



### Price Index



31 Widths  
10 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

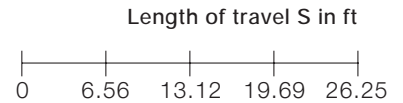
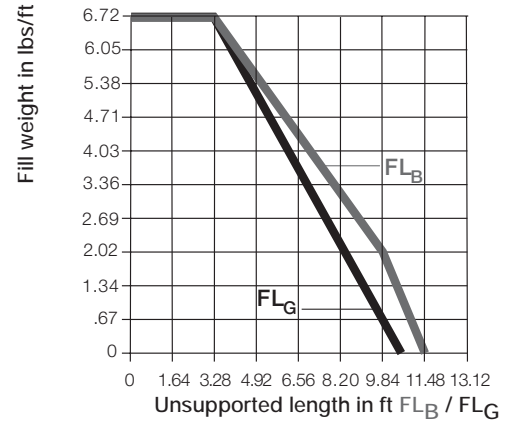
Removable lids along inner radius of Energy Tube

Closed and open styles can be combined

Dirt-repellent exterior

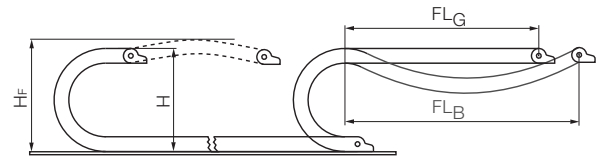
Strain relief elements can be integrated with the mounting bracket

Crossbars on Energy Chains® are removable along both radii



### Unsupported length

- FL<sub>B</sub> = unsupported with permitted sag
- FL<sub>G</sub> = unsupported with straight upper run



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**

### Other Installation Methods:

Vertical, hanging	= max 262 ft (80 m)
Vertical, standing, unsupported*	= max 16.4 ft (5 m)
Side-mounted, unsupported	= max 4.92 ft (1.5 m)
Rotary	= requires further calculation

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

● Long travel Max: 656 ft. (200 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**

### Product range

Inner Widths (Bi) inches (mm):	1.97 - 15.75 (50 - 400)
Bending Radii (R) inches (mm):	2.48 (63), 2.95 (75), 3.94 (100), 4.92 (125), 5.91 (150), 6.89 (175), 7.87 (200), 8.66 (220), 9.84 (250), 11.81 (300)
Pitch:	2.20 (56 mm/link) = 5.49 links/ft (18 links/m) 39.6 (1008 mm)



**When to use the Series 280/290/R770:**

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights



**When not to use the Series 280/290/R770:**

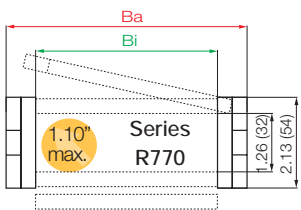
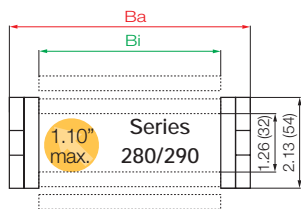
- If long, side-mounted, unsupported length is required ► Series 2828/2928/R7728, **Chapter 6**
- If a simpler system is sufficient ► Series 28/29/R77 **Classic Carrier Catalog**
- If single-radius accessibility is sufficient ► Series 26/27/27i, **Chapter 4**

