

### Price Index



31 Widths  
11 Bending Radii

Hinged, snap-open, removable lids along outer radius of Energy Tube

KMA mounting brackets with attachment points on all sides

Locking or pivoting mounting brackets available

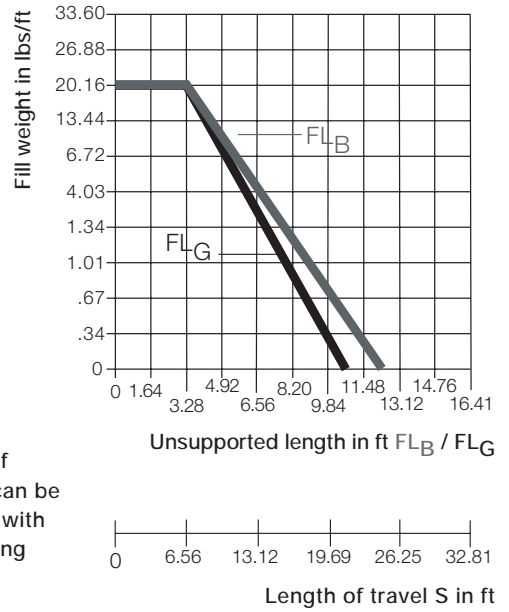
Removable lids along inner radius of Energy Tube

Closed and open styles can be combined

Dirt-repellent exterior

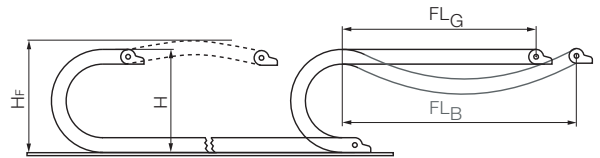
Strain relief elements can be integrated with the mounting bracket

Crossbars on Energy Chains® are removable along both radii



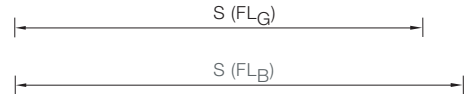
### Unsupported length

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



### Product range

Inner Widths (Bi) inches (mm):	1.97 - 15.75 (50 - 400)
Bending Radii (R) inches (mm):	2.95 (75), 3.94 (100), 4.52 (115), 4.92 (125), 5.91 (150), 6.69 (170), 7.87 (200), 4.66 (215), 9.84 (250), 11.81 (300), 13.78 (350)
Pitch:	2.64 (67 mm/link) = 4.57 links/ft (15 links/m) 39.7 (1005 mm)



Unsupported Energy Chains® ► **Design, Chapter 1**, feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

If the unsupported length is exceeded, the Energy Chain®/Tube must glide on itself. This requires a guide trough ► **Design, Chapter 1** or incorporation of igus® exclusive AUTO-GLIDE System guide elements, which are available for this chain series ► **AUTO-GLIDE System, Chapter 9**.



### When to use the Series 380/390/R780:

- If a quieter version is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights



### When not to use the Series 380/390/R780:

- If a side-mounted chain/tube with a long unsupported length is required  
► Series 3838/3938/R7838, **Chapter 6**
- If a simpler system is sufficient  
► Series 38/39/R78, **Chapter 6**
- If one-sided hinged crossbars are sufficient  
► Series 340/350, **Chapter 4**

- Accessories for  
► Guide Troughs, **Chapter 9**
- Further information  
► **Design, Chapter 1**

### Other Installation Methods:

<b>Vertical, hanging</b>	= max 328 ft (100 m)
<b>Vertical, standing, unsupported*</b>	= max 19.69 ft (6 m)
<b>Side-mounted, unsupported</b>	= max 6.56 ft (2 m)
<b>Rotary</b>	= requires further calculation

\*With support, this distance can be greater. Call igus for details.

