

PHILLIPS & TEMRO *industries*[®]

Light – Heavy Duty

Off-Road

Mining

Oil & Gas

Power Generation



2017

Fuel & Fluid Warming
Product Catalog



On-Line Catalog Available
www.PhillipsandTemro.com

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Phillips and Temro Industries (PTI) is a global OEM and aftermarket provider of custom engineered thermal systems and solutions. Trucking, agriculture, automotive, oil & gas and EV/hybrid are just a few of the diverse markets that benefit from PTI's heating, cooling, and electrification solutions. PTI manages the entire process from concept design, prototyping and testing to delivery with a focus on quality. PTI's portfolio of technologies include Zerostart, Temro, Arctic Fox, Idle Free and Truflo.

MARKET APPLICATIONS

- Automotive / Light Duty
- Medium / Heavy Duty
- Agriculture
- Off-Road / Industrial
- Oil & Gas
- Power Generation
- Power Sports



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Heating Products



Fuel & Fluid Warming



Cooling & Ventilation



Idle Elimination

RESOURCES

WEBSITE

Visit our website at www.phillipsandtemro.com for a full range of resources.

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- Videos
- Safety Data Sheets
- General FAQ
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 - Diesel Fuel Filter Pad Heater
 - Flip Cap Receptacle
 - Heat Magnet
 - Hydra Liner
 - Thermostat Immersion Heater System
 - In-Line Fuel Warmers
 - Interior Car Warmer
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 - Silicone Pad Heater
 - Thermostat
 - Vibra



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IN-LINE FUEL & FLUID WARMERS

MIDRANGER™



FEATURES

- Diesel, BioDiesel & Fluids
- 8-3/4" L x 3-1/4" H (53cm L x 20cm H)
- 9 Tube Design with 3 Half Baffles
- 304 Stainless Steel Construction
- No Moving Parts

- Easy Installation
- Maintenance Free
- Recommend Shut-Off Valve for Warm Weather Application to Avoid Fuel Overheating
- Mounting Brackets Included

TYPICAL APPLICATIONS

- Diesel Engines (Up to 5L)
- Small – Power Generators
- Construction Equipment
- Light Duty Vehicle
- Compact Diesel Equipment

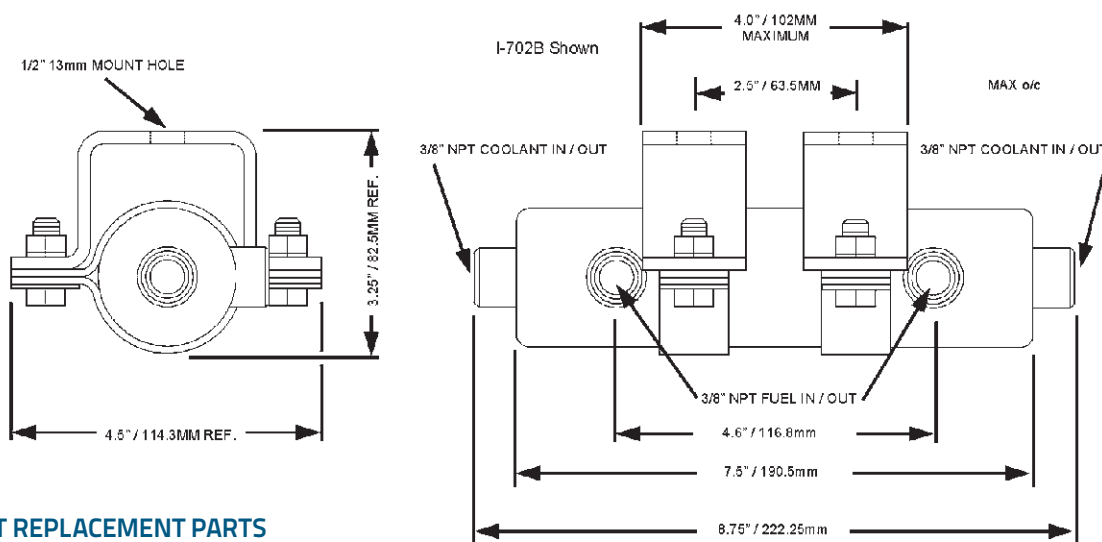
Part No.	Fuel Flow GPM/LPM	Fuel Port (NPT)	Coolant Port (NPT)	Length	Height	Notes
I-702	0.1-0.5 / 0.4-1.9	3/8" NPT	3/8" NPT	8-3/4" (53cm)	3-1/4" (20cm)	
I-702B	0.1-0.5 / 0.4-1.9	3/8" NPT	3/8" NPT	8-3/4" (53cm)	3-1/4" (20cm)	Bracket

HEAT RISE DATA

FUEL FLOW

GPM/LPM	0.1/0.4	0.2/0.8	0.3/1.1	0.5/1.9	1.5/5.7	2.5/9.5
Fuel Temp. In °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C
+10 / -12	+99 / +37	+85 / +29	+75 / +24	+63 / +17	+38 / +3	+33 / +1
-20 / -29	+81 / +27	+66 / +19	+57 / +14	+35 / +2	+13 / -11	+5 / -15
-40 / -40	+71 / +22	+55 / +13	+42 / +6	+19 / -7	-7 / -22	-17 / -27

PRODUCT DIMENSIONS



BRACKET REPLACEMENT PARTS

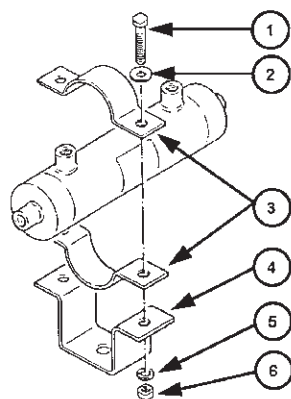


Image	Part No.	Description	Quantity
1	A-321	3/8" UNC X 1.0 Long Bolt	4
2	A-311	Flat Washer 3/8" SAE	4
3	A-307	Bracket – Half Moon	4
4	A-308	U-Bracket	2
5	A-310	Split Lock Washer 3/8"	4
6	A-309	Uhex Nut 3/8"	4

IN-LINE FUEL & FLUID WARMERS

LINEHAULER™



FEATURES

- Diesel
- 14-3/4" L x 5" H (91cm L x 13cm H)
- 9 Tube Design
- 304 Stainless Steel Construction
- Mounting Brackets Included

OPTIONS AVAILABLE

- Shut-off Thermostat – Avoid Fuel Over Heating, All Season Operation
- Electric Preheat – 120 VAC & 240VAC, Cordset Not Included
- Dual Fuel Inlet – Allows for simplified plumbing when retrofitting single to dual draw systems

- Check Valve – Eliminates drain back when changing fuel filter, warmer mounted above fuel

TYPICAL APPLICATIONS

- Diesel Engines (Up to 10L)

Part No.	Fuel Flow GPM / LPM	Check Valve	Shut-Off Thermostat	Fuel Inlet	Fuel Port (NPT)	Coolant Port (NPT)	Notes
I-703	0.1-1.5 / 1.4-5.7	–	–	–	3/8"	1/2"	
I-703B	0.1-1.5 / 1.4-5.7	–	–	–	3/8"	–	Bracket
I-703BT	0.1-1.5 / 1.4-5.7	Yes	78°-95° F	–	1/2"	1/2"	Bracket, Thermostat
I-703BTEH	0.1-1.5 / 1.4-5.7	Yes	78°-95° F	Single	1/2"	1/2"	Bracket, Thermostat, Electric Heat 120 VAC, Maximum current draw 1/2 A, Cordset sold separately
I-704B	0.1-1.5 / 1.4-5.7	–	–	–	1/2"	1/2"	Bracket
I-704BT	0.1-1.5 / 1.4-5.7	–	78°-95° F	–	1/2"	1/2"	Bracket, Thermostat
I-704BTEH	0.1-1.5 / 1.4-5.7	–	78°-95° F	Single	1/2"	1/2"	Bracket, Thermostat, Electric Heat 120 VAC, Cordset sold separately
I-705B	0.1-1.5 / 1.4-5.7	Yes	–	Dual	1/2"	1/2"	Bracket
I-705BT	0.1-1.5 / 1.4-5.7	Yes	78°-95° F	Dual	1/2"	1/2"	Bracket, Thermostat
I-706B	0.1-1.5 / 1.4-5.7	–	–	Dual	1/2"	1/2"	Bracket
I-706BT	0.1-1.5 / 1.4-5.7	–	78°-95° F	Dual	1/2"	1/2"	Bracket, Thermostat
I-714BT	0.1-1.5 / 1.4-5.7	–	104 - 125 °F	–	1/2"	1/2"	Bracket
I-714BTEH-2	0.1-1.5 / 1.4-5.7	–	104 - 125 °F	–	1/2"	1/2"	Bracket, Thermostat, Electric Heat 220/240 VAC, Cordset sold separately
I-724BT	0.1-1.5 / 1.4-5.7	–	104 - 125 °F	–	1/2"	1/2"	Bracket, Thermostat, Electric Heat 120 VAC can be added

CORDSETS

SERIES I-703, I-704 & I-724

Part No.	Volts	Length	Description
EH10	120	10' (3m)	Threaded
EH10Y	120	10' (3m)	Series Y
EH14YK	120	14' (4.3m)	Series Y

HEAT RISE DATA

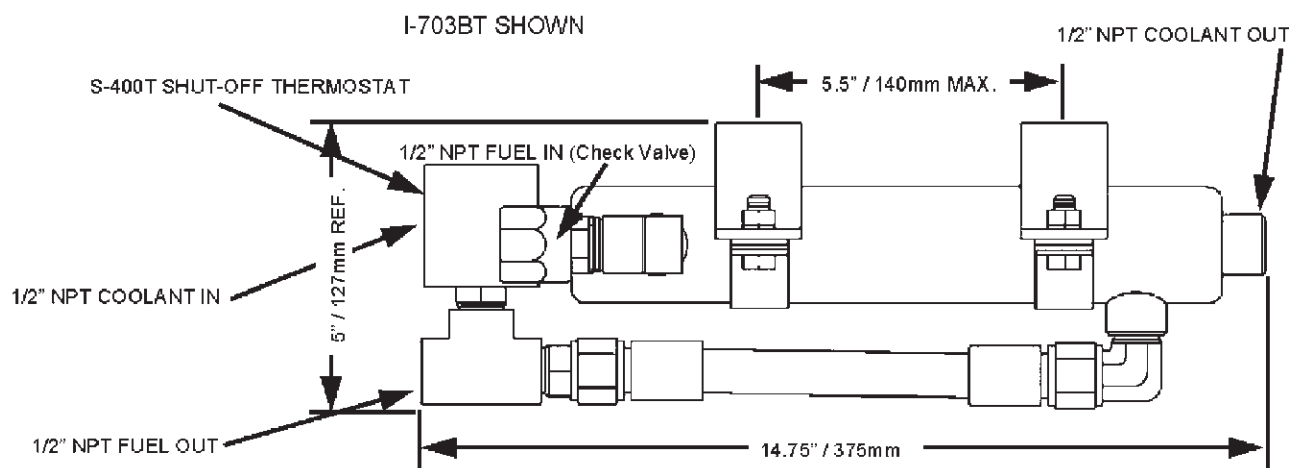
FUEL FLOW

GPM/LPM	0.1/0.4	0.2/0.8	0.3/1.1	0.5/1.9	1.5/5.7	2.5/9.5
Fuel Temp In. °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C	Fuel Temp. Out °F / °C
+10 / -12	+112 / +45	+100 / +38	+90 / +32	+72 / +22	+48 / +9	+39 / +4
-20 / -29	+95 / +35	+86 / +30	+78 / +26	+59 / +15	+20 / -6	+10 / -12
-40 / -40	+86 / +30	+74 / +23	+61 / +16	+34 / +1	+2 / -17	-4 / -20

IN-LINE FUEL & FLUID WARMERS

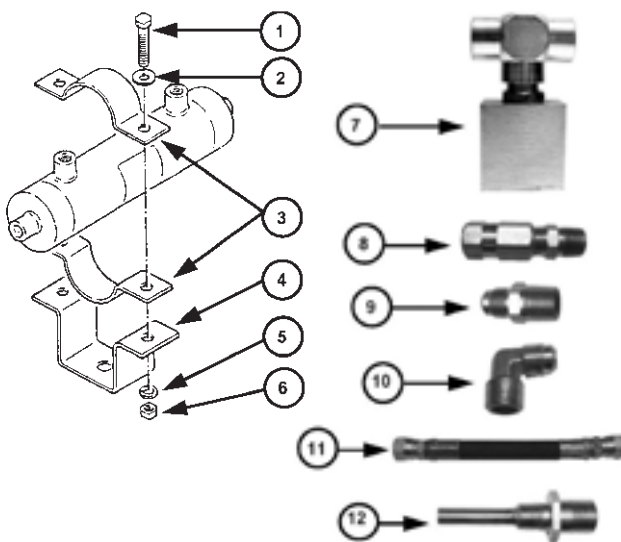
LINEHAULER™

PRODUCT DIMENSIONS



REPLACEMENT PARTS

Image	Part No.	Description	Quantity
1	A-321	3/8" UNC X 1.0 Long Bolt	4
2	A-311	Flat Washer 3/8" SAE	4
3	A-307	Bracket - Half Moon	4
4	A-308	U-Bracket	2
5	A-310	Split Lock Washer 3/8"	4
6	A-309	Uhex Nut 3/8"	4
7	S-400T	Thermostat with Tee	1
8	A-335	Check Valve 1/2" NPT	1
9	A-287	Male Connector #8 x 1/2" NPT	1
10	A-281	Elbow #8 x 1/2" NPT	1
11	A-703H-B	#8 Single Wire Braided Hose	1
12	A-120EK-1	Heat Element 63W 120V	1



IN-LINE FUEL & FLUID WARMERS

I-909 & I-15



FEATURES:

- Diesel & BioDiesel B100
- 304 Stainless Steel Construction
- Thermostatically Controlled – Prevent Fuel Overheating During All Seasons
- On 78°F Off 95°F (On 25°C Off 35°C)
- Mounting Brackets Included

TYPICAL APPLICATIONS

- Most Versatile and Multi Purpose In-Line Warmer
- Extreme Duty Use



OPTIONS AVAILABLE

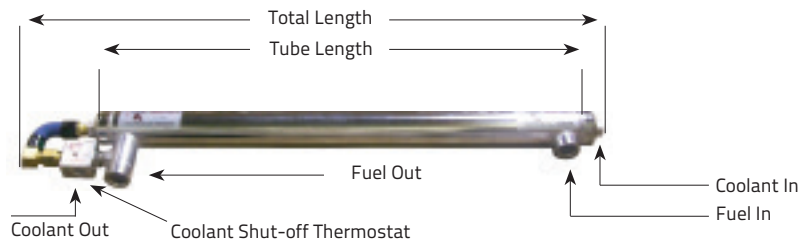
- **Electric Preheat – 120VAC**
Pre-heating ensures warm fuel gets directly to the fuel filter at start up (Part No. I-909BTEH-B100)
Cordset sold separately
- **Series Y-Cordset**
Allows you to plug in the block heater and fuel heater simultaneously while the engine is off (See Cordsets listed below)

Part Number	Coolant Port	Fuel Port	Tube Length	Tube O.D.	Total Length	Surface Area	Pre Heat Option
I-909BT-B100	1/2" NPT	1/2" NPT	9.75"/248mm	2.0"/51mm	15.5"/394mm	100" ² /645.2cm ²	No
I-909BTEH-B100*	1/2" NPT	1/2" NPT	9.75"/248mm	2.0"/51mm	18.5"/470mm	100" ² /645.2cm ²	120 VAC
I-1518BT-B100	1/2" NPT	1" NPT	18.0"/457mm	2.375"/60mm	25.5"/648mm	320" ² /2064.5cm ²	No
I-1530BT-B100	1/2" NPT	1" NPT	30.0"/762mm	2.375"/60mm	37.0"/940mm	532" ² /3432.3cm ²	No

NOTE: All models made of 304 stainless Steel – maximum Coolant Operating Pressure 25 psi (172.4kPa).

* Pre-heat option does NOT include power cord. Contact Arctic Fox for proper cord to match your application.

