



Warming Unit – # 24500
 Set point temperature: 41°C
 Flow rates: KVO – 30,000 mL/hr
 Alarms: Over temperature primary setpoint = 43°C
 Over temperature secondary setpoint = 46°C
 Power: 110 VAC / 220-240 VAC
 Weight: 3.3 kg (7.4 lbs)
 Dimensions: 19w x 11h x 25d cm
 (7.5w x 4.5h x 10d in)



Pressure Infusors – # 90083
 Pressure: 300-350 mmHg maximum dynamic operating pressure
 Weight: 7.0 kg (15.5 lbs)
 Dimensions: 33w x 43h x 25d cm
 (13w x 17h x 10d in)
 Case quantity: 2 Infusors on mounting bracket
 Use with 500 to 1,000 mL solution containers
 For use with Power Pack(#90031 or # 90033), wall air or canned air, IV pole mountable



Power Pack – # 90031
 Power: 220-240 VAC
 Pressure Setting: 300 - 350 mmHg
 Weight: 2.7 kg (6 lbs)
 Dimensions: 13w x 18h x 25d cm
 (5w x 7h x 10d in)
 Case Quantity: 1 each
 For use with: Pressure Infusor (# 90083)
 IV pole mountable



Off-set IV pole and base – # 90068 / 90069
 Height: Adjustable from 186-279 cm (73.5 to 110 in)
 Weight: 15.8 kg (35 lbs)
 Diameter: 71cm (28 in) Base, 5 wheels
 Units per box: 1 unit
 For use with: Pressure infusor (# 90083) and Power Pack (# 90031)



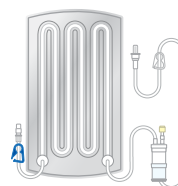
Filter Accessory High Flow Disposable Set* – # 90029
 To be used as a replacement filter with Ranger high flow disposable sets
 Priming Volume: 64 mL
 Filter: 150 micron filter



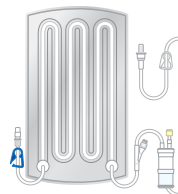
Cleaning Tool Accessory – # 90030
 To be used for cleaning surface of Ranger warming unit heater plates.
 Use: Disposable
 Case quantity: 12 cleaning tools/case

***All disposable sets and set accessories:**

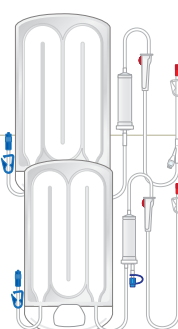
Pressure infusion: Up to 300 mmHg maximum dynamic operating pressure
 Material: Latex-free
 Case quantity: 10 disposable sets/case
 Sterile: EtO
 Use: Single use only



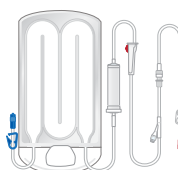
Paediatric/Neonate Disposable Set* #24400
 Flow rates: KVO - 6,000 mL/hr
 Priming volume: 20 mL
 Components: Heat exchanger, bubble trap with air aspiration port, 24 in. patient line



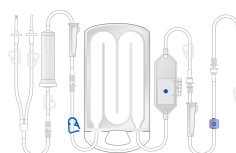
Paediatric/Neonate Disposable Set* with Fluid Aspiration Port #24450
 Flow rates: KVO - 6,000 mL/hr
 Priming volume: 20 mL
 Components: Heat exchanger, bubble trap with air aspiration port, fluid aspiration port, 24 in. patient line



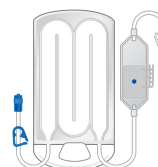
Standard Flow Disposable Set* – # 24200
 Flow rates: KVO – 9,000 mL/hr
 Priming volume: 39 mL
 Components: Heat exchanger, needleless injection port, bubble trap, 30 in. patient line



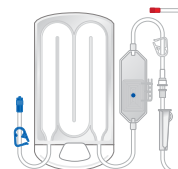
Standard Flow with Extension Disposable Set* – # 24250
 Flow rates: KVO – 9,000 mL/hr
 Priming volume: 44 mL
 Components: Heat exchanger, bubble trap, needleless injection port
 Extension: Luer connected
 30 in. extension set on 30 in. patient line



High Flow Disposable Set* – # 24355
 Flow rates: KVO – 30,000 mL/hr
 Priming volume: 150 mL
 Components: Heat exchanger, 2 IV spikes, drip chamber with 150 micron filter, needleless injection ports, auto-venting bubble trap, 60 in. patient line
 Filter: Replaceable 150 micron filter
 Drip rate: 20 drips per mL