- Long travel Max: 984 ft. (300 m)

Low-noise design

3 options for mounting brackets

Extension links for variable widths

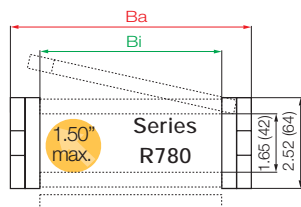
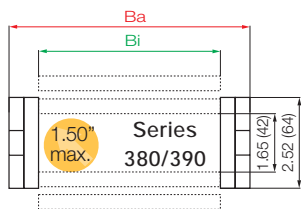
Wide range of interior separation

[Click Here for Specs & CAD Files](#)

# Series 380/390/R780 "E4/100"



380  
390  
R780



For crossbar selection please visit [www.igus.com](http://www.igus.com) and use the "E-Chain Helper"

Extender crossbar for large diameter hoses, see following pages

Increased inner height also as Series:

38022

## Increased inner height

The Series 38022 Energy Chain®, with an increased inner height of 2.05 (52 mm) is available for unsupported applications. Please consult igus® for delivery time and availability. We recommend the use of steel mounting brackets for this series.

For wider chains, see following pages

Part No.	Bi	Ba <sup>+</sup>
380/ 390/780-05*	1.97 (50)	3.07 (76)
380/ 390-06	2.68 (68)	3.78 (94)
380/ 390/780-07	2.95 (75)	4.06 (101)
380/ 390-087	3.43 (87)	4.57 (114)
380/ 390/780-10	3.94 (100)	5.04 (126)
380/ 390/780-11	4.25 (108)	5.35 (134)
380/ 390-112	4.41 (112)	5.55 (139)
380/ 390/780-12	4.92 (125)	6.02 (151)
380/ 390-137	5.39 (137)	6.54 (164)
380/ 390/780-15	5.91 (150)	7.01 (176)
380/ 390-162	6.38 (162)	7.52 (189)
380/ 390/780-17	6.61 (168)	7.72 (194)
380/ 390-18	6.89 (175)	7.99 (201)
380/ 390-187	7.36 (187)	8.50 (214)
380/ 390/780-20	7.87 (200)	8.98 (226)
380/ 390-212	8.35 (212)	9.49 (239)
380/ 390-23	8.86 (225)	9.96 (251)
380/ 390-237	9.33 (237)	10.47 (264)
380/ 390/780-25	9.84 (250)	10.94 (276)
380/ 390-262	10.31 (262)	11.46 (289)
380/ 390-28	10.83 (275)	11.93 (301)
380/ 390-29	11.30 (287)	12.44 (314)
380/ 390/780-30	11.81 (300)	12.91 (326)
380/ 390-312	12.28 (312)	13.43 (339)
380/ 390-325	12.79 (325)	13.90 (351)
380/ 390-337	13.27 (337)	14.41 (364)
380/ 390-350	13.78 (350)	14.80 (376)
380/ 390-362	14.25 (362)	15.39 (389)
380/ 390-375	14.76 (375)	15.87 (402)
380/ 390-387	15.24 (387)	16.38 (414)
380/ 390-400	15.75 (400)	16.85 (426)

Click Here for Specs & CAD Files

Bending Radii for ALL Widths  
 2.95 (075)\*\*  
 3.94 (100)\*\*  
 4.52 (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)

\* Removable lid only, no hinged option

\*\* Not available for R780

Supplement part number with required radius for example, 380-07-150-0

### Price Index



## Series 380, Energy Chain (with crossbars every link)

Select Energy Chains® with crossbars every link when using rigid hydraulic hoses or if an application is particularly demanding.



### Standard Price Index



## Series 390, Energy Chain (with crossbars every other link)

This design is the **standard** Energy Chain® for this size range. For almost all applications, the Series 390 offers the easiest assembly and best stability for the price.



### Price Index



## Series R780, Energy Tube (fully enclosed)

Energy Tubes offer excellent cable and hose protection against dirt, debris and other contaminants, as well as hot chips. This design offers cable and hose accessibility along both radii. Lids along the entire inner radius are completely removable. Lids along the entire outer radius are single-sided, snap-open, with a hinge on the other side to keep them attached to the chain, or completely removable.



