HOTSTART EVRHEAT SERIES 20
Efficiency & Performance

Efficiency is Everything

Engine heating provides essential benefits to organizations that rely on onsite power generation. However, an inefficient heating solution can slowly sap away time and money – in the form of excessive electrical costs, frequent repair costs or replacement of hoses and plumbing.

EVRHEAT

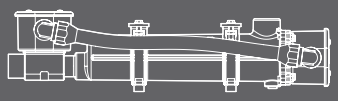
Wattage: **1400 W | 2500 W**
Engine: **20 L max.**
Circulation Method:
Forced Circulation
Set Temperature:
110 °F

Testing

To evaluate the EVRHEAT Series 20 in terms of efficiency compared to both standard thermosiphon and forced circulation systems, we tested it against our engine heating benchmarks: the HOTSTART TPS, CB and CTM models.

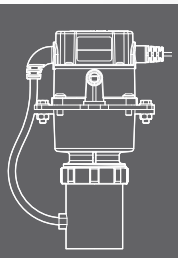
TPS MODEL

Wattage: **1500 W**
Engine: **8.2 L max.**
Circulation Method:
Thermosiphon
Set Temperature:
100 °F (on) / 120 °F (off)



CB MODEL

Wattage: **2500 W**
Engine: **13.1 L max.**
Circulation Method:
Thermosiphon
Set Temperature:
100 °F (on) / 120 °F (off)



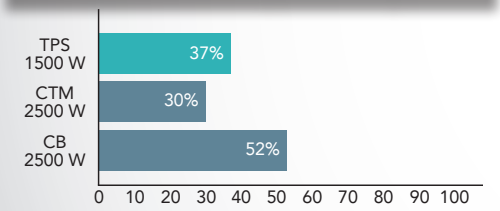
CTM MODEL

Wattage: **2500 W**
Engine: **20 L max.**
Circulation Method:
Forced Circulation
Set Temperature:
100 °F (on) / 120 °F (off)

Results

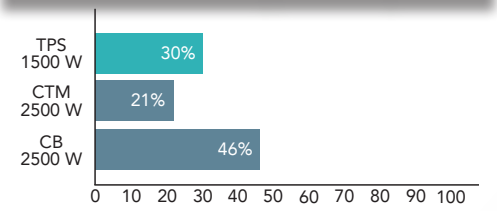
Heaters were evaluated using the same engine block in tests performed at a room-temperature environment (68 °F) and a simulated outdoor temperature (32 °F). The kilowatt-hours of electricity consumed over a 12 hour period of steady state operation were recorded.

EVR20 Energy Savings



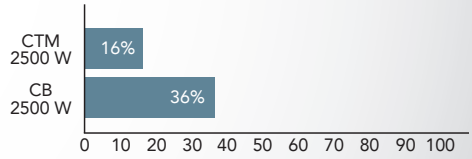
68 °F | 1400 W

EVR20 Energy Savings



68 °F | 2500 W

EVR20 Energy Savings



32 °F | 2500 W

Analysis

The following is the measured average power consumption for an identical setup (above) and one month estimated cost (below). Cost and savings are calculated using a $0.10/kWh rate over a 8760 hour period*.

*Actual savings for installed heaters dependent on application, installation and local utility rates.

68 °F / 1400 W

TPS	0.984kW
EVR	0.615 kW
TPS	$862 / yr.
EVR	$539 / yr.

$323

68 °F / 2500 W

TPS	0.984kW
CB	1.269 kW
CTM	0.877 kW
EVR	0.689 kW
TPS	$862 / yr.
CB	$1112 / yr.
CTM	$768 / yr.
EVR	$604/ yr.

$258 | $164 | $508

32 °F / 2500 W

CB	2.363 kW
CTM	1.809 kW
EVR	1.518 kW
CB	$2070 / yr.
CTM	$1585 / yr.
EVR	$1330 / yr.

$740 | $255

HOTSTART EVRHEAT SERIES 20
Efficiency & Performance

The Performance Edge

All engine heating systems provide baseline benefits. But to avoid common pitfalls of nuisance low temperature alarms, damaged hoses and wasted heating costs, engine heating systems should be capable of providing uniform, even heating throughout the engine block around the clock regardless of ambient conditions.

