	38.1	1-1/2"	6.4 1/4"	●	●	●	●	●	●	●	●	●	●	●	6.4	1/4"
BMF 16 AY	44.5	1-3/4"		●	●	●	●	●	●	●	●	●	●	●	9.5	3/8"
BMF 20 AY	50.8	2"		●	●	●	●	●	●	●	●	●	●	●	12.7	1/2"
BMF 25 AY	63.5	2-1/2"		●	●	●	●	●	●	●	●	●	●	●	17.5	11/16"
BMF 30 AY	76.2	3"		●	●	●	●	●	●	●	●	●	●	●	20.6	13/16"

● Standard - ● Upon request

BMC



BMF



BNS - Brush

Abrasive Nylon Max rotation speed: 20.000 rpm

Code	Brush Ø		Stem Ø mm	Silicon Carbide					Aluminum Oxide					Bristles length mm	
	mm	Inch		Grit					Grit						
				80	120	180	320	500	80	120	180	320	500		600
BNS 4 AY	12.7	1/2"	6.4 1/4"	●	●	●	●	●	●	●	●	●	●	●	22.2 7/8"
BNS 6 AY	19	3/4"		●	●	●	●	●	●	●	●	●	●	●	
BNS 10 AY	25.4	1"		●	●	●	●	●	●	●	●	●	●	●	

● Standard - ● Upon request

BNS



BNH - Cup

Abrasive Nylon

Code	Effective Diameter		Stem Ø mm	Silicon Carbide					Aluminum Oxide					Bristles length mm	Max rotation speed rpm	
	mm	Inches		Grit					Grit							
				80	120	180	320	500	80	120	180	320	500			600
BNH16AY	44.5	1-3/4"	6.4	●	●	●	●	●	●	●	●	●	●	●	12.7 1/2"	10.000
BNH26AY	69.9	2-3/4"	1/4"	●	●	●	●	●	●	●	●	●	●	●	19 3/4"	8.000

● Standard - ● Upon request

BNH



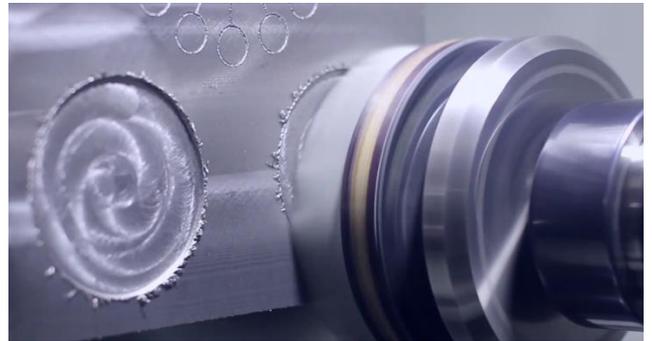
NAMPOWER CERAMIC FRONTAL BRUSHES

Ideal for use on CNC machines in applications with high production volumes

Available in 50, 60, 80, 100, 125, 150mm diameters – Abrasive Nylon 50% SC – 50% Ceramic

Dot Style: General use for light edge deburring and surface finishing in reduced cycle times. Dot Style brushes are very flexible and allow for easy deburring of edges in small holes or recesses.

Turbine Style: Ideal for medium to heavy deburring applications. The combination of silicon carbide and ceramic filaments allows for extremely fast cutting action and minimal wear.



DOT STYLE

Code		Grit	Diameter	Bristles length	Max rotation speed
DOT	TURBINE				
ADD501880	ADT501880	80	50mm	18mm	6.500 rpm
ADD5018120	ADT5018120	120			
ADD5018180	ADT5018180	180			
ADD5018320	ADT5018320	320			
ADD601880	ADT601880	80	60mm	18mm	5.500 rpm
ADD6018120	ADT6018120	120			
ADD6018180	ADT6018180	180			
ADD6018320	ADT6018320	320			
ADD801880	ADT801880	80	80mm	18mm	4.000 rpm
ADD8018120	ADT8018120	120			
ADD8018180	ADT8018180	180			
ADD8018320	ADT8018320	320			
Stem Code		Stem Ø		Stem type	
ADH16P		Ø16mm		Cilindrico	
14258		Ø10mm		Cilindrico	

Fornibili a richiesta altre tipologie di gambo



TURBINE STYLE



ADH16P
Ø 16mm cylindrical stem
Internal coolant passage

Code		Grit	Diameter	Bristles length	Max rotation speed
DOT	TURBINE				
ADD1001880	ADT1001880	80	100mm	18mm	2.200 rpm
ADD10018120	ADT10018120	120			
ADD10018180	ADT10018180	180			
ADD10018320	ADT10018320	320			
ADD1003880	ADT1003880	80	100mm	38mm	2.200 rpm
ADD10038120	ADT10038120	120			
ADD10038150	ADT10038150	180			
ADD10038320	ADT10038320	320			
ADD1251880	ADT1251880	80	125mm	18mm	2.000 rpm
ADD12518120	ADT12518120	120			
ADD12518180	ADT12518180	180			
ADD12518320	ADT12518320	320			
ADD1253880	ADT1253880	80	125mm	38mm	2.000 rpm
ADD12538120	ADT12538120	120			
ADD12538180	ADT12538180	180			
ADD12538320	ADT12538320	320			
ADD1501880	ADT1501880	80	150mm	18mm	1.800 rpm
ADD15018120	ADT15018120	120			
ADD15018180	ADT15018180	180			
ADD15018320	ADT15018320	320			
ADD1503880	ADT1503880	80	150mm	38mm	1.800 rpm
ADD15038120	ADT15038120	120			
ADD15038180	ADT15038180	180			
ADD15038320	ADT15038320	320			
Stem code		Stem Ø		Stem type	
ADHLWMSL		25mm		Weldon	

Other types of stems available upon request

DOT STYLE



TURBINE STYLE



ADHLWMSL
W25
Internal coolant passage

NAMPOWER CERAMIC FRONTAL BRUSHES

Ideal for use on CNC machines and robots in applications with high production volumes.
Maximum density, 100% Ceramic Abrasive Nylon.

Code	Grit	A Brush diameter	B Bristles length	C Total length	D Stem diameter
AEB125880	#80	1/2" 12.7mm	5/8" 16mm	4.88" 124mm	3/8" 9.5mm
AEB1258120	#120				
AEB1258180	#180				
AEB1258320	#320				
AEB343480	#80	3/4" 19mm	3/4" 19mm	5" 127mm	3/8" 9.5mm
AEB3434120	#120				
AEB3434180	#180				
AEB3434320	#320				
AEB1003480	#80	1" 25.4mm	3/4" 19mm	5" 127mm	3/8" 9.5mm
AEB10034120	#120				
AEB10034180	#180				
AEB10034320	#320				
AEB11210080	#80	1-1/2" 38mm	1" 25.4mm	5-1/4" 133.4mm	1/2" 12.7mm
AEB112100120	#120				
AEB112100180	#180				
AEB112100320	#320				
AEB20010080	#80	2" 51mm	1" 25.4mm	5-1/4" 133.4mm	1/2" 12.7mm
AEB200100120	#120				
AEB200100180	#180				
AEB200100320	#320				



NAMPOWER HEX DRIVE FRONTAL BRUSHES

For use on automatic and semi-automatic machines, NC, CNC, robotic systems. The Hex-Drive design allows the tool to rotate in both directions for a 360° finish. Typical applications include deburring, rounding edges, and general surface finishing.

