

# DISC BRUSHES

Flexible tools for surface treatment

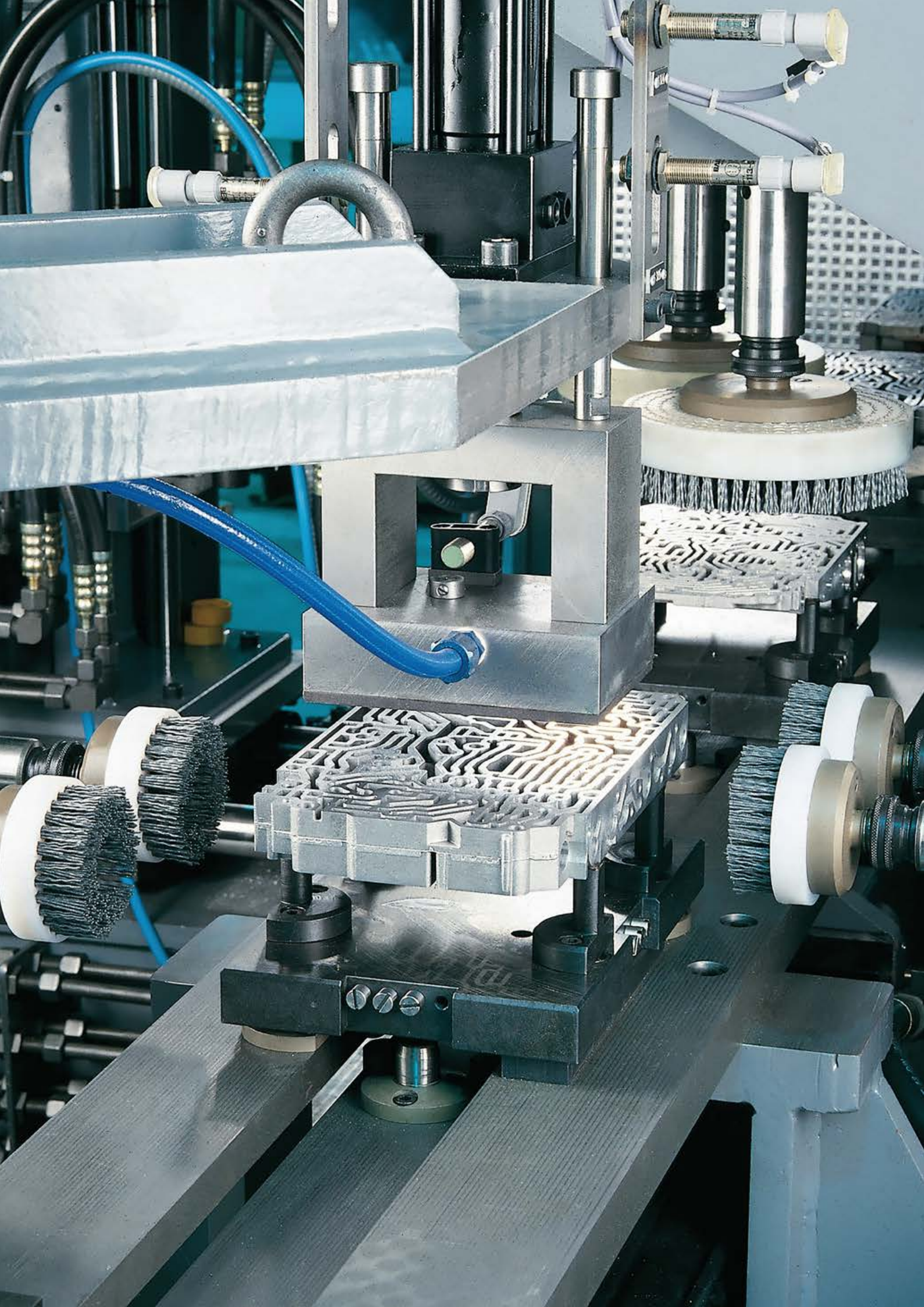
KULLEN-KOTI BRUSHES



*Kullen*

— KOTI GROUP —

Brushing Solutions



# BRUSHING SOLUTIONS

**The name KULLEN-KOTI is synonymous with Europe's most comprehensive range of brushes. For over 100 years, we are specialized in manufacturing high-grade industrial brushes.**

The traditional family firm was founded in 1913 and employs a workforce of around 200 in Reutlingen. Over the years it has achieved an impressive number of pioneering developments in the field of brush technology. Since August 2012, Kullen has been part of the KOTI Group. The product ranges of these two individual companies complement each other ideally, allowing us to offer a product portfolio which is unique anywhere in the world.

