Instructions

G3 Automatic Lubrication Pump

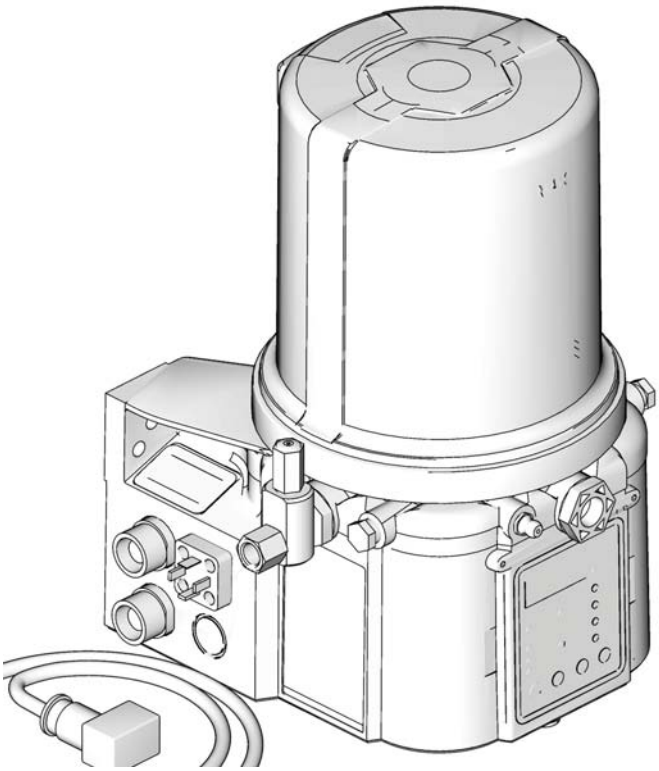
3A0414C
ENG

For dispensing of NLGI Grades #000 to #2 greases.

Not approved for use in European explosive atmospheres. For Professional Use Only.

Part Nos., page 3
5100 psi (35.1 MPa, 351.6 bar) Maximum Working Pressure

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



HO03

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Table of Contents

Part / Model Numbers - 2 Liter Models

The Part Number is a six-digit unique number that is only used to order the G3 Pump. Directly related to this six digit Part Number is the configured Graco Model Number. This configured number identifies the distinct features of a specific G3 Pump. To help you understand each component that makes up the Model Number see Understanding Your Model Number, page 4. The tables below shows the relationship between each Part Number and its related Model Number.

No Control Models

Part Numbers.	Model Number
96G000	G3-G-12NC-2L0000-00C00000
96G001	G3-G-24NC-2L0000-00C00000
96G002	G3-G-ACNC-2L0000-0D000000
96G003	G3-G-12NC-2L0A00-L0C00000
96G004	G3-G-12NC-2LFA00-L0C00000
96G005	G3-G-24NC-2L0A00-L0C00000
96G006	G3-G-24NC-2FA00-L0C00000
96G007	G3-G-ACNC-2L0A00-LD000000
96G008	G3-G-ACNC-2LFA00-LD00000

Pro Models

Part Numbers	Model Numbers
96G009	G3-G-12PR-2L0L00-R0C00000
96G010	G3-G-12PR-2LFL00-R0C00000
96G011	G3-G-24PR-2L0L00-R0C00000
96G012	G3-G-24PR-2LFL00-R0C00000
96G013	G3-G-ACPR-2L0L00-0D000000
96G014	G3-G-ACPR-2LFL00-0D000000
96G027	G3-G-12PR-2L0000-00C00000
96G028	G3-G-24PR-2L0000-00C00000
96G029	G3-G-ACPR-2L0000-0D000000

Max Models

Part Numbers	Model Numbers
96G015	G3-G-12MX-2L0L00-10CV0000
96G016	G3-G-12MX-2LFL00-10CV0000
96G017	G3-G-24MX-2L0L00-10CV00R0
96G018	G3-G-24MX-2LFL00-10CV00R0
96G019	G3-G-ACMX-2L0L00-1D0V0000
96G020	G3-G-ACMX-2LFL00-1D0V0000
96G021	G3-G-12MX-2L0L00-1DMVA2R3
96G022	G3-G-12MX-2LFL00-1DMVA2R3
96G023	G3-G-24MX-2L0L00-1DMVA2R3
96G024	G3-G-24MX-2LFL00-1DMVA2R3
96G025	G3-G-ACMX-2L0L00-1DMVA2R3
96G026	G3-G-ACMX-2LFL00-1DMVA2R3
96G030	G3-G-12MX-2L0L00-10C00000
96G031	G3-G-24MX-2L0L00-10C000R0
96G032	G3-G-ACMX-2L0L00-1D000000

Understanding the Model Number

Use the Code Sample provided below to identify each component's location in the Model Number. The options for each component that make up the code are provided on the lists below.

NOTE: Some pump configurations are not available. Contact Graco Customer Service or your local Graco distributor for assistance.

Code Sample: G 3 - G - a a b b - c c d e f f - g h i j k m n p

G3 - G = Identifies pump as being a G3. G = Grease

Code aa: Power Source

- 12 = 12 Volts DC
- 24 = 24 Volts DC
- AC = 100 - 240 Volts AC

Code bb: Operation Control

- NC = No Controller
- PR = Pro (Timer) Control
- MX = Max (Cycle) Control

Code cc: Reservoir Capacity (Liters)

- 2L = 2 Liters

Code d: Follower Plate Installed

- F = Follower Plate Installed
- 0 = No Follower Plate

Code e: Low Level Option

- L = Low Level with Controller
- A = External Low Level
- 0 = No Low Level monitoring

Code ff: Options

- 05 = 5 Pin CPC power cable

Code g, h, i, j, k, m, n, p
NOTE: Codes g - p relate to a specific location on the G3 pump. See **FIG. 1** for these locations.

- C = CPC
- D = DIN
- 1, 2, 3 = Sensor Number
- R = Remote Manual Run
- M = Machine Count
- A = Alarm Output
- L = Low Level
- V = Vent Valve
- 0 = Not populated

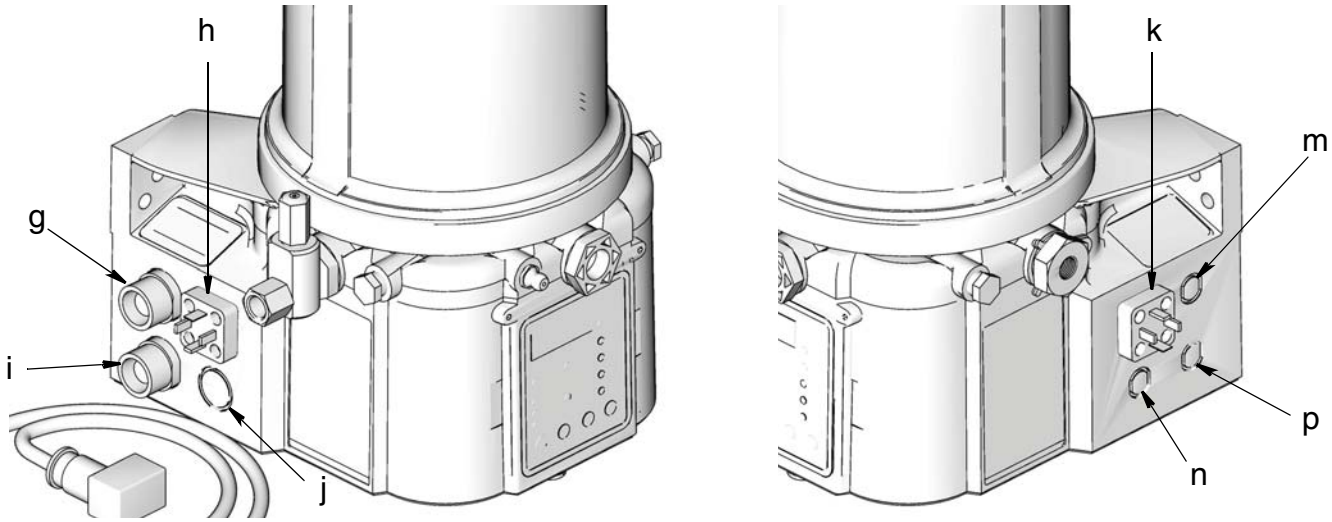


FIG. 1

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. When these symbols appear in the body of this manual, refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

⚠ WARNING

ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- 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. For complete information about your material, request MSDS from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

SKIN INJECTION HAZARD

High-pressure fluid from dispense device, 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 dispense device at anyone or at any part of the body.
- Do not put your hand over the fluid outlet.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Follow **Pressure Relief Procedure** in this manual, when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately.

⚠ WARNING


PRESSURIZED EQUIPMENT HAZARD

Over-pressurization can result in equipment rupture and serious injury.

- A pressure relief valve is required at each pump outlet.
- Follow **Pressure Relief Procedure** in this manual before servicing.

PLASTIC PARTS CLEANING SOLVENT HAZARD

Many solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage.

- Use only compatible water-based solvents to clean plastic structural or pressure-containing parts.
- See **Technical Data** in this and all other equipment instruction manuals. Read fluid and solvent manufacturer's MSDSs and recommendations.


MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** in this manual. Disconnect power or air supply.

PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Installation

Grounding

The equipment must be grounded. Grounding reduces the risk of electric shock by providing an escape wire for the electrical current in the event of malfunction or breakdown. This product is equipped with a cord having an equipment grounding conductor. The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.