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

# Series 280/290/R770 "E4/100"



280  
290  
R770



● 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 :  
● Series 28022

## Increased inner height

The Series 28022 Energy Chain®, with an increased inner height of 1.57 (40 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>
280/ 290/ 770-05*	1.97 (50)	2.87 (73)
280/ 290-06	2.68 (68)	3.58 (91)
280/ 290/ 770-07	2.95 (75)	3.86 (98)
280/ 290-087	3.43 (87)	4.33 (110)
280/ 290/ 770-10	3.94 (100)	4.84 (123)
280/ 290/ 770-11	4.25 (108)	5.16 (131)
280/ 290-112	4.41 (112)	5.35 (136)
280/ 290/ 770-12	4.92 (125)	5.83 (148)
280/ 290-137	5.39 (137)	6.34 (161)
280/ 290/ 770-15	5.91 (150)	6.81 (173)
280/ 290-162	6.38 (162)	7.32 (186)
280/ 290/ 770-17	6.61 (168)	7.52 (191)
280/ 290-18	6.89 (175)	7.80 (198)
280/ 290-187	7.36 (187)	8.31 (211)
280/ 290/ 770-20	7.87 (200)	8.78 (223)
280/ 290-212	8.35 (212)	9.29 (236)
280/ 290-23	8.86 (225)	9.76 (248)
280/ 290-237	9.33 (237)	10.28 (261)
280/ 290/ 770-25	9.84 (250)	10.75 (273)
280/ 290-262	10.31 (262)	11.26 (286)
280/ 290-28	10.83 (275)	11.73 (298)
280/ 290-29	11.30 (287)	12.24 (311)
280/ 290/ 770-30	11.81 (300)	12.72 (323)
280/ 290-312	12.28 (312)	13.23 (336)
280/ 290-325	12.79 (325)	13.70 (348)
280/ 290-337	13.27 (337)	14.21 (361)
280/ 290-350	13.78 (350)	14.69 (373)
280/ 290-362	14.25 (362)	15.20 (386)
280/ 290-375	14.76 (375)	15.67 (398)
280/ 290-387	15.24 (387)	16.18 (411)
280/ 290-400	15.75 (400)	16.65 (423)

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

Bending Radii for ALL Widths  
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)

\* Removable lid only, no hinged option

\*\* Not available for R770

Supplement part number with required radius for example, 280-07-150-0

### Price Index



## Series 280, 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 290, Energy Chain (with crossbars every other link)

This design is the **standard** Energy Chain® for this size range. For almost all applications, the Series 290 offers the easiest assembly and best stability for the price.



### Price Index



## Series R770, 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.



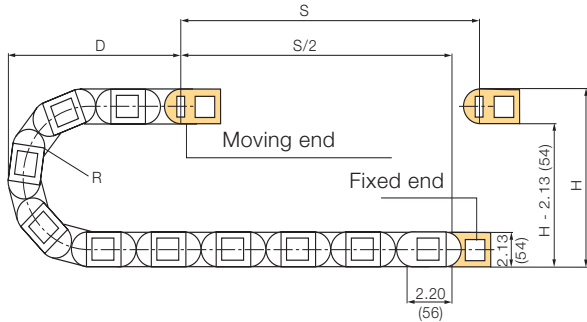
PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
Specs/CAD/RFO: [www.igus.com/echain.asp](http://www.igus.com/echain.asp)  
RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



▶ Page 6.163



### Installation Dimensions



- Pitch: = 2.20 (56 mm) per link
- Links per ft (m): = 5.49 (18)
- Total travel: = S
- Chain length: =  $\frac{S}{2} + K$

R	2.48 (063)	2.95 (075)	3.94 (100)	4.92 (125)	5.91 (150)
H <sup>*)</sup> <sub>4,20</sub>	7.09 (180)	8.07 (205)	10.04 (255)	12.01 (305)	13.98 (355)
D	5.12 (130)	5.91 (150)	6.89 (175)	7.87 (200)	8.86 (225)
K	13.39 (340)	14.96 (380)	18.31(465)	21.65 (550)	24.41 (620)

R	6.89 (175)	7.87 (200)	8.66 (220)	9.84 (250)	11.81 (300)
H <sup>*)</sup> <sub>4,20</sub>	15.94 (405)	17.91 (455)	19.49 (495)	21.85 (555)	25.79 (655)
D	9.84 (250)	10.83 (275)	11.61 (295)	12.80 (325)	14.76 (375)
K	27.56 (700)	30.71 (780)	33.46 (850)	37.01 (940)	43.70 (1110)

\*The required clearance height is HF = H + 1.57 (40) with 1.34 lbs/ft (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 applications and gliding applications in a guide trough.