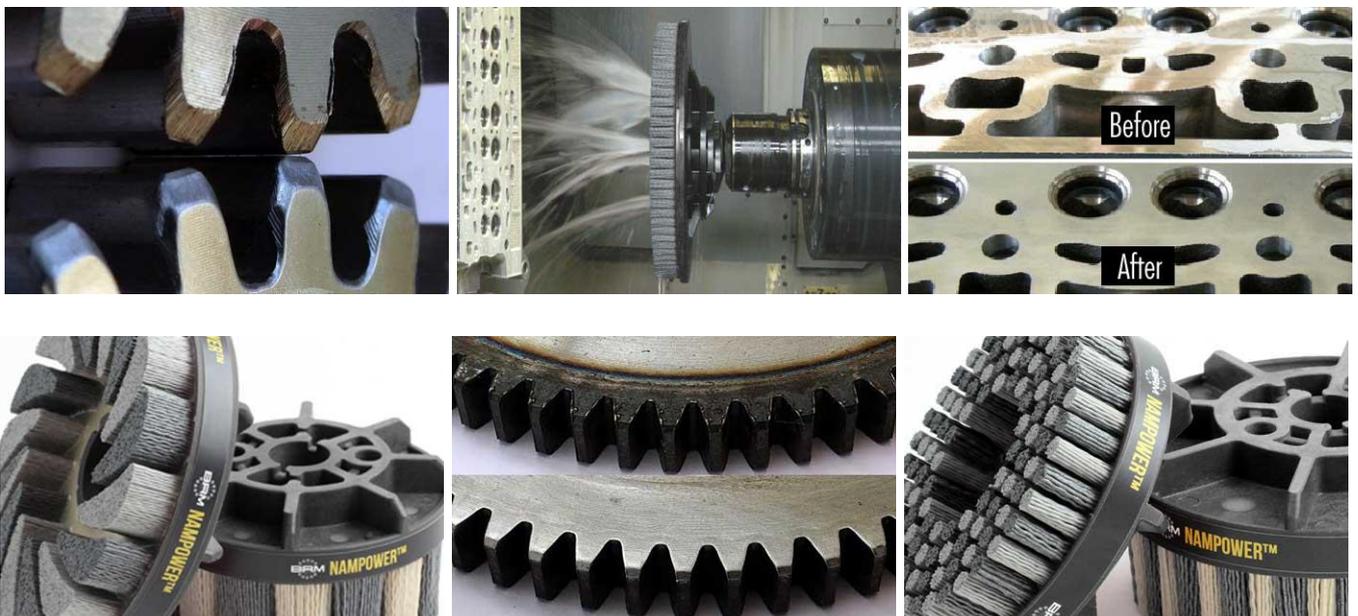
Code	External Ø		Stem	Silicon Carbide bristle			Max Rotation speed	
	inch	Mm		Ø mm	Grit	L. mm		
AHX 2046	2	50.8	6.4mm 1/4"	1.5	.060"	46	10.000 rpm	
AHX 2060				1.2	.045"	60		
AHX 2080				1.0	.040"	80		
AHX 2120				0.7	.028"	120		
AHX 2180				0.9	.035"	180		
AHX 3046	3	76.2	AHXD 250 6.4mm 1/4"	1.5	.060"	46		25.4 1"
AHX 3060				1.2	.045"	60		
AHX 3080				1.0	.040"	80		
AHX 3120				0.7	.028"	120		
AHX 3180				0.9	.035"	180		
AHX 4060	4	101.6	AHXD 375 9.5mm 3/8"	1.2	.045"	60	6.000 rpm	
AHX 4080				1.0	.040"	80		
AHX 4120				0.7	.028"	120		
AHX 4180				0.9	.035"	180		
AHX 5060				5	127	/		
AHX 5080	1.0	.040"	80					
AHX 5120	0.7	.028"	120					
AHX 5180	0.9	.035"	180					
Stem for AHX3 AHX4 AHX5		Code	Shaft diameter					Max external Ø
		AHXD250	1/4" – 6.4mm	4"		10.000 rpm		
		AHXD375	3/8" – 9.5mm	5"		10.000 rpm		



Nampower brushes can be used both wet and dry, and the rotation speed depends on the burrs and the material being worked on. At low speeds, there is a greater brushing effect. Start the process by setting a depth of 0.8mm.

APPLICATION	GRIT				
	#46	#60	#80	#120	#180
Deburring		◆	◆	◆	
Rust removal	◆	◆	◆	◆	
Gasket cleaning/removal	◆	◆	◆		
Roughing	◆	◆	◆	◆	◆
Finishing before painting or coating			◆	◆	◆
Glue residue removal, etc	◆		◆	◆	◆
Mold cleaning	◆		◆		
Finishing	◆		◆	◆	◆
Surface roughness improvement			◆	◆	◆
Weld cleaning	◆		◆	◆	
Fiberglass cleaning				◆	◆
Plastic parts for automotive industry	◆		◆		

- Fast machining
- No clogging
- Follows the contours of surfaces
- Does not alter the geometry of the parts
- Safe - abrasive filaments do not break off
- Does not cause oxidation
- Does not react with metals
- Clean action
- Long-lasting





Brushes for deburring, edge rounding, surface finishing. Ideal for use on CNC machines, transfer machines, automatic machines, robotic cells... Shank with cylindrical or Weldon attachment and internal cooling

Bristles configuration

Bristles length



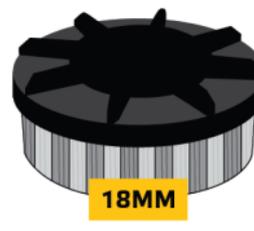
Dot

Generic use in deburring and finishing



Turbine

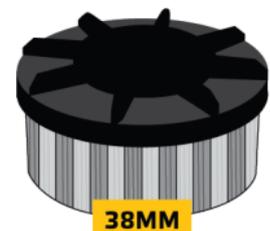
Applications for medium to heavy deburring



18MM

18mm bristles

Less flexibility, higher aggressiveness



38MM

38mm bristles

More flexibility, lower aggressiveness

The choice of filament configuration and length is determined by the size of the burrs, shape and geometry of the parts to be deburred, required radius, and desired finish.

Grit

Grit	Starting Ra
80	1.3-1.5
120	1.0-1.3
180	0.8-1.0
320	0.5-0.8

The choice of grit depends on the required finish value. The general rule is to choose the coarsest grit that can maintain the required finish. Using a fine grit on a surface with a high starting finish (Ra) produces a worse result than using a coarse grit followed by a fine one. Coarse grits are recommended for heavy deburring where an extremely low Ra surface finish is not required.

Brush Diameter

Surface coverage

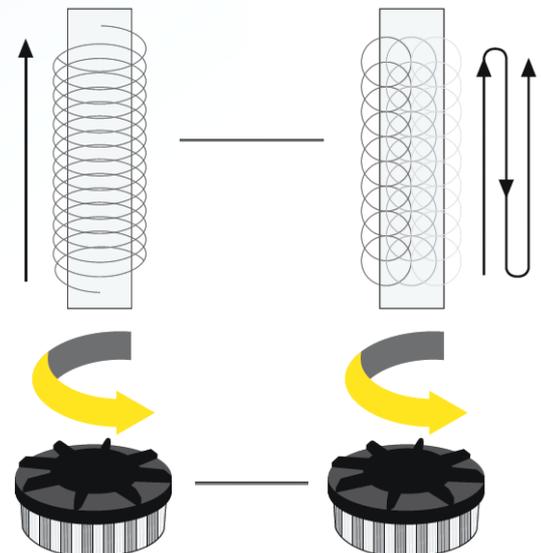
The brush should ideally be approximately 25mm larger than the part being worked on. If a smaller brush is required due to space constraints, the centerline of the brush should be aligned with the edge to be deburred with a minimum of 35-40mm overlap between passes.

Tool path

The brush should start rotating immediately at the working speed given for its diameter, and it should begin and end the path completely outside of the part.

Rotation direction

The brush should rotate in the opposite direction of the cutting tool that created the burr.