Component Identification

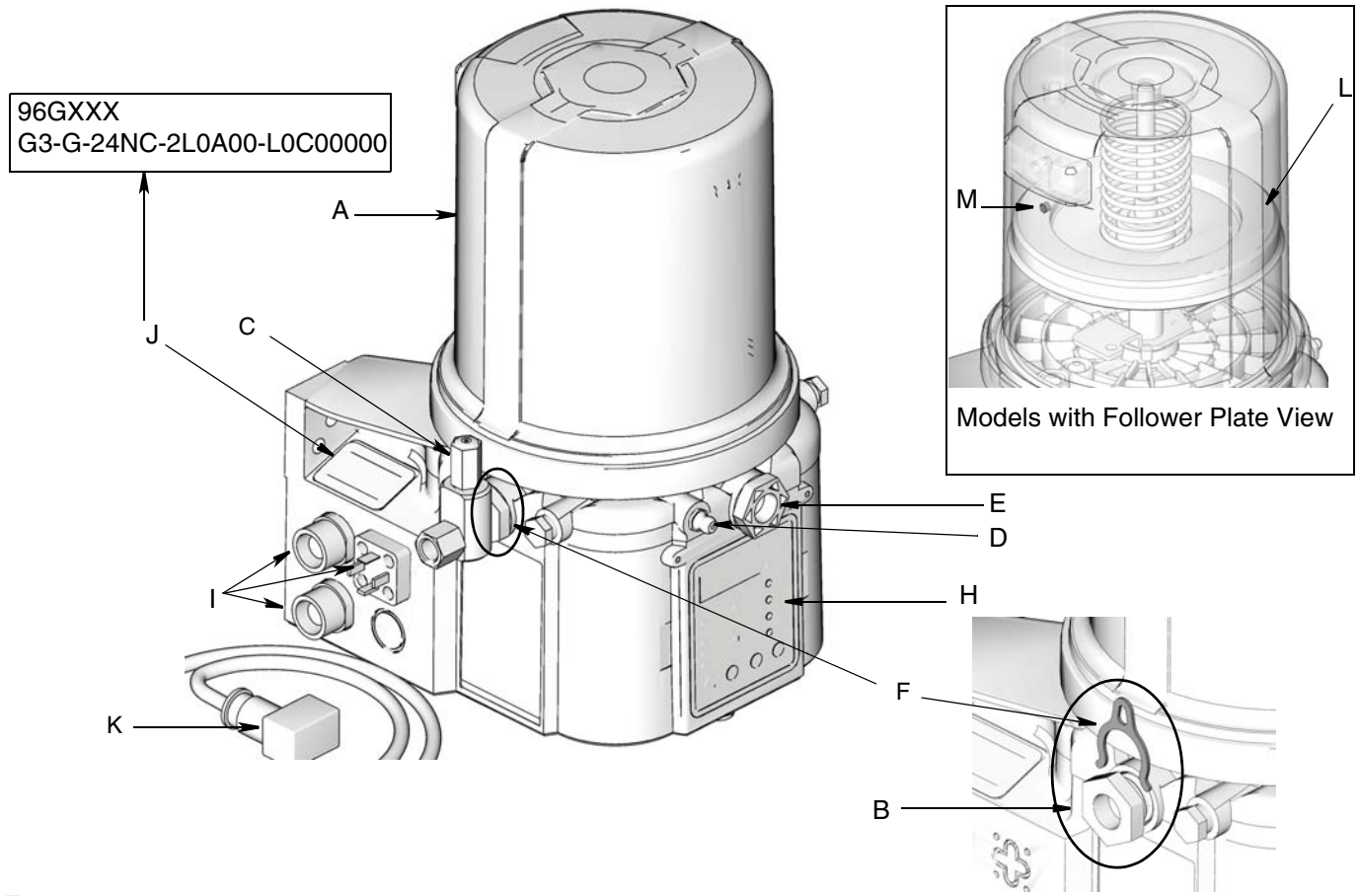


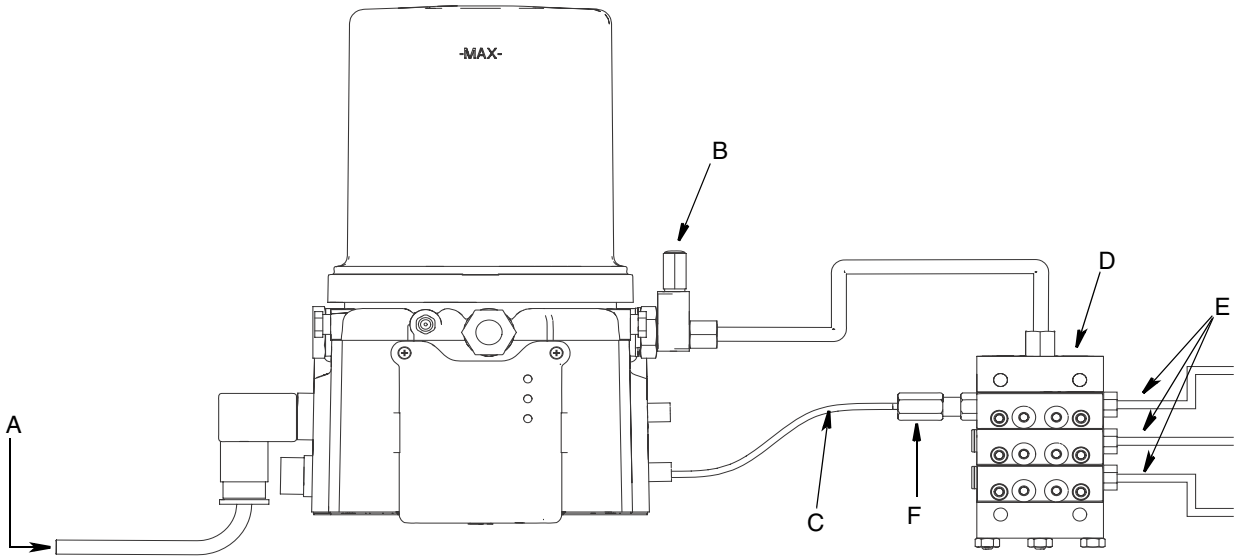
FIG. 2:

Key:

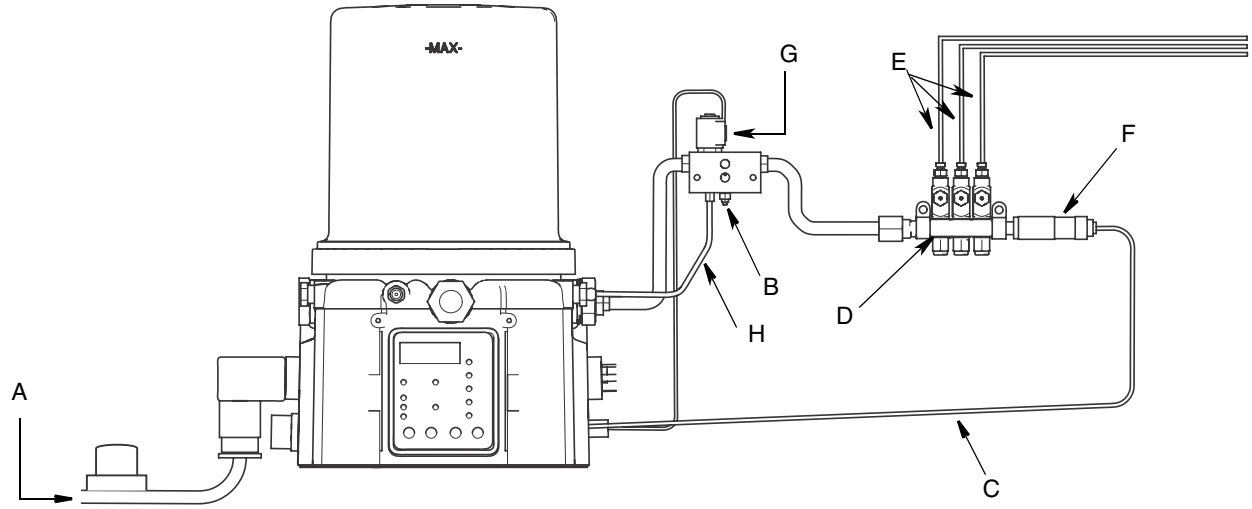
A Reservoir
B Adjustable Pump Element (1 included. Can accommodate 3 total)
C Pressure Relief Valve (Not included / required for each outlet - Available from Graco. See Parts, page 54.)
D Zerk Inlet Fill Fitting (1 included)
E Pump Outlet Plug (2 included)
F Volume Control Spacers (2 included. More spacers = less output volume per stroke) (also see FIG. 4, page 25)
G Fuse (DC models only - Not included, not shown. Available from Graco. See Parts, page 55.)
H Control Panel (Pro and Max models only)
I Power / Sensor Panel (both sides; only one side shown)
J Part Number / Model Number example only shown, (see pages 3 and 4, Understanding the Model Number, for details)
K Power Cord (DIN shown)
L Follower Plate (not included on all models)
M Vent Hole for Follower Plate (not on all models)

Typical Installation

Divider Installations



Injector Installations



A Connected to fuse / power
B Pressure relief valve (Not included, required for each outlet - user supplied; see Parts, page 54)
C - Cycle indicator sensor cable (Divider Installations)
- Pressure switch cable (Injector Installations)
D - Series progressive divider valves (Divider Installations)
- Injectors (Injector Installations)
E To lube points
F - Proximity Switch (Divider Installations)
- Pressure switch (Injector Installations)
G Vent valve
H Return to reservoir

Choosing an Installation Location

AUTOMATIC SYSTEM ACTIVATION HAZARD

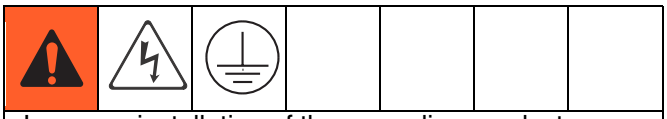
Unexpected activation of the system could result in serious injury, including skin injection and amputation.

This device has an automatic timer that activates the pump lubrication system when power is connected or when exiting the programming function. Before you install or remove the lubrication pump from the system, disconnect and isolate all power supplies and relieve all pressure.

- Select a location that will adequately support the weight of the G3 Pump and lubricant, as well as all plumbing and electrical connections.
- Refer to the two mounting hole layouts provided in the Mounting Pattern section of this manual, page 60.

  NOTE: The two mounting hole layouts provided in the Technical Data section show the only correct installation patterns to use for mounting the G3. No other installation configurations should be used.
- Use designated mounting holes and provided configurations only.
- Always mount the G3 upright.
- If the G3 is going to be operated in a tilted or inverted position for any period of time, you must use a model that includes a follower plate. Refer to your model number to confirm if a follower plate was installed on your pump. See page 4, Understanding the Model Number to identify this character in your model number.
- Use the three fasteners (included) to secure the G3 to the mounting surface.

System Configuration and Wiring



Improper installation of the grounding conductor may result in a risk of electric shock. This product must be installed by a qualified electrician in compliance with all state and local codes and regulations.

If the product is permanently connected:

- it must be installed by a qualified electrician or serviceman.
- it must be connected to a grounded, permanent wiring system.

If an attachment plug is required in the end use application:

- it must be rated for the product electrical specifications.
- it must be an approved, 3-wire grounding type attachment plug.
- it must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.
- when repair or replacement of the power cord or plug is required, do not connect the grounding wire to either flat blade terminal.

Fuses

NOTICE

Fuses (user supplied) are required on all DC models. To avoid equipment damage:

- Never operate G3 Pump DC models without a fuse installed.
- A fuse of the correct voltage must be installed in line with the power entry to the system.

Fuse Kits are available from Graco. The following Table identifies the correct fuse to use for your input voltage and the corresponding Graco Kit number.

Input Voltage	Fuse Value	Graco Kit No.
12 VDC	7.5 A	571039
24 VDC	4 A	571040

Recommendations for Using Pump in Harsh Environments

- Use pump with CPC style power cable.
- If using a DIN style power or alarm harness with a right angle mating connector, make sure the connector does not exit the unit in the UP direction.
- Use a corrosion preventative electrical grease on all contacts.

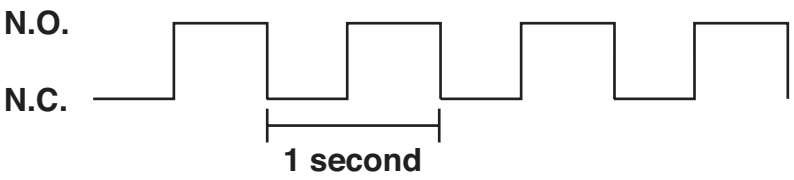
Alarm Output and Remote Illumination Response

The following tables include graphical representations of the connector as it appears on the unit, a pin-out associated with the connector and a typical installation wiring diagram. An internal representative wiring diagram is included where it is deemed useful.

Wire colors provided on these pages only refer to the power cable provided by Graco with this product.

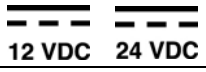
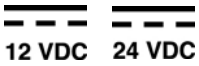
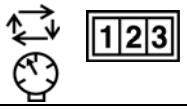
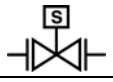
	Alarm Output	**Standard Remote Illumination** (via 5 wire CPC power cable - Kit 571049)	**Tri-Color Remote Illumination** (via illuminated manual run input)
Unit in OFF Mode	Deactivated (off)	Off	Off
Unit in ON Mode	Deactivated (off)	On	Green
Warning Condition	Activated (on)	Toggles On and Off once per second	Yellow
Fault Condition	Toggles On and Off once per second	Toggles On and Off once per second	Red

Alarm Relay Response

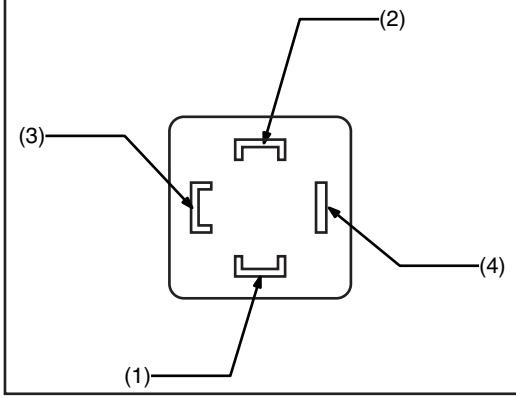
	Output Tied to Common
No Faults or Warnings	
Warning	
Fault	

Wiring and Installation Diagrams

The following Table identifies the wiring and installation diagrams provided in this manual. Additional wiring diagrams for power cords and cables (described on the parts list, page 54) start on page 58.

