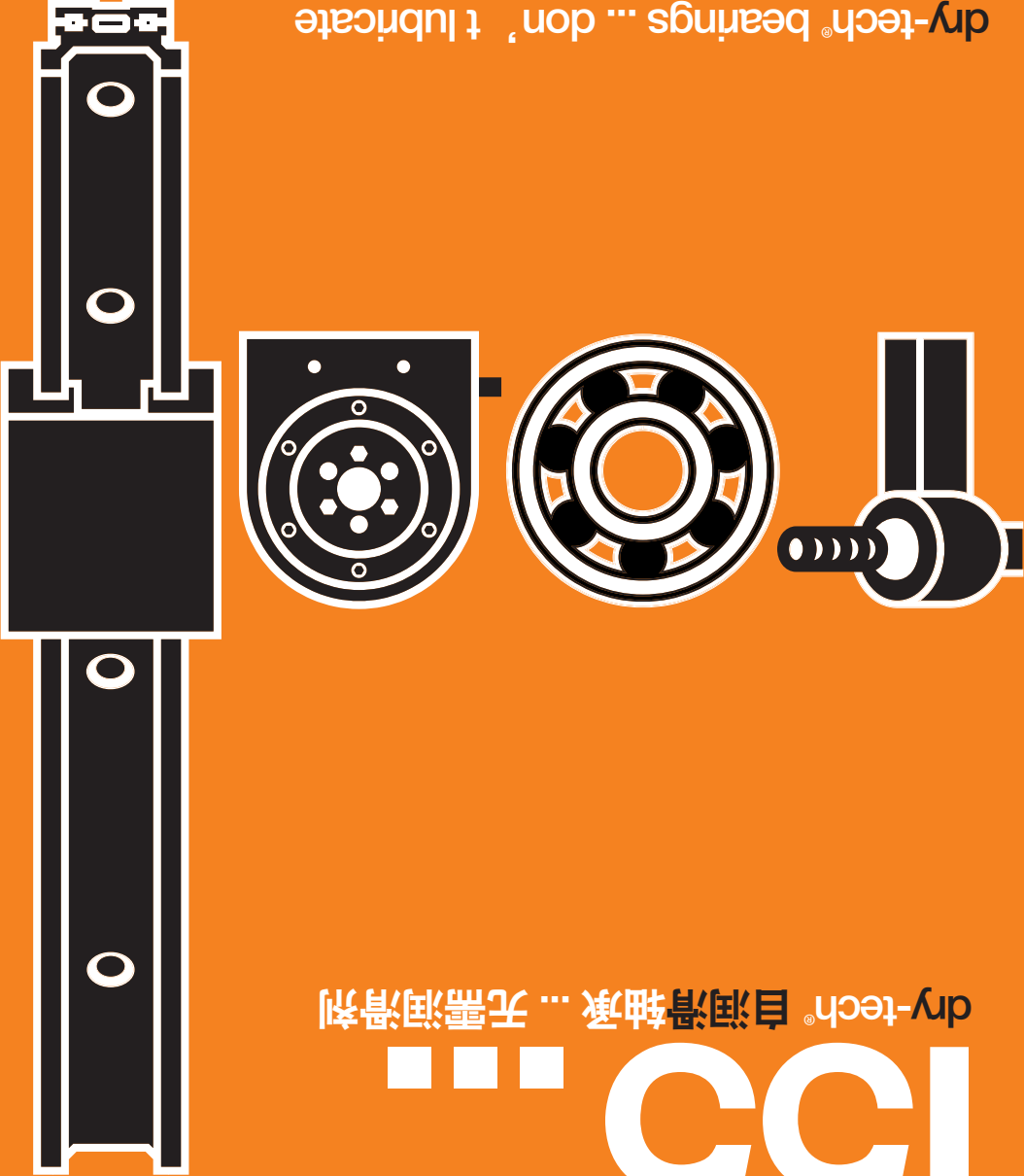


# 新品 2015

dry-tech® bearings ... don't lubricate



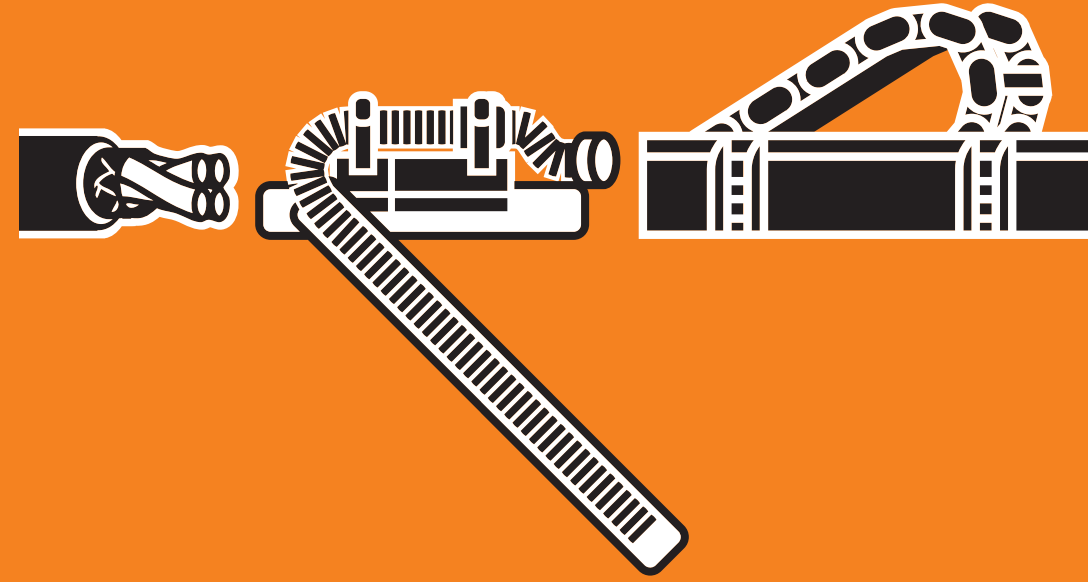
dry-tech® 自润滑轴承 ... 无需润滑剂

# 155

155 款 2015 新品 ... motion plastics® ... 拖链系统 ... 自润滑轴承 ... igus

# 155 ...

拖链系统 ... 移动供电更便捷  
Chainflex® 高柔性电缆 ... 经测试!



the-chain ... moving energy made easy  
chainflex® cables works ... tested!

# 新品 2015

igus ... motion plastics®

## ▶▶ ... 长行程

guidefast



起重机横梁支架模块, 新尺寸 Crane girder trough module in more widths

▶ 页码 page 44

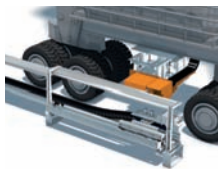
autoglide E2/000



无需导向槽拖链更多宽度选择 Save guide troughs in more widths

▶ 页码 page 46

e-rover

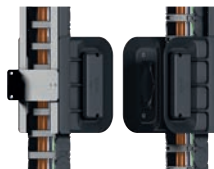


RTGs 上高速传输信号 Coupling on RTGs for high-speed data

▶ 页码 page 48

## ▶▶ ... 垂直应用

guidelok slimline P



向更高处的能量传输 Simple guide energy into heights

▶ 页码 page 52

## ▶▶ ... 应用广泛

magsnap



磁性, 节省导向槽 Fixed with magnets - save troughs

▶ 页码 page 54

E4.64L



耐灰尘, 轻, 快速运行 dust resistant, large, lightweight and dynamic

▶ 页码 page 58

R2.75



经济型, 大型, 新宽度 cost-effective, large and tight, new widths

▶ 页码 page 60

4240AX



外侧限位块, 灰尘不会进入内部 stop dogs outside, no dirt inside

▶ 页码 page 62

## ▶▶ 特殊应用

E4.1 Light



轻巧, 快速运行, 新宽度 lightweight, dynamic, new widths

▶ 页码 page 64

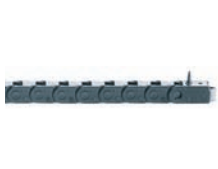
E6.1



无尘室, 静音, 新尺寸 cleanroom, silent, new sizes

▶ 页码 page 66

031



最小的拖链 smallest e-chain® of the world

▶ 页码 page 68

e-cord micro



双向导向 guide capillar hose double

▶ 页码 page 72

# igus...2015 新品 ...拖链系统...

... 移动供电更便捷

## ▶▶ ... 特殊应用

减振拖链

EMA

E4.1 分隔片

分隔片



抗振动 against high vibrations



预防意外停机 alert if the chain is partially broken



简单装填的分隔片 dividable separators for easy filling



高保持力的分隔片 notch separator with highest retention forces

▶ 页码 page 74

▶ 页码 page 76

▶ 页码 page 80

▶ 页码 page 81

## ▶▶ ... 拖链附件 ...

去应力元件

E4.112 扩展

在线工具

拖链专家系统



简单固定电缆 easy fixation for cables



增加 50% 负载和宽度 50% more loads and widths



装配成本计算 Kosten für Montage vor Ort berechnen



拖链在线配置 Lebensdauerberechnung & Konfiguration

▶ 页码 page 82

▶ 页码 page 83

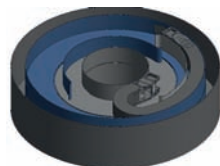
▶ 页码 page 86

▶ 页码 page 87

## ▶▶ ... 拖链在线工具 ...

3D-CAD... 1000° 旋转

iPad 应用



旋转 > 1000° 的 3D-CAD 模型 rotary movement > 1.000° in 3D-CAD



iPad 可以安装在线工具 online tools also for the iPad

▶ 页码 page 88

▶ 页码 page 90

# igus® ... 2015 news ... the-chain ...

... moving energy made easy

## ▶▶ Chainflex® 高柔性电缆 ... Chainflex® cables ...

Chainflex® 电缆质保

CF430.D / CF440

CF220.UL.H / CF220.UL.H

CFBUS.052 CAT7



全系列 Chainflex® 电缆最高 3 年质保  
3 years of guarantee for ALL Chainflex® cables

重量减轻 40 %，适用于长行程  
Motor cables 40 % lower weight for very long travels

用于多种驱动系统的伺服混合电缆  
New Servo Hybrid cables for many drive systems

CAT7-Ethernet 电缆用于拖链  
CAT7 Ethernet cable for the e-chain®

▶ 页码 page 88

▶ 页码 page 92

▶ 页码 page 94

▶ 页码 page 96

## ▶▶ Chainflex® 高柔性电缆 ... Chainflex® cables ...

CF888 / CF898

CFLG.LB.PUR

新款控制电缆

CF885 / CF886



经济型 CAN-Bus + Profinet 电缆  
Very cost-effective CAN-Bus + Profinet cables

海工认证的光缆  
LWL with Offshore approval

大截面的控制电缆  
Large cross-sections for control cables

经济型单芯动力电缆  
Very cost-effective single core motor cables

▶ 页码 page 98

▶ 页码 page 100

▶ 页码 page 104

▶ 页码 page 110

## ▶▶ Chainflex® 高柔性电缆 ... Chainflex® cables ...

测量系统 / 伺服电缆

CFROBOT3

CF270.UL.D

CFRIP®



测量系统电缆和伺服电缆型号扩充  
Extension Measuring-system cables and servo cables

可扭转数据电缆使用寿命增加  
Twistable data cables for increased service lifes

新型伺服单芯电缆  
New Servo spindle cable

更快剥线速度  
Integrated stripping tool for further series

▶ 页码 page 112

▶ 页码 page 116

▶ 页码 page 118

▶ 页码 page 120

# igus...2015 news... 拖链系统... ... 移动供电更便捷

## ▶▶ ... readychain® ... readycable® ... 装配拖链 ... 装配电缆 ...

M12 8-Pol/12-Pol

DVI 转换 HDMI

conprotect® RJ-45

615/915 springtec



8 和 12 芯接头 8- and 12-poles in smallest spaces

视频装配电缆 Harnessed cables for video surveillance

RJ-45 坚固的保护壳 Stability and protection for RJ-45

搭配复合电缆的网络接头 Network connectors for hybrid cables

▶ 页码 page 134

▶ 页码 page 136

▶ 页码 page 137

▶ 页码 page 138

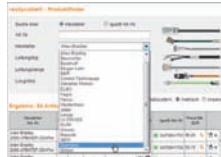
## ▶▶ ... readychain® ... readycable® ... 装配

USB 3.0 Micro B

Drive Cliq M12

Mitsubishi 和 Parker

readycable® 产品查找器



用于拖链的USB 3.0 micro B USB 3.0 B for e-chains®

用于拖链的 Drive Cliq More readymade Drive Cliq cables for e-chains®

400种新的马达控制电缆 400 new drive control cables

在线选购全球著名品牌的动力线 World-wide largest drive power range online

▶ 页码 page 140

▶ 页码 page 141

▶ 页码 page 142

▶ 页码 page 143

## ▶▶ ... readychain® ... readycable® ... 装配服务

readychain® speed 2.0

readychain® 滚轴支架

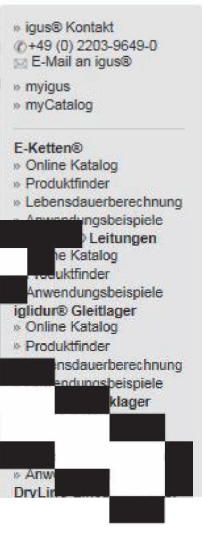
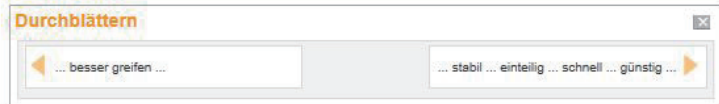


160 种电缆秒速断开, 秒速连上 Unlink and connect 160 pins in seconds

快速展开 100 m 拖链 Simple unroll 100 m

▶ 页码 page 144

▶ 页码 page 146



### Neuheiten und Programweiterungen 2014

- » Neuheiten und Programweiterungen durchblättern (PDF)
- » 27 Herbst-Neuheiten durchblättern (PDF)
- » SPS-Neuheiten durchblättern (PDF)
- » SPS-Neuheiten Broschüre bestellen

#### Direkt zu...

- » Herbstneuheiten 2014
- » e-ketten® für lange Verfahrswege
- » e-ketten® special ... Offshore, Krane, Medizin, „Tri-spool“
- » readychain®
- » iglidur® Gleitlager
- » iglidur® Halbzüge
- » drylin® Antriebstechnik ... Low Cost-Automation – funktional
- » drylin®-Lineartechnik ... Hybridlager rollen und gleiten
- » drylin® Antriebstechnik ...
- » e-ketten® für universellen Einsatz
- » 3D e-ketten® für robotics-Anwendungen
- » e-ketten® Services
- » readycable®
- » iglidur® Kolbenringe
- » xiros® Polymer-Kugellager
- » drylin® Linear-/Antriebstechnik – leichter und schneller
- » drylin® SD-Gewindetriebe ...
- » dryspin®-Technologie – effizient

- » Produktfinder
- » Produktfinder
- » Lebensdauerberechnung
- » Anwendungsbispiele
- » Leitungen
- » Online Katalog
- » Produktfinder
- » Produktfinder
- » Lebensdauerberechnung
- » Anwendungsbispiele
- » Online Katalog
- » Produktfinder
- » Produktfinder
- » DryLin®



在线产品所有 2015 新品  
[www.igus.com.cn/news](http://www.igus.com.cn/news)

Find all News and Extensions 2015  
 also online at [www.igus.eu/news](http://www.igus.eu/news)

#### 优势:

- 免费的 3D-CAD 文件
- 专家系统, 配置器, 产品查找器
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- 3D-CAD for free
- Expertsystems, configurators and productfinder
- Lifetime calculation for almost all products
- Videos, animations and more information
- Online ordering around the clock 24/7
- in many languages available

igus® 拖链系统 ...  
移动供电更便捷

拖链 ...  
... 波纹管概念 ...  
... 创新型拖链

e-chain®

... corrugated tube ideas ...

