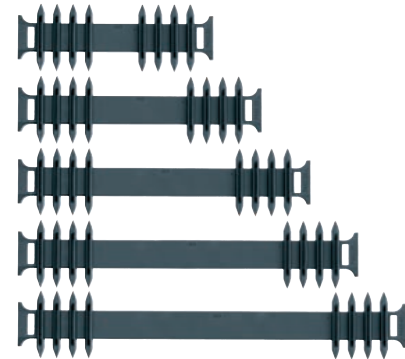
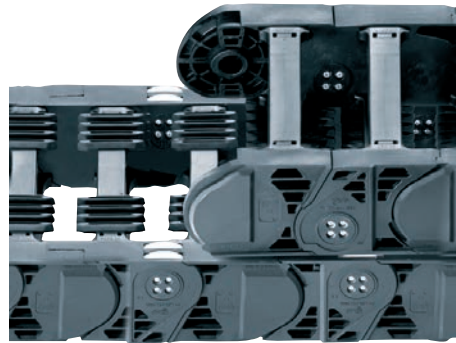
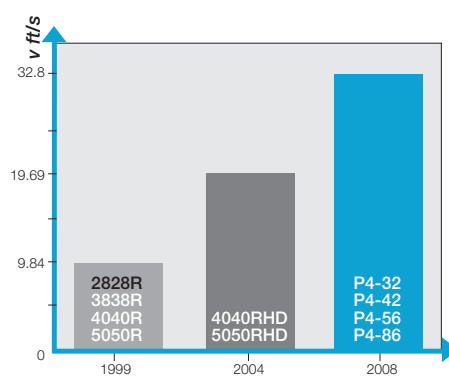
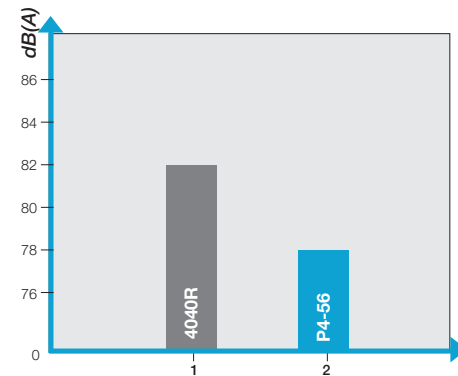


## New: Wide variety of modular components and accessories for P4 Rol E-Chains®

### New technical data:

Modular P4 system for very long travels and high speed

- 2,625 ft.
- > 32.8 ft/s
- Heavy fill weight up to 6.7 lbs/ft
- Large rolling and gliding surfaces for long cycle life
- Safely on track using AUTO-GLIDE crossbars and guide trough
- Same pitch for roller links/chain links



### New: P4-80

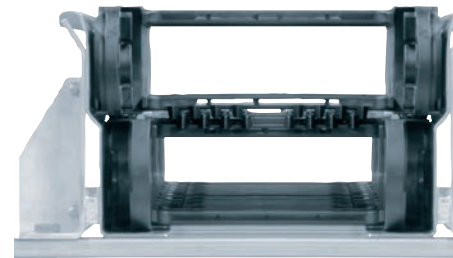
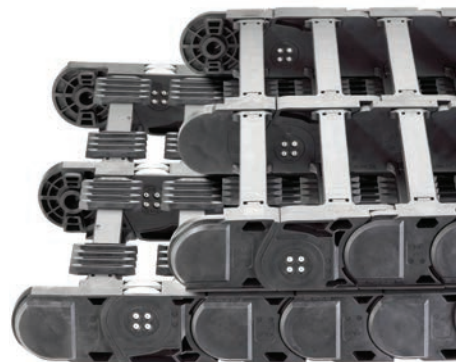
- 3.15" inner height
- Tribo-optimized roller material
- Higher fill-weights and longer travels
- Same pitch for all links
- Large rolling and gliding surfaces
- Interior separation systems series 5050 available

### New: Additional widths

- System P4 now comes in 5 widths
- AUTO-GLIDE version for all widths
- Crossbars in cable-friendly, rounded plastic
- Safe due to double lock mechanism