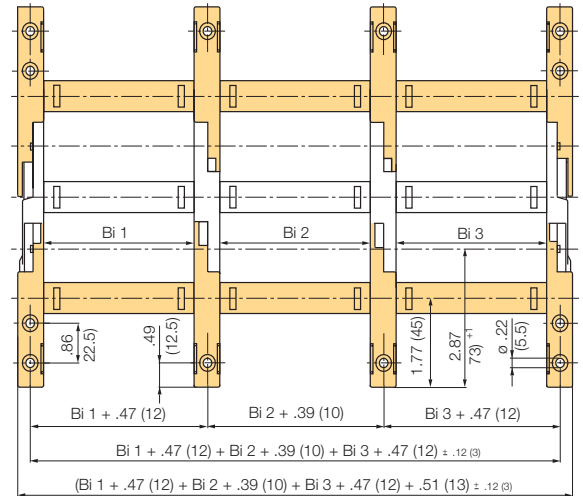
Energy Chains® with extension links are attached with KMA mounting brackets or steel mounting brackets. We strongly recommend on-site consultation with an igus technician for individual advice regarding mounting brackets, guide troughs and other design details.

- Chain widths up to 118" (3000 mm) can be achieved
- Also available as Energy Tube



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

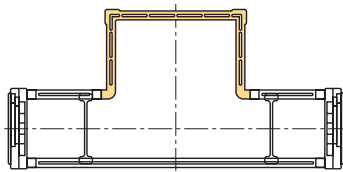
Part number example for Energy Chain®  
280-10/20/10-200-0



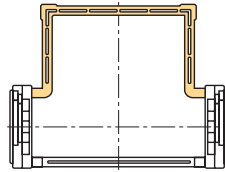
## Extender Crossbars

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 placed 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.

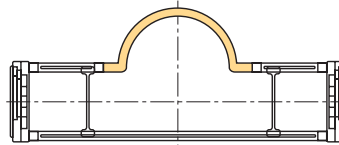
Part No.	Max Ø Hose	Style	Installation Side Link	Combined with Snap-Open Crossbars
385-15-RHD115	By request	Round	No	Yes
385-18-RD115	By request	Round	Yes	No



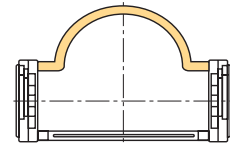
Square extender crossbar combined with standard snap-open crossbars.



Square extender crossbars attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



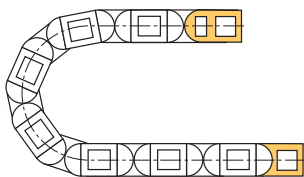
Round extender crossbar attached directly to the side link.

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

## Hinged Crossbars

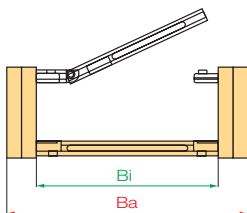
Typically, Energy Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the Energy Chain®, a hinged design has been developed.

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

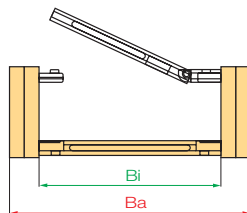


All views shown from fixed end perspective

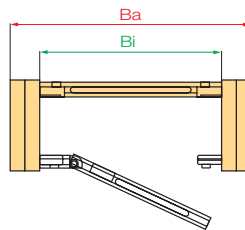
Option 1



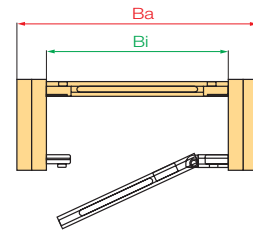
Option 2



Option 3



Option 4



## Interior Separation

### Option 1: separators

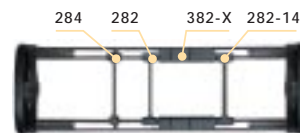
Separators can be placed at any point along the chain's cross-section. **igus® standard separator (Part No. 281)** offers safe stability due to its broad "foot" design, even when used with large diameter cables or hoses. If the distance needed between separators is greater than this separator's dimension, we offer the 281-14 separator.