... innovative energy chain®



igus® the-chain ...  
moving energy made easy

08

### 易格斯“多用途”波纹管

The „can do more “ corrugated tube from igus®

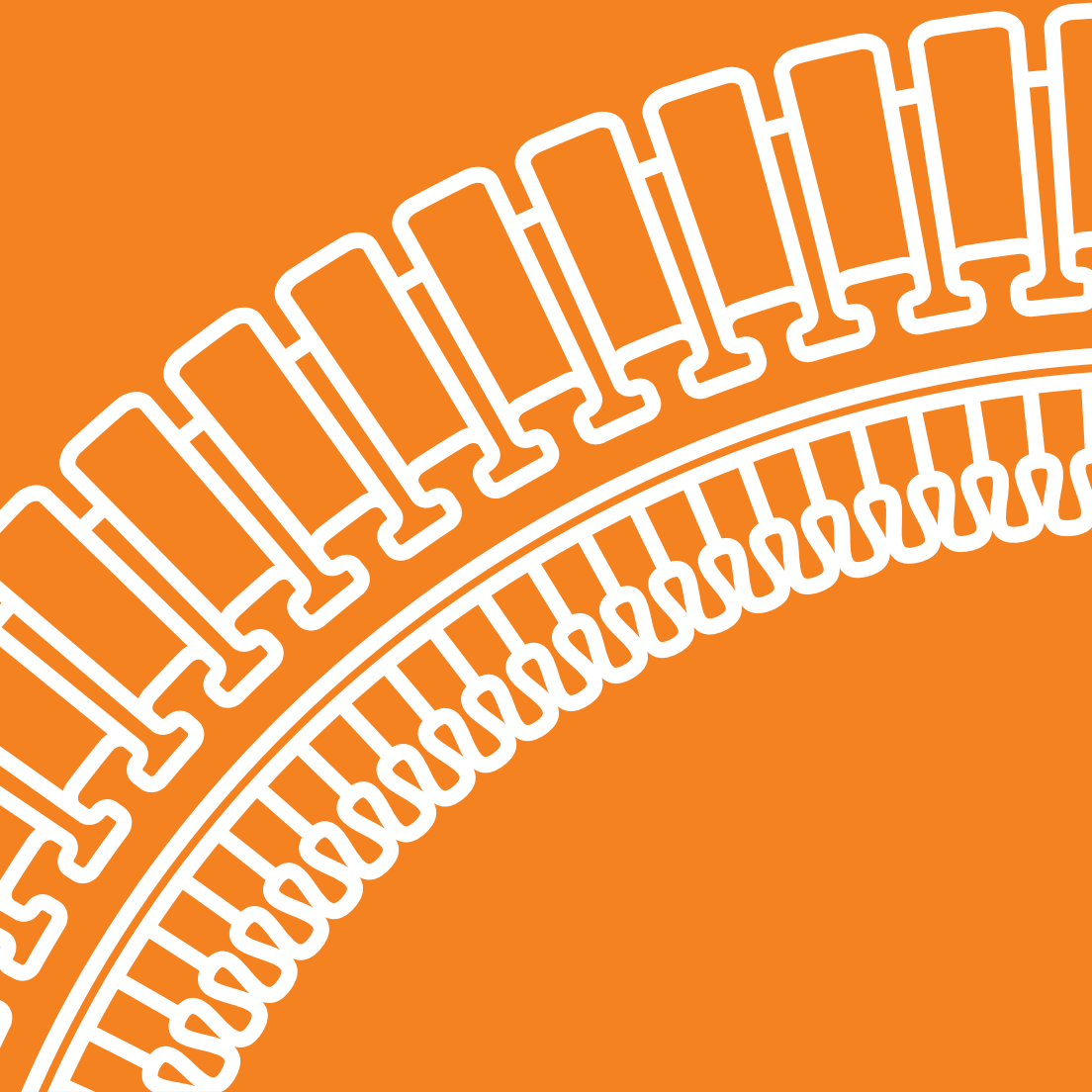
e-skin

12

### 波纹管，简易稳固

Corrugated tubes, easily stabilized

e-shell







拉链式快速打开  
zip for fast opening

试点应用产品  
Pilot product

可打开外壳  
openable  
shells

# ... 拉链式快速打开 ...

## e-skin: 创新型拖链-“多用途”波纹管

e-skin 是由上下外壳组成可以完全封闭的管子。由于采用了简易可重复锁紧的开启机构，e-skin 可以实现维护检测内部填充的电缆。与一般的波纹管对比，e-skin 具有下面优点：

- 容易开启，快速装配
- 固定一定刚性，适用于架空应用
- 可提供多种材料，多种颜色，也可小批量订购
- 可选配内部分隔

### 典型应用场合：

快速运动的短行程架空应用，站立悬挂应用，分拣存储设备，打印机，一般洁净室应用，仍在使用的波纹管的机床和其他设备

## e-skin: revolutionary energy supply – the “can do more” corrugated tube

The e-skin is a tube consisting of upper and lower shell, fitted together it is completely closed. Due to the simple and re-lockable opening mechanism an uncomplicated maintenance and inspection of the inserted cables is possible. Advantages – e-skin compared to conventional corrugated tubes:

- Easy to open, fast assembly
- Inherent rigidity for unsupported lengths
- Different materials and different colours available, also in small quantities
- Available with optional interior separation

### Typical application areas:

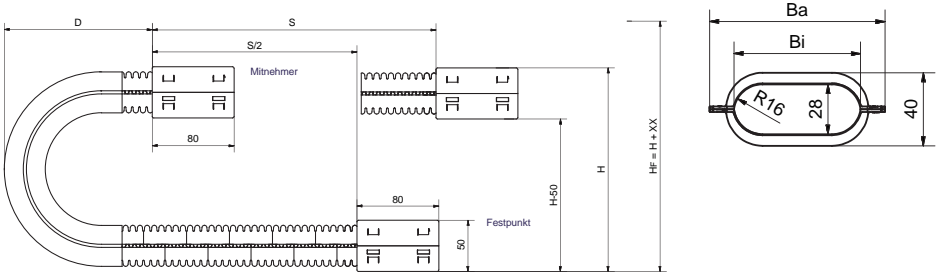
Fast, short, unsupported applications, standing and suspended applications, pick & place, printers, general applications in the clean room, but also in machine tools and other machines where corrugated tubes are still in use today.

\*此种产品目前仍在试点生产阶段，我们非常期待您在木工机械，机床以及洁净室应用方面的想法，请联系我们。

This product is in the introduction phase of serial production (pilot production). We would be pleased to include your ideas from all industries – from wood processing machines, machine tools, to clean room application; contact us.



# e-skin ...



## 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height	外高 outer height	内宽 inner width	外宽 outer width	弯曲半径 bending radius
	hi	ha	Bi [mm]	Ba [mm]	R
SK.28.Bi.R.0	28	40	68	95	40

根据需求可提供更多尺寸 More sizes upon request



交货期 Available

样机2015年六月起 prototypes from June 2015



[www.igus.com.cn/e-skin](http://www.igus.com.cn/e-skin)

[www.igus.eu/e-skin](http://www.igus.eu/e-skin)



IPA Klasse 1 IPA class 1

# ... 洁净室应用 ...

## igus® e-skin 其他优势

与传统波纹管不同，e-skin具有预设好的运动方向，并有一定的自我支撑能力。因此，e-skin可以用于短行程架空应用的水平能源供应。此外，由于采用了椭圆形设计，相对于圆形设计而言，可使用可拓展的模块化设计扩展更多的空间。内部分隔模块也特别适合于电缆导向。

## Additional advantages – igus® e-skin

Unlike conventional corrugated tube, e-skin has a defined movement direction and in addition, supports itself. Thus it can be used as a horizontal energy supply for short unsupported lengths. Moreover, the modularly extensible tube offers more space than round corrugated tubes, thanks to its oval design. Interior separation modules offer an especially cable-friendly cable guiding.

### 1 方便填充-可打开

Easy filling because it can be opened

### 2 更少的安装空间需求-自我支持能力可实现尽量长的行程

Less install space required, in spite of extensive reach through self-supporting function

### 3 防尘防水

Dust- and watertight

### 4 可达到洁净室等级IPA Class 1

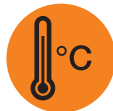
Clean room compatible in accordance with IPA Class 1

### 5 可使用符合预设最小弯曲半径的电缆

Cable-friendly cables through a defined minimum bending radius

### 6 对不可预期的横向运动起防护作用

Protection against undesired lateral movements



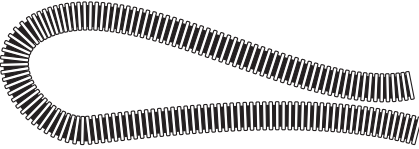
提供不同材料不同颜色的 e-skin 适用于不同应用

Different materials and colours for different applications with e-skin



波纹管的弯曲半径通常是固定的。

Corrugated tubes have consistently the same bending radius



波纹管几乎没有或只有极小的刚性，而e-shell解决了这个问题，详见12页。

Corrugated hoses have no/little rigidity. e-shell solves the problem, page 12



几乎没有或只有极小的刚性应用于有横向作用力时  
No/little stability in case of applied lateral force



传统波纹管不能用于架空应用

Corrugated hoses can not be used unsupported



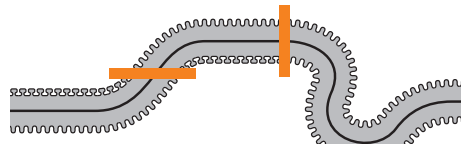
在动态应用中，波纹管不可打开

Corrugated hoses (for dynamic applications) can not be opened



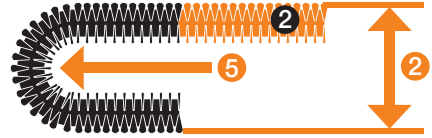
不可提供内部分隔

The interior of the hose can not be divided



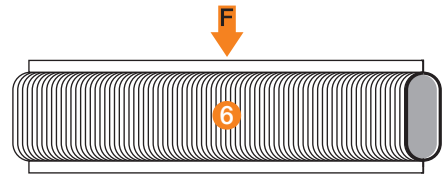
e-skin由两个外壳组成（顶部和底部），可通过配置预设好的外壳进行运动。

e-skin consists of two shells (top/bottom). The movement can be defined by configuring the shells.



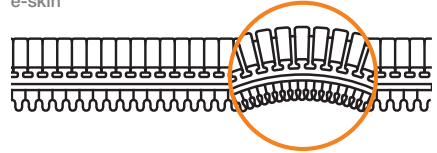
e-skin可用于短行程架空应用

e-skin for short unsupported length



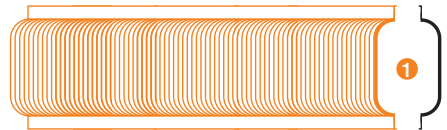
由于采用椭圆形设计具有横向稳定性

Lateral stability due to the oval geometry of the e-skin



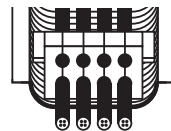
e-skin具有自我支撑能力，可用于短行程架空应用

e-skin supports itself and can be used for short unsupported length



e-skin可以打开，易于填充

e-skin can be opened, easy to fill



e-skin可配置内部分隔

e-skin can be equipped with an interior separation



可实现架空应用  
unsupported length possible

防护横向运动  
prevents lateral movements

# ... 稳固波纹管运动 ...

## 现有波纹管系统加强件 - e-shell

e-shell 可装配在波纹管上，嵌入波纹之间。按这种方式 e-shell 可以固定波纹管，使其只能沿一个方向运动。采用这种导向元件，e-shell 可以实现架空运行。

- 更少的安装空间需求-自我支持能力可实现尽量长的行程
- 可使用符合预设最小弯曲半径的电缆
- 易于进行再改造
- 可实现多排波纹管同时运动
- 对不可预期的横向运动起防护作用
- 不改变波纹管的防护能力

### 典型应用场合：

快速运行的短行程架空应用，站立悬挂应用，分拣存放设备，打印机

## The reinforcement for existing corrugated tube systems – e-shell

The e-shell is clipped onto the corrugated tube so that on the top side the joints of the corrugated tube can be filled. The e-shell stabilizes the corrugated tube in such a manner that it can only be moved in one direction. Through the guide elements on the sides the e-shell enables an unsupported travel.

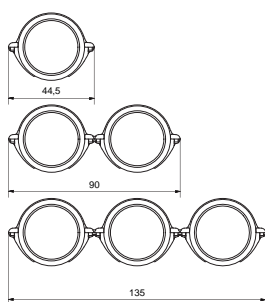
- Less installation space required in spite of an extensive range through the self-supporting function
- Cable-friendly through defined minimum bending radius
- Easy to retrofit
- Multiple corrugated tubes can be run side by side
- Stability against undesired lateral movements
- No change in the impermeability of the corrugated tube

### Typical application areas:

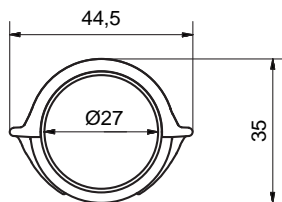
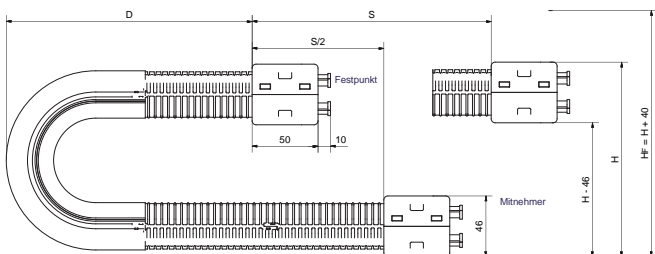
Fast, short, unsupported applications, Standing and hanging applications, pick & place, printers

预设运动  
Defined movements

稳固波纹管  
stabilized tube



可实现多排波纹管同时运动  
Guide multiple tubes side by side.



尺寸 Dimensions [mm]

产品代码 Part No.	NW 管 NW hose	外高 outer height ha	内径 inner-Ø Bi	外宽 outer width Ba	弯曲半径 bending radius R
EL.01.29.0	29	35	27	44,5	80

根据需求可提供更多尺寸 More sizes upon request



交货期 Available  
2015 年 5 月 May 2015



[www.igus.com.cn/e-shell](http://www.igus.com.cn/e-shell)  
[www.igus.eu/e-shell](http://www.igus.eu/e-shell)

igus® 拖链系统 ...  
移动供电更便捷

机器人解决方案 ...  
... 提高使用寿命  
... 缩短装配时间

Robotic solutions ...  
... increase service life ... reduce assembly time



16

**无偏斜角度的回缩运动**

Retraction without deflection

Triflex® RSE

20

**小尺寸快速填充**

Fast filling in a smaller size

Triflex® TRCF65

21

**弯曲半径为 240 的光缆防护**

Bending radius 240 for protection of the laser light cable

Triflex® TRCF.85.240.00

22

**按需提供尺寸为50的机器人拖链**

Requested size 50 for robot e-chain®

Triflex® TRC50/TRE50

24

**“通用机器人”连接件**

Connection on "Universal Robots"

Triflex® R 连接 UR5, UR10







紧凑设计，非环形，最长伸出长度  
600mm

igus® DryLin® 直线系统  
免润滑免维护

igus® DryLin® linear module  
lubricant and maintenance-free

# ... 机器人回拉系统 ...

## Triflex® RSE – 采用 TRC, TRE, TRCF 的自动回拉系统

能源供应系统得到满足，从而极大增加了自动化领域产品技术的多样性。机器人生产的频率越来越高，电缆和气管都需要通过螺栓，铆钉和螺钉进行固定。由于弯曲半径过小，新的 Triflex® RSE 无需弯转无需纤维棒或偏移滑轮即可做非常简单的线性回缩运动。

- 尺寸范围 60-125 - 均可固定在一个系统中缩短了电缆长度 - 无需做偏移运动
- 更加经济
- 节省空间
- 减少偏移，提高了光缆和介质管运动的可靠性

### 典型应用场合：

使用光缆和介质管进行复杂高频运动的 3D 机器人

## Triflex® RSE – automatic retraction system for Triflex® TRC, TRE, TRCF

The requirements to be met by energy supply systems increase with the greater diversity in the area of automated product technology. With increasing frequency not must electrical and pneumatic cables have to be guided to manufacturing robots but also bolts, rivets, and nails. Because these are not compatible with narrow bending radii, the new Triflex® RSE relies on an extremely simple and linear retraction without bends, fiber rods or deflector rollers.

- Available for Triflex® sizes from 60-125 – all to be mounted on one system
- Shorter cable lengths, because there is no deflection
- More cost-effective
- Space saving design
- Less deflection points, greater process reliability for laser light cables and supply hoses

### Typical application areas:

3D robots with complex movement sequences for laser light cables and supply hoses

compact design, no loops, 600 mm  
retraction length



RSE 回拉系统包括以下部件：

- 1 DryLin® 起导向运输作用的 DryLin® 直线系统
- 2 起回缩作用的弹性绳
- 3 起连接作用的钣金件，不同机器人类型提供不同的型号
- 4 不带去应力元件的连接件，根据拖链尺寸确定
- 5 根据拖链尺寸确定的滑动导向孔

The RSE pull-back system consists of the following component parts:

- 1 DryLin® linear guide with carriage
- 2 Elastic strap for retraction
- 3 Fastening plates for variable connection on a variety of robot types
- 4 Connection element without strain relief of the respective e-chain® size
- 5 Gliding feed-through of the respective e-chain® size



[www.igus.com.cn/TriflexR](http://www.igus.com.cn/TriflexR)  
[www.igus.eu/TriflexR](http://www.igus.eu/TriflexR)



# ... 不偏移 ...

Triflex® RSE 回拉系统用于把拖链固定在机器人手臂上，防止拖链悬挂下来而影响或妨碍机器人运动。Triflex® RSE 是一种非常轻便的回拉系统。

The Triflex® RSE retraction system is used to hold the e-chain® compactly on the robot arm, to prevent the hanging chain from influencing or blocking the movement of the robot. The Triflex® RSE is a particularly light and retraction system.





TRC/TRE 60



TRC/TRE 70



TRC/TRE/TRCF 85



TRC/TRE/TRCF 100



TRC/TRE 125



# ...无缠绕

尺寸 Dimensions [mm]

Triflex® RSE 产品型号 Part No. Triflex® RSE	可用拖链 for e-chain®	回缩长度 LLLL [mm] Retraction length LLLL [mm]	Triflex® R-类型 Triflex® R version
TR.RSE.60	TRE.RSE.60.087.[LLLL].0.B	0500, 1000, 1500, 2000	TRE
TR.RSE.60	TRC.RSE.60.087.[LLLL].0	0500, 1000, 1500, 2000	TRC
TR.RSE.70	TRE.RSE.70.110.[LLLL].0.B	0500, 1000, 1500, 2000	TRE
TR.RSE.70	TRC.RSE.70.110.[LLLL].0	0500, 1000, 1500, 2000	TRC
TR.RSE.85	TRE.RSE.85.135.[LLLL].0.B	0500, 1000, 1500, 2000	TRE
TR.RSE.85	TRC.RSE.85.135.[LLLL].0	0500, 1000, 1500, 2000	TRC
TR.RSE.85	TRCF.RSE.85.135.[LLLL].0	0500, 1000, 1500, 2000	TRCF
TR.RSE.85	TRCF.RSE.85.240.[LLLL].0	0500, 1000, 1500, 2000	TRCF
TR.RSE.100	TRE.RSE.100.145.[LLLL].0.B	0500, 1000, 1500, 2000	TRE
TR.RSE.100	TRE.RSE.100.145.[LLLL].0.C	0500, 1000, 1500, 2000	TRE
TR.RSE.100	TRC.RSE.100.145.[LLLL].0	0500, 1000, 1500, 2000	TRC
TR.RSE.100	TRCF.RSE.100.145.[LLLL].0	0500, 1000, 1500, 2000	TRCF
TR.RSE.125	TRE.RSE.125.182.[LLLL].0	0500, 1000, 1500, 2000	TRE
TR.RSE.125	TRC.RSE.125.182.[LLLL].0	0500, 1000, 1500, 2000	TRC



交货期 Available  
六月起 from June



[www.igus.com.cn/TriflexR](http://www.igus.com.cn/TriflexR)  
[www.igus.eu/TriflexR](http://www.igus.eu/TriflexR)



# ... 新内径 ...

## 快速填充 Triflex® TRCF 新尺寸

与全封闭的 TRC 必须穿线的形式不同，TRCF 的链节是可以打开的。

- 只需一把螺丝刀即可打开，便于填充大型介质管或大量电缆
- 每个链节的旋转角度达 ±10°
- 可根据需要延长或缩短
- 预设最小弯曲半径
- 采用 igumid G 材料，提高稳定性

### 典型应用场合：

使用光缆和介质管做复杂高频运动的 3D 机器人

## New sizes for quickly-to-fill Triflex® TRCF

Unlike the completely closed TRC, for which the cables must be threaded through, the chain links of the TRCF can be flipped open.