The company attaches particular importance to the continuous development of its already very extensive standard range. Because, alongside the principles of quality and service, KULLEN-KOTI's prime concern is versatility. Creativity and experience go hand in hand with technical expertise. KULLEN-KOTI brushes are in successful use today in practically every conceivable field of application.



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**TÜV ISO 9001:2015 certified**

## **High standards through certification**

As Europe's largest brush manufacturer, KULLEN-KOTI has qualified for TÜV ISO 9001:2015 certification and meets all its actual requirements. Our consistent investments in development and the logical implementation of improved quality systems to ISO 9001 ensure that you will get a reliable, high quality product.



## KULLEN-KOTI DISC BRUSHES

A perfect finish. KULLEN-KOTI disc brushes offer unlimited finishing options. For decades we have constantly developed our disc brush production know-how based on our long-term experience and co-operation with our customers. We offer you the most versatile assortment worldwide of disc brush systems and our wide experience allows us to specify which brush system might be the best solution for your brushing problem.



*Abrasive disc brushes are an excellent tool for deburring motor blocks, engines and transmissions.*



## Disc brushes by KULLEN-KOTI – the all-round, flexible tools for surface machining

Their application versatility makes them indispensable for tasks such as deburring, grinding, structuring, polishing, washing, cleaning and sealing. They are available in all sizes and various materials – so just as you can be sure that KULLEN-KOTI has the right disc brush size for your application, you can also rely on KULLEN-KOTI for quality. This we guarantee because we produce disc brushes using semi- and fully automated CNC machines.

### **In addition to quality we deliver individuality.**

Quality is a matter of course. Individuality is up to you. That's why we provide a wide range of metal, wooden and plastic cores as well as various fill materials such as wire, plastic, Anderlon filaments or natural bristles. You can find out which fill material is best suited to your application on pages 9 to 13. Naturally, our technical consultants are always there to answer your questions and will gladly work out the best solution to your problem.

For most applications a disc brush with a punched fill core is adequate. Here the fill material is automatically fixed in pre-drilled holes using a wire hoop. Depending on the requirements, the tuft density can be adjusted over a broad range.

### **Advantages of disc brushes:**

- Suitable for various applications
- Huge selection of core sizes and filling materials
- Different dimensions available, depending on the application
- Various fixing options

# FOR TOUGH APPLICATIONS: MOULDED DISC BRUSHES FROM KULLEN-KOTI

**Moulded disc brushes from KULLEN-KOTI - a particularly efficient and precise tool for the surface finishing of its components for automatic surface-finishing of metalwork. For perfect use in CNC machines or robot cells.**

## **Applications:**

- Precise deburring
- Exact edge rounding
- Fine machining of complex components
- Finishing of large surfaces

The filling is firmly cast into the core. This gives the brush exceptionally high dimensional stability and allows high-for-high-precision surface finishing.

Workpieces of very different geometries can be machined - dry or wet. They are mainly used for deburring pneumatic parts, hydraulic components, cylinder heads, motor blocks, sealing surfaces, sintered parts, punched and pressed parts and die-cast parts.

