

ROBOTRAX

3D multi-axis
3D cable carrier system
cable system
carrier



KABELSCHLEPP

Key Features:

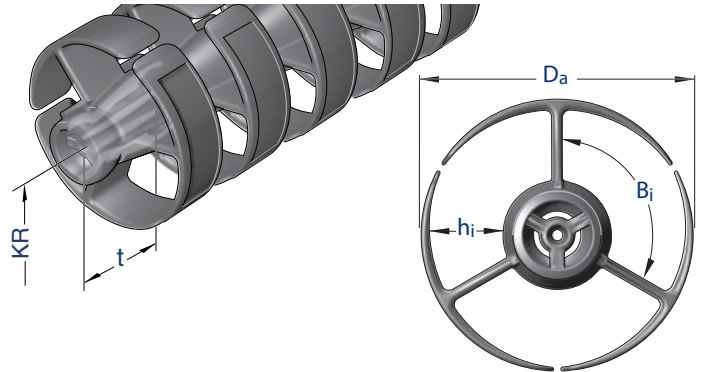
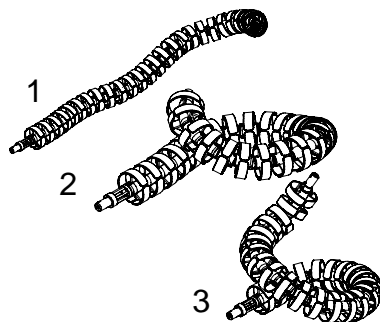
- Perfect for 3D multi-axis movement applications. Maintains a pre-determined minimum bend radius
- Open-style design allows for easy installation, inspection and service of cables and hoses
- High tensile strength, braided steel wire rope core gives added strength
- Use in articulating arm robotic applications and for applications requiring 3D, swiveling, and rotating movements: the same system can be used in robot base and robot arm locations
- Optimum protection for the longevity of your cables and/or hoses:
 - Minimum bend radius of cables and/or hoses is maintained
 - Cables and/or hoses can be properly partitioned into three separate compartments
- Easy installation: Cables/hoses can be easily pressed into the carrier system's cavity partitions
- Quick-opening mounting brackets: Easily attach any link of the ROBOTRAX system to any mounting point on the robot



GENERAL DATA

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<p>A product group's EVA score is a general indicator that allows a customer to quickly and easily compare a product group's basic price, features, capabilities and value relative to other comparably sized products within the KS product range.</p>	
<p>Download 3D CAD files, videos, updated product info & much more at: www.kabelschlepp.com/robotrax.htm</p>	

Example of typical ROBOTRAX 3D articulation



Dimensions in inches (mm)

Technical Data

	Bend Radius KR	Outer Link Diameter Ø Da	Inner Link Diameter Ø Bi	Cavity Height hi	Pitch Link Length t	Recommended Cable/Hose Diameters Ø
R 040	3.15 (80)	1.57 (40)	1.06 (27)	0.39 (10)	0.85 (21.5)	0.08 to 0.33 (2) to (8.5)
R 056	4.53 (115)	2.20 (56)	1.54 (39)	0.55 (14)	1.26 (32)	0.08 to 0.43 (2) to (11)
R 075	5.71 (145)	2.95 (75)	2.05 (52)	0.87 (22)	1.57 (40)	0.12 to 0.71 (3) to (18)
R 085	6.89 (175)	3.35 (85)	2.13 (54)	0.94 (24)	1.57 (40)	0.12 to .079 (3) to (20)
R 100	7.68 (195)	3.94 (100)	2.52 (64)	1.22 (31)	1.57 (40)	0.12 to 1.06 (3) to (27)

