



**PIXX<sup>®</sup>**

**Bird Control Systems**  
A brand of **FKS**

# CATALOGUE 2024



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**Astrid K. Schulz GmbH & Co.  
Handelsgesellschaft KG  
Weinbergstraße 42  
D-74360 Ilsfeld-Auenstein  
Telefon +49 7062 63450  
Telefax +49 7062 64499  
E-Mail [info@aks-schulz.de](mailto:info@aks-schulz.de)  
Web [www.aks-schulz.de](http://www.aks-schulz.de)**



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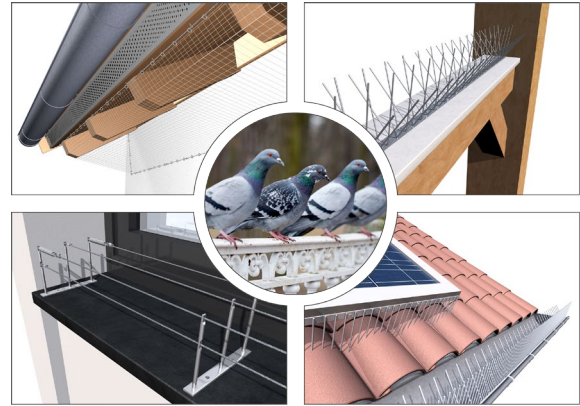
## PIXX® - Bird Control Systems

AKS – founded in 1975, has been active in the field of bird control systems for over 30 years. In this time, we have gained considerable experience in innovating and developing practical measures necessary to protect buildings from soiling through feral pigeons, swallows, sparrows and seagulls. With professional installation on ledges, parapets, beams, balustrades, protruding walls, railings, gutters, ridge lines etc., these systems prevent the landing, perching and nesting of birds and therefore minimize soiling through their contaminating and pathogenic excrement.

### PIGEON CONTROL SYSTEMS

In choosing the most appropriate system, it is important to appreciate the motivation of the pigeon on the area to be protected. There are three types of pigeon perching behaviour and consequently, three problem levels

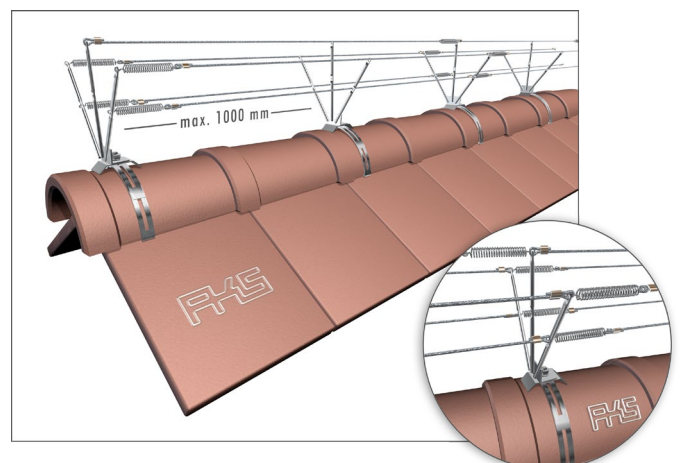
- **low:** occasional landing and perching, often high up on a building, unprotected from the weather
- **medium:** recurring use as a lookout for possible feeding sites, not necessarily protected from weather
- **high:** overnight use for roosting and nesting, protected from weather and predators



**Pigeon spikes** are usually employed in cases of low and medium perching issues. The spikes are generally glued into place, in some cases also screwed, nailed or riveted. In order to achieve complete protection of the affected area, the spikes can be mounted in rows, spaced at a maximum of 5 cm apart. Spikes should be installed on the foremost edge of the area to be protected and should protrude to some degree over the edge! The spikes, made completely of stainless steel AISI 304 with  $\varnothing$  2.0 mm, are extremely stable, prevent the pigeon pushing the spikes apart and are therefore a particularly effective protection. As an attractive economical alternative, we offer stainless steel spikes with a diameter of 1.6 mm. The transparent plastic spike system (made from UV-stabilised polycarbonate) with  $\varnothing$  1.3/1.4 mm is also particularly suited to illuminated advertising units as it has no significant impact on the lighting effect!

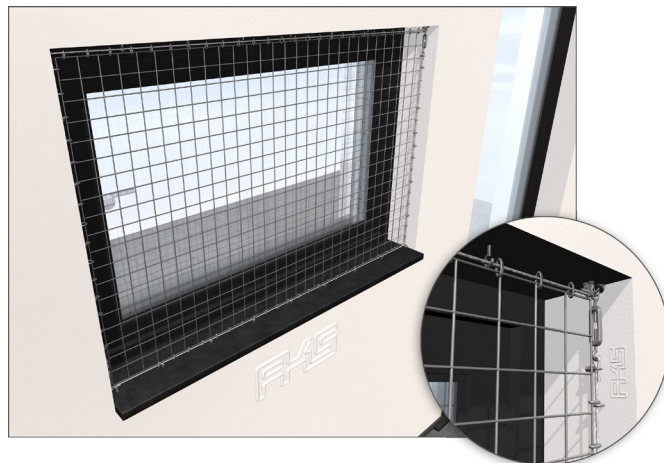


**Spring wire systems** are employed in cases of low perching issues and are particularly unobtrusive on the building. We also recommend the installation of these thin stainless steel wires on heritage-listed buildings. To ensure complete coverage of the surface to be protected, the wires can be mounted in rows. The posts to which the wires are attached should be mounted on the foremost edge of the surface to be protected. With this system, we recommend fixing the posts to the surface with screws and rivets and not adhesive.

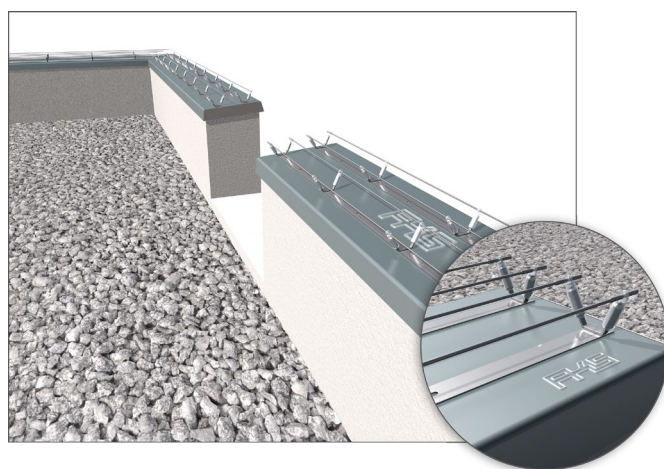




**Plastic netting and stainless steel mesh** are designed for large areas and all kinds of perching behaviour. Windows, ornaments, whole façades or inner courtyards can be protected with the professional installation of this high quality material, thereby preventing birds from approaching or entering. A wire rope suspension system is necessary when the length of the net exceeds 5 m or on an especially large area to avoid the net sagging and to provide the necessary stability.



**Electrical systems releasing a pulse** are deployed in areas with particularly high pigeon populations and can be mounted in parallel rows on the surface to be protected. The continual electrical pulse, similar to the principle behind electric fences, is extremely effective against pigeons landing, perching and nesting. We recommend these systems only to trained specialists, e.g., pest control officers, building preservation technicians or roofing contractors. The installation and activation of these electrical systems should be carried out by an electrician.

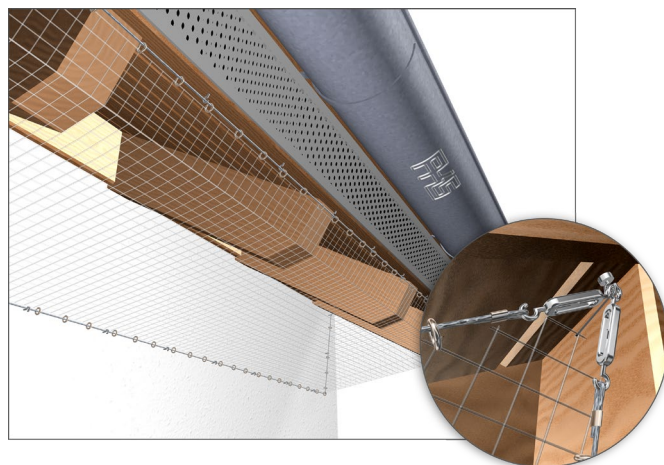


### SWALLOW CONTROL SYSTEMS

Swallows are strictly protected and monitored in Germany, and for this reason, existing nests must be tolerated and protected! According to the Federal Nature Conservation Act (BNatschG), even out of roosting and nesting season, swallow nests are never allowed to be destroyed, removed or access to them hindered (i.e., via a net).

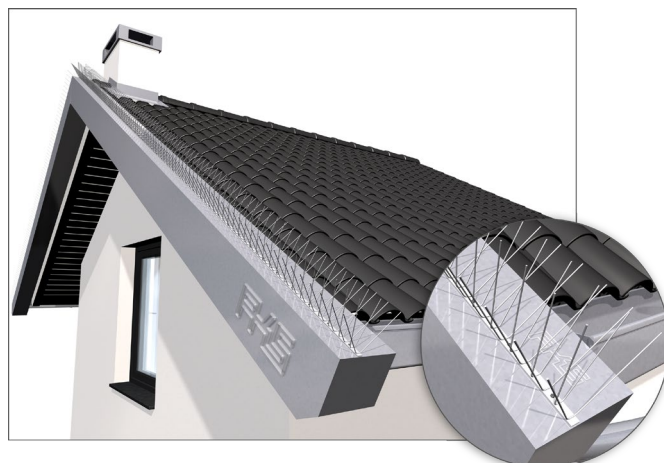
**There is, however, nothing against the following preventative measures.**

To avoid nest building around the eaves, deterrents are often fixed directly in the recess between the outer wall of the building and the roof overhang. However, swallow spikes mounted in the eaves in this way do not prevent swallows from building nests on the façade below the spikes, leading to further soiling. To avoid any nest building, a secure method is the installation of plastic netting or stainless steel mesh across the whole eave area.



### SEAGULL CONTROL SYSTEMS

Seagull deterrent spikes are often deployed in areas near the coast. Due to the size of seagulls, the spikes are considerably longer than the pigeon deterrent spikes. The spikes should be installed on the foremost edge of the area to be protected and should protrude to some degree over the edge! The spikes made completely of stainless steel AISI 304 with  $\varnothing$  2.0 mm are especially stable, prevent the seagull pushing the spikes apart and are therefore a particularly effective protection. Spring wire or electrical systems are not used as seagull deterrents.





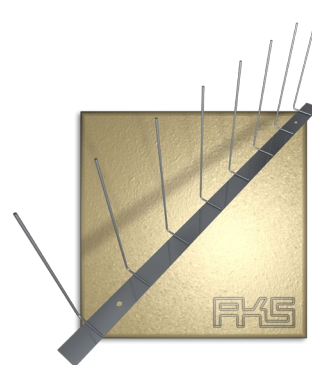
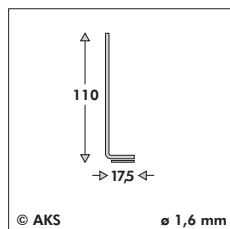
### PIXX® - Uno Lite ø 1.6 mm

Art. No. PI3144

PIXX® - Uno Lite consists of a single row of vertical stainless steel spikes welded to a 1 m long stainless steel base rail.

With a coverage width of c. 50 mm, this product is suitable for very narrow areas such as snow guards, ledges, railings and balustrades.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3144
Length x width x height	1.000 x 18 x 110 mm
Coverage width	c. 50 mm
Spike rows	20
Spike / spike spacing	50 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	100 m (10 x 10 pcs)



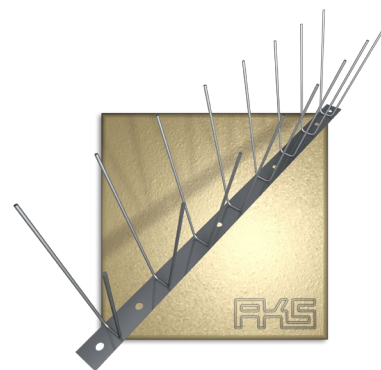
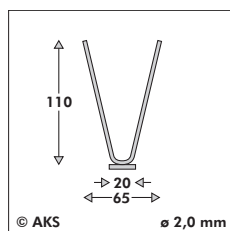
### PIXX® - Duo ø 2.0 mm

Art. No. PI3103

PIXX® - Duo consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 115 mm, this product is suitable for narrow areas such as ledges, railings and balustrades.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3103
Length x width x height	1.000 x 65 x 110 mm
Coverage width	c. 115 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	20 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	100 m (10 x 10 pcs)





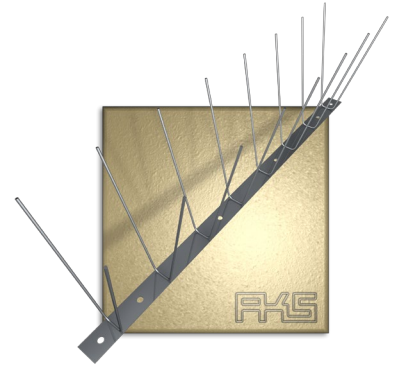
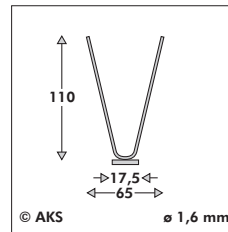
### PIXX® - Duo Lite ø 1.6 mm

Art. No. PI3133

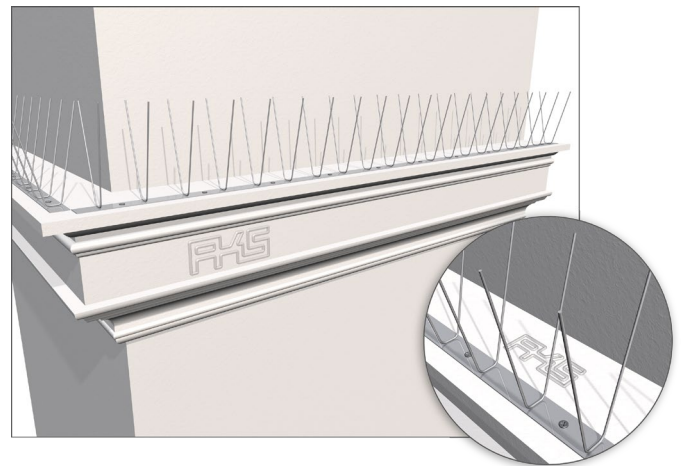
PIXX® - Duo Lite consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 115 mm, this product is suitable for narrow areas such as ledges, railings and balustrades.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3133
Length x width x height	1.000 x 65 x 110 mm
Coverage width	c. 115 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	10 x 4.0 mm
Packaging	100 m (10 x 10 pcs)



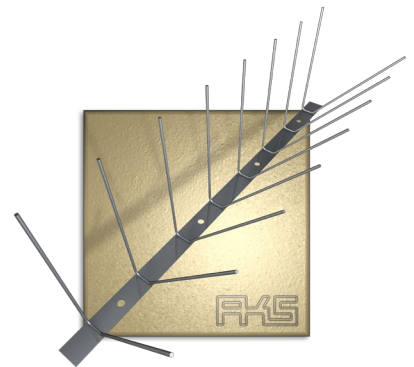
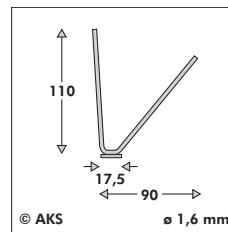
### PIXX® - Duo T-beam ø 1.6 mm

Art. No. PI3145

PIXX® - Duo T-Support is specially designed for installation on steel profiles like IPE and T-beams or ledges, windowsills and snow guards.

This product consists of rows of two asymmetrical stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

It can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3145
Length x width x height	1.000 x 90 x 110 mm
Coverage width	c. 115 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	100 m (10 x 10 pcs)



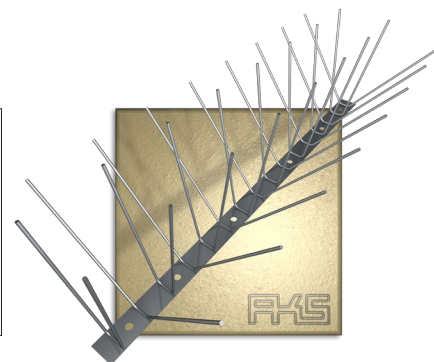
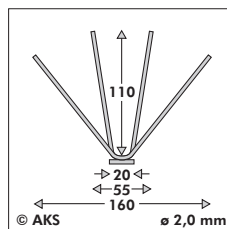
### PIXX® - Quattro ø 2.0 mm

Art. No. PI3104

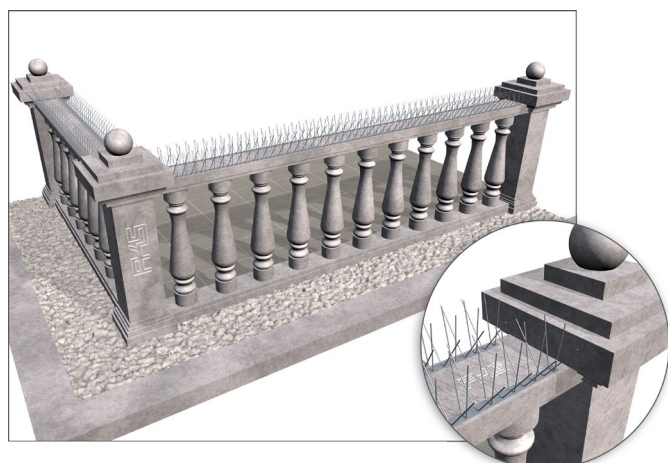
PIXX® - Quattro consists of four rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 200 mm, this product is suitable for wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3104
Length x width x height	1.000 x 160 x 110 mm
Coverage width	c. 200 mm
V-shaped spike rows	40
Spike / spike spacing	25 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	20 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	50 m (5 x 10 pcs)



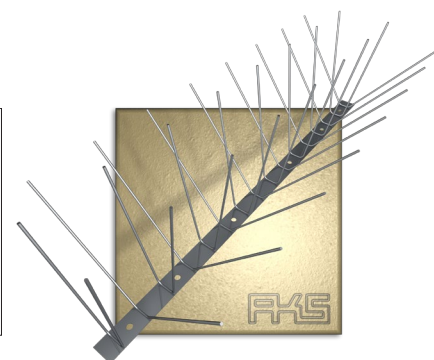
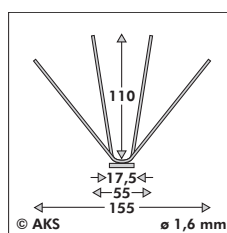
### PIXX® - Quattro Lite ø 1.6 mm

Art. No. PI3134

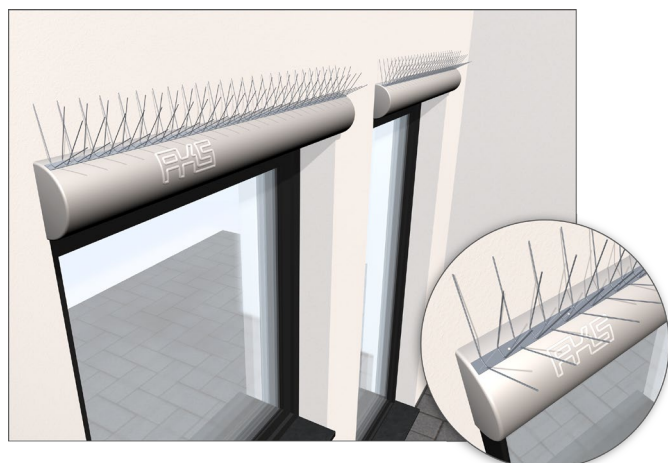
PIXX® - Quattro Lite consists of four rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 200 mm, this product is suitable for wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3134
Length x width x height	1.000 x 155 x 110 mm
Coverage width	c. 200 mm
V-shaped spike rows	40
Spike / spike spacing	25 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	50 m (5 x 10 pcs)



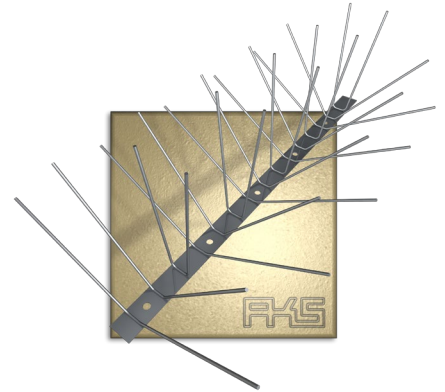
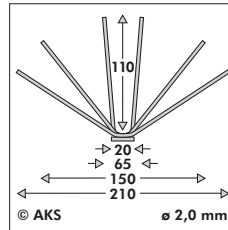
**PIXX® - Multi ø 2.0 mm**

Art. No. PI3107

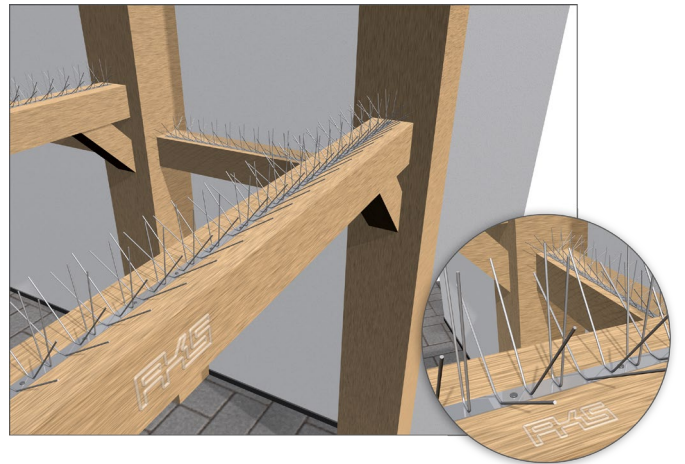
PIXX® - Multi consists of six rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 260 mm, this product is especially suitable for very wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3107
Length x width x height	1.000 x 210 x 110 mm
Coverage width	c. 260 mm
V-shaped spike rows	45
Spike / spike spacing	25 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	20 mm
Base rail perforations	9 x ø 4.0 mm
Packaging	50 m (5 x 10 pcs)





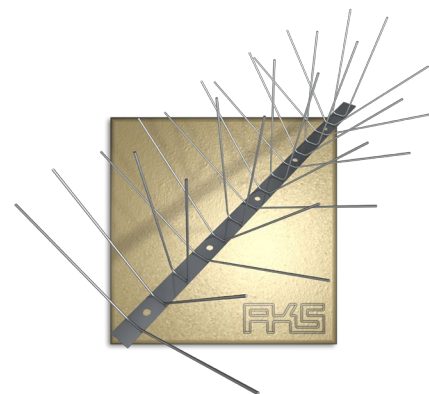
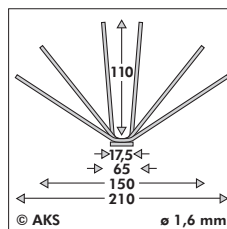
### PIXX® - Multi Lite $\varnothing$ 1.6 mm

Art. No. PI3137

PIXX® - Multi Lite consists of six rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

With a coverage width of c. 260 mm, this product is especially suitable for very wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.



