Instructions - Parts

248921 Hose Heat Control Kit

310798F

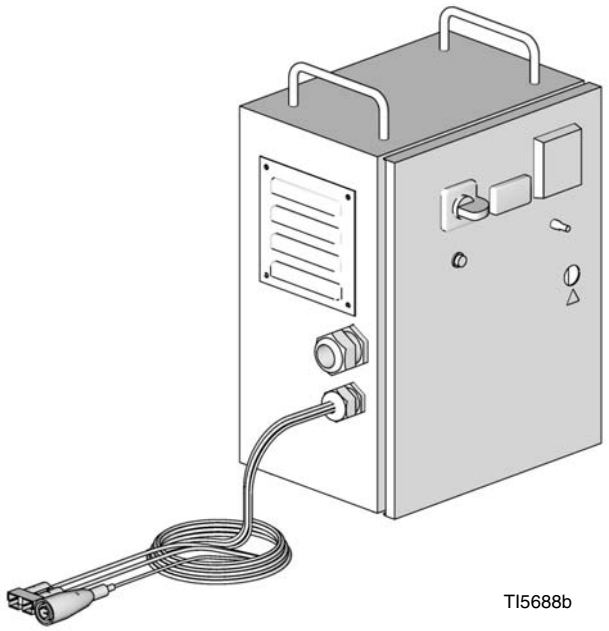
EN

For monitoring and controlling fluid temperature in low voltage heated hose.

Not for use in explosive atmospheres.

Important Safety Instructions
Read all warnings and instructions in this manual. Save these instructions.

See page 2 for Table of Contents.



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PROVEN QUALITY. LEADING TECHNOLOGY.

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Manual Conventions

WARNING

Hazard Symbol

WARNING: a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Warnings in the instructions usually include a symbol indicating the hazard. Read the general **Warnings** section for additional safety information.

CAUTION

CAUTION: a potentially hazardous situation which, if not avoided, may result in property damage or destruction of equipment.

Note

Additional helpful information.

Warnings

The following warnings include general safety information for this equipment. Further product specific warnings may be included in the text where applicable.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. To help prevent fire and explosion:

- Use equipment only in well ventilated area.
- Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Ground equipment and conductive objects in work area. See **Grounding** instructions.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail.
- If there is static sparking or you feel a shock, **stop operation immediately.** Do not use equipment until you identify and correct the problem.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Data** in all equipment manuals. Read fluid and solvent manufacturer's warnings.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not alter or modify equipment.
- For professional use only.
- Use equipment only for its intended purpose. Call your Graco distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not use hoses to pull equipment.
- Comply with all applicable safety regulations.

ELECTRIC SHOCK HAZARD

Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Use only grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on sprayer and extension cords.

Setup

1. Locate hose heat control

Position hose heat control for convenient operator access and maintenance, safe routing of cables, and easy connections.

2. Electrical requirements

See TABLE 1.

WARNING

Your system must be grounded. Read warnings, page 3.

Table 1: Electrical Requirements (kW/Full Load Amps)

Voltage (phase)	Full Load Peak Amps*	System Watts
230V (1)	15	3500

* Full load amps with all devices operating at maximum capabilities. Fuse requirements at various flow rates and mix chamber sizes may be less.

3. Connect electrical cord

Power cord is not supplied. Use minimum 12 AWG (3.3 mm^2), 2 wire + ground.

WARNING

Installing this equipment requires access to parts which may cause electric shock or other serious injury if work is not performed properly. Have a qualified electrician connect power and ground to power switch terminals, see FIG. 1. Be sure your installation complies with all National, State and Local safety and fire codes.

230V, 1 phase: Using 5/32 or 4 mm hex allen wrench and flat-head screwdriver, connect two power leads to L1 and L2. Connect green to ground (GND). See FIG. 1.

