



# Robotic equipment



## MATERIAL PROPERTIES



Materials used

## MECHANICAL PROPERTIES



Protection class



Crush resistance

## THERMAL PROPERTIES



Temperature / temperature range

## FIRE BEHAVIOUR



Fire classification

## GENERAL TECHNICAL DATA



Additional information

## APPROVALS AND OPERATING PERMITS



EU railway approval  
EN 45545-2 : 2016



CSA approval



cULus approval



cURus approval



VDE approval



EX approval



ROBI approval

## TECHNICAL INFORMATION



Halogen-free  
DIN 53474



UV-resistant

## CONFORMITY



RoHS (EC Directive 2002/95/EC)

## ROBOTIC EQUIPMENT

<b>1. R-Tec Box</b>	<b>Page 685 – 690</b>
1.1 R-Tec Box . . . . .	Page 686
1.2 System plate for R-Tec Box . . . . .	Page 687 – 688
1.3 Spare parts for R-Tec Box . . . . .	Page 689 – 690
<b>2. R-Tec Liner</b>	<b>Page 691 – 694</b>
2.1 R-Tec Liner . . . . .	Page 692
2.2 Spare parts for R-Tec Liner . . . . .	Page 693
<b>3. Recirculation system</b>	<b>Page 695 – 698</b>
3.1 Recirculation system Set . . . . .	Page 696
3.2 Recirculation system 21/29, system plate . . . . .	Page 697
3.3 Recirculation system 21/29, spare parts . . . . .	Page 698
<b>4. Flexible support system</b>	<b>Page 699 – 710</b>
4.1 FHS-SH support bracket . . . . .	Page 700
4.2 FHS-C support bracket . . . . .	Page 701
4.3 FHS-UHE support bracket . . . . .	Page 702
4.4 Robotic-Kit UR . . . . .	Page 703 – 704
4.5 Robotic-Kits TM . . . . .	Page 705
4.6 Robotic-Kit Franka Emika . . . . .	Page 706
4.7 Velcro tape KKR-Fix . . . . .	Page 707
4.8 Accessories FHS . . . . .	Page 708
4.9 FHS Recirculation system 21/29 . . . . .	Page 709
<b>5. Cable protection conduit</b>	<b>Page 711 – 722</b>
5.1 Cable protection conduit type EW-PAE . . . . .	Page 712 – 713
5.2 Cable protection conduit type EWX-PAE (high corrugation) . . . . .	Page 714
5.3 Cable protection conduit type EWX-PAE-LS (high corrugation) . . . . .	Page 715
5.4 Cable protection conduit type EWX-PP-LS (high corrugation) . . . . .	Page 716
5.5 Cable protection conduit type EW-HY . . . . .	Page 717
5.6 Cable protection conduit type EWX-HY (high corrugation) . . . . .	Page 718
5.7 Cable protection conduit type EWX-HY-LS (high corrugation) . . . . .	Page 719
5.8 Cable protection conduit type EW-PRF . . . . .	Page 720 – 721
5.9 Cable protection conduit type EF (rectangular conduit) . . . . .	Page 722
<b>6. Fastening element</b>	<b>Page 723 – 733</b>
6.1 System holder type SH . . . . .	Page 724
6.2 Telescopic joint type KEG-AK . . . . .	Page 725
6.3 Ball bearing type KEG/K . . . . .	Page 726
6.4 Ball bearing type KEG/ZL – Conduit ring type SRF/ZL . . . . .	Page 727
6.5 Strain relief cable star . . . . .	Page 728
6.6 Ball bearing type KMG/F – Conduit ring type SRF . . . . .	Page 729
6.7 Ball bearing type KMG/G . . . . .	Page 730
6.8 Trumpet type TRO . . . . .	Page 731
6.9 Ball bearing type KMG-F H. . . . .	Page 732
6.10 Conduit adapter A-RS . . . . .	Page 733
<b>7. Robot connection</b>	<b>Page 734 – 738</b>
7.1 Tension clamp (axis 6) . . . . .	Page 734
7.2 Precision pipe . . . . .	Page 735
7.3 Pipe clamp . . . . .	Page 736
7.4 Base plate . . . . .	Page 737
7.5 Pivot bearing . . . . .	Page 738
<b>8. Protectors / conduit couplings</b>	<b>Page 739 – 740</b>
8.1 Protector type PR/SV . . . . .	Page 739 – 740

*Continued on the next page*



<b>9. Accessories</b>	<b>Page 741 – 750</b>
9.1 Conduit knife type Tube-Cut (Conduit knife for cable protection conduits)	Page 742
9.2 Corrugated conduit cutter type m-cut	Page 743
9.3 Wire insertion tool type KE.	Page 744
9.4 Position marker	Page 745
9.5 Robotic opening tool	Page 746
9.6 Robot lubricant	Page 747
9.7 Media hose type R-MS	Page 748
9.8 Hose nozzle type R-MSA	Page 749

## APPENDIX

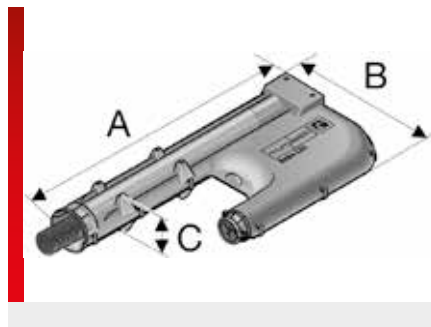
Selection table base plates and recirculation system for KUKA robots	Page 752 – 753
Selection table base plates and recirculation system for Fanuc robots	Page 754
Selection table base plates and recirculation system for ABB robots	Page 755
Selection table base plates and recirculation system for Yaskawa-Motoman robots	Page 755
Index of types	Page 756



**R-Tec Box**

AUR

## R-Tec Box



### PRODUCT INFORMATION

With their R-Tec Box design, Murrplastik has succeeded in creating a new system for optimum management of energy packages from axis 3 to axis 6 of 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.

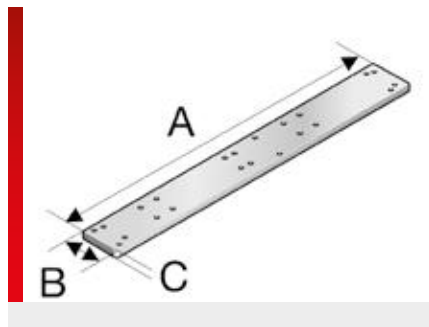
### SPECIFICATIONS

- 40 – 140 °C, short term 160 °C
- Modified polypropylene
- 

Type	Order No.	Colour	Suitable for EW-PAE	Suitable for EWX-PAE	A mm	B mm	C mm	Stroke mm	MOQ Pcs.
R-Tec Box-S EW 29 MP - 35N	83692693	Black	M32/P29		507.00	285.00	110.00	270.00	1
R-Tec Box-S EWX 29 MP - 35N	83692695	Black		M32/P29	507.00	285.00	110.00	270.00	1
R-Tec Box-S EW 36 MP - 35N	83692696	Black	M40/P36		507.00	285.00	110.00	270.00	1
R-Tec Box-S EWX 36 MP - 35N	83692697	Black		M40/P36	507.00	285.00	110.00	270.00	1
R-Tec Box EW 36 MP - 80N	83692650	Black	M40/P36		730.00	343.00	138.00	400.00	1
R-Tec Box EWX 36 MP - 80N	83692652	Black		M40/P36	730.00	343.00	138.00	400.00	1
R-Tec Box EW 48 MP - 100N	83692654	Black	M50/P48		730.00	343.00	138.00	400.00	1
R-Tec Box EWX 48 MP - 100N	83692656	Black		M50/P48	730.00	343.00	138.00	400.00	1
R-Tec Box EWX 48-KB MP - 100N <sup>1)</sup>	83692633	Black		M50/P48	730.00	343.00	138.00	400.00	1
R-Tec Box EW 48 MP - 120N	83692664	Black	M50/P48		730.00	343.00	138.00	400.00	1
R-Tec Box EWX 48 MP - 120N	83692665	Black		M50/P48	730.00	343.00	138.00	400.00	1
R-Tec Box EW/EWX 56 MP - 200N	83692658	Black	56 Jumbo	56 Jumbo	937.50	430.00	176.00	600.00	1
R-Tec Box EW/EWX 70 MP - 200N	83692660	Black	70 Jumbo	70 Jumbo	937.50	430.00	176.00	600.00	1
R-Tec Box EW/EWX 70-KB MP - 200N <sup>1)</sup>	83692662	Black	70 Jumbo	70 Jumbo	937.50	430.00	176.00	600.00	1

<sup>1)</sup> With strain relief V-ZLT-70KB

## System plate for R-Tec Box




### PRODUCT INFORMATION

System plate for mounting a R-Tec Box on axis 3. Adjusted to production series of various manufacturers.

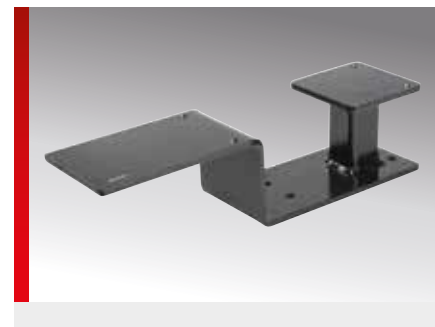
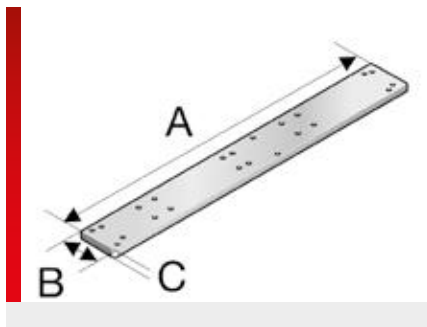
The listed system plates are examples only. Contact us for the proper size for you.

### SPECIFICATIONS

 Sheet steel, powder-coated


Type	Order No.	Colour	A mm	B mm	C mm	MOQ Pcs.
<b>Kuka</b>						
Baseplate A3 Kuka KR6 <sup>1)</sup>	83692751	Black	295.00	50.00	32.00	
No stock goods, delivery time and minimum order quantities upon request						
Base plate Kuka KR16 <sup>2)</sup>	83692750	Black	420.00	90.00	5.00	1
Base plate L Kuka KR16 <sup>3)</sup>	83692777	Black	465.00	115.00	6.00	1
Base plate Kuka KR30 - KR60 <sup>2)</sup>	83692757	Black	465.00	114.00	6.00	1
Base plate L Kuka KR30 - KR60 <sup>4)</sup>	83692776	Black	760.00	160.00	8.00	1
Base plate Kuka Quantec/series 2000 <sup>4)</sup>	83692620	Black	760.00	130.00	8.00	1
Base plate Kuka KR1000 Titan-F <sup>4)</sup>	83692785	Black	760.00	130.00	8.00	1
<b>ABB</b>						
Base plate ABB IRB series 1600 <sup>2)</sup>	83692762	Black	310.00	183.00	6.00	1
Base plate ABB IRB 2400 <sup>3)</sup>	83692780	Black	350.00	155.00	6.00	1
Base plate ABB IRB 2600 12-1,85 <sup>3)</sup>	83692763	Black	331.00	180.00	6.00	1
Base plate ABB IRB 4400-60 <sup>3)</sup>	83692779	Black	350.00	200.00	6.00	1
Base plate ABB series 4600 <sup>4)</sup>	83692625	Black	770.00	153.00	5.00	1
Base plate ABB series 6400 <sup>5)</sup>	83692623	Black	450.00	228.00	8.00	1
Base plate ABB series 6600/6640/6650/6700 <sup>4)</sup>	83692622	Black	500.00	140.00	6.00	1
Base plate ABB IRB series 6620 <sup>4)</sup>	83692627	Black	500.00	140.00	6.00	1
Base plate R-Tec Box, ABB IRB 6640 <sup>4)</sup>	82390028	Black	500.00	120.00	6.00	1
Base plate ABB IRB series 7600 <sup>4)</sup>	83692764	Black	325.00	130.00	8.00	1
<b>Fanuc</b>						
Base plate R-Tec Box Fanuc M710 <sup>3)</sup>	82390043	Black	361.50	242.00	6.00	1
Base plate Fanuc M-900 <sup>4)</sup>	83692755	Black	350.00	130.00	6.00	1
Base plate Fanuc M-900iA350/600 <sup>4)</sup>	83692624	Black	390.00	120.00	8.00	1
Base plate Fanuc series 2000 iA, iB, iC <sup>4)</sup>	83692621	Black	347.00	140.00	6.00	1
Base plate Fanuc R-2000iC 210L <sup>6)</sup>	83692797	Black	351.00	130.00	6.00	1

## System plate for R-Tec Box (continued)



Type	Order No.	Colour	A mm	B mm	C mm	MOQ Pcs.
<b>Yaskawa Motoman</b>						
Base plate Motoman HD20 <sup>2)</sup>	83692761	Black	300.00	90.00	5.00	1
Base plate Motoman MH50 <sup>7)</sup>	83692628	Black	660.00	120.00	8.00	1
Base plate Motoman MH50-2 <sup>3)</sup>	83692778	Black	410.00	180.00	8.00	1
Base plate Motoman MH50-35 <sup>4)</sup>	83692772	Black	660.00	130.00	8.00	1
Base plate Motoman MS165, MH180 <sup>4)</sup>	83692629	Black	770.00	160.00	6.00	1
<b>Kawasaki</b>						
Base plate Kawasaki RS80N <sup>7)</sup>	83692747	Black	660.00	120.00	8.00	1
<b>Comau</b>						
Base plate A3 Comau NJ220 <sup>4)</sup>	83692793	Black	370.00	240.00	8.00	1

<sup>1)</sup> Suitable for the 21/29 recirculation system

<sup>2)</sup> Suitable for R-Tec Box-S 29/36

<sup>3)</sup> Suitable for R-Tec Box-S 29/36 & R-Tec Box 36/48

<sup>4)</sup> Suitable for R-Tec Box M40/M50, R-Tec Box 56/70, R-Tec Liner 56/70 as well as R-Tec Liner 80/95

