



Automation and Robotic Equipment Systems



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Solutions for all robot applications





Murrplastik Systemtechnik GmbH are the specialists for cable protection conduit systems, cable entry systems, labelling systems and cable drag chain systems.

Right from the beginning priority was given to a systematic approach. That is still the case today. These systematic approaches have formed the basis for continuous expansion:

Since 2006, we have expanded our range of services to include products and services for automation and robotic equipment systems.

Achieve freedom of movement through fastening elements: there's nothing else like it for robotics and automation! Well-considered components provide the robots with the freedom of movement they need for high working speeds and precise repeat accuracy during long service lives.

Universally applicable fastening elements for all standard robots can be combined into individual designs that provide a basis for the hydraulic, pneumatic and electronic components on the dresspack.

Murrplastik's specially developed cable protection conduits for complex robot applications can stand up to extreme stress and movement. Specially modified materials and special conduit geometry ensure optimal protection and long lives.

Our services:

Design

Creation of various solution concepts that account for both your wishes and all eventualities.

Development

Our specialists develop individual dresspacks and outfit them with corresponding conduits, polyurethane tube for gas and liquid media and plugs.

Prototyping

By request we will produce prototypes to be used for functional and service life testing in test installations.

Documentation

By request we will assume responsibility for the documentation of the dresspack, including illustrations.

Mounting/Optimisation

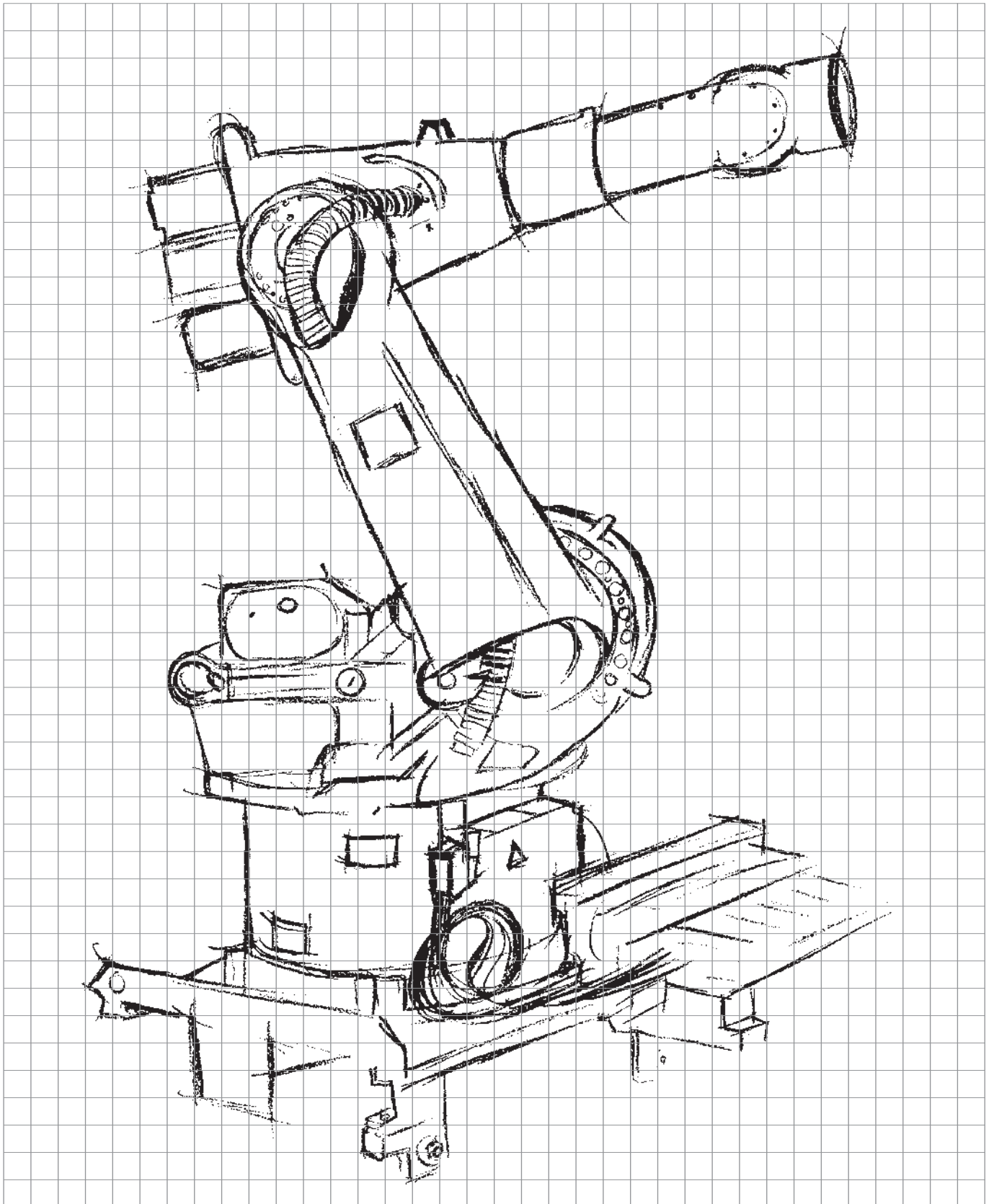
Our assembly team will by request assume responsibility for the installation of the dresspack.

Repairs/Maintenance

If problems arise, we can by request assume responsibility for repairs and/or replacement of the dresspacks. We'd also be glad to take over servicing and preventative maintenance.

Spare parts

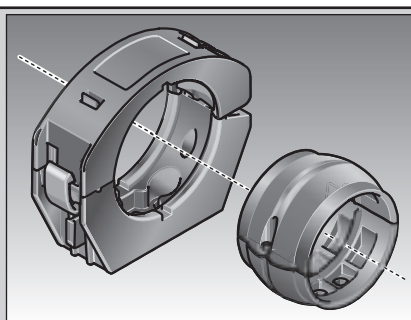
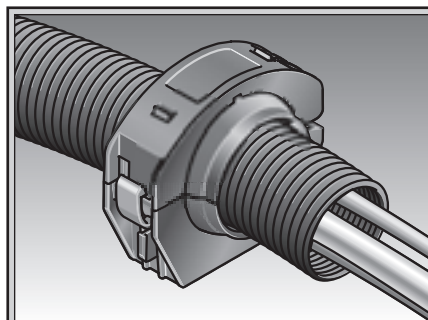
Our warehouse of inventory ensures prime availability and short delivery times.



Module overview

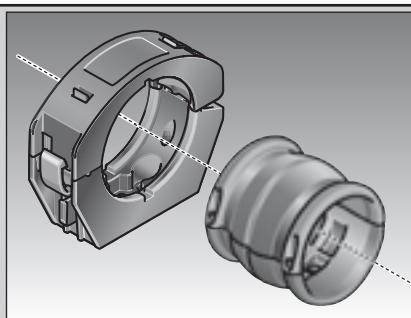
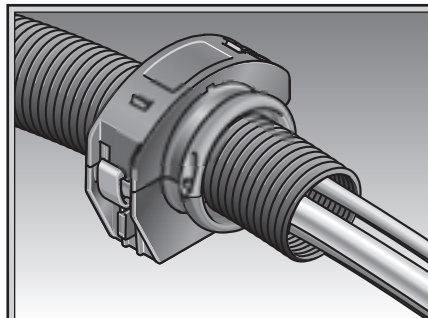


System holder SH-P/M25-M32



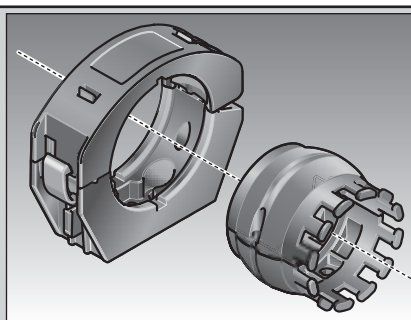
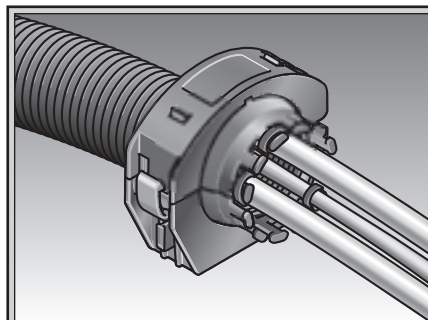
System holder with centre ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 2) Centre ball joint KMG-F, fixed (conduit fixed in axial direction)



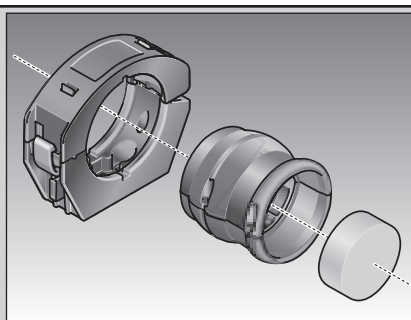
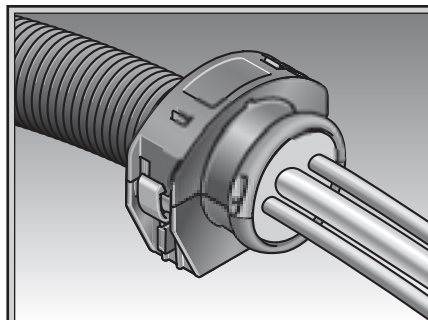
System holder with centre ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 3) Centre ball joint, sliding, KMG-G (conduit sliding in axial direction)



System holder with end ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 4) End ball joint with integrated strain relief KEG-ZL (conduit fixed)



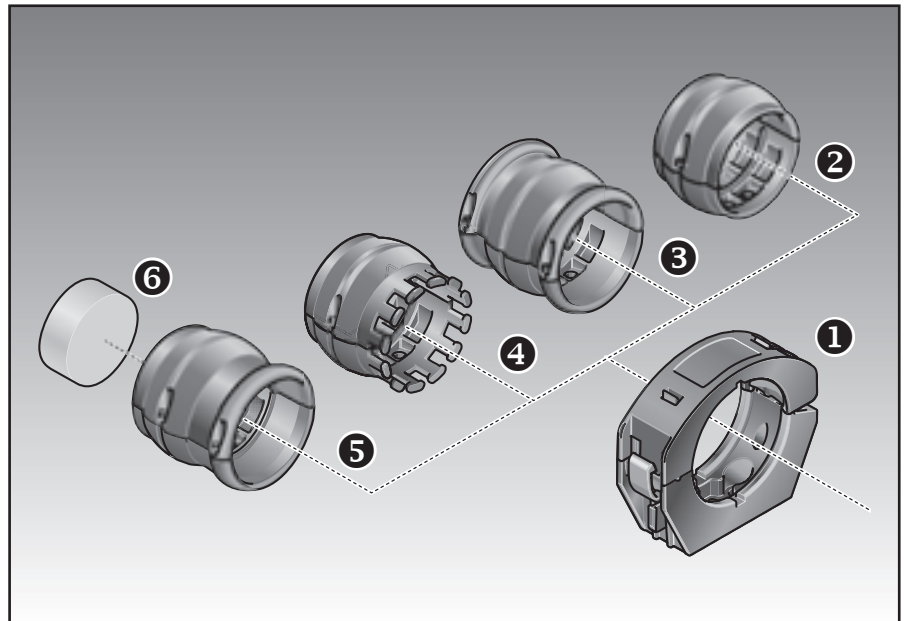
System holder with end ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 5) End ball joint for cable star strain relief KEG-K (conduit fixed)
- 6) Strain relief for self-made assembly R-ZL/N1

System holder SH-P/M25-M32

The system holder SH is the centrepiece of a modular conduit holding system which can be customised using four ball joints (inlays) to a wide range of applications in automation and robotic equipment systems: For dynamic use with high flexibility of the dresspack at the attachment point, as well as for rigid applications with securely guided cables and conduits, with or without strain relief.

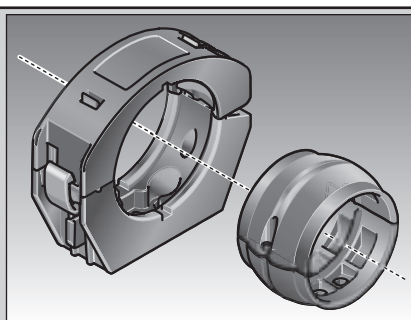
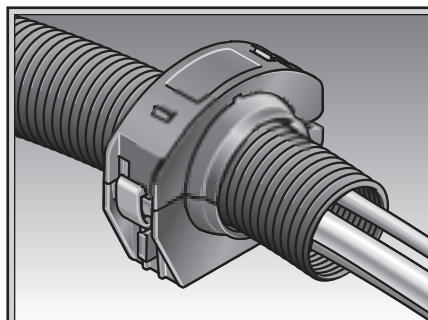
The system as a whole provides the highest performance in terms of stability, flexibility and durability.



Schematic representation, single components may deviate in details

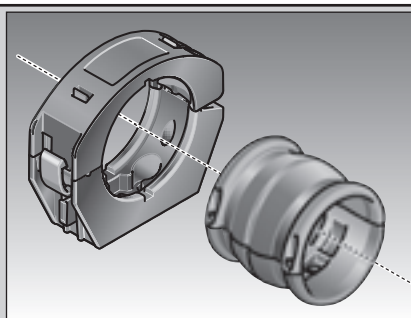
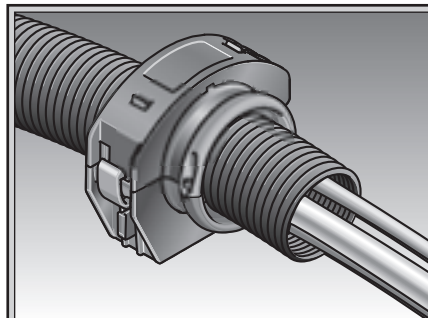
Item	Type	Order no.	Colour	Material	Version	Pack qty.
System holder						
1	SH-P/M25-M32	83691462	Black	PA	Without continuous fin	10
Ball joints (inlays)						
Centre ball joint (fixed) for fastening cable protection conduits						
2	KMG-F M25/P21	83691658	Black	PA		10
2	KMG-F M32/P29	83691660	Black	PA		10
Centre ball joint (sliding) for length-compensating guiding of cable protection conduits						
3	KMG-G M25/P21	83691858	Black	PA		10
3	KMG-G M32/P29	83691860	Black	PA		10
End ball joint with integrated strain relief						
4	KEG-ZL M25/P21	83692258	Black	PA		10
4	KEG-ZL M32/P29	83692260	Black	PA		10
End ball joint for cable star strain relief						
5	KEG-K M25/P21	83692458	Black	PA		10
5	KEG-K M32/P29	83692460	Black	PA		10
Strain relief as blank for self-made assembly						
6	R-ZL/N1 21/29	83951606	Black	TPE		1

