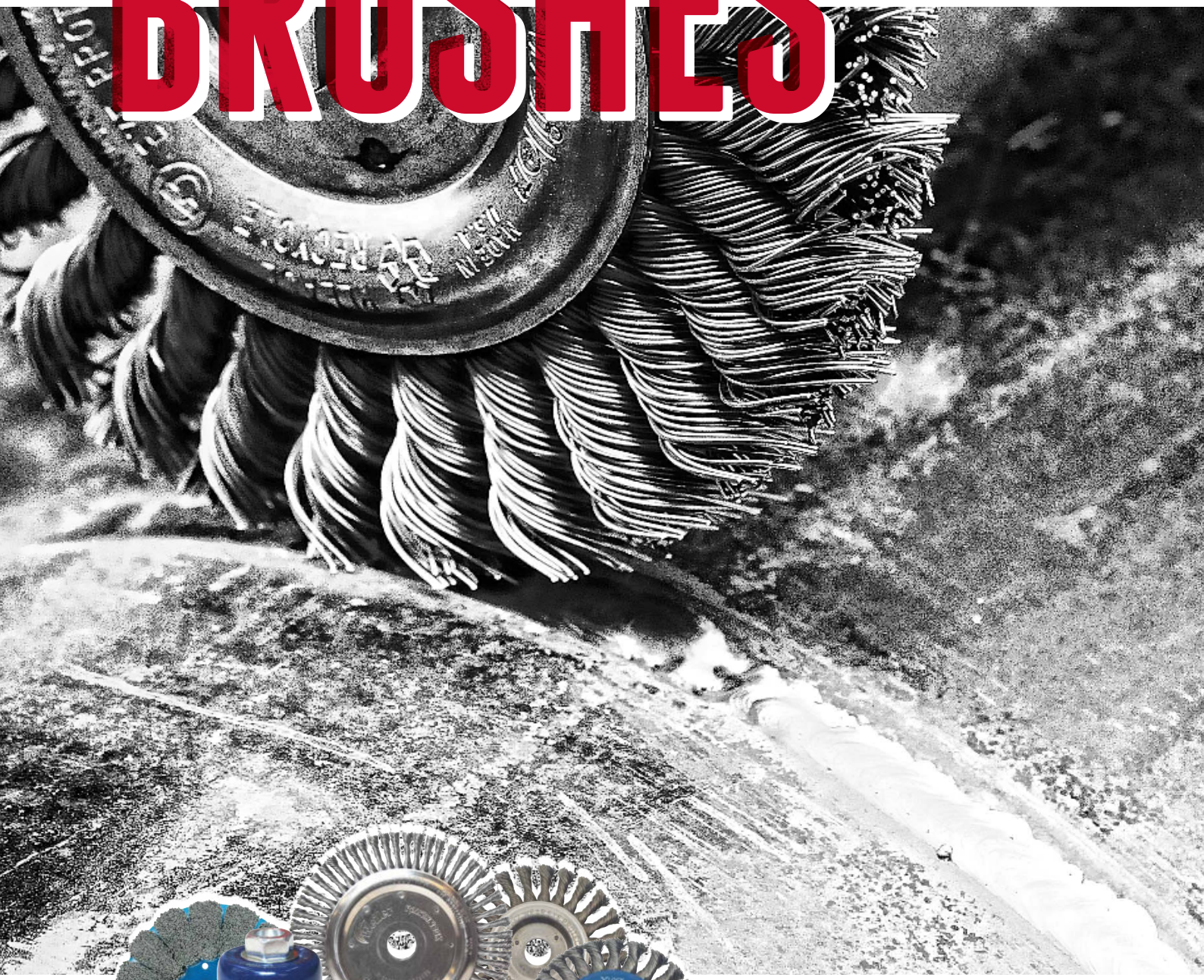
BRUSHES



Solutions for Deburring, Debuging, Maintance and Cleaning.

WEILER®

POWER BRUSHES

CHOOSE QUALITY

Superior construction, the highest quality materials, state of the art manufacturing, and exacting quality standards deliver the most consistent brush performance. Each Weiler brush is designed to provide the best performance at the lowest cost-of-use.

Superior performance is now even easier to see. Our most popular stainless steel brushes are now color-coded black for easy identification, even during operation. See the items bold in black throughout this section.

SOLUTIONS SHOWCASE

TUBE END DEBURRING

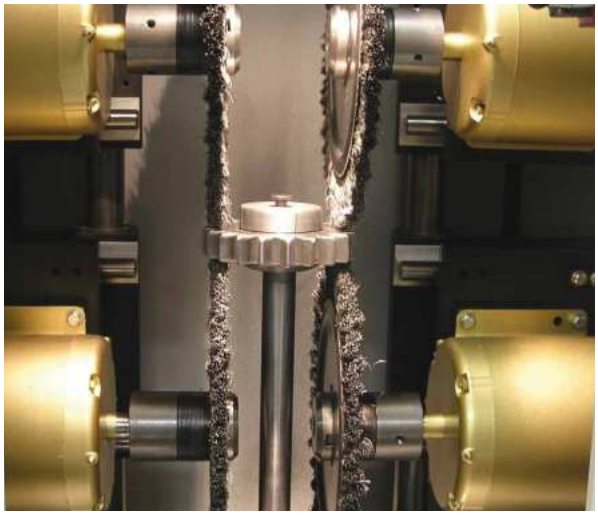
Problem: Structural tubing is fabricated into an abundance of different forms. In order to facilitate safer handling and proper fit, the ends of the tubing must frequently be deburred.

Solution: Wide face crimped wire wheel brushes are an extremely effective solution for tube end deburring. Brushes can deburr the OD and ID of tubing at an extremely high rate and produce a media-cost-per-part of considerably less than 0.01 € per part.

GEAR DEBURRING

Problem: Power transmission components like gears cannot function properly when burrs prevent correct engagement. Further, burrs that become detached from gears can become lodged in critical transmission components causing premature wear and potential failure.

Solution: Knot wire wheel brushes with surface speed in excess of 1.800 SMPM are an excellent solution for deburring gears prior to heat treatment. The high energy filament tips are able to separate burrs from base material and produce a uniform edge break, which protects the edge of the gear.



Photos courtesy of On-Line Services.

REMOVAL OF MILL SCALE

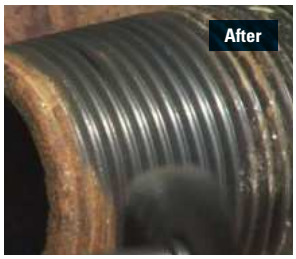
Problem: Mill processing of steel often involves heat treating and oil quenching operations that produce an adherent scale, which must be removed prior to joining or finishing operations.

Solution: Wire brushes are capable of quickly cleaning material to white metal and producing varying degrees of surface roughening to promote adhesion. Brushing operations are often preferred over blasting and chemical processes that generate an expensive waste stream and can be costly to operate and maintain.

INTER-PASS PIPELINE WELD CLEANING

Problem: To prevent voids and inclusions when welding multi-pass joints, the surface of each bead must be completely cleaned of slag and other residuals. Performing inter-pass weld cleaning as quickly and as thoroughly as possible is critical to avoiding costly repair work and delays.

Solution: Weiler's Roughneck and Dually stringer bead wheels have been engineered to maximize efficiency and minimize costs and are the preferred choice of welders' helpers on the pipeline. From hot pass to cap pass, these premium weld cleaning brushes excel at quickly and thoroughly removing slag, spatter, and oxidation without damaging the filler material.



CLEANING THREADED CONNECTIONS

Problem: The box ends of drill string and other oilfield tubular goods are examples of connections that must be periodically cleaned without altering the geometry of the threads. Abrasive products all remove base material to some extent and are capable of damaging threads, resulting in unreliable connections and the risk of potential failures.

Solution: The conformability and impact action of small diameter crimped wire wheels make them ideal tools for cleaning threads without fear of damage. When used on a high-speed die grinder, these radial wheel brushes quickly remove residual dope as well as rust, corrosion and scale from male or female thread ends.

REMOVAL OF EXCESS MOLDED RUBBER

Problem: Mechanical rubber components such as motor mounts are produced through a process that commonly leaves flash and excess rubber on critical surfaces. In order for the component to function properly, this unwanted material must be removed.

Solution: The non-loading nature of wire brushes makes them the best available solution in the marketplace for removal of rubber from targeted surfaces. This solution can be implemented off-hand or using automated equipment.

SELECTING THE RIGHT BRUSH

SELECTION BY TOOL

	Crimped Wheels	Knot Wheels	Crimped Cups	Knot Cups	Crimped Stem-Mtd. Wheels	Crimped Stem-Mtd. End	Knot Stem-Mtd. End	Power & Hand Tube Brushes	Mini Brushes
Right Angle Grinder	✔	✔	✔	✔					
Straight Grinder	✔	✔			✔	✔	✔		
Die Grinder	✔	✔			✔	✔	✔		
Corded/Cordless Hand Drill					✔	✔	✔	✔	
High Speed Pencil Grinder									✔
Bench/Pedestal Grinder	✔	✔							
Drill Press					✔	✔	✔	✔	
CNC/Milling/ Automatic Machine	✔	✔	✔	✔	✔	✔	✔	✔	

WIRE SIZE

To maximize brush life and reduce costs, always use the finest wire that will accomplish the job without requiring excessive applied pressure or engagement with the brush face.

Wire	Coarse		Medium		Fine		Very fine	
Gauge No.	25	30	33	34	35	38	43	47
Diameter in mm	0,51	0,36	0,30	0,26	0,24	0,20	0,15	0,13

LARGE DIAMETER WIRE
- Aggressive brushing action
- Fatigues and breaks more quickly

SMALL DIAMETER WIRE
- Resists fatigue and breakage
- Less aggressive
- Flexible brushing action

Wire sizes shown in all tables throughout this catalog are in milimeters

CRIMPED VS. KNOT WIRE

CRIMPED WIRE BRUSHES:

- Greater flexibility for light/medium duty applications.
- Use on parts that could be damaged by the impact of a knot brush.
- Use for a broad range of applications.

KNOT WIRE BRUSHES:

- Straight wire filaments that are twisted as a single unit like a piece of cable or wire rope.
- Provide less flexibility and more aggressive brushing action in heavy-duty applications.
- Use on parts requiring high-impact action.
- Use to remove large burrs and heavy contamination, such as multiple layers of rust, scale, paint or oxides.

KNOT TWIST CONFIGURATIONS

STANDARD
Provides some flexibility for use on irregular surfaces. Sharp wire tips make this knot aggressive right from the start.

HURRICANE
Provides smoother operation but sacrifices much of the cleaning action.

STRINGER BEAD
High-impact action, primarily for weld cleaning. Sharp wire tips make this knot aggressive right from the start.

TRIM LENGTH & FILL DENSITY

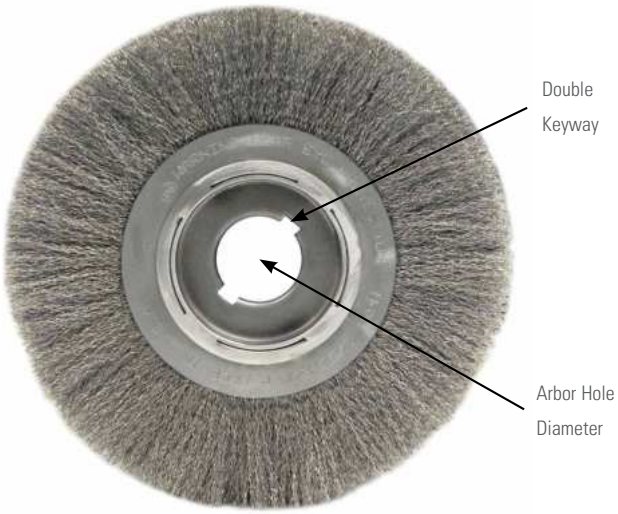
To maximize brush life and reduce costs, always use the shortest trim, highest density brush that will adequately conform to the surface or part edges.

