

Sustainability at the push of a button: e-chain for Drop Water vending machine

A new water vending machine from a Californian company reduces the transport and consumption of plastic bottles with the help of igus motion plastics.

The Drop Station is a new sustainable drinks vending machine that dispenses water into compostable containers at the push of a button. The water does not have to be transported, as the kiosk is connected to a water source on site. A linear robot using drylin linear guides mixes the water with optional flavours and dispenses it. Ready-made e-chains ensure the protection of chainflex energy and data cables.

Drop Stations, the drinks vending machines produced by Drop Water from California, can be found in airports, supermarkets and train stations. The customer selects their drink at the machine using a touch display, and then receives an individually filled compostable container. The water is filtered at the point of sale and options include flavours, caffeine and temperature settings. Drop Water's vending machine decentralizes the bottling process by using the self-service kiosk as a mini-filling line. The company is taking a much more environmentally friendly approach than suppliers of conventional bottled water and using Drop Stations could mean transporting filled bottles becomes redundant.

The packaging of Drop Water is also an important innovation. "The drop container is a big part of what makes our kiosks unique," says Scott Edwards, CEO of Drop Water. "Each Drop Station has a supply of empty, compostable containers that can be easily replenished, but the customer can also use their own bottle." The heart of the vending machine is a linear robot that dispenses the drinks. The robot is supplied with energy and data via cables protected by an energy chain. Despite the use of an e-chain, the cables failed in prototypes. It was found that the cables rotated slowly with each cycle and were twisted after 1,000 cycles.

The second problem was the packaging. In order to avoid constantly buying, cutting, modifying and assembling every single component, the company needed a functional ready-to-connect solution.

Looking for a better system

With better design engineering and with a pre-assembled, readychain e-chain system from igus, the machine now works perfectly. The US company was able to save considerably on time and costs of assembly. Drop Water also relied on igus for the linear robot and in the output unit. The mechanics here consist of maintenance-free drylin W bearings, drylin W rails and slides. "We are proud to work with such a forward-looking, socially responsible company as Drop Water, and we wish them many years of success as we all join the movement to keep our planet free of pollution for all future generations," said Rick Abbate, Vice President of igus inc, USA.

The project also won over the judging panel of the 7th igus vector awards in 2020. The prize is awarded every two years and awards the most creative energy chain applications worldwide. Drop Water received one of the first green vector awards, a new award for sustainable applications.

Learn more about Drop Water:

<https://youtu.be/kR6rBpCXZyQ>



Image PM3821-1

A ready-made e-chain ensures safe cable routing in the Drop Station, a new vending machine that dispenses water with no plastic packaging. (Source: igus).

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About igus:

Based in Northampton in the UK and with global headquarters in Cologne, Germany, igus is a leading international manufacturer of energy chain systems and polymer plain bearings. The family-run company is represented in 31 countries and employs over 4000 people around the world. In 2019, igus generated a turnover of 764 million euros with motion plastics, plastic components for moving applications.

With plastic bearing experience since 1964, cable carrier experience since 1971 and continuous-flex cable experience since 1989, igus provides the right solution based on 100,000 products available from stock, with between 1,500 and 2,500 new product introductions each year. 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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