Typical ROBOTRAX System Components



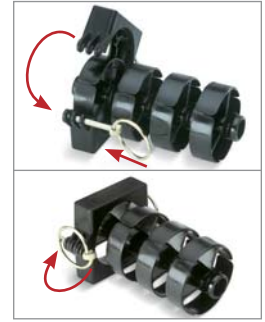
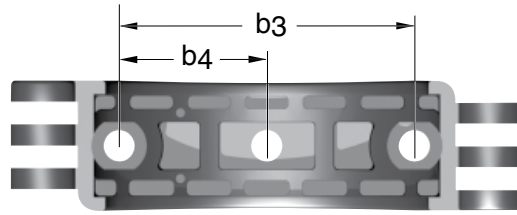
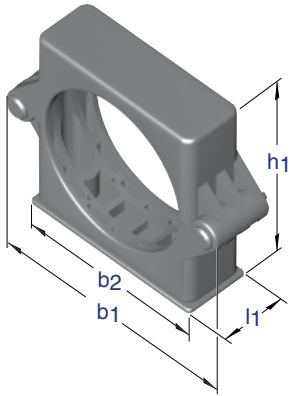
Ordering a complete ROBOTRAX cable carrier system

ROBOTRAX carrier system; completely assembled with the required number of mounting brackets, steel wire and metal shim bolts.

For example: R 075 - 145 x 50 links + 4 mounting brackets

$$\begin{array}{ccccccc}
 \text{Number of} & \times & \text{Carrier} & + & \text{Bend} & \times & \text{Links in} & + & \text{Number of} \\
 \text{Systems Req.} & & \text{Type} & & \text{Radius} & & \text{Length} & & \text{Brackets} \\
 \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow \\
 10 & \times & R\ 075 & - & 145 & \times & 50\ \text{Links} & + & 4\ \text{Brackets}
 \end{array}$$

Specifications are subject to change without notice.
KS-1106-GC-A



Clam-shell closure with spring-clip locking pin

Dimensions for Hinged-Opening Mounting Brackets

inches (mm)

Type	Overall Height h1	Overall Depth l1	Overall Width b1	Mounting Width b2	Outer Hole Offset b3	Inner Hole Offset b4	Fastening Bolt Types
R 40	2.13 (54)	0.59 (15)	3.23 (82)	1.97 (50)	1.42 (36)	0.71 (18)	M4 Required
R 056	2.76 (70)	0.87 (22)	3.39 (86)	2.48 (63)	1.89 (48)	0.94 (24)	M4 Required
R 075	3.39 (86)	1.10 (28)	4.33 (110)	3.23 (82)	2.52 (64)	1.26 (32)	M6 Required
R 085	4.13 (105)	1.18 (30)	5.24 (133)	3.78 (96)	2.83 (72)	1.42 (36)	M8 Required
R 100	4.72 (120)	1.26 (32)	5.91 (150)	4.41 (112)	2.76 (70)	1.38 (35)	M8 Required

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ROBOTRAX Standard Components

Type	Mounting Bracket Components 2 of each required per bracket set		Metal Clamp Bolts 2 bolts required per system	Steel Wire please specify the total length of individual segments required	Strain Relief required to properly secure cables and hoses
	Bracket Half (A)	Hinge Pin (B)			
R 040	60350	60591	60661	60583 Diameter Ø = 0.07 (1.8)	60658
R 056	60450	60591	60662	60580 Diameter Ø = 0.10 (2.5)	60657
R 075	60550	60590	60560	60580 Diameter Ø = 0.12 (3)	60659
R 085	60650	60590	60560	60580 Diameter Ø = 0.12 (3)	60659
R 100	60750	60590	60660	60581 Diameter Ø = 0.16 (4)	60659



ROBOTRAX Optional Accessories

Alternate Bend Radii Inserts for R 075, R 085, and R 100 Sizes

Dimensions in inches (mm)



When the minimum bend radius of the cables or hoses being placed inside the ROBOTRAX carrier is larger than the standard bend radius of the cable carrier, optional Bend Radii Inserts can be added to increase the bend radius (KR) of the carrier to a larger bend radius that is appropriate for the cables or hoses being used. (see chart for dimensions)

Part Number	R 075	R 085	R 100
60830	6.30 (160)	9.06 (230)	11.02 (280)
60831	7.48 (190)	10.43 (265)	12.20 (310)
60832	8.66 (220)	11.81 (300)	13.39 (340)
60833	9.84 (250)	13.19 (335)	14.57 (370)
60834	11.02 (280)	14.57 (370)	15.75 (400)
60835	12.20 (310)	15.95 (405)	16.93 (430)
60836	13.39 (340)	17.32 (440)	18.11 (460)
60837	14.57 (370)	18.70 (475)	19.29 (490)
60838	15.75 (400)	20.08 (510)	20.47 (520)
60839	16.93 (430)	21.46 (545)	21.65 (550)



Tension Chucking Device

Makes setting the steel wire to the required tension quick and easy.

