

# Heater Upgrade Kit

312477C

EN

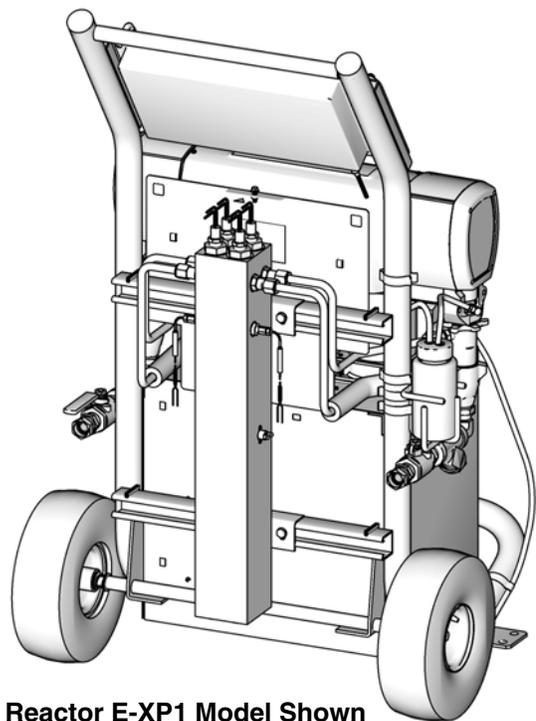
*For installing new heaters on plural component proportioners.*



## Important Safety Instructions

Read all warnings and instructions in Reactor<sup>®</sup> Operation and Repair-Parts manuals. Save all instructions.

See page 2 for List of Models and Table of Contents.



**Reactor E-XP1 Model Shown**

Ti11353A

# Contents

<b>List of Heater Upgrade Kits</b> .....	<b>2</b>	<b>Verify Heaters Are Working</b> .....	<b>10</b>
<b>List of Heater Upgrade Kits</b> .....	<b>2</b>	<b>Parts</b> .....	<b>11</b>
<b>Before Beginning Repair</b> .....	<b>3</b>	Heater Upgrade Kits .....	11
Pressure Relief .....	3	<b>Graco Standard Warranty</b> .....	<b>12</b>
Flushing .....	3	<b>Graco Information</b> .....	<b>12</b>
<b>Remove Heater</b> .....	<b>4</b>		
<b>Install New Heaters</b> .....	<b>7</b>		
Prepare Heater(s) For Mounting .....	7		
Heater Installation .....	7		

## List of Heater Upgrade Kits

Part No.	Model	Wattage (W)	Old Heater Part No.
259063	Reactor E-20	6.0 W	245975
259064	Reactor E-XP1	10.2 W	245962
259065	Reactor E-30	10.2 W	245962
259715	Reactor E-XP2	15.3 W	245963
	Reactor E-30		
	Rhino Pro		
259730	Rhino Pro Classic	7.65 W	255147
259731	Heater Control Package	6.0 W	245975
259732	Heater Control Package	10.2 W	245962
247525	Heater Control Package	15.3 W	245963

# Before Beginning Repair

## Pressure Relief



1. Relieve pressure in the gun and perform gun shut-down procedure. See gun manual.
2. Ensure gun fluid manifold valves A and B are closed.
3. Shut off feed pumps and agitator, if used.
4. Turn pressure relief/spray valves to pressure relief. Route fluid to waste container or supply tanks. Ensure that pressure gauges drop to 0 psi. See FIG. 1.