System holder SH-P/SH-F/SH-PF/M40-M50



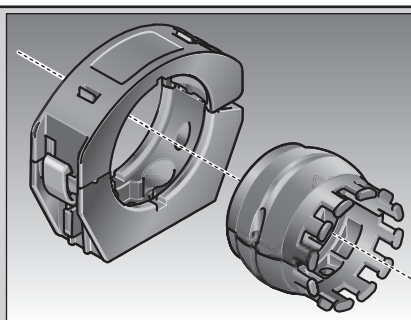
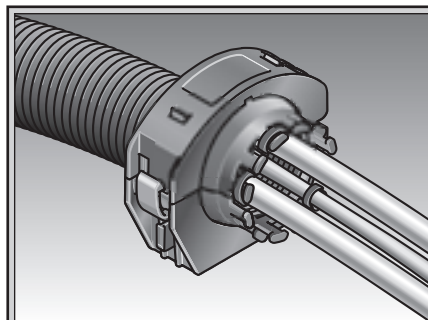
System holder with centre ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 2) Centre ball joint KMG-F, fixed (conduit fixed in axial direction)



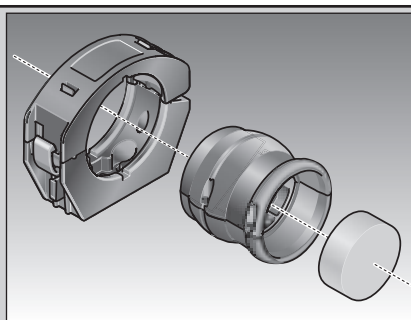
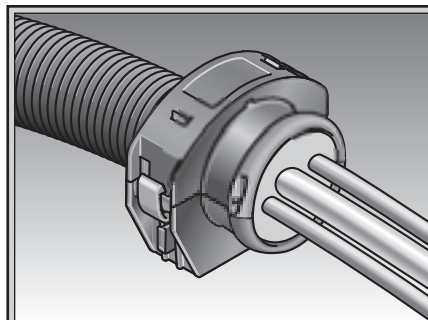
System holder with centre ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 3) Centre ball joint, sliding, KMG-G (conduit sliding in axial direction)



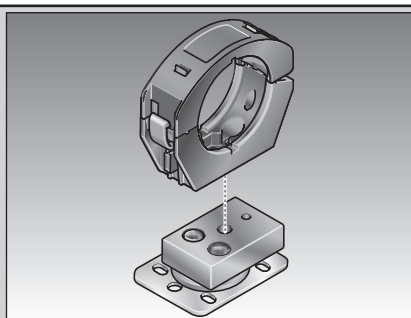
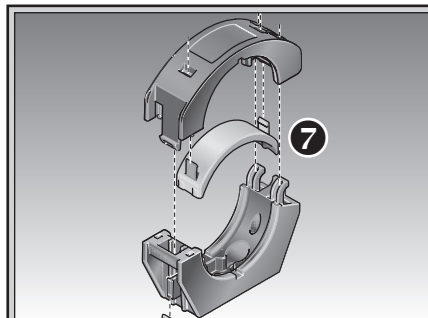
System holder with end ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 4) End ball joint with integrated strain relief KEG-ZL (conduit fixed)



System holder with end ball joint for the mounting of a corrugated conduit.

- 1) System holder SH
- 5) End ball joint for cable star strain relief KEG-K (conduit fixed)
- 6) Strain relief for self-made assembly R-ZL/N1



System holder with continuous fin:

- 1) System holder SH
- 7) Continuous fin ELR limits the movability of ball joints to radial rotation

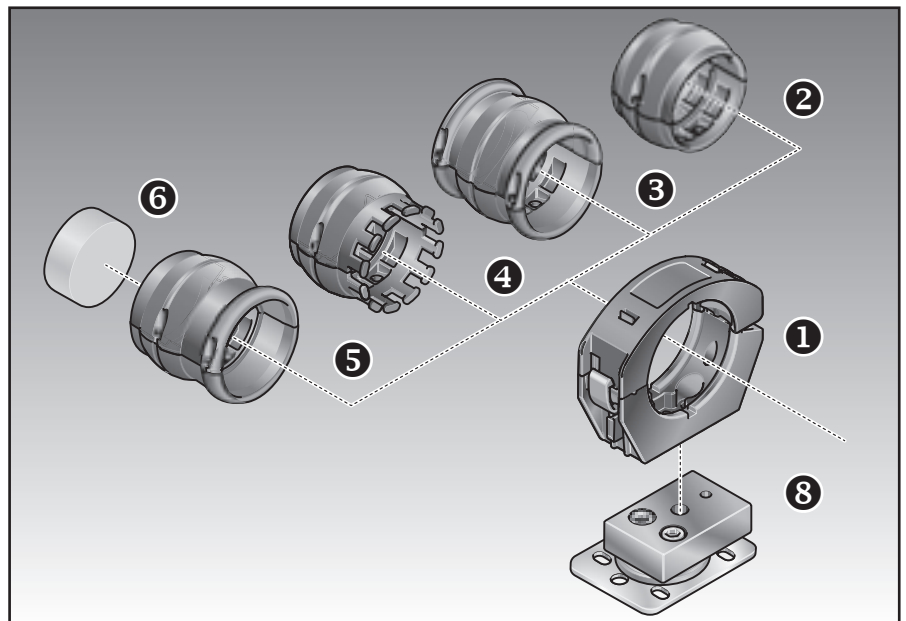
System holder on pivot bearing:

- 1) System holder SH
- 8) Pivot bearing with R-DZM adapter plate

System holder SH-P/SH-F/SH-PF/M40-M50

The system holder SH is the centrepiece of a modular conduit holding system which can be customised using four ball joints (inlays) to a wide range of applications in automation and robotic equipment systems: For dynamic use with high flexibility of the dresspack at the attachment point, as well as for rigid applications with securely guided cables and conduits, with or without strain relief.

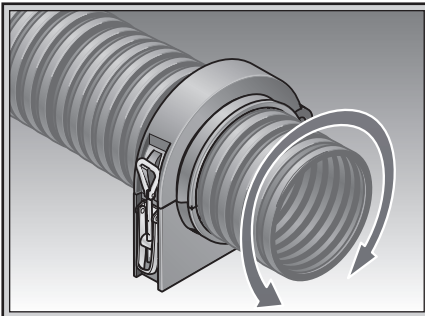
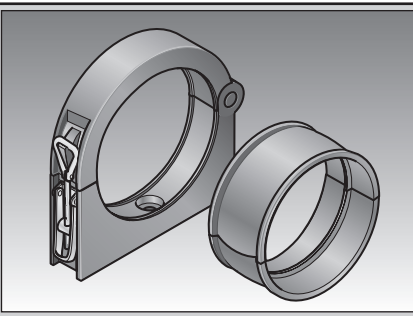
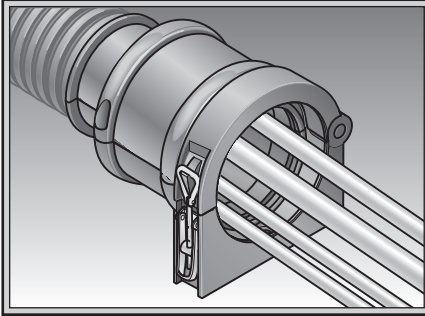
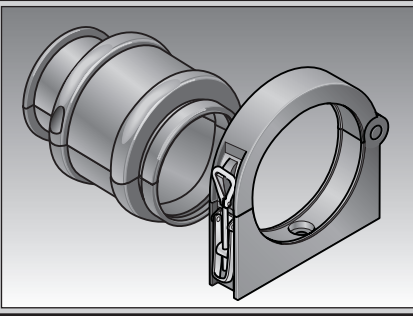
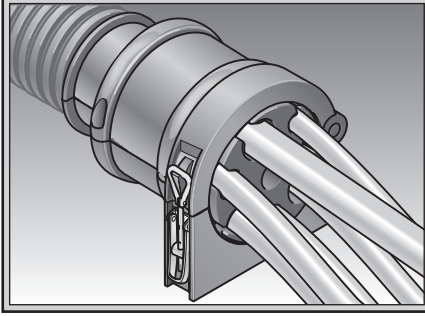
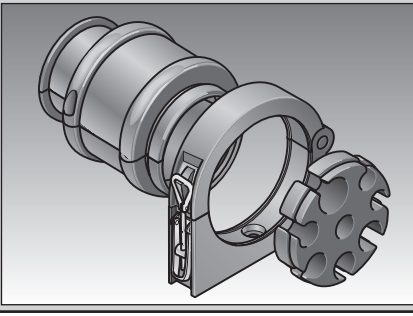
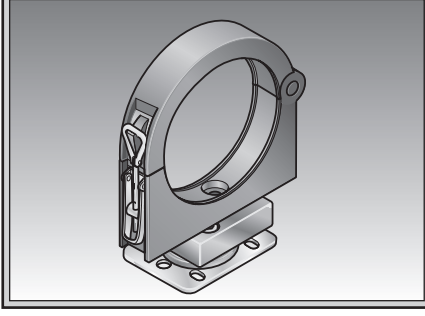
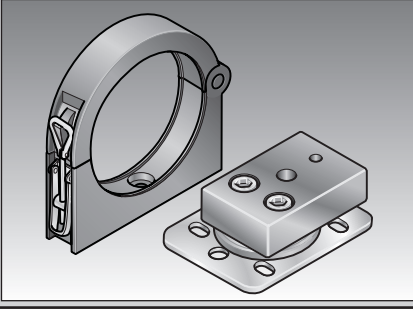
The system as a whole provides the highest performance in terms of stability, flexibility and durability.



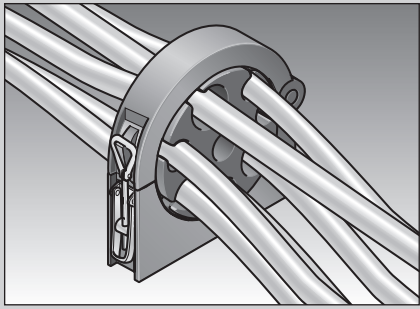
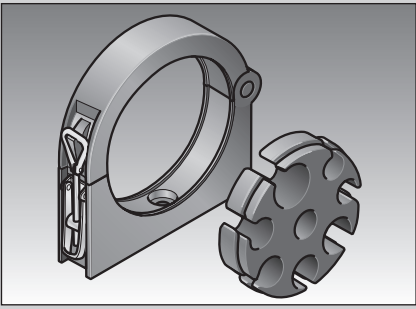
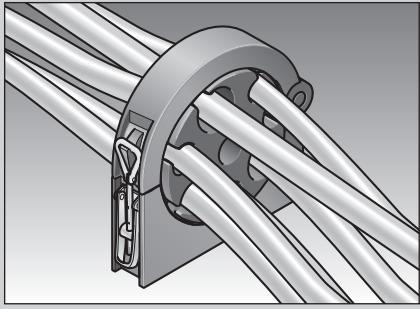
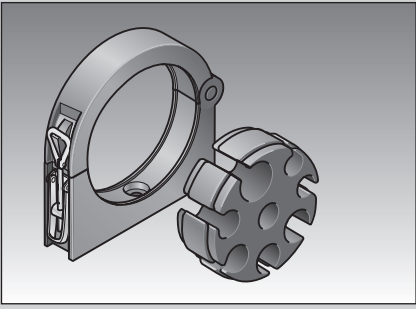
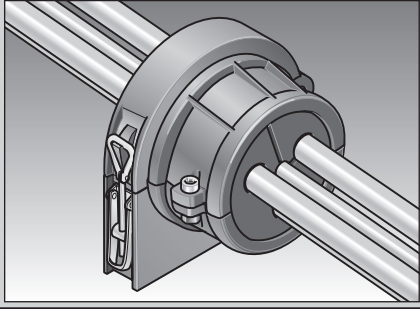
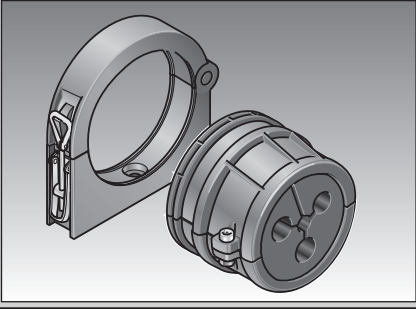
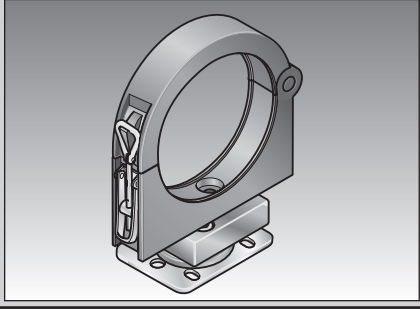
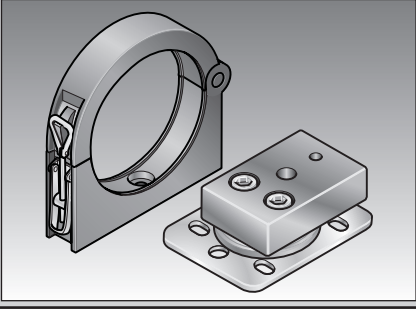
Schematic representation, single components may deviate in details

Item	Type	Order no.	Colour	Material	Version	Pack qty.
System holder						
1.1	SH-P/M40-M50	83691460	Black	PA	Without continuous fin	10
1.2	SH-F/M40-M50	83691450	Black	PA	With continuous fin	10
1.3	SH-PF/M40-M50	83691470	Black	PA	Continuous fin enclosed	10
Ball joints (inlays)						
Centre ball joint (fixed) for fastening cable protection conduits						
2	KMG-F M40/P36	83691662	Black	PA		10
2	KMG-F M50/P48	83691664	Black	PA		10
Centre ball joint (sliding) for length-compensating guiding of cable protection conduits						
3	KMG-G M40/P36	83691862	Black	PA		10
3	KMG-G M50/P48	83691864	Black	PA		10
End ball joint with integrated strain relief						
4	KEG-ZL M40/P36	83692262	Black	PA		10
4	KEG-ZL M50/P48	83692264	Black	PA		10
End ball joint for cable star strain relief						
5	KEG-K M40/P36	83692462	Black	PA		10
5	KEG-K M50/P48	83692464	Black	PA		10
Strain relief as blank for self-made assembly						
6	R-ZL/N1 36/48	83951610	Black	TPE		1
Conduit holder inlay						
7	ELR M40-M50	83691480	Red	PA		10
Pivot bearing						
8	R-DZM	83952214	Silver/Black	Steel		1

System holder NW 70 (Part 1: Fixing of conduits)

		System holder with hose ring for mounting of a corrugated conduit NW 70. 1) System holder 2) Hose ring / half shell (conduit radial revolving)
		System holder with swivelling joint for mounting of a corrugated conduit NW 70. 1) System holder 4) Joint R-GSA 70
		System holder with swivelling joint for mounting of a corrugated conduit NW 70 and simultaneous fastening of the conduit. 1) System holder 3) Strain relief R-ZL2 70 4) Joint R-GSA 70
		System holder on ball-bearing pivot bearing. Rotatable in 360°. 1) System holder 5) Pivot bearing with adapter plate