High Flow Set* – # 24365
 Flow rates: KVO – 30,000 mL/hr
 Priming volume: 65 mL
 Components: Heat exchanger, auto-venting bubble trap



High Flow Set* – # 24370
 Flow rates: KVO – 30,000 mL/hr
 Priming volume: 89 mL
 Components: Heat exchanger, auto-venting bubble trap, 48 in. patient line



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3M™ Ranger™ Blood/Fluid Warming System with Smartheat Technology



High Performance
Low Maintenance

The 3M™ Ranger™ Blood/Fluid Warming System
with Smartheat Technology. One intelligent
blood/fluid warmer.

3M Infection Prevention Solutions

Innovation
On A Mission

3M

Fast

- Quickly adapts to changes in flow rates: KVO to 30,000 mL/hr.
- Disposable sets slide easily into the warming unit — and they only fit in one direction, so set up is hassle-free.
- Highly conductive aluminium heating plates disperse heat immediately, handling sudden changes in flow rates with ease.
- The Ranger system cleaning tool makes maintenance quick and simple.



Functional

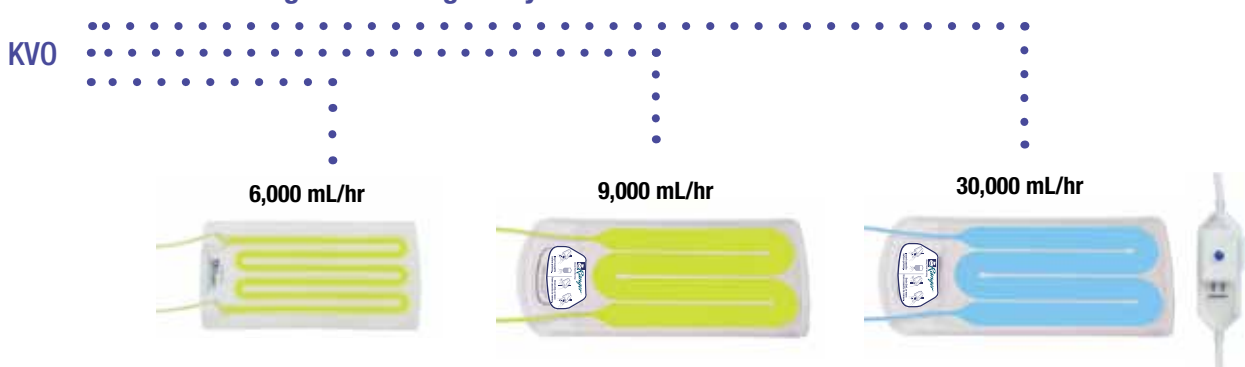
- Smartheat technology disperses heat evenly, eliminating potentially dangerous hotspots and overheating of fluids.
- The Ranger system's software monitors temperature four times each second and adjusts the heat level to maintain a 41°C setpoint. The result: fast, accurate heat control.
- Sophisticated temperature maintenance and monitoring means that alarm conditions in normal operating mode are rare. If the system functions outside of normal temperature range, redundant audible/visible alarms notify users immediately.

Flexible

- The Ranger system maintains safe temperatures across the flow path — from stopped flow to 30,000 mL/hr.
- Economical and easy-to-use disposable sets handle the full range of fluid warming needs.
- Paediatric/Neonate (KVO - 6,000 mL/hr)
- Standard Flow (KVO - 9,000 mL/hr)
- High Flow (KVO - 30,000 mL/hr)

No water. No risk of water-related infection

The Range in the Ranger™ System



Paediatric Disposable Set

Low Flows

- Aliquot fluid administration
- Takes chill off fluids
- Cost effective
- Reduces priming volume

Standard Flow Disposable Set

Moderate Flows

- Responsive to changes in flow rates
- Able to warm at higher flow rates
- Cost effective

High Flow Disposable Set

High Flows

- Auto-venting bubble trap
- Fluid volume capacity
- Hassle-free
- Cost effective

- 1 Integrated handle for easy transport
- 2 Compact, space-saving design
- 3 Large, easy-to-read temperature display
- 4 Audible/visible over-and under-temperature alarms
- 5 Highly conductive aluminium plates for maximum heat transfer and no hotspots
- 6 Inexpensive, simple-to-use disposable warming sets
- 7 Convenient over-temperature test function
- 8 Built-in IV pole clamp for secure hold

