

Autoject® Visco

A disposable auto-injector developed for high viscosity formulations

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The Owen Mumford Challenge

The objective for Owen Mumford was to develop a high viscosity disposable auto-injector - which also featured variable dosing and high levels of dose accuracy using a standard pre-filled syringe.

The Analysis

The Autoject® Visco is developed for high viscosity drug formulations which include a high force spring so that the drug will be delivered within the desired delivery time. Our customer had several unique requirements, including a variable dose as weight based dosing was required for the drug, and precise dose accuracy requirements due to drug action, meaning that priming was required to ensure a consistent stopper location of the pre-filled syringe.

Engineering Design

One of the challenges of working with high viscosity formulations is around the use of a larger spring and the higher noise level when the device is activated. In order to address this, we developed a velocity regulator, which works by progressing the syringe forward in a more controlled manner and minimising noise levels during activation, as well as helping to maintain syringe integrity.

The Solution

When a customer approached us with their requirements of a variable dose device with dose accuracy, Autoject® Visco could meet their needs with the following features:

- Self-priming - prepares the device for precise dose accuracy
- Quiet on activation with minimal vibration, despite an energy spring
- Audible and visual end-of-dose indication
- Automatic needle insertion and drug delivery – for true auto-injection
- Lockout shroud function to prevent needle stick injury
- Large drug window for easy viewing
- Multiple colour variants for easy dose recognition