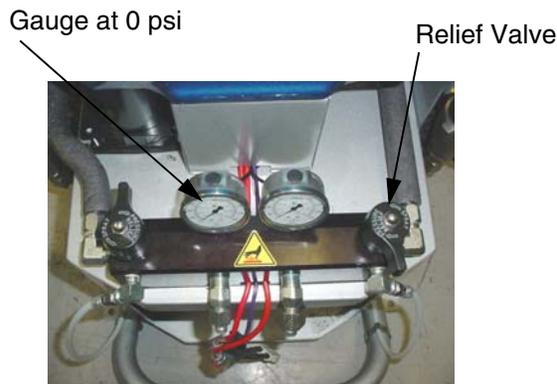
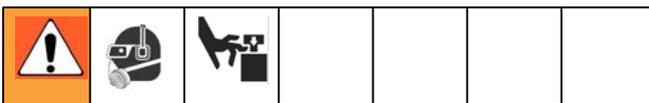


FIG. 1

- All fluid components are compatible with common solvents. Use moisture-free solvents.
1. To flush feed hoses, pumps, and heaters separately from heated hoses, set pressure relief/spray valves to pressure relief. See FIG. 1.
  2. To flush entire system, circulate solvent through gun fluid manifold (with manifold removed from the gun). Set pressure relief/spray valves to pressure spray.
    - a. Open gun manifold and spray into empty waste container. Flush each side separately and into separate containers.
    - b. After each side has been flushed, close the valve on the gun manifold.
    - c. Shut down feed system.
    - d. Check for pressure in unit on manifold gauges. If there is pressure, relieve pressure by opening the pressure relief/spray valves to relief until the pressure is at 0 psi.

## Flushing



Trapped air can cause the pump to cycle unexpectedly, which could result in serious injury from splashing or moving parts.

It is highly recommended that you flush the system with solvent before replacing heater unit.

- Flush out old fluid with a compatible solvent before introducing new fluid.
- Use the lowest possible pressure when flushing.

# Remove Heater

1. Ensure main power is turned off. Disconnect power supply or turn off main breaker for system. See FIG. 2.

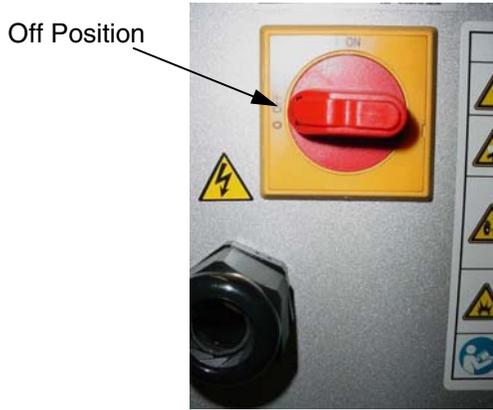


FIG. 2

2. Relieve pressure if it has not already been done. See **Pressure Relief** on page 3.
3. Remove heater shroud from back of proportioner. Remove bolt on top of the shroud. Lift the shroud up and away from the proportioner. Set aside the bolt and discard the shroud. See FIG. 3.



Ensure heater blocks are cool before removal.