With applications where a large number of small cables need to be individually separated, our **separator with a narrow foot (Part No. 283)** can be used (for Energy Chains only).

A **locking separator (Part No. 293)** 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 **281T separator** is used with Energy Tubes only. It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

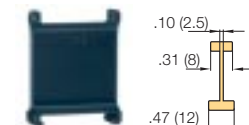
All separators are adjustable, but may be fixed in place with spacers (chains only). Spacers are most often necessary with side-mounted applications.



Separator 281

#### Separator Chain/Tube

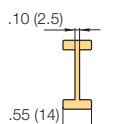
Unassembled	Part No. 280
Assembled	Part No. 281



Separator 281T

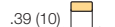
#### Separator (Tube Only)

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



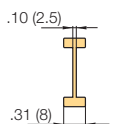
#### Separator Chain/Tube

Unassembled	Part No. 281-14
Assembled	Part No. 282-14



#### Space (Chain Only)

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



#### Separator (Chain Only)

Unassembled	Part No. 283
Assembled	Part No. 284



#### Space (Chain Only)

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



Separator 293

#### Locking Separator (Chain Only)

Unassembled	Part No. 293
Assembled	Part No. 294



#### 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 each side of a separator, the overall inner height is reduced by .16 (4 mm). In order to avoid this, place the spacers on the outside of the opening crossbar.

# Series 280/290/R770 "E4/100"



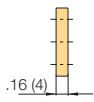
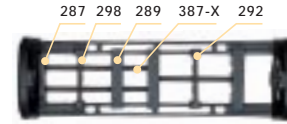
280  
290  
R770

## 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.

For special applications, a separator with an integrated injection-molded shelf 2.26 or 1.77 (57.5 or 45 mm) is available.



### Side Plate

Unassembled Part No. 286

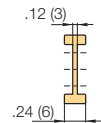
Assembled Part No. 287



### Vertical Separator

Unassembled Part No. 288

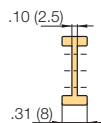
Assembled Part No. 289



### Slotted Separators

Unassembled Part No. 291

Assembled Part No. 292

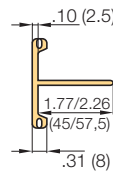


### Slotted Separators, Open

Unassembled Part No. 297

Assembled Part No. 298

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



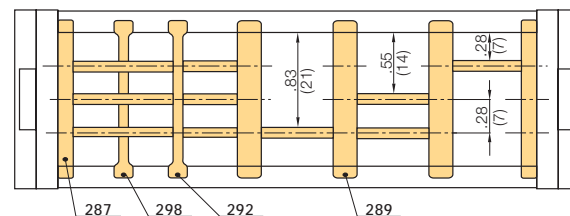
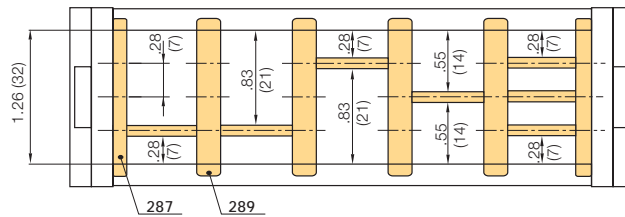
### Separators w/Integrated Shelf

Unassembled Part No. 281-S-57

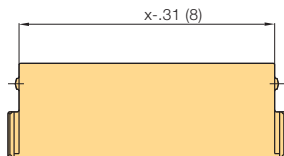
Assembled Part No. 282-S-57

Unassembled Part No. 281-S-45

Assembled Part No. 282-S-45



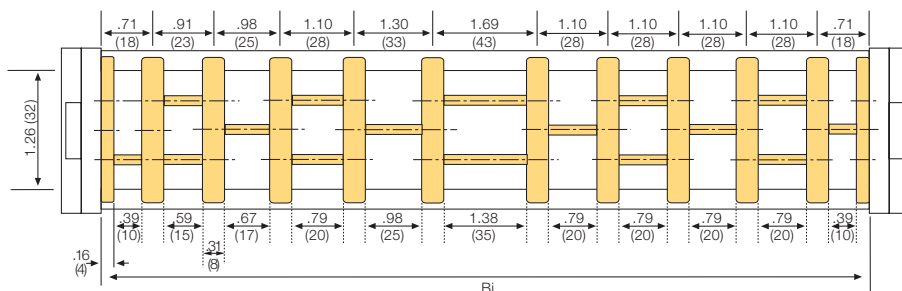
Shelves 386-XX



Slotted separators (Part No. 291) are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.