Recommended and Maximum Working Speeds

Diameter mm	Grit - rpm				Max rpm
	#80	#120	#180	#320	
50	6.500	6.250	4.000	3.500	6.500
60	5.500	5.000	4.000	2.750	5.500
80	4.500	4.250	3.500	2.500	4.500
100	1.850	1.800	1.750	1.700	2.200
125	1.600	1.550	1.500	1.450	2.000
150	1.350	1.300	1.250	1.200	1.800

The brushes should be used at a lower speed than the maximum indicated to prevent overheating and melting of the nylon on the working surface. It is recommended to stay below 760 m/min for dry use and below 1,070 m/min for wet use. A 150 mm diameter brush used at 1,400 rpm is more effective than the same brush used at 2,800 rpm. Excessive speed, especially with a long filament length, causes deformation and bouncing of the filaments. Typically, brushes are used at higher speeds to prioritize aggressiveness and at lower speeds to prioritize the brush's adaptation to the surface's contour.

Cutting pressure

The cutting pressure should be adjusted to 10% of the bristle length for small-section (#320) and no more than 5% for larger-section bristles (#80-120-180). The higher the cutting pressure, the lower the rotation speed should be so that the filaments can adapt to the shape of the part.

DOT	TURBINE
0.4-3.8 mm	0.1-2.4 mm

Feed rate

Material	m/min
Non Ferrous	2.00 m/min
Cast iron	1.50 m/min
Ductile steel	1.25 m/min
Stainless and alloyed steel	0.75 m/min
Titanium and alloys with high Nickel content	0.75 m/min

The feed rate depends on various factors such as the size of the burrs, material, surface contour, and required finish. Flat surfaces are processed at high speed and low cutting pressure, while curved surfaces with variations in level are processed at low speed and high cutting pressure. The recommended feeds are a starting point, but the most effective feed depends on the application and should be determined through processing trials.

Wear compensation

Some machines allow monitoring the spindle load and adjusting the cutting pressure to maintain a constant value. In most CNC machines, there is an automatic increment determined by wear detected in processing trials or through brush height control or manual adjustment.

Suggestions

More aggressiveness

- Short bristles
- Larger brush diameter
- Coarser grit
- Higher bristle density
- Higher rotation speed
- Higher cutting pressure

Less aggressiveness

- Long bristles
- Smaller brush diameter
- Finer grit
- Lower bristle density
- Lower cutting pressure

Non planar surface

- Long bristles
- Finer grit
- Lower bristle density
- Higher cutting pressure

High finish required

- Use coolant
- Long bristles
- Higher rotation speed

No finish required

- Use dry
- Coarser grit
- Smaller brush diameter
- Lower rotation speed

To prevent melting of the bristles

- Use coolant
- Smaller brush diameter
- Lower rotation speed
- Lower cutting pressure

NAMPOWER CIRCULAR BRUSHES

Silicon Carbide Abrasive Nylon

For use on brushing machines or for manual deburring.

Also used for honing the cutting edges and finishing the blades of HSS and WIDIA tools.

Advantages: high filament density, greater durability, reduced processing times, increased aggressiveness, and fewer bristles breaks, greater useful width, and constant density across the entire width. Balanced.

Maximum rotation speed: 3200 rpm.

Code	Grit	Bristle Ø	Diameter	Width	Bristle L.	Hole Ø
CW61280SC	80	.040" - mm1	6" 152.4mm	1/2" 12.7mm	1-1/2" 38.1mm	2" 50.8mm
CW612022120SC	120	.022" - mm0.56				
CW612040120SC	120	.040" - mm1				
CW612180SC	180	.035 - mm0.89				
CW612320SC	320	.022" - mm0.56				
CW612500SC	500	.018" - mm0.46				
CW6180SC	80	.040" - mm1	6" 152.4mm	1" 25.4mm	2-1/2" 63.5mm	
CW61022120SC	120	.022" - mm0.56				
CW61040120SC	120	.040" - mm1				
CW61180SC	180	.035 - mm0.89				
CW61320SC	320	.022" - mm0.56				
CW61500SC	500	.018" - mm0.46				
CW81280SC	80	.040" - mm1	8" 203.2mm	1/2" 12.7mm	2-1/2" 63.5mm	
CW812022120SC	120	.022" - mm0.56				
CW812040120SC	120	.040" - mm1				
CW812180SC	180	.035 - mm0.89				
CW812320SC	320	.022" - mm0.56				
CW812500SC	500	.018" - mm0.46				
CW8180SC	80	.040" - mm1	8" 203.2mm	1" 25.4mm	2-1/2" 63.5mm	
CW81022120SC	120	.022" - mm0.56				
CW81040120SC	120	.040" - mm1				
CW81180SC	180	.035 - mm0.89				
CW81320SC	320	.022" - mm0.56				
CW81500SC	500	.018" - mm0.46				



NAMPOWER DIAMOND CIRCULAR BRUSHES

Used for honing the cutting edges and finishing the blades of WIDIA tools.

Used in finishing and deburring operations on hardened steels, superalloys, glass, ceramics.

Code	Grit	Diameter	Width	Bristle L.	Hole Ø
DW100X5X600	# 600	100	5	12.7	20
DW150X10X600		150	10	19	3-1/4"
DW150X15X600		150	15		
DW200X10X600		200	10		
DW200X15X600		200	15		
DWA314-20MM	Adapter from 3-1/4" to 20mm hole				



Adapters for CW

Code	External Ø	Internal Ø	Code	External Ø	Internal Ø
CWA2-12	2" 50.8mm	1/2" - 12.7mm	CWA2-78	2" 50.8mm	7/8" - 22mm
CWA2-58		5/8" - 16mm	CWA2-1		1" - 25.4mm
CWA2-34		3/4" - 19mm	CWA2-114		1-1/4" - 31.8mm
CWA2-20MM	20mm	CWA2-112	1-1/2" - 38.1mm		



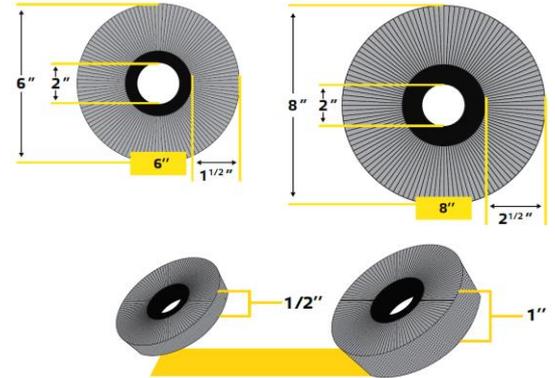
Circular abrasive nylon brushes for use in machines or manually.

Deburring, finishing, rounding edges.

In choosing a circular brush, one must consider the diameter, width, and length of the bristles. The width should be sufficient to cover a broad surface area but thin enough to allow access to all parts to be worked on. The Nampower brushes are available with a width of 1/2" - 12.7mm or 1" - 25.4mm. The choice of grit also affects the flexibility of the brush; the larger the grit, the larger the diameter of the bristles.

Diameter choice

Nampower circular brushes are available in 6" (152.4mm) and 8" (203.2mm). The larger the diameter, the greater the flexibility and the lower the aggressiveness. Brushes with a smaller diameter are stiffer and more aggressive. The choice of diameter depends on the size of the burrs, the shape of the parts, the required finish, the extent of the edge rounding required, and the type of machine on which the brush will be installed.



Rotation speed

It is preferable to stay below 760 m/min for dry use and 1060 m/min for use with coolant.

Cutting pressure

The cutting pressure should be adjusted to 10% of the length of the bristles for small section sizes and not exceed 5% for larger section sizes.

Grit

The choice of grit depends on the required finish value. The general rule is to choose the coarsest grit that can still achieve the desired finish level. Using a fine grit on a surface with a high starting Ra finish yields worse results than using a coarse grit followed by a fine one. Coarse grits are recommended for heavy deburring where an exceptionally low Ra finish is not required.