PRODUCT DIMENSION

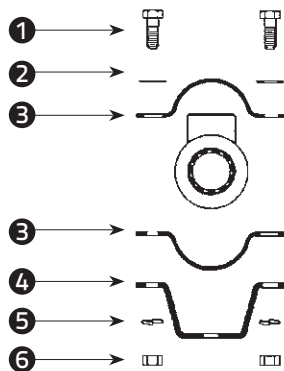


CORDSETS

MODEL I-909BTEH-B100

Part No.	Volts	Length	Description
EH10	120	10' (3m)	Threaded
EH10Y	120	10' (3m)	Series Y
EH14YK	120	14' (4.3m)	Series Y

BRACKET REPLACEMENT PARTS INFORMATION

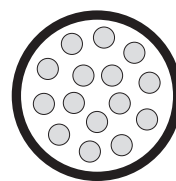


Item	Qty	Part #	Description
1	All	A-321	3/8" UNC X 1.0" Long Bolt
2	All	A-311	3/8" SAE Flat Washer
3	I-909 I-1518/ I-1530	A-307 A-1356	Half Moon Bracket
4	I-909 I-1518/ I-1530	A-308 A-1361	U-Bracket
5	All	A-310	3/8" Split Lock Washer
6	All	A-309	3/8" UNC Nut

NOTE: Bracket components listed above are included with each unit in the proper quantity to support the heat exchanger.

IN-LINE FUEL & FLUID WARMERS

MULTI FUEL & FLUID



FEATURES

- Diesel, Hydraulic Fluid, Engine Oil, Transmission Fluid, BioDiesel B100 & Fluids
- 18"-50" (46-127cm) L
- 15 Tube Design – Longest in-line fuel warmer for maximum heat transfer
- 304 Stainless Steel Construction
- No Moving Parts

TYPICAL APPLICATIONS

- Customized Systems
- Extreme Cold Weather Application

END VIEW – 15 TUBE BUNDLE

Engine coolant or other warm fluid is routed through 15 tubes welded inside the housing to provide heat. Fluid being heated is routed through the baffled shell side. All stainless steel construction eliminates corrosion and contamination of your fuel or fluid.

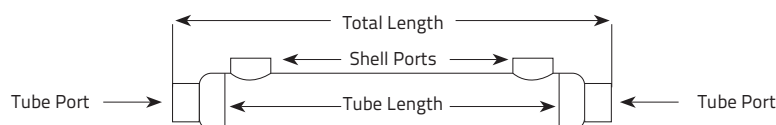
Part Number	Tube Port	Shell Port	Tube Length	Total Length	Surface Area
SF-1542-18	1/2" NPT	1/2" NPT	18.0" / 457mm	22.0" / 559mm	320" ² / 2064.5cm ²
SF-1542-24	1/2" NPT	1/2" NPT	24.0" / 610mm	28.0" / 711mm	426" ² / 2748.4cm ²
SF-1542-30	1/2" NPT	1/2" NPT	30.0" / 762mm	34.0" / 864mm	532" ² / 3432.3cm ²
SF-1562-18	1" NPT	1" NPT	18.0" / 457mm	22.0" / 559mm	320" ² / 2064.5cm ²
SF-1562-24	1" NPT	1" NPT	24.0" / 610mm	28.0" / 711mm	426" ² / 2748.4cm ²
SF-1562-30	1" NPT	1" NPT	30.0" / 762mm	34.0" / 864mm	532" ² / 3432.3cm ²
SF-5139-40	1-1/2" NPT	1" NPT	40.0" / 1016mm	45.0" / 1143mm	710" ² / 4580.6cm ²
SF-5139-45	1-1/2" NPT	1" NPT	45.0" / 1143mm	50.0" / 1270mm	800" ² / 5161.3cm ²
SF-5139-50	1-1/2" NPT	1" NPT	50.0" / 1270mm	55.0" / 1397mm	885" ² / 5709.7cm ²
STT-2537*	1/2" NPT	1" NPT	30.0" / 762mm	34.0" / 864mm	532" ² / 3432.3cm ²
STT-2537-78-95**	1/2" NPT	1" NPT	30.0" / 762mm	34.0" / 864mm	532" ² / 3432.3cm ²

NOTE: All models made of 304 Stainless Steel—Maximum Operating Pressure 25 psi (172.4kPa) – OD 2.375" (60mm)

*STT-2537 Has integral coolant shutoff thermostat (104° – 125°F / 40°-52° C)

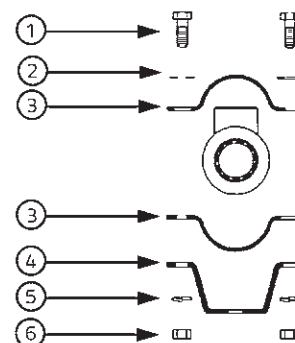
**STT-2537-78-95 Has integral coolant shutoff thermostat (78° – 95°F / 25° – 35°C)

PRODUCT DIMENSIONS



BRACKET REPLACEMENT PARTS

Item	Qty	Description	Part #
1	4	3/8" UNC x 1.0" Long Bolt	A-321
2	4	3/8" SAE Flat Washer	A-311
3	4	Half Moon Bracket	A-1356
4	2	U-Bracket	A-1361
5	4	3/8" Split Lock Washer	A-310
6	4	3/8" UNC Nut	A-309



IN-LINE FUEL & FLUID WARMERS

COMPRESSED NATURAL GAS (CNG)



THE PROBLEM:

Natural gas is stored in tanks on board the vehicle at "tank pressures" ranging from 250 to 3600 psi (1720.7 to 24821.1kPa). A regulator is used to regulate this pressure to a value typically around 115psi (792.9kPa). As a result of the pressure drop through the regulator, the natural gas reaches temperatures nearing -200°F (-128°C). The Arctic Fox heater is utilized to prevent the natural gas from dropping below an acceptable temperature based on engine temperature and load. At low fuel rates, a thermostat may be required to prevent heating of the gas above an acceptable temperature. The Arctic Fox CNG fuel warmer is designed to be installed downstream of the primary pressure regulator.

TYPICAL APPLICATIONS

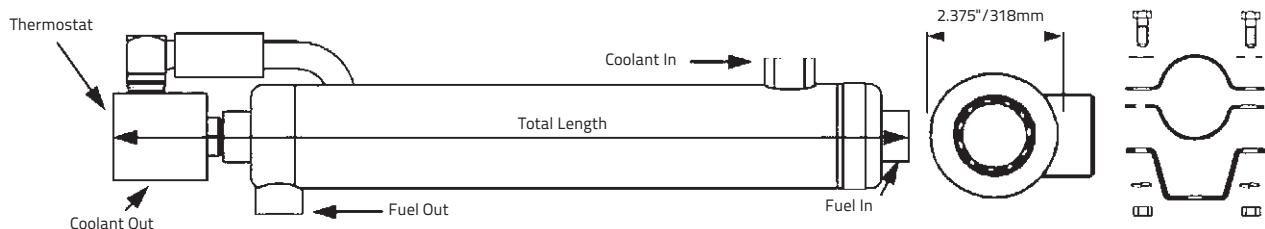
- Natural Gas Engines
- Commercial Buses
- Garbage Trucks

Part Number	Gas Port Size	Coolant Port Size	Tube Length	Total Length	Surface Area	Integral Thermostat
SF-2587-6	1/2" NPT	1/2" NPT	6.0"/152mm	10.0"/245mm	108" ² /697cm ²	NO
SF-2587-8	1/2" NPT	1/2" NPT	8.0"/203mm	12.0"/305mm	143" ² /923cm ²	NO
SF-2587-10	1/2" NPT	1/2" NPT	10.0"/254mm	14.0"/356mm	179" ² /1155cm ²	NO
SF-2587-12	1/2" NPT	1/2" NPT	12.0"/305mm	16.0"/406mm	214" ² /1381cm ²	NO
SFT-2587-1/2NPT-6	1/2" NPTF	1/2" NPT	6.0"/152mm	12.5"/318mm	108" ² /697cm ²	YES
SFT-2587-1/2NPT-8	1/2" NPTF	1/2" NPT	8.0"/203mm	14.5"/368mm	143" ² /923cm ²	YES
SFT-2587-1/2NPT-10	1/2" NPTF	1/2" NPT	10.0"/254mm	16.5"/419mm	179" ² /1155cm ²	YES
SFT-2587-1/2NPT-12	1/2" NPTF	1/2" NPT	12.0"/305mm	18.5"/469mm	214" ² /1381cm ²	YES
SFT-2587-6-SWGLK-X/XCP	1/2" Swagelok	See Note	6.0"/152mm	13.0"/330mm	108" ² /697cm ²	YES
SFT-2587-8-SWGLK-X/XCP	1/2" Swagelok	See Note	8.0"/203mm	15.0"/381mm	143" ² /923cm ²	YES
SFT-2587-10-SWGLK-X/XCP	1/2" Swagelok	See Note	10.0"/254mm	17.0"/432mm	179" ² /1155cm ²	YES
SFT-2587-12-SWGLK-X/XCP	1/2" Swagelok	See Note	12.0"/305mm	19.0"/483mm	214" ² /1381cm ²	YES

NOTE: For SFT-2587 with Swagelok fuel ports, coolant ports can be 1/2", 5/8", or 3/4" hose barb—substitute desired hose barb size for the X/X designation in the part number—Example: SFT-2587-SWGLK-3/4CP will have 3/4" hose barbs included in the hardware package.

WARNING: Maximum recommended service life for SF-2587 and SFT-2587 models is 6 years from the date of manufacture as labeled on the device. Replace with new unit when the device has reached 6 years of service.

PRODUCT DIMENSIONS



FEATURES

- Compressed Natural Gas
- 15 Tube Design
- 304 Stainless Steel Construction
- Compact design for limited space
- Maximum Working Pressure 350 PSI (2,413kPa) – 100%
- Minimum Burst Pressure 6000 PSI (4,1369kPa)
- NPTF & Swagelok Fuel Ports
- Independent Lab Certified
- Mounting Brackets Included

OPTIONS AVAILABLE

- Shut-off Thermostat

IN-LINE FUEL & FLUID WARMERS

HOTLINE ELECTRIC®


FEATURES

- Diesel Fuel Suction Lines
- 2'-12'L (0.6m-3.7m L)
- Insulated electric tape enclosed in a reinforced fuel line
- Thaw frozen diesel fuel in 3-4 minutes
- Eliminate fuel waxing on the road
- Modular design allows for easy installation and service
- Works in conjunction with coolant heaters for complete fuel system protection
- Kits are complete with all electrical components and wiring harness



TYPICAL APPLICATIONS

- Heavy Duty
- Class 8 Trucks
- Power Generators

OPTIONS AVAILABLE

- Shut-off Thermostat (12V & 24V)

POWER	600 WATT		450 WATT		300 WATT		150 WATT	
Length	12 Volt	24 Volt	12 Volt	24 Volt	12 Volt	24 Volt	12 Volt	24 Volt
12' / 3.7m	D3085-1180	D3085-2180	D3085-1152	D3085-2152	D3085-1138	D3085-2138	N/A	N/A
8.5' / 2.6m	D3085-1168	D3085-2168	D3085-1146	D3085-2146	D3085-1133	D3085-2133	N/A	N/A
6.0' / 1.8m	N/A	N/A	D3085-1141	N/A	D3085-1130	D3085-2130	D3085-1126	D3085-2126
4.5' / 1.4m	N/A	N/A	N/A	N/A	D3085-1128	D3085-2128	D3085-1122	D3085-2122
2.0' / 0.6m	N/A	N/A	N/A	N/A	N/A	N/A	D3085-1118	D3085-2118

MAXIMUM CURRENT DRAW / SUSTAINED AMPERAGE

	45	23	31	16	21	11	10	5
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MINIMUM ALTERNATOR CAPACITY

	130	87	105	70	85	55	75	45
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Note: Total system load analysis is required for accurate battery/ charging system specification. Refer to maximum sustained current draw and consult your vehicle manufacturer for advisement whenever adding any aftermarket auxiliary current load.

SHUT-OFF THERMOSTAT KIT (12V & 24V)

Part Number	Off Temp	On Temp	Amp Draw
D3065-2338	80F / 27 C	55 F / 13C	Negligible

REPLACEMENT PARTS

See Technical Information for detailed installation diagram – page 35

Item	Description	Part Number
1	Black Jumper 14 Gauge	D3061-1677
2	12V Lighted Toggle Switch	D3061-1582
	24V Lighted Toggle Switch	D3061-1584
3	Optional Thermostat Kit	D3065-2338
4	3-Wire Harness Kit	D3061-1735
5	Wire Jumper Magnetic Switch	D3065-2360
6	#10 Jumper Main Power	D3061-1664

Item	Description	Part Number
7	12V Magnetic Switch	D3061-1573
	24V Magnetic Switch	D3061-1575
8	12V 60 Amp Circuit Breaker	D3061-1560
	24V 60 Amp Circuit Breaker	D3061-1565
9	#4 Jumper Main Power-47"	D3061-1638
10	Wire Jumper Mod. Ground-96"	D3065-2357
11	Insulating Boot	D3065-2284

IN-TANK FUEL & FLUID WARMERS

HOTFOX™ WITH SHUT-OFF THERMOSTAT

Get the fuel warming efficiency you desire and the thermostatic control you need in one factory assembled product that is installed in the fuel tank.

FEATURES

- Diesel & BioDiesel
- Heats fuel as it is drawn from the tank to the engine
- Shut-Off Thermostat
On 78°F (25°C) Off 95°F (35°C)
- Installs in a Standard USA Fuel Sending Gauge Opening
- 304 Stainless Steel Construction
- 1/2" Extension Fitting Available (Part No. A-858)
- Fuel Tank Adapter Kit Required (Page 13)

Part	Tank
SHFT-2512-10-12	10-12" / 254-305mm
SHFT-2512-12-14	12-14" / 305-356mm
SHFT-2512-13-15	13-15" / 330-381mm
SHFT-2512-14-16	14-16" / 356-406mm
SHFT-2512-17-19	17-19" / 432-483mm
SHFT-2512-20-22	20-22" / 508-559mm
SHFT-2512-22-24	22-24" / 559-610mm
SHFT-2512-24-26	24-26" / 610-660mm
SHFT-2512-26-28	26-28" / 610-711mm
SHFT-2512-27-29	27-29" / 686-737mm

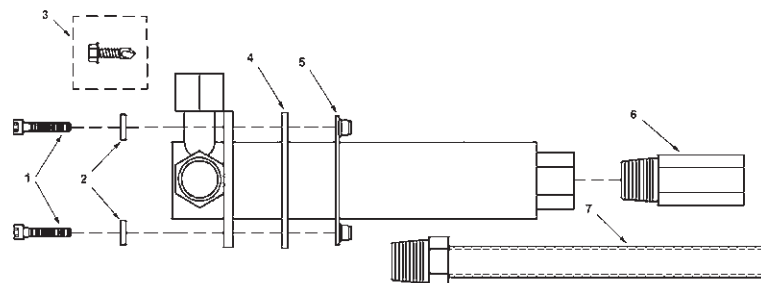


CAUTION: THE HOT FOX™ WITH SHUT-OFF THERMOSTAT REQUIRES IT'S OWN COOLANT LOOP—DO NOT PLUMB IN SERIES WITH ANY OTHER COOLANT DEPENDENT DEVICES

WARNING: Tank reinforcement **MUST** be used to provide additional structural support to the fluid warmer to avoid tank cracking, leading to fluid leakage. See Page 13 for tank adapter kits.

REPLACEMENT PARTS – ALL HOTFOX™ MODELS

Item	Qty	Description	Part #
1	5	#10-32 UNF x 1.0 Cap Screw	A-857
2	5	Stainless Steel Washer	A-861
3	2	Self Drill / Tap Screw	A-608
4	1	HOT FOX™ Fuel Warmer Gasket	A-841
5	1	Back Up Plate / Template	A-834
6	1	1/2" NPT X 2.0 (51mm) Extension Nipple	A-858
7		HOT FOX™ Fuel heater Extension Nipple—1/2" NPT X 21" (533mm) Long	SP-1950
8		HOT FOX™ Fuel heater Hardware Kit (Includes items 1-6)	KT-834



IN-TANK FUEL & FLUID WARMERS

HOTFOX™ WITH STANDPIPE

Warms fuel for the main supply and an auxiliary fuel supply. Operators can now easily supply diesel fired coolant heaters, diesel fired cab heaters, and other auxiliary fuel requirements, as well as the main engine fuel supply, all in one package.