LONG TRIM, LOW DENSITY BRUSHES
- Flexibility that is ideal for applications such as cleaning surfaces that are somewhat irregular
- Lower fill density can result in shorter brush life and less consistent performance in production environments.

SHORT TRIM, HIGH DENSITY BRUSHES
- Less flexible and faster action requires less applied pressure
- Consistent performance and longer life

ARBOR HOLE VARIATIONS

Arbor Hole Diameter	STEMS
M14	2,38 mm
M16	3,18 mm
X-LOCK	3,61 mm
9,53 mm or 12,7 mm	3,99 mm
12,7 mm or 15,88 mm	4,39 mm
19,05 mm	5 mm
22,23 mm	6 mm
31,75 mm	6,35 mm
50,8 mm	44,54 mm



PRODUCT ADVANTAGES

OPERATIONAL ADVANTAGES

POWER BRUSHES DO NOT REMOVE BASE MATERIAL

- The impact action of the wire tips of a rotating brush behave in the same manner as the media in a blasting operation and they have the same ability to separate surface contaminants without damaging the substrate.
- Due to its compliant nature, a power brush is the ideal tool for removing burrs and blending sharp edges without changing overall part dimensions after sawing, cutting, grinding and machining operations.

Grinding Wheel

Wire Wheel

POWER BRUSHES DO NOT LOAD

Unlike bonded, coated and non-woven abrasive products, power brushes will not load when used on softer materials or when removing paint or similar coatings from a harder surface. Because a power brush consists of a collection of individual wire filaments, there is no place for debris to accumulate and prevent the sharp wire tips from striking the work.

Resin Fiber Disc

Wheel Brush

POWER BRUSHES ARE SELF-SHARPENING

As a power brush is used, the wire tips will naturally tend to wear to a point due to contact with the working surface. It is possible to take advantage of this self-sharpening action by periodically switching the mounting position of wheel brushes to maintain their speed and effectiveness.

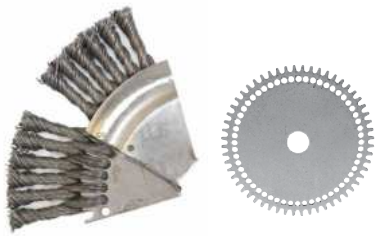
WEILER SUPERIOR CONSTRUCTION

WEILER'S SOLID RING CONSTRUCTION

Our crimped wire brushes are constructed using solid rings to retain the fill material and our manufacturing process results in an even, consistent distribution of wire strands around the entire brush diameter. This ensures that our crimped wire products run smoother and last longer than the competition - even in the toughest applications.

WEILER'S INDIVIDUAL KNOT HOLE CONSTRUCTION

Weiler's knot wheels are constructed with an internal steel plate that has equally spaced individual holes around the perimeter. Wire is inserted through each hole and twisted into a knot. Each hole has precisely the same wire count, thereby assuring perfect balance. This eliminates vibration, reduces operator fatigue and increases brush life.

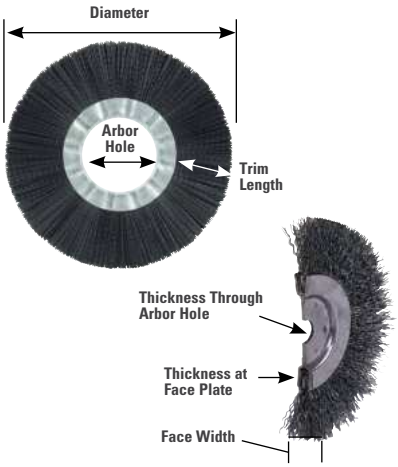


WEILER'S ROUGHNECK WELD CLEANING BRUSH CONSTRUCTION

Each knot is twisted through its own hole and locked into an individual sprocket tooth. This prevents the knots from moving, providing a stronger striking action on the work surface, longer brush life and less operator fatigue. This results in the most aggressive weld cleaning in the market with the lowest cost-per-piece brushed.

PRODUCT CHARACTERISTICS

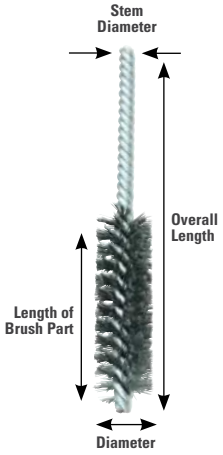
WHEEL BRUSH



CUP BRUSH

END BRUSH

TUBE BRUSH



FILL MATERIALS

Steel Wire - Carbon steel wire is the most durable power brush fill material for metalworking and heavy-duty cleaning applications. **Weiler industrial grade brushes** utilize heat treated, high tensile steel wire that has been drawn to the most exacting industry standards for superior fatigue resistance and aggressive brushing action. These brushes utilize more cost-effective grades of steel wire to deliver reliable performance in less demanding applications.

Stainless Steel Wire - Stainless steel wire is only recommended when brushing corrosion-resistant or non-ferrous metals such as stainless or aluminum or when the brush is being used in a wet environment. Stainless steel wire is not any more durable or aggressive than the highest grades of steel wire. All Weiler stainless steel brushes are manufactured with Type 302 stainless wire, but select items are also available with Type 316 wire by special order.

Non-Ferrous Wire - Brass, bronze and aluminum wire are available in assorted Weiler industrial grade power brush items. These non-ferrous materials will not generate a spark in use, but they lack the durability of carbon steel and stainless steel wire. Due to their soft brushing action, these materials may also be used in special applications such as decorative finishing.

Animal Hair - Natural hair bristle is used primarily in miniature power brushes for scratch-free cleaning and polishing. Depending on the animal species and type of hair, this fill material can range from relatively stiff to relatively soft, making it suitable for a variety of applications from removing dust from optical lenses to buffing precious metals using abrasive compounds.

Synthetic - Nylon is typically the most durable synthetic bristle material for use in power brushes and can be used in a variety of applications due to its flexibility, high fatigue strength and resistance to abrasion, heat, acids and alkali. Polypropylene is less durable and used primarily in strip brushes.

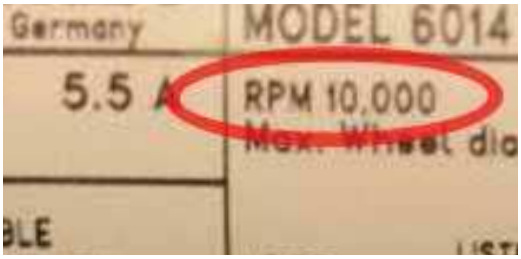
STAINLESS STEEL BRUSHES

Weiler's stainless steel wire brushes are manufactured using wire drawn from Type 302 stainless steel. Although 302 stainless is typically a non-magnetic material, it is important to remember that the amount of cold-working that it experiences during the wire-drawing process causes it to become magnetic. For this reason, proper storage and handling of stainless steel brushes is critical to prevent cross-contamination and "after rust" issues. Type 302 is widely used in the manufacture of power brushes for its relative durability and aggressive action as well as for its austenitic properties that insure the corrosion resistance of the materials on which it is applied. The use of a different grade of stainless steel wire is typically required in critical weld preparation and cleaning applications, but it will not address "after rust" and other cross-contamination issues. To insure the corrosion resistance of any stainless steel surface after brushing, passivating it with a 10-20% solution of nitric acid is recommended.

WORK SAFER WITH PROPER BRUSH USAGE

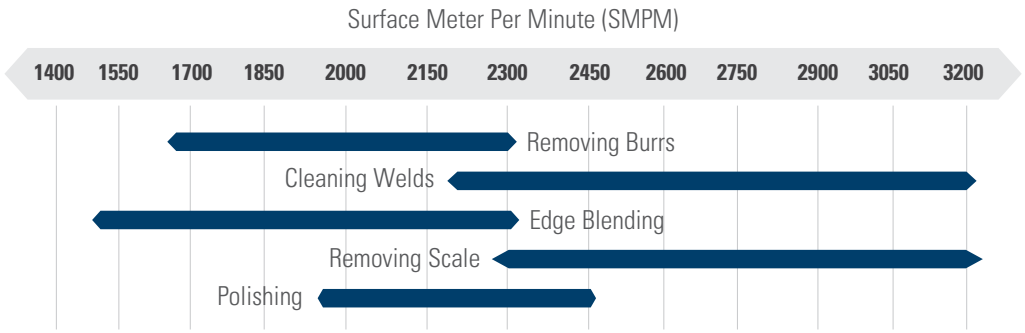
SPEED & SIZE

- Power brushes, operate most effectively when the speed and pressure of the operation are properly matched to the demands of the application. In most operations, the highest speed and lightest pressure will ensure the fastest brushing action and longest brush life.
- Increasing brush speed increases the face hardness and brushing action; therefore, a fine wire brush rotating at a higher speed will often produce the same results as a coarser wire brush rotating at a slower speed. Finer wire operating at a higher speed is generally preferred and will provide a longer brush life.
- MSFS - Maximum Safe Free Speed (RPM) is the maximum speed at which the brushes may be used safely but is not necessarily the optimum speed for a given application. Operating speed should be determined by the application. When running a wire brush, a rule is to run it a minimum of 1.500 Surface Meter Per Minute (SMPM). However, never exceed the Maximum Safe Free Speed of the brush.
- Make sure spindle size and motor of machine are large enough to accommodate the diameter of brush to be used.



Match the RPM rating of the power brush to the tool being used. The RPM of the tool should never exceed the RPM of the power brush.

RECOMMENDED SURFACE SPEEDS FOR BRUSHING APPLICATIONS



SMPM = π Dia. x RPM

SURFACE SPEEDS (PERIPHERAL SPEED IN M/MIN)

	Diameter (m)							
RPM	0,05	0,075	0,1	0,15	0,2	0,25	0,3	0,35
1000	157	236	314	471	628	785	942	1099
1500	236	353	471	707	942	1178	1413	1649
1750	275	412	550	824	1099	1374	1649	1923
2500	393	589	785	1178	1570	1963	2355	2748
3000	471	707	942	1413	1884	2355	2826	3297
3450	550	824	1099	1649	2198	2748	3297	3847
4000	628	942	1256	1884	2512	3140	-	-
6000	942	1413	1884	2826	-	-	-	-
10.000	1570	2355	3140	-	-	-	-	-
15.000	2355	3533	4710	-	-	-	-	-
20.000	3140	4710	6280	-	-	-	-	-

Example: A 150 mm diameter wheel running at 3.500 RPM has a surface speed of 1.650 SMPM.

PRESSURE

Avoid excessive pressure when using a wire brush. Excessive pressure causes over-bending of the filaments and heat build-up resulting in filament breakage, rapid dulling and reduced brush life.

INSTEAD OF GREATER PRESSURE, TRY:

- A brush with more aggressive action (increase filament diameter, decrease trim length, different brush type, i.e.; knot type instead of crimped type.
- Higher surface speed (increase RPM or brush diameter)

Never exceed the recommended Maximum Safe Free Speed or RPM rating of the brush.

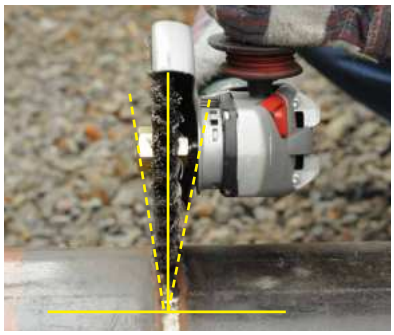
Correct
Wire Tips Doing the Work

Incorrect
Excessive Pressure Causes Wire Breakage

ORIENTATION

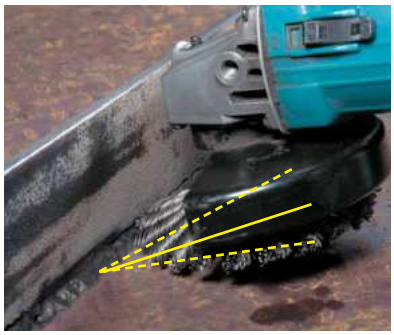
WORKING ANGLE BY BRUSH TYPE

Never stray more than 15˚ from the suggested working angles of the brush configurations below.



WHEEL +/- 15˚

CUP +/- 15˚



BEVEL +/- 15˚

TIME

Reduce the time it takes to get the job done by choosing the most appropriate product configuration.