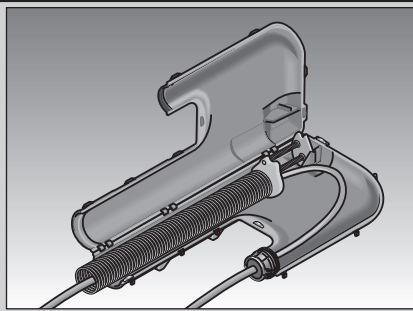
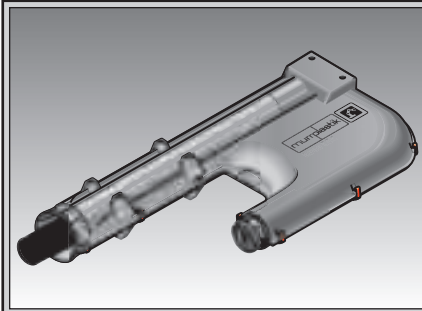
System holder NW 70 (Part 2: Strain relief)

		System holder with strain relief for fastening the installed conduits. 1) System holder 3) Strain relief R-ZL2 70
		System holder with strain relief for fastening the installed conduits. 1) System holder 2) Strain relief R-ZL1 70
		System holder with strain relief for fastening the installed conduits. 1) System holder 4) Strain relief R-ZL3 70
		System holder on ball-bearing pivot bearing. Rotatable in 360°. 1) System holder 5) Pivot bearing with adapter plate



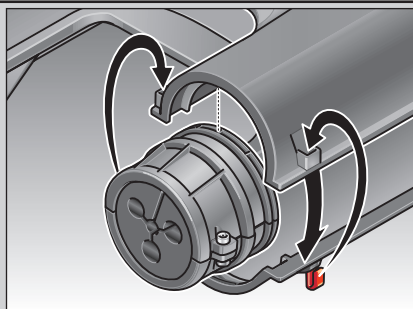
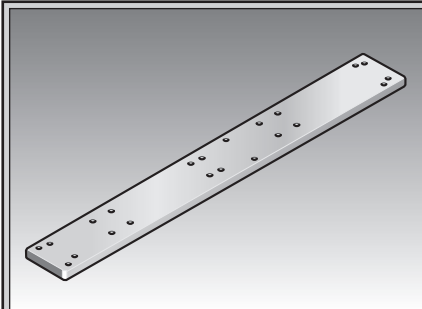
Module overview

R-Tec Box



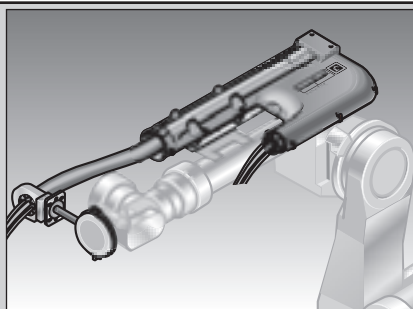
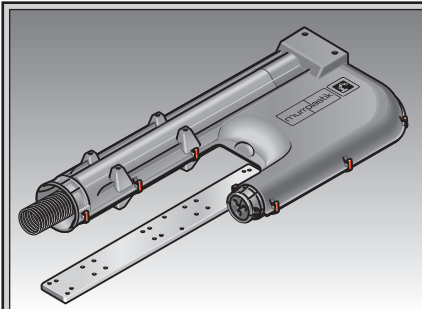
R-Tec Box enclosed and opened:

- 1) R-Tec Box
- 3) Strain relief R-ZL3 70



Spare parts and accessories for R-Tec Box:

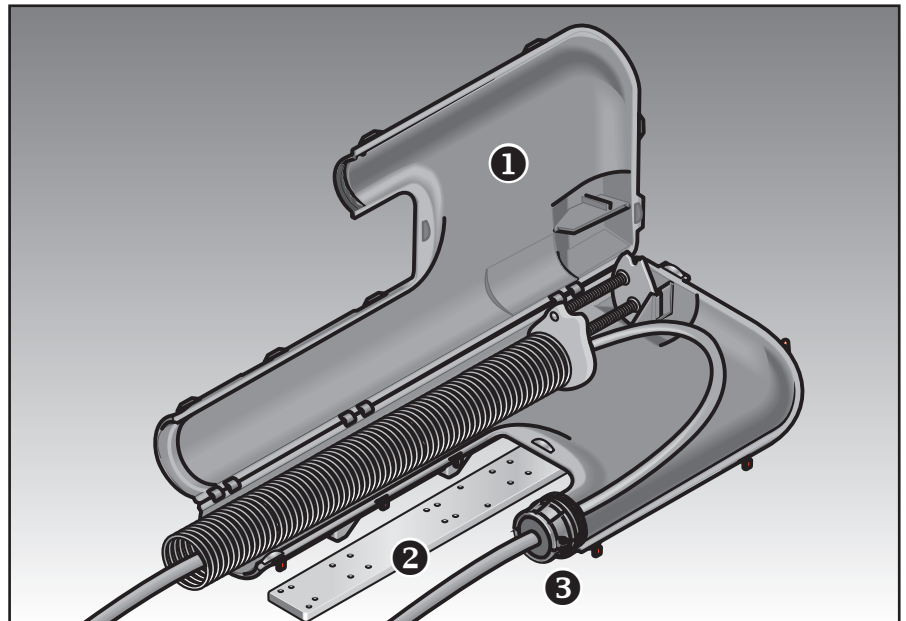
- 2) System plate for R-Tec Box
- 3) Strain relief R-ZL3 70
- 4) Spare part sets



R-Tec Box and system plate, in particular and in operating position.

R-Tec Box for conduit sizes M40/P36 and M50/P48

With the R-Tec Box, Murrplastik has succeeded in creating a new system for the optimal feed-through with length compensation of energy packages from axis 3 to 6 in industrial robots. In this specially designed housing with the unique, integrated spring return system, the energy packet is transported safely and effectively in a low-wear manner within the smallest space.



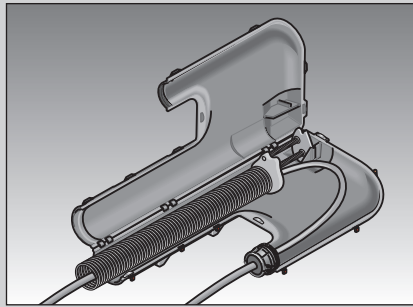
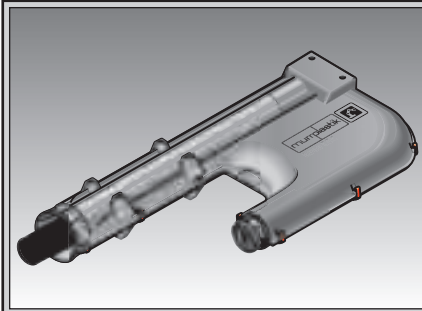
Schematic representation, single components may deviate in details

Item	Type	Order no.	Colour	Material	Suitable for Murrflex	Pack qty.
R-Tec Box						
1.1	R-Tec Box EW 36	83692650	Black	PP with 30% fibre glass	EW M40/P36	1
1.2	R-Tec Box EWX 36	83692652	Black	PP with 30% fibre glass	EWX M40/P36	1
1.3	R-Tec Box EW 48	83692654	Black	PP with 30% fibre glass	EW M50/P48	1
1.4	R-Tec Box EWX 48	83692656	Black	PP with 30% fibre glass	EWX M50/P48	1
System plate for R-Tec Box *						
2.1	Base plate Kuka series Quantec/series 2000	83692620	Black	Steel		1
2.2	Base plate Fanuc series 2000 iB/iA	83692621	Black	Steel		1
2.3	Base plate ABB series 6600	83692622	Black	Steel		1
Strain relief cable star						
3	R-ZL3 70 Strain relief support including insert **	83951628	Black	PA/TPE		1
Spare part sets ***						
4.1	Mounting set 36/48	83692682				1
4.2	Spring set 36/48	83692686				1
4.3	Slider set EW 36	83692670				1
4.4	Slider set EWX 36	83692672				1
4.5	Slider set EW 48	83692674				1
4.6	Slider set EWX 48	83692676				1
* for additional robots/robot types on request						
** by request we assemble the core according to your specifications						
*** Set composition: see page 56						



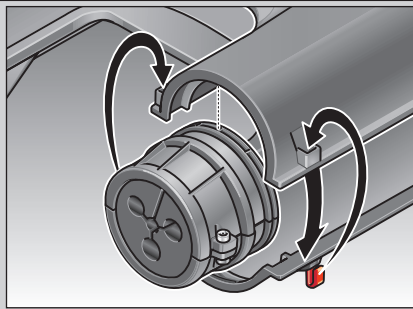
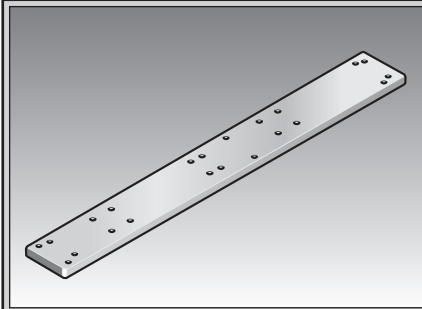
Module overview

R-Tec Box



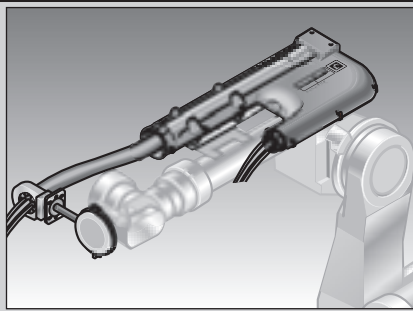
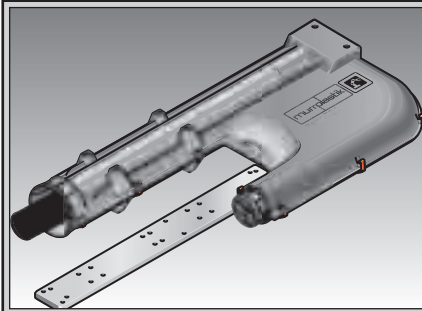
R-Tec Box enclosed and opened:

- 1) R-Tec Box
- 3) Strain relief R-ZL3 70



Spare parts and accessories for R-Tec Box:

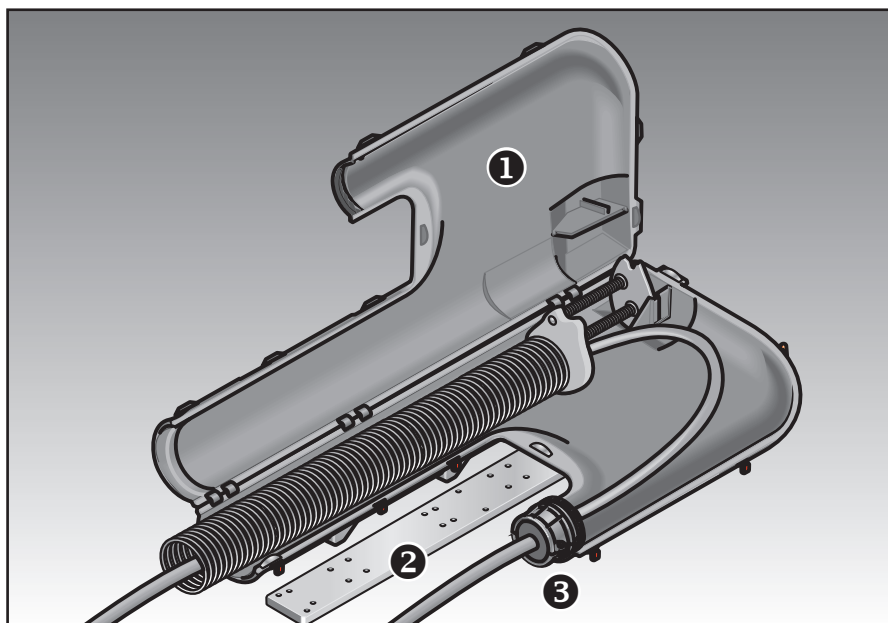
- 2) System plate for R-Tec Box
- 3) Strain relief R-ZL3 70
- 4) Spare part sets



R-Tec Box and system plate, in particular and in operating position.

R-Tec Box for conduits of nominal width 56 and 70 mm

With the R-Tec Box, Murrplastik has succeeded in creating a new system for the optimal feed-through with length compensation of energy packages from axis 3 to 6 in industrial robots. In this specially designed housing with the unique, integrated spring return system, the energy packet is transported safely and effectively in a low-wear manner within the smallest space.



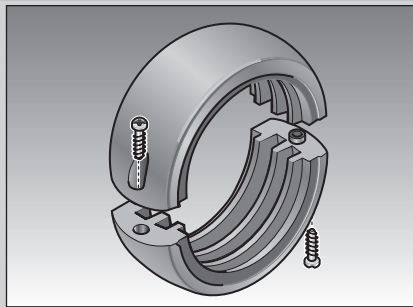
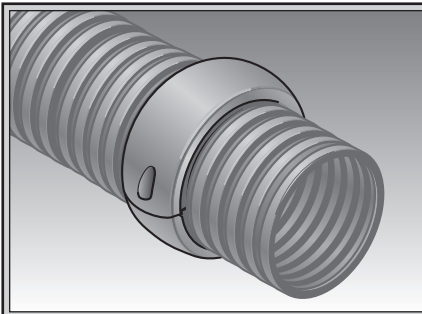
Schematic representation, single components may deviate in details

Item	Type	Order no.	Colour	Material	Suitable for Murrflex	Pack qty.
R-Tec Box						
1.1	R-Tec Box EW/EWX 56	83692658	Black	PP with 30% fibre glass	EW/EWX 56	1
1.2	R-Tec Box EW/EWX 70	83692660	Black	PP with 30% fibre glass	EW/EWX 70	1
System plate for R-Tec Box *						
2.1	Base plate Kuka series Quantec/series 2000	83692620	Black	Steel		1
2.2	Base plate Fanuc series 2000 iB/iA	83692621	Black	Steel		1
2.3	Base plate ABB series 6600	83692622	Black	Steel		1
Strain relief cable star						
3	R-ZL3 70 Strain relief support including insert **	83951628	Black	PA/TPE		1
Spare part sets ***						
4.1	Mounting set 56/70	83692684				1
4.2	Spring set 56/70	83692688				1
4.3	Slider set EW/EWX 56	83692678				1
4.4	Slider set EW/EWX 70	83692680				1
* for additional robots/robot types on request						
** by request we assemble the core according to your specifications						
*** Set composition: see page 56						



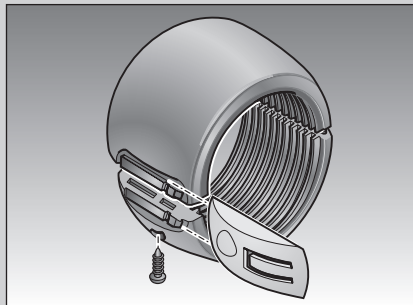
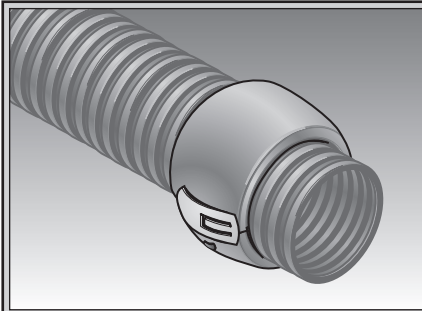
Module overview

Protector / conduit coupling



Protector in screwed design as strike guard for cable protection conduits.