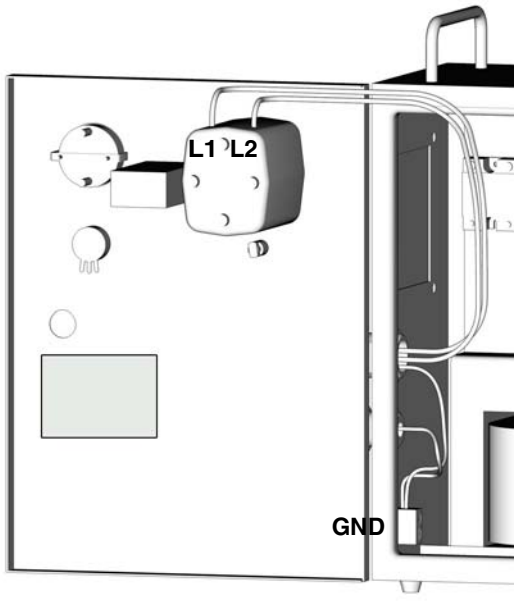

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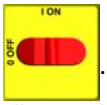
FIG. 1. Connect Electrical Cord

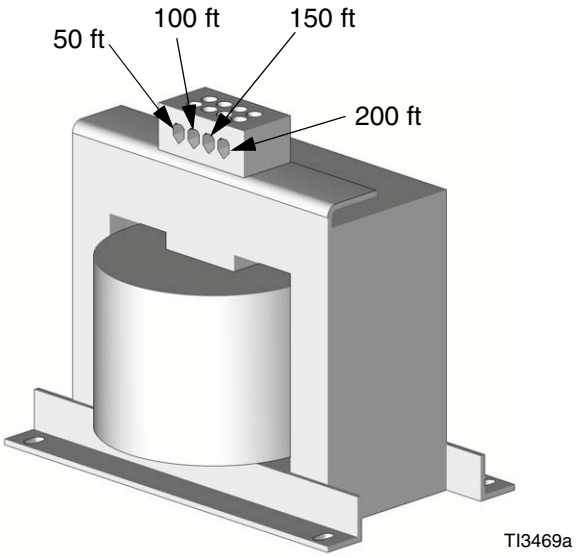
4. Set transformer wire taps

WARNING

Read warnings, page 3.

Turn power switch OFF 

. Transformer tap wire connections vary depending on length of heated hose. See FIG. 2. Verify that tap wire connections are correct.



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Hose Length* ft (m)	Tap Terminal Label (ft)
50 (15.25)	50
100 (30.5)	100
150 (45.75)	150
200 (61.0)	200

* Length does not include unheated whip hose.

FIG. 2: Transformer Wire Taps

5. Connect fluid hose

Hoses are 50 ft (15.2 m) long. The maximum combined hose length (including whip hose) is 210 ft (94.5 m).

When Using 261670 FTS, Unheated Whip Hose

a. Connect desired lengths of hose. Secure all connections as explained in manual 309572.

b. Connect hoses to appropriate heater fluid outlets.

c. Plug sensor cable (SC) and electrical connector (EC) from hose heat control into mating connectors on first length of heated hose. See FIG. 5. Be sure cables have slack when hose bends. Wrap cable and electrical connections with electrical tape.

d. See FIG. 3. Install jumper (102) in electrical connector (EC) at last length of heated hose.

e. Carefully extend FTS probe (P). Do not bend or kink probe. Insert in major volume (resin) side of heated hose.

f. Connect hoses to FTS inlets. Connect hose sensor cable (SC) to FTS cable.

g. Connect mix manifold, static mixers, whip hose, and spray gun as explained in separate instruction manuals.

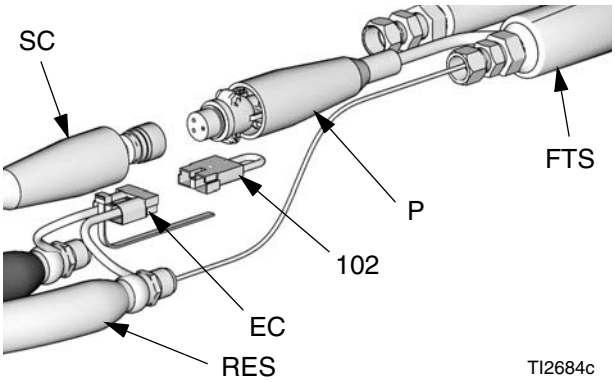

FIG. 3. 261670 Fluid Temperature Sensor

When Using 261669 FTS, Heated Whip Hose

a. Connect desired lengths of hose. Secure all connections as explained in manual 309572.