SELF-SHARPENING OF WIRE WHEEL BRUSHES

When using wire wheel brushes without nuts, periodically reverse the direction of rotation to take advantage of the self-sharpening action that will result. Remove the brush from the spindle, flip the wire brush 180˚ and remount the brush securely.

Remove

Flip 180˚

Remount Securely

KNOT WHEEL BRUSHES

KNOT WIRE WHEELS - Provide heavy-duty brushing action with some flexibility; ideal for demanding cleaning applications on somewhat irregular surfaces.

APPLICATIONS:

- Weld preparation and cleaning
- Cleaning scale and heavy corrosion
- Removing heavy burrs from large pieces after cutting

386122

388067
XLOCK

Steel and stainless wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
Standard Twist								
76	0,3	9,525 or 12,7*	9,525	15,875	25000	10	388105	388106
76	0,35	9,525 or 12,7*	9,525	15,875	25000	10	418353	—
100	0,35	9,525 or 12,7*	12,7	22,23	20000	10	388102	388103
100	0,5	M16	12,7	22,23	20000	10	418321	—
115	0,35	22,23	12	28	12500	5	388112	—
150	0,5	22,23	12	31	11000	10	386118	—
Stringer Bead Twist								
100	0,5	M16	4,76	22,23	20000	5	418333	—
115	0,5	22,23	4,76	20,64	15000	5	—	418309
115	0,5	22,23	6	22	12500	10	386120	—
115	0,5	22,23	12	22	12500	10	388018	—
125	0,5	22,23	6	22	12500	5	386121	—
125	0,5	22,23	6	22	12500	5	—	388044
150	0,5	22,23	6	28,58	11000	10	388017	—
150	0,5	22,23	4,76	28,58	11000	10	—	418336
150	0,5	M16	4,76	28,58	12500	10	418320	—
178	0,5	22,23	6	28	9000	10	386122	—
Hurricane Twist								
115	0,5	22,23	12	22	12500	10	386113	386112
115	0,5	X-LOCK	12	22	12500	10	388067	—
125	0,5	22,23	12	27	12500	10	386116	386115
125	0,5	M14	12	27	12500	10	386117	—
150	0,5	22,23	16	35	11000	10	388045	388118
178	0,5	22,23	16	42	9000	10	386119	—
200	0,5	22,23	16	42	6000	10	388093	—

* Power brush with small plastic adapter that is easy to remove. With plastic adapter arbor hole is 9,525 mm, without plastic adapter arbor hole is 12,7 mm.

386111

Length diameter mm	Wire size mm	Stem mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
Hurricane Twist								
75	0,5	6	12	15	15000	10	386111	—

KNOT BEVEL BRUSHES

HURRICANE TWIST BEVEL BRUSHES - Are shaped radial wheels that provide a heavy-duty brushing action with some flexibility; ideal for cleaning fillet welds and into corners

APPLICATIONS:

- Weld preparation and cleaning
- Cleaning scale and heavy corrosion
- Removing powder coating, epoxy-based paints and rubberized coatings

Steel wire / Hurricane twist

Length diameter mm	Wire size mm	Arbor	Face width mm	Thickness mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
100	0,5	M14	20	14	12500	1	386089
115	0,35	M14	22	14	12500	1	388046
115	0,5	M14	20	14	12500	1	386090
125	0,5	M14	25	14	12500	1	388096

386089

CRIMPED BEVEL BRUSHES

CRIMPED BEVEL BRUSHES - Are shaped radial wheels that provide a heavy-duty brushing action with some flexibility; ideal for cleaning fillet welds and into corners.

APPLICATIONS:

- Removing rust and light corrosion
- Paint removal and surface cleaning
- Removing heat discoloration

Steel and stainless wire

Diameter mm	Wire size mm	Arbor	Face width mm	Thickness mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
100	0,3	M14	20	12	12500	1	386088	386087
125	0,35	M14	26	12	12500	1	388095	—

386088

CRIMPED WIRE WHEEL BRUSHES

SMALL DIAMETER CRIMPED WIRE WHEELS - Provide a flexible brushing action and consistent performance for light duty cleaning and deburring applications requiring a small wheel.

APPLICATIONS:

- Removing rust and light corrosion
- Cleaning threads
- Removing carbon build-up and deposits

388109

388113

Steel and stainless wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
Cooper center								
25	0,08	6,35	4,76	6,35	20000	10	—	388158
25	0,13	6,35	4,76	6,35	20000	10	—	388159
32	0,2	6,35	6,35	9,525	20000	10	—	388160
50	0,08	12,7	9,525	12,7	20000	10	388019	—
50	0,26	12,7	9,525	12,7	20000	10	388166	—
50	0,15	12,7	9,525	12,7	20000	10	388109	—
50	0,13	12,7	9,525	12,7	20000	10	—	388110
50	0,3	9,525 or 12,7	9,525	12,7	20000	10	388169	—
64	0,3	9,525 or 12,7	12,7	19,05	20000	10	418332	—
75	0,15	12,7	15,875	25,4	20000	10	—	388012
75	0,2	9,525 or 12,7	15,875	25,4	20000	10	388125	—
75	0,3	9,525 or 12,7	15,875	25,4	20000	10	388113	—
75	0,15	9,525 or 12,7	15,875	25,4	20000	10	388013	—

APPLICATIONS:

- Removing rust and light corrosion
- Paint removal and surface cleaning
- Light deburring

388127

Steel and stainless wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
Regular								
150	0,35	31,75	25	30	6000	20	388094	—
150	0,3	50,8	25,4	28,58	6000	1	—	418344
200	0,5	31,75	30	45	4000	10	388136	—
250	0,35	50,8	28,575	50,8	3600	1	388127	—
250	0,3	50,8	50,8	47,625	4000	1	418354	—
250	0,5	50,8	50,8	47,625	4000	1	418311	—

KNOT CUP BRUSHES

KNOT WIRE CUP BRUSHES - Provide heavy-duty brushing action with some flexibility; ideal for demanding cleaning applications on relatively flat surfaces.

APPLICATIONS:

- Cleaning rust, scale, and corrosion
- Removing paint and coatings
- Removal of slag from the edges of plasma or flame-cut plate
- Deburring

Steel and stainless wire / Hurricane twist

Length diameter mm	Wire size mm	Arbor	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Stainless
65	0,35	M14	20	12500	1	386107	386106
65	0,5	M14	20	12500	1	386108	—
70	0,5	M10	25,4	14000	1	418342	—
70	0,5	M14	25,4	14000	1	388014	—
70	0,5	M16	25,4	14000	1	418322	—
75	0,5	M14	22	11000	1	386109	—
75	0,5	X-LOCK	21	11000	1	388068	—
90	0,6	M16	22,23	13300	1	418329	—
100	0,5	M14	24	8600	1	386110	—
100	0,35	M16	31,75	9000	1	418327	—
150	0,35	M14	35	6000	1	418356	—

386110

388068

XLOCK

CRIMPED CUP BRUSHES

UTILITY CRIMPED WIRE CUP BRUSHES - Are smaller diameter cup brushes which provide flexible brushing actions and consistent performance for more demanding light-duty cleaning applications.

APPLICATIONS:

- Removing rust and light corrosion
- Paint removal and surface cleaning
- Weld preparation and cleaning

418315

386123

Steel and soft hair

Length diameter mm	Wire size mm	Stem mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Soft hair
14	/	3	/	37000	144	—	418315
50	0,3	6,35	16	4500	10	386123	—
75	0,3	6,35	20	4500	10	386124	—

CRIMPED WIRE CUP BRUSHES - Provide very flexible brushing action and the most consistent performance for demanding light-duty cleaning applications; feature a threaded nut for use on angle grinders.

APPLICATIONS:

- Removing rust and light corrosion
- Paint removal and surface cleaning
- Weld preparation and cleaning

386100

388069
XLOCK

Steel and stainless wire

Length diameter mm	Wire size mm	Arbor	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Stainless
60	0,3	M14	21	12500	1	386099	386098
75	0,3	M14	21	12500	1	386100	—
75	0,3	X-LOCK	23	12500	1	388069	—
100	0,3	M14	28,5	8600	1	386101	—
150	0,35	M14	32	6000	1	418357	—

KNOT END BRUSHES

KNOT WIRE END BRUSHES - Feature a hollow end and heavy-duty brushing action with some flexibility; ideal for more demanding cleaning applications in recessed areas.

APPLICATIONS:

- Removal of die flash and excess molded material
- Spot facing
- Deburring internal edges and crosshole intersections

Steel and stainless wire

Length diameter mm	Wire size mm	Stem mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Stainless
13	0,15	6,35	28,575	20000	10	—	388162
19	0,25	6	25	22000	320	388097	—
19	0,35	6,35	22,23	22000	10	—	388163
20	0,35	6	25,4	22000	10	386105	386104
29	0,5	6,35	22,23	22000	10	418325	—

386105

CRIMPED END BRUSHES

CRIMPED WIRE END BRUSHES - Feature a solid end construction and very flexible brushing action ideal for more demanding light-duty cleaning applications in corners and hard-to-reach areas.

APPLICATIONS:

- Removal of die flash and excess molded material
- Cleaning ID's, internal passages and recessed areas
- Deburring internal edges and crosshole intersections

Steel and stainless wire

Length diameter mm	Wire size mm	Stem mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Stainless
13	0,15	6,35	22,23	25000	10	—	388164
13	0,26	6,35	22,23	25000	10	—	388144
20	0,26	6	22,23	20000	10	388089	388090
20	0,26	6,35	22,23	22000	10	—	388145
25	0,15	6	22,23	20000	10	—	386102
25	0,26	6,35	22,23	20000	10	—	388114
30	0,26	6	22,23	20000	10	386103	—

386102

MINI END BRUSHES

MINI END BRUSHES - For scratch-free cleaning or for buffing and polishing of very small recesses using abrasive compounds.

APPLICATIONS:

- Decorative finishing
- Buffing and polishing of small parts
- Light-duty cleaning

388148

Stainless and soft hair

Length diameter mm	Stem size mm	Stem length mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Stainless	Soft hair
5	3,175	31,75	6,35	37000	144	388146	418316
6	3,175	31,75	11,11	37000	144	388147	—
8	3,175	31,75	14,29	25000	144	388148	—

STEM-MOUNTED CRIMPED BRUSHES

CRIMPRED WIRE RADIALS - Feature side plates for a shorter trim length and more controlled brushing action in a stem-mounted crimped wire wheel.

APPLICATIONS:

- Cleaning and finishing ID's and recessed areas
- Paint removal and surface cleaning
- Cleaning threads
- Light deburring

386093

Steel and stainless wire

Length diameter mm	Wire size mm	Stem mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Steel	Stainless
40	0,25	6	13	11	20000	10	—	388086
50	0,3	6	16	12,5	20000	10	386093	386091
70	0,3	6	18	17,5	15000	10	386095	386094

418362

Stainless wire

Length diameter mm	Wire size mm	Stem mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
							Stainless
80	0,2	6	18	22	4500	10	418362

STEM-MOUNTED CRIMPED BRUSHES

CRIMPRED WIRE RADIALS - Feature side plates for a shorter trim length and more controlled brushing action in a stem-mounted crimped wire wheel.

APPLICATIONS:

- Removing paint and coatings
- Deburring
- Weld preparation and cleaning

Steel wire

Length diameter mm	Wire size mm	Stem mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
							Steel
50	0,3	6,35	8	10	4500	10	386092
75	0,3	6,35	10	15,5	4500	10	386096
100	0,3	6,35	10	23	4500	10	386097

386092

Stainless wire

Length diameter mm	Wire size mm	Stem mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
							Stainless
50	0,3	6,35	9,525	12	20000	10	418323
76	0,35	6,35	12,7	25,4	20000	10	418324

418323

MINI STEM-MOUNTED CRIMPED BRUSHES

CRIMPRED WIRE RADIALS - Feature side plates for a shorter trim length and more controlled brushing action in a stem-mounted crimped wire wheel.

