

KOTI BRUSHES



Ready for take-off

Ready for take-off

Check in at KOTI for powerful runway brushes







Index

Airport runway brushes	9
KOTI supplies worldwide	13
Brush cassettes steel wires	15
Brush cassettes synthetic fibres	21
Combination options	25
KOTI brush cores	29
KOTI tips & advice	34
Clean take-off and landing runways	39
KOTI facilities	43
Brush rings	49
More about brushes	55

check In

Check-in at KOTI for powerful runway brushes...

KOTI understands the importance of keeping take-off and landing runways free of snow and 'Foreign Object Debris' (FOD). Safety first is a famous term in aviation, with passenger safety always predominant. At KOTI this is no different. KOTI's airport brushes remove snow, dust, sand and grit from platforms, paved surfaces, hangars, take-off and landing runways, etc.

In addition to quality, innovation, sustainability and a focus on solutions are key features of KOTI airport brushes. Product development is essential and innovation helps create 'smart industry'. KOTI knows what matters to airports and co-develops top-quality brushes that optimise the sweeping process. This gives KOTI airport brushes a decisive role in the best end result: products that are 100% compliant with the requirements.

Sustainability is key. Reuse and recyclable environmentally-friendly materials are a prerequisite for product development at KOTI. And the excellent quality of every runway brush goes without saying. All complemented by efficient and effective high service.

Ready for take-off, thanks to KOTI runway brushes!



Products

KOTI is the exclusive producer of airport brushes and brush rings in the Benelux. KOTI's contemporary machinery has guaranteed solid production of brushes for a number of years. KOTI works closely with renowned equipment manufacturers and airports to extensively test the runway brushes to ensure that the KOTI brushes always deliver the optimum result.

Among the products offered by KOTI are:

- **Brush cassettes with galvanised steel wire:** the firm brush holder makes it suitable for the heavy-duty work, like clearing snow.
- **Brush cassettes with synthetic fibres:** suitable for light-duty and normal brushing.
- **Aluminium bush core:** for use in combination with the brush cassettes for an even better sweeping result. The brush cassettes can also be used in existing cores.
- **Brush rings:** suitable for various brushing work and available in different versions like the Wave Ring.