- Easily snapped with a screw driver for large, rigid hoses and/or many cables
- Torsion of approx. ±10° /chain link possible
- Can be extended and shortened as desired
- Defined minimum bending radius
- igumid G material for improved stability

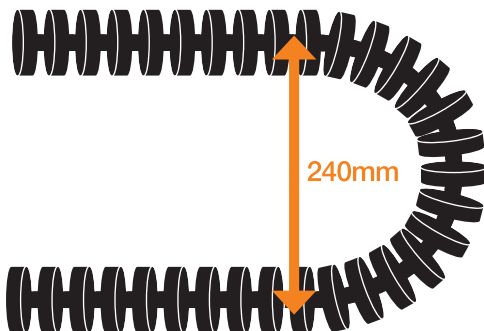
### Typical application areas:

3D robots with complex movement sequences for laser light cables and supply hoses

### 尺寸 Dimensions [mm]

产品代码 Part No.	内径 inner-Ø	外径 outer-Ø	每米链节数 Links per m	弯曲半径 bending radius
	Bi	Ba		R
TRCF.65.R.0*	62,7	70,2	44	100
TRCF.85.R.0	84,5	94,5	33	135   240*
TRCF.100.R.0	96,5	108	29	145

\*交货期 2015 六月起 Available from June 2015



# ... 保护 LLK ...

## 为保护大规格电缆设计的新弯曲半径

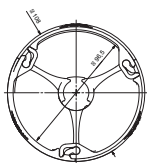
为保护机器人中的光缆、铆管和螺管运动安全可靠，必须获取各种管子所容许的最小弯曲半径。Triflex® TRCF.85.240.0采用了通用的弯曲半径值240mm，可靠保护以上管线，并可实现快速填充。

- 更大的弯曲半径(240mm)提高了光缆的使用寿命，防止介质管互相缠绕
- 即使是带接头的电缆，也可从外部快速填充
- 只需一把螺丝刀即可开启
- 每个链节的旋转角度达 $\pm 10^\circ$
- 可根据需要延长或缩短

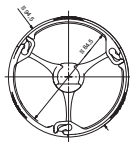
## New bending radius for even greater cable protection

To guide laser light cables, rivet tubes or screw tubes on the robot in a process reliable manner, the respectively required minimum bending radius must not be underranged. The Triflex® TRCF.85.240.0 with a nominal bending radius of 240 mm protects reliably and offers easy "filling" of the Triflex® TRCF series.

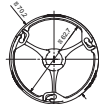
- Larger bend radius (240 mm) increases the service life of the laser light cable and prevents kinking of supply hoses.
- Fast filling from outside, even of harnessed cables
- Only a screwdriver is required for opening
- Defined torsion angle per chain link (approx.  $\pm 10^\circ$ )
- Can be extended and shortened as desired



TRCF.100.145



TRCF.85.135



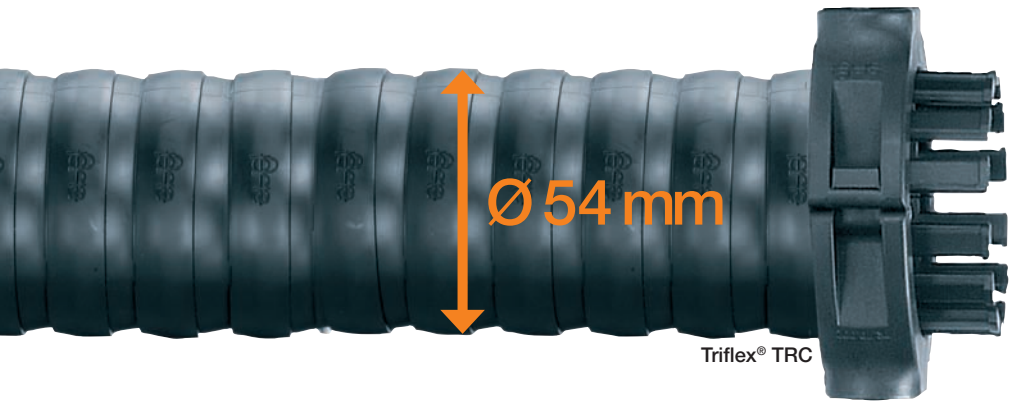
TRCF.65.100



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[www.igus.com.cn/TriflexR](http://www.igus.com.cn/TriflexR)  
[www.igus.eu/TriflexR](http://www.igus.eu/TriflexR)



# ... 三维拖链新内高 ...

## 全封闭新尺寸 Triflex® TRC/TRE

Triflex® R (R即“圆形”)是第三代维运动易格斯拖链。Triflex® R 拖链设计的关键因素包括:

- 每个链节的旋转角度达 $\pm 10^\circ$
- 采用球槽连接, 高抗拉强度
- 无需连续支撑元件, 如: 钢丝绳、弹簧支架等
- 可选配回拉系统用于引导机器人手臂上的多维拖链并有效预防出现缠绕

### 典型应用场合:

工业机器人的首选, 机床, 6轴输送设备, 材料输送设备, 包装设备

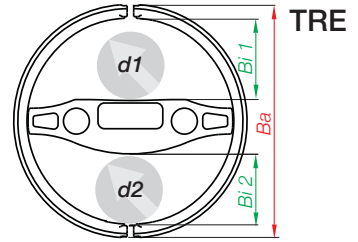
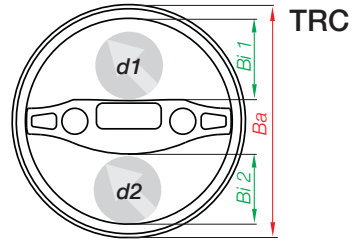
## Gap closed – new size – Triflex® TRC/TRE

Triflex® R (R for “round” ) is the third generation of 3-axis igus® e-chains®. The key design characteristics of Triflex® R e-chains® include:

- Approximately  $\pm 10^\circ$  torsion per chain link
- High tensile strength of the ball-and-socket joint
- Fiber rod option for partial directional control and reinforcement
- No need for contiguous support elements e.g. steel cables, spring suspensions etc.
- Diverse range of accessories
- Optional retraction systems securely guide 3D e-chains® on the robot arm and reliably prevent loop formation

### Typical application areas:

First choice for industrial robots, machine tools, handling equipment 6-axis, material handling, packaging machine



## 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height		最大电缆直径 max. cable-Ø		外宽 outer width	弯曲半径 bending radius
	Bi1	Bi2	d1	d2	Ba	R
TRC.30	12	10	10	8	34,5	50
TRC.40	15	13	13	11	43	58
TRC.50*	18,8	16,2	16,5	14	54	80
TRC.60	22,5	19,5	20,5	17,5	65	87
TRC.70	28	24	26	22	81	110
TRC.85	33	28	31	26	94,5	135
TRC.100	37,5	32,5	35,5	30,5	108	145
TRC.125	43,3	43,3	41	41	135	182
TRE.30	12	10	10	8	34,5	50
TRE.40	15	13	13	11	43	58
TRE.50*	18,8	16,2	16,5	14	54	80
TRE.60	22,5	19,5	20,5	17,5	65	87
TRE.70	28	24	26	22	81	110
TRE.85	33	28	31	26	94,5	135
TRE.100	37,5	32,5	35,5	30,5	108	145
TRE.125	43,3	43,3	41	41	135	182

\*交货期 2015年六月起 Available from June 2015

 交货期 Available  
常备库存 from stock

 [www.igus.com.cn/TriflexR](http://www.igus.com.cn/TriflexR)  
[www.igus.eu/TriflexR](http://www.igus.eu/TriflexR)





# ... Triflex® 连接件

## Triflex® R-通用机器人连接件

通用机器人公司构建了操作简便轻巧的机器人系统。这些机器人无需自带能源供应系统。Triflex® R尺寸30至40的拖链可以同时从技术和视觉方面完美匹配UR5和UR10机器人系统。

- 采用 Triflex R 确保“通用机器人”上电缆的导向
- 采用螺栓进行方便连接
- 2 种 Triflex 尺寸 -  $\Phi$ 30和40
- 4 种不同的夹紧件尺寸

### 典型应用场合：

所有通用机器人系统的电缆导向

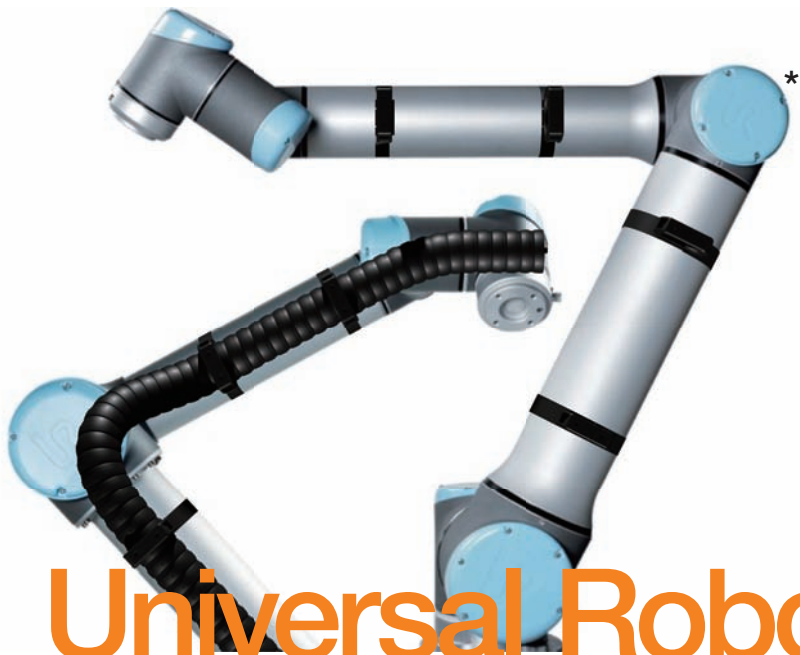
## Triflex® R connections for "Universal Robots"

The company, Universal Robots, builds easy to operate, lightweight robot systems. These robots do not have their own energy supply systems. The Triflex® R sizes 30 und 40 are a perfect match, technically and also visually for the elegant UR5 and UR10 robot systems. The UR clips offer a quick and easy connection.

- Secure cable guidance with Triflex® R on robots from "Universal Robots"
- Easy connection with screw clips
- 2 Triflex® R sizes -  $\Phi$  30 and 40
- 4 different clamp diameters

### Typical application areas:

Cable guidance on all Universal Robots Systems



# Universal Robots

## 尺寸 Dimensions [mm] –

不带去应力系统 without strain relief systems

产品代码 Part No.	公称直径 Ø Nominal diameter Ø	用于 UR-Roboter for UR-Roboter
TR.911.965.075.Z0	075	UR 5
TR.911.965.086.Z0	086	UR 10
TR.911.965.100.Z0	100	UR 5
TR.911.965.108.Z0	108	UR 10
TR.911.966.075.Z0	075	UR 5
TR.911.966.086.Z0	086	UR 10
TR.911.966.100.Z0	100	UR 5
TR.911.966.108.Z0	108	UR 10

## 尺寸 Dimensions [mm] –

带去应力系统 with strain relief systems

产品代码 Part No.	公称直径 Ø Nominal diameter Ø	用于 UR-Roboter for UR-Roboter
TR.911.965.075.Z1	075	UR 5
TR.911.965.086.Z1	086	UR 10
TR.911.965.100.Z1	100	UR 5
TR.911.965.108.Z1	108	UR 10
TR.911.966.075.Z1	075	UR 5
TR.911.966.086.Z1	086	UR 10
TR.911.966.100.Z1	100	UR 5
TR.911.966.108.Z1	108	UR 10



交货期 Available

常备库存 from stock



[www.igus.com.cn/TriflexR](http://www.igus.com.cn/TriflexR)  
[www.igus.eu/TriflexR](http://www.igus.eu/TriflexR)

igus® 拖链系统 ...  
移动供电更便捷

**拖链 ...**

**... 可沿任何方向运动, 可传输所有的能量和数据 ...**

**更紧凑, 更稳固, 行程可达  
50 m**

e-chains® ...

... moving in all directions, guiding all energies and media ... more compact, up to 50 m, more stable

igus® the-chain ...  
moving energy made easy

28

**更小更紧凑**

Small & compact cable drum  
e-spool mini

30

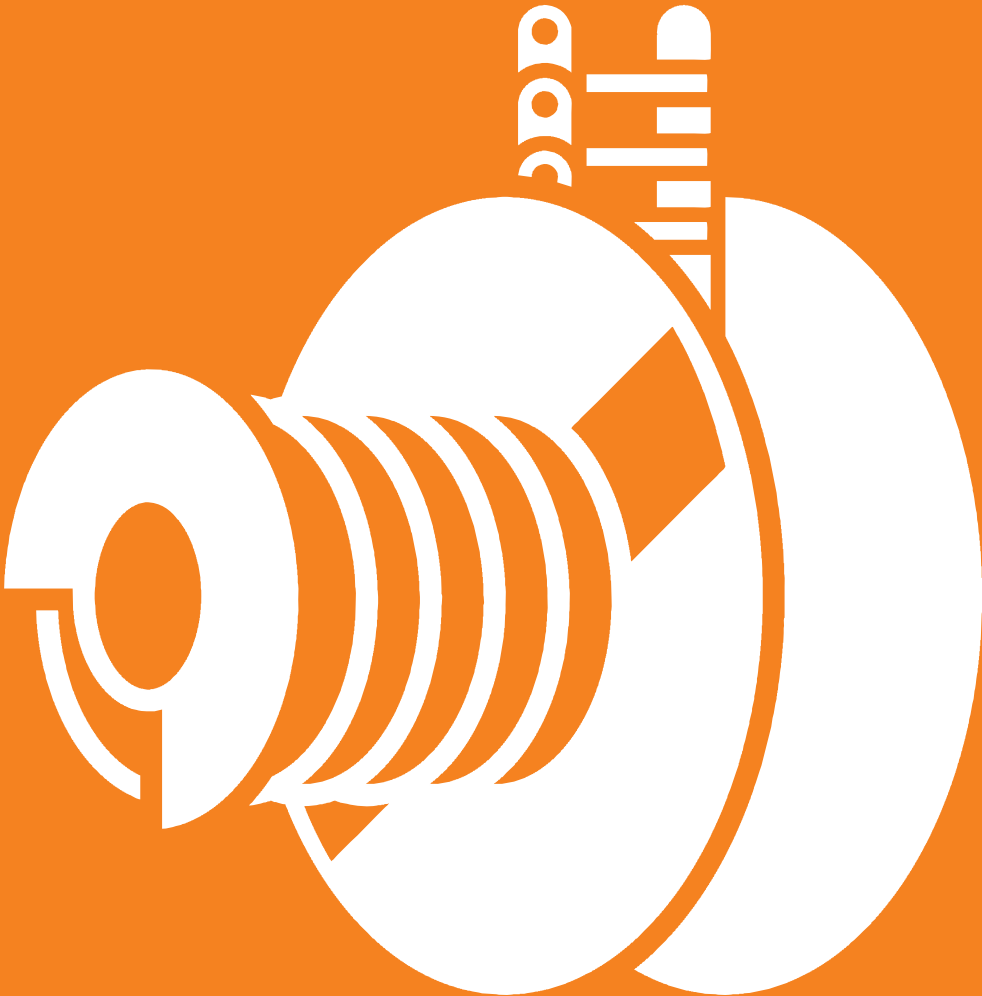
**电机驱动伸出与卷起**

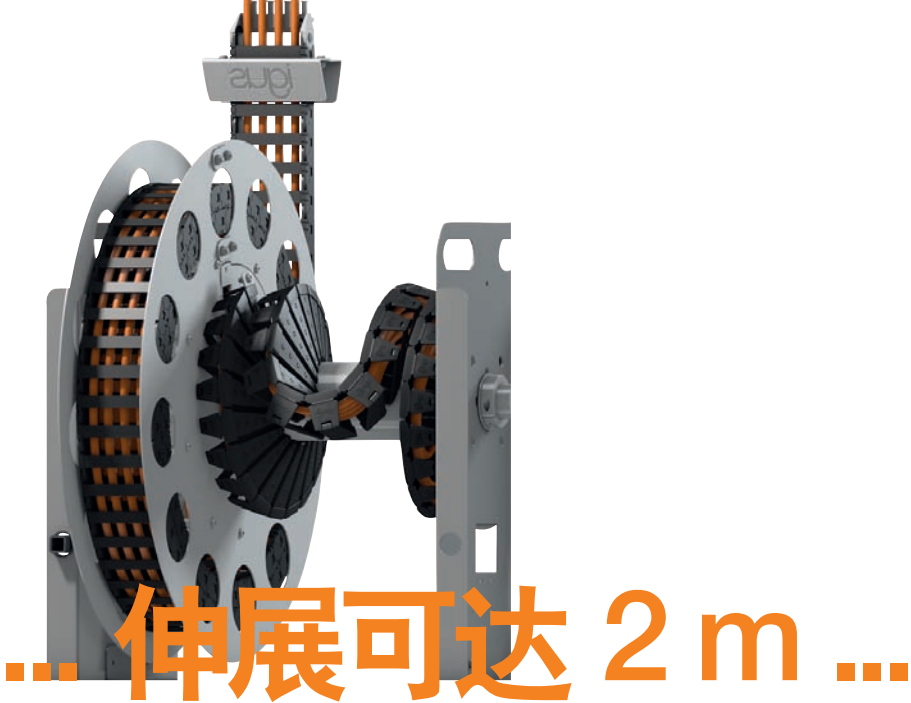
Motor driven unroll and roll, up to 50 m  
e-spool power

32

**小空间内更稳固的旋转运动**

More stable rotation in small spaces  
twisterband HD





### 无需滑环的易格斯拖链卷筒-紧凑设计

小型的 mini-e-spool 是一种结构更紧凑由弹簧驱动的拖链卷筒，其中不同的电缆排布在直线拖链中。

- 无需滑环的拖链卷筒
- 伸出长度可达 2000 mm
- 可在一个系统中传输多种媒体（电，数据，光信号，气体，流体）
- 可向所有方向进行能量供应
- 替换方便，填充扩展简单
- 节省空间，几乎不会看到
- 拉出/回缩速度可达 1m/s
- 采用铝制设计极大减轻自重

#### 典型应用场合：

小规模回转运动，任何类型的直线伸出或转角运动，室内应用

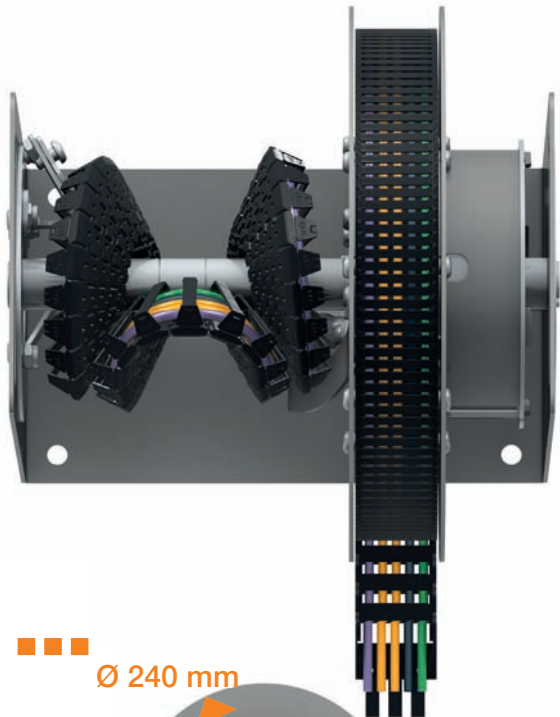
### igus® cable drum without a slip ring - now in compact design

The mini mini-e-spool is a compact, spring-driven cable drum in which different cable types are routed in a linear chain.

