

# Armature Heatsink Assembly Replacement

(for 1250 and 1650A, 1395 DC Drives)

## Contents

This document shows how to remove and replace a heatsink assembly in a 1250 or 1650A, 1395 DC drive.

## What This Kit Contains

Using the table below, verify that you have received the appropriate items in your kit:

For this part:	You should receive this quantity:
heatsink assembly	1

## Other Items Needed

Before you begin, be sure you also have the following:

- Tools needed for:
  - Removing, fastening, and torquing bolts (ratchet with extension and a 9/16" socket, torque wrench for 25 lb-ft)
  - Testing for voltage (multimeter)
- Documentation:
  - Your drive system schematics
  - Publication 1395-5.40, *Bulletin 1395 Digital DC Drive—User Manual*
  - Publication 2361-5.01, *Bulletin 1395 Digital DC Drive in Bulletin 2361 Motor Control Center for Drive Systems—User Manual*

## Safety Precautions

The following general precautions apply when working on drives:

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**ATTENTION:** Only those familiar with the drive system, the products used in the system, and the associated machinery should plan or implement the installation, startup, and future maintenance of the system. Failure to comply can result in personal injury and/or equipment damage.

**ATTENTION:** Verify that all sources of AC and DC power are deenergized and locked out or tagged out in accordance with the requirements of ANSI/NFPA 70E, Part II.

**ATTENTION:** The system may contain stored energy devices. To avoid the hazard of electrical shock, verify that all voltage on capacitors has been discharged before attempting to service, repair, or remove a drive system or its components. You should only attempt the procedures in this manual if you are qualified to do so and are familiar with solid-state control equipment and the safety procedures in publication NFPA 70E.

**ATTENTION:** When servicing any unit, do not drop any nuts, bolts, washers, etc. inside the unit, as they may cause a short circuit on power up.

**ATTENTION:** This drive system contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, or repairing this assembly. Component damage can result if ESD control procedures are not followed. If you are not familiar with static control procedures, refer to Rockwell Automation publication 8000-4.5.2, *Guarding Against Electrostatic Damage* or any other applicable ESD protection handbook.

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## Special Instructions

**Important:** You will need to reuse parts that are removed from the drive. Place parts, in the order removed, on a clean surface.

**Important:** Some washers, such as clamp and Belleville washers, have only one correct orientation.

## Preliminary Steps

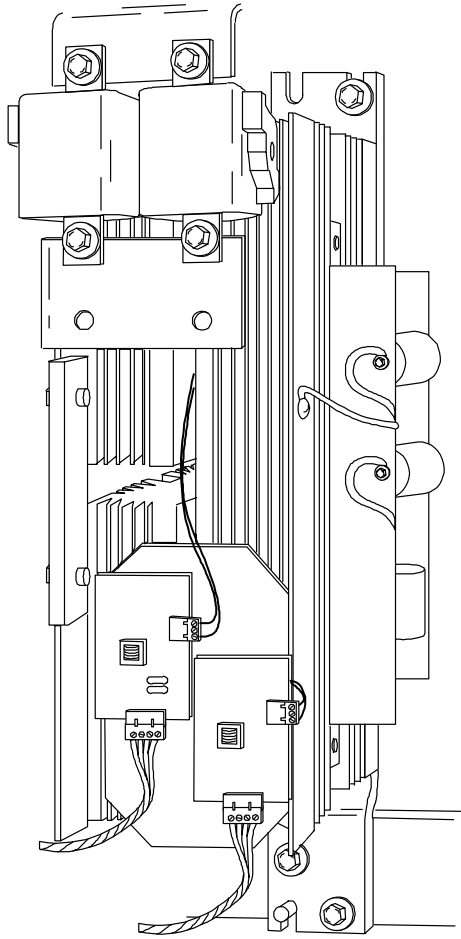
Before replacing the heatsink assembly, shut off the drive power, wait five minutes for the voltage to discharge, open the bridge bay door, and remove all Lexan™ guards shielding the heatsink assemblies.