1) Protector / Strike guard, elevated design

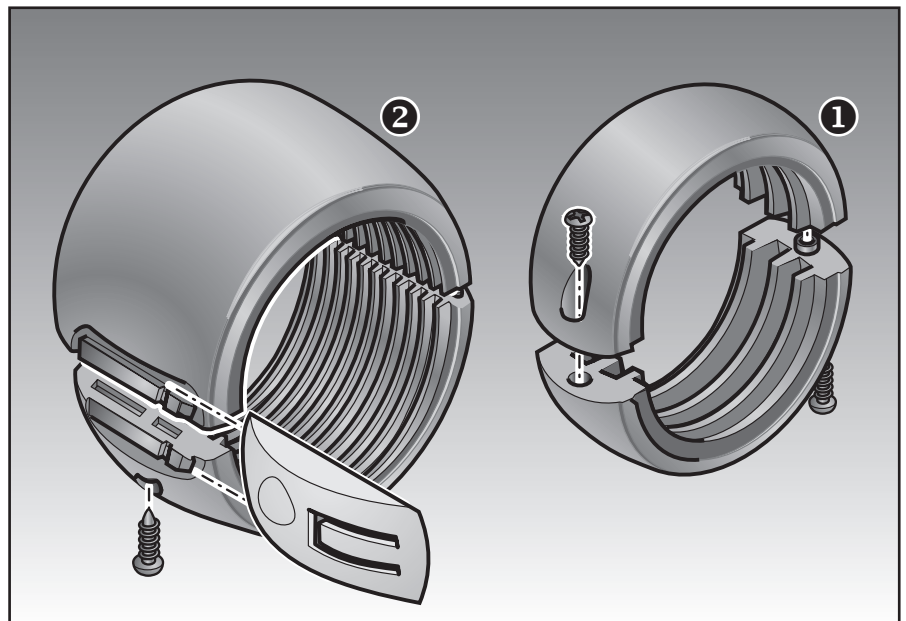


Protector and conduit coupling with sliding locking device and retaining screw as strike guard for cable protection conduits.

2) Protector / Strike guard, flat design

Protector / conduit coupling

The protectors in high design of type R-PRT 70 guard cable protection conduits and dresspacks against impacts and abrasion. The protectors and conduit couplings in flat design of type PR/SV serve as impact protection and allow the connection of two separate cable protection conduits.



Schematic representation, single components may deviate in details

Item	Type	Order no. in colour Black	Order no. in colour Grey	Order no. in colour Red	Order no. in colour Green	Version	Material	Murrflex NW	Pack qty.
------	------	---------------------------------	--------------------------------	-------------------------------	---------------------------------	---------	----------	----------------	--------------

Protector / Strike guard

1 High design for cable protection conduits with standard corrugation type EW-xx-70 Jumbo

1.1	R-PRT 70 sw	83951814	—	—	—	high	PA	NW 70	10
1.2	R-PRT 70 rot	—	—	83951824	—	high	PA	NW 70	10
1.3	R-PRT 70 grün	—	—	—	83951844	high	PA	NW 70	10

Protector / conduit coupling

2 Flat design for cable protection conduits with standard corrugation type EW-xx

2.1	PR/SV-EW 21	83691058	83691018	—	—	flat	PA	M25/P21	10
2.2	PR/SV-EW 29	83691060	83691020	—	—	flat	PA	M32/P29	10
2.3	PR/SV-EW 36	83691062	83691022	—	—	flat	PA	M40/P36	10
2.4	PR/SV-EW 48	83691064	83691024	—	—	flat	PA	M50/P48	10
2.5	PR/SV-EW 56	83691065	83691025	—	—	flat	PA	NW 56	5

2 Flat design for cable protection conduits with standard corrugation type EWX-xx

2.6	PR/SV-EWX 21	83691258	83691218	—	—	flat	PA	M25/P21	10
2.7	PR/SV-EWX 29	83691260	83691220	—	—	flat	PA	M32/P29	10
2.8	PR/SV-EWX 36	83691262	83691222	—	—	flat	PA	M40/P36	10
2.9	PR/SV-EWX 48	83691264	83691224	—	—	flat	PA	M50/P48	10
2.10	PR/SV-EWX 56	83691265	83691225	—	—	flat	PA	NW 56	5

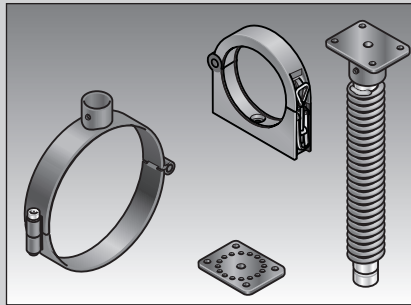
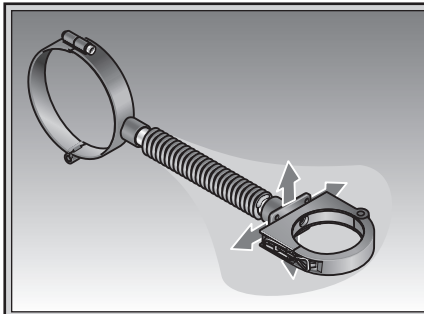
3 Flat design for cable protection conduits with high corrugation type EWX-xx-70 Jumbo and standard corrugation type EW-xx-70 Jumbo

3.1	PR/SV-UNI 70	83691267	—	—	—	flat	PA	NW 70	5
3.2	PR/SV-UNI 70	—	83691227	—	—	flat	PA	NW 70	5



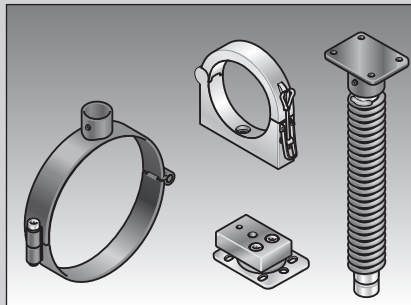
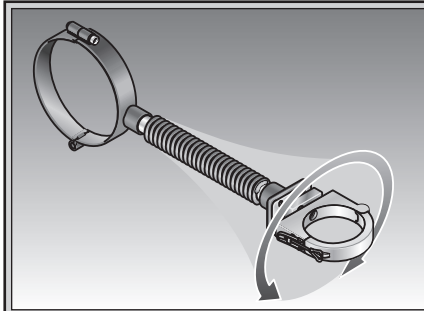
Module overview

Spring package (axis 4)



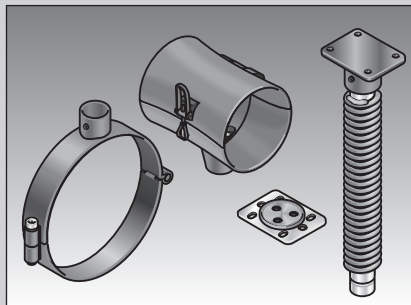
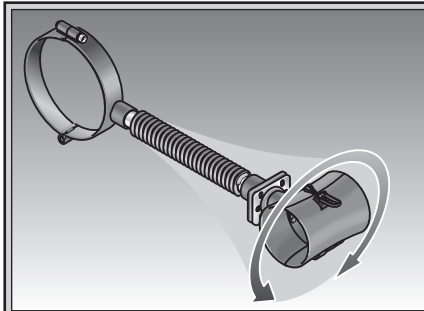
Spring package as flexible fastening option on axis 4.

- 1) Wrist support
- 2) Spring package
- 5) System holder
- 7) Base plate



Spring package as flexible fastening option on axis 4.

- 1) Wrist support
- 2) Spring package
- 3) Pivot bearing with adapter plate
- 5) System holder

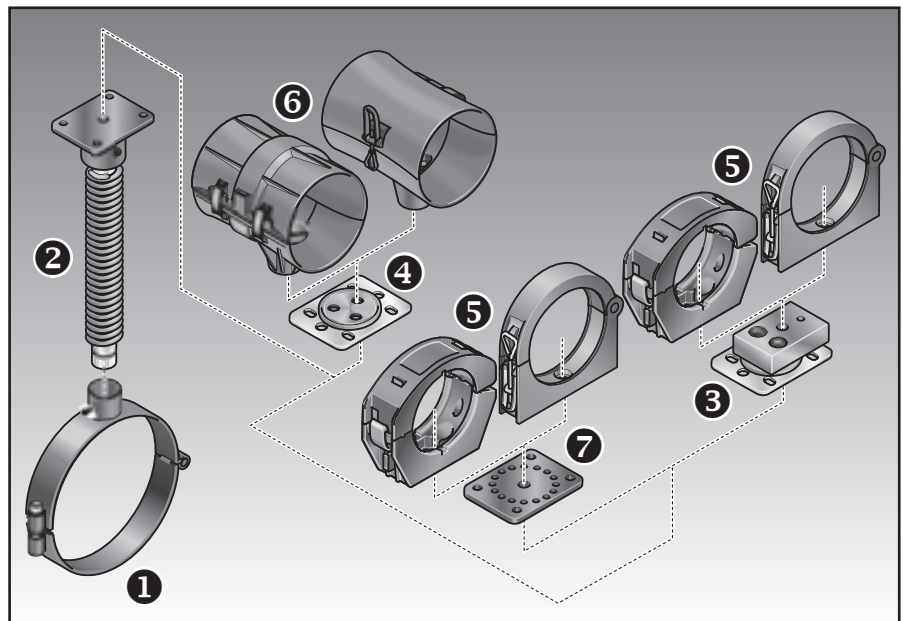


Spring package as flexible fastening option on axis 4.

- 1) Wrist support
- 2) Spring package
- 4) Pivot bearing
- 6) Trumpet

Spring package (axis 4)

The wrist support allows the spring package to be fixed on axis 4. The spring element offers freedom of movement for the dresspack. The spring element compensates for changes in length and avoid or reduces tension on the dresspack.



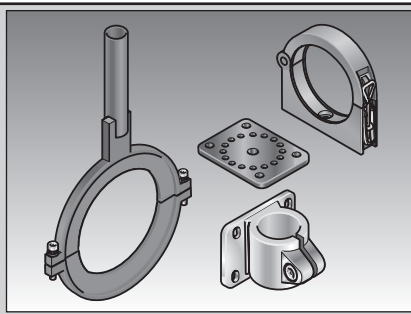
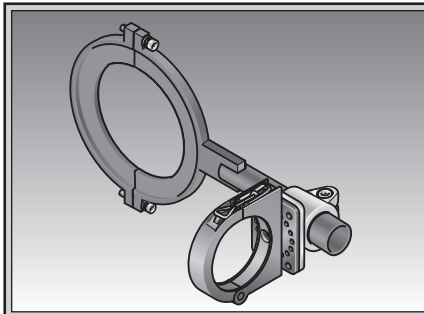
Schematic representation, single components may deviate in details

Item	Type	Order no.	Colour	Material	Version	Pack qty.
Wrist support without pipe						
1.1	R-SS0 227-1	83952650	Black	Steel		1
1.2	R-SS0 243-1	83952654	Black	Steel		1
1.3	R-SS0 305-1	83952662	Black	Steel		1
Spring package						
2.1	R-FDP 125	83952690	Silver/Black	Steel/Spring steel		1
2.2	R-FDP 250	83952694	Silver/Black	Steel/Spring steel		1
Pivot bearing						
3 with adapter plate	R-DZM	83952214	Silver/Black	Steel		1
4	R-DLM	83952210	Silver	Steel		1
System holder						
5.1	SH-P/M25-M32	83691462	Black	PA	without continuous fin	10
5.2	SH-P/M40-M50	83691460	Black	PA	without continuous fin	10
5.3	SH-F/M40-M50	83691450	Black	PA	with continuous fin	10
5.4	SH-PF/M40-M50	83691470	Black	PA	continuous fin enclosed	10
5.5	R-SHK 70	83951014	Black	PA		1
Trumpet						
6.1	R-TRO 70	83952414	Black	Aluminium		1
6.2	TRO 70	83692004	Black	PA		1
base plate						
7	R-FKG	83952620	Black	Steel		1



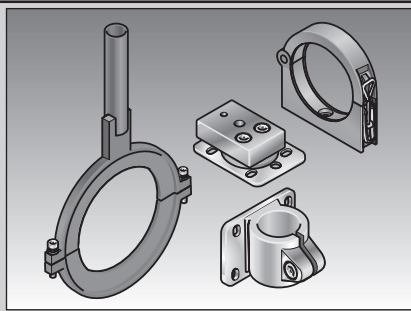
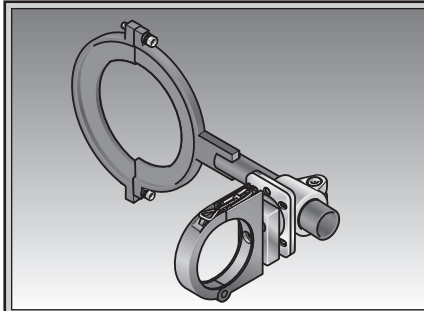
Module overview

Wrist support (axis 6)



Wrist support for mounting on axis 6.

- 1) Wrist support
- 2) System holder
- 3) Pipe clamp
- 5) Base plate



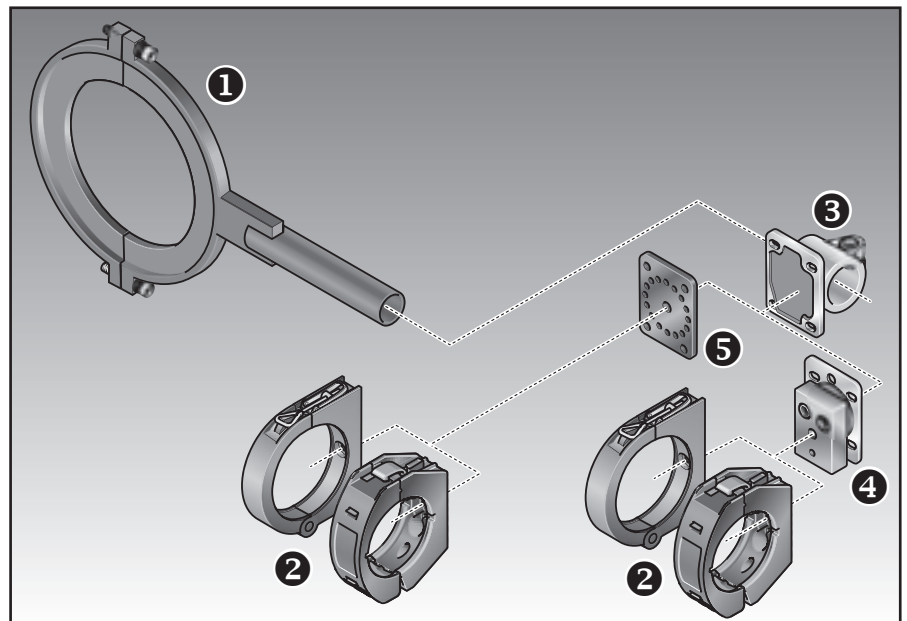
Wrist support for mounting on axis 6.