### New: More bending radii

- System P4 now comes in 3 new bending radii: 250, 300 and 350 mm
- Large radii for stiff cables and hoses
- Small radii for limited space



### New: Extension link – heavy fill weights

- New roller extension link for series P4-56
- 50% higher fill weight possible
- Increased unsupported span
- Maximum rigidity
- Divides cross section into separate compartments (electric/hydraulic)

### New: Long-life rollers

- New tribo-optimized plastic rollers for all P4 systems
- Wear optimized
- Long cycle life
- Improved rolling
- Lower noise and vibration
- Same pitch for roller links/chain links

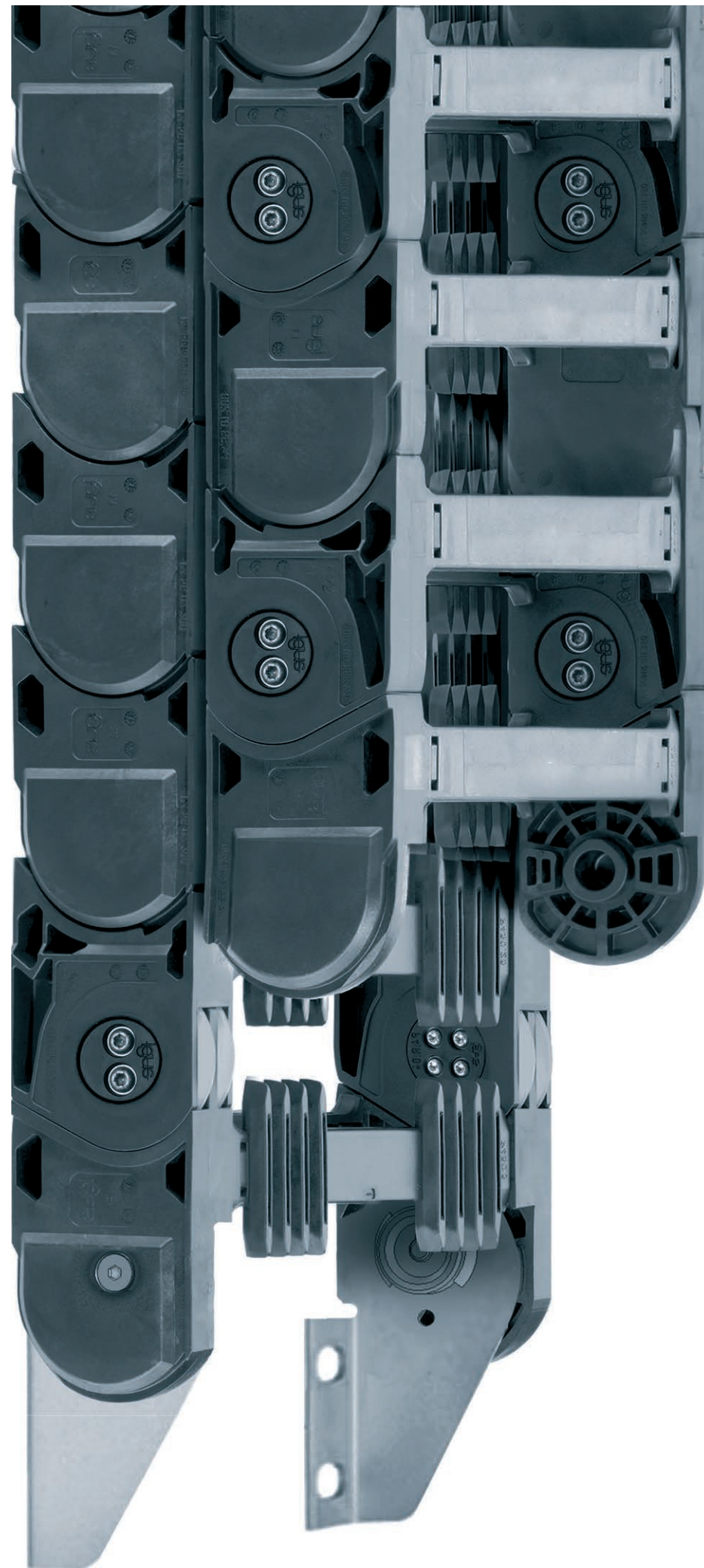
### New: Standard guide trough system

- New guide trough system
- Special geometry in combination with AUTO-GLIDE crossbars allows for offset upper and lower run
- Strong installation kits for long life
- Stainless trough segments resist corrosion and sea water

