

High-performance

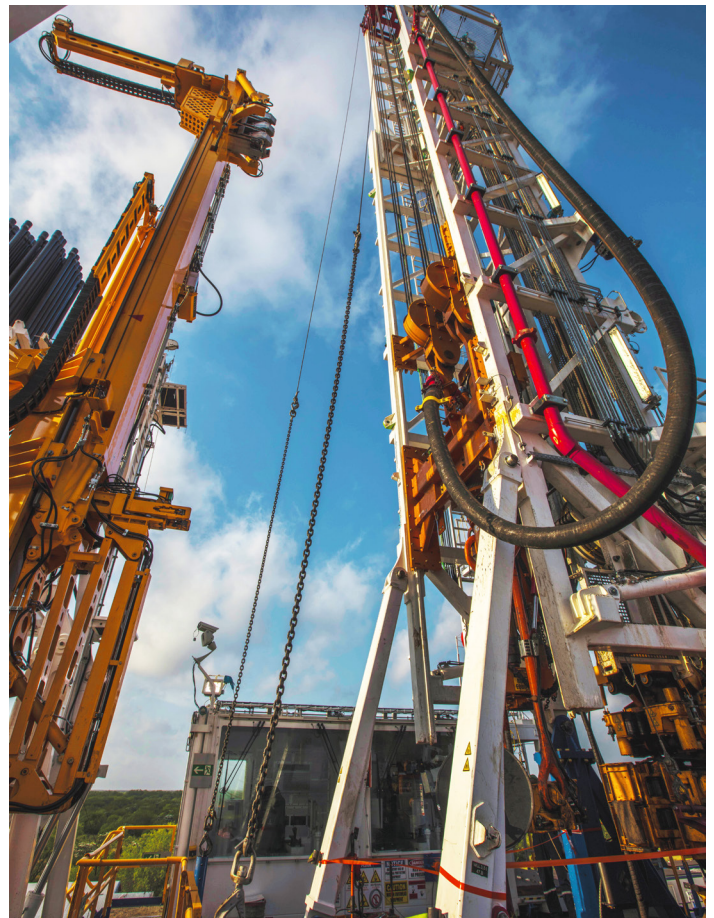
plastic solutions for drilling rigs

Advancing the oil & gas industry with modern, dual cable management systems in top drives

“Plastic” might bring to mind grocery bags, disposable cups or one-use bottles. Engineered igus® plastic, used in energy chain cable carriers, is an entirely different material. The optimized polymers in e-chains® are used to manufacture military equipment, rocket launch site components and power plant machinery. Their strength and durability make them applicable in nearly all technologies.

The power of plastic has made energy chain cable management systems a valued asset to the oil and gas industry. The heavy-duty e-chains® are used in both offshore and onshore drilling rigs. They are nearly impossible to break down, which allows them to reliably operate in rigs’ inclement conditions.

Drilling rigs’ pipe handling systems, gantry cranes, cat walks, cantilever skids, and most recently, top drive systems, are increasingly reaping the benefits of igus® solutions. The advantages of e-chains® for these application areas are all-encompassing.



Environmental benefits

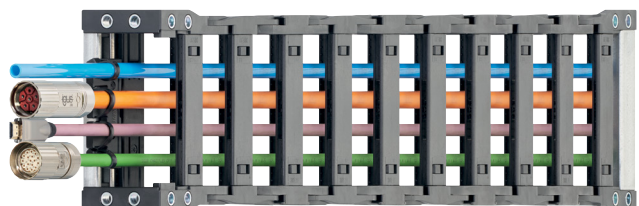
- Resistance to extreme temperatures
- Resistance to chemicals, dirt, and sea water (100 percent corrosion resistance)

Performance benefits

- High mechanical strength
- Capacity to manage heavy loads
- Light weight
- Excels at high speeds

TCO / ROI benefits

- Cost-effectiveness
- Extended service life for cables and hoses
- Easy repair with no special tools needed



Top drive systems equipped with e-chains[®] are outperforming those with alternative cable management systems. Many rigs use **festoon systems** or service loops to manage cables, but the way e-chains[®] guide and protect cables makes them superior. In festoons, cables are clamped in bunches, making the replacement or addition of cables a time-consuming process. In e-chains[®], cables and hoses are guided in the system with interior separators so that cables can never cross over one another and become tangled. The e-chain[®] strain relief system allows cables to be individually released for repair or replacement. In service loops, the whole composite cable may need to be replaced if one conductor is damaged, while in e-chains[®], only the one damaged cable would have to be swapped.

The e-chain[®] is a “motion plastic” system that allows all modes of movement to be achieved. In offshore pipe handling systems, guidance of the drill pipe from the fingerboard to the top drive can be achieved horizontally or vertically with an e-chain[®]. Here, the e-chains[®] are exposed to the toughest conditions of the rig yet are highly reliable. Large fill weights in multiband chains, such as large hydraulic hoses, can be handled without problems if extension links are used. Guide troughs and e-chains[®] in riser gantry cranes also provide safe guidance of cables and hoses in a single system. When rotational guidance is required, for example, in a rotation system for pipe racking, rotary and three-dimensional motion can be achieved with a standard e-chain[®].



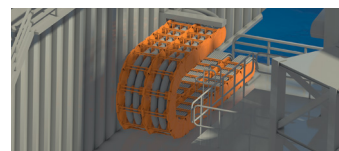
The energy chain manufacturer, igus[®], develops customized solutions for every application in the oil and gas industry. A specialized offshore e-chain[®] is available for use in the toughest conditions while remaining durable and failsafe. Other customized solutions that igus[®] has provided for the industry include customized rotation systems for riser pull-in applications, and the development of special plastic materials for extremely low water absorption in deep-sea installations. Both specialized and standard igus[®] components are thoroughly tested in the 29,600 sq. ft. test lab, and customer applications can be tested under real-world conditions upon request.



Gantry Cranes



Cat walks



Cantilever skid



Pipe handling

To learn more or have your application be one of the thousands already benefiting from energy chains, visit the **e-chain[®] content library**, browse the **online shop** or **contact an expert**. The igus[®] service and installation team is with the customer every step of the way, from initial discussions to post-installation inspections. Free consultation is provided, as well as a free sample that can be placed in the operational area. The goal of the igus[®] team is not to be viewed as a vendor, but instead, a partner.