The system holder remains rotatable.

- 1) Wrist support
- 2) System holder
- 3) Pipe clamp
- 4) Pivot bearing with adapter plate

Wrist support (axis 6)

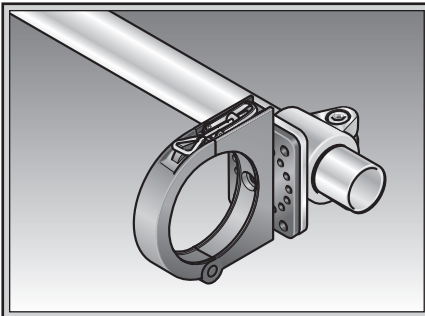
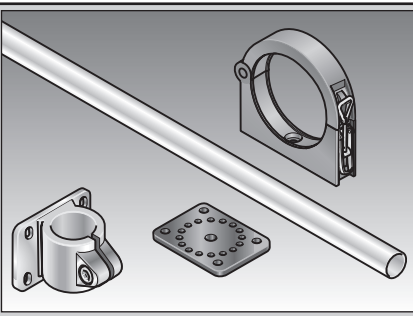
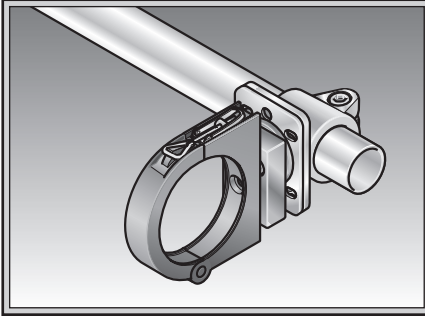
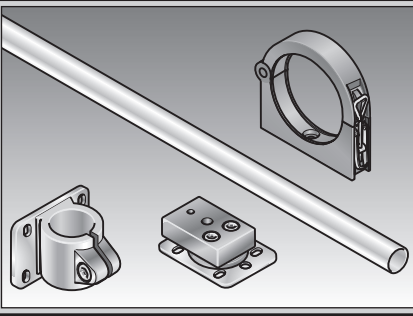
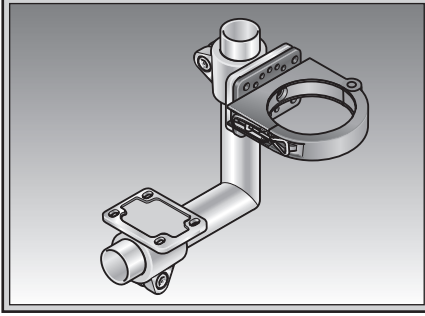
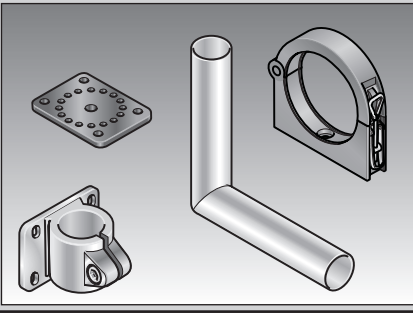
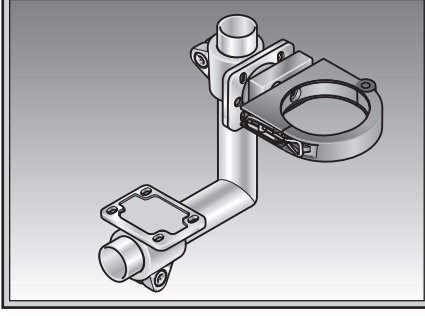
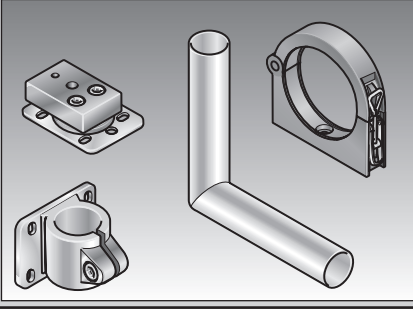
Wrist support for mounting on axis 6. Various add-on components can be mounted onto the wrist support with pipe clamp R-FKM 32.



Schematic representation, single components may deviate in details

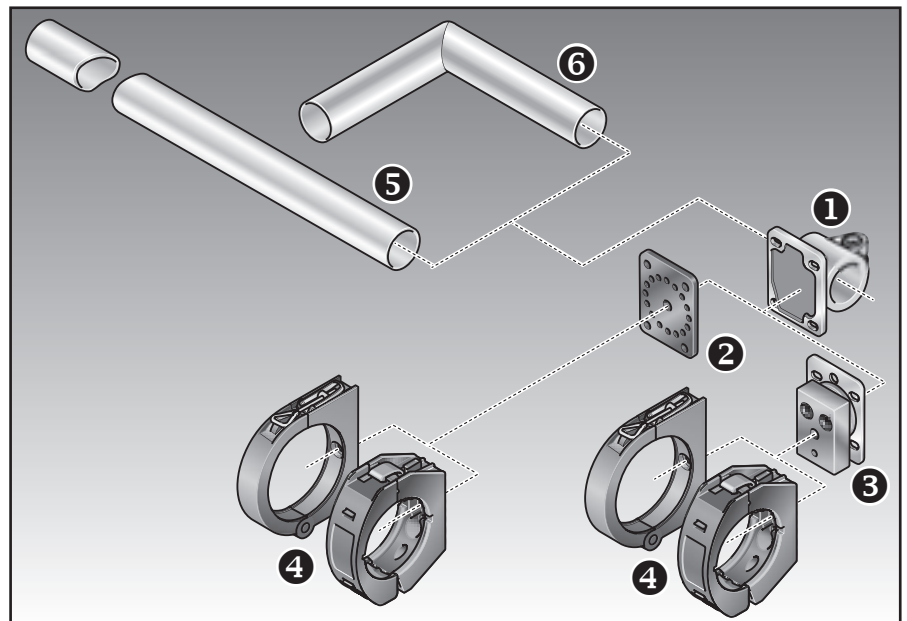
Item	Type	Order no.	Colour	Material	Version	Pack qty.
Wrist support with pipe						
1.1	R-SSR 160-1	83952628	Silver	Steel		1
1.2	R-SSR 160-2	83952630	Silver	Steel		1
1.3	R-SSR 190-1	83952638	Silver	Steel		1
1.4	R-SSR 200-1	83952642	Silver	Steel		1
1.5	R-SSR 250-1	83952646	Silver	Steel		1
System holder						
2.1	SH-P/M25-M32	83691462	Black	PA	without continuous fin	10
2.2	SH-P/M40-M50	83691460	Black	PA	without continuous fin	10
2.3	SH-F/M40-M50	83691450	Black	PA	with continuous fin	10
2.4	SH-PF/M40-M50	83691470	Black	PA	continuous fin enclosed	10
2.5	R-SHK 70	83951014	Black	PA		1
Pipe clamp						
3	R-FKM 32	83952610	Silver	Aluminium		1
Pivot bearing						
4 with adapter plate	R-DZM	83952214	Silver/Black	Steel		1
Base plate						
5	R-FKG	83952620	Black	Steel		1

Pipe clamp

		Pipe clamp for rigidly fixing corrugated conduits. 1) Pipe clamp 2) Base plate 4) System holder 5) Precision pipe, straight
		Pipe clamp with pivot bearing for flexible fastening of corrugated conduits. 1) Pipe clamp 3) Pivot bearing with adapter plate 4) System holder 5) Precision pipe, straight
		Pipe clamp for rigidly fixing corrugated conduits. 1) Pipe clamp 2) Base plate 4) System holder 6) Precision pipe 90°
		Pipe clamp with pivot bearing for flexible fastening of corrugated conduits. 1) Pipe clamp 3) Pivot bearing with adapter plate 4) System holder 6) Precision pipe 90°

Pipe clamp

A pipe clamp of type R-FKM 40 is required to affix the precision pipes. The mounting flange serves to retain the pivot bearing R-DZM respectively the base plate R-FKG.



Schematic representation, single components may deviate in details

Item	Type	Order no.	Colour	Material	Version	Pack qty.
Pipe clamp						
1	R-FKM 40	83952612	Silver	Aluminium		1
base plate						
2	R-FKG	83952620	Black	Steel		1
pivot bearing with adapter plate						
3	R-DZM	83952214	Silver/Black	Steel		1
System holder						
4.1	SH-P/M25-M32	83691462	Black	PA	without continuous fin	10
4.2	SH-P/M40-M50	83691460	Black	PA	without continuous fin	10
4.3	SH-F/M40-M50	83691450	Black	PA	with continuous fin	10
4.4	SH-PF/M40-M50	83691470	Black	PA	continuous fin enclosed	10
4.5	R-SHK 70	83951014	Black	PA		1
Precision pipe						
5	Precision pipe, straight					
5.1	R-RG40 1000	83952810	Silver	Steel		1
5.2	R-RG40 1200	83952814	Silver	Steel		1
5.3	R-RG40 1500	83952818	Silver	Steel		1
6	Precision pipe, angled 90°					
6.1	R-RW40 250	83952830	Silver	Steel		1
6.2	R-RW40 350	83952834	Silver	Steel		1



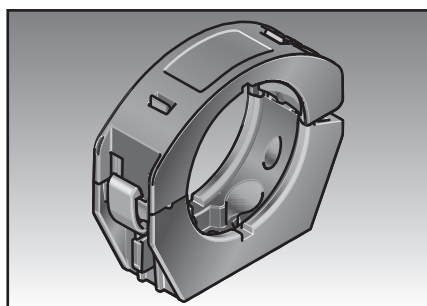
Fixing elements with accessories



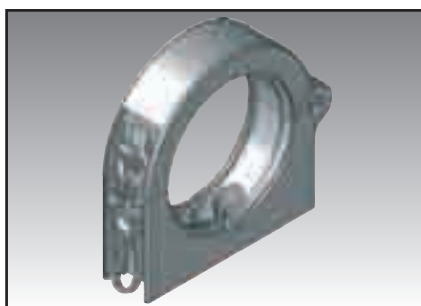


PA

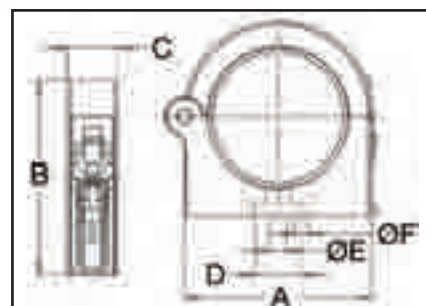
- **System holder SH-P:** Without continuous fin, allows free radial rotation and axial dynamic deflection of the conduit in all directions up to a maximum of 20°.
- **System holder SH-F:** With continuous fin, statically anchored system for precision guiding of the conduit, free rotation is maintained.
- **System support R-SHK:** One-piece holder with toggle fastener for easy opening and closing.



SH-F/M40-M50



R-SHK 70

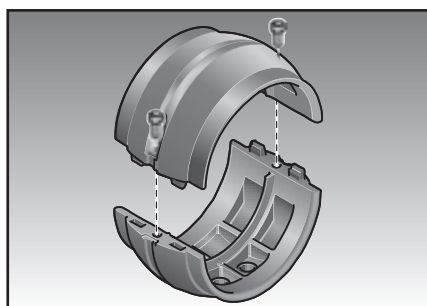
30



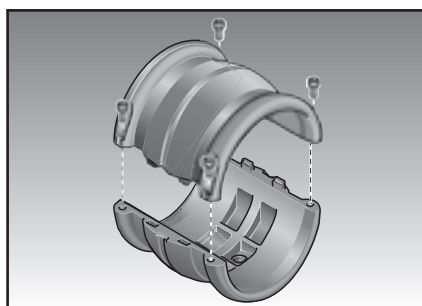
PA

Centre ball joints allow dynamic use with high flexibility of the dresspack at the attachment point, as well as rigid applications with securely guided cables and conduits, with or without strain relief.

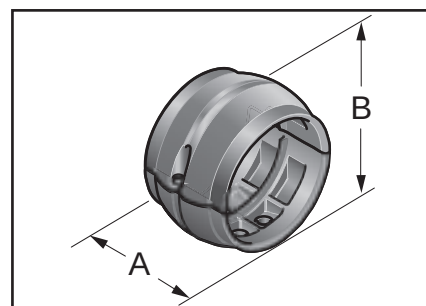
- For robot applications and handling devices
- Quick and easy to assemble and to disassemble



Centre ball joint type KMG-F



Centre ball joint type KMG-G

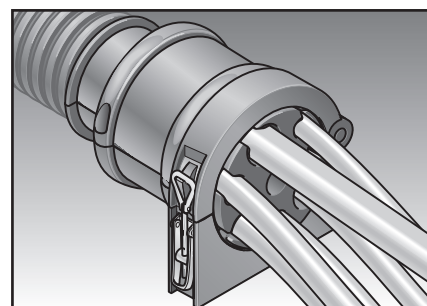
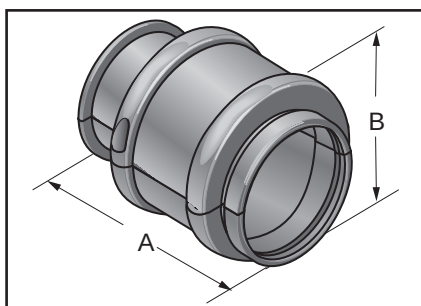


