

**3M** Science.  
Applied to Life.™



# Safe, effective fluid warming when you need it.

The 3M™ Ranger™ Blood and Fluid Warming System with dry heat technology adapts to virtually any fluid warming need from KVO to 30,000mL/hr. In the operating theatre, a routine procedure can quickly turn into a trauma situation. When it does, you have more important things to worry about than whether or not your fluid warmer is up to the task.

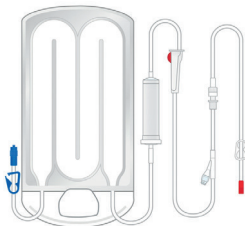
# 3M™ Ranger™ Blood and Fluid Warming System

The Ranger blood and fluid warming system helps clinicians to prevent further reduction in core temperature caused by cold fluids.<sup>1</sup> We have a range of standard and high flow options available to deliver safe, effective warming for all patients – all in one system.



## Everyday fluid warming

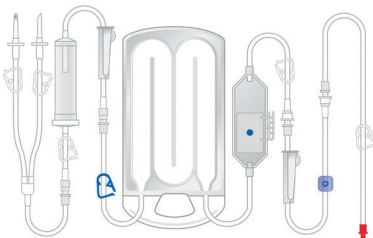
The Ranger blood and fluid warming system allows you to warm fluids effectively without compromising patient safety. The microprocessor controlled heating system maintains plate temperature irrespective of flow rate or the temperature of the fluid bag. With bubble trap functionality in our standard and paediatric sets and air elimination feature in our high flow sets, you can protect your patients against the risk and dangers of air embolism.



Model 24200

## High flow fluid warming

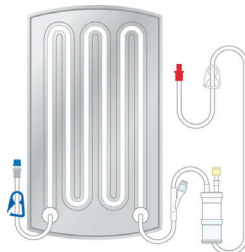
The 3M™ Ranger™ High Flow Warming Set is designed to deliver warm fluids in situations where fluid is required at a fast flow rate. All high flow sets are fitted with an auto-venting bubble trap; an air elimination feature which is capable of venting up to 3L of air per minute.



Model 24355

## Fluid warming for smaller patients

The 3M™ Ranger™ Paediatric Warming Set has a lower flow rate and priming volume to accommodate the needs of paediatric and neonatal patients. It has specific design features to address aliquot (bolus) fluid administration.



Model 24450

## Pressure infusion system

The 3M™ Ranger™ Pressure Infusor System can be relied upon to maintain a continuous 300mmHg of pressure to the fluid, significantly increasing flow and volume. The Ranger pressure infusor can accommodate fluid bags from 250–1000ml in size, and can be used with all Ranger disposable warming sets and other intravenous fluid administration systems.



Model 145

## Fluid warming set specifications

	Models					
	Paediatric	Standard flow			High flow	
	24450	24200	24240	24250	24355	24370
Flow rate	KVO-6L/hr	KVO-9L/hr	KVO-9L/hr	KVO-9L/hr	KVO-30L/hr	KVO-30L/hr
Priming volume	20ml	39ml	44ml	44ml	150ml	89ml
Patient line	61cm	152cm	152cm	152cm	142cm	122cm
Air management	Bubble trap	Bubble trap	Bubble trap	Bubble trap	Auto-venting bubble trap	Auto-venting bubble trap
Fluid aspiration port	Yes	No	No	No	No	No
Injection port	N/A	Needle	N/A	Needleless	Needleless	N/A
Pack quantity	10	10	10	10	10	10



1 Sessler, DI. Consequences and treatment of perioperative hypothermia. Anesthesiology Clinics of North America 1994;12(3): 425–426.

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