For additional information please contact igus®

[igus.com](http://igus.com)

igus® Inc., PO Box 14349, East Providence, RI 02914  
Tel: 401.438.2200 • Fax: 401.438.7680 • Toll Free: 888.803.1895  
[www.igus.com](http://www.igus.com) • E-mail: [sales@igus.com](mailto:sales@igus.com)



Energy Chain Systems® ...for long travel at high speeds

# System P4

# igus® P4 Energy Chain®

Rolling cable carrier for fast, quiet movement

## Secure energy and data transmission for indoor and outdoor crane equipment and conveyor systems

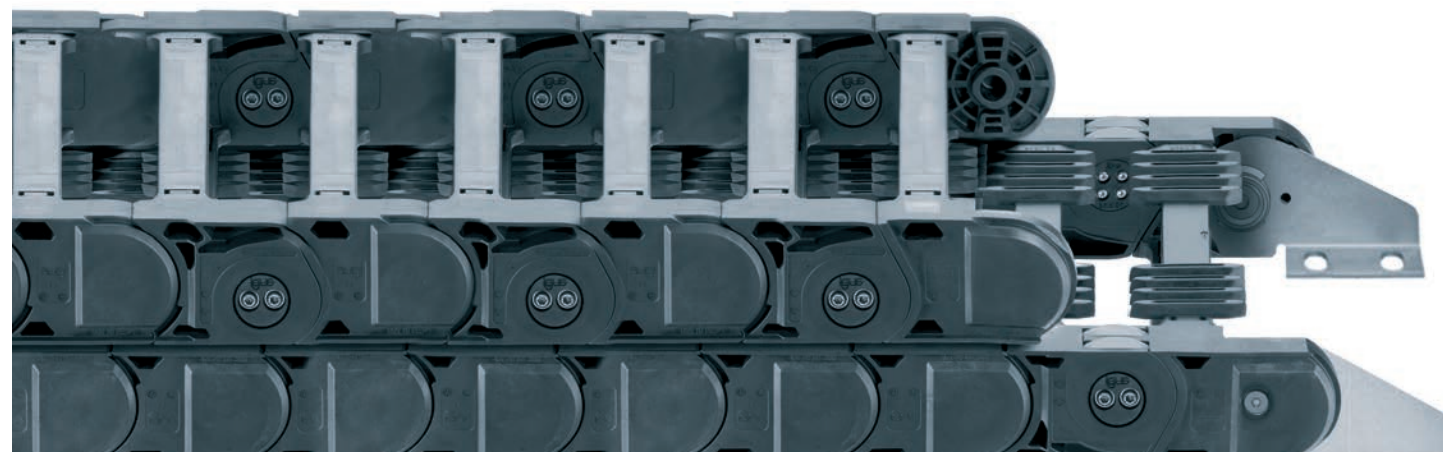
With the development of the rolling cable carrier more than a decade ago, igus® has successfully designed a safe solution for the transmission of energy and data in crane and conveyor applications. Since then, igus® Energy Chain Systems® have proven their abilities in the most demanding crane applications in the world. Since 2006, the number of large shipyard cranes equipped with igus energy chains has been steadily on the rise. To date, igus® has equipped more than 2,500 RTG and RMG cranes worldwide.

