



Arctic Fox LLC—570 South 7th Street—Delano, Minnesota 55328 USA
 Phone: (800) 654-5382 or (763) 972-2758—Fax: (763) 972-2873—www.arctic-fox.com

Arctic Fox Europe—Strijmaden 5—4703 Roosendaal—The Netherlands
 Phone: 31 (0) 165 55 9245—Fax: 31 (0) 165 54 9640—www.arctic-foxeurope.eu

Hydraulic Fluid Warmers Hydra Liner Series

APPLICATIONS: Hydraulic Fluid—Water—Other Fluids

PRODUCT DESIGNS:

- COOLANT to FLUID Heat Exchangers
- Hydra Liner—Hydraulic Hot Fox—Mini Heat Exchanger—Custom Formed Tubes
- Electric Warmers
- 120VAC, 240VAC, 12VDC, 24VDC—See Page 16

- Warm oil flows free.
- Reduce pump cavitation and resulting damage.
- Increase productivity—no more idle equipment or workers waiting for hydraulics to warm up.
- Versatile design allows for use on equipment for Logging, Construction, Mining, Waste Hauling, Utility and Maintenance Vehicles.

HYDRA LINER SERIES

- All stainless steel construction.
- Large surface area exposed to fluid to maximize heat rise.
- Threads into standard 2" NPT female pipe thread or 2" Straight Thread O-Ring (STOR) coupling. (Listed Below)
- Excellent coolant flow capacity, utilizing 3/4" NPT coolant connections.
- 5-year—600,000 mile (965,000km) warranty.
- Install multiple units for larger tanks or faster heat rise.

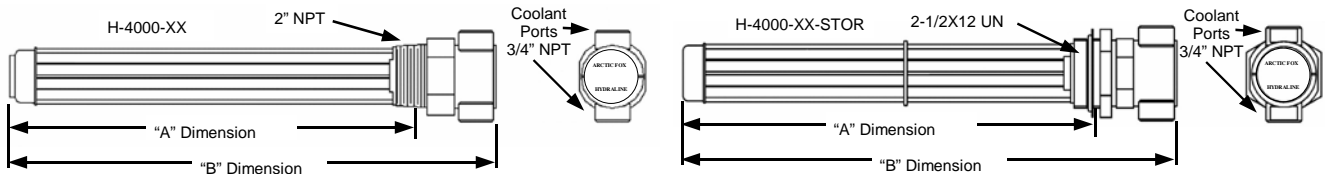
PART NUMBER	"A" DIMENSION NOMINAL	"B" DIMENSION NOMINAL	SURFACE AREA NOMINAL	BTU/hr NOMINAL(1)	TYPICAL APPLICATION TO -20°F / -29°C (2)	TYPICAL APPLICATION TO -40°F / -40°C (2)
H-4000-8 H-4000-8-STOR	7 Inches 178mm	10 Inches 254mm	105 In ² 8 dm ²	Water 4,200 Oil 2,100	Up to 20 US gallons 76 Liters	Up to 10 US gallons 38 Liters
H-4000-12 H-4000-12-STOR	11 Inches 280mm	14 Inches 356mm	180 In ² 12 dm ²	Water 7,200 Oil 3,600	Up to 35 US Gallons 133 Liters	Up to 17 US gallons 38 Liters
H-4000-16 H-4000-16-STOR	15 Inches 381mm	18 Inches 457mm	250 In ² 16 dm ²	Water 10,000 Oil 5,000	Up to 50 US Gallons 190 Liters	Up to 10 US gallons 66 Liters
H-4000-20 H-4000-20-STOR	19 Inches 483mm	22 Inches 559mm	315 In ² 20 dm ²	Water 13,000 Oil 6,500	Up to 63 US Gallons 239 Liters	Up to 25 US gallons 95 Liters
H-4000-24 H-4000-24-STOR	23 Inches 584mm	26 Inches 660mm	385 In ² 24 dm ²	Water 16,000 Oil 8,000	Up to 77 US Gallons 292 Liters	Up to 38 US gallons 146 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 temperature and flow rate, specific heat capacity of fluids and air movement around reservoir.