## **Special advantages:**

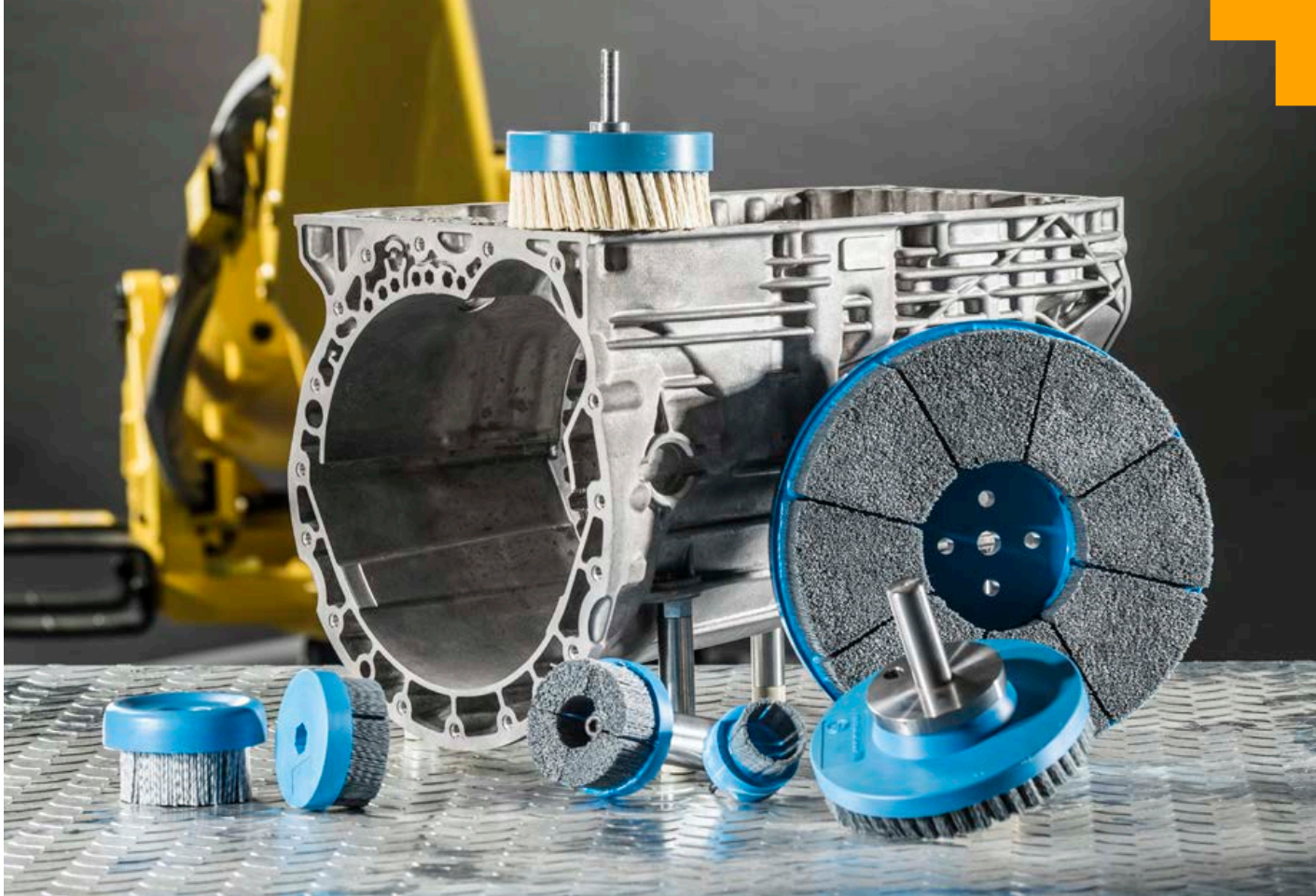
- The bristles remain compact and do not spread.
- They are particularly aggressive and thus guarantee shorter deburring times.

Due to their compactness, exact setting values can be fixed and thus reliable process results can be achieved. This is the basic requirement for fully automatic operation. A cast-in base plate ensures maximum stability, so that these disc brushes can be used with very high contact pressure.

***Unlimited possibilities in automated finishing.*** Factors such as fill material, bristle thickness and fill density have a decisive influence on the result. If, for example, a highly abrasive effect is to be achieved - such as during roughening or deburring - the disc brushes can be equipped with polyamide bristles that are interspersed with a wide variety of abrasives.