APPLICATIONS:

- Decorative finishing
- Light deburring
- Cleaning

Steel and stainless wire

Length diameter mm	Wire size mm	Stem mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Steel	Stainless
25	0,13	2,38	7,94	37000	144	418337	—
25	0,13	3,18	7,94	37000	144	—	418335
32	0,15	6,35	8	20000	10	—	388030

418337

TUBE BRUSHES

TUBE BRUSHES - Feature a single continuous length of stainless steel stem wire and filled with a tuft of crimped wire to provide an aggressive flat side action; ideal for cleaning and deburring internal threads.

APPLICATIONS:

- Crosshole deburring
- Removing burrs
- Removing paint

388101

Steel

Length diameter mm	Wire size mm	Stem mm	Brush part mm	Max. RPM min^{-1}	Standard pack pc/box	Item number Steel
6,4	0,1	3,175	25,4	2000	10	388122
8	0,13	3,175	25,4	2000	10	418366
11,1	0,08	2,38	/	2000	10	388101
14	0,13	3,175	15,875	2000	10	388027
19	0,13	3,175	15,875	2000	10	388028
25	0,13	3,175	15,875	2000	10	388029
25	0,2	6,35	25,4	2000	10	418358

BRASS COATED POWER BRUSHES

BRASS COATED CRIMPED WIRE WHEELS - Waved steel wire with high tensile strength for strongly adhering chips, for processing and polishing rubber materials.

APPLICATIONS:

- Weld cleaning
- Deburring

418359

Brass coated

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number Brass
90	0,3	12,5	10	16,5	4500	2	418359
90	0,5	12,5	10	16,5	4500	2	418360

418361

Brass wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number Brass
105	0,3	32	10	20	4500	2	418361

BRONZE/BRAS POWER BRUSHES

BRONZE KNOT WIRE WHEELS - Provide a flexible brushing action and consistent performance for light-duty cleaning and deburring applications requiring a small wheel for use in X-zones.

APPLICATIONS:

- Deburring component parts machined from soft, non-ferrous metals
- Light to medium duty cleaning of surfaces, recesses, and ID's
- Cleaning molds and dies in the injection-molding and extrusion of plastics

Bronze wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
							Bronze
76	0,5	9,525 or 12,7	9,525	15,875	25000	10	388107
100	0,5	M16	12,7	22,23	20000	10	388104

388107

BRASS CRIMPED WIRE WHEELS - Provide a flexible brushing action and consistent performance for light-duty cleaning and deburring applications requiring a small wheel for use in X-zones.

Brass wire

Length diameter mm	Wire size mm	Arbor hole mm	Face width mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
							Brass
152	0,3	12,7 or 15,875	12,7	31,75	6000	2	388115

388115

DRIVE ARBORS

DRIVE ARBORS - For mounting small diameter wheels into a collet or chuck.

388150

388151

A.H to A.H. / A.H. to Stem	Arbor hole diameter mm	Stem diameter mm	Stem length mm	For brushes with a max. dia. of mm	Overall length mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
A.H. to Stem	6,35	6,35	28,58	50,8	52,39	20.000	5	388150
A.H. to Stem	9,53	6,35	28,58	101,6	49,21	20.000	5	388149
A.H. to Stem	6,35	6,35	26,99	50,8	65,09	20.000	5	388153
A.H. to Stem	9,53	6,35	25,4	76,2	65,09	20.000	5	388152
A.H. to Stem	15,88	6,35	19,05	76,2	46,04	25.000	5	388151

OTHER ADAPTERS and DRIVE ARBORS

OTHER ADAPTERS and DRIVE arbors for use brush on different tools

NOTE:

- The adapters and drive arbors listed on this page are for use with small diameter wheel brushes only
- Never mount a drive arbor onto a tool that operates above the maximum RPM rating of either the arbor of the brush and be sure that the stem of the arbor is properly secured in the collet or chuck before use

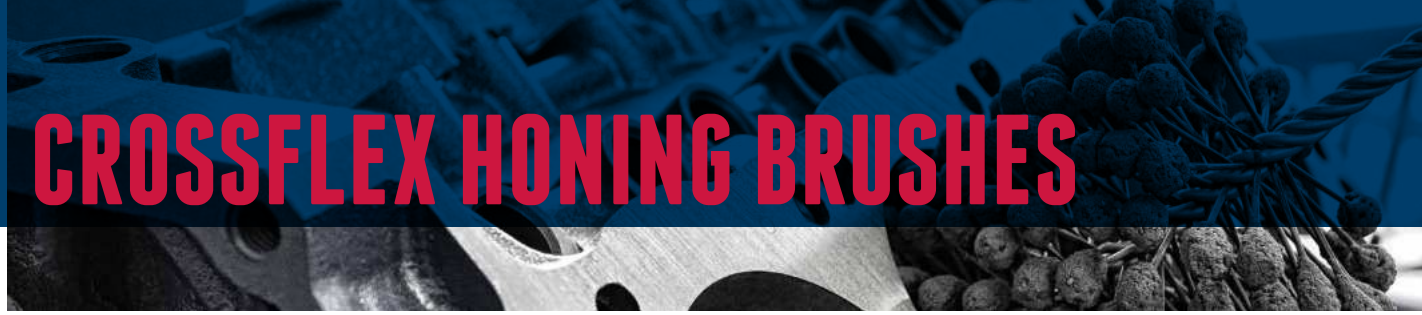
388128

388124

388100

Fixed arbor hole mm	Fixed stem mm	Adapted arbor hole mm	Adapted stem / shaft mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
50,8	/	31,75	/	N/A	1	388128
12,7	/	/	6	N/A	1	388108
22,23	/	/	19,05	2.500	1	388124
/	/	/	12,7	6.000	1	388043
/	2,38	/	6,35	N/A	5	388100

CROSSFLEX HONING BRUSHES



CrossFlex offers machinists the right combination of performance and value for professional honing applications. Flexible filaments provide the correct pressure to create an ideal hone; one bore after another. It's the ideal tool to create cross-hatch patterns for improved oil retention and increased part efficiency. The strong self-centering system leaves a smooth, even surface finish free of metal burrs whether used in a manual or automated application.

No matter what type or size cylinder, Weiler's CrossFlex brushes deliver the options you need to solve your toughest deburring and honing challenges.

FEATURES & BENEFITS:

- **Desired Finish**
  CrossFlex offers a wide range of grits and sizes allowing machinists to achieve the desired finish.
- **Heavy Burr Removal**
  Increased brush to part contact ensures that the heaviest burrs will be removed, outperforming standard nylon tube brushes.
- **Long Life**
  CrossFlex brushes have a long operational life, lowering total cost of use compared to other brush options.
- **Flexible Nylon Stems**
  Distribute pressure evenly and self centers within the part to create an ideal hone.
- **Consistent Cross Hatch Pattern**
  Helps to seat piston rings and retains oil for lubrication in a combustion cylinder.
- **Collet Ready Brushes**
  Deliver a true center rotation and exceptional brush balance for automated applications or hand held use.

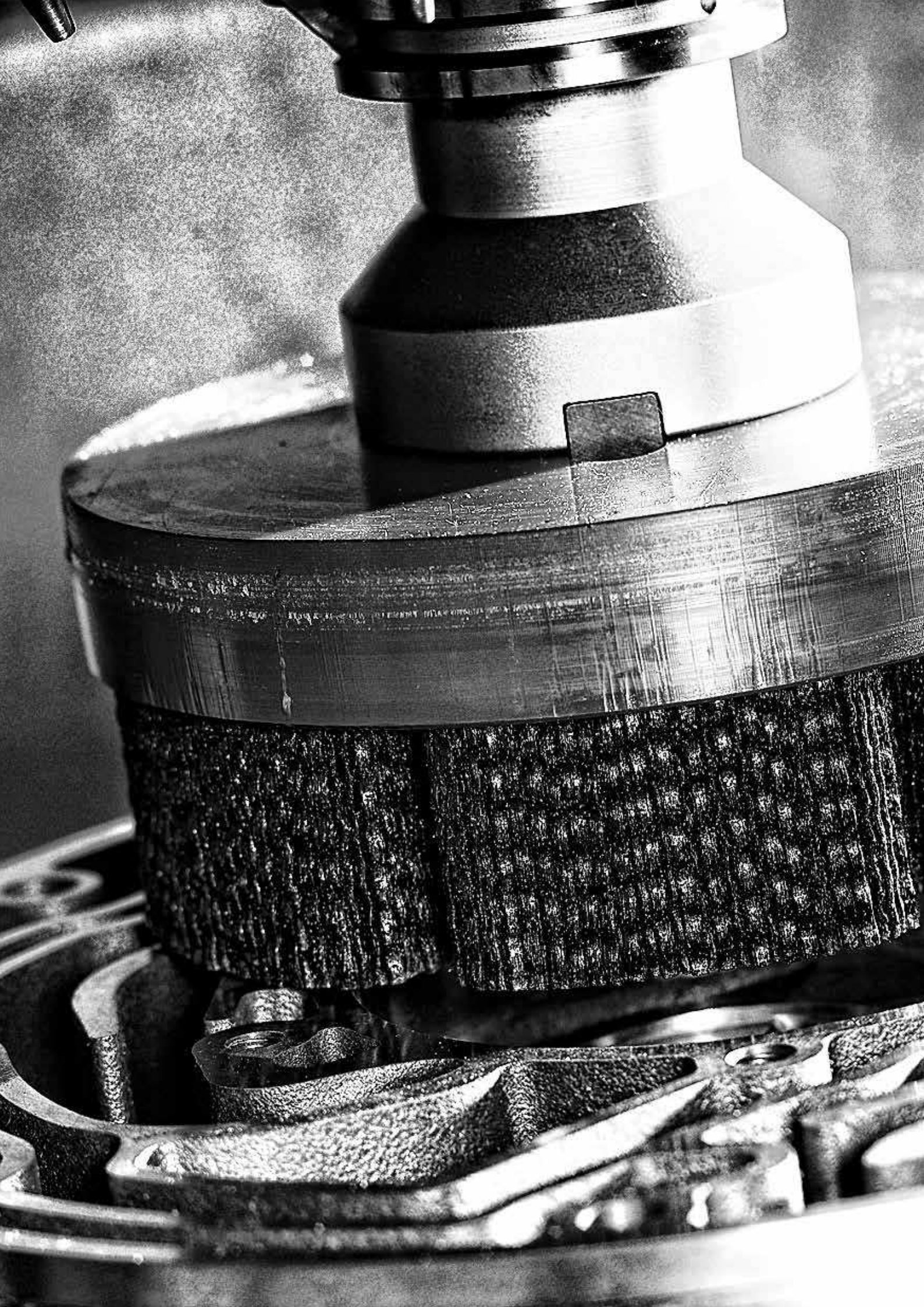
CROSSFLEX HONING BRUSHES Silicon carbide cross-honing brushes for standard use.
Ideal for deburring small diameter cross hole intersections.

Nylox SiC

Diameter mm	Brush lenght mm	Overall length mm	Shaf / Shank diameter mm	Grit	Max. RPM min^{-1}	Standard pack pc/box	**Item number** Nylox SiC
9,5	50,8	200	6,35	120	900	1	388165
11	50,8	200	6,35	320	900	1	418355
11	50,01	200	3,61	120	900	1	388051
12	50,01	200	3,99	120	900	1	388052
13	50,01	200	4,39	120	900	1	388053
16	62,99	200	5,00	120	900	1	418310

388051

388053



NYLOX BRUSHES

INCREASE PRODUCTIVITY

Combining cutting-edge technology and product innovation, Nylox abrasive nylon filament brushes were developed to provide increased productivity, thereby cutting production costs. Nylox brushes were specifically designed as flexible deburring and edge radiusing tools for CNC, robotic and automated processes.