Article No.	PI3137
Length x width x height	1.000 x 205 x 110 mm
Coverage width	c. 260 mm
V-shaped spike rows	45
Spike / spike spacing	25 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	9 x $\varnothing$ 4.0 mm
Packaging	50 m (5 x 10 pcs)



### PIXX® - Bracket - Half Round Ridge Tiles

Art. No. PI3112

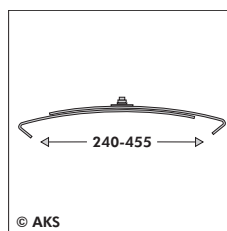
PIXX® - Bracket - Half Round Ridge Tiles is most suited to the durable fixing of PIXX® - Stainless steel spikes to rear-ventilated half round ridge tiles. The brackets can not be fastened to cemented Ridge Tiles.

The bracket is manufactured entirely from stainless steel and is suitable for a clamping width of 240 – 455 mm.

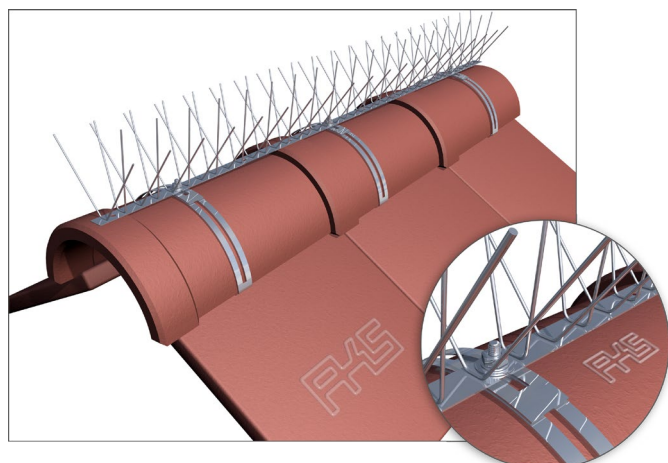
**The  $\varnothing$  4 mm holes in the spike base rail must be drilled to  $\varnothing$  M6 for the bracket bolts before installation.**

Due to the ridge tiles overlapping, we recommend fixing at least 3 brackets per metre.

Our recommendation for spikes: PIXX® - Quattro  $\varnothing$  2.0 mm on page 9



Article No.	PI3112
Adjustable width	240 - 455 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	25 mm
Packaging	PU 100 pcs, can be ordered single



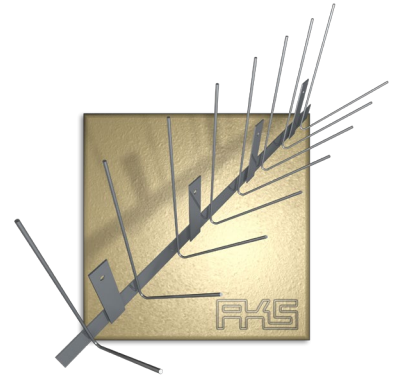
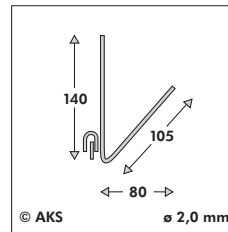
### PIXX® - Gutter ø 2.0 mm

Art. No. PI3105

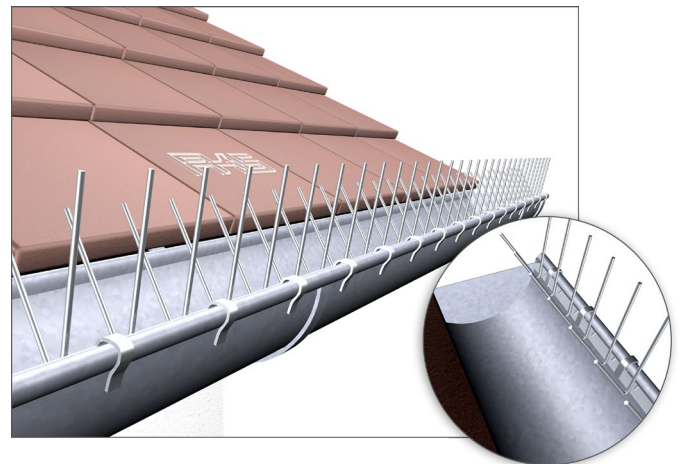
PIXX® - Gutter is designed especially for gutters and consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel base rail.

To install:

Lay the base rail on the inside of the front edge of the gutter (the angled spikes facing the roof), slip the rail under the gutter bracket spring clips and simply bend the 70 mm fastening clips (4 per metre) over the lip of the gutter by hand or with the aid of combination pliers. The perforation in every base rail allows for the additional use of rivets, bolts or glue.



Article No.	PI3105
Length x width x height	1.000 x 80 x 140 mm
Coverage width	c. 100 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Packaging	100 m (10 x 10 pcs)



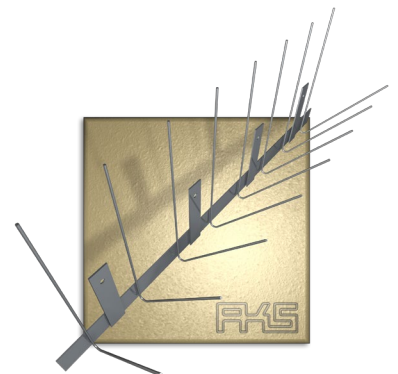
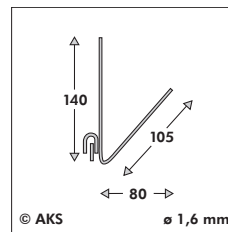
### PIXX® - Gutter Lite ø 1.6 mm

Art. No. PI3135

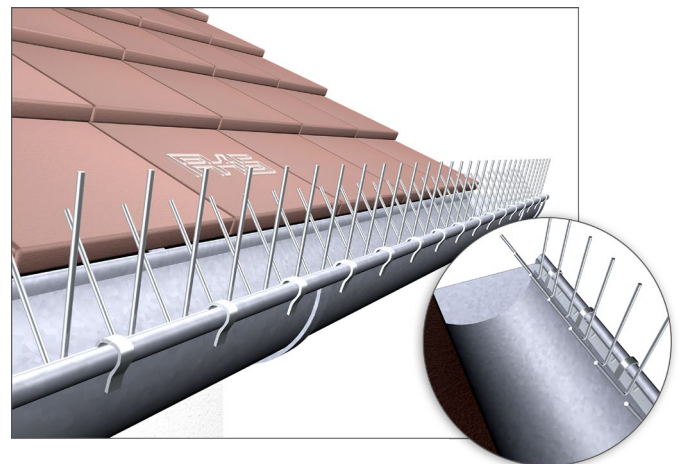
PIXX® - Gutter Lite is designed especially for gutters and consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel rail.

To install:

Lay the base rail on the inside of the front edge of the gutter (the angled spikes facing the roof), slip the rail under the gutter bracket spring clips and simply bend the 70 mm fastening clips (4 per metre) over the lip of the gutter by hand or with the aid of combination pliers. The perforation in every metal strip enables the rails to be additionally riveted, screwed or glued.



Article No.	PI3135
Length x width x height	1.000 x 80 x 140 mm
Coverage width	c. 100 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Packaging	100 m (10 x 10 pcs)



## PIXX® - PV-Spikes 100/125/150/200

Art. No. PI3151-53

PIXX® - PV-Spikes werden in 4 Varianten verschiedener Spikelänge gefertigt.

PIXX® - PV-Spikes are specially designed for side mounting on photovoltaics and solar thermal energy panels to prevent pigeons from crawling under the panels. Pigeons very often use these spaces for nesting or roosting due to the fact that they are largely protected from the weather. PIXX® - PV-Spikes are an effective measure to prevent access!

The vertical downward facing spikes at a length of 100 mm, 125 mm, 150 mm and 200 mm are welded onto a stainless steel rail.

Wir empfehlen, die Spikes an den PV- oder Solarthermie-Modulen anzukleben, z.B. mit PI3427 und PI3446 (siehe Zubehör).

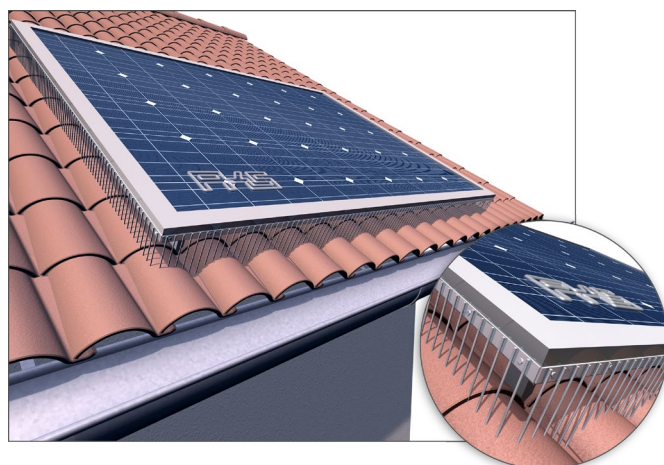
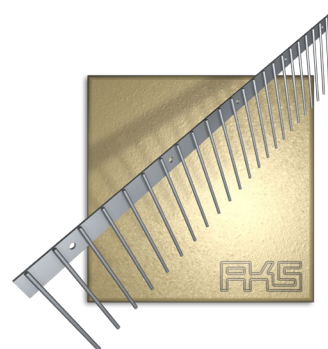
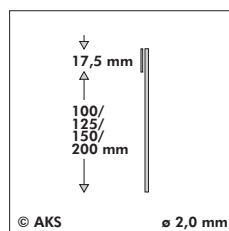
Bitte vermeiden Sie unbedingt, die Spikes an aufgeheizte Modulrahmen zu kleben! Sollte die Gewährleistung der PV-Module nicht mehr berücksichtigt werden müssen, können die Spikes auch z.B. mit PI3403 (siehe Zubehör) angeschraubt werden.

This element, manufactured completely from stainless steel, is 50 cm long.

### Safety advice:

In order to minimise the risk of electric shock, please ensure the photo-voltaic or solar-thermal system is turned off before installation of the PV-Spikes.

After switching off, there is still a risk of residual voltage. We therefore recommend wearing protective gloves, so-called 'electrical safety gloves, class 0' which protect the wearer against an electrical current of up to 1,000 volts.



Article No.	PI3151 / PI3152 / PI3153 / PI3154
Length x width x height	500 x 3.3 x 100 / 125 / 150 / 200 mm
Spike rows	24
Spike / spike spacing	21 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	4 x ø 4.0 mm
Packaging	50 m (10 x 10 pcs)



## PIXX® - PV-Spikes, adjustable 100/130/160

Art. No. PI3156-68

PIXX® - PV-Spikes verstellbar werden in 3 Varianten verschiedener Spikelänge gefertigt.

Die PIXX® - PV-Spikes sind speziell für die seitlich umlaufende Montage an Photovoltaik- und Solarthermie-Panelel konzipiert, um das Unterkriechen von Tauben unter die Panels zu verhindern. Tauben nutzen diesen Unterschlupf sehr häufig, um weitestgehend witterungsgeschützt einen Schlaf- oder Nistplatz einzurichten.

Mit den PIXX® -PV-Spikes wird der Zugang wirksam verwehrt!

Die senkrecht nach unten zeigenden Spikes mit einer Höhe von 135 mm, 165 mm bzw. 195 mm Länge sind in einer Edelstahlleiste verstellbar geführt. Mit PIXX® - PV-Spikes, adjustable 210 or 240 auf Seite 15 erreichen Sie durch eine zweite Edelstahlleiste einen noch stabileren Schutz!

Die Spikes sind mit dem Bügel in Richtung Dachfläche zu montieren und decken eine Höhe bis 100 mm bzw. 130 mm bzw. 160 mm ab.

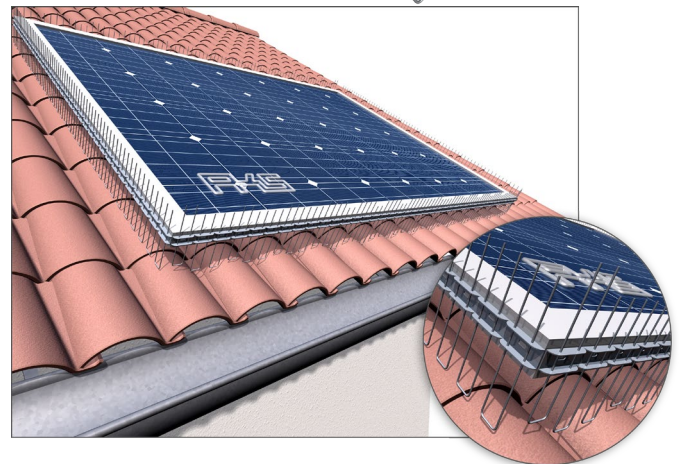
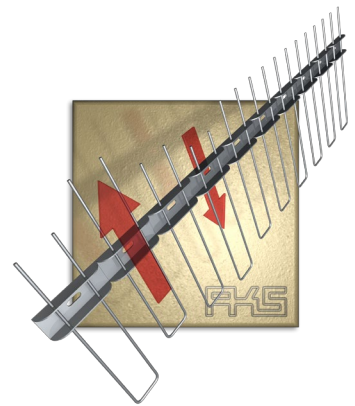
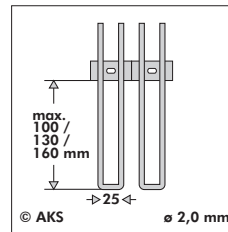
Wir empfehlen, die Spikes an den PV- oder Solarthermie-Modulen anzukleben, z.B. mit PI3427 / PI3428 und PI3446 / PI3448 (siehe Zubehör).

Bitte vermeiden Sie unbedingt, die Spikes an aufgeheizte Modulrahmen zu kleben! Sollte die Gewährleistung der PV-Module nicht mehr berücksichtigt werden müssen, können die Spikes auch z.B. mit PI3403 (siehe Zubehör) angeschraubt werden.

Das Element, komplett aus Edelstahl, wahlweise in schwarz RAL 9005, hergestellt, ist 100 cm lang.

### Sicherheitshinweis:

Bitte schalten Sie, um das Risiko eines Stromschlages zu minimieren, die Photovoltaik- bzw. Solarthermieanlage unbedingt vor der Installation der PV-Spikes ab! Nach dem Abschalten können dennoch Restspannungen an der Anlage verbleiben, daher empfehlen wir das Tragen von Schutzhandschuhen, sogenannten „Elektriker-Handschuhe Klasse 0“, die bis zu einem Maximum von 1.000 Volt Spannung schützen.



Article No.	PI3156 / PI3157 / PI3158 / PI3166 / PI3167 / PI3168
Length x width x height	1.000 x 6 x 135 / 165 / 195 mm
height covered (adjustable)	15 - 100 / 130 / 160 mm
Spike rows	40
Spike / spike spacing	25 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated PI3166 / PI3167 / PI3168: schwarz RAL 9005
Base rail width	18 mm
Base rail perforations	20 x 4.0 x 10 mm elongated holes
Packaging	50 m

**PIXX® - PV-Spikes, adjustable 210 or 240**

Art.-Nr. PI3160-61

Currently german text only.

PIXX® - PV-Spikes verstellbar mit Doppelleiste werden in 2 Varianten verschiedener Spikelänge gefertigt.

PIXX® - PV-Spikes sind speziell für die seitlich umlaufende Montage an Photovoltaik- und Solarthermie-Panels konzipiert, um das Unterkriechen von Tauben unter die Panels zu verhindern. Tauben nutzen diesen Unterschlupf sehr häufig, um weitestgehend witterungsgeschützt einen Schlaf- oder Nistplatz einzurichten.

Mit den PIXX®-PV-Spikes wird der Zugang wirksam verwehrt!

Die senkrecht nach oben zeigenden Spikes sind an zwei parallel angeordneten Edelstahlleisten verstellbar geführt, was im Gegensatz zu den PIXX® - PV-Spikes, adjustable 100/130/160 on page 14 einen noch stabileren Schutz gewährleistet!

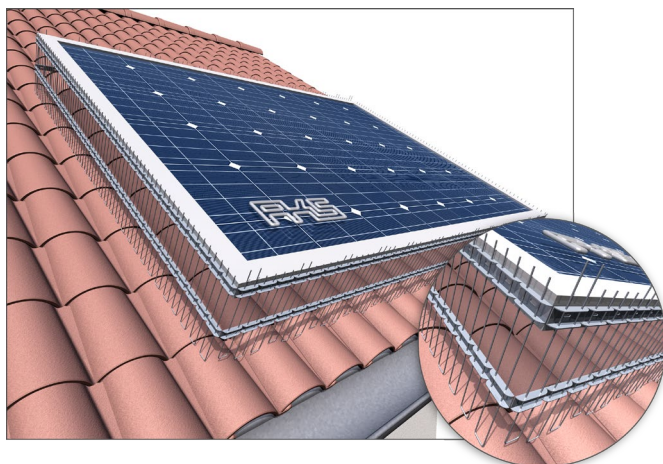
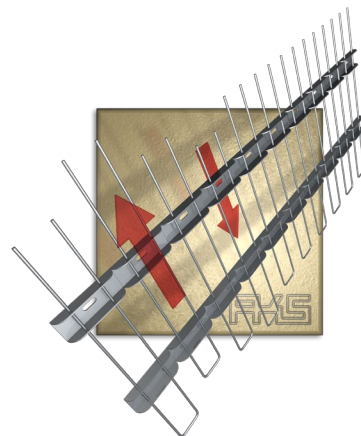
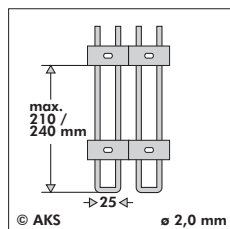
Die Spikes sind mit dem Bügel in Richtung Dachfläche zu montieren und decken eine Höhe bis 210 bzw. 240 mm ab.

Wir empfehlen, die Spikes an den PV- oder Solarthermie-Modulen anzukleben, z.B. mit PI3427 und PI3446 (siehe Zubehör).

Bitte vermeiden Sie unbedingt, die Spikes an aufgeheizte Modulrahmen zu kleben! Sollte die Gewährleistung der PV-Module nicht mehr berücksichtigt werden müssen, können die Spikes auch z.B. mit PI3403 (siehe Zubehör) angeschraubt werden. Das Element, komplett aus Edelstahl hergestellt, ist 100 cm lang.

**Sicherheitshinweis:**

Bitte schalten Sie, um das Risiko eines Stromschlages zu minimieren, die Photovoltaik- bzw. Solarthermieanlage unbedingt vor der Installation der PV-Spikes ab! Nach dem Abschalten können dennoch Restspannungen an der Anlage verbleiben, daher empfehlen wir das Tragen von Schutzhandschuhen, sogenannten „Elektriker-Handschuhe Klasse 0“, die bis zu einem Maximum von 1.000 Volt Spannung schützen.



