
 TECHNICAL DATA SHEET

PMA CobotProtect™ - Kit-CCH - CobotKit



The PMA CobotProtect™ CobotKit offers an easy-to-use dress pack solution for collaborative robots, allowing to fasten, rout and protect cables & tubes. The kit includes Cobot Conduit Holder, a Cobot Strain Relief (incl. BFH-0 for mounting) and 3m of the XTPC multilayer conduit, featuring a wear indication function.



Product selection:

Part no.		Conduit size	Conduit Part no.		Cobot Conduit Holder Part no.	Cobot Strain Relief Ring Part no.	Cobot Strain Relief Ring Holder Part no.	Packing unit
black	slitted	NW	XTPC	XTPC slitted	BCCH	BCSR	BFH-0	pcs/PU
KIT-CCH-17	KIT-CCH-17L	17	XTPCG-17BB.3	XTPCG-17BB.3L	BCCH-17	BCSR-17	BFH-23-0	1
KIT-CCH-23	KIT-CCH-23L	23	XTPCG-23BB.3	XTPCG-23BB.3L	BCCH-23	BCSR-23	BFH-29-0	1
KIT-CCH-29	KIT-CCH-29L	29	XTPCG-29BB.3	XTPCG-29BB.3L	BCCH-29	BCSR-29	BFH-36-0	1

Our customer service dept. or local distribution partner will be pleased to help you concerning product availability and lead time
Slitted conduit does not meet the mechanical properties described in the conduit data sheet

Content of delivery:

- 2x BCCH - Cobot Conduit Holder
- 1x BCSR - Cobot Strain Relief Ring
- 1x BFH-0 System Support
- 1x 3m XTPC multilayer conduit

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PMA CobotProtect™ - BCCH - Cobot Conduit Holder

PMA



Applications:

- In automation applications for fixing PMA conduits along a variety of cylindrical & elliptical shaped collaborative robot (cobot) arms

Features & Benefits:

- Flexible design of swivel base ensures compatibility with cobot models of most widely used brands (e.g., ABB™, UR™, Omron™, etc.)
- Fastening along cobot arm with Velcro® and/or cables ties
- 360° swiveling of BFH-0 clip gives flexibility and reduces mechanical stress induced by cobot movements
- 10° tilt angle of FH-clip in any direction
- Fits G- and T conduit profile
- Easy to install and to exchange

Materials:

- High-grade, specially formulated polyamide 6

Compatible with:

- PMAFLEX Pro Conduits
- PMAFLEX Multilayer Conduits
- PMAFLEX Conduits
- PMA Smart Line Conduits

Colour:

- Black

Additional information:

- Installation with Velcro® for cylindrical arm diameter 56mm – 120mm
- For arm diameter 120mm-370mm, the use of a Velcro® and additional cable ties (not included) is recommended

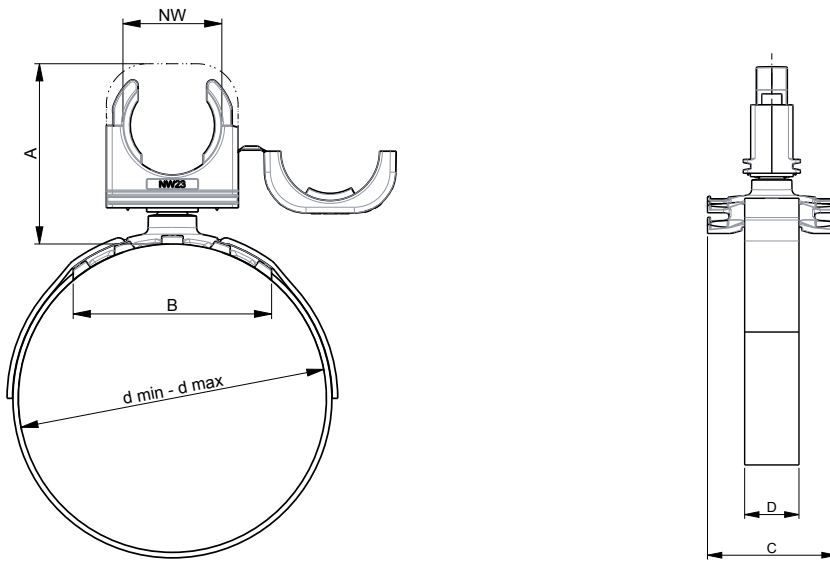
Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