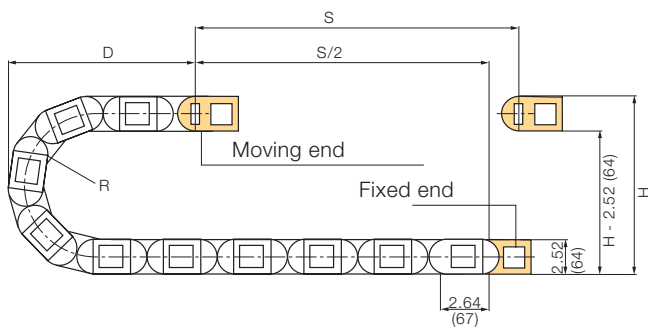
PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
 Specs/CAD/RFQ: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
 RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



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### Installation Dimensions



Pitch: = 2.64 (67 mm) per link  
 Links per ft (m): = 4.57 (15)  
 Total travel: = S  
 Chain length: =  $\frac{S}{2} + K$

R	2.95 (075)	3.94 (100)	4.52 (115)	4.92 (125)
H <sub>1,25</sub> <sup>0</sup>	8.46 (215)	10.43 (265)	11.61 (295)	12.40 (315)
D	5.91 (150)	7.87 (200)	8.46 (215)	8.86 (225)
K	15.75 (400)	19.69 (500)	23.62 (600)	25.59 (650)

R	5.91 (150)	6.69 (170)	7.87 (200)	8.46 (215)
H <sub>1,25</sub> <sup>0</sup>	14.37 (365)	15.94 (405)	18.31 (465)	19.49 (495)
D	9.84 (250)	10.63 (270)	11.81 (300)	12.40 (315)
K	28.54 (725)	30.71 (780)	34.45 (875)	36.22 (920)

R	9.84 (250)	11.81 (300)	13.78 (350)	
H <sub>1,25</sub> <sup>0</sup>	22.24 (565)	26.18 (665)	30.12 (765)	
D	13.78 (350)	15.75 (400)	17.72 (450)	
K	41.34 (1050)	48.23 (1225)	53.12 (1350)	

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

### Extension Link



The extension link has been developed for applications in which particularly high fill weights necessitate extremely wide Energy Chains®. The extension link design allows virtually limitless side-by-side attachment of chains. In addition, the unsupported length of a chain can be increased. Using extension links also allows for additional fill weights.

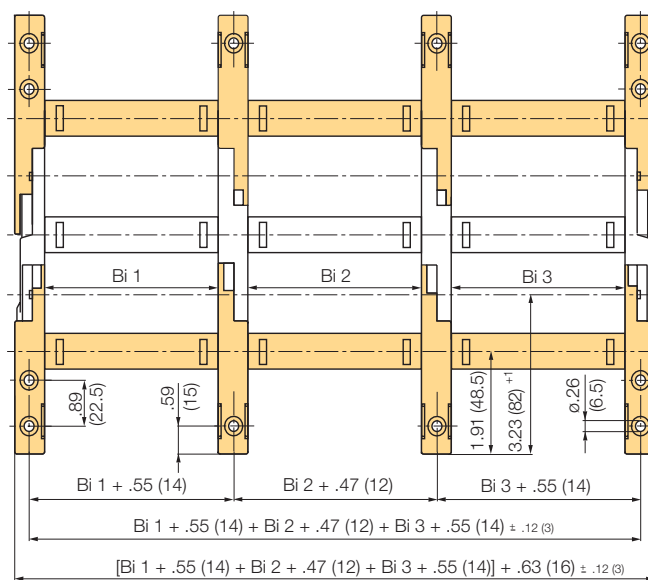
Extension links can be used with Energy Chains®, Energy Tubes or a combination of chains and tubes. They are equally suitable for unsupported and gliding applications in a guide trough.

Energy Chains® with extension links are attached with KMA or steel mounting brackets. We strongly recommend on-site consultation with an igus technician for individual advice regarding mounting brackets, guide troughs and other design details.

All nominal widths from the preceding page available in all combinations.

- Chain widths up to 118 in. (3000 mm) can be achieved

- Also available as Energy Tube

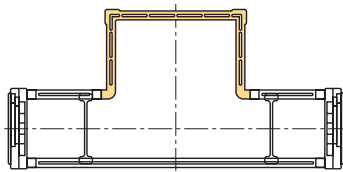


Part number example for Energy Chain®  
380-10/ 20/10-200-0

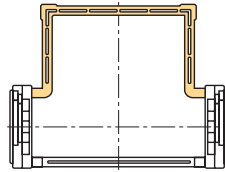
## Extender Crossbars

The extender crossbars were developed specifically for applications in which a hose or large diameter cable must be guided carefully. It is intended for hoses and cables with a maximum outer diameter of 11.81 (300 mm). The extender crossbar can be attached either along the outer or inner radius. In most applications the inner radius is preferred. However, the chain/tube cannot glide on itself in this case. If gliding operation is required, the crossbars are assembled along the outer radius and a special guide trough is required. The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

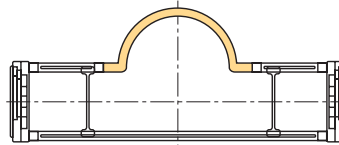
Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No



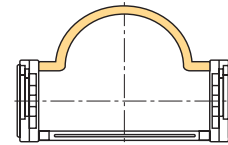
Square extender crossbar combined with standard snap-open crossbars.



