igus® design guide

https://www.igus.com/cable-carriers

6 Tips for the correct use of guide troughs

Contents

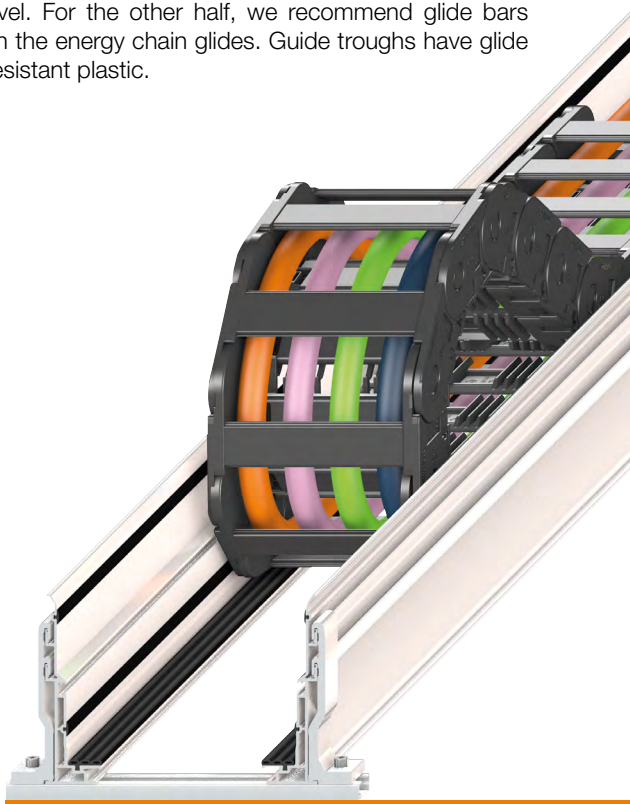
Introduction

Guide troughs are used for longer travel lengths, starting from 5m-12m depending on the chain type. They allow smooth, low-friction operation of igus® energy chains and energy tubes. If the fixed end is at the center of the travel, the energy chain glides on itself for half the travel. For the other half, we recommend glide bars installed in the trough, on which the energy chain glides. Guide troughs have glide bars made of highly abrasion-resistant plastic.

