

The 3p-Technology and its individual parts

Standard

**CLAMPING CONE SET**  
with hex head screw (3p-SPK-N1-N2-6K)

· Tightens the system firmly

Consisting of: M12 hexagonal head screw, N1 clamping cone without internal thread, N2 clamping cone with internal thread or N1 with M12 nut

Material: stainless steel 1.4301

Before installation, it's recommended to lubricate hex head screw and nut with a special ceramic paste. Please inquire! We will be happy to advise you.



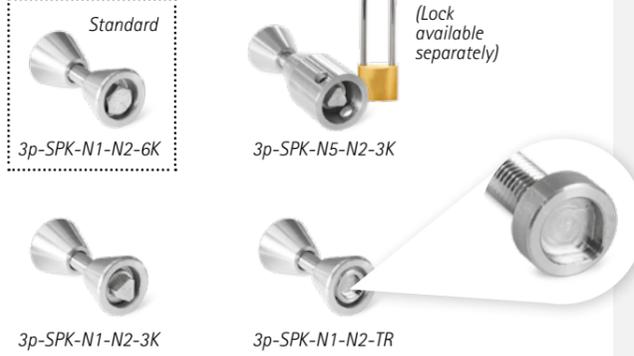
Options

3p-SPK-N1-N2-3K **Clamping cone set with triangular head screw**

3p-SPK-N5-N2-3K **Clamping cone set with lengthened clamping cone (N5)**  
Additional protection with a padlock in order to prevent unauthorised removal (e.g. fire brigade padlock), possible use with triangular head screw or with hex head screw

3p-SPK-N1-N2-TR **Clamping cone set with ABES bolt (Drop shaped)**

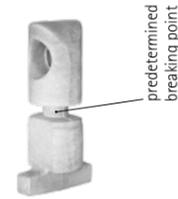
Special head screw with drop shaped drive  
Can only be opened with an optional special tools; hence protection against unauthorised opening with standard tools (utility model protection)



**JUNCTION PIECE WITH PREDETERMINED BREAKING POINT**  
without anti-roll device (000.008)

· Links bollard to the ground shell  
· Breaks at the predetermined breaking point when damaged by a vehicle  
· Can be instantly replaced if damaged

Material: cast iron, galvanised



000.013 **Junction piece with anti-roll device**

The metal rod prevents the bollard from rolling away

000.015 **Junction piece with steel spring (3p-Flex)**

The bollard returns to its initial position after impact (8-10° tilt), and only breaks if the breaking load is exceeded

000.016 **Junction piece with extended connection (3p-High)**

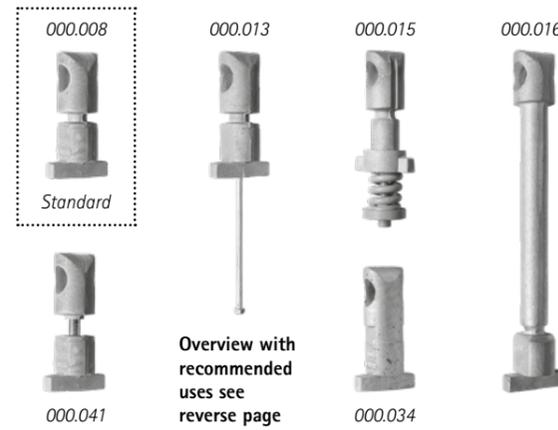
Allows to open and close the locking mechanism with long fire brigade triangular keys without a break

000.034 **Junction piece without predetermined breaking point**

Solid protection for people and objects

000.041 **Height-adjustable junction piece**

· Height can be adjusted with a threaded rod  
· Compensates for the gap between bollard and ground shell, if it ends below level, e.g. with paving stones of different heights



**GROUND SHELL 300 mm (hybrid)\***  
(000.001)

· Extremely robust component for long-lasting concrete embedment

Material: cast iron, galvanised

Note: In order to prevent the interruption of the construction process, the ground shells can be delivered in advance, if requested.

\* The hybrid ground shell can also be used for bollards with 3p-Snaplock (see reverse page).



