CASE STUDY

Redesigning a Capillary Collection Device for Dual-Product Manufacturing

A global point-of-care diagnostics manufacturer needed a partner to redesign a core collection device and scale production fast enough to keep up with market demand.

CHALLENGE

Drummond began working with the customer in **1998**, supplying a 20 µL metered Aqua-Cap capillary tube for its CRP test. Between **2004** and **2017**, annual sales grew from 3.75 million to 12.5 million pieces.

In **2017**, the customer approached Drummond to redesign the device around a 10 µL end-to-end capillary tube incorporated into a plastic frame. The new format required custom tooling, a new assembly process and a manufacturing partner that could support the product from initial concept through full-scale production.

APPROACH

Drummond joined the project at the concept stage, working directly with the customer's team to develop the new design, build out the Design History File, and finalize the product specification. From there, the partnership moved into tooling and production:

- Provided initial product samples in **2018** to validate the design
- Acquired the mold for the plastic frame, beginning with a 2-cavity mold and eventually scaling to 52 cavities
- Designed and built a custom de-gating machine to separate the plastic frame from the sprue runner

In **2019**, Drummond built a hand-loaded, semi-automated fixturing line capable of producing 1 million units annually. The equipment automated the placement of the glass capillary into the plastic frame and bonded the components using a UV-curing adhesive.

As demand continued to grow, Drummond built its first fully automated line in **2020**, increasing annual capacity to 4 million units while reducing production costs. The customer reached that capacity in **2022**.

That same year, the customer asked Drummond to support a new 1 µL HbA1c collection device based on a similar design. Drummond responded by developing a second fully automated line capable of producing both the CRP and HbA1c devices.

RESULTS

The second automated line went live in **2023**, adding 7 million units of annual production capacity. Today, Drummond manufactures approximately 8 million units annually, and growing, as the customer transitions from the old standard to the new.

The line was also designed so one operator could run both automated systems simultaneously. This reduced labor costs by 50%, with the savings passed directly on to the customer.

A single capillary redesign grew into a multi-product manufacturing partnership, with tooling, automation, and process expertise scaling in step with the customer's own growth, from a high-cost, labor-intensive process to a fully automated dual-product line.

About Drummond Scientific Company

With more than 75 years of dedicated service in life science manufacturing, Drummond Scientific Company has become a trusted venture manufacturing partner for diagnostics companies at every stage of growth. We partner with innovators who share our vision of translating ideas into scalable, market-ready products and solutions that create and save lives.

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