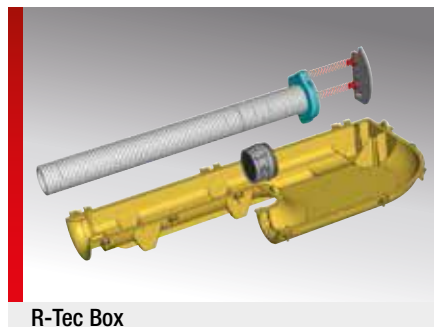
<sup>5)</sup> Suitable for R-Tec Box 56/70, R-Tec Liner 56/70 and R-Tec Liner 80/95

<sup>6)</sup> Suitable for R-Tec Box-S M32/M40, R-Tec Box M40/M50, R-Tec Box 56/70, R-Tec Liner 56/70 as well as R-Tec Liner 80/95

<sup>7)</sup> Suitable for R-Tec Box M40/M50



## Replacement parts for R-Tec Box



R-Tec Box



Wear ring



SCH locking clip

### PRODUCT INFORMATION

Replacement parts for R-Tec Box

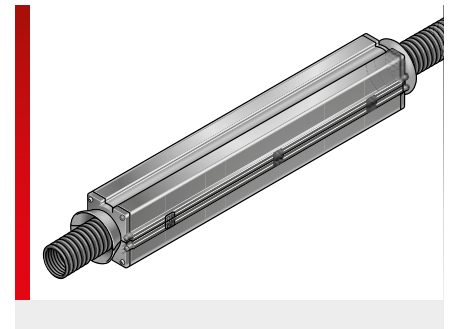
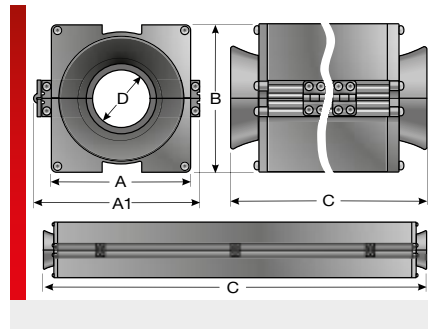
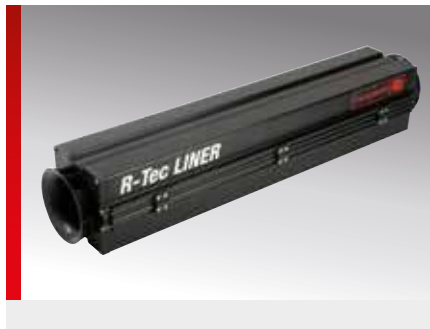
Type	Order No.	Colour	MOQ Pcs.
<b>Spring set</b>			
Spring set 29/36 35N <sup>1)</sup>	83692679	Silver	1
Spring set 36/48 80N <sup>1)</sup>	83692685	Silver	1
Spring set 36/48 100N <sup>1)</sup>	83692686	Silver	1
Spring set 36/48 120N <sup>1)</sup>	83692687	Silver	1
Spring set 56/70 200N <sup>1)</sup>	83692688	Silver	1
Also suitable for R-Tec Liner 550mm 80/95			
<b>Position markers for EW, EW-LS, EWT and EWX</b>			
Position marker - set 36	83692690	Green / Yellow / Red	1
Position marker - set 48	83692692	Green / Yellow / Red	1
Position marker - set 56	83692694	Green / Yellow / Red	1
Position marker - set 70	83692698	Green / Yellow / Red	1
<b>Slider set</b>			
Slider-Set R-Tec Box-S EW 29 <sup>2)</sup>	83692671	Black	1
Slider-Set R-Tec Box-S EWX 29 <sup>2)</sup>	83692673	Black	1
Slider-Set R-Tec Box-S EW 36 <sup>2)</sup>	83692675	Black	1
Slider-Set R-Tec Box-S EWX 36 <sup>2)</sup>	83692677	Black	1
Slider-Set EW 36 <sup>2)</sup>	83692670	Black	1
Slider-Set EWX 36 <sup>2)</sup>	83692672	Black	1
Slider-Set EW 48 <sup>2)</sup>	83692674	Black	1
Slider-Set EWX 48 <sup>2)</sup>	83692676	Black	1
Slider-Set EW/EWX 56 <sup>2)</sup>	83692678	Black	1
Slider-Set EW/EWX 70 <sup>2)</sup>	83692680	Black	1
<b>Mounting set</b>			
Mounting set 29/36 <sup>3), 4)</sup>	83692681	-	1
Mounting set 36/48 <sup>3)</sup>	83692682	-	1
Mounting set 56/70 <sup>3)</sup>	83692684	-	1





**R-Tec Liner**

## R-Tec Liner



### PRODUCT INFORMATION

With the R-Tec Liner, Murrplastik has succeeded in creating a new linear system for the optimum guidance of energy packages from axis 3 to axis 6 on industrial robots. In the specially manufactured aluminium housing with the integrated and patented spring return system, the energy package is guided effectively and with low wear.

- Extremely strong aluminium housing
- The system can be installed without base plate on selected robots
- Compact design
- Highest holding times
- Quick and easy replacement of the dresspack
- Closed system; the guidance system is protected from ingress of dirt
- Preferred for conduit harnesses from axis 1-6

### SPECIFICATIONS

- 40 – 140 °C, short term 160 °C
- Aluminium  
Modified polypropylene
- According to UL94 V2

Type	Order No.	Colour	Suitable for EW-PAE	Suitable for EWX-PAE	A mm	A1 mm	B mm	C mm	Stroke mm	MOQ Pcs.
R-Tec Liner 400mm EW 36 - 140N <sup>1)</sup>	83693060	Black	M40/P36		127.00	177.00	125.00	655.00	400.00	1
R-Tec Liner 400mm EWX 36 - 140N <sup>1)</sup>	83693062	Black		M40/P36	127.00	177.00	125.00	655.00	400.00	1
R-Tec Liner 400mm EW 48 - 140N <sup>1)</sup>	83693064	Black	M50/P48		127.00	177.00	125.00	655.00	400.00	1
R-Tec Liner 400mm EWX 48 - 140N <sup>1)</sup>	83693066	Black		M50/P48	127.00	177.00	125.00	655.00	400.00	1
R-Tec Liner 350mm EW/EWX 56 <sup>2)</sup>	83693076	Black	NW 56	56 Jumbo	150.00	195.00	150.00	655.00	350.00	1
R-Tec Liner 550mm EW/EWX 56 <sup>2)</sup>	83693078	Black	NW 56	56 Jumbo	150.00	195.00	150.00	855.00	550.00	1
R-Tec Liner 350mm EW/EWX 70 <sup>2)</sup>	83693080	Black	NW 70	70 Jumbo	150.00	195.00	150.00	655.00	350.00	1
R-Tec Liner 550mm EW/EWX 70 <sup>2)</sup>	83693082	Black	NW 70	70 Jumbo	150.00	195.00	150.00	855.00	550.00	1
R-Tec Liner 350mm EW/EWX 80 - 200N <sup>2)</sup>	83693084	Black	NW 80	80 Jumbo	175.00	215.00	185.00	655.00	350.00	1
R-Tec Liner 550mm EW/EWX 80 - 200N <sup>2)</sup>	83693086	Black	NW 80	80 Jumbo	175.00	215.00	185.00	855.00	550.00	1
R-Tec Liner 350mm EW/EWX 95 - 200N <sup>2)</sup>	83693088	Black	NW 95	95 Jumbo	175.00	215.00	185.00	655.00	350.00	1
R-Tec Liner 550mm EW/EWX 95 - 200N <sup>2)</sup>	83693090	Black	NW 95	95 Jumbo	175.00	215.00	185.00	855.00	550.00	1

<sup>1)</sup>System plates of R-Tec Box 36/48 will fit R-Tec Liner 36/48

<sup>2)</sup>System plates of R-Tec Box 56/70 will fit R-TecLiner 56/70 as well as R-TecLiner 80/95

## Spare parts for R-Tec Liner



### PRODUCT INFORMATION

Type	Order No.	Colour	Suitable for EW-PAE	Suitable for EWX-PAE	A mm	B mm	MOQ Pcs.
<b>Spring set</b>							
Spring set 56/70 200N, 350mm <sup>1)</sup>	83693006	Silver					1
also suitable for R-Tec Liner 350mm 80/95							
Spring set 56/70 200N <sup>1)</sup>	83692688	Silver					1
also suitable for R-Tec Liner 550mm 80/95							
Spring set R-Tec Liner 80/95 350N, 350mm <sup>1)</sup>	83693058	Silver					1
Spring set R-Tec Liner 80/95 350N, 550mm <sup>1)</sup>	83693057	Silver					1
<b>Slider for R-Tec Liner</b>							
Slider EW 36 R-Tec Liner	83693026	Black	M40/P36				1
Slider EWX 36 R-Tec Liner	83693027	Black		M40/P36			1
Slider EW 48 R-Tec Liner	83693024	Black	M50/P48				1
Slider EWX 48 R-Tec Liner	83693025	Black		M50/P48			1
EW/EWX 56 R-Tec Liner slider	83693022	Black	56 Jumbo	56 Jumbo			1
EW/EWX 70 R-Tec Liner slider	83693020	Black	70 Jumbo	70 Jumbo			1
EW/EWX 80 R-Tec Liner slider	83693021	Black	80 Jumbo	80 Jumbo			1
EW/EWX 95 R-Tec Liner slider	83693023	Black	95 Jumbo	95 Jumbo			1
<b>Trumpet End piece R-Tec Liner</b>							
TRO R-Tec Liner 36/48	83693037	Black					1
TRO R-Tec Liner 56/70	83693036	Black					1
TRO R-Tec Liner 80/95	83693035	Black					1
<b>Position markers for EW, EW-LS, EWT and EWX</b>							
Position marker - set 36	83692690	Green / Yellow / Red			32.70	1.75	1
Position marker - set 48	83692692	Green / Yellow / Red			41.20	1.75	1
Position marker - set 56	83692694	Green / Yellow / Red			59.10	1.75	1
Position marker - set 70	83692698	Green / Yellow / Red			70.50	1.75	1
Position marker - set 80	83692733	Green / Yellow / Red			82.60	1.75	1
Position marker - set 95	83692737	Green / Yellow / Red			95.00	1.75	1

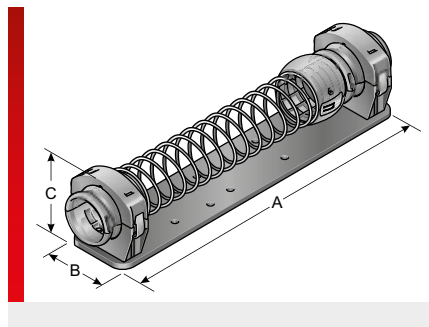
<sup>1)</sup> Consisting of: 2x tension spring incl. mounting material





## Recirculation system

## Recirculation system set



### PRODUCT INFORMATION

The recirculation system serves as a simple, space-saving alternative to the Murrplastik R-TecBox-S and creates a length compensation of 150 mm. The system is very suitable for small robots, such as FANUC M20iA or KUKA KR6/KR10.

As long as the hole pattern fits, the recirculation system can be mounted directly on the robot or attached with spacer sleeves. If the hole pattern does not match, an additional adapter plate will be necessary for the installation.

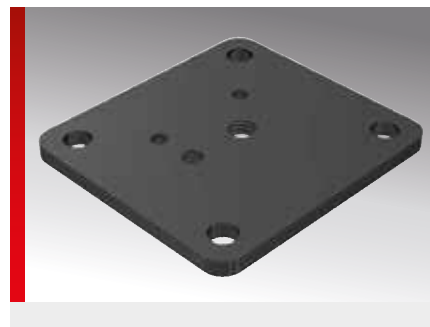
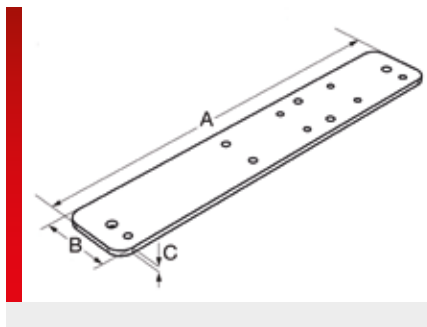
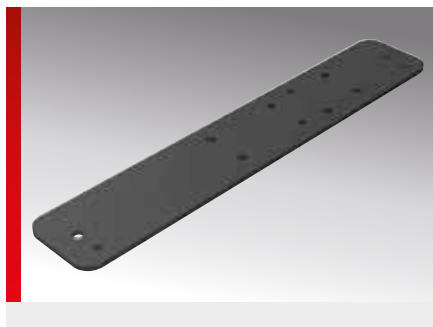
### SPECIFICATIONS

- 40 – 110 °C
  - Modified polyamide PA 6  
Base plate: Aluminium  
Spring steel
  - According to UL94 V0
- RoHS
 HF
 Robot

Type	Order No.	Colour	A mm	B mm	C mm	MOQ Pcs.
EW 21 - 20N recirculation system	83692721	Black	290.00	72.50	70.00	1
EWX 21 - 20N recirculation system	83692722	Black	290.00	72.50	70.00	1
EW 29 - 20N recirculation system	83692723	Black	290.00	72.50	70.00	1
EWX 29 - 20N recirculation system	83692724	Black	290.00	72.50	70.00	1






## Recirculation system, system plate 21/29



### PRODUCT INFORMATION

System plate for holding the recirculation system. Adjusted to production series of various manufacturers.  
Contact us for your individual system plate!