Product selection:

Part no.	Conduit size	Velcro® length	Dimensions in mm (nom.)						Weight
			d min.	d max.	A	B	C	D	
black	NW	mm							kg/100 pcs
BCCH-17	17	500	56.0	370.0	44.5	57.9	45.0	19.0	20.3
BCCH-23	23	500	56.0	370.0	52.5	57.9	45.0	19.0	23.1
BCCH-29	29	500	56.0	370.0	58.5	57.9	45.0	19.0	25.2

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**Assembly instructions:**

- Please consider the appropriate assembly instructions on www.pma.ch

TECHNICAL DATA SHEET

PMA CobotProtect™ - BCSR - Cobot Strain Relief

PMA



Applications:

- In automation applications to relief strain and to fixate individual cables/tubes to a conduit terminal

Features & Benefits:

- Fastening of individual cables/tubes to a conduit terminal via cable ties (not included)
- To be used freely rotating around conduit axis, or in “lock” mode using a BFH-0 clip (see drawing page 2)
- Fits G- and T conduit profile
- Easy to install and to exchange

Materials:

- High-grade, specially formulated polyamide 6

Compatible with:

- PMAFLEX Pro Conduits
- PMAFLEX Multilayer Conduits
- PMAFLEX Conduits
- PMA Smart Line conduits
- PMA Clip - BFH-0 - System support
- PMA Trust - BGPM - System support

Colour:

- Black

Chemical properties:

- Please refer to www.pma.ch (Technical Information / Chemical Resistance)

Additional information:

- Combining the BCSR with a BFH-0, requires a BFH-0 of the next larger NW (i.e., BCSR-17 is used in combination with BFH-23-0)

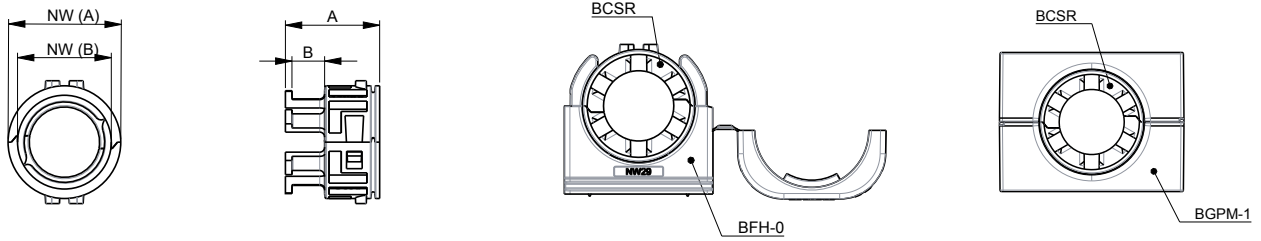
Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

Product selection:

Part no.	Conduit size	Fits to BFH-0 BGPM-1x	Strain relief teeth	Dimensions in mm (nom.)		Weight
				A	B	
black	NW (B)	NW (A)	qty	A	B	kg/100 pcs
BCSR-17	17	23	4	28.8	10.0	5.0
BCSR-23	23	29	6	28.8	10.0	6.0
BCSR-29	29	36	6	28.8	10.0	8.6

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Mechanical Properties:	Value:	Test parameters:	Test method:
Tensile modulus	1'200 ... 3'700 N/mm ²		ISO 527
Tensile strength	45 ... 65 N/mm ²		ISO 527
Notched bar impact test	4 ... 20 kJ/m ²		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 9.21-4360

Assembly instructions:

- Please consider the appropriate assembly instructions on www.pma.ch

TECHNICAL DATA SHEET

PMAFLEX Multilayer - XTPC - Corrugated Conduit

Highly flexible, medium-duty

PMA



Highly flexible conduit for robotic applications with high resistance to abrasion and wear indication function. Especially suitable for narrow bending radii



