

## **Autonomous through the factory: this is how igus makes automated guided vehicles more fail-safe**

**AGVs become lighter and require less maintenance thanks to lubrication-free motion plastics**

**In times of increasing digitalisation of factories and warehouses, automated guided vehicles (AGVs) are continuously conquering intralogistics. The reliability requirements are high in order to ensure faster processing and unimpeded material flow. AGV manufacturers are therefore equipping their systems with motion plastics components from igus, which make the autonomous vehicles less maintenance-intensive, lighter and more energy-efficient.**

The use of automated guided vehicles is booming. The reasons are obvious: companies can use automated guided vehicles (AGVs) to increase the efficiency of material flow, make work easier for employees or compensate for the shortage of skilled workers. However, it is important that automation technology is reliable and economical in use. For automated guided vehicles, this means: the autonomous electric car cannot afford any failures in everyday operation. They have to work around the clock, seven days a week, 365 days a year. A challenge for AGV manufacturers, which can be overcome by combining reliable and cost-efficient components.

### **Tribo-polymer bearings reduce maintenance costs**

The reliability and energy efficiency of an AGV can be significantly increased with motion plastics from igus. "Lubrication-free and maintenance-free iglidur tribo-polymer bearings, which are used in the tilting devices and scissor lifts of AGVs, are up to 60 per cent lighter than metal bearings. This saves vehicle weight and increases performance," says Christian Strauch, Industry Manager Material Handling at igus. The bearings are extremely durable. "Fibres and fillers reinforce the bearings for absorbing high forces and edge loads. And integrated solid lubricants ensure a maintenance-free dry operation." In addition to tribo-polymer plain bearings, the plain bearing

range from igus also includes linear, slewing ring, spherical and ball bearings.

### **Knapp Industry Solutions equips AGV with igus lead screw modules**

The igus AGV range also includes electrically driven lead screw modules. The users include Knapp Industry Solutions, which produces the "Open Shuttle" - a vehicle that drives autonomously through factory halls and transports boxes between roller conveyors. The shuttle is more flexible than intralogistics automation solutions of the past and can be quickly adapted to changing processes. The roller tray of the vehicle must be flexible and able to constantly adapt to different transfer heights. The movement takes place via two light and robust drylin SLW lead screw modules, which are equipped with maintenance-free polymer liners and lead screw nuts and score points with high reliability and a long service life.

### **igus e-chains and cables increase the operating times of AGVs**

The installation spaces in AGVs are often very limited. Nevertheless, in order to guide cables safely, igus offers energy chains with very narrow bend radii. These include the E2 micro, which is designed for extremely tight spaces. It is light, has a small bend radius and an inner height of only five millimetres. igus also has the matching e-chain cables in its product range, with or without plug-in connectors, including those that can be used in AGVs operating in cold storage at temperatures as low as -35 degrees Celsius. In order for the customer to be sure that the data and energy supply of his AGV is working reliably even under these adverse conditions, igus operates a cold chamber in Cologne where the cables are tested under real conditions. The chamber is part of the 3,800 square metre igus test laboratory, where two billion test cycles are completed annually. As a result, igus is the only provider capable of offering a unique guarantee of 36 months on its cables. This gives AGV manufacturers as well as their customers additional reliability in the operation of automated guided vehicle systems.

**Caption:**



**Picture PM5719-1**

Automated guided vehicles move goods in the factory 24/7. Lubrication-free and maintenance-free motion plastics from igus ensure weight savings and increased reliability. (Source: igus GmbH)

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**ABOUT IGUS:**

igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs 4,150 people around the world. In 2018, igus generated a turnover of 748 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.

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