QinFLOW

Real Time Warm Fluid Delivery, Guaranteed!

QinFlow Warrior

The only field operated, portable blood and IV fluid warming solution capable of instantaneously warming fluids from any input temperature to 38ºC (100ºF), even at high flow rates

Photo credit: E

About Us:

Since 2008 QinFlow (stands for "Quality in Flow") has worked to develop and perfect an extremely efficient fluid warming technology. The company's products provide front end rescue teams, paramedics, critical care transport teams, ER teams, trauma centers, and operating rooms with reliable, simple to operate, and completely portable blood and IV fluid warming devices that operate flawlessly in all environmental conditions in order to fight hypothermia and help in saving lives.

Unique Value Proposition:

- **Unmatched performance**: the only solution capable of warming fluids from practically any fluid input temperature and flow rate requirements to body temperature in just a few seconds
- **Unmatched capacity**: provides three to five times the amount of warmed fluids per single battery than any alternative solution
- **Flexible power sources**: battery and AC operable
- **Simple to operate**: easy to train, maintain and troubleshoot

Management Team:

- Dov Nachshon, Chief Executive Officer
- Dr. Ron Elazari Volcani, Co-Founder Chief Technology Officer
- Ariel Katz, Executive Director, Commercial Affairs

Advisory Board:

- Prof. Uri Martinowitz, Director of the National Hemophilia Center, Sheiba Medical Center, Tel Hashomer, Israel
- Prof. Eilat Shinar, Director of National Blood Services, Magen David Adom (MDA), Israel

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Background: hypothermia is a life threatening situation that occurs in up to 67% of trauma patients. Hypothermia occurs when body temperature drops below 35°C. *"Hypothermia in an adult trauma victim with a core temperature less than 32°C is associated with 100% mortality, independent of the presence of shock, injury severity score, or volume of fluid resuscitation"; "Hypothermia increases fluid requirements and independently increases acute mortality after major trauma"*[1]. Hypothermia and trauma is a deadly combination: *"both civilian and military patients suffering traumatic injury have significantly increased mortality if they arrive at the hospital with lowered body temperatures compared to normal"*[2]. Hypothermia patients should be re-warmed immediately.

The Unmet Need: warming blood and IV fluids from any input temperature up to body temperature in all practical flow rates and operating environments. The most advanced fluid warming solutions for the prehospital space struggle or simply fail to perform below 20°C / 68°F fluid input temperature (especially when the flow rate requirements are intense), leaving frontend rescue and transport teams significantly underequipped to deal with the challenge. Similarly, hospital solutions are often too complex to setup, require prolonged warm up time and can not warm fluids when transporting patients within the hospital's premises. These shortfalls have lethal implications for trauma patients.

Introducing QiF-01 ("Warrior"): a commercially available fluid warming solution from QinFlow that delivers on the promise of warming fluids in all applicable environmental conditions and flow rate requirements. Leveraging QinFlow's unique and patented technology, QiF-01 ("Warrior") is the only portable device capable of meeting the key performance parameters expected from modern fluid warmers, namely: warming range, warming speed, warming capacity, flow rates, and simplicity.

[1] Ann Surg. 1997 October; 226(4): 439–449. Is hypothermia in the victim of major trauma protective or harmful? A randomized, prospective study. L. M. Gentilello, G. J. Jurkovich, M. S. Stark, S. A. Hassantash, and G E O'Keefe

[2] http://www.ems1.com/trauma/articles/1189729-Hypothermia-and-trauma-A-deadly-combination/ [December 01, 2011]

Not all fluid warmers are created equal

Fluid Input Warming Range

Warrior	Other Warmers
✓	FAIL

At flow rates exceeding 100 ml/min

Max Flow Rate

Warrior	Other Warmers
> 200 ml/min	30-100 ml/min

Supporting Venflon 14

Energy Weight Required to Warm 3 Liters

Warrior	Other Warmers
0.5 Kg	2 Kg

At 100-180 ml/minute

Single Battery Warming Capacity

Warrior	Other Warmers
5 Liter	1-1.5 Liter

At 170ml/min, 20°C fluid input temperature and 22°C ambient temperature

Warm up Time

Warrior	Other Warmers
Up to 11 sec	45-260 sec