

Safe retraction without loops: a new energy supply system from igus

Retraction system for e-chains on industrial robots enables guiding of supply hoses for rivets and screws

The motion plastics specialist igus has developed a lightweight and cost-effective concept for the automatic retraction of energy chains allowing further advances in robotics. Besides carrying energy, data and media cables, industrial robots nowadays also frequently carry supply hoses for rivets or screws. The new triflex RSE system prevents looping of the energy chain, allowing these materials to be safely supplied to the end of the robot arm.

The triflex R series has been designed by igus specifically for highly dynamic industrial robotic applications and as a multi-axis energy chain it can move in all directions in space. The universal triflex chains made from high-performance plastics work in even the most demanding industrial environments, are easy to install and can quickly be filled with cables from the outside. They also have high tensile and torsion strength. "However, since nowadays it is not only just electrical and pneumatic cables that are conducted on the robot, but also often supply hoses for bolts, rivets or screws, tight bends or hanging loops can sometimes cause problems," says Jörg Ottersbach, industry manager for robotics at igus. "Any reduction in the minimum allowable bend radius of the supply hoses can lead to a fault, reducing the efficiency of the process. - In the worst case a rivet or a screw gets stuck in the supply hose, which then leads to a plant standstill." With its linear retraction of the e-chain, the triflex RSE retraction system offers an efficient and cost-effective solution that requires no curve, spring rods or deflecting rollers.

Sleek design with direct control on the robot

The extremely light system is based on the proven lubrication and maintenance free drylin linear guide from igus, where a moving carriage transports the chain on a retraction distance of up to 600 millimetres. Elastic cords pull back the

extended chain automatically. Thus the looping of the energy chain is prevented. In this way the service life can be significantly increased.

The self-guiding retraction system is designed for the enclosed or snap open triflex chain versions TRC, TRE and TRCF in sizes from 60 to 125 millimetres in diameter. They are retained by means of a mounting bracket and a glide-through bracket on the system, which in turn can be easily fitted to a variety of robot types. Since the triflex RSE directly guides and controls the e-chain on the robot and no other deflections are needed, the required length of the cable and chain is reduced. For this reason triflex RSE is not only space-saving and light, but is also a cost-effective solution.

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ABOUT IGUS:

igus GmbH is a leading international manufacturer of energy chain systems and polymer plain bearings. The family-run company based in Cologne is represented in 36 countries and employs over 2,700 people worldwide. In 2014 igus generated a turnover of € 469 million with 'motion plastics', plastic components for moving applications. igus operates the largest test laboratories and factories in its sector, which enables it to offer customers innovative and customised products and solutions in the shortest possible time.

The terms "igus, e-chain, e-chainsystems, 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, motion plastics, CFRIP, dryspin, speedigus, manus and vector" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.

Captions:



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The lightweight and affordable triflex RSE retraction system is based on a lubrication and maintenance free drylin linear guide from igus. A moving carriage transports the chain, elastic cords keep it under tension and retract it automatically. (Source: igus GmbH)