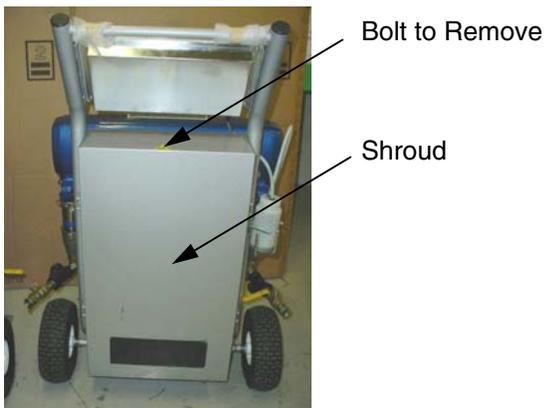


FIG. 3

4. Remove tape and wire connectors; disconnect heater element wires from heater wire harness. See FIG. 4.

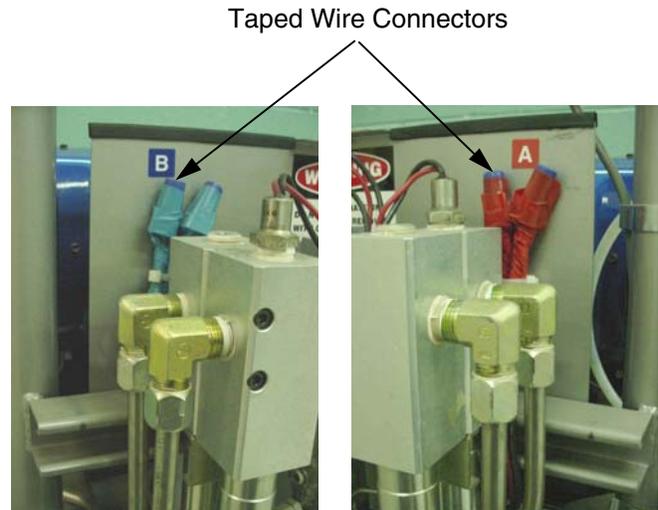


FIG. 4

5. Unplug red, green, black and white wires from the two heater over-temperature switches. See FIG. 5.
  - a. *Single u-tube heater*: all four wires are connected; each pair is connected to a single tube. See FIG. 5.

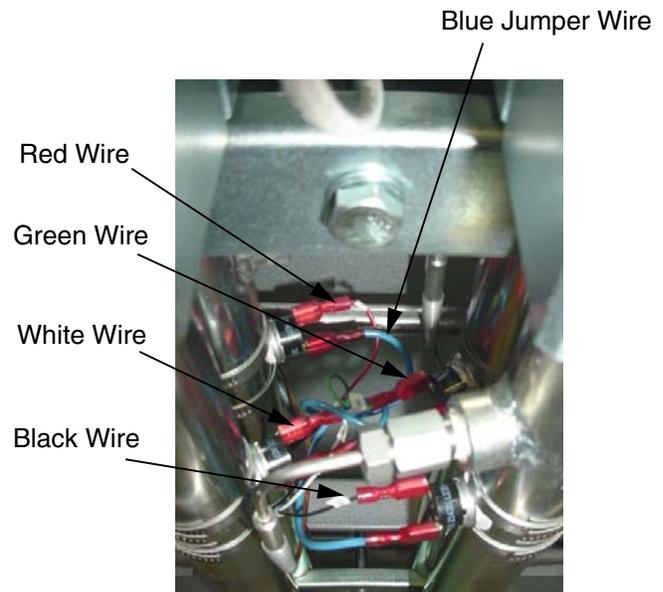
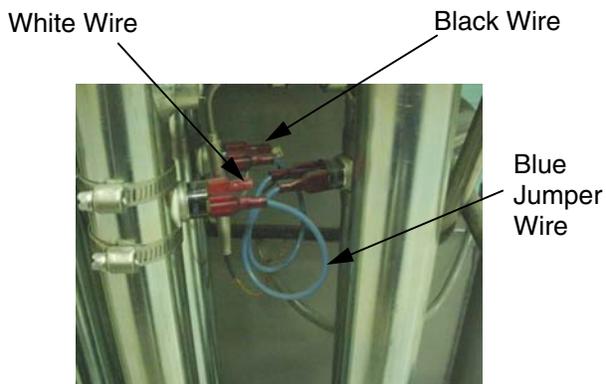


FIG. 5: Single U-tube Heater

- b. *Dual u-tube heater.* Each pair is connected to one set of tubes. See FIG. 6.

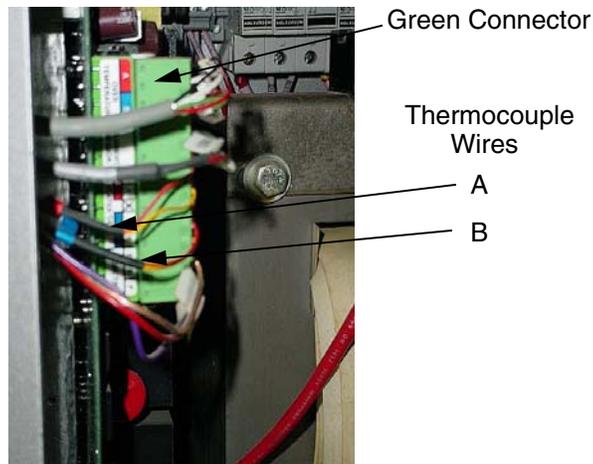


**FIG. 6: Dual U-tube Heaters**

- Unplug blue jumper wires from the overtemperature switch. Discard wires. See FIG. 5 and FIG. 6.
- Disconnect thermocouple wires from the large green plug on temperature board. See FIG. 7 and FIG. 8.