000.003 **Ground shell 500 mm (hybrid)\***

For additional stability on unstabilised subsoil, cobblestone pavement etc.

000.007 **Ground shell 100 mm**

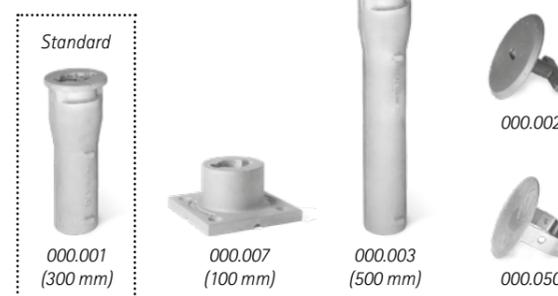
As special solution in case of small mounting depth, e.g. car parks, bridges etc.

**Ground shell cover**

Reduces risk of tripping, prevents soiling

000.002 **Cast aluminium**

000.050 **S235 Steel with spring, hot-dip galvanised**



ADVANTAGES AT A GLANCE

Cost advantages in case of damage

- Cost savings up to 90% compared to all conventional and known bollards made of steel or cast aluminium
- Less than 3 minutes working time
- Bollards, foundations with floor sleeves and plaster usually remain intact



Mounting advantages

- Quick replacement with simple tools on site
- Removable
- Absolutely accurate and firm

Simplified storage (same parts)

One single ground shell for all products with 3p-Technology

- Easy stockpiling
- Less storage space
- Lower storage costs

All ABES bollards, lighting bollards, waste containers, etc. can be mounted alternately on the same ground shell.



ABES – The 3p-Technology

The fastening system with pre-determined breaking point\*



## What is the ABES 3p-Technology?



### Help through ABES 3p-Technology

#### A complete repairs system

In 2001, ABES has launched 3p-Technology, a mounting system that allows a bollard that has been hit to be repaired in a very short time and in just a few steps.

The core of 3p-Technology is a junction piece with a predetermined breaking point.

Under the effect of an external force carried out by a car, a conventional bollard, including ground shell and locking mechanism, is seriously damaged or even destroyed.

This does not apply to bollards with 3p-Technology: their junction piece yields and breaks at the predetermined breaking point. Except for possible scratches on the bollard, every part, including the foundation and the pavement, remains intact. The junction piece is replaced, and in just a few minutes the bollard is ready for use again – without having lost any of its stability.

In numerous cities and municipal facilities, the 3p-Technology has become the standard mounting system.

## THE PROBLEM

### Defective bollards on the street

Crooked or broken bollards can be seen in every city. These pictures are certainly quite familiar. The replacement of conventional bollards is laborious, it takes a lot of manpower and time. This results in high costs.



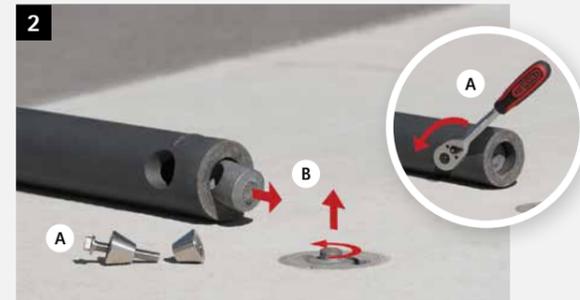
## THE SOLUTION

### Bollards with 3p-Technology

The ABES 3p-Technology is the solution. If the bollard has been rammed or knocked over by a vehicle, the junction piece with predetermined breaking point gives way.



Bollard hit by a car. The replaceable junction piece breaks at the predetermined breaking point. The bollard and foundation with base generally remain intact.