- The cable drum without slip ring
- For extraction lengths to 2,000 mm
- Different media (electricity, data, FOC, air, fluids) can be guided together in one system
- Energy supply in all directions
- Easy replacement and extension of the filling
- Space saving and almost "invisible"
- Max. pull-out and retract speed 1 m/s
- very light-weight design made from aluminum

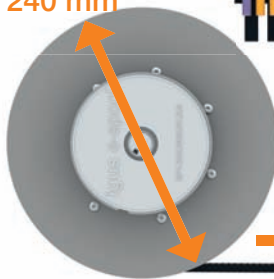
#### Typical application areas:

Small circular movements, any type of extraction – linear or "around the corner", indoor applications



# 紧凑型 ...

Ø 240 mm



2.000 mm

图示为一个完整的系统  
Figure shows a "right system"

## 动态数据 dynamic parameter

最大速度 max. speed	1 m/s
最大加速度 max. acceleration	2 m/s <sup>2</sup>
最大侧向速度 max. lateral speed	1 m/s
最大侧向加速度 max. lateral acceleration	1 m/s <sup>2</sup> (径向) 0,25 m/s <sup>2</sup> (轴向)

## 尺寸 Dimensions [mm]

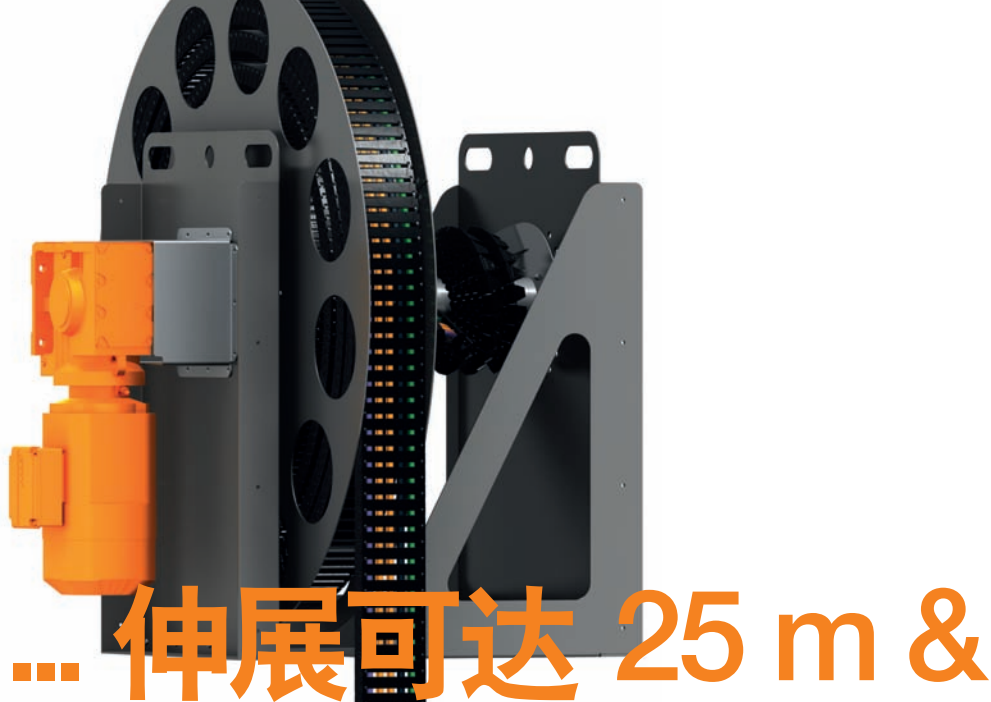
产品代码 Part No.	卷筒直径 Ø drum-Ø	最大伸展长度 [mm] max. extraction length [mm]	最大电缆直径 Ø [mm] max.cable-Ø [mm]
SP1.240.2000.01.R.0	240	2.000	24 - 35



交货期 Available  
六月起 from June



[www.igus.com.cn/e-spool](http://www.igus.com.cn/e-spool)  
[www.igus.eu/e-spool](http://www.igus.eu/e-spool)



# ... 伸展可达 25 m &

## e-spool 供能系统

采用电机驱动的 e-spool 伸出长度可达 25m(50m也有可能)

- 户外应用温度可达 0° C 以下
- 采用回拉系统和电机可实现较长的使用寿命
- 与采用弹簧的“普通” e-spool 相比, 采用电机驱动可实现更长的行程
- 电缆外径可达17mm
- 电缆不受拉应力
- 不使用滑环
- 可在一个系统中传输多种媒体 (电, 数据, 光信号, 气体, 流体)
- 驱动装置和控制器一起发运
- 安装在天花板上时, 系统就“隐形”了
- 替换方便, 填充扩展简单
- 拉出/回缩速度可达 1.2 m/s

## 典型应用场合:

戏剧和舞台应用, 室内起重机, 海上应用, 造船厂

## e-spool power

The motor-driven e-spool for long extraction lengths up to 25 m (50 m is possible).

- Outdoor use possible, even at temperatures below 0° C
- Long service life thanks to retraction system and motor
- With the motor, longer travel can be realised than it is possible with the spring of an "normal" e-spool
- Cable diameters to 17 mm
- No tensile stress on the cables
- No slip ring
- Different media (electricity, data, FOC, air, fluids) can be guided in one system without interruption
- Delivery including drive and controller
- For installation under the ceiling – the system is "invisible"
- Easy replacement and extension of the filling
- Max. extraction and retraction speed: 1.2 m/s

## Typical application areas:

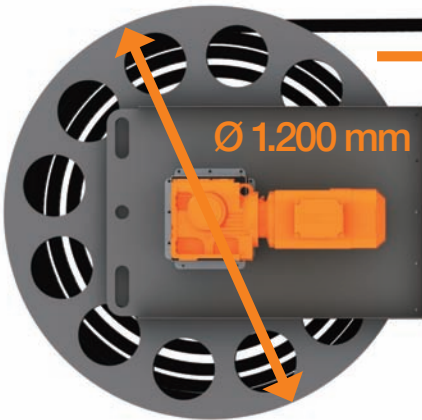
Theatre and stage applications, (indoor) cranes, maritime, ship construction



# 电机驱动

采用电机驱动时显著提高了行程长度，e-spool 的使用寿命也相应得到了提高。

Due to the motor driven power unit the travel lengths can be increased. The lifetime of the e-spool increases as well.



25.000 ... 50.000 mm



行程可达50m(标准25m)  
up to 50 m (standard 25 m) extraction length

\*此产品目前仍在批量试点生产，如果您有好的想法，欢迎联系我们。

\*This product is in the introduction phase of serial production (pilot production). We would be pleased to include your ideas, please contact us.

## 尺寸 Dimensions [mm]

产品代码 Part No.	卷筒直径-Ø drum-Ø	最大伸展距离 [mm] max. extraction length [mm]	最大电缆直径 Ø [mm] max. cable-Ø [mm]
SPP1.1200.25000.01.R.0	1200	25000	44 - 47

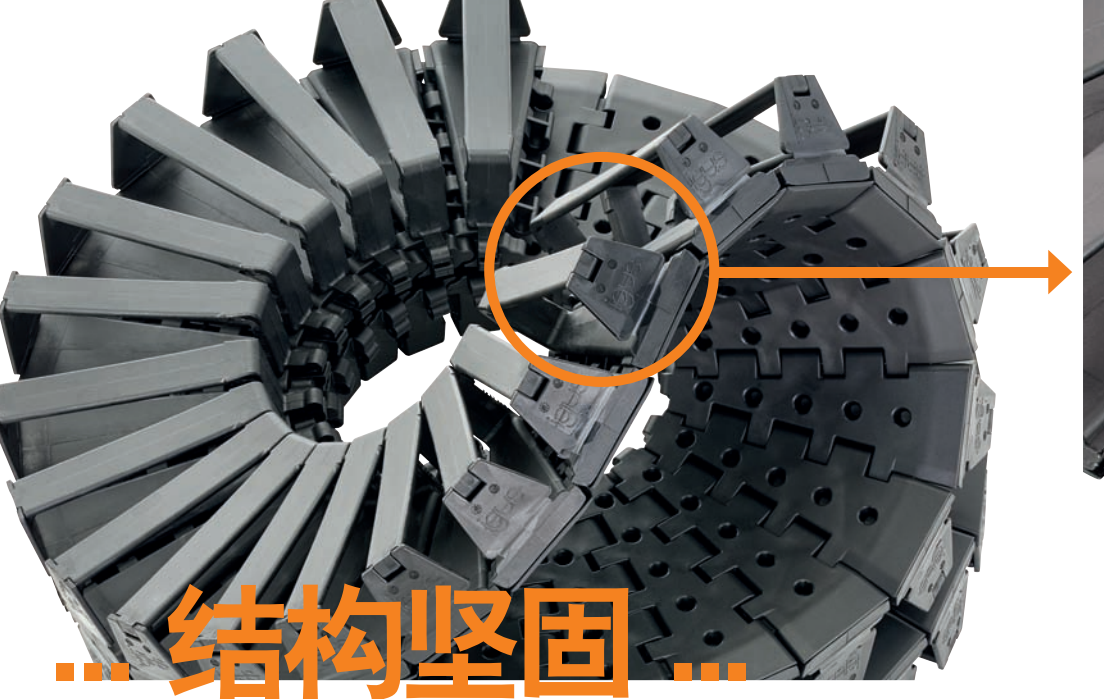


交货期 Available  
七月起 from July



[www.igus.com.cn/e-spool](http://www.igus.com.cn/e-spool)  
[www.igus.eu/e-spool](http://www.igus.eu/e-spool)





# ... 结构坚固 ...

## 小空间内的回转运动-更加稳固

替代之前的薄膜铰接红柳, twisterband HD 的链节采用非常稳固的孔/销连接。填充管线和 0° C 以下的应用均不再受限制, 使用寿命也显著增长。

- 电缆不间断连接旋转
  - 稳固的孔/销连接适用于高负载长使用寿命
  - 温度范围: -40° C 至 +80° C, 室外应用的理想选择
  - 可在一个系统中引导电缆, 光缆和气管等
  - 采用限位块设定弯曲半径, 非常适合于电缆导向
- 旋转速度可达 360° /s

### 典型应用场合:

搬运机械手, 旋转工作台, 6轴机器人, 所有需要应用滑环的场合

## Rotary movements in smallest space – Now even more stable

Instead of film hinges, the twisterband HD has an extremely stable pin/hook connection of the chain links. Longer service life, filling and temperatures to 0° C are now possible without restriction.

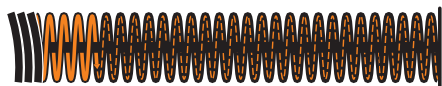
- Continuous cable routing for rotary movements
- Stable pin/hook connection for high load and long service life
- Temperature range -40° C to +80° C, ideal for outdoor applications
- Guiding of electrical cables, fibre-optic cables, pneumatic hoses in one system
- Stop dogs for defined bending radius
- Cable-friendly due to defined bending radius stop dogs
- Max. rotational speed 360° /s

### Typical application areas:

Processing heads on tool machines, rotary tables, 6th axis on robots; in general all applications where slip rings are currently used



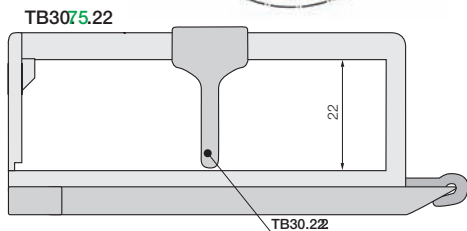
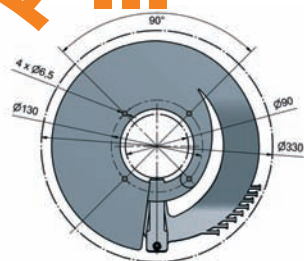
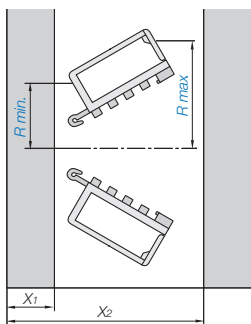
# ... 7000° 旋转 ...



... 7.000°



... 3.000°



## 尺寸 dimensions [mm]

产品代码 Part No.	内径 inner Ø X1	外径 outer Ø X2	内高 inner height hi	内宽 inner width Bi	弯曲半径 bending radii R
TBHD30.75.22.360.01.0	90	330	22	75	44 - 77

可提供其它尺寸 other sizes possible



交货期 Available  
六月起 from June



[www.igus.com.cn/twisterbandHD](http://www.igus.com.cn/twisterbandHD)  
[www.igus.eu/twisterbandHD](http://www.igus.eu/twisterbandHD)

igus® 拖链系统 ...  
移动供电更便捷

拖链 ...

... 长行程

... 模块化设计,

应用于化工行业, 自动连  
接器

e-chains® ...

... for long travels ... in the chemicals industry,  
automatic coupling, from the modular kit



36

**模块化系统，低噪音，快速运行，低磨损**

Low-noise, fast, minimal wear from the modular system

E4.1 轮式拖链

40

**自重轻，高化学抗性**

Lightweight and chemical resistant

guidelite plus 导向槽系统

42

**提升改造**

Retrofit riser

铝合金导轨

44

**更宽的起重机横梁支架模块**

Crane girder trough module in more widths

guidefast

46

**更多尺寸拖链无需导向槽**

Save guide troughs in more widths

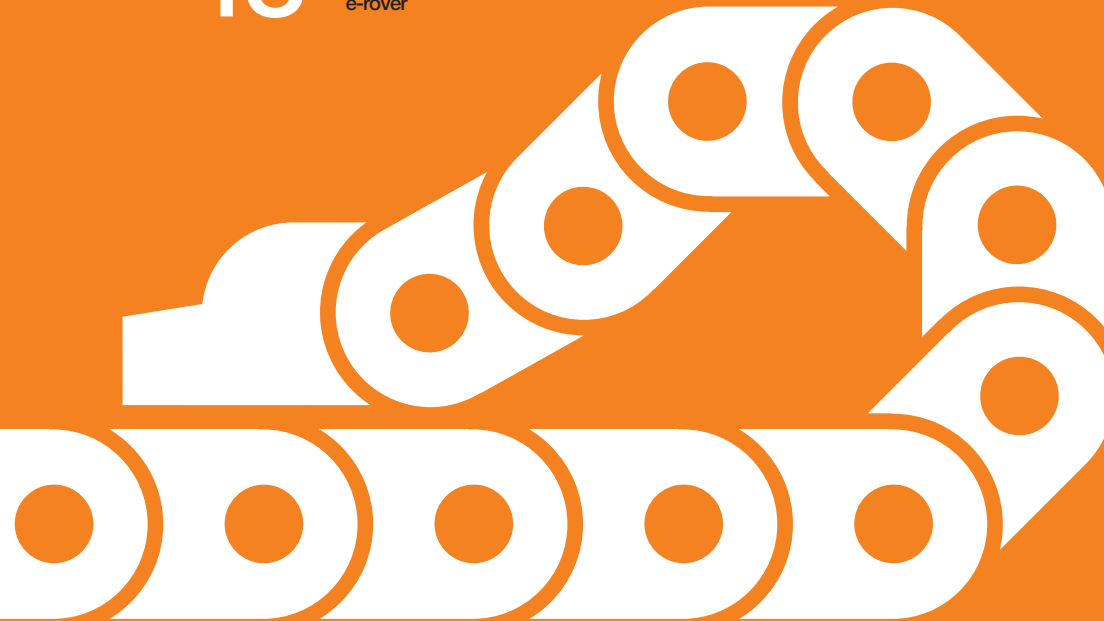
autoglide E2/000

48

**高速运动的RTGs连接器**

Coupling on RTGs for high-speed data

e-rover





# ... 安静, 快速 ...

## 节省驱动力的拖链系统-采用E4.1标准模块 - E4.1轮式拖链

目前, 最长的行程长度是由高效节能的 E4.1 拖链实现的。新系统由于轮式链节和标准链节的节距相同, 运行起来也相当平滑。内侧采用“斜坡”(即制动器原理设计), 运行时噪音也相应减小。

- 侧板内嵌滚轮使得运行非常平滑
- 轮式链节和标准链节的节距相同, 也采用了“斜坡”设计
- 高效节能——节省驱动力可达 57%
- 速度可达 10m/s
- 采用E4.1 系列的分隔片配置, 保护电缆
- 经济

### 典型应用场合:

汽车厂, 运输设备, 起重机, 煤炭输送机, 行程超过50m或对使用寿命有特殊要求的场合

## Reduce drive power for moving energy chains® - with the E4.1 standard kit – E4.1 rol e-chain®

Now even the longest travels can be realized with E4.1. energy efficiently. The new system runs very smoothly due to an equal pitch of roller and standard chain links. Built-in “ramps” provide for a more silent run of the rollers when they run over each other.