(Note: can not be used with standard Strain Relief Piece)

Type	R 040	R 056	R 075	R 085	R 100
Part Number	260430	260530	260230	260230	260330



Strain Relief

Allows cables/hoses to be easily secured using standard tie-wraps.

(Note: can not be used with Tension Chucking Device)

Type	R 040	R 056	R 075	R 085	R 100
Part Number	60658	60657	60659	60659	60659

Toll Free: 1.888.822.2024
Email: info@ipandc.com

Fax: 1.519.822.2140
Web: www.ipandc.com



Protective Sleeves

Protective Heat Sleeve: Constructed of textile fiber layered with aluminum, this sleeve protects the ROBOTRAX cable carrier and its contents from heat, sparks and other debris. Recommended for use with ROBOTRAX on applications such as welding robots.

Protective Dirt Sleeve: The layered polyester sleeve offers protection against aggressive cutting and hydraulic oils as well as fine dust particles and spray paints. (not pictured)



Ordering Protective Sleeves

Heat Sleeve see Part Number A
Dirt Sleeve see Part Number B (not pictured)

Please specify total length and/or individual segment lengths.

Type	R 040	R 056	R 075	R 085	R 100
Part Number A	60801	60802	60803	60804	60805
Part Number B	60806	60807	60808	60809	60810



Impact Protection

When a robot is in motion, ROBOTRAX may come in hard contact with parts of the robot. To soften the impact, use these link protection parts. These parts are made of elastomer plastic and can be easily installed on each link using a cable tie.



Ordering Impact Protection

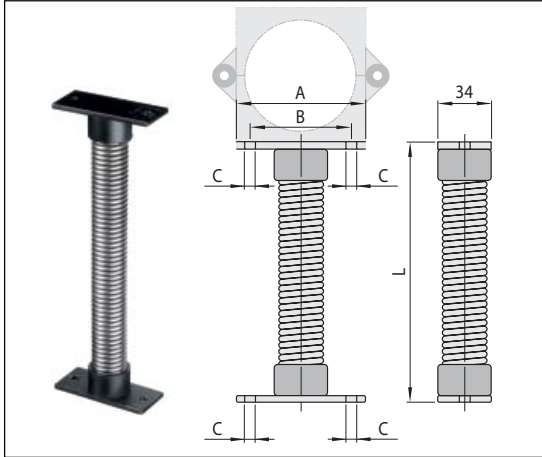
Packaged in kits: 5 pieces
 Consists of: 10 semi-circular half shells and 5 tie-wraps

Type	R 075	R 085	R 100
Part Number	260120	260240	260340



Flexible Spring Extension for ROBOTRAX Mounting Brackets

The Flexible Spring Extension allows ROBOTRAX brackets to be mounted away from the machine and the ability to flex in all directions for three dimensional movement.