Applications:

- For dynamic conduit systems in robotics and automation industry

Features & Benefits:

- With wear indication function
- High resistance to continuous bending
- No abrupt conduit failure due to high tear propagation resistance
- Very high abrasion resistance
- High resistance to torsion
- Suitable for tight bending-radii
- Long service life

Materials:

- Outer, intermediate and inner layer made from High-grade, specially modified Thermoplastic copolyester elastomer

Compatible with:

- PMA Automation Products
- PMAFIX Pro, PMAFIX fittings
- PMAGRIP flange
- PMA Accessories

Temperature range:

- -40°C ... +105°C continuous, +150°C short-term

Weathering resistance:

- Good UV resistance and weathering characteristics

Colour:

- Outer layer: black (protection layer) abrasion and UV resistant
- Intermediate layer: yellow (warning layer)
- Inner layer: blue (wear limit reached) conduit should be replaced

Chemical properties:

- Please refer to www.pma.ch (Technical Information / Chemical Resistance)

Environmental properties:

- Free from halogens and cadmium
- RoHS and REACH compliant

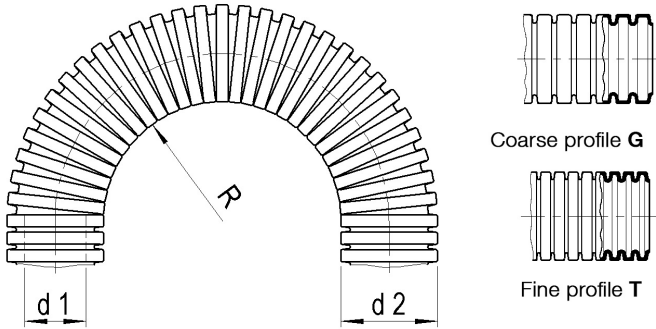
XTPC-Index

min.											max.
Ductility											
Fatigue reversed bending											
Compression resistance											
Low temperature performance											
Weathering resistance											

Product selection:

Part no.	Profile	Conduit size		rec. fitting thread size		Dimensions in mm (nom.)				Weight kg/100 m
		NW	metric	PG	metric	d1	d2	stat. R	dyn. R.	
black/blue	T/G									
XTPCG-17BB.3	G	17	20	16	M20x1.5	15.2	21.1	30	75	8.5
XTPCG-23BB.3	G	23	25	21	M25x1.5	21.2	28.4	40	100	13.0
XTPCG-29BB.3	G	29	32	29	M32x1.5	26.8	34.5	50	120	17.0

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stat. R. = min. bending radius for static (fixed) installation

dyn. R. = min. bending radius for dynamic (flexible) installation

Mechanical Properties:	Value:	Test parameters:	Test method:
Impact strength	> 4.5 J		PMA DO 9.21-4330
Compression strength	> 160 N	(50 x 50 mm)	PMA DO 9.21-4320
	> 320 N	(100 x 100 mm)	
Resistance to fatigue	> 5'000'000 cycles		PMA DO 9.21-4420
	> 10'000'000 cycles		PMA DO 9.21-4425
Pull-out resistance conduit - fitting series			
PMAFIX Pro	> 280 N		PMA DO 9.21-4610
PMAFIX IP68	> 260 N		PMA DO 9.21-4610
PMAFIX IP66	> 220 N		PMA DO 9.21-4610

Note: Testing at 23°C, 50% r.h., conduit nominal width 17, unless otherwise stated

Additional sealing may be required to archive IP performance in combination with the fitting series PMAFIX, PMAFIXpro and PMAGRIP due to higher material shrinkage of the corrugated conduit

Thermal properties:	Value:	Test parameters:	Test method:
Continuous application temperature	-40 ... +105°C		PMA DO 9.21-4510
Upper application temperature	+120°C	(20'000 h)	PMA DO 9.21-4360
Short-term	+150°C	(168 h)	PMA DO 9.21-4360

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