b. Connect hoses to appropriate heater fluid outlets.

c. Plug sensor cable (SC) and electrical connector (EC) from hose heat control into mating connectors on first length of heated hose. See FIG. 5. Be sure cables have slack when hose bends. Wrap cable and electrical connections with electrical tape.

d. See FIG. 4. Carefully extend FTS probe (P). Do not bend or kink probe. Insert in ISO side of 50 ft (15.2 m) heated hose.

e. Connect 50 ft (15.2 m) heated hose to FTS inlets. Connect hose sensor cable (SC) to FTS cable.

f. Connect whip hose as explained in hose manual 309572.

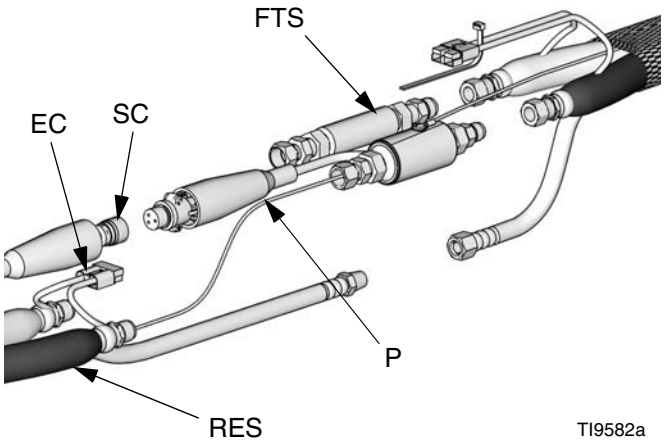

FIG. 4. 261669 Fluid Temperature Sensor, with heated whip hose

6. Startup

a. Ensure that all harnesses, cables, and connectors are properly connected. Connect hose.

b. Connect power supply. Turn power ON

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c. Using a screwdriver, turn current adjustment screw (CA) until meter (M) reads 45 A maximum. See FIG. 5. Fasten locknut to secure at this setting.

d. Set heat control to desired hose temperature.