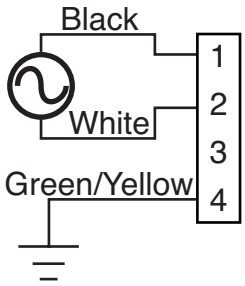
Diagram	Symbol	Page #
Power DIN AC		**13**
Power DIN DC		**14**
Power CPC DC		**15**
Inputs		**16**
Vent Valve Outputs		**17**
Alarm Outputs		**18**
Low Level Outputs		**19**
Illuminated Manual Run Input		**Kits: 571030, 571031, 571032, 571033**

Power DIN AC

Connector on Housing	Pin-out (AC)
	

1	LINE	Black
2	NEUTRAL	White
3	Not Used	Not Used
4	GROUND	Green/Yellow

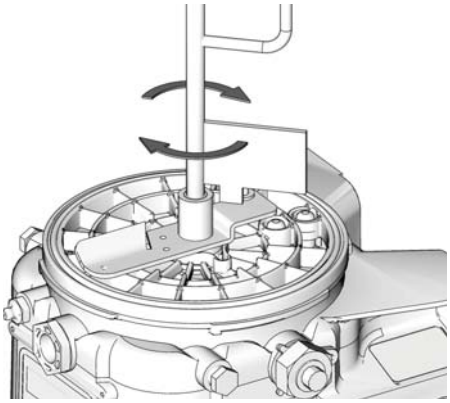
Example Wiring Diagram



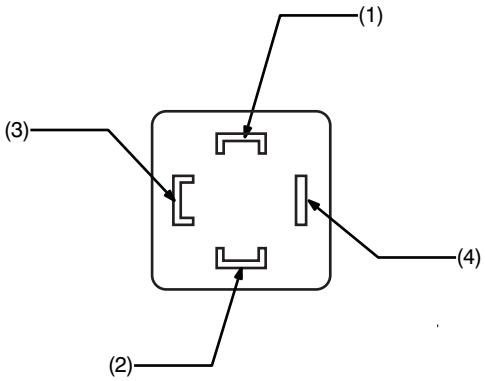
12 VDC 24 VDC Power DIN DC

NOTICE

Be sure when power is applied that stirring paddle rotates clockwise (when viewed from the top). If it is wired incorrectly paddle could rotate counter-clockwise which will damage the pump's internal components. If this happens, stop the pump immediately and wire unit correctly.



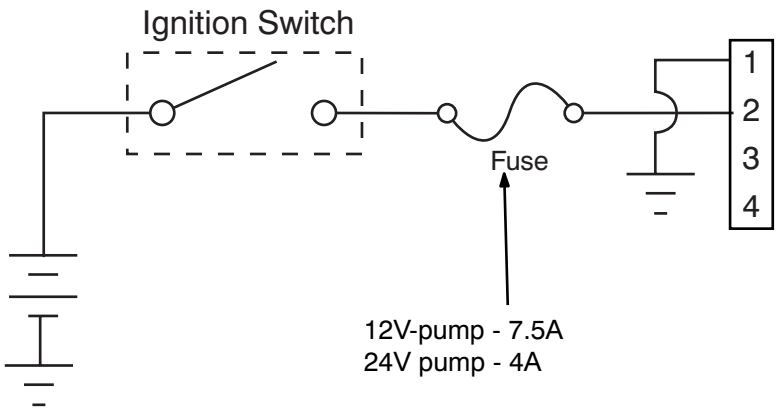
Connector on Housing



Pin-out (DC)

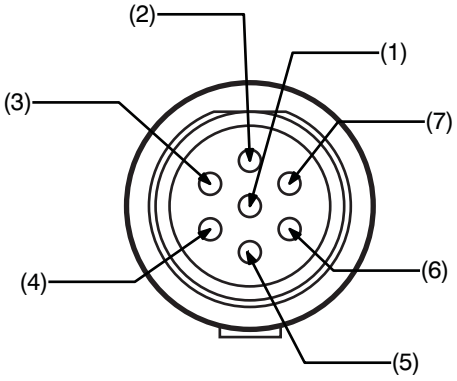
1	-VDC	Black
2	+VDC	White
3	Not Used	Not Used
4	Not Used	Green

Example Wiring Diagram



12 VDC 24 VDC **Power CPC DC**

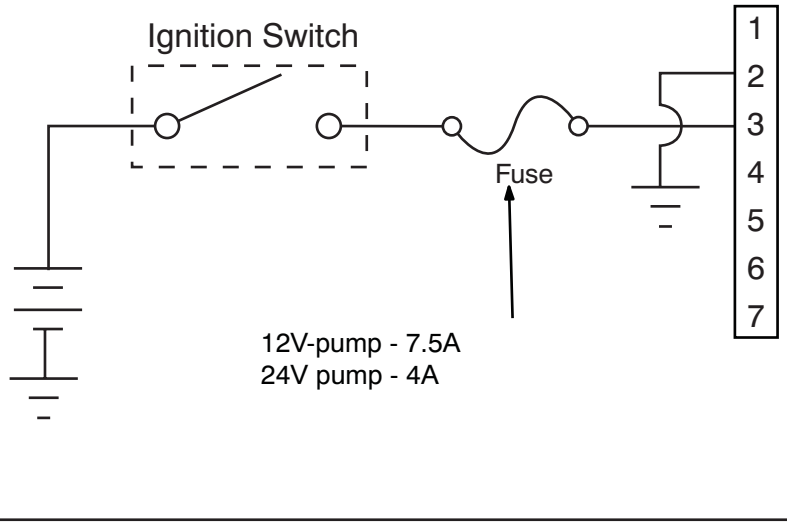
Connector on Housing



Pin-out

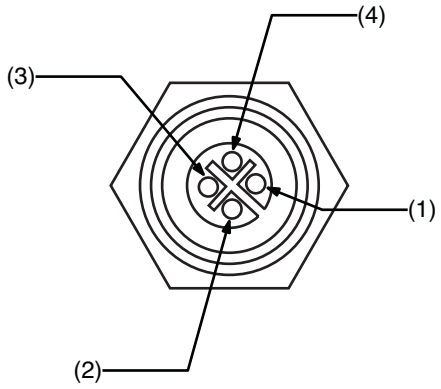
1	Not Used	Not Used
2	- VDC	Black
3	+ VDC	White
4	Not Used	Not Used
5	Not Used	Not Used
6	Not Used	Not Used
7	Not Used	Green/Yellow

Example Wiring Diagram



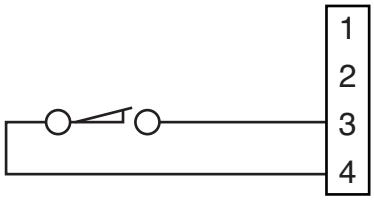
Inputs

See Technical Data, page 58 for ratings.

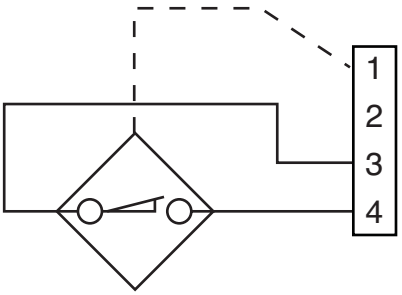
Connector on Housing	Pin-out
	1 SW + 2 Not Used 3 SW - 4 Signal

Example Wiring Diagram

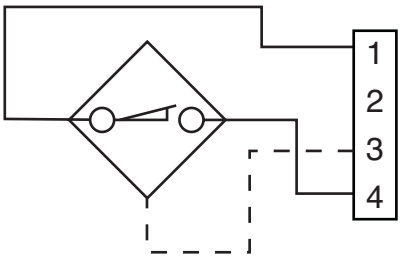
Dry Contacts



Sink (NPN) 2 or 3 wire

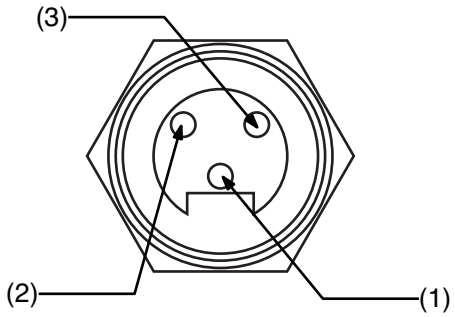
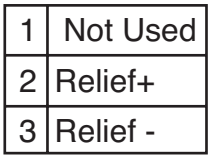


Source (PNP) 2 or 3 wire



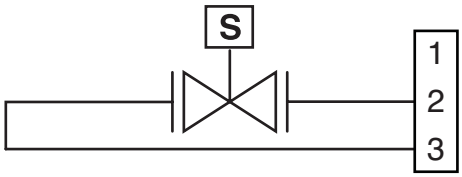
Vent Valve Outputs

See Technical Data, page 58 for ratings.

Connector on Housing	Pin-out
	

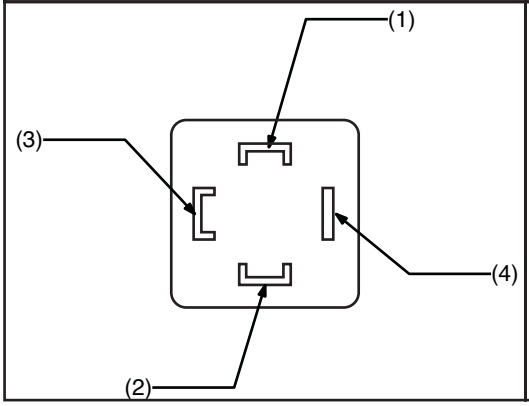
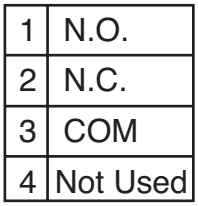
1	Not Used
2	Relief+
3	Relief -

Example Wiring Diagram



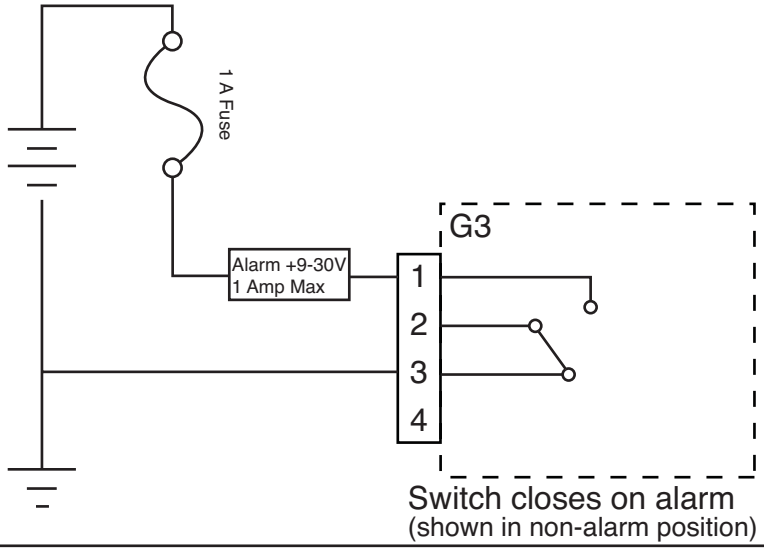
Alarm Outputs

DC example shown. See Technical Data, page 58 for ratings.

Connector on Housing	Pin-out
	

1	N.O.
2	N.C.
3	COM
4	Not Used

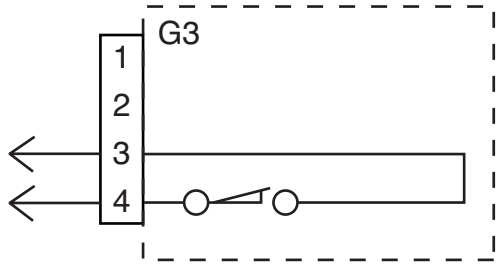
Example Wiring Diagram



Low Level Outputs

See Low Level Output Option, page 28 for functional description. See Technical Data, page 58 for ratings.