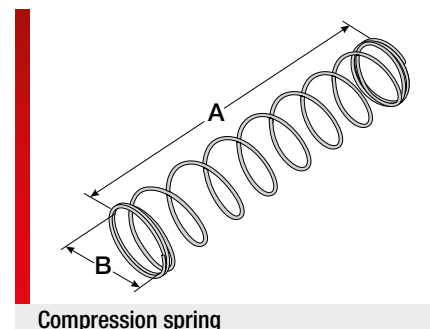
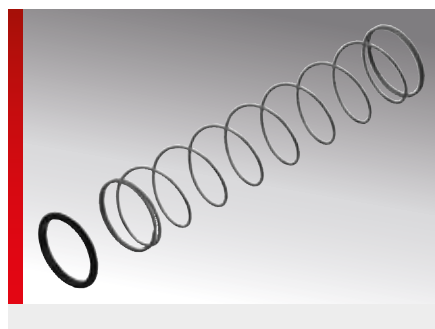
### SPECIFICATIONS

-  Aluminium
-  RoHS
- 

Type	Order No.	Colour	A mm	B mm	C mm	MOQ Pcs.
A3 Fanuc M20iA adapter plate	83692759	Anodised black	65.00	60.00	4.00	1
Base plate Kuka KR10 R 1100 <sup>1)</sup>	83692760	Anodised black	280.00	50.00	4.00	1

<sup>1)</sup> Serves as mounting base plate for recirculation systems 21/29 (pre-assembled)

## Recirculation system, replacement parts



Compression spring

### PRODUCT INFORMATION

Spare parts for the recirculation system  
 For centering rings an additional ball centre joint type KMG/G is required.  
 Type R-FES spring end pieces are inserted directly into a system holder.  
 From size 56 Jumbo the R-FES is used together with the TRO-70.

### SPECIFICATIONS



Type	Order No.	Colour	A mm	B mm	MOQ Pcs.
<b>Compression spring</b>					
M25/P21 compression spring	83692754	Typical for the material	164.00	30.00	1
M32/P29 compression spring	83692756	Typical for the material	164.00	38.00	1
R-FED 40-350	83952440	Typical for the material	350.00	53.00	1
R-FED 40-600	83952442	Typical for the material	600.00	52.00	1
R-FED 50-350	83952450	Typical for the material	350.00	62.00	1
R-FED 50-600	83952452	Typical for the material	600.00	62.00	1
R-FED 56-500	83952456	Typical for the material	500.00	75.00	1
R-FED 56-800	83952458	Typical for the material	800.00	75.00	1
R-FED 70-250	83692714	Typical for the material	250.00	91.50	1
R-FED 70-800	83952464	Typical for the material	800.00	88.00	1
<b>Pressure spring with end piece</b>					
M25/P21 centring device	83692702	Black	36.00		1
M32/P29 centring device	83692704	Black	42.00		1
R-FES M40/P36	83692705	Black	47.00		1
R-FES M50/P48	83692706	Black	57.00		1
R-FES 56 Jumbo	83692707	Black	72.50		1
R-FES 70 Jumbo	83692708	Black	82.50		1



## Flexible support system

## FHS-SH support bracket



FHS-SH on UR5

### PRODUCT INFORMATION

The FHS-SH fixes the proven SH-P M25-M32 system holder without tools and without much effort to nearly any small robots and cobots.

For smaller cable packages and low to medium travel speed, this is the way to provide secure hold and maximum flexibility for the applications. The respective protective conduits can be installed fixed, sliding in

axial direction or with strain relief by using additional system components in M25 or M32 sizes.

Optional accessories:

- KEG/ZL - strain relief with cable ties
- KEG/K - strain relief with cable star
- KMG/G - sliding channel guide
- KMG/F - axial channel guide

### SPECIFICATIONS

	Modified polyamide Modified polypropylene Thermoplastic elastomer

Type	Order No.	Colour	Length of Velcro tape mm	MOQ Pcs.
FHS-SH-G <sup>1)</sup>	83693416	Black / Red		5
FHS-SH 300	83693424	Black / Red	300.0	1
FHS-SH 350	83693423	Black / Red	350.0	1
FHS-SH 450	83693425	Black / Red	450.0	1
FHS-SH 550	83693427	Black / Red	550.0	1
FHS-SH 750	83693429	Black / Red	750.0	1
FHS-SH Set <sup>2)</sup>	83693422	Black / Red	350.0 – 750.0	1

<sup>1)</sup>Body without Velcro tape

<sup>2)</sup>Set with 4 Velcro tapes

## FHS-C support bracket



FHS-C on UR5

### PRODUCT INFORMATION

The FHS-C has been designed for the direct insertion of lines or protective conduits. The Velcro tape has a slip-resistant coating and wraps around the cable packet as well as the robot. The variable lengths of Velcro tape and the special contour of the base element makes the system exceptionally well suited for assemblies on a variety of robot models and machine components.

#### Advantages:

- Low interference contour
- Saves space
- Low weight
- Secure hold, even on conical surfaces
- Quick fit, without pre-drilling
- Quick routing adjustment is possible during implementation

### SPECIFICATIONS

Polypropylene (PP)  
Thermoplastic elastomer



Type	Order No.	Colour	Length of Velcro tape mm	MOQ Pcs.
FHE-16-29 <sup>1)</sup>	83693421	Black / Red		5
FHS-C 350	83693443	Black / Red	350.0	1
FHS-C 450	83693445	Black / Red	450.0	1
FHS-C 550	83693447	Black / Red	550.0	1
FHS-C 750	83693449	Black / Red	750.0	1
FHS-C Set <sup>2)</sup>	83693442	Black / Red	350.0 – 750.0	1

<sup>1)</sup> Body without Velcro tape

<sup>2)</sup> Set with 4 Velcro tapes

## FHS-UHE support bracket



FHS-UHE on UR5

### PRODUCT INFORMATION

The FHS-UHE makes fixing the cable protection conduit quick and possible without tools. The conduit is fixed with especially low cable wear for light, dynamic applications and without axial movement of the attachment. The specially coated Velcro tape and the unique shape of the base element gives the system a tight fit on almost any contour. This makes the FHS-UHE suitable for nearly all small robot cable routings.

#### Advantages:

- No additional components required
- Especially gentle on cables
- Secure hold, even on conical surfaces
- Quick fit, without pre-drilling
- Quick routing adjustment is possible during implementation

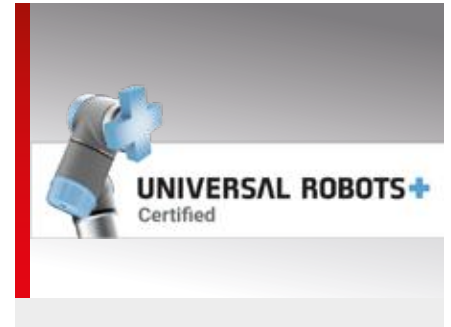
### SPECIFICATIONS

	Modified polyamide PA 6 Polypropylene (PP) Thermoplastic elastomer

Type	Order No.	Colour	Length of Velcro tape mm	MOQ Pcs.
<b>suitable for Murrflex EW and EWX</b>				
FHS-UHE M25/P21 350	83693461	Black / Red	350.0	1
FHS-UHE M25/P21 450	83693462	Black / Red	450.0	1
FHS-UHE M25/P21 550	83693463	Black / Red	550.0	1
FHS-UHE M25/P21 750	83693464	Black / Red	750.0	1
FHS-UHE M25/P21 Set <sup>1)</sup>	83693460	Black / Red	350.0 – 750.0	1
FHS-UHE M32/P29 350	83693466	Black / Red	350.0	1
FHS-UHE M32/P29 450	83693467	Black / Red	450.0	1
FHS-UHE M32/P29 550	83693468	Black / Red	550.0	1
FHS-UHE M32/P29 750	83693469	Black / Red	750.0	1
FHS-UHE M32/P29 Set <sup>1)</sup>	83693465	Black / Red	350.0 – 750.0	1

<sup>1)</sup>Set with 4 Velcro tapes

## Robotics-Kit UR



### PRODUCT INFORMATION

Sets, especially designed for cable routing on robots of the Universal Robots Company. The assembly includes the protective hose, end sleeves and the appropriate fastening with non-slip Velcro tape. For an easier installation of pre-assembled cables, the protective conduit is available in slotted LS. The set offers a lowest possible interference contour for a low risk of damage.

Optional accessories:

- R-SSR - tension clamp for axis 6
- SH-P M25-M32 - system holder
- KEG/ZL or KEG/K - strain relief

### SPECIFICATIONS



Polypropylene (PP)  
Thermoplastic elastomer  
Modified polyamide



Type	Order No.	Colour	MOQ Pcs.
<b>Fixing kit for Universal Robot UR3</b>			
FHS-C-Set UR3	83693480	Black / Red	1
Set consists of: 2m EWX-PP-LS M25/P21, 3x FHS-C incl. Velcro tape, 2x end grommets, 1x wire insertion tool			
FHS-UHE-Set UR3	83693494	Black / Red	1
Set consists of: 2m EWX-PP-LS M25/P21, 3x FHS-UHE incl. Velcro tape, 2x end grommet, 1x wire insertion tool			
FHS-SH-Set UR3	83693491	Black / Red	1
Set consists of: 2m EWX-PP-LS M25/P21, 2x FHS-SH incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
<b>Fixing kit for Universal Robot UR5</b>			
FHS-C-Set UR5	83693482	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 4x FHS-C incl. Velcro tape, 2x end grommets, 1x wire insertion tool			
FHS-UHE-Set UR5	83693489	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 4x FHS-UHE incl. Velcro tape, 2x end grommet, 1x wire insertion tool			
FHS-SH-Set UR5	83693492	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 3x FHS-SH incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
FHS-RS-Set UR5	83693495	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 1x- spring-return mechanism, 2x FHS-UHE incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
<b>Fixing kit for Universal Robot UR10</b>			
FHS-C-Set UR10	83693484	Black / Red	1
Set consists of: 3.5m EWX-PP-LS M32/P29, 5x FHS-C incl. Velcro tape, 2x end grommets, 1x wire insertion tool			





## Robotics-Kit TM



### PRODUCT INFORMATION

Sets specially designed for cable routing on TM robots.

The assembly includes the protective hose, end sleeves and the appropriate fastening with non-slip Velcro tape. For an easier installation of pre-assembled cables, the protective conduit is available in slotted LS.

The set offers a lowest possible interference contour for a low risk of damage.

Optional accessories:

- R-SSR - tension clamp for axis 6
- SH-P M25-M32 - system holder
- KEG/ZL or KEG/K - strain relief

### SPECIFICATIONS

Polypropylene (PP)  
 Thermoplastic elastomer  
 Modified polyamide

Type	Order No.	Colour	MOQ Pcs.
<b>Techman Robot</b>			
FHS-C-Set TM5	83693500	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 4x FHS-C incl. Velcro tape, 2x end grommets, 1x wire insertion tool			
FHS-C-Set TM12/TM14	83693501	Black / Red	1
Set consists of: 3m EWX-PP-LS M32/P29, 4x FHS-C incl. Velcro tape, 2x end grommets, 1x wire insertion tool			
FHS-UHE-Set TM5	83693502	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 4x FHS-UHE incl. Velcro tape, 2x end grommet, 1x wire insertion tool			
FHS-UHE-Set TM12 / TM14	83693503	Black / Red	1
Set consists of: 3.5m EWX-PP-LS M32/P29, 5x FHS-UHE incl. Velcro tape, 2x end grommet, 1x wire insertion tool			
FHS-SH-Set TM5	83693504	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 3x FHS-SH incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
FHS-SH-Set TM12 / TM14	83693505	Black / Red	1
Set consists of: 3.5m EWX-PP-LS M32/P29, 4x FHS-SH incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
FHS-RS-Set TM5	83693506	Black / Red	1
Set consists of: 2m EWX-PP-LS M32/P29, 1x- spring-return mechanism, 2x FHS-UHE incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			
FHS-RS-Set TM12 / TM14	83693507	Black / Red	1
Set consists of: 3.5m EWX-PP-LS M32/P29, 1x- spring-return mechanism, 2x FHS-UHE incl. Velcro tape, 1x end grommet, 1x strain relief, 1x tension clamp axis 6, 1x wire insertion tool			

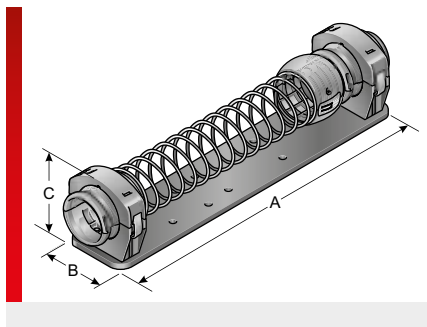
AUR







## FHS Recirculation system 21/29



### PRODUCT INFORMATION

The recirculation system is a simple and space-saving system and can handle a length adjustment of 150 mm. The system is very suitable for small robots, such as UR5 & UR10 of Universal Robots.

The recirculation system can be mounted directly on the robot with FHS-Velcro holders.

### SPECIFICATIONS

- 40 – 110 °C
- Modified polyamide PA 6  
Base plate: Aluminium  
Spring steel
- According to UL94 V0
- 

Type	Order No.	Colour	MOQ Pcs.
FHS-RS EW 21 - 20N <sup>1)</sup>	83693411	Black	1
FHS-RS EW 29 - 20N <sup>1)</sup>	83693413	Black	1
FHS-RS EWX 21 - 20N <sup>1)</sup>	83693412	Black	1
FHS-RS EWX 29 - 20N <sup>1)</sup>	83693414	Black	1

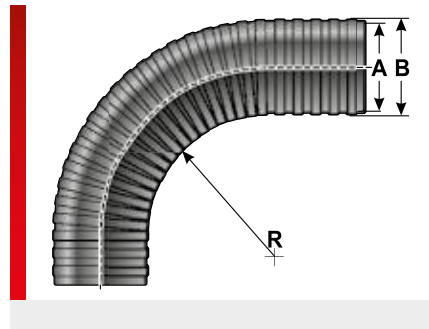
<sup>1)</sup> The set includes the Velcro lengths 350mm and 450mm.