Artikel-Nr.	PI3160 - PI3161
Länge x Breite x Höhe	1.000 x 6 x 240 / 270 mm
verstellbare Abdeckhöhe	15 - 210 / 240 mm
Spikereihen	40 Stück
Abstand Spike / Spike	25 mm
Spike Durchmesser	2,0 mm
Spike Material	Edelstahl, Werkstoff-Nr. 1.4301 (AISI 304), unbehandelt
Basis Breite	18 mm
Basis Lochungen	20 Stück 4,2 x 10 mm Langloch
Verpackung	25 m

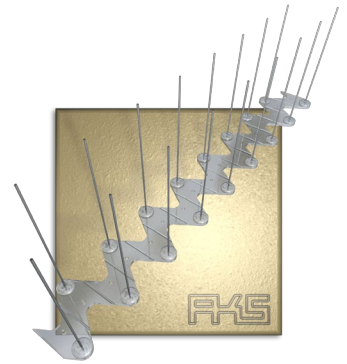
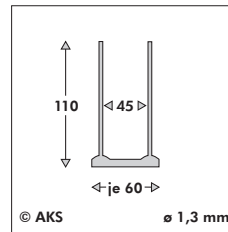
### PIXX® - Transparent Duo ø 1.3 mm

Art. No. PI3106

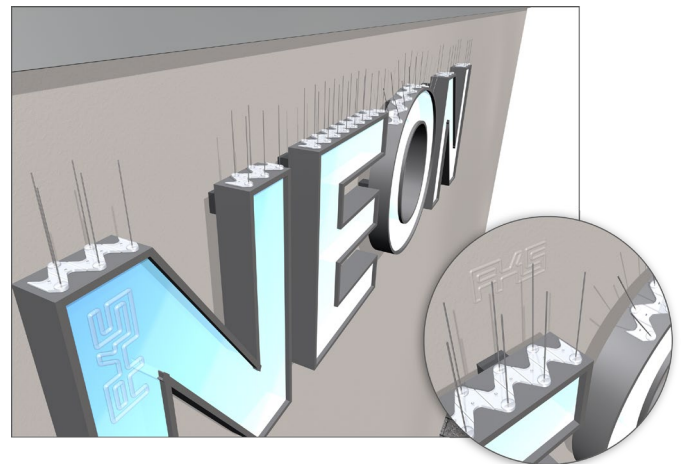
PIXX® - Transparent Duo consists of two rows of vertical spikes (diagonally opposed) made of rust-free spring steel wire attached to a 50 cm long zigzag-shaped plastic base rail made of polycarbonate.

With a coverage width of c. 100 mm, this product is particularly suited to narrow areas such as ledges, railings and balustrades. PIXX® - Transparent Duo is extremely unobtrusive and does not interfere with the aesthetic impression of the façade.

This system is mounted using adhesive (see accessories). No special tools required to cut to length.



Article No.	PI3106
Length x width x height	500 x 60 x 110 mm
Coverage width	c. 100 mm
Spike rows	20
Spike / spike spacing	50 mm
Spike diameter	1.3 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	60 mm
Base rail perforations	20 x ø 2.3 mm
Packaging	100 m (20 x 10 pcs)



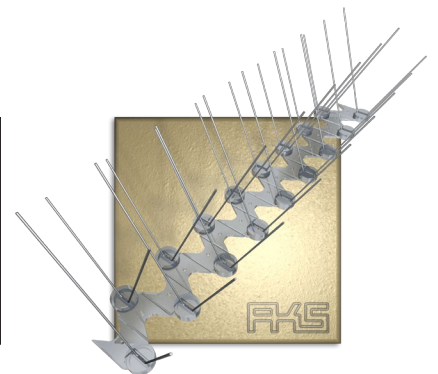
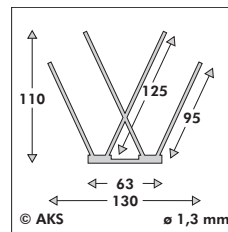
### PIXX® - Transparent Quattro ø 1.3 mm

Art. No. PI3109

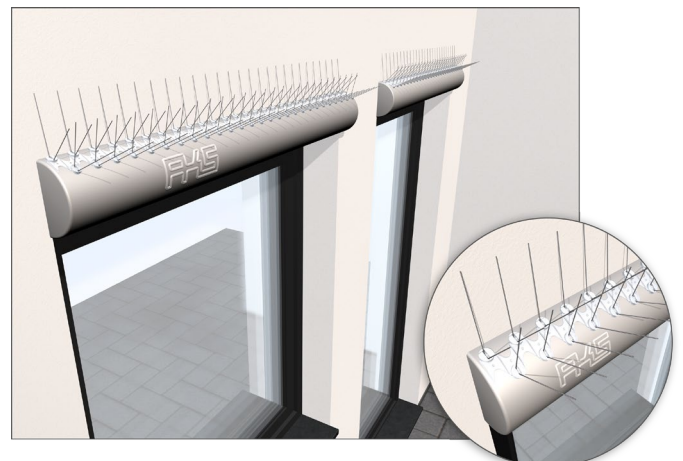
PIXX® - Transparent Quattro consists of four rows of spikes (V-shaped, diagonally opposed) made of rust-free spring steel wire attached to a 50 cm long zigzag-shaped plastic base rail made of polycarbonate.

With a coverage width of c. 200 mm, this product is particularly suited to wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes. PIXX® - Transparent Quattro is extremely unobtrusive and does not interfere with the aesthetic impression of the façade.

This system is mounted using adhesive (see accessories). No special tools required to cut to length.



Article No.	PI3109
Length x width x height	500 x 130 x 110 mm
Coverage width	c. 200 mm
V-shaped spike rows	20
Spike / spike spacing	25 mm
Spike diameter	1.3 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	63 mm
Base rail perforations	20 x ø 2.3 mm
Packaging	60 m (12 x 10 pcs)



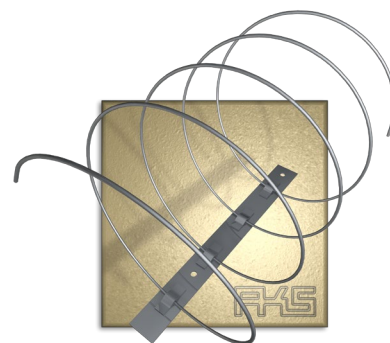
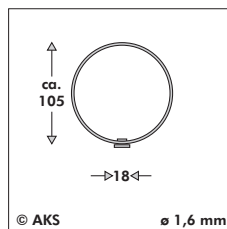


## PIXX® - Spiral

Art. No. PI3155

The PIXX® - Spiral is suitable for light pigeon populations and is employed mainly in schools, kindergartens, aged care homes and other public facilities; that is, all places where PIXX® - Spikes are not appropriate.

This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.








Article No.	PI3155
Length / Diameter	500 mm / ø 105 mm
Coverage width	c. 150 mm
No. of coils	13
Coil spacing	40 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	18 mm
Base rail perforations	4 x ø 5.0 mm
Packaging	50 m (100 pcs)





## PIXX® - Accessories for Spike Systems

	Product	Packaging	Art. No.
	PIXX® - Bracket for spikes on half round ridge tiles	PU 100 pcs, can be ordered single	PI3112
	PIXX® - Screw, stainless steel (raised countersunk, Phillips head) 4.5 x 25	PU 100 pcs	PI3402
	PIXX® - Nylon plug S 6 (for PI3402 + PI3412 + PI3414)	PU 100 pcs	PI3431
	PIXX® - Hybrid-Adhesive 700, grey, 290 ml cartridge to glue spikes + electrical systems	PU 20 cartridges	PI3417
	PIXX® - Konstruktionsklebstoff „Klebt und Dichtet Power“, grau, Kartusche à 300 ml zum Verkleben von Spikes + Elektrosystem	PU 12 cartridges	PI3427
	PIXX® - Konstruktionsklebstoff „Klebt und Dichtet Power“, schwarz, Kartusche à 300 ml zum Verkleben von Spikes + Elektrosystem	PU 12 cartridges	PI3428
	PIXX® - Primer S, 250 ml, bonding agent for the preparation of mineral surfaces	Single	PI3445
	PIXX® - Primer MK, 250 ml, bonding agent for the preparation of metal and plastic surfaces	Single	PI3446
	PIXX® - Soft-Cleaner, 500 ml, for the pretreatment of surfaces (cleans + removes grease)	Single	PI3448
	PIXX® - Soft-Cleaner, 2500 ml, for the pretreatment of surfaces (cleans + removes grease)	Single	PI3447
	PIXX® - Schraube selbstschneidend, Edelstahl (Linsenkopf, Torx) 3,9 x 13	PU 100 pcs	PI3403
	PIXX® - Screw, self-tapping stainless steel (raised countersunk, Phillips head) 4.2 x 25	PU 100 pcs	PI3460
	PIXX® - Screw, self-tapping stainless steel (raised countersunk, Phillips head) 4.2 x 32	PU 100 pcs	PI3461
	PIXX® - Screw, self-tapping stainless steel (raised countersunk, Phillips head) 4.8 x 25	PU 100 pcs	PI3462
	PIXX® - Screw, self-tapping stainless steel (raised countersunk, Phillips head) 4.8 x 32	PU 100 pcs	PI3463

### PIXX® - Post on Stainless Steel Base Plate

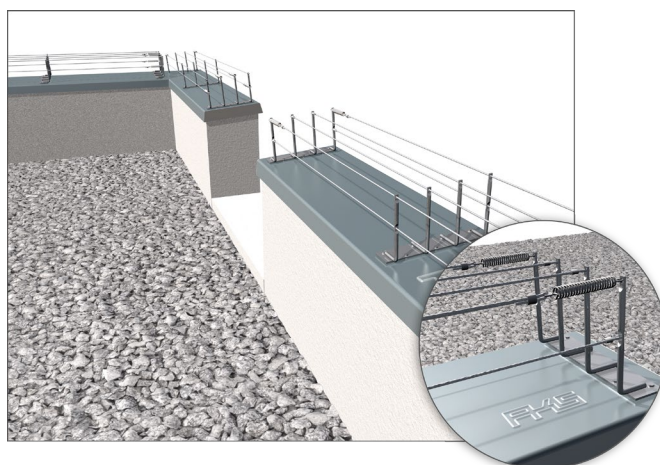
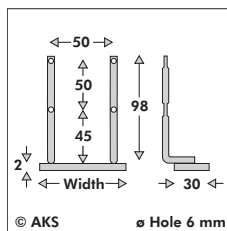
Art. No. PI3281-91

#### for ledges, parapets and balustrades

PIXX® - Post on Stainless Steel Base Plate is available in different versions (1 - 11 posts with additional lower wire). The spacing between base plates should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.

Article No.	PI3281 - PI3291
Diameter / height	4.0 mm / 98 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untr.
Plate width x thickness	30 x 2 mm
Plate perforations ø	6 mm
Packaging	Single

Product versions	Width	Holes	Art. No.
1-post with additional lower wire	36 mm	2	PI3281
2-post with additional lower wire	60 mm	3	PI3282
3-post with additional lower wire	110 mm	5	PI3283
4-post with additional lower wire	160 mm	7	PI3284
5-post with additional lower wire	210 mm	9	PI3285
6-post with additional lower wire	260 mm	10	PI3286
7-post with additional lower wire	310 mm	12	PI3287
8-post with additional lower wire	360 mm	14	PI3288
9-post with additional lower wire	410 mm	15	PI3289
10-post with additional lower wire	460 mm	16	PI3290
11-post with additional lower wire	510 mm	18	PI3291



### PIXX® - Post on Aluminium Base Plate

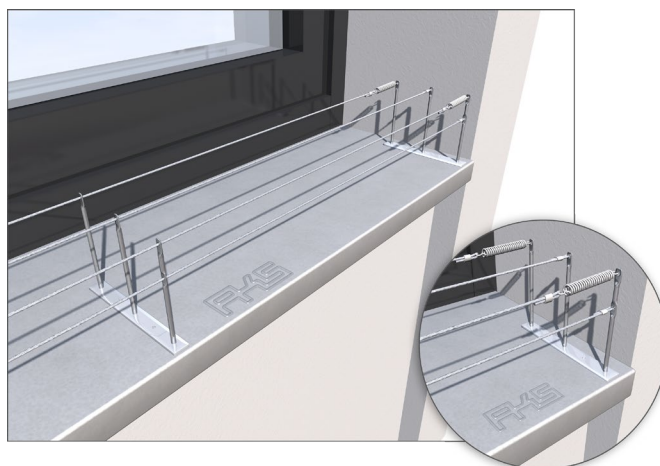
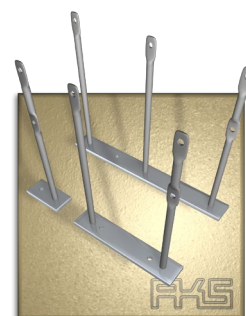
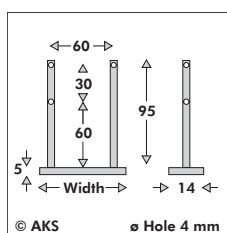
Art. No. PI3261-69

#### for ledges, parapets and balustrades

PIXX® - Post on Plastic Base Plate is available in different versions (1 - 9 posts with additional lower wire). The bracket is made of plastic, the posts of stainless steel. The spacing between posts should be max. 1.0 - 1.5 m; the wire length per spring max. 2 - 3 m, otherwise it may sag with time.

Article No.	PI3261 - PI3269
Diameter / height	4.0 mm / 95 mm
Material	Aluminium + stainless steel, Material No. 1.4301 (AISI 304), untr.
Plate width x thickness	14 x 5 mm
Plate perforations ø	4 mm
Packaging	Single

Product versions	Width	Holes	Art. No.
1-post with additional lower wire	30 mm	1	PI3261
2-post with additional lower wire	76 mm	1	PI3262
3-post with additional lower wire	136 mm	2	PI3263
4-post with additional lower wire	196 mm	2	PI3264
5-post with additional lower wire	256 mm	2	PI3265
6-post with additional lower wire	316 mm	3	PI3266
7-post with additional lower wire	376 mm	3	PI3267
8-post with additional lower wire	436 mm	4	PI3268
9-post with additional lower wire	496 mm	4	PI3269





## PIXX® - Post on Plastic Base Plate

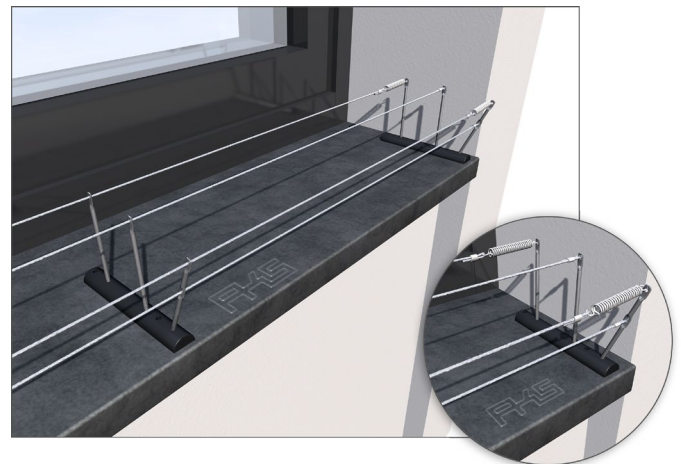
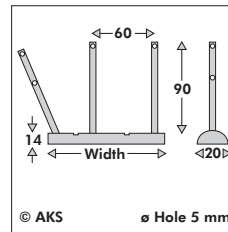
Art. No. PI3251-59

### for ledges, parapets and balustrades

PIXX® - Post on Plastic Base Plate is available in different versions (1 - 9 posts with additional lower wire). The bracket is made of plastic, the posts of stainless steel. The spacing between posts should be max. 1.0 - 1.5 m; the wire length per spring max. 2 - 3 m, otherwise it may sag with time.

Article No.	PI3251 - PI3259
Diameter / height	4.0 mm / 90 mm
Material	PVC + stainless steel, Material No. 1.4301 (AISI 304), untr.
Plate width x thickness	20 x 14 mm
Plate perforations ø	5 mm
Packaging	Single

Product versions	Width	Holes	Art. No.
1-post with additional lower wire	30 mm	1	PI3251
2-post with additional lower wire	45 mm	1	PI3252
3-post with additional lower wire	115 mm	2	PI3253
4-post with additional lower wire	175 mm	2	PI3254
5-post with additional lower wire	235 mm	2	PI3255
6-post with additional lower wire	295 mm	3	PI3256
7-post with additional lower wire	355 mm	3	PI3257
8-post with additional lower wire	415 mm	4	PI3258
9-post with additional lower wire	475 mm	4	PI3259



## PIXX® - Trägerelement 1-fach

Art.-Nr. PI3275

### für Gesimse, Balken, T-Träger und Dachrinnen, mit Unterflugschutz

Currently German Version only.

Das PIXX® - Trägerelement 1-fach für Gesimse, Balken, T-Träger und Dachrinnen, mit Unterflugschutz ist aus Edelstahl, Werkstoff-Nr. 1.4301 hergestellt.

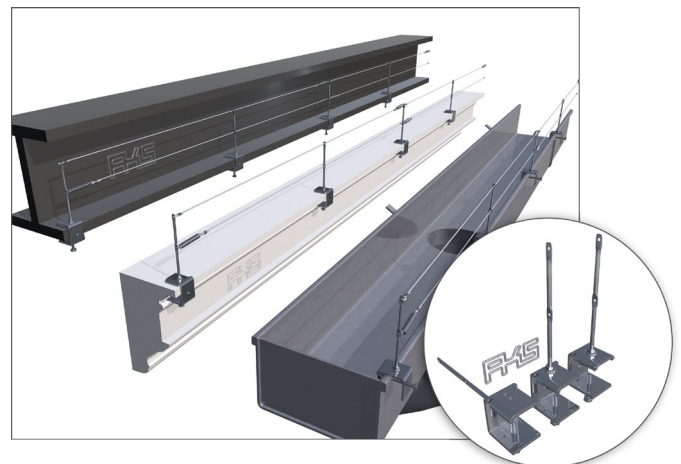
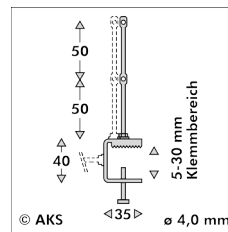
Die Besonderheit bei diesem Trägerelement ist der variable Einsatz der U-Trägerform, bei dem der Edelstahlpin wahlweise in 3 vorgegebene Bohrungen eingeschraubt werden kann.

So ist z.B. beim Einsatz von Balken oder T- oder IPE-Trägern der Einsatz des Pins an der vorderen Bohrung sinnvoll.

Durch Edelstahlseile, die mit Hilfe von Federn und Klemmhülsen an den Trägerelementen gespannt werden, wird das Absitzen der Tauben wirksam verhindert.

Der Abstand von Trägerelement zu Trägerelement sollte maximal 1,0 - 1,5 m betragen, die Seillänge pro Feder maximal 2-3 m, da sonst das Seil mit der Zeit stark durchhängt.

Artikel-Nr.	PI3275
Durchmesser / Höhe	4,0 mm / 100 mm
Material	Edelstahl, Werkstoff-Nr. 1.4301 (AISI 304), unbehandelt
Basis Länge x Breite	40 x 35 mm
Klemmbereich	5 - 30 mm
Verpackung	einzel



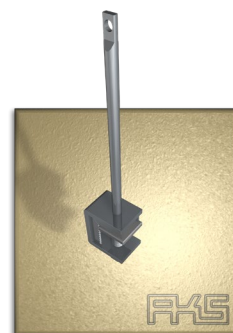
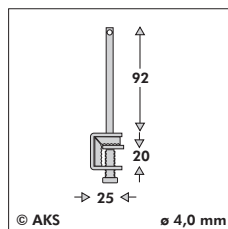
## PIXX® - Post & Clamp for Ledges/Beams

Art. No. PI3234

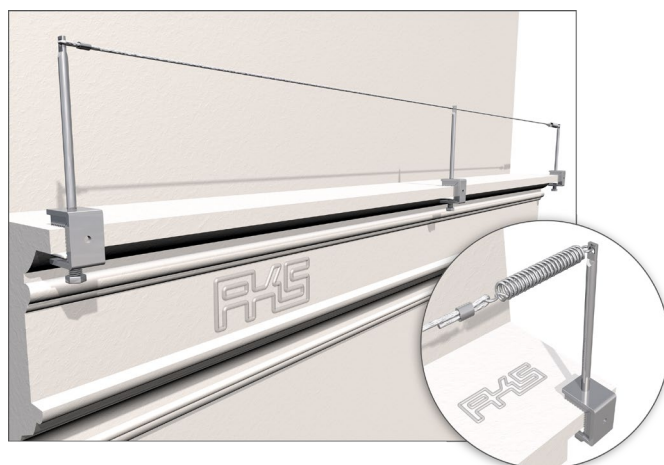
PIXX® - Post & Clamp for Ledges/Beams is made of stainless steel and is for installation on ledges, beams and girders (e.g., T-beams).

The stainless steel wire which is stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between posts should be max. 1.0 - 1.5 m, the cable length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3234
Diameter / height	4.0 mm / 92 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
No. of posts	1
Clamp length x width	25 x 19 mm
Packaging	Single



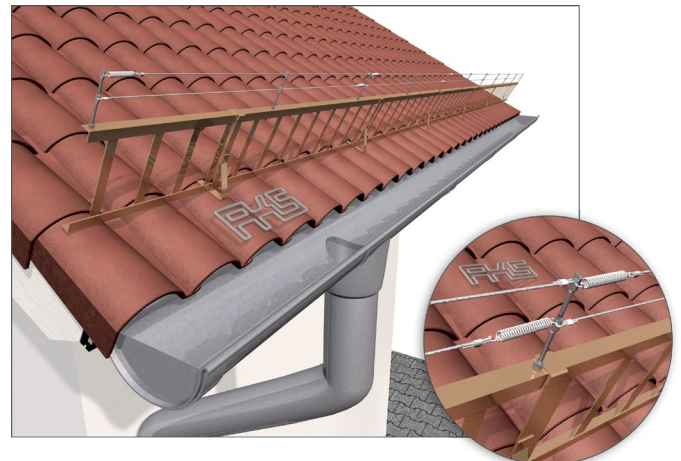
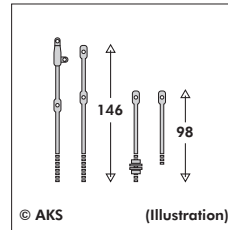
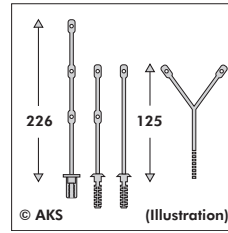
## PIXX® - Single Posts + Accessories

The Single Posts (single-headed, double-headed or triple-headed) are made of stainless steel and are available in different lengths and with or without thread. The posts without thread are mounted with the aid of anchor plugs (nylon), the posts with thread with the aid of nuts, washers and counter nuts or blind rivet nuts. The post insulators pictured are for the mounting of current-carrying stainless steel wires.