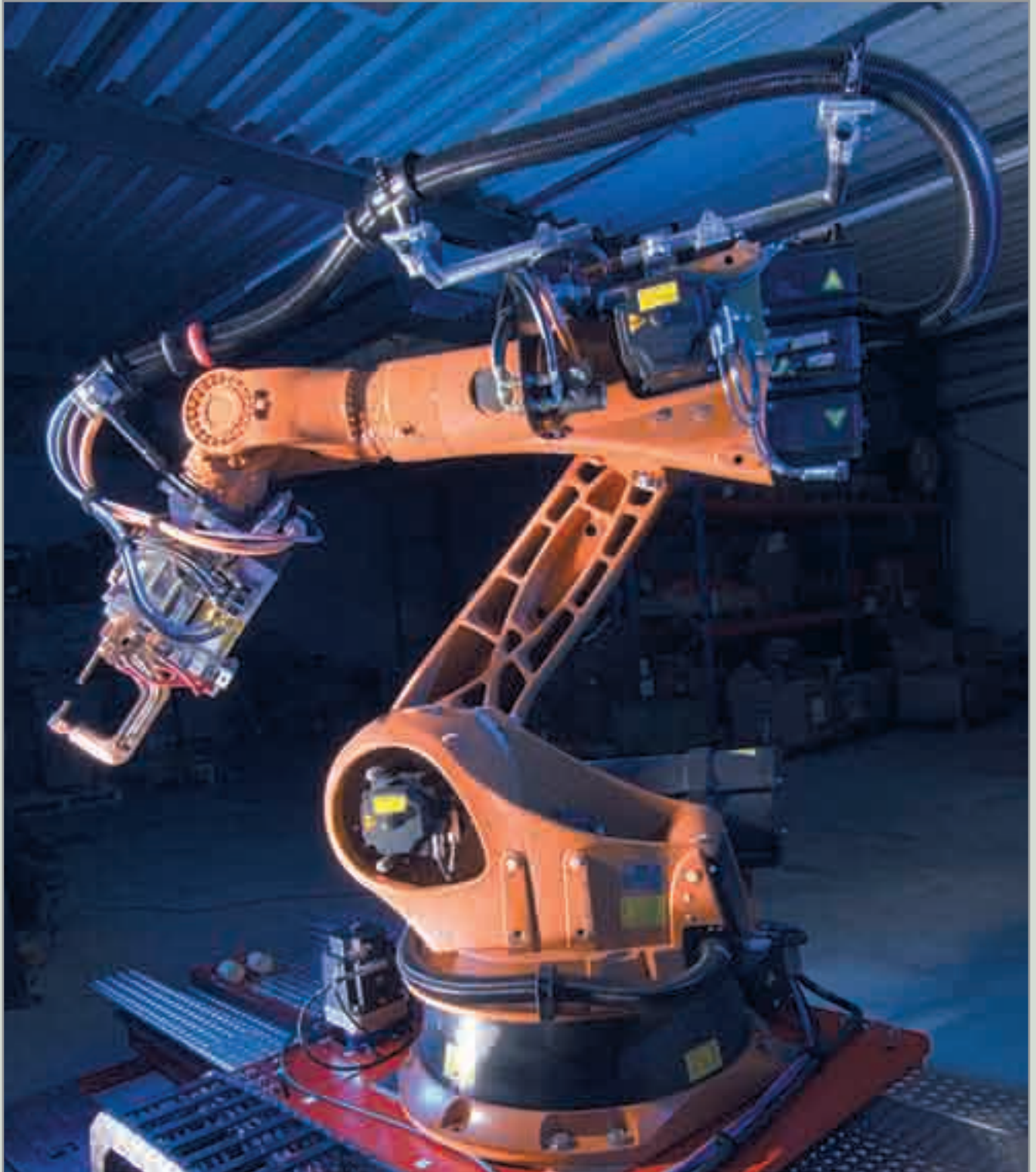
Schematic dimensioning

32



The telescopic joint provides approx. 30 mm of length compensation. The conduit connection piece can be swung in roughly 15° in all directions and hence adjusts for the movement of the dresspack.

[illegible]



Feeder plate

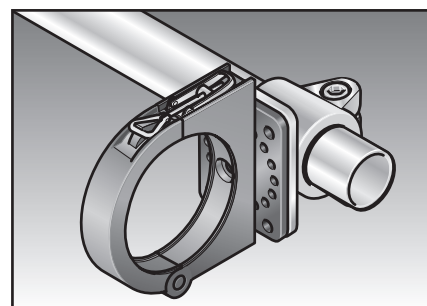




The base plate serves to hold the system holders of type SH as well as type R-SHK. All system holders can be fixed to the base plate at an angle of 45° using the threaded holes on the inner ring. The mounting drill holes are lined up to fit pipe clamp of type R-FKM.

-

A 3D perspective diagram of a rectangular perforated plate. The plate has a grid of circular holes. Dimension A is the length, B is the width, and C is the thickness. A circular hole is shown in cross-section, with D representing the hole diameter and E representing the plate thickness.

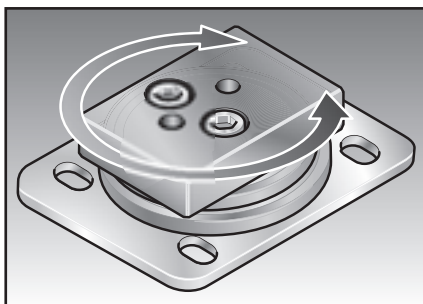
38

Pivot bearing

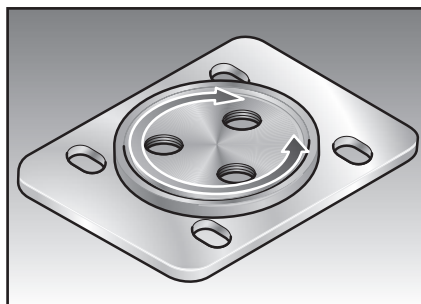


Steel

- R-DZM Pivot bearing with adapter plate for mounting system holders of types SH and R-SHK / freely rotatable, without limitation of the rotation angle
- R-DLM pivot bearing individual for use with trumpet/freely rotatable, without limitation of the rotation angle



R-DZM (schematic representation)



R-DLM



Type	Order no.	Colour	Material	Length Pivot bearing mm	Width Pivot bearing mm	Through-holes Pivot bearing mm	Pack qty.
R-DZM	83952214	Silver/Black	Steel	120.0	85.0	8.5	1
R-DLM	83952210	Silver	Steel	120.0	85.0	8.5	1

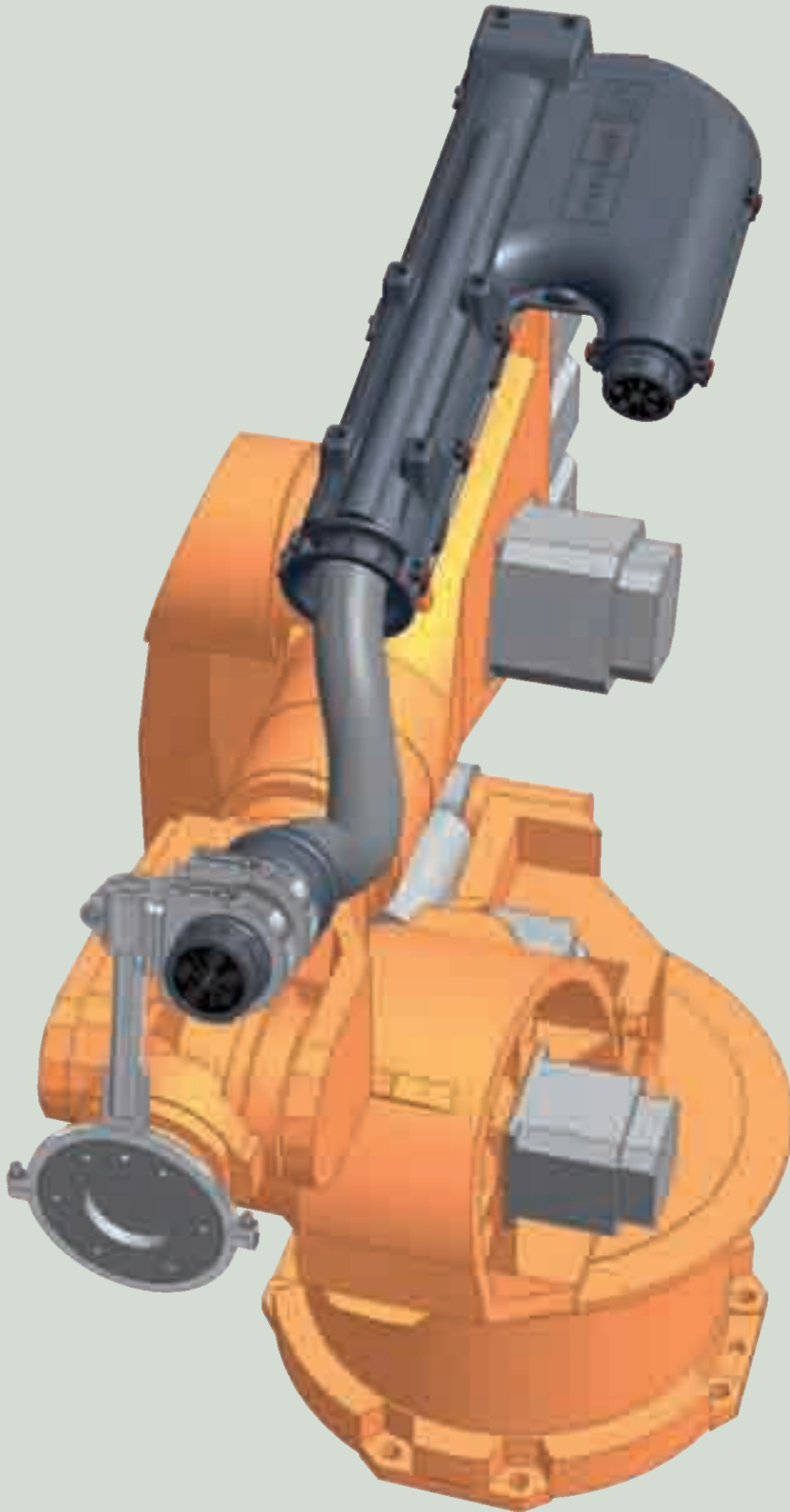
Adapter plate for mounting system holders

SH-P/M25-M32	Arranged axially and rotated 40° in Ø 6 mm hole (1 x threaded hole and 1 x cylinder hole)
SH-P/M25-M32	Arranged axially with 2 x cylinder pins* Ø 6 mm in threaded hole M8
SH-P/M25-M32	Arranged asymmetrically with cylinder pin* Ø 6 mm in hole (1 x threaded hole and 1 x cylinder pin*)
SH-P/SH-F/SH-PF/M40-M50	Arranged symmetrically with 2 x M8 socket head cap screws in M8 hole (additional optional fastening using cylindrical pin*)
R-SHK 70	Arranged axially with 2 x M8 hexagon socket head screw (additional optional fastening using 2 x cylindrical pins* 6 mm drilled hole)

* cylindrical pins are not available from Murrplastik

The following system holders from third-party manufacturers may be assembled:

System holder by Leoni with 2 x threaded holes M10
System holder by KUKA, REIKU and Robotec

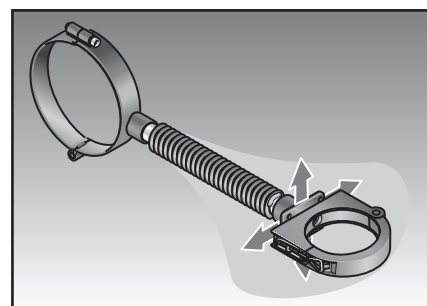
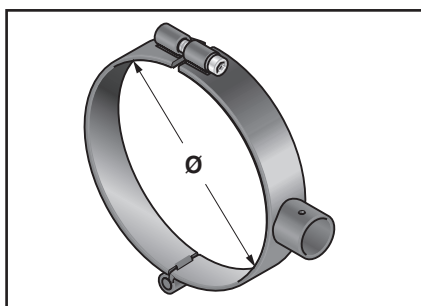


Wrist support





The R-SSO wrist support serves to provide a fixing point on axis 4. With the matching spring package of type R-FDP, a flexible fixing point can be created for the dresspack.

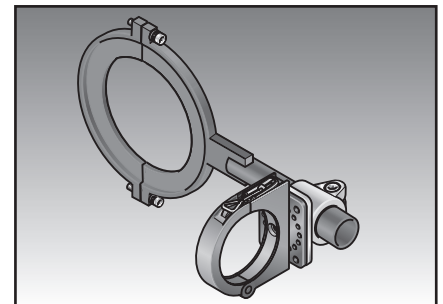
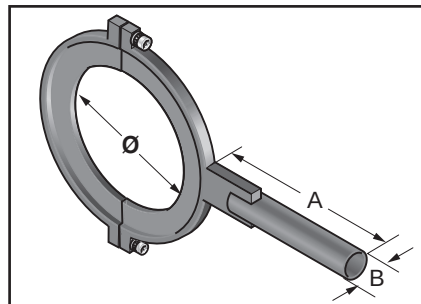
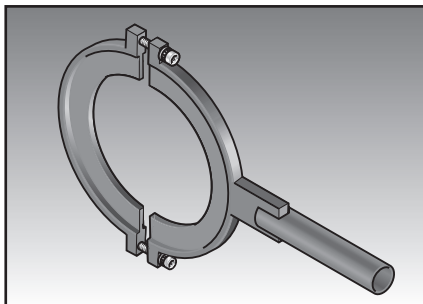
[illegible]

Wrist support with pipe (axis 6)



Galvanised steel

The R-SSR wrist support serves to provide a fixing point on axis 6. Addition fastening elements can be affixed to the wrist support as required.

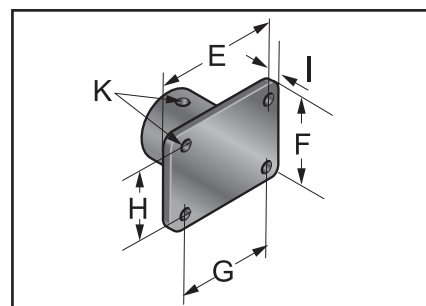
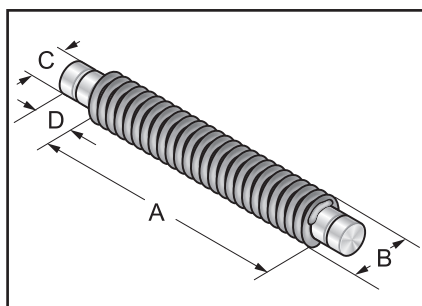


R-SSR

[illegible]



The spring package of type R-FDP can be combined with wrist support of type R-SSO and is mounted onto axis 4. It serves as length compensation for mounted dresspacks that must follow the movements of the robots.

[illegible]

Pipe clamps

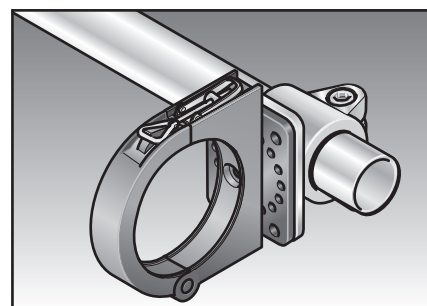




Pipe clamp



The pipe clamp R-FKM can be used to connect wrist supports of type R-SSR and straight or angled R-Rx precision pipes at an angle of 90° to other components. Clamping takes place on the entire pipe circumference. With hub flange for pivot bearings and base plate.



R-FKM

[illegible]

Protector / conduit coupling





Single component

Protector / conduit coupling



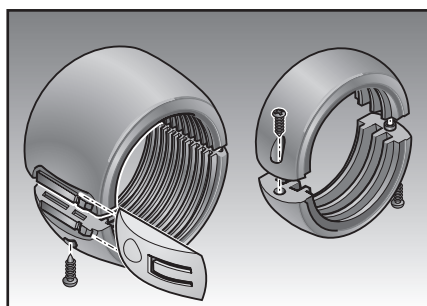
PA

The protectors in high design of type R-PRT 70 guard cable protection conduits and dress-packs against impacts and abrasion. This significantly extends the service life of the dress-pack.