Brush Ø	Rpm		
	Dry	Coolant	Nominal
4" - 100mm	3400	2400	2800
6" - 152.4mm	1500	2250	1750
8" - 203.2mm	1250	1650	1500

Grit	Bristle Ø	Cutting pressure		
		Ø 4" 100mm	Ø 6" 152.4mm	Ø 8" 203.2mm
600		1.3mm	1.8mm	2.8mm
500	.018"		3.8mm	3.8mm
320	.022"			
120	.022"			
180	.035"			
80	.040"		1.9mm	1.9mm
120	.040"			

Grana	Ra di partenza
80	1.3-1.5
120	1.0-1.3
180	0.8-1.0
320	0.5-0.8

Feed rate

Once all the other parameters are determined, the optimal feed rate is established through a processing test, as it depends on various variables. As a general rule, it is advisable to apply the fastest feed rate that still achieves the required finishing and/or deburring result.

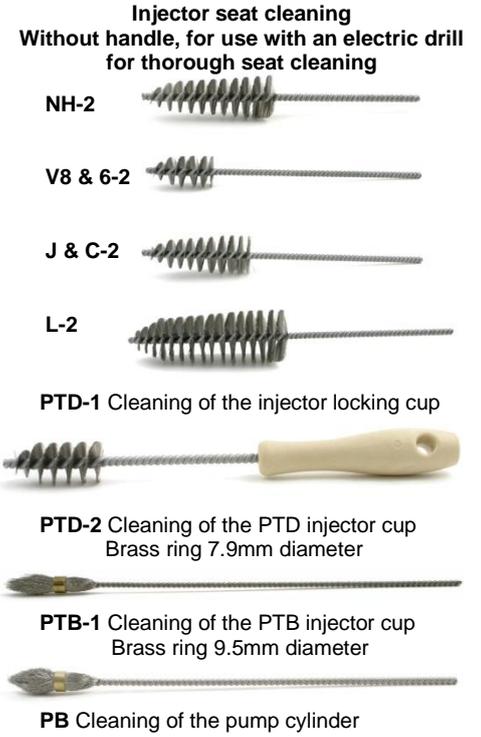
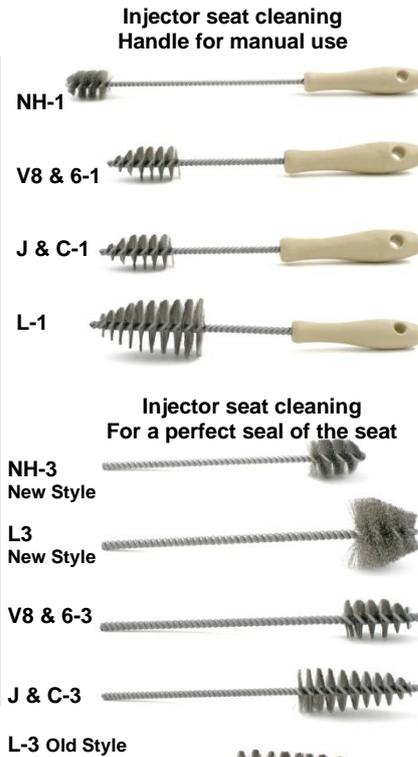
Suggestions

The correct balance of all working parameters allows achieving the desired result and, at the same time, ensures a satisfactory brush life. Low speeds and working pressures make the brush last longer, but sometimes increase the time needed to achieve the result. If high speeds and working pressures are required to achieve the result, choose a more aggressive brush that allows working more lightly. It is always advisable to use a coolant, especially when working at high speeds and pressures, as the heat produced significantly affects the lifespan and performance of the nylon bristles.

BRUSHES FOR OVERHAUL AND MAINTENANCE OF DIESEL ENGINES

CUMMINS SERIES

Code	Bristle Ø	Major Ø mm	Brush L. mm	Total L. mm
NH1	.005" 0.13 Inox	29.9 1.175"	38 1-1/2"	368 14-1/2"
V861	.006" 0.15 Inox	29.2 1.155"	54 2-1/8"	267 10-1/2"
JC1		30.5 1.200"	92 3-5/8"	305 12"
L1		52.0 2.050"	108 4-1/4"	254 10"
NH2		41.3 1.625"	54 2-1/8"	
V862		28.6 1.125"	86 3-3/8"	305 12"
JC2	34.3 1.350"	57.2 2.250"	38 1-1/2"	216 8-1/2"
L2	54.0 2.125"	45 1-3/4"		
NH3N	.005" 0.13 Inox	29.9 1.175"	38 1-1/2"	216 8-1/2"
L3N	.008" 0.2 Inox	54.0 2.125"	45 1-3/4"	
V863	.010" 0.25 Acc.	31.8 1.250"	54 2-1/8"	254 10"
JC3	.012" 0.3 Acc.	38.1 1.500"	83 3-1/4"	305 12"
L30		63.5 2.500"	165 6-1/2"	305 12"
PTD1	.006" 0.15 Inox	24.8 0.975"	51 2"	267 10-1/2"
PTD2	.005" 0.13 Inox	7.9 0.312"	25.4 1"	165 6-1/2"
PTB1		9.5 0.375"	32 1-1/4"	
PB400	Nylon	10.2 .400"	/	/
PB450		11.4 .450"		
PB500		12.7 .500"		
PB550		13.4 .550"		
PB850		21.6 .850"		
PB1000		25.4 1.000"		



DETROIT DIESEL SERIES

Code	Bristle Ø	Major Ø mm	Brush L. mm	Total L. mm
DD1(149)	.006" 0.15 Inox	35.8 1.400"	70 2-3/4"	267 10-1/2"
DD1(53/71/92)		25.4 1.000"	54 2-3/16"	254 10"
DD2(149)		41.3 1.625"	120 4-3/4"	
DD2(53/71/92)		30.5 1.200"	95 3-3/4"	
DD3N		/	/	/
DD3(149)	.012" 0.3 Acc.	41.3 1.675"	127 5"	254 10"
DD3(53/71/91)		33 1.300"	92 3-5/8"	



CATERPILLAR SERIES

Code	Bristle Ø	Major Ø mm	Brush L. mm	Total L. mm
Direct injection. Pre-chamber cleaning 1693, 333, 342, 346, 348, 353				
CAT-1	.005"	22.9 .900"	22 7/8"	267 10-1/2"
CAT-2	0.13 Inox	15.9 .625"	16 5/8"	



INJECTOR CAVITIES

To clean the sealing area of the gasket.
Stainless steel bristles, brass ring

SB-1 1/4"-6.4mm diameter - Brush length 1/2"-12.7mm
SB-2 5/16"-7.9mm diameter - Brush length 5/8"-16mm

INTERNATIONAL HARVESTER - Stainless steel bristle

FB-5 Flat brush, 1/2"-12.7mm diameter, Stainless steel bristle .005"-0.13 diameter
FB-75 Flat brush, 3/4"-19mm diameter, Stainless steel bristles .005"-0.13 diameter

CRANKSHAFT LUBRICATION HOLES

CSN Set 2 Nylon brushes 6-12 5/16"-7.9mm and 7/32"-5.6mm diameter
Brush length 2"-50mm, total length 10"-254mm
CSS Set 2 Stainless steel brushes, same dimensions as CSN

VALVE GUIDE BRUSHES

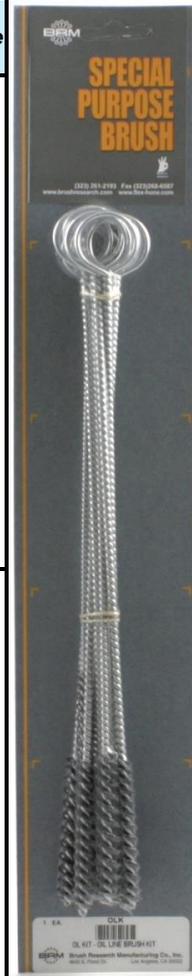
Code	Bristle Ø	Brush Ø mm	Brush L. mm	Total L. mm
VGC312	.008" 0.2mm Acc.	7.9 5/16"	63.5 2-1/2"	241.3 9-1/2"
VGC344		8.7 11/32"		
VGC375		9.5 3/8"		
VGC438		11.1 7/16"		