Super-aluminum trough Basic

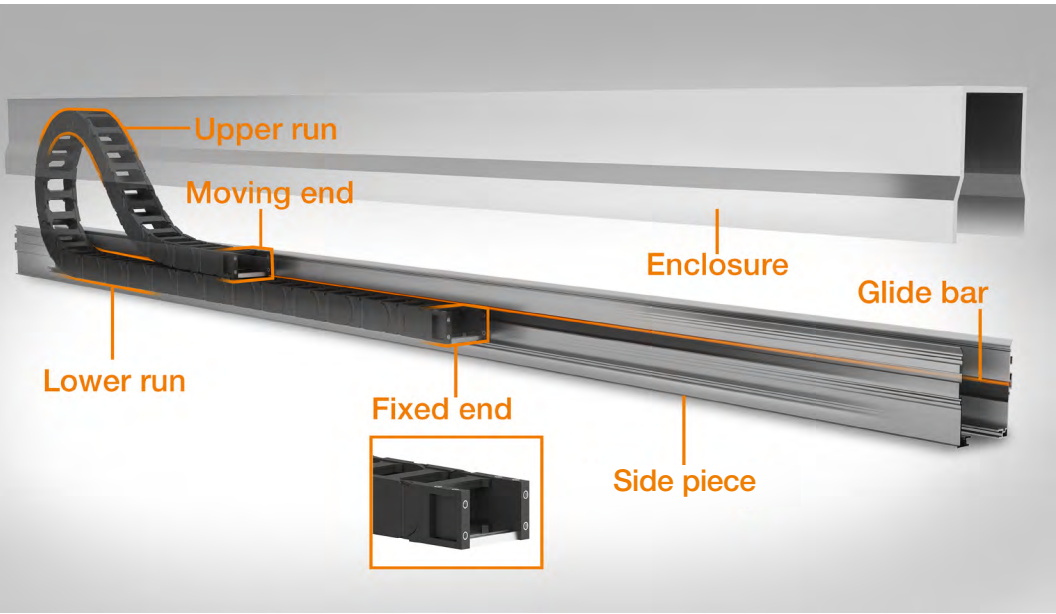
Super-aluminum trough Heavy-Duty

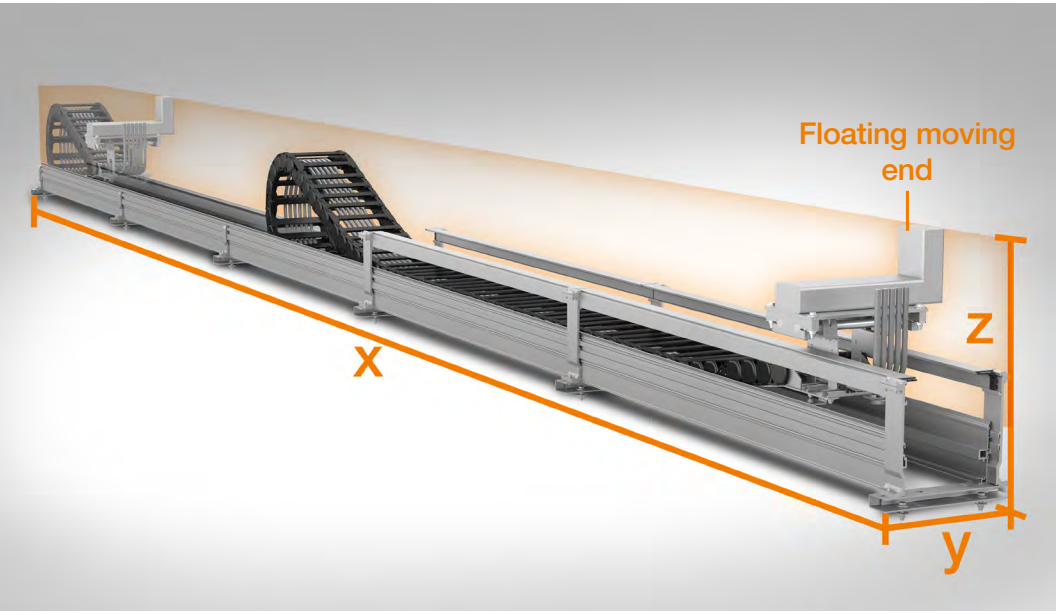
Steel trough



Standard guide troughs can be supplied in steel or aluminum. The latter, i.e. "Super-aluminum troughs" are the igus® standard. This modular system is available in two versions - Basic and Heavy-Duty.

Definition of “Super-aluminum troughs”

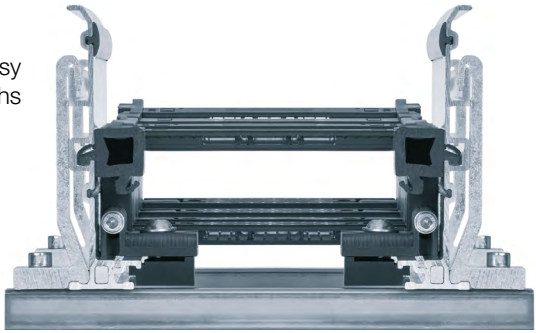


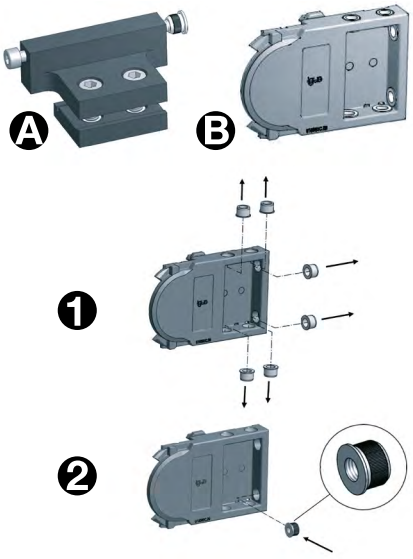


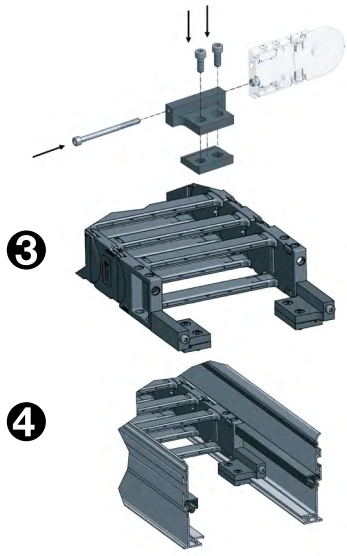
Fixed end module for Super-aluminum troughs

With the fixed end module, a fast and easy mounting on the super-aluminum troughs is possible.