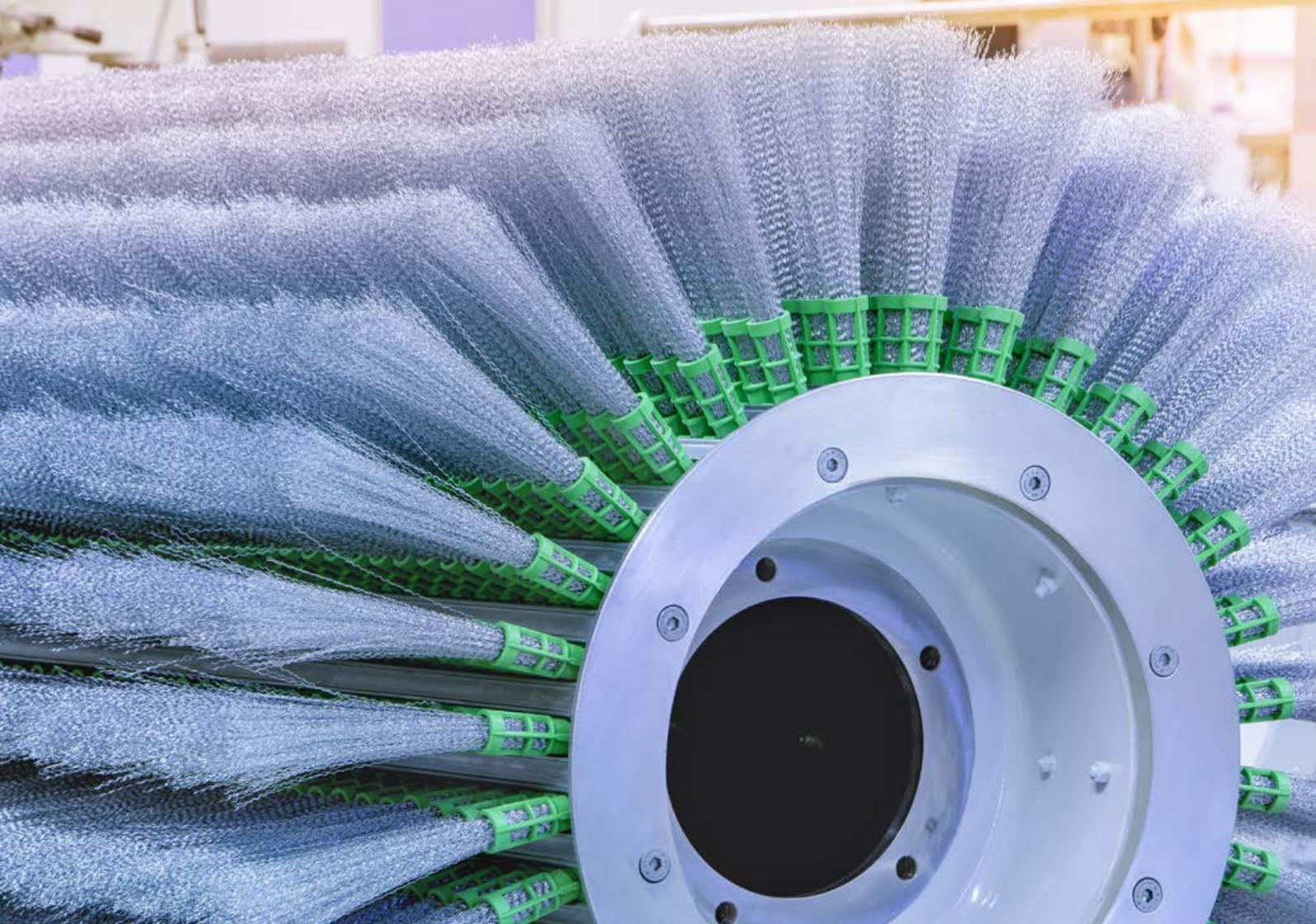
KOTI supplies worldwide

KOTI's runway brushes are products that are manufactured in Europe. Solid. Reliable. Innovative. While KOTI may not be the pioneer of this technology, it is certainly one of Europe's and the world's top brush producers!

KOTI works with a professional network of skilled partners in a wide range of countries. Its main market for airport brushes is not confined to Europe but extends beyond.

The airport specialists in the various countries advise specifically for the local airports so that the best and right choice of brush can be made.

For specific advice and contacts in a particular country, get in touch with one of the technical advisors of KOTI via: runwaybrushes@koti-eu.com



Brush cassettes | steel wires

One of the specialist fields of KOTI is the production of brush cassettes with galvanised steel wire. The brush cassettes, comprised of steel wires, are suitable for sweeping and removing snow. The cassettes have durable synthetic holders made of UV- and cold-resistant material with a high degree of shape retention. The material can withstand temperatures of up to -40°C.

Unique production process

KOTI has a unique, in-house production process that is without compare. All the brush cassettes with galvanised steel wires are produced entirely in-house. The machine undulates the steel wire-by-wire and this means that the fibres are always side-by-side and finally they are secured so that everything is perfectly aligned. All in all, this minimises the risk of any of the wires breaking and maximises the lifetime guaranteed by KOTI!

Brush cassettes | steel wires

Specification for the steel wire brush cassettes

- High-quality brush cassettes thanks to the use of high-grade materials.
- Extra safeguard makes the brush cassettes aviation-proof. Guarantee of virtually no loss of wires and minimal FOD hazard. Available in standard version of 140 wires.
- Temperature resistant up to -40°C.
- Proven longer lifetime compared with other cassettes.



Environmentally-friendly

- Production process uses environmentally-friendly materials.
- Materials can be recycled after use.



Size and delivery

- Various sizes for all kinds of machines like: Øveraasen, Schörling, Schmidt and Boschung.
- Approved and certified top 3 supplier for major machine manufacturers.
- All of the most common sizes can be supplied direct from stock.
- KOTI supplies a complete set of cassettes for a specific brush roller in one case, regardless of the length of the brush. So, transparent storage and less labour-intensive.



Brush cassettes | steel wires

Brush cassette with open or closed cup holder

Length	Number of bundles	Thread length	Diameter of the thread	Number of threads per bundle***	Number of tips
743.5 mm	18	280 mm	0.45 mm	120	240
			0.60 mm**	140	280
828 mm	20	280 mm	0.45 mm	120	240
			0.60 mm**	140	280
1034 mm	25	280 mm	0.45 mm	120	240
			0.60 mm**	140	280

*Other thread lengths upon request

**This diameter optional upon request.

***More threads mean a powerful and more rigid brush filling.

KOTI supplies the steel wire brush cassettes in 2 different versions: open synthetic cup holders and closed synthetic cup holders. Both brush cassettes are qualitatively the same but the properties of use differ.

Brush cassette open cup holder

Flexibility is the unique feature of the brush cassette with an open cup holder. The high-quality steel wires in the open cup are more flexible and can be used for all snow-covered surfaces.

Brush cassettes with closed cup holder

Rigidity is the specific feature of the brush cassette with a closed cup holder. The high-quality steel wires in the closed cup are stiffer and can also be used for all snow-covered surfaces.

