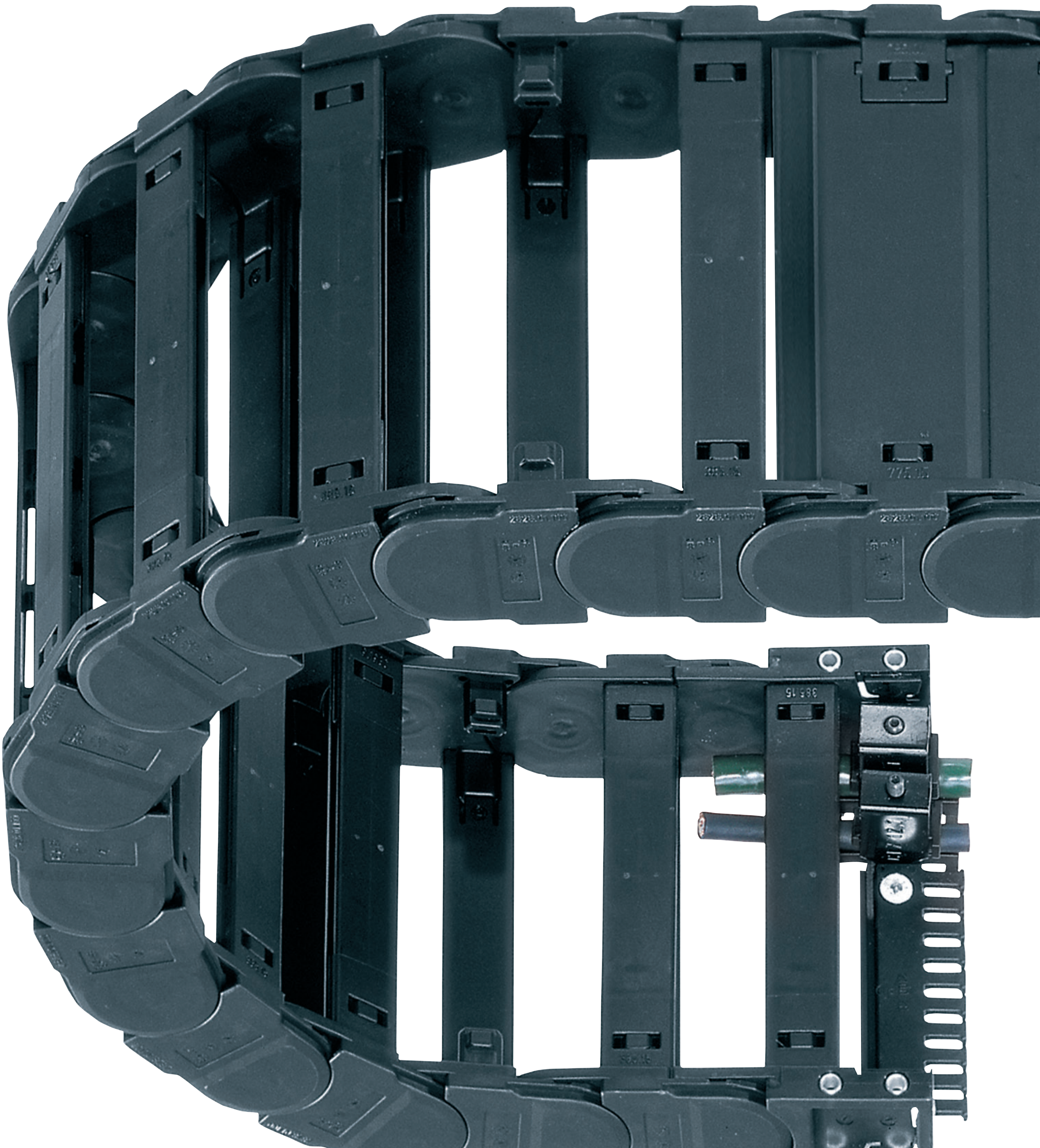


igus®

System E4/4

For new applications we recommend System E4-1

For new applications we recommend System E4-1

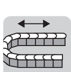
E4/4 - for long travels and side-mounted applications

System E4/4 is ideal for extremely long travel lengths and also works especially well in free-hanging, side-mounted applications. The E-Chain®'s special 'roller' links are the key to enabling longer travels. The side links are designed to create an overlapping multipurpose grip, which increases stability for heavier side loads. E4/4 can also withstand 50 percent greater push-pull forces than the next comparable E-Chain design and is resistant to dirt and debris. E4/4 is also available in a special conductive plastic called igumid ESD for use in ESD / ATEX applications.

Typical industries and applications

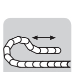
- Unsupported, side mounted applications
- Cranes: RTG, Quay cranes, many more
- Compost plants
- Construction machines
- Gypsum plants, concrete plants, chemical plants
- Agricultural plants
- ESD applications
- Heavy machinery
- Steel plants
- Shipyards
- General machinery

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) "Rear grip" achieves long-term electrical conductivity

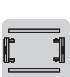


Side-mounted - unsupported

High torsional rigidity

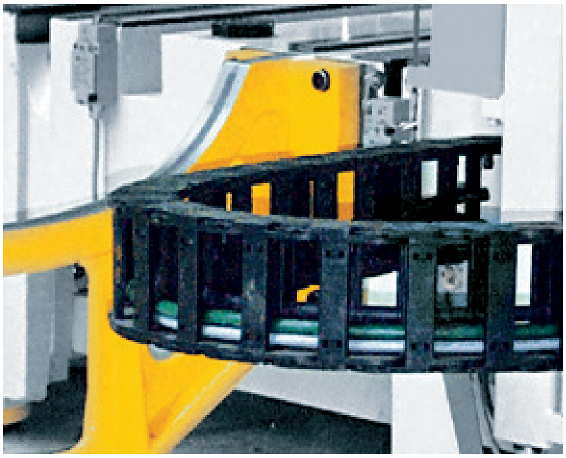


System E4/4 approved with long travels



System E4 - 4-piece E-Chain® links

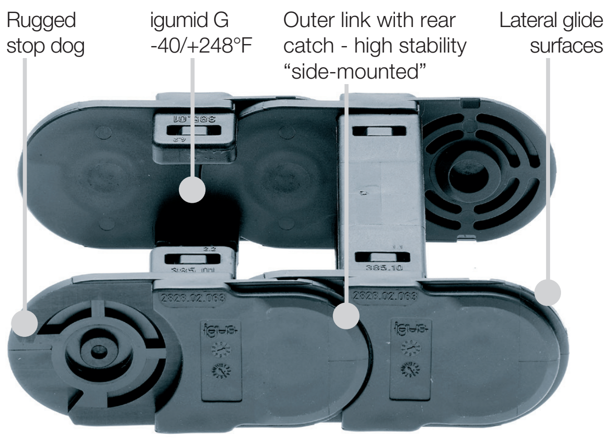
Many successful Rol E-Chain® applications, i.e. one of the igus® longest travels at the moment on 2 ship unloaders in Malaysia, both equipped with a Rol E-Chain® at (441.3 m) travel length



Special case: Side-mounted, unsupported - undercut design offers stability

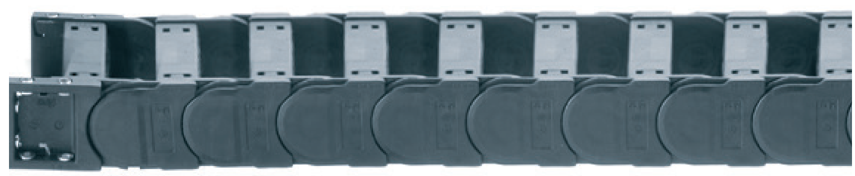
656 ft. (200 m) travels and more possible

E-Chain System® E4/4
Selection Guide



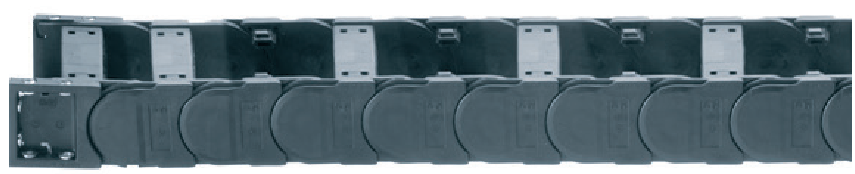
- Best unsupported lengths "side-mounted"
- Rol E-Chain® links available
- For very long travels up to 492-820 ft. (150 - 250 m)
- High torsional rigidity
- Good for tough environments with dirt and debris
- ESD version available
- Interior separation tool box available
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

Crossbars every link
for particularly demanding applications



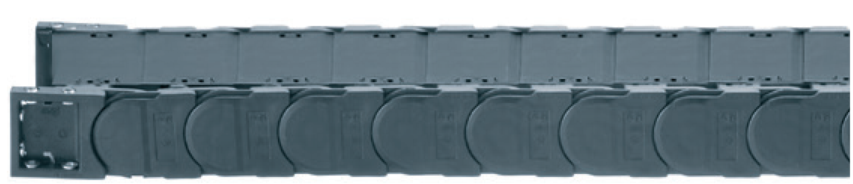
Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
2828	1.25	(32)	1.97-15.75	(50-400)	2.91-16.69	(74-424)	2.13	(54)	2.48-11.81	(63-300)
3838	1.65	(42)	1.97-15.75	(50-400)	3.03-16.81	(77-427)	2.52	(64)	2.95-13.78	(75-350)
4040	2.20	(56)	1.97-23.62	(50-600)	3.39-25.04	(86-636)	3.31	(84)	5.31-19.69	(135-500)
5050	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000

Crossbars every 2nd link
for almost all applications



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
2828	1.25	(32)	1.97-15.75	(50-400)	2.91-16.69	(74-424)	2.13	(54)	2.48-11.81	(63-300)
3838	1.65	(42)	1.97-15.75	(50-400)	3.03-16.81	(77-427)	2.52	(64)	2.95-13.78	(75-350)
4140	2.20	(56)	1.97-23.62	(50-600)	3.39-25.04	(86-636)	3.31	(84)	5.31-19.69	(135-500)
5050	3.15	(80)	1.97-23.62	(50-600)	3.94-25.59	(100-650)	4.25	(108)	5.91-39.37	(150-1000)

E-Tubes
fully enclosed,
excellent cable protection
for hot chips



Series	Inner height *hi* in.	(mm)	Inner width *Bi* in.	(mm)	Outer width *Ba* in.	(mm)	Outer height *ha* in.	(mm)	Bending radius *R* in.	(mm)
R7728	1.25	(32)	1.97-11.81	(50-300)	2.91-12.76	(74-324)	2.13	(54)	4.92-11.81	(125-300)
R7838	1.65	(42)	1.97-11.81	(50-300)	3.03-12.87	(77-327)	2.52	(64)	4.92-13.78	(125-350)
R8840	2.20	(56)	2.95-18.19	(75-462)	4.37-19.65	(111-499)	3.31	(84)	5.91-19.69	(150-500)
R9850	3.15	(80)	2.95-18.19	(75-462)	4.92-20.20	(125-513)	4.25	(108)	7.87-39.37	(200-1000)

E-Chain System® E4/4 Assembly Instructions

E-Chains® and E-Tubes - Assembling

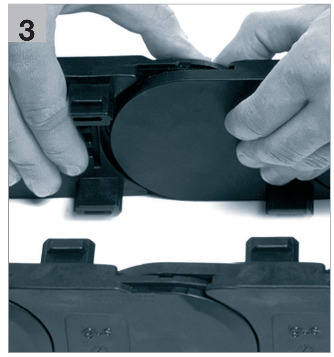
1

Remove crossbars at connection point. Slide side links into each other - Press together

2

Join the side links - join the second side link by pressing from the top

3



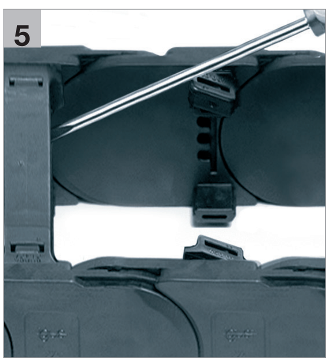
Join the side links together on the opposite side by applying pressure to the outer link

4

Assemble crossbars - Push down and snap in by using a screwdriver

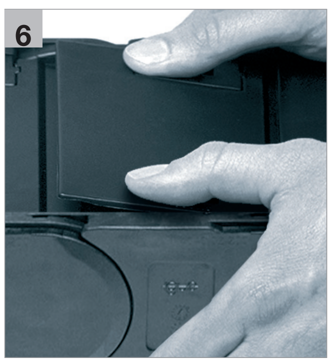
Assembling continued

5



Assemble clips (E-Chains® with crossbars every other link) - Push down and snap in

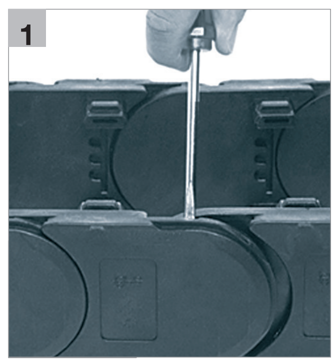
6



Assemble E-Tube lids/bottoms - Attach to the connector at an angle - Snap in

E-Chains® and E-Tubes - Separating

1

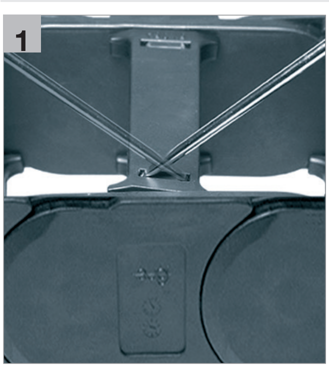


2

Remove crossbars, clips, and lids on two adjacent chain links. Guide the screwdriver into the slot between side links and release it by levering it and separate the E-Chain®

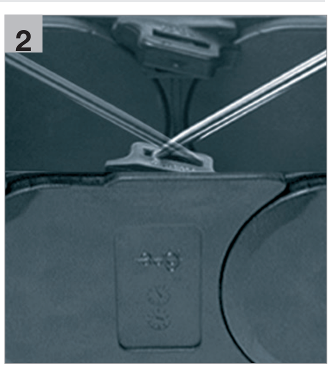
E-Chains® - Opening

1



Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

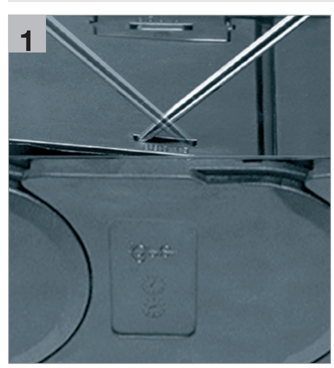
2



Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

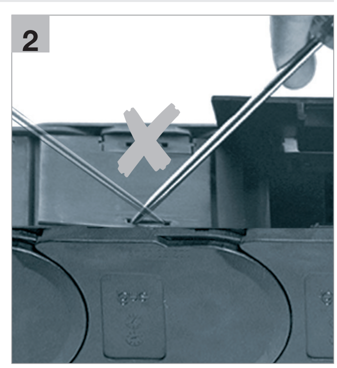
E-Tube - Opening

1



Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

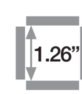
2



Release only **one side** to open the lid

E-Chain System® E4/4
Series 2828/2928/R7728

For new applications use Series E4-32



Price Index

Series 2828

Series 2928

Series R7728

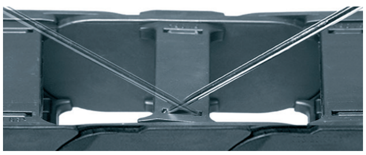
Special Features / Options

Side-mounted - unsupported

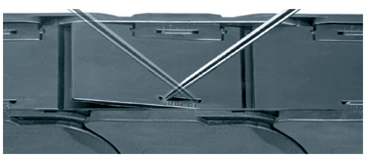
ESD classification:
Electrically conductive ESD/
ATEX version upon request

High torsional rigidity

Assembly Tips



Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 230 ft (70 m)
Vertical, standing ≤ 16.4 ft (5 m)
Side-mounted, unsupp. ≤ 6.56 ft (2 m)
Rotary requires further calculation

Usage Guidelines

\+

- If subject to high torsional or shearing forces
- If a side-mounted chain/tube with long unsupported lengths is required
- If subject to very damp environments consistently

−

- If a quieter version is required
  ➤ Series 280/290/R770

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Removable lids along inner radius
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

Rol E-Chain® Series 2828R/7728R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

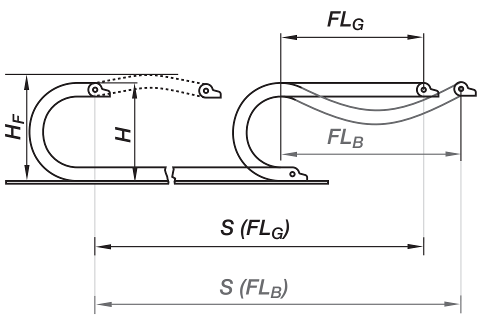
9.84 ft (3 m) **2828-30-300-0**	E-Chain®
With 2 separators **281** assembled every 2nd link	Interior Separation
1 Set **282800-30-12P**	Mounting Bracket

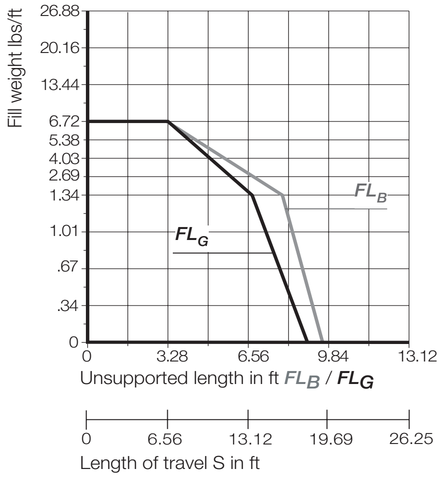
E-Chain System® E4/4 Series 2828/2928/R7728 Installation Dimensions

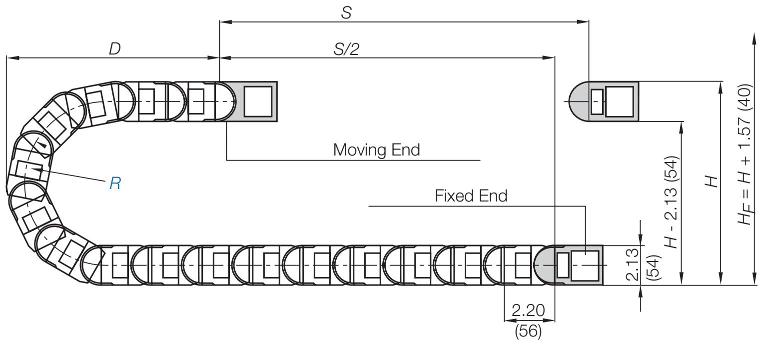
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.20” (56 mm)
Links per ft (m): = 5.48 (18)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_{-0}^{+20}	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.12 (130)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.61 (295)	12.80 (325)	14.76 (375)
K	13.39 (340)	14.96 (380)	18.31(465)	21.65 (550)	24.41 (620)	27.56 (700)	30.70 (780)	33.46 (850)	37.01 (940)	43.70 (1110)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

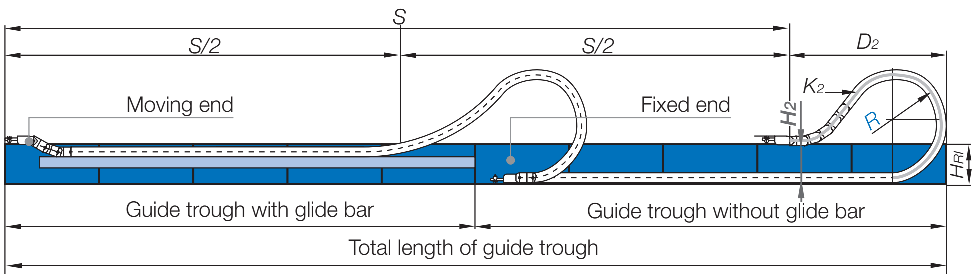
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + safety buffer
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H_2	-	-	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)	6.54 (166)
D_2 +20	-	-	14.57 (370)	17.52 (445)	24.61 (625)	25.79 (655)	30.31 (770)	34.25 (870)	36.61 (930)	48.82 (1240)
K_2	-	-	24.25 (616)	30.87 (784)	39.68 (1008)	41.89 (1064)	50.71 (1288)	57.32 (1456)	61.73 (1568)	77.17 (1960)

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

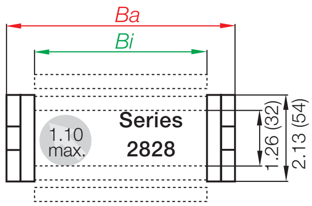
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Technical Data

Details of material properties
➤ Chapter 1

E-Chain System® E4/4
Series 2828/2928/R7728

Series 2828 - E-Chain® with crossbars every link



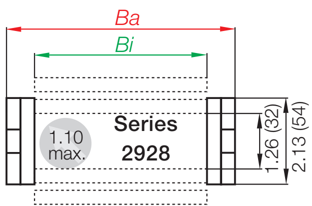
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

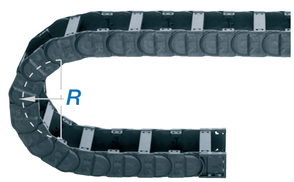
Part Number Structure

2828- 30- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- 2828 – Series

Series 2928 - E-Chain® with crossbars every other link





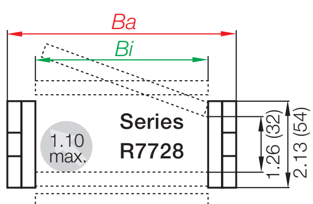
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

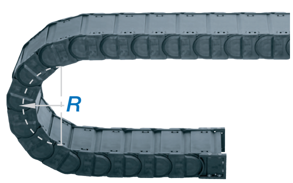
Part Number Structure

2928- 30- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- 2928 – Series

Series R7728 - fully enclosed E-Tube





- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely re-movable

Part Number Structure

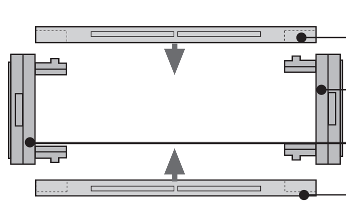
7728- 30- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 30 – Width
- 7728 – Series

E-Chain® as separate parts, links and side plates

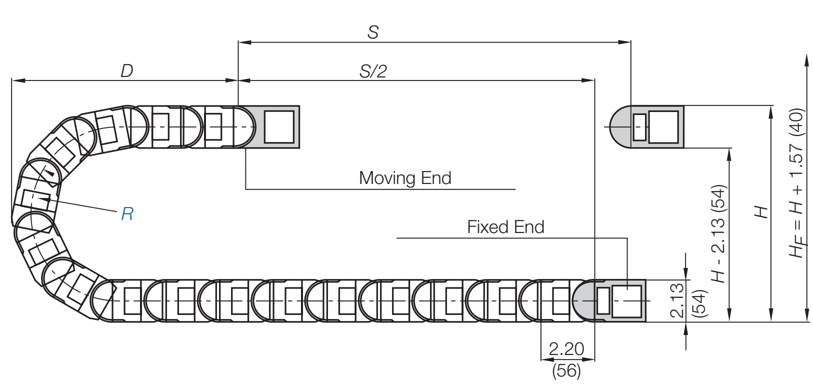
Right side link*, single part - Part No. 2828-02-R

Single crossbar, E-Chain® - Part No. 385-Bi
Single lid, E-Tube - Part No. 775-Bi



Single bottom, E-Tube - Part No. 776-Bi

Left side link*, single part - Part No. 2828-01-R



*View from the fixed point of the E-Chain®/E-Tube

Supplement part number with required radius. Example: 2828-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