- Fast attachment of the e-chain® via clamps on the aluminum trough
- The mounting point of the e-chain® can be changed easily
- No drilling required







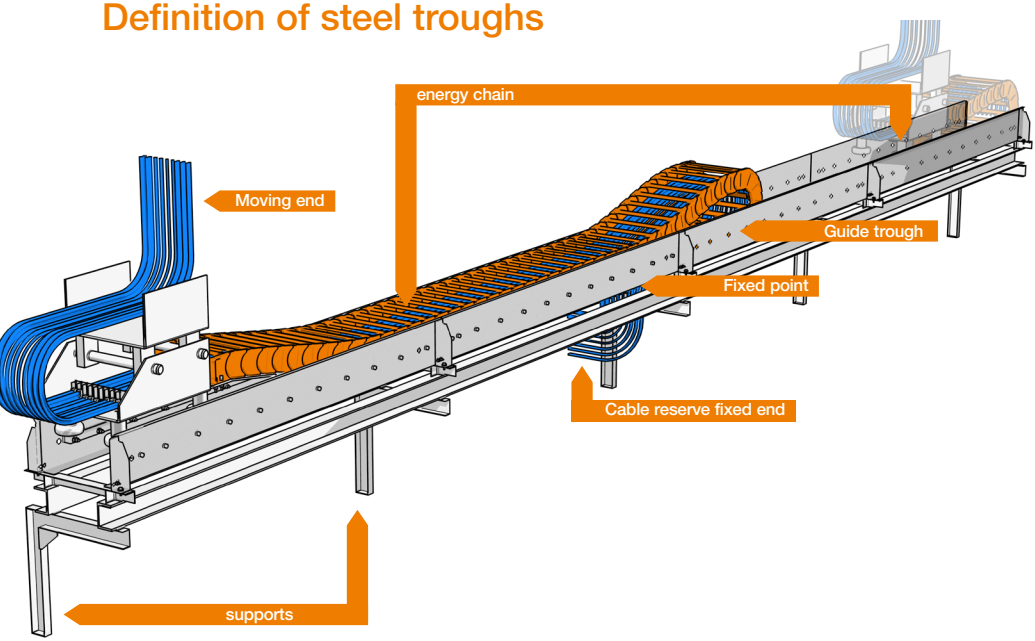
Installation:

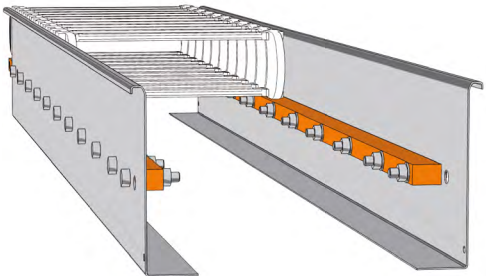
A) Fixed end module
B) KMA mounting bracket

1. Remove the pre-assembled metal bushings
2. Insert the threaded bushings
3. Install the fixed end module
4. Assemble on super-aluminum troughs

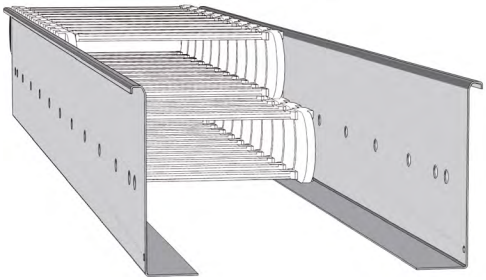
www.igus.com/cable-carriers/energy-chains-guide-trough