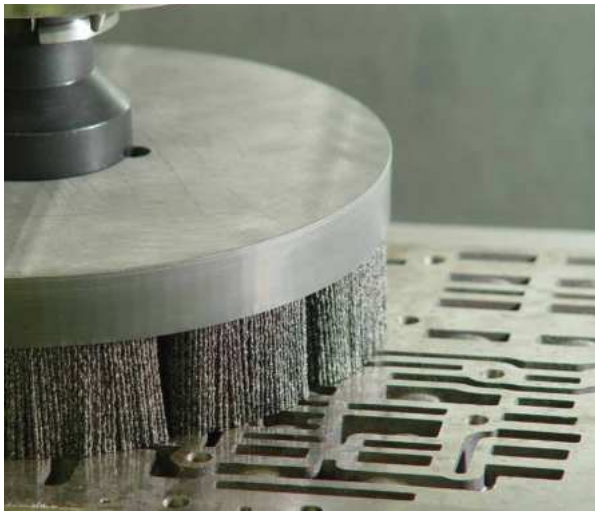
The nylon filaments of these brushes are impregnated with abrasive grain. As the nylon wears, new sharp grains are constantly exposed to the work surface, enabling the brush to maintain consistent brushing action throughout its life.

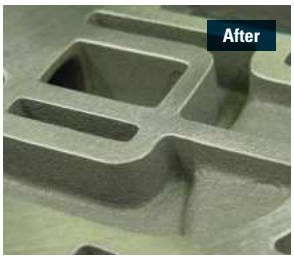
SOLUTIONS SHOWCASE

TRANSMISSION VALVE BODY

Problem: Burrs on transmission components can break away from parent components during use and cause transmission wear and eventual failure. Therefore, fluid passages must be completely burr-free.

Solution: A 250 mm Nylox disc brush operating at 825 RPM in a vertical CNC machining center is an ideal solution for deburring this component. Since all of the burrs are on a single plane, the non-directional nature of a Nylox disc brush produces a part on which all edges have been uniformly deburred.

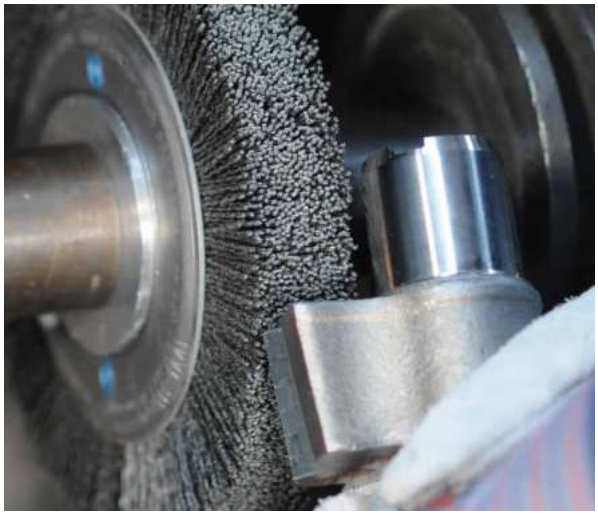




STEERING COMPONENT

Problem: Manual deburring can be costly in many respects. Hard deburring tools and aggressive abrasive wheels do not allow much margin for operator error and the result is often high scrap rates.

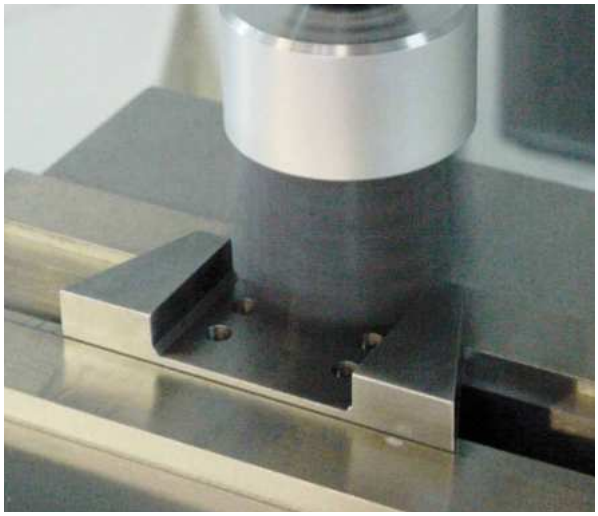
Solution: Nylox brushes produce a flexible filing action that concentrates all of the abrasive cutting action on sharp edges, giving them the ability to remove burrs without altering overall part dimensions. For example, a 150 mm wheel mounted onto a 1.725 RPM pedestal buffer is capable of deburring this steering component just as quickly as a convolute wheel but without the fear of over-radiusing the edges of the teeth or producing flat spots.

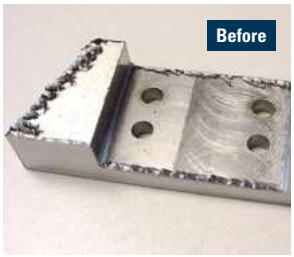


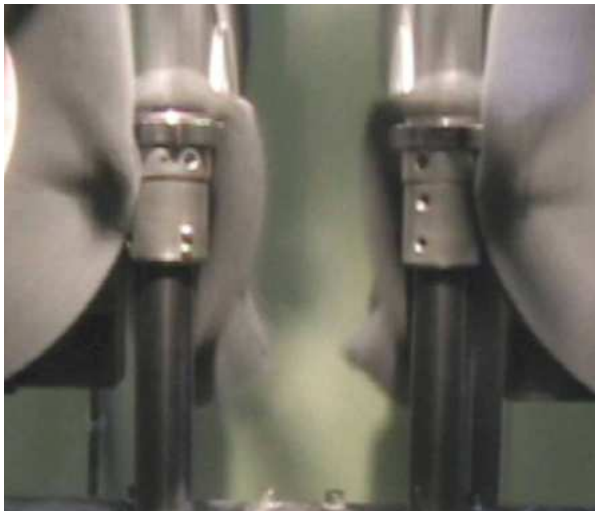
TOOL STEEL DEBURRING

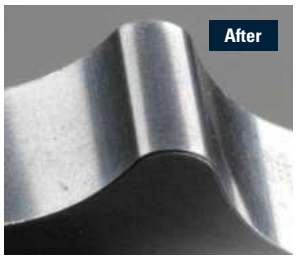
Problem: Traditional nylon abrasive brushes were not sufficiently aggressive to remove large burrs from materials like tool steels and stainless steels.

Solution: Weiler's next generation filament technology, embodied in the company's line of Burr-Rx brushes, creates sufficient aggression to handle the toughest deburring jobs. This enables more users to capture the benefits offered by in-machine deburring.









PUMP GEAR

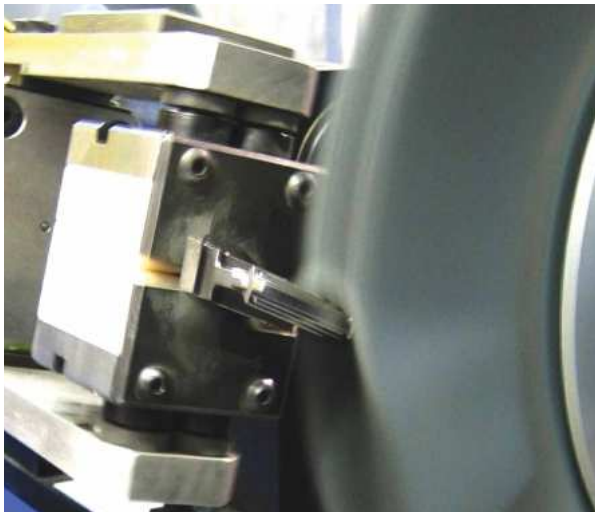
Problem: Pumps are extremely susceptible to failure due to burrs. Due to the tight fit between components, all edges must be deburred and radiused to ensure proper function. Proper deburring of rotating pump gears is especially important.

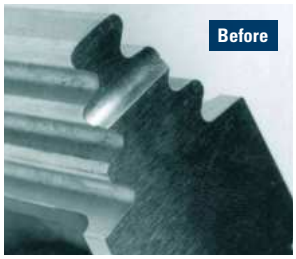
Solution: A dedicated machine running 350 mm Nylox wheel brushes at 900 RPM was a low-cost solution for deburring these gears. By using dedicated equipment, cycle time was minimized and an acceptable edge condition was achieved.

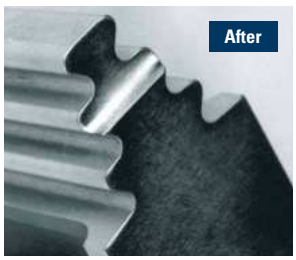
CAST ALUMINUM HOUSING

Problem: Although deburring the face-milled surfaces of castings is a very straight forward application for Nylox disc brushes, the limited availability of valuable machine time can be a perceived obstacle that prevents users from reaping the many benefits of implementing in-machine deburring operations.

Solution: The advanced ceramic grain technology of Weiler's Burr-Rx tools offer a deburring action that is up to 400% greater than traditional abrasive nylon brushes that contain silicon carbide or aluminum oxide filaments. This allows Burr-Rx deburring tools to be used at feed rates that dramatically reduce the amount of additional machine time required to perform a brushing operation.







TURBINE BLADE

Problem: Protecting turbine engine components against high-temperature fatigue is critical to ensure safe, reliable engine operation. Component edges must be burr-free and generally require an edge radius in the range of 0,12 mm to 0,15 mm.

Solution: Robots are extremely well-suited for this application because they can manipulate the component in many orientations in relation to the brush. Weiler works closely with users and robot integrators to develop products and process programs that maximize brush life while generating exceptional part quality and consistency.

Photo courtesy of ACME Manufacturing.

SELECTING THE RIGHT BRUSH

WHERE TO START?

Sometimes it's necessary to design and manufacture a unique, custom-tailored product to meet your application requirements. Although Weiler offers such engineered solutions in all of our product lines, the innovative construction and value-added nature of the Nylox line of nylon abrasive filament brushes showcases the creativity and expertise of our Application Engineering Team in designing products that have been tailored to the needs of the customer.

- Custom-engineered Nylox brushes can be designed and manufactured as variations on our standard products.
- Wide face brush assemblies for finishing flat surfaces or deburring cylindrical parts can also be designed and manufactured using Nylox nylon abrasive filaments.

FOR SOLUTIONS TO DIFFICULT APPLICATIONS

If the problem is too complex to be solved over the phone, we will determine if an evaluation should be conducted at our in-house lab or the user's facility.

TRIM LENGTH AND FILL DENSITY

To maximize brush life and reduce costs, always use the shortest trim, highest density brush that will adequately conform to the surface or part edges.

LONG TRIM, LOW DENSITY

These brushes offer a greater degree of flexibility that is ideal for applications requiring a high degree of brush conformability. However, the lower fill density can result in shorter brush life and less consistent performance.

SHORT TRIM, HIGH DENSITY

These brushes work with a faster action and less engagement with the brush face. This produces shorter cycle times, more consistent performance and longer life in applications that do not require a high degree of brush conformability.

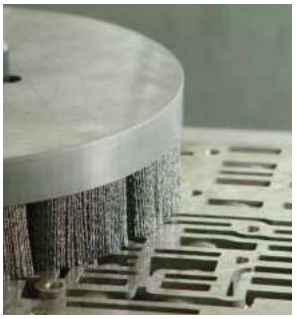
PRODUCT ADVANTAGES

PRODUCT ADVANTAGES

AGGRESSIVE YET COMPLIANT

- Nylox brushes do not alter the overall dimensions or geometry of a part.
- Filament compliance allows these brushes to conform to complex part shapes and reduces the need for ultra-precise programming and fixturing.

IDEAL FOR DEBURRING



- Nylox filaments act like flexible files, deburring and radiusing edges as they wipe across them.
- Their limited aggression and flexible filing action also make them suitable for deburring a wider range of materials in comparison to wire-filled power brushes.

IDEAL FOR AUTOMATION

- Abrasive grain is evenly distributed throughout the nylon filament.
- Extremely consistent performance throughout their product life.
- Ideal media for use in automated deburring and finishing processes.
- Ideal for dedicated production equipment or robotic cells.
- Can be directly integrated into the cycle of CNC machining centers.
- Improve part quality and consistency.
- Reduce direct labor cost.