Whether you use an open or a closed cup holder depends on the type of machine used and is purely subjective.





Brush cassettes | synthetic fibre

Within the range of airport brushes KOTI has also developed a synthetic fibre brush cassette. A brush cassette made entirely of synthetic material whereby all the parts of the brush – the holder, the core and the filling – are compressed at high pressure and smelted to form a whole unit.

The synthetic fibre brush cassette is characterised by an unique bundle shape that creates a good 'sweeping' effect and ensures that this brush has the optimum sweep. High-quality products, where quality is leading. And, altogether, these qualities mean a longer life span!

Brush cassettes | synthetic fibre

Size and delivery

- Various sizes for all kinds of machines like Øveraasen, Schörling, Schmidt and Boschung.
- Can be supplied in different diameters of synthetic fibres.
- Can be supplied in standard lengths.
- KOTI supplies a complete set of cassettes for one brush roller in one case, regardless of the length of the brush.

KOTI produces the synthetic fibre brush cassette in various sizes. The cassette is easy to shorten to the required specifications. The standard length is 825 mm and the standard fibre diameter is 1.8 mm. For other sizes see the chart below.

Length	Fibre version	Thread length	Fibre diameter*
413 ~ 1034 mm	Straight	180 ~ 350 mm	Ø 1 ~ 2.7 mm
413 ~ 1034 mm	Wave	180 ~ 350 mm	Ø 1 ~ 2.7 mm

Other sizes by request, such as a fibre diameter of 4 mm.

*The ticker the fibre diameter, the stiffer the brush filling and stronger the brush effect.

Specification for synthetic fibre brush cassettes

- Unique production process means virtually no thread breakage or loss and therefore less FOD hazard.
- Around 20 to 40 per cent more filling than traditional synthetic cassettes.
- Longer life span than traditional synthetic cassettes.
- Better 'sweep' effect than the traditional synthetic cassettes.

Environmentally-friendly

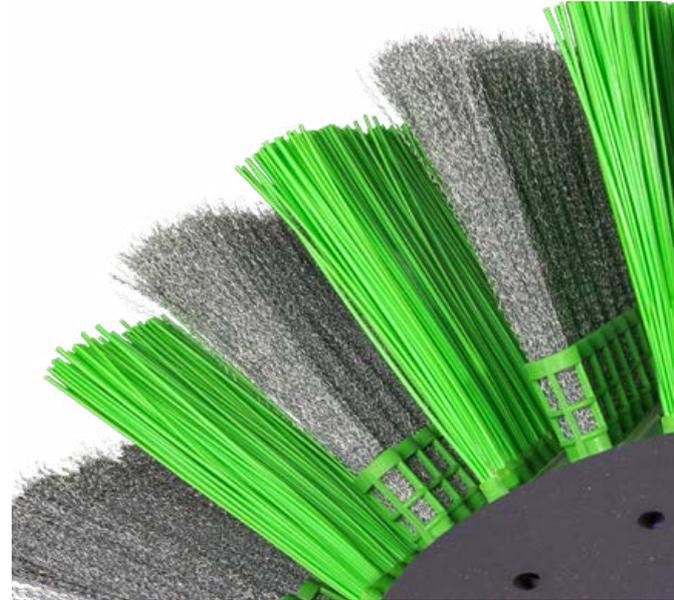
- Fully recyclable after use.