Part Number				*Bi*	*Ba*	Weight		
Crossbars Every Link	Crossbars Every Other	Tube Version		in. (mm)	in. (mm)	2828 lbs/ft (kg/m)	2928 lbs/ft (kg/m)	R7728 lbs/ft (kg/m)
2828-05-	2928-05	*7728-05-	-0	1.97 (50)	2.91 (74)	≈ 1.16 (1.73)	≈ 1.10 (1.64)	≈ 1.76 (2.63)
2828-06-	2928-06-		-0	2.68 (68)	3.62 (92)	≈ 1.20 (1.79)	≈ 1.12 (1.67)	–
2828-07-	2928-07	7728-07-	-0	2.95 (75)	3.90 (99)	≈ 1.24 (1.84)	≈ 1.14 (1.69)	≈ 1.84 (2.75)
2828-087-	2928-087-		-0	3.43 (87)	4.37 (111)	≈ 1.30 (1.93)	≈ 1.16 (1.73)	–
2828-10-	2928-10-	7728-10-	-0	3.94 (100)	4.88 (124)	≈ 1.36 (2.02)	≈ 1.20 (1.78)	≈ 1.90 (2.83)
2828-11-	2928-11-	7728-11-	-0	4.25 (108)	5.20 (132)	≈ 1.40 (2.08)	≈ 1.22 (1.81)	≈ 1.98 (2.94)
2828-112-	2928-112-		-0	4.41(112)	5.39 (137)	≈ 1.44 (2.15)	≈ 1.24 (1.84)	–
2828-12-	2928-12-	7728-12-	-0	4.92 (125)	5.87 (149)	≈ 1.48 (2.20)	≈ 1.26 (1.87)	≈ 2.04 (3.03)
2828-137-	2928-137-		-0	5.39 (137)	6.38 (162)	≈ 1.54 (2.29)	≈ 1.28 (1.91)	–
2828-15-	2928-15-	7728-15-	-0	5.91 (150)	6.85 (174)	≈ 1.60 (2.38)	≈ 1.32 (1.96)	≈ 2.14 (3.19)
2828-162-	2928-162-		-0	6.38 (162)	7.36 (187)	≈ 1.64 (2.44)	≈ 1.34 (1.99)	–
2828-17-	2928-17-	7728-17-	-0	6.61 (168)	7.56 (192)	≈ 1.69 (2.51)	≈ 1.36 (2.02)	≈ 2.28 (3.39)
2828-18-	2928-18-		-0	6.89 (175)	7.83 (199)	≈ 1.72 (2.56)	≈ 1.38 (2.05)	–
2828-187-	2928-187-		-0	7.36 (187)	8.35 (212)	≈ 1.78 (2.65)	≈ 1.40 (2.09)	–
2828-20-	2928-20-	7728-20-	-0	7.87 (200)	8.82 (224)	≈ 1.84 (2.74)	≈ 1.44 (2.14)	≈ 2.41 (3.59)
2828-212-	2928-212-		-0	8.35 (212)	9.33 (237)	≈ 1.93 (2.87)	≈ 1.48 (2.20)	–
2828-23-	2928-23-		-0	8.86 (225)	9.80 (249)	≈ 1.96 (2.92)	≈ 1.49 (2.22)	–
2828-237-	2928-237-		-0	9.33 (237)	10.31 (262)	≈ 2.05 (3.05)	≈ 1.54 (2.29)	–
2828-25-	2928-25-	7728-25-	-0	9.84 (250)	10.79 (274)	≈ 2.08 (3.10)	≈ 1.56 (2.32)	≈ 2.72 (4.04)
2828-262-	2928-262-		-0	10.31 (262)	11.26 (286)	≈ 2.14 (3.19)	≈ 1.59 (2.36)	–
2828-28	2928-28-		-0	10.83 (275)	11.77 (299)	≈ 2.20 (3.28)	≈ 1.62 (2.41)	–
2828-29-	2928-29-		-0	11.30 (287)	12.28 (312)	≈ 2.26 (3.37)	≈ 1.65 (2.45)	–
2828-30-	2928-30-	7728-30-	-0	11.81 (300)	12.76 (324)	≈ 2.33 (3.46)	≈ 1.68 (2.50)	≈ 2.98 (4.43)
2828-312-	2928-312-		-0	12.28 (312)	13.27 (337)	≈ 2.41 (3.59)	≈ 1.72 (2.56)	–
2828-325-	2928-325-		-0	12.79 (325)	13.74 (349)	≈ 2.47 (3.68)	≈ 1.75 (2.60)	–
2828-337-	2928-337-		-0	13.27 (337)	14.25 (362)	≈ 2.53 (3.77)	≈ 1.78 (2.65)	–
2828-350-	2928-350-		-0	13.78 (350)	14.72 (374)	≈ 2.59 (3.86)	≈ 1.81 (2.69)	–
2828-362-	2928-362-		-0	14.25 (362)	15.24 (387)	≈ 2.65 (3.95)	≈ 1.84 (2.74)	–
2828-375-	2928-375-		-0	14.76 (375)	15.71 (399)	≈ 2.72 (4.04)	≈ 1.88 (2.79)	–
2828-387-	2928-387-		-0	15.24 (387)	16.22 (412)	≈ 2.76 (4.11)	≈ 1.90 (2.82)	–
2828-400	2928-400-		-0	15.75 (400)	16.69 (424)	≈ 2.81 (4.18)	≈ 1.92 (2.86)	–

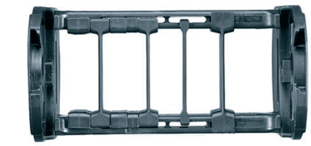
Choose from the radii below for all of the above sizes
Radius (mm) Example: 2828-30-300-0

	063**	075**	100**	125	150	175	200	220	250	300
R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H* $^{-0}_{+20}$	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	5.12 (130)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)	9.84 (250)	10.83 (275)	11.61 (295)	12.80 (325)	14.76 (375)
K	13.39 (340)	14.96 (380)	18.31(465)	21.65 (550)	24.41 (620)	27.56 (700)	30.70 (780)	33.46 (850)	37.01 (940)	43.70 (1110)

** This radius is not available for the R7728 Series
*Removable lid only, no hinged option

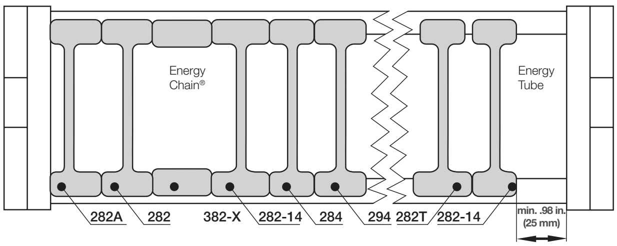
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.223. For large diameter hoses see page 6.223

E-Chain System® E4/4 Series 2828/2928/R7728 Interior Separation

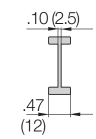


Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



STANDARD
Vertical separator 280

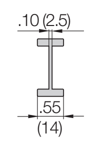


Separator (chain only)

Unassembled	**Part No. 280**
Assembled	**Part No. 281**

- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 280 -14

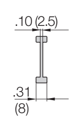


Separator (chain/tube)

Unassembled	**Part No. 280-14**
Assembled	**Part No. 281-14**

- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

Vertical separator 283

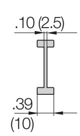


Separator (chain only)

Unassembled	**Part No. 283**
Assembled	**Part No. 284**

- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

Locking separator 293

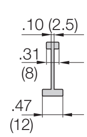


Locking Separator (chain only)

Unassembled	**Part No. 293**
Assembled	**Part No. 294**

- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention "clamps" attached to the chain's cross-bar. Please ensure that they are properly aligned.

Vertical separator 281T

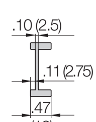


Vertical Separator (tubes only)

Unassembled	**Part No. 280T**
Assembled	**Part No. 281T**

- **Vertical separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

Asymmetric separator 281A

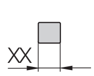


Asymmetric separator (chain only)

Unassembled	**Part No. 280A**
Assembled	**Part No. 281A**

- **Asymmetrical separator 281A for E-Chains®**
  This separator features a (12mm) base. It can be used in combination with spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX



Spacer (chain only)

Unassembled	**Part No. 381-XX**
Assembled	**Part No. 382-XX**

XX = width of the spacer

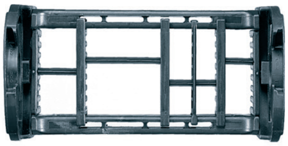
Spacers available in the following sizes:

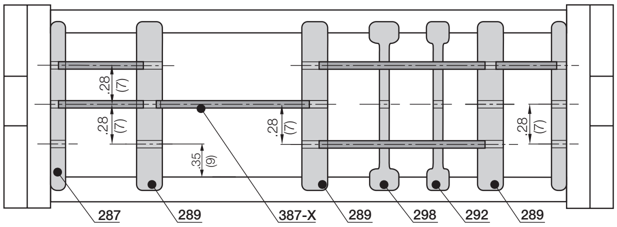
Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	**382 -10**	.39"	(10)
381 -15	**382 -15**	.59"	(15)
381 -20	**382 -20**	79"	(20)

- NOTE ON SPACERS
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4 Series 2828/2928/R7728 Interior Separation





Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.

- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.

Side Plate	
Unassembled	**Part No. 286**
Assembled	**Part No. 287**

Side plate 286

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.

Vertical Separator	
Unassembled	**Part No. 288**
Assembled	**Part No. 289**

Vertical separator 288

- **Locking vertical separator 281-S**
  Vertical separator with injection molded shelf

Separators w/Integrated Shelf	
Unassembled	**Part No. 281-S-45**
Assembled	**Part No. 282-S-45**
Unassembled	**Part No. 281-S-57**
Assembled	**Part No. 282-S-57**

Separator with integrated shelf 281-S

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

Slotted Separators (chain only)	
Unassembled	**Part No. 291**
Assembled	**Part No. 292**

Closed slotted separator 291

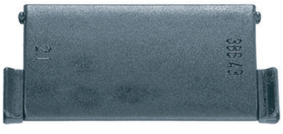
- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

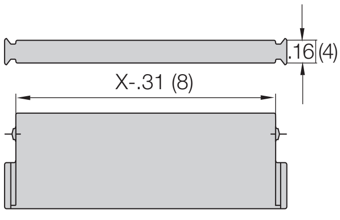
Slotted Separators, Open	
Unassembled	**Part No. 297**
Assembled	**Part No. 298**

Open slotted separator 297

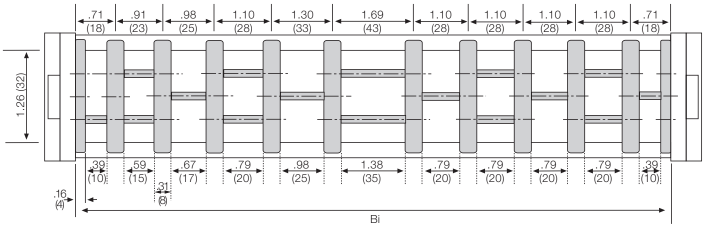
Width X in.	(mm)	Usable Width in.	(mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**
8.86	(225)	8.54	(2.17)	**386-225**	**387-225**

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments





The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator***.



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4
Series 2828/2928/R7728
Special Accessories

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

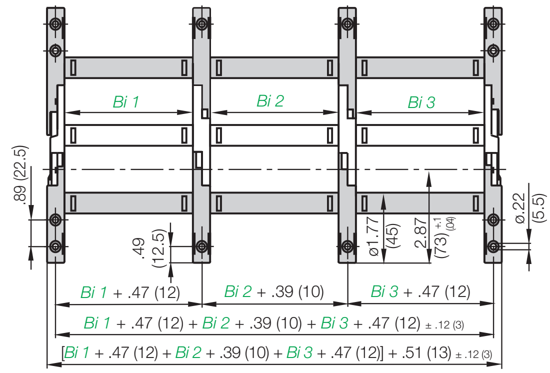
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.

Part number example for E-Chain®

2828-10/20/10-200-0

2828-Bi1/Bi2/Bi3-R-0

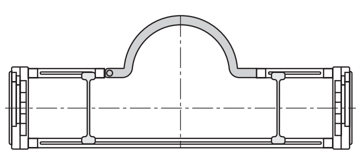
We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.



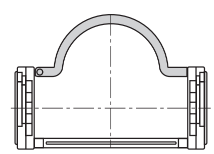
Extender crossbars - For careful guiding of large diameter cables and hoses

Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

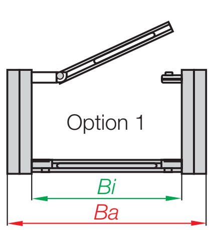


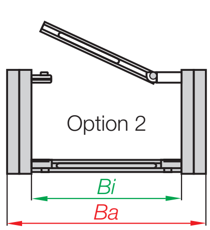
Attached directly to the side link.

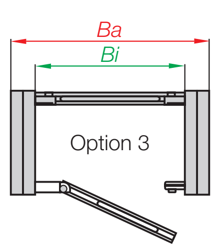
Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No

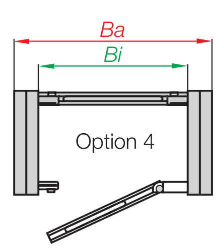
Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance









Telephone 1-800-521-2747
Fax 1-401-438-7270

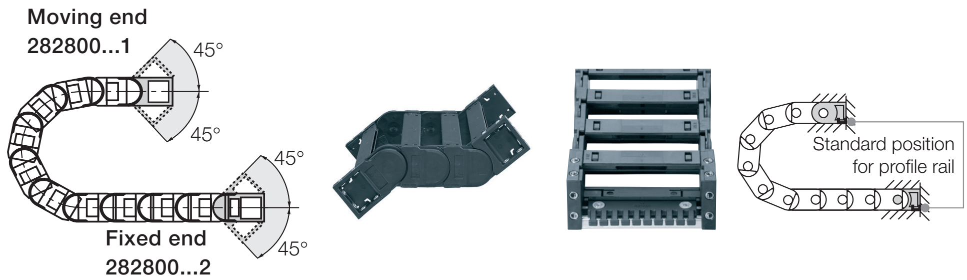
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 2828/2928/R7728
Mounting Brackets - KMA

Standard

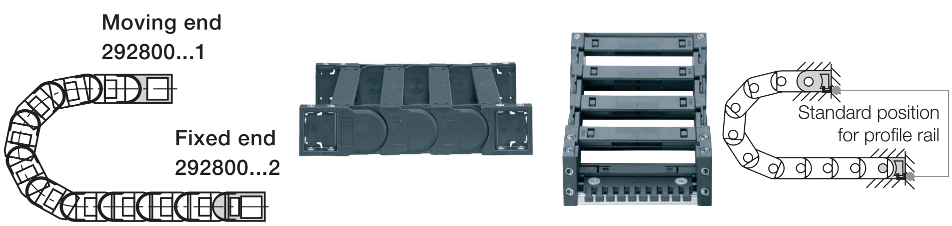
Option 1: pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



Option 2: locking

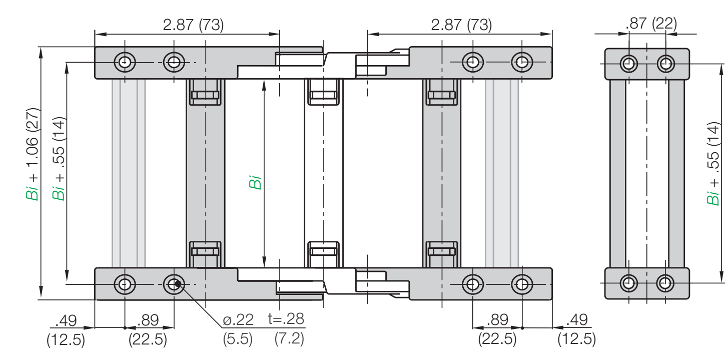
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



Part Number Structure

282800- 07- 12 T P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 282800 = Pivoting
  292800 = Locking



Full set, for both ends:

282800- 07- 12 Full set, **each part with pin/bore**

Single-part order:

282800- 07- 1 Mounting bracket **with bore**

282800- 07- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 292800

Part No. Full Set (pivoting)
Series 2828 or 2928:
282800-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 2828 or 2928
282800-Width-12P

Part No. Full Set (pivoting)
Tube Series R7728
282800-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R7728
282800-Width-12TP

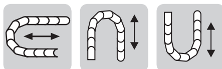
Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	282800	292800	-05-12	T	P	1.97 (50)
-06	282800	292800	-06-12		P	2.68 (68)
-07	282800	292800	-07-12	T	P	2.95 (75)
-087	282800	292800	-087-12		P	3.43 (87)
-10	282800	292800	-10-12	T	P	3.94 (100)
-11	282800	292800	-11-12	T	P	4.25 (108)
-112	282800	292800	-112-12		P	4.41 (112)
-12	282800	292800	-12-12	T	P	4.92 (125)
-137	282800	292800	-137-12		P	5.39 (137)
-15	282800	292800	-15-12	T	P	5.91 (150)
-162	282800	292800	-162-12		P	6.38 (162)
-17	282800	292800	-17-12	T	P	6.61 (168)
-18	282800	292800	-18-12		P	6.89 (175)
-187	282800	292800	-187-12		P	7.36 (187)
-20	282800	292800	-20-12	T	P	7.87 (200)
-212	282800	292800	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	282800	292800	-23-12		P	8.86 (225)
-237	282800	292800	-237-12		P	9.33 (237)
-25	282800	292800	-25-12	T	P	9.84 (250)
-262	282800	292800	-262-12		P	10.31 (262)
-28	282800	292800	-28-12		P	10.83 (275)
-29	282800	292800	-29-12		P	11.30 (287)
-30	282800	292800	-30-12	T	P	11.81 (300)
-312	282800	292800	-312-12		P	12.28 (312)
-325	282800	292800	-325-12		P	12.79 (325)
-337	282800	292800	-337-12		P	13.27 (337)
-350	282800	292800	-350-12		P	13.78 (350)
-362	282800	292800	-362-12		P	14.25 (362)
-375	282800	292800	-375-12		P	14.76 (375)
-387	282800	292800	-387-12		P	15.24 (387)
-400	282800	292800	-400-12		P	15.75 (400)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

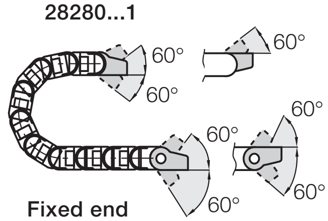
igus®

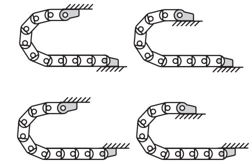
E-Chain System® E4/4 Series 2828/2928/R7728 Mounting Brackets - Steel



Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



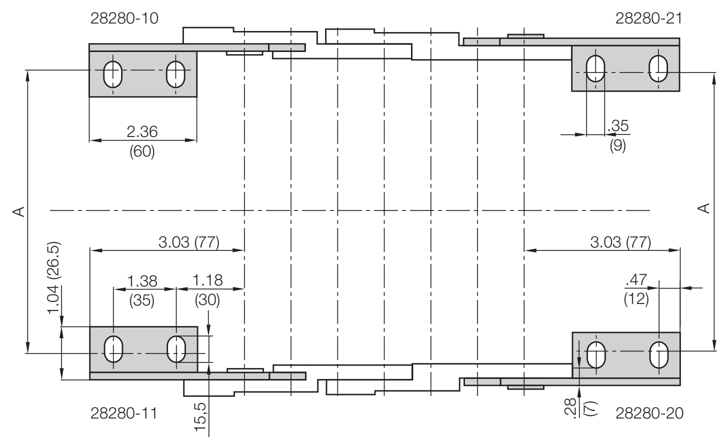


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 2828, 2928 or R7728:
28280-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 2828, 2928 or R7728:
28280-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 2828, 2928 or R7728:
28280-2

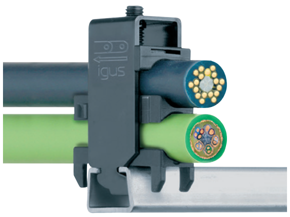


Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	28280	-12	-1	-2	1.18 (30)
2.68 (68)	28280	-12	-1	-2	1.77 (45)
2.95 (75)	28280	-12	-1	-2	2.16 (55)
3.43 (87)	28280	-12	-1	-2	3.15 (80)
3.94 (100)	28280	-12	-1	-2	3.15 (80)
4.25 (108)	28280	-12	-1	-2	3.62 (92)
4.41 (112)	28280	-12	-1	-2	3.15 (80)
4.92 (125)	28280	-12	-1	-2	4.13 (105)
5.39 (137)	28280	-12	-1	-2	4.61 (117)
5.91 (150)	28280	-12	-1	-2	5.12 (130)
6.38 (162)	28280	-12	-1	-2	5.59 (142)
6.61 (168)	28280	-12	-1	-2	6.10 (155)
6.89 (175)	28280	-12	-1	-2	6.57 (167)
7.36 (187)	28280	-12	-1	-2	6.57 (167)
7.87 (200)	28280	-12	-1	-2	7.09 (180)
8.35 (212)	28280	-12	-1	-2	7.56 (192)
8.86 (225)	28280	-12	-1	-2	8.07 (205)
9.33 (237)	28280	-12	-1	-2	8.54 (217)
9.84 (250)	28280	-12	-1	-2	9.05 (230)
10.31 (262)	28280	-12	-1	-2	9.53 (242)
10.83 (275)	28280	-12	-1	-2	10.04 (255)
11.30 (287)	28280	-12	-1	-2	10.51 (267)
11.81 (300)	28280	-12	-1	-2	11.02 (280)
12.28 (312)	28280	-12	-1	-2	11.49 (292)
12.79 (325)	28280	-12	-1	-2	12.00 (305)
13.27 (337)	28280	-12	-1	-2	12.48 (317)
13.78 (350)	28280	-12	-1	-2	12.99 (330)
14.25 (362)	28280	-12	-1	-2	13.46 (342)
14.76 (375)	28280	-12	-1	-2	13.97 (355)
15.24 (387)	28280	-12	-1	-2	14.45 (367)
15.75 (400)	28280	-12	-1	-2	14.96 (380)

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 2828/2928/R7728
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1M	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1M	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1M	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1M	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1M	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1M	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1M	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1M	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1M	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1M	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1M	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

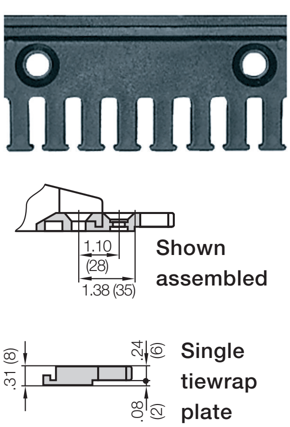
Chainfix Clip

Modular snap-on strain relief device

Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates



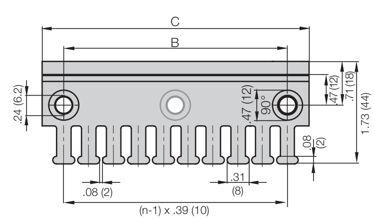
Shown assembled

Single tiewrap plate

Option 1:
Tiewrap plates as an individual part

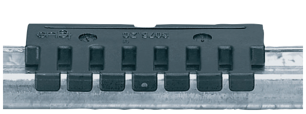
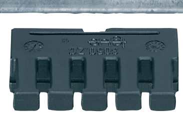
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4 Series 2828/2928/R7728 Guide Troughs

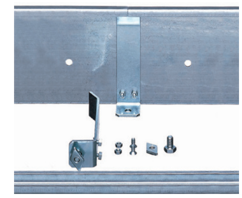
Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part Number 98-30
- 1/2 travel length of glide bars
  Part number 92-01
- Installation sets as end connectors
  Part Number 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

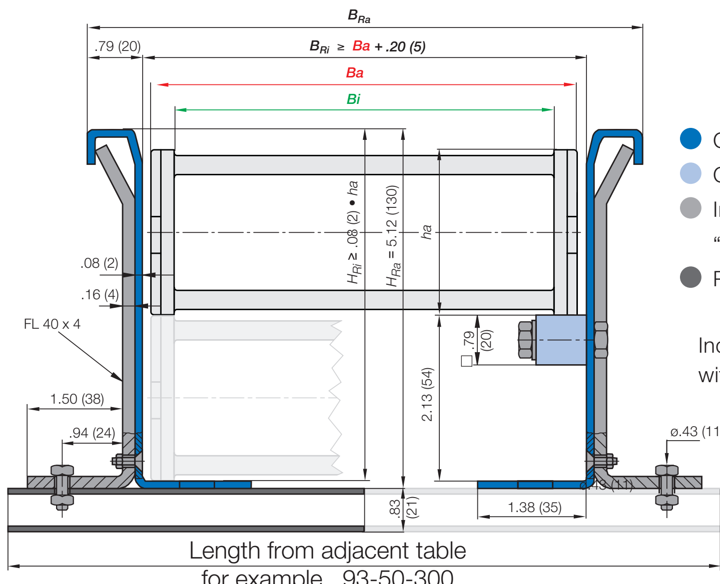
Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 98-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 92-01
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
93-50-XXX
Example: 93-50-400 for 15.75 (400 mm) long profile rail.