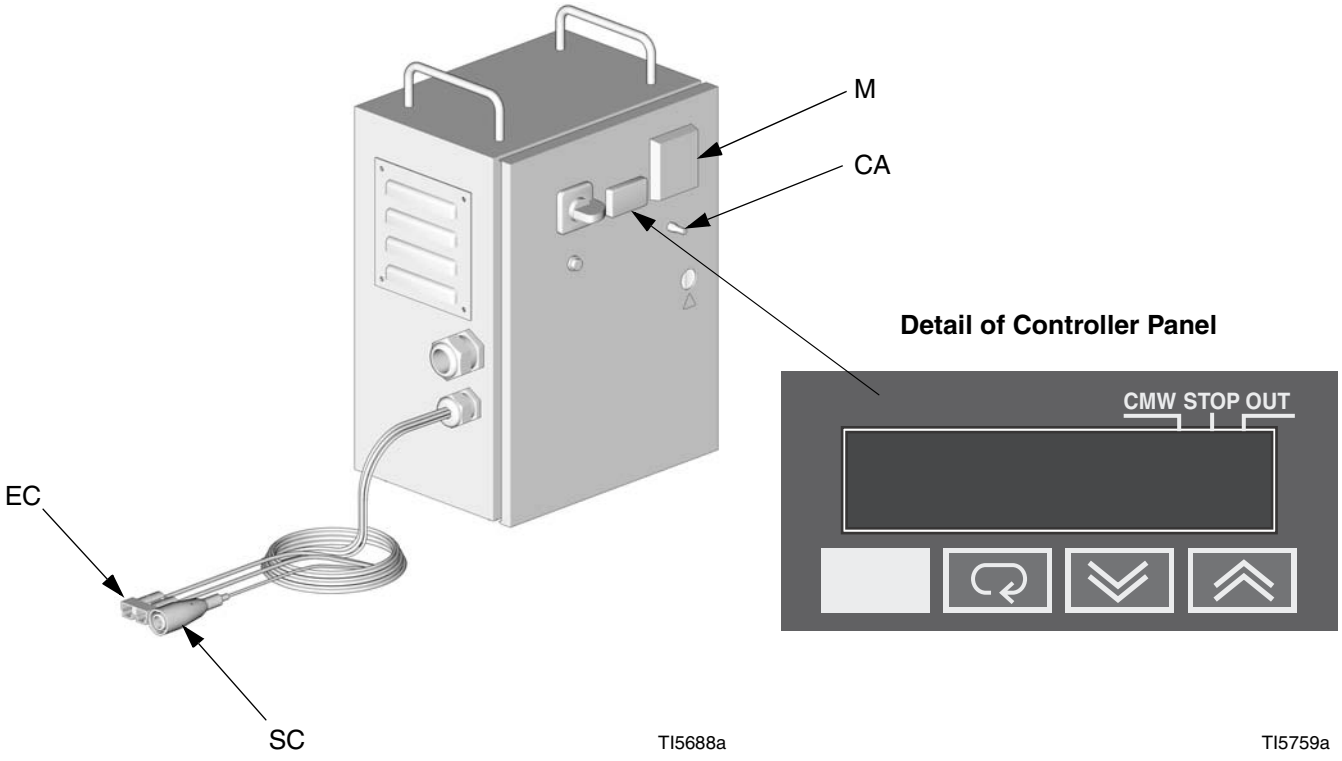


FIG. 5. Heat Control Connections

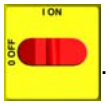
Troubleshooting

PROBLEM	CAUSE	SOLUTION
No temperature display.	Inadequate power to temperature control.	Check that power supply meets requirements.
	Loose power cable.	Check cable connections.
	Bad module.	Replace temperature control module.
No hose heat.	Loose hose electrical connections.	Check all hose connections. See **Test Hose Continuity**, page 12.
	Circuit breakers tripped.	Check CB1 and CB2.
	Hose heat not turned on.	To turn on, press  . To change from Stop mode to Run mode, press  . LED in upper right corner of display will change. To return to main menu, press  .
	Temperature setpoint too low.	Check. Increase if necessary.
	Maximum amp setting is too low.	Check connections to current sensor. Increase current, page 8.
	Hose length tap set too low.	Check and set to hose length being used, page 5.
	No voltage to transformer primary.	Replace phase controller (3).
	No output voltage.	Replace solid state relay (2).
Low hose heat.	Temperature setpoint too low.	Check. Increase if necessary.
	Flow too high.	Decrease pressure.
	Hose heat requires more time.	Allow more time to preheat material.
	Loose hose electrical connections.	Check all hose connections. See **Test Hose Continuity**, page 12.

Repair

Fluid Temperature Sensor (FTS)

Test/Removal

1. Turn power OFF 

. Disconnect power supply.

WARNING

Read warnings, page 3.

2. Relieve pressure, see proportioner operation manual.
3. Remove tape and protective covering from FTS. Disconnect hose cable (SC). Test with ohmmeter between pins of cable connector.

Pins	Result
1 to 2	approximately 10 ohms
1 to 3	infinity
3 to FTS groundscrew	0 ohms
1 to FTS component A fitting (ISO)	infinity

4. If FTS fails test, replace FTS.
5. Disconnect electrical connectors (EC).
6. Disconnect FTS from mix manifold and fluid hoses.
7. Remove FTS probe (P) from hose.

Installation

See instructions on pages 6 and 7.