- High design with screw fixing

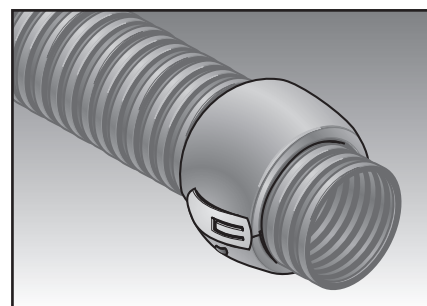
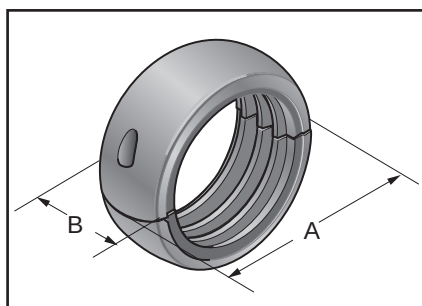
The protectors and conduit couplings in flat design of type PR/SV serve as impact protection and allow the connection of two separate cable protection conduits.

- Flat design with sliding locking device and retaining screw



PR/SV

R-PRT



Type	Order no. Colour Black	Order no. Colour Grey	Order no. Colour Red	Order no. Colour Green	Version	Material	Murrflex NW	A mm	B mm	Pack qty.
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Protector / Strike guard

High design for cable protection conduits **with standard corrugation**, type EW-xx-70 Jumbo

R-PRT 70 sw	83951814	—	—	—	high	PA	NW 70	109.0	33.0	10
R-PRT 70 rot	—	—	83951824	—	high	PA	NW 70	109.0	33.0	10
R-PRT 70 grün	—	—	—	83951844	high	PA	NW 70	109.0	33.0	10

Protector / conduit coupling

Flat design for cable protection conduits **with standard corrugation**, type EW-xx

PR/SV-EW 21	83691058	83691018	—	—	flat	PA	M25/P21	51.6	51.2	10
PR/SV-EW 29	83691060	83691020	—	—	flat	PA	M32/P29	57.9	51.0	10
PR/SV-EW 36	83691062	83691022	—	—	flat	PA	M40/P36	66.0	51.5	10
PR/SV-EW 48	83691064	83691024	—	—	flat	PA	M50/P48	78.0	49.5	10
PR/SV-EW 56	83691065	83691025	—	—	flat	PA	NW 56	90.8	51.0	5

Flat design for cable protection conduits **with high corrugation**, type EWX-xx

PR/SV-EWX 21	83691258	83691218	—	—	flat	PA	M25/P21	51.6	51.2	10
PR/SV-EWX 29	83691260	83691220	—	—	flat	PA	M32/P29	57.9	51.0	10
PR/SV-EWX 36	83691262	83691222	—	—	flat	PA	M40/P36	66.0	51.5	10
PR/SV-EWX 48	83691264	83691224	—	—	flat	PA	M50/P48	78.0	49.5	10
PR/SV-EWX 56	83691265	83691225	—	—	flat	PA	NW 56	90.8	51.0	5

Flat design for cable protection conduits **with high corrugation**, type EWX-xx-70 Jumbo **and standard corrugation**, type EW-xx-70 Jumbo

PR/SV-UNI 70	83691267	83691227	—	—	flat	PA	NW 70	103.5	51.4	5
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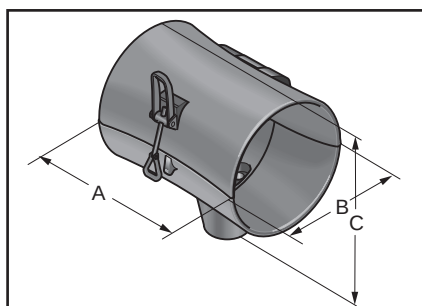
Trumpet





Trumpet for guiding of dresspacks.

-

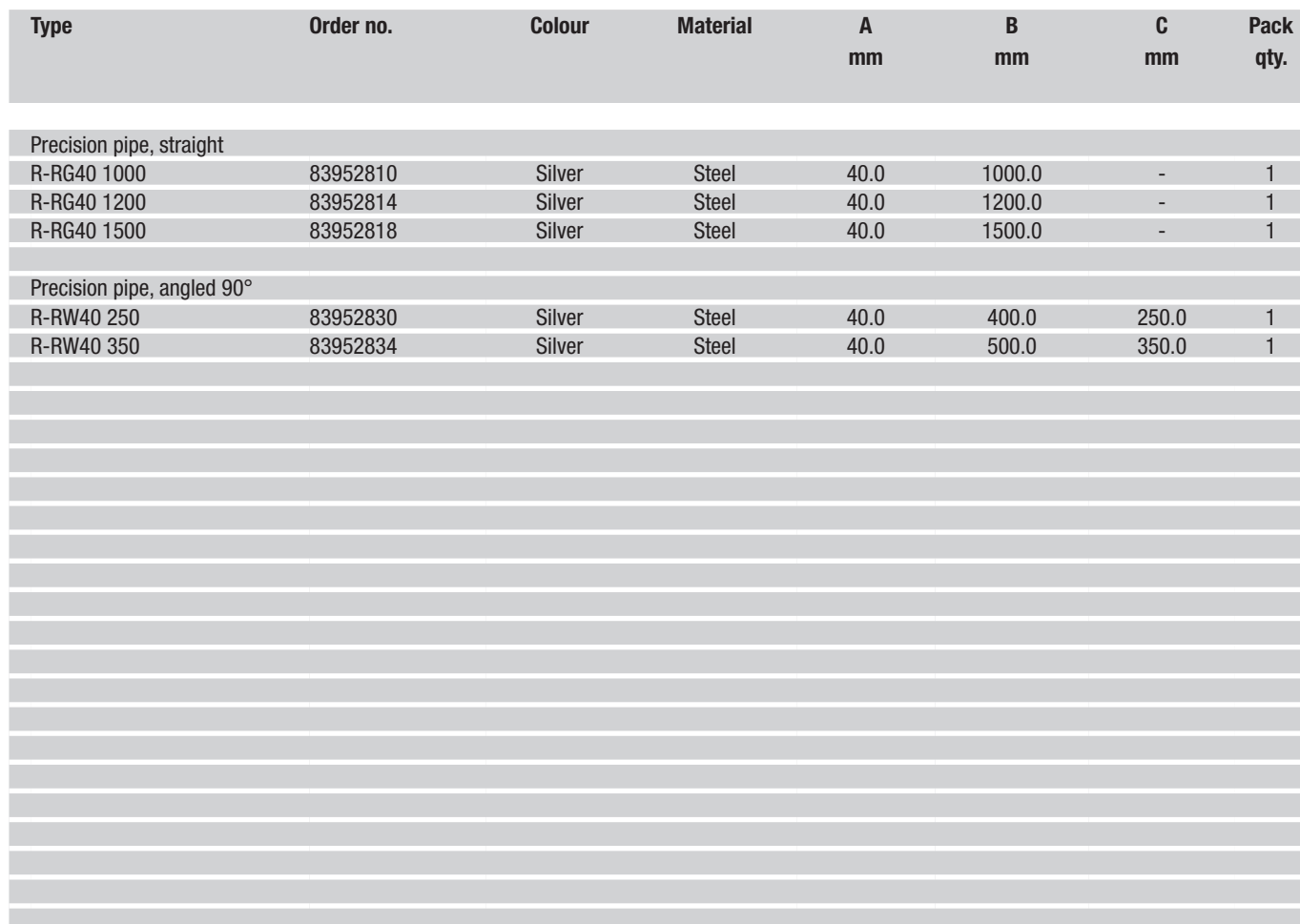
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Precision pipe





Various precision pipes are available as extensions. These can be combined with pipe clamp R-FKM 40.



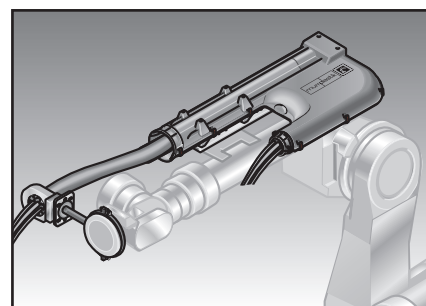
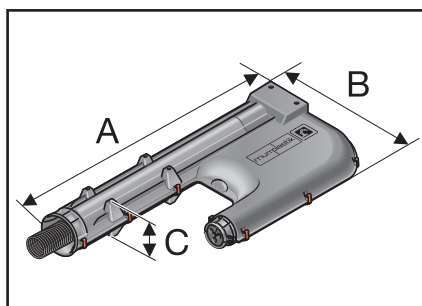
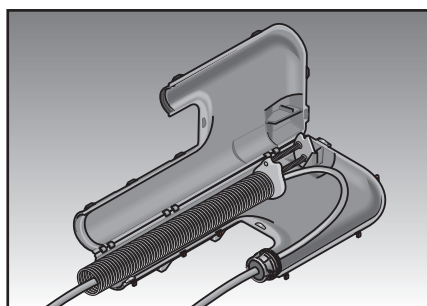
R-Tec Box with spare parts and accessories





With the R-Tec Box, Murrplastik has succeeded in creating a new system for the optimal feed-through of energy packages from axis 3 to 6 in industrial robots. In this specially designed housing with the unique, integrated spring return system, the energy packet is transported safely and effectively in a low-wear manner within the smallest space.

- Can be adapted to a variety of robot types
- Quick and easy assembly
- Allows the energy supply to be changed quickly, spring package can be easily removed
- Minimum operating noise



R-Tec Box

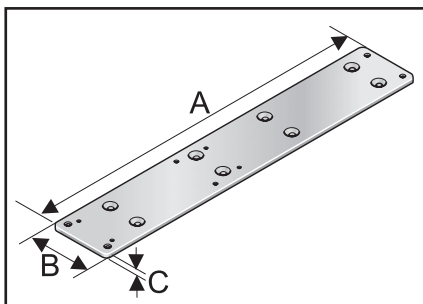
[illegible]

System plate for R-Tec Box (axis 4)

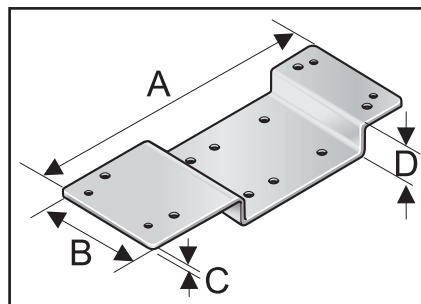


Steel, coated

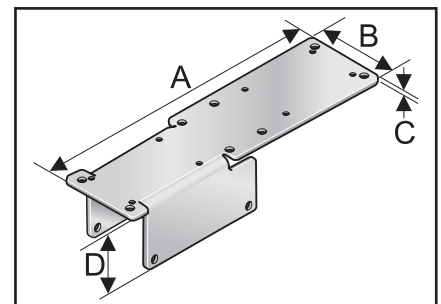
System plate for mounting a R-Tec Box on axis 4. Adjusted to production series of various manufacturers.



Base plate Kuka



Base plate Fanuc



Base plate ABB

Type	Order no.	Colour	Material	A mm	B mm	C mm	D mm	Pack qty.
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Base plate matching R-Tec Box 36/48/56/70

Base plate Kuka series Quantec/series 2000	83692620	Black	Steel	760.0	130.0	8.0	–	1
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Base plate Fanuc series 2000 iB/iA	83692621	Black	Steel	347.0	130.0	6.0	42.0	1
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Base plate ABB series 6600	83692622	Black	Steel	500.0	140.0	6.0	116.0	1
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for additional robots/robot types on request



Single component

Spare part sets for R-Tec Box



See article

Spare part sets for R-Tec Boxes of all conduit sizes.

Type	Order no.	Components of set	Pack qty.
Spare part sets for R-Tec Box small:			
Mounting set 36/48	83692682	Mounting accessories, 24-parts	1
Spring set 36/48	83692686	2 x tension spring, shot peened, 4 x spring washer end piece, Mounting accessories, 8-parts	1
Slider set EW 36	83692670	1 x slider EW 36, mounting accessories, 4-parts	1
Slider set EWX 36	83692672	1 x slider EWX 36, mounting accessories, 4-parts	1
Slider set EW 48	83692674	1 x slider EW 48, mounting accessories, 4-parts	1
Slider set EWX 48	83692676	1 x slider EWX 48, mounting accessories, 4-parts	1
Spare part sets for R-Tec Box big:			
Mounting set 56/70	83692684	Mounting accessories, 24-parts	1
Spring set 56/70	83692688	2 x tension spring, shot peened, 4 x spring washer end piece, Mounting accessories, 8-parts	1
Slider set EW/EWX 56	83692678	1 x slider EW/EWX 56, mounting accessories, 4-parts	1
Slider set EW/EWX 70	83692680	1 x slider EW/EWX 70, mounting accessories, 4-parts	1
Strain relief support for R-Tec Box 36/48/56/70 including insert for self-made assembly			
R-ZL3 70 Strain relief support including insert*	83951628	PA/TPE, black	1
* by request we assemble the core according to your specifications			

Conduits for gas and liquid media with accessories

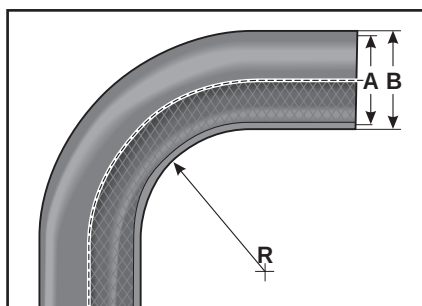
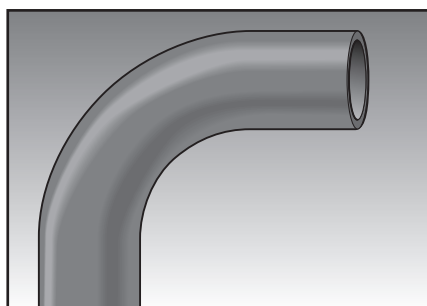




 -40 – 80 °C

 PUR

- free of paint-wetting impairment substances (PWIS)
- silicon-free, UV resistant, flexible in cold conditions
- resistant to oils, oxygen, ozone, acids and diluted alkaline

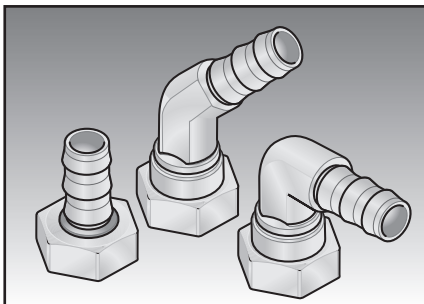
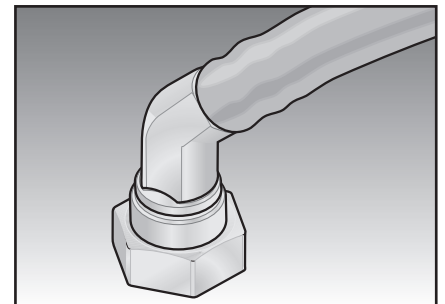
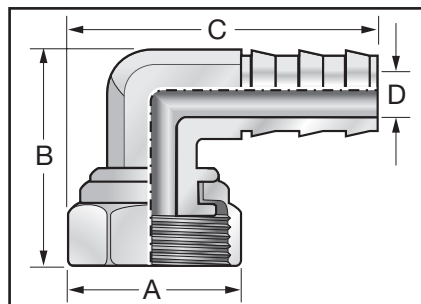


R-MS

[illegible]

Hose nozzle type R-MSA

Hose nozzle for assembling conduits for gas and liquid media, type R-MS. The conduit for gas and liquid media is pushed onto the male coupling to the stop and locks automatically. An additional hose clamp, for applications of up to a maximum operating pressure in the conduits for gas and liquid media is not required.