FEATURES

- Diesel & BioDiesel
- Heats fuel as it is drawn from the tank to the engine and auxiliary fuel requirements
- Installs in a Standard USA Fuel Sending Gauge Opening
- 304 Stainless Steel Construction
- Low Profile Mount 2" (51mm) – Between Fuel Tank & Cab
- Includes 2" Extension Fitting
- Fuel Tank Adapter Kit Required (Page 13)



Part Number	Tank Depth	Coolant Port Size	Main Fuel Port Size	Aux Fuel Port Size	Aux Fuel Tube I.D.
TWHF 10-12 2mm	10-12" / 254-305mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 12-14 2mm	12-14" / 305-356mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 13-15 2mm	13-15" / 254-381mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 14-16 2mm	14-16" / 356-406mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 17-19 2mm	17-19" / 432-483mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 20-22 2mm	20-22" / 508-559mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 22-24 2mm	22-24" / 559-610mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 24-26 2mm	24-26" / 610-660mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 26-28 2mm	26-28" / 660-711mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 27-29 2mm	27-29" / 686-737mm	1/2" NPT	1/2" NPT	1/8" NPT	2mm
TWHF 10-12 4mm	10-12" / 254-305mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 12-14 4mm	12-14" / 305-356mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 13-15 4mm	13-15" / 254-381mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 14-16 4mm	14-16" / 356-406mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 17-19 4mm	17-19" / 432-483mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 20-22 4mm	20-22" / 508-559mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 22-24 4mm	22-24" / 559-610mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 24-26 4mm	24-26" / 610-660mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 26-28 4mm	26-28" / 660-711mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm
TWHF 27-29 4mm	27-29" / 686-737mm	1/2" NPT	1/2" NPT	1/8" NPT	4mm

WARNING: Tank reinforcement MUST be used to provide additional structural support to the fluid warmer to avoid tank cracking, leading to fluid leakage. See Page 13 for tank adapter kits.

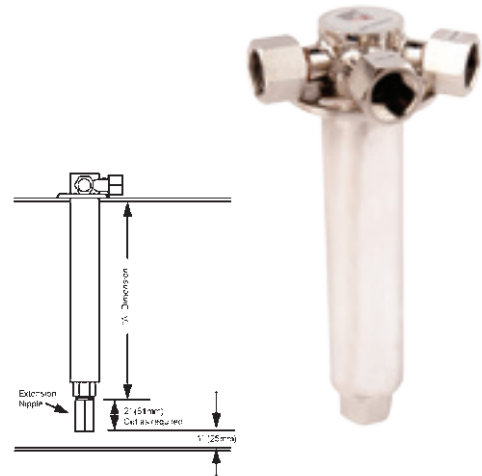
IN-TANK FUEL & FLUID WARMERS

HOT FOX™

Coolant passages inside the tube surround the fuel standpipe to provide heat rise. The internal fuel line features an exclusive spiral design to maximize heat exchange between warm coolant and cold fuel.

FEATURES AND BENEFITS:

- Diesel & BioDiesel
- Heats fuel as it is drawn from the tank to the engine
- Installs in a Standard USA Fuel Sending Gauge Opening
- 304 Stainless Steel Construction
- Lowest Profile Mount 1-1/3" (34mm) – Between Fuel Tank & Cab
- 2" Extension Fitting Included
- Fuel Tank Adapter Kit Required (Page 13)



Part Number	Tank Depth/Diameter	Tube Length
HFG 08-10	08-10" / 203-245mm	7" / 178mm
HFG 10-12	10-12" / 245-305mm	9" / 229mm
HFG 12-14	12-14" / 305-356mm	11" / 279mm
HFG 13-15	13-15" / 330-381mm	12" / 305mm
HFG 14-16	14-16" / 356-406mm	13" / 330mm
HFG 17-19	17-19" / 432-483mm	16" / 406mm
HFG 20-22	20-22" / 508-559mm	19" / 483mm
HFG 22-24	22-24" / 559-610mm	21" / 533mm
HFG 24-26	24-26" / 610-660mm	23" / 584mm
HFG 26-28	26-28" / 660-711mm	25" / 635mm
HFG 27-29	27-29" / 686-737mm	26" / 660mm

MOST EFFICIENT HEAT TRANSFER

Choose the longest HOT FOX™ fuel warmer available for your tank diameter/depth – leaving a 1" (25mm) space between the end of the fuel warmer and the bottom of the tank.

Spacer Kits are available to raise the Hot Fox™ fuel heater flange above the tank 1/2" (13mm) or 1" (25mm). Install the spacer between the Hot Fox™ flange and USA fuel sending gauge opening. See page 13 for spacer kits

WARNING: Tank reinforcement MUST be used to provide additional structural support to the fluid warmer to avoid tank cracking, leading to fluid leakage. See Page 13 for tank adapter kits.

HEAT RISE DATA Coolant Temperature between 192°F / 89°C and 201°F / 94°C—Coolant flow at 5GPM/19LM

HFG 13-15			HFG 20-22			HFG 27-29		
Fuel Flow GPM/LM	Temp In F/C	Temp Out F/C	Fuel Flow GPM/LM	Temp In F/C	Temp Out F/C	Fuel Flow GPM/LM	Temp In F/C	Temp Out F/C
0.17/0.6	+1.7/-17	69.5/21	0.19/0.7	-3.7/-20	84.3/29	0.21/0.8	0.0/-18	81.7/28
0.50/1.9	+2.6/-16	43.2/6	0.51/1.9	-3.7/-20	51.6/11	0.48/2.2	+1.8/-18	71.6/22
1.53/5.8	-0.7/-18	23.9/-5	1.44/5.5	-3.8/-20	34.2/1	1.57/6.0	2.2/-17	45.7/8
0.16/0.6	-20.9/-29	60.9/16	0.20/0.8	-19.2/-28	67.8/20	0.24/1.1	-22.0/-30	66.2/19
0.50/1.9	-20.4/-29	19.2/-7	0.56/2.5	-19.9/-29	34.2/1	0.49/1.9	-21.1/-30	55.5/13
1.50/5.7	-20.3/-29	5.4/-15	1.59/6.0	-20.5/-29	16.8/-8	1.51/6.9	-20.1/-29	26.1/-3
0.22/0.8	-34.7/-37	37.8/3	0.16/0.6	-36.1/-38	78.9/26	0.17/0.6	-31.8/-35	67.2/20
0.52/1.9	-34.8/-37	9.5/-13	0.50/1.9	-36.0/-38	18.6/-7	0.54/2.0	-32.9/-36	37.2/3
1.44/5.5	-34.8/-37	-7.5/-22	1.48/5.6	-35.9/-38	-1.4/-19	1.60/6.0	-33.4/-36	10.8/-12

IN-TANK FUEL & FLUID WARMERS

HOT FOX™ FOR HYDRAULIC FLUID

Used on applications which require maximum heat transfer in a concentrated area. Install multiple fluid heaters for extreme cold weather applications.

FEATURES AND BENEFITS:

- Diesel & Hydraulic
- Heats and circulates the fuel or fluid inside the tank
- Installs in a Standard USA Fuel Sending Gauge Opening
- 304 Stainless Steel Construction
- Fuel Tank Adapter Kit Required (Page 13)



Part Number	Total Length (Inch/mm)	Maximum Tank Capacity (usg/L)
SHH-1844-09	8-1/4 / 210	8 / 30
SHH-1844-11	10-1/4 / 260	10 / 38
SHH-1844-12	11-1/4 / 286	12 / 45
SHH-1844-13	12-1/4 / 311	14 / 53
SHH-1844-16	15-1/4 / 387	17 / 64
SHH-1844-19	18-1/4 / 464	20 / 76
SHH-1844-21	20-1/4 / 514	22 / 83
SHH-1844-23	22-1/4 / 565	25 / 95
SHH-1844-25	24-1/4 / 616	28 / 106
SHH-1844-26	25-1/4 / 641	32 / 121

MOST EFFICIENT HEAT TRANSFER

Choose the longest HOT FOX™ fuel warmer available for your tank diameter/depth – leaving a 1" (25mm) space between the end of the fuel warmer and the bottom of the tank.

Spacer Kits are available to raise the Hot Fox™ fuel heater flange above the tank 1/2" (13mm) or 1" (25mm). Install the spacer between the Hot Fox™ flange and USA fuel sending gauge opening. See page 13 for spacer kits

WARNING: Tank reinforcement **MUST** be used to provide additional structural support to the fluid warmer to avoid tank cracking, leading to fluid leakage. See Page 13 for tank adapter kits.

IN-TANK FUEL & FLUID WARMERS

HOT FOX™ FUEL TANK ADAPTER KITS

WARNING: Failure to use recommended reinforcement kits or providing additional structural support to heater may cause tank to crack, leading to fuel leakage.

TANK REINFORCEMENT ADAPTERS

Installation:

- Extreme Vibration
- Horizontal Installation
- Additional Structural Support



THREADED ADAPTER Fits 1-1/2" & 2" NPT Couplings

A-1721 (To -40° F/C)	A-1721F (To -90° F/-67°/C)
Parts Included	Parts Included
(1) A-1792 Gasket	(1) A-1792 Gasket
(2) A-1726 O-Ring	(2) A-2758 O-Ring

Installation:

- Non-Reinforced Opening
- Manufactured Tanks
- Additional Structural Support

FLAT TANKS



KT-826F

Applications:

Adapts standard Arctic Fox fuel heater mount to Hot Fox™ mount.

Kit Components

- Adapter Plate 6"/152mm Square
- (1) A-826
- Backing Plates (2) A-2025
- Clips (4) A-649
- Gasket (1)—A-611
- Mounting Bolts (12) – A-610
- Template (1)—A-708



WELD-IN ADAPTER For Fuel or Hydraulic Tanks

A-2060 (Steel) A-2060-A (Alum.) (To -40° F/C)	A-2060F A-2060-AF (To -90° F/-67°/C)
Parts Included	Parts Included
(1) A-1792 Gasket	(1) A-1792 Gasket
(2) A-1726 O-Ring	(2) A-2758 O-Ring

ROUND TANKS



KT-827C for 22"-29"/559-737mm Dia.

KT-831CS for 14"-21"/356-533mm Dia.

Applications:

Adapts standard Arctic Fox fuel heater mount to Hot Fox™ mount.

Kit Components

- Adapter Plate 6"/152mm Square (1)
- A-827 for KT-827C
- A-831 for KT-831CS
- Backing Plates (2) A-1795
- Clips (4) A-649
- Gasket (1)—A-611
- Mounting Bolts (12) – A-610
- Template (1)—A-708

SPACER KITS

Installation:

- Raise Heater Flange
- Additional Structural Support



KT-875

Purpose: To raise HOT FOX™ fuel heater flange 1/2" (13mm) above tank.

Parts Included:

- (5) A-863 #10-32 UNF socket head bolts
- (1) A-841 Gasket
- (1) A-875 1/2" (13mm) Spacer

KT-877

Purpose: To raise HOT FOX™ fuel heater flange 1" (25mm) above tank. For Kenworth recessed gauge opening & misc. others

Parts Included:

- (5) A-869 #10-32 UNF socket head bolts
- (1) A-841 Gasket
- (1) A-877 1" (25mm) Spacer

HOT FOX™ FUEL & FLUID HEATER ACCESSORIES



BLANK PLATE Part No. A-870

Application

- Cover Standard USA Fuel Tank Opening



TAPPED PLATE Part No. A-4607

Application

- Auxiliary Standpipe Installation into a Standard USA Fuel Tank Opening
- Center Tap for 1/2" NPT



120MM FLANGE KT-829K

Application

- Adapts Kenworth OEM 104.5mm B.C. Flange to Hot Fox™ mount

Kit Components

- (1) Adapter Plate – A-829
- (1) Gasket – A-811
- (10) Mounting Bolts – A-856

IN-TANK FUEL & FLUID WARMERS

THE ORIGINAL ARCTIC FOX®

Used on applications which require maximum heat transfer in a concentrated area. Install multiple fluid heaters for extreme cold weather applications.

FEATURES

- Diesel, BioDiesel up to 5%, Hydraulic, Oil & Water
- Heats the fuel or fluid inside the tank
- 304 Stainless Steel Loop
- 2/3/4" (70mm) Above Tank Clearance Required

OPTIONS AVAILABLE

- Flat or Curved Tank Mounting Flange
- Fuel Standpipe
- Custom Built Fluid Heaters – Quoted by Request
Under 14" or Over 29" L (356mm / 737mm L)



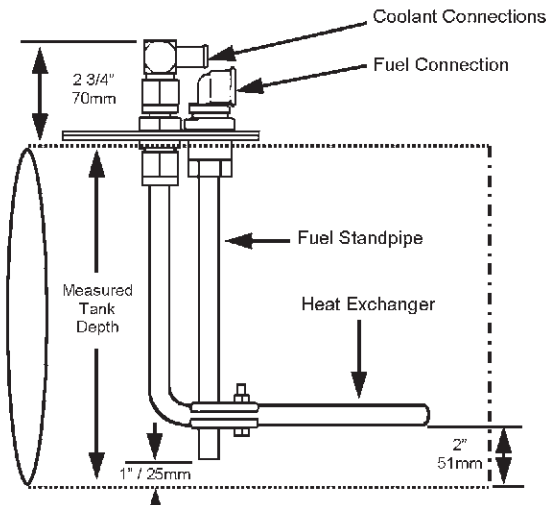
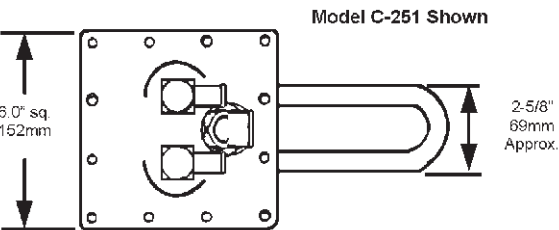
Fuel Standpipe

No Fuel Standpipe

Part No.	Tank Depth	Coolant Hose	Fuel Standpipe
C-201	Round 22" through 29" (559mm through 737mm)	5/8" Hose Barb	No
C-201P	Round 22" through 29" (559mm through 737mm)	1/2" Female Pipe Thread	No
C-251	Round 22" through 29" (559mm through 737mm)	5/8" Hose Barb	Yes
C-251P	Round 22" through 29" (559mm through 737mm)	1/2" Female Pipe Thread	Yes
CS-201	Round 14" through 21" (356mm through 533mm)	5/8" Hose Barb	No
CS-201P	Round 14" through 21" (356mm through 533mm)	1/2" Female Pipe Thread	No
CS-251	Round 14" through 21" (356mm through 533mm)	5/8" Hose Barb	Yes
CS-251P	Round 14" through 21" (356mm through 533mm)	1/2" Female Pipe Thread	Yes
F-203	Flat 14" through 29" (356mm through 737mm)	5/8" Hose Barb	No
F-203P	Flat 14" through 29" (356mm through 737mm)	1/2" Female Pipe Thread	No
F-253	Flat 14" through 29" (356mm through 737mm)	5/8" Hose Barb	Yes
F-253P	Flat 14" through 29" (356mm through 737mm)	1/2" Female Pipe Thread	Yes

Note: Coolant loop and standpipe are cut to desired length

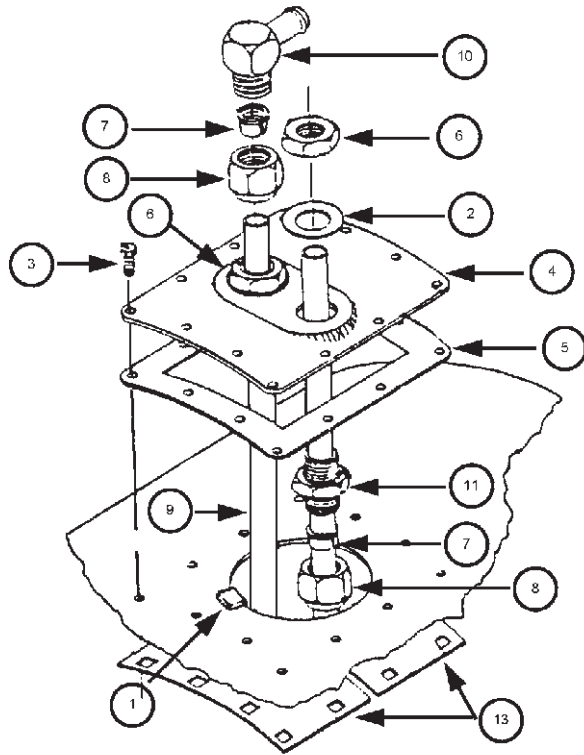
DIMENSIONS



IN-TANK FUEL & FLUID WARMERS

THE ORIGINAL ARCTIC FOX®

REPLACEMENT PARTS



Item No.	Qty.	Description	Part No.
1	4	Retaining Clip – (Included in Installation Kit)	A-649
2	2	Copper Washer	A-616
3	12	Mounting Bolt – (Included in Installation Kit)	A-610
(a) 4	1	Curved 2-Hole Plate – See Option 4 Below for Flat Plate	A-415-2
5	1	Gasket – (Included in Installation Kit)	A-611
6	2	Locking Nut	A-628
7	4	Split Ring Ferrule	A-621
8	4	Compression Nut	A-639
9	1	Heat Exchanger Tube 28" / 711mm	A-600
(b) 10	2	5/8" Tube Fitting Elbow to 5/8" / 16mm Hose Barb (Includes 7 & 8) – See Option 10 Below for 1/2" NPT	A-613
11	2	Bushing (Includes 6, 7, & 8)	A-612
12	8	O-Ring Kit (Package Contains 4 Each White & Black O-Rings) – NOT SHOWN	A-617
(c) 13	2	Curved Back-Up Plate – See Option 13 Below for Flat Back-Up Plate	A-1795
(a) Option 4	1	Flat 2-Hole Plate	A-414-2
(b) Option 10	2	5/8" Tube Fitting Elbow to 1/2" Female NPT	A-619
(c) Option 13	2	Flat Back-Up Plate	A-2025
Misc.	N/A	Curved Cover Up Kit – 22" Through 29" / 559mm Through 737mm Tanks	KT-1909
Misc.	N/A	Curved Cover Plate – 22" Through 29" / 559mm Through 737mm Tanks	A-415-0
Misc.	N/A	Flat Cover Up Kit	KT-1911
Misc.	N/A	Flat Cover Up Plate	A-414-0
Misc.	N/A	Curved Cover Up Kit – Up To 22" / 559mm Tanks	KT-1910
Misc.	N/A	Curved Cover Up Plate – Up To 22" / 559mm Tanks	A-541-0

IN-TANK FUEL & FLUID WARMERS

THE ORIGINAL ARCTIC FOX® WITH BY-PASS THERMOSTAT

Fuel is warmed to the optimum operating temperature in cold weather with the proven Arctic Fox® fuel heater in-tank design. A fully mechanical thermostat integrated into the unit by-passes the fuel warming loop when fuel temperature reaches optimum operating temperature.