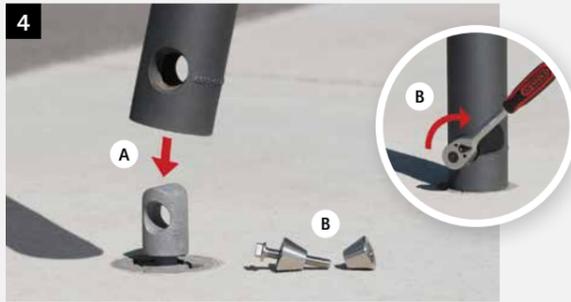


A) Unscrew the clamping cone set in the bollard and remove it  
B) Remove the broken junction piece from the bollard and ground shell



A) Insert a new junction piece in the ground shell and turn it by 90°

Enter your repair costs and compare:  
<https://abes-online.com/en/3p-technology/3p-cost-comparison/>



A) Place bollard on junction piece  
B) Insert and tighten-up clamping cones



A) Bollard back standing firmly once more  
B) When the bollard is removed, the ground shell can be closed with a cover

## An overview of the 3p-Technology



	Fixed mounting with 3p ground shells			Fixed mounting with 3p ground shells		Screw-on
	Removable <u>WITH</u> predetermined breaking point			Removable <u>WITHOUT</u> predetermined breaking point		Removable
	3p-Technology			3p-Technology	3p-Snaplock	3p-Multiflange
	<b>Junction piece without anti-roll device</b> 000.008 (standard)	<b>Junction piece with anti-roll device</b> 000.013	<b>Junction piece with steel spring (3p-Flex)</b> 000.015	<b>Junction piece without predetermined breaking point</b> 000.034	Triangular or cylinder lock	Connecting flange (multiflange) for screwing to pad foundation
<b>Properties when hit by a vehicle</b>	<ul style="list-style-type: none"> <li>Breaks at the predetermined breaking point</li> </ul>	<ul style="list-style-type: none"> <li>Breaks at the predetermined breaking point</li> <li>Metal rod prevents the bollard from rolling away (e.g. on slopes)</li> </ul>	<ul style="list-style-type: none"> <li>8-10° flexure, bollard returns to original position after impact</li> <li>The predetermined breaking point yields if the spring is overexpanded</li> </ul>	<ul style="list-style-type: none"> <li>Higher resistance to impacts as there is no breaking point</li> </ul>	<ul style="list-style-type: none"> <li>Higher resistance to impacts as there is no breaking point</li> </ul>	<ul style="list-style-type: none"> <li>Yields under increased pressure load</li> </ul>
<b>Recommended areas of application</b>	<ul style="list-style-type: none"> <li>Parked cars/Stationary traffic</li> <li>Inner-city traffic</li> <li>Parking places</li> </ul>	<ul style="list-style-type: none"> <li>On slopes</li> <li>Parked cars/Stationary traffic</li> <li>Inner-city traffic</li> <li>Parking places</li> </ul>	<ul style="list-style-type: none"> <li>Parked cars/Stationary traffic</li> <li>Delivery traffic</li> <li>Parking places</li> </ul>	<ul style="list-style-type: none"> <li>Multiple consecutive rows can be used as simple object protection</li> </ul>	<ul style="list-style-type: none"> <li>Critical locations, where the removal has to be done quickly in case of emergency</li> </ul>	<ul style="list-style-type: none"> <li>Parked cars/Stationary traffic</li> <li>Inner-city traffic</li> <li>Parking places</li> <li>Locations with no installation depth</li> </ul>
<b>Features</b>	<ul style="list-style-type: none"> <li>Flexible, since removable (with predetermined breaking point)</li> <li>Low repair costs after impacts</li> </ul>			<ul style="list-style-type: none"> <li>Flexible, since removable (without predetermined breaking point)</li> <li>Higher resistance to impacts</li> </ul>	<ul style="list-style-type: none"> <li>Self-latching, thus allowing a quick insertion</li> <li>Available for selected cast aluminium models (also with cast emblem) up to ø 100 mm</li> <li>Hybrid ground shell, also suited for every 3p product with a predetermined breaking point</li> </ul>	<ul style="list-style-type: none"> <li>Low fitting costs: Pad foundation instead of a deep foundation for a ground sleeve</li> <li>Bollards, clamping cones and screws are 100 % compatible with the 3p-Technology</li> <li>Low repair costs after collision</li> </ul>
<b>Removable</b>	Yes			Yes	Yes	Yes
<b>Repair costs after impacts</b>	Minor			High	High	Minor
<b>Vehicle damage after impacts</b>	Minor to medium			High	High	Minor to medium