EVRHEAT

Wattage: **1400 W | 2500 W**
Engine: **20 L max.**
Circulation Method:
Forced Circulation
Set Temperature:
110°F

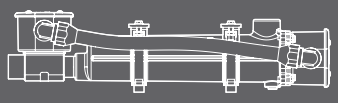
Testing

To evaluate the EVRHEAT Series 20 in terms of performance compared to both standard thermosiphon and forced circulation systems, we tested it against our engine heating benchmarks: the HOTSTART TPS, CB and CTM models.

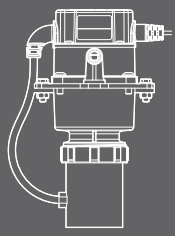
TPS MODEL

Wattage: **1500 W**
Engine: **8.2 L max.**
Circulation Method:
Thermosiphon
Set Temperature:
100 °F (on) / 120 °F (off)

CB MODEL



Wattage: **2500 W**
Engine: **13.1 L max.**
Circulation Method:
Thermosiphon
Set Temperature:
100 °F (on) / 120 °F (off)

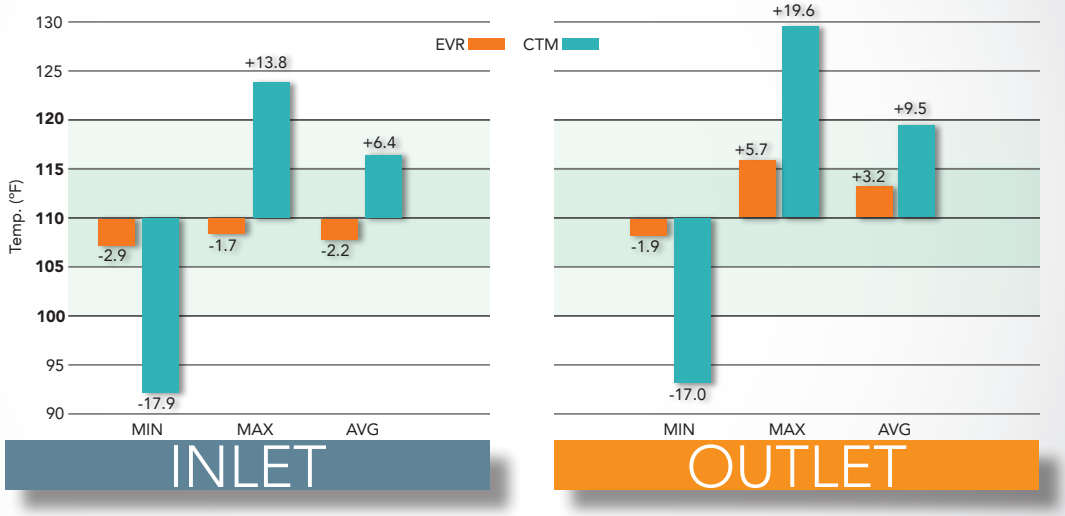


CTM MODEL

Wattage: **2500 W**
Engine: **20 L max.**
Circulation Method:
Forced Circulation
Set Temperature:
100 °F (on) / 120 °F (off)

Results

Without pumps, the TPS and CB models registered well behind the two forced circulation options. Instead, we focused on the 2500 W CTM and EVR models in 32 °F ambient conditions. With inlet and outlet temperatures closest to 110 °F, the EVR showed minimal potential for hot or cold areas in the block.



Analysis

The benefits of the EVR model's advanced solid-state controls were readily apparent, keeping average inlet and outlet temperatures extremely close to the optimal 110 °F mark on our test engine*.

*Heater performance based on test engine. Temperatures may vary due to installation and application.

68 °F / 1400 W		
INLET	TPS	104.5 °F
	EVR	102.6 °F
OUTLET	TPS	146.8 °F
	EVR	104.7 °F

68 °F / 2500 W		
INLET	CB	113.2 °F
	CTM	112.6 °F
	EVR	106.5 °F
OUTLET	CB	144.1 °F
	CTM	113.5 °F
	EVR	109.2 °F

32 °F / 2500 W		
INLET	CB	123.3 °F
	CTM	116.4 °F
	EVR	107.8 °F
OUTLET	CB	174.0 °F
	CTM	119.5 °F
	EVR	113.2 °F