The stainless steel wire which is stretched between the single posts with the aid of springs and ferrules effectively deters pigeons from perching. The spacing between the posts should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.

Product	Length	Art. No.
PIXX® - Single-headed post (ø3.5 mm) with thread M4 (30 mm), stainless steel	82 mm	PI3218
PIXX® - Single-headed post (ø3.5 mm) with thread M4 (10 mm), stainless steel	98 mm	PI3219
PIXX® - Single-headed post (ø4.0 mm) without thread, stainless steel	130 mm	PI3222
PIXX® - Double-headed post (ø3.5 mm) with thread M4 (10 mm), stainless steel	98 mm	PI3223
PIXX® - Double-headed post (ø4.0 mm) without thread, stainless steel	130 mm	PI3225
PIXX® - Double-headed post (ø4.0 mm) without thread, stainless steel	164 mm	PI3226
PIXX® - Triple-headed post (ø4.0 mm) without thread, stainless steel	226 mm	PI3227
PIXX® - Y-Post (ø3.5 mm) with thread M4 (30 mm), stainless steel	120 mm	PI3228
PIXX® - Single-headed post (ø 4.5 mm) with thread M5 (10 mm), stainless steel	110 mm	PI3495
PIXX® - Single-headed post (ø 4.5 mm) with thread M5 (30 mm), stainless steel	130 mm	PI3496
PIXX® - Double-headed post (ø 4.5 mm) with thread M5 (10 mm), stainless steel	110 mm	PI3497
PIXX® - Double-headed post (ø 4.5 mm) with thread M5 (30 mm), stainless steel	130 mm	PI3498

Accessories	Packaging	Art. No.
Hex nut M4, stainless steel (for single posts ø 3.5 mm with thread)	PU 100 pcs	PI3432
Washer for M4, stainless steel (for single posts ø 3.5 mm with thread)	PU 100 pcs	PI3433
Hex nut M5, stainless steel (for single posts ø 4.5 mm with thread)	PU 100 pcs	PI3525
Washer for M5, stainless steel (for single posts ø 4.5 mm with thread)	PU 100 pcs	PI3526
Rivet nut M4 x 12.5 IG, stainless steel with countersunk head for posts and eyebolts with M4-thread	PU 100 pcs	PI3457
Rivet nut M5 x 16 IG, stainless steel with countersunk head for posts and eyebolts with M5-thread	PU 100 pcs	PI3456



Accessories	Packaging	Art. No.
Threaded mandrel for pliers with nozzle M4 (fits PI3457)	Single	PI3459
Threaded mandrel for pliers with nozzle M5 (fits PI3456)	Single	PI3475
Manual rivet nut setting pliers without threaded mandrel	Single	PI3458
Anchor plug 36 mm (for posts without thread)	PU 50 pcs	PI3413
Post Insulator 30 mm, UV-proof	PU 100 pcs	PI3436



### PIXX® - Rail for Window Recesses

Art. No. PI3622-25

PIXX® - Rail for Window Recesses is available in 4 different versions. The stainless steel wire stretched between the rails with the aid of springs and ferrules effectively deters pigeons from perching.

With the aid of an optional screw-in PIXX® - Single Post, the leading edge of the ledge can also be protected.

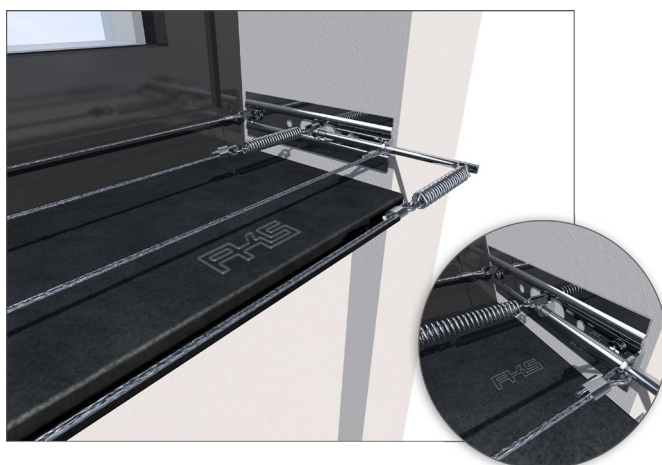
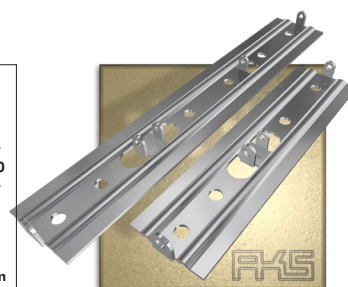
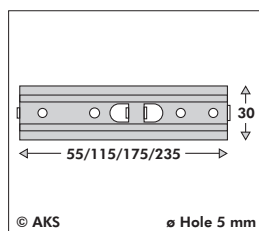
Article No.	PI3622 - PI3625
Material	stainless steel, Material No. 1.4404 (AISI 316L)
Rail width	30 mm
Rail perforations ø	5 mm
Packaging	Single

#### Product versions

Width	for recess depth	No. of wires	Holes	Art. No.
55 mm	60-120 mm	2	3	PI3622
115 mm	120-180 mm	3	4	PI3623
175 mm	180-240 mm	4	6	PI3624
235 mm	240-300 mm	5	8	PI3625

#### Optional

PIXX® - Single-headed post, length 98 mm of which 10 mm thread M4 PI3219



### PIXX® - 3 Post Bracket Half Round Ridge Tiles

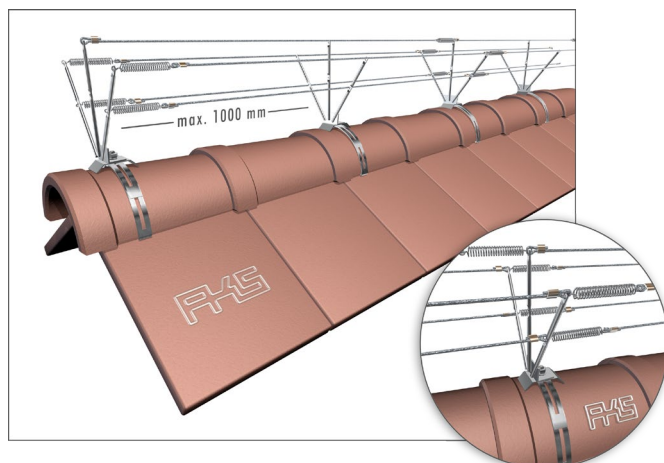
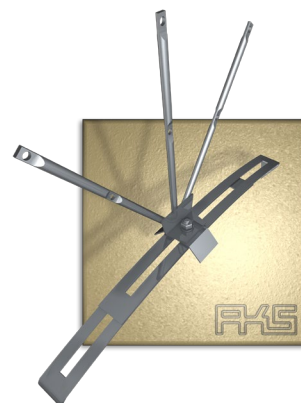
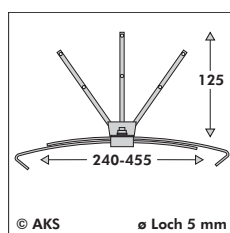
Art. No. PI3229

PIXX® - 3 Post Bracket for rear-ventilated Half Round Ridge Tiles with additional lower wire is stainless steel and adjustable in the width. The brackets can not be fastened to cemented Ridge Tiles.

Bei eingemörtelten Firstziegeln können die Klemmen des Trägerelements nicht angesetzt werden.

The 5 stainless steel wires stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between the brackets should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3229
Adjustable width	240 - 455 mm
Diameter / height	4.0 mm / 125 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
No. of posts	3
Bracket width	25 mm
Packaging	PU 100 pcs, can be ordered single

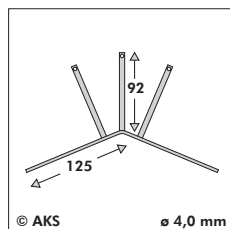
### PIXX® - 3 Post Bracket for Angle Ridge Tiles

Art. No. PI3238

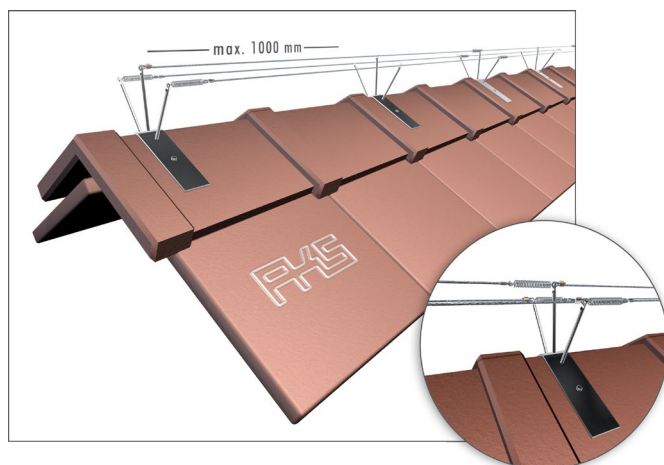
PIXX® - 3 Post Bracket for Angle Ridge Tiles is stainless steel and is for mounting on angle ridge tiles.

The stainless steel wire stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between the brackets should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3238
Diameter / height	4.0 mm / 92 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
No. of posts	3
Bracket width	40 mm
Packaging	Single



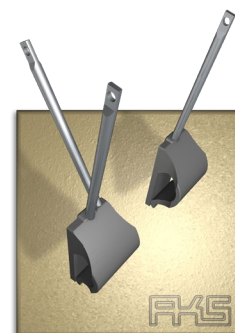
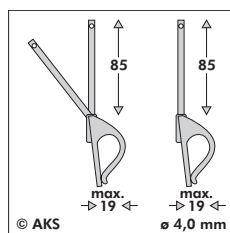
### PIXX® - Post & Clamp for Gutters

Art. No. PI3231-2

PIXX® - Post & Clamp for Gutters (rounded) has a plastic clamp and stainless steel posts and is for mounting on gutters with a rounded lip (ø 17 to max. 19 mm). There is a choice of 1 or 2 posts per clamp.

The stainless steel wire stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between the clamps should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time. The first, last and every third clamp must be secured with blind rivets to prevent the posts tipping sideways on tensioning!



Article No.	PI3231 / PI3232
Diameter / height	4.0 x 85 mm
Material	HDPE + stainless steel, Material No. 1.4301 (AISI 304), untr.
No. of posts	1 or 2
Clamp width	36 mm
Packaging	Single

Product versions	Art. No.
1-post	PI3231
2-post	PI3232



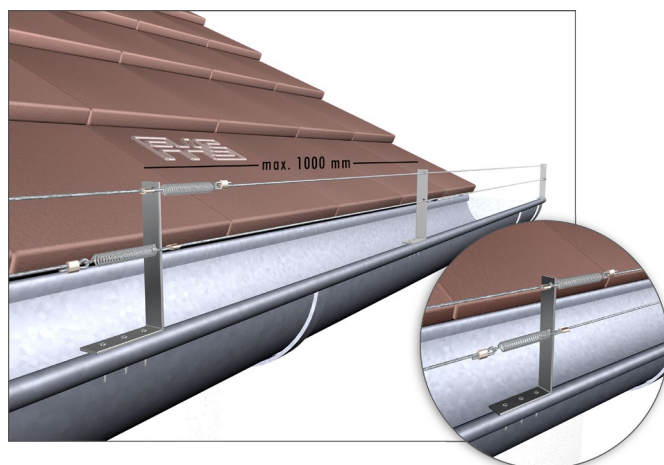
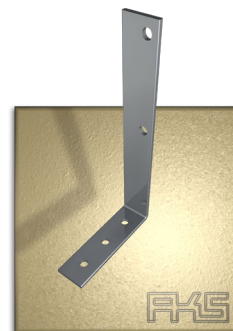
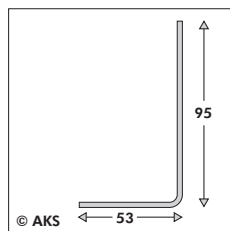
### PIXX® - Bracket for Gutters

Art. No. PI3270

PIXX® - Bracket for Gutters is made entirely of stainless steel and is for mounting on gutters and snow guards.

Three  $\varnothing$  5 mm perforations enable the bracket to be simply screwed or riveted into place. The stainless steel wire, which is stretched between the brackets with the aid of springs and ferrules, effectively deters pigeons from perching.

The spacing between the brackets should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3270
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base width	15 mm
Base perforations $\varnothing$	5 mm
Packaging	10 pcs

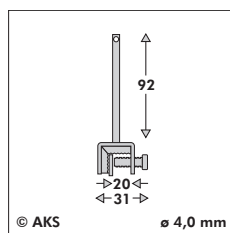
### PIXX® - Post & Clamp for Gutters

Art. No. PI3233

PIXX® - Post & Clamp for Gutters (K-style or box) is made of stainless steel and is for mounting on K-style or box gutters with a squared lip.

The stainless steel wire stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between the clamps should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3233
Diameter / height	4.0 mm / 92 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
No. of posts	1
Clamp length x width	31 x 19 mm
Packaging	Single



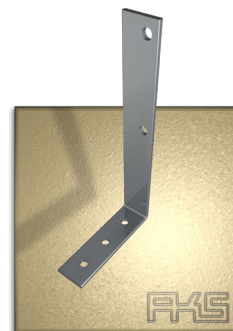
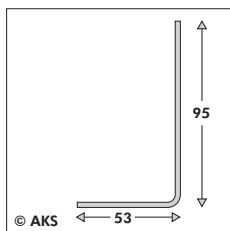
### PIXX® - Bracket for Snow Guards

Art. No. PI3270

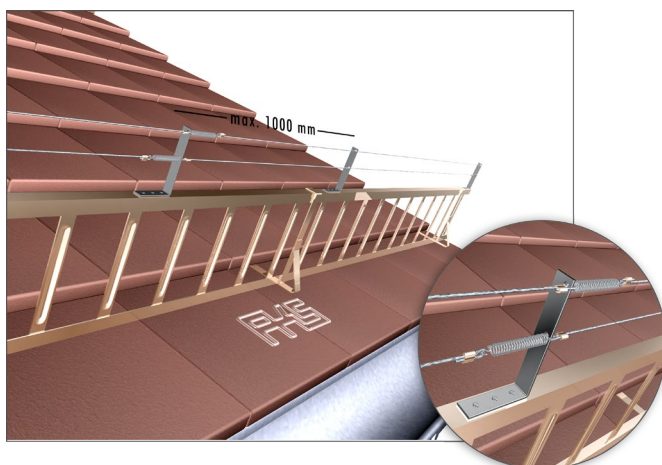
PIXX® - Bracket for Snow Guards is made entirely of stainless steel and is for mounting on gutters and snow guards.

Three  $\varnothing$  5 mm perforations enable the bracket to be simply screwed or riveted into place. The stainless steel wire, which is stretched between the brackets with the aid of springs and ferrules, effectively deters pigeons from perching.

The spacing between the brackets should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3270
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base width	15 mm
Base perforations $\varnothing$	5 mm
Packaging	10 pcs



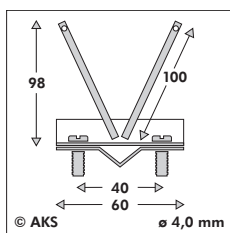
### PIXX® - Posts & Clamp Lightning Conductors

Art. No. PI3235

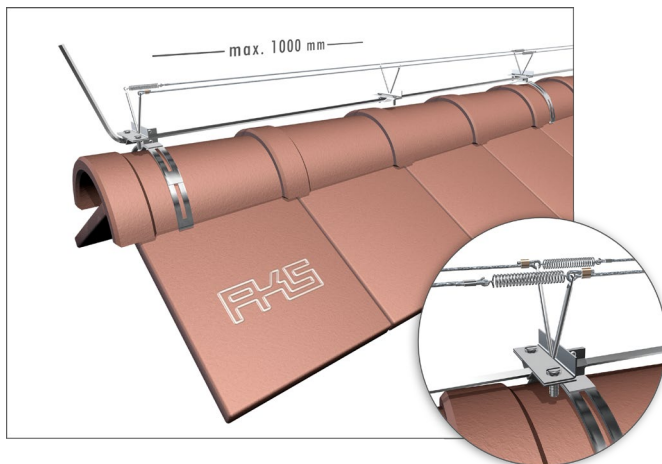
PIXX® - Posts & Clamp for Lightning Conductors is made of stainless steel and is mounted directly on lightning conductors.

The stainless steel wire stretched between the posts with the aid of springs and ferrules effectively deters pigeons from perching.

The spacing between the clamps should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time.



Article No.	PI3235
Diameter / height	4.0 mm / 100 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
No. of posts	2
Clamp length x width	60 x 20 mm
Packaging	Single



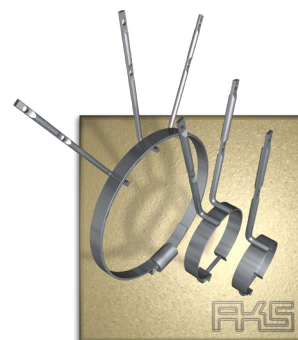
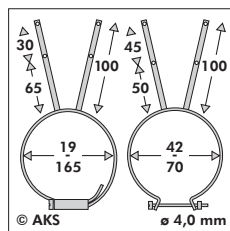
## PIXX® - Post & Bracket for Pipes

PIXX® Post & Bracket for Pipes is made of stainless steel and is for mounting on pipes and rails.

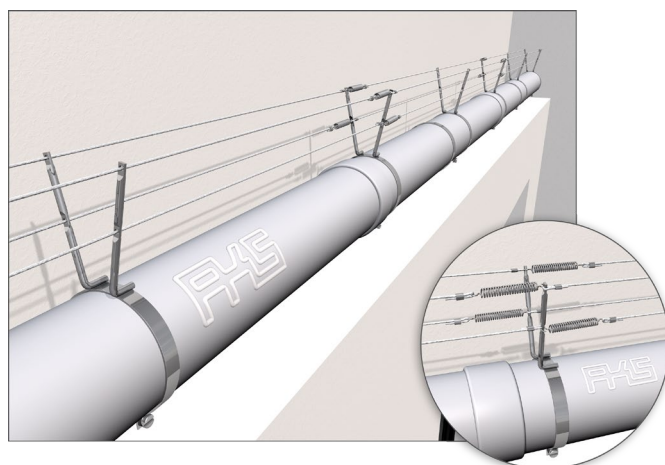
The standard bracket is closed with a M5 nut and bolt. We also offer an alternative bracket with a screw thread. If required, both types are also available for larger pipe diameters!

The stainless steel wire stretched between the posts with the aid of springs and ferules effectively deters pigeons from perching.

The spacing between the brackets should be max. 1.0 - 1.5 m, the wire length per spring max. 2 - 3 m, otherwise it may sag with time. All posts allow for the inclusion of an additional lower wire!



Article No.	see table
Diameter Posts	4.0 mm
Material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Bracket width	12 mm
Packaging	Single



Product versions	Posts	Diameter	Art. No.
with nut and bolt	1	c. 42-50 mm	PI3236
with nut and bolt	1	c. 50-60 mm	PI3247
with screw thread	1	c. 19-28 mm	PI3610
with screw thread	1	c. 26-38 mm	PI3611
with screw thread	2	c. 38-50 mm	PI3612
with screw thread	2	c. 58-75 mm	PI3613
with screw thread	2	c. 77-95 mm	PI3614
with screw thread	3	c. 87-112 mm	PI3615
with screw thread	3	c. 104-138 mm	PI3616
with screw thread	3	c. 130-165 mm	PI3617



PIXX® - Accessories for Spring Wire Systems

	Product	Packaging	Art. No.
	PIXX®- Wire 0.54 mm / 1 x 7	PU 50 m	PI3199
	PIXX®- Wire 0.54 mm / 1 x 7	PU 100 m	PI3203
	PIXX®- Wire 0.54 mm / 1 x 7	PU 250 m	PI3209
	PIXX®- Wire 0.54 mm / 1 x 7	PU 500 m	PI3202
	PIXX®- Ferrule, copper, for 0.54 mm wire	PU 100 pcs	PI3419
	PIXX®- Ferrule, stainless steel, for 0.54 mm wire (2 x 20 mm)	PU 100 pcs	PI3423
	PIXX®- Crimping tool (for PI3419 + PI3423)	Single	PI3406
	PIXX®- Wire spring, stainless steel, for 0.54 mm wire	PU 100 pcs	PI3408
	PIXX®- Eyebolt with wood thread 20 mm, stainless steel, 4.0 x 30	PU 100 pcs	PI3412
	PIXX®- Eyebolt with wood thread 20 mm, stainless steel, 4.0 x 80	PU 100 pcs	PI3414
	PIXX®- Nylon plug S 6 (for PI3402 + PI3412 + PI3414)	PU 100 pcs	PI3431
	PIXX®- Eyebolt with metric thread M4, stainless steel, 10 mm long	PU 100 pcs	PI3464
	PIXX®- Eyebolt with metric thread M5, stainless steel, 27 mm long	PU 100 pcs	PI3415
	PIXX®- Rivet nut M4 x 12,5 IG, stainless steel with countersunk head for posts and eyebolts with M4-thread	PU 100 pcs	PI3457
	PIXX®- Rivet nut M5 x 16 IG, stainless steel with countersunk head posts and eyebolts with M5-thread	PU 100 pcs	PI3456
	PIXX®- Threaded mandrel for pliers with chuck M4 (fits PI3457)	Single	PI3459
	PIXX®- Threaded mandrel for pliers with chuck M5 (fits PI3456)	Single	PI3475
	PIXX®- Manual rivet nut setting pliers without threaded mandrel	Single	PI3458



## PIXX® - Wire Mesh

PIXX® - Wire Mesh is made of rust-free stainless steel wire, Material No. 1.4301 (untreated) and is intended for broad areas. The professional installation of this high quality material ensures the protection of windows, ornaments and whole façades. The variety of PIXX® - Wire Mesh allows for a tailor-made solution for a wide range of areas and applications. When required, fine mesh even provides protection from smaller birds, both indoors and outdoors.