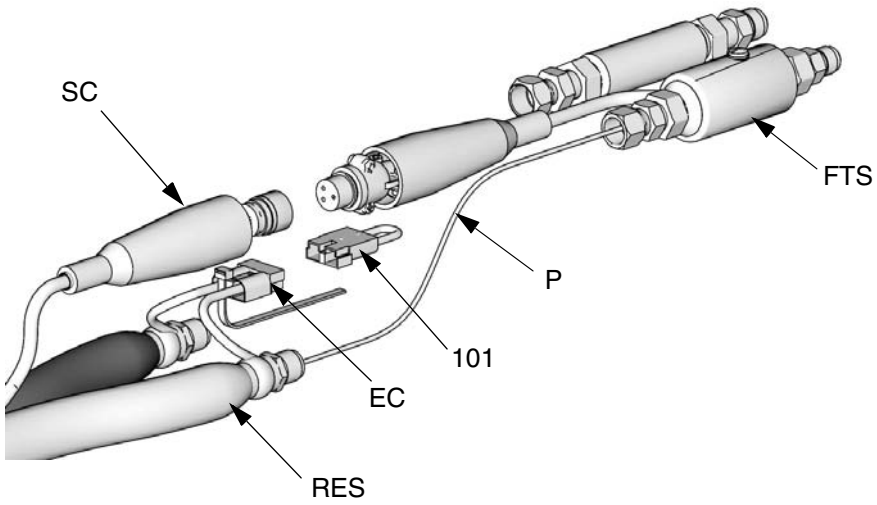
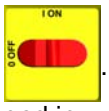


FIG. 6. Fluid Temperature Sensor (Model 261670 Shown)

Transformer

Test Hose Continuity

1. Turn power OFF 

. Disconnect power supply. Leave hose plugged in.
2. See **Electrical Schematic**, page 13. Remove wire no. 1055 (red, 8 AWG) from solid state relay (2).
3. Remove wire no. 1102 (red, 8 AWG) from tap setting on top of transformer.
4. Using an ohmmeter in continuity mode, check between the two wires. There should be continuity.
5. If test fails, remove jumper (102) from electrical connector of last hose section and place in electrical connector of first hose section. Check continuity again. If continuity, continue testing each hose section until failure is located. Replace/remove bad hose section.

Transformer Primary Check

1. Ensure that all harnesses, cables, and connectors are properly connected. Connect hose.
2. Connect power supply. Turn power ON 

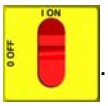
.
3. Set heat control to desired hose temperature.

WARNING

Read warnings, page 3. Step 4 measures line voltage and should be done by a qualified electrician. If work is not performed properly it may cause electric shock or other serious injury.

4. See **Electrical Schematic**, page 13. Measure voltage at two bottom terminals of 20 A circuit breaker (9). Measurement should be line voltage. If not, check that lamp is illuminated red. Continue toward disconnect switch until loose connection is found. If all voltages are good and transformer secondary test fails, replace transformer.

Transformer Secondary Check

1. Ensure that all harnesses, cables, and connectors are properly connected. Connect hose.
2. Connect power supply. Turn power ON 

.
3. Set heat control to desired hose temperature.