## Cable protection conduit

## Type EW-PAE



### PRODUCT INFORMATION

The EW-PAE cable protection conduits are made of specially modified polyamide 12. The material is halogen, phosphor and cadmium-free.

The EW-PAE cable protection conduits are characterised by excellent flexibility, flexural fatigue strength and good crush resistance. For extremely dynamic applications involving medium mechanical loads.

Applications:

- Robotics
- Handling systems
- In cable drag chains

### SPECIFICATIONS

- 40 – 120 °C, short term 150 °C
- Modified polyamide PA 12
- According to UL94 HB
- According to IEC EN 61386: > 500 N



Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>Standard corrugation</b>								
EW-PAE-06	83181650	Black	6.50	9.80	15.00	40.00	1.8	50
EW-PAE-M10/P7	83181652	Black	8.50	11.50	20.00	45.00	2.1	50
EW-PAE M12/P09, 200m	83988262	Black	9.60	12.80	21.00	51.00	2.8	200
EW-PAE-M12/P9	83181654	Black	9.60	12.80	21.00	51.00	2.8	50
EW-PAE-M16/P11	83181656	Black	11.90	15.60	28.00	68.00	3.8	50
EW-PAE-M20/P16	83181658	Black	15.50	20.80	36.00	70.00	5.8	50
EW-PAE M20/P16, 200m	83988263	Black	15.50	20.80	36.00	70.00	5.8	200
EW-PAE-M25/P21	83181660	Black	21.80	28.30	49.00	109.00	9.5	50
EW-PAE-M32/P29	83181662	Black	27.80	34.40	67.00	142.00	12.6	25
EW-PAE M32/P29, 200m	83988264	Black	27.80	34.40	67.00	142.00	12.6	200
EW-PAE-M40/P36	83181664	Black	34.90	42.00	81.00	191.00	17.0	25
EW-PAE-M50/P48	83181666	Black	47.00	54.00	102.00	237.00	22.8	25
EW-PAE-56 Jumbo	83181678	Black	56.00	67.30	110.00	310.00	40.0	25
EW-PAE-70 Jumbo	83181680	Black	67.40	79.00	200.00	390.00	48.0	25
EW-PAE-80 Jumbo	83181681	Black	79.00	93.00	220.00	440.00	62.0	15
EW-PAE-95 Jumbo	83181682	Black	89.70	105.00	265.00	500.00	83.0	10
EW-PAE-06 <sup>1)</sup>	83181610	Grey	6.50	9.80	15.00	40.00	2.0	50
EW-PAE-M10/P7	83181612	Grey	8.50	11.50	20.00	45.00	2.1	50
EW-PAE-M12/P9	83181614	Grey	9.60	12.80	21.00	51.00	2.6	50
EW-PAE-M16/P11	83181616	Grey	11.90	15.60	28.00	68.00	3.6	50
EW-PAE-M20/P16	83181618	Grey	15.50	20.80	36.00	70.00	5.8	50
EW-PAE-M25/P21	83181620	Grey	21.80	28.30	49.00	109.00	9.5	50
EW-PAE-M32/P29	83181622	Grey	27.80	34.40	67.00	142.00	12.6	25
EW-PAE-M40/P36	83181624	Grey	34.90	42.00	81.00	191.00	17.0	25

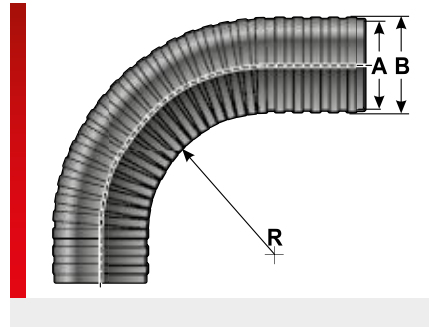


**Typ EW-PAE** (Continued...)

Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
EW-PAE-M50/P48	83181626	Grey	47.00	54.00	102.00	237.00	22.8	25
EW-PAE-56 Jumbo <sup>1)</sup>	83181638	Grey	56.00	67.30	110.00	310.00	35.0	25
EW-PAE-70 Jumbo <sup>1)</sup>	83181640	Grey	67.40	79.30	200.00	390.00	56.0	25
EW-PAE-95 Jumbo <sup>1)</sup>	83181642	Grey	89.70	105.80	265.00	500.00	80.0	10

<sup>1)</sup> No stock goods, delivery time and minimum order quantities upon request

## Type EWX-PAE (high corrugation)



### PRODUCT INFORMATION

The EWX-PAE cable protection conduits are made of specially modified polyamide 12. The material is halogen, phosphor and cadmium-free. With its excellent flexural fatigue strength, this product is ideal for robotics engineering and in the area of handling systems. For extremely dynamic applications involving medium to high mechanical loads.

The EWX-PAE cable protection conduits have a higher corrugation and feature the following advantages:

- Very good flexibility
- Excellent flexural fatigue strength
- Less wear
- Good crush resistance

### SPECIFICATIONS

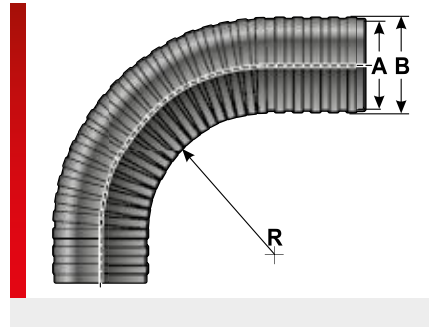
- 40 – 120 °C, short term 150 °C
- Modified polyamide PA 12
- According to UL94 HB
- According to IEC EN 61386: > 1200 N



Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>High corrugation</b>								
EWX-PAE-M25/P21	83182058	Black	18.20	28.10	49.00	104.00	13.0	50
EWX-PAE-M32/P29	83182060	Black	22.80	34.10	57.00	117.00	22.0	25
EWX-PAE-M40/P36	83182062	Black	28.70	42.40	71.00	146.00	28.0	25
EWX-PAE-M50/P48	83182064	Black	36.70	53.50	87.00	167.00	36.0	25
EWX-PAE-56 Jumbo	83182078	Black	52.20	67.70	95.00	220.00	40.0	25
EWX-PAE-70 Jumbo	83182080	Black	64.00	80.30	115.00	235.00	56.0	25
EWX-PAE-70 Jumbo	83182084	Black	64.00	80.30	115.00	235.00	52.0	110
EWX-PAE-80 Jumbo	83182081	Black	76.00	92.80	195.00	380.00	66.0	15
EWX-PAE-95 Jumbo	83182082	Black	88.20	105.50	220.00	450.00	92.5	10
EWX-PAE-M25/P21 <sup>1)</sup>	83182018	Grey	18.20	28.10	49.00	104.00	11.0	50
EWX-PAE-M32/P29	83182020	Grey	22.80	34.10	57.00	117.00	22.0	25
EWX-PAE-M40/P36 <sup>1)</sup>	83182022	Grey	28.70	42.40	71.00	146.00	28.0	25
EWX-PAE-M50/P48 <sup>1)</sup>	83182024	Grey	36.70	53.50	87.00	167.00	36.0	25
EWX-PAE-70 Jumbo <sup>1)</sup>	83182040	Grey	64.00	80.30	115.00	235.00	56.0	25

<sup>1)</sup>No stock goods, delivery time and minimum order quantities upon request

## Type EWX-PAE-LS (high corrugation)



### PRODUCT INFORMATION

The EWX-PAE-LS cable protection conduits are made of specially modified polyamide 12. The material is halogen, phosphor and cadmium-free.

With its excellent flexural fatigue strength, this product is ideal for robotics engineering and in the area of handling systems. For installation of pre-assembled cables, retrofitting or repair of cables.

For dynamic applications involving light to medium mechanical loads.

The EWX-PAE-LS cable protection conduits have a higher corrugation and feature the following advantages:

- Very good flexibility
- Excellent flexural fatigue strength
- Less wear
- Good crush resistance
- Subsequent installation possible

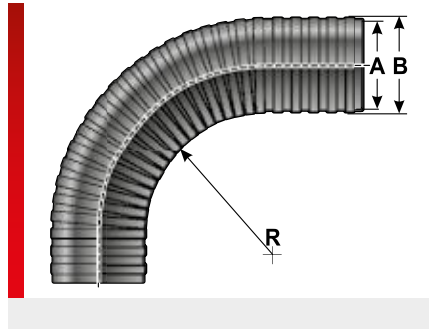
### SPECIFICATIONS

- 40 – 120 °C, short term 150 °C
- Modified polyamide PA 12
- According to UL94 HB



Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>High corrugation</b>								
EWX-PAE-LS-M20/P16	83182256	Black	13.30	21.10	36.00	77.00	6.0	50
EWX-PAE-LS-M25/P21	83182258	Black	19.20	28.20	49.00	104.00	11.0	50
EWX-PAE-LS-M32/P29	83182260	Black	23.10	34.50	57.00	117.00	14.0	25
EWX-PAE-LS-M40/P36	83182262	Black	28.50	42.20	71.00	146.00	18.2	25
EWX-PAE-LS-M50/P48	83182264	Black	36.50	53.60	87.00	167.00	24.0	25
EWX-PAE-LS-56 Jumbo	83182278	Black	51.70	67.70	95.00	220.00	40.0	25
EWX-PAE-LS-70 Jumbo	83182280	Black	64.30	80.30	115.00	235.00	52.0	25

## Type EWX-PP-LS (high corrugation)



### PRODUCT INFORMATION

The self-extinguishing EWX-PP cable protection conduits are made of specially modified polypropylene. The material is phosphor and cadmium-free.

For static and dynamic applications involving medium to high mechanical loads, as well as the installation of pre-assembled cables, retrofitting or repair of cables.

The EWX-PP-LS cable protection conduits have a higher corrugation and feature the following advantages:

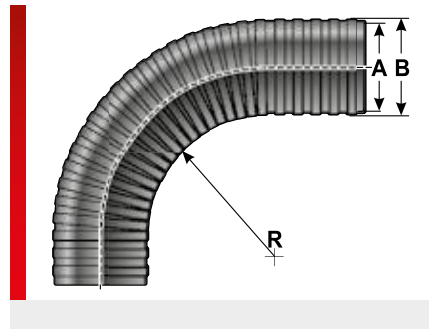
- Good flexibility
- Less wear
- Excellent crush resistance
- Subsequent installation possible
- Chemical resistance

### SPECIFICATIONS

- 40 – 130 °C, short term 150 °C
- Modified polypropylene
- Self-extinguishing, according to UL94 V2

Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>High corrugation</b>								
EWX-PP-LS M25/P21 Murrflex, sw	83203058	Black	18.30	28.00	50.00	110.00	9.0	50
EWX-PP-LS M32/P29 Murrflex, sw	83203060	Black	22.60	34.20	60.00	120.00	12.2	25

## Type EW-HY



### PRODUCT INFORMATION

The EW-HY cable protection conduits are made of specially modified thermoplastic elastomer. The material is halogen-, phosphor- and cadmium-free – as well as heat and hydrolysis stabilised.

The EW-HY cable protection conduits are characterised by outstanding flexibility, flexural fatigue strength and good crush resistance. This product is ideal for use in handling systems and robotics engineering, because

of its excellent flexural fatigue strength. For dynamic applications involving low to medium mechanical loads.

Applications:

- Robotics
- Handling systems

### SPECIFICATIONS

- 45 – 160 °C, short term 180 °C
- Thermoplastic elastomer
- According to UL94 HB
- According to IEC EN 61386: > 500 N

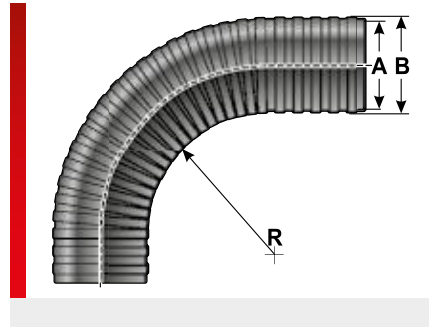


Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>Standard corrugation</b>								
EW-HY-06 <sup>1)</sup>	83121048	Black	6.40	9.90	18.00	40.00	2.4	50
EW-HY-M12/P9	83121050	Black	9.40	12.80	21.00	51.00	3.2	50
EW-HY-M16/P11	83121052	Black	12.10	15.60	28.00	68.00	4.0	50
EW-HY-M25/P21	83121056	Black	21.80	28.00	49.00	109.00	12.0	50
EW-HY-M32/P29	83121058	Black	27.70	34.20	67.00	142.00	17.0	25
EW-HY-M40/P36	83121060	Black	35.20	42.20	81.00	191.00	21.0	25
EW-HY-M50/P48	83121062	Black	47.30	53.40	102.00	237.00	28.0	25
EW-HY-70 Jumbo	83121066	Black	66.20	79.50	140.00	330.00	51.5	25
EW-HY-95 Jumbo	83121070	Black	90.00	105.00	150.00	400.00	90.0	10
<b>Narrow corrugation</b>								
EW-HY-M12/P9 <sup>2), 1)</sup>	83121010	Grey	9.40	12.80	21.00	51.00	2.8	50
EW-HY-M16/P11	83121012	Grey	12.10	15.60	28.00	68.00	4.0	50
EW-HY-M25/P21	83121016	Grey	21.80	28.00	49.00	109.00	12.0	50
EW-HY-M32/P29	83121018	Grey	27.70	34.20	67.00	142.00	17.0	25
EW-HY-M40/P36	83121020	Grey	35.20	42.20	81.00	191.00	21.0	25
EW-HY-M50/P48	83121022	Grey	47.30	53.40	102.00	237.00	29.5	25
EW-HY-70 Jumbo	83121026	Grey	66.20	79.50	140.00	330.00	51.5	25
EW-HY-95 Jumbo <sup>1)</sup>	83121030	Grey	90.00	105.00	150.00	400.00	90.0	10
<b>Standard corrugation</b>								
EW-HY-M20/P16S	83121054	Black	16.70	20.70	38.00	95.00	7.0	50
EW-HY-M20/P16S	83121014	Grey	16.70	20.70	38.00	95.00	6.8	50

<sup>1)</sup> No stock goods, delivery time and minimum order quantities upon request

<sup>2)</sup> Min. order quantity 2100m

## Type EWX-HY (high corrugation)



### PRODUCT INFORMATION

The EWX-HY cable protection conduits are made of specially modified thermoplastic elastomer. The material is halogen, phosphor and cadmium-free and is also heat and hydrolysis stabilised.

