

# Crib Heater Installation, Operation and Maintenance Manual

## A. GENERAL

Fastrax® crib heaters have a unique low profile design to fit all switch designs including conventional wood, composite, rubber, concrete or hollow steel ties.



**CAUTION.** Disconnect electrical feeder prior to terminating heaters.



**CAUTION.** The National Electrical Code and Canadian Electrical Code require ground-fault protection be provided for electric heaters

**NOTE:** Do not operate heaters at voltages in excess of that stamped on the heater. Excess voltage will shorten heater life.

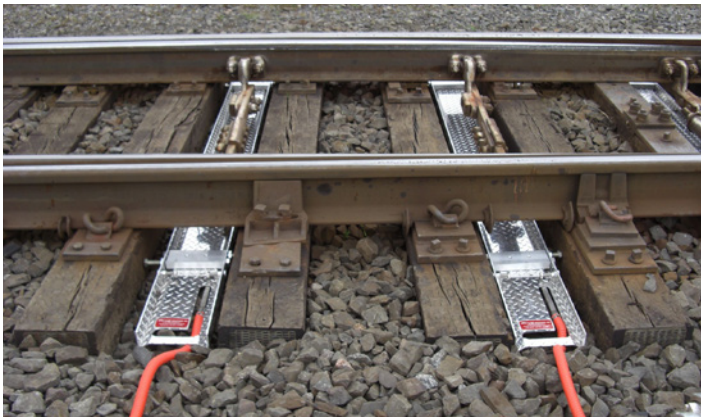


Figure 1 - Completed Installation

### Prior to Installation



**WARNING.** Hazard of electrical shock. When electric heaters are applied to track switches where track circuits are used in conjunction with signal or switch operation and it is necessary that power system be maintained free from grounds, suitable ground fault detection and interrupting systems must be in use at all times to reduce shock hazard and protect signal system.

1. Using the 500 volt DC scale on a standard meg ohm meter perform a dielectric test on the heater.
  - a. Connect one lead of the meg ohm meter to the metal jacket of the heater and the second lead to either the black or white heater conductor. The insulation resistance should read at least 20 meg ohms from conductor to outer meter jacket (refer to Figure 2).



**CAUTION.** Do not come into contact with heater while performing the meg ohm test.

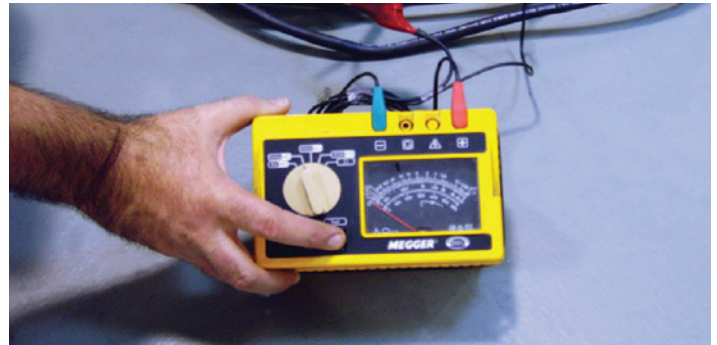


Figure 2 - Meg Ohms Reading

- b. If the heater does not reach 20 meg ohms, contact Fastrax® and do not install the heater.
2. Using a standard ohm meter perform a heater resistance test.
  - a. Connect one lead of the ohm meter to the black heater conductor and the other lead to the white heater conductor. (refer to Figure 2). Confirm the reading is consistent with the value listed in document 10022. Alternatively the resistance of the heater can be calculated by using the nameplate data stamped on the heater near the terminal end. The formula for calculating resistance is  $VOLT^2/WATTS$ . Record the ohm reading on the "System Checkout" sheet located at the back of this instruction.



Figure 3 - Standard Ohms Reading

- b. Connect one lead of the ohm meter to the green heater conductor and the other lead to the crib heater chassis. Confirm the ohm meter reads zero ohms (dead short).

## Installation

1. Review site plans for crib heater placement and orientation.
2. Check the heater nameplate for proper voltage.
3. Locate the crib(s) with rods to be heated.
4. Between conventional ties, remove the ballast to allow 2" of clearance between top of crib heater and switch rods or more as required to allow free operation of rods.
5. For cribs with rods connecting to a switch machine, place the heater under the rod all the way up to the switch machine. For other cribs, center the heater under the gauge of the rail.
6. For conventional ties, use the jack-bolt clamps provided. Turn the bolts counter-clockwise until securely contacting ties.
7. Replace the ballast around the heater up to the top of the heater platform.
8. For hollow steel ties, remove the four yellow jack bolts. It may be necessary to also remove the four 3/4" x 1" bolts at the same time. After sliding the crib heater on the bottom of the hollow steel tie, tighten the 4 smaller bolts into the side of the hollow steel tie until snug.
9. Route and connect the heater lead wires to the junction box or directly to the control panel, as indicated on site plans, or as per railway authority instructions.