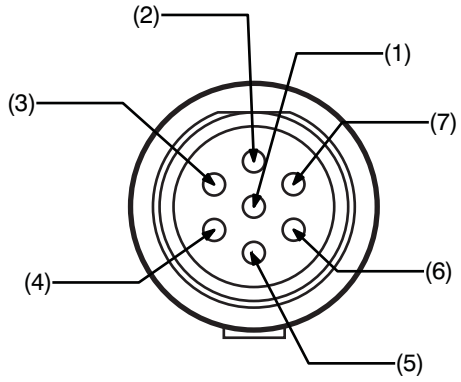
Example Wiring Diagram



Cable Wiring Diagrams

Part No. 123749: 3-Wire

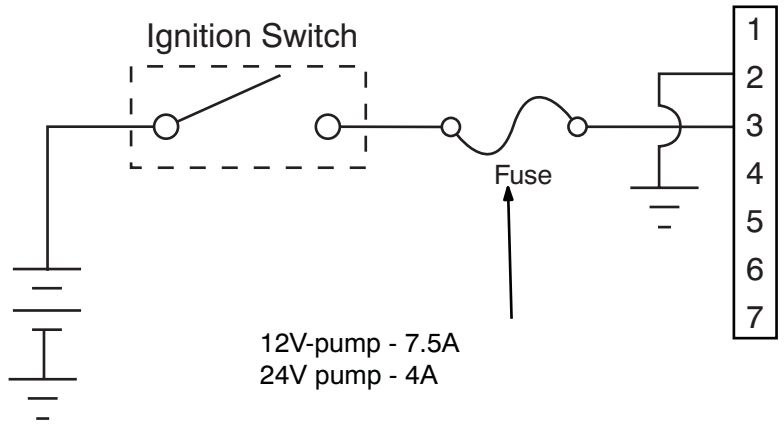
Connector on Housing



Pin-out

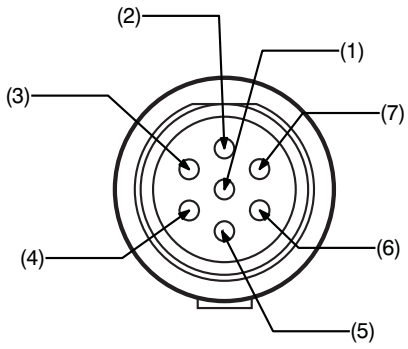
1	Not Used	Not Used
2	- VDC	Black
3	+ VDC	White
4	Not Used	Not Used
5	Not Used	Not Used
6	Not Used	Not Used
7	Not Used	Green/Yellow

Example Wiring Diagram



Part No. 123750: 5-Wire

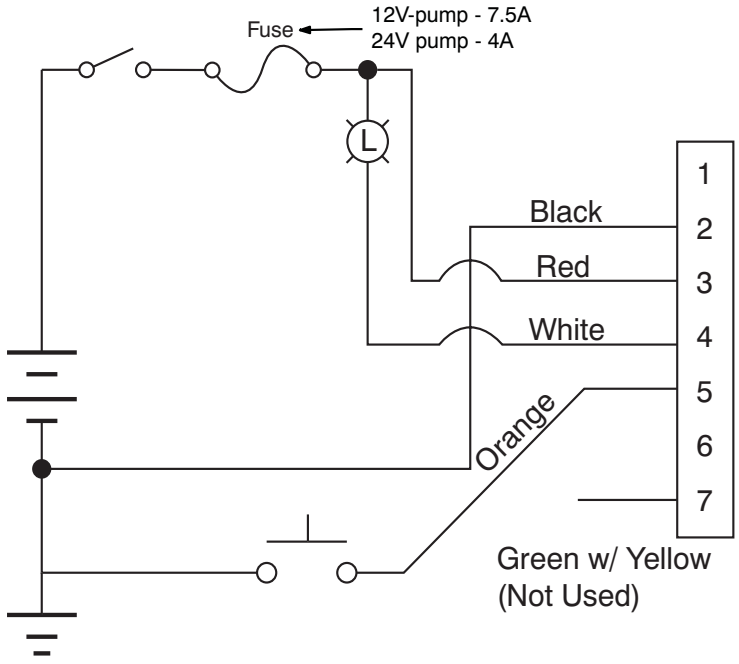
Connector on Housing



Pin-out

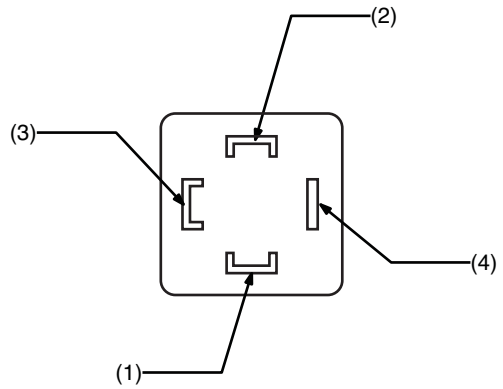
PIN	PIN Name	Wire Color
1	Not Used	N/A
2	- VDC	Black
3	+ VDC	Red
4	LIGHT	White
5	MANUAL	Orange
6	Not Used	N/A
7	Not Used	Green w/ Yellow

Example Wiring Diagram



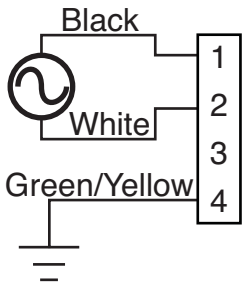
Part No. 123358: DIN

Connector on Housing	Pin-out (AC)



1	LINE	Black
2	NEUTRAL	White
3	Not Used	Not Used
4	GROUND	Green/Yellow

Example Wiring Diagram



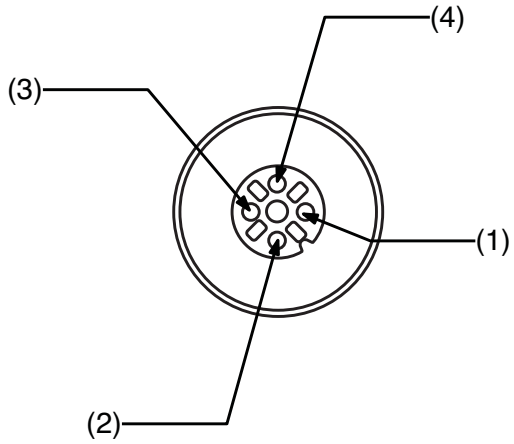
Part No. 124333: Cable Pin Out

Wire Colors

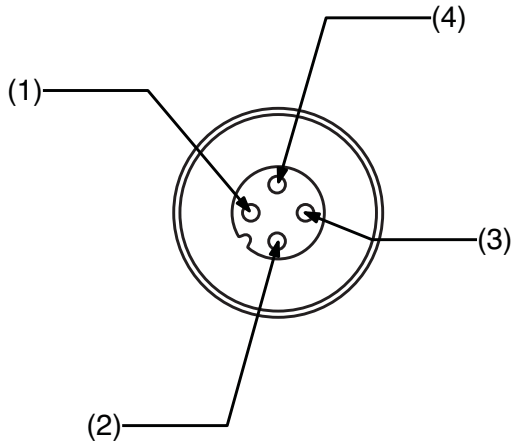
Item No.	Color
1	Brown
2	White
3	Blue
4	Black

Cable Pin Out

Female End View



Male End View



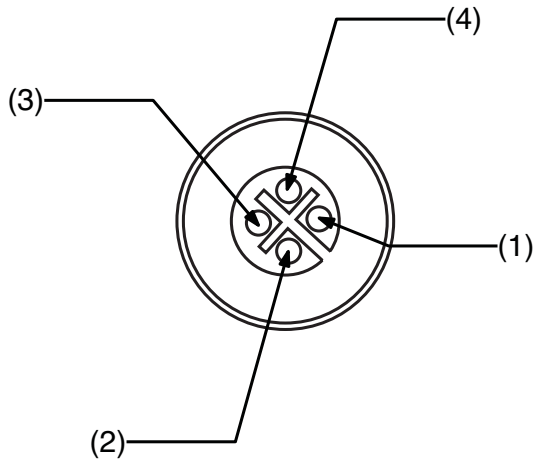
Part No. 124300: Field Wireable Pin Out

Wire Colors

Item No.	Color
1	Brown
2	White
3	Blue
4	Black

Field Wireable Pin Out

Female End View



Setup

Pressure Relief

Relieve pressure in system using two wrenches working in opposite directions on pump element and pump element fitting to ***slowly loosen fitting only*** until fitting is loose and no more lubricant or air is leaking from fitting.

NOTE: When loosening pump element fitting, do NOT loosen **pump element**. Loosening pump element will change the output volume.

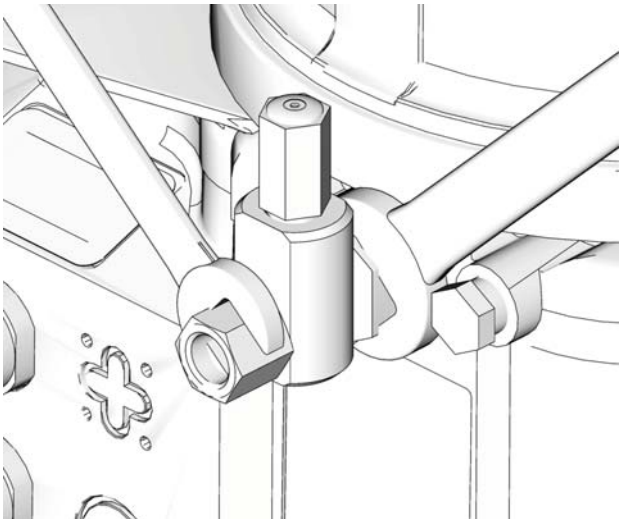


FIG. 3

Connecting to Auxiliary Fittings

NOTICE

Do not attach unsupported equipment to auxiliary fittings such as fill ports and pump element. Attaching unsupported equipment to these fitting can result in irreparable housing damage.

- Always use two wrenches working in opposite directions when connecting anything to pump element or auxiliary fittings . See FIG. 3 for an example.
- Torque pump element fittings to 50 in. lbs (5.6 N•m).
- When connecting pump element into housing torque to 50 in. lbs (5.6 N•m).

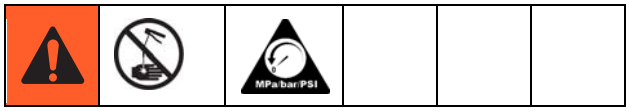
Pressure Relief Valves

A pressure relief valve appropriate for the lubrication system must be installed close to every pump outlet to alleviate unintended pressure rises in the system and protect the G3 pump from damage.

- Only use a pressure relief valve that is rated for no more than the working pressure of the G3 pump it is installed on. See Technical Data, page 58.
- Install a pressure relief valve close to every pump outlet; before any auxiliary fitting.

NOTE: A pressure relief valve can be purchased from Graco. See Parts, page 55.

Setting Pump Outlet Volume



NOTE:

- Before making any adjustments to pump volume, **Relieve Pressure** following procedure on page 24.
- Only use Graco supplied spacers to control output volume.
- It may be necessary to repeat this outlet volume setup procedure after the pump is operating to re-adjust the volume of dispensed grease.

1. Use a wrench to turn pump element counter-clockwise to loosen. Do not remove entire pump element. Only back pump element out enough to allow spacer to be slid on or off.

2. If needed, remove or insert spacers to achieve required pump output volume. A tool may be needed to facilitate removal.

   Pump volume control is set using either no (0) spacers, 1 or 2 spacers (FIG. 4).

   Do not use more than 2 spacers to adjust output volume.

No. Spacers	Output Volume / Minute	
	cubic inches	cubic cm
2	0.12	2
1	0.18	3
0	0.25	4

NOTE:

- The amount of dispensed volume can vary depending on external conditions such as lubricant temperature and back pressure from downstream connections.
- Use of these volume adjustment in conjunction with setting the ON time of the pump will allow for control of the output volume.
- Use these volume adjustments as a starting point and adjust as necessary to ensure desired lubrication dispense.