Square extender crossbars attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.

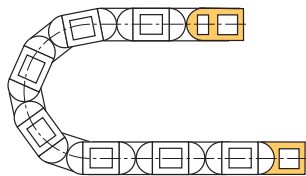


Round extender crossbar attached directly to the side link.

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

## Hinged Crossbars

Typically, Energy Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the Energy Chain®, a hinged design has been developed.

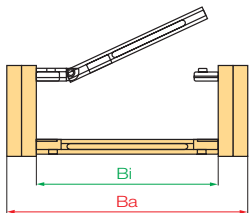


All views shown from fixed end perspective

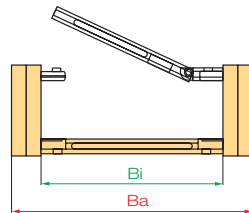
4 hinged crossbar options are available. Please consult igus for design assistance.



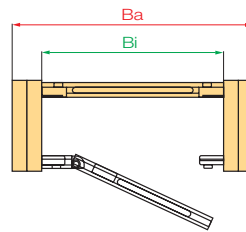
Option 1



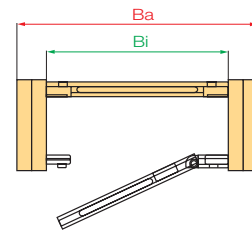
Option 2



Option 3



Option 4



PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
 Specs/CAD/RFO: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
 RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



## Interior Separation

### Option 1: separators

Separators can be placed at any point along the chain's cross-section. **igus® standard separator (Part No. 381)** offers safe stability due to its broad "foot" design, even when used with large diameter cables or hoses.

A **locking separator (Part No. 383)** is used in applications with very high relative humidity, such as composting plants. The increased retention force needed for these types of applications is produced by asymmetrical retention "clamps" attached to the chain's crossbar. If installing these yourself, please ensure that they are identically aligned.

The **381T separator** is designed for Energy Tubes incorporating several separators. It clamps to the inner radius and remains free along the outer radius to facilitate lid removal. Again, uniform alignment of the separators is critical. The injection-molded part number can be used as an orientation guide.

All separators are adjustable, but may be fixed in place with spacers (chains only). Spacers are most often necessary with side-mounted applications.



igus® Energy Chain System®

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



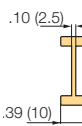
#### Separator Chain/Tube

Unassembled	Part No. 380
Assembled	Part No. 381



#### Space (Chain Only)

Unassembled	Part No. 381-10
Assembled	Part No. 382-10



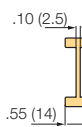
#### Locking Separator

Unassembled	Part No. 383
Assembled	Part No. 384



#### Space (Chain Only)

Unassembled	Part No. 381-15
Assembled	Part No. 382-15



#### Separator (Tube Only)

Unassembled	Part No. 380T
Assembled	Part No. 381T



#### Space (Chain Only)

Unassembled	Part No. 381-20
Assembled	Part No. 382-20



#### Note:

The available inner height is decreased by .08 (2 mm) per spacer (for example, if one spacer is placed on either side of the separator, the overall inner height is reduced by .16 (4 mm)). To avoid this, place the spacers on the outside of the opening crossbar.