FEATURES

- Diesel, BioDiesel up to 5%, Hydraulic, Oil & Water
- Heats the fuel or fluid inside the tank
- Thermostatically Controlled
- 304 Stainless Steel Loop
- 2/3/4" (70mm) Above Tank Clearance Required

OPTIONS AVAILABLE

- Flat or Curved Tank Mounting Flange
- Fuel Standpipe
- Can be Custom Designed



Part	Tank Depth	Coolant Connection	Fuel Standpipe
C-406-XX	Round 22" through 29" (559mm through 737mm)	5/8" Hose Barb	No
C-407-XX	Round 22" through 29" (559mm through 737mm)	3/4" Hose Barb	No
C-456-XX	Round 22" through 29" (559mm through 737mm)	5/8" Hose Barb	Yes
C-457-XX	Round 22" through 29" (559mm through 737mm)	3/4" Hose Barb	Yes
CS-406-XX	Round 14" through 21" (356mm through 533mm)	5/8" Hose Barb	No
CS-407-XX	Round 14" through 21" (356mm through 533mm)	3/4" Hose Barb	No
CS-456-XX	Round 14" through 21" (356mm through 533mm)	5/8" Hose Barb	Yes
CS-457-XX	Round 14" through 21" (356mm through 533mm)	3/4" Hose Barb	Yes
F-406-XX	Flat 14" through 29" / 356 through 737mm	5/8" Hose Barb	No
F-407-XX	Flat 14" through 29" / 356 through 737mm	3/4" Hose Barb	No
F-456-XX	Flat 14" through 29" / 356 through 737mm	5/8" Hose Barb	Yes
F-457-XX	Flat 14" through 29" / 356 through 737mm	3/4" Hose Barb	Yes

ORDERING INFORMATION: ALL heaters are factory pre-assembled. Order heaters based upon outside tank dimension.

Example C-406-XX—if tank outside dimension is 27" / 686mm, order C-406-27

NOTE: Warranty is void if disassembled

REPLACEMENT PARTS



A-611 Gasket



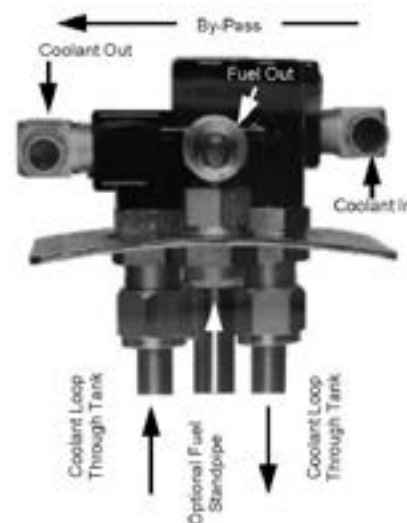
A-649 Tank Clip



A-610 Mounting Bolt



Back Up Plate
A-1795 "C" Models
A-2025 "F" Models
A-1795 "CS" Models



IN-TANK FUEL & FLUID WARMERS

MINI HEAT EXCHANGER

Utilizes engine coolant to warm engine oil pans and small hydraulic reservoirs.

FEATURES

- Hydraulic, Oil & Water
- Heats fluid inside the tank
- Small Tank Applications 1-5 Gal. (4-19 L)
- 304 Stainless Steel Construction
- Install multiple units for larger tanks or faster heat rise
- Install horizontally at bottom of tank



Part Number	Adapter Type	Tube Diameter	Material	DIM "A"	DIM "B"
H-2697-6SS	3/4" NPT	7/8" / 22mm	Stainless Steel	6 / 152mm	7 / 178mm
H-2697-8SS	3/4" NPT	7/8" / 22mm	Stainless Steel	8 / 203mm	9 / 229mm
H-2697-10SS	3/4" NPT	7/8" / 22mm	Stainless Steel	10 / 254mm	11 / 279mm

DIMENSIONS



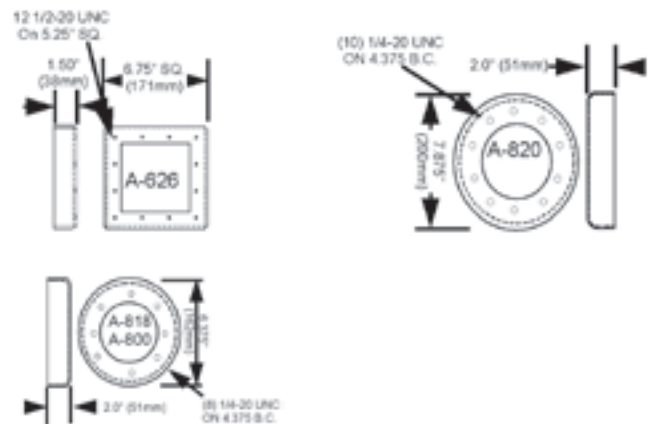
A-1714 MOUNTING PLATE BUSHING WITH O-RING

Used on applications where a reservoir is pressurized or when a heater is mounted below the fluid level. May be used instead of standard A-612 bushing to achieve seal under pressure.

Part No.	Description	
A-639	Compression Nut	
A-621	Split Ring Ferrule—Package of 4	
A-628	Locking Nut	
A-617	O-Ring kit—Package contains 4 White & 4 Black	
A-616	Copper Washer	
A-1714	Hydraulic Bushing	
A-1725	O-Ring	

FUEL & HYDRAULIC TANK WELD-ON ADAPTERS

Part No.	Material	Cover Plate	Gasket	Mounting Bolt
A-626	Steel	A-414-0	A-611	A-610
A-800	Aluminum	A-802	A-801	A-610
A-818	Steel		A-801	A-610
A-820	Steel	A-822-0	A-821	A-610



IN-TANK FUEL & FLUID WARMERS

HYDRA LINER

Utilizes engine coolant to warm fluid reservoirs.

FEATURES

- Hydraulic, Diesel, Oil & Water
- Heats fluid inside the tank
- 304 Stainless Steel Construction
- Threads into standard 2" NPT female pipe thread or standard 2" Straight Thread-O-Ring (STOR) coupling
- Install multiple units for larger tanks or faster heat rise
- Install horizontally at bottom of tank
- STOR Models include mounting flange TWF-32



Part Number	"A" Tube Immersion Length	"B" Total Length	Surface Area Nominal	BTU/hr Nominal (1)	Typical Application (ambient air temp) to -20°F / -29°C (2)**	Typical Application (ambient air temp) to -40°F / -40°C (2)**
H-4000-8	7 inches	10 inches	105 in ²	Water 4,200	Up to 20 US gallons	Up to 8 US gallons
H-4000-8-STOR	178 mm	254 mm	8 dm ²	Oil 2,100	76 Liters	30 Liters
H-4000-12	11 inches	14 inches	180 in ²	Water 7,200	Up to 35 US gallons	Up to 14 US gallons
H-4000-12-STOR	280 mm	356 mm	12 dm ²	Oil 3,600	133 Liters	53 Liters
H-4000-16	15 inches	18 inches	250 in ²	Water 10,000	Up to 50 US gallons	Up to 19 US gallons
H-4000-16-STOR	381 mm	457 mm	16 dm ²	Oil 5,000	190 Liters	72 Liters
H-4000-20	19 inches	22 inches	315 in ²	Water 13,000	Up to 63 US gallons	Up to 25 US gallons
H-4000-20-STOR	483 mm	559 mm	20 dm ²	Oil 6,500	239 Liters	90 Liters
H-4000-24	23 inches	26 inches	385 in ²	Water 16,000	Up to 77 US gallons	Up to 30 US gallons
H-4000-24-STOR	584 mm	660 mm	24 dm ²	Oil 8,000	292 Liters	113 Liters

(1) Nominal BTU/hr based upon 180°F / 82°C Coolant flowing at 5 US Gallons / 19 Liters per minute.

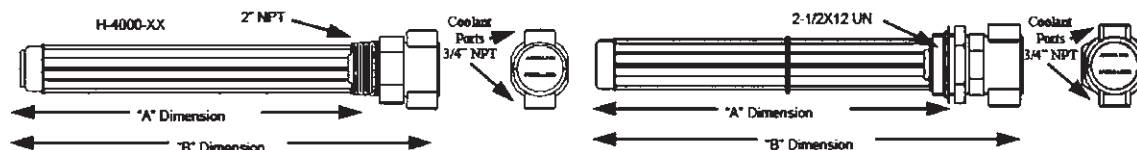
Water—beginning temperature at +35°F / +2°C

Oil—ISO 32 Hydraulic Oil beginning temperature -20°F / 29°C

(2) Actual temperature rise will be affected by factors such as coolant temperatures and flow rate, specific heat capacity of fluids and air movement around reservoir.

**Contact Arctic Fox Application Engineering for estimated temperature rise for your specific application.

DIMENSIONS



WELD ON TANK ADAPTERS

Part Number	Description	Application
A-3228HD	Steel—Schedule 80 2" NPT Female Coupling	Preferred for most installations on steel tanks
A-3228AHD	Aluminum T-6061—Schedule 80 2" NPT Female Coupling	Preferred for most installations of aluminum tanks
A-3228HD-STOR	Steel—Combination 32 STOR & 2" NPT	May be used to install either style of Hydra Liner
V6216	Steel—Half Coupling—32 STOR	Used when external tank clearance is limited
A-5878SSHD	Stainless Steel—Half Coupling—32 STOR	Used when external tank clearance is limited
IS43THCK	Stainless Steel—2" NPT Half Coupling 300#	Preferred for most installations on Stainless Steel Tanks
TWF-32	Steel—Flange 32 STOR	Used when external clearance is limited
TWF-32N	Steel—Flange 2" NPT	Used when external clearance is limited

IN-TANK FUEL & FLUID WARMERS

DUAL & SINGLE DRAW

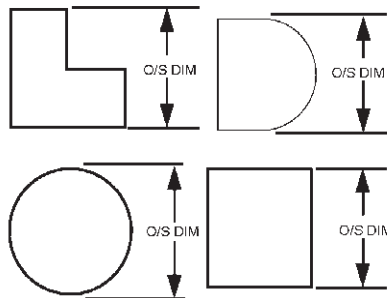
The Fuel Standpipe transfers diesel fuel from the fuel tank to the diesel-fired heater. It is available dual or single draw. Dual draw includes a suction standpipe and a return fuel provision. Single draw can serve as either a suction standpipe or as a return fuel provision.

BENEFITS

- Allow easy retrofitting to dual suction/dual return
- Avoid costly road hazards by converting bottom draw to top draw
- Complete systems available including tank standpipes, fuel tee brackets and hose assemblies

Measure tank as shown. Model Number SP-1662 is a standpipe with Return Provision—specify curved or flat tank, refer to part number example and sizing chart to define the part number required for your application.

WHERE TO MEASURE TANK

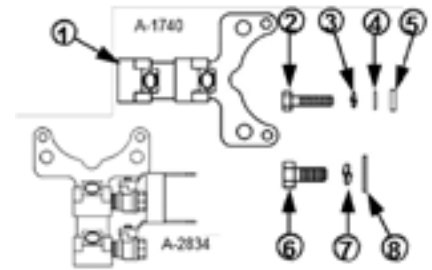


Part Number	Measured Outside Tank Dimension
SP-1662-13	13"-13-7/8" (330mm-353mm)
SP-1662-14	14"-14-7/8" (356mm-379mm)
SP-1662-15	15"-15-7/8" (381mm-404mm)
SP-1662-16	16"-16-7/8" (406mm-429mm)
SP-1662-17	17"-17-7/8" (432mm-455mm)
SP-1662-18	18"-18-7/8" (457mm-480mm)
SP-1662-19	19"-19-7/8" (483mm-506mm)
SP-1662-20	20"-20-7/8" (508mm-531mm)
SP-1662-21	21"-21-7/8" (533mm-556mm)
SP-1662-22	22"-22-7/8" (559mm-582mm)
SP-1662-23	23"-23-7/8" (584mm-607mm)
SP-1662-24	24"-24-7/8" (610mm-633mm)
SP-1662-25	25"-25-7/8" (635mm-658mm)
SP-1662-26	26"-26-7/8" (660mm-683mm)
SP-1662-27	27"-27-7/8" (686mm-709mm)
SP-1662-28	28"-28-7/8" (711mm-734mm)
SP-1662-29	29"-29-7/8" (737mm-760mm)
SP-1662-30	30"-30-7/8" (762mm-785mm)

Specify curved (c) tank or flat (f) tank

TRANSMISSION MOUNTED DUAL TEE BRACKET ASSEMBLY

Ref #	Part Number	Description
1	A-1740 A-2834	Bracket kit includes reference numbers 1 through 8 Bracket with dual Tee & Shut-Off valves include reference numbers 1 through 8
2	A-1744	7/16" / 11mm UNC x 2" / 512mm long Grade 8 bolt (2)
3	A-1745	7/16" / 11mm Split Ring Lock Washer (2)
4	A-1746	7/16" / 11mm SAE Flat Washer (2)
5	A-1747	7/16" / 11mm I.D. x 1/4" / 6mm Thick Spacer (2)
6	A-1742	5/8" / 16mm UNC x 1-1/2" / 38mm Long Grade 8 Bolt (2)
7	A-1743	5/8" / 16mm Split Ring Lockwasher (2)
8	A-1648	5/8" / 16mm SAE Flat Washer (2)

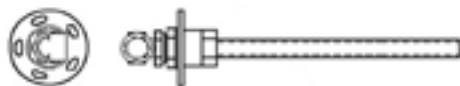


CAUTION: It is extremely important suction and return hoses to left and right fuel tanks be identical in I.D., length and installation elevation.

SINGLE DRAW STANDPIPE KIT

PART NUMBER SP-1069

A non-heated standpipe which can be used as a suction standpipe or as a return fuel provision. Fits any size tank up to 29" / 737mm, can be cut to required length by installer. This assembly bolts into a standard USA fuel gauge sending unit size opening if available. Kit includes template and hardware to easily make additional tank opening when required. For those systems that require special applications we'll design a standpipe with mounting hardware to supply diesel fuel to your fuel fired coolant or cab heater or refrigeration unit from your main fuel supply.