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 on aluminum tanks
A-3228HD-STOR	Steel—Combination 32 STOR & 1/2" NPT	May be used to install either design Hydra Liner
A-3228SSHD-STOR	Stainless Steel—Combination 32 STOR & 1/2" NPT	May be used to install either design Hydra Liner
A-5878HD	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
IS4CTHSP114	Stainless Steel—2" NPT Half Coupling 150#	Used mainly for thin walled tanks to minimize welding distortion
V6216	Steel—Half Coupling—32 STOR	Used when external tank clearance is limited
TWF-32	Steel—Flange 32 STOR	Used when external clearance is limited
TWF-32N	Steel—Flange 2" NPT	Used when external clearance is limited

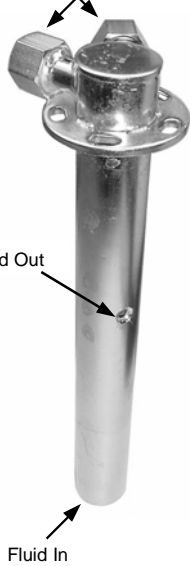


Arctic Fox LLC—570 South 7th Street—Delano, Minnesota 55328 USA
 Phone: (800) 654-5382 or (763) 972-2758—Fax: (763) 972-2873—www.arctic-fox.com

Arctic Fox Europe—Strijmaden 5—4703 Roosendaal—The Netherlands
 Phone: 31 (0) 165 55 9245—Fax: 31 (0) 165 54 9640—www.arctic-foxeurope.eu

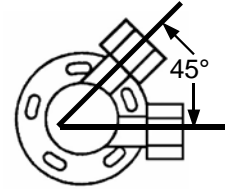
Hydraulic Fluid Warmers Hot Fox™ Series

Coolant Connections—1/2" NPT

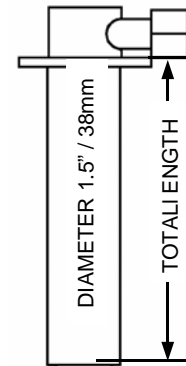


Used on applications which require maximum heat exchangers in a concentrated area.

NOTE: For extreme cold weather applications, multiple hydraulic HOT FOX™ fluid warmers may be desired.



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
SHH-2603-31	30-1/4 / 768	37 / 140



Recommendation: The HFG & SHH series HOT FOX™ warmers can mount into a standard USA fuel gauge sending unit opening.

For extreme vibration applications and all applications involving horizontal or tank bottom vertical mounting, the A-1721 or A-2060 shown below, is required.

NOTE: For installations into non-reinforced gauge hole openings or in tanks manufactured of 14 gauge (0.075" / 1.9mm) and lighter steel, or 0.100" / 2.5mm and lighter aluminum, the appropriate adapter kit KT-826F, KT-827C, or KT-831CS is suggested.

ROUND TANKS

KT-827C for 22"-29"/559-737mm Dia.
 KT-831CS for 14"-21"/356-533mm Dia.

Adapts standard Arctic Fox fuel warmer mount to Hot Fox™ mount. Reinforces tank opening.

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

FLAT TANKS

KT-826F

Adapts standard Arctic Fox fuel warmer mount to Hot Fox™ mount. Reinforces tank opening.

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

Threaded Adapter
 Fits 1-1/2" & 2" NPT Couplings

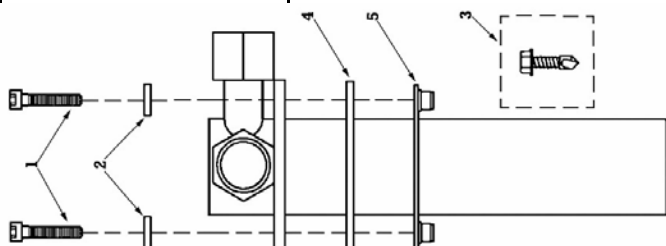
A-1721
 (To -40° F/C)
 Parts Included
 (1) A-1792 Gasket
 (2) A-1726 O-Ring

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

Weld-In Adapter
 For Fuel or Hydraulic Tanks

A-2060 (SS)
A-2060-A (Alum.)
 (To -40° F/C)
 Parts Included
 (1) A-1792 Gasket
 (2) A-1726 O-Ring

A-2060F
 (To -90° F / -67°/C)
 Parts Included
 (1) A-1792 Gasket
 (2) A-2758 O-Ring



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



Arctic Fox LLC—570 South 7th Street—Delano, Minnesota 55328 USA
 Phone: (800) 654-5382 or (763) 972-2758—Fax: (763) 972-2873—www.arctic-fox.com