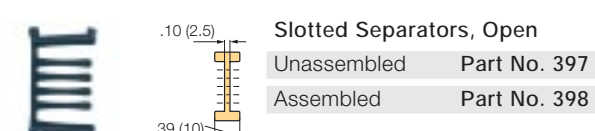
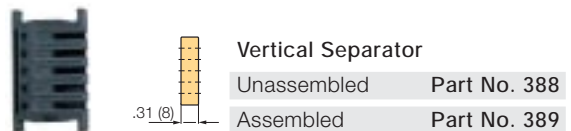
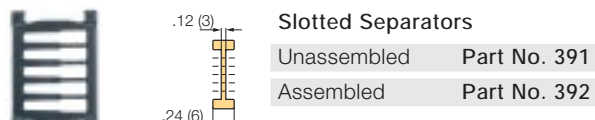
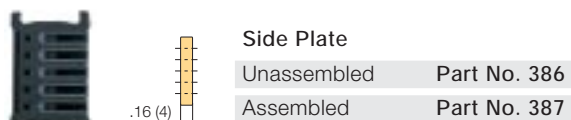
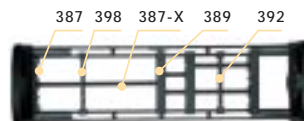
Internet: <http://www.igus.com>  
email: [sales@igus.com](mailto:sales@igus.com)  
QuickSpec: <http://www.igus.com/qs/echain.asp>

# Interior Separation: Series 380/390/R780 "E4/100"

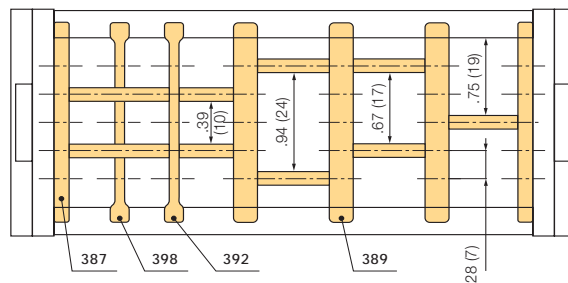
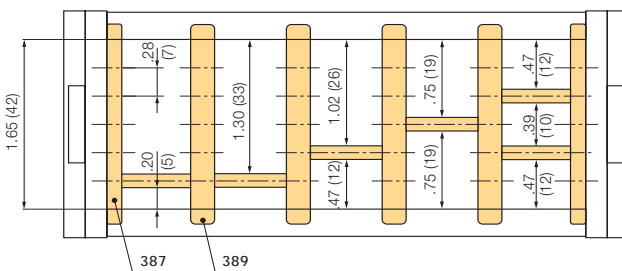
## Option 2: shelves

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

Side plates, separators and shelves form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28 (7 mm) increments ▶ **Design, Chapter 1** for layout recommendations. If open, slotted separators are used, only the middle slot is available for shelves.



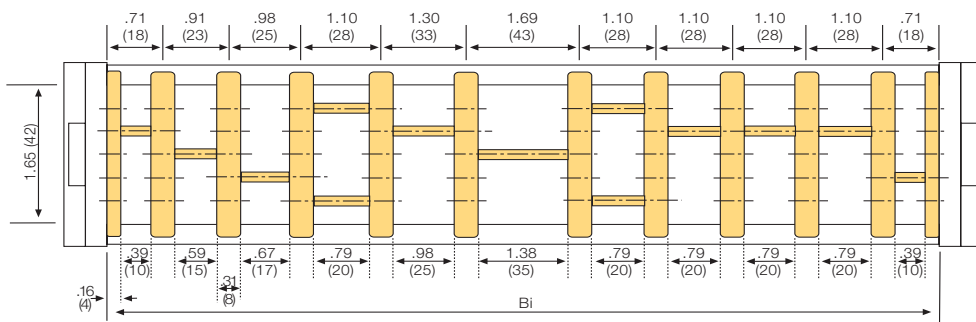
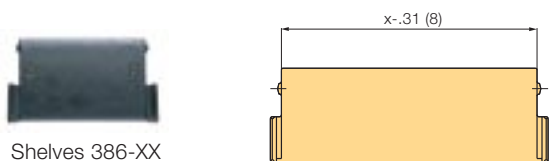
Width X in. (mm)	Usable Width in. (mm)	Part No. Unassembled	Part No. Assembled
.71 (18)	.39 (10)	386-18	387-18
.91 (23)	.59 (15)	386-23	387-23
.98 (25)	.67 (17)	386-25	387-25
1.10 (28)	.79 (20)	386-28	387-28
1.30 (33)	.98 (25)	386-33	387-33
1.69 (43)	1.38 (35)	386-43	387-43
1.97 (50)	1.65 (42)	386-50	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



Slotted separators (Part No. 391) are used for complex subdivision. However, they cannot be retrofitted in an existing interior separation system without removing the shelves first.