The EWX-HY cable protection conduits are characterised by outstanding flexibility, flexural fatigue strength and good crush resistance. With its excellent flexural fatigue

strength, this product is ideal for use in handling systems and robotics engineering. For dynamic applications involving low to medium mechanical loads.

### SPECIFICATIONS

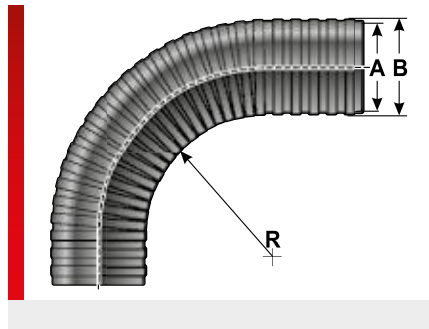
- 45 – 160 °C, short term 180 °C
- Thermoplastic elastomer
- According to UL94 HB
- According to IEC EN 61386: > 900 N



Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>High corrugation</b>								
EWX-HY-M25/P21	83121258	Black	18.60	27.80	49.00	104.00	13.0	50
EWX-HY-M32/P29	83121260	Black	23.00	34.20	57.00	117.00	17.5	25
EWX-HY-M40/P36	83121262	Black	28.90	42.30	71.00	146.00	28.0	25
EWX-HY-M50/P48	83121264	Black	36.80	53.70	87.00	167.00	30.4	25
EWX-HY-56 Jumbo	83121278	Black	53.00	67.80	95.00	220.00	45.0	25
EWX-HY-70 Jumbo	83121280	Black	64.40	80.50	140.00	330.00	63.0	25
EWX-HY-95 Jumbo <sup>1)</sup>	83121282	Black	91.00	105.50	150.00	400.00	89.0	10

<sup>1)</sup>No stock goods, delivery time and minimum order quantities upon request

## Type EWX-HY-LS (high corrugation)



### PRODUCT INFORMATION

The EWX-HY-LS cable protection conduits are made of specially modified thermoplastic elastomer. The material is halogen, phosphor and cadmium-free.

With its excellent flexural fatigue strength, this product is ideal for robotics engineering and in the area of handling systems. For installation of pre-assembled cables, retrofitting or repair of cables.

For dynamic applications involving light to medium mechanical loads.

The EWX-HY-LS cable protection conduits have a higher corrugation and feature the following advantages:

- Very good flexibility
- Excellent flexural fatigue strength
- Less wear
- Good crush resistance
- Subsequent installation possible

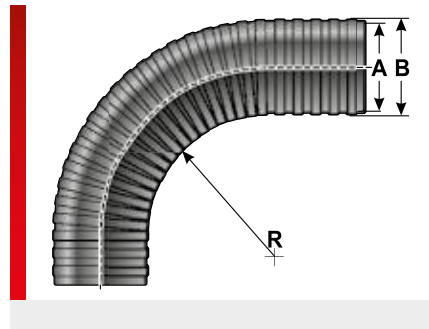
### SPECIFICATIONS

- 45 – 160 °C, short term 180 °C
- Thermoplastic elastomer
- According to UL94 HB
- RoHS
- HF
- UV
- Hand

Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>High corrugation</b>								
EWX-HY-LS-M25/P21	83122258	Black	19.80	28.10	49.00	104.00	11.5	50
EWX-HY-LS-M32/P29	83122260	Black	24.10	34.50	57.00	117.00	17.5	25
EWX-HY-LS-M40/P36	83122262	Black	29.70	42.10	71.00	146.00	22.0	25
EWX-HY-LS-M50/P48	83122264	Black	38.00	54.10	87.00	167.00	30.4	25
EWX-HY-LS-56 Jumbo <sup>1)</sup>	83122278	Black	52.00	68.00	95.00	220.00	45.0	25
EWX-HY-LS-70 Jumbo <sup>1)</sup>	83122282	Black	64.00	80.00	115.00	235.00	63.0	25

<sup>1)</sup> No stock goods, delivery time and minimum order quantities upon request

## Type EW-PRF



### PRODUCT INFORMATION

The EW-PRF cable protection conduits are made of specially modified polyamide 12. The material is halogen, phosphor and cadmium-free.

The conduits are suitable for dynamic applications involving medium to high mechanical loads. The EW-PRF cable protection conduits are used both in the robotics engineering as well as in the aviation industry.

They feature the following advantages:

- High flexibility
- Excellent impact strength
- Excellent self-extinguishing properties
- Very low levels of smoke gas

### SPECIFICATIONS

- 40 – 105 °C, short term 150 °C
- Modified polyamide PA 12
- Self-extinguishing, according to UL94 V2
- According to IEC EN 61386: > 1100 N

Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
<b>Standard corrugation</b>								
EW-PRF-M10/P7	83181252	Black	8.50	11.60	21.00	46.00	2.0	50
EW-PRF-M12/P9	83181254	Black	9.80	13.00	22.00	51.00	2.5	50
EW-PRF-M16/P11	83181256	Black	11.80	15.90	28.00	68.00	3.6	50
EW-PRF-M20/P16	83181258	Black	15.60	21.10	38.00	95.00	5.5	50
EW-PRF-M25/P21	83181262	Black	21.60	28.50	49.00	109.00	10.0	50
EW-PRF-M32/P29	83181264	Black	28.00	34.50	67.00	142.00	12.0	25
EW-PRF-M40/P36	83181266	Black	35.00	42.50	81.00	191.00	17.0	25
EW-PRF-M50/P48	83181268	Black	47.00	54.30	102.00	237.00	23.0	25
EW-PRF-70 Jumbo	83181272	Black	68.40	80.00	200.00	390.00	44.0	25
EW-PRF-95 Jumbo <sup>1)</sup>	83181274	Black	89.40	106.10	265.00	500.00	80.5	10
<b>Grey variants</b>								
EW-PRF-M10/P7	83181212	Grey	8.50	11.60	21.00	46.00	2.1	50
EW-PRF-M12/P9 <sup>1)</sup>	83181214	Grey	9.80	13.00	22.00	51.00	2.5	50
EW-PRF-M16/P11 <sup>1)</sup>	83181216	Grey	11.80	15.90	28.00	68.00	3.6	50
EW-PRF-M20/P16 <sup>1)</sup>	83181218	Grey	15.60	21.10	38.00	95.00	5.8	50
EW-PRF-M25/P21	83181222	Grey	21.60	28.50	49.00	109.00	9.5	50
EW-PRF-M32/P29	83181224	Grey	28.00	34.50	67.00	142.00	12.0	25
EW-PRF-M40/P36 <sup>1)</sup>	83181226	Grey	35.00	42.50	81.00	191.00	16.5	25
EW-PRF-M50/P48 <sup>1)</sup>	83181228	Grey	47.00	54.30	102.00	237.00	23.0	25
EW-PRF-70 Jumbo <sup>1)</sup>	83181232	Grey	68.40	80.00	200.00	390.00	48.0	25
EW-PRF-95 Jumbo <sup>1)</sup>	83181234	Grey	89.40	106.10	265.00	500.00	81.0	10
<b>Narrow corrugation</b>								
EW-PRF-M20/P16S	83181260	Black	16.70	21.10	35.00	90.00	5.6	50
EW-PRF-M25/P21S <sup>1)</sup>	83181462	Black	23.00	28.30	44.00	104.00	10.0	50

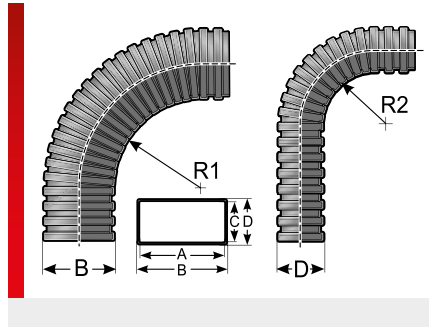
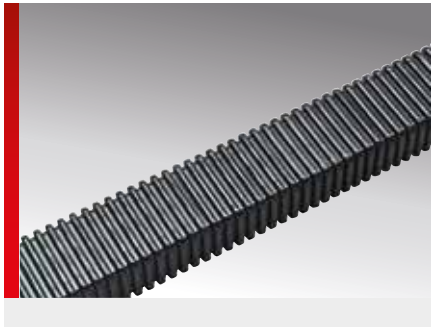


**Typ EW-PRF** (Continued...)

Type	Order No.	Colour	A Ø mm	B Ø mm	R stat. mm	R dyn. mm	Weight kg/100m	MOQ m
EW-PRF-M32/P29S	83181464	Black	28.50	34.30	62.00	132.00	14.0	25
EW-PRF-M20/P16S <sup>1)</sup>	83181220	Grey	16.70	21.10	35.00	90.00	5.6	50
EW-PRF-M25/P21S <sup>1)</sup>	83181422	Grey	23.00	28.30	44.00	104.00	9.5	50
EW-PRF-M32/P29S <sup>1)</sup>	83181424	Grey	28.50	34.30	62.00	132.00	14.0	25

<sup>1)</sup>No stock goods, delivery time and minimum order quantities upon request

## Type EF (rectangular conduit)



### PRODUCT INFORMATION

The rectangular Energoflex EF cable protection conduits are made of specially modified thermoplastic elastomer. The material is halogen, phosphor and cadmium-free. The Energoflex EW cable protection conduits are characterised by excellent flexibility and good flexural fatigue strength. With its rectangular shape, the EF conduit can be used as a cost-effective alternative to cable drag chains. For dynamic applications involving light to medium mechanical loads in mechanical and plant engineering.

Advantages of the Energoflex include:

- Little relative movement of the cables
- Low-wear interior
- Simultaneous traversing in multiple axes possible
- Higher stability compared to a conduit

System affiliation:

- Holder EF/B 26/42
- Flange connection FL-EF 26042

### SPECIFICATIONS

- 45 – 160 °C, short term 180 °C
- Thermoplastic elastomer
- According to UL94 HB
- According to IEC EN 61386: > 1000 N

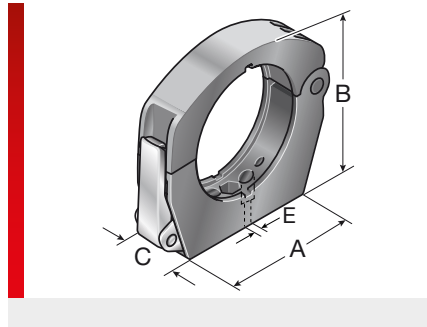


Type	Order No.	Colour	A mm	B mm	C mm	D mm	R1 stat./dyn. mm	R2 stat./dyn. mm	Weight kg/100m	MOQ m
EF 26042 Energoflex TPE	83361012	Black	42.00	50.00	26.00	34.00	110.0 / 320.0	60.0 / 120.0	24.0	3
EF 26042 Energoflex TPE, 50m	83361014	Black	42.00	50.00	26.00	34.00	110.0 / 320.0	60.0 / 120.0	22.0	50



**Fastening element**

## SH system holder








### PRODUCT INFORMATION

The SH system holder is the optimally aligned main component which, especially in conjunction with Murrflex cable protection conduits and the inlays, is able to promise excellent performance in terms of stability, operational flexibility and durability, even under high dynamic loads.

The SH 56/70 & SH 56/70-M system holder is made of a modified, impact resistant polyamide, whereas the SH 56/70-A is made of black anodised aluminium.

- Suitable for initial equipment, subsequent installations or repairs
- Excellent system stability
- Easy assembly of inlays and the cable protection conduit without tools
- Suitable for 4 different inserts/inlays
- Simple and easy configuration for dynamic or rigid applications
- Cost reduction – only one system holder for every application
- Versatile mounting options

### SPECIFICATIONS

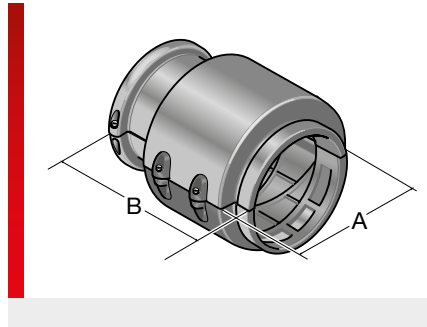
-  -40 – 110 °C, short term 140 °C
-  Type SH ... : Modified polyamide
-  Type SH ... -M: Modified polyamide
-  Type SH ... -A: Aluminium
-  According to UL94 V0



Type	Order No.	Colour	A mm	B mm	C mm	E mm	MOQ Pcs.
<b>System holder without corrugated insert</b>							
SH-P/M25-M32	83691462	Black	73.00	62.00	26.00	8.60	1
SH-P/M40-M50	83691460	Black	104.50	90.00	33.00	8.80	1
SH 56/70	83691490	Black	135.00	120.00	33.00	8.80	1
SH 80/95	83691506	Black	150.00	147.00	40.00	8.80	1
<b>System holder with corrugated insert</b>							
SH-F / M40-M50	83691450	Black	104.50	90.00	33.00	8.80	1
SH-PF / M40-M50 <sup>1)</sup>	83691470	Black	104.50	90.00	33.00	8.80	1
<b>System holder with metal closing</b>							
SH M40/M50-M	83691501	Black	118.00	90.00	33.00	8.80	1
SH 56/70-M	83691502	Black	135.00	120.00	33.00	8.80	1
<b>System holder made of aluminium</b>							
SH M40/M50-A	83691503	Anodised black	104.50	90.00	30.00	8.80	1
SH 56/70-A	83691504	Anodised black	130.00	121.00	34.00	8.80	1
SH 80/95-A	83691508	Anodised black	150.00	147.00	40.00	8.80	1
<b>Corrugated insert</b>							
ELR M40-M50	83691480	Red					1

<sup>1)</sup> Corrugated insert type ELR, included loose

## KEG-AK telescopic joint



with SH and ZS-70

### PRODUCT INFORMATION

The extendible KEG/AK telescopic joint makes a length adjustment of approx. 30 mm possible. The conduit connection piece can be pivoted by approx. 20° in all directions and can therefore adapt to the dresspack movements.

