

## **Minutes instead of days: Complete solution from igus reduces the assembly time of machining centres**

**Thanks to ready-to-install readychain systems from igus, process costs can be lowered and errors reduced**

**In its robotic machining centres, Taiwanese tool manufacturer Hartford uses fully harnessed energy chain systems from igus. This cuts out many process steps for the manufacturer, reducing assembly time from several weeks to just half a day.**

In very few industries are throughput times as important as in the machine tool industry. Cutting out individual work steps means that considerable savings in process costs can be achieved. The design engineers at Hartford, the largest manufacturer of CNC machining centres in Taiwan, know this as well. The manufacturer has 50 years of history exporting more than 46,000 machines to 65 different countries. Since 2017, the company has been developing CNC equipment of the AERO series – the robotic machining centres for very large components needed for the aerospace industry, for example. In this industry, precision and reliability are critical factors. Therefore it was important to have a reliable means of energy supply from the switch cabinet to the moving parts, which include spindles and motors. At the same time, all the information regarding axis position and dynamics must be passed back to the control system without any interruption. In the first model in this series, the AERO626, this happens at accelerations of up to 0.5 g and a maximum travel speed of up to 60 m/min.

### **Reliable complete solution from a single source**

This is why Hartford's engineers turned to igus, the motion plastics specialist. igus is the only provider to develop energy chains that are configurable and predictable online, as well as specially designed, highly flexible chainflex cables tested for two billion cycles per year in a 2,750-square-metre test laboratory. As a complete system from one source, these so-called 'readychains' are harnessed to customers' requirements at 12 locations all over the world and

then delivered as ready-to-install products. The company igus presented Hartford a solution for the AERO series plants. The advantage is that by using igus energy chains the amount of installation space needed can be reduced considerably. One reason for this is that all chainflex cables on the machine have an oil-resistant PUR outer jacket. As additional protective hoses are superfluous because of this feature, the amount of space needed for the cables, and therefore the size of the chains, are reduced. The absence of these protective hoses reduces cost and helps ease maintenance too. Through close collaboration between igus Taiwan and Hartford, a 3D drawing of the readychain with assembly frame was created in order to simulate the assembly procedure. The benefit could be seen straight away: The first energy chain fitted with all electrical cables was installed on the machine in an hour. The second chain with hydraulic hoses was installed even faster, taking just 40 minutes.

**Work steps cut out for significantly greater productivity**

Normally, machine tool manufacturers try to avoid too many different work steps being carried out on a system at the same time. A lot of manual work done by different employees does not necessarily enhance efficiency; on the contrary, it increases the probability that errors can occur. By using igus readychains, all four e-chains from igus can be fully installed in half a day. Previously, two employees took one and half weeks for the work on the X axis of an AERO system and a further week for the energy supply of the Y and Z axes. In this way, Hartford is able to cut out some work steps, reduce process cost and, at the same time, greatly improve productivity.

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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 3.800 people around the world. In 2017, igus generated a turnover of 690 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", "chainflex", "CFRIP", "conprotect", "CTD", "drylin", "dry-tech", "dryspin", "easy chain", "e-chain", "e-chain-systems", "e-ketten", "e-kettensysteme", "e-skin", "flizz", "ibow", "iglide", "iglidur", "igubal", "manus", "motion plastics", "pikchain", "readychain", "readycable", "speedigus", "triflex", "plastics for longer life", "roboLink", and "xiros" are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.

**Image captions:**



**Picture PM5418-1**

In Hartford's robotic machining systems, energy chains from igus ensure a safe and reliable energy supply. (Source: igus GmbH)



**Picture PM5418-2**

igus energy chains, including cables and mounting frame, are delivered to Hartford as fully-assembled readychains. The energy supply systems are then fitted within half a day instead of several weeks. (Source: igus GmbH)