- Very smooth run due to splitted links and profile rollers
- Same pitch of the roller and standard chain links as well as “ramps”
- Energy efficient – save up to 57% drive power
- Max. speeds: 10 m/s
- Cable-friendly interior-separation program of the E4.1 family
- cost-effective

### Typical application areas:

Automation and material handling, cranes, coal conveyors, travels > 50 m or with special requirements for lifetime

# ... 坚固耐用 ...



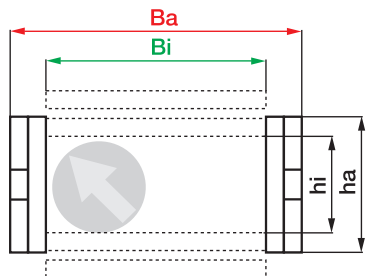
轮式链节和标准链节的节距相同，也采用了“斜坡”设计-拖链运行非常平滑

Same pitch of the roller and standard chain links as well as "ramps" - smooth "round" run of the e-chain®



滚轮位置设置为运行时交叉而非相撞，所以可大大降低噪音并且提高使用寿命。

Profile rollers "next to each other" and not over each other. Thus there is a considerable reduction in operating noise and a considerable increase of the service life.



## 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height	外高 outer height	内宽 inner width	外宽 outer width	弯曲半径 bending radius
	hi	ha	Bi	Ba	R
E4.42R.Bi.R.0**	42	64	50 - 400	76 - 426	125 - 350
E4.56R.Bi.R.0*	56	84	50 - 600	84 - 634	175 - 500



交货期 Available

\* 六月起 from June

\*\* 八月起 from August



[www.igus.com.cn/E41R](http://www.igus.com.cn/E41R)

[www.igus.eu/E41R](http://www.igus.eu/E41R)



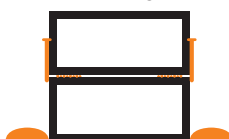
# ... 滑行 ... 自滑行 ...

E4.1



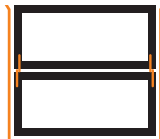
滑行  
gliding

E4.1AG

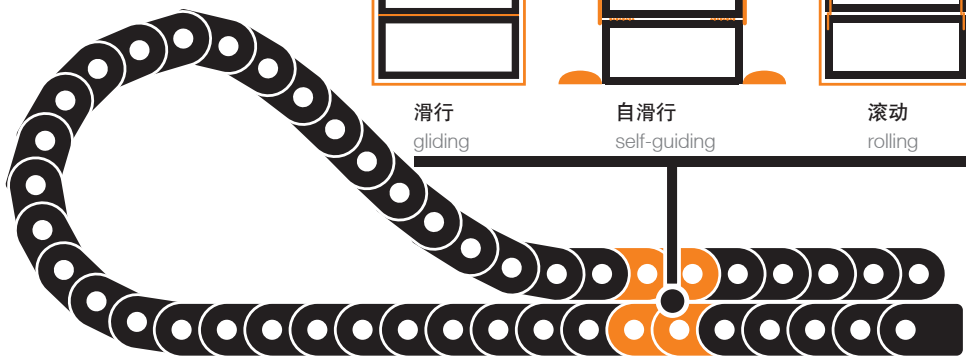


自滑行  
self-guiding

E4.1R



滚动  
rolling



采用 E4.1 模块化系统实现长行程运行

滑行：采用标准导向槽

自滑行：采用自滑行导槽

新型滚轮：高效节能的长行程

Long travel distances to meet your requirements from the E4.1 modular system.

Gliding: with guide trough, the standard.

Self-guiding: troughs with autoglide.

**NEW, Rolling:** energy efficient on long travels.



**E2/000 轮式拖链 rol e-chain®**



**E4.1 轮式拖链 rol e-chain®**



**P4 轮式拖链 rol e-chain®**

**尺寸 Dimensions**

行程	200 m	500 m	800 m
速度	5 kg/m	13 kg/m	30 kg/m
负载	4 m/s	10 m/s	>10m/s

- 抗污能力强，可用于脏污环境
- 可开启横杆实现快速装配
- 高效节能——节省驱动力可达 57%

- Dirt repellent rollers allow an operation in dirty environment
- Quick assembly due to openable crossbars
- Energy efficient – save up to 57% drive power

- 采用分离式轮式链节和阻尼滚轮，运行非常平滑
- 可与E4.1系列的配件配合使用
- 高效节能——节省驱动力可达 57%

- Smooth running due to splitted roller links and damped rollers
- To be combined with the complete tool box of the E4.1 family
- Energy efficient – save up to 57% drive power

- 降低噪音达40%
- 磨损非常小，实现更长使用寿命
- 高效节能——节省驱动力可达 57%

- 40% less noise
- Long lifetime due to minimum wear
- Energy efficient – save up to 57% drive power





# ... 轻巧 ...

## 模块化，全工程塑料导向槽系统： guidelite plus

guidelite plus 是两侧封闭，所有组件均由工程塑料制成的导向系统。可实现快速简易安装，在安装和采购方面双向降低成本。

- 高化学抗性，高抗腐蚀能力
- 快速安装节省装配时间
- 与金属导向槽相比，自重更小，更加轻巧
- 明显比同样性能的不锈钢导向槽便宜

### 典型应用场合：

电镀厂，化肥厂(生产和运输)，低速长行程应用

## Modular, All plastic guide trough system: guidelite plus

The guidelite plus guidance system is a guide trough that is closed on both sides, and which consists completely of plastic components. It can be installed very quickly and easily, double cost reduction: in installation and acquisition.

- Resistant to chemicals and corrosion-resistant
- Save time through fast installation
- Low weight, lighter than metal guide troughs
- Significantly cheaper than a comparable stainless steel trough

### Typical application areas:

Galvanizing, fertilizer production and transport, long travel lengths at lower speed

# ... 化学抗性 ...

可以根据不同的应用调整连接处的缝隙。

Can be adapted to different ambient conditions through expansion joints.



侧视图

Side view



俯视图

View from above



通过卡槽结构实现快速连接

Fast assembly through simple clipping together of the side parts of the trough

## 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height	安装长度 [mm] field length [mm]	可用拖链 for e-chain®
9GP.150.35.1000*	35	1000	2500
9GP.150.50.1000*	50	1000	2700/2700R
9GP.150.64.1000**	64	1000	3500/E4.42/H4.42/3500



交货期 Available

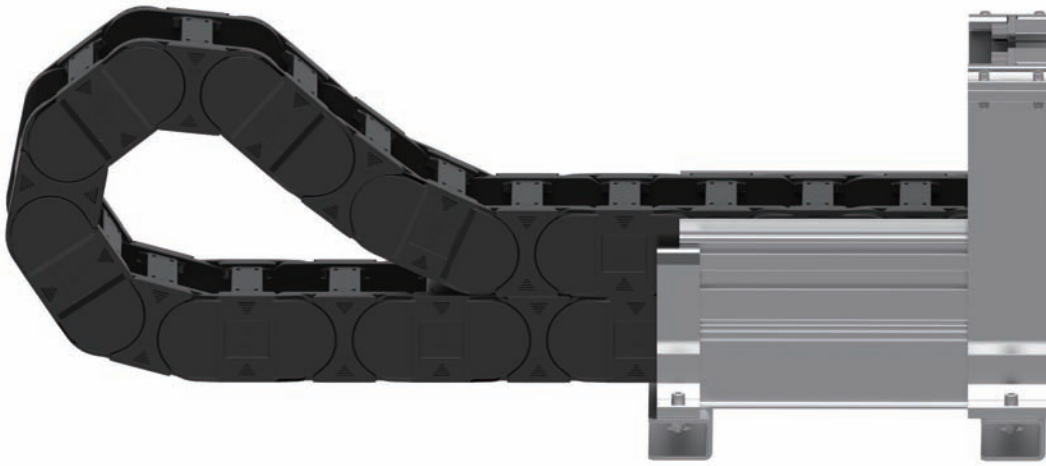
\* 七月起 from July

\*\* 六月起 from June



[www.igus.com.cn/guideliteplus](http://www.igus.com.cn/guideliteplus)

[www.igus.eu/guideliteplus](http://www.igus.eu/guideliteplus)



# 模块化加强导槽 ...

## 加强保护——非常容易改造

在极长行程或极高的驱动力应用中，加强保护引导拖链系统。可以在现有的铝制导向槽系统上直接加装铝制导向槽模块。不再需要加培训复杂昂贵的特殊结构。

- 在极长行程应用中加强保护作用，现在有现货供货
- 耐海水耐腐蚀
- 在高负载超长行程应用中提高安全性
- 现货供应，节省成本

## 典型应用场合：

起重机，煤炭仓库，超过100m的超长行程且高负载/高剪切力的应用场合

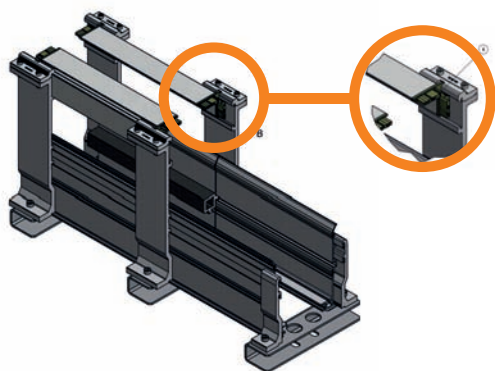
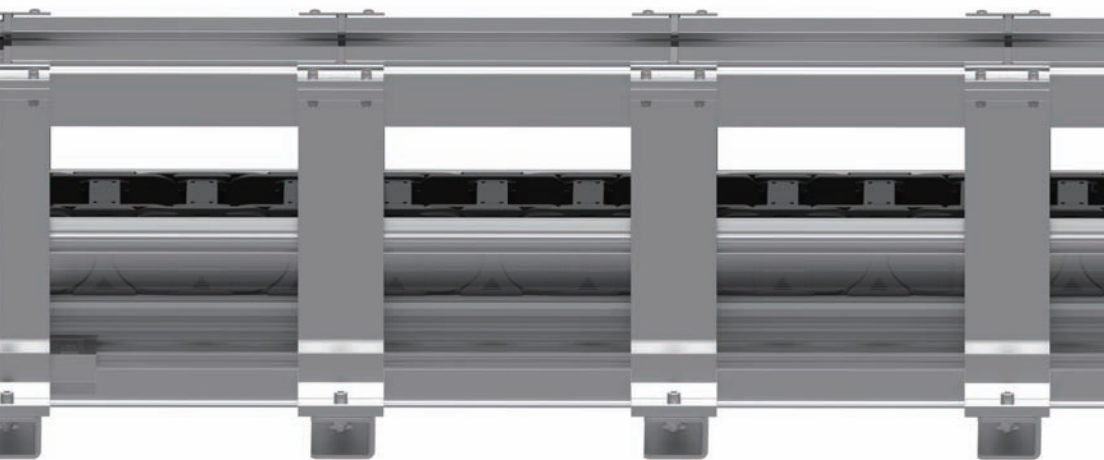
## Rise protection – can be easily retrofitted

On very long travels and/or in case of highest push/pull forces the igus rise protection gives you more safety for the guiding of the e-chain®. The rise protection is now available as ready-to-install article from the igus® aluminum trough kit. No need for difficult and expensive special constructions anymore.

- Rise protection for extremely long travel lengths now available from stock
- Seawater and corrosion resistant
- Increased safety under high loads and over long distances
- Cost-effective, from stock

## Typical application areas:

Cranes, coal bunkers, inclined lifts, long travel more than 100 m with high tensile load/shear load



尺寸 Dimensions [mm]

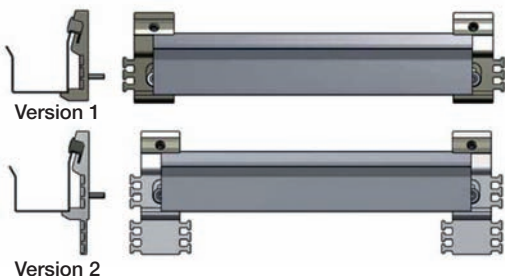
产品代码 Part No.	适用拖链 for e-chain®
RP.974.31.SL	E4.56, 4040R, 4040RHD
RP.P974.Bi.31.SL	P4.56
RP.975.31.SL	E4.80, 5050R, 5050RHD
RP.P975.Bi.31.SL	P4.80



交货期 Available  
2015 七月 July 2015



[www.igus.com.cn/rise](http://www.igus.com.cn/rise)  
[www.igus.eu/rise](http://www.igus.eu/rise)



# ... 室内起重机 ...

## igus® guidefast: 单侧快速方便安装的标准室内导向槽系统

成套供应于室内起重机: E2/000 拖链 + Chainflex® 高柔性电缆 + guidefast

- 节省装配时间达80%
- 几乎适用于所有标准的吊车
- 标准导槽长度为2m
- 适合于所有侧向安装应用
- 简单的电器件，固定不动的电缆可以直接固定在导向支架上
- 拖链连接块提前开好孔便于安装
- 补偿公差
- 标准材料: 镀锌钢, 不锈钢, 黑色粉末涂层钢 (铝制正在设计)
- 经过长时间的振动和恶劣环境的测试

### 典型应用场合:

室内起重机, 起重机

## igus® guidefast: Trough for fast and easy assembly on the side of standard indoor crane girders

Complete tool box package for indoor cranes: E2/000 + Chainflex® cables + guidefast

- Save assembly time up to 80%
- Suitable for almost all standard crane girders
- For standard trough length of 2.0 m
- For all side-mounted applications
- Easy electrification, static cables can be fixated directly onto the trough bracket
- Easy to install due to defined bore patterns of e-chain® brackets
- Compensates tolerances
- Material: Galvanized steel, stainless steel or black powder coating (aluminum version in preparation)
- Long-term tested to withstand vibration and rough environment

### Typical application areas:

Indoor cranes, cranes

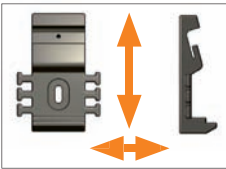
每500mm预打孔，方便快速固定拖链接头 Defined bore patterns for e-chain® mounting brackets every 500 mm, for fast e-chain® assembly

导向槽采用卡片连接，避免产生偏差 Guide trough segments are connected with clips, avoiding misalignment

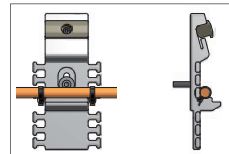
新宽度尺寸：03 和 09  
New widths 03 and 09

为直接装入拖链的电缆，每500mm设置电缆反馈 Cable feeding every 500 mm, for direct insertion of cables into e-chains®

# ... 新宽度 ...



容许垂直方向和水平方向的调整  
Allows vertical and horizontal adjustments



带有去应力元件的支架，可用于把固定不动的电缆固定在起重机横梁上 Brackets with integrated strain relief for assembly of static cables on the crane girder

## 尺寸 Dimensions [mm]

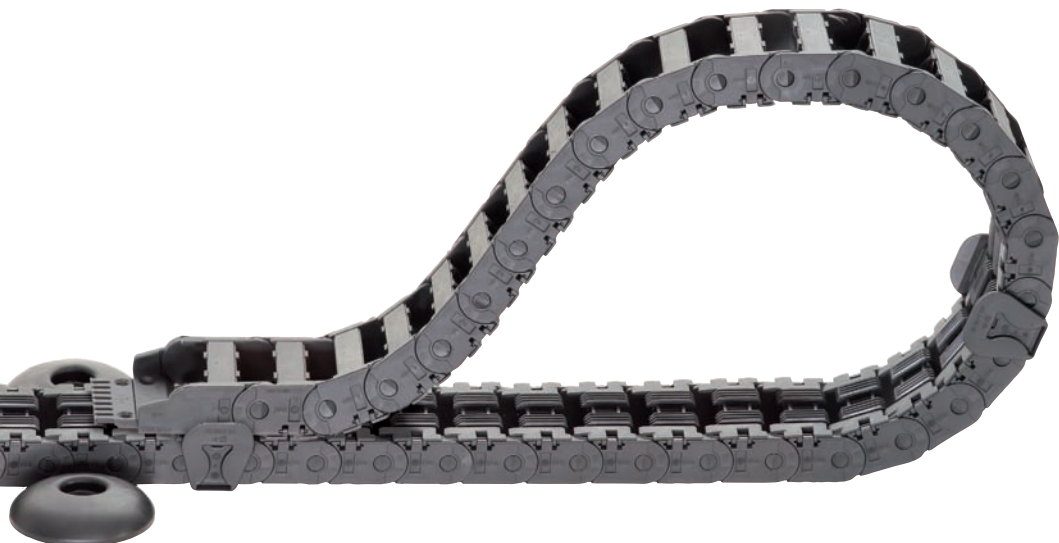
用于 E2/000 拖链 for E2/000 e-chain®	不带滑条的导向槽 包含连接片 trough profile* without glide bar set with clips	带滑条的导向槽 包含连接片 trough profile* with glide bar set with clips	guidefast 连接块 短型 01 包含梳状板 guidefast fixation "short" version 01 Set with clamps	guidefast 连接块 长型 02 包含梳状板 guidefast fixation "long" version 02 Set with clamps	B <sub>R1</sub> [mm]
1500.025.	▶ GF91.30.025.2000	GF91.31.025.2000	GF9.2.12	GF9.2.11	42.5
1500.050.	▶ GF91.30.050.2000	GF91.31.050.2000	GF9.2.12	GF9.2.11	67.5
2500.03.	▶ GF92.30.03. 2000	GF92.31.03. 2000	GF9.2.12	GF9.2.11	57
2500.05.	▶ GF92.30.05. 2000	GF92.31.05. 2000	GF9.2.12	GF9.2.11	77
2500.07.	▶ GF92.30.07. 2000	GF92.31.07. 2000	GF9.2.12	GF9.2.11	97
2500.09.	▶ GF92.30.09. 2000	GF92.31.09. 2000	GF9.2.12	GF9.2.11	110.5
2500.10.	▶ GF92.30.10. 2000	GF92.31.10. 2000	GF9.2.12	GF9.2.11	123
2700.05.	▶ GF95.30.05. 2000	GF95.31.05. 2000	GF9.2.12	GF9.2.11	70
2700.07.	▶ GF95.30.07. 2000	GF95.31.07. 2000	GF9.2.12	GF9.2.11	95
2700.10.	▶ GF95.30.10. 2000	GF95.31.10. 2000	GF9.2.12	GF9.2.11	120



交货期 Available  
常备库存 from stock



[www.igus.com.cn/guidefast](http://www.igus.com.cn/guidefast)  
[www.igus.eu/guidefast](http://www.igus.eu/guidefast)



# ... 节省导槽 ...

## autoglide – 新宽度尺寸的自滑行拖链(无需导向槽)

自滑行系统无需配备导向槽即可实现长行程运行，最长行程可达50m。

- 无需导向槽行程可达50m
- 速度可达1.5m/s
- 结构紧凑，工作区域无需导向槽
- 安装时间极短，适用于长行程
- 可沿内半径打开
- 可提供半封闭拖管-外半径封闭

### 典型应用场合：

温室，存储检索单元，输送系统，室内起重机，运输系统和其他长行程应用

## autoglide – self-guiding e-chains® without trough in further widths

The autoglide system enables long travels without guide troughs. Selfguiding e-chains® glide safely on top of each other travel of up to 50 m.