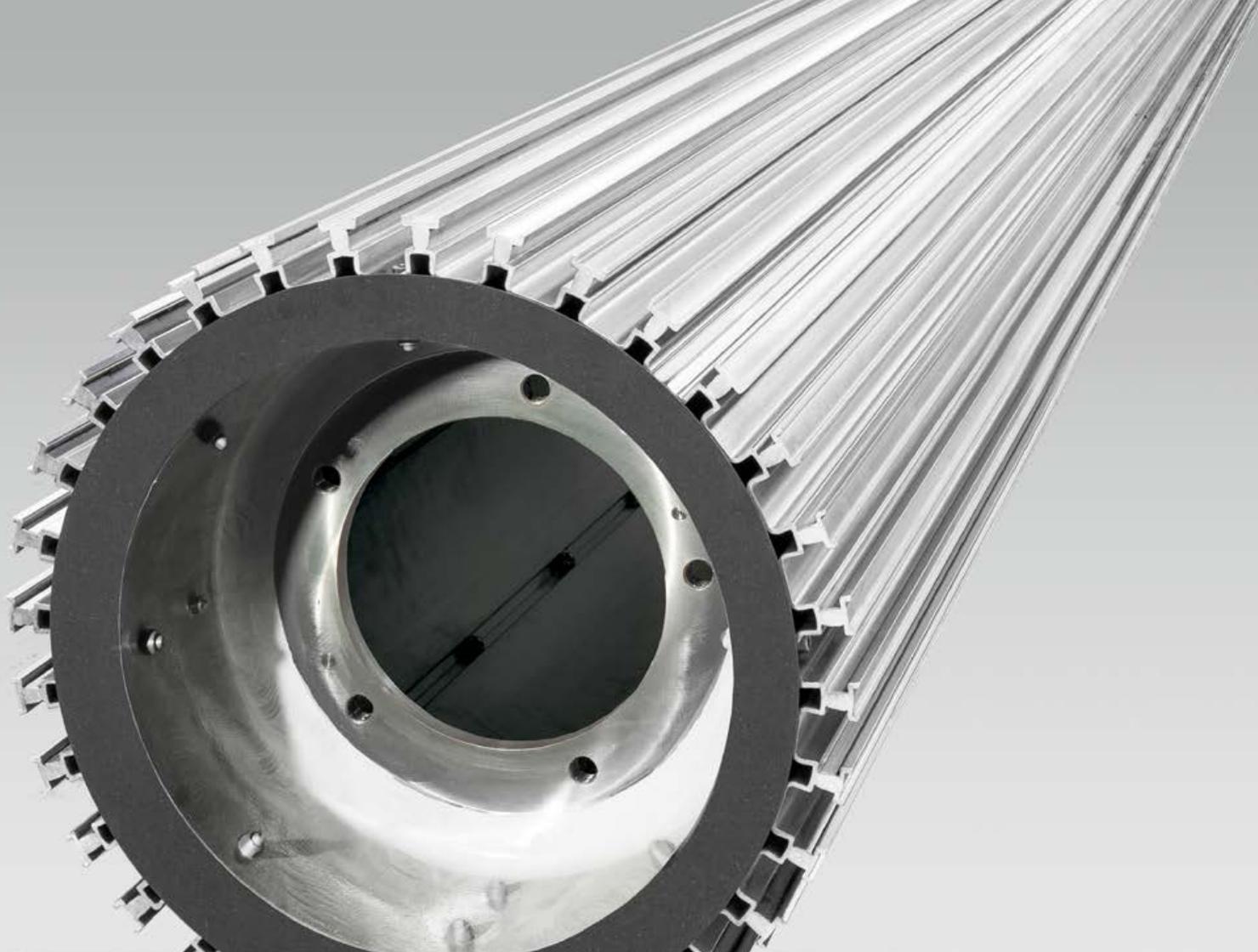
Combination options

Apart from the standard filling of brushes in synthetic fibre or steel wire cassettes, it is also possible to combine these cassettes, for example placing the two types of cassette alternately in the brush roller, which produces a light yet firm brush filling. This combined filling is highly suited to airports where there is little snowfall but when snowfall occurs incidentally, it must still be cleared. The combination filling offers the possibility to clear the surrounding terrain also in the cold winter periods when there is no snow.









KOTI Brush cores

A high-quality brush core has been developed specially for all KOTI brush cassettes, from synthetic to steel wire cassettes. The durable, lightweight aluminium brush core is the result of the in-house KOTI Research & Development team. An extensive development period and test phase lie at the basis of the KOTI brush cores. The ultimate combination of brush cores and the brush cassette guarantee maximum effect. To underline the maximum effect of this combination, KOTI offers a guarantee of 5 years on the brush core (provided this is used with KOTI brush cassettes). KOTI therefore guarantees everyone a top-notch product duo.

KOTI Brush cores

Length	Brush diameter with cassettes	Number of tracks	Core external diameter	Core internal diameter
Max. 6.5 m	36 inch (914 mm)	16	373 mm	205 mm
Max. 6.5 m	36 inch (914 mm)	20	373 mm	205 mm
Max. 7.2 m	46 inch (1168 mm)	20	618 mm	460 mm
Max. 7.2 m	46 inch (1168 mm)	32*	618 mm	460 mm

Connection plates in the core can always be adjusted to a particular specification.

*A 16-track brush core is also possible by covering the tracks alternately with a strip.



Sizes

KOTI produces brush cores up to 7.2 metres (around 24 feet) long. This size is suitable for all types of machine. The brush diameters vary from 36 to 46 inches and the cores comprise 16 or 20 tracks. KOTI has also developed a unique brush core with 32 tracks, which offers more space for multiple brush cassettes on one brush roller. An absolute plus. In addition to the extended life span of the brush roller, access roads along with take-off and landing runways can be cleaned more efficiently. The brush diameter and amount of filling is significantly greater, after all.





KOTI Brush cores

Balance

All KOTI brush cores are fully dynamically balanced in line with the VDI standard.