Left: Guide trough with glide bars
Right: Guide troughs without glide bars


Installation sets as section connectors

Width of Crossbar
280-**05**-200-0

Width of Crossbar	B_{Ri}	Installation Part No.
-05	3.11 (79)	93-50-200
-06	3.82 (97)	93-50-225
-07	4.09 (104)	93-50-225
-087	4.57 (116)	93-50-225
-10	5.08 (129)	93-50-250
-11	5.39 (137)	93-50-250
-112	5.59 (142)	93-50-250
-12	6.06 (154)	93-50-275
-137	6.57 (167)	93-50-275
-15	7.05 (179)	93-50-300
-162	7.56 (192)	93-50-300
-17	7.76 (197)	93-50-325
-18	8.03 (204)	93-50-325
-187	8.54 (217)	93-50-325
-20	9.02 (229)	93-50-350
-212	9.53 (242)	93-50-350
-23	10.00 (254)	93-50-375
-237	10.51 (267)	93-50-375
-25	10.98 (279)	93-50-400
-262	11.50 (292)	93-50-400
-28	11.97 (304)	93-50-425
-29	12.48 (317)	93-50-425
-30	12.95 (329)	93-50-450
-312	13.46 (342)	93-50-450
-325	13.94 (354)	93-50-475
-337	14.45 (367)	93-50-475
-350	14.92 (379)	93-50-500
-362	15.43 (392)	93-50-500
-375	15.91 (404)	93-50-525
-387	16.42 (417)	93-50-525
-400	16.89 (429)	93-50-550



- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

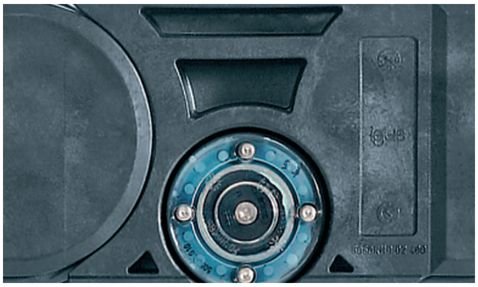
For further technical information on guide troughs
➤ Chapter 9

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

High unsupported lengths and perfect suitability for circular movements (RBR-versions) are some features for the E4/4-System

Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 2828R - Order example 2828R-30-220-0
Further information: Call igus at 800-521-2747

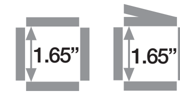


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

E-Chain System® E4/4
Series 3838/3938/R7838

For new applications use Series E4-42



Price Index

Series 3838

Series 3938

Series R7838

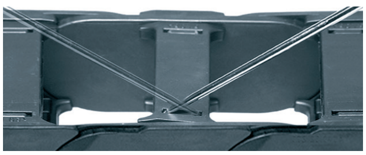
Special Features / Options

Side-mounted - unsupported

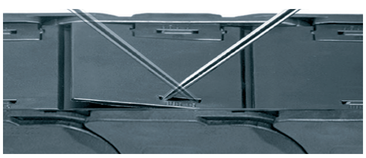
ESD classification:
Electrically conductive ESD/
ATEX version upon request

High torsional rigidity

Assembly Tips



Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
Rotary requires further calculation

Usage Guidelines

+

- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

−

- If a quieter version is required
  ➤ Series 380/390/R780

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Lids and crossbars are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 3838R/7838R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

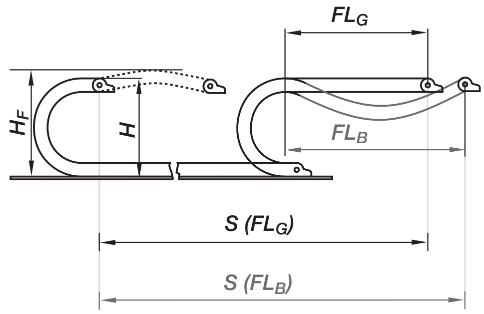
13.12 ft (4 m) **3838-30-300-0**	**E-Chain®**
With 2 separators **381** assembled every 2nd link	**Interior Separation**
1 Set **383800-30-12P**	**Mounting Bracket**

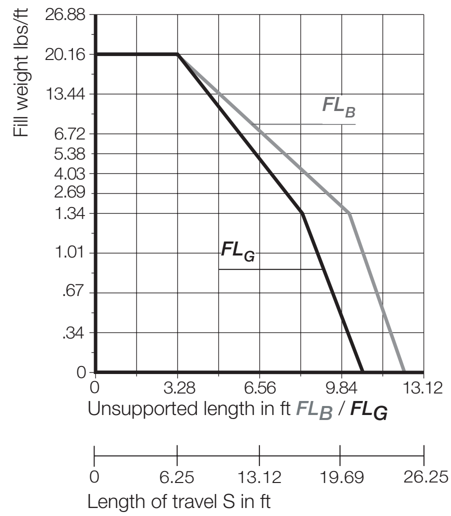
E-Chain System® E4/4
Series 3838/3938/R7838
Installation Dimensions

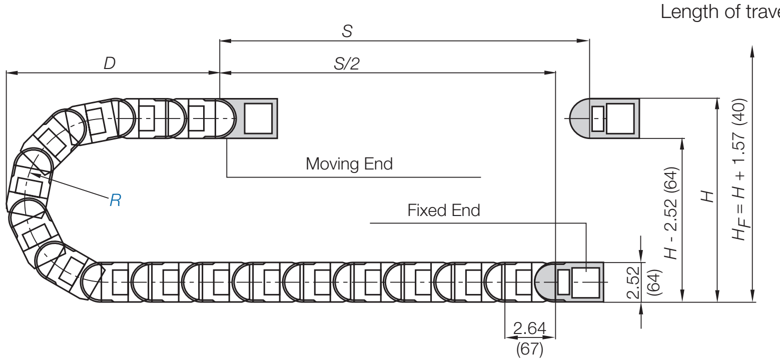
Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1







Pitch per link: = 2.64" (67 mm)
Links per ft (m): = 4.57 (15)
For center mount applications:
Chain length = $S/2 + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H -0 +20	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
HF = Required clearance height
HRi = Trough inner height
H2 = *Mounting height
D2 = Overlength - long travels, gliding
K2 = *Further add-on

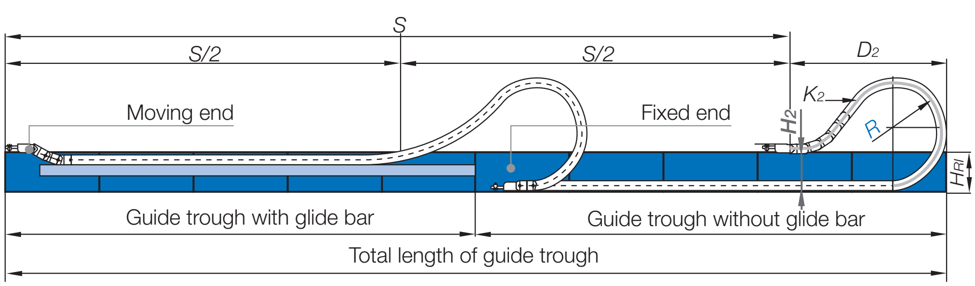
*If the mounting bracket location is set lower

1.65"

For long travels with lowered mounting height

Long travel lengths from 32.8 ft. (10 m) to max. 919 ft. (280 m)

For center mount applications:
Chain length: = $S/2 + K_2$



R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H2	-	-	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)	7.32 (186)
D2 +25	-	-	17.12 (435)	18.70 (475)	22.44 (570)	27.17 (690)	30.71 (780)	34.06 (865)	39.76 (1010)	45.28 (1150)	59.06 (1500)
K2	-	-	29.02 (737)	31.65 (804)	39.57 (1005)	44.84 (1139)	52.76 (1340)	55.39 (1407)	65.94 (1675)	76.50 (1943)	94.96 (2412)

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

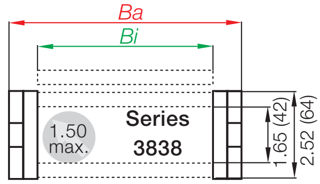
Technical Data

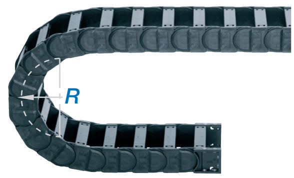
Details of material properties
➤ **Chapter 1**

igus®

E-Chain System® E4/4
Series 3838/3938/R7838

Series 3838 - E-Chain® with crossbars every link





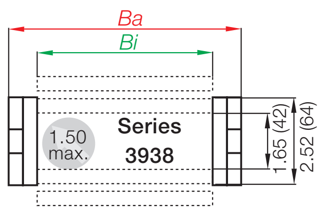
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

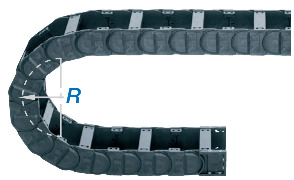
Part Number Structure

3838- 400- 300- 0

- 0: Color - Black
- 300-: Bending radius
- 400-: Width
- 3838-: Series

Series 3938 - E-Chain® with crossbars every other link





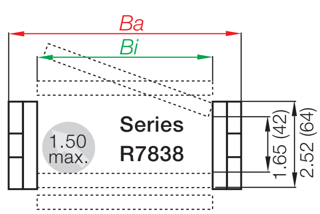
- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

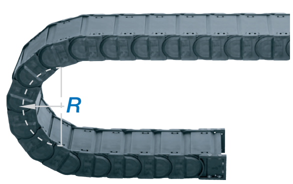
Part Number Structure

3938- 400- 300- 0

- 0: Color - Black
- 300-: Bending radius
- 400-: Width
- 3938-: Series

Series R7838 - fully enclosed E-Tube





- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

7838- 25- 300- 0

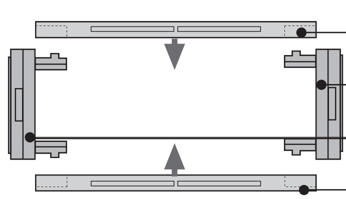
- 0: Color - Black
- 300-: Bending radius
- 25-: Width
- 7838-: Series

E-Chain® as separate parts, links and side plates

Left side link*, single part - Part No. 3838-02- R

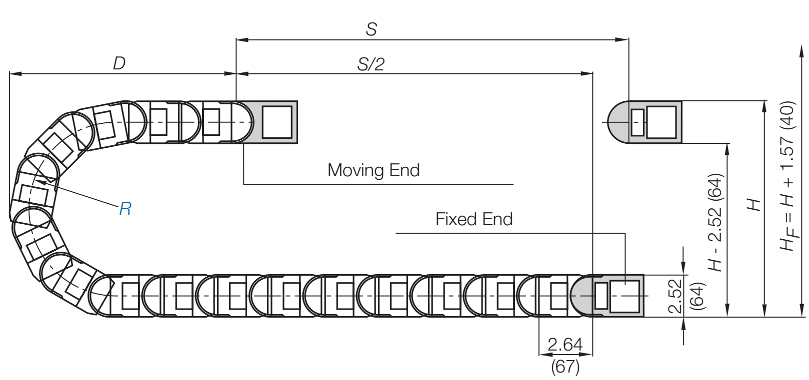
Single crossbar, E-Chain® - Part No. 385- Bi

Single lid, E-Tube - Part No. 785- Bi



Single bottom, E-Tube - Part No. 786- Bi

Right side link*, single part - Part No. 3838-01- R



*View from the moving point of the E-Chain®/E-Tube

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 3838/3938/R7838

Supplement part number with required radius. Example: 3838-30-[300]-0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

Part Number: Crossbars Every Link	Crossbars Every Other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	Weight 3838 lbs/ft (kg/m)	3938 lbs/ft (kg/m)	R7838 lbs/ft (kg/m)
3838-05-	3938-05	*7838-05-	-0	1.97 (50)	3.03 (77)	≈ 1.38 (2.06)	≈ 1.33 (1.98)	≈ 1.51 (2.25)
3838-06-	3938-06-		-0	2.68 (68)	3.74 (95)	≈ 1.40 (2.09)	≈ 1.34 (1.99)	–
3838-07-	3938-07	7838-07-	-0	2.95 (75)	4.02 (102)	≈ 1.42 (2.12)	≈ 1.35 (2.01)	≈ 1.60 (2.38)
3838-087-	3938-087-		-0	3.43 (87)	4.53 (115)	≈ 1.47 (2.18)	≈ 1.37 (2.04)	–
3838-10-	3938-10-	7838-10-	-0	3.94 (100)	5.00 (127)	≈ 1.51 (2.25)	≈ 1.40 (2.08)	≈ 1.75 (2.60)
3838-11-	3938-11-	7838-11-	-0	4.25 (108)	5.31 (135)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	≈ 1.78 (2.65)
3838-112-	3938-112-		-0	4.41(112)	5.51 (140)	≈ 1.55 (2.30)	≈ 1.41 (2.10)	–
3838-12-	3938-12-	7838-12-	-0	4.92 (125)	5.98 (152)	≈ 1.61 (2.40)	≈ 1.44 (2.15)	≈ 1.89 (2.81)
3838-137-	3938-137-		-0	5.39 (137)	6.50 (165)	≈ 1.64 (2.44)	≈ 1.46 (2.17)	–
3838-15-	3938-15-	7838-15-	-0	5.91 (150)	6.97 (177)	≈ 1.70 (2.53)	≈ 1.49 (2.21)	≈ 2.06 (3.07)
3838-162-	3938-162-		-0	6.38 (162)	7.48 (190)	≈ 1.71 (2.55)	≈ 1.49 (2.22)	–
3838-17-	3938-17-	7838-17-	-0	6.61 (168)	7.68 (195)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	≈ 2.18 (3.24)
3838-18-	3938-18-		-0	6.89 (175)	7.95 (202)	≈ 1.76 (2.62)	≈ 1.52 (2.26)	–
3838-187-	3938-187-		-0	7.36 (187)	8.46 (215)	≈ 1.81 (2.69)	≈ 1.55 (2.30)	–
3838-20-	3938-20-	7838-20-	-0	7.87 (200)	8.94 (227)	≈ 1.86 (2.77)	≈ 1.57 (2.33)	≈ 2.37 (3.53)
3838-212-	3938-212-		-0	8.35 (212)	9.45 (240)	≈ 1.91 (2.84)	≈ 1.59 (2.37)	–
3838-23-	3938-23-		-0	8.86 (225)	9.92 (252)	≈ 1.96 (2.92)	≈ 1.62 (2.41)	–
3838-237-	3938-237-		-0	9.33 (237)	10.43 (265)	≈ 1.99 (2.96)	≈ 1.63 (2.43)	–
3838-25-	3938-25-	7838-25-	-0	9.84 (250)	10.91 (277)	≈ 2.05 (3.05)	≈ 1.66 (2.47)	≈ 2.91 (4.33)
3838-262-	3938-262-		-0	10.31 (262)	11.42 (290)	≈ 2.06 (3.06)	≈ 1.67 (2.48)	–
3838-28	3938-28-		-0	10.83 (275)	11.89 (302)	≈ 2.13 (3.17)	≈ 1.70 (2.53)	–
3838-29-	3938-29-		-0	11.30 (287)	12.40 (315)	≈ 2.14 (3.19)	≈ 1.71 (2.54)	–
3838-30-	3938-30-	7838-30-	-0	11.81 (300)	12.87 (327)	≈ 2.23 (3.32)	≈ 1.75 (2.61)	≈ 3.29 (4.89)
3838-312-	3938-312-		-0	12.28 (312)	13.39 (340)	≈ 2.24 (3.34)	≈ 1.76 (2.62)	–
3838-325-	3938-325-		-0	12.79 (325)	13.86 (352)	≈ 2.29 (3.41)	≈ 1.79 (2.66)	–
3838-337-	3938-337-		-0	13.27 (337)	14.37 (365)	≈ 2.33 (3.46)	≈ 1.80 (2.68)	–
3838-350-	3938-350-		-0	13.78 (350)	15.41 (377)	≈ 2.47 (3.68)	≈ 1.88 (2.79)	–
3838-362-	3938-362-		-0	14.25 (362)	15.36 (390)	≈ 2.51 (3.74)	≈ 1.90 (2.82)	–
3838-375-	3938-375-		-0	14.76 (375)	15.83 (402)	≈ 2.55 (3.79)	≈ 1.91 (2.84)	–
3838-387-	3938-387-		-0	15.24 (387)	16.34 (415)	≈ 2.59 (3.85)	≈ 1.93 (2.87)	–
3838-400	3938-400-		-0	15.75 (400)	16.81 (427)	≈ 2.62 (3.90)	≈ 1.95 (2.90)	–

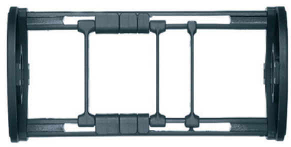
Choose from the radii below for all of the above sizes
Radius (mm) Example: 3838-07-[150]-0

	075**	100**	115**	125**	150	170	200	215	250	300	350
R	2.95 (075)	3.94 (100)	4.53 (115)	4.92 (125)	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)	9.84 (250)	11.81 (300)	13.78 (350)
H $^{-0}_{+20}$	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)	22.24 (565)	26.18 (665)	30.12 (765)
D	6.85 (174)	7.83 (199)	8.43 (214)	8.82 (224)	9.80 (249)	10.59 (269)	11.77 (299)	12.36 (314)	13.74 (349)	15.71 (399)	17.68 (449)
K	14.57 (370)	17.72 (450)	19.69 (500)	20.87 (530)	24.02 (610)	26.38 (670)	30.12 (765)	31.89 (810)	36.22 (920)	42.52 (1080)	48.62 (1235)

** This radius is not available for the R7838 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.235. For large diameter hoses see page 6.235

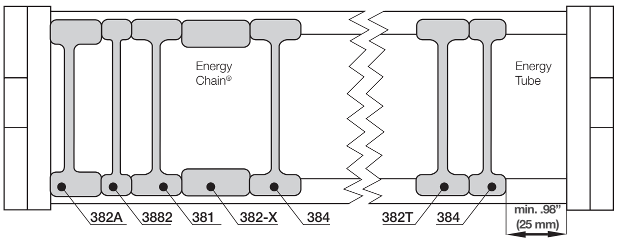
E-Chain System® E4/4 Series 3838/3938/R7838 Interior Separation



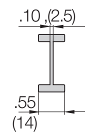
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



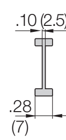
STANDARD
Vertical separator 380



Separator (chain/tube)	
Unassembled	Part No. 380
Assembled	Part No. 381

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

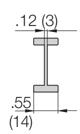
Vertical separator 3881



Separator (chain only)	
Unassembled	Part No. 3881
Assembled	Part No. 3882

- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.

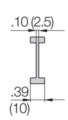
Vertical separator 380T



Vertical Separator (tubes only)	
Unassembled	Part No. 380T
Assembled	Part No. 381T

- **Locking separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.

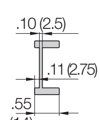
Vertical separator 383



Locking Separator (chain only)	
Unassembled	Part No. 383
Assembled	Part No. 384

- **Vertical separator 383 for E-Chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force. Ensures proper alignment.

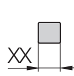
Asymmetric separator 381A



Asymmetric separator (chain only)	
Unassembled	Part No. 381A
Assembled	Part No. 382A

- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX



Spacer (chain only)	
Unassembled	Part No. 381-XX
Assembled	Part No. 382-XX

XX = width of the spacer

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
381 -10	382 -10	.39"	(10)
381 -15	382 -15	.59"	(15)
381 -20	382 -20	79"	(20)

- NOTE ON SPACERS
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® E-Chain System®
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Internet: http://www.igus.com
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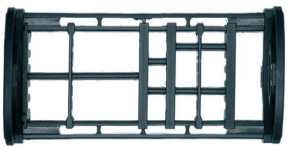
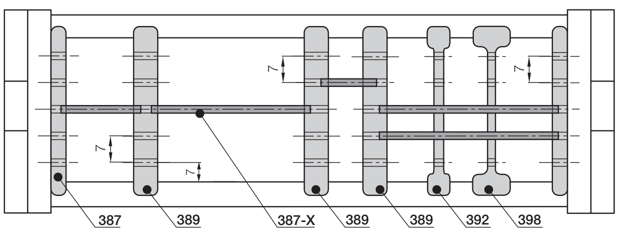
E-Chain System® E4/4 Series 3838/3938/R7838 Interior Separation

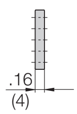


Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.



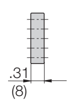
- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.



Side Plate	
Unassembled	**Part No. 386**
Assembled	**Part No. 387**

Side plate
386

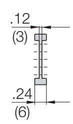
- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.



Vertical Separator	
Unassembled	**Part No. 388**
Assembled	**Part No. 389**

Vertical
separator
388

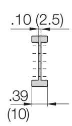
- **Closed slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



Slotted Separators	
Unassembled	**Part No. 391**
Assembled	**Part No. 392**

Closed slotted
separator
391

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 3 middle slots only.

