

Fast, safe and quiet: igus expands the P4 roller energy chain system

Rollers ensure very low friction and energy efficiency for long travels

The Cologne-based plastics specialist igus has expanded its comprehensive range of P4 roller energy chains system, now offering guide troughs for the P4.80. With it, a complete range of guide troughs are now available for all P4 roller energy chains from stock. Due to its special design, the P4 system can achieve travels of 800 metres or more in a very energy efficient way.

Long travel lengths, high dynamics and high cable fill weights are extremely important not only for crane and conveyor energy supply systems. Speed and acceleration are important even in other sectors such as the automotive industry. For this reason, igus GmbH developed its innovative roller energy chain system which has been providing power and data reliably and safely for more than 15 years. Rollers made of special tribo-polymers provide a virtually maintenance-free operation. They reduce abrasion and wear of the energy chain considerably thereby increasing the service life of the system. As the coefficient of friction is about 75 percent less with integrated rollers than with the normal gliding contact friction, up to 57 percent less energy is required to drive the energy chain system.

High speed, long distance

The roller energy chain system is constantly evolving. The P4 system is designed specifically for long travels up to 800m, high travel speeds over 10 m/s and high fill weights of up to 50 kg/m. The rollers of the upper run do not run on the lower rollers, but are staggered to run between them. This is also supported by the use of autoglide crossbars with “combs” that keep the energy chain gliding in a straight line. The small pitch and uniform size of the chain links - with and without the rollers - causes the polygon effect to decrease and the chain thereby rolls smoothly and quietly. The chain is also shaped to offer a wide continuous running surface for the rollers to run on.. Guide troughs also assist in the safe and reliable operation of the e-chain. Wear pads integrated

into the chain side links ensure a long service life when in contact with the guide trough.

Strong and stable

Achieving exceptional stability at high speeds and accelerations is one of the objectives of the P4 system from igus. The links in the e-chain include a double “stop-dog” system, and tight tolerances allow a low clearance motion which enables high acceleration. The large pin and bore connections in the side links also provide stability, as does the “tongue and groove” design which interlocks the chain links together. The P4 roller chain is offered with a range of inner widths from 100 to 400 millimetres and inner heights of 32, 42, 56 and 80 millimetres. Three different bending radii for each type ensure flexibility in matching the cable minimum bend radius requirements. The load capacity of the roller chain can be increased further by using extension links to build a wider system. Each extension link can carry up to 50 percent higher fill weight, increasing the overall capacity. A double lock on the crossbar, which can still be opened quickly and easily with a screwdriver, holds the cables and hoses securely in the energy chain, even with large fill weights.

Everything from one source

The P4 system is offered by igus as a modular system from a single source. As a readychain, the roller chain can be supplied as a fully assembled energy chain complete with cables, connectors and equipped with interface components such as floating towing arms and even electronic condition monitoring systems. These are delivered ready for installation together with the trough system. Before specifying the roller energy supply system, the igus installation team design the system, including all drawings and layouts. By working directly with the customer the individual system requirements can be fully met.

Captions:



Image PM2714-1

In the P4 system the rollers (marked in green) of the upper run do not run onto the lower ones, but are staggered to run through them and supported by comb-shaped autoglide crossbars (also in green). The coefficient of friction when rolling drops by around 75 percent when compared with gliding friction, which enables energy savings of up to 57 percent required to drive the chain. (Source: igus GmbH)

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ABOUT IGUS:

igus GmbH is a globally leading manufacturer in the field of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs around 2,400 people around the world. In 2013, igus generated a turnover of 427 million euros with motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

The terms 'igus, e-ketten, e-kettensysteme, chainflex, readycable, easychain, e-chain, e-chainsystems, energy chain, energy chain system, flizz, readychain, robolink, pikchain, triflex, twisterchain, invis, drylin, iglidur, igubal, xiros, xirodur, plastics for longer life, CFRIP, dryspin, manus and vector' are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.