The open, slotted separator (Part No. 397) 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.



**Click Here for  
Specs &  
CAD Files**

PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
Specs/CAD/RFO: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



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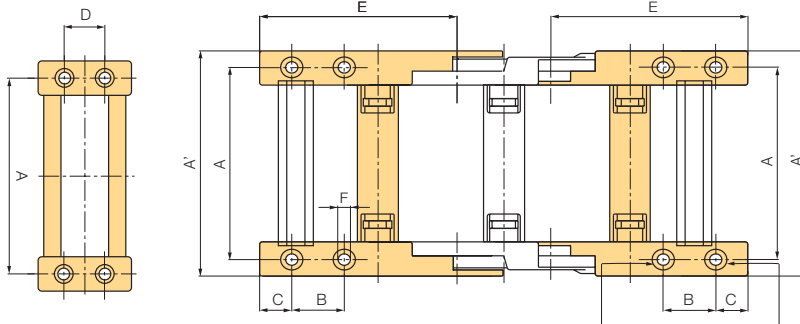
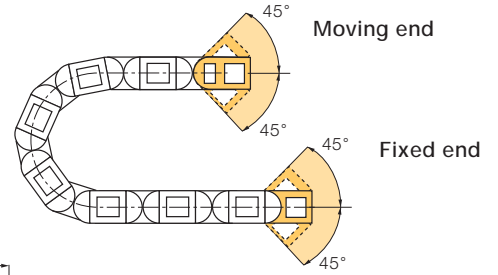


### Mounting Brackets

#### Option 1: pivoting

Standard

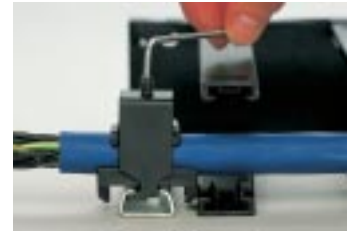
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



Mounting with socket head cap bolts  
M6 DIN 912-8.8

A	A'	B	C	D	E	F	in. (mm)
Bi +.63 (16)	Bi +1.26 (32)	.89 (22.5)	.59 (15)	.87 (22)	3.23 (82)	.25 (6.5)	

An integrated strain relief system, using profile rail, is an option  
► **Strain Relief, Chapter 10**



**Note:** One special feature of the E4/100 System is the Energy Chain® may end with either an inner side link or an outer side link. Keep in mind that an outer side link always forms the first chain link at the moving end.

Part No., full set  
Series 380/ 390

38000-\_\_-12



Please insert width of selected Energy Chain®.  
For example, 38000-18-12 for Energy Chain® 380/ 390-18.....

Part No., full set, with profile rail  
Series 380/ 390

38000-\_\_-12P



Please insert width of selected Energy Chain®.  
For example, 38000-18-12P for Energy Chain® 380/ 390-18.....

Part No., full set  
Series R780

38000-\_\_-12T



Please insert width of selected Energy Tube.  
For example, 38000-18-12T for Energy Tube 780-18.....

Part No., full set, with profile rail  
Series 780

38000-\_\_-12TP



Please insert width of selected Energy Tube.  
For example, 38000-18-12TP for Energy Tube 780-18.....

Chain/Tube Width	Bi
-05	1.97 (50)
-06	2.68 (68)
-07	2.95 (75)
-087	3.43 (87)
-10	3.94 (100)
-11	4.25 (108)
-112	4.41 (112)
-12	4.92 (125)
-137	5.39 (137)
-15	5.91 (150)
-162	6.38 (162)
-17	6.61 (168)
-18	6.89 (175)
-187	7.36 (187)
-20	7.87 (200)
-212	8.35 (212)
-23	8.86 (225)
-237	9.33 (237)
-25	9.84 (250)
-262	10.31 (262)
-28	10.83 (275)
-29	11.30 (287)
-30	11.81 (300)
-312	12.28 (312)
-325	12.79 (325)
-337	13.27 (337)
-350	13.78 (350)
-362	14.25 (362)
-375	14.76 (375)
-387	15.24 (387)
-400	15.75 (400)

igus® Energy Chain System®

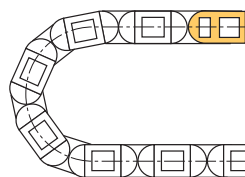
Telephone 1-800-521-2747  
Fax 1-401-438-7270

