

## Advantages of elastomeric pumps

# A safe alternative to electric pump systems in pain therapy

Mobile infusion pumps are used for many medical applications, mainly in oncology and in a variety of post-operative pain therapies, whether systemic or in regional anaesthesia such as continuous plexus anaesthesia, epidural anaesthesia, or wound infiltration. Electric pumps are often the choice. Elastomeric pumps, however, offer significant advantages and are a safe alternative to electric pump systems in every respect. They have therefore been standard in oncology for many years. Numerous variants and sizes of elastomeric pumps have been developed for postoperative pain therapy, covering a very wide range of indications.

### The advantages are obvious: elastomeric pumps...

#### ... enable early mobilisation,

even easier than with electric PCA pumps. They are more compact, easier to handle and more lightweight than electric pumps, and they are independent of power sources.

#### ... are widely applicable.

Thanks to the variety of models with different reservoir sizes, adjustable basal flow and different bolus functions, elastomeric pumps are ideally suited for all PCA applications.

#### ... are simple to operate and use,

and do not require any adjustments by specially trained personnel during infusion.

#### ... are not error-prone and easy to use.

Elastomeric pumps have pre-set basal flow rates as well as a fixed bolus dose and lockout time. Only multi-rate models allow adjustment of the flow rate in pre-set steps with a removable key. The risk of accidental misuse is highly reduced. The pumps are very robust. In the event of a shock or fall, the pumps continue to work in a stable manner.

#### ... are maintenance-free and not sensitive to faults.

There are no batteries to change and no need for personnel to respond to alarms, real or false, as elastomeric pumps are designed in such a way that alarms are unnecessary. As a result, the patient's night-time rest is not disturbed.

#### ... are immediately available, without financial risk and proven to be more cost-effective.

For electronic infusion pumps, high acquisition costs have to be calculated, which are only amortised over the years through intensive use. In addition, costs for battery replacement, mandatory biennial recalibrations and, if necessary, further costs for repair or maintenance must be expected. In addition, sterile disposables (bags or cassettes, connection systems and, if necessary, transfer lines) are required for each use. Elastomeric pumps have low unit prices and no maintenance costs. They do not require specially trained staff and may save personnel costs.



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### **... do not have to be changed during treatment.**

Common electric PCA pumps have a limited capacity. Sterile disposable inserts have to be changed for longer applications with larger volumes. Elastomeric pumps, on the other hand, are also available in much larger volumes according to need. Another advantage of elastomeric pumps is that they do not have to be disconnected and reconnected to change reservoirs. They thus represent an exemplary closed system without the risk of contamination when changing systems. This is a significant advantage for tissue applications in regional anaesthesia. There is no need for personnel to change reservoirs with elastomeric pumps.

### **... offer hygienic advantages.**

They are used only once and do not have to be cleaned by the staff from patient to patient.

### **... increase the patient's quality of life.**

They are small, light, silent and discreet. Due to their independent, portable characteristics and the high safety level, the use of elastomeric pumps is particularly advantageous for stationary and ambulatory areas.

### **... are the favourites of the nursing staff on the ward,**

because they do not require alarms or monitoring, and yet they do their job to the full.

## **Aspects that argue in favor of electric pumps**

Electric pumps are more precise and are therefore particularly suitable for cardiological indications. Electric PCA pumps offer the possibility of extensive reprogramming of the infusion protocol during running time, even if this is rarely necessary. However, it requires precise knowledge of the electric pump used in order to avoid incorrect programming and thus risks. For applications that may require a change in flow rate, elastomeric multirate pumps such as the CareVis® VariO can be used as an alternative. With these, the flow rate can be easily changed with a removable key. Electric PCA pumps can record data and incident logs can be created for transfer to the patient's record. This is a practical feature that is reflected in the price of the pumps and the running costs. Injection pumps are inexpensive, apart from the purchase and mandatory maintenance costs, because simple needles are used. However, they counteract early mobilisation of the patient. For large-volume applications in regional anaesthesia, they are obsolete because of frequent needle changes.



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# Advantages of CareVis® elastomeric pumps

- Safety and easy handling due to closed one-way system
- High flow accuracy
- Shockproof and hard casing to protect the balloon and to exclude external influences
- Balloon and casing are transparent for clear visual control of the medication
- Balloon is guided centrally for even flow
- Kink-resistant infusion line prevents the infusion from stopping
- Easy-to-read progression indicator
- Minimum residual volumes for complete drug administration
- Bacteria-proof venting cap - priming with the cap closed without dripping
- Particle filter of 1.2 µm and ventilation filter of 0.2 µm to reduce the risk of air embolisms and particle contamination
- Also available with neuroaxial connector and dual lines if required
- Latex and phthalate free