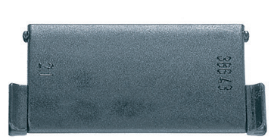


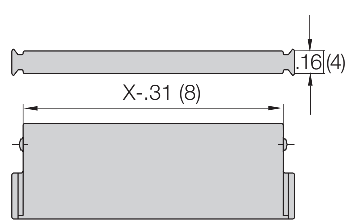
Slotted Separators, Open	
Unassembled	**Part No. 397**
Assembled	**Part No. 398**

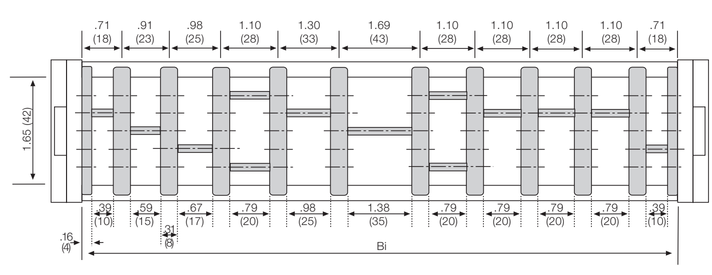
Open slotted
separator
397

Width X in.	Width X (mm)	Usable Width in.	Usable Width (mm)	Part No. Unassembled	Part No. Assembled
.71	(18)	.39	(10)	**386-18**	**387-18**
.91	(23)	.59	(15)	**386-23**	**387-23**
.98	(25)	.67	(17)	**386-25**	**387-25**
1.10	(28)	.79	(20)	**386-28**	**387-28**
1.30	(33)	.98	(25)	**386-33**	**387-33**
1.69	(43)	1.38	(35)	**386-43**	**387-43**
1.97	(50)	1.65	(42)	**386-50**	**387-50**
2.13	(54)	1.81	(46)	**386-54**	**387-54**
2.44	(62)	2.13	(54)	**386-62**	**387-62**
2.95	(75)	2.64	(67)	**386-75**	**387-75**
3.43	(87)	3.12	(87)	**386-87**	**387-87**
3.94	(100)	3.62	(92)	**386-100**	**387-100**
4.25	(108)	3.94	(100)	**386-108**	**387-108**
4.92	(125)	4.61	(117)	**386-125**	**387-125**
5.91	(150)	5.59	(142)	**386-150**	**387-150**
6.89	(175)	6.57	(167)	**386-175**	**387-175**
7.87	(200)	7.56	(192)	**386-200**	**387-200**
8.19	(208)	7.87	(200)	**386-208**	**387-208**

Shelves 386-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28” (7mm) increments



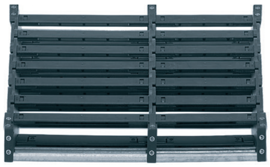




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

E-Chain System® E4/4
Series 3838/3938/R7838
Special Accessories



Part number example for E-Chain®

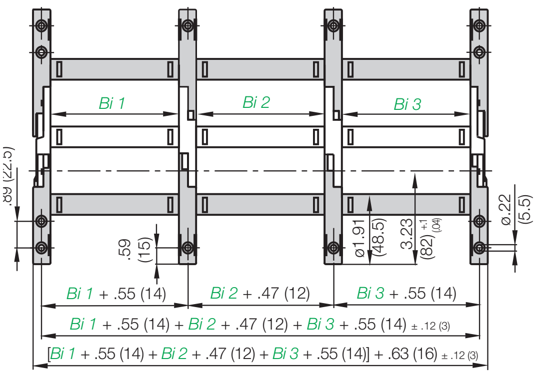
3838-10/20/10-[200]-0

3838-*Bi1*/*Bi2*/*Bi3*-[*R*]-0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

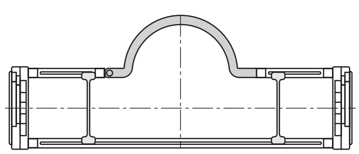
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



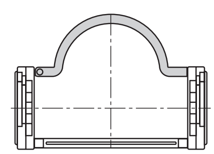
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

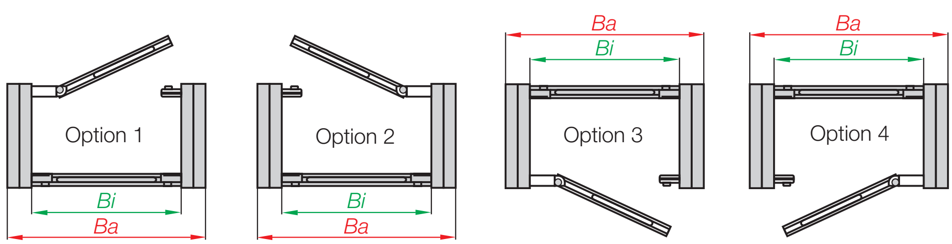


Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No

Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance



igus® E-Chain System®

Telephone 1-800-521-2747
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Internet: http://www.igus.com
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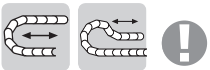
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 3838/3938/R7838
Mounting Brackets - KMA

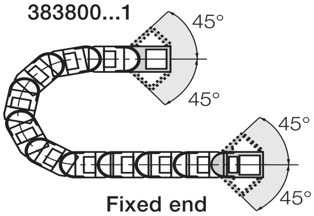


Standard

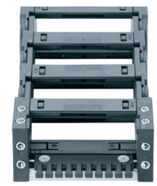
Option 1: KMA pivoting

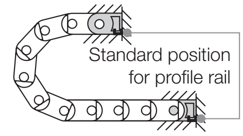
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

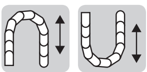
Moving end
383800...1



Fixed end
383800...2



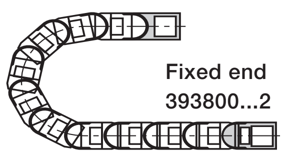




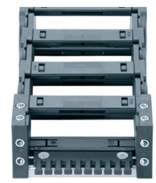
Option 2: KMA locking

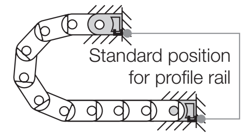
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

Moving end
393800...1



Fixed end
393800...2





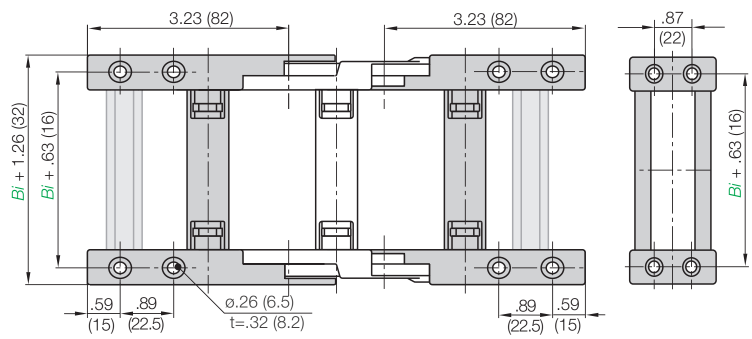
Part Number Structure

383800- | 07- | 12 | T | P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 383800 = Pivoting
  393800 = Locking

Full set, for both ends:
383800- | 05- | 12 | Full set, **each part with pin/bore**

Single-part order:
383800- | 05- | 1 | Mounting bracket **with bore**
383800- | 05- | 2 | Mounting bracket **with pin**



Part number examples are shown for pivoting brackets. For locking brackets change part number to 393800

Part No. Full Set (pivoting)
Series 3838 or 3938:
383800-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 3838 or 3938
383800-Width-12P

Part No. Full Set (pivoting)
Tube Series R7838
383800-Width-12T

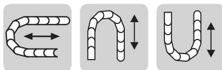
Part No. Full Set (pivoting)
with Profile Rail
Tube Series R7838
383800-Width-12TP

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05*	383800	393800	-05-12	T	P	1.97 (50)
-06	383800	393800	-06-12		P	2.68 (68)
-07	383800	393800	-07-12	T	P	2.95 (75)
-087	383800	393800	-087-12		P	3.43 (87)
-10	383800	393800	-10-12	T	P	3.94 (100)
-11	383800	393800	-11-12	T	P	4.25 (108)
-112	383800	393800	-112-12		P	4.41 (112)
-12	383800	393800	-12-12	T	P	4.92 (125)
-137	383800	393800	-137-12		P	5.39 (137)
-15	383800	393800	-15-12	T	P	5.91 (150)
-162	383800	393800	-162-12		P	6.38 (162)
-17	383800	393800	-17-12	T	P	6.61 (168)
-18	383800	393800	-18-12		P	6.89 (175)
-187	383800	393800	-187-12		P	7.36 (187)
-20	383800	393800	-20-12	T	P	7.87 (200)
-212	383800	393800	-212-12		P	8.35 (212)

Width	Part No. Full Set Pivoting	Part No. Full Set Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-23	383800	393800	-23-12		P	8.86 (225)
-237	383800	393800	-237-12		P	9.33 (237)
-25	383800	393800	-25-12	T	P	9.84 (250)
-262	383800	393800	-262-12		P	10.31 (262)
-28	383800	393800	-28-12		P	10.83 (275)
-29	383800	393800	-29-12		P	11.30 (287)
-30	383800	393800	-30-12	T	P	11.81 (300)
-312	383800	393800	-312-12		P	12.28 (312)
-325	383800	393800	-325-12		P	12.79 (325)
-337	383800	393800	-337-12		P	13.27 (337)
-350	383800	393800	-350-12		P	13.78 (350)
-362	383800	393800	-362-12		P	14.25 (362)
-375	383800	393800	-375-12		P	14.76 (375)
-387	383800	393800	-387-12		P	15.24 (387)
-400	383800	393800	-400-12		P	15.75 (400)

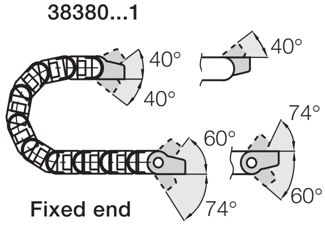
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

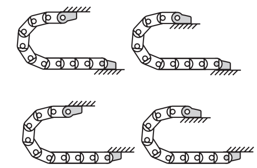
E-Chain System® E4/4
Series 3838/3938/R7838
Mounting Brackets - Steel



Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



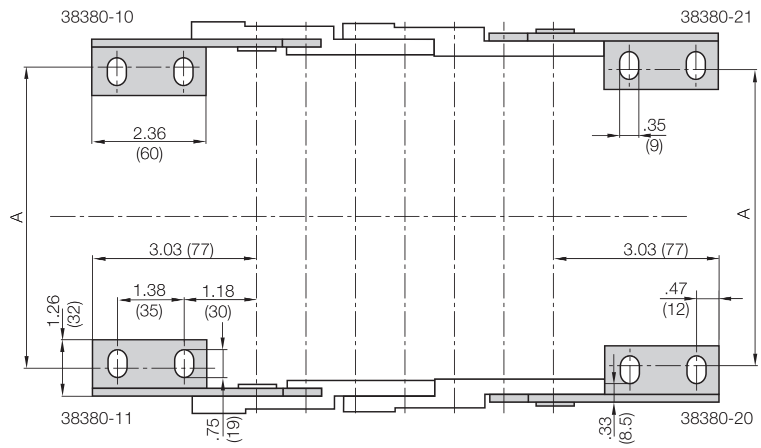


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 3838, 3938 or R7838:
38380-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
38380-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
38380-2



Width of Chain *Bi*	Mounting Brackets Part Number	Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)*	38380	-12	-1	-2	3.54 (90)
2.68 (68)	38380	-12	-1	-2	1.57 (40)
2.95 (75)	38380	-12	-1	-2	18.5 (47)
3.43 (87)	38380	-12	-1	-2	2.32 (59)
3.94 (100)	38380	-12	-1	-2	2.83 (72)
4.25 (108)	38380	-12	-1	-2	3.14 (80)
4.41 (112)	38380	-12	-1	-2	3.30 (84)
4.92 (125)	38380	-12	-1	-2	3.81 (97)
5.39 (137)	38380	-12	-1	-2	4.29 (109)
5.91 (150)	38380	-12	-1	-2	4.80 (122)
6.38 (162)	38380	-12	-1	-2	5.27 (134)
6.61 (168)	38380	-12	-1	-2	5.51 (140)
6.89 (175)	38380	-12	-1	-2	5.78 (147)
7.36 (187)	38380	-12	-1	-2	6.25 (159)
7.87 (200)	38380	-12	-1	-2	6.77 (172)
8.35 (212)	38380	-12	-1	-2	7.24 (184)
8.86 (225)	38380	-12	-1	-2	7.75 (197)
9.33 (237)	38380	-12	-1	-2	8.22 (209)
9.84 (250)	38380	-12	-1	-2	8.74 (222)
10.31 (262)	38380	-12	-1	-2	9.21 (234)
10.83 (275)	38380	-12	-1	-2	9.72 (247)
11.30 (287)	38380	-12	-1	-2	10.19 (259)
11.81 (300)	38380	-12	-1	-2	10.70 (272)
12.28 (312)	38380	-12	-1	-2	11.18 (284)
12.79 (325)	38380	-12	-1	-2	11.69 (297)
13.27 (337)	38380	-12	-1	-2	12.16 (309)
13.78 (350)	38380	-12	-1	-2	12.67 (322)
14.25 (362)	38380	-12	-1	-2	13.14 (334)
14.76 (375)	38380	-12	-1	-2	13.66 (347)
15.24 (387)	38380	-12	-1	-2	14.13 (359)
15.75 (400)	38380	-12	-1	-2	4.64 (372)

*Mounting bracket feet must face outward

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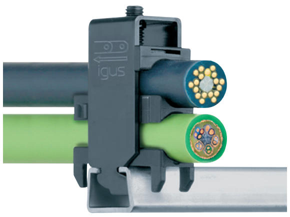
E-Chain System® E4/4
Series 3838/3938/R7838
Strain Relief

Chainfix clamps for the profile rail

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.



Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

Chainfix Clip

Modular snap-on strain relief device

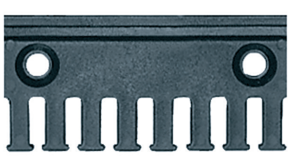
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

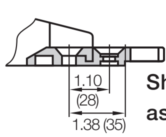
Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates

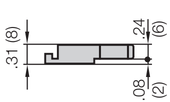
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



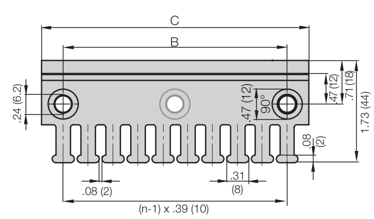


Shown assembled



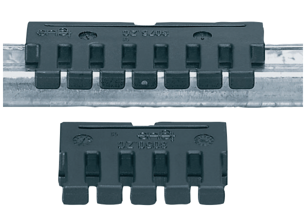
Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

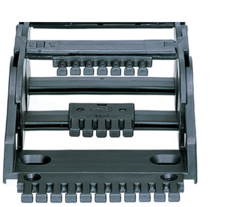


Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief	
		in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10



Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief	
		in.	(mm)
3850-ZS	5	1.89	(48)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4 Series 3838/3938/R7838 Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

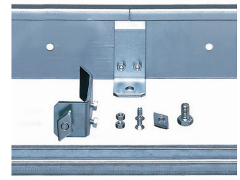
- Full travel length of guide trough
  Part No. 93-30
- 1/2 travel length of glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 93-50-XX

-XX indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

Example:
Length of travel 164 ft (50 m)
Center mounted
Required guide troughs:
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 93-30
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

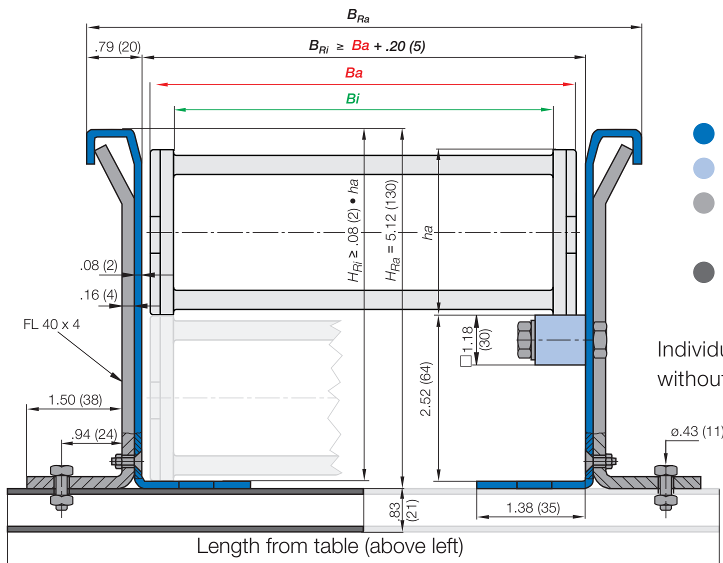


Installation sets as section connectors

Width of Crossbar
380-**05**-200-0

	B_{Ri}	Installation Part No.
-05	3.23 (82)	**93-50-200**
-06	3.94 (100)	**93-50-225**
-07	4.21 (107)	**93-50-225**
-087	4.72 (120)	**93-50-250**
-10	5.20 (132)	**93-50-250**
-11	5.51 (140)	**93-50-250**
-112	5.71 (145)	**93-50-275**
-12	6.18 (157)	**93-50-275**
-137	6.69 (170)	**93-50-300**
-15	7.16 (182)	**93-50-300**
-162	7.68 (195)	**93-50-325**
-17	7.87 (200)	**93-50-325**
-18	8.15 (207)	**93-50-325**
-187	8.66 (220)	**93-50-350**
-20	9.13 (232)	**93-50-350**
-212	9.65 (245)	**93-50-375**
-23	10.12 (257)	**93-50-375**
-237	10.63 (270)	**93-50-400**
-25	11.10 (282)	**93-50-400**
-262	11.61 (295)	**93-50-425**
-28	12.09 (307)	**93-50-425**
-29	12.60 (320)	**93-50-450**
-30	13.07 (332)	**93-50-450**
-312	13.58 (345)	**93-50-475**
-325	14.06 (357)	**93-50-475**
-337	14.57 (370)	**93-50-500**
-350	15.04 (382)	**93-50-500**
-362	15.55 (395)	**93-50-525**
-375	16.02 (407)	**93-50-525**
-387	16.53 (420)	**93-50-550**
-400	17.01 (432)	**93-50-550**

Standard length profile rail



* Specialized guide trough available upon request

For further technical information on guide troughs
➤ Chapter 9

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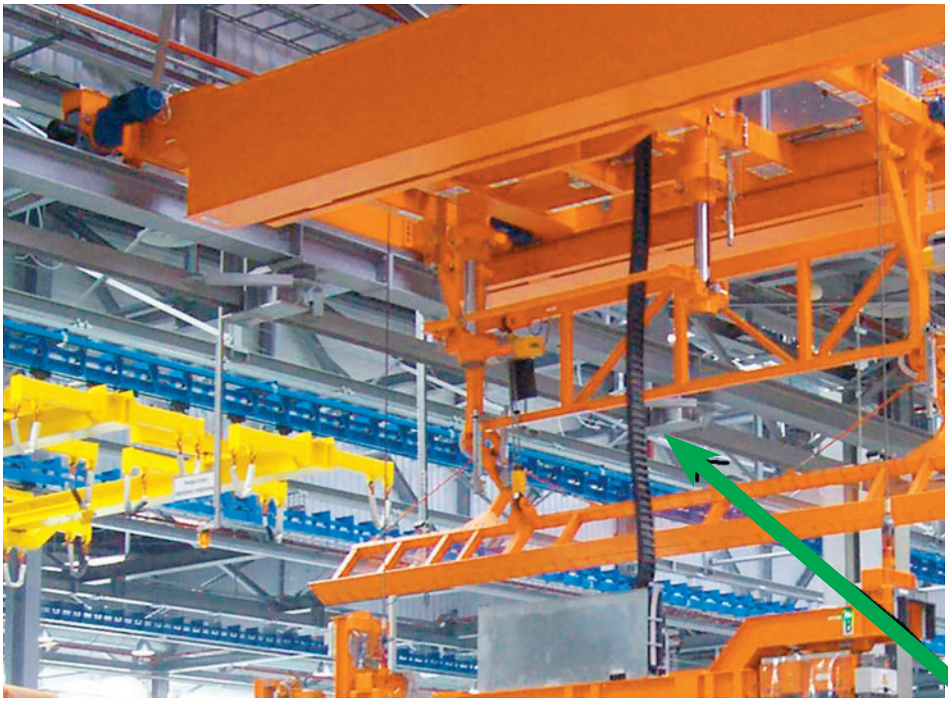
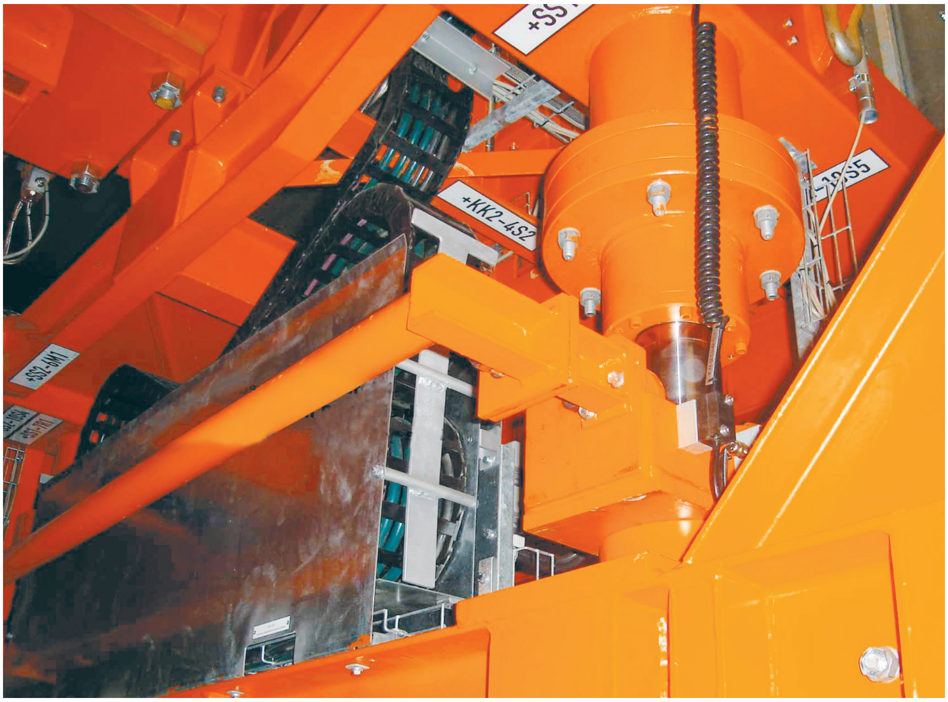
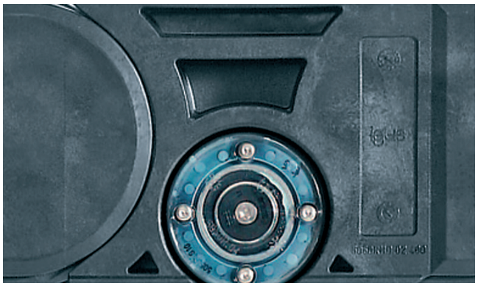




E4/4 as ZigZag version in this crane.

Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 3838R - Order example 3838R-30-220-0
Further information: Call igus® at 800-521-2747



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4
Series 4040/4140/R8840
For new applications use Series E4-56

2.20" 2.20"

Price Index

Series 4040 | Series 4140

Series R8840

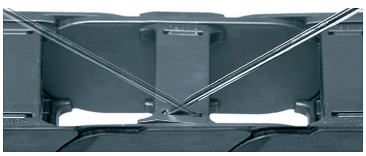
Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Assembly Tips



Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 328 ft (100 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

+

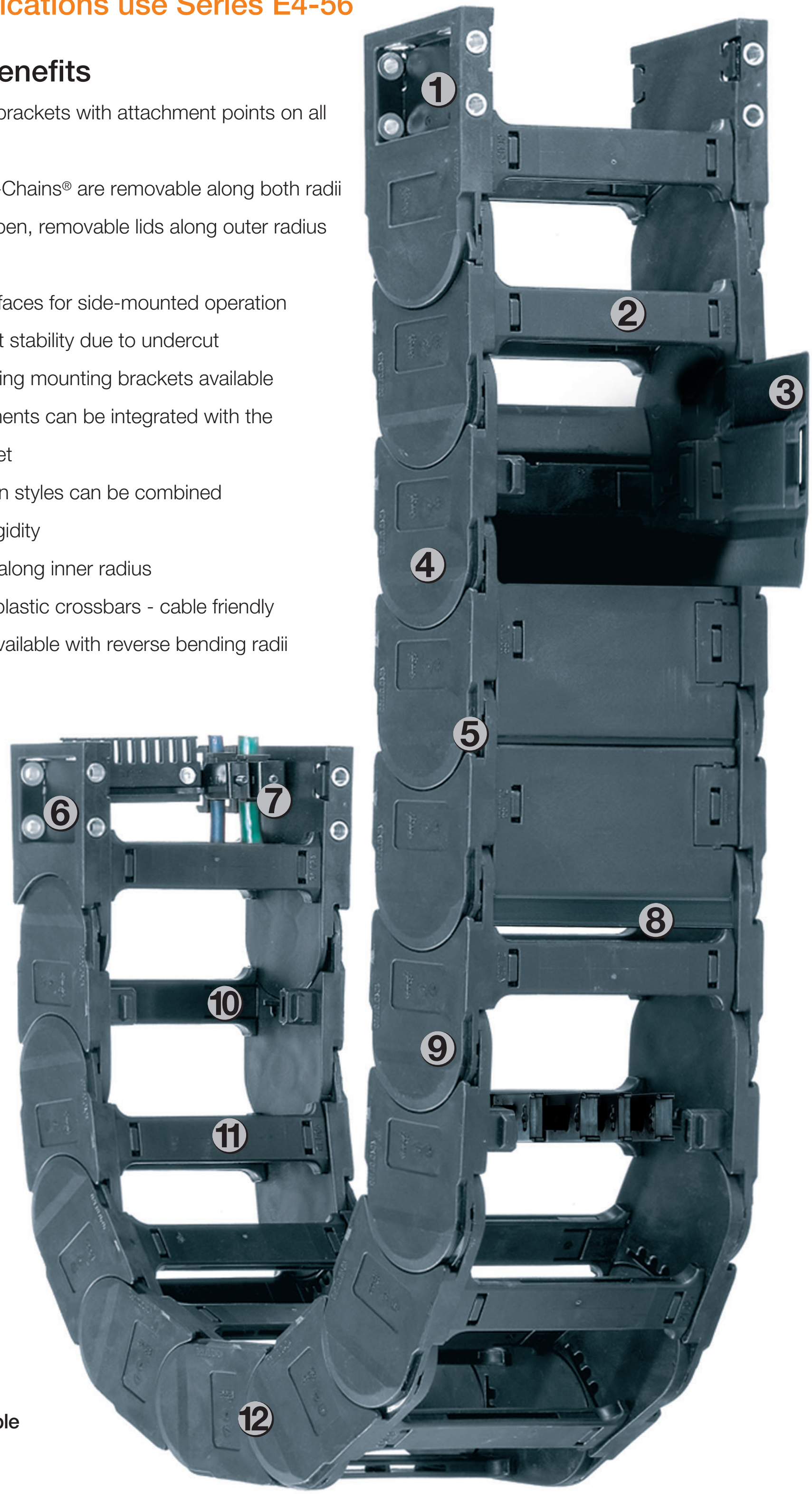
- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

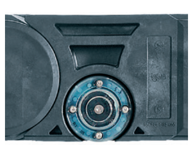
−

- If a quieter version is required
  ➤ **Series 400/410/R880**
- If a simple low-cost solution is required
  ➤ **Series 14040/R18840**
- When very long travels or high additional loads are involved
  ➤ **Series 4040HD**

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Strain relief elements can be integrated with the mounting bracket
8. Closed and open styles can be combined
9. High torsional rigidity
10. Removable lids along inner radius
11. Wide, rounded plastic crossbars - cable friendly
12. E-Chain® also available with reverse bending radii





Rol E-Chain® Series 4040R/8840R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

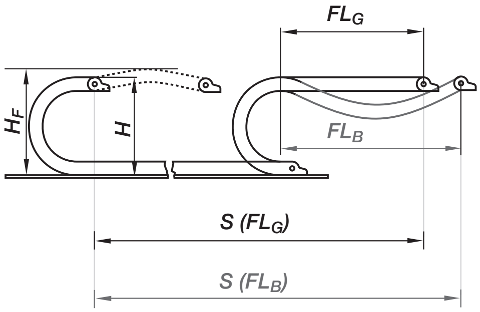
16.4 ft (5 m) **4040-30-300-0**	**E-Chain®**
With 2 separators **411** assembled every 2nd link	**Interior Separation**
1 Set **404000-30-12P**	**Mounting Bracket**

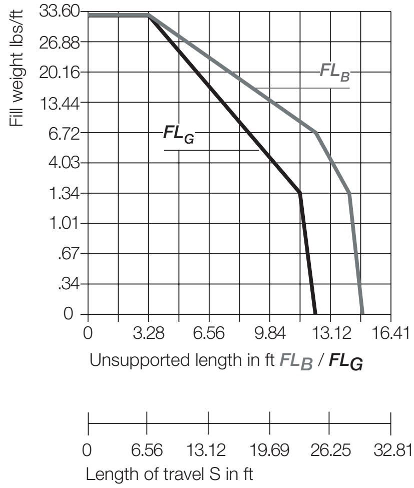
E-Chain System® E4/4 Series 4040/4140/R8840 Installation Dimensions

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

Further information ➤ Design, Chapter 1





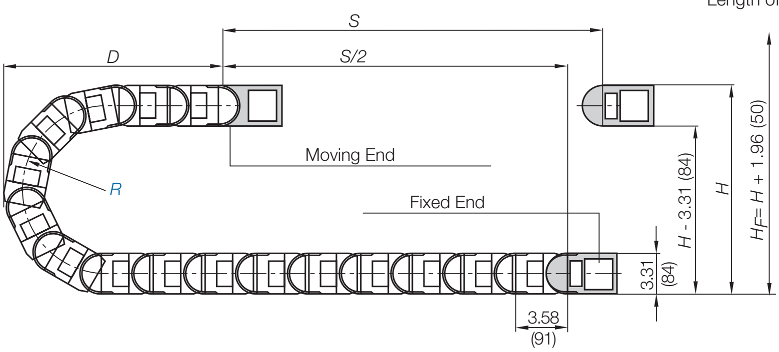
Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
H_F = Required clearance height
H_{RI} = Trough inner height
H_2 = *Mounting height
D_2 = Overlength - long travels, gliding
K_2 = *Add-on

*If the mounting bracket location is set lower



Pitch per link: = 3.58” (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

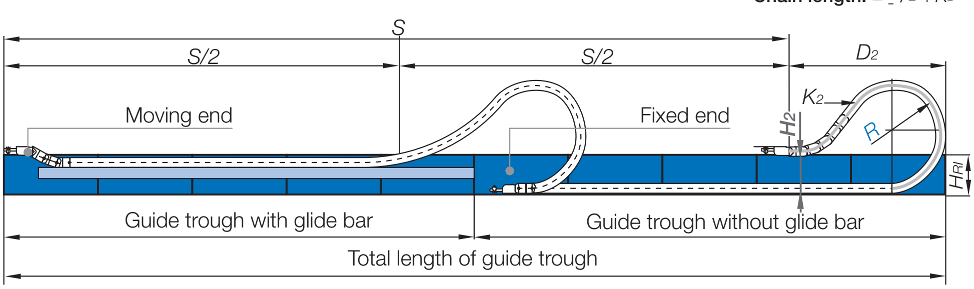
The required clearance height: $H_F = H$ **+ 1.96 in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H^{+0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 984 ft. (300m)

For center mount applications:
Chain length: = $S/2 + K_2$



Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1

R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H_2	-	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)	10.47 (266)
D_2 +25	-	18.90 (480)	23.62 (600)	28.74 (730)	36.61 (930)	37.01 (940)	46.46 (1180)	56.69 (1440)	60.24 (1530)	72.83 (1850)
K_2	-	32.24 (819)	42.99 (1092)	50.16 (274)	60.91 (1547)	60.91 (1547)	78.82 (2002)	93.15 (2366)	100.31 (2548)	125.39 (3185)

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Technical Data

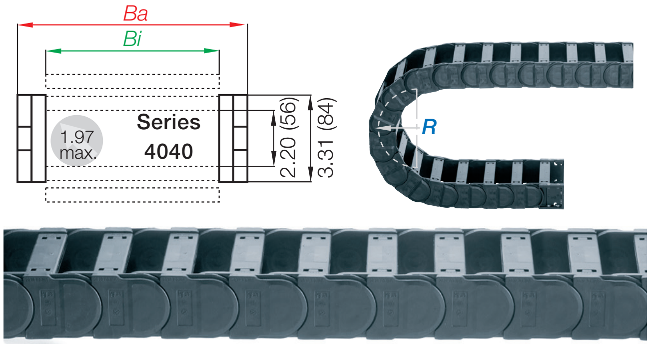
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ Chapter 1

2.20”

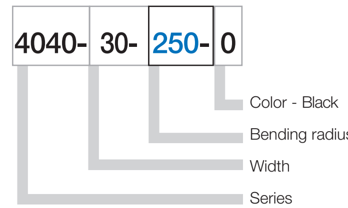
E-Chain System® E4/4
Series 4040/4140/R8840

Series 4040 - E-Chain® with crossbars every link

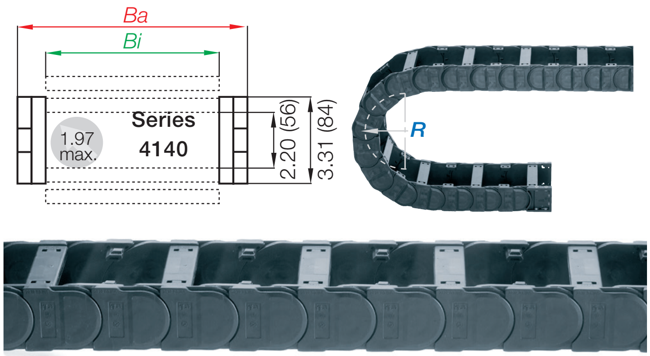


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

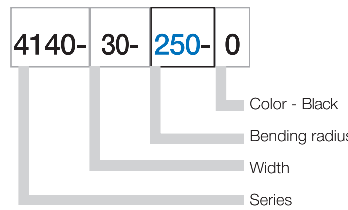


Series 4140 - E-Chain® with crossbars every other link

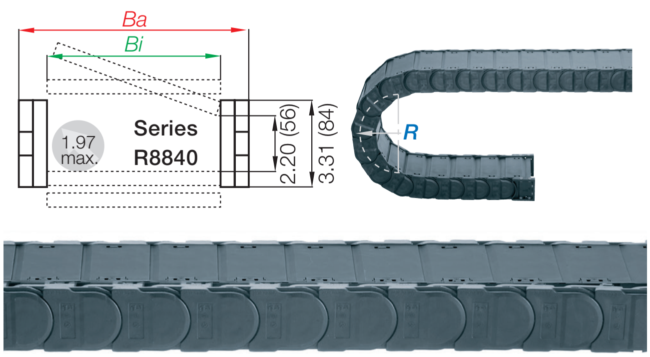


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

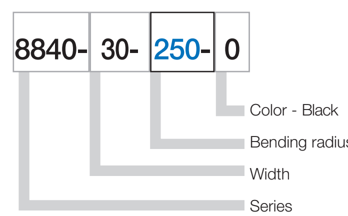


Series R8840 - fully enclosed E-Tube

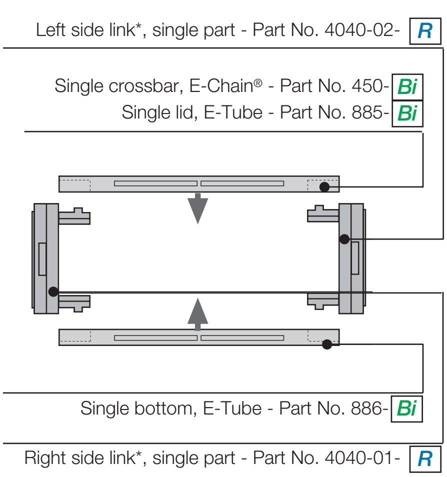


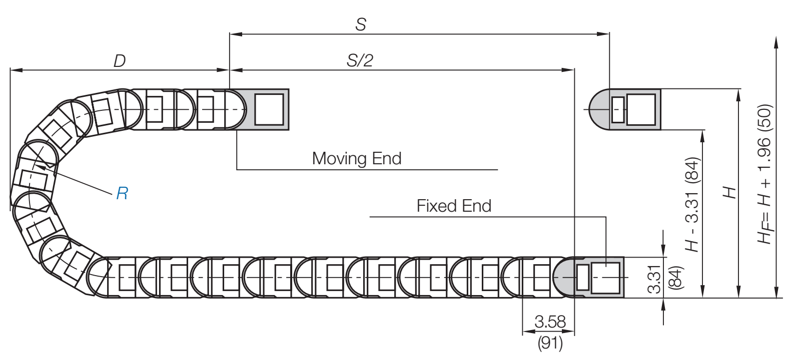
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure



E-Chain® as separate parts, links and side plates





*View from the moving point of the E-Chain®/E-Tube

E-Chain System® E4/4
Series 4040/4140/R8840

Supplement part number with required radius. Example: 4040-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		Bi in. (mm)	Ba in. (mm)	4040 lbs/ft (kg/m)	4140 lbs/ft (kg/m)	R8840 lbs/ft (kg/m)
4040-05-	4140-05-		[ ]-0	1.97 (50)	3.39 (86)	≈ 2.45 (3.65)	≈ 2.63 (3.58)	–
4040-06-	4140-06-		[ ]-0	2.56 (65)	3.98 (101)	≈ 2.47 (3.67)	≈ 2.15 (3.60)	–
4040-07-	4140-07-	8840-07-	[ ]-0*	2.95 (75)	4.37 (111)	≈ 2.54 (3.78)	≈ 2.31 (3.70)	≈ 2.85 (4.24)
4040-08-	4140-08-		[ ]-0	3.43 (87)	4.84 (123)	≈ 2.57 (3.83)	≈ 2.52 (3.75)	–
4040-10-	4140-10-	8840-10-	[ ]-0	3.94 (100)	5.35 (136)	≈ 2.66 (3.96)	≈ 2.37 (3.78)	≈ 3.04 (4.52)
4040-11-	4140-11	-	[ ]-0	4.41 (112)	5.87 (149)	≈ 2.75 (4.09)	≈ 2.42 (3.85)	–
4040-12-	4140-12-	8840-12-	[ ]-0	4.92 (125)	6.34 (161)	≈ 2.80 (4.16)	≈ 2.44 (3.88)	≈ 3.28 (4.88)
4040-13-	4140-13-		[ ]-0	5.39 (137)	6.85 (174)	≈ 2.88 (4.29)	≈ 2.49 (3.95)	–
4040-15-	4140-15-	8840-15-	[ ]-0	5.91 (150)	7.32 (186)	≈ 2.93 (4.36)	≈ 2.51 (3.98)	≈ 3.57 (5.31)
4040-16-	4140-16-		[ ]-0	6.38 (162)	7.83 (199)	≈ 3.00 (4.47)	≈ 2.54 (4.04)	–
4040-17-	4140-17-	8840-17	[ ]-0	6.89 (175)	8.31 (211)	≈ 3.08 (4.58)	≈ 2.58 (4.09)	≈ 3.74 (5.56)
4040-18-	4140-18-		[ ]-0	7.36 (187)	8.81 (224)	≈ 3.15 (4.69)	≈ 2.61 (4.15)	–
4040-20-	4140-20-	8840-20-	[ ]-0	7.87 (200)	9.29 (236)	≈ 3.17 (4.71)	≈ 2.63 (4.16)	≈ 3.96 (5.89)
4040-21-	4140-21-		[ ]-0	8.35 (212)	9.80 (249)	≈ 3.24 (4.82)	≈ 2.66 (4.21)	–
4040-22-	4140-22-		[ ]-0	8.86 (225)	10.28 (261)	≈ 3.28 (4.88)	≈ 2.68 (4.25)	–
4040-23-	4140-23-		[ ]-0	9.33 (237)	10.79 (274)	≈ 3.37 (5.02)	≈ 2.73 (4.31)	–
4040-25-	4140-25-	8840-25-	[ ]-0	9.84 (250)	11.26 (286)	≈ 3.43 (5.10)	≈ 2.76 (4.36)	≈ 4.44 (6.61)
4040-26-	4140-26-		[ ]-0	10.31 (262)	11.77 (299)	≈ 3.49 (5.19)	≈ 2.79 (4.40)	–
4040-27-	4140-27-	8840-27	[ ]-0	10.83 (275)	12.24 (311)	≈ 3.56 (5.30)	≈ 2.82 (4.46)	≈ 4.63 (6.89)
4040-28-	4140-28-		[ ]-0	11.30 (287)	12.76 (324)	≈ 3.58 (5.32)	≈ 2.83 (4.47)	–
4040-30-	4140-30-	8840-30-	[ ]-0	11.81 (300)	13.23 (336)	≈ 3.72 (5.54)	≈ 2.90 (4.58)	≈ 4.89 (7.27)
4040-31-	4140-31-		[ ]-0	12.28 (312)	13.74 (349)	≈ 3.75 (5.58)	≈ 3.09 (4.60)	–
4040-32-	4140-32-		[ ]-0	12.79 (325)	14.21 (361)	≈ 3.78 (5.63)	≈ 2.94 (4.62)	–
4040-33-	4140-33-		[ ]-0	13.27 (337)	14.72 (374)	≈ 3.90 (5.81)	≈ 3.00 (4.71)	–
4040-35-	4140-35-	8840-35-	[ ]-0	13.78 (350)	15.20 (386)	≈ 4.01 (5.96)	≈ 3.04 (4.79)	≈ 5.39 (8.02)
4040-36-	4140-36-		[ ]-0	14.25 (362)	15.71 (399)	≈ 4.01 (5.96)	≈ 3.04 (4.79)	–
4040-37-	4140-37-		[ ]-0	14.76 (375)	16.18 (411)	≈ 4.02 (5.98)	≈ 3.05 (4.80)	–
4040-38-	4140-38-		[ ]-0	15.24 (387)	16.69 (424)	≈ 4.08 (6.07)	≈ 3.08 (4.84)	–
4040-40-	4140-40-	8840-40-	[ ]-0	15.75 (400)	17.17 (436)	≈ 4.21 (6.27)	≈ 3.15 (4.94)	≈ 6.04 (8.98)
4040-41-	4140-41-		[ ]-0	16.22 (412)	17.68 (449)	≈ 4.31 (6.42)	≈ 3.20 (5.02)	–
4040-42-	4140-42-		[ ]-0	16.73 (425)	18.15 (461)	≈ 4.42 (6.58)	≈ 3.25 (5.09)	–
4040-43-	4140-43-		[ ]-0	17.20 (437)	18.66 (474)	≈ 4.46 (6.64)	≈ 3.27 (5.13)	–
4040-45-	4140-45-		[ ]-0	17.72 (450)	19.13 (486)	≈ 4.51 (6.71)	≈ 3.30 (5.16)	–
4040-46-	4140-46-	8840-46-	[ ]-0	18.19 (462)	19.65 (499)	≈ 4.52 (6.73)	≈ 3.49 (5.19)	≈ 6.34 (9.44)
4040-47-	4140-47-		[ ]-0	18.70 (475)	20.12 (511)	≈ 4.61 (6.86)	≈ 3.35 (5.24)	–
4040-48-	4140-48-		[ ]-0	19.17 (487)	20.63 (524)	≈ 4.63 (6.88)	≈ 3.55 (5.28)	–
4040-50-	4140-50-		[ ]-0	19.69 (500)	21.10 (536)	≈ 4.70 (7.00)	≈ 3.39 (5.30)	–
4040-51-	4140-51-		[ ]-0	20.16 (512)	21.61 (549)	≈ 4.72 (7.02)	≈ 3.40 (5.31)	–
4040-52-	4140-52-		[ ]-0	20.67 (525)	22.09 (561)	≈ 4.74 (7.06)	≈ 3.41 (5.34)	–
4040-53-	4140-53-		[ ]-0	21.14 (537)	22.60 (574)	≈ 4.85 (7.22)	≈ 3.47 (5.41)	–
4040-55-	4140-55-		[ ]-0	21.65 (550)	23.07 (586)	≈ 5.17 (7.70)	≈ 3.63 (5.65)	–
4040-60-	4140-60-		[ ]-0	23.62 (600)	25.04 (636)	≈ 5.31 (7.90)	≈ 3.70 (5.75)	–

Choose from the radii below for all of the above sizes
Radius (mm) Example: 4040-30-[300]-0

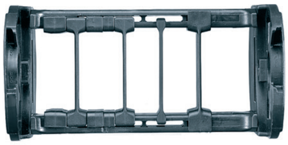
	135**	150	175	200	240	250	300	350	400	500
R	5.31 (135)	5.91 (150)	6.89 (175)	7.87 (200)	9.45 (240)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)
H^{*-0}_{+25}	14.17 (360)	15.16 (385)	17.13 (435)	19.09 (485)	22.24 (565)	23.03 (585)	26.97 (685)	30.91 (785)	34.84 (885)	42.72 (1085)
D	10.63 (270)	11.22 (285)	12.20 (310)	13.19 (335)	14.76 (375)	15.16 (385)	17.13 (435)	19.09 (485)	21.06 (535)	25.00 (635)
K	25.59 (650)	29.53 (750)	32.48 (825)	35.43 (900)	40.16 (1020)	41.34 (1050)	48.23 (1225)	52.76 (1340)	57.09 (1450)	69.88 (1775)

** This radius is not available for the R8840 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.247. For large diameter hoses see page 6.247

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

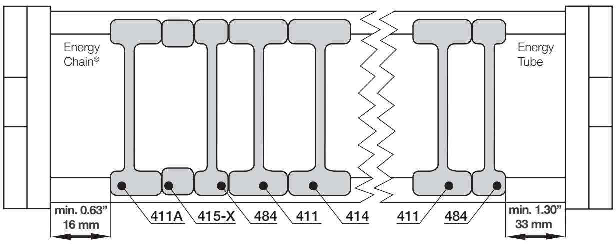
E-Chain System® E4/4 Series 4040/4140/R8840 Interior Separation



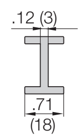
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



STANDARD Vertical separator 401

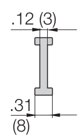


Vertical separator

Unassembled	Part No. 401
Assembled	Part No. 411

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 483

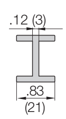


Vertical separator

Unassembled	Part No. 483
Assembled	Part No. 484

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

Locking separator 404

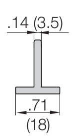


Locking separator (chain only)

Unassembled	Part No. 404
Assembled	Part No. 414

- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

Locking separator 406

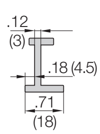


Locking separator (tube only)

Unassembled	Part No. 406
Assembled	Part No. 416

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar

Asymmetric separator 401A

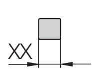


Asymmetrical separator (chain only)

Unassembled	Part No. 401A
Assembled	Part No. 411A

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX



Spacer (chain only)

Unassembled	Part No. 405-XX
Assembled	Part No. 415-XX

XX = width of the spacer

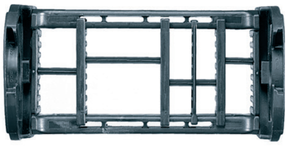
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

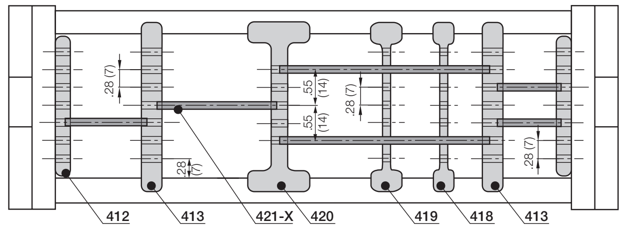
E-Chain System® E4/4 Series 4040/4140/R8840 Interior Separation



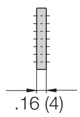
Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ Design, Chapter 1 for layout recommendations.



- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.

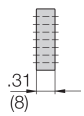


Side plate

Unassembled	**Part No. 402**
Assembled	**Part No. 412**

Side plate
402

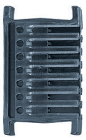
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.



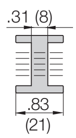
Vertical separator

Unassembled	**Part No. 403**
Assembled	**Part No. 413**

Vertical separator
403



- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.

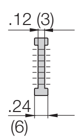


Locking vertical separator

Unassembled	**Part No. 410**
Assembled	**Part No. 420**

Locking vertical
separator
410

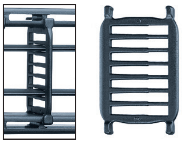
- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



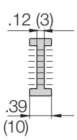
Slotted separators, closed

Unassembled	**Part No. 408**
Assembled	**Part No. 418**

Closed slotted
separator
408



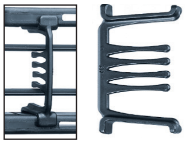
- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots



Slotted separators, open

Unassembled	**Part No. 409**
Assembled	**Part No. 419**

Open slotted
separator
409

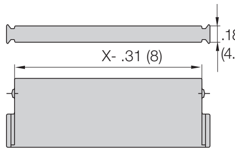


Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

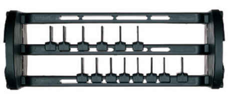
Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**
.91 (23)	.59 (15)	**420-23**	**421-23**
.98 (25)	.67 (17)	**420-25**	**421-25**
1.10 (28)	.79 (20)	**420-28**	**421-28**
1.30 (33)	.98 (25)	**420-33**	**421-33**
1.69 (43)	1.38 (35)	**420-43**	**421-43**
1.97 (50)	1.65 (42)	**420-50**	**421-50**
2.44 (62)	2.13 (54)	**420-62**	**421-62**

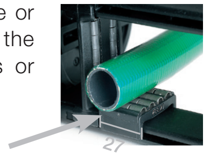
Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
2.95 (75)	2.64 (67)	**420-75**	**421-75**
3.46 (88)	3.15 (80)	**420-88**	**421-88**
3.94 (100)	3.62 (92)	**420-100**	**421-100**
4.92 (125)	4.61(117)	**420-125**	**421-125**
5.91 (150)	5.59(142)	**420-150**	**421-150**
6.89 (175)	6.57(167)	**420-175**	**421-175**
7.36 (187)	7.05(179)	**420-187**	**421-187**
7.87 (200)	7.56(192)	**420-200**	**421-200**



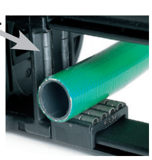
Center crossbar - developed for applications involving a very large number of thin cables, individually separated. This offers the option of subdividing the E-Chain® into upper and lower halves, with mutually independent separators.