## Notes on the Heatsink Assembly

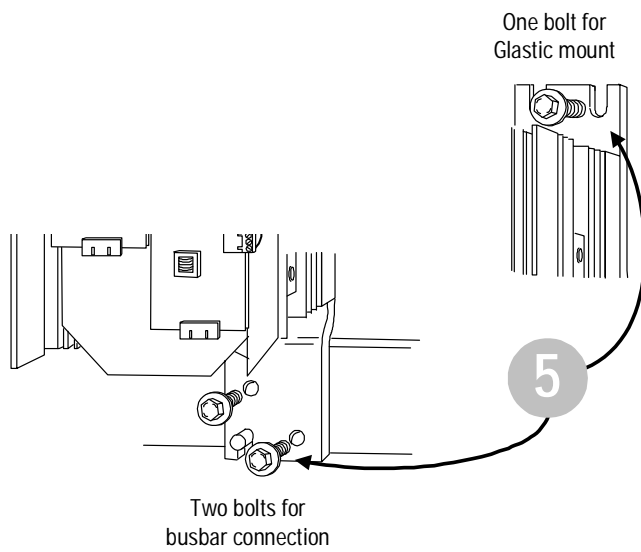
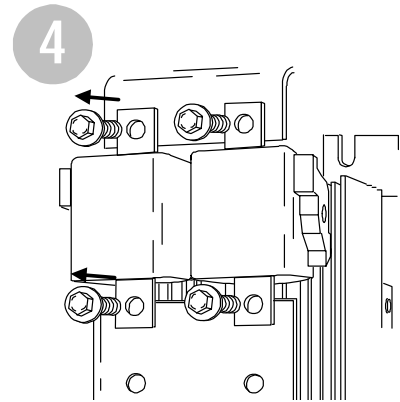
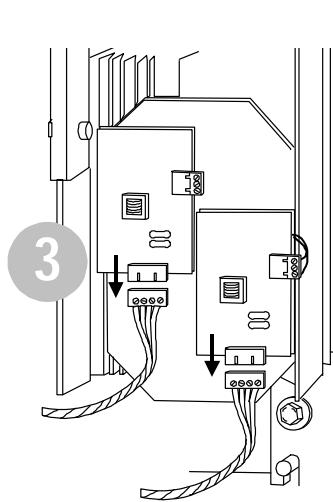
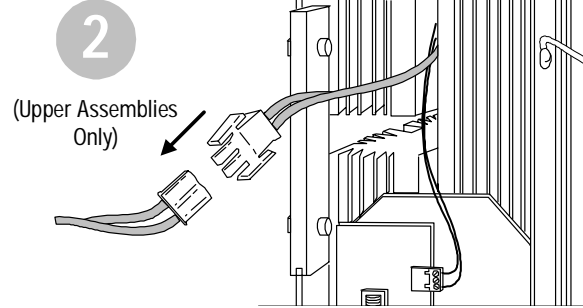
While this document covers the removal and installation of all 1250 and 1650A drive heatsink assemblies, please note that the assemblies can be slightly different:

- Lower assemblies (on the negative leg) do not have thermoswitch connections and are built in an upside-down fashion from the upper assemblies.
- Non-regenerative assemblies only have the lower AC heatsink, one armature-pulse transformer board, and one SCR installed.
- Regenerative assemblies will have two AC heatsinks, two armature-pulse transformer boards, and two SCRs installed.

Removing The Assembly



Heatsink Assembly  
Negative (lower)  
regenerative example



## Removing the Assembly

1. Using a voltmeter, test the voltage across the three phases, then across the heatsink assembly components.



**ATTENTION:** If there is any voltage present, remove the source of the voltage and check for voltages again before proceeding to the next step.

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2. Unplug the thermoswitch connector (upper assemblies only).

*Note:* Unplug thermoswitch connectors for any other assemblies if they are in the way.

3. Unplug the gate lead connector from J1 on each armature-pulse transformer board.

*Note:* Unplug gate lead connectors for any other assemblies if they are in the way.

4. Remove the two fuses from the front of the assembly.

5. Remove the mounting bolts from the top and bottom of the assembly.



**ATTENTION:** Heatsink assemblies weigh 60-75 lbs each. Take the necessary precautions (following your company's material handling procedures) before lifting to avoid injury and equipment damage.

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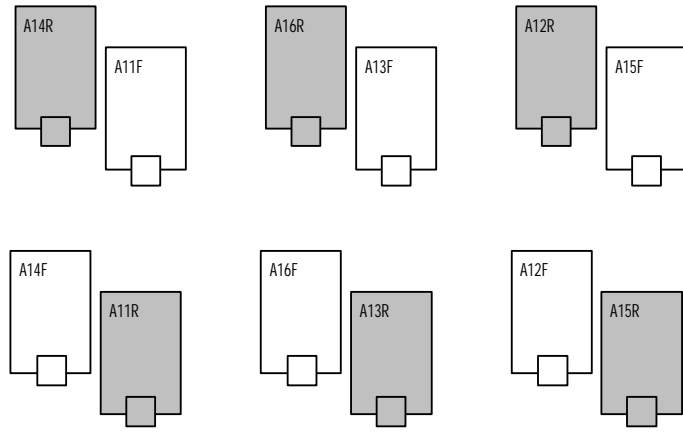
6. Lift the heatsink assembly out of the drive.

## Replacing the Heatsink Assembly

1. Place the new assembly into the drive (with the snubbers to the right), and rest the lower bracket (or busbar) on the mounting peg.
2. Mount the assembly, securing the three mounting bolts to the top and bottom of the assembly. Torque the Glastic™ surface to 25 lb-ft and the busbar mounting surface to 25 lb-ft.
3. Mount the two fuses with the label text upright, and the black indicators away from each other. Torque the fuse bolts to 25 lb-ft.
4. Connect the gate lead connector to J1 on each armature-pulse transformer board. Ensure that the connectors for all six assemblies in the drive are secure.

*Note: Match the board names (i.e. A14R) with the wire labels (i.e. A14R-J1) to verify proper connections.*

5. Connect the thermoswitch plug to the incoming thermoswitch lead (upper assemblies only). Ensure that the connectors for the three upper assemblies are secure.

**Armature-Pulse Transformer  
Board Wiring**

■ Not used in non-regenerative units.

**Concluding Steps**

After installing the assembly, replace all Lexan shielding and secure the bridge bay door. Dispose of old parts according to your company procedures and local ordinances.

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Glastic is a trademark of Glastic, Inc.



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