*If, on the other hand, a moderately abrasive, smoothing or even polishing effect is required, the disc brushes are equipped with correspondingly softer filling materials.*





**Before** surface with burr formation at the edge.



**Afterwards** brushed surface with rounded edges.

### ANDERLON Abrasive filaments

- Optimum abrasive effect
- Perfectly matched mix of synthetic granulate and abrasive grain
- Various bristle diameters from 0.25-1.60 mm available Grain sizes from 46-1000 with silicon carbide, aluminium oxide and diamond grain

A constant immersion depth in all process steps, such as the rounding of edges or the deburring of bores, can be achieved with a continuously high degree of accuracy.

The improved dimensional stability leads to longer service life: The brushes have to be replaced much less frequently. The moulded disc brush can be used in drilling machines, machining centres or as a robot tool.

Available diameters from 100 mm to 200 mm.

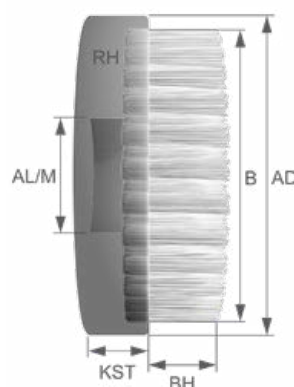
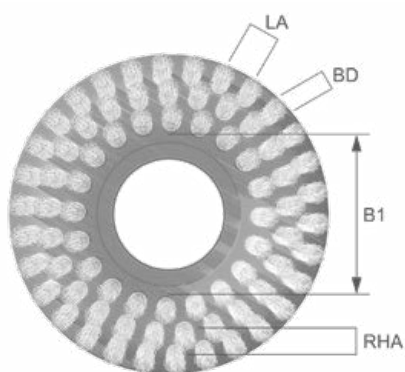
Shaft diameter of 12 or 16 mm, depending on the version.

Based on KULLEN-KOTI basic models, we configure the best brush for you with a filling that is individually adapted to your application.

# TUFTED DISC BRUSHES

## Specifications

Standardised but not „off the peg“. In order to respond as quickly as possible to your needs we stock common standard cores for our disc brushes. As a rule, these are made from polypropylene and are on stock in the colours red, grey, black and orange. As a standard our cores have a shaft hole, some also have a tappet hole. Additional tappet holes can easily be added. For machines with threaded shafts we offer different discs already equipped with insert nuts – also with left-hand threads.



### Legende

AD	Disc outer diameter
AL/M	Bore hole/thread
B	Trim outer diameter
B1	Trim inner diameter
BD	Diameter of bore
BH	Trim height
KST	Core thickness
LA	Hole pitch
RH	Number of rows
RHA	Pitch of rows

### Standard cores for disc brushes

AD (mm)	KST (mm)	AL/M	Core material
50	8	6.1	PP
120	18/20.5	M14	PP
120	15	25/34.5x10	PP
130	18	M14	PP
140	15	40	PP
140	15	11/7	PP
150	18/21	M14	PP
150	20	M16	PP
150	25	10/25	PP
165	25	25/35x14/25	PP
180	20/16.5	M12R	PP
180	20/16.5	M12L	PP
200	15	25/34.5x10	PP
225	20	25	PP



# MOLDED DISC BRUSHES

## Specifications

Our moulded disc brushes are available in three different versions: With bundle, field and turbo filling. They can be mounted on all standard milling arbors. As filling material we usually use nylon bristles with silicon carbide.

In addition to our standard solutions, we also offer you other filling materials and core sizes. We are happy to advise you individually.



### Bundle fill

#### Application:

For lighter deburring and surface finishing.

#### Filling alignment:

- Straight
- Right angled
- Left angled



### Pattern fill

#### Application:

For heavy deburring application at plane surfaces. Higher filament support in comparison to bundle fill.