EXTRA-LONG BRUSHES

For cleaning oil passages and channels in general

Code	Diameter		Brush L. mm	Total L. mm	Pack. pcs	Description	Bristle	
	inches	Mm						
1	1/4	6.4	50 2"	254 10"	12	Small rigid brush for channels	Nylon 6-12	
1a					12	Same as #1, but thinner bristles and flexible stem		
2	5/16	7.9	64 2-1/2"	305 12"	12	Rigid, for channels, crankshaft and valve guides		
2a					12	Same as #2, but thinner bristles and flexible stem		
3	3/8	9.5	76 3"	864 34"	6	Same as #2		
4	5/8	15.9			6	Channels		
5			6	Same as #4, but extra-long				
6	3/4	19	1016 40"	356 14"	6	Tappet rod channels		
7					6	For main oil passages		
8	1-1/8	28.6	64 2-1/2"	864 34"	6	Tappet rod channels		
9					6	Oil passages		
38	3/8	9.5	64 2-1/2"	305 12"	6	Valve guides		
41	1/2	12.7			6	Main oil passages		
42			12	Same as #41, but thinner bristles and flexible stem				
44N	1-1/4	31.8	102 4"	305 12"	6	Conical pins		
46					12	64 2-1/2"		305 12"
47N	11/32	8.8	64 2-1/2"	305 12"	12			
48N	13/32	10.3				64 2-1/2"		305 12"
49N	7/16	11.1	64 2-1/2"	305 12"	12			
6C	3/4	19				76 3"		6
7C			6	Main oil passages				
8C			6	Main oil passages				
11C	1/4	6.4	50 2"	254 10"	12	Same as #1		Acciaio
13C	5/16	7.9	64 2-1/2"	305 12"	12	Cams oil passages and valve guides		
14C	3/8	9.5			6		Tappet rod channels	
15	5/8	15.9	76 3"	762 30"	6	Oil passages		
16					6	Tappet rod channels		
18	1-1/8	28.6	64 2-1/2"	305 12"	6	Oil passages		
38C	3/8	9.5			6	Oil passages		
44C	1/2	12.7	64 2-1/2"	864 34"	12	Valve guides		
45					6	Main oil passages		
46C	1-1/4	31.8	102 4"	305 12"	6	Conical pins		
47C					11/32	8.8	12	
48C	13/32	10.3	64 2-1/2"	305 12"	12	Valve guides		
49C	7/16	11.1	64 2-1/2"	305 12"	12		Valve guides	



KIT 1E:

1, 1a, 2, 2°.....3pz per tipo
 3.....6pz
 4, 5, 6, 7, 8, 9, 38, 41, 42, 46, 10a(5"-127mm)..1pz per tipo
 Totale: 29 spazzole

KIT VGNK:

1, 2, 3, 44N, 47N, 48N, 49N.....1pz per tipo

KIT VGCK:

11C, 13C, 14C, 44C, 47C, 48C, 49C....1pz per tipo

OIL LINE KIT:

1.....1pz
 2.....2pz
 3.....6pz

OIL GALLERY KIT:

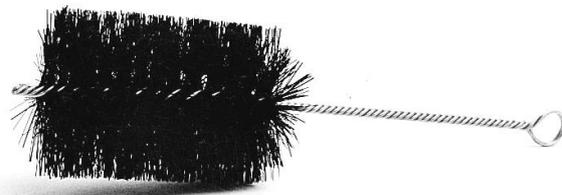
5, 7, 8, 38, 42.....1pz per tipo

NYLON ROD BRUSHES

Nylon 6-12, available in diameters up to 14" (355mm)

Cylinder cleaning after processing with Flex-Hone

Code	Diameter	
	inch	mm
03390	2"	50.8
03391	2-1/2"	63.5
02640	3"	76.2
10A312	3-1/2"	88.9
10A4	4"	101.6
10A412	4-1/2"	114.3
10A5	5"	127.0
10A512	5-1/2"	139.7
10A6	6"	152.4
10A612	6-1/2"	165.1



BRUSH WITH HANDLE

Code: SPOKE

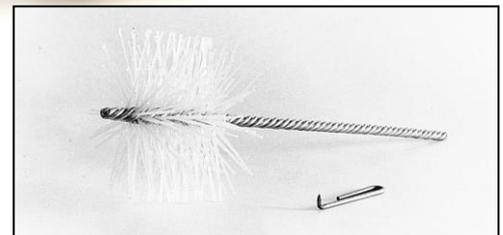
Diameter 3" – 76mm

O-R SEATS IN MONOBLOCK CLEANING

Code: 10-SJD

Diameter 5-1/2"-140mm - Extra-hard Nylon bristles .079"-2mm diameter
 Supplied with stainless steel O-R removal and seat scraping tool.

(John Deere) Different measurements available upon request.



CIRCULAR BRUSHES

CARBON STEEL & STAINLESS STEEL BRISTLES

Small diameter, possibility of stack mounting, capable of high rotational speeds.
 Deburring, chamfering of sharp edges, rust removal, surface preparation for bonding, finishing.
 Max rotational speed: 20.000 rpm

Code	Brush diameter		Hole diameter mm	Bristle diameter (mm)						Pack. Pcs
	mm	inch		0.15 .006"	0.2 .008"	0.25 .0104"	0.3 .0118"	0.35 .014"	0.5 .020"	
C 1-1/4	31.8	1-1/4	3/8" - 9.5	●						12
C 1-3/8	34.9	1-3/8		●						
C 1-1/2	38.1	1-1/2		●						
C 2	50.8	2	1/2" - 12.7	●	●	●	●	●	●	6
C 2-1/2	63.5	2-1/2	1/2" - 12.7 o	●		●	●	●	●	
C 3	76.2	3	5/8"-15.9	●	●		●	●	●	
C 3-1/2	88.9	3-1/2	1/2" - 12.7	●	●	●	●	●	●	
C 4	101.6	4	1/2" - 12.7 o	●	●	●	●	●	●	
			3/8"-15.9	●	●	●	●	●	●	



TAMPICO BRISTLES

Code	Effective diameter		Hole diameter mm	Brush width mm	Max Rotational speed rpm	Pack. Pcs
	mm	Inches				
CT 2	50.8	2	1/2" 12.7mm	3/8"	20.000	6
CT 2-1/2	63.5	2-1/2		9.5mm		
CT 3	76.2	3				
CT 3-1/2	88.9	3-1/2		1/2" - 12.7		
TWA 6	152.4	6	3-1/4"-82.5	17/32" 13.4mm	6.000	1
TWA 8	203.2	8			5.000	
TWA 10	254	10			4.500	



NYLON BRISTLES

Code	Effective diameter		Hole diameter mm	Bristles Ø (mm)				Brush width	Max Rotational speed rpm	Pack. Pcs
	mm	Inches		0.15 .006"	0.25 .010"	0.4 .016"	0.5 .020"			
CN 1	25.4	1	1/4"-6.4mm	●				1/4" 6.4mm	20.000	12
CN 1-3/8	34.91	1-3/8	1/4"-6.4mm		●					
CN 1-1/2	38.1	1-1/2	3/8"-9.5					3/8"-9.5mm	20.000	6
CN 1-3/4	44.45	1-3/4								
CN 2	50.8	2	1/2"-12.7 5/8"-15.9	●	●	●		1/2" 12.7mm	6.000 4.800	1
CN 2-1/2	63.5	2-1/2								
CN 3	76.2	3								
CN 3-1/2	88.9	3-1/2		●	●	●	●			
CN 4	101.6	4		●		●	●			
NWA 6	152.4	6	2" - 50.8	●		●	●			
NWA 8	203.2	8								