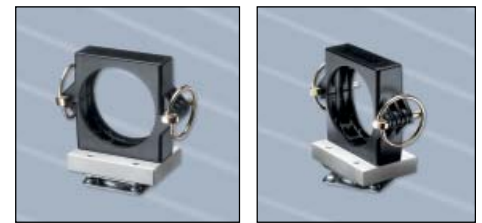
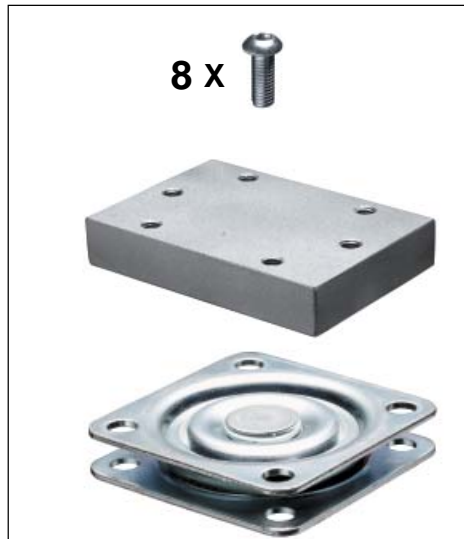
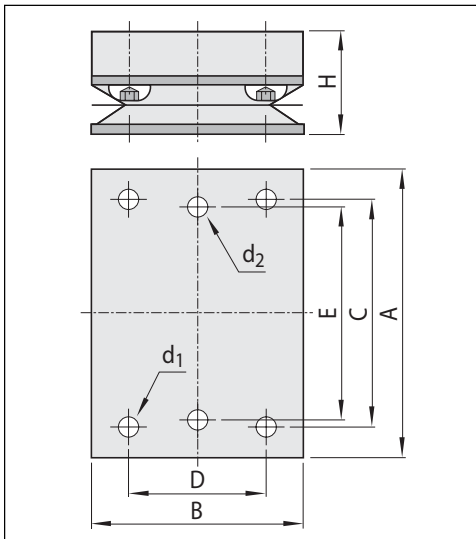
Type	R 075	R 085	R 100
A	3.23 (82)	3.78 (96)	4.41 (112)
B	2.52 (64)	2.83 (72)	2.76 (70)
C	0.26 (6.5)	0.33 (8.5)	0.33 (8.5)
Length L = 6.50 (165)	60816	60820	60824
Length L = 9.06 (230)	60817	60821	60825
Length L = 12.40 (315)	60818	60822	60826
Length L = 18.31 (465)	60819	60823	60827

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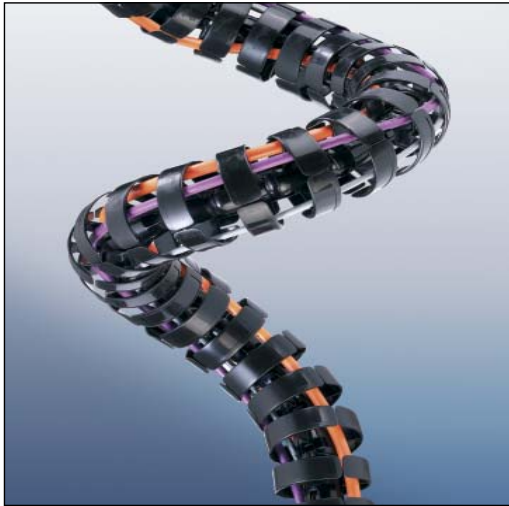
Swivel Base for ROBOTRAX Mounting Brackets

The Swivel Base option allows the mounting bracket to swivel at the attachment points to accommodate more complex robot movements.



Type	R 075	R 085	R 100
A	3.23 (82)	3.78 (96)	4.41 (112)
B	2.24 (57)	2.76 (70)	2.76 (70)
C	1.69 (43)	2.95 (75)	2.95 (75)
D	1.69 (43)	1.77 (45)	1.77 (45)
E	2.52 (64)	2.83 (72)	2.76 (70)
H	0.98 (25)	1.34 (34)	1.34 (34)
d1	M6	M6	M6
d2	M6	M8	M8
Part Number	260550	260560	260570

Specifications are subject to change without notice.
KS-1106-GC-A



ROBOTRAX

- Benchmark patented design
- Innovative system for 3D and multi-axis movements
- Easy press-in cable/hose installation and replacement
- Easy to inspect system contents with optional covers available
- Extremely high system tensile strength for high speed and high stress 3D movements



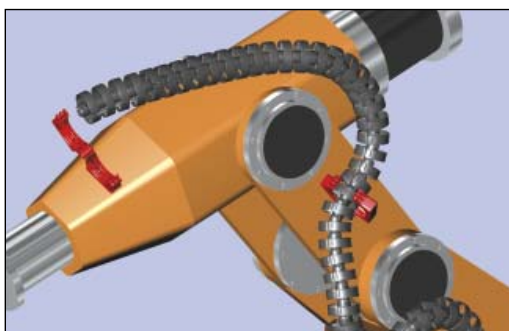
The first of its kind ROBOTRAX cable and hose management system has been designed from the ground up to be the ultimate in long-term protection for your continuously moving cables and hoses attached to machinery requiring multi-axis or 3D movement.