Definition of steel troughs





Guide trough bolted to glide bar



Guide trough without glide bar

Fixed end module for steel trough

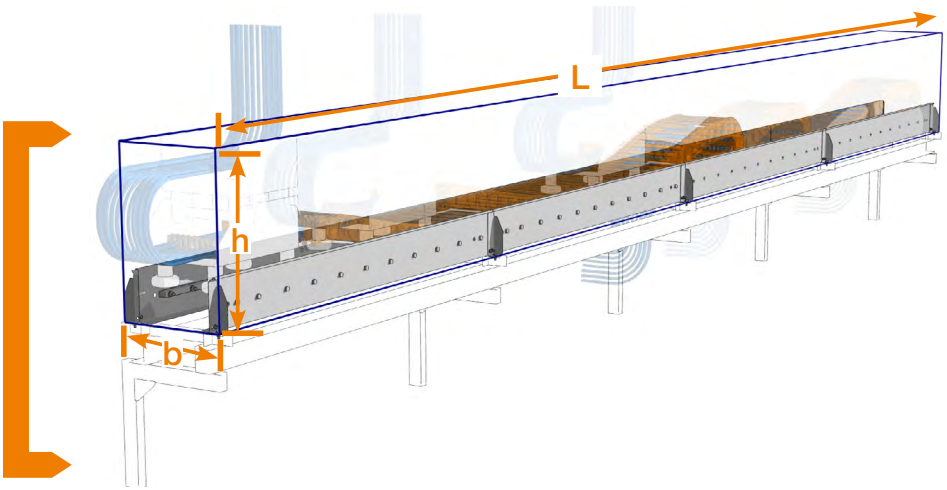
When installing the mounting brackets at the fixed end, the steel trough normally needs to be drilled to match the mounting bracket hole pattern. With the new fixed end module, the holes are pre-fabricated so that the 2,000mm long component can be used for center-fed, end-fed and even for reverse-fed applications.

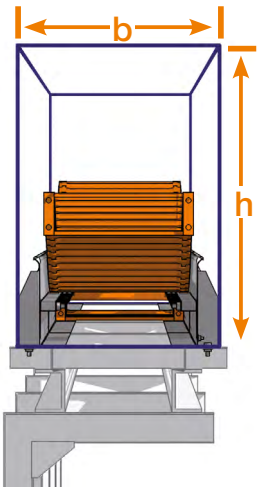
1. Fast fixation of mounting brackets thanks to pre-fabricated holes
2. Fast installation of additional C-profiles for strain relief
3. Fast screw connection of glide bars

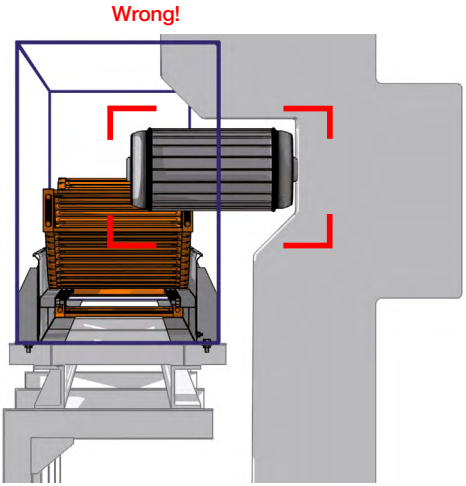
Industries: power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants etc.

Tip 1: Check installation space

The energy chain must be able to move freely and without interference along the entire travel distance. There mustn't be any interfering objects in the travel range of the energy chain.