**MSA**[illegible]



Cable protection conduit





Single component

Cable protection conduit, type EW-PAE



-40 – 120 °C, transient 150 °C



Mod. polyamide PA 12



HB

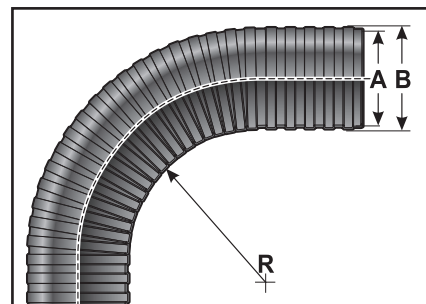
Cable protection conduit for highest dynamic and medium mechanical stresses. Ideally suited for heavy-duty applications in robot engineering.

Characteristics:

- for high stresses in robotics
- high abrasion resistance

Applications:

- robots
- handling systems
- in cable drag chains



EW-PAE

Type	Order no.	Colour	Material	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PAE-06	83181650	Black	PA	7.0	10.0	15.0	40.0	1.8	50
EW-PAE-M10/P7	83181652	Black	PA	8.2	11.5	20.0	45.0	2.1	50
EW-PAE-M12/P9	83181654	Black	PA	9.8	12.7	21.0	51.0	2.6	50
EW-PAE-M16/P11	83181656	Black	PA	12.1	15.7	28.0	68.0	3.6	50
EW-PAE-M20/P16	83181658	Black	PA	15.7	21.0	36.0	70.0	5.3	50
EW-PAE-M25/P21	83181660	Black	PA	21.7	28.2	49.0	109.0	9.0	50
EW-PAE-M32/P29	83181662	Black	PA	27.4	34.2	67.0	142.0	12.2	25
EW-PAE-M40/P36	83181664	Black	PA	35.3	42.3	81.0	191.0	16.2	25
EW-PAE-M50/P48	83181666	Black	PA	46.3	53.9	102.0	237.0	22.3	25
EW-PAE-56 Jumbo	83181678	Black	PA	56.0	68.0	-	-	37.0	25
EW-PAE-70 Jumbo	83181680	Black	PA	66.0	78.8	200.0	390.0	48.0	25
EW-PAE-95 Jumbo	83181682	Black	PA	89.5	105.2	265.0	500.0	80.0	10
EW-PAE-06	83181610	Grey	PA	7.0	10.0	15.0	40.0	1.8	50
EW-PAE-M10/P7	83181612	Grey	PA	8.2	11.5	20.0	45.0	2.1	50
EW-PAE-M12/P9	83181614	Grey	PA	9.8	12.7	21.0	51.0	2.6	50
EW-PAE-M16/P11	83181616	Grey	PA	12.1	15.7	28.0	68.0	3.6	50
EW-PAE-M20/P16	83181618	Grey	PA	15.7	21.0	36.0	70.0	5.3	50
EW-PAE-M25/P21	83181620	Grey	PA	21.7	28.2	49.0	109.0	9.0	50
EW-PAE-M32/P29	83181622	Grey	PA	27.4	34.2	67.0	142.0	12.2	25
EW-PAE-M40/P36	83181624	Grey	PA	35.3	42.3	81.0	191.0	16.2	25
EW-PAE-M50/P48	83181626	Grey	PA	46.3	53.9	102.0	237.0	22.3	25
EW-PAE-70 Jumbo	83181640	Grey	PA	66.0	78.8	200.0	390.0	48.0	25
EW-PAE-95 Jumbo	83181642	Grey	PA	89.5	105.2	265.0	500.0	80.0	10

The variants highlighted in colour are ideally combinable with the system holders and parts specified in this catalogue.

Cable protection conduit type EWX-PAE (high corrugation)



-40 – 120 °C, transient 150 °C



Mod. polyamide PA 12



HB

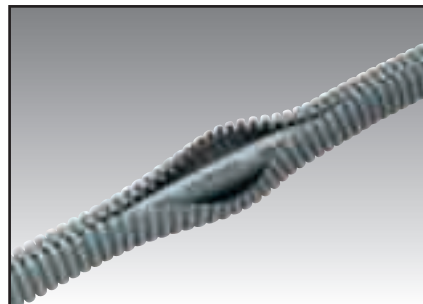
This cable protection conduit was developed specially for robot applications subject to extreme movements. The special corrugated geometry provides improved characteristics: Extremely small bending radii with extremely high flexibility and extreme flexural fatigue strength. It is also highly resistant to abrasion and offers high angle consistency. Also available with longitudinal slit.

Applications:

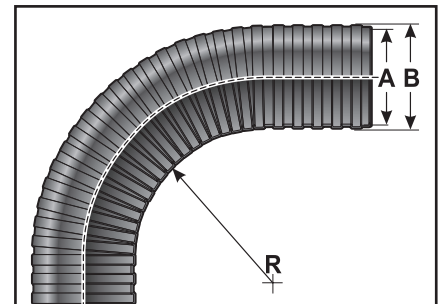
- robots
- handling systems
- in cable drag chains



EWX-PAE



EWX-PAE-LS



Type	Order no.	Colour	Material	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EWX-PAE-M25/P21	83182058	Black	PA	19.8	28.1	49.0	104.0	11.0	50
EWX-PAE-M32/P29	83182060	Black	PA	24.1	34.5	57.0	117.0	13.8	25
EWX-PAE-M40/P36	83182062	Black	PA	29.7	42.1	71.0	146.0	18.2	25
EWX-PAE-M50/P48	83182064	Black	PA	38.0	54.1	87.0	167.0	24.0	25
EWX-PAE 56 Jumbo	83182078	Black	PA	52.0	68.0	95.0	220.0	40.0	25
EWX-PAE 70 Jumbo	83182080	Black	PA	64.0	80.0	115.0	235.0	55.0	25
EWX-PAE 95 Jumbo	83182082	Black	PA	87.0	105.0	220.0	450.0	92.5	10
EWX-PAE-M25/P21	83182018	Grey	PA	19.8	28.1	49.0	104.0	11.0	50
EWX-PAE-M32/P29	83182020	Grey	PA	24.1	34.5	57.0	117.0	13.8	25
EWX-PAE-M40/P36	83182022	Grey	PA	29.7	42.1	71.0	146.0	18.2	25
EWX-PAE-M50/P48	83182024	Grey	PA	38.0	54.1	87.0	167.0	24.0	25
With longitudinal slit									
EWX-PAE-LS M25/P21	83182258	Black	PA	19.8	28.1	49.0	104.0	11.0	50
EWX-PAE-LS M32/P29	83182260	Black	PA	24.1	34.5	57.0	117.0	13.8	25
EWX-PAE-LS M40/P36	83182262	Black	PA	29.7	42.1	71.0	146.0	18.2	25
EWX-PAE-LS M50/P48	83182264	Black	PA	38.0	54.1	87.0	167.0	24.0	25
EWX-PAE-LS 56 Jumbo	83182278	Black	PA	52.0	68.0	95.0	220.0	40.0	25
EWX-PAE-LS 70 Jumbo	83182280	Black	PA	64.0	80.0	115.0	235.0	55.0	25

KE installation aid for longitudinally slit conduit Order no. 83729010

The variants highlighted in colour are ideally combinable with the system holders and parts specified in this catalogue.



Single component

Cable protection conduit, type EW-HY



-50 – 150 °C, transient 180 °C



Thermoplastic elastomer

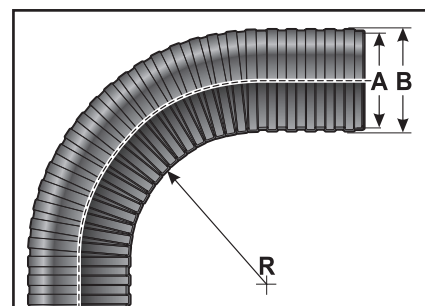


HB

Cable protection conduit for medium mechanical stresses and maximum flexibility. Ideal for robot applications at higher ambient temperatures.

Applications:

- robots
- handling systems
- in cable drag chains
- Vehicle engineering



EW-HY

Type	Order no.	Colour	Material	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-HY-M12/P9	83121050	Black	TPE	9.9	12.5	21.0	51.0	2.6	50
EW-HY-M16/P11	83121052	Black	TPE	12.3	15.5	28.0	68.0	3.4	50
EW-HY-M20 / P16S *	83121054	Black	TPE	16.6	21.0	38.0	95.0	6.3	50
EW-HY-M25/P21	83121056	Black	TPE	21.7	28.0	49.0	109.0	9.0	50
EW-HY-M32/P29	83121058	Black	TPE	27.2	34.1	67.0	142.0	12.5	25
EW-HY-M40/P36	83121060	Black	TPE	34.7	42.0	81.0	191.0	14.8	25
EW-HY-M50/P48	83121062	Black	TPE	46.9	53.7	102.0	237.0	20.0	25
EW-HY-70 Jumbo	83121066	Black	TPE	66.5	79.5	140.0	330.0	51.5	25
EW-HY-95 Jumbo	83121070	Black	TPE	91.0	105.5	150.0	400.0	90.0	10
EW-HY-M12/P9	83121010	Grey	TPE	9.9	12.5	21.0	51.0	2.6	50
EW-HY-M16/P11	83121012	Grey	TPE	12.3	15.5	28.0	68.0	3.4	50
EW-HY-M20 / P16S *	83121014	Grey	TPE	16.6	21.0	38.0	95.0	6.3	50
EW-HY-M25/P21	83121016	Grey	TPE	21.7	28.0	49.0	109.0	9.0	50
EW-HY-M32/P29	83121018	Grey	TPE	27.2	34.1	67.0	142.0	12.5	25
EW-HY-M40/P36	83121020	Grey	TPE	34.7	42.0	81.0	191.0	14.8	25
EW-HY-M50/P48	83121022	Grey	TPE	46.9	53.7	102.0	237.0	20.0	25
EW-HY-70 Jumbo	83121026	Grey	TPE	66.5	79.5	140.0	330.0	51.5	25
EW-HY-95 Jumbo	83121030	Grey	TPE	91.0	105.5	150.0	400.0	90.0	10

* Narrow corrugation

The variants highlighted in colour are ideally combinable with the system holders and parts specified in this catalogue.



Single component

Cable protection conduit, type EW-PRF



-50 – 105 °C, transient 150 °C



Mod. polyamide PA 12

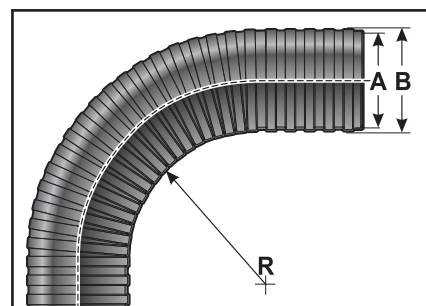


V0

Cable protection conduit for medium to high mechanical stresses and high flexibility. UR-listed self-extinguishing conduit approved for use in railway engineering. Particularly suited for dynamic routing in railway vehicles.

Applications:

- robots
- handling systems
- in cable drag chains
- railway engineering



EW-PRF

Type	Order no.	Colour	Material	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PRE-M10/P7	83181252	Black	PA	8.4	11.6	21.0	46.0	2.1	50
EW-PRF-M12/P9	83181254	Black	PA	9.8	12.9	22.0	51.0	2.6	50
EW-PRF-M16/P11	83181256	Black	PA	12.2	15.8	28.0	68.0	3.6	50
EW-PRF-M20/P16	83181258	Black	PA	15.6	21.1	38.0	95.0	5.3	50
EW-PRF-M20 / P16S *	83181260	Black	PA	15.7	21.1	35.0	90.0	5.6	50
EW-PRF-M25/P21	83181262	Black	PA	22.3	28.3	49.0	109.0	9.6	50
EW-PRF-M25 / P21S *	83181462	Black	PA	23.1	28.0	44.0	104.0	9.6	50
EW-PRF-M32/P29	83181264	Black	PA	27.5	34.5	67.0	142.0	12.2	25
EW-PRF-M32 / P29S *	83181464	Black	PA	29.2	34.5	62.0	132.0	14.0	25
EW-PRF-M40/P36	83181266	Black	PA	35.4	43.0	81.0	191.0	16.2	25
EW-PRF-M50/P48	83181268	Black	PA	47.3	54.7	102.0	237.0	22.3	25
EW-PRF-70 Jumbo	83181272	Black	PA	67.2	79.5	200.0	390.0	48.0	25
EW-PRF-95 Jumbo	83181274	Black	PA	90.0	105.2	265.0	500.0	80.0	10
EW-PRE-M10/P7	83181212	Grey	PA	8.4	11.6	21.0	46.0	2.1	50
EW-PRF-M12/P9	83181214	Grey	PA	9.8	12.9	22.0	51.0	2.6	50
EW-PRF-M16/P11	83181216	Grey	PA	12.2	15.8	28.0	68.0	3.6	50
EW-PRF-M20/P16	83181218	Grey	PA	15.6	21.1	38.0	95.0	5.3	50
EW-PRF-M20 / P16S *	83181220	Grey	PA	15.7	21.1	35.0	90.0	5.6	50
EW-PRF-M25/P21	83181222	Grey	PA	22.3	28.3	49.0	109.0	9.6	50
EW-PRF-M25 / P21S *	83181422	Grey	PA	23.1	28.0	44.0	104.0	9.6	50
EW-PRF-M32/P29	83181224	Grey	PA	27.5	34.5	67.0	142.0	12.2	25
EW-PRF-M32 / P29S *	83181424	Grey	PA	29.2	34.5	62.0	132.0	14.0	25
EW-PRF-M40/P36	83181226	Grey	PA	35.4	43.0	81.0	191.0	16.2	25
EW-PRF-M50/P48	83181228	Grey	PA	47.3	54.7	102.0	237.0	22.3	25
EW-PRF-70 Jumbo	83181232	Grey	PA	67.2	79.5	200.0	390.0	48.0	25
EW-PRF-95 Jumbo	83181234	Grey	PA	90.0	105.2	265.0	500.0	80.0	10

* Narrow corrugation

The variants highlighted in colour are ideally combinable with the system holders and parts specified in this catalogue.

Circuits for robot applications



Circuits for robot applications



As a system provider of dress-packs used in robots and handling equipment, Murrplastik Systemtechnik GmbH offers a complete service:

From single and spare parts, through complete mounting modules for the various robot axes, to fully equipped dress-packs including all cables and media conduits.

We configure and produce a dresspack tailored to your specifications as a complete assembly for installation or replacement on site. Please contact our application engineers.

Notes

This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, medium-gray lines. The grid consists of small, equal-sized squares that extend across the entire visible area of the page, leaving no margins or other markings.



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All details given in our sales material prospectuses and catalogues as well as the information available online are based on our current knowledge of the products described.

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Our General Terms and Conditions apply.

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