ENHANCED SURFACE FINISHES

- The compliant cutting action not only limits their ability to alter part dimensions, but it makes them an effective tool for refining surface texture characteristics without removing significant amounts of base material.
- Although they contain the same abrasive grain sizes, Nylox brushes will not generate the same prominent scratch pattern as a comparable coated abrasive product.

CONSTRUCTION ADVANTAGES

COMPETITOR'S METAL HUB

- Metal hub components are assembled under high pressure, potentially damaging the filaments and causing premature breakage.
- Retaining ring displaces filament material, creating a void in the center of the brush face.
- Lower fill density can result in shorter life and less consistent performance.

WEILER'S COMPOSITE HUB

- Molded hub construction eliminates filament breakage.
- Uniform distribution of fill material and superior balance.
- Higher fill density provides more aggressive brushing and longer life.
- Consistent performance as the brush wears.

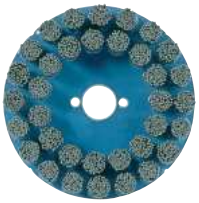
WEILER'S COMPOSITE METAL HUB

- Filaments retained using the latest polymer technology to prevent filament breakage.
- Metal components add impact resistance and dimensional stability.
- The highest filament density in the market ensures lowest cost-per-part.

WEILER'S PVC SHELL MILL

The PVC construction results in a very consistent, flat brush face. Their high dimensional precision makes them suitable for the most critical applications. They perform more consistently from the first part to the last.

WEILER'S TUFTED FILAMENTS



This construction style offers increased aggression due to added filament density. This enables processing of severe burrs or generating larger edge radii in shorter cycle times. The longer trim length allows for greater conformability and longer life.

WEILER'S MAXIMUM DENSITY

Maximum density brushes are uniquely suited for demanding applications characterized by large burrs and rapid feed rates.

PRODUCT CHARACTERISTICS

WHEEL BRUSHES

- Precision deburring of component parts after machining or grinding.
- Improving surface texture on machined or ground surfaces.
- Honing cutting tools and generating specific edge profiles and radii.
- Light duty cleaning and finishing of metals; light sanding of woods and composites.

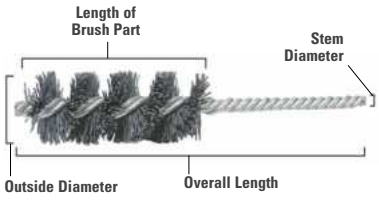
DISC BRUSHES

- Deburring flat surfaces on machined components.
- Improving texture on machined or ground surfaces.
- Deburring face-milled castings or forgings.
- Blending tool marks after machining or grinding.

END BRUSHES

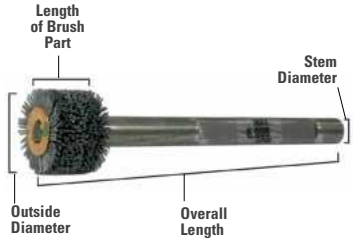
- Deburring flat surfaces on machined components.
- Improving texture on machined or ground surfaces.
- Deburring face-milled castings or forgings.
- Blending tool marks after machining or grinding.

TUBE BRUSHES



- Deburring and finishing applications in tubular component parts, drilled and tapered holes and machined bores and passages.

CROSSHOLE DEBURRING BRUSHES



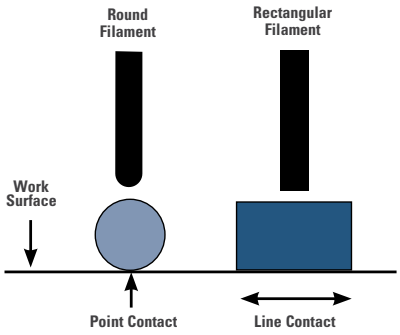
- Deburring internal edges.
- Improving surface texture on internal bores.

FILAMENT CONFIGURATIONS

ROUND FILAMENTS - Due to their cross-sectional shape and the reduced contact with the work surface or part edges that result, round filaments provide a more compliant brushing action for less aggression and enhanced conformability.

RECTANGULAR FILAMENTS - Due to their shape, larger cross-sectional area and increased contact with the work, rectangular filaments provide a less compliant brushing action for much greater aggression and reduced conformability.

Crimping either type of filament along its length enhances conformability, allowing greater penetration of part edges into the brush face, often increases aggression. Crimped filaments are especially beneficial in maximum density disc brush designs.



ABRASIVE FILAMENTS

Abrasive brush filaments are manufactured by extruding a mixture of liquefied polymer and abrasive grain. Unlike the filaments used in DIY grade abrasive brushes, industrial grade products like Weiler's Nylox and Burr-Rx brushes feature the highest grade of abrasive filament manufactured using a Type 6.12 nylon polymer. Industrial grade filaments also feature the highest quality abrasive materials that have been sifted and sorted to ensure that the grains are consistent in size. These grains may be one of four different types of abrasive:

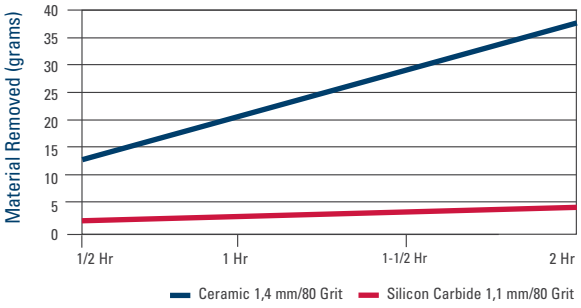
- **ALUMINUM OXIDE (AO)** - is a duller, less aggressive grain typically used in finishing applications requiring a less pronounced scratch line pattern or deburring applications on materials where the use of SiC may be prohibited
- **SILICON CARBIDE (SIC)** is a sharp-edged grain that produces an effective cutting action. It is the most common grain used in industrial grade brushes.
- **BURR-RX CERAMIC (CG)** is an engineered abrasive grain that produces a superior cutting action and is compatible with the widest range of materials. It is the most effective grain available today!
- **DIAMOND FILAMENT** is a sharp-edged grain typically used for producing edge radii on hard materials like diamond, ceramic, CBN and glass.

ADVANTAGES OF BURR-RX CERAMIC

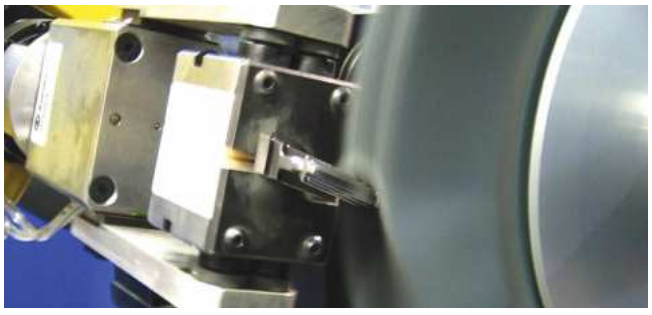
Nylox brushes containing the Burr-Rx black ceramic filament provide the following advantages over SiC and AO filaments.

- 400% greater cutting action
- Most cost-effective deburring brush
- Deburr tougher materials
- Minimize cycle time
- Maximize tool life
- Reduce finishing costs
- Eliminate hand deburring

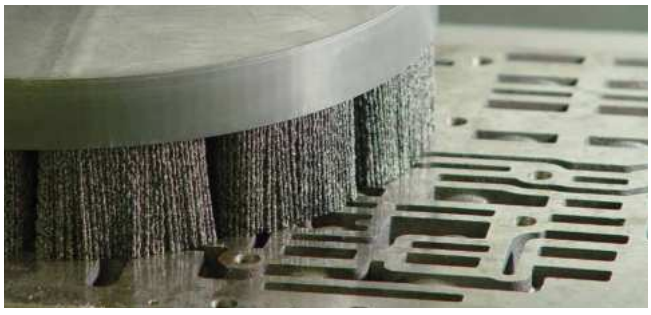
DEBURRING ACTION - BURR-RX (CG VS. SIC)



WHEEL VS. DISC BRUSH



Nylox wheel brushes are for applications where a targeted brushing action is required.



Disc brushes are for applications where the burrs lie along a single plane.

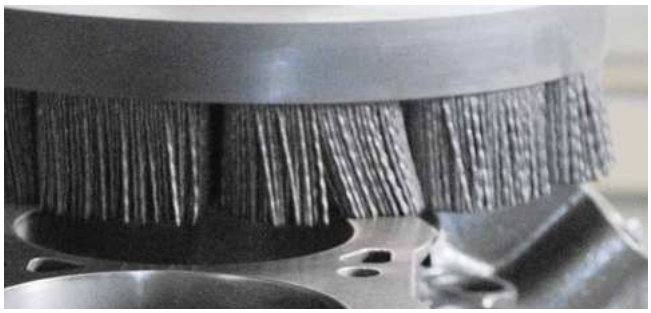
OPERATING INFORMATION

OPERATING PARAMETERS

Nylox abrasive brushes work with a wiping and filing action. Think of them as flexible files. The sides of the Nylox filament actually do the work. To achieve a maximum edge radius and complete burr removal, parts should be buried into a slow running brush face. They work best when operated at speeds that allow fairly deep penetration of the work-piece into the brush filaments. Usually, faster speeds do not work as well as slower speeds. The maximum RPM marked on the brush is not the optimum working speed. A good rule of thumb is to stay under 700 SMPM in dry applications and 1050 SMPM in wet applications.

WHEEL BRUSHES
PENETRATE 10% OF TRIM LENGTH

DISC BRUSHES
1,9 mm - 2,5 mm DEPTH OF INTERFERENCE



OPERATING SPEEDS - WHEEL BRUSHES

Diameter mm	RPM
50	3.450 - 5.000
76	2.500 - 3.450
100	1.750 - 2.500
150	1.350 - 1.750
180	1.150 - 1.350
255	950 - 1.150
305	750 - 950
356	650 - 850

OPERATING SPEEDS - DISC BRUSHES

Diameter mm	RPM
45 & 50	1.750 - 2.000
76 - 100	1.500 - 1.750
125 - 150	1.250 - 1.500
180	800 - 1.000
255	700 - 800
305	600 - 700
356	500 - 600

FEED RATE is determined by the amount of deburring, edge radiusing or surface finishing required and the type of material that is being processed. It is generally application specific. Slower feeds result in a more aggressive brushing action. Based on the brushing action desired for a specific application, the feed rate can be increased or decreased.

Material	SiC and AO Grain Feed Rate
Non-Ferrous	1,27 m/min
Cast Iron	0,76 m/min
Mild Steel and Ductile Iron	0,64 m/min
Stainless and Alloy Steels	0,38 m/min
Titanium and High Nickel Alloys	0,25 m/min

COOLANT & WEAR COMPENSATION

COOLANTS
Nylox brushes can be run dry, without coolants. However, certain deburring conditions such as higher speeds, material properties and greater depth of penetration can create excessive heat buildup, causing the nylon filaments to melt and smear on the work surface. If the speed or depth of penetration cannot be changed, coolants are recommended to overcome heat smear. Coolants will also help produce finer finishes.

WEAR COMPENSATION
On dedicated equipment, it is possible to automate wear compensation by using electronic controls to monitor the load on drive motors and adjust the position of the brushing tool to maintain a relatively consistent amount of interference or pressure. Since this is typically not possible with standard CNC machine tools, there are three other possible methods of compensating for tool wear for "in-machine" implementations of Nylox brushes.

AUTOMATIC INDEXING
Most CNC controllers allow tool wear compensation to be accomplished by programming a "macro" - routine to periodically adjust the position of the tool based upon the number of parts produced. Some experimentation may be required to determine the frequency and amount of adjustment that will result for most consistent performance and maximum brush life.

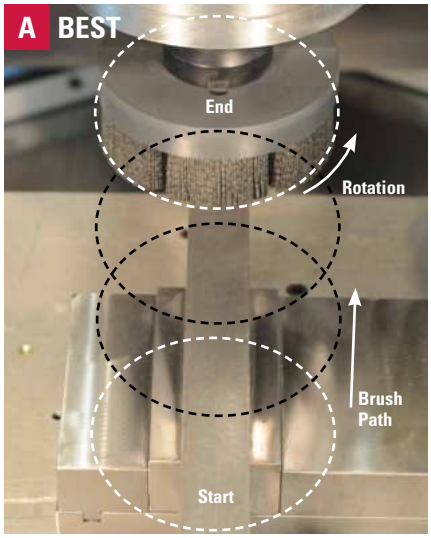
PROBING
If the machining center has the capability to probe the face of the brush, this feature can be used to gauge the true position of the filament tips. Adjustments to the brush position can then be made to maintain a consistent amount of interference between the tool and the part.