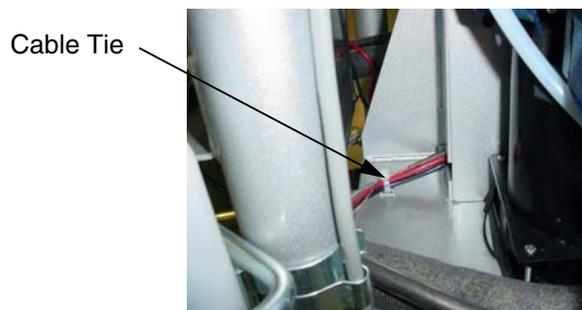


**FIG. 7**



**FIG. 8**

- Cut off cable ties holding thermocouple wires in place. Cable ties are inside the electrical enclosure and between back panel and center support. See FIG. 9.



**FIG. 9**

- Remove side cover on middle compartment below motor housing. Set aside panel and screws. This will help in removing and replacing wires. See FIG. 10.



**FIG. 10**

Remove Heater

10. Unscrew wires from green connector on temperature board.
11. Pull wires out of the back of the proportioner near the heater.
12. Remove four fluid tubes and fittings off manifold and pump outlet. Disconnect tubes at the heaters, fluid manifold, and pumps. Discard fluid tubes. See FIG. 11 and FIG. 12.

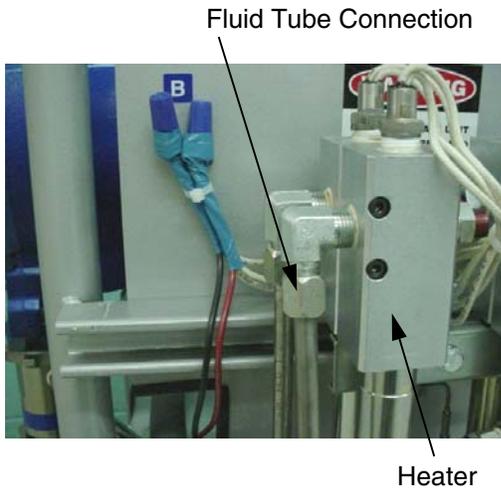


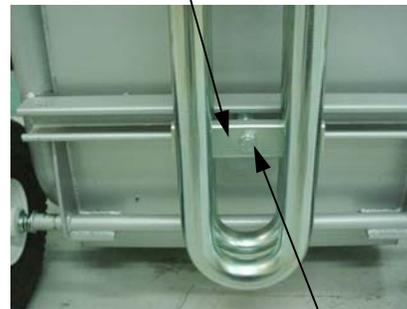
FIG. 11

13. Remove u-tube heaters; loosen and remove top and bottom bolts holding heater tube.
14. Single heaters have two bolts and dual heaters have four bolts. Discard bolts and mounting bracket. See FIG. 13 and FIG. 14.

 Heater tubes are heavy. Have someone help support the heaters when removing.

Carefully remove tubes, there may be fluid left in the heater u-tube.

Bottom Support Bracket



Remove Bolt

FIG. 13

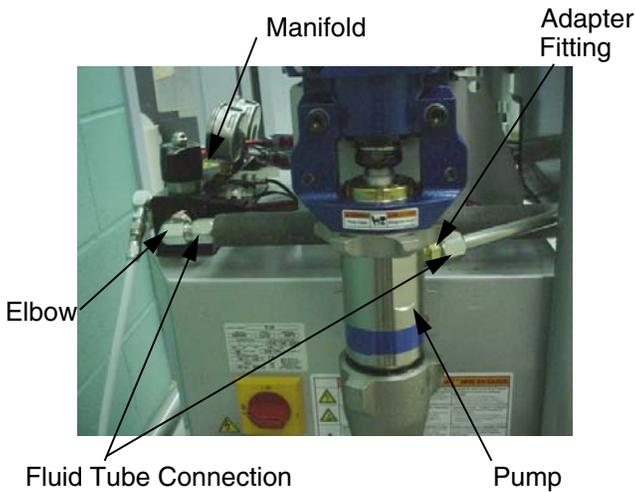
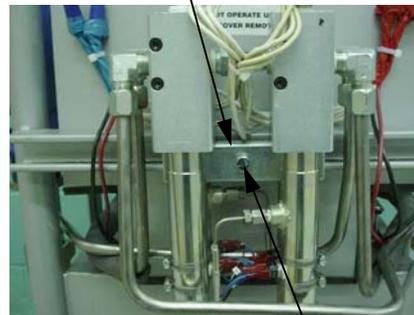