The open slotted separator (Part No. 297) can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.



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

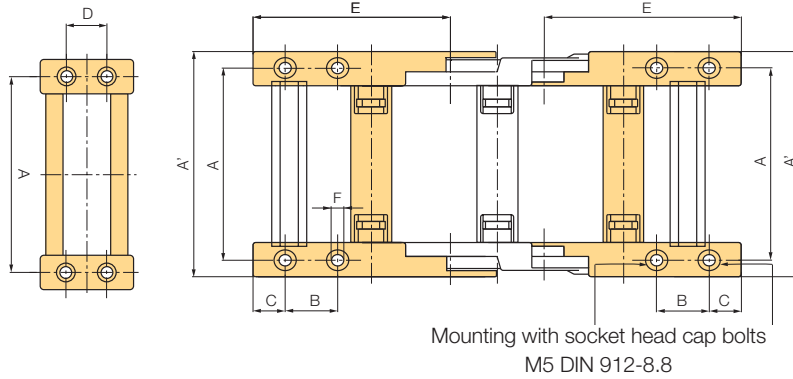
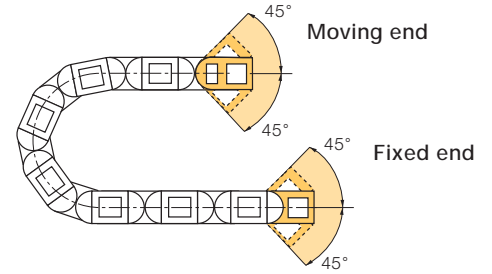


Mounting Brackets

Option 1: pivoting

Standard

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



- igus tiwrap plates attached to a profile rail can be used for strain relief. Tiwraps are available as a separate part number upon request. **► Strain Relief, Chapter 10**

A	A'	B	C	D	E	F	in. (mm)
Bi +.55 (14)	Bi +1.06 (27)	.89 (22.5)	.49 (12.5)	.87 (22)	2.87 (73)	.22 (5.5)	

**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 280/ 290



28000-\_\_-12

Please insert width of selected Energy Chain®.  
For example, 28000-187-12 for Energy Chain® 280/ 290-187.....

Part No., full set, with profile rail  
Series 280/ 290



28000\_\_-12P

Please insert width of selected Energy Chain®.  
For example, 28000-187-12P for Energy Chain® 280/ 290-187.....

Part No., full set  
Series R770



28000-\_\_-12T

Please insert width of selected Energy Tube.  
For example, 28000-187-12T for Energy Tube 770-187.....

Part No., full set, with profile rail  
Series 770



28000-\_\_-12TP

Please insert width of selected Energy Tube.  
For example, 28000-187-12TP for Energy Tube 770-187.....

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	12.80 (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®

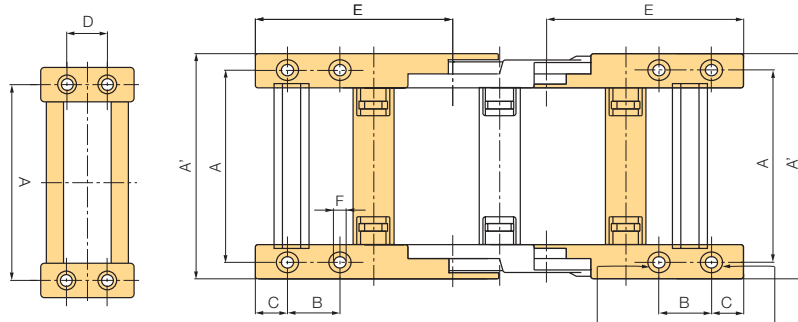
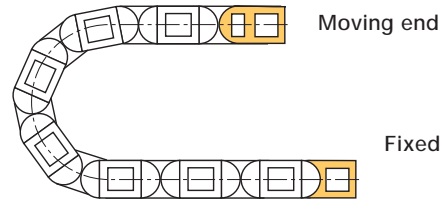
Telephone 1-800-521-2747  
Fax 1-401-438-7270