Since ROBOTRAX is a true three dimensional cable and hose carrier system, only one ROBOTRAX carrier system is typically required for swiveling and rotating movements that would normally require separate chain systems for each axis.

The truly ingenious design of the ROBOTRAX system combines the traits of ultimate flexibility, strength and content organization into one system. The patented steel rope core provides extremely high tensile strength. The adjustable minimum bend radius, critical in maintaining cable and hose operating longevity, is maintained and cables and/or hoses can be properly partitioned in three separate compartments.



Installing and/or replacing individual cables or hoses:
Completely harnessed (with connectors and fittings) cables or hoses are simply pressed into the ROBOTRAX system cavity partition and can be easily inspected or individually replaced whenever necessary.



Whenever required, the complete ROBOTRAX system can be replaced in just minutes – no time consuming screwing and no replacement of cable ties. Just open the quick-connect mounting brackets, take out the entire system and install a new one – it's that easy, saving time and money!

FLEXBALL

Based on the ROBOTRAX concept, FLEXBALL is a clever, light-weight, and light-duty solution for static and dynamic 3D applications.

- 3D low-duty cycle and slow-speed applications
- 3D cable management for the intelligent office or factory space
- 3D static cable management
- Easy press-in cable installation and replacement
- Individual components permit 360° rotation on a common axis
- Attractive appearance, available in black (standard), silver and blue colors
- Modular and simple system design
- Engineered to be a clean, quiet and capable yet inexpensive solution

P/N	Description	Technical Details
95121	Black FLEXBALL Kit 29.92" (760 mm) long Split link for easy press-in cable installation. Kit = Snap-together links section, including 1 top and 1 base connection.	2.20" (56 mm) Pitch (t) 2.48" (63 mm) Outside Diameter 1.81" (46 mm) Inside Diameter 2.64" (67 mm) x 2.64" (67 mm) Base
95131	Blue FLEXBALL Kit 29.92" (760 mm) long Split link for easy press-in cable installation. Kit = Snap-together links section, including 1 top and 1 base connection.	2.20" (56 mm) Pitch (t) 2.48" (63 mm) Outside Diameter 1.81" (46 mm) Inside Diameter 2.64" (67 mm) x 2.64" (67 mm) Base
95111	Silver FLEXBALL Kit 29.92" (760 mm) long Split link for easy press-in cable installation. Kit = Snap together links section, including 1 top and 1 base connection.	2.20" (56 mm) Pitch (t) 2.48" (63 mm) Outside Diameter 1.81" (46 mm) Inside Diameter 2.64" (67 mm) x 2.64" (67 mm) Base

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Ideal for cleaning up cable clutter on adjustable furniture in today's hitech office and retail workspace

FLEXBALL is ideal for cleaning-up and organizing unsightly cable clutter on and around automated equipment, moving mechanisms and furniture. For all those applications with infrequent movement, very slow speeds and where protection and organization of cables is a must. FLEXBALL's easily adjustable "link" system can be effortlessly assembled and mounted. With only 3 basic components, FLEXBALL is an affordable and innovative cable management solution for many simple 3D applications.

To install cables, simply line up (by rotating the link) openings (vertical slots) in each link, press in cables, then rotate links again to lock in cables... It's that easy!



A perfect solution for cable management in intelligent office, factory & lab environments



The weighted base connection piece can be securely attached with screws or simply set on a level surface



The top connection piece can be attached to a flat surface in a variety of positions including hanging, standing or on its side

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 \text{Systems Req.} \\
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 \text{PN} \\
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