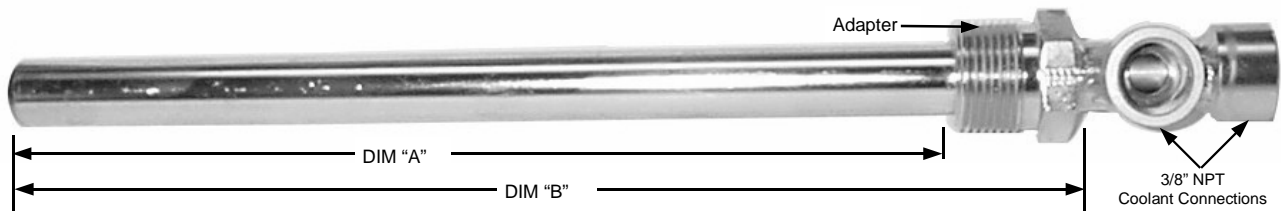
Arctic Fox Europe—Strijmaden 5—4703 Roosendaal—The Netherlands
 Phone: 31 (0) 165 55 9245—Fax: 31 (0) 165 54 9640—www.arctic-foxeurope.eu

Hydraulic Fluid Warmers Mini—Custom Bend—Specialty Adapters

PART NUMBER	ADAPTER TYPE	MATERIAL	DIM "A"	DIM "B"
H-2697-5	3/4" NPT	Steel	5" / 127mm	6" / 152mm
H-2697-6	3/4" NPT	Steel	6" / 152mm	7" / 178mm
H-2697-9	3/4" NPT	Steel	9" / 229mm	10" / 254mm
H-2697-8SS	3/4" NPT	Stainless Steel	8" / 203mm	9" / 229mm
H-2697-10SS	3/4" NPT	Stainless Steel	10" / 254mm	11" / 279mm
H-3833-8SS-1-1/16 STOP	1-1/16" STOP	Stainless Steel	8" / 203mm	9" / 229mm

MINI HEAT EXCHANGER

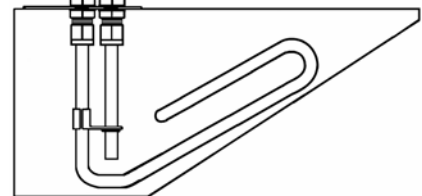
- Utilizes engine coolant for small reservoir applications
- Engine oil pans
- Small hydraulic reservoirs 1 to 5 gallons / 4-19 Liters



CUSTOM HEAT EXCHANGERS

- Review the following questions—
 - Exact dimensions and tank clearance (i.e. sketch, blueprint, IGES CAD file)? Tank and system capacity?
 - Type of vehicle or machine?
 - Type of fluid to be heated?
 - Maximum allowable temperature of fluid to be heated? Is thermostat required?
 - Total coolant capacity?
 - Does equipment have a fuel fired coolant pre-heater? What BTU size capacity?
 - Does 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.
 - Is tank pressurized or used on aerial man lift?
- Fax or call Arctic Fox with above information
 Phone: (800) 654-5382 or (763) 972-2758—Fax: (763) 972-2873
- Arctic Fox will design and quote for this specific reservoir.
- 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.

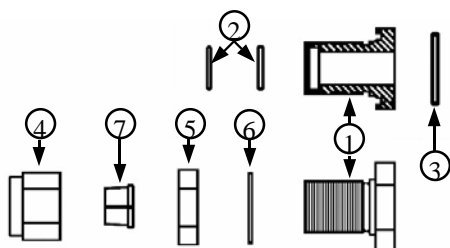
Example of Custom Heater with By-Pass Thermostat for Customer Specified Tank Configuration



A-1714 Mounting Plate Bushing with O-Ring Seal

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.

ITEM	QTY.	DESCRIPTION	PART #
1	1	Hydraulic Bushing	A-1714
2		O-Ring kit—Package contains 4 White & 4 Black	A-617
3	1	O-Ring	A-1725
4	1	Compression Nut	A-639
5	1	Locking Nut	A-628
6	1	Copper Washer	A-616
7		Split Ring Ferrule—Package of 4	A-621



Fuel & Hydraulic Tank Weld-On Adapters

Part Number	Material	Cover Plate	Gasket	Mounting Bolt
A-626	Steel	A-414-0	A-611	A-610
A-818	Steel	A-819	A-801	A-610
A-800	Aluminum	A-802	A-801	A-610
A-820	Steel	A-822-0	A-821	A-610
A-823	Aluminum	A-824-0	A-821	A-610