3. Tighten pump element fitting. Torque fitting to 50 in. lbs (5.6 N•m).

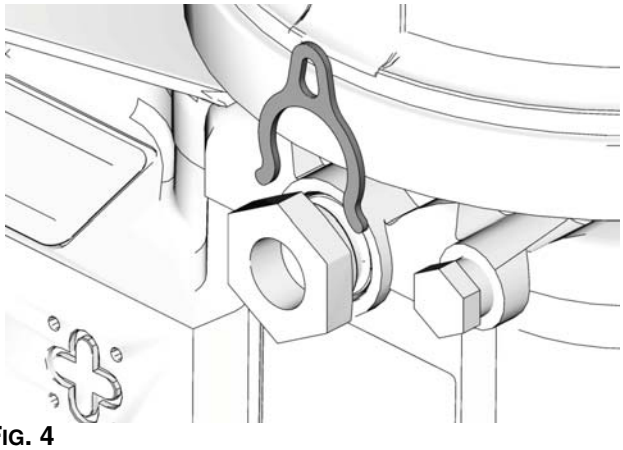


FIG. 4

Loading Grease

To ensure optimal performance from the G3:

- Only use NLGI #000 - #2 greases appropriate for your application, automatic dispensing, and the equipment's operating temperature. Consult with machine and lube manufacturer for details.
- The reservoir can be filled using a hand operated pump, pneumatic pump or electric transfer pump.
- Do not overfill (FIG. 6).
- Do not operate G3 without reservoir attached.

NOTICE

- Always clean fitting (D) with a clean dry cloth prior to filling reservoir. Dirt and/or debris can damage pump and/or lubrication system.
- Care must be used when filling the reservoir using a pneumatic or electric transfer pump to not pressurize and break the reservoir.

Models without a follower plate:

1. Connect fill hose to inlet fitting (FIG. 5).

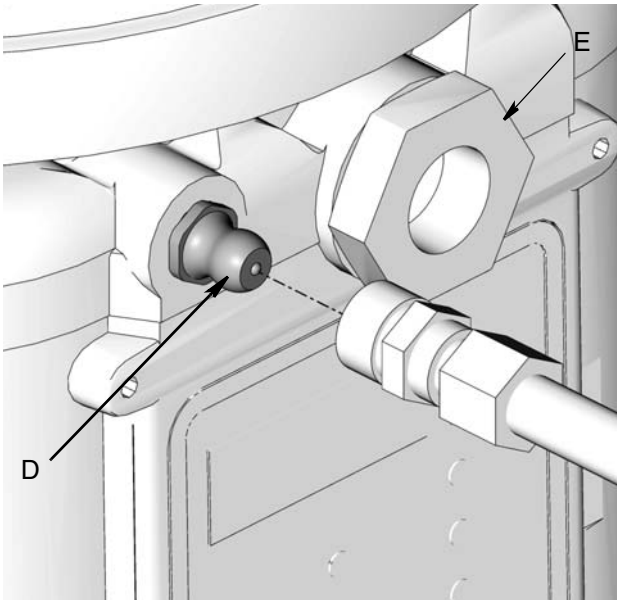


FIG. 5

2. For higher viscosity fluids, start pump to rotate stir-ring paddle during fill to prevent air pockets from forming in grease.

   For models using an external controller, start pump operation per your controller specifications.

   For Max and Pro models press the manual run button.

3. Fill reservoir with NLGI grease to max fill line.

NOTE: Vent port, located in rear of reservoir, should not be used as an overfill port/indicator.

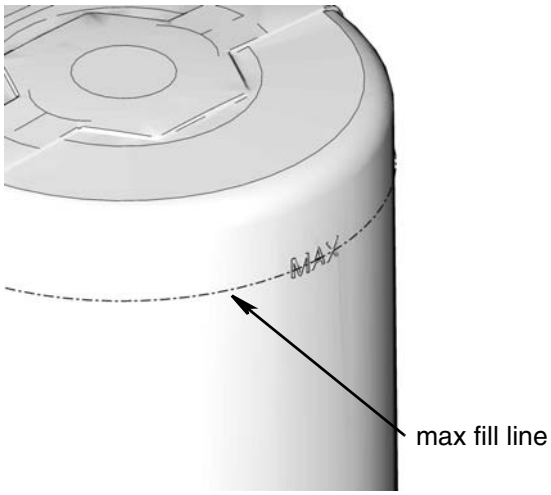


FIG. 6

4. Remove fill hose.

Models with a follower plate:

1. Connect fill hose to inlet fitting (FIG. 5).
2. For higher viscosity fluids, start pump to rotate stir-ring paddle during fill to prevent air pockets from forming in grease.

   For models using an external controller, start pump operation per your controller specifications.

   For Max and Pro models press the manual run button.

3. Fill reservoir with grease until seal of follower plate breaches the vent hole (FIG. 7) and the majority of air is expelled from the reservoir.

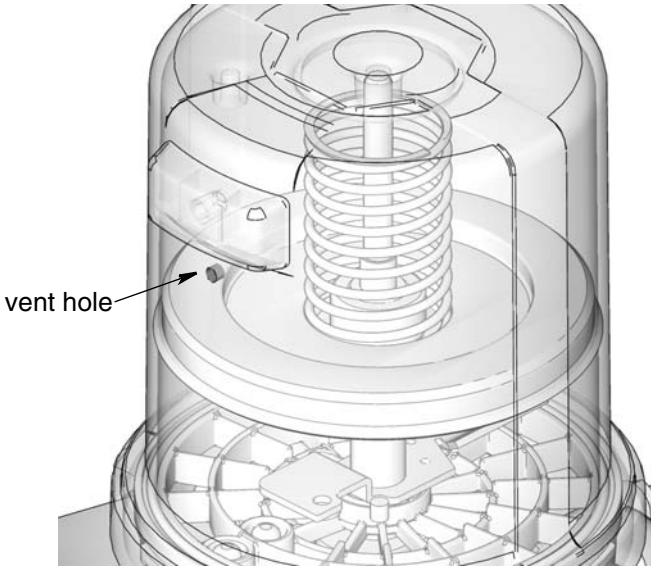


FIG. 7

NOTE: Vent port, located in rear of reservoir, should not be used as an overfill port/indicator.

4. Remove fill hose.

Priming

NOTE: It is not necessary to prime pump every time pump is filled with grease.

Pump only requires priming the first time it is used or if it is allowed to run dry.

1. Loosen pump element fitting (FIG. 8).

NOTE: When loosening pump element fitting, do NOT loosen **pump element**. Loosening pump element will change the output volume

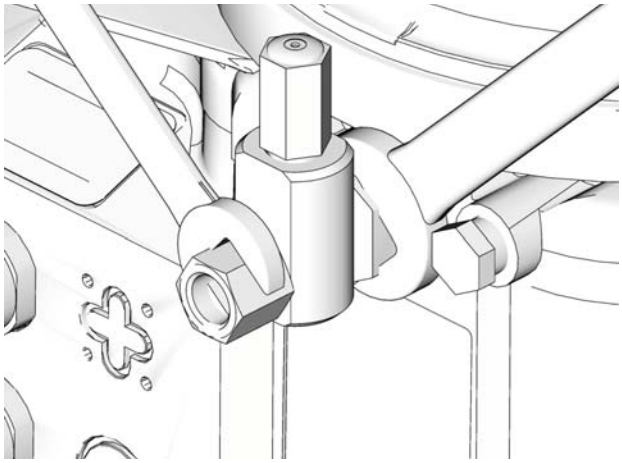


FIG. 8

2. Only run pump until air is no longer dispensed with the grease coming out of element fitting (FIG. 9).

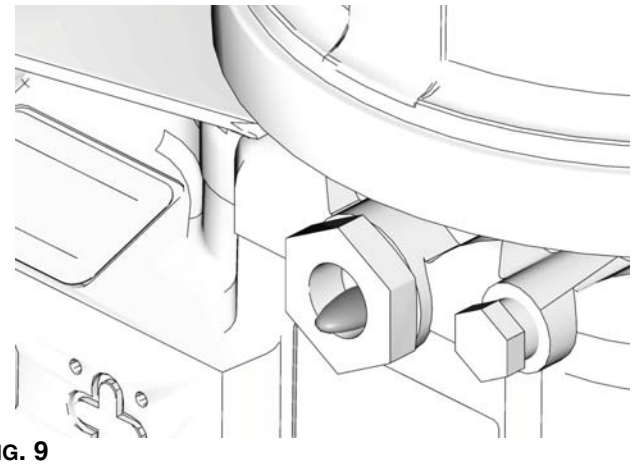


FIG. 9

3. Tighten pump element fitting using two wrenches working in opposite directions (FIG. 8).

Changing Greases

When changing greases, always use compatible fluids or greases.

No Controller Operation

The G3 Pump can be controlled using an external, user supplied, power source and controller.

Refer to the Typical Installation diagrams provided on page 8 for correct location of the required pump ground wire and fuses.

NOTE:

- When using an external power source and controller, Pump ON (Run) Time should be set for no longer than 30 minutes.
- In most cases, Pump OFF (Rest) Time should be twice as long as Pump ON (Run) time. If alternative ON / OFF times are required, contact Graco Customer Service for assistance.

Low Level Output Option

Some G3 pumps without controllers include a Low Level Output Option. When the fluid level has reached a low, warning level, PINS 3 and 4 momentarily close (1 time per paddle revolution), sending the signal to the controller that the fluid has reached a low level. For PIN 3 and 4 locations and wiring information, see the Low Level Outputs diagram, page 19.

To ensure a low level condition has been met, 3 or more low warning level triggers must be detected within 1 minute or less.

NOTE: A low level warning is triggered when the controller detects PINS 3 and 4 have momentarily closed.

See FIG. 10 for an illustration of a Typical Low Level Output Response with Low Level Fluids.

Typical Low Level Output Response with Low Level Fluid

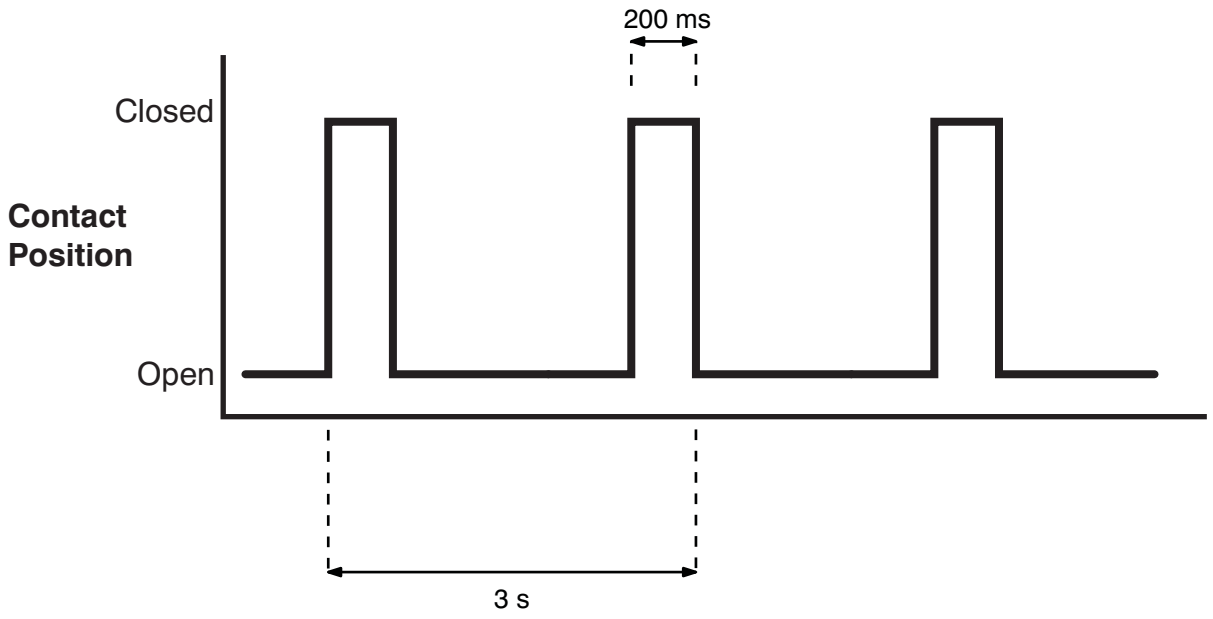
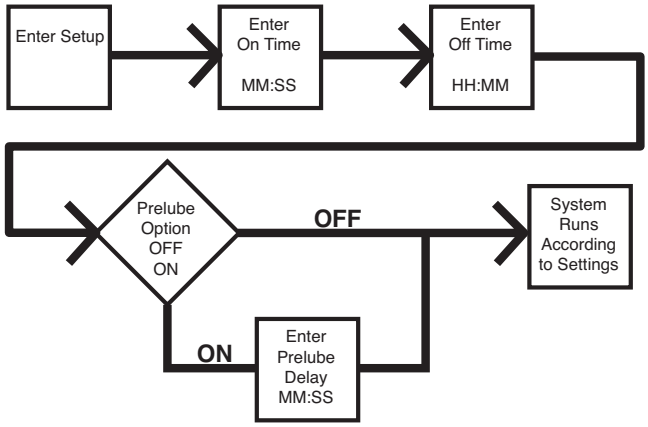