Benefits of the KOTI brush system

- Highly environmentally-friendly assembly and disassembly thanks to the slide system.
- The brush core does not have to be disassembled during brush cassette replacement. This saves on labour and costs.
- Replacement can easily be done by one person.



KOTI tips & advice

When it snows, airports must be cleared of snow fast and within the standard times stipulated for take-off and landing runways. Snow machines are essential here as is the correct setting of the brushes. KOTI uses a protocol that helps optimise the quality of the brushing and the life span of the brush.

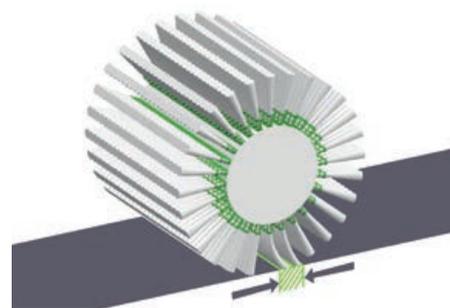
Sweep pattern

The width of the swept surface is the sweep pattern. Literally from the moment that the brush threads make contact with the surface. The sweep pattern also depends on the type of machine used and the kind of snowfall. Normally, a sweep pattern of 70mm generates an effective and efficient sweep result.

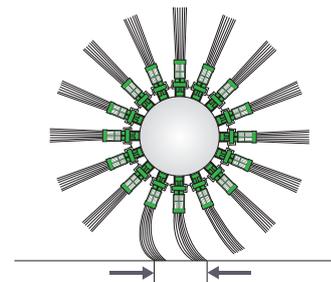
Settings that optimise the sweep effect

Use of high-grade materials ensures that the KOTI brushes have an extended life span, an absolute key benefit. Other qualities, like the right optimisation of velocity, rotational speed of the brush core and brush diameter (tip speed) are also contributory factors. When these basic values are set correctly, the brushes produce an optimum sweep effect and less friction, wear and tear. Conditions that are crucial for extended continuing use and higher yield.

An example: if using the brushes, a brush roller with 16 tracks and a brush diameter of 36 inches, fitted with new brush cassettes driving at 25 km/h and rotating at 400 rpm, will need to increase the rotational speed to maintain the same sweep effect. In other words, as the brush threads deteriorate during the sweeping process, a brush roller at the same driving speed must increase the rpm to maintain the tip speed and guarantee the effectiveness of the sweeping.

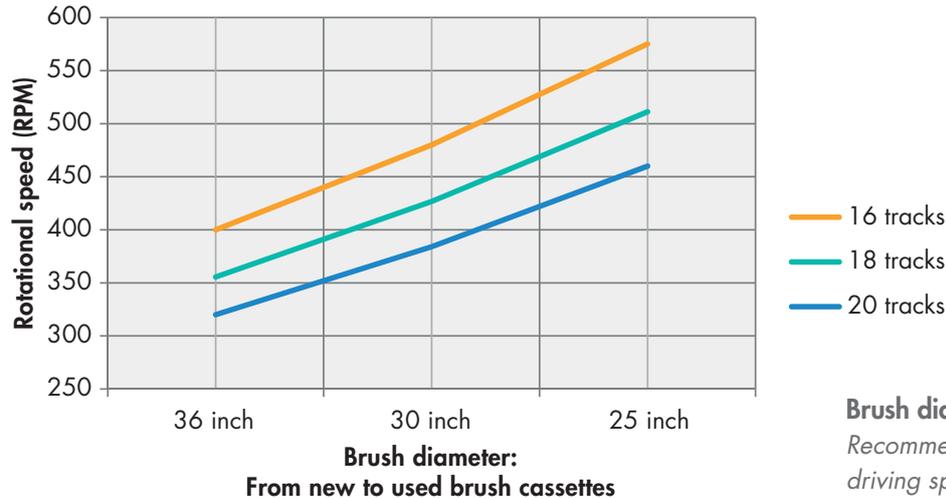


Schematic drawing of the sweeping pattern.