Item	Qty.	Description	Part #
1	5	#10-32 Allen head cap screw (Not Shown)	A-857
2	5	St. Steel Washer (Not Shown)	A-861
3	1	5/8" / 16mm x 1/2" NPT Elbow	A-609
4	2	Self-Drill-Tap Screw (Not Shown)	A-608
5	1	Standpipe Fitting	A-622B
6	1	Copper Washer	A-816
7	1	2.75" / 70mm O.D Standpipe Plate	A-1364
8	1	Gasket (Not Shown)	A-841
9	1	Backup Plate/Template (Not Shown)	A-834
10	1	Inverted Flare Gasket (Not Shown)	A-635
11	1	Standpipe 29"/737mm	A-624-29

SHUT-OFF THERMOSTATS

Control fuel or fluid temperature for any fuel warmer. Thermostat will close restricting fluid to the device or component connected in series when the fluid reaches the off temperature.

FEATURES

- Hydraulic, Diesel, Oil & Water
- 1/2" NPT Connector
- Steel Tees

TEE STYLE A-289

(2) 1/2" THREADED FEMALE PORTS

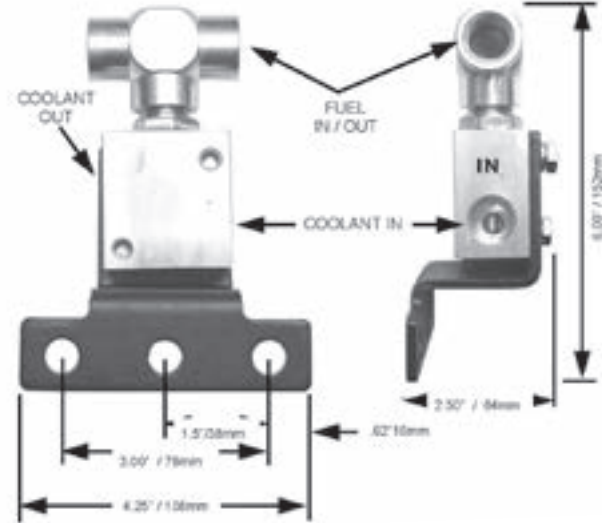
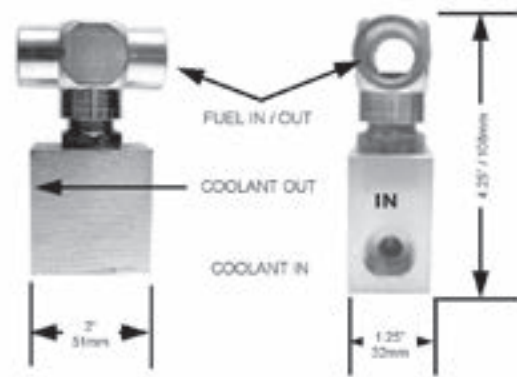
Part No.	Tee Style	Mounting Holes	Bracket	Temp On	Temp Off
S-400T	A-289	-	-	78° F (25° C)	95° F (35° C)
S-440T	A-289	-	-	104° F (40° C)	125° F (52° C)
S-400HT	A-289	(2) Opposite Corners	-	78° F (25° C)	95° F (35° C)
S-440HT	A-289	(2) Opposite Corners	-	104° F (40° C)	125° F (52° C)
S-400BT	A-289	(2) Opposite Corners	Y	78° F (25° C)	95° F (35° C)
S-440BT	A-289	(2) Opposite Corners	Y	104° F (40° C)	125° F (52° C)

TEE STYLE A-284

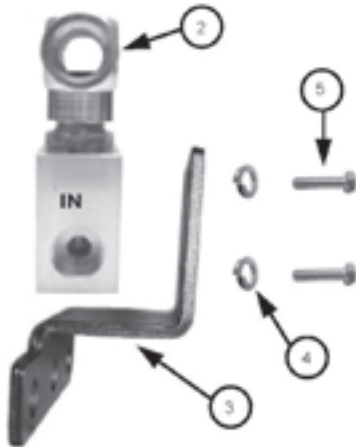
(1) 1/2" THREADED FEMALE PORT & (1) 1/2" THREADED MALE PORT

Part No.	Tee Style	Mounting Holes	Bracket	Temp On	Temp Off
S-400ST	A-284	-	-	78° F (25° C)	95° F (35° C)
S-440ST	A-284	-	-	104° F (40° C)	125° F (52° C)

DIMENSIONS



REPLACEMENT PARTS



Item No.	Part No.	Description
2	A-289	Tee – (2) Threaded Female Ports
2	A-284	Tee – Threaded Female & Male Port
3	A-315	Mounting Bracket
4	A-317	Split Lock Washer 5/16"
5	A-316	Bolt 5/16" UNC x 1.25" (32mm)

COOLANT WARMING ACCESSORIES

COOLANT CIRCULATION PUMP

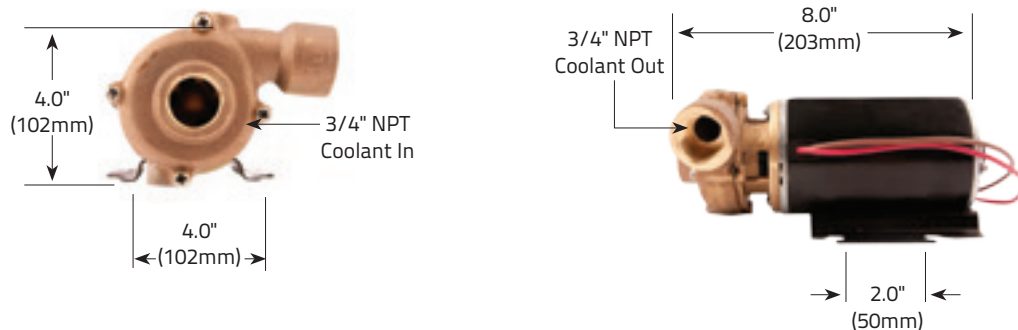
Used to "boost" coolant flow in Arctic Fox® Fuel & Fluid Temperature Management Systems, when multiple heat exchangers are installed or for remote tank installations that require long lengths of plumbing



Part Number	Description	Amp Draw	Recommended Temp Range	GPM/LPM	Pressure PSI/Bar
A-1600-12V	12V DC Pump	8.5	to +20°F / -7°C	8/30	4/.28
A-1600-24V	24V DC Pump	4.3	to +20°F / -7°C	8/30	4/.28
A-1600-115V*	115V AC Pump	1.0	to +20°F / -7°C	8/30	4/.28
A-4350-12V	12V DC Pump	10.1	to -40°F / -40°C	10/38	8/.55
A-4350-24V	24V DC Pump	5.1	to -40°F / -40°C	10/38	8/.55

*Dimensions shown do not pertain to the A-1600-115V

DIMENSIONS

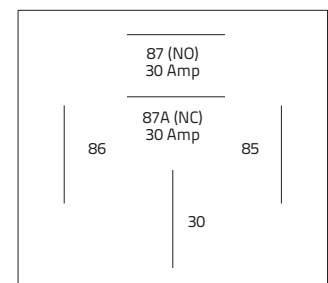


RELAY & BRACKET – DS 12V & 24V

Allows 12 and 24 volt DC pumps to be operated with minimal current draw through a switch or other triggering mechanism.

Part Number	Description
KT-1904	Relay & Connector Bracket for 12V DC System
KT-1941	Relay & Connector Bracket for 24V DC System

Terminal	Connection
30	Battery + for negative ground systems Battery – for negative ground systems
85	Switch or triggering mechanism
86	Ground
87 (NO)	Brown pump wire on negative ground or insulated systems. Black pump wire for positive ground systems
87a (NC)	Normally closed contact—not used



Relay Terminal Connection

COOLANT WARMING ACCESSORIES

COOLANT MANIFOLDS

Used in Arctic Fox® Fuel & Fluid Temperature Management Systems to help distribution of coolant through multiple heat exchangers. May also be used to eliminate the use of multiple wye and tee fittings and to reduce the number of connections.

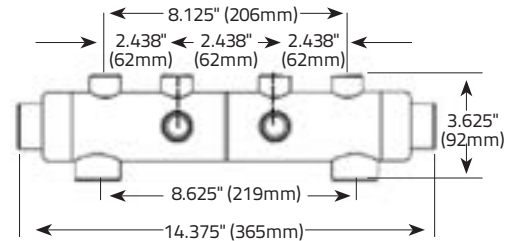
ST-1596 — Dual chamber, typically used on systems with up to a 50,000 BTU coolant preheater.

INPUT CONNECTIONS:

- One 1" NPT inlet
- One 1" NPT outlet
- Three ½" NPT outlets

OUTPUT CONNECTIONS:

- One 1" NPT inlet
- Three ½" NPT inlets
- One 1" NPT outlet



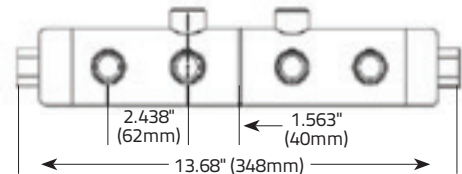
ST-1596SC — Dual chamber, typically used on Scania vehicles.

INPUT CONNECTIONS:

- One ½" NPT inlet
- Three ½" NPT outlets

OUTPUT CONNECTIONS:

- Three ½" NPT inlets
- One ½" NPT outlet



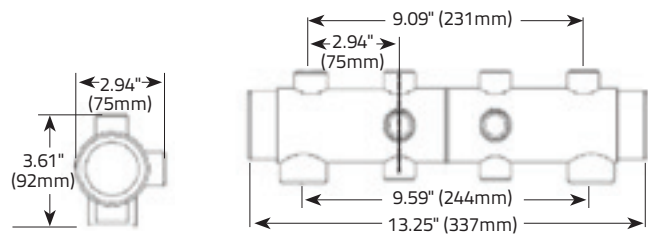
ST-2520 — Dual chamber, typically used on systems with a 80,000-100,000 BTU coolant preheater.

INPUT CONNECTIONS:

- One 1½" NPT inlet
- One 1" NPT outlet
- Four ½" NPT outlets

OUTPUT CONNECTIONS:

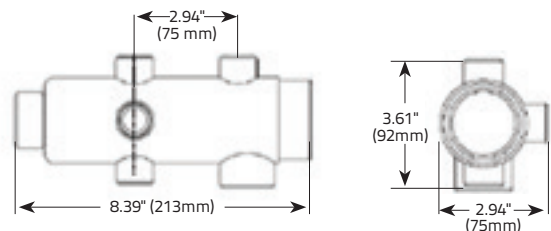
- One 1" NPT inlet
- Four ½" NPT inlets
- One 1½" NPT outlet



ST-2580 — Single chamber, typically used in place of multiple Tee's.

CONNECTIONS:

- One 1½" NPT
- Two 1" NPT
- Four ½" NPT ports



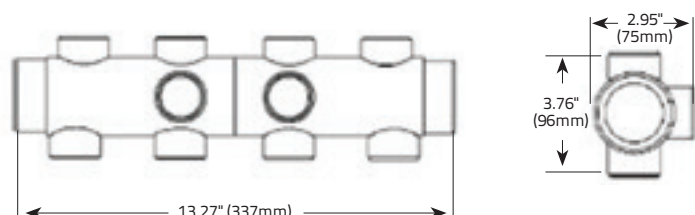
ST-5136 — Dual chamber, typically used on systems with a 80,000-100,000 BTU coolant preheater.

INPUT CONNECTIONS:

- One 1½" NPT inlet
- Five 1" NPT outlets

OUTPUT CONNECTIONS:

- Five 1" NPT inlets
- One 1" NPT outlet



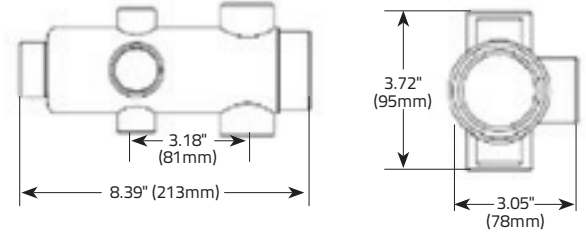
COOLANT WARMING ACCESSORIES

COOLANT MANIFOLDS

ST-5809 — Single chamber, typically used in place of multiple Tee's.

CONNECTIONS:

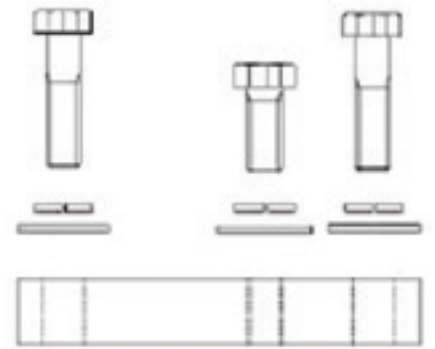
- One 1½" NPT
- Four 1" NPT
- Two ½" NPT ports



KT-5812 — Used to mount ST-5809 manifold to 3500 series Caterpillar eng

KIT CONTENTS:

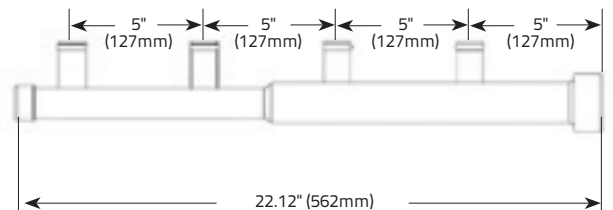
- One Manifold Spacer Plate
- Two M12 x 1.75 x 50 Bolts
- Two ½ x 13 x 2 Bolts
- One ½ x 1.5 Bolt
- Three ½ SAE Flat Washers
- Three ½ SAE Spring Lock Washers
- Two ½ UNC Nuts



A-5562 — Single chamber, vertical mount, typically used when multiple SF-5139 heater exchangers are used in parallel, or as an extension.

CONNECTIONS:

- One 1½" NPT inlet
- Four 1" O.D. Hose barb outlets
- One ¾" NPT outlet



COOLANT WARMING ACCESSORIES

COOLANT HOSES

Insulated, sleeved coolant hoses maintain heat to maximize coolant heating system.

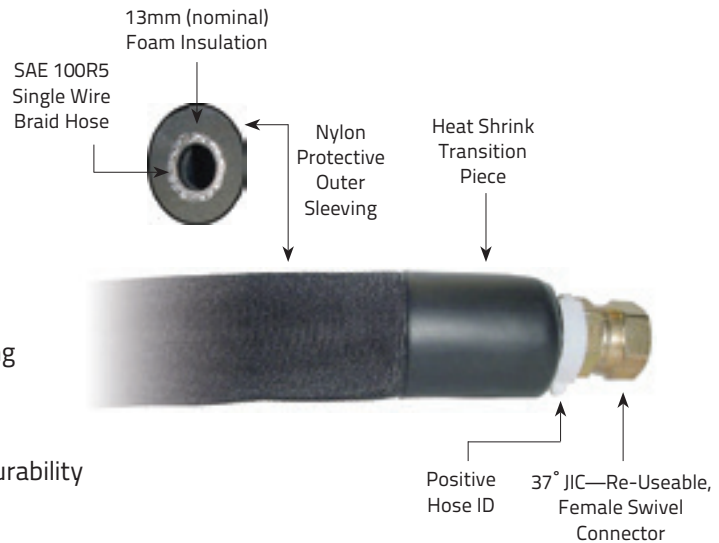
Wrapped in rugged nylon sleeve, with shrink wrapped ends and reusable fittings these insulated, sleeved coolant hoses outlast standard hoses under the toughest in-field conditions.

BENEFITS

- Minimize wasted energy, save up to 15% over non insulated hoses
- Pre-assembled to save shop time
- Leak proof, JIC connectors on SAE 100R5 hose
- Flexible, bulk hose can be cut to length / finished with additional fittings
- Handles high pressure cooling systems

FEATURES

- Pre-assembled 50' length with reusable JIC fittings installed (6 fittings included)
- Wrapped in Insultube seamless insulated foam tubing
- Environmentally protected by a dependable rugged nylon sleeve
- Hose ends are finished with heat shrink tubing for durability
- Additional heat shrink wrap shipped with hose assembly
- Temperature rated -40° to 220°F



PRE-ASSEMBLED INSULATED, SLEEVED, COOLANT HOSE

Part Number	Hose Type	Hose Size	Fitting Size	Hose Length	Protective/ Insulated Sleeve
A-10-600-PS	SAE 100R5	#10	A-1752-10	50ft. (600")	Yes
A-12-600-PS	SAE 100R5	#12	A-1753-12	50ft. (600")	Yes
A-16-600-PS	SAE 100R5	#16	A-1753-16	50ft. (600")	Yes
A-20-600-PS	SAE 100R5	#20	A-1753-20	50ft. (600")	Yes
A-24-600-PS	SAE 100R5	#24	A-1753-24	50ft. (600")	Yes

NOTE: 50' bulk hose is terminated on each end with reusable straight female JIC connectors. Includes hose identification labels, 4 extra loose fittings, and 4 ft. of heat shrink tube to cover installation of fittings on additional hose ends. Order additional fittings appropriate for the correct size hose to make additional finished hose sections. See the Reusable Swivel Fitting chart below.