- Travels up to 50 m without guide trough
- Speeds up to 1.5 m/s
- Very compact, no trough in the working area
- Fast installation times for long distances
- Openable in the inner radius
- Available as "half tube", enclosed in the outer radius

### Typical application areas:

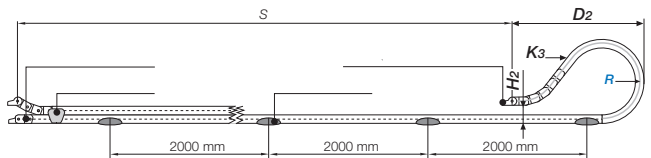
Greenhouses, storage and retrieval units, conveyor systems, indoor cranes, handling systems and many other "long travels"

新宽度  
New widths



上下滑齿的偏移保证了连续运行的滑移表面。

Offset course of upper run and lower run provides contiguous surface.



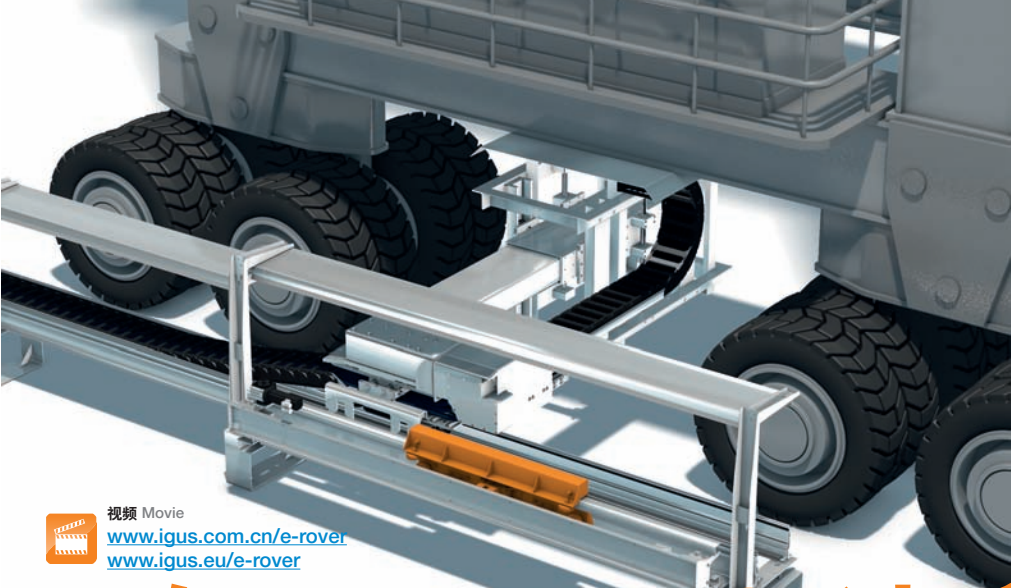
尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height hi	外高 outer height ha	内宽 inner width Bi [mm]	外宽 outer width Ba [mm]	弯曲半径 bending radius R [mm]
2400.Bi.AG.R.0	25	35	05 (57 mm)   07 (77 mm)	73 - 93	075 - 200
2600.Bi.AG.R.0	35	50	05 (50 mm)   07 (75 mm)   10 (100 mm)	66 - 91	075 - 200
3400.Bi.AG.R.0	45	64	07 (75 mm)   10 (100 mm)	95 - 120	100 - 300

交货期 Available  
常备库存 from stock

[www.igus.com.cn/autoglide](http://www.igus.com.cn/autoglide)  
[www.igus.eu/autoglide](http://www.igus.eu/autoglide)





视频 Movie

[www.igus.com.cn/e-rover](http://www.igus.com.cn/e-rover)

[www.igus.eu/e-rover](http://www.igus.eu/e-rover)

# ... 轻 30% 10G 速度

## 拖链的自动化连接 - 提供能量和达到10G的高速数据连接

这个系统复合了不间断高速安全数据传输(最高可达10G)与光信号传输。适用于高清视频和超过800m的长行程传输。新设计比原来轻达30%，安装空间更少，所需拖链更短。

- 高达10G的光信息安全传输
- 可实现不同的填充和行程
- 节省RTGs系统的运营成本
- 防止环境干扰
- 抗脏污
- 节省30%自重和安装空间
- 行程可超过800m

### 典型应用场合:

港口起重机, RTG's 高清监控

## Automatic coupling of e-chains® – igus® coupling for energy and high-speed data to 10 Gbits

The system combines secure data transmission at uninterrupted high-speed data transmission (maximum data rate 10 Gbits), with FOC. Suitable for HD video transmissions and travel of 800 m and more. The redesigned version is now more as much as 30% lighter, requires less install space and can be operated with shorter e-chains®.

- Safe transmission also with FOC signals with Data rates of 10 Gbits
- Different fillings and travels
- Saves operating costs of RTGs
- Protects the environment
- Dirt-repellent
- 30% less weight and install space
- Travel 800 m and more

### Typical application areas:

Port cranes, HD monitoring on RTG



交货期 Available

根据订单 order-related



[www.igus.com.cn/e-rover](http://www.igus.com.cn/e-rover)

[www.igus.eu/e-rover](http://www.igus.eu/e-rover)



# RTG-起重机



...RTG在堆叠操作中与供电系统连接...

The RTG is coupled to the electrical supply system during operation in the stack ...



...易格斯e-rover可靠传输电力，数据和信号（包括光信号）...

... the igus® e-rover reliably transmits all power, data and signals (including FOC) ...



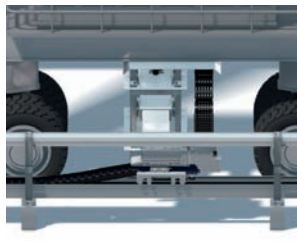
... 连接完成后，RTG进行低速放电操作 ...

... once coupling is complete, the RTG is operated electrically with low emissions ...



... 水平方向补偿 ...

... Compensation for horizontal ...



... 垂直方向偏差 ...

... and vertical deviations ...



... 易格斯e-rover降低了成本及对环境系统的影响 ...

... the igus e-rover reduces costs and environmental impact.

igus® 拖链系统 ...  
移动供电更便捷

# 拖链 ... ... 快速, 安全, 低成本传输的竖直运动

e-chains® ...  
...for fast, safe, and low-cost handling of  
vertical movements

igus® the-chain ...  
moving energy made easy

52

**快速更简单的竖直应用**

Fast and safe even easier for vertical applications

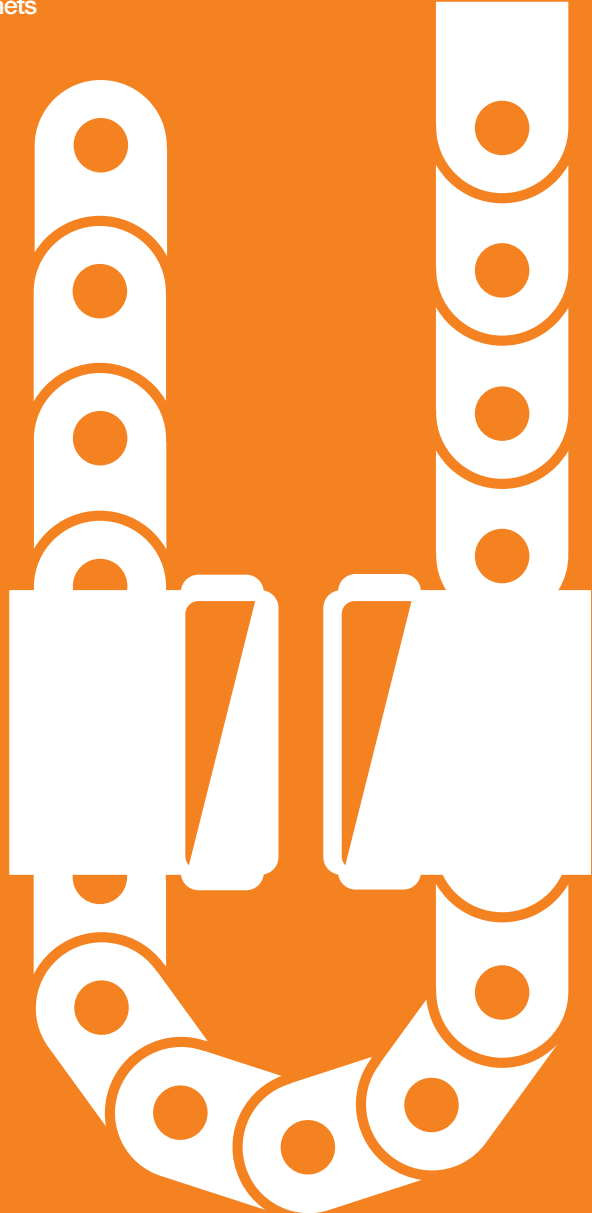
guidelok slimline P

54

**磁性固定**

Held by magnets

magsnap





# ... 垂直方向应用 ...

## 低成本，更轻便，安装更简单 – guidelok slimline P – 全工程塑料

垂直应用的导向槽，采用更轻便的部件更加精简的结构，适用于所有类型的堆垛机。锁定机构和导轨起防止拖链振动和偏移的作用。

- 与全封闭的结构相比，显著节约成本降低自重
- 降低运输成本
- 固定好导轨，即可实现快速安全方便安装
- 显著降低噪音
- 维护简便
- 在这个单独的系统里，能量、数据及图像安全传输

### 典型应用场合：

堆垛机，提升机，建筑起重机，自动化车库，船用提升机

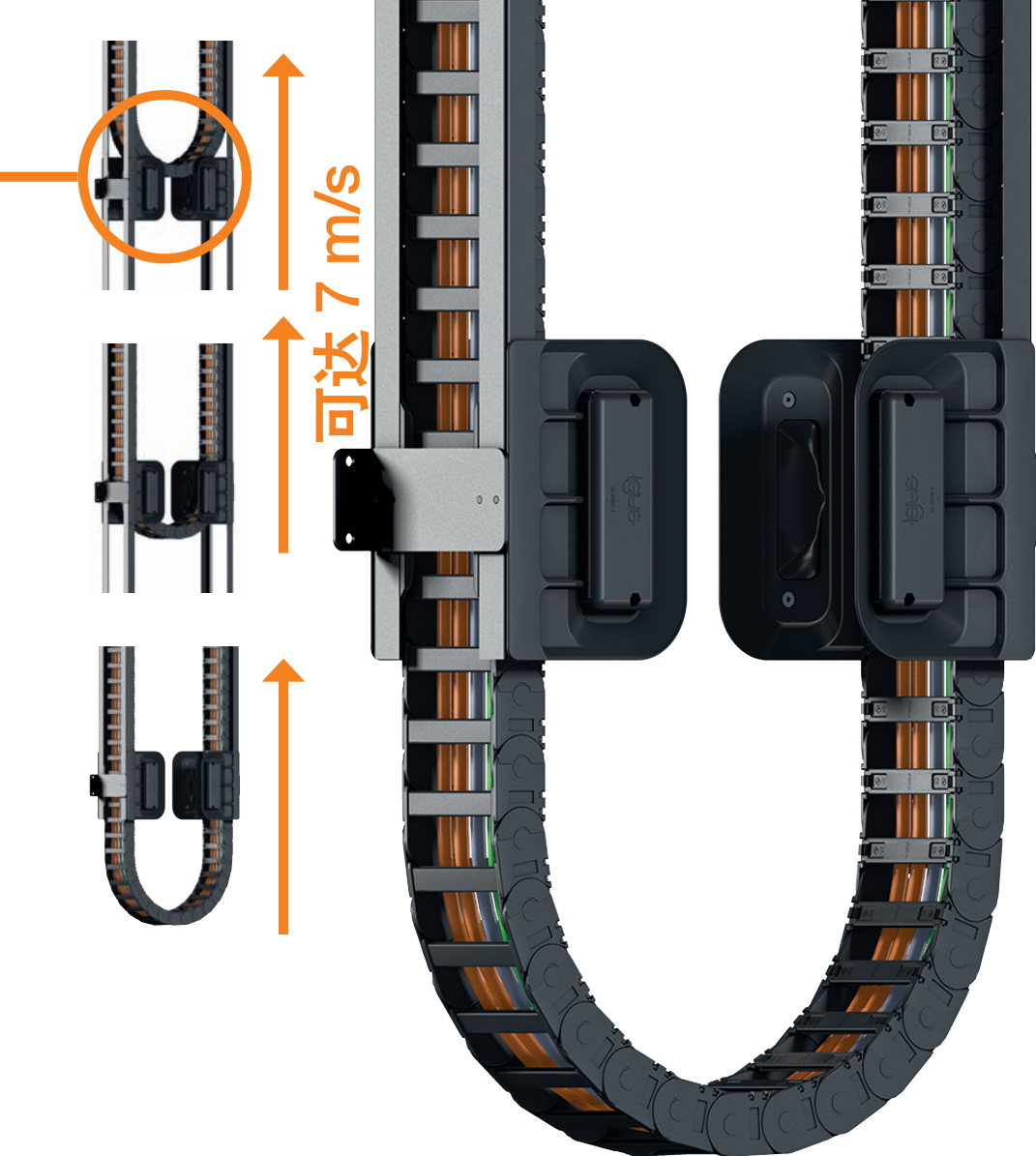
## Lower-cost, lighter and even easier to assemble – guidelok slimline P – made entirely of plastic

Guide trough for vertical applications, in particular for Stacker cranes of all type, now with even lighter components and a simplified. Locking lever and guide rails prevent shaking and deflection of the energy chain.

- Significant savings of costs and weight compared with a complete enclosure
- Thus transport costs are also lower
- Fast, secure, and easy assembly by clipping in the guide rails
- Significant noise reduction
- Easy access for servicing
- Energy, data and other media in a single system

### Typical application areas:


Stacker cranes, lifters, construction and crane lifts, automatic car parks, ship lifts




可达 7 m/s

尺寸 Dimensions [mm]

产品代码 guidelok P Part No. guidelok P	拖链系列 e-chain® series	内宽 inner width B <sub>i</sub>	弯曲半径 bending radius R
GLSL.P.255.10.150.LLLL/FFFF	255	103	150
GLSL.P.2700.10.150.LLLL/FFFF	2700	100	150

 交货期 Available  
常备库存 from stock

 [www.igus.com.cn/GLSLP](http://www.igus.com.cn/GLSLP)  
[www.igus.eu/GLSLP](http://www.igus.eu/GLSLP)



## ...磁性...

### 磁力 magsnap 可开启横杆——无需导向槽节省空间

在长行程和竖直接传输应用中，由于空间限制有时不能使用导向槽。磁铁把拖链控制在指定方向上，比如“固定”在 RGB 的金属支撑板上，有效防止拖链摇摆。由于磁铁可以把拖链的外半径部分吸附在“RBR 导向槽”上保证拖链能够安全安静地运动，所以 magsnap 拖链是垂直圆周运动(RBR)的理想选择。

- 在垂直、水平乃至圆周运动中安全有效地限制拖链
- 快速方便装配
- 装配阻尼元件降低噪音
- 方便维修

#### 典型应用场合：

悬挂应用：比如存储检索设备，建筑用升降机，自动化车库，和垂直方向的圆周运动(RBR)

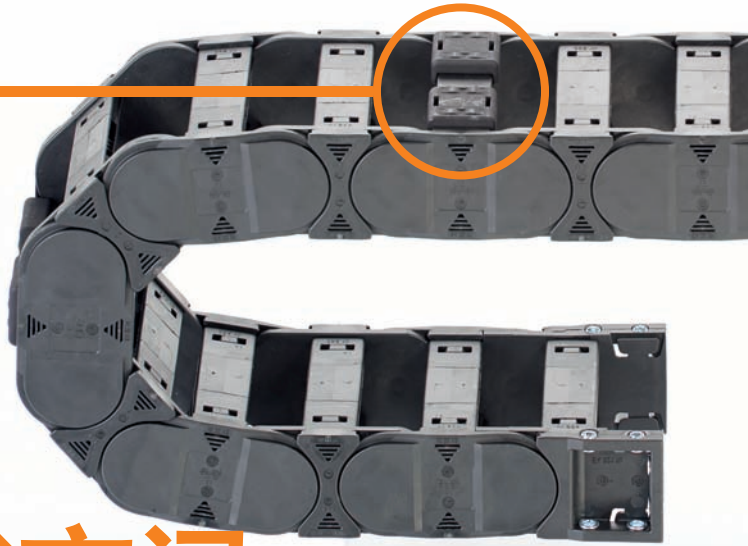
### Magnetic magsnap opening crossbars – save space run without trough

For long, vertical hanging applications where the use of a guide trough is not possible for space reasons. Magnets hold the e-chain® in the specified direction and "fix" this to the metal panel of your RGB, e.g. This reliably prevents the e-chain® from swinging. The magsnap e-chain® is also ideal for vertical circular motion (RBR) as magnets hold the outer radius of the e-chain® to the "RBR guide trough" and the e-chain® can be moved securely and quietly.

- Holds the e-chain® securely in position for vertical, horizontal or even circular applications
- Fast and easy assembly
- Equipped with damping elements to reduce noise
- Easy to retrofit

#### Typical application areas:

Hanging Applications, like: storage and retrieval equipment, builder's and crane lifts, automatic car parks and vertical applications with circular movement (RBR)



# 节省空间 ...

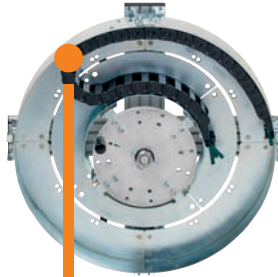
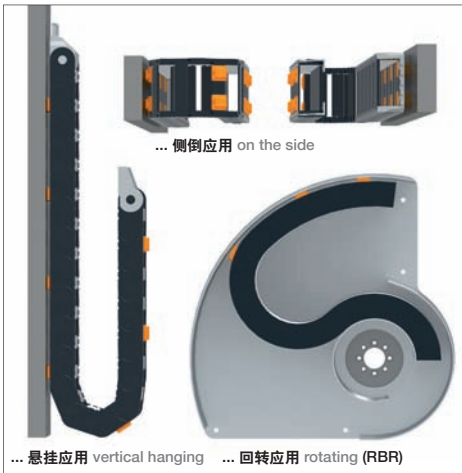
magsnap 装配在外半径横杆上，标准配置为每 5 节配一组(也可根据负载进行调整)

E2 系列拖链可配置 magsnap:

E2/000 - 2600 和 3500 系列, E2mini -10和B17系列。

The magsnaps are attached to the crossbar in the outer radius. As standard they are attached every 5th link (can change based on additional load).

magsnap is available for many E2 series: E2/000, Serie 3500; E2/000, Serie 2600; E2 mini, Serie 10; E2 mini, Serie B17.



