



This manual contains important
warnings and information.
READ AND KEEP FOR REFERENCE.

INSTRUCTIONS

PrecisionFlo™ Circuit Boards

+5 Volts, 0.5 Amps; +12 Volts, 0.25 Amps; -12 Volts, 0.002 Amps

Part No. 237-955

Control Board Assembly

Part No. 238-093

Current/Temperature Board Assembly

NOTE: Use the control board only in non-hazardous locations. Do not operate it in hazardous locations, as defined in article 500 of the National Electrical Code (USA).

Symbols

Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

! WARNING



FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

Improper grounding, poor air ventilation, open flames, or sparks can cause a hazardous condition and result in fire or explosion and serious injury.

- The equipment must only be installed and serviced by a qualified electrician.
- Ground the equipment and the object being sprayed.
- Do not install the equipment in a hazardous area, as defined in Article 500 of the National Electrical Code (USA).
- If there is any static sparking while using the equipment, **stop dispensing immediately**. Identify and correct the problem.
- Keep liquids away from the electrical components
- Disconnect electrical power at the main switch before servicing the equipment.



INSTRUCTIONS



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to malfunction or start unexpectedly and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call Graco Technical Assistance at 313-416-3407 or 313-416-3408.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.

Graco Phone Number

TO PLACE AN ORDER, contact your Graco distributor, or call this number to identify the distributor closest to you:
1-800-367-4023 Toll Free

Changing the Software Chips

⚠ WARNING



ELECTRIC SHOCK HAZARD

Installing and servicing this equipment requires access to parts which could cause an electric shock or other serious injury if the work is not performed properly.

- Do not service this equipment unless you are trained and qualified.
- The power to the PrecisionFlo Control must be off before you begin to change the software.

⚠ CAUTION

The service technician and the equipment must be grounded to avoid static electricity discharge, which can damage electronic components. It is recommended that the technician wear a static-strap.

NOTE: Have the system binder (a collection of manuals and diagrams in a three-ring binder, supplied by Graco) available to refer to.

Installing the New Software

1. Turn off the power to the PrecisionFlo Control.
2. Locate the control board (A) in the control box assembly. See Fig. 4.
3. Locate the software chips U6 and U7 on the control board (A). Note the direction of the chips.
4. Use an I.C. extraction tool (B) to remove the old software chips. Pull the chips directly up. See Fig. 1.

To remove the software chips without an extraction tool, carefully pry the chips out evenly on both sides. See Fig. 2.

5. Install the new software chips. Make sure chips U6 and U7 are placed in their proper locations. Verify the chips are facing the correct direction and all the pins are in the holes. See Fig. 3.
6. Set the proper parameters in the setup program.

