

BLOOD FLUID WARMER THERMAL ANGEL

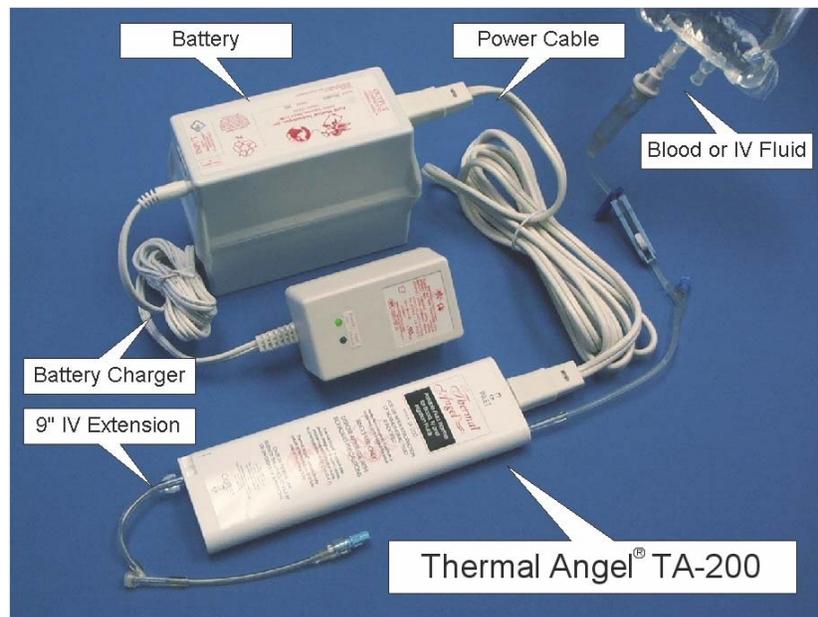
Thermal Angel
Estill Medical Technologies, Inc
Model TA-SK1M
Manufacturer's PHONE: (214) 561-6001 Fax: (214) 561-1930
Website: <http://www.thermalangel.com>

ACC "L" ITEM NSN 6515-01-500-3521

UNIT PRICE: \$642.50

POC: Brandon Lopez

THERMAL ANGEL KIT TA-SK1M



System Description: The Thermal Angel is an in line, battery-powered disposable, lightweight and completely portable blood and IV fluid warming device, capable of intravenous application and irrigation warming. The Thermal Angel can be used to help prevent fluid-induced hypothermia. The Thermal Angel TA-200 will strive to achieve 38°C (100.4°F) $\pm 3^{\circ}\text{C}$ at a flow rate of 2 to 150 ml/min given a fluid input temperature of 20°C (68°F) with a fully charged TA-BCE Battery.



**THERMAL ANGEL UNIT
TA-200
ACC "L" NSN 6515-01-500-3521**

- Features:**
- Lightweight (9 oz), in-line, disposable, portable battery-powered blood and IV fluid warmer
 - No cartridges or cleaning
 - Inserted below standard IV tubing, coming from the bag and before the extension set leading to the infusion site
 - Will strive to achieve 38°C (100.4°F) ±3°C at a flow rate of 2 to 150 ml/min given a fluid input temperature of 20°C (68°F) with a fully charged TA-BCE Battery
 - Quick setup within 30 seconds
 - Warms in approximately 45 seconds
 - Placed at or near the infusion site for minimal heat loss through tubing
 - Failsafe to prevent overheating
 - Ability to remain with patient from first contact through hospital stay
 - Can be used in the field, ambulances, helicopters, ER, OR, military and other care areas
 - The unit uses standard luer fittings and will accept all standard IV line sets
 - Single patient use
 - Heaters adjust automatically in response to changes in flow rate
 - Disposable

Thermal Angel[®] TA-200 Performance Specifications:

Output Temperature:	38°C (100.4°F)
Accuracy:	±3°C (5.4°F)
Input Temperature:	20°C (68°F)
Input Flow Rate:	2 to 150 ml/min
Input Voltage:	12 Volts DC from a fully charged power source
Warm-up Time:	Approximately 45 seconds

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Thermal Angel[®] TA-200 Absolute Minimum and Maximum Specifications:

	Minimum	Maximum
Output Temperature:	NA	47°C (116.6°F) failsafe fuse
Input Temperature:	4°C (39.2°F)	38°C (100.4°F)
Input Flow Rate:	0 ml/min	200 ml/min
Input Voltage:	10.5 Volts DC	13.8 Volts DC
Storage Temperature:	0°C (32°F)	40°C (104°F)

Thermal Angel[®] TA-200 External Physical Specifications:

Length:	9.0 in. (22.86 cm)
Width:	2.8 in. (7.11 cm)
Depth:	0.95 in. (2.41 cm)
Weight:	9.2 oz. (260.82 g)

Thermal Angel[®] TA-200 Fluid Path Specifications:

Material:	Passivated 316L stainless steel tube
Tube Length:	50.25 in. (127.5 cm)
Tube Wall Thickness:	0.035 in. (.098 cm)
Tube I.D.:	0.117 in. (.30 cm)
Volume:	0.540 cu. in. (8.85 ml)

Thermal Angel[®] TA-200 Heater Specifications:

Type:	Electrical resistance, band heater
Material:	1 oz. copper
Substrate:	3 mil polyester film

Approximate Area: 17 sq. in.
Nominal Power: 216 watts @ 12 Volts DC

Thermal Angel[®] TA-200 Controller Specifications:

Operational Voltage: 5 Volts DC
Processor: 8-bit microcontroller
Clock Rate: 8 MHz
ADC Configuration: 8-bits
Sensor: NTC Thermistor mounted in fluid stream
Control Algorithm: Closed-loop PID (Proportional Integral Differential)

Sample Rate: 4.8 Ks/sec

TA-200 QUICK STEPS

Step 1: • Remove the female luer cap from the inlet end of the Thermal Angel[®]. • Connect IV tubing to the female luer. Tighten until resistance is met. Do not over tighten

Step 2: • Remove the male luer cap from the outlet end of the Thermal Angel[®]. • Connect 9 Inch IV Extension Set to the male luer. Tighten until resistance is met. Do not over tighten.

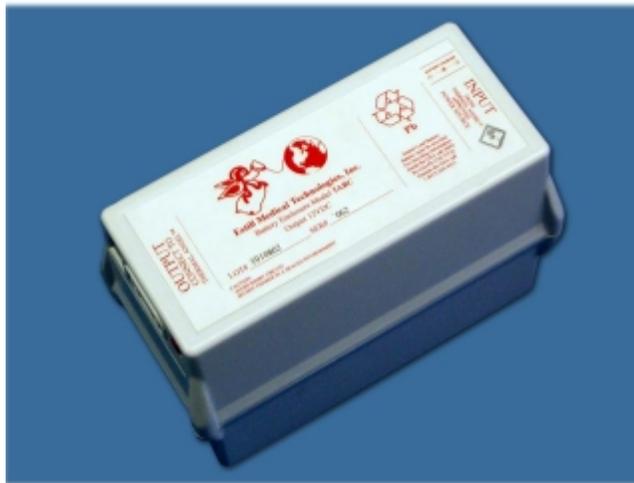
Step 3: • Connect assembled IV line to fluid source and prime the line.

Step 4: • Connect the male end of the Power Cable to the inlet end cap of the Thermal Angel[®]. • Connect the female end of the Power Cable to the Battery. • The green LED on the Thermal Angel[®] inlet end cap should display continuous illumination without blinking.

Step 5: • Connect 9 Inch IV Extension Set to IV catheter. • Engage roller clamp on IV tubing to adjust flow.



**9 INCH EXTENSION SET
TA-9EXT
6515-01-503-8228**



**BATTERY
TA-BCE
6515-01-500-2858**



BATTERY CHARGER
TA-CAC
6515-01-500-3022



BATTERY BAG
TA-CC
6515-01-500-3045



**POWER CABLE
TA-CDC
6515-01-500-3027**

CONSUMABLES AND ACCESSORIES START-UP

NSN	NOTES	Nomenclature	PN	QT Y	UI	Unit Price	Total Price	MFG	Shelf Life, months	Refrig Y/N	CONUS Ship Time, weeks
6515015003521	INCLUDED W/NSN	THERMAL ANGEL	TA-200	1	5/EA	\$85.00	\$425.00	Estill Medical Tech	N	N	2
6515015002858	INCLUDED W/NSN	Battery	TA-BCE	1	EA	\$125.00	\$125.00	Estill Medical Tech	N	N	2
6515015003022	INCLUDED W/NSN	Battery Charger	TA-CAC	1	EA	\$30.00	\$30.00	Estill Medical Tech	N	N	2
6515015003027	INCLUDED W/NSN	Power Cable	TA-CDC	1	EA	\$25.00	\$25.00	Estill Medical Tech	N	N	2
6515015003045	INCLUDED W/NSN	Battery Bag	TA-CC	1	EA	\$20.00	\$20.00	Estill Medical Tech	N	N	2
6515015038228	INCLUDED W/NSN	9" IV extension	TA-9EXT	1	5/EA	\$3.50	\$17.50	Estill Medical Tech	N	N	2