

INNOVATIVE INJECTION PEN: THE D-FLEX™

A new generation of manual injection pens

A pen for injecting one or more predefined dosage volumes.



It closes a gap in the market: The D-Flex™ injection pen can do more than previous pens. D-Flex™ can be configured for several fixed dose values and is thus a variable fixed dose pen. It makes it possible to integrate a certain dosage value or several different fixed dosage volumes in one injection device.

The D-Flex™ injection pen is a cartridge-based disposable pen. The pen design is award-winning: The D-Flex™ pen has been awarded the GOOD DESIGN Award. The key feature of the innovative pen is that a fixed dosage value or several different dosage volumes can be integrated into one pen. These values can be freely selected before manufacturing the pen. Between the predefined dosage values, the pen prevents the selection of incorrectly selected dosages and avoids incorrect injections.

Flexible platform solution

By exchanging just one component, different dosage volumes can be defined if necessary so that the D-Flex™ pen can be used as a platform for additional adjustments, thus making it a solution for the

entire product life cycle. The high-quality plastic pen can be adjusted to the customer's needs and individually printed, for example.

Depending on the maximum dosage volume, multiple injections are possible, whereby the active ingredient of the injection pen is injected subcutaneously. Patients can operate and handle the D-Flex™ injection pen particularly easily and comfortably. This was tested and confirmed by a human factors study as part of an internal innovation project.

Connectivity: Add value to your health

The D-Flex™ injection pen can be combined with a smart cap if necessary, thus forming a system that has the necessary connectivity for smart health applications. The storage temperature of the pen, the remaining volume or the dose delivered, as well as the date and time of the medication delivery are measured. The data can be managed with the smartphone and sent to selected people or offices.

Flexibly allows manufacturers to act

Pharmaceutical companies benefit from

the fact that a reliable development partner like Haselmeier is at their side from a very early stage. The D-Flex™ pen can be manufactured both in small series for clinical studies as well as in large quantities as series products. The dosage steps and thus dosage values can be adjusted to customer requirements - at any time: The D-Flex™ can thus be changed as part of clinical studies and adapted to the optimal dosages.

The D-Flex™ pen remains the same on the outside - only one component decides on the preset dosage units. This means that changes over the course of the life cycle management are not a problem, even after the market launch. One and the same pen can be used with different predefined dosage values for different applications. This high level of flexibility reduces the risks for the manufacturer considerably, significantly contributing to saving time and money.

Always a step ahead

It takes years before a new medicine is available on the market. The development, clinical studies and approval

BENEFICIAL FOR MANUFACTURERS AND PATIENTS

The D-Flex™ pen doses precisely

The **D-Flex™** Injection Pen A new generation of manual injection pens



cedures take time and cost money. So it's good when manufacturers can rely on already developed medication dosing systems, such as the D-Flex™ pen. The D-Flex™ pen can be quickly adapted to manufacturer specifications and is ready for use, which significantly reduces the time-to-market and makes it the ideal companion during the entire development phase as well as during the entire product life cycle.

Optimizing costs

The overall costs of production are a decisive factor for the success of a new product. The so-called capital expenditures, CAPEX for short, are an important variable in the manufacturer's balance sheet. As a long-term development partner for companies from the pharmaceutical and biotechnology sectors, Haselmeier has extensive experience and, thanks to its mature and sophisticated products, an optimal cost-benefit ratio and the flexible

platform strategy, is a preferred solution provider with excellent performance.

An advantage for patients

The sophisticated and award-winning design of the D-Flex™ pen is particularly easy for patients to handle. The preset dosage values contribute to avoiding incorrect dosages. Intermediate values cannot be selected or accidentally dispensed. This significantly improves patient safety. Stefan Gaul, Head of Strategic Product Management at Haselmeier: „Aspects like patient safety and convenience with regard to operation and handling are key elements of the D-Flex™ pen. For us, it's a good feeling knowing that patients can be reliably and conveniently helped with the D-Flex™ pen.”

Self-management is supported

The D-Flex™ pen can define a number of different dosages. So it is possible to in-

crease dosages over a certain period of time as well as to vary quantities according to the course of a treatment and requirements or for the changing conditions of the patient. This simplifies patients' self-management in dealing with their disease and subcutaneous injection pen. One D-Flex™ pen often is enough for patients' treatments compared to previously having to use several devices. The independence of treatment from places and times can be optimized by an innovative injection pen like the D-Flex™. Responsible and informed patients receive a modern and safe dosing system with the D-Flex™, which can significantly improve their quality of life.

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