If used in conjunction with the strain-relief systems ZS-70 or ZS-70-KB it provides optimum wear protection, even when using heavy media packages.

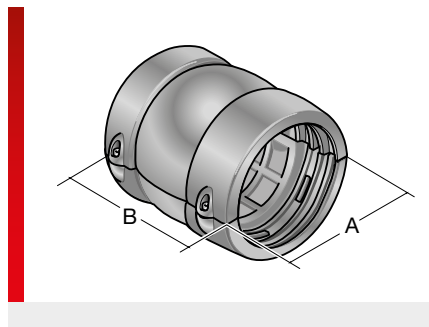
### SPECIFICATIONS

- 40 – 110 °C
  - Modified polyamide
  - According to UL94 V0
- 

Type	Order No.	Colour	Suitable for Murrflex	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
KEG/AK-70 <sup>1)</sup>	83692480	Black	NW70	SH 56/70	Split	105.00	120.00	1

<sup>1)</sup> Tightening torque 1.5Nm

## KEG/K ball bearing



with SH and V-ZLT-70

### PRODUCT INFORMATION

The KEG-K is used wherever cables or cords exit from the cable protection conduit. The type KEG-K ball joint, which can be installed into the SH system holder easily and quickly, is the optimum fit for cords, cables and conduit throughputs; especially because its integratable strain relief is freely configurable to the needs of the application.

The KEG-K is the ideal connection of the Murrflex cable protection conduit to the

SH system holder. The cables are sealed and strain is relieved at the same time.

### SPECIFICATIONS

- 40 – 110 °C
- Modified polyamide
- According to UL94 V0



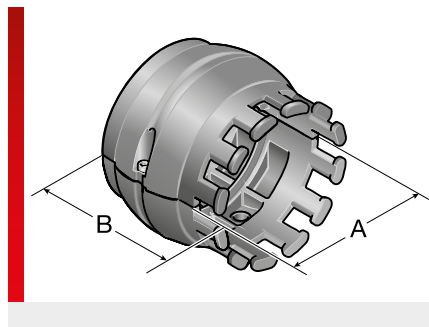
Type	Order No.	Colour	Suitable for Murrflex	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
KEG/K-M25	83692458	Black	M25/P21	SH-P/M25-M32	Split	46.50	48.50	1
KEG/K-M32	83692460	Black	M32/P29	SH-P/M25-M32	Split	46.50	48.50	1
KEG/K-M40	83692462	Black	M40/P36	SH-P/M40-M50	Split	70.00	67.00	1
KEG/K-M50	83692464	Black	M50/P48	SH-P/M40-M50	Split	70.00	67.00	1
KEG/K-56 <sup>1)</sup>	83692466	Black	NW56	SH 56/70	Split	100.50	122.40	1
KEG/K-70 <sup>1)</sup>	83692468	Black	NW70	SH 56/70	Split	100.50	122.40	1
KEG/K-80 sw <sup>1)</sup>	83692470	Black	NW80	SH 80/95	Split	126.00	170.00	1
KEG/K-95 sw <sup>1)</sup>	83692472	Black	NW95	SH 80/95	Split	126.00	170.00	1

<sup>1)</sup>Tightening torque 1.5Nm

## KEG/ZL ball joint – SRF/ZL Conduit ring



KEG/ZL and SRF/ZL



### PRODUCT INFORMATION

The KEG-ZL and SRF/ZL is used wherever cords or cables exit from the cable protection conduit with strain relief.

The separable ball end joint type KEG/ZL and the separable hose ring type SRF/ZL with integrated strain relief are simply and quickly inserted into the SH system holders and thus connect the Murrflex cable protection conduits to the robot.

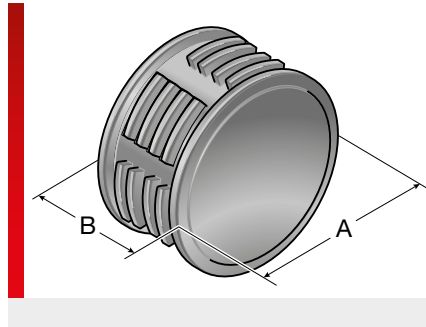
The cords, conduits and cables are connected to the integrated strain relief with cable ties.

### SPECIFICATIONS

- 40 – 110 °C
- Modified polyamide
- According to UL94 V0
- RoHS
- HF
- 

Type	Order No.	Colour	Suitable for Murrflex	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
<b>End ball joint with integrated strain relief</b>								
KEG/ZL-M25	83692258	Black	M25/P21	SH-P/M25-M32	Split	42.50	38.50	1
KEG/ZL-M32	83692260	Black	M32/P29	SH-P/M25-M32	Split	42.50	38.50	1
KEG/ZL-M40	83692262	Black	M40/P36	SH-P/M40-M50	Split	69.00	56.50	1
KEG/ZL-M50	83692264	Black	M50/P48	SH-P/M40-M50	Split	69.00	56.50	1
<b>Hose ring (fixed) with integrated strain relief</b>								
SRF/ZL-70	83692266	Black	70 Jumbo	SH 56/70	Split	89.50	58.50	1
SRF/ZL-95	83692270	Black	95 Jumbo	SH 80/95	Split	119.00	74.50	1

## Strain relief cable star









ZS-70-KB

### PRODUCT INFORMATION

The cable star grommet is the optimum and most cord friendly strain relief for your cables, also offering the highest degree of tear-out resistance. The elongated KB version is fastened with an additional conduit clamp to facilitate even extreme loads. Another benefit of the cable star grommet is its preventive properties against the ingress of contamination into the dresspack.

Simply drill holes of the appropriate cable diameter into the R-ZL. Or, with a minimum order of 10 pieces, we can produce your customised hole pattern, using our waterjet technology. Talk to us!

### SPECIFICATIONS

	-40 – 110 °C
	Elastomer
	According to UL94 HB
	
	
	

Type	Order No.	Colour	Suitable for System holder	A mm	B mm	MOQ Pcs.
<b>Strain relief as blank for self-made assembly</b>						
R-ZL/N1 21/29 <sup>1)</sup>	83951606	Black		33.50	18.00	1
R-ZL/N1 36/48 <sup>2)</sup>	83951610	Black		55.00	18.00	1
V-ZLT-70 <sup>3)</sup>	83692802	Black		82.50	39.00	1
V-ZLT-70KB <sup>3)</sup>	83692804	Black		82.50	66.50	1
V-ZLT-95 <sup>5)</sup>	83692830	Black		102.00	39.00	1
V-ZLT-95KB <sup>5)</sup>	83692832	Black		102.00	66.00	1
<b>Strain relief system</b>						
ZS-70 <sup>4)</sup>	83692806	Black	SH 56/70	100.90	60.35	1
ZS-70-KB <sup>4)</sup>	83692808	Black	SH 56/70	100.90	85.40	1
ZS-95 strain relief system <sup>4)</sup>	83692834	Black	SH 80/95	102.00	57.00	1
ZS-95-KB strain relief system <sup>4)</sup>	83692836	Black	SH 80/95	102.00	82.00	1

<sup>1)</sup> Suitable for KEG-K M25 and KEG-K M32

<sup>2)</sup> Suitable for KEG-K M40 and KEG-K M50

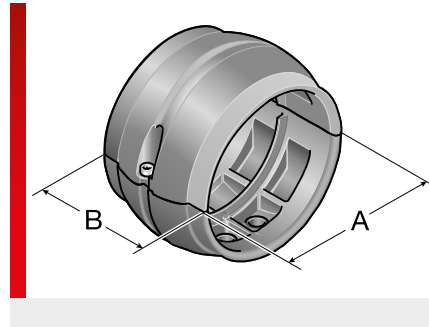
<sup>3)</sup> Suitable for KEG-K 56 and KEG-K 70

<sup>4)</sup> Tightening torque 1.5Nm

<sup>5)</sup> Suitable for KEG-K 80 and KEG-K 95



## KMG/F ball bearing - SRF hose ring



### PRODUCT INFORMATION

The KMG/F and SRF have been designed for robot applications and other moving handling equipment.




The SH system holder can be mounted easily and quickly in the detachably connected inlays and is the perfect fit for fixing Murrflex cable protection conduits.

The KMG-F and SRF are made of especially modified polyamide.

The special advantages of the KMG-F centre ball joint and of the SRF hose ring are:

- Suitable for conversions or subsequent installation
- May be used statically fixed (KMG-F + SRF) or detachable at the axis (KMG-F)
- Long service life
- Easy assembly and disassembly
- Murrflex cable protection conduits are firmly fastened and are therefore securely routed

### SPECIFICATIONS

	-40 – 110 °C, short term 140 °C
	Modified polyamide
	According to UL94 V0

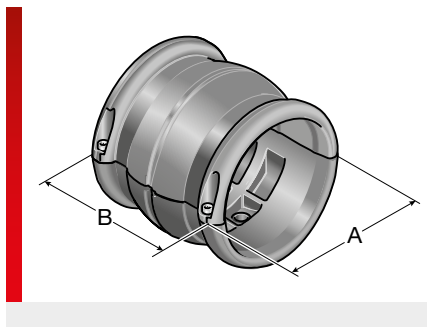


Type	Order No.	Colour	Suitable for Murrflex	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
<b>Centre ball joint (fixed) for fastening cable protection conduits</b>								
KMG-F-M25	83691658	Black	M25/P21	SH-P/M25-M32	Split	42.50	27.50	1
KMG-F-M32	83691660	Black	M32/P29	SH-P/M25-M32	Split	42.50	27.50	1
KMG-F-M40	83691662	Black	M40/P36	SH M40-M50	Split	69.00	44.00	1
KMG-F-M50	83691664	Black	M50/P48	SH M40-M50	Split	69.00	44.00	1
<b>Set consists of KMG/F + SH-P M40/M50</b>								
Set KMG-F-M40 <sup>1)</sup>	83691663	Black	M40/P36		Split	69.00	44.00	1
Set KMG-F-M50 <sup>1)</sup>	83691665	Black	M50/P48		Split	69.00	44.00	1
<b>Hose ring (fixed) for fastening cable protection conduits</b>								
SRF-M40/P36 <sup>2)</sup>	83692288	Black	M40/P36	SH 56/70	Split	89.50	27.00	1
SRF-M50/P48 <sup>2)</sup>	83692289	Black	M50/P48	SH 56/70	Split	89.50	27.00	1
SRF-56	83692290	Black	NW56	SH 56/70	Split	89.50	27.00	1
SRF-68	83692291	Black	NW68	SH 56/70	Split	89.50	27.00	1
SRF-70	83692292	Black	NW70	SH 56/70	Split	89.50	27.00	1
SRF-80	83692294	Black	NW80	SH 80/95	Split	119.00	46.00	1
SRF-95	83692296	Black	NW95	SH 80/95	Split	119.00	46.00	1
<b>Set consist of SRF + SH 56/70</b>								
Set SRF-68	83692246	Black	NW68		Split	89.50	27.00	1

<sup>1)</sup> No stock goods, delivery time and minimum order quantities upon request

<sup>2)</sup> \* mainly developed for use in the R-Tec Box-36/48 for continuous laying of a Murrplastik corrugated conduit.

## KMG/G ball bearing



### PRODUCT INFORMATION

The KMG-G is mainly used for dynamic applications, as you may find in robots and other movable handling devices. The detachably connected type KMG-G centre ball joint can be mounted at the SH system holder easily and quickly. The KMG-G facilitates a smooth gliding movement through the longitudinal axis whenever the cable protection conduit

is moving in the longitudinal direction. This makes the KMG-G the perfect fastening system of the Murrflex cable protection conduits to the SH system holder. Therefore lines and cables can be routed and protected with absolute process protection and length adaptability, even in highly dynamic applications.

### SPECIFICATIONS

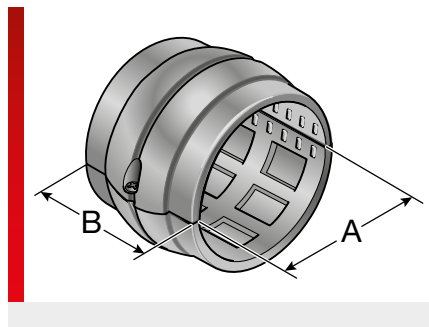
- 40 – 110 °C
- Modified polyamide
- According to UL94 V0

RoHS
 HF

Type	Order No.	Colour	Suitable for Murrflex	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
KMG/G-M25	83691858	Black	M25/P21	SH-P/M25-M32	Split	42.50	36.00	1
KMG/G-M32	83691860	Black	M32/P29	SH-P/M25-M32	Split	42.50	36.00	1
KMG/G-M40	83691862	Black	M40/P36	SH-P/M40-M50	Split	70.00	70.00	1
KMG/G-M50	83691864	Black	M50/P48	SH-P/M40-M50	Split	70.00	70.00	1



## KMG-F H ball bearing



### PRODUCT INFORMATION

The detachably connected KMG/F-H is the perfect fixation for coiled heat conduits. Our ball joint can be placed into the SH-system holder quickly and easily and is mostly used for robot applications and other smaller handling equipment. This way your heat conduits are routed and protected for any application with absolute process safety.