MANUAL
If the other methods cannot possibly be used, machine operators can adjust the brush position based on either statistical process control data or visual inspection of completed parts.

THE IDEAL TOOL PATH for a Nylox Disc brush is very similar to the path of the face mill that produced the burr. However, three differences exist:

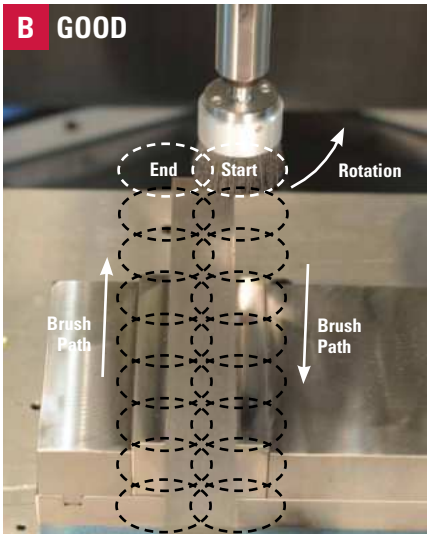
- The rotation direction of the brush should be opposite of the cutting tool that created the burr.
- The length of the path must be longer than the part. Unlike a cutter path that can stop when the leading edge of the cutter reaches the end of the part, the tool path of a brush should continue until the trailing edge of the brush reaches the end of the part.
- The centerline of the brush may need to be off-set from the center of the part in order to maximize the number of filaments that strike the part at a perpendicular angle. This is especially important when the diameter of the brush is similar to the width of the part.

The part is deburred in the shortest cycle time with the lowest consumable cost-per-part.



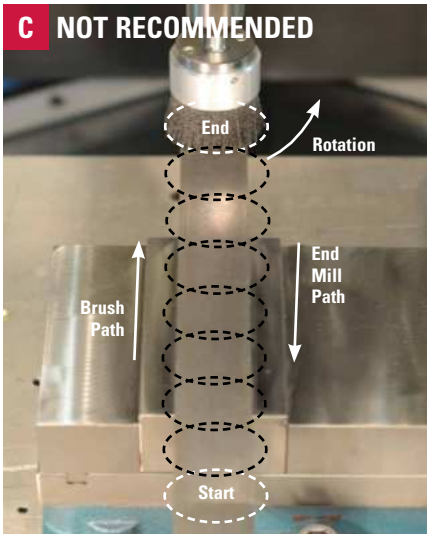
If a large diameter brush can be used, the centerline of the brush should be positioned on the center of the part. Ideally, the brush should be 75 -100 mm wider than the part.

The part is deburred, but requires a longer cycle time. When a large brush will not fit in the tool changer, this method is recommended.



If a small diameter brush must be used, the centerline of the brush should be positioned on the edge of the part. This maximizes aggression by increasing the amount of perpendicular contact between the brush filaments and the burred edge.

Produces less deburring than A & B.



Positioning a small diameter brush with its centerline on the center of the part is not recommended. This configuration will not allow perpendicular contact of the filaments against the burred edge.

COOLANT COMPATIBILITY

NYLOX BRUSHES IN AUTOMATED ENVIRONMENTS

MYTH: The abrasive grain in the Nylox brush will affect the accuracy of the equipment over time.

FACT: The abrasive grain in the Nylox brushes will not result in accelerated machine wear over time when used with proper filtration (50-micron or finer).

Automotive Case Study

In the auto industry a five year study was conducted on the use of Weiler Nylox brushes with silicon carbide (SiC) grain in the manufacturing of aluminum intake and exhaust manifolds. Over the period of the study, there was no noticeable difference in way wear between machines that ran brushes and those that did not. A 50-micron coolant filter worked as specified to remove the residuals from the brushing process.

Aerospace Case Study

A three year study was conducted on the use of Weiler Nylox brushes with ceramic grain (CG) in the manufacture of jet engine components. Over the period of the study, there was no loss in accuracy in the aerospace manufacturer's machines. A 50-micron coolant filter worked as specified to remove the residuals from the brushing process.

ENGINEERED PRODUCTS AND CUSTOMIZED SOLUTIONS

WE PROVIDE YOU WITH THE MOST COST-EFFECTIVE APPLICATION SOLUTIONS

Sometimes it is necessary to design and manufacture a unique, custom tailored product to meet your application requirements. Although Weiler offers such engineered solutions in all of our product lines, the innovative construction and value-added nature of the Nylox line of nylon abrasive filament brushes showcases the creativity and expertise of our Application Engineering Team in designing products that have been tailored to the needs of the customer.

- Custom-engineered Nylox brushes can be designed and manufactured as variations on standard product configurations such as wheel, disc, cup, end, or tube brushes.
- Weiler's exclusive Burr-Rx and Bore-Rx brushing tools can be engineered to meet the demands of a specific application.
- Wide face brush assemblies for applications such as finishing flat surfaces or deburring cylindrical parts can also be designed and manufactured using Nylox nylon abrasive filaments.

FOR SOLUTIONS TO DIFFICULT APPLICATIONS

If the problem is too complex to be solved over the phone, we will determine if an evaluation should be conducted at our in-house lab or the user's facility.

DISC BRUSHES

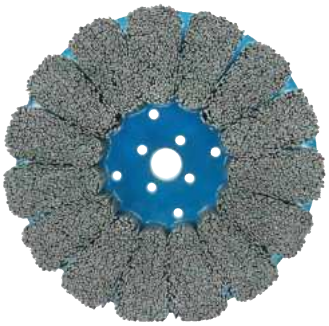
NYLON FILAMENT DISC BRUSHES - For deburring flat surfaces, face-milled castings of forgings, improving texture characteristics and for blending tool marks.

APPLICATIONS:

- Deburring flat surfaces on machined components
- Blending tool marks after machining or grinding
- Improving texture characteristics on machined or ground surfaces

385154

388123



383990

Nylox SiC & CER

Length diameter mm	Fill diameter mm / Grit	Arbor hole mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Nylox SiC	Nylox CER
CRIMPED NYLON FILAMENT							
45	0,9/180	15,88	31,75	6000	2	388040	—
45	0,56/120	15,88	31,75	6000	2	388041	—
45	N/A/80	15,88	31,75	4500	2	418338	—
50	1,1/120	9,53	31,75	4500	2	—	385154
50	0,66/120	9,53	31,75	4500	2	—	388033
76	1,1/120	9,53	31,75	4500	1	—	388035
76	0,9/180	22,23	38,1	2500	1	388036	—
76	1,0/120	22,23	38,1	2500	1	388037	—
89	0,9/180	22,23	38,1	2500	1	418340	—
89	1,0/80	22,23	38,1	2500	1	418341	—
100	0,9/180	22,23	38,1	2500	1	388074	—
100	1,1/120	31,75	38,1	2500	1	—	388180
127	1,0/80	22,23	38,1	2500	1	388123	—
152	1,4/120	31,75	38,1	2500	1	—	418303
254	1,1/200	22,23	38,1	1750	1	—	388117
254	1,1/120	31,75	38,1	2000	1	—	418313
RECTANGULAR NYLON FILAMENT							
76	120	22,23	38,1	2500	1	388038	—
89	320	22,23	38,1	2500	1	388039	—
100	80	22,23	38,1	2500	1	388091	—
100	120	22,23	38,1	2500	1	388056	—
152	120	22,23	38,1	2000	1	418302	—
229	80	22,23	38,1	1750	1	383990	—
254	80	31,75	38,1	1750	1	—	383991

WHEEL BRUSHES

NYLON CRIMPED FILAMENT WHEEL BRUSHES - For precision deburring, improving texture characteristics, honing cutting tools and light duty cleaning and finishing of metals.

APPLICATIONS:

- Precision deburring of component parts after machining or grinding
- Light duty cleaning and finishing of metals; light sanding of woods and composites
- Improving texture characteristics on machined or ground surfaces

Nylox SiC & CER

Length diameter mm	Fill diameter mm / Grit	Arbor hole mm	Trim lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number	
						Nylox SiC	Nylox CER
35	0,45/500	6,35	7,94	10000	10	418304	—
38	0,64/120	12,7	9,53	10000	10	—	388054
76	0,56/320	9,53 or 12,7	9,53	6000	2	388055	—
76	0,89/180	9,53 or 12,7	9,53	6000	2	418346	—
76	0,56/320	12,7	12,7	10000	10	388079	—
76	0,89/80	12,7	12,7	10000	10	—	418331
100	0,66/120	12,7 or 15,88	25,4	6000	2	—	388111
100	0,45/500	12,7	25,4	6000	10	—	388121
100	0,56/320	9,53 or 12,7	22,23	6000	2	388087	—
100	1,0/120	31,75	25,4	6000	100	388116	—
152	0,89/180	50,8	25,4	4000	1	418343	—
152	0,66/120	50,8	19,05	4000	1	—	418319
152	1,4/80	50,8	19,05	4000	1	—	418318
203	1,1/120	50,8	22,23	4000	1	—	418312
203	0,66/120	50,8	22,23	4000	1	—	418364
203	1,4/80	50,8	22,23	4000	1	—	418328
254	0,56/320	50,8	28,56	1800	1	418363	—
254	1,1/120	50,8	31,75	1800	1	—	388020
355	0,9/80	50,8	25,4	1800	1	—	388092
355	1,4/80	50,8	25,4	1800	1	—	385153

418304

388079

418312

CROSSHOLE BRUSHES

NYLON FILAMENT CROSSHOLE BRUSHES - For bore finishing and crosshole deburring.

APPLICATIONS:

- Honing and finishing of cylindrical bores
- Deburring

418330

Nylox CER

Length diameter mm	Fill diameter mm / Grit	Face width mm	Trim lenght mm	Overall length mm	Stem mm	Max. RPM min^{-1}	Standard pack pc/box	Item number
22	0,66/120	19,05	4,06	120,65	9,53	8000	1	418330
25	0,66/120	19,05	5,46	120,65	9,53	8000	1	388130

TUBE BRUSHES

NYLON TUBE BRUSHES - For internal deburring and finishing applications in tubular component parts, drilled and tapered holes and machined bores and passages.

APPLICATIONS:

- Cleaning and finishing the ID of tubing and pipe
- Crosshole deburring

388178

388070

388134

418307

Nylox SiC, AO, CER & black CER

Length diameter mm	Fill diameter mm / Grit	Lenght of brush part mm	Stem mm	Overall lenght mm	Standard pack pc/box	Item number
Nylox black						
6	0,13	50,8	2,38	158,8	36	388173
10	0,13	50,8	2,38	158,8	36	388174
13	0,25	76,2	3,18	215,9	36	388175
19	0,3	76,2	3,18	215,9	36	388176
25	0,36	101,6	3,97	311,15	36	388177
32	0,36	101,6	3,97	330,2	36	388178
50	0,36	127	4,76	425,5	36	388179
Nylox AO						
8	600	25,4	2,92	127	10	388070
Nylox black CER						
7	0,66/120	25,4	6,35	88,9	10	418367
8	0,66/120	25,4	6,35	88,9	10	418368
10	0,66/120	25,4	6,35	88,9	10	418306
11	0,66/120	25,4	6,35	88,9	10	418305
13	0,66/120	25,4	6,35	88,9	10	388132
22	0,56/320	63,5	5,56	139,7	10	388135
22	0,66/120	25,4	6,35	88,9	10	388133
25	0,66/120	25,4	6,35	88,9	10	388134
Nylox SiC						
19	0,66/120	63,5	6,35	139,7	10	388131
32	0,56/320	63,5	6,35	139,7	10	418307

END BRUSHES

NYLON TUBE BRUSHES - For internal deburring and finishing applications in tubular component parts, drilled and tapered holes and machined bores and passages.