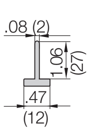
Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables





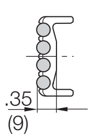
Roller separator - performs a similar function to the Rollclip, but doubles as a separator. Consult igus® if you have any questions regarding the roller separator.





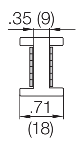
Center crossbar

Unassembled	**Part No. 405**
Assembled	**Part No. 415**



Rollclip

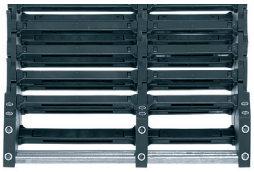
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**



Roller separator

Unassembled	**Part No. 429**
Assembled	**Part No. 430**

E-Chain System® E4/4
Series 4040/4140/R8840
Special Accessories



Part number example for E-Chain®

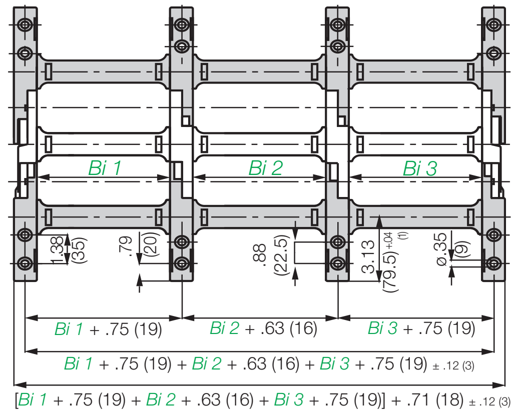
4040-10/20/10- 200 -0

4040-*Bi1*/*Bi2*/*Bi3*- *R* -0

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

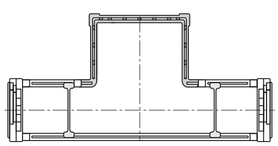
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118” (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



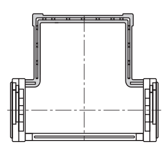
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

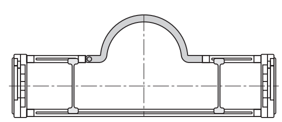
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



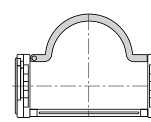
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

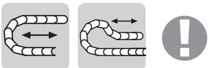
Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

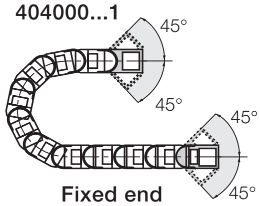
E-Chain System® E4/4
Series 4040/4140/R8840
Mounting Brackets - KMA

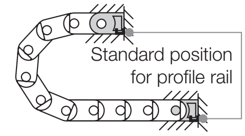


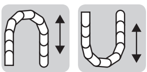
Standard

Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

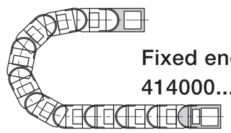


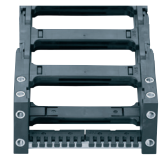


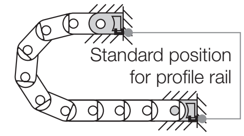


Option 2: KMA locking

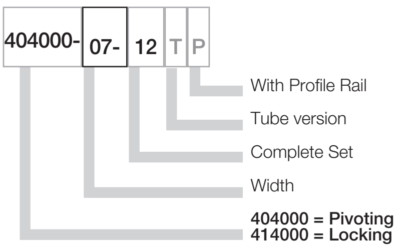
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

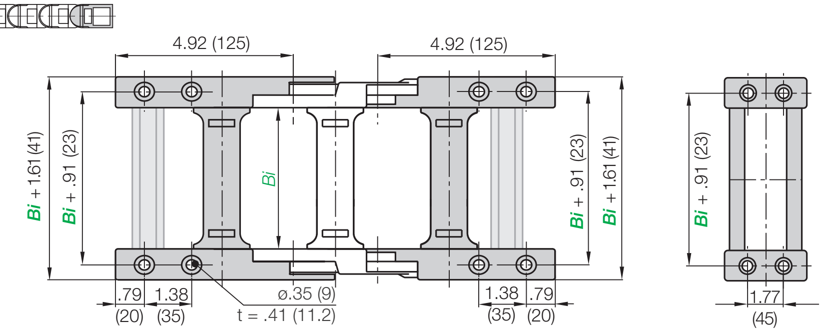






Part Number Structure





Full set, for both ends:

404000- 05- 12 Full set, **each part with pin/bore**

Single-part order:

404000- 05- 1 Mounting bracket **with bore**

404000- 05- 2 Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 414000

Part No. Full Set (pivoting)
Series 4040 or 4140:
404000-Width-12

Part No. Full Set (pivoting)
with profile rail
Series 4040 or 4140
404000-Width-12P

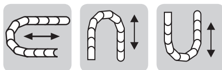
Part No. Full Set (pivoting)
Tube Series R8840
404000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R8840
404000-Width-12TP

Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-05	404000	414000	-05-12		P	1.97 (50)
-06	404000	414000	-06-12		P	2.56 (65)
-07	404000	414000	-07-12	T	P	2.95 (75)
-08	404000	414000	-08-12			3.43 (87)
-10	404000	414000	-10-12	T	P	3.94 (100)
-11	404000	414000	-11-12		P	4.41 (112)
-12	404000	414000	-12-12	T	P	4.92 (125)
-13	404000	414000	-13-12		P	5.39 (137)
-15	404000	414000	-15-12	T	P	5.91 (150)
-16	404000	414000	-16-12		P	6.38 (162)
-17	404000	414000	-17-12	T	P	6.89 (175)
-18	404000	414000	-18-12		P	7.36 (187)
-20	404000	414000	-20-12	T	P	7.87 (200)
-21	404000	414000	-21-12		P	8.35 (212)
-22	404000	414000	-22-12		P	8.86 (225)
-23	404000	414000	-23-12		P	9.33 (237)
-25	404000	414000	-25-12	T	P	9.84 (250)
-26	404000	414000	-26-12		P	10.31 (262)
-27	404000	414000	-27-12	T	P	10.83 (275)
-28	404000	414000	-28-12		P	11.30 (287)
-30	404000	414000	-30-12	T	P	11.81 (300)

Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	*Bi* in. (mm)
-31	404000	414000	-31-12		P	12.28 (312)
-32	404000	414000	-32-12		P	12.79 (325)
-33	404000	414000	-33-12		P	13.27 (337)
-35	404000	414000	-35-12	T	P	13.78 (350)
-36	404000	414000	-36-12		P	14.25 (362)
-37	404000	414000	-37-12		P	14.76 (375)
-38	404000	414000	-38-12		P	15.24 (387)
-40	404000	414000	-40-12	T	P	15.75 (400)
-41	404000	414000	-41-12		P	16.22 (412)
-42	404000	414000	-42-12		P	16.73 (425)
-43	404000	414000	-43-12		P	17.20 (437)
-45	404000	414000	-45-12		P	17.72 (450)
-46	404000	414000	-46-12	T	P	18.19 (462)
-47	404000	414000	-47-12		P	18.70 (475)
-48	404000	414000	-48-12		P	19.17 (487)
-50	404000	414000	-50-12		P	19.69 (500)
-51	404000	414000	-51-12		P	20.16 (512)
-52	404000	414000	-52-12		P	20.67 (525)
-53	404000	414000	-53-12		P	21.14 (537)
-55	404000	414000	-55-12		P	21.65 (550)
-60	404000	414000	-60-12		P	23.62 (600)

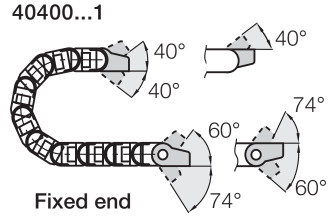
E-Chain System® E4/4 Series 4040/4140/R8840 Mounting Brackets - Steel



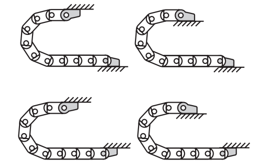
Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive

Moving end
40400...1



Fixed end
40400...2

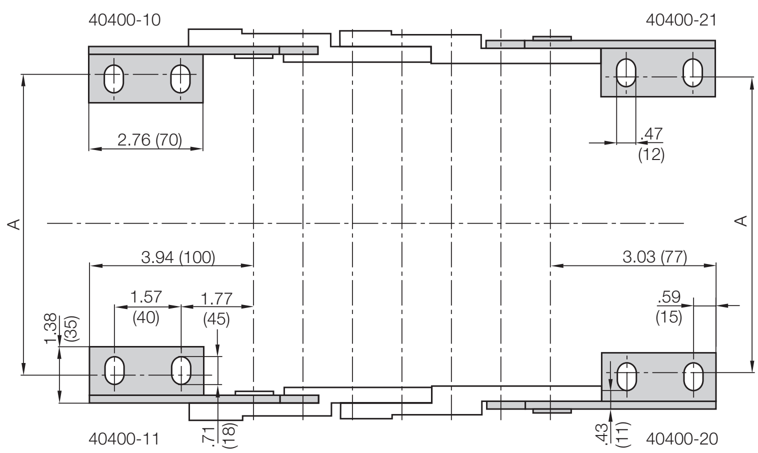


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 4040, 4140 or R8840:
40400-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 4040, 4140 or R8840
40400-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 4040, 4140 or R8840
40400-2



Bracket Mounting dimensions

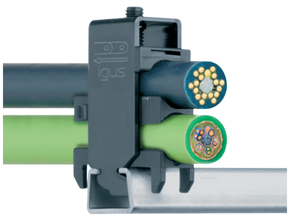
Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Moving End Only	Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)*	40400	-12	-1	-2	1.18 (30)	12.28 (312)	40400	-12	-1	-2	11.50 (292)
2.56 (65)	40400	-12	-1	-2	1.77 (45)	12.79 (325)	40400	-12	-1	-2	12.01 (305)
2.95 (75)	40400	-12	-1	-2	2.17 (55)	13.27 (337)	40400	-12	-1	-2	12.48 (317)
3.43 (87)	40400	-12	-1	-2	2.64 (67)	13.78 (350)	40400	-12	-1	-2	12.99 (330)
3.94 (100)	40400	-12	-1	-2	3.15 (80)	14.25 (362)	40400	-12	-1	-2	13.39 (342)
4.41 (112)	40400	-12	-1	-2	3.62 (92)	14.76 (375)	40400	-12	-1	-2	13.98 (355)
4.92 (125)	40400	-12	-1	-2	4.17 (105)	15.24 (387)	40400	-12	-1	-2	14.45 (367)
5.39 (137)	40400	-12	-1	-2	4.61 (117)	15.75 (400)	40400	-12	-1	-2	14.96 (380)
5.91 (150)	40400	-12	-1	-2	5.12 (130)	16.22 (412)	40400	-12	-1	-2	15.43 (392)
6.38 (162)	40400	-12	-1	-2	5.59 (142)	16.73 (425)	40400	-12	-1	-2	15.94 (405)
6.89 (175)	40400	-12	-1	-2	6.10 (155)	17.20 (437)	40400	-12	-1	-2	16.42 (417)
7.36 (187)	40400	-12	-1	-2	6.57 (167)	17.72 (450)	40400	-12	-1	-2	16.93 (430)
7.87 (200)	40400	-12	-1	-2	7.09 (180)	18.19 (462)	40400	-12	-1	-2	17.40 (442)
8.35 (212)	40400	-12	-1	-2	7.56 (192)	18.70 (475)	40400	-12	-1	-2	17.91 (455)
8.86 (225)	40400	-12	-1	-2	8.07 (205)	19.17 (487)	40400	-12	-1	-2	18.39 (467)
9.33 (237)	40400	-12	-1	-2	8.54 (217)	19.69 (500)	40400	-12	-1	-2	18.90 (480)
9.84 (250)	40400	-12	-1	-2	9.06 (230)	20.16 (512)	40400	-12	-1	-2	19.37 (492)
10.31 (262)	40400	-12	-1	-2	9.53 (242)	20.67 (525)	40400	-12	-1	-2	19.88 (505)
10.83 (275)	40400	-12	-1	-2	10.04 (255)	21.14 (537)	40400	-12	-1	-2	20.35 (517)
11.30 (287)	40400	-12	-1	-2	10.51 (267)	21.65 (550)	40400	-12	-1	-2	20.87 (530)
11.81 (300)	40400	-12	-1	-2	11.02 (280)	23.62 (600)	40400	-12	-1	-2	22.83 (580)

*Mounting bracket feet must face outward

E-Chain System® E4/4
Series 4040/4140/R8840
Strain Relief

Chainfix clamps for the profile rail

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.



Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

Chainfix Clip

Modular snap-on strain relief device

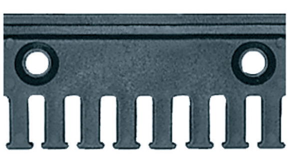
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

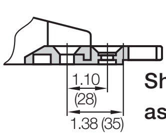
Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates

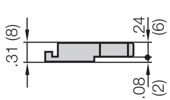
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



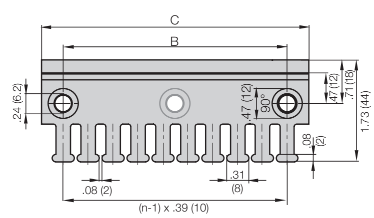


Shown assembled



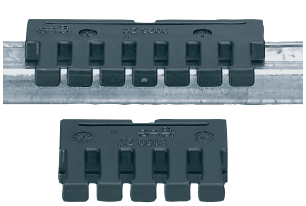
Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10



Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

E-Chain System® E4/4 Series 4040/4140/R8840 Guide Troughs

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar 4040-**05**-200-0	B_{Ri}	Installation Part No.
-05	3.50 (89)	*
-06	4.23 (104)	94-50-225
-07	4.49 (114)	94-50-225
-08	5.04 (128)	94-50-250
-10	5.47 (139)	94-50-250
-11	5.98 (152)	94-50-275
-12	6.46 (164)	94-50-275
-13	6.97 (177)	94-50-300
-15	7.44 (189)	94-50-300
-16	7.95 (202)	94-50-325
-17	8.42 (214)	94-50-325
-18	8.94 (227)	94-50-350
-20	9.41 (239)	94-50-350
-21	9.92 (252)	94-50-375
-22	10.39 (264)	94-50-375
-23	10.91 (277)	94-50-400
-25	11.38 (289)	94-50-400
-26	11.89 (302)	94-50-425
-27	12.36 (314)	94-50-425
-28	12.87 (327)	94-50-450
-30	13.35 (339)	94-50-450
-31	13.86 (352)	94-50-475
-32	14.33 (364)	94-50-475
-33	14.84 (377)	94-50-500
-35	15.31 (389)	94-50-500
-36	15.82 (402)	94-50-525
-37	16.30 (414)	94-50-525
-38	16.81 (427)	94-50-550
-40	17.28 (439)	94-50-550
-41	17.79 (452)	94-50-575
-42	18.27 (464)	94-50-575
-43	18.78 (477)	94-50-600
-45	19.25 (489)	94-50-600
-46	19.76 (502)	94-50-625
-47	20.24 (514)	94-50-625
-48	20.75 (527)	94-50-650
-50	21.22 (539)	94-50-650
-51	21.73 (552)	94-50-675
-52	22.20 (564)	94-50-675
-53	22.72 (577)	94-50-700
-55	23.19 (589)	94-50-700
-60	25.28 (639)	94-50-750

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  Part No. 94-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 94-50-XX

.XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

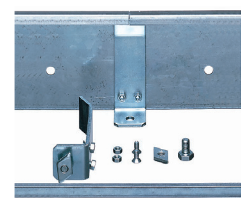
Example:
Length of travel 164 ft (50 m)
Center mounted

Required guide troughs:
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
Part No. 94-30
= 13 sections of 6.56 ft (2 m) glide bars
Part No. 93-01

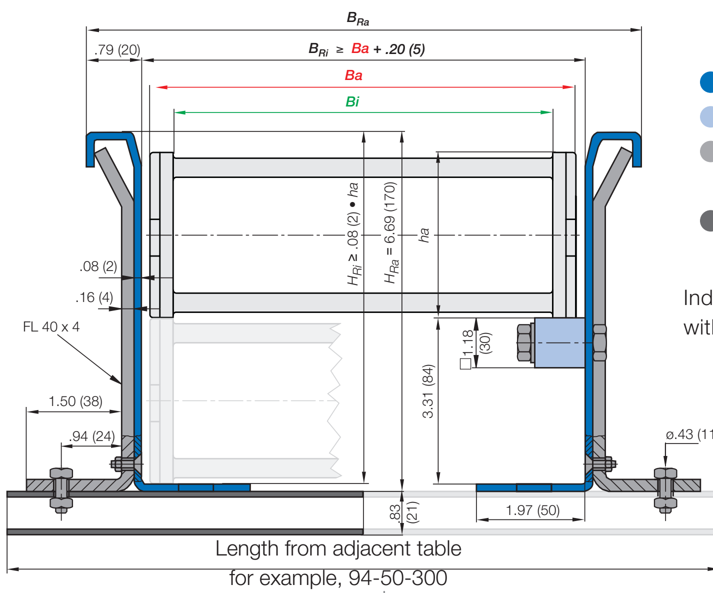
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
94-50-XXX

Example:
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars



Installation sets as section connectors



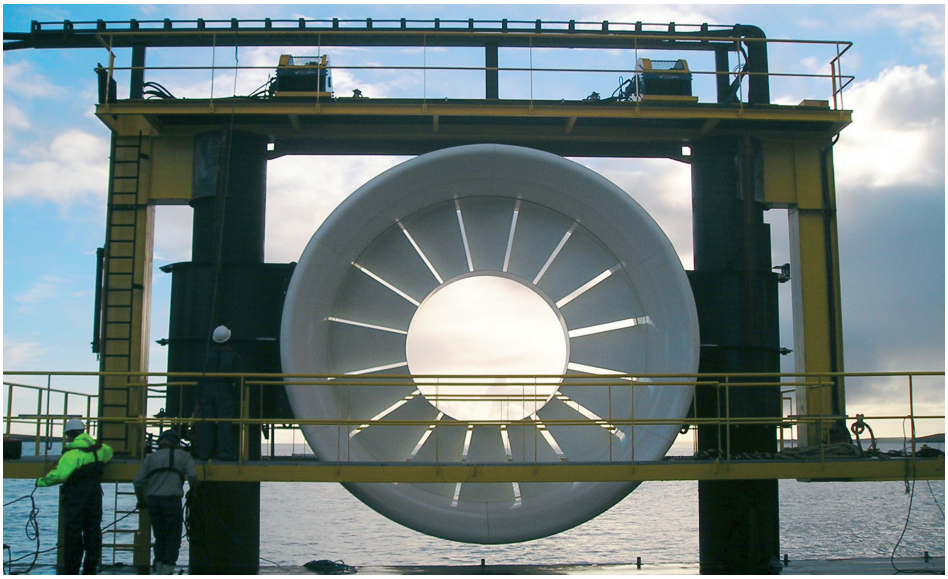
Standard length profile rail

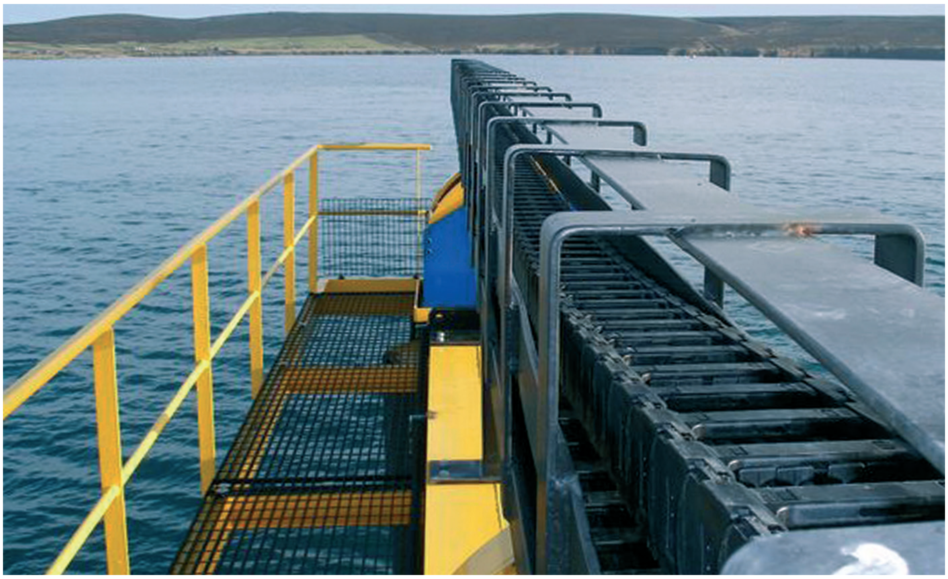
- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

For further technical information on guide troughs
➤ Chapter 9



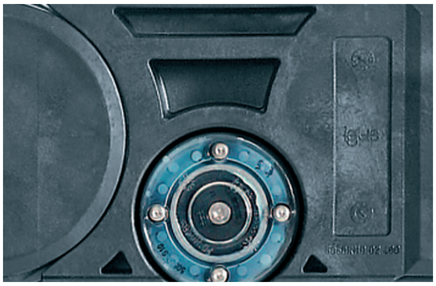


The maintenance-free Series 4040 protects the igus® Chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approx. 65.6 ft. (20 m) in vertical direction above and underwater

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

Rol instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 4040R - Order example 4040R-30-250-0
Further information: Call igus® at 800-521-2747



E-Chain System® E4/4
Series 5050/5150/R9850

For new applications use Series E4-80

Price Index

Series 5050

Series 5150

Series R9850

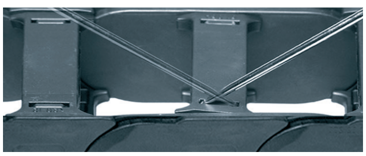
Special Features / Options

Side-mounted - unsupported

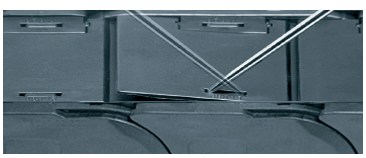
ESD classification:
Electrically conductive ESD/
ATEX version upon request

High torsional rigidity

Assembly Tips



Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action



Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

Other Installation Methods

Vertical, hanging ≤ 394 ft (120 m)
Vertical, standing ≤ 19.69 ft (6 m)
Side-mounted, unsupp. ≤ 9.84 ft (3 m)
Rotary requires further calculation

Usage Guidelines

+

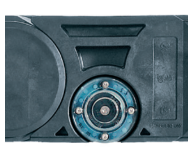
- If subject to high torsional forces
- For side-mounted applications involving long unsupported lengths
- If subject to very dirty or dusty environments

−

- If a simpler low-cost solution is required
  ➤ Series 15050/R19850
- When very long travels or high additional loads are involved
  ➤ Series 5050HD/R9850HD

Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Wide, rounded plastic crossbars - cable friendly
7. High torsional rigidity
8. Closed and open styles can be combined
9. High side-mount stability due to undercut
10. Numerous interior separation possibilities
11. E-Chain® also available with reverse bending radii



Rol E-Chain® Series 5050R/9850R available upon request

Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

16.4 ft (5 m) **5050-30-300-0**	**E-Chain®**
With 2 separators **511** assembled every 2nd link	**Interior Separation**
1 Set **505000-30-12P**	**Mounting Bracket**

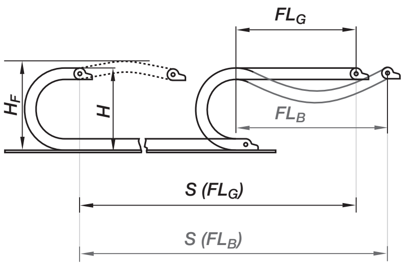
E-Chain System® E4/4 Series 5050/5150/R9850 Installation Dimensions

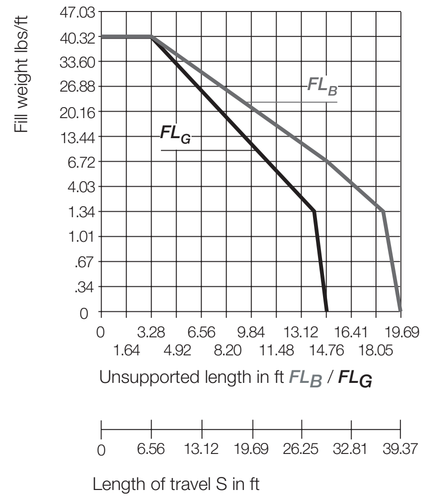
3.15”

Short travel, unsupported length

- FL_B = unsupported with permitted sag
- FL_G = unsupported with straight upper run

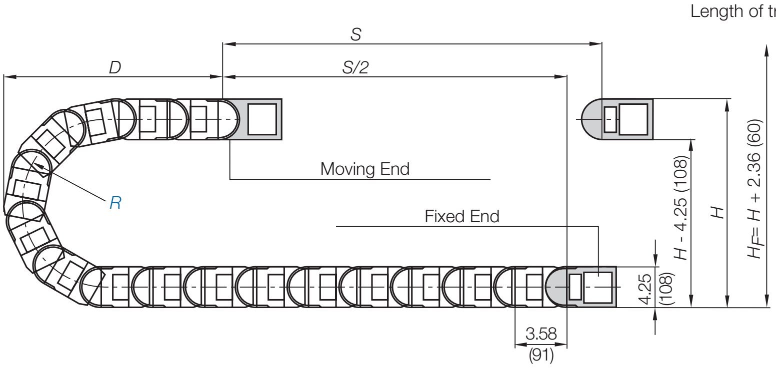
Further information ➤ Design, Chapter 1





Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.