REUSEABLE SWIVEL FITTINGS (FOR SAE 100R5 HOSE)

Part Number	Hose Size	Thread Size	Tube Size	Seat
A-1752-10	#10	7/8"-14	5/8"	Dual (SAE 45° & JIC 37°)
A-1753-12	#12	1-1/16"-14	3/4"	JIC 37°
A-1753-16	#16	1 5/16"-12	1"	JIC 37°
A-1753-20	#20	1 5/8"-12	1 1/4"	JIC 37°
A-1753-24	#24	1 7/8"-12	1 1/2"	JIC 37°

PRE-ASSEMBLED INSULATED, SLEEVED, SILICONE COOLANT HOSES

(Fittings are not included with Insulated, Sleeved, Silicone Coolant Hoses)

Part Number	Hose Type	Hose Size	Hose Length	Protective/Insulated Sleeve
A-525-600-PS	SAE 20R3	5/8"	50ft. (600")	Yes
A-530-600-PS	SAE 20R3	3/4"	50ft. (600")	Yes
A-3231-600-PS	SAE 20R3	1"	50ft. (600")	Yes

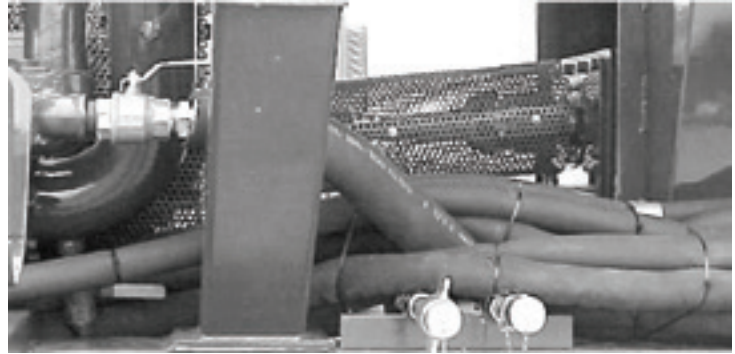
COOLANT WARMING ACCESSORIES

FUEL & COOLANT HOSES

Arctic Fox® insultube is the perfect companion product for Arctic Fox® fuel and fluid heaters. While the fuel heater keeps your fuel warm and prevents gelling or waxing, insultube insulates the fuel and coolant line to help maintain the optimum temperature. Protect that critical area between the fuel tank and engine with Arctic Fox® insultube.

FEATURES

- Prevent fuel from cooling off before reaching the engine
- Add to the efficiency of Arctic Fox® fuel heaters
- Help prevent hose chafing
- Improve performance of preheaters by maintaining heat in the system
- Effectively insulate cross-over lines
- Use with temperatures ranging from -40° F/C to + 220°F / 104°C
- 1/2" (13mm) wall thickness for easy installation



INSULTUBE

Part No.	Insultube I.D.	Nominal Length
A-1710	1/2" / 13mm	6 feet / 2 meters
A-1711	5/8" / 16mm	6 feet / 2 meters
A-1712	3/4" / 19mm	6 feet / 2 meters
A-706	1-1/8" / 32mm	6 feet / 2 meters
A-720	1-1/8" / 32mm	125' Roll or 25' Increments
A-705	1-1/8" / 32mm	4 Pieces 6' each / 2 meters w/ tie straps
A-712	1-3/8" / 35mm	6 feet / 2 meters
A-721	1-3/8" / 35mm	125' Roll or 25' Increments
A-713	2-1/8" / 54mm	6 feet / 2 meters
A-1791	2-1/2" / 64mm	6 feet / 2 meters
A-714	3" / 76mm	6 feet / 2 meters

PUSH-LOK HOSE – SOLD BY THE FOOT

A-2766	1/4" / 6.35mm
A-1660	3/8" / 9.53mm

Sold by the foot length

INSTALLATION AIDS

A-711	Heavy Duty Weather Resistant Tie Strap	14" / 356MM
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COOLANT HOSE

Part No.	Hose I.D.	Quantity	Material	Notes
A-532	5/8" / 16mm	Bulk (1)	Insulated Silicone	Includes A-720 Insultube
A-525	5/8" / 16mm	Bulk (1)	Silicone	
A-530	3/4" / 19mm	Bulk (1)	Silicone	
A-534	3/4" / 19mm	Bulk (1)	Insulated Silicone	Includes A-721 Insultube
A-3231	1" / 25mm	Bulk (1)	Silicone	

SAE 100R5 HOSE

SINGLE WIRE BRAID – SOLD BY THE FOOT

Part No.	Hose Size	Hose I.D.
A-1750-4	#4	0.19" / 4.8mm
A-1750-10	#10	0.50" / 12.7mm
A-1750-12	#12	0.62" / 15.7mm

Sold by the foot length

COOLANT WARMING ACCESSORIES

FUEL & COOLANT HOSE

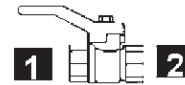
HOSE CLAMPS

Part No.	Size	EFFECTIVE DIAMETER		Style
		Min.	Max.	
A-2020	4	7/32" / 5.6mm	5/8" / 15.8mm	Standard
A-520	10	9/16" / 14.3mm	1-1/16" / 26.9mm	Shielded
A-2869	10	9/16" / 14.3mm	1-1/16" / 26.9mm	Constant Torque
A-279	12	11/16" / 17.5mm	1-1/4" / 31.7mm	Shielded
A-3950	12	11/16" / 17.5mm	1-1/4" / 31.7mm	Constant Torque
A-3267-16	16	13/16" / 20.6mm	1-1/2" / 38.1mm	Shielded
A-3950-16	16	13/16" / 20.65mm	1-1/2" / 38.1mm	Constant Torque
A-3950-20	20	15/16" / 23.8mm	1-3/4" / 44.4mm	Constant Torque
A-3267-24	24	1-1/16" / 26.9mm	2" / 50.8mm	Shielded
A-3950-24	24	1-1/16" / 26.9mm	2" / 50.8mm	Constant Torque

VALVES

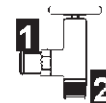
BALL VALVE

Part No.	NPT Thread 1	NPT Thread 2	Notes
A-461	1/2"	1/2"	
A-2838	1/2"	1/2"	Male/Female
A-3696-12	3/4"	3/4"	
A-3696-16	1"	1"	
A-3696-24	1-1/2"	1-1/2"	



TRUCK VALVE—BRASS

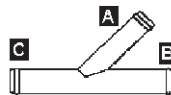
Part No.	I.D. Hose Size 1	I.D. Thread Size 1	Thread Size 2	Handle
A-526	5/8" / 16mm	N/A	3/8" NPT	Tee
A-275	3/4" / 19mm	N/A	1/2" NPT	Round



WYES AND TEES

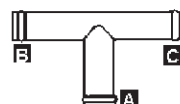
BEADED WYE—STEEL

Part No.	DIM A	DIM B	DIM C
A-457	5/8"	5/8"	5/8"
A-459	3/4"	3/4"	3/4"



Beaded Tee—Steel

Part No.	DIM A	DIM B	DIM C
A-2321	5/8"	5/8"	5/8"
A-2323	5/8"	7/8"	7/8"
A-3600	3/4"	3/4"	3/4"
A-2322	3/4"	7/8"	7/8"



SILICONE PAD HEATERS



ADHESIVE – SILICONE PAD HEATERS




Model Specific

Silicone pad heater that is easily installed with adhesive mounting and silicone weatherproofing for installation on smooth metal surfaces.

- Reduces engine wear by improving the flow of engine fluids
- Reduces pump cavitation, blown seals and burst
- CSA models include thermostats



Part No.	Watts	Volts	Amp	Width	Length	Power Plug		Oil Pan Capacity	Hydraulic Fluid
3400070	7	12 DC	0.6	1" (2.5cm)	2" (5cm)	-	-	Spot heating for small valves and fittings	
3400071	80	12 DC	6.7	1-1/2" (4cm)	8" (20cm)	-	-		0.5-6 Qts (0.5-5.7L)
3400072	125	120 AC	1	2-1/4" (6cm)	4" (10cm)	3-Prong	-	1.5-4 Qts (1.3-3.8L)	1-10 Gal (3.8-37.9L)
3400073	125	220 AC	0.6	2-1/4" (6cm)	4" (10cm)	-	-	1.5-4 Qts (1.3-3.8L)	1-10 Gal (3.8-37.9L)
3400061	236	230	1	3" (7.6cm) Round	-	3-Prong	-	3-6 Qts (2.9-5.7L)	-
3400031	236	230	1	3" (7.6cm) Round	-	3-Prong	Y	3-6 Qts (2.9-5.7L)	-
3400074	80	12 DC	6.7	3-1/4" (9cm)	1-3/4" (4.5cm)	-	-	-	0.5-6 Qts (0.5-5.7L)
3400060	50	120	0.4	3-1/2" (9cm)	1-1/4" (3cm)	3-Prong	-	1-3 Qts (1.0-1.9L)	-
3400030	50	120	0.4	3-1/2" (9cm)	1-1/4" (3cm)	3-Prong	Y	1-3 Qts (1.0-1.9L)	-
3400075	250	220 AC	1.1	3-1/2" (9cm)	4-1/4" (11cm)	-	-	4.5-12 Qts (4.3-11.4L)	10-30 Gal (37-113L)
3400063	250	120	2.1	3-3/4" (9.5cm)	4-1/4" (11cm)	3-Prong	-	5-13 Qts (4.7-12.3L)	10-30 Gal (37-113L)
3400033	250	120	2.1	3-3/4" (9.5cm)	4-1/4" (11cm)	3-Prong	Y	5-13 Qts (4.7-12.3L)	10-30 Gal (37-113L)
3400076	80	24 DC	3.4	4" (10cm)	1-1/2" (4cm)	-	-	-	0.5-6 Qts (0.5-5.7L)
3400064	500	120	4.2	5" (13cm)	7" (18cm)	3-Prong	-	13-27 Qts (12.3-25.5L)	20-50 Gal (75-189L)
3400034	500	120	4.2	5" (13cm)	7" (18cm)	3-Prong	Y	13-27 Qts (12.3-25.5L)	20-50 Gal (75-189L)
3400078	500	220 AC	2.3	5" (13cm)	7" (18cm)	-	-	3-6 Gal (11.4-22.7L)	20-50 Gal (75-189L)
3400062	125	120	1	6" (15cm)	1-1/2" (4cm)	3-Prong	-	3-6 Qts (2.9-5.7L)	-
3400032	125	120	1	6" (15cm)	1-1/2" (4cm)	3-Prong	Y	3-6 Qts (2.9-5.7L)	-
3400065	1000	120	8.3	6" (15cm)	10-3/4" (27cm)	3-Prong	-	26-48 Qts (24.6-45.4L)	50-100 Gal (189-378L)
3400035	1000	120	8.3	6" (15cm)	10-3/4" (27cm)	3-Prong	Y	26-48 Qts (24.6-45.4L)	50-100 Gal (189-378L)
3400080	1000	220 AC	4.5	6" (15cm)	10-3/4" (27cm)	-	-	6.5-12 Gal (24.6-45.4L)	50-100 Gal (189-378L)


Specialty Products

DIESEL FUEL FILTER – SILICONE PAD HEATERS

Flexible silicone pad heater that snugly wraps around diesel fuel filters with a velcro wrap closure.

- Fits diesel fuel filters from 2-3/4" – 5" (8.9 – 12.7cm)
- Reduces engine wear by improving the flow of engine fluids



Part No.	Watts	Volts	Amp	Width	Length	Power Plug		Filter Diameter
3400039	50	12	4.2	3" (7.6cm)	9" (23cm)	-	-	2-3/4-3-3/4" (6.98-9.52cm)
3400037	100	12	8.3	4" (10cm)	1" (30.5cm)	-	-	3-1/2-5" (8.9-12.7cm)
3400040	100	24	8.3	4" (10cm)	12" (30.5cm)	-	-	3-1/2-5" (8.9-12.7cm)

BATTERY HEATERS

Electric heating that is applied directly to the battery for reliable cold-weather starting.

Benefits:


- Maintain available cold cranking amps in cold weather by warming the batteries
- Efficient direct heat transfer
- Three heating options available – silicone pad, blanket and box heater
- Install in sub-zero temperatures
- Improved recharge time

SILICONE PAD – BATTERY HEATER Model Specific

Silicone pad heater placed underneath the batteries.

- Silicone material is resistant to battery acid
- Slim design to fit in the battery box/tray




Part No.	Watts	Volts	Amp	Width	Length	Power Plug	
3400066	60	120	0.5	5-1/2" (14cm)	8-1/2" (21.6cm)	3-Prong	-
3400036	60	120	0.5	5-1/2" (14cm)	8-1/2" (21.6cm)	3-Prong	Y
3400068	180	120	1.5	13" (33cm)	20-1/2" (52cm)	3-Prong	-
3400038	180	120	1.5	13" (33cm)	20-1/2" (52cm)	3-Prong	Y

BLANKET – BATTERY HEATER

Thinsulate™ thermal blanket that wraps around the battery to maintain temperature in cold or warm weather.

- Warms battery core to 60-70° above ambient temperature for quick starts
- Grounded cord 30" (76cm) in length



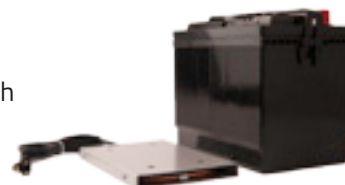
Part No.	Watts	Volts	Height	Width	Length	Fits Batteries	
2800055	50	120 AC	5" (12.7cm)	1/2" (1.1cm)	28" (71cm)	Series 26, 26R, 70	Y
2800063	80	120 AC	5" (12.7cm)	1/2" (1.1cm)	36" (91cm)	Series 24, 24F, 27, 27F, 74	Y
2800071	160	120 AC	5" (12.7cm)	1/2" (1.1cm)	72" (183cm)	Truck Batteries, Series – Parallel Systems	Y

Thinsulate™ is a registered trademark of 3M corporation.

BOX – BATTERY HEATER

Box heater with a preset thermostat that maintains 80°F (27°C) battery warmth

- Designed to fit in the battery box/tray
- Grounded cord 8' (2.4m) in length



Part No.	Watts	Volts	Width	Length	Height
8500320	200	120 AC	6" (15cm)	9" (23cm)	3/4" (1.9cm)
8500339	200	240 AC	6" (15cm)	9" (23cm)	3/4" (1.9cm)

Caution: Battery heater is not recommended for nickel cadmium batteries.

BATTERY HEATERS

BH-3100 SERIES



Customize your battery heating solution for your application in severe cold weather.

FEATURES

- Available for all Group 31 Battery Configurations
- Utilizes Heat Energy From Engine Coolant or Diesel Fired Auxiliary Heater
- Durable Stainless Steel Coolant Tubes
- Light Weight Aluminum Heating Plate
- 1/2" NPT Coolant Connections
- Require Minimum 1" (25.4mm) Clearance Above Batteries

OPTIONS AVAILABLE

- By-Pass Thermostat
- Custom Sizes Quoted Upon Request

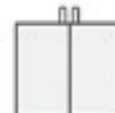
Part Number	Length Inches/mm	Width Inches/mm
BH-3101	12-7/8 / 327	6-5/8 / 168
BH-3102	13 / 330	13 / 330
NOTE: BH-3102—Both batteries may be placed parallel or perpendicular to the coolant ports.		
BH-3103	21 / 533	14 / 356
BH-3104	27 / 686	14 / 356
NOTE: BH-3104—All 4 batteries may be placed parallel or perpendicular to the coolant ports, or 2 either way.		
BH-3110	21-1/2 / 546	11 / 279
BH-3113	21-1/2 / 546	11 / 279
BH-3119	21 / 526	8-1/2 / 216
BH-3124	25-1/4 / 641	6-1/4 / 159



BH-3101
BH-3110
BH-3119



BH-3113



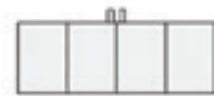
BH-3102



BH-3124



BH-3103

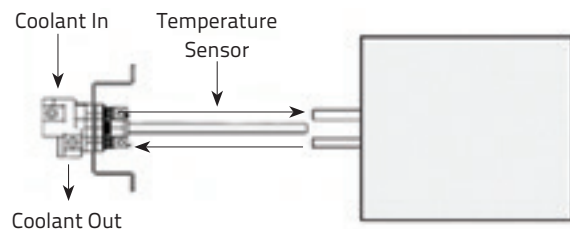
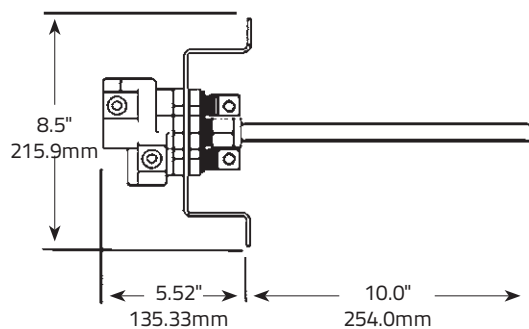


BH-3104

BY-PASS THERMOSTAT

Part No. BPT-2800

Measures air temperature inside the battery box



Schematic for Battery Warmer with Optional By-Pass Thermostat

2-in-1 Shop Tool – Coolant Dam pulls a vacuum on the cooling system through the radiator cap allowing repairs to be done in less time while not completely draining the coolant out and then, changes over to a pressure tester after the repair has been completed.