FIG. 10

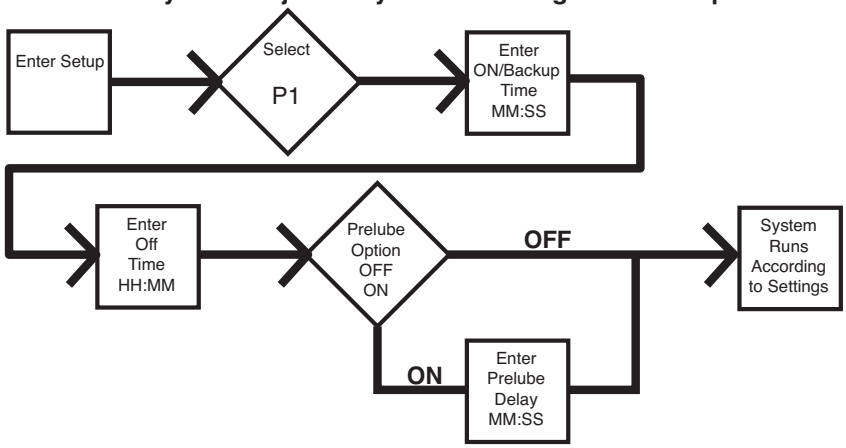
Quick Setup Guide

Complete setup instructions for Pro Models begin on page 30 and Max Models begin on page 34.

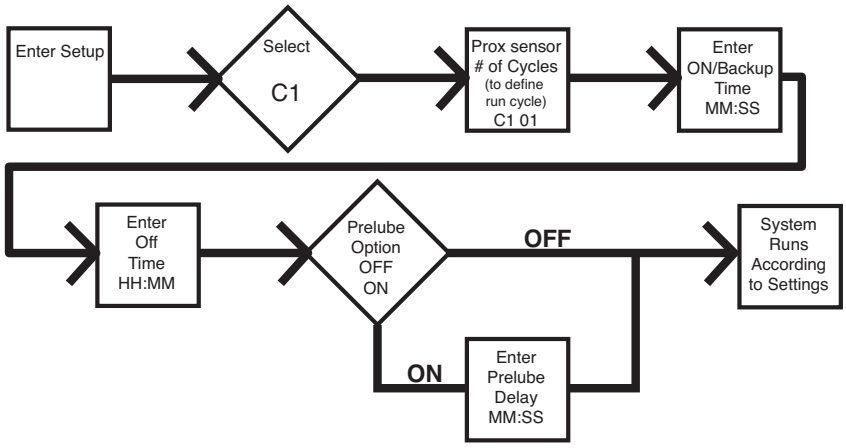
Pro Model System



Max Model System - Injector System with Single Sensor Input



Max Model System - Divider Valve System with Single Sensor Input



Pro Model Setup

Control Panel Overview (FIG. 11)

NOTE: *Programming instructions begin on page 31.*

DISPLAY

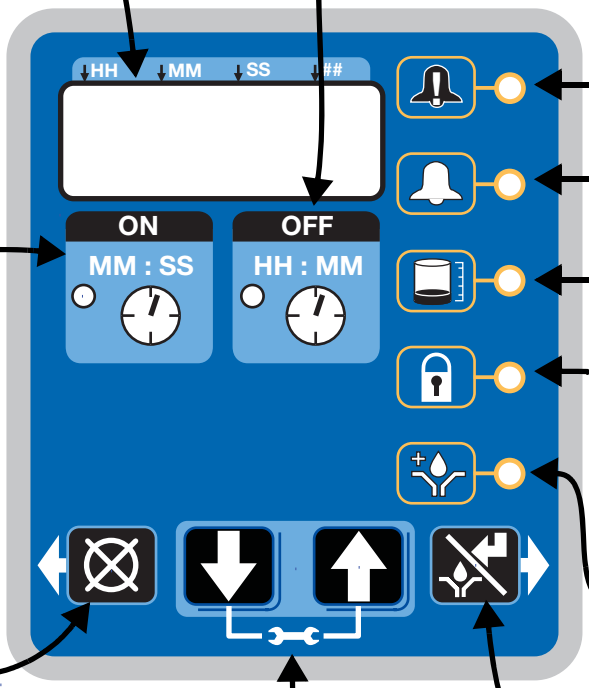
- A blinking LED under HH, MM, SS or ## indicates type of measurement unit you are setting; i.e., HH is hours.
- A blinking number on the display indicates the G3 is in SETUP MODE.
- In RUN MODE displayed numbers count up or down. See Time ON and Time OFF.

OFF TIME

- LED lights when OFF Time sequence is running.
- Value is entered in HH:MM.
- Displays in HH:MM (hours and minutes) when > 1 hour.
- Displays in MM:SS (minutes and second) when < 1 hour.
- Times pump rest between cycles.
- Counts down from set time to zero.

ON TIME

- LED lights when ON Time sequence is running.
- Display shows time as MM:SS (minutes and seconds). i.e., 08:30 is 8 minutes: 30 seconds.
- Times lubrication cycle.
- Counts down from a set time to zero.



ALARM ICONS

LED next to icon lights when a fault / warning event occurs during a run cycle. See page 49 for a complete description of these alarm scenarios.

LOCK ICON

- LED next to icon lights indicating PIN is required to enter setup.
- In SETUP MODE LED lights when setting up the PIN.

PRELUBE

LED next to icon lights indicating Prelube function is enabled.

LEFT DIRECTION ARROW / RESET

- In SETUP MODE, moves cursor in display one field to the left.
- In RUN MODE: single press clears warning.
- In ALARM MODE: pressing and holding for 3 seconds clears fault / warning and switches cycle to OFF MODE.

UP and DOWN ARROW

- Hold both the UP and DOWN ARROW buttons down together for 3 seconds to enter SETUP MODE.
- In SETUP MODE, increases or decreases number values shown in display.

RIGHT DIRECTION ARROW / MANUAL RUN / ENTER:

- In SETUP MODE, saves entry, moves cursor in display one field to the right or to the next setup step.
- In RUN MODE starts a manual run cycle.

FIG. 11

Instructions

Powering Units With Controllers

By default, units with controllers are set to operate in a timed mode with 1 minute of ON time and 8 hours of OFF time. The unit should be powered up in OFF mode, counting down from the 8 hours. If the unit powers up in ON mode and has not been primed, hold the reset button located on the control panel (example shown on the right) for 3 seconds to move to the OFF mode.

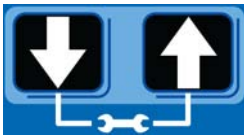
The Pro Model uses a timer to regulate how long a pump cycle runs and the length of time the pump rests between cycles.

NOTE:

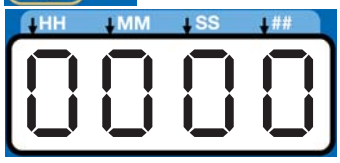
- A blinking number on the display indicates the G3 is in SETUP MODE.
- In RUN MODE numbers on the display do not blink.
- After 60 seconds of no activity, the device returns to RUN MODE in the OFF Time cycle and the OFF Time restarts counting down the total programmed amount of time. It does **not** resume the countdown from the point where the cycle was interrupted when you entered SETUP MODE.

Entering Setup Mode

Press both the UP and DOWN ARROW buttons together for 3 seconds to enter the SETUP MODE.



NOTE: If the lock LED is lit after entering Setup Mode and four 0000's are displayed, the unit has a PIN Code lock out enabled. See Entering a PIN Code to Access Setup Mode for instructions on entering a value.

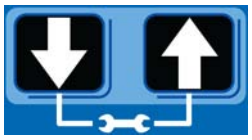


Entering a PIN Code to Access Setup Mode

The G3 controller does not require a user to provide a PIN code to access the programming features of the unit. However, Graco understands that some users may want to protect the program settings and therefore, an option for adding PIN Code authorization is available. The instructions for setting a PIN Code are provided in the Advanced Programming section of this manual. See page 40.

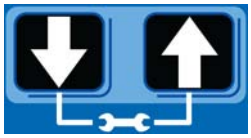
To enter the PIN Code:

1. Press both the UP and DOWN ARROW buttons for 3 seconds.



2. The LED next to the LOCK ICON on the display lights and the 4 zeros appear on the display indicating the system requires a PIN Code entry to access the G3 in SETUP MODE.

3. The cursor is automatically positioned to enter the first character of the PIN Code. Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the first number in the PIN code is displayed in the field.



4. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

5. Repeat steps 3 and 4 for each PIN Code prompt field.

If the PIN Code you entered is correct, the first editable character on the display will flash.

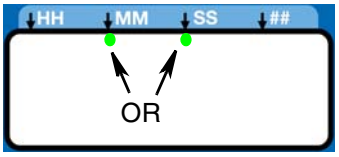
NOTE: A blinking field on the display indicates the G3 is in SETUP MODE. In RUN MODE numbers on the display will not blink.

ON Time

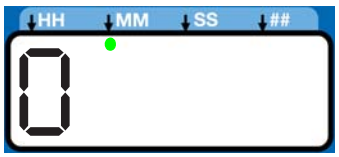
- The LED next to the clock in the ON field lights, indicating you are setting the ON Time parameters.

- ON Time is set in Minutes and Seconds (MM : SS).

- An LED flashes under either MM when programming minutes **OR** SS when programming seconds.



- In SETUP MODE, the number displayed in the first field, on the left side of display blinks, indicating the device is ready to program the ON Time minutes.



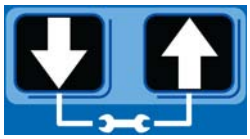
- The total amount of ON Time cannot exceed 30 minutes. If a value greater than 30 minutes is entered, the RED alarm LED lights and the value must be updated.

  If this time does not meet the application needs, contact Graco Customer Support.

Programming ON Time

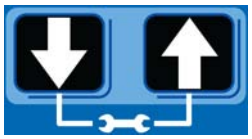
NOTE: When programming a time of less than 10 minutes you **must** program a leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the ON Time use the UP or DOWN ARROW button to scroll through numerals 0 to 5 until the desired number appears in the first MM (minutes) field.



2. Press the ENTER button to lock in the selection. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.



4. Press the ENTER button to lock in the selection.

   The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 - 4 to set the SS (seconds) fields.

6. After pressing the ENTER button to set the last SS field, all the programmed ON Time information is saved.

   The G3 automatically switches to the OFF Time SETUP MODE.