### Turbine fill

#### Application:

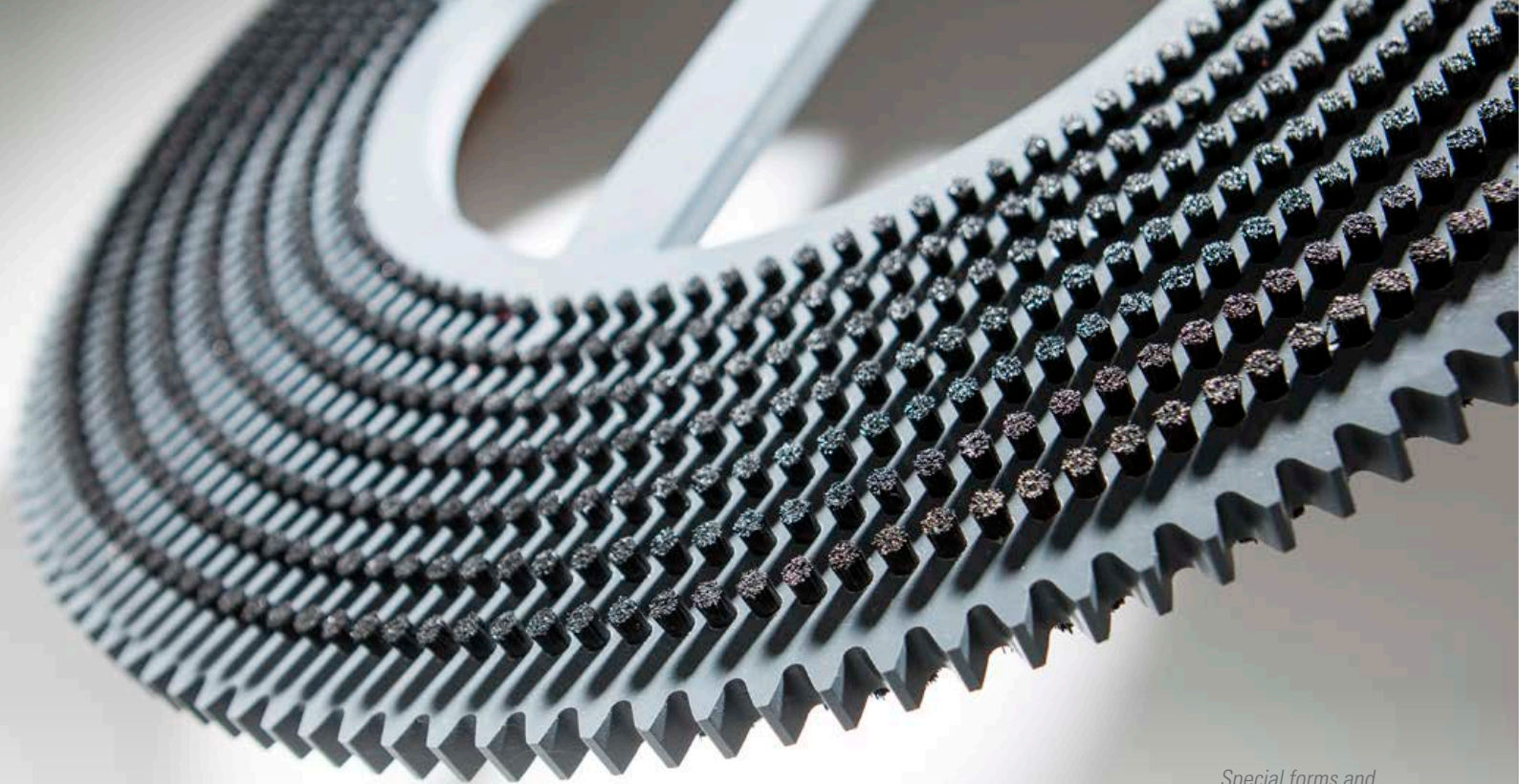
For edge rounding, surface finishing and heavy deburring.

#### Filling alignment:

- Right angled
- Left angled

Standard solutions for moulded disc brushes

AD (mm)	KST (mm)	AL/M* Ø	BH (mm)	Grit			Filling versions		
				K80	K180	K320	Bundle	Field	Turbo
76	13	16	35	•	•	•	•	•	
76	13	22	35	•	•	•	•	•	
76	13	27	35	•	•	•	•	•	
106	15	16	35	•	•	•	•	•	
106	15	22	35	•	•	•	•	•	
106	15	27	35	•	•	•	•	•	
115	25	16	35	•	•	•	•	•	
115	25	22	35	•	•	•	•	•	
115	25	27	35	•	•	•	•	•	
125	15	16	35	•	•	•	•	•	
125	15	22	35	•	•	•	•	•	
125	15	27	35	•	•	•	•	•	
150	25	16	35	•	•	•	•	•	•
150	25	22	35	•	•	•	•	•	•
150	25	27	35	•	•	•	•	•	•
200	20	27	35	•	•	•	•	•	•
200	20	32	35	•	•	•	•	•	•
250	18	32	35	•	•	•	•	•	•



