

---

 TECHNICAL DATA SHEET

# PMA Automation - BTK - Ball joint sleeve

## PMA



### Applications:

- Ball joint sleeve allows fixation and mechanical guidance of PMA conduits
- Used in combination with BSH tube clamps
- Suited for robotics dress pack installations

### Features & Benefits:

- Ball joint used in combination with BSH allows tilting of up to +/- 10° and 360° of axial rotation, increases degree of freedom for cable packs
- Trumpet-shaped openings restricts conduit bending radius, increasing product lifetime
- Combination with strain relief insert (BTR) allows to block axial conduit movement/sliding
- Easy to install and exchange

### Materials:

- High-grade, specially formulated polyamide 6 (BTK & BTR)

### Compatible with:

- PMA Automation BSH Tube clamp
- PMAFLEX Pro Conduits
- PMAFLEX Multilayer Conduits
- PMAFLEX Conduits

### Weathering resistance:

- Very good UV resistance and weathering characteristics

### Colour:

- Black

### Chemical properties:

- Please refer to [www.pma.ch](http://www.pma.ch) (Technical Information / Chemical Resistance)

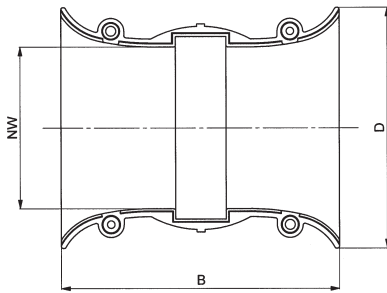
### Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

**Product selection:**

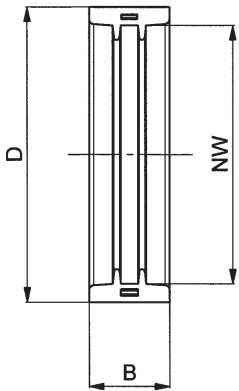
Part no.		Conduit size	Dimensions in mm (nom.)		Fits to	Weight	Packing unit
glide	strain relief	NW	B	D		kg/100 pcs	pcs/PU
BTK-R36	BTK-R36 + BTR-R36GT	36	104.0	66.0	BSH-R48	6.3	1
BTK-R48	BTK-R48 + BTR-R48GT	48	110.0	79.5	BSH-R56	8.2	1
-	BTK-R70 + BTR-R70G + BGN-R56G/70G	56	138.5	121.0	BSH-R70	25.5	1
BTK-R70	BTK-R70 + BTR-R70G	70	138.5	121.0	BSH-R70	22.1	1

Our customer service dept. or local distribution partner will be pleased to help you concerning product availability and lead time

**BTR, strain relief insert****Product selection:**

Part no.	Conduit size	Dimensions in mm (nom.)		Fits to	Weight	Packing unit
glide	NW	B	D		kg/100 pcs	pcs/PU
BTR-R36GT	36	27.5	49.5	BTK-R36	1.4	1
BTR-R48GT	48	31.5	61.5	BTK-R48	2.1	1
BTR-R70G	70	24.5	91.0	BTK-R70	4.2	1

Our customer service dept. or local distribution partner will be pleased to help you concerning product availability and lead time



Mechanical Properties:	Value:	Test parameters:	Test method:
Tensile modulus	1'200 ... 3'700 N/mm <sup>2</sup>		ISO 527
Tensile strength	45 ... 65 N/mm <sup>2</sup>		ISO 527
Notched bar impact test	4 ... 20 kJ/m <sup>2</sup>		ISO 180/1C

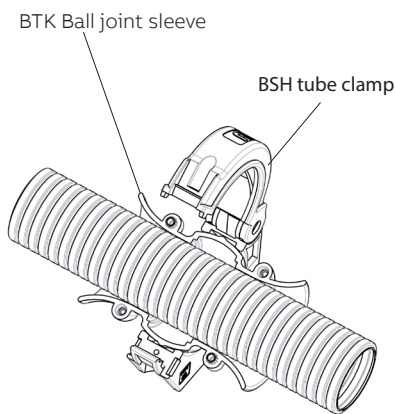
Thermal properties:	Value:	Test parameters:	Test method:
Continuous application temperature	-50 ... +105°C		PMA DO 9.21-4510
Upper application temperature	+120°C	(20'000 h)	PMA DO 9.21-4360
Short-term	+160°C	(168 h)	PMA DO 9.21-4361

**Content of delivery:**

- BTK: 2 halfshells + 4 screws
- BTR: 2 halfshells

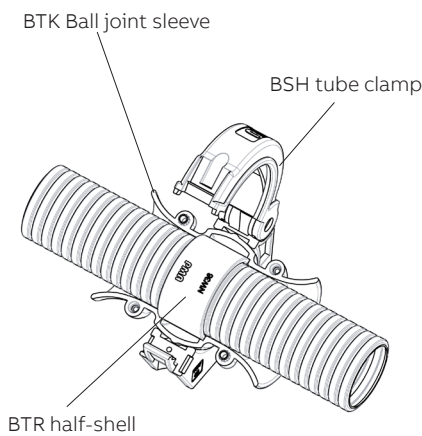
**Examples for combination possibilities**

**Sliding functionality**



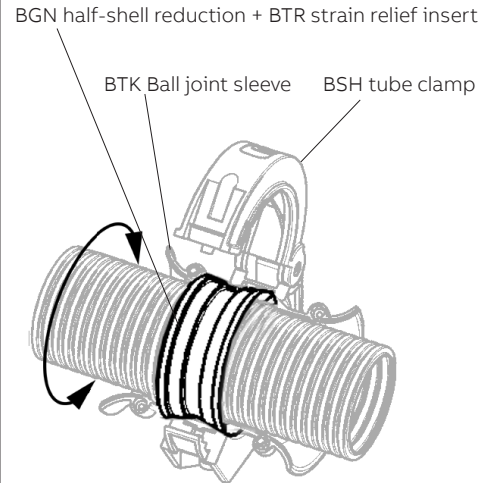
PMA conduit can axially slide and rotate

**Strain relief functionality**



PMA conduit is axially fixed (no sliding) and can rotate

**Strain relief functionality + size reduction**



PMA conduit is axially fixed (no sliding) and can rotate

ABB Switzerland Ltd,  
PMA Cable Protection  
Aathalstrasse 90  
8610 Uster, Switzerland  
Phone: +41 58 585 00 11  
pma-info@ch.abb.com  
www.pma.ch

Let's write the future.  
Together. **abb.com**

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB Installation Products Inc. does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB Inc. Copyright© 2019 ABB Installation Products Inc. All rights reserved