**magsnap:**

**磁铁固定在外半径**

Magnets located in the outer radius

- 比如: 可省去圆周运动的导向板

- For example, guide plates for circular movements are dispensed with



交货期 Available

2-3 周 2-3 weeks

更多型号根据需求 more types on request



[www.igus.com.cn/magsnap](http://www.igus.com.cn/magsnap)

[www.igus.eu/magsnap](http://www.igus.eu/magsnap)



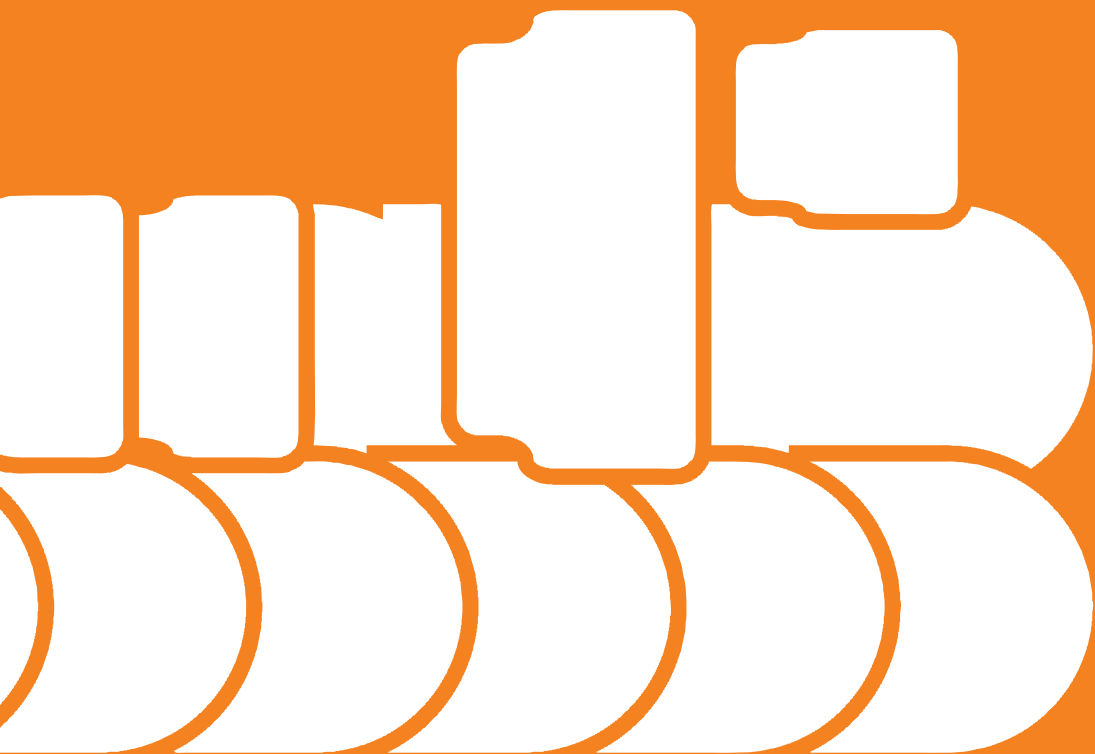
igus® 拖链系统 ...  
移动供电更便捷

拖链 ...

... 通用场合, 洁净室应用,  
防尘应用 ...

e-chains® ...

... for universal, clean and dusty use



58

防尘，大规格，自重轻，动态场合

Dust-tight, large, lightweight and dynamic

E4.64L

60

低成本，大规格，自重轻，新宽度尺寸

Low-cost, large and tight, new widths

R2.75

62

外侧限位块，切屑停留在外侧

Stop dogs on the outside, dirt stays outside

4240AX

64

自重轻，动力场合，新宽度尺寸

Lightweight, dynamic, new widths

E4.31L/R4.31L, E4.38L/R4.38L, E4.48L/R4.48L

66

洁净室，低噪音，新尺寸

Cleanroom, low noise, new sizes

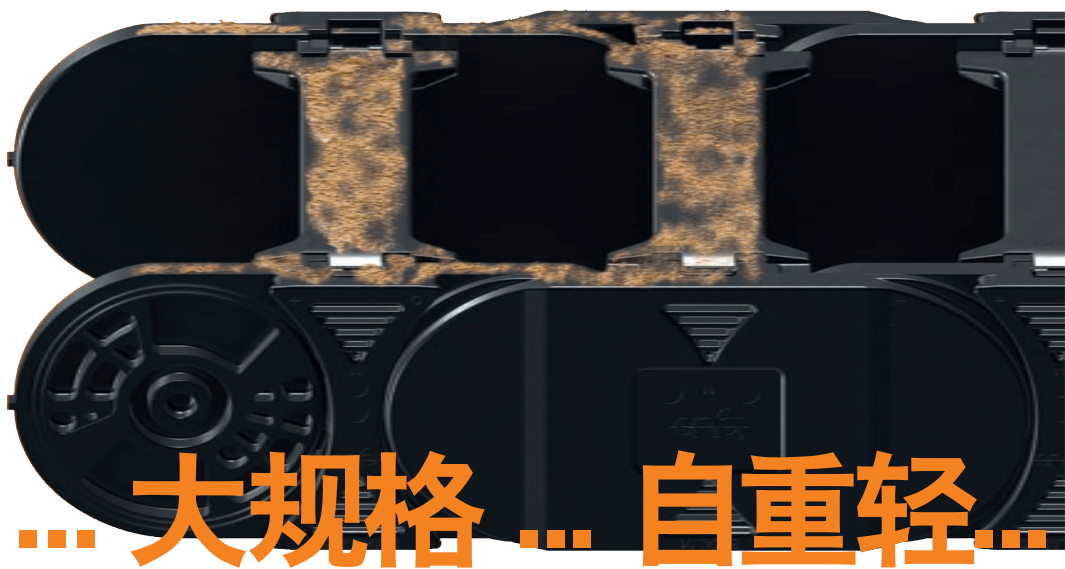
E6.1

68

世界上最小的拖链

Smallest e-chain® of the world

Serie 031



# ... 大规格 ... 自重轻 ...

## E4.1 轻型拖链系统防尘密封内高 64mm 新成员 - E4.64L

内高 64mm，集成密封结构防止细小灰尘进入限位块。类似于其他 E4.1 轻型拖链，可开启横杆的设计极大的增大了拖链的内高，降低了磨损，而且两侧均可铰接式打开。

- 密封挡片设计保护限位块
- 优化内外高度比例
- 降低自重
- 使用螺丝刀即可从两侧打开横杆

### 典型应用场合：

分隔片光滑表面保护电缆；锁紧分隔片卡槽间隔 2.5mm；非常适合于侧倒安装应用。



适用的分隔片：分隔片光滑表面保护电缆；锁紧分隔片卡槽间隔 2.5 mm；非常适合于侧倒安装应用。

Suitable separators: Separators have cable friendly rounded design. Separator notch securely every 2.5 mm. Especially good for side mounted applications.

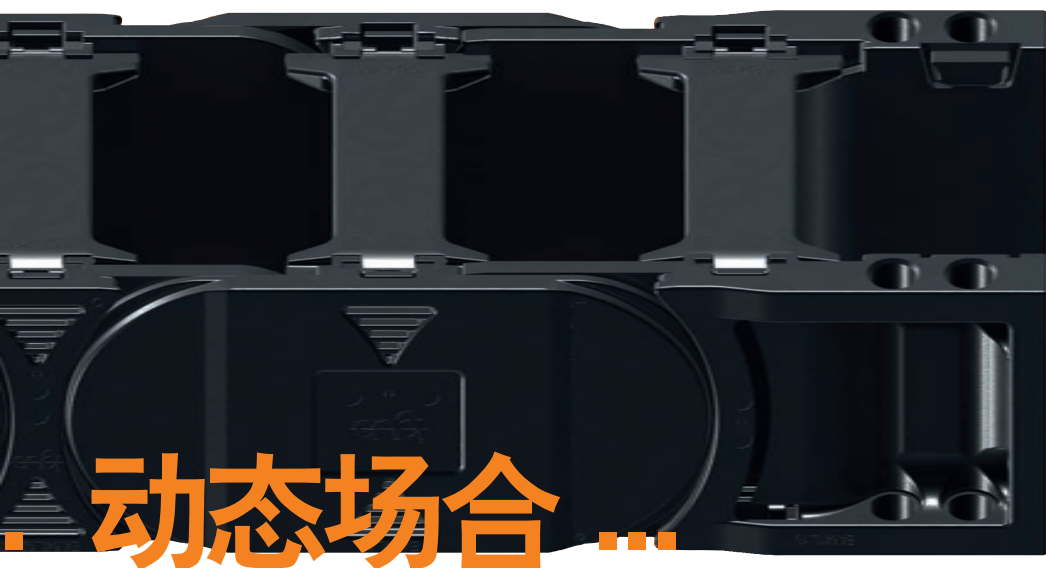
## A new member of the E4.1 Light family with integrated dust seal and 64 mm inner height – E4.64L

With an inner height of 64 mm and integrated seal that prevent ingress of fine dust in the stop dogs. Like the other E4.1L variants, the opening crossbar has been designed to enable the greatest possible inner height, optimised wear and flipping open in both directions.

- Chip-tight design with encapsulated stop dogs
- Optimised ratio of inner to outer height
- Low weight for higher dynamics
- Opening crossbars can be swiveled open to both sides

### Typical application areas:

Wood processing machines, machine tools



# 动态场合



注塑成型的密封结构防止细小灰尘进入

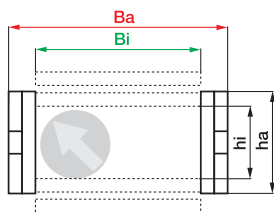
Injected seal prevents ingress of fine dust.



“推出”结构排出进入的灰尘

"Pusher" conveys dust towards the outlet openings

注塑密封槽  
Injected seal groove



排灰尘开口  
Outlet openings for dust

尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height hi	外高 outer height ha	内宽 inner width Bi [mm]	外宽 outer width Ba [mm]	弯曲半径 bending radius R
E4.64L.Bi.R.0	64	84	50, 100, 150, 200, 250, 400	Bi + 24,5	100, 125, 150, 175, 200, 250, 300, 350, 400

交货期 Available

[www.igus.com.cn/E4light](http://www.igus.com.cn/E4light)  
[www.igus.eu/E4light](http://www.igus.eu/E4light)



# 全封闭

## R2.75 - 可从两侧开启内高 75mm 拖管

经济稳固内高为75mm的拖管。可沿外半径两侧开启。自重轻，双限位块设计，可承受高负载的架空应用。

- 更多宽度的低成本 E2 拖管
- 切屑防护
- 方便填充电缆——可从两侧开启盖板
- 双限位块设计，运行平稳
- 锁紧分隔片适用于侧倒安装应用

### 典型应用场合：

机床，木工机械，纺织机械，通用机械

## R2.75 – e-tube swivelable from both sides with 75 mm inner height

Cost-effective, stable e-tube with an inner height of 75 mm. Outer radius can swiveled open on both sides. Very tight design with stable double stop dogs for high filling weights and unsupported lengths.

- More widths of low cost E2 tubes
- Cables are protected from chips
- Easy to fill, due to the lids open on both sides
- Smooth run due to double stop dog system
- Integrated notches for side mounted applications

### Typical application areas:

Machine tools, wood working machines, textile machines, general mechanical engineering



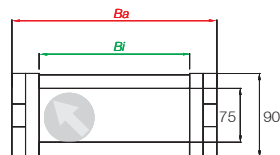
#### 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height hi	内宽 inner width Bi	外高 outer height ha	外宽 outer width Ba	弯曲半径 bending radius R
R2.75.Bi.R.0	75	111   163*   200**	90	Bi + 24	130 *

\* 新弯曲半径交货期4周。  
其它宽度尺寸根据要求提供。 New radii available up to 4 weeks after first order. More widths upon request.

#### 分隔片, 保护电缆, 带锁紧 Separator, cable friendly, notch

产品代码 Part No.	可用拖链内高 For inner height e-chain®	版本 Version
75.1	75	Standard
75.5	75	Rasttrennsteg Notch separator



适用的分隔片: 分隔片光滑表面保护电缆; 锁紧分隔片卡槽间隔 2.5mm; 非常适合于侧倒安装应用。

Suitable separators: Separators have cable friendly rounded design. Separator notch securely every 2.5 mm. Especially good for side mounted applications.



交货期 Available

\* 六月起 from June

\*\* 七月起 from July



[www.igus.com.cn/R275](http://www.igus.com.cn/R275)

[www.igus.eu/R275](http://www.igus.eu/R275)



# ... 防尘 ...

## 特殊的防尘拖链

新开发的 4240AX 适用于对于传统拖链来说防尘要求比较复杂的应用。传统的限位系统，大量灰尘会聚集在限位块上，长时间运行就会导致拖链弯曲半径变大。采用这种外置的限位块，就可以避免这种现象。

- 外置限位块
- 尘屑(比如木屑)不容易聚集在限位块上
- 优化横杆结构增大拖链内高
- 行程可达 300m

## 典型应用场合：

木工加工机械，火电厂，矿山，大量灰尘或颗粒物的应用场合

## Special e-chain® for applications in fine dust

The 4240AX has been developed for applications where fine dust complicates use of a conventional e-chain®. With conventional stop systems the finest dust can collect on the stops and cause the radius of the e-chain® to become larger over a longer period of time. Thanks to the exterior stop dogs, this situation does not occur.

- Exterior stop dogs
- Dust (e.g. saw dust) does not accumulate on the stop dogs
- No "rising" of the e-chain®
- Optimised inner height through smaller opening crossbars
- Long travel up to 300 m

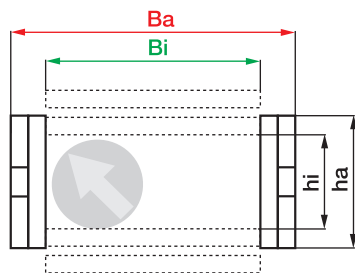
## Typical application areas:

Wood processing industry, coal-fired power plants, mines, applications with fine dust/particles



外置限位块：防止灰尘聚集在限位块上

Exterior stop dogs: Dust does not accumulate on the stop dogs





尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height	外高 outer height	内宽 inner width	外宽 outer width	弯曲半径 bending radius
	hi	ha	Bi [mm]	Ba [mm]	R
4040AX.Bi.R.0	56	84	Bi + 36	86 - 436 mm	135, 150, 200
4240AX.Bi.R.0	62	84	Bi + 36	86 - 436 mm	135, 150, 200

相同外高，内高增大10%!

10% greater inner height with the same outer height!

 交货期 Available  
常备库存 from stock

 [www.igus.com.cn/AX](http://www.igus.com.cn/AX)  
[www.igus.eu/AX](http://www.igus.eu/AX)



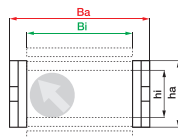


## 更轻, 更稳定, 更经济 - E4.1轻型新尺寸

- 从两侧铰接式开启拖链
- 更薄的链节, 优化的横杆, 改进了内外尺寸比例
- 快速装配
- 行程可达100m
- 可提供 ESD 拖链

## Light, highly dynamic, cost-effective - new size E4.1 light: E4.31L

- e-chain® model snaps open on both sides
- Reduced weight, higher dynamics possible
- Thinner outer links and optimized crossbar geometry provide improved ratio of inner and outer dimensions.
- Quick assembly
- Travel up to 100 m
- Also available as ESD version



### 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height hi [mm]	内宽n inner widths Bi [mm]	外高 outer height ha [mm]	外宽 outer width Ba [mm]	弯曲半径 bending radius R [mm]
E4.31L.Bi.R.0	31	40   50   62   75   87   100   125   150   175	42	Bi + 14	55 - 300
E4.38L.Bi.R.0	38	50   62   75   87   100   105   112   125   137   150   162   175   200   250	54	Bi + 16	63 - 300
E4.48L.Bi.R.0	48	50   62   75   87   100   105   112   125   137   150   162   175   200   250	64	Bi + 20	75 - 350

4 片式设计。中等负载, 最高可达26 kg/m (Flb)  
4 part design. For medium loads and fill weights up to 26 kg/m (Flb)

 交货期 Available  
常备库存 from stock

 [www.igus.com.cn/E41light](http://www.igus.com.cn/E41light)  
[www.igus.eu/E41light](http://www.igus.eu/E41light)



# 新尺寸...

## 可提供 3 种尺寸的新设计拖管

- 可打开盖板
- 密封盖板，几乎没有边缝
- 低自重，运动更稳定
- 更薄的链节，优化的横杆，改进了内外尺寸比例
- 平滑表面
- 快速装配
- 行程可达25m
- 可提供ESD拖链和耐高温拖链

## Available in three sizes as energy-tube with new design

- Openable lids
- Tightly sealing lids and bottoms, almost no edges and undercuts
- Low weight, higher dynamic possible
- Thinner outer links and optimized opening cross-bar geometry provide improved ratio of inner and outer dimensions.
- Smooth surface
- Quick assembly
- Travel up to 25 m
- Also available as ESD and high temperature version

## 尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height hi [mm]	内宽n inner widths Bi [mm]	外高 outer height ha [mm]	外宽 outer width Ba [mm]	弯曲半径 bending radius R [mm]
R4.31L.Bi.R.0	31	50   75   125   150   175   200   250	42	Bi + 14	75 - 300
R4.38L.Bi.R.0	38	50   75   100   125   150   200   250	54	Bi + 16	125 - 300
R4.48L.Bi.R.0	48	50   62   75   100   125   175   200   250	64	Bi + 20	125 - 350

4 片式设计。中等负载，最高可达26 kg/m (Flb)