*Special forms and fillings are all possible.*

## DISTINCTIVE SOLUTIONS

### **Spoilt for choice starting with the material.**

Here we offer you innumerable possibilities regarding core dimensions, core form, core strength and core material as well as the choice of fill type, fill diameter, configuration and density. We decide how to fix the fill material - either moulded, punched or hand-drawn - individually to suit your requirements. Don't worry, we have the experience and will help you to find the best solution.

### **Mounting as diverse as the brush itself.**

You need the mounting that is best suited to form the perfect connection between brush and drive. We provide shaft holes – with or without keyways – as well as tappet or anchor holes, pressed insert nuts with left-hand or right-hand thread, thread bolts, shafts or moulded couplings.

#### Disc brushes, Options tufted and molded

<b>Disc outer diameter</b>	AD	min. 8 mm	max. 600 mm
<b>Core thickness</b>	KST	min. 6 mm	
<b>Trim height</b>	BH	min. 8 mm	max. 200 mm
<b>Fill density</b>	EA1	EA2	EA3
	high	medium	low

*Core material: wood, metal,  
plastic PA, PE, PP, POM, PVC*

*Fill material: all, see pages 9 to 13*



# TECHNICAL INFORMATION

KULLEN-KOTI can supply brushes for all applications even for unusual special uses. In addition to the probably largest product range in Europe, KULLEN-KOTI offers you a first class service.

## FILLING MATERIALS

### Wires

In order to obtain our worldrenowned wire quality we are always in touch with internationally chosen wire manufacturers and thus are in the position to offer you a wide variety of wire qualities for all kinds of applications. The most important characteristic for the quality of brush wires is the tensile strength which determines the abrasion-proof, hardness and cutting duty of the wire brush. The list below retails the wire qualities that are most frequently used.



*PHB  
crimped*



*MES  
crimped*



*STD  
crimped*



*INOX  
crimped*



*LIT - cord construction  
crimped*



*LTE  
crimped*

Type	Description	Fill Ø
<b>"Soft"</b>		
PHB	Phosphor-bronze-wire (CuSn), straight or crimped.	0.05-0.50 mm
MES	Brass wire (CuZn), straight or crimped.	0.06-0.56 mm
NSI	Nickel-silver-wire (CuNi), crimped.	0.06-0.25 mm
<b>"Medium"</b>		
STD	Steel wire, natural hard, crimped.	0.06-0.80 mm
SUP	Steel wire, tempered, straight.	0.30-1.20 mm
INOX	Stainless steel wire, acid resistant, crimped or straight, material no. 1.4301/1.4310 or 1.4401/1.4571.	0.30-1.00 mm
TRD	Special wire, highly heat resistant. TRD I up to 1,000 °C, crimped. TRD III up to 1,200 °C, crimped.	0.30-0.50 mm
<b>"Hard"</b>		
ASD	Steel wire, tempered, extra hard and particularly tough, crimped.	0.20-0.50 mm
SSD	Steel wire, natural hard, extra hard.	0.12-0.25 mm
LIT	Brass-coated steel wire in cord construction, springy and tough, crimped.	0.15-0.38 mm
LTE	Brass-coated steel wire, single wire, springy, crimped.	0.15-0.38 mm
AZD	Steel wire, tempered, hard and tough, straight.	0.25-0.80 mm
FLA	Flat wire, tempered, straight.	1.10 x 0.25 to 3.3 x 0.75 mm or on request



## Synthetic filaments

Nobody can beat us for synthetic filaments as we always know the way out of your problems. We proved our versatile talents by developing new or improving existing synthetic filaments which offer new application possibilities for our brushes. In many areas synthetic filaments replace the familiar fill types such as natural hair or vegetable fibres.