WARNING

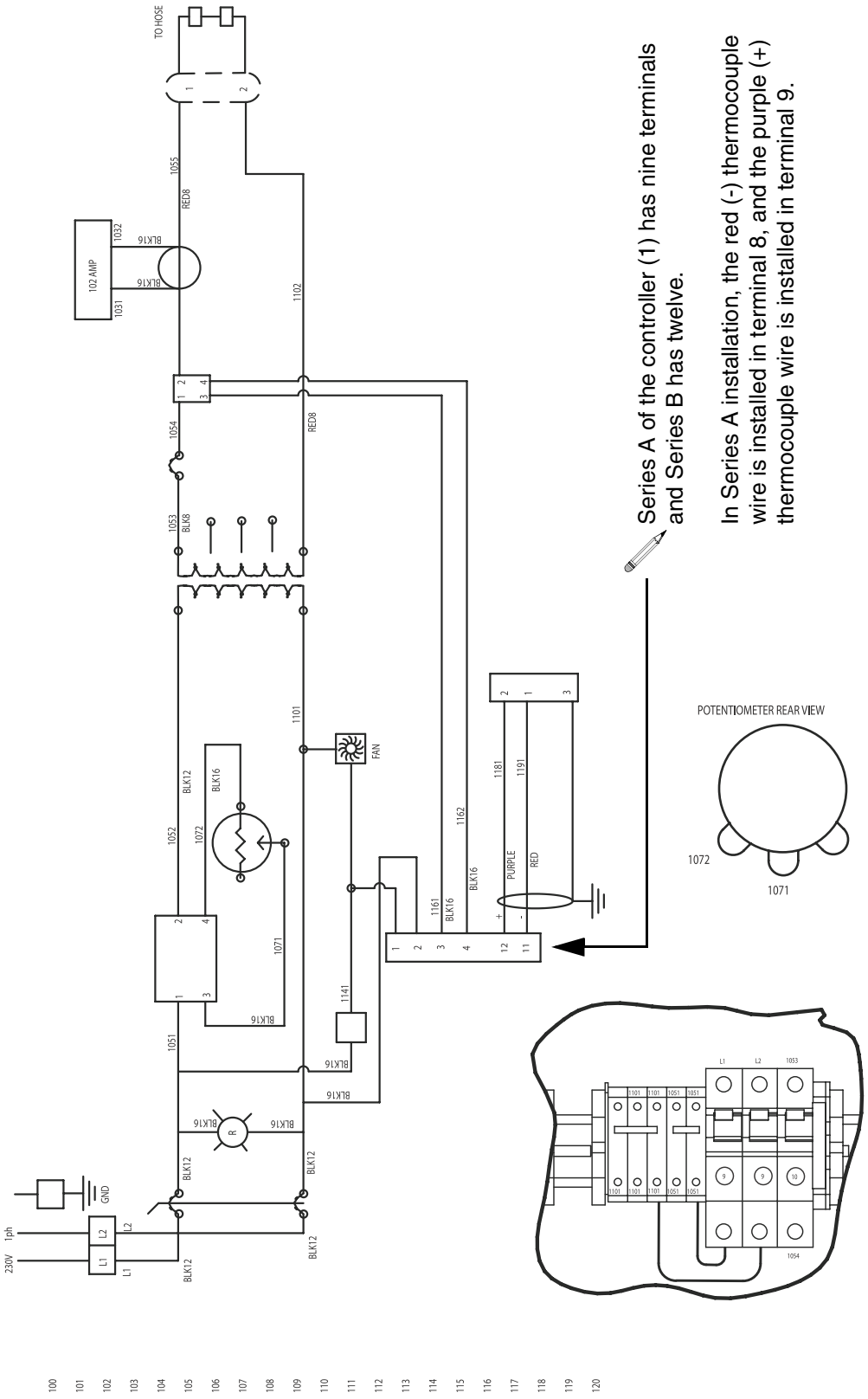
Read warnings, page 3. Step 4 measures line voltage and should be done by a qualified electrician. If work is not performed properly it may cause electric shock or other serious injury.

4. See **Electrical Schematic**, page 13. Measure voltage across transformer hose tap (R) you are using and top terminal on 50 A hose circuit breaker (10). See TABLE 2 for readings. If reading is correct, replace temperature control. If reading is wrong, replace transformer.