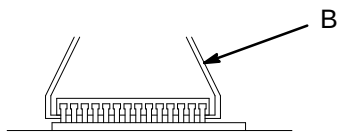


Fig. 1

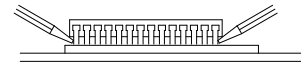


Fig. 2

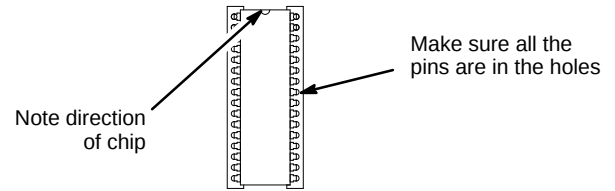


Fig. 3

Control Board

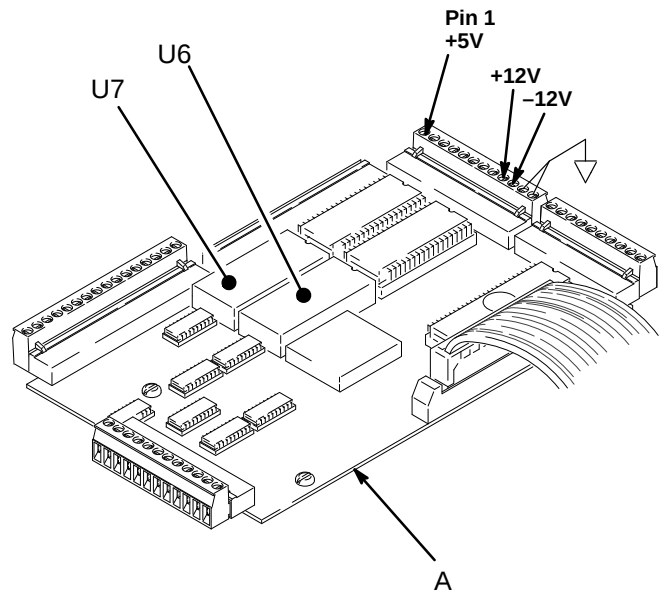


Fig. 4

05499

Current/Temperature Board

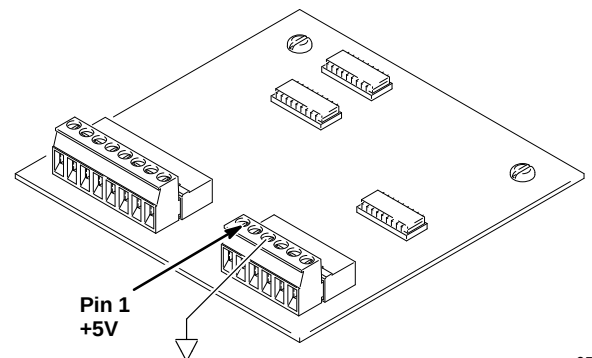


Fig. 5

05500

Electrical Troubleshooting

Have the following items available before you begin troubleshooting.

- PrecisionFlo system binder (collection of manuals and diagrams in a three-ring binder, supplied by Graco)
- Voltmeter that is capable of reading values in ac and dc voltage.
- Small standard screwdriver

Control Component Identification

There are three major control components:

- Power Supply
- Circuit Board
- Current/Temperature Board

Before you troubleshoot the PrecisionFlo Control, it is important to understand what the control components are and what they do.

Power Supply – See the electrical diagram in the system binder

The power supply consists of several transformers that convert the 110 or 220 Vac power supplied to the system into four different dc voltages (+24,+5, +12, and –12). These dc voltages are required for the system to operate.

Control Board

The control board does all of the math. It monitors the regulator pressure and sends signals to the motor control. It retains the set points in memory, and sounds an alarm if a problem occurs.

The control board holds five integrated circuit (IC) chips, which are: two PrecisionFlo program chips, one micro-control chip, one static ram chip, and a battery to store the memory when the power is turned off.

The control board can only accept and send out signals that are no greater than +5 Vdc.

Current/Temperature Board

The current/temperature board provides voltage isolation and signal conditioning for the current and temperature signals that the PrecisionFlo motor sends to the control board.

Pendant

The pendant hooks directly to the PrecisionFlo computer and communicates with it through RS–232 communication.

The function of the pendant is similar to the function of a computer keyboard and monitor. The pendant allows the operator to see information about the PrecisionFlo operation and to make changes to the operation.

Control Panel dc Voltage Problems

**WARNING**

**ELECTRIC SHOCK HAZARD**
High voltage is present when performing the following voltage checks, which could cause an electric shock injury if the work is not performed properly. Do not service this equipment unless you are trained and qualified.

NOTE:

- If any of the voltages are not present while following steps 1 to 5 below, find the problem and fix it before continuing to troubleshoot.
- If the correct voltages are present and the software is installed correctly, replace the control board if the problem continues. The control board cannot be repaired, it must be replaced.

1. Verify that all dc common terminals are connected together.
2. Verify that the main power switch on the front of the PrecisionFlo enclosure is on. Check all of the dc voltages on the power supply outputs. There should be +5, +12, –12, and +24 Vdc. See your system binder for the wire numbers.
3. Verify that the correct dc voltages are going to the control board. There should be +5, +12, and –12 Vdc. See Fig. 4, page 3 for the terminal numbers.
4. Verify that the correct dc voltage is going to the current/temperature board. It should be +5 Vdc. See Fig. 5, page 3 for the terminal numbers.
5. Verify that the dc voltages are on all other dc terminals inside the control panel. See your system binder for the terminal numbers.

Sales Offices: Atlanta, Chicago, Detroit, Los Angeles

Foreign Offices: Belgium, Canada, England, Korea, Switzerland, France, Germany, Hong Kong, Japan

GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440–1441

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