Figure 4 - Jack bolt Mount



Figure 5 - Hollow Steel Tie Mount

## B. MAINTENANCE PROCEDURE



CAUTION

**CAUTION.** Hazard of severe shock. Disconnect and lock out/tag out all power to heaters before servicing or replacing heaters. Only qualified personnel trained in electrical equipment service should perform maintenance on switch heating and control equipment.

- Periodically (minimum annual) check connection of the electrical terminals and tighten if necessary to torque specification guides.
  - It is recommended that switch heaters be tested annually per section A. Prior to Installation. 1 & 2
  - Periodically check heater-mounting hardware for loose or missing clamps - tighten or replace as needed.
  - Visually check heaters regularly and keep debris, combustible materials, and other objects from accumulating on top of heater.
- Visually check heaters regularly for signs of physical damage from abnormal circumstances. If physical damage is apparent, disconnect and perform insulation test immediately before placing the heater back in service.



CAUTION

**CAUTION.** DO NOT attempt to disassemble any component of this heater.



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### HEATER CIRCUIT READINGS

FORM 0004ET

PROJECT: \_\_\_\_\_ PAGE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_  
 TECH: \_\_\_\_\_

TERMINAL NUMBERS		(*1) LOCATION (POSITION)	SWITCH DESIGNATION	FASTRAX® MODEL NUMBER	(*2) REF OHMS	MEG	OHM	AMP	VOLT	NOTE

**NOTES:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*1. Position: Facing switch point - left or right hand heater  
 \*2. Complete "REF OHM" column immediately before installation

FORM 0004ET



## PLEASE ADHERE TO INSTRUCTIONS IN THIS MANUAL

Failure to do so may be dangerous and may void certain provisions of your warranty.

For further assistance, please call 1.855.244.3128

**WARRANTY:** Under normal use the Company warrants to the purchaser that defects in material or workmanship will be repaired or replaced without charge (from date of shipment) for a period of:

- 84 months - SwitchBlade® Heaters
- 60 months - DC Heaters
- 36 months - DC Control Panels
- 36 months - HELLFIRE Heaters, FEB Heaters
- 12 months - All other Fastrax® Products

Any claim for warranty must be reported to the sales office where the product was purchased for authorized repair or replacement within the contract terms.

Subject to State or Provincial law to the contrary, the Company will not be responsible for any expense for installation, removal from service, transportation, or damages of any type whatsoever, including damages arising from lack of use, business interruptions, or incidental or consequential damages.

The Company cannot anticipate or control the conditions of product usage and therefore accepts no responsibility for the safe application and suitability of its products when used alone or in combination with other products. Tests for the safe application and suitability of the products are the sole responsibility of the user.

This warranty will be void if, in the judgment of the Company, the damage, failure or defect is the result of:

- Vibration, radiation, erosion, corrosion, process contamination, abnormal process conditions, temperature and pressures, unusual surges or pulsation, fouling, ordinary wear and tear, lack of maintenance, incorrectly applied utilities such as voltage, air, gas, water, and others or any combination of the aforementioned causes not specifically allowed for in the design conditions
- Or, any act or omission by the Purchaser, its agents, servants or independent contractors which for greater certainty, but not so as to limit the generality of the foregoing, includes physical, chemical or mechanical abuse, accident, improper installation of the product, improper storage and handling of the product, improper application or the misalignment of parts.

No warranty applies to paint finishes except for manufacturing defects apparent within 30 days from the date of installation.

The Company neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the product(s).

The Purchaser agrees that all warranty work required after the initial commissioning of the product will be provided only if the Company has been paid by the Purchaser in full accordance with the terms and conditions of the contract.

The Purchaser agrees that the Company makes no warranty or guarantee, express, implied or statutory, (including any warranty of merchantability or warranty of fitness for a particular purpose) written or oral, of the Article or incidental labour, except as is expressed or contained in the agreement herein.

**LIABILITY:** Technical data contained in the catalog or on the website is subject to change without notice. The Company reserves the right to make dimensional and other design changes as required. The Purchaser acknowledges the Company shall not be obligated to modify those articles manufactured before the formulation of the changes in design or improvements of the products by the Company.

The Company shall not be liable to compensate or indemnify the Purchaser, end user or any other party against any actions, claims, liabilities, injury, loss, loss of use, loss of business, damages, indirect or consequential damages, demands, penalties, fines, expenses (including legal expenses), costs, obligations and causes of action of any kind arising wholly or partly from negligence or omission of the user or the misuse, incorrect application, unsafe application, incorrect storage and handling, incorrect installation, lack of maintenance, improper maintenance or improper operation of products furnished by the Company.