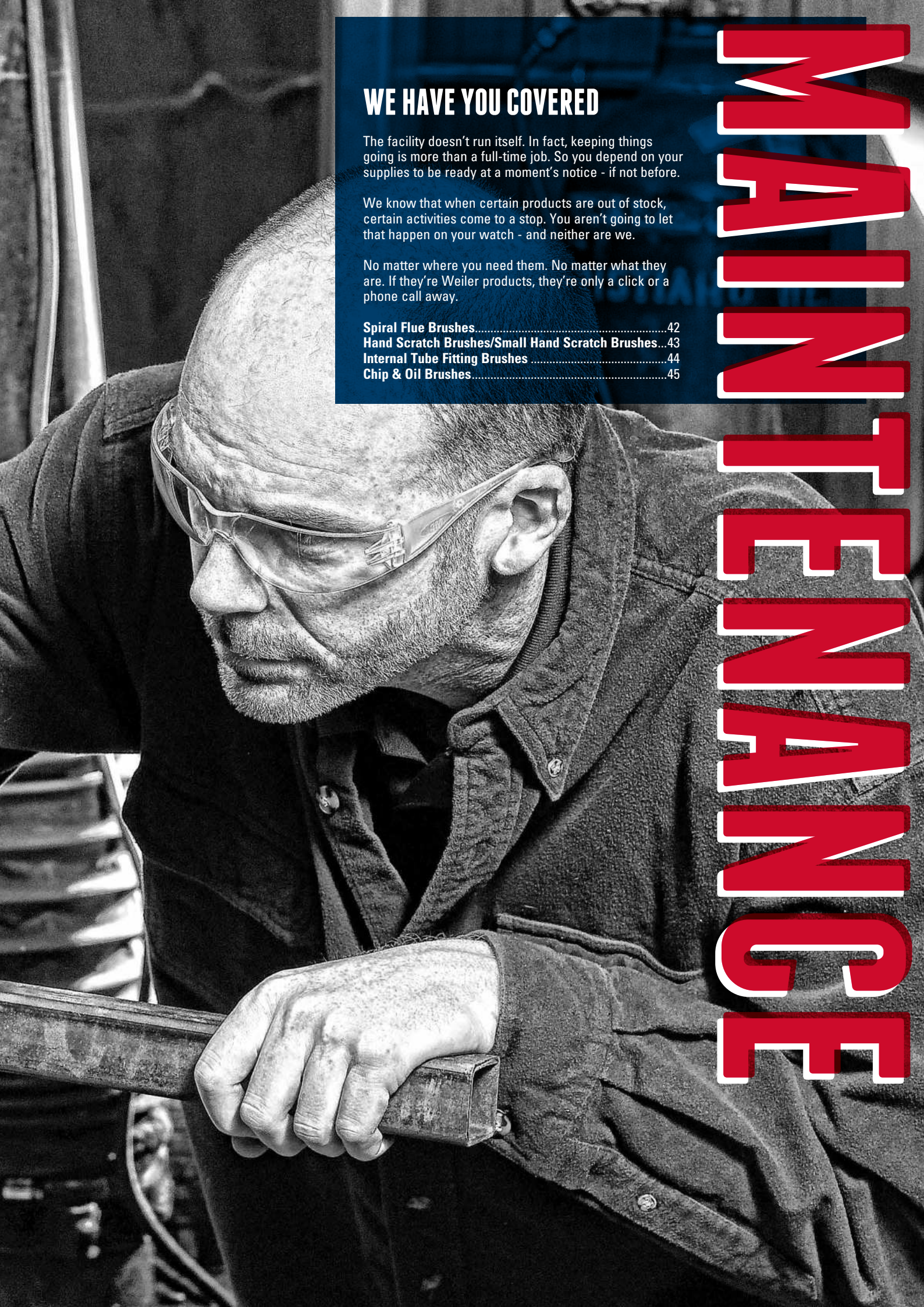
APPLICATIONS:

- Deburring small recessed areas and internal part features
- Finishing slots and recessed surfaces on machined parts

Nylox SiC & CER

Diameter mm	Stem size mm	Trim length mm	Overall length mm	Fill diameter mm / Grit	Max. RPM min^{-1}	Standard pack pc/box	Item number	
							Nylox SiC	Nylox CER
6	3,18	9,53	53,88	0,46/500	37.000	144	388077	—
10	6,35	6,35	60,33	0,66/120	10.000	10	—	418314
13	6,35	6,35	61,91	1,1/120	10.000	10	—	388050
13	6,35	9,53	65,09	0,89/180	10.000	10	388047	—
19	6,35	6,35	61,91	0,66/120	10.000	10	—	388031
19	6,35	9,53	61,91	1,0/120	10.000	10	388048	—
25	6,35	6,35	66,68	0,66/120	10.000	10	—	388032

388047



MAINTENANCE

WE HAVE YOU COVERED

The facility doesn't run itself. In fact, keeping things going is more than a full-time job. So you depend on your supplies to be ready at a moment's notice - if not before.

We know that when certain products are out of stock, certain activities come to a stop. You aren't going to let that happen on your watch - and neither are we.

No matter where you need them. No matter what they are. If they're Weiler products, they're only a click or a phone call away.

SPIRAL FLUE BRUSHES

FLUE BRUSHES - Ideal for internal cleaning of pipes and flues.

APPLICATIONS:

- Pipe cleaning
- Flue cleaning
- Boiler tube cleaning

388023

Steel

Brush diameter mm	Wire size mm	Brush lenght mm	Overall lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number Steel
22	0,3	114	191	/	1	388021
32	0,3	114	191	/	1	388022
45	0,3	114	191	/	1	388023
64	0,3	114	191	/	1	388024
100	0,3	114	191	/	1	388025

FLUE BRUSH EXTENSION ROD -One 6,35 mm male pipe nipple and one 6,35 mm female pipe coupling allows user to extend flue brush.

388026

Steel

Brush diameter mm	Wire size mm	Overall lenght mm	Max. RPM min^{-1}	Standard pack pc/box	Item number Steel
/	/	/	/	1	388026

HAND SCRATCH BRUSHES

HAND SCRATCH BRUSHES - For general purpose, light-duty cleaning.

APPLICATIONS:

- Cleaning dirt, rust, scale, chips and paint
- Use in plating and welding operations

Hardwood block

Overall length mm	Brush length mm	Number of rows	Trim length mm	Standard pack pc/box	Item number
0,35 mm Straight Steel Wire					
290	120	3	25	12	388000
290	120	4	25	12	388001
290	120	5	25	12	388002
0,30 mm Straight Stainless Wire					
290	120	4	25	12	388003

388002

Strip style - Plastic block

Overall length mm	Brush length mm	Number of rows	Trim length mm	Standard pack pc/box	Item number
0,3 mm Crimped Steel Wire					
241	127	1	32	12	388007
0,3 mm Crimped Stainless Wire					
241	127	1	32	12	388008
0,3 mm Crimped Brass Wire					
241	127	1	32	12	388009

388008

SMALL HAND SCRATCH BRUSHES

SMALL HAND SCRATCH BRUSHES - Ideal for cleaning and preparing surfaces

APPLICATIONS:

- Surface preparation
- Cleaning dirt & rust

Wood block

Overall length mm	Brush length mm	Number of rows	Trim length mm	Standard pack pc/box	Item number
0,15 mm Straight Stainless Wire					
191	12,7	3	12,7	36	418317
191	35	3	13	36	388010
0,15 mm Straight Brass Wire					
191	35	3	13	36	388011

388011

INTERNAL TUBE FITTING BRUSHES

Wire fill - For internal cleaning and deburring of copper tube fittings. Also used in trucking and marine industries as a light socket cleaning brushes.

APPLICATIONS:

- Deburring
- Ideal for cleaning inside diameter

418347

Steel

Pipe size mm	Brush diameter mm	Brush length mm	Overall lenght mm	Handle lenght mm	Standard pack pc/box	Item number Steel
10	12,7	25,4	165,1	82,55	12	418347
13	15,88	25,4	165,1	82,55	12	418348
19	22,34	25,4	165,1	82,55	12	418349
22	25,4	25,4	165,1	82,55	12	418350
25	28,58	25,4	165,1	82,55	12	418351
32	34,93	25,4	165,1	82,55	12	418352

CHIP & OIL BRUSHES

CHIP & OIL BRUSHES - Reliable and efficient brushes at value price.

APPLICATIONS:

- Removing chips
- Cleaning
- Applying paint

Brush length mm	Trim length mm	Standard pack pc/box	**Item number**
10	18	720	388016
25	37,6	36	388064
50	37,6	24	388065
50	57,15	12	388066

388065

388066

TROUBLESHOOTING GUIDE

POWER BRUSHES

There are many variables in power brush applications. If the power brush you are using does not accomplish the desired results, select a solution from the suggestions below for your specific application.

Problem	Recommended Solutions
Brush works too fast	• Select a brush with longer filaments and/or lower fill density • Select a brush with a smaller diameter wire • Select a brush with a narrower face and/or lower fill density • Select a brush with a smaller outside diameter • Operate the brush at a slower RPM
Brush works too slowly	• Select a brush with shorter filaments and/or higher fill density • Select a brush with a larger diameter wire • Select a brush with a wider face and/or higher fill density • Select a brush with a larger outside diameter • Operate the brush at a faster RPM
Brushing action rolls or peens the burr over instead of removing burr	• Select a brush with a larger diameter wire • Select a brush with shorter filaments and/or higher fill density • Operate the brush at a faster RPM • Replace the crimped wire brush with a knot wire brush
Finer final finish required	• Select a brush with longer filaments • Select a brush with a smaller diameter wire • Operate the brush at a higher RPM • Replace the wire brush with a nylon abrasive brush (Nylox)
Coarser final finish required	• Select a brush with shorter filaments • Select a brush with a larger diameter wire • Operate the brush at a slower RPM
Non-uniform brushing action	• Select a brush with longer filaments • Select a brush with a larger diameter wire • Automate the operation to reduce human variables
Filaments break off	• Reduce applied pressure or engagement • Select a brush with a smaller diameter wire • Select a brush with a lower fill density
Short brush life	• Reduce applied pressure or engagement • Select a brush with a smaller diameter wire • Select a brush with a higher fill density

NYLOX BRUSHES

There are many variables in Nylox applications. If the Nylox brush you are using does not accomplish the desired results, select a solution from the suggestions below for your specific application.

Problem	Recommended Solutions
Brush not aggressive enough	• Increase filament diameter and/or grit size • Increase filament density by using round straight rather than round crimped • Increase surface contact by using rectangular rather than round • Increase pressure/depth of interference • Increase surface speed by increasing spindle RPM • Use a larger diameter brush • Reduce trim length or feed rate
Brush too aggressive	• Reduce filament diameter and/or grit size • Reduce filament density by using round crimped rather than round straight • Reduce surface contact by using round rather than rectangular • Reduce pressure/depth of interference • Reduce surface speed by reducing spindle RPM • Use a smaller diameter brush • Increase trim length or feed rate
Brush not conformable enough	• Increase trim length • Reduce filament diameter • Reduce filament density by using round crimped rather than round straight or rectangular • Reduce surface speed by reducing spindle RPM • Reduce feed rate
Finer final finish required	• Increase surface speed by increasing spindle RPM • Decrease grit size • Use brush with a coolant
Coarser final finish required	• Reduce surface speed by reducing spindle RPM • Increase grit size • Use brush without a coolant
Filaments melt/smear on workpiece	• Reduce surface speed by reducing spindle RPM • Use a smaller diameter brush • Use brush with a coolant
Short brush life	• Increase filament density • Reduce pressure/depth of interference

NEED HELP?

To discuss specific requirements with a specialist call: +386 2 333 16 00
or write an email: info.slovenia@weilerabrasives.com

THE WEILER PROMISE

At Weiler, we passionately embrace change to improve our products and our processes to move the company and our customers forward. By bringing new ideas and creative problem solving together in an open, collaborative environment, we will improve our customers' productivity and create profitable growth.

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