Internet: <http://www.igus.com>  
email: [sales@igus.com](mailto:sales@igus.com)  
QuickSpec: <http://www.igus.com/qs/echain.asp>

## Mounting Brackets

### Option 2: locking

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

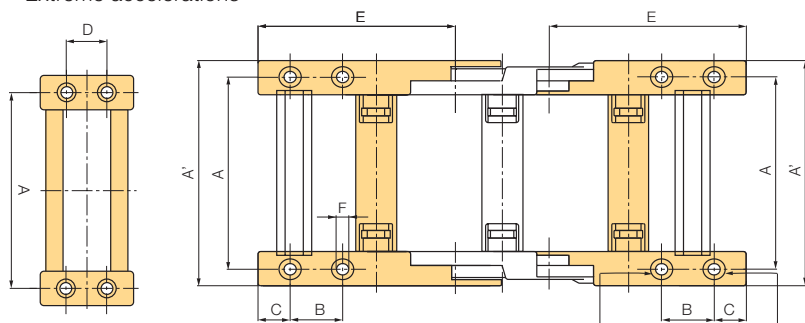
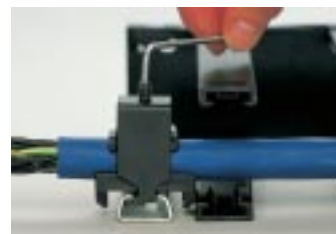


Moving end

Fixed end

An integrated strain relief system, using profile rail, is an option

► Strain Relief, Chapter 10



Mounting with socket head cap bolts  
M5 DIN 912-8.8

A	A'	B	C	D	E	F	in. (mm)
Bi +.62 (16)	Bi +1.26 (32)	.89 (22.5)	.59 (15)	.87 (22)	3.23 (82)	.26 (6.5)	



Part No., full set  
Series 380/ 390

39000-\_\_-12



Please insert width of selected Energy Chain®.  
For example, 39000-112-12 for Energy Chain® 380/ 390-112-\_\_

Part No., full set, with profile rail  
Series 380/ 390

39000-\_\_-12P



Please insert width of selected Energy Chain®.  
For example, 39000-112-12P for Energy Chain® 380/ 390-112-\_\_

Part No., full set  
Series R780

39000-\_\_-12T



Please insert width of selected Energy Tube.  
For example, 39000-112-12T for Energy Tube 780-112-\_\_

Part No., full set, with C-profile  
Series 780

39000-\_\_-12TP



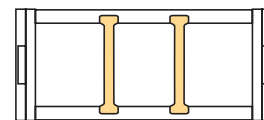
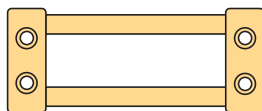
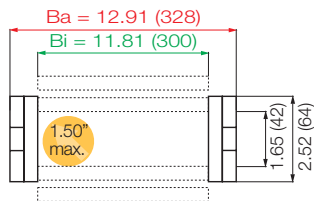
Please insert width of selected Energy Tube.  
For example, 39000-112-12TP for Energy Tube 780-112-\_\_

Chain/Tube Width	Bi
-05	1.97 (50)
-06	2.68 (68)
-07	2.95 (75)
-087	3.43 (87)
-10	3.94 (100)
-11	4.25 (108)
-112	4.41 (112)
-12	4.92 (125)
-137	5.39 (137)
-15	5.91 (150)
-162	6.38 (162)
-17	6.61 (168)
-18	6.89 (175)
-187	7.36 (187)
-20	7.87 (200)
-212	8.35 (212)
-23	8.86 (225)
-237	9.33 (237)
-25	9.84 (250)
-262	10.31 (262)
-28	10.83 (275)
-29	11.30 (287)
-30	11.81 (300)
-312	12.28 (312)
-325	12.79 (325)
-337	13.27 (337)
-350	13.78 (350)
-362	14.25 (362)
-375	14.76 (375)
-387	15.24 (387)
-400	15.75 (400)

PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
Specs/CAD/RFO: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



Order example



1. Chain selection:

380-30-300-0



2. Mounting brackets:

38000-30-12P



3. Interior Separation:

2 separators, assembled every other link (part no. 381).  
Alternative interior separation configuration according to design layout possible.



