

Electronic Infusion Pump vs. Elastomeric Infusion Pump



Electronic Infusion Pump



Elastomeric Infusion Pump

Electronic Infusion Pump vs. Elastomeric Infusion Pump		
Category	Electronic Infusion Pump	Elastomeric Infusion Pump
Driving mechanism	Electric motor with electronic control	Elastic force of a silicone balloon
Power requirement	Required (battery or mains power)	Not required (no power, no battery)
Typical use environment	Mainly in-hospital (ICU, wards)	Hospital, outpatient, and home care
Portability	Low (bulky and heavy)	Very high (lightweight and portable)
Device complexity	Complex (electronics, sensors, software)	Simple mechanical structure
Risk of device failure	Possible (battery failure, electronic malfunction)	Very low
Programming error risk	Present (manual setting and software input)	Minimal (fixed, pre-set flow rate)
Flow rate control	Electronically adjustable	Pre-set, fixed flow rate
Flow rate accuracy	High and electronically regulated	High, influenced by temperature and viscosity
Maintenance	Regular maintenance and calibration required	No maintenance required
Reusability	Reusable device (requires cleaning and disinfection)	Single-use, disposable
Infection control	Risk of cross-contamination	Minimal risk of cross-contamination
Noise	Audible (motor and alarm sounds)	Silent
Patient compliance	Can be low due to size and inconvenience	Very high
Training requirement	High (staff training required)	Low (simple operation)
Alarm functions	Available (occlusion, battery, system errors)	Not available
Initial acquisition cost	High	Low
Long-term operating cost	High (maintenance, servicing, accessories)	Low
Typical clinical applications	ICU, TPN, high-risk drug infusion	Oncology, antibiotics, PCA, pain management
Suitability for home care	Limited	Excellent
Market trend	Hospital-centered	Rapid growth with outpatient & home-care expansi