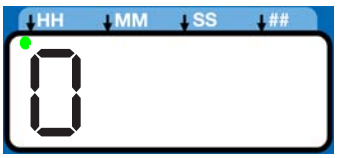
OFF Time

- The LED next to the clock in the OFF field lights, indicating you are setting the OFF Time parameters.

- OFF Time is set in Hours and Minutes (HH : MM).

- An LED flashes under either HH when programming hours **OR** MM when programming minutes.

- In SETUP MODE the number displayed in the first field, on the left side of display blinks, indicating the device is ready to program the OFF Time hours.



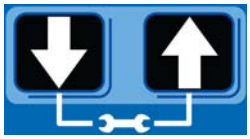
- The total amount of OFF Time must be at least twice as long as the programmed ON Time. If a value less than twice the ON Time is entered, the RED alarm LED lights and the value must be updated.

  If this time does not meet the application needs, contact Graco Customer Support.

Programming OFF Time

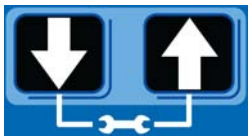
NOTE: When programming a time of **less than 10 hours** you **must** program a leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the OFF Time use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the first HH (hour) field.



2. Press the ENTER button to lock in the selection. The next HH number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second HH number field.



4. Press the ENTER button to lock in the selection.

   The next number field to the right flashes and the LED lights under MM; indicating it is ready to program the minutes fields.

5. Repeat steps 1 - 4 to set the next MM (minutes) fields.

6. After pressing the ENTER button to set the last MM field, the OFF Time information is saved.

Prelube

The Prelube function determines operation of the pump when power is applied. It can be set to OFF or ON.

OFF (default) - The unit resumes its lubrication cycle at the point it was at when power was removed.

ON - The unit begins a pump cycle.

Setting Prelube

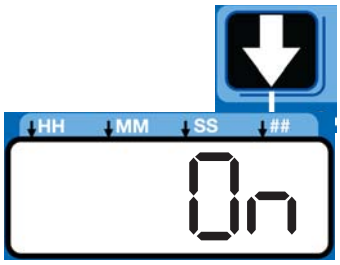
1. After you set the OFF Time information and press the ENTER button, the G3 automatically switches to the Prelube setup.

   Notice the LED next to the prelube icon on the G3 display lights indicating you are now in the Prelube setup mode.

2. OFF displays. If you want the prelube cycle to begin immediately, leave this set to OFF.

3. Press the ENTER button to set the selection.

4. If you want to set a prelube delay time, press the DOWN ARROW button to change OFF to ON on the display.

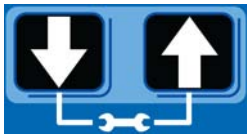


Prelube Delay

Prelube Delay can be entered to delay the start of the pump's cycle on power up. If prelube is set to ON, a prelube delay time in MM:SS must be entered. By default, the delay is set to 0 (begin an ON cycle immediately).

Delaying the prelube function may be desired if other critical functions or systems of your machine or vehicle are also coming on line during power up.

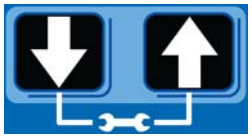
1. Prelube Delay is set in MM:SS (minutes and seconds). To set the time use the UP or DOWN ARROW button to scroll through numerals 0 to 5 until the desired number appears in the first MM (minutes) field.



   The maximum length of time Prelube Delay can be set to is 59:59 (59 minutes:59 seconds).

2. Press the ENTER button to lock in the selection. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.



4. Press the ENTER button to lock in the selection.

   The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 - 4 to set the SS (seconds) fields.

6. After pressing the ENTER button to set the last SS field the G3 automatically switches to the RUN MODE.

Max Model Setup

Control Panel Overview (FIG. 12)

NOTE: *Programming instructions begin on page 35.*

ON TIME/BACKUP TIME

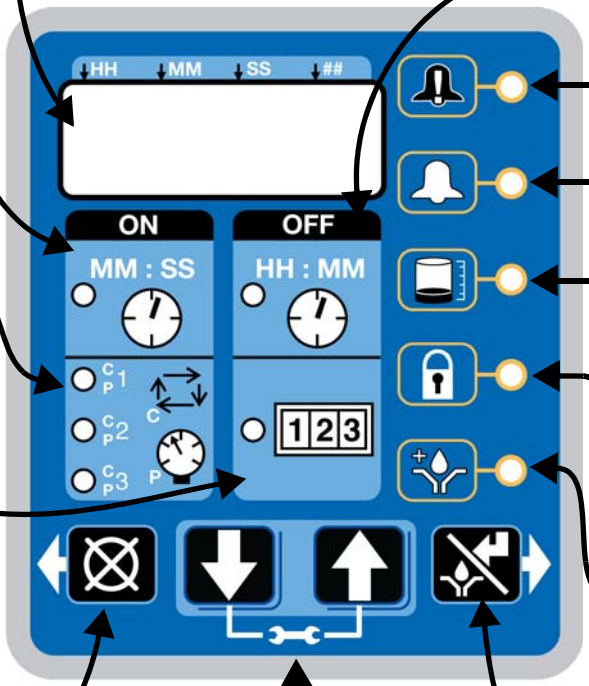
- LED lights when ON Time/Backup Time is running.
- Display shows time as MM:SS (minutes and seconds). i.e., 08:30 is 8 minutes: 30 seconds.
- Sets the limits for the amount of time to complete a cycle or build up pressure before a warning is activated.
- Counts down from a set time to zero.

DISPLAY

- A blinking LED under HH, MM, SS or ## identifies type of measurement unit you are setting; i.e., HH is hours.
- A blinking number on the display indicates the G3 is in SETUP MODE.
- In RUN MODE displayed numbers count up or down. See Time ON and Time OFF.

OFF TIME/BACKUP TIME

- LED lights when OFF Time/Backup Time is used to control Pump OFF function.
- Value is entered in HH:M.
- Displays in HH:MM (hours and minutes) when > 1 hour.
- Times pump rest between cycles.
- Counts down from set time to zero.
- Can be set up to use as a backup for Machine Count control.



CYCLE / PRESSURE SETUP

- Sets either Cycle (C) or Pressure (P) Monitoring limits for up to 3 sensors.
- Each sensor is set up and controlled independently.

ALARM ICONS

LED next to icon lights when a fault / warning event occurs during a run cycle. See page 49 for a complete description of these alarm scenarios.

MACHINE COUNT

- LED lights when Machine Count is used to control Pump OFF function.
- Counts independent machine operations with a sensor to control Pump Off duration.
- Time OFF function can be used as a backup for Machine Count.

PIN ICON

- LED next to icon lights indicating PIN is required to enter setup.
- In SETUP MODE LED lights when setting up the PIN.

PRELUBE

LED next to icon lights indicating LED lights when Prelube function is enabled.

LEFT DIRECTION ARROW / RESET

- In ADVANCED and SETUP MODES, moves cursor in display one field to the left.
- In RUN MODE: single press clears warning.
- In ALARM MODE: pressing and holding for 3 seconds clears fault / warning and switches cycle to OFF MODE.

UP and DOWN ARROW

- Hold both the UP and DOWN ARROW buttons down together for 3 seconds to enter SETUP MODE.
- In SETUP MODE, increases or decreases number values shown in display.

RIGHT DIRECTION ARROW / MANUAL RUN / ENTER

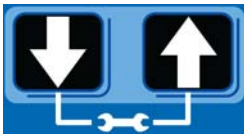
- In SETUP MODE, saves entry, moves cursor in display one field to the right or to the next setup step.
- In RUN MODE starts a manual run cycle.

FIG. 12

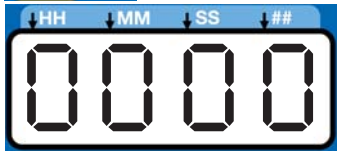
Programming the Max Model

Entering Setup Mode

Press both the UP and DOWN ARROW buttons together for 3 seconds to enter the SETUP MODE.



NOTE: If the lock LED is lit after entering Setup Mode and four 0000's are displayed, the unit has a PIN Code lock out enabled. See the following section: Entering a PIN Code to Access Setup Mode.

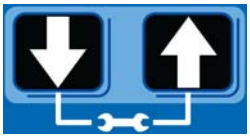


Entering a PIN Code to Access Setup Mode

The G3 controller does not require a user to provide a PIN code to access the programming features of the unit. However, Graco understands that some users may want to protect the programming settings and therefore, an option for adding PIN Code authorization is available. The instructions for setting up PIN Code Authorization are provided in the Advanced Programming section of this manual. See page 41.

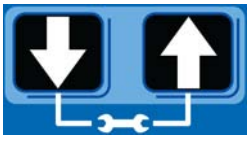
To enter the PIN Code:

1. Press both the UP and DOWN ARROW buttons for 3 seconds.



2. The LED next to the LOCK ICON on the display lights and the 4 zeros appear on the display indicating the system requires a PIN Code entry to run the G3 in SETUP MODE.

3. The cursor is automatically positioned to enter the first character of the PIN Code. Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the first number in the PIN code is displayed in the field.



4. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

5. Repeat steps 1 and 2 for each PIN Code prompt field.

If the PIN Code you entered is correct, the first editable character on the display will flash.

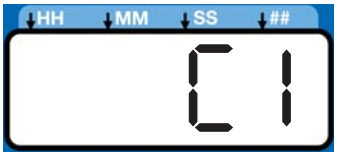
NOTE: A blinking field on the display indicates the G3 is in SETUP MODE. In RUN MODE numbers on the display will not blink.

Powering Units With Controllers

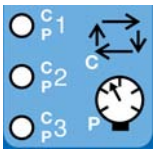
By default, units with controllers are set to operate in a timed mode with 1 minute of ON time and 8 hours of OFF time. The unit should be powered up in OFF mode, counting down from the 8 hours. If the unit powers up in ON mode and has not been primed, hold the reset button located on the control panel (example shown on the right) for 3 seconds to move to the OFF mode.

Programming ON Duration

- OFF, C1 (C2, C3) or P1 (P2, P3) displays, identifying the function you are programming.



- Selection of OFF, C1 (C2, C3) or P1 (P2, P3) designates the way pump run time is controlled:
  - C1, C2, C3 - Completing a specific number of cycles measured by an external prox/cycle switch
  - P1, P2, P3 - Reaching a specific pressure threshold measured by an external pressure switch - **OR**,
  - OFF - A specific duration of time elapses.
- The LED next to C/P1 lights, indicating which sensor of the pump control you are programming using either a specific number of cycles or by monitoring a pressure switch.



- C / P2 and C / P3 controls functions to the second and third sensors (when sensors are used).
- Only sensor inputs that are available on the unit can be programmed.

NOTE: Field cannot be left blank. If C / P2 and C / P3 are not used, OFF must be entered instead.

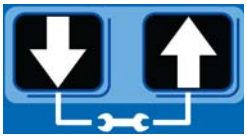
Cycle (C1, C2, C3) Setup

Cycle controls the number of lube cycles (as monitored by an external cycle monitor) completed before the pump rests.

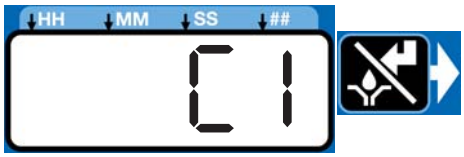
NOTE:

- You must program at least **one** cycle. Zero is not an available option.

1. Use UP or DOWN arrow button to toggle display between OFF / C1 / P1 on the display.

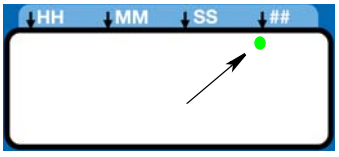


2. When C1 is on display, press the ENTER button to save selection and begin programming Cycle data.



   - The first number displayed after the “C1” on the display blinks, indicating the device is ready to program the number of C1 cycles.

   - The LED under the # sign lights when setting the number of cycles.



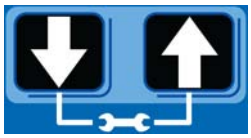
3. Program the number of cycles by pressing the UP or DOWN ARROW button to move up or down through number 0-9.