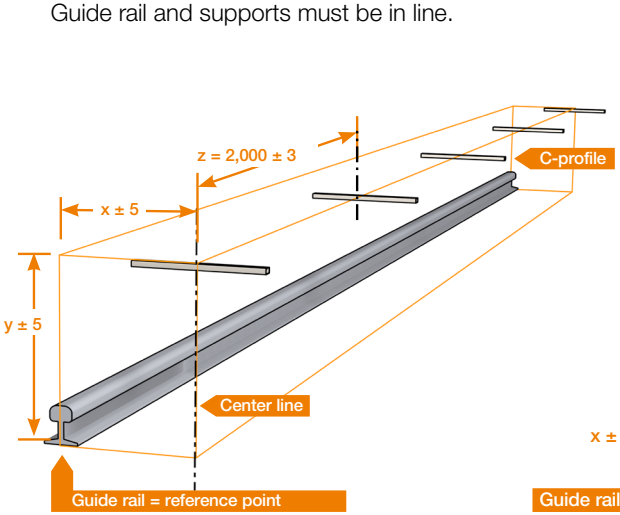


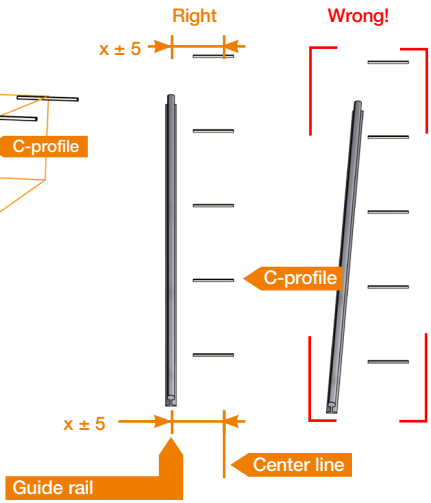


www.igus.com/cable-carriers/guide-troughs

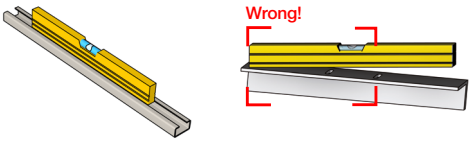
Tip 2: Supports for the guide trough

Guide rail and supports must be in line.

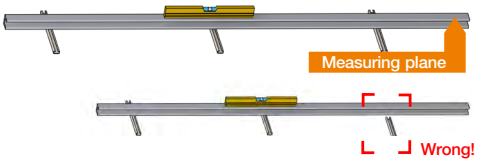




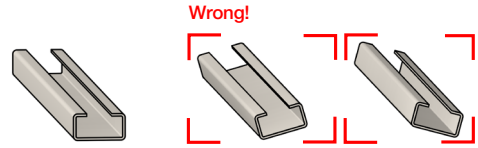
Supports must be aligned and perpendicular



Align supports

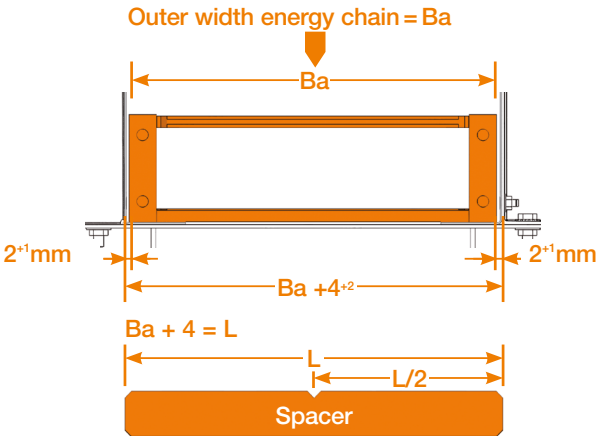


Align C-profile

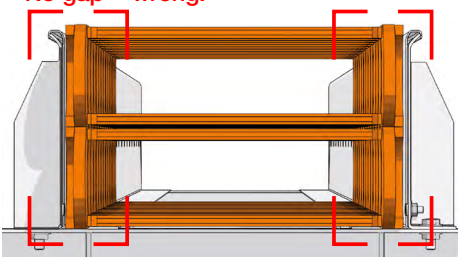


Tip 3: Installation of the guide

Prepare a spacer to adjust the inside width of the trough.

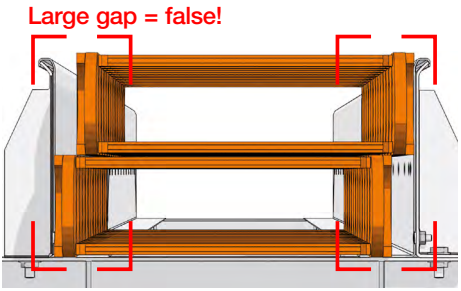


No gap = wrong!



No gap = abrasion on chain links. energy chain is blocked.

Large gap = false!

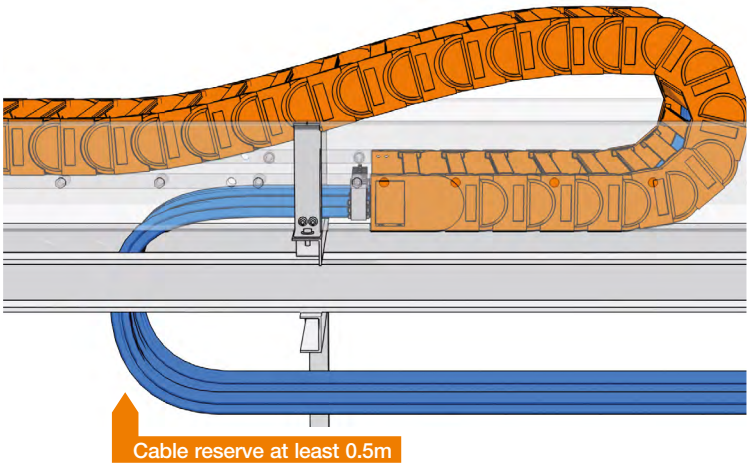


Large gap = abrasion on chain links and crossbars.