### SPECIFICATIONS

- 40 – 110 °C
- Modified polyamide
- According to UL94 V0

Type	Order No.	Colour	Suitable for System holder	Version	A mm	B mm	MOQ Pcs.
KMG-F H45/13	83691670	Black	SH-P/M40-M50	Split	45.70	44.00	1
KMG-F H55/16	83691672	Black	SH-P/M40-M50	Split	55.25	44.00	1
KMG-F H66/25	83691674	Black	SH 56/70	Split	66.50	45.00	1
Set KMG-F H45/13 <sup>1), 4)</sup>	83691602	Black		Split			1
Set KMG-F H55/16 <sup>2), 4)</sup>	83691604	Black		Split			1
Set KMG-F H66/25 <sup>3)</sup>	83691606	Black		Split			1

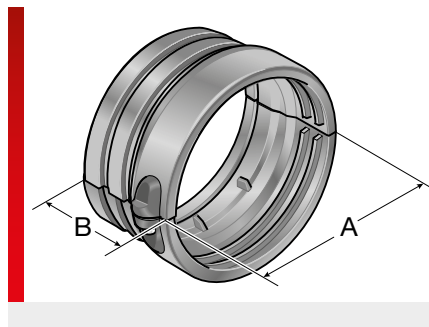
<sup>1)</sup>Set consists of KMG-F H45/13 and SH M40/M50

<sup>2)</sup>Set consists of KMG-F H55/16 and SH M40/M50

<sup>3)</sup> Set consists of KMG-F H 66/25 and SH 56/70

<sup>4)</sup> No stock goods, delivery time and minimum order quantities upon request

## A-RS conduit adapter



### PRODUCT INFORMATION

The A-RS conduit adapter is intended for corrugated conduits from third party manufacturers that may have different diameters. They facilitate secure manoeuvring at the robot arm with optimum hold.

### SPECIFICATIONS

- 40 – 110 °C
- Modified polyamide
- According to UL94 V0

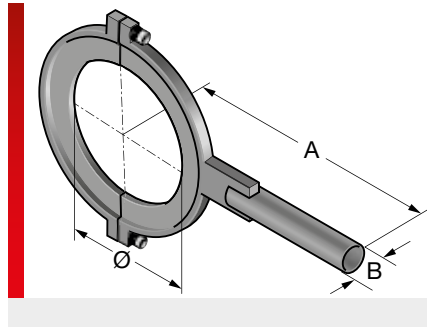
RoHS
 HF

Type	Order No.	Colour	Suitable for Murrflex	Version	A mm	B mm	MOQ Pcs.
A-RS-56 sw <sup>1)</sup>	83692280	Black	NW52	Split	102.50	46.00	1
A-RS-70 sw <sup>1)</sup>	83692282	Black	NW70	Split	102.50	46.00	1

<sup>1)</sup> Tightening torque 1.5Nm

AUR

## Tension clamp (axis 6)



### PRODUCT INFORMATION

The R-SSR tension clamp serves to provide a fixing point on axis 6. Additional fastening elements can be affixed to the tension clamp as required.

### SPECIFICATIONS

Sheet steel, powder-coated

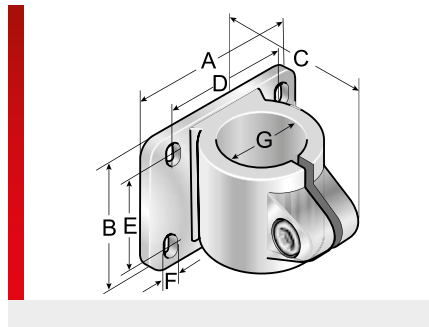
Type	Order No.	Colour	Ø mm	A mm	B mm	MOQ Pcs.
Kuka KR6, KR 10 retaining plate, axis 6	83692753	Black	39.50	83.00		1
R-SSR D 50 tension clamp with angled sheet	83952697	Black	50.00	89.50		1
R-SSR 63 tension clamp UR3 <sup>1)</sup>	83693201	Black	63.00	54.00		1
R-SSR 63 tension clamp with angled sheet <sup>2)</sup>	83952699	Black	63.00	99.30		1
R-SSR 75 tension clamp UR5 <sup>1)</sup>	83693202	Black	75.00	60.00		1
R-SSR 90 tension clamp UR10 <sup>1)</sup>	83693203	Black	90.00	68.00		1
R-SSR 95-1 15° clamp	83952669	Black	95.00	289.00	32.00	1
R-SSR 100-1 tension clamp with pipe 15°	83952626	Black	100.00	289.00	32.00	1
R-SSR 116-2 tension clamp with pipe, straight	83692712	Black	116.00	301.00	32.00	1
R-SSR 125-1 tension clamp with pipe 15°	82952696	Black	125.00	361.60	32.00	1
R-SSR 125-2 tension clamp with pipe, straight	82390044	Black	125.00	352.50	32.00	1
R-SSR 140-2 tension clamp with pipe, straight	82390067	Black	140.00	355.00	32.00	1
R-SSR 160-1 tension clamp with pipe 15°	83952628	Black	160.00	374.40	32.00	1
R-SSR 160-2 tension clamp with pipe, straight	83952629	Black	160.00	370.00	32.00	1
R-SSR 172-1 tension clamp with pipe 15°	83952634	Black	172.00	384.00	32.00	1
R-SSR 180-1 tension clamp with pipe 15°	82390032	Black	180.00	384.00	32.00	1
R-SSR 190-1 tension clamp with pipe 15°	83952638	Black	190.00	384.00	32.00	1
R-SSR 200-1 tension clamp with pipe 15°	83952642	Black	200.00	388.20	32.00	1
R-SSR 220-1 tension clamp with pipe 15°	83952640	Black	220.00	392.30	32.00	1
R-SSR 250-1 tension clamp with pipe 15°	83952646	Black	250.00	412.30	32.00	1
R-SSR 315-1 tension clamp with pipe 15°	83692711	Black	315.00	493.70	32.00	1

<sup>1)</sup> Suitable for system holder SH M25/M32

<sup>2)</sup> Suitable for system holder SH M40/M50



## Flange clamp



with FKE 32 and SH 56/70-M

### PRODUCT INFORMATION

The R-FKM and R-FKE pipe clamps facilitate connecting R-SSR tension clamps with other components. Clamping on the entire pipe circumference. With hub flange for pivot bearings and base plate.

The R-FKM pipe clamps need the R-FKG base plate for fixing a system holder.

The Type R-FKE pipe clamp does not need the additional base plate; the system holder can be attached directly.

### SPECIFICATIONS

Aluminium

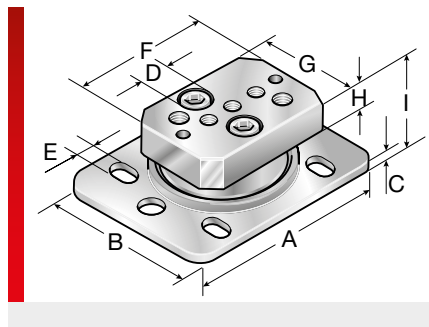
Type	Order No.	Colour	A mm	B mm	C mm	D Angle °	E mm	F mm	G mm	MOQ Pcs.
R-FKE 32	83952614	Anodised black	60.00	60.00	93.00				32.00	1
R-FKM 32 <sup>1)</sup>	83952610	Silver	105.00	80.00	85.00	80.00	58.00	8.50	32.00	1
R-FKM 40 <sup>1)</sup>	83952612	Silver	105.00	80.00	85.00	80.00	58.00	8.50	40.00	1

<sup>1)</sup>Adapter plate R-FKG is required for the installation of a system holder.





## Pivot bearing



R-DLM with TRO 70

### PRODUCT INFORMATION

The pivot bearing can be rotated in 360° and is on a ball bearing.

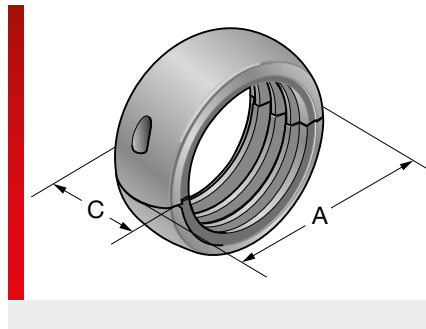
- R-DZM pivot bearings with adapter plates for mounting type SH system holders
- R-DLM individual pivot bearing for use with TRO 70 trumpet

### SPECIFICATIONS

Steel  
 Steel, powder coated

Type	Order No.	Colour	A mm	B mm	C mm	E mm	F mm	G mm	H mm	I mm	K Thread	MOQ Pcs.
<b>Pivot bearing with adapter plate</b>												
R-DZM	83952212	Silver / Black	120.00	85.00	5.00	9.00	80.00	45.00	15.00	34.00	M10x1,5	1
<b>Pivot bearing without adapter plate</b>												
R-DLM	83952211	Silver	120.00	85.00	5.00	9.00					M10x1,5	1

## PR/SV protector



### PRODUCT INFORMATION

The PR/SV protectors are made of specially modified polyamide 6. The material is halogen, phosphor and cadmium-free. The protectors are used for impact protection and connecting cable protection conduits and also protect against wear.

The PR/SV protectors feature the following advantages:

- Flat construction
- Simple assembly with a sliding lock and optional lock screw assembly
- High tear-out strength

### SPECIFICATIONS

- 40 – 110 °C, short term 140 °C
- UL listed material mod. polyamide PA 6
- According to UL94 V0 self-extinguishing

Type	Order No.	Colour	Suitable for Murrflex	Suitable for Murrflex EWX	A mm	C mm	MOQ Pcs.
<b>Standard design for cable protection conduits with standard corrugation, type EW-xx / type EWT-xx</b>							
PR/SV-EW 21	83691058	Black	M25/P21		51.60	51.20	10
PR/SV-EW 29	83691060	Black	M32/P29		57.90	51.00	10
PR/SV-EW 36	83691062	Black	M40/P36		66.00	51.50	10
PR/SV-EW 48	83691064	Black	M50/P48		78.00	49.50	10
PR/SV-EW 56	83691065	Black	NW56		90.80	51.00	5
PR/SV-EW 21 <sup>1)</sup>	83691018	Grey	M25/P21		51.60	51.20	10
PR/SV-EW 29	83691020	Grey	M32/P29		57.90	51.00	10
PR/SV-EW 36 <sup>1)</sup>	83691022	Grey	M40/P36		66.00	51.50	10
PR/SV-EW 48 <sup>1)</sup>	83691024	Grey	M50/P48		78.00	49.50	10
PR/SV-EW 56 <sup>1)</sup>	83691025	Grey	NW56		90.80	51.00	5
<b>Standard design for cable protection conduits with high corrugation, type EWX-xx</b>							
PR/SV-EWX 21	83691258	Black	M25/P21		51.60	51.90	10
PR/SV-EWX 29	83691260	Black	M32/P29		57.90	51.00	10
PR/SV-EWX 36	83691262	Black	M40/P36		66.00	51.50	10
PR/SV-EWX 48	83691264	Black	M50/P48		78.00	49.50	10
PR/SV-EWX 56	83691265	Black	NW56		90.80	51.00	5
PR/SV-EWX 21 <sup>1)</sup>	83691218	Grey	M25/P21		51.60	51.90	10
PR/SV-EWX 29 <sup>1)</sup>	83691220	Grey	M32/P29		57.90	51.00	10
PR/SV-EWX 36 <sup>1)</sup>	83691222	Grey	M40/P36		66.00	51.50	10
PR/SV-EWX 48 <sup>1)</sup>	83691224	Grey	M50/P48		78.00	49.50	10
PR/SV-EWX 56 <sup>1)</sup>	83691225	Grey	NW56		90.80	51.00	5

**Type PR/SV** (continued)

Type	Order No.	Colour	Suitable for Murrflex	Suitable for Murrflex EWX	A mm	C mm	MOQ Pcs.
<b>Standard design for cable protection conduits with standard corrugation, type EW-xx and high corrugation, type EWX-xx</b>							
PR/SV-UNI 70	83691267	Black	NW70	70 Jumbo	103.50	51.50	1
PR/SV-UNI 80	83691269	Black	NW80	80 Jumbo	119.00	51.50	1
PR/SV-UNI 95	83691270	Black	NW95	95 Jumbo	130.00	51.50	1
PR/SV-UNI 70	83691227	Grey	NW70	70 Jumbo	103.50	51.50	5
<b>Long design for cable protection conduits with standard corrugation, type EW-xx and high corrugation, type EWX-xx</b>							
PR/SV 70L	83691067	Black	NW70	70 Jumbo	103.50	97.00	1
PR/SV 70L	83691069	Red	NW70	70 Jumbo	103.50	97.00	1

<sup>1)</sup>No stock goods, delivery time and minimum order quantities upon request

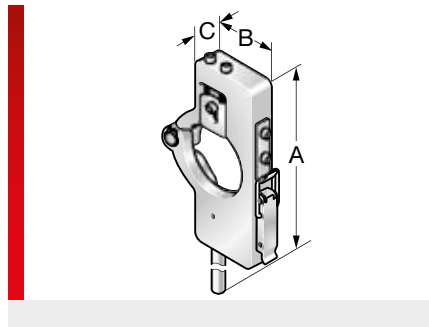


## Accessories

AUR



## Type m-cut



### PRODUCT INFORMATION

The type m-cut corrugated conduit cutter is made of aluminium and makes length adjustments for Murrplastik cable protection conduits easy and safe. It can be used by both the right and left-handed. A sturdy double-edged blade has been installed to achieve perfectly cut edges.