*PP*  
*straight*



*PA*  
*crimped*



*HCB*  
*straight*



*CON*  
*straight*

Type	Description	Fill Ø
PP	Polypropylene, acid resistant, straight or crimped, colours on request.	0.10-1.00 mm
PA	Polyamide, straight or crimped, colours on request. All polyamide qualities have strong recovery properties. PA 6.6 is the filament with the highest rigidity in dry application before PA 6.12. In case of wet use PA 6.12 ranks before PA 6.6 and PA 6 because of the lowest water absorption.	PA 6: 0.08-3.00 mm PA 6.6: 0.08-1.50 mm PA 6.12: 0.08-3.00 mm
PBT	Polyester, straight or crimped, colours on request.	0.20-3.00 mm
KBL	Special bristle based on polyamide, very good alkaline resistance also at high temperatures, straight or crimped, colours on request.	0.08-1.50 mm
KBS	Special bristle based on polyamide, very acid resistant also at high temperatures, straight or crimped, colours on request.	0.08-1.50 mm
HCB	Extremely heat resistant (up to max. 180 °C) and chemical resistant special straight filament, colours on request.	0.20-0.60 mm
CON	Electrically conductive, special filament (up to 5 x 10 kOhm/cm <sup>2</sup> ) based on polyamide, straight, black, temperature resistant up to 100 °C.	0.13 mm and 0.25 mm For large quantities the following bristle-dia. are available to special order: 0.21 mm, 0.41 mm, 0.52 mm and 0.64 mm.



## Natural bristles and plant fibres

KULLEN-KOTI works exclusively with natural fibres that are proved top-quality products. These include natural hair of horse and goat, natural bristles of hog and vegetable fibres like Mexico fibre and Sisal.



*ROS*  
horse hair



*ZIE*  
goat hair



*CHS*  
chinese  
hog bristles



*FIB - white*  
mexico fibre



*FIB - grey*  
mexico fibre

Type	Description
<b>Natural hair</b>	
ROS	Horse hair, medium.
ZIE	Goat hair, soft, is known as a so-called "fine hair".
<b>Natural bristles</b>	
CHS	Chinese hog bristles, medium.
<b>Vegetable fibres</b>	
FIB	Mexico fibre, hard.
SIS	Sisal twines.



## ANDERLON ABRASIVE FILAMENTS

ANDERLON - a top quality state of the art leading brand material. ANDERLON abrasive filaments are produced through a mix of synthetic and abrasive grain. Its special feature: it's interspersed with abrasive grain so it keeps its abrasiveness even in case of wearing out.



ANA K500



ANA K240



ANA K80



ANS K500



ANS K320



ANS K120



ANS K46



ANS-F



AND K600



AND K320



ANK K320



ANK K240



ANK K80

Type	Description
ANA	Our standard round filament with aluminium oxide (AO) grit with sizes ranging from 46 to 1000. Heat stability and high chemical resistance as well as an even grit insertion are guaranteed.
ANS	This round filament with integrated silicon carbide (SIC) grit is used worldwide. We offer grit sizes from 46 to 1000, heat stability, a considerable chemical resistance and an even grit insertion.
ANS-F	A flat bristle (1.25 x 2.50 mm) that gives longer life and shorter processing time, is very stiff and percentage abrasive grit.
AND	Diamond grain is aggressive towards almost everything. Due to this diamond grain the AND filament has maximum aggression and a considerable lifetime. Therefore this ANDERLON quality is especially used for the treatment of hard alloy tools.
ANK	Ceramic grain with bristle based on PA.

## Brushing Solutions

KULLEN-KOTI disc brushes make your products ready for use.  
Our solutions provide optimum support during surface finishing:



- Deburring of cut edges
- Deburring of separating edges
- Edge rounding
- Grinding
- Smoothing
- Polishing
- Structuring
- Cleaning

...and many more!

**KULLEN-KOTI GmbH Brushing Solutions**

T +49 (0) 71 21/142-0

E [post@kullen.de](mailto:post@kullen.de)

[www.kullen.com](http://www.kullen.com)

**KOTI**  
GROUP