To install:

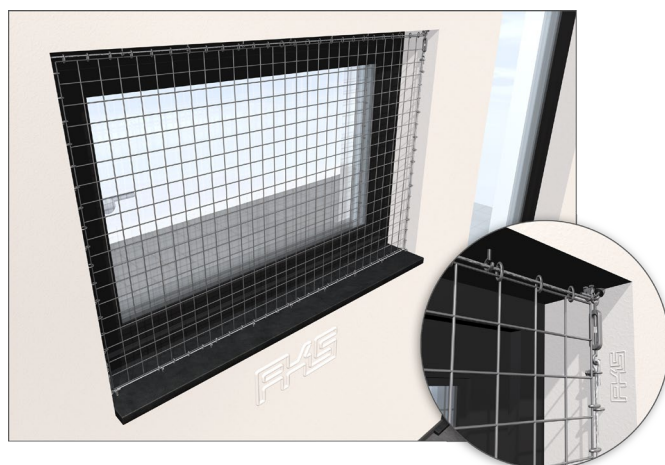
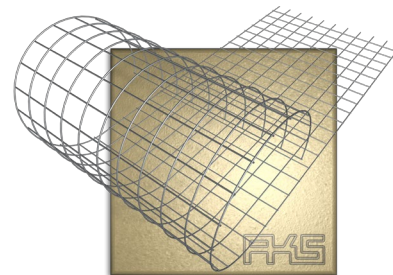
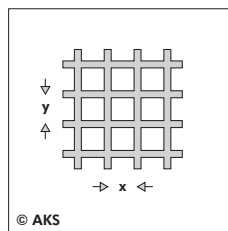
PIXX® - Wire Mesh is stretched across the space with the aid of PIXX® - Hog Rings and PIXX® - Turnbuckles attached to a wire rope suspension system (e.g., PIXX® - Wire 1.5/2.0 mm). The suspension wire is threaded through PIXX® - Eyebolts. The mesh is subsequently attached to the suspension wire with PIXX® - Hog rings.

In addition to the standard sizes listed below, we offer galvanized mesh in 25 m rolls for interior use. Further variations in terms of wire strength, mesh size and materials are available upon request.

Mesh size	Application
6-20 mm	small birds such as sparrows, tits etc., (also rodents!)
30 mm	medium-size birds such as starlings, blackbirds etc.
50 mm	bigger birds such as pigeons, crows etc.

### Product versions

Mesh size / Wire gauge	Length	Width	m <sup>2</sup> /roll	Art. No.
6 x 6 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PE1105
8 x 8 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PE1109
10 x 10 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PI3304
10 x 10 x 1.0 mm	25 m roll	1.500 mm	37.5 m <sup>2</sup>	PE1144
16 x 16 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PI3310
20 x 20 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PI3311
20 x 20 x 1.0 mm	50 m roll	1.996 mm	99.8 m <sup>2</sup>	PE1165
30 x 30 x 0.7 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PI3320
30 x 30 x 0.7 mm	25 m roll	1.500 mm	37.5 m <sup>2</sup>	PI3322
30 x 30 x 0.7 mm	25 m roll	2.000 mm	50 m <sup>2</sup>	PI3325
30 x 30 x 1.0 mm	25 m roll	1.000 mm	25 m <sup>2</sup>	PI3323
30 x 30 x 1.0 mm	25 m roll	1.500 mm	37.5 m <sup>2</sup>	PI3324
48.8 x 48.8 x 2.0 mm	25 m roll	1.016 mm	25.4 m <sup>2</sup>	PE1141
50 x 50 x 1.0 mm	25 m roll	1.500 mm	37.5 m <sup>2</sup>	PI3327



## PIXX® - Nylon Netting

PIXX® - Nylon Netting is knotted and made of high quality transparent nylon wire (Polyamide - PA6). The professional installation of this high quality material ensures the protection of windows, ornaments and whole façades. Nets are installed with the aid of a wire rope suspension system.

To install:

PIXX® - Nylon Netting is stretched and anchored with the aid of PIXX® - Turnbuckles and PIXX® - Hog rings attached to the suspension system (e.g., PIXX® - Wire 1.5/2.0 mm). The suspension wire is threaded through PIXX® - Eyebolts. The outer edge of the net is attached to the suspension wire with PIXX® - Hog rings.

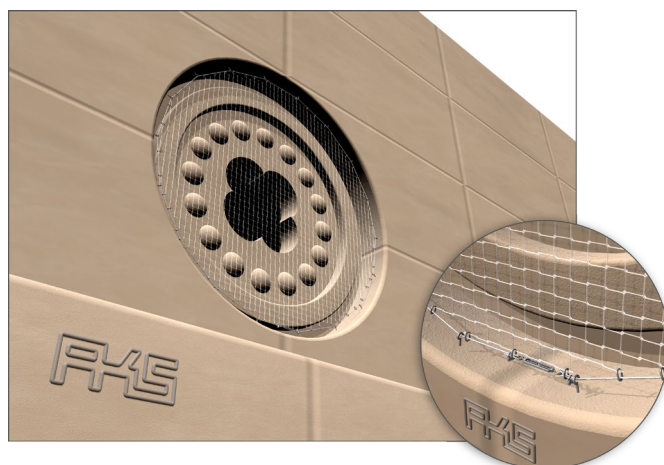
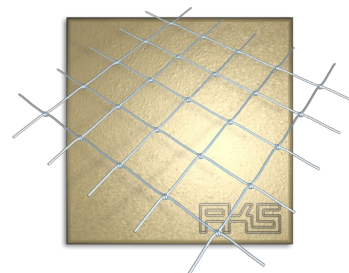
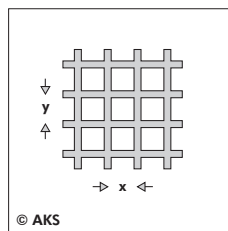
PIXX® - Nylon Netting is UV-stabilised (400 KLY), heat resistant up to 95 °C and has a melting point of c. 220 °C. It is available in the following mesh sizes for the following applications:

Mesh size	Application	Net weight
20 mm	small birds such as sparrows, tits etc.	c. 13 g/m <sup>2</sup>
30 mm	medium-size birds such as starlings, blackbirds etc.	ø 0.4 mm: c. 12 g/m <sup>2</sup> ø 0.6 mm: c. 27 g/m <sup>2</sup>
50 mm	bigger birds such as pigeons, crows etc.	c. 16 g/m <sup>2</sup>

### Product versions

Colour	Mesh size / Gauge	Length	Width	Art. No.
translucent-white	c. 20 x 20 x 0.40 mm	100 m	2 m	PI3334
translucent-white	c. 20 x 20 x 0.40 mm	100 m	5 m	PI3344
translucent-white	c. 20 x 20 x 0.40 mm	100 m	10 m	PI3354
translucent-white	c. 30 x 30 x 0.40 mm	100 m	2 m	PI3330
translucent-white	c. 30 x 30 x 0.40 mm	100 m	5 m	PI3340
translucent-white	c. 30 x 30 x 0.40 mm	100 m	10 m	PI3350
translucent-white	c. 30 x 30 x 0.60 mm	100 m	2 m	PI3331
translucent-white	c. 30 x 30 x 0.60 mm	100 m	5 m	PI3341
translucent-white	c. 30 x 30 x 0.60 mm	100 m	10 m	PI3351
translucent-white	c. 50 x 50 x 0.60 mm	100 m	2 m	PI3332
translucent-white	c. 50 x 50 x 0.60 mm	100 m	5 m	PI3342
translucent-white	c. 50 x 50 x 0.60 mm	100 m	10 m	PI3352
translucent-white	c. 50 x 50 x 0.60 mm	100 m	15 m	PI3362

Cut to size on request, however then excluded from exchange!



## PIXX® - Polypropylene Netting

PIXX® - Polypropylene Netting is knotless and made of high quality PP. The professional installation of this high quality material ensures the protection of windows, ornaments, whole façades or even larger areas, such as courtyards. Nets are installed with the aid of a wire rope suspension system.

To install:

PIXX® - Polypropylene Netting is attached to a suspension wire (e.g., PIXX® - Wire 1.5/2.0 mm) and stretched with the aid of PIXX®- Turnbuckles and PIXX®- Hog rings. The suspension wire (e.g., PIXX® - Wire 1.5/2.0 mm) is threaded through PIXX®- Eyebolts. Subsequently, the outer edge of the net is attached to the suspension wire with PIXX®- Hog rings.

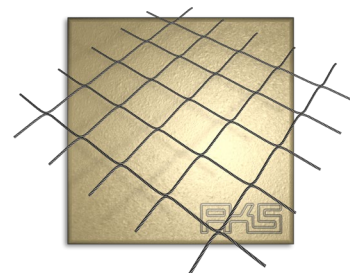
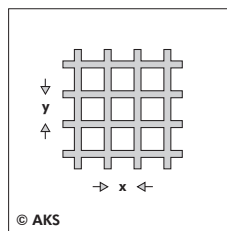
PIXX® - Polypropylene Netting is UV-stabilised (300 KLY), heat resistant up to 100° C and has a melting point of c. 165 °C. It is available in the following mesh sizes for the following applications:

Mesh size	Application	Net weight
20 mm	small birds such as sparrows, tits etc.	c. 50 g/m <sup>2</sup>
30 mm	medium-size birds such as starlings, blackbirds etc.	c. 31 g/m <sup>2</sup>
50 mm	bigger birds such as pigeons, crows etc.	c. 18 g/m <sup>2</sup>

Please note: All nets are manufactured with diagonal mesh to the greatest possible width and then converted to square mesh. The resulting seams are technically unavoidable and do not indicate any reduction in quality!, Nets without seams are available up to 20 m wide and 50 m long.

Product version	Colour	Mesh size	Gauge	Art. No.
PIXX®- Polypropylene Netting, only cut, without fixed edging	white	c. 20 x 20 mm	c. 1.0 mm	PI3370
	black	c. 20 x 20 mm	c. 1.0 mm	PI3371
	hemp	c. 20 x 20 mm	c. 1.0 mm	PI3372
PIXX®- Polypropylene Netting, with fixed edging	white	c. 20 x 20 mm	c. 1.0 mm	PM1201
	black	c. 20 x 20 mm	c. 1.0 mm	PM1202
	hemp	c. 20 x 20 mm	c. 1.0 mm	PM1203
PIXX®- Polypropylene Netting, only cut, without fixed edging	white	c. 30 x 30 mm	c. 1.0 mm	PI3380
	black	c. 30 x 30 mm	c. 1.0 mm	PI3381
	hemp	c. 30 x 30 mm	c. 1.0 mm	PI3382
PIXX®- Polypropylene Netting, with fixed edging	white	c. 30 x 30 mm	c. 1.0 mm	PM1204
	black	c. 30 x 30 mm	c. 1.0 mm	PM1205
	hemp	c. 30 x 30 mm	c. 1.0 mm	PM1206
PIXX®- Polypropylene Netting, only cut, without fixed edging	white	c. 50 x 50 mm	c. 1.0 mm	PI3390
	black	c. 50 x 50 mm	c. 1.0 mm	PI3391
	hemp	c. 50 x 50 mm	c. 1.0 mm	PI3392
PIXX®- Polypropylene Netting, with fixed edging	white	c. 50 x 50 mm	c. 1.0 mm	PM1207
	black	c. 50 x 50 mm	c. 1.0 mm	PM1208
	hemp	c. 50 x 50 mm	c. 1.0 mm	PM1209

Cut to size on request, however then excluded from exchange!



## PIXX® - Polyethylene Netting

PIXX® - Polyethylene Netting is knotted and made of high quality HDPE. The professional installation of this high quality material ensures the protection of windows, ornaments, whole façades or even larger areas, such as courtyards. Nets are installed with the aid of a wire rope suspension system.

### To install:

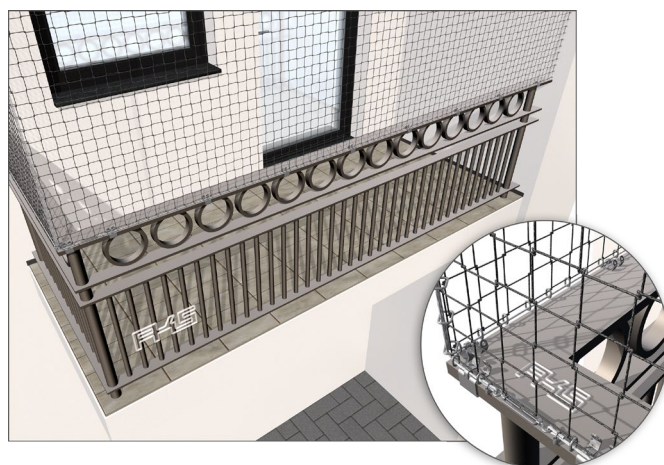
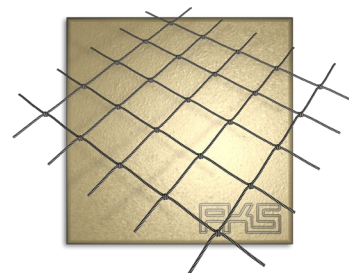
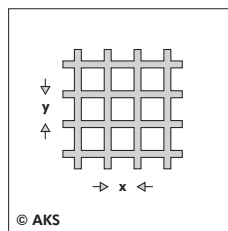
The PIXX® - Polyethylene Netting is attached to a suspension wire (e.g., PIXX® - Wire 1.5/2.0 mm) and stretched with the aid of PIXX® - Turnbuckles and PIXX® - Hog rings. The suspension wire (e.g., PIXX® - Wire 1.5/2.0 mm) is threaded through PIXX® - Eyebolts. Subsequently, the outer edge of the net is attached to the support wire with PIXX® - Hog rings.

PIXX® - Polyethylene Mesh is UV-stabilised (320 KLY), heat resistant up to 100 °C and has a melting point of c. 130 °C. It is available in the following mesh sizes for the following applications:

Mesh size	Application	Net weight
19 mm	small birds such as sparrows, tits etc.	c. 72 g/m <sup>2</sup>
28 mm	medium-size birds such as starlings, blackbirds etc.	c. 43 g/m <sup>2</sup>
50 mm	bigger birds such as pigeons, crows etc.	c. 21 g/m <sup>2</sup>

### Product versions

Colour	Mesh size	Gauge	Dimensions	Art. No.
black	c. 50 x 50 mm	c. 1,0 mm	5 x 5 m	PI3631
			5 x 10 m	PI3632
			5 x 15 m	PI3633
			5 x 20 m	PI3634
			5 x 25 m	PI3687
			5 x 30 m	PI3688
			10 x 10 m	PI3635
			10 x 15 m	PI3636
			10 x 20 m	PI3637
			10 x 25 m	PI3689
			10 x 30 m	PI3690
			10 x 100 m	PI3638
			15 x 15 m	PI3639
			15 x 20 m	PI3640
			15 x 25 m	PI3641
			15 x 30 m	PI3691
			20 x 20 m	PI3642
			20 x 25 m	PI3643
			20 x 30 m	PI3644
			20 x 50 m	PI3692
20 x 100 m	PI3645			
25 x 25 m	PI3646			
25 x 30 m	PI3693			
30 x 30 m	PI3647			
30 x 50 m	PI3694			
black	c. 28 x 28 mm	c. 1,0 mm	5 x 5 m	PI3648
			10 x 10 m	PI3649
			15 x 15 m	PI3650
			20 x 20 m	PI3651



black	c. 19 x 19 mm	c. 1,0 mm	5 x 5 m	PI3652
			5 x 10 m	PI3685
			5 x 15 m	PI3695
			5 x 20 m	PI3696
			5 x 25 m	PI3697
			5 x 30 m	PI3698
			5 x 100 m	PI3653
			10 x 10 m	PI3654
			10 x 15 m	PI3684
			10 x 20 m	PI3699
			10 x 25 m	PI3700
			10 x 30 m	PI3701
			10 x 100 m	PI3655
			15 x 15 m	PI3702
			15 x 20 m	PI3703
			20 x 20 m	PI3656



Product versions continued

Colour	Mesh size	Gauge	Dimensions	Art. No.
hemp	c. 50 x 50 mm	c. 1,0 mm	5 x 5 m	PI3657
			5 x 10 m	PI3658
			5 x 15 m	PI3659
			5 x 20 m	PI3660
			5 x 25 m	PI3704
			5 x 30 m	PI3705
			10 x 10 m	PI3661
			10 x 15 m	PI3662
			10 x 20 m	PI3663
			10 x 25 m	PI3706
			10 x 30 m	PI3707
			10 x 100 m	PI3664
			15 x 15 m	PI3665
			15 x 20 m	PI3666
			15 x 25 m	PI3667
			20 x 20 m	PI3668
20 x 25 m	PI3669			
20 x 30 m	PI3670			
25 x 25 m	PI3671			
25 x 30 m	PI3672			
30 x 30 m	PI3673			

Colour	Mesh size	Gauge	Dimensions	Art. No.
hemp	c. 28 x 28 mm	c. 1,0 mm	5 x 5 m	PI3674
			10 x 10 m	PI3675
			15 x 15 m	PI3676
			20 x 20 m	PI3677
hemp	c. 19 x 19 mm	c. 1,0 mm	5 x 5 m	PI3678
			5 x 10 m	PI3708
			5 x 15 m	PI3709
			10 x 10 m	PI3679
			10 x 15 m	PI3710
			10 x 20 m	PI3711
			15 x 15 m	PI3712
			20 x 20 m	PI3680
white	c. 50 x 50 mm	c. 1,0 mm	5 x 5 m	PI3681
			5 x 15 m	PI3713
			10 x 10 m	PI3682
			10 x 15 m	PI3714
			10 x 20 m	PI3715
white	c. 19 x 19 mm	c. 1,0 mm	20 x 20 m	PI3683
			5 x 10 m	PI3716
			10 x 10 m	PI3717

PIXX®- Polyethylene Netting, flame-resistant  
in accordance with DIN4102-B1 (does not drip in case of fire)

Colour	Mesh size	Gauge	Dimensions	Art. No.
black	c. 50 x 50 mm	c. 1,0 mm	10 x 10 m	PI3731
			20 x 20 m	PI3732
			30 x 30 m	PI3733
black	c. 19 x 19 mm	c. 1,0 mm	10 x 10 m	PI3735
stonecoloured	c. 50 x 50 mm	c. 1,0 mm	10 x 10 m	PI3737
			20 x 20 m	PI3738
			30 x 30 m	PI3740
stonecoloured	c. 19 x 19 mm	c. 1,0 mm	10 x 10 m	PI3739






