

# Harvey Water Softeners utilise HepcoMotion actuators in a precision pick and place system

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INDUSTRY	PRODUCT	COUNTRY	PROCESS
Electronic	SBD Belt Driven Actuator	UK	Pick and Place

In order to meet the growing demand for its products, Harvey Water Softeners based in Woking, Surrey, has recently automated the manual process responsible for the assembly of its popular push fit connectors. These connectors are an integral part in the water softener product; there are approximately 12 connectors in each product. The largest water softener manufacturer in Europe, Harvey Water Softeners sell a water softener every 17 minutes!

## The assembly process

The application is a manually intensive process that requires precision placement of component parts into multiple receptacle profiles. They require significant force to insert and are repetitive in nature. The decision to automate was driven by the desire to improve the assembly process in terms of consistency and reliability. The increase in demand has further added to the company's drive to automate. Over the past few years Harvey Water Softeners have invested heavily in their manufacturing process thanks to a multi-million pound investment programme.

There are three main universal components that need to be assembled to form the push fit connector. Firstly, the 'O' ring seal is inserted into the receptacle base, followed by a cartridge and finally the collet. Once assembled, these components form the push fit pipefitting. The assembly process caters for multiple fitting types.

## HepcoMotion actuators specified to offer positional accuracy and repeatability

After visiting linear motion expert HepcoMotion at the PPMA (Processing and Packaging Machinery Association) exhibition, Harvey Water Softeners was impressed with the breadth of product range and technical expertise. The experience of HepcoMotion's in-house design team in pick and placements was particularly suited to this application.

Says Mark Pell, Process Manager, Harvey Water Softeners Ltd.; "I outlined my ideas to one of Hepco's Sales Engineers, Mike McQuire, and after a quick chat he was able to start to build up a picture of how he saw the process coming together. It was very similar to what I had in my head."

As a world-leading manufacturer of linear motion systems, HepcoMotion offers over forty-two major

product lines with thousands of individual components in various sizes. For this application, Hepco's SBD belt driven actuator and PSD80 screw driven low maintenance actuator were specified to provide the continuous positional control at the speeds required to meet the targets set.

The SBD actuator transfers the receptacle bases to the three different stations for the components to be fitted. Based on ballrail technology, SBD offers high accuracy and rigidity – crucial benefits for the precision placing of small components in the assembly. Accurate positioning is also required by the actuator to stop the bases in line with the stations. Says Mike McGuire, HepcoMotion Sales Engineer; "SBD also offers good speed; again of particular interest to Harvey Water Softeners, looking to increase production."

Lifting the 'O' rings requires accurate, vertical positioning; Hepco's space-saving, ready to mount PSD80 achieves this. This lightweight screw driven actuator provides accurate control to get the pitch of the 'O' rings correct. Being a lightweight actuator, PSD80 works well with the small, lightweight, plastic components. PSD80 meets the accuracy and duty needs required, offering consistent performance over long periods.

The frame was constructed using Hepco's MCS aluminium profiles and accessories. Offering improved flexibility, and reducing both the assembly time and material costs, these aluminium profiles are a good alternative to welded steel frames.

The consistency and reliability of Harvey Water Softeners assembly process has improved as a result of the new system. A further consideration for Harvey Water Softeners was to modernise the production facility; an important factor as they have lots of dealerships visiting the factory. The new system complements the sophisticated, automated production line in the rest of the factory. There is also the potential for Harvey Water Softeners to fully automate the system in the future with the addition of bowl feeders and a robot to unload.

<https://www.harveywatersofteners.co.uk/>