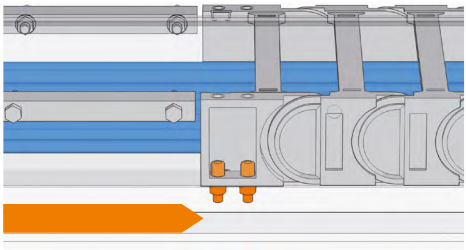
www.igus.com/cable-carriers/guide-troughs

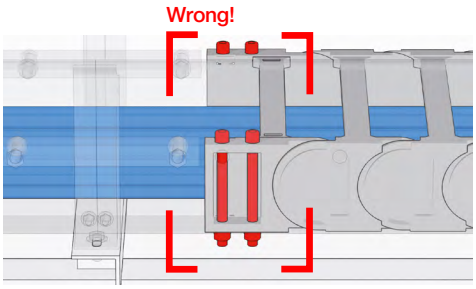
Tip 4: Fastening of the energy chain

Leave a cable reserve of at least 0.5m at the fixed end and at the moving end to align the cables.



Check if the fixed end is in the right position and secure everything with screws (Din 912/EN ISO 7462)

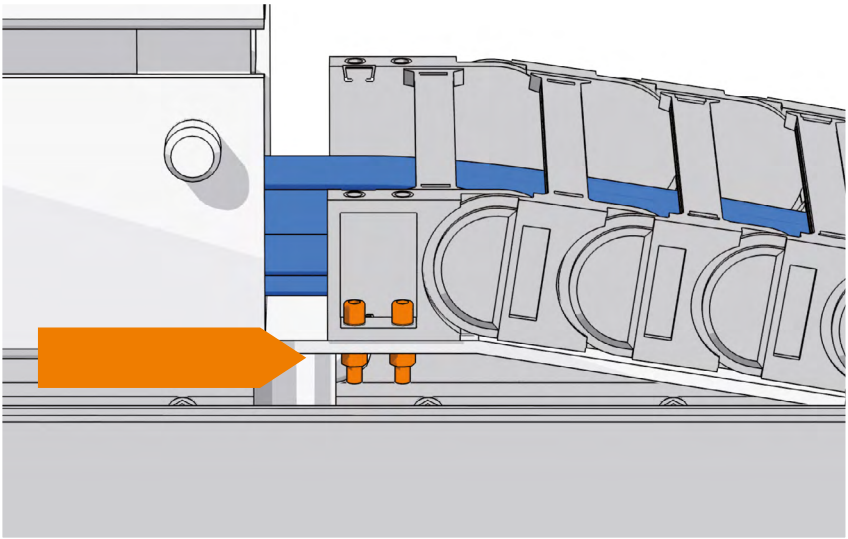


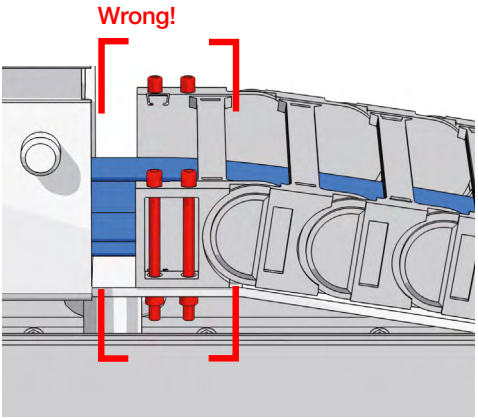


Make sure that the bushings have been removed from the mounting bracket on the sliding side of the energy chain.

Tip 5: Install moving end

Move the chain radius to the moving end arm and fasten it with hexagon socket screws (DIN 912/EN ISO 7462).

