



Following our work that created the Veramyst intranasal device we can now show the Relvar/Breo Ellipta combination inhaler.

This complex and thoroughly resolved device represents eight years of development input. In which time we generated innovation, experimentation, IP, detail design and design for scale up and industrialisation.

Warwick Design brings twenty years of drug delivery and medical device development experience to new projects.



Warwick Design created IP in the inhaler and was responsible for layout, design and detailing. Prototype steel tooling was manufactured from early development data enabling evaluation of the device's performance and potential production requirements from first-off sample mouldings.

The refinement continued leading to Warwick Design providing component data for the clinical trial mouldings, industrialisation and scaleup stages. This was a highly collaborative project with weekly meetings attended by all partners including Tech Group, Männer, Rexam and GSK's own teams.

Warwick Design also supported this device with assembly rigs that ensure pre-production quantities are put together correctly allowing the function of clips and welds to be assessed.

Specialised test and assembly equipment can be provided for some of the manufacturing operations. By Warwick Design providing these supplementary services in-house the client has benefitted from a quicker turnaround, with reduced knowledge transfer issues and number of external suppliers kept to a minimum.



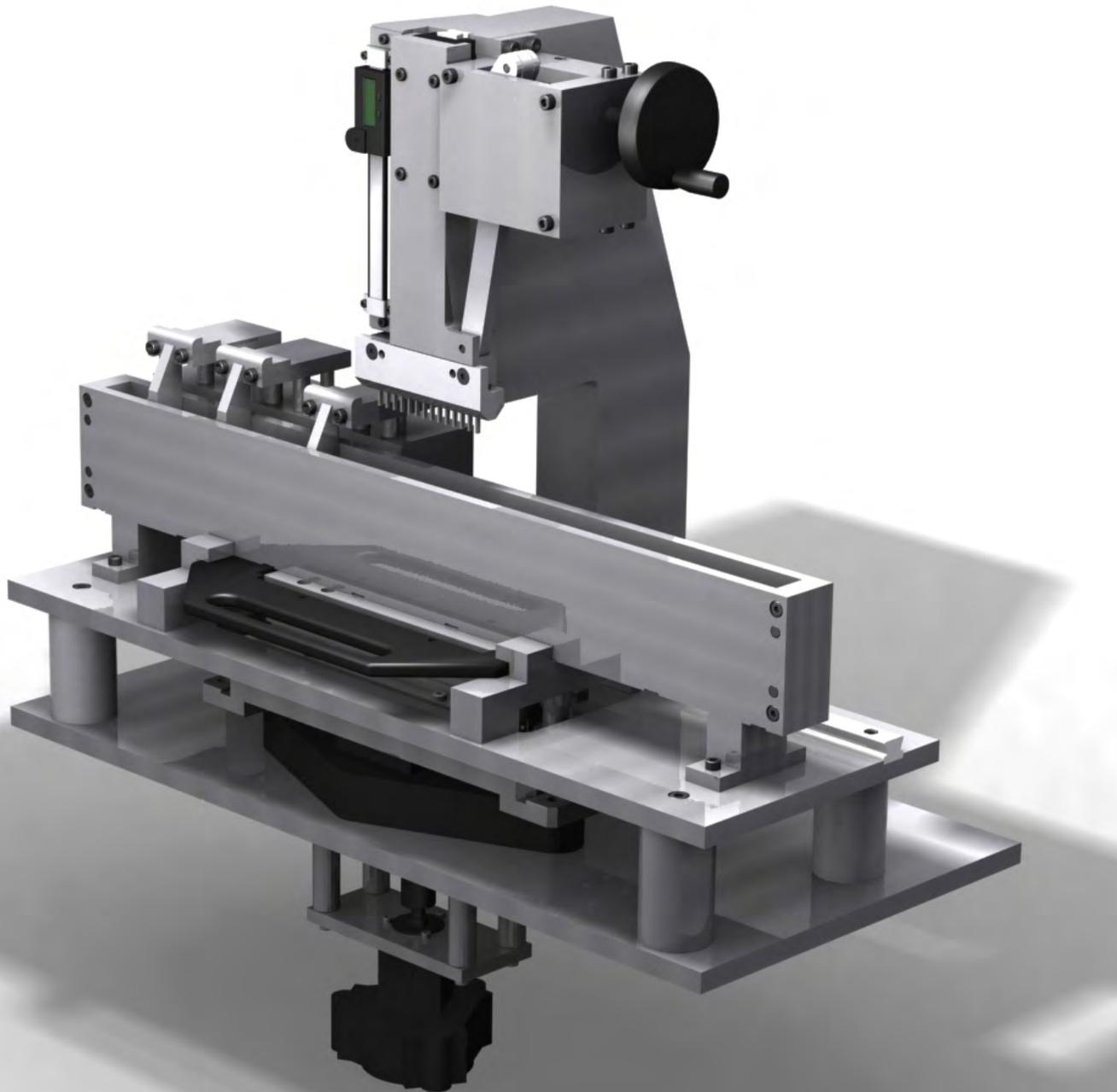
Conventional COPD treatment requires taking multiple doses from different inhalers. This new combination inhaler dispenses two active pharmaceutical ingredients that are inhaled simultaneously in a once-a-day regime supplied by the automatic opening of two individual blister strips.

The Breo Ellipta has exceptionally reliable operation that required many years of development to perfect. The treatment is metered and dispensed by an intricate but robust device that is pharmaceutically reliable and particularly easy for the patient to use. Despite opening two strips the force to operate the lever is no greater than the single strip Diskus.

With so many moving parts extensive investigations were carried out in tolerancing, geartooth shaping and clearances at all extremes of moulding variations. This is to ensure that the device always delivers and always delivers both parts of the treatment.



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Warwick Design also supported our client with strip making machines for laboratory scale manufacture.