igus® Energy Chain System® - Installation Guide

- Support structure
- Energy Chain®
- Cable reserve
- Guide trough
- Fixed point
- Moving end
- Support structure
- Guide trough
- Fixed point
- Moving end
Check Installation Space

Space requirement for Energy Chain System®

Energy Chain® has to move freely along the entire travel length. Other components or machine parts must not obstruct the operation area!

Wrong!

Use igus® System Drawings

Installation has to be done according to igus® system drawings.
Support Structure for Guide Trough

Machine rail and support structure have to be aligned.

L-profile
oblong hole
drill pattern c-profile

x ± 5
y ± 5
z = 2000 ± 3

Center line
Machine rail = reference

Support structure has to be aligned and level.

Level the support structure
Level the L-profile

Check the support structure before trough installation. Any adjustments or corrections need to be made before next installation step.
Guide Trough Installation

Prepare a spacer tool, to adjust the inner trough width.

Energy Chain® outer width = $Ba$

No gap = wrong!
Big gap = wrong!

Big gap causes wear on the chain links and crossbar.

No gap causes wear on chain links and blocks the Energy Chain®.

Prepare a spacer tool, to adjust the inner trough width.

Energy Chain® outer width = $Ba$

No gap = wrong!
Big gap = wrong!

Big gap causes wear on the chain links and crossbar.

Prepare a spacer tool, to adjust the inner trough width.

Energy Chain® outer width = $Ba$

No gap = wrong!
Big gap = wrong!

Big gap causes wear on the chain links and crossbar.
Guide Trough Installation

Important: Guiding trough has to be parallel with the machine rail, both horizontally and vertically.

1. Mount Profile Rail
2. Preassemble installation angles
3. Install alignment wire parallel with the machine rail

3. Align trough parts and angles with steel wire and spacer tool

Fix trough parts
Use spacer tool

Use torque wrench to tighten screws

<table>
<thead>
<tr>
<th>Thread size</th>
<th>Material</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6</td>
<td>8.8/A2/A4-70</td>
<td>10 Nm</td>
</tr>
<tr>
<td>M8</td>
<td>8.8/A2/A4-70</td>
<td>23 Nm</td>
</tr>
<tr>
<td>M10</td>
<td>8.8/A2/A4-70</td>
<td>35 Nm</td>
</tr>
<tr>
<td>M12</td>
<td>8.8/A2/A4-70</td>
<td>75 Nm</td>
</tr>
<tr>
<td>fastening of plastic slide bar</td>
<td>8.8/A2/A4-70</td>
<td>7 Nm</td>
</tr>
</tbody>
</table>

Check trough alignment and torque. Make all adjustments before next installation step.
Energy Chain® Pre-Assembly

Check part no. on Energy Chain®, before assembly. For example: 5050C- 4040C- Series

Chain s number 5050C-30-300-0

Lay the fixed point (part 3) into the trough and assemble parts until you reach the mounting end.

Fixed point (KMA bracket attached)  
Energy Chain® parts (meter sections)  
Moving end (KMA attached)

Signed with yellow tag  
Three links turned
Energy Chain® Pre-Assembly

Make sure the fixed-point position is according to igus® drawings, relative to the travel stroke.
Lay the preassembled Energy Chain® into the guiding tough.

For details see igus® long travel drawing.

Check fixed point position relative to the travel stroke.
Pull Cables Into Energy Chain®

Make sure cable arrangement is according to igus® interior shelving drawing.

Installation methods:
Pull cables into Energy Chain®

Alternative installation method:
Open the crossbars, lay the cables in the Energy Chain® and close it

Corkscrew or Cable damage

Correct!
Wrong!

All crossbars snapped in? Any broken parts?

Correct!
Wrong!

Check the interior separation of the Energy Chain®. Are all separators plumb and tight?

Correct!
Wrong!
Attach Energy Chain®

Leave a spare cable loop for cable adjustment at fixed point and moving end.

Max. .12” (3mm)

Spare cable min
1.64 ft. (0.5m)

Make sure that the fixed point is in the correct position and affix it with Allen screws (DIN 912 / EN ISO 7462).

Wrong!

Level Moving End

Moving end has to be installed according to system drawing. Support plate has to be level! Mounting height according to igus® drawing.

for E4-80/5050C h= 9.52” + .39” (242mm +10)

for E4-56/4040C/400 h= 10.47” + .39” (266mm +10)
Install moving end

Flip chain radius, move it to the moving arm and fix it with Allen screws (DIN 912 / EN ISO 7462).

Cable adjustment

Correct cable adjustment

Wrong!

- Cable too tight
- Cable too loose

Wrong!
Install Strain Relief

Install strain relief clamps at moving end and fixed point.

Swing strain relief clamps in the profile-rail and tighten the screw.

Are screws in place and fixed with torque wrench?

Are moving-end height and Energy Chain® fixation correct?

Are there any obstructions or tools in the guide trough?

Are all strain relief clamps installed at both ends?

Is the cable arrangement correct?

Move the Energy Chain® slowly and carefully to both end positions and check the cable arrangement/position. Double check after a few test cycles.

Check height

wrong!