4 part design. For medium loads and fill weights up to 26 kg/m (Flb)



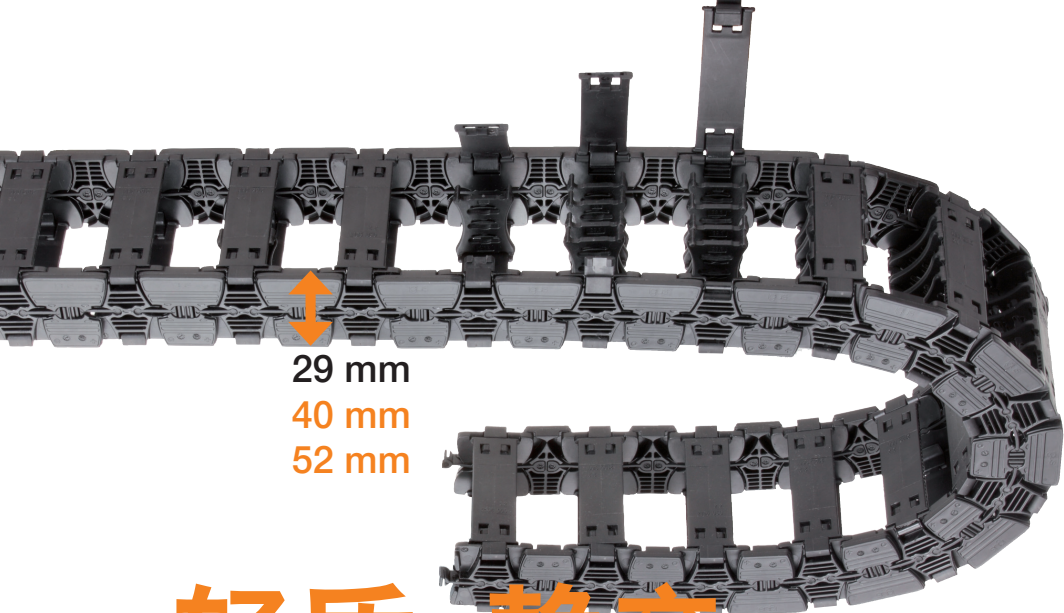
交货期 Available

常备库存 from stock



[www.igus.com.cn/E41light](http://www.igus.com.cn/E41light)

[www.igus.eu/E41light](http://www.igus.eu/E41light)



29 mm

40 mm

52 mm

# ... 轻质, 静音 ...

## E6.1 系列拖链 - 运行更顺畅, 洁净室应用 新尺寸拖链

易格斯无尘室静音拖链增添了两个新尺寸。易格斯 E6.1 拖链的最大特点就是低噪音运行（最大为 38dB(A)）并且运行过程中振动非常小。采用特殊“弹簧片连接”使用 E6.1 拖链适用于无尘室应用。

- 极低振动
- 低磨损的链节结构设计(非孔/销连接)
- 无多边形效应, 所以运行极为平稳顺畅
- 平滑的内腔设计, 有效保护了内部电缆及其他介质管, 延长其使用寿命
- E6.29 系列: 横杆可沿两侧打开, 并且亦可沿内半径或外半径拆卸
- 与 E6 系列相比, 自重减轻近 30%
- 高性价比

### 典型应用场合:

半导体行业, 印刷行业, 有高加速低噪音低磨损需求的应用

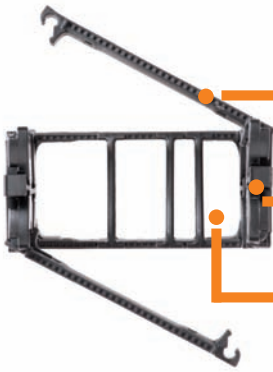
## System E6.1 – quiet running and cleanroom suitable e-chains® in new sizes

The igus® cleanroom and “whisper “ chain with two new sizes. The igus® E6.1 chains® are characterized by an enormous silent run (from 38 dB (A)) and extremely low vibration. The special “spring connector principle” makes the E6.1 cleanroom suitable.

- Extremely low vibration
- Low-abrasion fastening system (no pin/hole connection)
- Virtually no polygon effect, thereby “round “ operation
- Smooth and obstacle free interior design for a long lifetime of cables and hoses
- Series E61.29: Snap-open crossbars on both sides and removable along the inner and outer radius
- Approx. 30% reduction compared to System E6
- Low-priced

### Typical application areas:

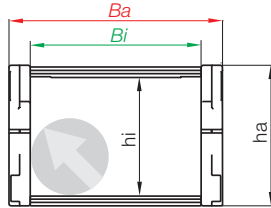
semi-conductor industry, Printer/Plotter industry, For applications with max. accelerations, when minimum noise and wear are important



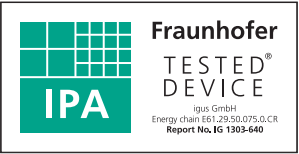
E61.29: 横杆可沿两侧打开, 并且亦可沿内半径或外半径拆卸。 Crossbars (E61.29) are swivelable on both sides and removable in the inner and outer radius

与E6.29相比, 自重减轻 37% 37% weight saving (compared with E6.29)

全内腔尺寸, 可实现方便填充 Inner diameter completely accessible for easy filling



# 新尺寸 ...



● IPA 无尘认证 - IG 1303-640-1 报告: 根据国际标准 DIN EN ISO 14644-1, 符合 ISO Class 1 等级。E61.29.050.075.0.CR分别在速度0.5m/s, 1.0m/s, 2.0m/s条件下测试。

● IPA classification - Report IG1303-640-1: ISO Class 1, according to DIN EN ISO 14644-1 for series E61.29.050.075.0.CR at v = 0,5 m/s, 1,0 m/s, 2,0 m/s

● 通过小节距以及独特制动系统使得运行极为安静 - 38dB(A)

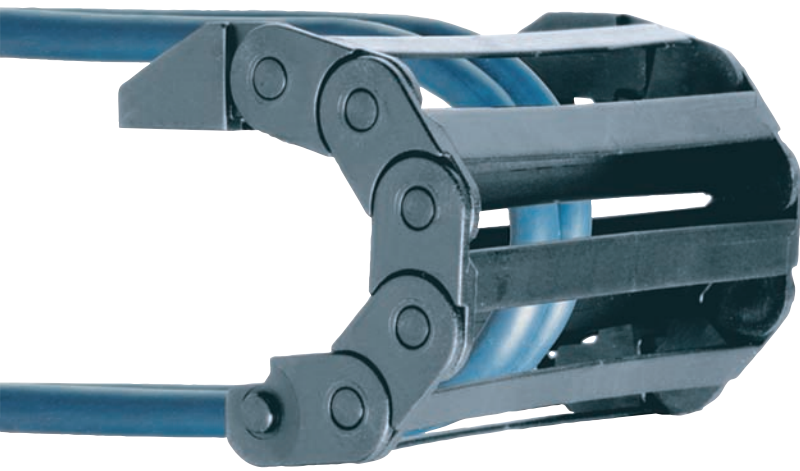
● Extremely quiet through small pitch and “brake” in the stop dog system – 38 dB(A)

尺寸 Dimensions [mm]

产品代码 Part No.	内高 inner height	外高 outer height	内宽 inner width	外宽 outer width	弯曲半径 Bending radius
	hi	ha	Bi	Ba	R
E61.29.Bi.R.0	29	35	30 - 120	43 - 133	55 - 150
E61.40.Bi.R.0	40	54	60 - 320	60 - 320	63 - 200
E61.52.Bi.R.0	52	65	64 - 324	64 - 324	75 - 250

交货期 Available  
常备库存 from stock

[www.igus.com.cn/E61](http://www.igus.com.cn/E61)  
[www.igus.eu/E61](http://www.igus.eu/E61)



## E2 微型拖链 - 一片式设计 - 最小尺寸

E2 微型拖链是体积极小轻质的一片式拖链，特别适用于高速运动。

早先的最小塑料拖链为 03 系列(不可打开)和 E03 (方便型拖链)，而现在有更小的拖链了，内高为4.5mm的031系列拖链成为现在世界上最小的拖链。

- 更小的内高和弯曲半径
- 小节距适用于安静应用
- 内部光滑，保护电缆
- 低自重
- 大尺寸销保证长使用寿命
- 优化的内外尺寸比例
- 世界上最小的拖链

### 典型应用场合：

自动化设备(车载系统)，一般机械，模型(微型拖链)，自动门，车辆，测量机，电气传输系统，拾取机器人

## E2 micro – One piece design – even smaller size

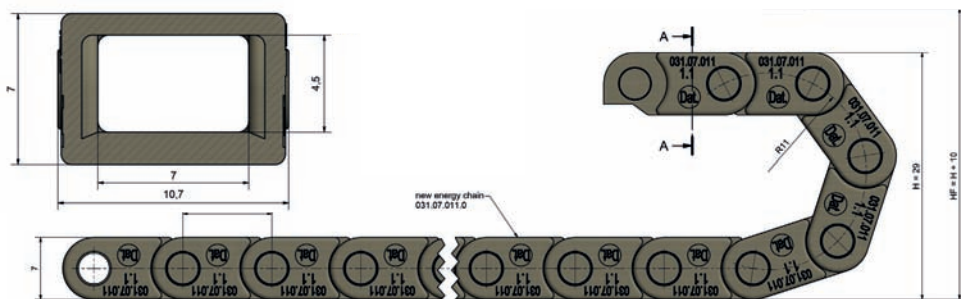
E2 micro e-chains® are very small, one-piece e-chains® with a low weight and therefore ideal for highly dynamic applications.

The previous smallest plastics chain®-03 series (not to open) or series E03 (easychain® principle) is now even smaller. With an interior height of 4,5 mm, series 031 is the smallest plastic e-chain® of the world.

- Smallest inner heights and bending radii
- Small pitch for silent operation
- Cable-friendly interior
- Low weight
- Large pins for a long service life
- Favorable internal/external dimensions ratio
- Smallest e-chain® of the world

### Typical application areas:

Automotive (Onboard-systems), General construction machinery, Models (micro e-chain), Automatic doors, Vehicles, Measuring machines, Electronics Handling systems, Pick and place robot



产品代码 Part No.	内高 inner height hi [mm]	内宽n inner widths Bi [mm]	外高 outer height ha [mm]	外宽 outer width Ba [mm]	弯曲半径 bending radius R [mm]
031.07.011.0	4,5	7	7	10,7	11



交货期 Available  
常备库存 from stock



[www.igus.com.cn/news](http://www.igus.com.cn/news)  
[www.igus.eu/news](http://www.igus.eu/news)

igus® 拖链系统 ...  
移动供电更便捷

拖链 ...

... 特殊应用

... 引导毛细管或监控

e-chains® ...

... for "special" ... guide ultra-small capillary tubes  
or with monitoring



igus® the-chain ...  
moving energy made easy

72

### 引导毛细管

Guide capillary tubes in tandem  
e-cord micro

74

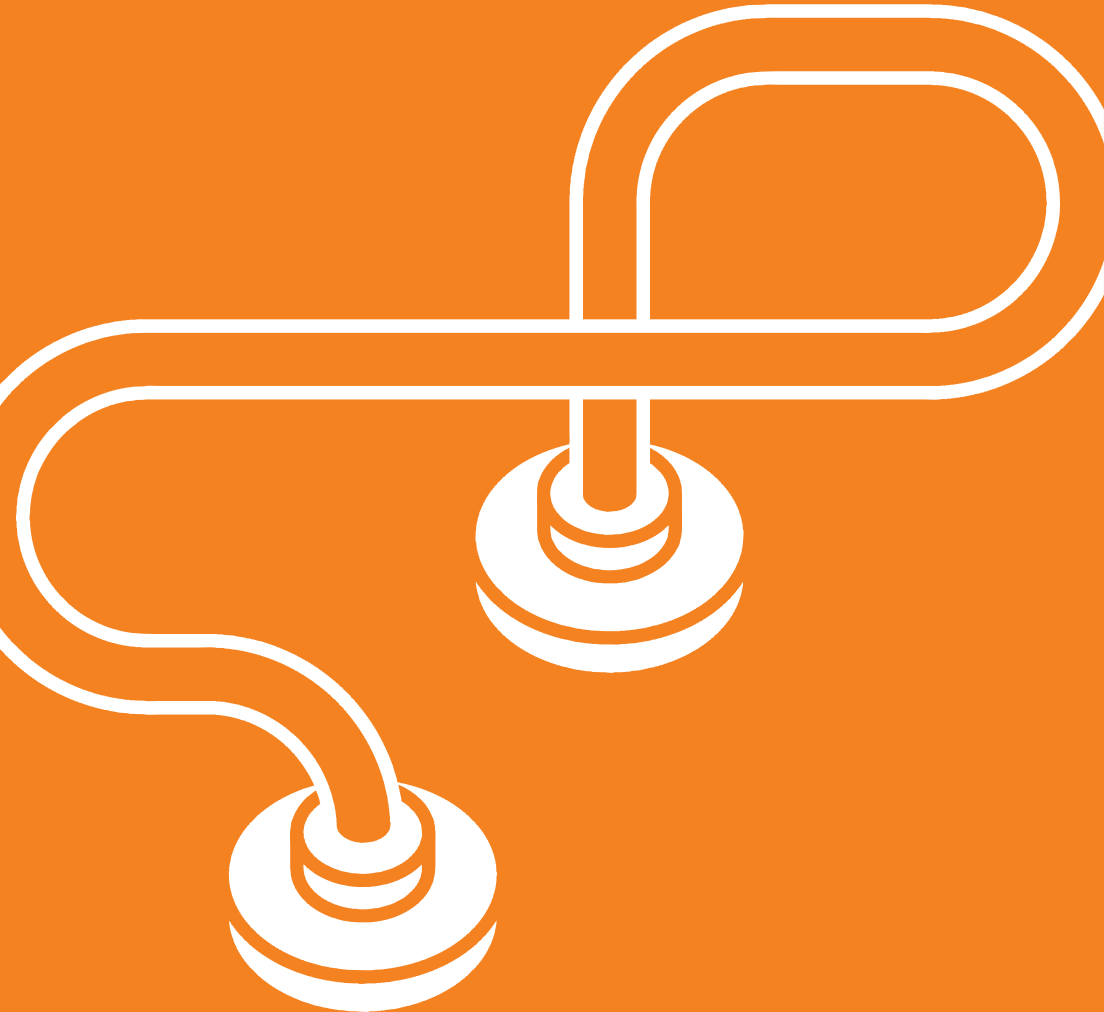
### 最大程度阻止振动

Dampening even the strongest vibrations  
gedämpfte e-kette®

76

### 拖链有操作时自动触发装置

Triggealart if there is a partial defect of the e-chain®  
EMA







$R \geq 45 \text{ mm}$

## ... 双向引导 ...

### 微型 e-cord - 并联导向的 2 种可能

创新型易格斯“微型 e-cord”的功能即为：安全灵活引导直径小于 1mm 的超细管线。柔性微型 E-cord 为模块化系统，并可根据运动设备进行调整。预设弯曲半径，防止软管产生过度弯折，确保运动顺畅不停机。使用该系统，即使尺寸小于  $\varnothing 1\text{mm}$  的毛细管，也可以安全灵活的运动。

- 安全灵活引导超细管线
- 预装配模块
- 预设弯曲半径，防止软管产生过度弯折，确保运动顺畅不停机

典型应用场合：  
医疗用移液器

### e-cord micro — now parallel guiding of two possible

Safe and flexible guiding of the smallest tubes  $< \varnothing 1 \text{ mm}$  is how the innovative igus® "e-cord micro" functions. The flexible "e-cord micro" can be assembled modularly and consequently adapted to movement in the machine. The pre-defined radii prevent bending of the tubes and ensure smooth workflows without machine downtimes.

- Safe and flexible guiding of the smallest tubes.
- Can be assembled modularly and consequently.
- Pre-defined radii coordinated with movement of the machine prevent bending of the tubes.

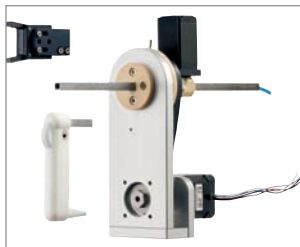
### Typical application areas:

Pipetting machines in medical technology



毛细管的粗细仅相当于注射器的针头，在调整应用中毛细管运动时，弯曲半径不能小于45mm。在设计或操作过程中，如果没有遵守这个要求，毛细管就很容易被卡断，从而导致机器故障。于是永久预设管路的弯曲半径这一工艺就成为了一个技术挑战，而由高效弹性耐磨聚合物制成的“微型e-cord”解决了这一难题。

The capillary tubes guided in such miniature hoses, whose diameters measure just a few millimeters, must not be bent in radii of less than 45 mm in dynamic applications. If this requirement is not adhered to in the design or during operation, the hoses snap off and this leads to a machine failure. Permanently secure routing in pre-defined radii thus poses a technical challenge, which is solved by the "e-cord micro" band made of high-performance and elastic tribopolymers.



医疗用移液器 - 详见 152 页

Pipetting machines in medical technology – for more information see page 152



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根据订单 order related



[www.igus.com.cn/e-cord](http://www.igus.com.cn/e-cord)

[www.igus.eu/e-cord](http://www.igus.eu/e-cord)



# ... 轮式拖链 ...

## 易格斯 E4.1 拖链 - 耐磨减振优化

在最大振动负荷应用中，拖链的使用寿命会由于振动而受限制，比如：旋锻。旋锻，顾名思义，就是旋转模锻，是生产管、棒等需要旋转对称工件的一种精密工艺。在这一锻造过程中，有高频短行程的径向运动，使得环绕工作产生径向作用力。这一过程由许多小步骤组成。简而言之，旋锻是一个渐进成型的过程。为了解决类似产品在这种应用中的问题，E4.1拖链就进行了耐磨减振优化，从而吸收或补偿振动作用。

## igus E4.1 e-chain® with Tribo-optimised vibration damping

For applications with maximum vibration loads the service life of the energy supply can be restricted through vibration, for example, rotary swaging. Rotary swaging, also formerly known as swaging, is a process for precision forming of tubes, bars and other rotationally-symmetric workpieces. The swaging dies perform high frequency radial movements with short strokes, and thus exert radial pressure forces on the encircled workpiece. Forming occurs in many small individual steps. Rotary swaging is referred to as an incremental forming procedure. To have a solution in the product range for these applications as well, the e-chain® E4.1 with tribo-optimised vibration damping was developed, which absorbs and/or compensates vibrations.