trainingTools

SMARTeZ™ Pump • eZS™ Pump

Non-electrically Driven Portable Infusion Pumps

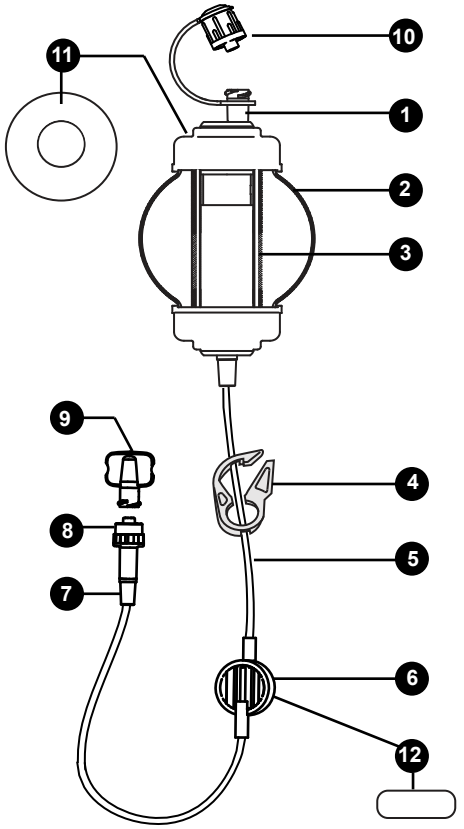
Factors Affecting Flow Rate

The SMARTeZTM Pump has a specially designed multi-layered balloon-like reservoirto be filled with the drug or fluid intended for infusion.
It exerts mechanical pressure thereby administering the contents through an orifice tube at a predetermined flow rate. The entire unit is sterile and is intended for single-use only.

Elastomeric pumps are calibrated to specific operating conditions.
When filled to the nominal volume, flow accuracy is within +/- 15% of the nominal (label) flow rate.

Several Factors may affect Flow Rate

Fill Volume
Temperature
Pump Position
Viscosity
Storage Time
External Pressure



1. Fill port
2. Outer soft cover
3. Multi-layered elastomeric membrane
4. ON-OFF clamp
5. PVC administration tubing
6. In-line air and particulate eliminating filter
7. Flow restrictor
8. Patient connector
9. Patient end cap
10. Fill port cap (tethered)
11. Labelling - Fill volume & infusion duration
12. Labelling - Flow rate

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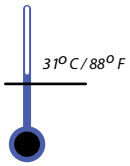
When filled to nominal volume, flow accuracy is within +/- 15% of the nominal (label) flow rate when infusion is started within 8 hours after fill.

Factor	Impact on Flow Rate	Guidelines
Fill Volume		
	Flow Rate accuracy specifications is based on filling the pump to the nominal volume.	Follow the Delivery Times Table in the Product User Information. - Always fill within the Minimum and Maximum limits specied for the pump.
Temperature		
	Temperature affects fluid viscosity , hence Flow Rate. Flow Rate increases 1.5% for every 1°F increase in temperature. Flow Rate decreases 1.5% for every 1°F decrease in temeparure.	- If pump is refrigerated , allow it to come to room temperature before use. - The flow restrictor which is embedded in the patient connector should be kept close to the skin. - Do not place the pump under bedcovers or near a heat source as temperature may be too warm.
Pump Position		
	Pump position is best kept at same level as catheter site. Pump position affects flow rate - higher pump position results in faster flow rate while lower position decrease flow.	- During use it is best to put the pump in a carrier bag , pocket or bedside table. - Do not hang the pump on an IV pole.
Viscosity		
	The nominal flow rate is based on saline as the diluent. The use of viscous drugs or fluids as diluent will reduce flow rate.	- Use of 5% Dextrose will result in a 10% longer delivery time.
Storage Time		
	Flow Rate accuracy specification is based on starting infusion within 8 hours after filling. Your SMARTeZ Pump can be started anytime ONE hour after filling.	- Allow the pump to rest ONE hour after filling before starting infusion.
External Pressure		
	Flow Rate will increase if there are external pressures exerted on the pump.	- Do not squeeze or lie on the pump during infusion.