Pitch per link: = 3.58” (91 mm)
Links per ft (m): = 3.35 (11)
For center mount applications:
Chain length = $S/2 + K$

Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- K = π • *R* + *safety buffer*
- H_F = Required clearance height
- H_{RI} = Trough inner height
- H_2 = *Mounting height
- D_2 = Overlength - long travels, gliding
- K_2 = *Add-on

*If the mounting bracket location is set lower

The required clearance height: $H_F = H$ **+ 2.36 in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H $_{-0}^{+25}$	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	55.43 (1408)	82.99 (2108)
D	11.61 (295)	13.58 (345)	15.55 (395)	17.52 (445)	19.49 (495)	21.46 (545)	25.39 (645)	27.36 (695)	29.33 (745)	31.30 (795)	45.08 (1145)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	75.20 (1910)	81.50 (2070)	87.60 (2225)	128.15 (3255)

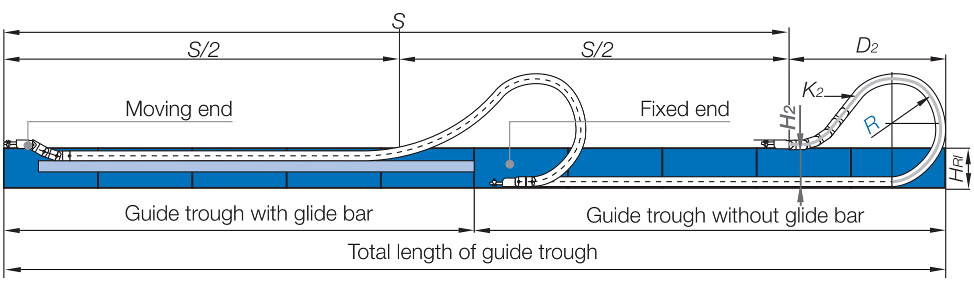
For long travels with lowered mounting height

Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)

For center mount applications:
Chain length: = $S/2 + K_2$

Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
Design, Chapter 1



R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H_2	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	9.53 (242)	-	-
D_2 +25	21.65 (550)	31.50 (800)	37.40 (950)	47.24 (1200)	61.02 (1550)	66.93 (1700)	85.63 (2175)	92.72 (2355)	101.57 (2580)	-	-
K_2	35.83 (910)	50.16 (1274)	64.49 (1638)	78.82 (2002)	96.73 (2457)	107.48 (2730)	136.14 (3458)	143.31 (3640)	175.55 (4459)	-	-

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

Technical Data

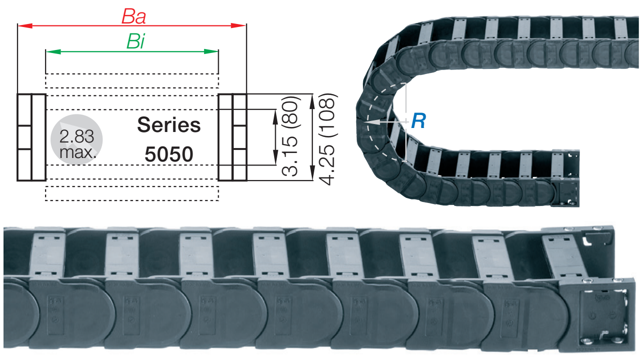
Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²)
Gliding speed / acceleration (maximum)	max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²)
Material - permitted temperature	igumid G / -40°F (-40°C) up to +248°F (+120° C)
Flammability Class, igumid G	VDE 0304 IIC UL94 HB

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4
Series 5050/5150/R9850

Series 5050 - E-Chain® with crossbars every link



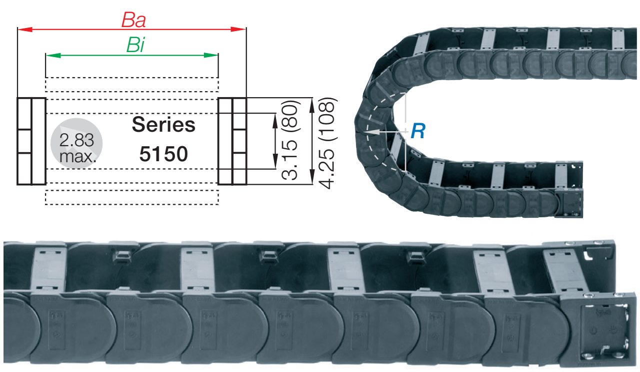
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

Part Number Structure

5050- 30- 300- 0

Color - Black
Bending radius
Width
Series

Series 5150 - E-Chain® with crossbars every other link



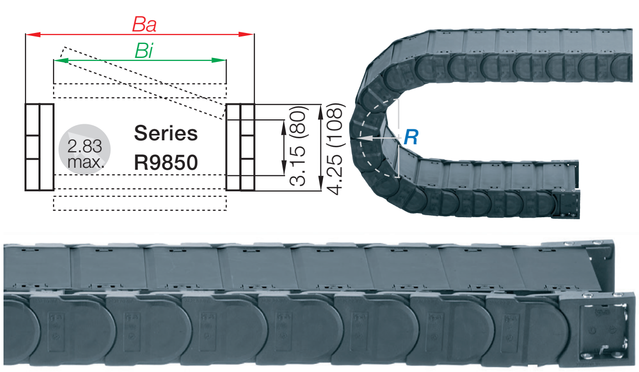
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

Part Number Structure

5150- 30- 300- 0

Color - Black
Bending radius
Width
Series

Series R9850 - fully enclosed E-Tube



- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

Part Number Structure

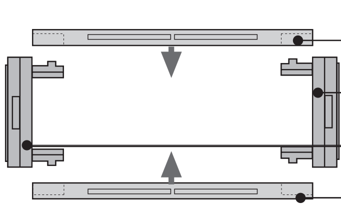
9850- 30- 300- 0

Color - Black
Bending radius
Width
Series

E-Chain® as separate parts, links and side plates

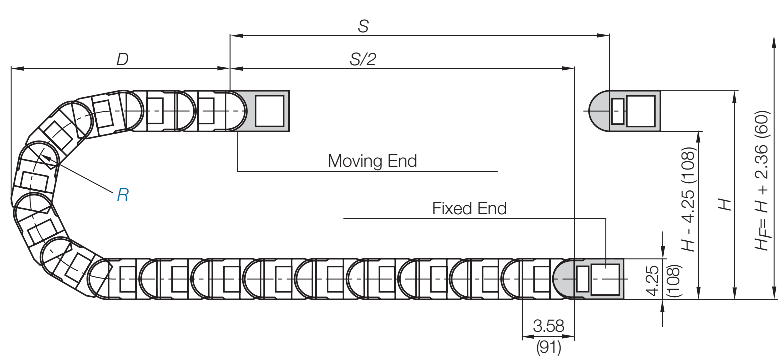
Left side link*, single part - Part No. 5050-02- R

Single crossbar, E-Chain® - Part No. 450- Bi
Single top lid, E-Tube - Part No. 885- Bi



Single bottom, E-Tube - Part No. 886- Bi

Right side link*, single part - Part No. 5050-01- R



*View from the moving end of the E-Chain®/E-Tube

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4
Series 5050/5150/R9850

Supplement part number with required radius. Example: 5050-30-[300]-0

Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

Part Number. Crossbars Every link	Crossbars Every other	Tube Version		*Bi* in. (mm)	*Ba* in. (mm)	5050 lbs/ft (kg/m)	5150 lbs/ft (kg/m)	R9850 lbs/ft (kg/m)
5050-05-	5150-05-		[ ]-0	1.97 (50)	3.94 (100)	≈ 3.78 (5.63)	≈ 3.78 (5.62)	–
5050-06-	5150-06-		[ ]-0	2.56 (65)	4.53 (115)	≈ 3.83 (5.70)	≈ 3.82 (5.68)	–
5050-07-	5150-07-	9850-07-	[ ]-0*	2.95 (75)	4.92 (125)	≈ 3.89 (5.79)	≈ 3.83 (5.70)	≈ 4.19 (6.24)
5050-08-	5150-08-		[ ]-0	3.43 (87)	5.39 (137)	≈ 3.96 (5.89)	≈ 3.87 (5.76)	–
5050-10-	5150-10-	9850-10-	[ ]-0	3.94 (100)	5.91 (150)	≈ 4.00 (5.96)	≈3.89 (5.79)	≈ 4.38 (6.52)
5050-11-	5150-11	-	[ ]-0	4.41 (112)	6.42 (163)	≈ 4.09 (6.09)	≈3.93 (5.85)	–
5050-12-	5150-12-	9850-12-	[ ]-0	4.92 (125)	6.89 (175)	≈ 4.14 (6.16)	≈3.96 (5.89)	≈ 4.63 (6.89)
5050-13-	5150-13-		[ ]-0	5.39 (137)	7.40 (188)	≈ 4.23 (6.29)	≈4.00 (5.95)	–
5050-15-	5150-15-	9850-15-	[ ]-0	5.91 (150)	7.87 (200)	≈ 4.27 (6.36)	≈4.02 (5.98)	≈ 4.92 (7.32)
5050-16-	5150-16-		[ ]-0	6.38 (162)	8.39 (213)	≈ 4.35 (6.47)	≈4.06 (6.04)	–
5050-17-	5150-17-	9850-17	[ ]-0	6.89 (175)	8.86 (225)	≈ 4.42 (6.58)	≈4.09 (6.09)	≈ 5.09 (7.58)
5050-18-	5150-18-		[ ]-0	7.36 (187)	9.37 (238)	≈ 4.50 (6.69)	≈4.13 (6.15)	–
5050-20-	5150-20-	9850-20-	[ ]-0	7.87 (200)	9.84 (250)	≈ 4.51 (6.71)	≈4.14 (6.16)	≈ 5.30 (7.89)
5050-21-	5150-21-		[ ]-0	8.35 (212)	10.35 (263)	≈ 4.58 (6.82)	≈4.18 (6.22)	–
5050-22-	5150-22-		[ ]-0	8.86 (225)	10.83 (275)	≈ 4.63 (6.89)	≈4.20 (6.25)	–
5050-23-	5150-23-		[ ]-0	9.33 (237)	11.34 (288)	≈ 4.72 (7.02)	≈4.24 (6.31)	–
5050-25-	5150-25-	9850-25-	[ ]-0	9.84 (250)	11.81 (300)	≈ 4.78 (7.11)	≈4.27 (6.36)	≈ 5.79 (8.61)
5050-26-	5150-26-		[ ]-0	10.31 (262)	12.32 (313)	≈ 4.83 (7.19)	≈4.30 (6.40)	–
5050-27-	5150-27-	9850-27	[ ]-0	10.83 (275)	12.80 (325)	≈ 4.91 (7.30)	≈4.34 (6.46)	≈ 5.93 (8.82)
5050-28-	5150-28-		[ ]-0	11.30 (287)	13.31 (338)	≈ 4.93 (7.33)	≈4.35 (6.47)	–
5050-30-	5150-30-	9850-30-	[ ]-0	11.81 (300)	13.78 (350)	≈ 5.07 (7.55)	≈4.42 (6.58)	≈ 6.23 (9.27)
5050-31-	5150-31-		[ ]-0	12.28 (312)	14.29 (363)	≈ 5.09 (7.58)	≈4.43 (6.60)	–
5050-32-	5150-32-		[ ]-0	12.79 (325)	14.76 (375)	≈ 5.13 (7.63)	≈4.45 (6.62)	–
5050-33-	5150-33-		[ ]-0	13.27 (337)	15.28 (388)	≈ 5.25 (7.81)	≈4.51 (6.71)	–
5050-35-	5150-35-	9850-35-	[ ]-0	13.78 (350)	15.75 (400)	≈ 5.35 (7.96)	≈4.56 (6.79)	≈ 6.73 (10.02)
5050-36-	5150-36-		[ ]-0	14.25 (362)	16.26 (413)	≈ 5.36 (7.97)	≈4.57 (6.80)	–
5050-37-	5150-37-		[ ]-0	14.76 (375)	16.73 (425)	≈ 5.37 (7.99)	≈4.57 (6.80)	–
5050-38-	5150-38-		[ ]-0	15.24 (387)	17.24 (438)	≈ 5.42 (8.07)	≈4.60 (6.84)	–
5050-40-	5150-40-	9850-40-	[ ]-0	15.75 (400)	17.72 (450)	≈ 5.56 (8.27)	≈4.66 (6.94)	≈ 7.38 (10.98)
5050-41-	5150-41-		[ ]-0	16.22 (412)	18.23 (463)	≈ 5.66 (8.43)	≈4.72 (7.02)	–
5050-42-	5150-42-		[ ]-0	16.73 (425)	18.70 (475)	≈ 5.77 (8.58)	≈4.77 (7.10)	–
5050-43-	5150-43-		[ ]-0	17.20 (437)	19.21 (488)	≈ 5.81 (8.65)	≈4.79 (7.13)	–
5050-45-	5150-45-		[ ]-0	17.72 (450)	19.69 (500)	≈ 5.85 (8.71)	≈4.81 (7.16)	–
5050-46-	5150-46-	9850-46-	[ ]-0	18.19 (462)	20.20 (513)	≈ 5.87 (8.73)	≈4.82 (7.17)	≈ 7.69 (11.44)
5050-47-	5150-47-		[ ]-0	18.70 (475)	20.67 (525)	≈ 5.96 (8.87)	≈4.87 (7.24)	–
5050-48-	5150-48-		[ ]-0	19.17 (487)	21.99 (538)	≈ 5.97 (8.88)	≈4.88 (7.26)	–
5050-50-	5150-50-		[ ]-0	19.69 (500)	21.65 (550)	≈ 6.05 (9.00)	≈4.91 (7.30)	–
5050-51-	5150-51-		[ ]-0	20.16 (512)	22.16 (563)	≈ 6.06 (9.02)	≈4.92 (7.32)	–
5050-52-	5150-52-		[ ]-0	20.67 (525)	22.64 (575)	≈ 6.09 (9.06)	≈4.93 (7.34)	–
5050-53-	5150-53-		[ ]-0	21.14 (537)	23.15 (588)	≈ 6.20 (9.22)	≈4.98 (7.41)	–
5050-55-	5150-55-		[ ]-0	21.65 (550)	23.62 (600)	≈ 6.52 (9.70)	≈5.15 (7.66)	–
5050-60-	5150-60-		[ ]-0	23.62 (600)	25.59 (650)	≈ 6.65 (9.90)	≈5.21 (7.76)	–

Choose from the radii below for all of the above sizes

Radius (mm) Example: 5050-30-[300]-0

	150	200	250	300	350	400	500	550	600	650	1000
R	5.91 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	19.68 (500)	21.65 (550)	23.62 (600)	25.59 (650)	39.37 (1000)
H_{+25}^{-0}	16.06 (408)	20.00 (508)	23.94 (608)	27.87 (708)	31.81 (808)	35.75 (908)	43.62 (1108)	47.56 (1208)	51.50 (1308)	55.43 (1408)	82.99 (2108)
D	11.61 (295)	13.58 (345)	15.55 (395)	17.52 (445)	19.49 (495)	21.46 (545)	25.39 (645)	27.36 (695)	29.33 (745)	31.30 (795)	45.08 (1145)
K	25.79 (655)	32.09 (815)	38.19 (970)	44.29 (1125)	50.59 (1285)	56.69 (1440)	69.09 (1755)	75.20 (1910)	81.50 (2070)	87.60 (2225)	128.15 (3255)

** This radius is not available for the R9850 Series

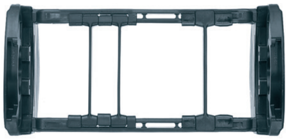
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1

For wider chains see page 6.259. For large diameter hoses see page 6.259

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

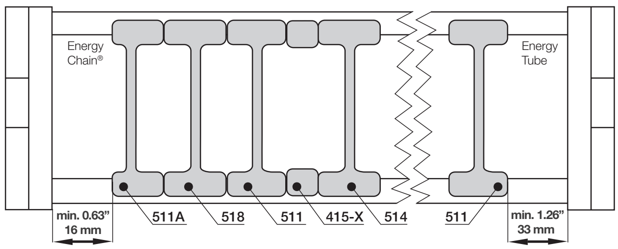
E-Chain System® E4/4 Series 5050/5150/R9850 Interior Separation



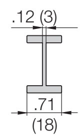
Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

NOTE: Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



STANDARD
Vertical separator 501

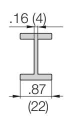


Vertical separator

Unassembled	**Part No. 501**
Assembled	**Part No. 511**

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Locking separator 504

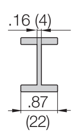


Locking separator (chain only)

Unassembled	**Part No. 504**
Assembled	**Part No. 514**

- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

Locking separator 508

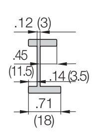


Locking separator (chain only)

Unassembled	**Part No. 508**
Assembled	**Part No. 518**

- **Locking separator 508 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric separator 501A

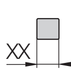


Asymmetrical separator (chain only)

Unassembled	**Part No. 501A**
Assembled	**Part No. 511A**

- **Asymmetrical separator 501A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX



Spacer (chain only)

Unassembled	**Part No. 405-XX**
Assembled	**Part No. 415-XX**

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

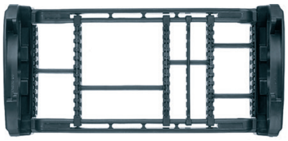
Spacers available in the following sizes:

Part No. Unassembled	Part No. Assembled	in.	(mm)
405 -10	415 -10	.39"	(10)
405 -15	415 -15	.59"	(15)
405 -20	415 -20	79"	(20)
405 -30	415 -30	1.18"	(30)
405 -40	415 -40	1.57"	(40)

Telephone 1-800-521-2747
Fax 1-401-438-7270

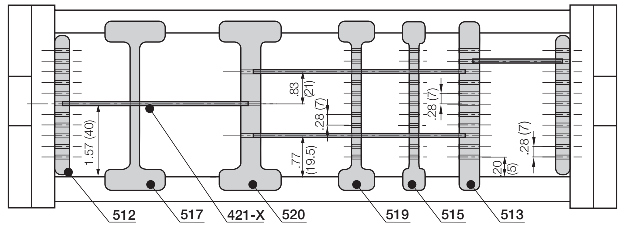
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Chain System® E4/4 Series 5050/5150/R9850 Interior Separation

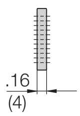


Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.
➤ **Design, Chapter 1** for layout recommendations.



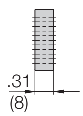
- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.



Side plate	
Unassembled	**Part No. 502**
Assembled	**Part No. 512**

Side plate 502

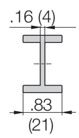
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.



Vertical separator	
Unassembled	**Part No. 503**
Assembled	**Part No. 513**

Vertical separator 503

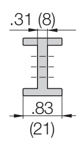
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.



Locking vertical separator	
Unassembled	**Part No. 507**
Assembled	**Part No. 517**

Locking vertical separator 507

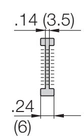
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.



Locking vertical separator (for E-Chains®)	
Unassembled	**Part No. 510**
Assembled	**Part No. 520**

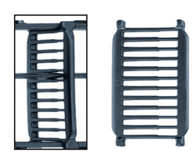
Locking vertical separator 510

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

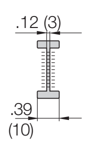


Slotted separators, closed	
Unassembled	**Part No. 505**
Assembled	**Part No. 515**

Closed slotted separator 505

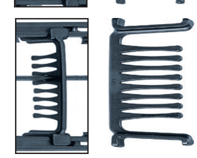


- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots



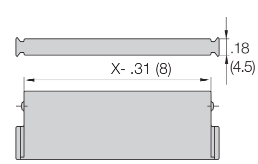
Slotted separators, open	
Unassembled	**Part No. 509**
Assembled	**Part No. 519**

Open slotted separator 509

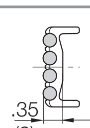


Shelves 420-XX
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled	Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	**420-18**	**421-18**	2.95 (75)	2.64 (67)	**420-75**	**421-75**
.91 (23)	.59 (15)	**420-23**	**421-23**	3.46 (88)	3.15 (80)	**420-88**	**421-88**
.98 (25)	.67 (17)	**420-25**	**421-25**	3.94 (100)	3.62 (92)	**420-100**	**421-100**
1.10 (28)	.79 (20)	**420-28**	**421-28**	4.92 (125)	4.61(117)	**420-125**	**421-125**
1.30 (33)	.98 (25)	**420-33**	**421-33**	5.91 (150)	5.59(142)	**420-150**	**421-150**
1.69 (43)	1.38 (35)	**420-43**	**421-43**	6.89 (175)	6.57(167)	**420-175**	**421-175**
1.97 (50)	1.65 (42)	**420-50**	**421-50**	7.36 (187)	7.05(179)	**420-187**	**421-187**
2.44 (62)	2.13 (54)	**420-62**	**421-62**	7.87 (200)	7.56(192)	**420-200**	**421-200**



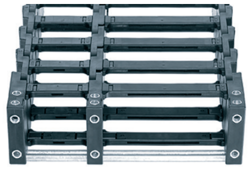
Rollclip - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



Rollclip	
Unassembled	**Part No. 489-27**
Assembled	**Part No. 490-27**

Telephone 1-800-521-2747
Fax 1-401-438-7270

E-Chain System® E4/4
Series 5050/5150/R9850
Special Accessories

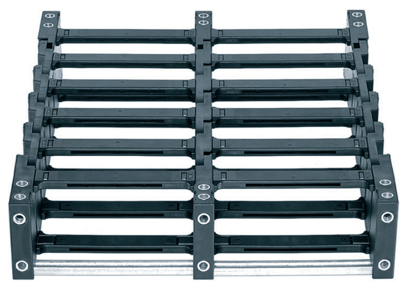


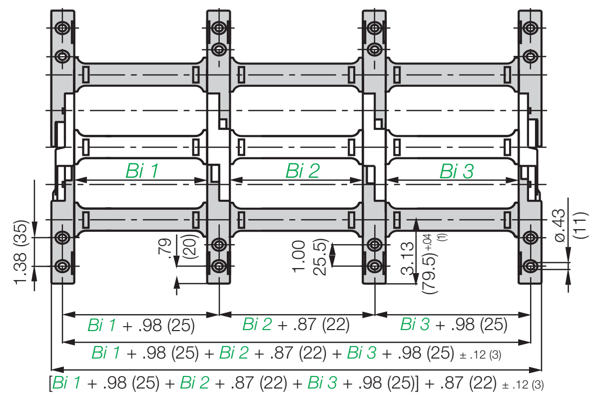
Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.