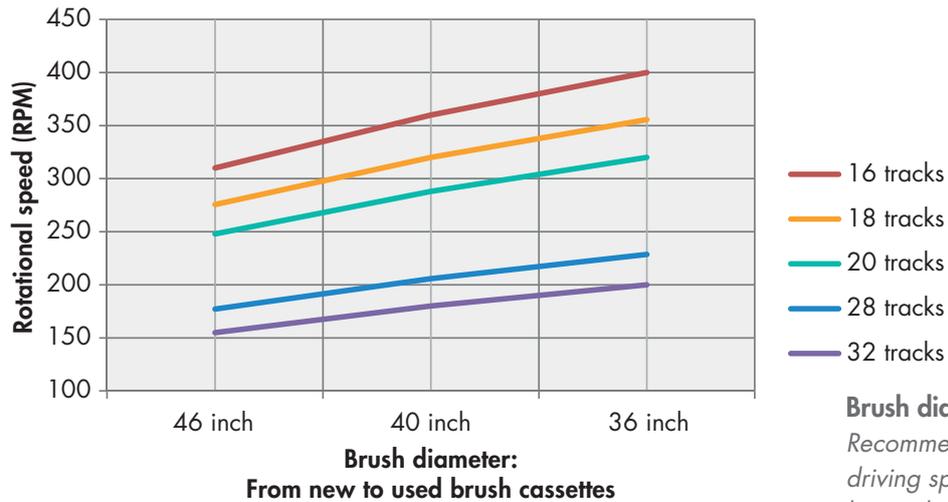


The average sweeping pattern is 70 mm.

KOTI tips & advice



Brush diameter 36"
Recommended rpm at a driving speed of 25 km/h in line with the consumption of the brushes



Brush diameter 46"

Recommended rpm at a driving speed of 25 km/h in line with the consumption of the brushes



Clean take-off and landing runways

Safety first

One of the most important aspects of an airport is the safety of passengers, crew, baggage and other cargo during take-off and landing. KOTI is fully aware of this. So safety is always one of the core values of KOTI, an essential basic criterion for each and every KOTI product. KOTI therefore works closely with customers and machine manufacturers to exchange knowledge and experience. In this way KOTI is constantly improving its products. 'Safety first' always come first!



Clean take-off and landing runways

Snow-free take-off and landing runways

Whenever the take-off and landing runways are covered with snow or lightly frozen snow, hazardous or even life-threatening situations can arise. KOTI runway brushes are perfect for keeping airports free of snow.

Clean take-off and landing runways all year round

The extensive range offers all sorts of options to use different brushes and brush combinations for the various activities in and around airports. KOTI's high-quality runway brushes can be used all year round.