Furthermore, the corrugated conduit cutters feature the following advantages:

- Extremely easy handling
- Safe handling, because of its spring-loaded blade cover, which covers the blade when the cutter is not in use.
- Faster and more secure blade exchange  
-> blades are available as spare parts
- Low weight

### SPECIFICATIONS

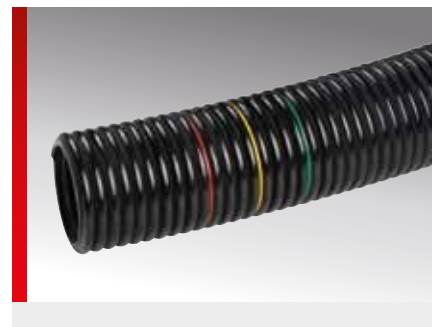
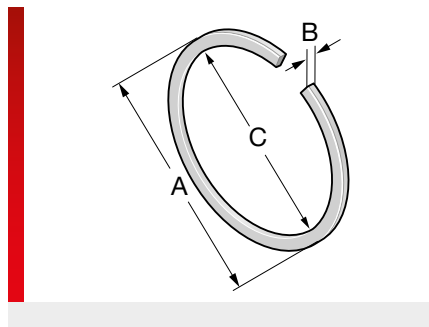


Type	Order No.	Suitable for Murrflex	MOQ Pcs.
m-cut M40 B	83729222	M40/P36	1
m-cut M50 B	83729224	M50/P48	1
m-cut 56 B	83729226	NW56	1
m-cut 70 B	83729228	NW70	1
m-cut 95 B	83729230	NW95	1
m-cut replacement blade	83729232		1





## Position marker



### PRODUCT INFORMATION

Conduit marking for any number of uses in robotics and mechanical engineering applications.  
Can be installed in seconds on EW and EWX cable protection conduits.

### SPECIFICATIONS

- 20 – 105 °C
- According to UL94 HB

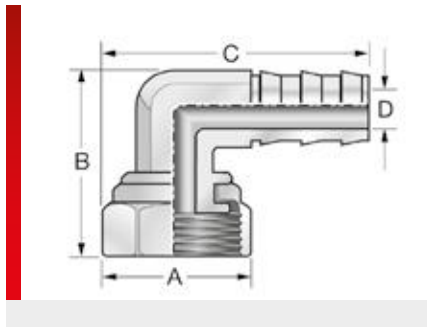
Type	Order No.	Colour	A mm	B mm	MOQ Pcs.
<b>Position markers for EW, EW-LS, EWT and EWX</b>					
Position marker - 36 - yellow	83692641	Yellow	32.70	1.75	5
Position marker - 36 - green	83692636	Green	32.70	1.75	5
Position marker - 36 - red	83692646	Red	32.70	1.75	5
Position marker - 48 - yellow	83692642	Yellow	41.20	1.75	5
Position marker - 48 - green	83692637	Green	41.20	1.75	5
Position marker - 48 - red	83692647	Red	41.20	1.75	5
Position marker - 56 - yellow	83692643	Yellow	59.10	1.75	5
Position marker - 56 - green	83692638	Green	59.10	1.75	5
Position marker - 56 - red	83692648	Red	59.10	1.75	5
Position marker - 70 - yellow	83692644	Yellow	70.50	1.75	5
Position marker - 70 - green	83692639	Green	70.50	1.75	5
Position marker - 70 - red	83692649	Red	70.50	1.75	5
Position marker - 80 - yellow	83692732	Yellow	82.60	1.75	5
Position marker - 80 - green	83692731	Green	82.60	1.75	5
Position marker - 80 - red	83692730	Red	82.60	1.75	5
Position marker - 95 - yellow	83692736	Yellow	95.00	1.75	5
Position marker - 95 - green	83692735	Green	95.00	1.75	5
Position marker - 95 - red	83692734	Red	95.00	1.75	5
Position marker - set 36	83692690		32.70	1.75	1
Position marker - set 48	83692692		41.20	1.75	1
Position marker - set 56	83692694		59.10	1.75	1
Position marker - set 70	83692698		70.50	1.75	1
Position marker - set 80	83692733		82.60	1.75	1
Position marker - set 95	83692737		95.00	1.75	1







## R-MSA hose nozzle



### PRODUCT INFORMATION

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.

### SPECIFICATIONS

Brass

Type	Order No.	Colour	A mm	B mm	Threaded connection	Conduit connection	Width across flats	MOQ Pcs.
<b>Straight</b>								
R-MSA/G M16/G3/8 <sup>(1)</sup>	83952902	Typical for the material	38.00		M16X1,5	3/8"	19.00	25
R-MSA/G M22/G1/2 <sup>(1)</sup>	83952904	Typical for the material	42.00		M22x1,5	1/2"	27.00	50
<b>45° bend</b>								
R-MSA/45 M16/G3/8 <sup>(1)</sup>	83952930	Typical for the material	58.00	18.00	M16X1,5	3/8"	19.00	10
R-MSA/45 M22/G1/2 <sup>(1)</sup>	83952932	Typical for the material	68.00	19.00	M22x1,5	1/2"	27.00	10
<b>90° bend</b>								
R-MSA/90 M16/G3/8 <sup>(1)</sup>	83952960	Typical for the material	33.00	49.00	M16X1,5	3/8"	19.00	10
R-MSA/90 M22/G1/2 <sup>(1)</sup>	83952962	Typical for the material	39.00	60.00	M22x1,5	1/2"	27.00	25
<b>Bulkhead nozzle</b>								
R-MSA/S M16	83952970	Typical for the material	52.00		M16X1,5		22.00	25
R-MSA/S M22	83952972	Typical for the material	57.00		M22x1,5		30.00	20

<sup>1)</sup>No stock goods, delivery time and minimum order quantities upon request





# Appendix

AUR





# Base plates and recirculation systems for KUKA robots

●	Base plate required
○	Base plate optional

## KUKA ROBOT TYPE

	83692760 Base plate KUKA KR10 R 1100	83692750 Base plate KUKA KR16	83692757 Base plate KUKA KR30 - KR60	83692620 Base plate KUKA KR30 - KR60	Recirculation system M25/M32	R-Tec Box-S M32/M40	R-Tec Box M40/M50	R-Tec Liner
KR 3 R540 (KR AGILUS)	●			●				
KR 6 R700 five (KR AGILUS)	●			●				
KR 6 R700 sixx (KR AGILUS)	●			●				
KR 6 R700 sixx WP (KR AGILUS)	●			●				
KR 6 R900 five (KR AGILUS)	●			●				
KR 6 R900 sixx (KR AGILUS)	●			●				
KR 6 R900 sixx WP (KR AGILUS)	●			●				
KR 10 R900 sixx (KR AGILUS)	●			●				
KR 10 R900 sixx WP (KR AGILUS)	●			●				
KR 10 R1100 five (KR AGILUS)	●			●				
KR 10 R1100 sixx (KR AGILUS)	●			●				
KR 10 R1100 sixx WP (KR AGILUS)	●			●				
KR 5 arc		●			●			
KR 6-2		●			●			
KR 16-2		●			●			
KR 16 L6-2		●			●			
KR 20-3		●			●			
KR 5-2 arc HW		●			●			
KR 16 arc HW		●			●			
KR 16-2 F		●			●			
KR 16-2 KS-F		●			●			
KR 16 L6-2 KS		●			●			
KR 16-2 CR		●			●			
KR 30-3			●		●			
KR 30 L16-2			●		●			
KR 60-3			●		●			
KR 30-3 F			●		●			
KR 30-4 KS-F			●		●			
KR 30-4 KS			●		●			
KR 30-3 CR			●		●			
KR 30 HA (High Accuracy)			●		●			
KR 60-3 F			●		●			
KR 60-4 KS-F			●		●			
KR 60-4 KS			●		●			
KR 60 L16-2 KS			●		●			
KR 90 R2700 pro (KR QUANTEC pro)				●		●	●	○
KR 120 R2500 pro (KR QUANTEC pro)				●		●	●	○
KR 90 R3100 extra (KR QUANTEC extra)				●		●	●	○
KR 120 R2900 extra (KR QUANTEC extra)				●		●	●	○
KR 150 R2700 extra (KR QUANTEC extra)				●		●	●	○
KR 210 R2700 extra (KR QUANTEC extra)				●		●	●	○
KR 180 R2500 extra (KR QUANTEC extra)				●		●	●	○
KR 90 R3100 extra F-HP (KR QUANTEC extra)				●		●	●	○
KR 120 R2900 extra F-HP (KR QUANTEC extra)				●		●	●	○
KR 150 R2700 extra F-HP (KR QUANTEC extra)				●		●	●	○
KR 180 R2500 extra F-HP (KR QUANTEC extra)				●		●	●	○

Continued on the next page



# Base plates and recirculation systems for KUKA robots



●	Base plate required
○	Base plate optional

83692760	Base plate KUKA KR10 R 1100
83692750	Base plate KUKA KR16
83692757	Base plate KUKA KR30 - KR60
83692620	Recirculation system M25/M32
	R-Tec Box-S M32/M40
	R-Tec Box M40/M50
	R-Tec Liner

## KUKA ROBOT TYPE

KUKA ROBOT TYPE	83692760	83692750	83692757	83692620	Recirculation system M25/M32	R-Tec Box-S M32/M40	R-Tec Box M40/M50	R-Tec Liner
KR 150 R3100 prime (KR QUANTEC prime)			●			●	●	○
KR 180 R2900 prime (KR QUANTEC prime)			●			●	●	○
KR 210 R2700 prime (KR QUANTEC prime)			●			●	●	○
KR 240 R2500 prime (KR QUANTEC prime)			●			●	●	○
KR 240 R2700 prime (KR QUANTEC)			●			●	●	○
KR 90 R3700 prime K (KR QUANTEC prime)			●			●	●	○
KR 120 R3500 prime K (KR QUANTEC prime)			●			●	●	○
KR 150 R3300 prime K (KR QUANTEC prime)			●			●	●	○
KR 180 R3100 prime K (KR QUANTEC prime)			●			●	●	○
KR 210 R2900 prime K (KR QUANTEC prime)			●			●	●	○
KR 210 R2700 prime F (KR QUANTEC prime)			●			●	●	○
KR 210 R3100 ultra (KR QUANTEC ultra)			●			●	●	○
KR 240 R2900 ultra (KR QUANTEC ultra)			●			●	●	○
KR 270 R2700 ultra (KR QUANTEC ultra)			●			●	●	○
KR 300 R2500 ultra (KR QUANTEC ultra)			●			●	●	○
KR 210 R3100 ultra F (KR QUANTEC ultra)			●			●	●	○
KR 120 R3900 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 150 R3700 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 180 R3500 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 210 R3300 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 240 R3100 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 270 R2900 ultra K (KR QUANTEC ultra)			●			●	●	○
KR 240 R2900 ultra F (KR QUANTEC ultra)			●			●	●	○
KR 270 R2700 ultra F (KR QUANTEC ultra)			●			●	●	○
KR 300 R2500 ultra F (KR QUANTEC ultra)			●			●	●	○
KR 240 R3330 (KR 360 FORTEC)			●			●	●	○
KR 280 R3080 (KR 360 FORTEC)			●			●	●	○
KR 360 R2830 (KR 360 FORTEC)			●			●	●	○
KR 340 R3330 (KR 500 FORTEC)			●			●	●	○
KR 420 R3080 (KR 500 FORTEC)			●			●	●	○
KR 480 R3330 MT (KR 500 FORTEC)			●			●	●	○
KR 500 R2830 (KR 500 FORTEC)			●			●	●	○
KR 500 R2830 MT (KR 500 FORTEC)			●			●	●	○
KR 420 R3330 (KR 600 FORTEC)			●			●	●	○
KR 510 R3080 (KR 600 FORTEC)			●			●	●	○
KR 600 R2830 (KR 600 FORTEC)			●			●	●	○
KR 120 R3200 PA (KR QUANTEC)			●			●	●	○
KR 180 R3200 PA (KR QUANTEC)			●			●	●	○
KR 240 R3200 PA (KR QUANTEC)			●			●	●	○
KR 300-2 PA			●			●	●	○
KR 470-2 PA			●			●	●	○
KR 700 PA			●			●	●	○

AUR



## Base plates and recirculation systems for ABB robots

●	Base plate required
○	Base plate optional

ABB ROBOT TYPE	83692762 Base plate ABB IRB Series 1600	83692763 Base plate ABB IRB 2600	83692625 Base plate ABB SERIE 4600	83692623 Base plate ABB SERIE 6400	83692627 Base plate ABB SERIE 6600	83692622 Base plate ABB SERIE 6620	83692761 Base plate ABB SERIE 7600	Recirculation system M25/M32	R-Tec Box-S M32/M40	R-Tec Box M40/M50	R-Tec Liner
ABB IRB 1600	●							●			
ABB IRB 2600		●						●			
ABB IRB 4600			●						●	●	●
ABB IRB 6400				●						●	●
ABB IRB 6600					●			●	●	●	●
ABB IRB 6620						●		●	●	●	●
ABB IRB 6640							●	●	●	●	●
ABB IRB 6650							●	●	●	●	●
ABB IRB 6650S							●	●	●	●	●
ABB IRB 6660							●	●	●	●	●
ABB IRB 6700							●	●	●	●	●
ABB IRB 7600							●	●	●	●	●

## Base plates and recirculation systems for Yaskawa-Motoman robots

●	Base plate required
○	Base plate optional

YASKAWA-MOTOMAN ROBOT TYPE	83692629 Base plate Motoman MS165, MH180	83692628 Base plate Motoman MH50	Recirculation system M25/M32	R-Tec Box-S M32/M40	R-Tec Box M40/M50	R-Tec Liner
Yaskawa-Motoman ES165RDII	●		●	●	●	
Yaskawa-Motoman ES200RDII	●		●	●	●	
Yaskawa-Motoman MH50-20II		●	●			
Yaskawa-Motoman MH180-120	●		●	●	●	
Yaskawa-Motoman MH180	●		●	●	●	
Yaskawa-Motoman MH225	●		●	●	●	
Yaskawa-Motoman MH280II	●		●	●	●	
Yaskawa-Motoman MS165	●		●	●	●	
Yaskawa-Motoman MS210	●		●	●	●	
Yaskawa-Motoman ES280-D	●		●	●	●	