Part number example for E-Chain®
5050-10/20/10- 200 **-0**
5050-*Bi1*/*Bi2*/*Bi3*- *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

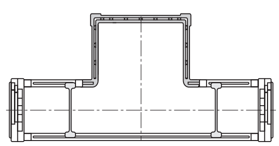




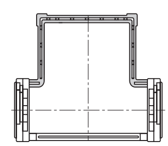
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

Extender crossbars - For careful guiding of large diameter cables and hoses

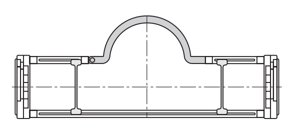
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



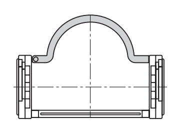
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
450-15-RHD115	By request	Round	No	Yes
450-17-RD115	By request	Round	Yes	No
450-25-D150	By request	Square	Yes	No
450-30-D200	By request	Square	Yes	No
450-35-D250	By request	Square	Yes	No
450-40-D300	By request	Square	Yes	No
450-20-HD150	By request	Square	No	Yes
450-25-HD200	By request	Square	No	Yes
450-30-HD250	By request	Square	No	Yes

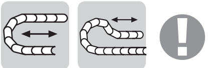
E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

Part No.	Form
450-B12	Locking clip, comprised of a locking element
450-B12-200	Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

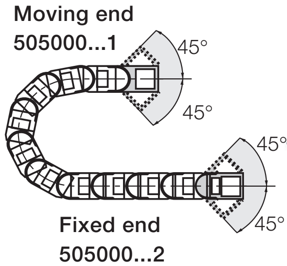
E-Chain System® E4/4
Series 5050/5150/R9850
Mounting Brackets - KMA

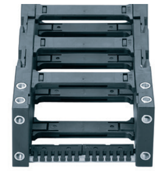


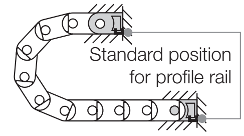
Standard

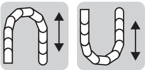
Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



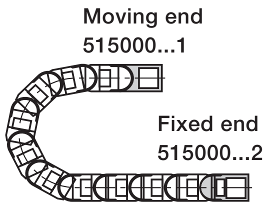


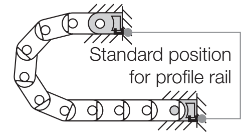




Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

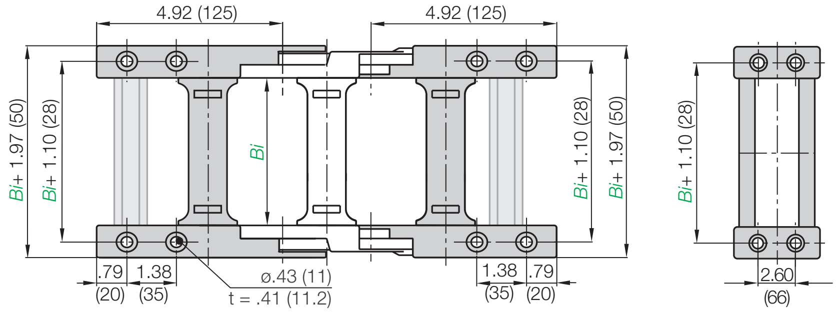




Part Number Structure

505000- | 07- | 12 | T | P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 505000 = Pivoting
- 515000 = Locking



Full set, for both ends:

505000- | 05- | 12 | Full set, **each part with pin/bore**

Single-part order:

505000- | 05- | 1 | Mounting bracket **with bore**

505000- | 05- | 2 | Mounting bracket **with pin**

Part number examples are shown for pivoting brackets. For locking brackets change part number to 515000

Part No. Full Set (pivoting)
Series 5050 or 5150:
505000-Width-12

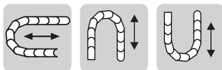
Part No. Full Set (pivoting)
with profile rail
Series 5050 or 5150
505000-Width-12P

Part No. Full Set (pivoting)
Tube Series R9850
505000-Width-12T

Part No. Full Set (pivoting)
with Profile Rail
Tube Series R9850
505000-Width-12TP

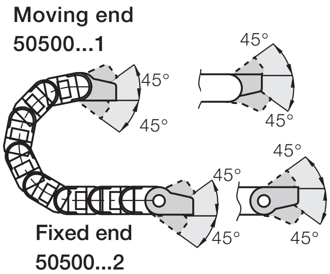
Width	Part No. Full Set Pivoting	Locking		Tube Option	With Profile Rail	Bi in. (mm)
-05	505000	515000	-05-12		P	1.97 (50)
-06	505000	515000	-06-12		P	2.56 (65)
-07	505000	515000	-07-12	T	P	2.95 (75)
-08	505000	515000	-08-12			3.43 (87)
-10	505000	515000	-10-12	T	P	3.94 (100)
-11	505000	515000	-11-12		P	4.41 (112)
-12	505000	515000	-12-12	T	P	4.92 (125)
-13	505000	515000	-13-12		P	5.39 (137)
-15	505000	515000	-15-12	T	P	5.91 (150)
-16	505000	515000	-16-12		P	6.38 (162)
-17	505000	515000	-17-12		P	6.89 (175)
-18	505000	515000	-18-12		P	7.36 (187)
-20	505000	515000	-20-12	T	P	7.87 (200)
-21	505000	515000	-21-12		P	8.35 (212)
-22	505000	515000	-22-12		P	8.86 (225)
-23	505000	515000	-23-12		P	9.33 (237)
-25	505000	515000	-25-12	T	P	9.84 (250)
-26	505000	515000	-26-12		P	10.31 (262)
-27	505000	515000	-27-12		P	10.83 (275)
-28	505000	515000	-28-12		P	11.30 (287)
-30	505000	515000	-30-12	T	P	11.81 (300)
-31	505000	515000	-31-12		P	12.28 (312)
-32	505000	515000	-32-12		P	12.79 (325)
-33	505000	515000	-33-12		P	13.27 (337)
-35	505000	515000	-35-12	T	P	13.78 (350)
-36	505000	515000	-36-12		P	14.25 (362)
-37	505000	515000	-37-12		P	14.76 (375)
-38	505000	515000	-38-12		P	15.24 (387)
-40	505000	515000	-40-12	T	P	15.75 (400)
-41	505000	515000	-41-12		P	16.22 (412)
-42	505000	515000	-42-12		P	16.73 (425)
-43	505000	515000	-43-12		P	17.20 (437)
-45	505000	515000	-45-12		P	17.72 (450)
-46	505000	515000	-46-12	T	P	18.19 (462)
-47	505000	515000	-47-12		P	18.70 (475)
-48	505000	515000	-48-12		P	19.17 (487)
-50	505000	515000	-50-12		P	19.69 (500)
-51	505000	515000	-51-12		P	20.16 (512)
-52	505000	515000	-52-12		P	20.67 (525)
-53	505000	515000	-53-12		P	21.14 (537)
-55	505000	515000	-55-12		P	21.65 (550)
-60	505000	515000	-60-12		P	23.62 (600)

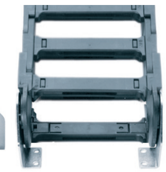
E-Chain System® E4/4 Series 5050/5150/R9850 Mounting Brackets - Steel

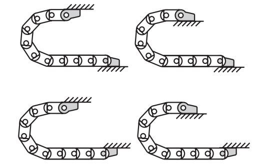


Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





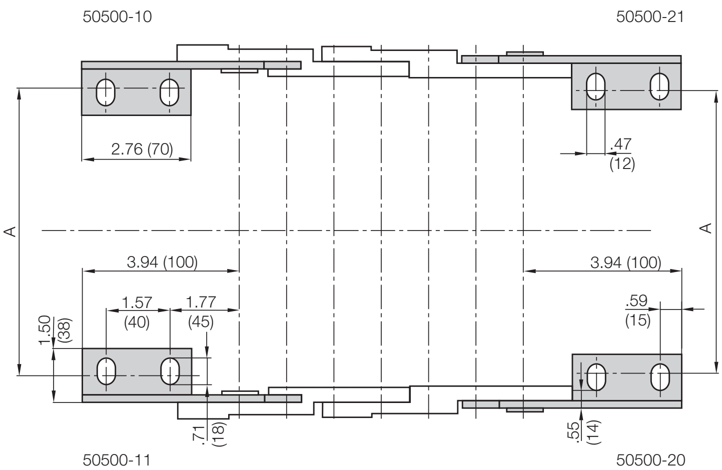


Possible installation configurations -

Part No. Mounting Brackets Full Set
4 parts, 2 with pin, 2 with bore
Series 5050, 5150 or R9850:
50500-12

Part No. Mounting Bracket Moving End
2 parts, 1 left & 1 right with bore
Series 5050, 5150 or R9850:
50500-1

Part No. Mounting Bracket Fixed End
2 parts, 1 left & 1 right with pin
Series 5050, 5150 or R9850:
50500-2



Bracket mounting dimensions

Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Mounting Brackets Moving End Only	Mounting Brackets Fixed End Only	Mounting Dimension A in. (mm)	Width of Chain *Bi*	Part Number	Mounting Brackets Full Set	Mounting Brackets Moving End Only	Mounting Brackets Fixed End Only	Mounting Dimension A in. (mm)
1.97 (50)	50500	-12	-1	-2	1.18 (30)	12.28 (312)	50500	-12	-1	-2	11.50 (292)
2.56 (65)	50500	-12	-1	-2	1.77 (45)	12.79 (325)	50500	-12	-1	-2	12.01 (305)
2.95 (75)	50500	-12	-1	-2	2.17 (55)	13.27 (337)	50500	-12	-1	-2	12.48 (317)
3.43 (87)	50500	-12	-1	-2	2.64 (67)	13.78 (350)	50500	-12	-1	-2	12.99 (330)
3.94 (100)	50500	-12	-1	-2	3.15 (80)	14.25 (362)	50500	-12	-1	-2	13.39 (342)
4.41 (112)	50500	-12	-1	-2	3.62 (92)	14.76 (375)	50500	-12	-1	-2	13.98 (355)
4.92 (125)	50500	-12	-1	-2	4.17 (105)	15.24 (387)	50500	-12	-1	-2	14.45 (367)
5.39 (137)	50500	-12	-1	-2	4.61 (117)	15.75 (400)	50500	-12	-1	-2	14.96 (380)
5.91 (150)	50500	-12	-1	-2	5.12 (130)	16.22 (412)	50500	-12	-1	-2	15.43 (392)
6.38 (162)	50500	-12	-1	-2	5.59 (142)	16.73 (425)	50500	-12	-1	-2	15.94 (405)
6.89 (175)	50500	-12	-1	-2	6.10 (155)	17.20 (437)	50500	-12	-1	-2	16.42 (417)
7.36 (187)	50500	-12	-1	-2	6.57 (167)	17.72 (450)	50500	-12	-1	-2	16.93 (430)
7.87 (200)	50500	-12	-1	-2	7.09 (180)	18.19 (462)	50500	-12	-1	-2	17.40 (442)
8.35 (212)	50500	-12	-1	-2	7.56 (192)	18.70 (475)	50500	-12	-1	-2	17.91 (455)
8.86 (225)	50500	-12	-1	-2	8.07 (205)	19.17 (487)	50500	-12	-1	-2	18.39 (467)
9.33 (237)	50500	-12	-1	-2	8.54 (217)	19.69 (500)	50500	-12	-1	-2	18.90 (480)
9.84 (250)	50500	-12	-1	-2	9.06 (230)	20.16 (512)	50500	-12	-1	-2	19.37 (492)
10.31 (262)	50500	-12	-1	-2	9.53 (242)	20.67 (525)	50500	-12	-1	-2	19.88 (505)
10.83 (275)	50500	-12	-1	-2	10.04 (255)	21.14 (537)	50500	-12	-1	-2	20.35 (517)
11.30 (287)	50500	-12	-1	-2	10.51 (267)	21.65 (550)	50500	-12	-1	-2	20.87 (530)
11.81 (300)	50500	-12	-1	-2	11.02 (280)	23.62 (600)	50500	-12	-1	-2	22.83 (580)

*Mounting bracket feet must face outward

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Fax 1-401-438-7270

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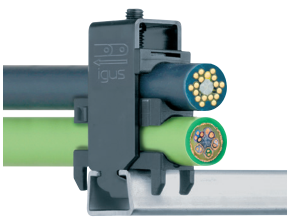
E-Chain System® E4/4
Series 5050/5150/R9850
Strain Relief

Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

Part No. Single Clamp		Part No. Double Clamp		Part No. Triple Clamp		Cable ø	
Steel	Stainless	Steel	Stainless	Steel	Stainless	in.	(mm)
CFX12-1	CFX12-1E	CFX12-2	CFX12-2E	CFX12-3	–	.24 - .47	(06 - 12)
CFX14-1	CFX14-1E	CFX14-2	CFX14-2E	CFX14-3	–	.47 - .55	(12 - 14)
CFX16-1	CFX16-1E	CFX16-2	CFX16-2E	CFX16-3	–	.55 - .63	(14 - 16)
CFX18-1	CFX18-1E	CFX18-2	CFX18-2E	CFX18-3	–	.63 - .71	(16 - 18)
CFX20-1	CFX20-1E	CFX20-2	CFX20-2E	CFX20-3	–	.71 - .79	(18 - 20)
CFX22-1	CFX22-1E	CFX22-2	CFX22-2E	CFX22-3	–	.79 - .87	(20 - 22)
CFX26-1	CFX26-1E	CFX26-2	CFX26-2E	–	–	.87 - 1.02	(22 - 26)
CFX30-1	CFX30-1E	CFX30-2	CFX30-2E	–	–	1.02 - 1.18	(26 - 30)
CFX34-1	CFX34-1E	CFX34-2	CFX34-2E	–	–	1.18 - 1.34	(30 - 34)
CFX38-1	CFX38-1E	–	–	–	–	1.34 - 1.50	(34 - 38)
CFX42-1	CFX42-1E	–	–	–	–	1.50 - 1.65	(38 - 42)

For more information please refer to strain relief section of Chapter 10

Chainfix Clip

Modular snap-on strain relief device

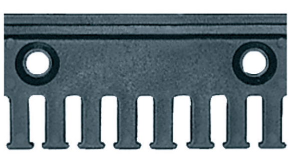
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

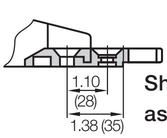
Cable ø		Part No.	Part No.
in.	(mm)	Clamp	Bottom
.16-.31	(04-08)	CFC-08-M	CFC-08-C
.31-.47	(08-12)	CFC-12-M	CFC-12-C
.47-.63	(12-16)	CFC-16-M	CFC-16-C
.63-.79	(16-20)	CFC-20-M	CFC-20-C
.79-.94	(20-24)	CFC-24-M	CFC-24-C

Tiewrap Plates

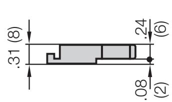
Option 1:
Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.



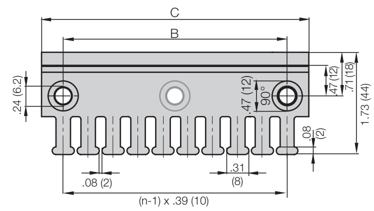


Shown assembled



Single tiewrap plate

Tiewrap Plate	n Number of Teeth	C Overall Width in. (mm)	B Bore Width in. (mm)	Center Bore
3050-ZB	5	1.97 (50)	1.18 (30)	no
3075-ZB	7	2.95 (75)	2.16 (55)	no
3100-ZB	10	3.94 (100)	3.15 (80)	no
3115-ZB	11	4.53 (115)	3.74 (95)	no
3125-ZB	12	4.92 (125)	4.13 (105)	no
3150-ZB	15	5.91 (150)	5.12 (130)	no
3175-ZB	17	6.89 (175)	6.10 (155)	no
3200-ZB	20	7.87 (200)	7.09 (180)	yes
3225-ZB	22	8.86 (225)	8.07 (205)	yes
3250-ZB	25	9.84 (250)	9.06 (230)	yes



If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
Example: 3050-ZBKMA

For more information please refer to strain relief section of Chapter 10

Option 2:
Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
3050-ZC	5	1.97	(50)
3075-ZC	7	2.95	(75)

For more information please refer to strain relief section of Chapter 10

Option 3:
Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

Part No.	Number of Teeth	Width of Strain Relief in.	(mm)
4550-ZS	5	1.89	(48)
4575-ZS	7	2.91	(74)

For more information please refer to strain relief section of Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

E-Chain System® E4/4 Series 5050/5150/R9850 Guide Troughs

Width of Crossbar
5050-**05**-200-0

B_{Ri}

Installation Part No.

-05	4.13 (105)	**96-50-225**
-06	4.72 (120)	**96-50-250**
-07	5.12 (130)	**96-50-250**
-08	5.59 (142)	**96-50-275**
-10	6.10 (155)	**96-50-275**
-11	6.61 (168)	**96-50-300**
-12	7.09 (180)	**96-50-300**
-13	7.60 (193)	**96-50-325**
-15	8.07 (205)	**96-50-325**
-16	8.58 (218)	**96-50-350**
-17	9.06 (230)	**96-50-350**
-18	9.57 (243)	**96-50-375**
-20	10.04 (255)	**96-50-375**
-21	10.55 (268)	**96-50-400**
-22	11.02 (280)	**96-50-400**
-23	11.54 (293)	**96-50-425**
-25	12.01 (305)	**96-50-425**
-26	12.52 (318)	**96-50-450**
-27	12.99 (330)	**96-50-450**
-28	13.50 (343)	**96-50-475**
-30	13.98 (355)	**96-50-475**
-31	14.49 (368)	**96-50-500**
-32	14.96 (380)	**96-50-500**
-33	15.47 (393)	**96-50-525**
-35	15.94 (405)	**96-50-525**
-36	16.46 (418)	**96-50-550**
-37	16.93 (430)	**96-50-550**
-38	17.44 (443)	**96-50-575**
-40	17.91 (455)	**96-50-575**
-41	18.43 (468)	**96-50-600**
-42	18.90 (480)	**96-50-600**
-43	19.41 (493)	**96-50-625**
-45	19.88 (505)	**96-50-625**
-46	20.39 (518)	**96-50-650**
-47	20.87 (530)	**96-50-650**
-48	21.38 (543)	**96-50-675**
-50	21.85 (555)	**96-50-675**
-51	22.36 (568)	**96-50-700**
-52	22.83 (580)	**96-50-700**
-53	23.35 (593)	**96-50-725**
-55	23.82 (605)	**96-50-725**
-60	25.79 (655)	**96-50-775**

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  Part No. 99-30
- 1/2 travel length glide bars
  Part No. 93-01
- Installation sets as end connectors
  Part No. 96-50-XX

-XX indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

Example:
Length of travel 164 ft (50 m)
Center-mounted

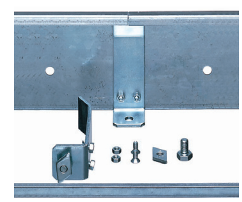
Required guide troughs:
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
Part No. 99-30

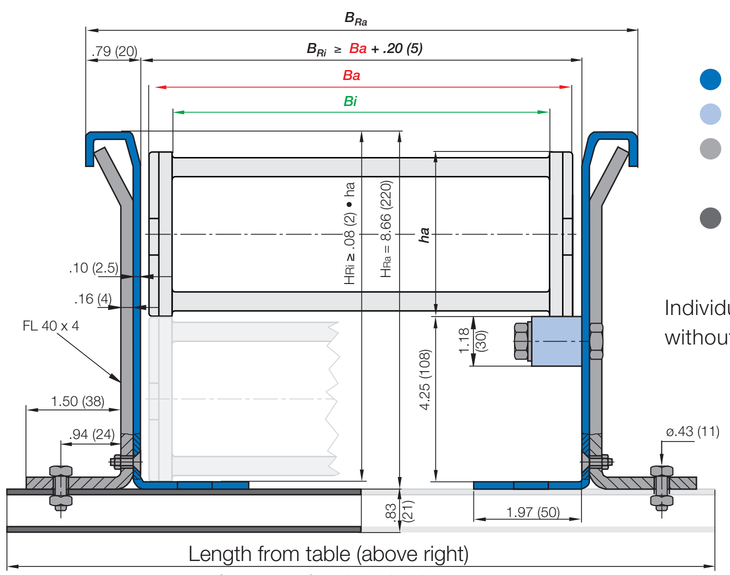
= 13 sections of 6.56 ft (2 m) glide bar
Part No. 93-01

Required number of installation set:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars
Right: Guide troughs without glide bars**



Installation sets as section connectors



Length from table (above right)
for example, 96-50-300

* Specialized guide trough available upon request

Standard length profile rail

For further technical information on guide troughs ➤ Chapter 9

igus® E-Chain System®
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Fax 1-401-438-7270
Internet: http://www.igus.com
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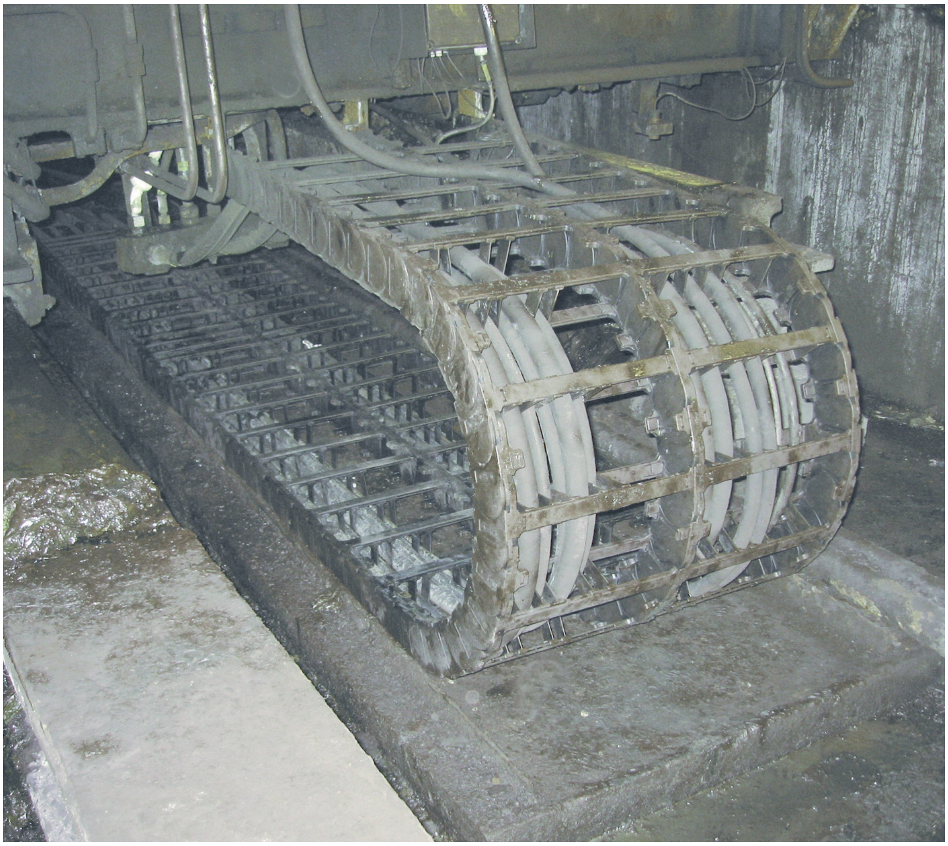
QuickSpec: http://www.igus.com/quickspec



Very robust E4/4 E-Chain® Series 5050 with middle strap in a steel factory. Heat and dust are no problem for the maintenance-free igus® E-Chain® which has been in operation for 3 years.