## New System P4 for smooth, quiet operation

The demands made on Energy Chains® are increasing all the time. Smooth running properties and low noise levels are becoming increasingly desirable as many ports and industrial sites are moving closer to residential areas, and travel speeds are ever-increasing. After three years of development and testing, igus has released a completely new generation of rolling Energy Chain Systems®. The low-maintenance System P4 is a modular system that makes safe energy and data transmission possible over very long distances up to 3,280 feet, or 1,000 meters. Specially developed for indoor or outdoor crane and conveyor systems, it is particularly quiet and wear-resistant at high speeds and high fill-weights. Thanks to the use of additional center links, there is practically no weight limit. System P4 is also particularly well suited to high-speed applications, and has been successfully operated at speeds up to 23 ft./s on a 410 foot test fixture at the igus test laboratory.

## Technical Design

The design of the P4 Energy Chain® causes the upper and lower runs of the chain to roll offset from one another. This means that the plastic profile rollers do not roll directly over each other, but rather travel on a consistent, flat surface, decreasing vibration and total system noise. Additionally, the pitch of the chain links is now identical with and without rollers, allowing the chain to achieve particularly smooth, vibration-free movement in the chain's radius.



# Green Automation

## Reduce drive power by up to 57% with the igus® P4 Energy Chain®

Cable carrier systems not only transport energy data and media to various types of machines, but also greatly influence energy costs. To keep energy costs low, one important consideration is the amount of push-pull forces, or drive force, which is required at a given speed to move the cable carrier. Energy Chain® carriers, combined with Chainflex® continuous-flex cables from igus can reduce the required drive power, energy consumption, and costs for environmentally conscious applications.

## Rolling instead of gliding

Recent tests and sample calculations performed at igus®' test laboratory prove that energy consumption can be drastically reduced by simply using the correct cable carrier system, especially in long-distance, high-load applications. igus® P4 "Rol E-Chain®" is designed with built-in wheels that roll the system over itself instead of gliding, to facilitate travel over long distances.

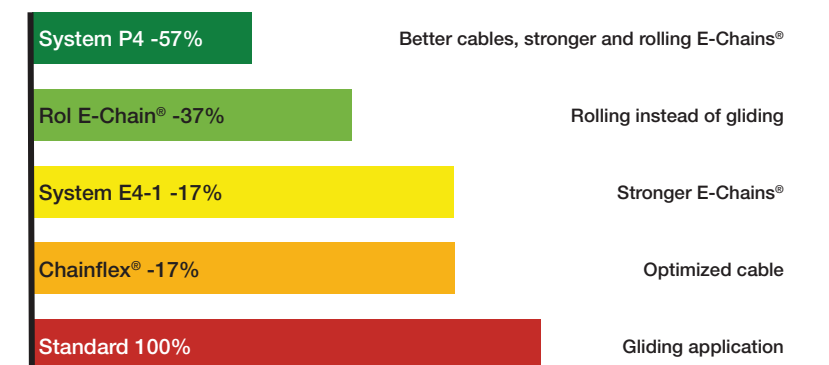
If such a rolling E-Chain® is used, the coefficient of friction of the system is reduced from 0.3, for a standard gliding system, to less than 0.1 for a rolling one. This correlates to a 37 percent reduction in drive power with the P4 Rol E-Chain® when compared to a traditional gliding system, leading to a decrease in overall energy costs.

## Technical Design

Chainflex® continuous-flex cables can also reduce energy consumption. igus® tests show that using high-performance sheathing and insulating materials, depending on the combination of cross-sections and number of cables used, can provide between a 5 and 30 percent reduction in energy. High-quality sheathing materials can be extruded with an extremely thin wall, which saves both size and weight. In addition, these insulating materials can often allow for reduction in conductor cross-section without compromising the electrical performance. These factors enable weight reductions of up to 30 percent when compared to conventional cables, which serves to reduce the required drive power.



Green automation: The abrasion-resistant and quiet P4 Rol E-Chain® from igus® requires 57% less drive power for applications moving at 10 feet/second and faster. When traveling at a distance of 130-160 feet, electricity costs are noticeably lower and higher speeds and accelerations can be achieved without increasing the noise level.



Saving energy costs for transport: With profile roller chains for green automation, such as the smaller P4-32 and P4-42, now available from igus®, smaller motors and associated parts can now be utilized.