

WHAT'S THE SECRET?



A closer look at what makes the Ranger® system so incredibly versatile.

The Ranger blood/fluid warmer safely and effectively warms fluids at flow rates from KVO to 30,000 mL/hr. This remarkable performance is due primarily to three carefully designed subsystems:

1 THE HEATING SYSTEM

There are two special features of the Ranger heating system:

PROVIDES HEAT WHEN YOU NEED IT, AND ONLY WHEN YOU NEED IT.

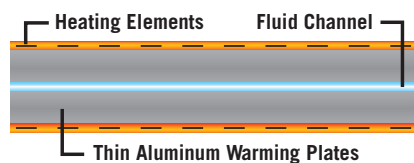
Highly conductive aluminum plates with a thin cross-section minimize the distance between the heating elements and the warming set. This means that excess heat is not stored in the aluminum plates, therefore, the potential of overheating fluid is eliminated.

RAPID AND UNIFORM HEAT TRANSFER.

The warming plates are ideally spaced to create maximum contact area with the warming set while allowing unrestricted fluid flow.

As a result, this tightly coupled heat system is highly responsive to changes in flow rates under all fluid warming conditions.

CROSS-SECTIONAL VIEW OF RANGER HEATING SYSTEM



2 THE CONTROL SYSTEM

The Ranger system uses a microprocessor-based controller to control temperature. This controller, which monitors system temperature four times per second, is sensitive to changes as small as 0.1°C.

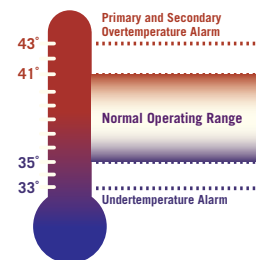
The temperature sensor is positioned in close contact with the warming set. Unlike a conventional thermostat (which uses a simple on/off control), the software in the controller continuously performs calculations based on sensor input to determine precisely how much heat is necessary to maintain a 41°C setpoint. The result is extremely fast and accurate control of the heating system.

3 THE ALARM SYSTEM

Because the Ranger system incorporates sophisticated controls and tight heat coupling to continuously monitor and maintain system temperature, alarm conditions are rare under normal operating conditions.

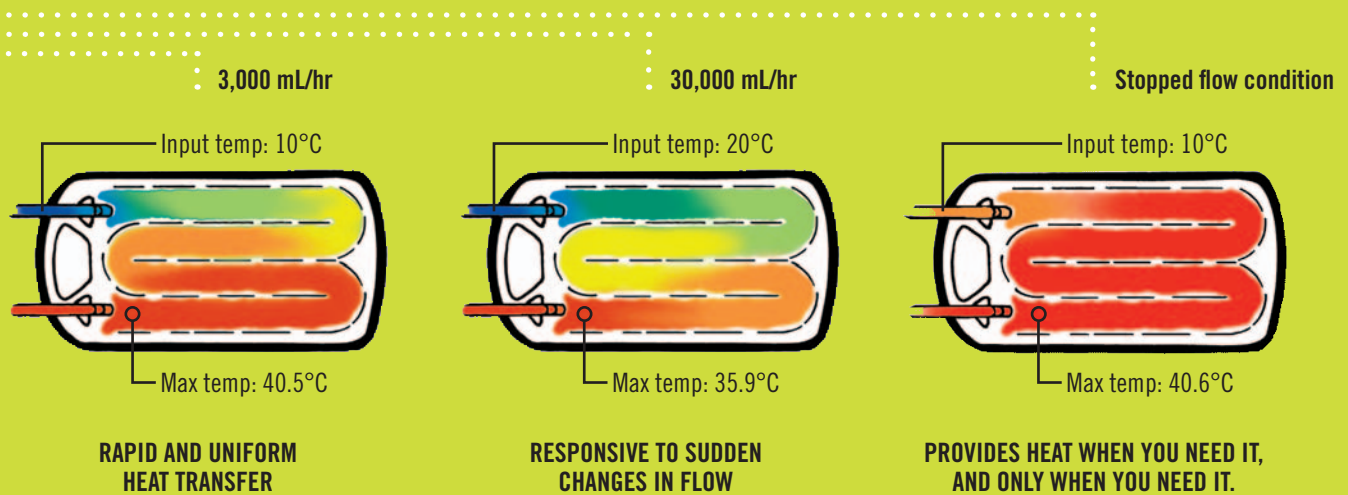
The redundant audible and visual alarms on the Ranger warming unit are designed to notify the user if, for any reason, the warming unit is functioning outside of its normal operating temperature range.

SAFETY ALARM SYSTEM



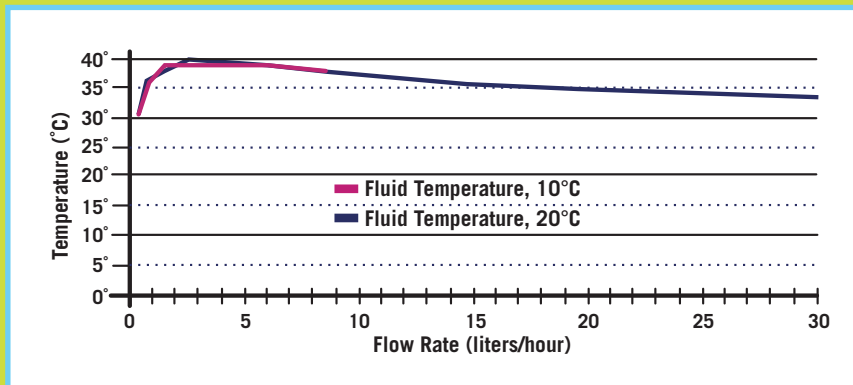
Adapting to all of your fluid warming needs.

The Ranger® system maintains safe temperatures at all areas in the flow path under all fluid warming conditions – from stopped flow to 30,000 mL/hr.*



Ranger System Performance**

Fluid temperature at end of patient line.



To arrange a free trial of the remarkable Ranger blood/fluid warming system, please contact your Arizant Healthcare representative or call 1-800-733-7775.



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*Temperatures were recorded at five different points along the flow path on the surface of the heat exchanger—thus recording approximate fluid temperatures. Maximum temperatures are indicated above.

**Nominal measurements only—Temperatures taken at 18°C room temperature at the distal end of patient line.