FIG. 12

Top Support Bracket



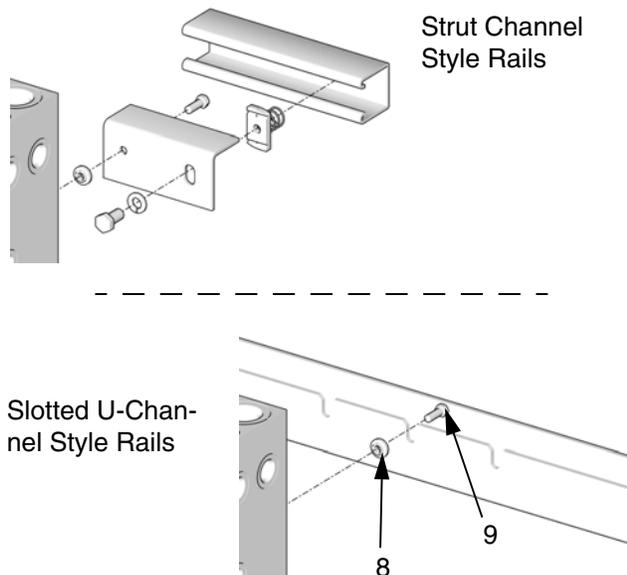
Remove Bolt

FIG. 14

# Install New Heaters

## Prepare Heater(s) For Mounting

The kit includes heater block assemblies (1) and mounting hardware. The strut channel style rails shown in FIG. 15 require all of the hardware included. The slotted U-channel style rails shown in FIG. 15 require only the insulator (8) and screw (9).



**FIG. 15**

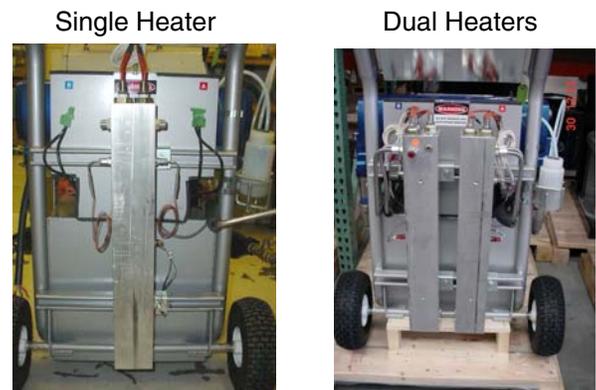
For the strut channel style, mount bracket (6) to heater block assembly (1) with insulator (8) and screw as shown in FIG. 15.

For the U-channel style, place insulator (8) on screw (9) and start screw into heater block assembly (1). With the insulator pushed against the heater block, turn the screw in until there is a 1/4 in. gap between the insulator and screw flange.

## Heater Installation

1. Install heater onto rails, see FIG. 16:

-  Position single heater in the center of the rails.
- Position the dual heaters each 2-5/8 in. from the center of the rails.