For 6.56 ft (2 m) chain, color black,  
with pivoting mounting brackets and integrated profile rail  
6.56 ft (2 m) 380-30-300-0 and 38000-30-12P and 2 Part No. 381, assembled every other link  
30 links — 4.57 links/ft (15 links/m)

# Technical Data: Series 380/390/R780 "E4/100"



380  
390  
R780

## Technical Data

Chain/Tube Width	Weight Per Link lbs (kg)			Weight lbs/ft (kg/m)		
	380	390	R780	380	390	R780
-05	.302 (0.137)		.331 (0.15)	1.38 (2.06)	1.33 (1.98)	1.51 (2.25)
-06	.306 (0.139)		-	1.40 (2.09)	1.34 (1.99)	-
-07	.311 (0.141)		.351 (0.159)	1.42 (2.12)	1.35 (2.01)	1.60 (2.38)
-087	.322 (0.146)		-	1.47 (2.18)	1.37 (2.04)	-
-10	.331 (0.150)		.384 (0.174)	1.51 (2.25)	1.40 (2.08)	1.75 (2.60)
-11	.337 (0.153)		.390 (0.177)	1.55 (2.30)	1.41 (2.10)	1.78 (2.65)
-112	.340 (0.154)		-	1.55 (2.30)	1.41 (2.10)	-
-12	.352 (0.160)		.412 (0.187)	1.61 (2.40)	1.44 (2.15)	1.89 (2.81)
-137	.359 (0.163)		-	1.64 (2.44)	1.46 (2.17)	-
-15	.373 (0.169)		.452 (0.205)	1.70 (2.53)	1.49 (2.21)	2.06 (3.07)
-162	.375 (0.170)		-	1.71 (2.55)	1.49 (2.22)	-
-17	.386 (0.175)		.476 (0.216)	1.76 (2.62)	1.52 (2.26)	2.18 (3.24)
-18	.386 (0.175)		-	1.76 (2.62)	1.52 (2.26)	-
-187	.397 (0.180)		-	1.81 (2.69)	1.55 (2.30)	-
-20	.406 (0.184)		.518 (0.235)	1.86 (2.77)	1.57 (2.33)	2.37 (3.53)
-212	.417 (0.189)		-	1.91 (2.84)	1.59 (2.37)	-
-23	.430 (0.195)		-	1.96 (2.92)	1.62 (2.41)	-
-237	.434 (0.197)		-	1.99 (2.96)	1.63 (2.43)	-
-25	.448 (0.203)		.637 (0.289)	2.05 (3.05)	1.66 (2.47)	2.91 (4.33)
-262	.450 (0.204)		-	2.06 (3.06)	1.67 (2.48)	-
-28	.465 (0.211)		-	2.13 (3.17)	1.70 (2.53)	-
-29	.470 (0.213)		-	2.14 (3.19)	1.71 (2.54)	-
-30	.490 (0.222)		.719 (0.326)	2.23 (3.32)	1.75 (2.61)	3.29 (4.89)
-312	.492 (0.223)		-	2.24 (3.34)	1.76 (2.62)	-
-325	.503 (0.228)		-	2.29 (3.41)	1.79 (2.66)	-
-337	.509 (0.231)		-	2.33 (3.46)	1.80 (2.68)	-
-350	.540 (0.245)		-	2.47 (3.68)	1.88 (2.79)	-
-362	.549 (0.249)		-	2.51 (3.74)	1.90 (2.82)	-
-375	.558 (0.253)		-	2.55 (3.79)	1.91 (2.84)	-
-387	.567 (0.257)		-	2.59 (3.85)	1.93 (2.87)	-
-400	.573 (0.260)		-	2.62 (3.90)	1.95 (2.90)	-

Material	igumid G
Permitted temperature	-40°/266°F (-40/+130°C)
Gliding speed (maximum)	16.4 ft/s (5 m/s)
Unsupported V (maximum)	32.8 ft/s (10 m/s)
Flammability class	VDE 0304 IIC UL94 HB

- Details of material properties
- ▶ Design, Chapter 1

- Weight data tolerance +/- 5%

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 Specs/CAD/RFO: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
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