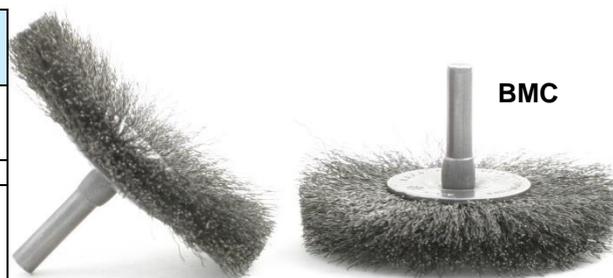
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CIRCULAR BRUSHES WITH STEM

Max rotational speed: 25.000 rpm

Code	Diameter		Stem Ø mm	Bristles diameter (mm)					Brush width Mm
	mm	Inches		0.15 .006"	0.2 .008"	0.25 .0104"	0.3 .0118"	0.35 .014"	
BMC-12	31.8	1-1/4	1/4" 6.4mm	●	●				3/16" 4.8mm
BMC-13	34.9	1-3/8		●	●	●			
BMC-14	38.1	1-1/2		●	●	●			5/16" 7.9mm
BMC-16	44.8	1-3/4		●	●	●	●	●	
BMC-20	50.8	2		●	●	●	●	●	
BMC-25	63.5	2-1/2			●	●	●	●	
BMC-30	76.2	3				●	●	●	
BMF-14	38.1	1-1/2			●	●	●		/
BMF-16	44.8	1-3/4		●	●		●	●	
BMF-20	50.8	2		●	●	●	●	●	
BMF-25	63.5	2-1/2		●	●	●	●		
BMF-30	76.2	3		●	●	●	●		

● Steel bristles - ● Stainless steel bristles



BMF

BMC

FRONTAL BRUSHES WITH STEM

Max rotational speed: 20.000 rpm

Code	Effective Ø		Stem Ø mm	Bristles diameter (mm)				Bristle L. Mm
	mm	Inch		0.15 .006"	0.25 .0104"	0.35 .014"	0.5 .02"	
BNS-4	12.7	1/2	1/4" 6.4mm					7/8" 22mm
BNS-6	19	3/4						
BNS-10	25.4	1						
BNS-4T	12.7	1/2		●	●			
BNS-6T	19	3/4		●	●			
BNS-10T	25.4	1				●	●	
BNS-4C	12.7	1/2				●	●	
BNS-6C	19	3/4						
BNS-10C	25.4	1						
BNH-6	19	3/4						
BNH-12	28.5	1-1/8	/	/				
BNH-6T	19	3/4						
BNH-12T	28.5	1-1/8						

Also available in Nylon6-12 and Brass

● Steel bristles - ● Stainless steel bristles



BNS-C

BNS-T

BNH-T

BNH

BNS

BNH-C

FLARED BRUSHES WITH STEM

Code	Brush Ø		Bristles diameter (mm)					Max rpm
	mm	inch	0.15 .006"	0.2 .008"	0.25 .0104"	0.35 .014"	0.5 .020"	
BNF-10	25.4	1	●	●			●	20.000
BNF-12	31.8	1-1/4	●	●			●	
BNF-14	38.1	1-1/2	●	●		●	●	
BNF-26	70.0	2-3/4		●		●	●	
BNF-30	76.2	3	●	●	●	●	●	15.000
BNF-40	101.6	4	●	●			●	

● Filo Acciaio - ● Filo Inox



BNF

CUP BRUSHES WITH STEM

Code	Brush diameter		Stem diameter mm	Bristles diameter mm			Max Rotational speed Rpm
	mm	inch		0.15 .006"	0.25 .0104"	0.3 .0118"	
BNH-16	44.5	1-3/4	1/4"	●	●	●	10.000
BNH-26	70.0	2-3/4	6.4mm			●	8.000

● Steel bristles - ● Stainless steel bristles



BNH-16

GUIDED BRUSHES

For cleaning paint, dirt, rust around screw or rivet holes, ensuring a clean contact.

Code	Pin Ø		Brush Ø	Bristle Ø mm	Bristle length	Stem Ø	Max rpm
	mm	Inch					
06721	2.4	3/32	1/2" 12.7mm	0.13	3/8" 9.5mm	1/4" 6.4mm	20.000
06741	3.2	1/8					
06761	4	5/32					
06781	4.8	3/16					
06801	6.4	1/4					



ENCAPSULATED BRUSHES

Highly aggressive brushing action for rapid burr removal and uniform processing. Wire encapsulation provides the brush with exceptional aggressiveness with minimal pressure.

Type	Code	Brush Ø		Steel bristle diameter					Hole Ø mm	Brush width mm	Max Rotational speed rpm
		mm	inch	0.2 .008"	0.25 .0104"	0.3 .0118"	0.35 .014"	0.5 .020"			
Frontal	BNS-6E	19	3/4		●			●	Gambo 1/4"-6.4	11.2	20.000
Circular	BDM-6E	152.4	6		●				5/8"-15.9 1/2"-12.7	/	6.000
	CE-1-1/2	38.1	1-1/2	●		●			3/8"-9.5	7.2	20.000
	CE-2	50.8	2		●		●		1/2"-12.7		
	CE-3	76.2	3			●	●		5/8"-15.9		



CUP BRUSHES

Code	Brush diameter		Bristles diameter (mm)				Attachment	Bristles length mm	Max Rotational speed rpm
	mm	inch	0.3 .0118"	0.35 .014"	0.5 .020"	0.65 .025"			
BUC-3	76.2	3		● ●			5/8"-11 thread	1" 25.4mm	14.000
BUC-4	101.6	4	●	● ●	●			1-1/4" 32mm	9.000
BUC-5	127	5		● ●	●			1-3/8" 35mm	6.600
BUC-6	152.4	6		● ●	●			7/8" 22mm	14.000
BUS-3	76.2	3		●				1-1/4" 32mm	9.000
BUS-4	101.6	4	● ●	● ●	●			1-3/8" 35mm	6.600
BUS-5	127	5		● ●	●			1" 25.4mm	14.000
BUS-6	152.4	6		● ●	●	●		1-1/4" 32mm	9.000
BUSC-3	70	2-3/4			● ●				
BUDX-4	101.6	4	●		● ●				

● Steel bristles - ● Stainless steel bristles



MINI-GRINDER SERIES

Angle grinder brushes. Threaded reduction available.

Code	Brush diameter		Bristles Ø (mm)		Threaded attachment	Bristles length mm	Max Rotational speed rpm	
	mm	inches	0.35 .014"	0.5 .020"				
BUSC-3	69.85	2-3/4		●	5/8-11	1" 25.4	14.000	
BUC-3	76.2	3	● ●					
BTS-4	101.6	4	● ●	● ●		13/16" 21		20.000
BTC-4	101.6	4	● ●	● ●				
BSTCM-102	101.6	4		● ●		7/8" 22		13/16" 21
BSTCM-115	114.3	4-1/2		●				

● Steel bristles - ● Stainless steel bristles



DESCALING

Hardened cobalt steel balls, welded at the ends of stainless steel aircraft cables.