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



Mounting with socket head cap bolts  
M5 DIN 912-8.8



- igus tiwrap plates attached to a profile rail can be used for strain relief. Tiwraps are available as a separate part number upon request.
- Strain Relief, Chapter 10

A	A'	B	C	D	E	F	in.	(mm)
Bi +.55	Bi +1.06	.86	.49	.87	2.87	.22		
(14)	(27)	(22.5)	(12.5)	(22)	(73)	(5.5)		

Part No., full set  
Series 280/ 290

29000-\_\_-12



Please insert width of selected Energy Chain®.  
For example, 29000-12-12 for Energy Chain® 280/ 290-12-\_\_

Part No., full set, with profile rail  
Series 280/ 290

29000\_\_-12P



Please insert width of selected Energy Chain®.  
For example 29000-12-12P for Energy Chain 280/ 290-12-\_\_

Part No., full set  
Series R770

29000-\_\_-12T



Please insert width of selected Energy Tube.  
For example, 29000-12-12T for Energy Tube 770-12-\_\_

Part No., full set, with profile rail  
Series R770

29000-\_\_-12TP



Please insert width of selected Energy Tube.  
For example, 29000-12-12TP for Energy Tube 770-12-\_\_

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	12.80 (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)

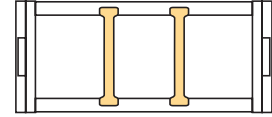
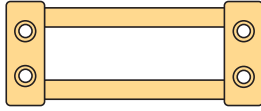
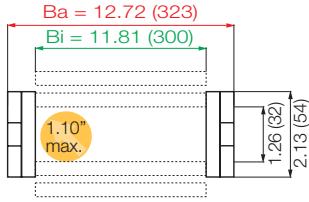
PDF: [www.igus.com/echainpdf.asp](http://www.igus.com/echainpdf.asp)  
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RoHS info: [www.igus.com/RoHS.asp](http://www.igus.com/RoHS.asp)



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Order example



1. Chain selection:  
280-30-300-0

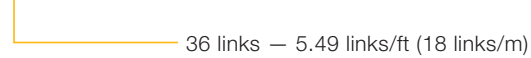


2. Mounting brackets:  
28000-30-12P



3. Interior separation:  
2 separators, assembled every other link (Part No. 281).  
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) 280-30-300-0 and 20800-30-12P and 4 Part. No. 281 assembled every other link