Table 2: Transformer Voltage Readings

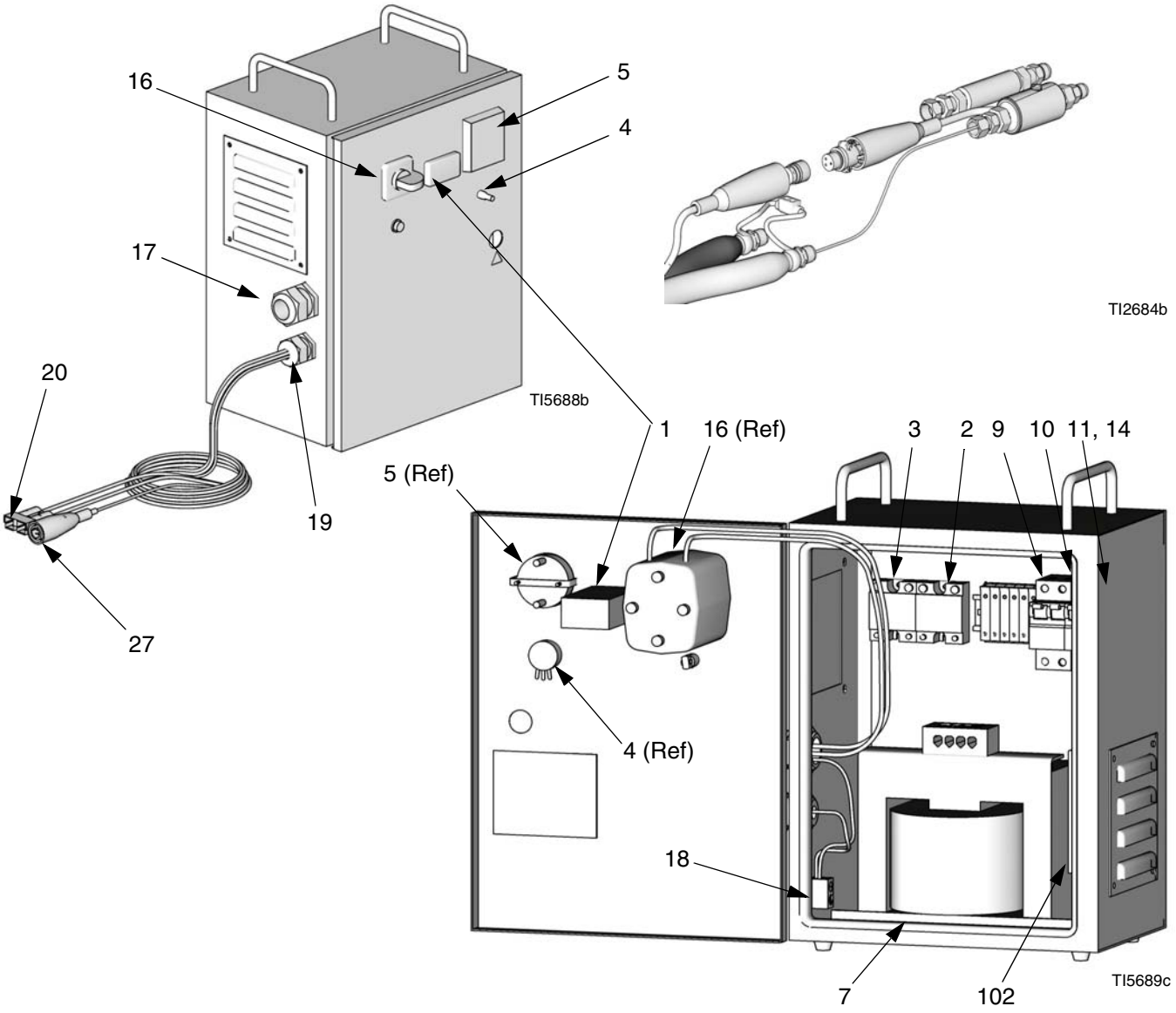
Transformer Tap	Reading (VAC)
50’	15-25
100’	26-42
150’	36-60
200’	47-77