APPLICATIONS:




















- Changing heater hoses
- Changing fan sensors
- Changing Temperature sensors
- Installing shut-off valves for fuel warmers & separators
- Replacing cab heater cores
- Replacing heater control valves

FEATURES:

- Creates a vacuum, holding coolant inside the engine without hand pumping or running the engine
- Quickly converts the unit from vacuum to a pressure tester
- No need to drain the block for simple repairs
- Coolant Filling



ACCESSORIES

	T-1025 Standard Automotive Size. Reversible seal fits 1" or 3/4" deep filler necks. Also fits late model Mercedes 1319.		T-1020 Volvo. Fits vehicles using Volvo part number 1542591 radiator cap. (46x33mm Thread).		T-1024 Truck "B" Size																					
	T-12027 To be used with T-1025 to test 32mm I.D. 16mm deep cooling system filler necks.		T-1029 GMC – Freightliner – Western Star Threaded, Non-Vented, Western Star cap part number 20009-0002.		T-1030 Transit Bus Adapter. Fits many Flexible, Crown, MCI, New Flyer, GM, MAN, SAAB filler necks.																					
	T-1034 Pop Off Pressure Adapter. Mounts to top of Coolant Dam® to test pop off pressure of truck "B" size cap.		T-1040 Volvo. Fits vehicles using Volvo part number 6794968 radiator cap. (63 x 3mm Thread).		T-1223 Volvo VN Series. Fits vehicles using Volvo part number 1674922.																					
	T-1228 Ford E-350. International 7.3L. Fits vehicles using Cap # RS-103, F6DZ-8100A, 12R-16#, or 31406.		T-1229 Kenworth Vehicles using cap #N5349001.		T-1230 Volvo VN Series. 2006 and newer Fits vehicles using Volvo part number 20519046.																					
	T-1233 Freightliner Columbia/ Cascadia. 2008 & newer Vehicles using cap # N9685001 or BHTN9685001 or BHTW3678001.		T-3000 Navistar (1996 & Newer). Fits vehicles using Navistar part number 2039390C1 radiator cap.		T-3064 Freightliner Columbia Fits vehicles using Freightliner part number 05-20763-000 radiator cap.																					
	T-3030X Caterpillar Adapter. Call for information – Cat. #s 7N918, 7N5565, 6N1981, 1N3599.	<div>Rubber Expansion Plugs – Used to temporarily plug coolant lines during component replacement</div> <table><tr><td rowspan="5"></td><td>A-440 – 3/8"</td><td>A-444 – 5/8"</td><td>A-448 – 7/8"</td><td>A-449 Kit (1) ea 3/8" to 7/8"</td></tr><tr><td>A-441 – 7/16"</td><td>A-445 – 11/16"</td><td>A-451 – 1"</td><td></td></tr><tr><td>A-442 – 1/2"</td><td>A-446 – 3/4"</td><td>A-452 – 1-1/8"</td><td>A-467 – Case</td></tr><tr><td>A-443 – 9/16"</td><td>A-447 – 13/16"</td><td>A-453 – 1-1/4"</td><td>A-466 – Foam Insert</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>					A-440 – 3/8"	A-444 – 5/8"	A-448 – 7/8"	A-449 Kit (1) ea 3/8" to 7/8"	A-441 – 7/16"	A-445 – 11/16"	A-451 – 1"		A-442 – 1/2"	A-446 – 3/4"	A-452 – 1-1/8"	A-467 – Case	A-443 – 9/16"	A-447 – 13/16"	A-453 – 1-1/4"	A-466 – Foam Insert				
	A-440 – 3/8"	A-444 – 5/8"	A-448 – 7/8"	A-449 Kit (1) ea 3/8" to 7/8"																						
	A-441 – 7/16"	A-445 – 11/16"	A-451 – 1"																							
	A-442 – 1/2"	A-446 – 3/4"	A-452 – 1-1/8"	A-467 – Case																						
	A-443 – 9/16"	A-447 – 13/16"	A-453 – 1-1/4"	A-466 – Foam Insert																						

Part No.
KT-T1000-CUMMINS-ISX-ATI
Servicing Cummins
ISX After-Treatment
Injector (ATI) Units

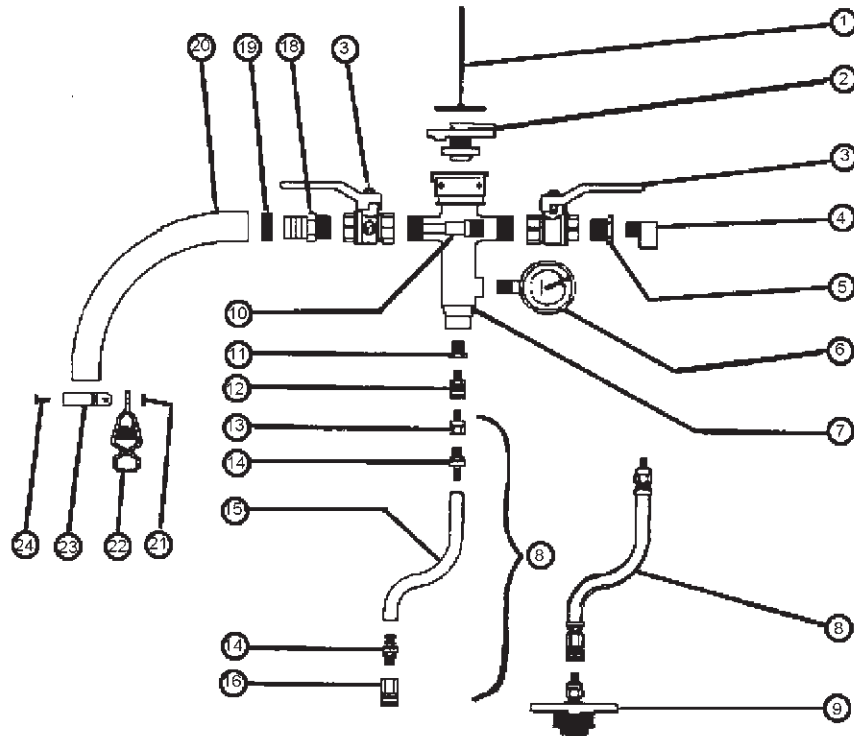
KIT INCLUDES:

- 3089567 Coolant Block Plug
- 4918690 Coolant Line Plugs
- A-6622 36" Extension Hose
- B-702 Work Instruction Sheet



COOLANT DAM®

REPLACEMENT PARTS



Item	Qty.	Description	Part #
1	1	Hanger Wire	A-483
2	1	Radiator Cap-Locking, 13 Pound	A-463
	1	Radiator Cap-Locking, 20 Pound	A-6336
3	1	1/2" Ball Valve (Blue Handle)	A-461-B
		1/2" Ball Valve (Red Handle)	A-461-R
4	1	1/4" 90 Degree Street Elbow	A-242
5	1	1/2" x 1/4" Steel Pipe Bushing	A-470
6	1	Pressure / Vacuum Gauge	A-460
7	1	COOLANT DAM Pressure Tester Housing	A-450
8	1	1/4" Extension hose (Includes 13, 14, 15, 16)	A-462-2
9	1	Head Kit	T-1025
10	1	Nozzle	A-477
11	1	1/4" x 1/8" Steel Pipe Bushing	A-472
12	1	1/8" BST Male Coupler	A-482
13	2	1/8" BST Female Nipple	A-481
14	2	1/4" x 1/8" Push on Hose End	A-462-3
15	1	1/2" O.D. x 14" (356mm) Long Hose	A-462-4
16	1	1/8" BST Female Coupler	A-480
18	1	3/4" Hose barb to 1/2" Male Pipe	A-652
19	1	Uni-Clamp	A-476
20	1	3/4" I.D. x 7' (2m) Long Discharge Hose	A-536
21	1	#8-32 KEPS Shake proof Nut	A-486
22	1	Spring Clip	A-485
23	1	Hose Band	A-484
24	1	#8-32 x 1/2" (13mm) Long Machine Screw	A-487

ADAPTER SERVICE PARTS



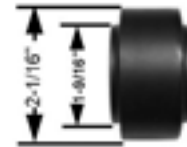
A-480—FEMALE COUPLER



A-480—MALE COUPLER



A-498-CAR RUBBER BUSHING



A-489-TRUCK RUBBER BUSHING



A-481—FEMALE NIPPLE



A-512—MALE NIPPLE

SYSTEM SOLUTIONS

Preheat engine fuel, fluids and battery systems to provide optimized startup and performance for mobile and stationary equipment. We offer unmatched design experience, support and training to assist you with your installation. Select individual components from our product line or contact Arctic Fox to design a warming package for your specific application(s).

Our experience, product quality and support ensure that your equipment will be up and running on your schedule.

BENEFITS

- Avoid down time and repair costs of fuel line or filter freeze up
- Reduce damaging hydraulic pump cavitation and blown seals due to cold weather operation
- Reduce the use of blended fuel and additives
- Low maintenance

MARKET APPLICATIONS

- Construction
- Mining
- Logging
- Oil & Gas
- Trucking
- Utility Fleets
- Power Generation

PRODUCTS

- In-Line Fuel Warmer
- In-Tank Fuel Warmer
- Hydraulic Fluid Warmer
- Battery Heaters
- Diesel Fired Coolant Heater
- Coolant Manifolds
- Silicone Pad Heater
- Engine Block Heater
- Transmission Heater
- Engine Pre-Heat (Combustion Air)
- Insulated Hoses
- Circulation Heater (Coolant / Air)



In-Line Fuel Warmer



Coolant Line Manifold



Insulated Coolant Hoses



Battery Warmer



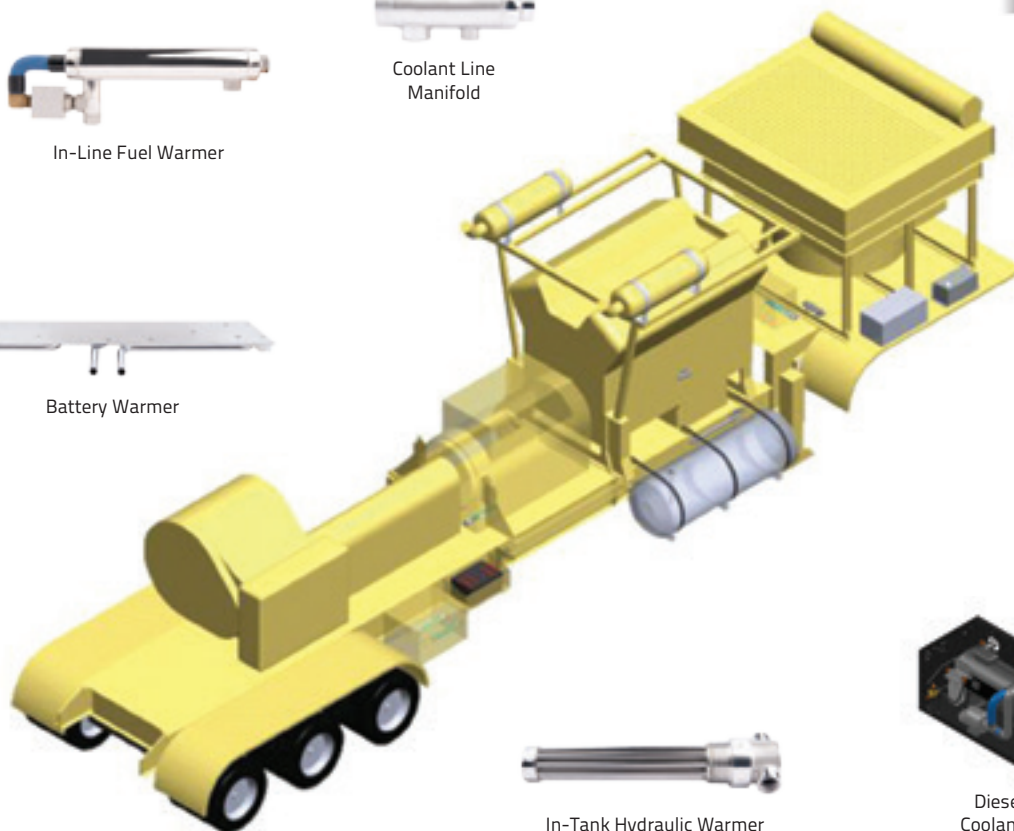
In-Tank Fuel Warmer



In-Tank Hydraulic Warmer



Diesel Fired Coolant Heater



CONTRACT MANUFACTURING

Arctic Fox offers contract manufacturing services from prototype, product development & qualification through full production. Our manufacturing capabilities are built around tube fabrication, include CAD design, engineering, laser tube cutting, tube bending, forming, machining, welding, bracing, assembly, finishing and packaging in bulk or line feed. Arctic Fox engineers will work with you to select the best materials, design modifications and cost saving solutions for your application. ISO registered since 1997.