PIXX® - Accessories for Net Systems



	Product	Packaging	Art. No.
	PIXX® - Wire 1.50 mm / 7 x 7	PU 100 m	PI3204
	PIXX® - Wire 1.50 mm / 7 x 7	PU 250 m	PI3211
	PIXX® - Wire 2.00 mm / 7 x 7	PU 100 m	PI3210
	PIXX® - Wire 2.00 mm / 7 x 7	PU 250 m	PI3212
	PIXX® - Ferrule, copper, for 1.50 mm wire	PU 100 pcs	PI3421
	PIXX® - Ferrule, copper, for 2.00 mm wire	PU 100 pcs	PI3422
	PIXX® - Ratchet crimping tool	Single	PI3405
	PIXX® - Wire rope grip, stainless steel for 2.00 mm wire	PU 10 pcs	PI3454
	PIXX® - Turnbuckle M 5 x 70 mm, stainless steel (hook/eye)	PU 10 pcs	PI3407
	PIXX® - Hog ring, aluminium	PU 2,500 pcs	PI3410
	PIXX® - Hog ring, stainless steel	PU 2,500 pcs	PI3430
	PIXX® - Hog ring pliers (for PI3410 + PI3430)	Single	PI3411
	PIXX® - Eyebolt with wood thread 20 mm, stainless steel 4.0 x 30	PU 100 pcs	PI3412
	PIXX® - Eyebolt with wood thread 20 mm, stainless steel 4.0 x 80	PU 100 pcs	PI3414
	PIXX® - Nylon plug S 6 (for PI3402 + PI3412 + PI3414)	PU 100 pcs	PI3431
	PIXX® - Eyebolt with metric thread M4, 10 mm long, stainless steel	PU 100 pcs	PI3464
	PIXX® - Eyebolt with metric thread M5, 27 mm long, stainless steel	PU 100 pcs	PI3415
	PIXX® - Rivet nut M4 x 12,5 IG, stainless steel with countersunk head for posts and eyebolts with M4-thread	PU 100 pcs	PI3457
	PIXX® - Rivet nut M5 x 16 IG stainless steel with countersunk for posts and eyebolts with M5-thread	PU 100 pcs	PI3456
	PIXX® - Mandrel for pliers with nozzle M4 (fits PI3457)	Single	PI3459
	PIXX® - Mandrel for pliers with nozzle M5 (fits PI3456)	Single	PI3475
	PIXX® - Manual rivet nut setting pliers without mandrel	Single	PI3458
	PIXX® - Carabiner 4 x 40 mm, stainless steel	PU 10 pcs	PI3425
	PIXX® - Closed hook anchor bolt M 6 x 70 mm, Schaftlänge ca. 40 mm, stainless steel (8 mm drill)	PU 10 pcs	PI3435
	PIXX® - Closed hook anchor bolt M 6 x 85 mm, Schaftlänge ca. 45 mm, stainless steel (10 mm drill)	PU 10 pcs	PI3434
	PIXX® - Net clip, stainless steel 1.4404, 15 x 25 mm, hole ø 5 mm	PU 50 pcs	PI3437



PIXX® - Accessories for Net Systems

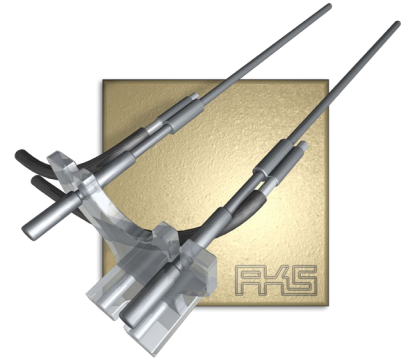
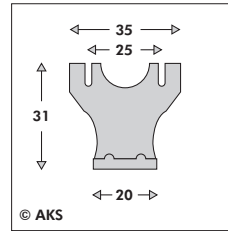
	Product	Packaging	Art. No.
	PIXX® - Trägerklemme aus Edelstahl für IPE-Träger in paralleler Seilführung, 2-3 mm	PU 100 pcs	PI3476
	PIXX® - Trägerklemme aus Edelstahl für IPE-Träger in paralleler Seilführung, 3-8 mm	PU 100 pcs	PI3477
	PIXX® - Trägerklemme aus Edelstahl für IPE-Träger in paralleler Seilführung, 8-14 mm	PU 100 pcs	PI3478
	PIXX® - Trägerklemme aus Edelstahl für IPE-Träger in paralleler Seilführung, 14-20 mm	PU 100 pcs	PI3479
	PIXX® - Beam clip, stainless steel for T-beams with parallel-to-beam wire guide, 3-9 mm	PU 20 pcs	PI3470
	PIXX® - Beam clip, stainless steel for T-beams with parallel-to-beam wire guide, 9-15 mm	PU 20 pcs	PI3472
	PIXX® - Beam clip, stainless steel for T-beams with parallel-to-beam wire guide, 15-21 mm	PU 20 pcs	PI3473
	PIXX® - Trägerklemme aus Edelstahl für T-Träger von 10-35 mm	Single	PI3474
	Gripple® - Wire connectors "Plus Small" for PIXX®- wire $\varnothing$ 1.5 + 2.0 mm, zinc-aluminium alloy	PU 10 pcs	PI3491
	Gripple® - Collet "Tool 5" to tighten the wire connectors (PI3491)	Single	PI3492
	Gripple® - Twister, blue, to secure the wire ends	PU 10 pcs	PI3493
	Gripple® - Adjustment key, to open and readjust wire tension	Single	PI3494
	PIXX® - Net zip, black, length 1 m (with 2 x 20 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3481
	PIXX® - Net zip, black, length 2 m (with 2 x 40 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3482
	PIXX® - Net zip, hemp coloured, length 1 m (with 2 x 20 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3485
	PIXX® - Net zip, hemp coloured, length 2 m (with 2 x 40 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3486
	PIXX® - Net zip, white, length 1 m (with 2 x 20 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3487
	PIXX® - Net zip, white, length 2 m (with 2 x 40 eyelets, for attachment with hog rings PI3410/PI3430)	Single	PI3488
	PIXX® - Repair cord, flame-resistant in accordance with DIN4102-B1 (black, $\varnothing$ c. 1.0 mm)	PU 150 m auf Haspel	PI3721
PIXX® - Repair cord (stone coloured, $\varnothing$ c. 1.0 mm)	PU 150 m auf Haspel	PI3722	
PIXX® - Repair cord (white, $\varnothing$ c. 1,0 mm)	PU 150 m auf Haspel	PI3723	
PIXX® - Repair cord (white transparent, for nylon netting, $\varnothing$ c. 0,4 mm)	PU 100 m auf Spule	PI3489	
PIXX® - Repair cord (white transparent, for nylon netting, $\varnothing$ c. 0,6 mm)	PU 100 m auf Spule	PI3490	
PIXX® - Repair needle	Single	PI3724	

### PIXX® - Electrical System

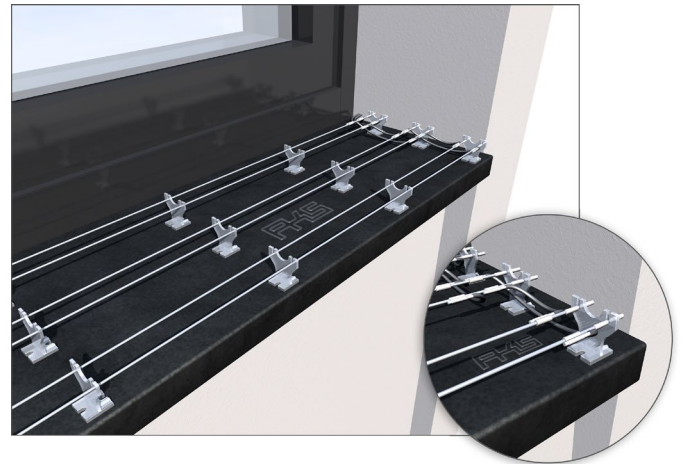
Art. No. PI3500

The PIXX® - Electrical System releases a pulse and is an effective deterrent against pigeons perching on ledges, windowsills, balustrades, T-beams, shutter boxes, etc. The stainless steel rods ( $\varnothing$  2.0 mm) are inserted at a height of c. 31 mm into UV-stabilised plastic insulating clamps, which are glued with PIXX®- Hybrid-Adhesive (PI3417) onto the surface to be protected. The PIXX® - Electrical System is c. 25 mm wide and prevents pigeons perching to a width of max. 100 mm.

The electrical pulse is produced via an electric charger (PI3506). The operating charge is 230 V AC. The harmless shock is unpleasant for pigeons and deters them from returning to perch on the same spot.



PIXX® - Electrical System	Art. No.
The complete system (for 100.5 m) consists of:	<b>PI3500</b>
Plastic insulating clamp (UV-proof)	300 pcs PI3518
Stainless steel rod $\varnothing$ 2.0 mm / 1.50 m long	134 pcs PI3511
Connecting spring 2 x 50 mm, stainless steel	150 pcs PI3519
Connecting sleeve 3 x 30 mm, stainless steel	20 pcs PI3514
Sleeve for wiring 5 x 7 mm, stainless steel	25 pcs PI3516
Fixing sleeve 3 x 10 mm, stainless steel	10 pcs PI3520
The complete system can be ordered in quantities for every 1.5 m. See accessories for single elements and optional components.	

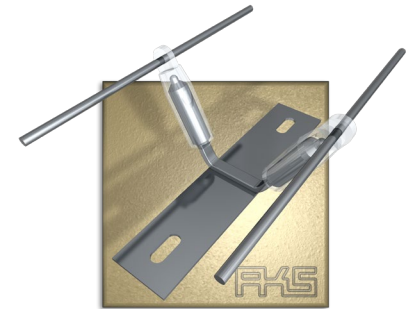
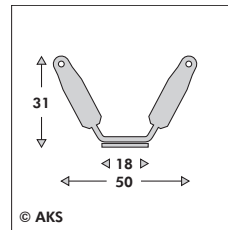


### PIXX® - Electrical System "Fix"

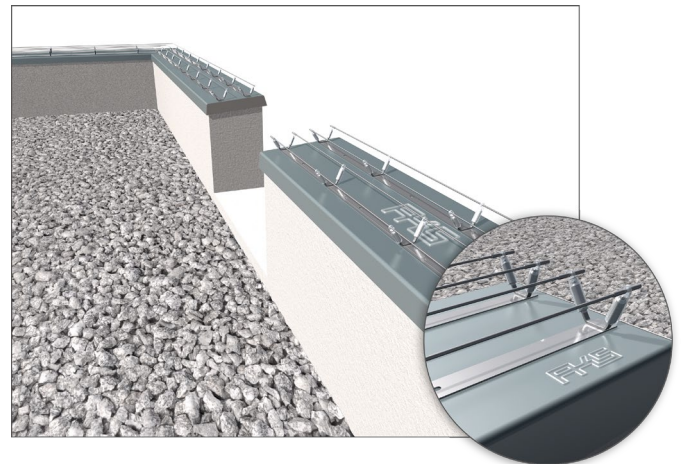
Art. No. PI3501

The PIXX® - Electrical System "Fix" releases a pulse and is an effective deterrent against pigeons perching on ledges, windowsills, balustrades, T-beams, shutter boxes, etc. The stainless steel rods ( $\varnothing$  2.0 mm) are inserted into UV-stabilised insulators at a height of c. 30 mm. The parallel stainless steel rods (Material No. 1.4301) set 50 mm apart are an effective deterrent against pigeons to a width of c. 100 mm. The base rail on which the 4 insulator holders are welded is 18 mm wide and 1 m long. The PIXX® - Electrical system "Fix" can be mounted with either screws or rivets through the 6 long perforations in the rail, or with an appropriate adhesive.

The electrical pulse is produced via an electric charger (PI3506). The operating charge is 230 V AC. The harmless shock is unpleasant for pigeons and deters them from returning to perch on the same spot.



PIXX® - Electrical System "Fix"	Art. No.
The complete system (for 1 m) consists of:	<b>PI3501</b>
"Fix" rail with 8 insulators	1 pcs
Stainless steel rod $\varnothing$ 2.0 mm / 1.00 m long	2 pcs
Connecting spring 2 x 50 mm, stainless steel	2 pcs PI3519
Packaging	70 m (70 x 1m)
See Accessories for optional components.	





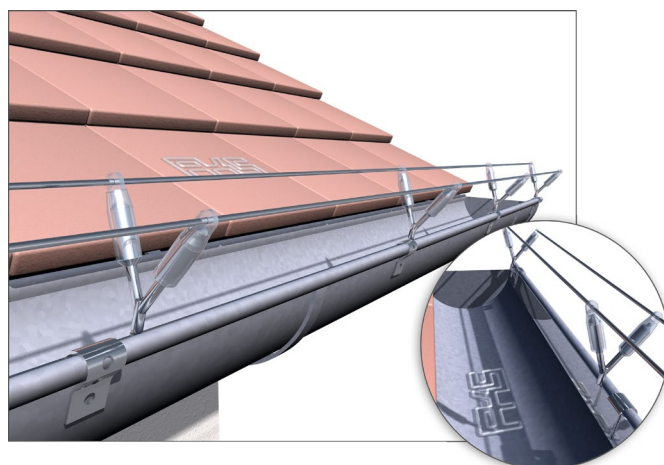
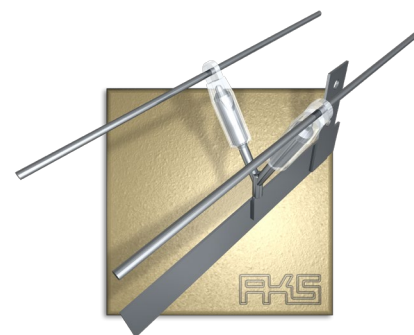
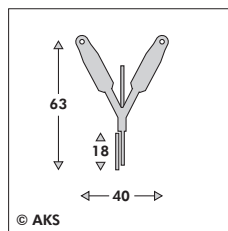
### PIXX® - Electrical system "Fix" for Gutters

Art. No. PI3502

The PIXX® - Electrical system "Fix" for Gutters releases a pulse and is an effective deterrent against pigeons perching on gutters. The parallel stainless steel rods (ø 2.0 mm, Material No. 1.4301) are set 40 mm apart and inserted into UV-stabilised insulators at a height of c. 45 mm. The base rail on which the 4 insulator holders are welded is 18 mm wide and 1 m long.

The electrical pulse is produced via an electric charger (PI3506). The operating charge is 230 V AC. The harmless shock is unpleasant for pigeons and deters them from returning to perch on the same spot.











Lay the stainless steel base rail on the inside of the front edge of the gutter, slip the rail under the gutter bracket spring clips and simply bend the fastening clips over the lip of the gutter by hand or with the aid of combination pliers. The perforation in every base rail allows for the additional use of rivets, bolts or glue.



PIXX® - Electrical system "Fix" for Gutters	Art. No.
The complete system (for 1 m) consists of:	<b>PI3502</b>
"Fix" for Gutters rail with 8 insulators	1 pcs
Stainless steel rod ø 2.0 mm / 1.00 m long	2 pcs
Connecting spring 2 x 50 mm, stainless steel	2 pcs PI3519
Packaging	70 m (70 x 1m)
See Accessories for optional components.	

PIXX® - Accessories for Electrical Systems



	Product	Packaging	Art. No.
	PIXX® - Plastic insulating clamp (UV-proof)	PU 100 pcs	PI3518
	PIXX® - Stainless steel rod ø 2.0 mm / 1.50 m long	Single	PI3511
	PIXX® - Connecting spring 2 x 50 mm, stainless steel	PU 10 pcs	PI3519
	PIXX® - Connecting sleeve 3 x 30 mm, stainless steel	PU 10 pcs	PI3514
	PIXX® - Sleeve for wiring 5 x 7 mm, stainless steel	PU 10 pcs	PI3516
	PIXX® - Fixing sleeve 3 x 10 mm, stainless steel	PU 10 pcs	PI3520
	PIXX® - Twin core double insulated cable, black	PU 50 m	PI3507
	PIXX® - Electric charger Horizont max. charge 4300V, operating charge 230 V AC, input 0.45 joule, output 0.35 joule, protection class IPX4	Single	PI3506
	PIXX® - Hybrid-Adhesive 700, grey, 290 ml cartridge, for gluing rails + plastic insulating clamps	PU 20 cartridges	PI3417
	PIXX® - Primer S, 250 ml, bonding agent for pretreatment of mineral surfaces	Single	PI3445
	PIXX® - Primer MK, 250 ml, bonding agent for pretreatment of metal and plastic surfaces	Single	PI3446
	PIXX® - Soft-Cleaner, 2500 ml, for pretreatment of surfaces (cleans + degreases)	Single	PI3447

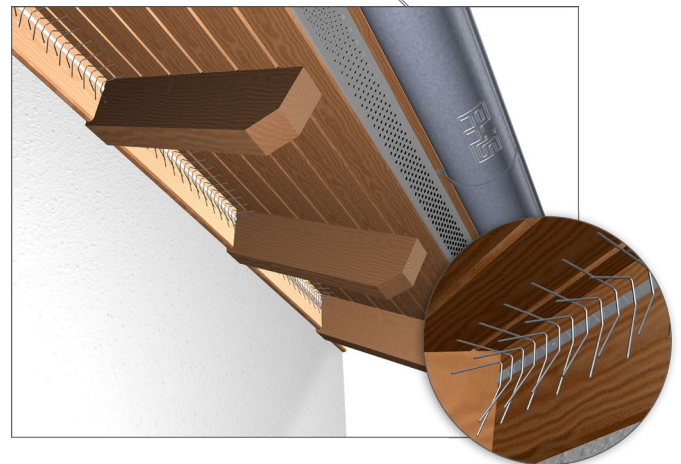
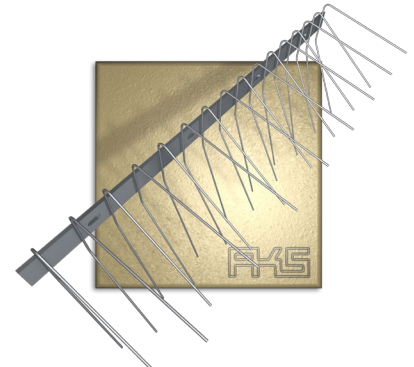
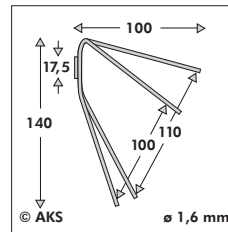
**PIXX® - Quattro Swallow  $\varnothing$  1.6 mm**

Art. No. PI3116

PIXX® - Quattro Swallow consists of four rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel rail. The rail is attached directly to the wall of the building under the eaves with adhesive or screws. On walls with insulation, we recommend special insulation wall plugs. Cut to length with metal shears.

Swallows are strictly protected and monitored. Please note the information relating to this on page 5 of this catalogue.

Accessories can be found under PIXX® - Accessories for Spike Systems on page 18.



Article No.	PI3116
Length x width x height	1.000 x 100 x 140 mm
V-shaped spike rows	40
Spike / spike spacing	25 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Base rail perforations	10 x $\varnothing$ 4.0 mm
Packaging	50 m (5 x 10 pcs)

## PIXX® - Swallow Control - Netting

The most suitable mesh and netting to deter swallows from the area around the eaves are those with a mesh size of 20 mm or smaller. We therefore recommend either durable stainless steel mesh (see PIXX® - Wire Mesh) with a mesh size of 20x20 mm, 16x16 mm or 10x10 mm, or plastic netting (see PIXX® - Nylon Netting or PIXX® - Polypropylene Netting) with a mesh size of 20x20 mm.

Swallow netting deters swallows from building nests in places protected from the weather under the eaves. It is an effective and long-term measure against soiling of exterior walls.

The netting is attached to the outer edge of the eaves directly under the gutter and to the wall via a suspension wire (e.g., PIXX® - Wire 1.5/2.0 mm) threaded through PIXX® - Eyebolts. PIXX® - Hog rings connect the net to the suspension wire which is in turn tensioned via PIXX® - Turnbuckles. It is important that the net is taut and that no spaces remain through which the swallows can gain access.

Accessories can be found under PIXX® - Accessories for Net Systems on page 34.

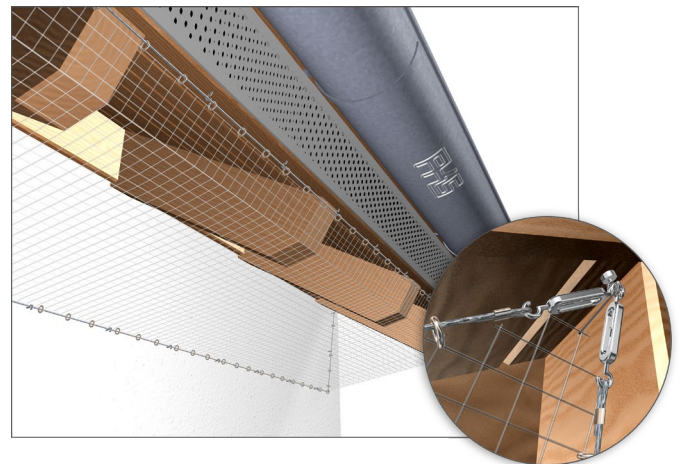
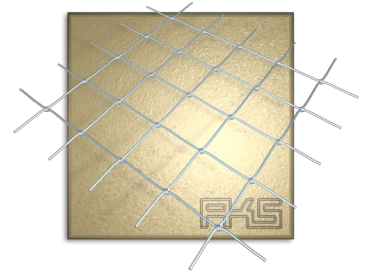
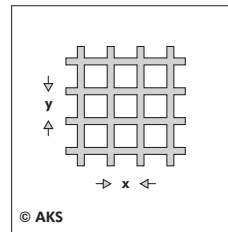
Swallows are strictly protected and monitored. Please note the information relating to this on page 5 of this catalogue.

Product versions	Colour	Mesh size / Gauge	Art. No.
PIXX® - Nylon Netting only cut, without fixed edging	translucent-white	20 x 20 x 0.40 mm	PI3334
PIXX® - Polypropylene Netting only cut, without fixed edging	white	20 x 20 x 1.0 mm	PI3370
PIXX® - Polypropylene Netting with fixed edging	white	20 x 20 x 1.0 mm	PM1201
PIXX® - Polypropylene Netting only cut, without fixed edging	black	20 x 20 x 1.0 mm	PI3371
PIXX® - Polypropylene Netting with fixed edging	black	20 x 20 x 1.0 mm	PM1202
PIXX® - Polypropylene Netting only cut, without fixed edging	hemp	20 x 20 x 1.0 mm	PI3372
PIXX® - Polypropylene Netting with fixed edging	hemp	20 x 20 x 1.0 mm	PM1203

Please note: all netting is produced in the largest possible width with diamond mesh and subsequently transformed to square mesh netting. The resulting seams are technically unavoidable and do not indicate any reduction in quality!