- DEB-3** 3 Cables, heavy-duty use. Use at low rpm. Excellent for removing heavy carbon deposits, etc. For diameters up to 1-1/2" - 38mm.
- DEB-4** 5 Cables, light use. Use at 2.000 rpm for the removal of rust and scale deposits from pipes. For diameters up to 5" - 127mm. Can also work in curved pipes.
- DEB-3x** Same as DEB-3, but with longer cables for tubes of diameter up to 4" - 101mm. Use at 2.000 rpm for rust removal
- DEB-4x** Same as DEB-4, but with longer cables for tubes of diameter up to 7" - 177mm



CIRCULAR BRUSHES

Code	Brush diameter		Bristles diameter mm							Hole diameter	Bristle length mm	Brush width mm	Max Rotational speed rpm	
	mm	Inches	0.3 .0118"	0.35 .014"	0.4 .016"	0.5 .020"	0.6 .023"	0.65 .025"	0.75 .030"					
BTS-3	76.2	3	● ●	● ●		● ●				3/8" - 9.5mm 1/2" - 12.7mm	1/2" 12.7mm	7/16" 11mm	20.000	
BTS-4	101.6	4	● ●	● ●	● ●	● ●				3/8" - 9.5mm 1/2" - 12.7mm Filetto 5/8"-11	13/16" 21mm	1/2" 12.7mm		
BTS-6	152.4	6	● ●	● ●	● ●		●		●	1/2" - 12.7mm 5/8" - 16mm	1-7/16" 37mm	5/8" 16mm	8.000	
BTS-7	177.8	7		●	●				●				6.000	
BTS-8	203.2	8	● ●	● ●	● ●		●		●	1/2" - 12.7mm 5/8" - 16mm 3/4" - 19mm	1-11/16" 43mm	3/4" 19mm		
B-462	152.4	6			●					1" - 25.4mm + 2 chiavette			8.000	
B-464	203.2	8			●					1" - 25.4mm + 2 chiavette			6.000	
TW-8	203.2	8	●		●				●	2" 50.8mm	1-3/4" 45mm 2-1/4" 58mm	1-1/8" 29mm 1-3/8" 35mm	6.000	
TW-10	254	10	●		●								4.500	
BTC-4	101.6	4		● ●		● ●				3/8" - 9.5mm 1/2" - 12.7mm 5/8" - 16mm Filetto 5/8"-11	13/16" 21mm	3/8" 9.5mm	20.000	
BTC-6	152.4	6					● ●		● ●	1/2" - 12.7mm 5/8" - 16mm	1-7/16" 37mm	7/16" 11mm	8.000	
BTC-7	177.8	7					●		●			1/2" 12.7mm	7.000	
BTC-8	203.2	8					●		●	1/2" - 12.7mm 5/8" - 16mm 3/4" - 19mm	1-11/16" 43mm	9/16" 15mm	6.000	
BSTCM-102	101.6	4				● ●				Filetto 5/8"-11	7/8" 22mm		20.000	
BSTCM-115	114.3	4-1/2				●					13/16" 21mm	3/16" 5mm		12.500
BSTCM-170	174.6	6-7/8				● ●					1-1/4" 32mm			9.000

● Steel bristles - ● Stainless steel bristles



BTS



B-464



TW



BSTCM

BTC



BDMB

Code	Brush diameter		Bristles diameter mm							Hole diameter	Bristle length mm	Brush width mm	Max Rotational speed rpm
	mm	Inches	0.13 .005"	0.15 .006"	0.2 .008"	0.25 .0104"	0.3 .0118"	0.35 .014"	0.5 .020"				
BDM-3	76.2	3		● ●		●	● ●			3/8" - 9.5mm 1/2" - 12.7mm	1/2" 12.7mm	3/8" 9.5mm	6.000
BDM-4	101.6	4		● ●	● ●	● ●	● ●	● ●			7/8" 22mm		4.500
BDM-6	152.4	6		● ●	● ●	● ●	● ●	● ●		2" - 50.8mm	1-1/8" 29mm		
BDM-6B	152.4	6	●							1/2" - 12.7mm 5/8" - 16mm	1-1/16" 27mm	1/2" 12.7mm	6.000
BDM-8	203.2	8		● ●	●	● ●	●	● ●			1-1/2" 38mm		4.500
BDA-6	152.4	6		● ●	● ●	●	● ●	● ●			1-1/8" 29mm		4.500
BDA-7	177.8	7		●			●	● ●			1-5/8" 42mm	7/8" 22mm	
BDA-8	203.2	8		● ●		● ●	● ●	● ●			1-1/2" 38mm		3.600
BDA-10	254	10		● ●		●	●	● ●	●	2" - 50.8mm	2" 50.8mm	1-1/8" 29mm	
BDA-12	304.8	12					●	●	●		3" 76mm	1-1/4" 32mm	3.000
BDH-6	152.4	6		● ●	●	●	● ●	● ●			1-1/8" 29mm		4.500
BDH-7	177.8	7					●	●			1-5/8" 42mm	1-3/8" 35mm	
BDH-8	203.2	8		● ●		● ●	●	●	●		1-1/2" 38mm		3.600
BDH-10	254	10			●		●	●	●		2-1/8" 63mm	1-3/4" 45mm	
BDH-12	304.8	12					●	●	●		3" 76mm	2" 50.8mm	3.000

● Steel bristles - ● Stainless steel bristles - ● Brass bristles



BDM



BDA



BDH

MINI SERIES

82A	Code	Diameter		Bristles	Hole Ø
		inches	Mm		
	82A-401	3/4	19	Medium	1/8" 3.2mm
	82A-401-1	1	25.4		
	82A-402-1			1-1/4	31.8
	82A-402-125				

82B	Code	Diameter		Bristles	Stem Ø	
		inches	Mm		Inches	mm
	82B-403	9/16	14.2	.005"-0.13 Crimped steel	3/32	2.4
	82B-404	1/2	12.7	.003"-0.08 Crimped steel		
	82B-405	5/8	14.2	.003"-0.08 Straight steel	1/8	3.2
	82B-407-1	9/16	14.2	Hard	1/8	3.2
	82B-407-3	1/2	12.7	Hard	3/32	2.4

82C	Code	Diameter		Bristle Ø	Bristle	Shaft Ø		Thickness
		Inches	mm			inch	mm	
	82C-408	3/4	19	.003" 0.08	Steel	1/8	3.2	Single
	82C-411	1	25.4			3/32	2.4	
	82C-412					1/8	3.2	
	82C-413					3/32	2.4	
	82C-414	3/4	19	.005" 0.13	Brass	1/8	3.2	Single
	82C-415			.003" 0.08		3/32	2.4	
	82C-416	1	25.4	.005" 0.13	Brass	1/8	3.2	Double
	82C-417			.003" 0.08		3/32	2.4	
	82C-418			.005" 0.13		1/8	3.2	
	82C-419	3/4	19	/	Hair			3/32
	82C-420			/		1/8	3.2	Single
	82C-421	/	3/32	2.4				
	82C-422	1	25.4	/	Stainless	1/8	3.2	Double
	82C-427	3/4	19	.005" 0.13				
	82C-428	1	25.4					

82D	Code	Diameter		Bristle	Stem Ø		Length
		inches	mm		Inches	mm	
	82D-429	3/16	4.5	.003"-0.08 Steel	1/8	3.2	2" 50.8
	82D-430			.003"-0.08 Brass			
	82D-431			Hair			
	82D-432			Soft			

12pcs packages



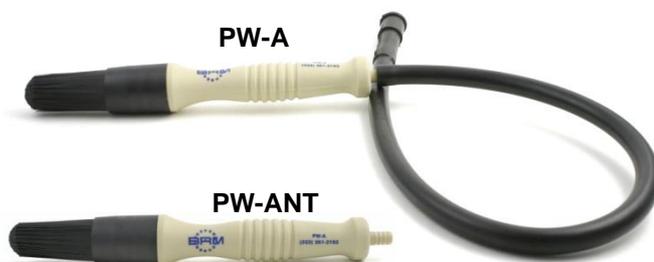
Bristle type	Ø5x6	Ø6x8	Ø8x10	Ø20x2	Ø25x2	Ø30x2	Ø10x7	Ø15x8
Horsehair								
	AFB-H5A	AFB-H6A	AFB-H8A	AFB-H20T	AFB-H25T	AFB-H30T	AFB-H10F	AFB-H15F
Natural								
	AFB-P5A	AFB-P6A	AFB-P8A	AFB-P20T	AFB-P25T	AFB-P30T	AFB-P10F	AFB-P15F
Wool								
	AFB-F5A	AFB-F6A	AFB-F8A	AFB-F20T	AFB-F25T	AFB-F30T	AFB-F10F	AFB-F15F
Brass								
	AFB-C5A	AFB-C6A	AFB-C8A	AFB-C20T	AFB-C25T	AFB-C30T	AFB-C10F	AFB-C15F
Stainless steel								
	AFB-S5A	AFB-S6A	AFB-S8A	AFB-S20T	AFB-S25T	AFB-S30T	AFB-S10F	AFB-S15F
Abrasive Nylon	AFB-N5A	AFB-N6A	AFB-N8A	AFB-N20T	AFB-N25T	AFB-N30T	AFB-N10F	AFB-N15F

3mm STEM

BRUSHES FOR WASHING

Handle made of polypropylene, bristles composed of synthetic material to withstand the majority of solvents and detergents. Designed for use with both petroleum-based and water-based cleaning solutions. All metal parts are made of stainless steel or brass to resist corrosion. The tubes are designed to adapt to the most common recirculating washing systems. The ergonomics of the handles reduce wrist fatigue and allow for greater pressure during cleaning.