MARKET APPLICATIONS

- ATV & Recreational Vehicles
- APU & Generators
- Off Highway
- Agricultural
- Exercise & Leisure
- Material Handling Equipment



MATERIAL OPTIONS

- Stainless Steel
- Carbon Steel Alloys
- Aluminum
- Copper
- Brass

FINISHING OPTIONS

- Painting
- Polishing
- Plating
- Etching

MACHINE OPTIONS

- CNC Tube Bending
- Tube Laser
- Milling
- Turning
- Boring
- Facing
- Drilling and Tapping
- Welding – MIG, TIG, Robotic
- Brazing – Rotary, Torch
- Forming
- Stamping
- Testing – Pressure, Vacuum

TUBE FABRICATING OPTIONS

- Rounding
- Square
- Rectangle
- Oval
- Beading
- Swaging
- Flaring
- Expanding / Reducing
- Forming
- Stamping
- Coining
- Embossing
- Flattening
- End Forming
- Piercing
- Trimming
- Threading
- Hole Drilling, Punching, Piercing, Flattening
- Custom Laser Cutting



TECHNICAL INFORMATION

HEAT RISE DATA COMPARISON



MIDRANGER (I-702)



LINEHAULER (I-703)

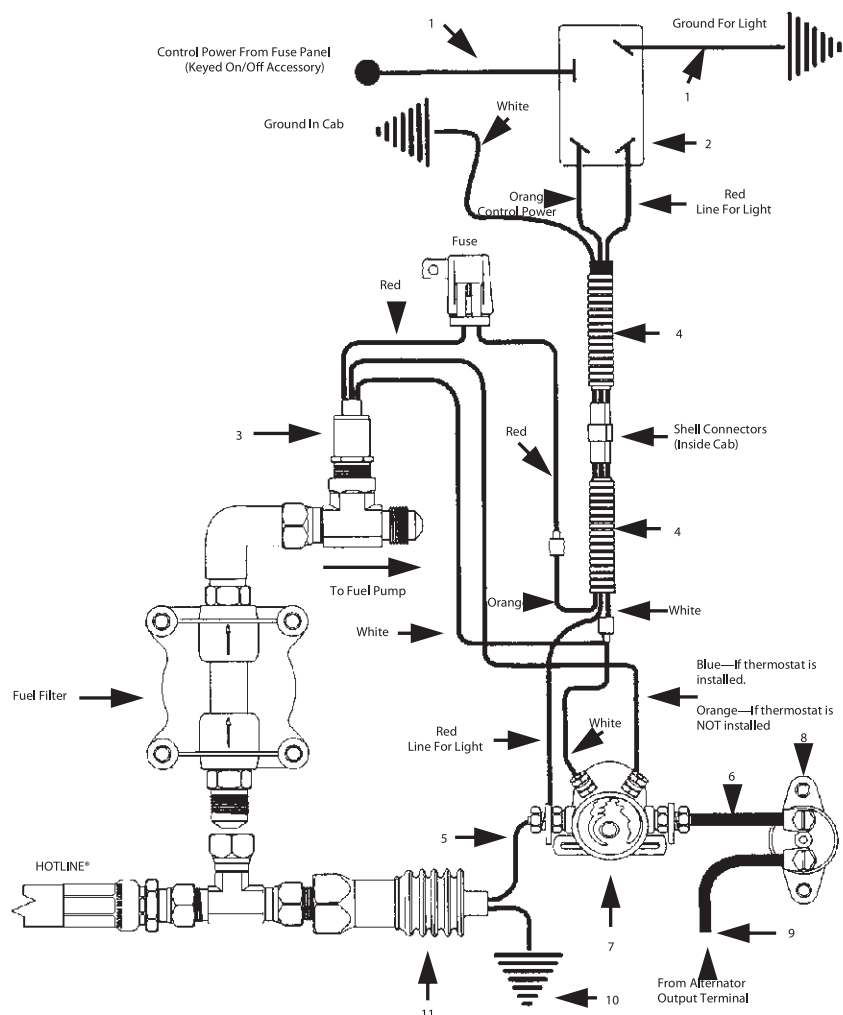
Fuel Temp Start of Test	Fuel Flow Rate GPM	Temp In	Temp Out	Heat Rise (Difference)
Fuel Temp +10°F	0.1	+11.2 °F	+98.8 °F	+87.6 °F
	0.2	+10.6 °F	+85.4 °F	+74.8 °F
	0.3	+10.6 °F	+75.2 °F	+64.6 °F
	0.5	+10.0 °F	+63.0 °F	+53.0 °F
	1.5	+9.6 °F	+37.6 °F	+28.0 °F
	2.5	+11.4 °F	+32.8 °F	+21.4 °F
Fuel Temp +0°F	0.1	-0.2 °F	+87.0 °F	+87.2 °F
	0.2	-0.4 °F	+79.0 °F	+79.4 °F
	0.3	-0.8 °F	+70.2 °F	+71.0 °F
	0.5	-0.2 °F	+48.8 °F	+49.0 °F
	1.5	+1.2 °F	+30.6 °F	+29.4 °F
	2.5	+0.6 °F	+21.8 °F	+21.2 °F
Fuel Temp -20°F	0.1	-22.0 °F	+81.4 °F	+103.4 °F
	0.2	-22.0 °F	+66.0 °F	+88.2 °F
	0.3	-21.8 °F	+57.2 °F	+79.0 °F
	0.5	-22.0 °F	+35.2 °F	+57.2 °F
	1.5	-21.0 °F	+12.6 °F	+33.6 °F
	2.5	-18.2 °F	+5.4 °F	+23.6 °F
Fuel Temp -40°F	0.1	-40.4 °F	+71.2 °F	+111.6 °F
	0.2	-41.2 °F	+54.6 °F	+95.8 °F
	0.3	-42.0 °F	+42.4 °F	+84.4 °F
	0.5	-41.6 °F	+18.6 °F	+60.2 °F
	1.5	-38.6 °F	-6.8 °F	+31.8 °F
	2.5	-38.0 °F	-16.8 °F	+21.2 °F

Fuel Temp Start of Test	Fuel Flow Rate GPM	Temp In	Temp Out	Heat Rise (Difference)
Fuel Temp +10°F	0.1	+9.0 °F	+112.8 °F	+103.8 °F
	0.2	+9.8 °F	+99.8 °F	+90.0 °F
	0.3	+10.2 °F	+90.0 °F	+79.8 °F
	0.5	+10.8 °F	+72.0 °F	+61.2 °F
	1.5	+11.8 °F	+48.2 °F	+36.4 °F
	2.5	+11.0 °F	+38.8 °F	+27.8 °F
Fuel Temp +0°F	0.1	-0.2 °F	+106.6 °F	+106.8 °F
	0.2	-0.4 °F	+93.2 °F	+93.6 °F
	0.3	-0.8 °F	+83.6 °F	+84.4 °F
	0.5	-0.8 °F	+65.2 °F	+66.0 °F
	1.5	+1.2 °F	+38.8 °F	+37.6 °F
	2.5	-0.4 °F	+28.0 °F	+28.4 °F
Fuel Temp -20°F	0.1	-19.8 °F	+95.4 °F	+115.2 °F
	0.2	-19.6 °F	+85.6 °F	+105.2 °F
	0.3	-19.6 °F	+78.4 °F	+98.0 °F
	0.5	-19.8 °F	+59.0 °F	+78.8 °F
	1.5	-19.8 °F	+20.4 °F	+40.2 °F
	2.5	-20.0 °F	+10.0 °F	+30.0 °F
Fuel Temp -40°F	0.1	-40.6 °F	+86.2 °F	+126.8 °F
	0.2	-41.8 °F	+73.4 °F	+115.2 °F
	0.3	-40.8 °F	+60.8 °F	+101.6 °F
	0.5	-40.6 °F	+33.8 °F	+74.4 °F
	1.5	-41.4 °F	+2.0 °F	+43.4 °F
	2.5	-38.0 °F	-4.4 °F	+33.6 °F

TECHNICAL INFORMATION

HOTLINE® – ELECTRIC

INSTALLATION DIAGRAM



REPLACEMENT PARTS

Item	Description	Part Number
1	Black Jumper 14 Gauge	D3061-1677
2	12V Lighted Toggle Switch 24V Lighted Toggle Switch	D3061-1582 D3061-1584
3	Optional Thermostat Kit	D3065-2338
4	3-Wire Harness Kit	D3061-1735
5	Wire Jumper Magnetic Switch	D3065-2360
6	#10 Jumper Main Power	D3061-1664

Item	Description	Part Number
7	12V Magnetic Switch 24V Magnetic Switch	D3061-1573 D3061-1575
8	12V 60 Amp Circuit Breaker 24V 60 Amp Circuit Breaker	D3061-1560 D3061-1565
9	#4 Jumper Main Power-47"	D3061-1638
10	Wire Jumper Mod. Ground-96"	D3065-2357
11	Insulating Boot	D3065-2284

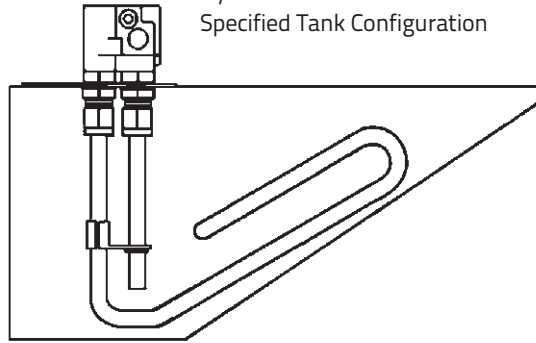
TECHNICAL INFORMATION

THE ORIGINAL ARCTIC FOX® CUSTOM DESIGNED

CUSTOM HEAT EXCHANGERS

1. Provide the following information to receive a quote
 - a. Exact dimensions and tank clearance (I.e. sketch, blueprint, IGES CAD file? Tank and system capacity)
 - b. Type of vehicle or machine
 - c. Type of fluid to be heated
 - d. Maximum allowable temperature of fluid to be heated. Is thermostat required?
 - e. Total coolant capacity
 - f. Does equipment have a fuel fired coolant pre-heater? What is the BTU size capacity?
 - g. Does the application only require maintaining existing reservoir heat or will system be "cold soaked" and fluid temperature rise be required? Please note original fluid temperature and desired temperature after one hour of heating.
 - h. Is tank pressurized or used on aerial man lift?
2. Fax or call Arctic Fox with above information
Phone: (800) 654-5382 or (763) 972-2758
Fax: (763) 972-2873.
3. Arctic Fox will design and quote for this specific reservoir.
4. A design print and customer authorization will be sent to customer. If approved, customer will indicate so by returning signed customer authorization form to Arctic Fox. After receipt of signed authorization, orders for the custom heat exchanger will be filled. Allow 4 to 6 weeks after receipt of signed authorization.

Example of Custom Heater with By-Pass Thermostat for Customer Specified Tank Configuration



WARRANTY & RETURNS – DOMESTIC SALES

FUEL AND FLUID HEATER WARRANTY (COOLANT)

All Arctic Fox® heaters (other than engine oil pan heat exchangers and alternative fuel heat exchangers) using coolant are warranted against defects in materials and workmanship for a period of 5 years or 600,000 miles from the date of purchase by the user. This warranty does not cover heaters which are altered or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor.

ELECTRICAL COMPONENTS WARRANTY HOTLINE®, ELECTRIC RESERVOIR HEATERS AND CAL RODS

All Arctic Fox® Electrical components are warranted for one year from date of sale to the original consumer against defects in workmanship and materials. The manufacturer's only obligation shall be to repair or replace at the manufacturer's option provided the product is returned transportation prepaid to the factory within one year from date of sale to original consumer. Defects or failures due to incorrect installation, improper voltage, improper usage or handling, or by any other conditions beyond our control, as to any and all of which the manufacturer will be sole judge, are specifically excluded from this warranty. This warranty gives you specific legal rights. You may also have implied warranty rights which vary from state to state, or province to province, depending upon the location of your residence. No other liability of any kind, arising from the use of the product, whether defective or not, is assumed.

NON-HEATED STANDPIPE WARRANTY

All Arctic Fox® non-heated standpipes are warranted against defects in workmanship for a period of 5 years or 600,000 miles from the date of purchase by user. Tank flange mounting gaskets and installation accessories are warranted against defects for a period of 90 days. This warranty does not cover standpipes which are altered, installed or used in a manner inconsistent with any Arctic Fox® instructions regarding use or installation. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges.

COOLANT DAM® PRESSURE TESTER WARRANTY

The Arctic Fox® COOLANT DAM® PRESSURE TESTER is warranted against defects in materials and workmanship for a period of one year from date of purchase by the user. This warranty does not cover tools which are altered or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges.

HOTLINE® WARRANTY

Arctic Fox® warrants the purchaser that the product shall be free from defects in materials and workmanship appearing under normal use and service. The product shall be warranted for a period of one year from the date of its sale to you. Your sole and exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor.

ENGINE OIL PAN HEAT EXCHANGER WARRANTY

Arctic Fox® Oil pan heat exchangers using coolant as a heat source are warranted against defects in material and workmanship for a period of one year from the date of purchase. This warranty does not cover components which are altered, or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges. Any warranty exposure to Arctic Fox® will not exceed the amount of the original purchase of the component from the manufacturer.

ALTERNATIVE FUELS HEAT EXCHANGER WITH AND WITHOUT THERMOSTAT WARRANTY

Limited warranty on heat exchanger (stainless steel weldment only) of 5 years or 600,000 miles (whichever comes first) from date of purchase. Limited warranty on thermostat of 2 years, or 200,000 miles (whichever comes first) from date of purchase.

WARRANTY RETURN PROCEDURE

In order to qualify for stated warranties, a Return Goods Authorization (RGA) number must be obtained from Arctic Fox® by calling (in USA) 1-800-654-5382 or 763-972-2758. The alleged defective unit must be returned to Arctic Fox® intact, postage or freight prepaid and Arctic Fox® will return the repaired or replaced unit postage or freight prepaid. Final determination of defects shall be made by Arctic Fox® in accordance with procedures established by Arctic Fox®. No agent, employee or representative of Arctic Fox® has any authority to bind any affirmation representation or warranty concerning Arctic Fox® products except as stated herein. There are no warranties that extend beyond the description of the express non-customer product warranty as stated. The warranty is in lieu of any other warranty, express or implied, and expressly excludes any warranty of merchantability or fitness for a particular purpose. To obtain performance of this limited warranty, the alleged defective product must be returned, together with reasonable proof of purchase, postage or freight prepaid, directly to:

(IN USA):

Warranty Department
Arctic Fox, LLC
570 South 7th Street
Delano, MN 55328

WARRANTY & RETURNS – INTERNATIONAL SALES

FUEL AND FLUID HEATER WARRANTY (COOLANT)

All Arctic Fox® heaters (other than engine oil pan heat exchangers and alternative fuel heat exchangers) using coolant are warranted against defects in materials and workmanship for a period of 5 years or 1,000,000 kilometers from the date of purchase by the user. This warranty does not cover heaters which are altered or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor.

ELECTRICAL COMPONENTS WARRANTY HOTLINE®, ELECTRIC RESERVOIR HEATERS AND CAL RODS

All Arctic Fox® Electrical components are warranted for one year from date of sale to the original consumer against defects in workmanship and materials. The manufacturer's only obligation shall be to repair or replace at the manufacturer's option provided the product is returned transportation prepaid to the factory within one year from date of sale to original consumer. Defects or failures due to incorrect installation, improper voltage, improper usage or handling, or by any other conditions beyond our control, as to any and all of which the manufacturer will be sole judge, are specifically excluded from this warranty. This warranty gives you specific legal rights. You may also have implied warranty rights which vary from state to state, or province to province, depending upon the location of your residence. No other liability of any kind, arising from the use of the product, whether defective or not, is assumed.

NON-HEATED STANDPIPE WARRANTY

All Arctic Fox® non-heated standpipes are warranted against defects in workmanship for a period of 5 years or 1,000,000 kilometers from the date of purchase by user. Tank flange mounting gaskets and installation accessories are warranted against defects for a period of 90 days. This warranty does not cover standpipes which are altered, installed or used in a manner inconsistent with any Arctic Fox® instructions regarding use or installation. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges.

COOLANT DAM® PRESSURE TESTER WARRANTY

The Arctic Fox® COOLANT DAM® PRESSURE TESTER is warranted against defects in materials and workmanship for a period of one year from date of purchase by the user. This warranty does not cover tools which are altered or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges.

ENGINE OIL PAN HEAT EXCHANGER WARRANTY

Arctic Fox® Oil pan heat exchangers using coolant as a heat source are warranted against defects in material and workmanship for a period of one year from the date of purchase. This warranty does not cover components which are altered, or used for a purpose other than that for which it was intended or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any unit found to be defective under this warranty is limited to the repair or replacement of the defective unit without charge, and Arctic Fox® shall **NOT** be liable for any consequential or incidental damages, including labor charges. Any warranty exposure to Arctic Fox® will not exceed the amount of the original purchase of the component from the manufacturer.

WARRANTY RETURN PROCEDURE

In order to qualify for stated warranties, a Return Goods Authorization (RGA) number must be obtained from Arctic Fox® by calling (in Europe) +31 165 55 9245 or (in USA) 1-800-654-5382 or 763-972-2758. The alleged defective unit must be returned to Arctic Fox® intact, postage or freight prepaid and Arctic Fox® will return the repaired or replaced unit postage or freight prepaid. Final determination of defects shall be made by Arctic Fox® in accordance with procedures established by Arctic Fox®. No agent, employee or representative of Arctic Fox® has any authority to bind any affirmation representation or warranty concerning Arctic Fox® products except as stated herein. There are no warranties that extend beyond the description of the express non-customer product warranty as stated. The warranty is in lieu of any other warranty, express or implied, and expressly excludes any warranty of merchantability or fitness for a particular purpose. To obtain performance of this limited warranty, the alleged defective product must be returned, together with reasonable proof of purchase, postage or freight prepaid, directly to:

(IN USA) WARRANTY DEPARTMENT

Arctic Fox
570 South 7th Street
Delano, MN 55328

(IN EUROPE) WARRANTY DEPARTMENT

Arctic Fox BV
De Stok 24 (indoor Skydive Tower, Level 2)
4703 SZ
Roosendaal
The Netherlands



ARCTIC FOX

570 South 7th Street, P.O. 309
Delano, MN 55328
Phone: 763-972-2758 or 800-654-5382
Fax: 763-972-2873
sales@phillipsandtemro.com
customerservice@arctic-fox.com

CORPORATE HEADQUARTERS

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Eden Prairie, MN 55344
Phone: 952-941-9700 or 800-328-6108
Fax: 952-941-2285
sales@phillipsandtemro.com
customerservice@phillipsandtemro.com