Cut to size on request, however then excluded from exchange!

Product versions	Length x width	Mesh size / Gauge	Art. No.
PIXX® - Wire Mesh	25 x 1 m	10 x 10 x 1.0 mm	PI3304
PIXX® - Wire Mesh	25 x 1 m	16 x 16 x 1.0 mm	PI3310
PIXX® - Wire Mesh	25 x 1 m	20 x 20 x 1.0 mm	PI3311



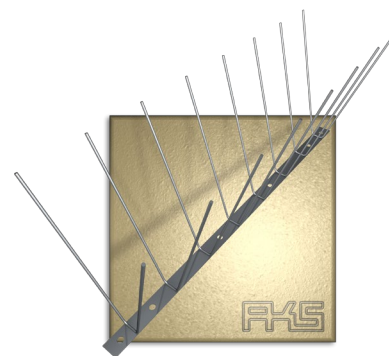
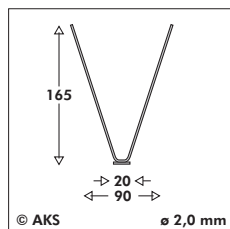


### PIXX® - Duo Seagull ø 2.0 mm

Art. No. PI3128

PIXX® - Duo Seagull is especially designed for seagulls (and crows) and consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel rail. With a coverage width of c. 130 mm, this product is particularly suitable for narrow areas such as ledges, railings and balustrades. This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.

Accessories can be found under PIXX® - Accessories for Spike Systems on page 18.



Article No.	PI3128
Length x width x height	1.000 x 90 x 165 mm
Coverage width	c. 130 mm
V-shaped spike rows	20
Spike / spike spacing	50 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	20 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	50 m (5 x 10 pcs)



### PIXX® - Quattro Seagull ø 2.0 mm

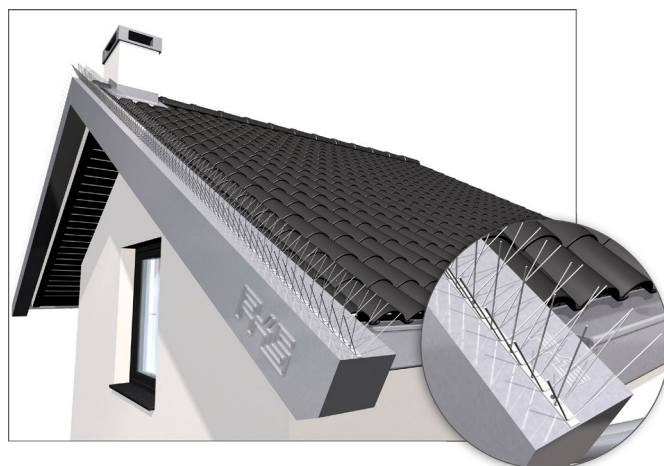
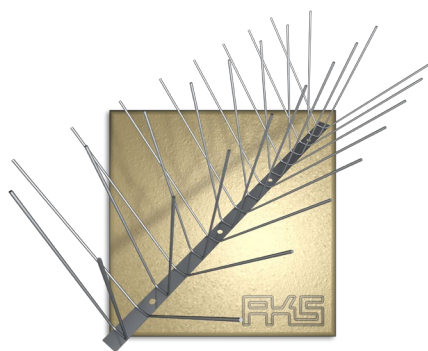
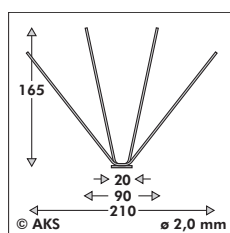
Art. No. PI3129

PIXX® - Quattro Seagull is especially designed for seagulls (and crows) and consists of four rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel rail.

With a coverage width of c. 250 mm, this product is particularly suitable for wide areas such as beams, windowsills and broad surface areas (in multiple rows). Both sides of free-standing elements, such as beams, can be effectively protected due to the V-shape of the spikes. This system can be installed with the aid of the base rail perforations (screws, rivets, nails) or adhesive (see accessories). Cut to length with metal shears.

Accessories can be found under PIXX® - Accessories for Spike Systems on page 18.

Article No.	PI3129
Length x width x height	1.000 x 210 x 165 mm
Coverage width	c. 250 mm
V-shaped spike rows	40
Spike / spike spacing	25 mm
Spike diameter	2.0 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	20 mm
Base rail perforations	10 x ø 4.0 mm
Packaging	50 m (5 x 10 pcs)



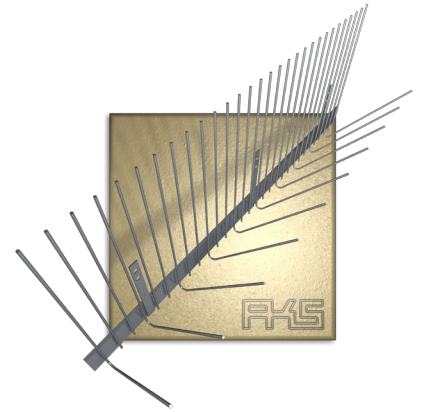
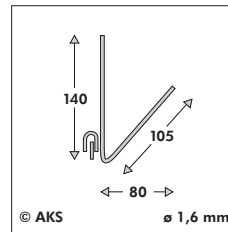
### PIXX® - Gutter Sparrow ø 1.6 mm

Art. No. PI3117

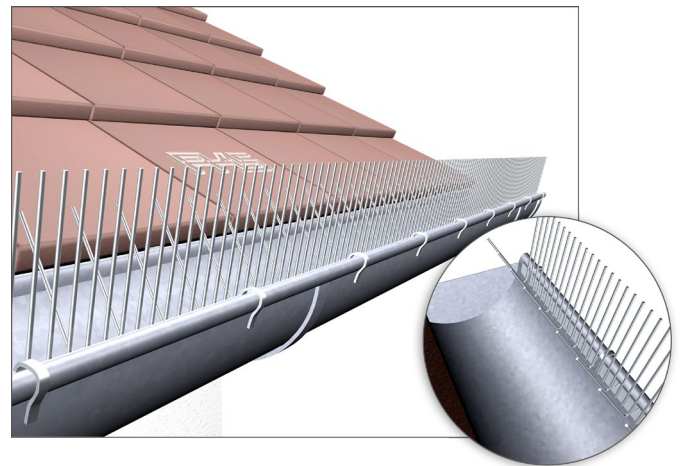
PIXX® - Gutter Sparrow is designed especially for gutters to hinder sparrows and other small birds from approaching and landing on the lip of the gutter. However, the birds cannot be prevented from grasping the spikes sideways. The system consists of two rows of stainless steel spikes (V-shaped) welded to a 1 m long stainless steel rail.

To install:

Lay the base rail on the inside of the front edge of the gutter, slip the rail under the gutter bracket spring clips (the width of these may need to be reduced) and simply bend the 70 mm fastening clips (5 per metre) over the lip of the gutter by hand or with the aid of combination pliers. The vertical spikes on the lip can potentially be bent forwards slightly to prevent birds landing on the lip.



Article No.	PI3117
Length x width x height	1.000 x 80 x 140 mm
Coverage width	c. 100 mm
V-shaped spike rows	70
Spike / spike spacing	14 mm
Spike diameter	1.6 mm
Spike material	stainless steel, Material No. 1.4301 (AISI 304), untreated
Base rail width	17.5 mm
Packaging	50 m (5 x 10 pcs)



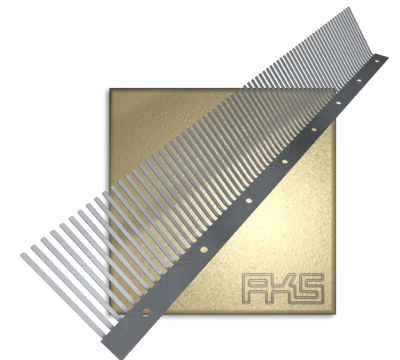
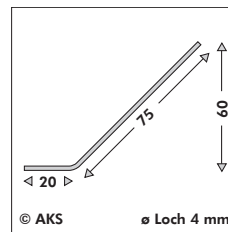
### AKS - Traufenkamm

Art.-Nr. PI3604

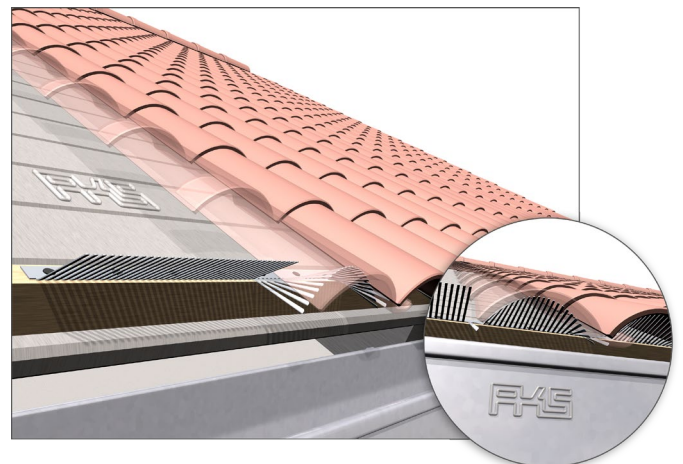
Currently german text only:

Der AKS - Traufenkamm verhindert wirksam das Eindringen von Vögeln unterhalb der Dachziegel. Durch die an das Profil der Dachziegel anpassbaren Zinken dieser Traufenkamm universell einsetzbar!

AKS - Traufenkamm ist aus Edelstahl, Werkstoff-Nr.1.4301 hergestellt und somit UV- und witterungsbeständig und zudem deutlich langlebiger und vor allem stabiler als vergleichbare Modelle aus Kunststoff!



Artikel-Nr.	PI3604
Länge x Breite x Höhe	1.000 x 70 x 60 mm
Materialstärke	0,5 mm
Abstand Zinke/Zinke	ca. 3 mm
Breite Zinke	3 mm
Anzahl Zinken	172 Stück, im Winkel von ca. 130°
Material	Edelstahl, Werkstoff-Nr. 1.4301 (AISI 304) unbehandelt
Basis Breite	20 mm
Basis Lochungen	16 x ø 4 mm
Verpackung	10 Stück / VPE

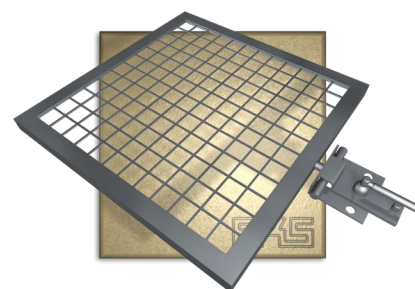
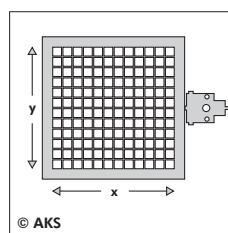
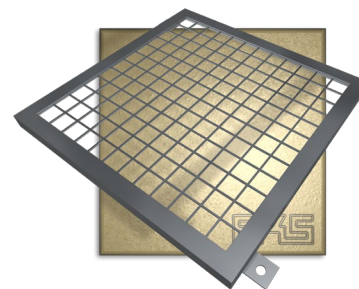
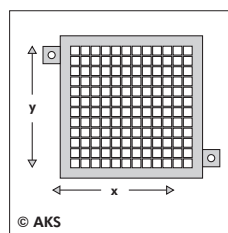


## AKS - Jackdaw Mesh

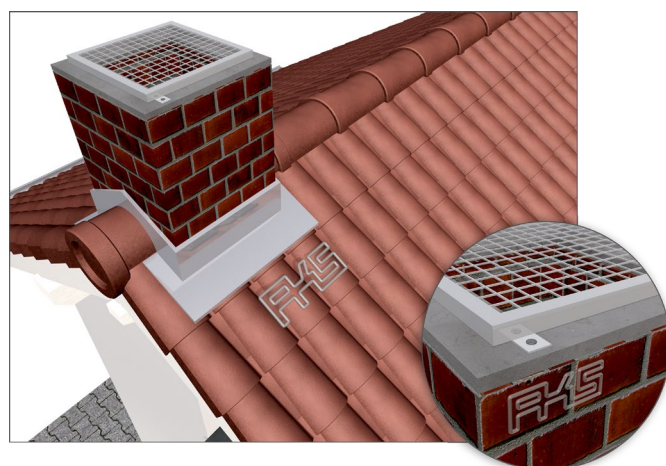
AKS - Jackdaw Mesh prevents jackdaws from building their nests in chimneys. Such places are very popular with these birds, which belong to the cave breeder family, because the narrow wind-protected vent offers the ideal conditions for nest building. The jackdaw will let the nesting material simply fall into the chimney until they can build a nest on top of it. In this way, the chimney can become completely blocked.

The screw-on AKS - Jackdaw Mesh (DE1101-DE1105) can simply be mounted on the top of the chimney with the screws supplied. The hinged AKS - Jackdaw Mesh (DE1201-DE1205) is mounted on top of the chimney via the safety hinge using the screws supplied and enables the flipping back and removal of the Jackdaw Mesh without tools.

This product is made entirely of untreated stainless steel, Material No. 1.4301 (AISI 304). The mesh size is c. 18 mm, the wire width c. 2-3 mm.



Product versions	For opening area	Dimensions	Art. No.
AKS- Jackdaw Mesh (screw-on), incl. 2 screws M8 x 65 mm + plugs	200 x 200 mm	c. 250 x 250 mm	DE1101
	250 x 250 mm	c. 285 x 285 mm	DE1102
	300 x 300 mm	c. 350 x 350 mm	DE1103
	350 x 350 mm	c. 385 x 385 mm	DE1104
	400 x 400 mm	c. 450 x 450 mm	DE1105
AKS- Jackdaw Mesh (hinged), with safety hinge, incl. 2 screws M8 x 65 mm + plugs	200 x 200 mm	c. 250 x 250 mm	DE1201
	250 x 250 mm	c. 285 x 285 mm	DE1202
	300 x 300 mm	c. 350 x 350 mm	DE1203
	350 x 350 mm	c. 385 x 385 mm	DE1204
	400 x 400 mm	c. 450 x 450 mm	DE1205



Further dimensions on request!



## AKS - Marten and Cat Defence Belt

Art. No. PI3601

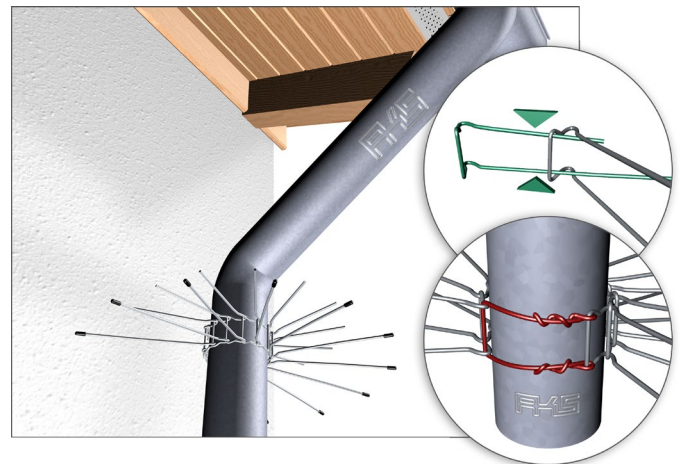
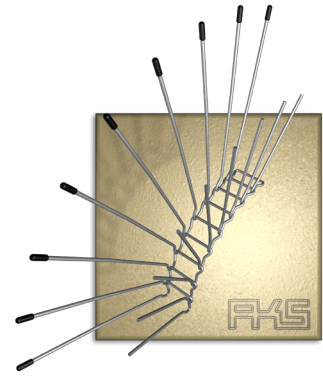
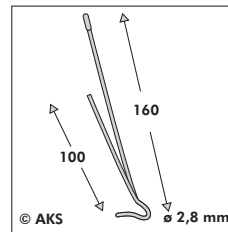
The AKS - Marten and Cat Defence Belt is made of galvanised steel wire and is best suited to mounting on galvanised downpipes. This product prevents martens from climbing the downpipe and accessing the roof. The AKS - Marten and Cat Defence Belt is c. 68 cm long in total and can therefore also be fixed to trees to prevent cats from climbing (to reach brooding birds). One set can protect max. 2 downpipes DN 100.

### To install:

Before assembly, push the supplied protective caps onto the longer wires. Press together the two wires and insert into the back of the next element (see illustration). Assemble all elements until the required circumference is achieved. Finally, when mounting the belt on a tree, connect the U-form wire connectors and bend over to secure.

When mounting on a downpipe, please note that a 360° installation as on a tree will not be possible and the ends need to be connected with binding wire or similar (see wire marked in red in the illustration, not supplied).

Mount the AKS - Marten and Cat Defence Belt with the longer wires facing downwards. The belt should be installed at a height over 2.5 m to avoid risk of injury! Please check the correct position of the defence belt regularly!



Article No.	PI3601
Length x width x height	c. 680 x 40 x 160 mm
V-shaped spike components	30
Spike / spike spacing	20 mm
Spike diameter	2.8 mm
Spike material	galvanised steel
Base rail width	40 mm
Packaging	Single, 1 set: 30 components



## AKS - Marten Defence Guard

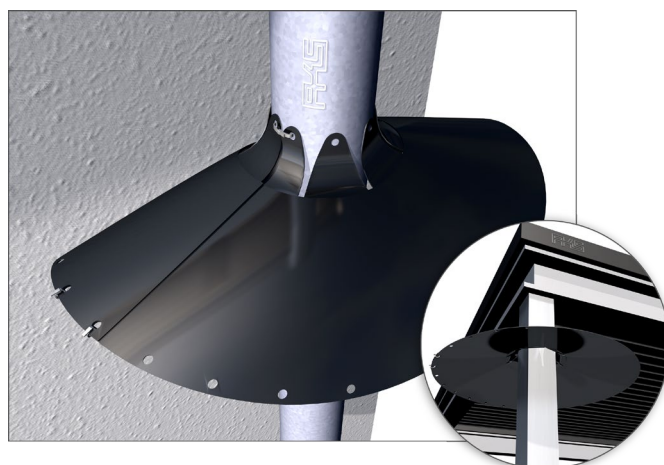
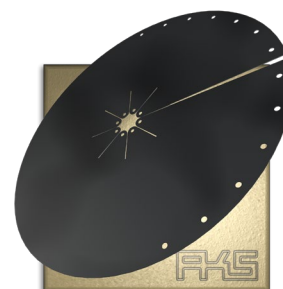
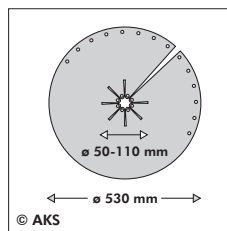
Art. No. PI3603

The AKS-Marten Defence Guard is black and made from UV stabilised polypropylene. It is best suited for mounting on downpipes fixed to the wall, free-standing downpipes, carport posts, etc.

Such guards stop martens getting up the pipes or posts and onto the roof. The AKS-Marten Defence Guard has an outer diameter of 53 cm and an inner diameter of 3.5 cm. Through the fan-like cuts in the inner ring, the guard is suitable for pipes of  $\varnothing$  50-110 mm.

### To install:

The AKS-Marten Defence Guard is laid around the pipe and pulled tight into position with the cable ties. The guard should be installed at a minimum height of 2.0 m so that there is no risk of injury. Please regularly check the correct positioning of the guard!



Article No.	PI3603
Outer diameter	530 mm
Inner diameter	50-110 mm
Inner flaps	8
Holes outer edge	14
Material	polypropylene (UV-stabilised)
Packaging	single, packaging contents: 1 guard + 3 cable ties

## AKS - Waschbärabwehrschild

Currently german text only:

Das AKS-Waschbärabwehrschild, hergestellt aus feuerverzinktem Stahlblech, schützt wirksam vor dem Aufsteigen von Waschbären an den Fallrohren der Regenrinnen und wird mit zwei Anbauringen am Fallrohr (DN100) montiert, ohne dieses zu beschädigen oder die Hauswand anbohren zu müssen!

Durch den Stoppwinkel, der am bodennahen Anbauring des AKS-Waschbärabwehrschildes verbaut wird, kann der Waschbär nicht unter dem Blech hinaufkriechen!

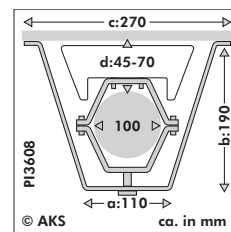
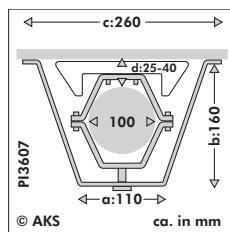
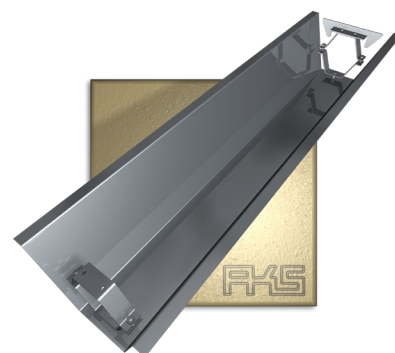
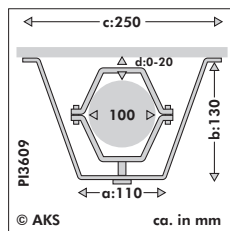
Bitte beachten Sie auch, dass angrenzende Bäume und Sträucher, die an oder über das Dach ragen, auf mindestens 1,50 m Abstand zum Dach abgeschnitten werden.