**FIG. 16: Heater Positioning**

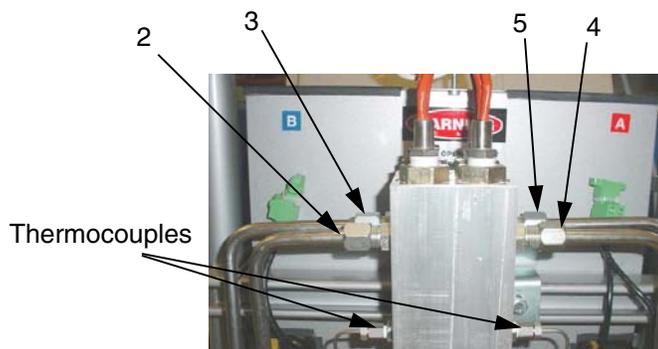
- For the strut channel style:* position spring nuts in approximate position in channels. Position heater on support rail then insert screw through lock washer and bracket and screw into spring nut. Leave finger tight. Slide heater(s) into position then tighten screws.
- For the slotted U-channel style:* Position heater with the mounting bolts over the appropriate slot in each rail. Make sure the insulator is pressed against the heater then lower heater so bolts and insulator slide into slots in rail. Tighten bolts.

## Install New Heaters

2. Attach the four fluid tubes, adapter fittings, and elbows that are included in the kit. The two tubes with insulation (2, 4) on the outside fitting of the heater block (1) and the un-insulated tubes (3, 5) on the inside fittings.

 With strut channel style rails, it may be necessary to loosen pumps and/or heaters and reorient to align fluid tubes.

3. Place a small amount of Fusion<sup>®</sup> grease on the cap then hand-tighten fitting caps to the heater block, pump lowers, and manifold.
4. Once all fluid tube fitting caps are fastened and heater (1) is aligned, tighten two bolts (7) holding heater to unit. Tighten fittings on the four fluid tubes (2, 3, 4, 5). See FIG. 16 and FIG. 17.



5. Unwrap wires attached to thermocouples. Feed wires, one at a time through back of unit, into middle enclosure and down through the hole into the electrical compartment. See FIG. 18.

 When looking at the back of unit, the B thermocouple is on the left side and the A thermocouple is on the right side.

Thermocouple wires



FIG. 18

6. Connect the wire of the thermocouple into green connector on temperature board. See FIG. 19. Tie-wrap loose wires inside electrical enclosure.

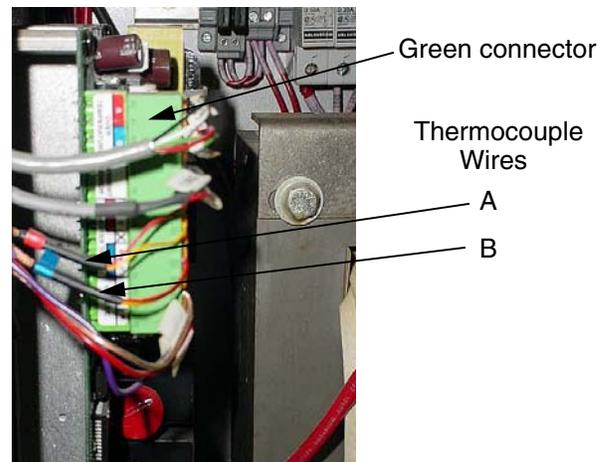


FIG. 19

7. Attach overtemperature wires to overtemperature switch:
  - *Single heater units:* Connect black and white wires to the switch. Connect green and red wires to supplied red jumper wire (15). See FIG. 20.

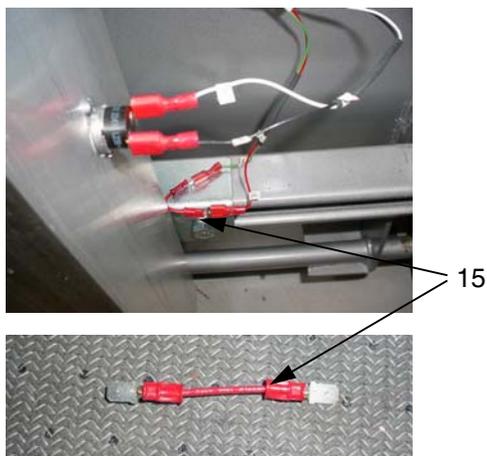


FIG. 20

- *Dual Heater units:* Connect black and white wires to switch on right side of B heater. Connect green and red wire to switch on left side of A heater. See FIG. 21.

