

Price Index


Series 045

Special Features / Options

 IPA Qualification Certificate:
Cleanroom test upon request

 ESD Classification:
Electrically conductive
ESD/ATEX version upon request

 Flammability Class
VDE 0304 IIC UL94 HB

Assembly Tips


Easy to assemble and disassemble

Usage Guidelines


- If very quiet operation is required
- Aesthetic design
- If excellent service life is required
- If cost is a factor
- If small bending radii are required



- If snap-open links are required
➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
➤ **Series E06 E-Z Chain**
- If extra rigidity is required
➤ **Series 06 E2 Micro**

Features & Benefits

- 1 Small pitch for very quiet operation
- 2 Very lightweight - ideal for low inertia applications
- 3 Dirt-repellant exterior
- 4 One-piece, non snap-open Energy Chain®


 Series 046 with full-width shelving
available for the following:

046-16-018

046-16-028

046-16-038

Width Bi: .63" (16 mm)

Radii R: (018), (028), (038)


[energy chain® configurator](#) ▶

Order Example: Complete Energy Chain®

Please indicate chain length or number of links. Example:

3.28 ft (1 m) 045-20-038-0



Energy Chain®

1 Set 0450-20-12



Mounting Bracket

Energy Chain System® E2 Micro Series 045

Installation Dimensions

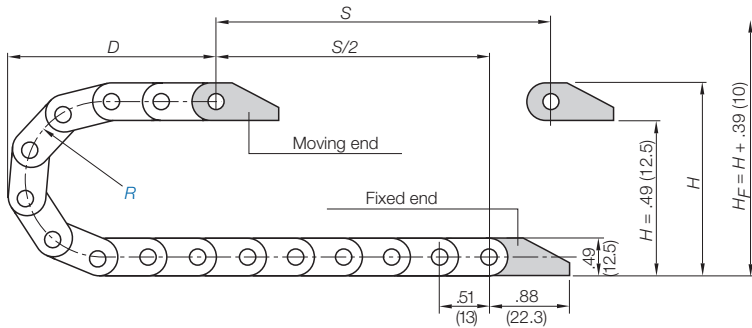
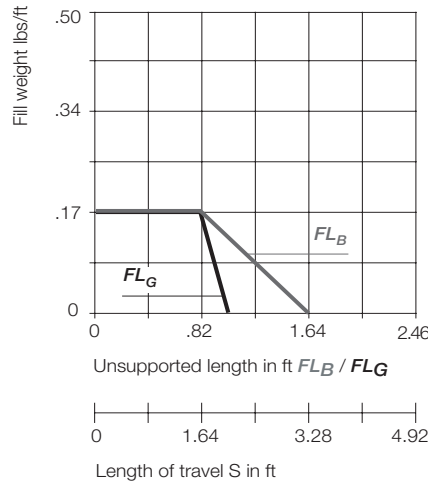
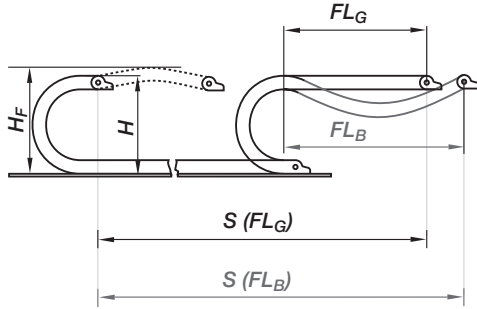
energy chain® configurator



045

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 = .51" (13 mm)
 Links per ft (m) = 23.47 (77)
 For center mount applications:
 Chain length = $S/2 + K$

The required clearance height: $H_f = H + .39$ in. (10 mm) (with .13 lbs/ft (0.2 kg/m) fill weight). Please consult igus® if space is particularly restricted.

R	.71 (018)	1.10 (028)	1.50 (038)
H	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
D	1.73 (44)	2.13 (54)	2.52 (64)
K	3.35 (85)	4.53 (115)	5.91 (150)

Short Travels - Unsupported



Unsupported Energy 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 Energy Chain® radius in final position
- $K = \pi \cdot R + \text{safety buffer}$
- H_f = Required clearance height

*If the mounting bracket location is set lower



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



Speed / acceleration FL_G	max. 65.6 ft/s (20 m/s) / max. 656 ft/s ² (200 m/s ²)
Speed / acceleration FL_B	max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s ² (6 m/s ²)
Gliding speed / acceleration (maximum)	max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s ² (10 m/s ²)
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