Code	Features
PW-A	With liquid passage hole and tube
PW-ANT	With liquid passage hole, without tube
PW-C	Without liquid passage hole
PW-6P	With liquid passage hole and tube
PW-6PNT	With liquid passage hole, without tube
PW-1P	With liquid passage hole, valve and tube
PW-1PNT	With liquid passage hole and valve, without tube
PW-4P	With liquid passage hole and tube
PW-4PNT	With liquid passage hole and valve, without tube
PW-3/4	¾ -9.5mm aluminum handle and scraper attachment



PW-1P with tube



PW-34



PW-1PNT



FLEX-HONE THREADED ATTACHMENTS AND EXTENSIONS

Available separately or, if specified in the order, Flex-Hones can be provided with the threaded attachment pre-mounted.

Threaded attachments

Code	Thread	Flex-Hone size
832A	8-32	7mm - 11mm
18NPT	1/8"	12mm - 3"
14NPT	1/4"	3" - 5-1/2"
38NPT	3/8"	6" - 8"
12NPT	1/2"	8" - 12"
34NPT	3/4"	12-1/2" - 18"



Extensions

Code	Thread	Length
18x18	1/8"	18" - 457mm
18x36		36" - 914mm
14x18	1/4"	18" - 457mm
14x36		36" - 914mm

ADAPTERS

Code	Brush hole		Shaft Ø	Max brush Ø	
	mm	inches		mm	inches
AT1	12.7	½	6.4mm ¼"	102	4"
UA1					
UA4	9.5	3/8		50.8	2"
UA2					
UA3	6.4	¼	102	4"	
1300	12.7	½			



Code	Diameter	Shaft hole		Compatible brushes
		mm	Inches	
AL 1/2	50.8mm 2"	12.7	½	BDM 6"-8" BDA 6"-8"
AL 5/8		15.9	5/8	
AL 5/8 1/2		15.9 - 12.7	5/8 - 1/2	
AL 3/4		19	¾	
AL 7/8		22	7/8	
AL 1		25.4	1	
AL 1-1/4	31.8	1-1/4	10"-12" BDH 10"-12" TWA 6", TW 8"-10", NWA 6"-18", NY 6"	
AL 1-1/2	38	1-1/2		
AL12A	12.7	½		
AL1A	25.4	1		
AL34A	19	¾		
AL5812A	15.9 - 12.7	5/8 - 1/2		
AL58A	15.9	5/8		
AL78A	22	7/8		



For Tampico and abrasive Nylon brushes

Code	External Ø		Standard shaft Ø	Max shaft Ø upon request
	mm	Inches		
MA3	82.5	3-1/4	5/8" - 15.9mm	2" - 50.8mm



Plastic reductions for circular brushes

Code	External Ø		Shaft Ø	
	mm	Inches	mm	inches
SA-1214	12.7	½	6.4	¼
SA-1238			9.5	3/8
SA-5812	15.9	5/8	12.7	½



Threaded adapters

Code	External thread	Internal Thread
TNA-3824	5/8"-11	3/8"-24
TNA-10125		M10x1.25
TNA-10150		M10x1.5



81 series micro-brushes adapters

Code	Type	Max brush stem Ø	Max brush Ø
PV-460	Double	.109" - 2.8mm	7/32" - 5.6mm
PV-467	Single rotating	.125" - 3.2mm	5/16" - 7.9mm



BRUSHES FOR ACIDS

Metal handle, horsehair bristles

Code	Width	Total length
#1	9.5mm – 3/8"	6"
#2	12.7mm – 1/2"	152mm



TOUCH-UP BRUSHES

Code	Description
4843	Size 1/4" camel hair flat brush
1091	Size 1 camel hair brush



BRUSHES

Code	Size	Length	Width	Pack.
601W	1/2"-12.7mm	1-3/4"-44.5mm	5-1/6"-7.9mm	36
	3"-76mm	1-11/16"-42.9mm		24
	4"-101mm	2"-50.8mm	11/16"-17.5mm	6
601G	1/2"-12.7mm	1-1/2"-38.1mm	1/4"-6.4mm	36
	1"-25.4mm	1-5/8"-41.3mm	5-1/6"-7.9mm	36
	1-1/2"-38.1mm			36
	2"-50.8mm			36
	2-1/2"-63.5mm	1-3/4"-44.5mm	3/8"-9.5mm	12
	3"-76mm			12
4"-101mm	12			



BRUSHES FOR ELECTRONICS

Nylon .003"-0.08mm bristles - Stainless steel 1/8" (3.2mm) handle – Delrin handle

Code	Description
5130-2	90° Execution



BRUSHES

Code	Size	Bristles	Bristle length	
622-S/H	5"x 5"	Plastic	2"	Short handle
622-L/H	127x127	Prolene	50.8mm	Long handle
King-8	8" – 203mm	Horse hair	2-1/2" – 63.5mm	



VARIOUS BRUSHES

Code	Bristle type	Rows	Width mm	Total L. mm	Bristle L. mm
B-40	Steel	3x19	1"-25.4	13-3/4"-350	1-1/8"-29
B-41		4x19	1-1/8"-29		
B-47 scraper		4x19	14"-355		
B-740	Stainless	3x19	1"-25.4	13-3/4"-350	1"-25.4
B-741		4x19	1-1/8"-29		
B-840	Bronze	3x19	1"-25.4	13-3/4"-350	1-1/8"-29
BN-49	Nylon	4x19	1-1/8"-29	14"-355	1"-25.4
BT-49	Tampico	4x18			
B-49S	Thin stainless 0.15	4x19	1-1/8"-29	10"-254	1-1/8"-29
B-46S		4x16			
B-39B	Thin brass 0.15	3x19	/	13-3/4"-350	1-1/8"-29
B-49B		4x19			
B-46B	4x16	/	/	/	/
B-44	Steel	4x16	1-1/8"-29	10-1/4"-260	1-1/4"-32
B-52		2x17	1/2"-12.7	10"-254	
B-844	Bronze	4x16	1-1/8"-29	10-1/4"-260	1-1/8"-29
B-210	Thin brass	4x11	1-1/8"-29	3-1/4"-83	9/16"-14.3
B-61	Brass	9x10	2-5/8"-67	8-7/8"-225	5/8"-16
B-200	Steel Chips removal	/	1-1/4"-32	5-1/2"-140	1-1/2"-38



SMALL BRUSHES

Handle Material	Handle width	Rows	Code and bristle type		
			Stainless .006 0.15mm	Nylon .018 0.45mm	Brass .006 0.15mm
Plywood	3/8" – 9.5mm	2	93A-S250	93A-N250	93A-B250
	7/16" – 11.1mm	3	93A-S375	93A-N375	93A-B375
	1/2" – 12.7mm	4	93A-S500	93A-N500	93A-B500

93-A



Handle material	Code	Bristle
Plastic	93-AP	.006-0.15mm Stainless
	93-APB	.006-0.15mm Brass
	93-APH	Horse hair
	93-APP	.006-0.15mm Bronzo
	93-APH	Horse hair
	93-APN	.012-0.3mm Nylon

93-AP