Electrical Schematic



Parts

248921 Series A, Hose Heat Control Kit



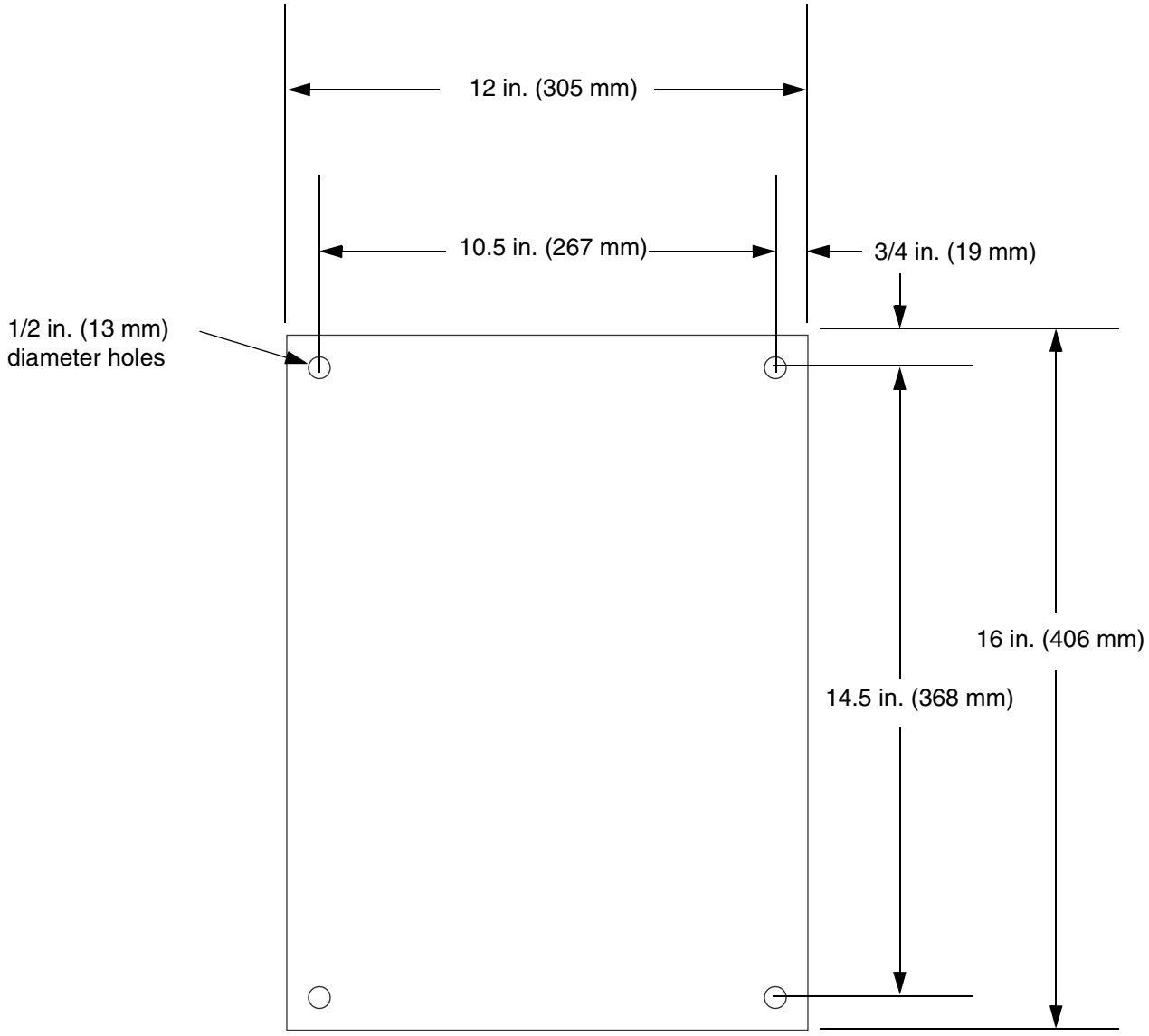
Ref. No.	Part No.	Description	Qty.
1	15F162	CONTROLLER, 240 V, dual display	1
2	15F163	RELAY, solid state, 24-240 V, 75 A	1
3	15F164	CONTROLLER, proportional, 240 V, 25 A	1
4	15F165	POTENTIOMETER	1
5	15F166	METER, 0-50 A	1
7	15B351	TRANSFORMER	1
9	117711	BREAKER, dual; 20 A	1
10	117503	BREAKER, single; 50 A	1
11	514556	FUSEHOLDER, 10 A	1

Ref. No.	Part No.	Description	Qty.
14	15F167	FUSE, 250 V, 1-8 A	1
16	15F168	DISCONNECT, electrical; 25 A	1
17	117682	STRAIN RELIEF, power cord	1
18	117666	TERMINAL, ground	1
19	115845	STRAIN RELIEF, cables	1
20	15F161	CONNECTOR, electrical	1
27	15F160	CABLE, hose	1
102	115834	FAN	1

Technical Data

Input Power Requirements	230 Vac, 1 phase, 50/60 Hz, 15 A
Output Power	10-70 Vac, 50 A
Weight	75 lb (34 kg)

Mounting Hole Pattern



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.

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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.

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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.

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

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Graco reserves the right to make changes at any time without notice.

For patent information, see www.graco.com/patents.

Original instructions. This manual contains English. MM 310798

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