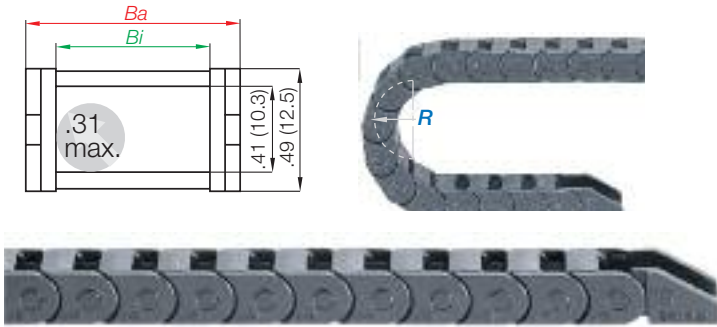
Chapter 1

igus® Energy Chain System®

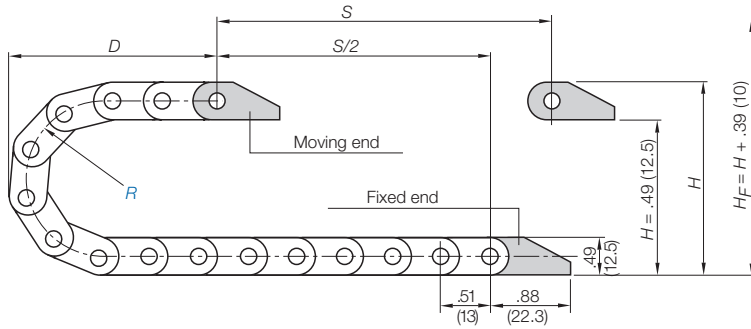
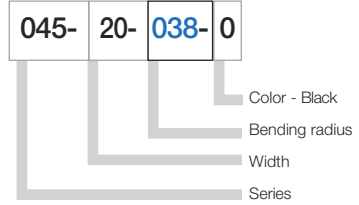
Telephone 1-800-521-2747
Fax 1-401-438-7270

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

Series 045 - Energy Chain® non snap-open



Part Number Structure



Supplement part number with required radius. Example: 045-20-**038**-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.47 (77)

Part Number		<i>Bi</i> in. (mm)	<i>Ba</i> in. (mm)	Weight lbs/ft (kg/m)
045-06-	<input type="text"/> -0	.24 (6)	.47 (12)	≈ 0.060 (0.09)
045-10-	<input type="text"/> -0	.39 (10)	.63 (16)	≈ 0.067 (0.10)
045-16-	<input type="text"/> -0	.63 (16)	.87 (22)	≈ 0.074 (0.11)
045-20-	<input type="text"/> -0	.79 (20)	1.02 (26)	≈ 0.087 (0.13)
045-30-	<input type="text"/> -0	1.18 (30)	1.42 (36)	≈ 0.108 (0.16)
045-64-	<input type="text"/> -0	2.52 (64)	2.76 (70)	≈ 0.128 (0.19)

Choose from the radii below for all of the above sizes

Radius (mm) Example: 045-20-**038**-0

	018	028	038
<i>R</i>	.71 (018)	1.10 (028)	1.50 (038)
<i>H</i>	1.91 (48.5)	2.70 (68.5)	3.48 (88.5)
<i>D</i>	1.73 (44)	2.13 (54)	2.52 (64)
<i>K</i>	3.35 (85)	4.53 (115)	5.91 (150)

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

Energy Chain System® E2 Micro Series 045 Mounting Brackets

energy chain® configurator ▶

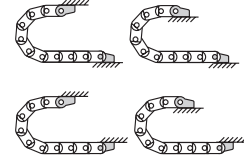
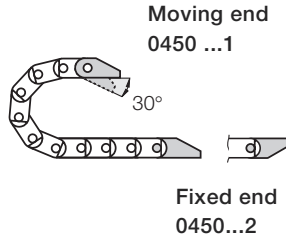


045



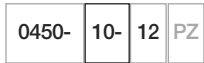
Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible



Possible installation configurations -

Part Number Structure



- With tiewrap plates
- Complete Set
- Width
- Mounting brackets for selected chain type

Full set, for both ends:

0450-10-12-PZ

Full set, each part with pin/bore + tiewrap plate

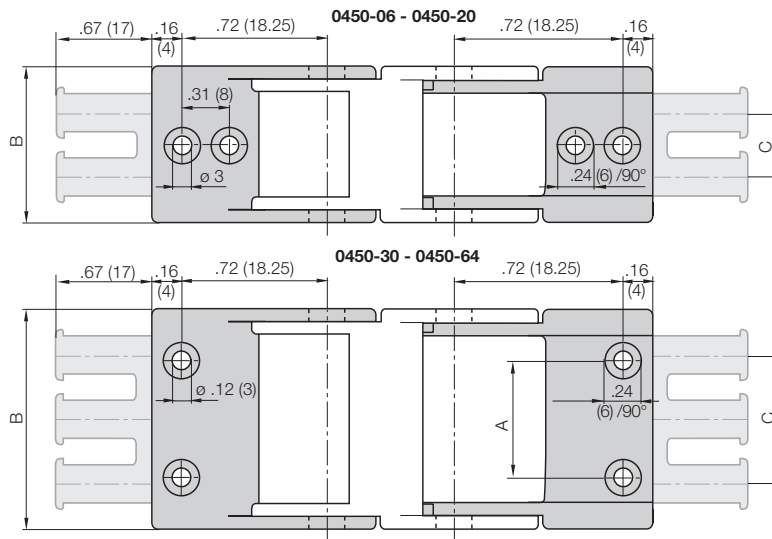
Single-part order:

0450-10-1-PZ

Mounting bracket with bore + tiewrap plate

0450-10-2-PZ

Mounting bracket with pin + tiewrap plate



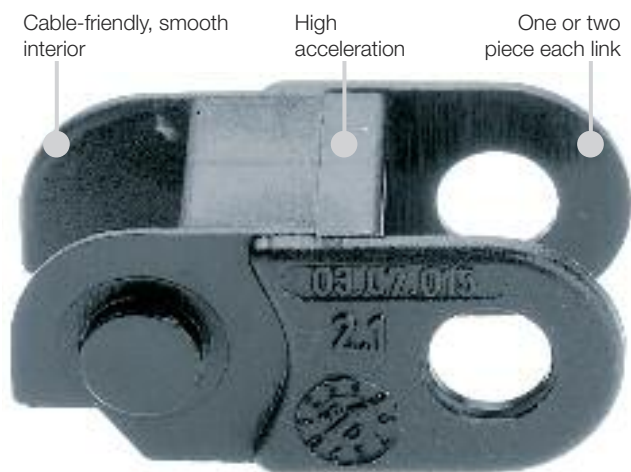
Chain Type	Part No. Full set without Tiewrap Plate	Part No. Full Set with Tiewrap Plate	Dimension A		Dimensions B		Dimensions C		Number of Teeth
			in.	(mm)	in.	(mm)	in.	(mm)	
045-06	0450-06-12	0450-06-12PZ	—	—	.47	(12)	—	—	1
045-10	0450-10-12	0450-10-12PZ	—	—	.63	(16)	—	—	1
045-16	0450-16-12	0450-16-12PZ	—	—	.87	(22)	.39	(10)	2
045-20	0450-20-12	0450-20-12PZ	—	—	1.02	(26)	.39	(10)	2
045-30	0450-30-12	0450-30-12PZ	.87	(22)	1.42	(36)	.79	(20)	3
045-64	0450-64-12	0450-64-12PZ	2.20	(56)	2.76	(70)	1.97	(50)	6

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



Energy Chain System® E2 Micro Selection Guide

energy chain® configurator 



Cable-friendly, smooth interior

High acceleration

One or two piece each link

- One-piece Energy Chains®, from inner height of .20 (5 mm)
- High torsional rigidity
- Smallest inner heights and bending radii
- Mounting brackets with optional strain relief
- Small pitch for smooth running
- Cable-friendly, smooth interior
- Low weight
- Large pins for longer life
- Space-saving ratio of inner-to-outer dimensions
- To find more technical data about the material, chemical resistance and temperatures ► [Design, Chapter 1](#)

Series	Inner height <i>hi</i>		Inner width <i>Bi</i>		Outer width <i>Ba</i>		Outer height <i>ha</i>		Bending radius <i>R</i>	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
03	.20	(5)	.20-.39	(5-10)	.34-.54	(8.7-13.7)	.31	(8)	.39-1.10	(10-28)
04	.28	(7)	.28-1.18	(7-30)	.47-1.38	(12-35)	.39	(10)	.59-1.89	(15-48)
045	.41	(10.3)	.24-2.52	(6-64)	.47-2.76	(12-70)	.49	(12.5)	.71-1.50	(18-38)
05	.39	(10)	.24-2.52	(6-64)	.39-2.68	(10-68)	.47	(12)	.71-1.50	(18-38)
06	.41	(10.5)	.24-2.52	(6-64)	.49-2.80	(12.5-71)	.59	(15)	.71-1.50	(18-38)
08	.59	(15)	.39-1.97	(10-50)	.72-2.29	(18.2-58.2)	.76	(19.3)	1.10-1.89	(28-48)

Energy Chain System® E2 Micro Assembly Instructions

Assembling | E2 micro



Twist and click

Separating | E2 micro



Twist and separate

Speciality | E2 micro



igus® micro Energy Chains® - for smallest bending radii with Chainflex® CF98 and CF99 - 4 x d!