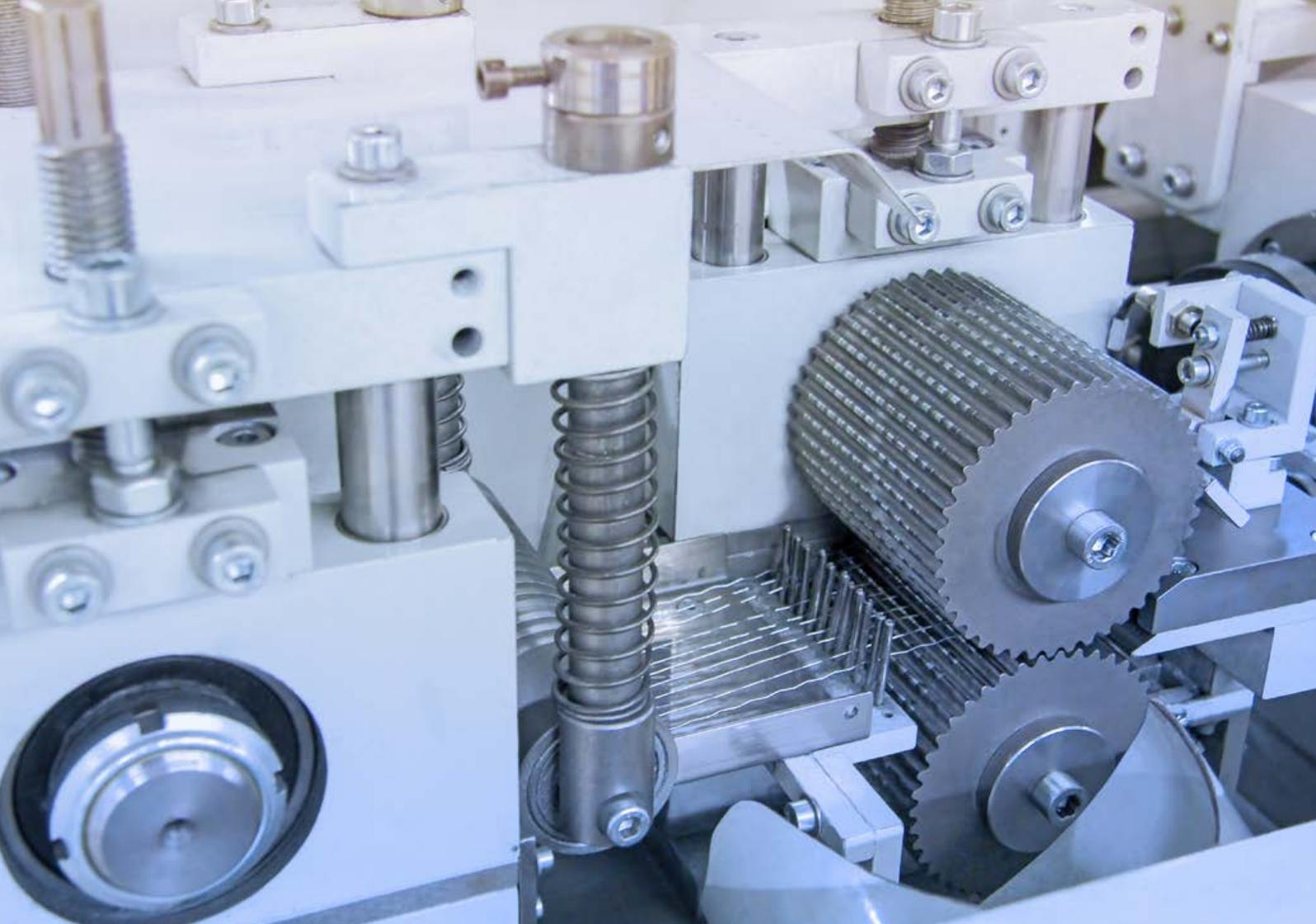


KOTI facilities

Project supervision and testing

The KOTI project team comprises professional technical staff with knowhow in all kinds of fields, from advisors with knowledge of aviation and machine construction to practical solutions for brushes. The team tests the flexibility of the bundles, the wear and tear of the brushes and the possibility of thread breakage. Continuous testing means that product improvement is a priority and enables KOTI to guarantee high-quality products. For KOTI product development and innovation are essential.





KOTI facilities

Production facilities

KOTI is the unique manufacturer of brush cassettes in the Benelux. All the brush cassettes with galvanised steel wires are produced entirely in-house. The machine undulates the steel wire-by-wire and this means that the fibres are always side-by-side and finally they are secured so that everything is perfectly aligned. All in all, this minimises the risk of any of the wires breaking whereby KOTI guarantees high-quality products with an absolutely longer life span!



↑  Departures

Arrivals  →

KOTI facilities

Stocks and delivery

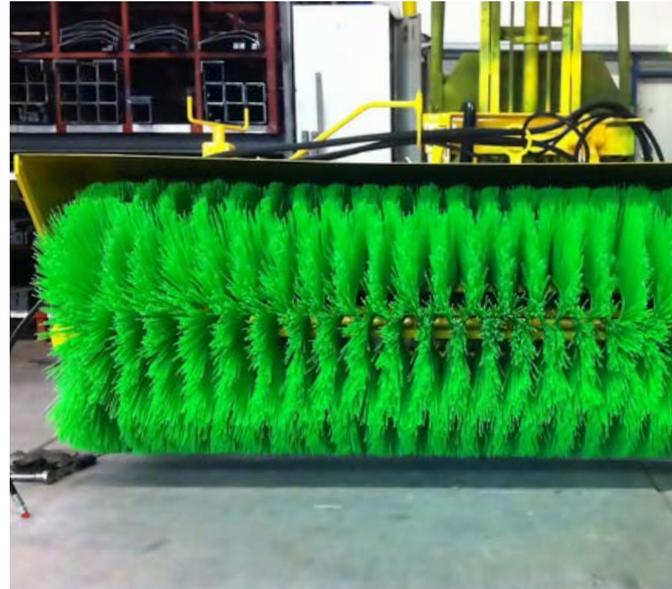
KOTI produces the brushes in large numbers in the most common measurements and can easily and quickly deliverable from stock. KOTI delivers a complete set of cassettes for a brush roller in one case regardless of the length of the brush. Once an order is placed, the customer's stock can be complemented with the possibility also to store just one case per brush roller and to transport from storage to assembly area, thereby saving significantly on time and labour.





Brush rings

In addition to brushes for snow-clearing equipment, KOTI also produces brush rings for every kind of sweeping machine, which makes KOTI one of the few brush manufacturers able to supply such an extensive range of brushes. KOTI is a 'one-stop-shop' for all airport brushes, from snow clearance to sweeping.



Brush rings

Wave Ring brush

The Wave Ring is made entirely of high-grade synthetic and fibre (PP) and so there is no possibility of rusting. The ring is compressed at high pressure and the brushes have virtually no thread breakage or loss. This minimizes the risk of FOD.

Steel profile brush ring

The steel profile brush ring can be filled with different filling materials. Such as a roller comprised of rings of purely synthetic filling for light sweeping or brush rings with a combined synthetic and steel wire filling and for heavy-duty sweeping and snow clearance.

Flat synthetic fibre brush ring

In the flat brush ring the synthetic core and filling are compressed into one ring. This means that there is less risk of a thread breakage and minimisation FOD hazard.