# Technical Data: Series 280/290/R770 "E4/100"



280  
290  
R770

## Technical Data

Chain/Tube Width	Weight Per Link lbs (kg)			Weight lbs/ft (kg/m)		
	280	290	R770	280	290	R770
-05	.212 (0.096)		-	1.16 (1.73)	1.10 (1.64)	-
-06	.218 (0.099)		- (1.79)	1.20 (1.67)	1.12 -	
-07	.225 (0.102)		.333 (0.151)	1.24 (1.84)	1.14 (1.69)	1.83 (2.72)
-087	.236 (0.107)		-	1.30 (1.93)	1.16 (1.73)	-
-10	.247 (0.112)		.346 (0.157)	1.36 (2.02)	1.20 (1.78)	1.90 (2.83)
-11	.254 (0.115)		.359 (0.163)	1.40 (2.08)	1.22 (1.81)	1.98 (2.94)
-112	.262 (0.119)		-	1.44 (2.15)	1.24 (1.84)	-
-12	.269 (0.122)		.370 (0.168)	1.48 (2.20)	1.26 (1.87)	2.04 (3.03)
-137	.280 (0.127)		-	1.54 (2.29)	1.28 (1.91)	-
-15	.291 (0.132)		.390 (0.177)	1.60 (2.38)	1.32 (1.96)	2.14 (3.19)
-162	.298 (0.135)		-	1.64 (2.44)	1.34 (1.99)	-
-17	.306 (0.139)		.415 (0.188)	1.69 (2.51)	1.36 (2.02)	2.28 (3.39)
-18	.313 (0.142)		-	1.72 (2.56)	1.38 (2.05)	-
-187	.324 (0.147)		-	1.78 (2.65)	1.40 (2.09)	-
-20	.335 (0.152)		.439 (0.199)	1.84 (2.74)	1.44 (2.14)	2.41 (3.59)
-212	.350 (0.159)		-	1.93 (2.87)	1.48 (2.20)	-
-23	.357 (0.162)		-	1.96 (2.92)	1.49 (2.22)	-
-237	.373 (0.169)		-	2.05 (3.05)	1.54 (2.29)	-
-25	.379 (0.172)		.494 (0.224)	2.08 (3.10)	1.56 (2.32)	2.72 (4.04)
-262	.390 (0.177)		-	2.14 (3.19)	1.59 (2.36)	-
-28	.401 (0.182)		-	2.20 (3.28)	1.62 (2.41)	-
-29	.412 (0.187)		-	2.26 (3.37)	1.65 (2.45)	-
-30	.423 (0.192)		.542 (0.246)	2.33 (3.46)	1.68 (2.50)	2.98 (4.43)
-312	.439 (0.199)		-	2.41 (3.59)	1.72 (2.56)	-
-325	.441 (0.204)		-	2.47 (3.68)	1.75 (2.60)	-
-337	.461 (0.209)		-	2.53 (3.77)	1.78 (2.65)	-
-350	.472 (0.214)		-	2.59 (3.86)	1.81 (2.69)	-
-362	.483 (0.219)		-	2.65 (3.95)	1.84 (2.74)	-
-375	.494 (0.224)		-	2.72 (4.04)	1.88 (2.79)	-
-387	.503 (0.228)		-	2.76 (4.11)	1.90 (2.82)	-
-400	.512 (0.232)		-	2.81 (4.18)	1.92 (2.86)	-

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
- Weight data tolerance: +/- 5%
- ▶ Design, Chapter 1

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)



## Guide Troughs

Guide troughs are used with applications where the upper run of the Energy 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

	$B_{Ri}$	Installation Part No.
-05	3.15 (78)	93-50-200
-06	3.86 (96)	93-50-225
-07	4.13 (103)	93-50-225
-087	4.61 (115)	93-50-225
-10	5.12 (128)	93-50-250
-11	5.43 (136)	93-50-250
-112	5.59 (141)	93-50-250
-12	6.10 (153)	93-50-275
-137	6.57 (166)	93-50-275
-15	7.09 (178)	93-50-300
-162	7.56 (191)	93-50-300
-17	7.80 (196)	93-50-325
-18	8.07 (203)	93-50-325
-187	8.54 (216)	93-50-325
-20	9.06 (228)	93-50-350
-212	9.53 (241)	93-50-350
-23	10.04 (253)	93-50-375
-237	10.51 (266)	93-50-375
-25	11.02 (278)	93-50-400
-262	11.50 (291)	93-50-400
-28	12.01 (303)	93-50-425
-29	12.48 (316)	93-50-425
-30	12.99 (328)	93-50-450
-312	13.46 (341)	93-50-450
-325	13.98 (353)	93-50-475
-337	14.45 (366)	93-50-475
-350	14.96 (378)	93-50-500
-362	15.43 (391)	93-50-500
-375	15.94 (403)	93-50-525
-387	16.42 (416)	93-50-525
-400	16.93 (428)	93-50-550



- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

\*Specialized guide trough available upon request

Standard length profile rail



igus® Energy Chain System®

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

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QuickSpec: <http://www.igus.com/qs/echain.asp>