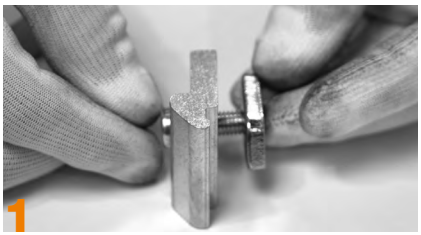




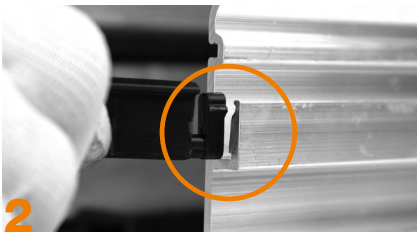
www.igus.com/cable-carriers/
resources/e-chain-designing-calculation

Tip 6a: Super-aluminum trough installation

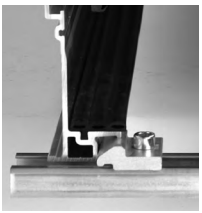
Pre-assembly of the basic trough system as standard!

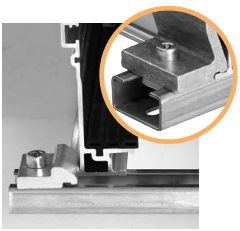


Pre-assemble bottom clamp and screw set.



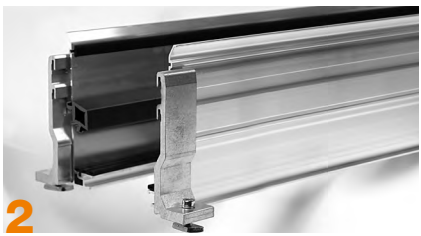
Clip the basic connector into the slot from both sides.





Basic installation set fits inside (3a) or outside (3b). Please check if the strength of the attachment is sufficient. Make sure that half of the installation sets protrude from the trough and that the sliding nut has been inserted correctly into the C-profile.

Pre-assembly of the heavy-duty trough system (alternative)

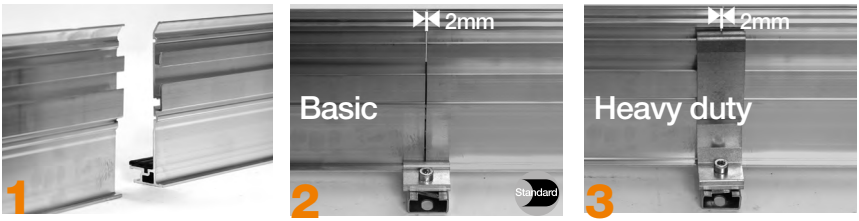


1) Pre-assemble bottom clamp and screw set.
2) Attach heavy-duty installation set on the outside. Make sure that half of the installation sets protrude from the trough.

Assembly of the rubber noise damping profile (optional)

The rubber noise damping profile is cut to the length of the trough (standard 2m) and pressed into the groove shown by hand. (Picture shows the left side. Right side is mirror-inverted. To be repeated for all plain trough sections)

Connecting and securing the trough sections



1) Join both trough side parts by pushing them together (but leave at least +2mm clearance!).
1) + 3) Ensure each installation set is fitted evenly across the trough sections.

Adjust clearance, align trough sections

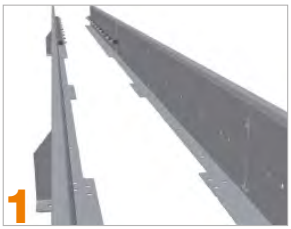
1. Set the required minimum clearance "e-chain/trough" to 2mm from both sides. Please note that when the glide bar has been installed, the inner width of the trough decreases by 2mm per side (see detail).
2. Test whether the e-chain runs smoothly and reliably in the guide trough.
3. After you have set the minimum clearance and all trough segments are aligned, tighten all screwed connections of the trough. Pay attention to the correct installation direction of the sliding nut (see detail). Tightening torques for fixing screws of the installation sets: M6: 10Nm/M8: 23Nm

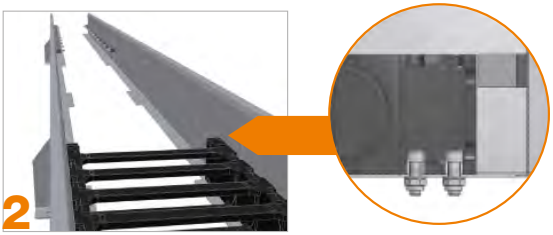
Super-aluminum guide trough assembly instructions:
www.igus.com/cable-carriers/special-solutions/energy-chains-super-alu-guide-trough-assembly

Tip 6b: Installation of steel guide troughs

Parallel to a chain

Connecting and securing the trough sections





Adjust clearance, align trough sections