Zur Montage:

Im ersten Schritt wird der Stoppwinkel (bei PI3609 wird kein Stoppwinkel mitgeliefert) an den hinteren Teil eines Anbaurings montiert, dann wird der bodennahe Anbauring mindestens 1 m vom Boden entfernt um die Regenrinne fixiert.

Im zweiten Schritt wird der obere Anbauring in ca. 94 cm Abstand am Fallrohr der Regenrinne montiert. Nun wird der AKS-Waschbärabwehrschild über das Fallrohr gestülpt und an den beiden Anbauringen festgeschraubt – fertig.

Natürlich sind die benötigten Schrauben dabei, Sie benötigen nur ein Inbus- und Maul- oder Ringschlüsselset.



Artikel-Nr.	PI3609
Breite a / Tiefe b / Breite c	ca. 110 x 130 x 250 mm
Rohrabstand zur Wand d	0 bis 20 mm
Länge	1000 mm
Materialstärke	1 mm
Material	aus feuerverzinktem Stahlblech
Verpackung	einzeln

Artikel-Nr.	PI3607
Breite a / Tiefe b / Breite c	ca. 110 x 160 x 260 mm
Rohrabstand zur Wand d	25 bis 40 mm
Länge	1000 mm
Materialstärke	1 mm
Material	aus feuerverzinktem Stahlblech
Verpackung	einzeln

Artikel-Nr.	PI3608
Breite a / Tiefe b / Breite c	ca. 110 x 190 x 270 mm
Rohrabstand zur Wand d	45 bis 70 mm
Länge	1000 mm
Materialstärke	1 mm
Material	aus feuerverzinktem Stahlblech
Verpackung	einzeln



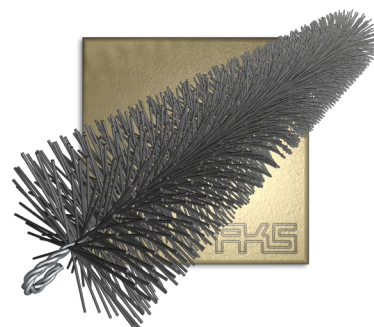
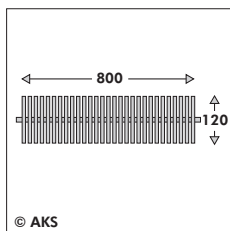
**AKS - Gutter Brush**

Art. No. PI3606

AKS-Gutter Brush  $\varnothing$  12 cm, black, fits gutters c. 10-15 cm wide. 80 cm long and made of plasticised wire, it is also suitable for copper gutters!

**To install:**

To join the brushes lengthways, bend and hook the middle wires with pliers:  
Position the brushes in the clean gutter over the downpipe outlet or along the whole length of the gutter.



Article No.	PI3606
Length x width x height	c. 800 x 120 x 120 mm
Material	plasticised wire
Packaging	PU 40 pcs



## AKS - Gutter Mesh

Art. No. PI3741-45

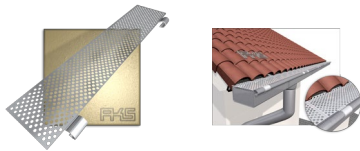
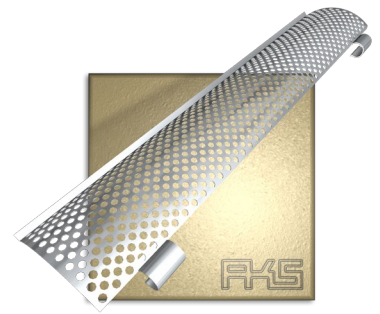
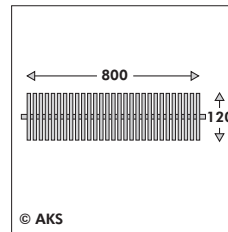
AKS-Gutter Mesh, convex for half-round gutters, protects against falling leaves. Stainless steel, Material-No. 1.4301 untreated, 1 m long, the mesh clips onto the gutter rim.

The mesh is suitable for all material types of gutter, whether stainless steel, copper, zinc or plastic.

The 1 m long elements made of 0.8 mm perforated sheeting Rv 10/15 (free cross-section 40%) are mounted on the entire length of the gutter.

See the table below for the gutter mesh suitable for your gutter size.

Hinweis: Sollte ein Traufblech, das in die Dachrinne hineinragt verbaut sein oder die Ziegel bis ungefähr in die Mitte der Dachrinne hineinragen, kann dieses Dachrinnengitter nicht montiert werden!



Flat gutter mesh for box gutters available on request!



### AKS-Gutter Mesh convex for half-round gutters

Gutter width b	Nominal size (German standard)	Packaging	Art. No.
105 mm	250 / 8-teilig	40 pcs	PI3741
127 mm	285 / 7-teilig	40 pcs	PI3742
153 mm	333 / 6-teilig (standard size in Germany)	30 pcs	PI3743
192 mm	400 / 5-teilig	30 pcs	PI3744
250 mm	500 / 4-teilig	20 pcs	PI3745



## General Terms And Conditions

Page 1 of 3

### of Astrid K. Schulz GmbH & Co. Handelsgesellschaft KG

Status: May 2009

This English translation is furnished for the customer's convenience only. The original German text of the General Terms and Conditions is binding in all respects. In the event of any divergence between the English and the German texts, constructions, meanings, or interpretations, the German text, construction, meaning or interpretation shall govern exclusively.

#### General

All our deliveries, services and offers are based exclusively on these General Terms and Conditions. They are part of all agreements concluded between us and our contractual partners (hereinafter also referred to as the "Customer") regarding the deliveries and services we offer. They also apply to all future services, deliveries or offers to the Customer even if they are not agreed upon separately again.

#### 1. Scope

**1.1** The terms and conditions of the Customer or of third parties do not apply even if we do not object to their application in each individual case. If we refer to a letter which contains or refers to terms and conditions of the Customer or of a third party, this does not imply any acceptance of the application of such terms and conditions.

**1.2** The Customer is consumer insofar as the purpose of the ordered deliveries and services cannot be considered part of his commercial or independent professional activity. By contrast, an entrepreneur is every natural or legal person or legal partnership which acts by the conclusion of the contract in exercise of their commercial or independent professional activity.

#### 2. Offer and Conclusion of Agreement

**2.1** All our offers are subject to change and not binding, unless expressly identified as binding or containing a specific term for acceptance. We can accept orders or contracts within 14 days after receipt. The date on which our acceptance is received by the customer is authoritative for keeping this deadline.

**2.2** Only the purchase agreement concluded in writing, including these General Terms and Conditions shall be significant for the legal relationship between us and the Customer. The purchase agreement fully reflects any and all understandings between the contractual parties regarding the subject matter of the agreement. Oral commitments made by us prior to the conclusion of this agreement are not legally binding and oral agreements between the contractual parties are replaced by the written agreement unless they expressly continue to be valid and binding due to their respective nature. Amendments and changes to the concluded agreements, including these General Terms and Conditions need to be made in writing in order to be valid. With the exception of the managing directors of Astrid K. Schulz GmbH, our employees are not permitted to make oral agreements differing hereof. In order to observe the written form requirement, the transmission via fax is sufficient. Transmission via other telecommunication, in particular via e-mail, is not sufficient.

**2.3** Our delivery or service details (e.g. weights, dimensions, consumption levels, stress levels, tolerances and technical data) including drawings thereof (e.g. technical drawings and illustrations) are only approximate, unless their usability for contractual purposes requires an exact match. They shall not be considered guaranteed features but rather descriptions or identifiers of the goods or services. Standard commercial deviations or deviations resulting from regulatory changes or technical improvement, as well as the replacement of components by similar parts, shall be permissible to the extent that they do not affect usability for the intended purpose.

#### 3. Prices / Packing costs

**3.1** The prices are generally stated in Euro without value-added tax. This will be charged separately in the invoice at the applicable rate according to the pertinent tax regulations.

**3.2** Value-added tax is always invoiced except in cases where the prerequisites for an exemption for export deliveries exist. Prices for export deliveries do not include customs, duties and other official charges.

**3.3** Unless otherwise agreed upon in writing, the prices shall be ex works or ex storage

**3.4** Our prices are exclusive of packing, insurance, loading and other forwarding

charges which will be invoiced separately unless expressly otherwise agreed. Packaging and shipping shall be performed at our discretion.

**3.5** The prices stated in our offer and/or order confirmation are calculated according to the date of the offer/order confirmation. We reserve the right to amend our prices reasonably in the event of increases or decreases in costs, in particular due to currency fluctuations or changes in the prices of raw materials which occur after the conclusion of the contract. This shall not apply if the service or delivery is supposed to be provided within four months after the conclusion of the contract and we are not responsible for a delay in delivery. We shall advise the Customer of such changes and the Customer has the right to withdraw from the contract in the case of substantial price increases.

**3.6** The agreed prices shall only apply to the given contract.

#### 4. Payment conditions

**4.1** Invoice amounts shall be paid within 20 days at the latest without any deduction, unless otherwise agreed in writing. Payment periods are considered met if we are able to dispose of the amount within the specified period. Payments can, at our discretion, be offset against outstanding amounts.

**4.2** The Customer is permitted to retain payments or to set-off payments against counter-claims only and insofar as the counter-claims are undisputed, found to be legally binding or acknowledged specifically by us. In addition, the right to retention of payment is only possible if it applies to the same contractual relationship.

**4.3** If the Customer is partly or completely in arrear of payments, interest at a rate of 5% per annum above the base rate of the European Central Bank will be added to the existing invoice. If the Customer is an entrepreneur, we have the right to charge default interest of 8% points over the current base rate. The application of higher interest rates and additional damages in case of late payment remains unaffected. The Customer is entitled to prove that the payment default caused us no losses or significantly lower losses.

**4.4** If the Customer suspends payments or has provided incorrect or incomplete information about his financial situation or if the Customer is in debt or if insolvency proceedings have been applied for against him, we are entitled to render further deliveries only against advance payment or provision of security. The same applies in the event of any other deterioration in the economic situation of the Customer. In these cases we are entitled to demand sufficient security or to withdraw from the contract.

#### 5. Delivery; Delivery deadlines; Delays

**5.1** Deliveries take place ex works or ex stock.

**5.2** Provided a definite period or date are not arranged in writing, deliveries and services will take place as quickly as possible, at the latest, however, within a period of circa two weeks.

**5.3** If we do not meet an agreed delivery time, the Customer will give us an appropriate extended deadline of a minimum of two weeks.

**5.4** We shall not be liable should delivery be impossible or for delays in delivery due to force majeure or other events for which we are not accountable that were unforeseeable at the time the contract was concluded (e.g. operational disturbances of all kinds, difficulties in procurement of materials or energy, transport delays, strikes, lawful lock-outs, lack of employees, energy or raw materials, or non-delivery, incorrect delivery or untimely delivery by suppliers). If such events significantly impair our delivery or service or render the same impossible, and if the hindrance is not of a temporary nature, we are entitled to withdraw from the contract. In the case of hindrances of a temporary nature, the delivery period shall be extended or postponed by the time period of the hindrance, plus a reasonable lead time. Insofar as the Customer cannot be expected to accept the supply or service as a result of the delay, he may withdraw from the contract by notifying us immediately in writing.

**5.5** Should we be behind schedule with a delivery, the Customer's rights are in accordance with the statutory regulations. Liability for damages due to delay in delivery or services are as set forth in Section 9.

**5.6** Should the Customer be in default of acceptance, or if he neglects other duties to collaborate, we shall be entitled to claim indemnification for any damages incurred including possible additional costs. The Customer shall reserve the right to prove a lower level of loss.

**5.7** We will be released from our duty to deliver if insolvency proceedings have been applied for against the assets of the Customer.

**5.8** Part shipments and corresponding invoices are admissible if

- the Customer can use the part delivery as part of the contractually intended purpose
- delivery of the remaining goods as ordered is assured
- the Customer incurs no major additional effort or costs (unless we agree to bear such costs).

## 6. Retention of title

**6.1** This provision applies to consumers:

**6.1.1** We reserve the title to the goods supplied by ourselves until the complete payment of all invoices for these goods. For the duration of the retention of title, the Customer must not sell or in any other way dispose of the ownership of these goods (hereinafter referred to as reserved title goods).

**6.1.2** In case of seizure of the reserved title goods by third parties – especially bailiffs and creditors – the Customer shall inform them of our ownership and shall notify us immediately so that we can assert our ownership rights.

**6.1.3** If the Customer is in breach of contract, in particular in the case of undue delay in payment, we shall be entitled to demand the return of the reserved title goods provided we have withdrawn from the contract.

**6.2** This provision applies to entrepreneurs:

**6.2.1** The following agreed retention of title serves to protect all our existing current and future claims against the Customer that result from the supply relationship between the contracting parties (including any balance demands related to the limited current account of the supply relationship).

**6.2.2** The goods that are delivered by us shall remain our property until all of our present claims against the Customer have been fulfilled. The goods and also the following mentioned goods under retention of title are called reserved title goods in the following.

**6.2.3** The Customer shall keep custody of the reserved title goods on our behalf free of charge.

**6.2.4** The Customer is entitled to process and resell the goods delivered in normal business transactions until such time as a claim is made against them. Pledging and transfer of ownership by way of security is not permissible.

**6.2.5** In the event that reserved title goods are processed by the Customer, it shall be agreed that such processing shall be effected on behalf of and favoring us in its capacity as manufacturer. Furthermore, we are entitled to direct title acquisition or – should the processing of such goods involve materials supplied by multiple manufacturers or should the value of the processed commodity be greater than that of the reserved title goods – to co-acquisition (co-ownership) of the newly created commodity, taking into account the value of the reserved title goods in relation to that of the newly-created commodity. In the event that such title acquisition is not effected to our benefit, the Customer shall undertake to transfer to us with immediate effect any title to the goods or – within the parameters of the relationship specified above – co-ownership of the newly-created commodity as security. In the event that reserved title goods combine with other articles to constitute a distinct article or are inextricably combined therewith, and should one of the other articles be deemed the principal article, insofar as we are the owner of this principal article we shall transfer proportional co-ownership of the distinct article to the Customer in accordance with the relationship delineated in Clause 1.

**6.2.6** In the event of re-sale of reserved title goods, the Customer shall with immediate effect undertake to assign to us as security the resultant claim vis-à-vis the buyer to the amount of the invoice value – and in the case of co-ownership reposed in us a share of the reserved title goods proportionate to co-ownership. The same applies in the case of other claims that take the place of reserved title goods or otherwise arise in the context thereof, such as insurance claims or claims arising on the basis of action ex delicto associated with loss or destruction. We revocably authorize the Customer to collect the claims assigned to us in its own name. We may revoke this direct debit mandate only in the case of an enforcement event.

**6.2.7** Should third parties lay claim to reserved title goods, in particular through seizure, the Customer shall immediately bring to the attention of such third parties our

proprietary rights and title and shall notify us thereof in order to ensure assertion of our proprietary rights. Should the third party not be in a position to reimburse legal or extralegal costs arising therefrom, the Customer transacting with us shall be liable to bear all such costs.

**6.2.8** Upon request, we shall release at our discretion the reserved title goods and the commodities that take their place or any claims assigned, insofar as their value exceeds secured receivables by more than 50%.

**6.2.9** Should we withdraw from the Agreement in consequence of the Customer's violation of its terms – in particular delayed payment – (enforcement event) we shall be entitled to reclaim the reserved title goods.

## 7. Transfer of risk

If the goods are delivered according to the request of the Customer – insofar as the Customer is an entrepreneur – the perils of random destruction and random deterioration are transferred to the Customer with the delivery (whereby the commencement of the loading process is decisive) of the goods to the forwarder, carrier or shipping agent. This also applies if part deliveries are made or we have taken on other services (e.g. dispatch). If dispatch or handover is delayed due to circumstances whose cause lies with the Customer, the transfer of risks to the Customer takes place on the day we are ready for dispatch and have notified the Customer of this.

## 8. Warranty

**8.1** The warranty period shall be one year from the date of delivery or, insofar as acceptance is required, from the date of acceptance.

**8.2** If the Customer is an entrepreneur, inspection of the goods for completeness and freedom from defects is transferred to the Customer upon handover. We must be immediately notified in writing of any defects, damage and deviations or within 1 week of delivery at the latest. If the ordering party fails to inspect the goods or provide notice of defects on time, the goods that were delivered shall be deemed as having been approved unless the defect was not recognisable when the goods were inspected. The timely dispatch shall be sufficient to observe the deadline; the Customer shall hereby bear the burden of proof. Defects which come to light later must be reported in writing to us within one week after detection, otherwise the goods shall be deemed as having been approved also in respect to these defects. In other respects, the conditions set out in §§ 377 HGB ff shall apply accordingly.

**8.3** If the Customer is the consumer, claims for damages due to obvious material defects are excluded if we are not notified of the defects within 2 weeks of delivery.

**8.4** In case of material defects in the items supplied, we are initially obliged and entitled to repair them or supply replacements at our discretion within an appropriate period. In the event of failure, i.e. repair or replacement supply is impossible or unreasonable or in case of refusal or inappropriate delay, the Customer may withdraw from the contract or reduce the purchase price appropriately.

**8.5** The Customer shall grant us the necessary time and opportunity to replace the faulty goods. Should the Customer refuse to cooperate with this requirement, we shall be released from rectifying the defect.

**8.6** If the defect is caused by our negligence, the customer may demand compensation for loss suffered as per the regulations set out in Section 9 of these contract provisions.

**8.7** A warranty claim does not exist for defects that do not reduce the value, the suitability or usability of the delivered goods.

**8.8** We reserve the right to customary variations on the indicated dimensions or other technical specifications of our delivered goods, unless we expressly declare compliance with the dimensions.

**8.9** Our liability for defects does not include normal wear or damage after the transfer of risk has taken place and which is caused by incorrect or careless handling, failure to observe the installation and handling instructions, excessive strain or use or inadequate maintenance or care, malicious damage, improper installation or storage by the Customer or third parties on behalf of the Customer. Claims for defects cannot be made if the goods are modified by third parties or if components of foreign origin have been fitted, unless the defect is not in causal relation to the modification.

## 9. Liability for damages in case of default

**9.1** Unless otherwise stated in these General Terms and Conditions, we are liable to pay damages and reimbursement of unnecessary expenses according to § 284 BGB on account of a violation of contractual or non-contractual obligations only in case of intent or gross negligence by our statutory representatives or by agents employed in the performance of our obligations in case of fatal injury, physical injury or impairment to health, on account of assuming a guarantee or guarantee of a condition, a breach of contractual duties, compulsory statutory liability pursuant to the German Product Liability Act or on account of any other compulsory liability. The damages for a breach of material contractual duties are, however, limited to foreseeable damage, typical for the type of contract, except in the event of intent or gross negligence by our statutory representatives or agents employed in the performance of our obligations or liability on account of fatal injury, physical injury or impairment to health or on account of assuming a guarantee or procurement risk. Essential contractual obligations include the obligation to deliver and install in a timely fashion goods that are free of essential defects, advisory, protective, custodial and duty of care obligations that enable the Customer to use the item delivered in the contractually prescribed manner or whose purpose is to protect the lives and health of the Customer's personnel or third parties on behalf of the Customer or the property of the Customer. The aforementioned regulations shall not imply a change of the burden of proof at the expense of the Customer.

**9.2** Indirect damage and consequential damage which results from defects in the delivered goods shall in addition only be reimbursable if such damage is typically to be expected if the delivered object is used as intended.

**9.3** Insofar as we provide technical information or act as an adviser and this information or advice is not part of the contractually agreed scope of services owed by us, this is done free of charge and with the exclusion of any liability.

## 10. Jurisdiction and Place of fulfillment

**10.1** If the Customer is an entrepreneur and has no domestic general jurisdiction or if he has moved his residence or his normal domicile abroad after conclusion of the contract or if at the time of starting the lawsuit no residence nor normal domicile is known, the jurisdiction of Heilbronn, Germany applies. We maintain the right, however, to take legal action in the jurisdiction of the Customer. Heilbronn remains the sole jurisdiction for legal action taken against us. Any mandatory provisions of applicable law providing for exclusive jurisdiction shall remain unaffected by this clause.

**10.2** The place of fulfillment for all contractual and legal claims shall be Ilsfeld-Auenstein, unless otherwise specified.

## 11. Applicable law

This Agreement and all legal relations subsisting between the parties are subject to the law prevailing in the Federal Republic of Germany, to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG) of 11 April 1980.

## 12. Partial Invalidity

Insofar as the contract or these General Terms and Conditions have failed to include certain provisions, the contracting parties agree to fill the gaps with such legally valid provisions as they would have agreed on, taking into account the economic objectives of the contract and the purpose of these General Terms and Conditions, had they known that the provisions concerned were lacking.

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**Astrid K. Schulz GmbH & Co.  
Handelsgesellschaft KG  
Weinbergstraße 42  
D-74360 Ilsfeld-Auenstein  
Telefon +49 7062 63450  
Telefax +49 7062 64499  
E-Mail [info@aks-schulz.de](mailto:info@aks-schulz.de)  
Web [www.aks-schulz.de](http://www.aks-schulz.de)**