Production

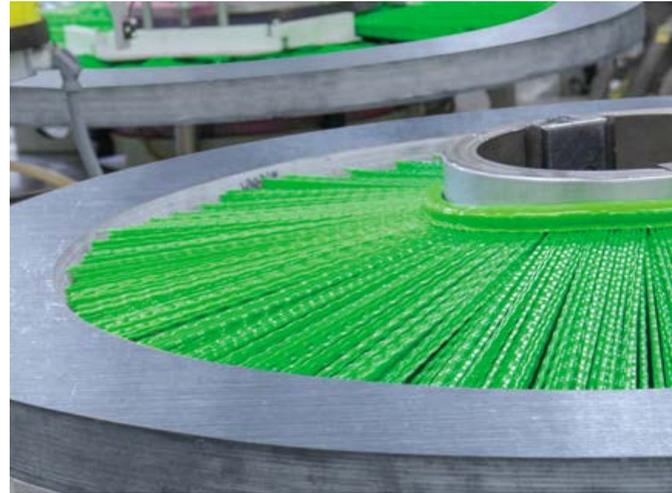
The brush rings are comprised of high-grade materials and produced by KOTI in a fully computer-controlled process. The strict quality controls during the production process ensure quality brushes with minimal FOD hazard.

Assembly

The brush rings are easy to assemble to bottom rollers since the brush rings are placed successively on a brush core. Only the steel profile brush ring uses spacer rings. Once the rings are fixed, the roller can be assembled on the machine and be rotated at great speed.

Tailor-made sweeping pattern

By placing the rings one at a time, the core can be filled with KOTI brush rings regardless of the sweeping width for an optimal sweeping result.



Brush rings

Sizes

The brush rings are made in different sizes, see chart below.

Type of brush ring	Bore diameter	Brush diameter
Wave Ring brush ring	Ø 128 mm	Ø 350 - 380 - 400 - 500 - 550 mm
	Ø 178 mm	Ø 500 - 600 - 650 - 700 mm
	Ø 254 mm	Ø 700 - 750 - 800 - 915 mm
Steel profile brush ring	Ø 76 mm	Ø 300 - 360 - 500 - 700 mm
	Ø 110 mm	Ø 300 - 350 - 400 mm
	Ø 128 mm	Ø 380 - 400 - 450 - 500 mm
	Ø 162 mm	Ø 550 mm
	Ø 178 mm	Ø 500 - 600 - 700 - 900 mm
	Ø 254 mm	Ø 700 - 750 - 800 mm
	Ø 300 mm	Ø 750 - 800 - 900 mm
Fully synthetic fibre flat brush ring	Ø 128 mm	Ø 380 - 400 - 500 - 550 mm
	Ø 178 mm	Ø 500 - 600 mm
	Ø 254 mm	Ø 700 - 750 - 800 - 915 mm

Any other sizes are possible by request.



More about brushes

KOTI produces much more than just airport runway brushes and brush rings, including other applications at airports like brush strips to seal off passenger gangways and escalators, brushes for scrubbing machines, antistatic brushes for baggage sealing machines, etc.

For half a century the KOTI name has guaranteed the most advanced product development in industrial and technical brushes. From sweeping brushes and machines to moulded rollers in the food industry. Apart from standard brushes the focus lies predominantly on specific, tailor-made brushes for a range of industrial uses. Thanks to a large automated machine park, the KOTI brush plant produces a comprehensive package: from moulding and welding to die-casting and smelting. KOTI brushes are always focused on solutions and absolutely indispensable in many different production processes.

For more information, go to the website:

www.koti-eu.com

For personal advice, contact the Sales department:

E runwaybrushes@kotieu.com

T +31 (0)495 880 880

About KOTI

ISO certificate

In 1993 KOTI was one of the first brush manufacturers to gain an ISO 9002 certificate. Now KOTI complies with the new standard ISO 9001: 2015 among the leading European suppliers of brushes for industrial processes. Such a certificate is synonymous with reliable, high-quality products.



Organisation

KOTI Industrial and Technical Brushes BV based in Weert is a Dutch family company that has become an ISO-certified group with some 650 employees and 14 branches worldwide. KOTI is a producer of brushes for green industry (sweeping, cleaning and maintenance), runway brushes and leads the market in tailor-made technical brushes for industrial processes. Hence the KOTI motto: "We make it all | Brushes for all industries".

Ready for take-off

Check in at KOTI for powerful runway brushes

Ready for take-off

Check in at KOTI for powerful runway brushes

BRUSHES FOR ALL INDUSTRIES

KOTI Industrial and Technical Brushes BV

T +31 (0)495 880 880

E runwaybrushes@koti-eu.com

www.koti-eu.com