**B Side Heater**



**A Side Heater**



FIG. 21

8. Attach heater wires with supplied power lock splice kit. See manual 312466.
9. Tie-wrap heater wires in place on the back of unit when finished with connections. Add red caps to connectors. See FIG. 22.

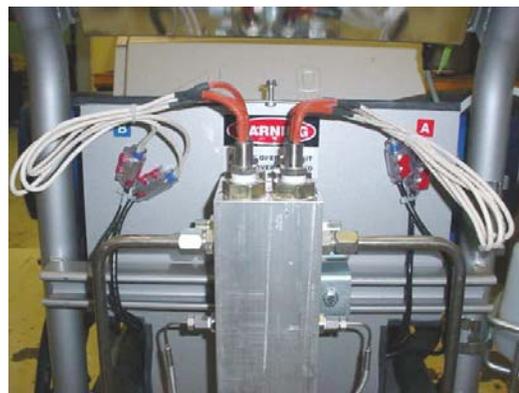


FIG. 22

10. Reconnect power to unit and power up and verify that the heaters are working. See **Verify Heaters Are Working** on page 10.

# Verify Heaters Are Working

This procedure can be completed for single and dual heaters.

1. Replace cover on middle enclosure of unit (See FIG. 23) and attach new supplied heater cover (11) on back of proportioner. See FIG. 24.

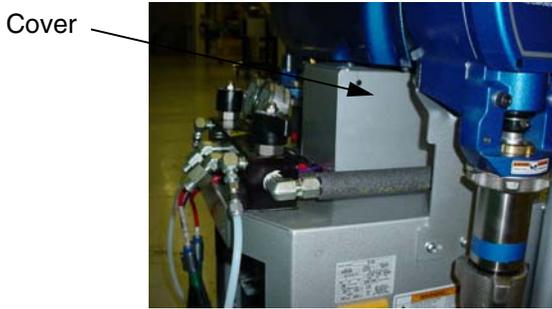


FIG. 23



FIG. 24

2. Reconnect power; power up and verify heaters are working.
  - a. Turn on A heater control and verify temperature is rising in A only.
  - b. Turn off A heater and verify B heater control is working correctly.

<b>CAUTION</b>
----------------

Only leave heaters on long enough to see temperature rise. There will not be fluid in heater housing.
---

# Parts

## Heater Upgrade Kits

247525, 259063, 259064, 259065, 259715, 259730, 259731, 259732

Ref No.	Description	Qty.
1	HEATER, system	1
*	HEATER, system	2
2	TUBE, fluid, A, outlet	1
3	TUBE, fluid, A, inlet	1
4	TUBE, fluid, heater, outlet, B	1
5	TUBE, fluid, heater inlet, B	1
6	BRACKET, heater	2
*	BRACKET, heater	4
7	SCREW, cap, hex hd; 3/8-16 unc	2
*	SCREW, cap, hex hd; 3/8-16 unc	4
8	INSULATOR, heat	2
*	INSULATOR, heat	4
9	WASHER, lock	2
*	WASHER, lock	4
10	SCREW, flanged, hex hd; 1/4-20 unc	2
*	SCREW, flanged, hex hd; 1/4-20 unc	4
11	KIT, heater shroud	1
13	FITTING, elbow, 3/4 x 3/8 npt (f)	2
14	KIT, heater wire connector	1
15	WIRE, jumper with quick disconnect	1
16	FITTING, elbow	2
17	FITTING, adapter	2

\* Included in 247525 and 259715 Upgrade Heater Kits.

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

**GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO.** These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

## **FOR GRACO CANADA CUSTOMERS**

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

# Graco Information

For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

*All written and visual data contained in this document reflects the latest product information available at the time of publication.  
Graco reserves the right to make changes at any time without notice.*

Original instructions. *This manual contains English. MM 312477*

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**

Copyright 2007, Graco Inc. All Graco manufacturing locations are registered to ISO 9001.

[www.graco.com](http://www.graco.com)  
Revised 01/2012