4. The cycle field is a 2 digit number. When the correct first numeral of the number displays, press the ENTER button to save the number. The cursor automatically moves to the second number field.

   NOTE: A leading zero (0) must be entered in the first field if the number of cycles is fewer than 10.

5. Press the ENTER button, to save the C1 information.

- If your G3 is equipped with more than one sensor input, you will automatically be prompted to begin selecting the pump control type for the next sensor. Repeat steps 1 - 5 to program cycles for C2 and C3.



   NOTE: If C / P2 and C / P3 are not used, the default OFF setting must be entered instead.

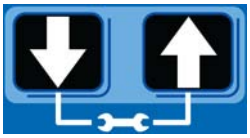
6. After you set the last field and press the ENTER button, the G3 saves the Cycle information and moves to setting Backup Time, page 37.

Pressure Control (P1, P2, P3) Setup

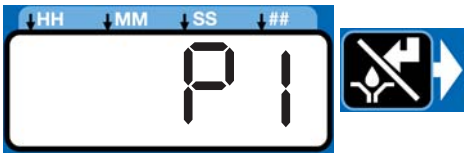
- For injector systems, monitoring pressure can be used as a way to ensure sufficient pressure has been reached to activate injectors. The pump runs, building up enough pressure to cause injectors to dispense fluid. Pressure continues to build to a preset maximum, activating the (user supplier) pressure switch. Then an external (user supplied) vent valve opens and pressure reduces, priming the injector for the next cycle.

- Pressure control is an ON / OFF selection only.

1. Use the UP or DOWN arrow button to toggle between OFF / C1/ P1.



2. When P1 displays, press ENTER button to save selection.



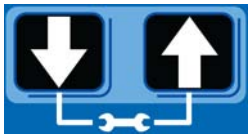
3. If your G3 comes equipped with more than one sensor input, you will automatically be prompted to begin selecting pump control type for the next sensor. Repeat steps 1 - 2 to program P2 and P3.

   If P1 / P2 / P3 is selected the vent valve time is automatically set to 5 minutes. If the unit is used in an injector based system and a sensor input is not used, the user must update the vent valve time in advanced programming. (See Advanced Programming, A-3 Vent Valve Time, page 42.)

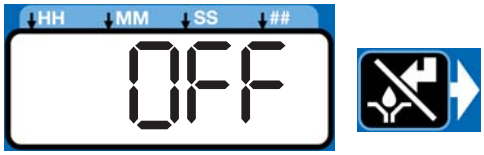
Input Not Used

Select OFF if your system does not use the applicable input.

1. Use UP or DOWN arrow button to toggle between OFF / C1 / P1 on the display.



2. When OFF is on the display, press the ENTER button to save selection.



If the sensor inputs are available and none are used in the ON Mode, the definition of the entered time is ON TIME.

Examples:

Model G3-G-24MX-2LFL00-1DMVA2R3 has 4 sensors, so C/P1, C/P2, and C/P3 and Machine Count can all be programmed.

Model G3-G-24MX-2LFL00-10CV00R0 has 1 sensor, only C/P1 is available for programming.

Backup Time

In both Cycle and Pressure Modes, a maximum run Time (Backup Time) for the lubrication period must be set up. If this Time expires before the lubrication is completed an alarm/warning is triggered and the pump stops.

To determine the Backup Time, Graco recommends the user verify the length of time it takes to complete a typical cycle and double that value (to a maximum of 30 minutes).

Backup Time is setup after Cycle or Pressure Sensor Setup is complete.

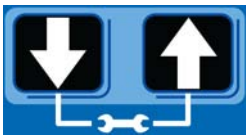
NOTE:

- The LED next to the clock in the ON field lights, indicating the Backup Time is being programmed.
- BACKUP (ON) Time is set as minutes and seconds (MM:SS) only.
- The small flashing LED under the MM indicates you are setting minutes.
- The first field (left side of display) blinks indicating the device is ready for you to begin programming.

Programming Backup Time

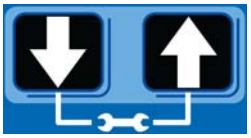
NOTE: When programming a time of less than 10 minutes you **must** program the leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the ON Time use the UP or DOWN ARROW button to scroll through numerals 0 to 5 until the desired number appears in the first MM (minutes) field.



2. Press the ENTER button to lock in the selection. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.



4. Press the ENTER button to lock in the selection.

   The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 - 4 to set the SS (seconds) fields.

6. After pressing the ENTER button to set the last SS field, all the programmed ON Time information is saved.

   The G3 automatically switches to the OFF Time SETUP MODE.

PUMP OFF / REST Setup

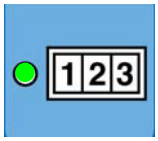
After setting the parameters for either Cycle (C1, C2 or C3) or Pressure (P1, P2, or P3) ON modes, the OFF or pump rest cycle must be set up. There are 3 ways to control this function:

- Machine Count switch activation, or

- Machine Count activations limited by a maximum Time, or
- A specific set amount of Time (similar to Time Mode).
- If the machine count sensor input is available and not used in the OFF Mode, the definition of the entered time is OFF TIME.

Machine Count

1. After you set the last ON Time field and press the ENTER button, the G3 automatically switches to the Machine Count setup.



   Notice the LED next to 123 on the G3 display lights indicating you are now in the Machine Count setup mode.

2. Press the UP or DOWN ARROW button to move up or down through number 0-9.

3. When the correct number displays, press the ENTER button to set the number.

NOTE: If the machine count input is available on the unit and not used, the value MUST be set to zero (0).

4. Repeat 2 - 3 to set the remaining fields.

NOTE: After the Machine Count value is entered, the G3 can be programmed to backup the machine count input with time.

Backup Time Setup

1. The OFF Time LED lights.

   OFF displays.

2. Press the UP or DOWN ARROW button to change OFF to ON on the display.

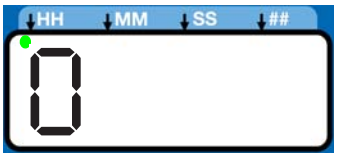
3. Press the ENTER button to set the selection.

Backup Time

- The LED next to the clock in the OFF field lights, indicating you are setting the Backup Time parameters.

- OFF Time is set in Hours and Minutes (HH : MM).
- An LED flashes under either HH when programming hours **OR** MM when programming minutes.

- In SETUP MODE the number displayed in the first field, on the left side of display blinks, indicating the device is ready to program the Backup Time hours.



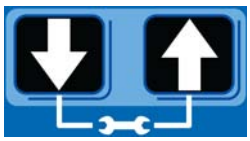
- The total amount of Backup Time must be at least twice as long as the programmed ON Time. If a value less than twice the ON Time is entered, the RED alarm LED lights and the value must be updated.

  If this time does not meet the application needs, contact Graco Customer Support.

Programming Backup Time

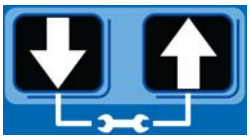
NOTE: When programming a Backup Time of **less than 10 hours** you **must** program a leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the Backup Time use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the first HH (hour) field.



2. Press the ENTER button to lock in the selection. The next HH number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second HH number field.



4. Press the ENTER button to lock in the selection.

The next number field to the right flashes and the LED lights under MM; indicating it is ready to program the minutes fields.

5. Repeat steps 1 - 4 to set the next MM (minutes) fields.

6. After pressing the ENTER button to set the last MM field, the OFF Time information is saved.

7. After selecting ON, refer to page 37.

NOTE: Backup time can be set in HH:MM for the machine count input.

Prelube

The Prelube function determines operation of the pump when power is applied. It can be set to OFF or ON.

OFF (default) - The unit resumes its lubrication cycle at the point it was at when power was removed.

ON - The unit begins a pump cycle.

Setting Prelube

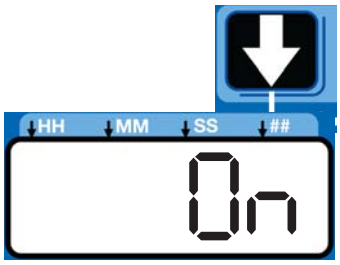
1. After you set the OFF Time information and press the ENTER button, the G3 automatically switches to the Prelube Delay setup.

Notice the LED next to the prelube icon on the G3 display lights indicating you are now in the Prelube setup mode.

2. OFF displays. If you want the prelube cycle to begin immediately, leave this set to OFF.

3. Press the ENTER button to set the selection.

4. If you want to set a prelube delay time, press the DOWN ARROW button to change OFF to ON on the display.

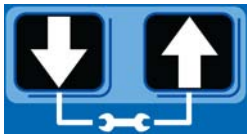


Prelube Delay

Prelube Delay can be entered to delay the start of the pump's cycle on power up. If prelube is set to ON, a prelube delay time in MM:SS must be entered. By default, the delay is set to 0 (begin an ON cycle immediately).

Delaying the prelube function may be desired if other critical functions or systems of your machine or vehicle are also coming on line during power up.

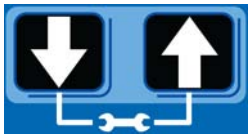
1. Prelube Delay is set in MM:SS (minutes and seconds). To set the time use the UP or DOWN ARROW button to scroll through numerals 0 to 5 until the desired number appears in the first MM (minutes) field.



The maximum length of time Prelube Delay can be set to is 59:59 (59 minutes:59 seconds).

2. Press the ENTER button to lock in the selection. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.



4. Press the ENTER button to lock in the selection.

The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 - 4 to set the SS (seconds) fields.

6. After pressing the ENTER button to set the last SS field the G3 automatically switches to the RUN MODE.

Advanced Programming

There are 5 Advanced Programming options. The following Table Identifies each option and when it is used.

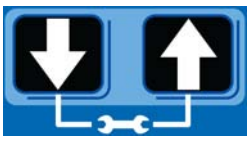
Advanced Option	Model	Setting	Format/ Description	Why Use This?
A1	Max / Pro	Lockout Code (Optional)	Secures setup modes with PIN	Prevents unauthorized users to adjusting settings.
A2	Max / Pro	Low Level Alarm Time	**MM:SS** (minutes:seconds) sets amount of time between Low Level Warning to Low Level Fault. Default = 3 minutes	To accommodate most lubrication situations, a conservative amount of time is programmed between the low level warning and fault to help protect unit from running dry. If necessary the amount of time the unit runs before stopping due to a low level fault can be adjusted.
A3	Max Only	Vent Valve Time	**MM:SS** (minutes:seconds) sets amount of time vent valve stays open after Pump ON Mode. Default = 5 minutes	• In an injector based system that does not use a sensor for feedback, determines the amount of time the system vents. • Vent time can be modified.
A4	Max Only	Alarm Retry	Sets number of automatic retries after a Cycle or Pressure Alarm. Default = 0	Establishes the number of times the unit automatically retries lubricating after a cycle or pressure alarm to determine if a temporary or false signal can be cleared.
A5	Max Only	Active Alarm	Changes alarm output behavior. Default = OFF	Uses alarm output to determine if a unit has an alarm AND/OR loses power. The output turns ON when power is applied. It turns OFF when power is lost or an alarm occurs. Normal operation (OFF) will only activate alarm output in an alarm condition when power is on. Can change (set to ON) to activate alarm with power ON and deactivate with power OFF OR warning. Used to manage power outage.

Entering Advanced Setup

Press the UP ARROW button for 10 seconds.

If the G3 was previously set up to require a PIN Code, the LED next to the LOCK ICON lights, indicating a PIN Code is required.

1. The cursor is automatically positioned to enter the first character of the PIN Code. Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the first number in the PIN code is displayed in the field.



2. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

3. Repeat steps 1 and 2 for each PIN Code prompt field.

If the PIN Code you entered is correct, the first editable character on the display will flash.

Selecting Advanced Setup Options

1. Press the UP or DOWN ARROW button to move up or down through Advanced Options A1 - A5.

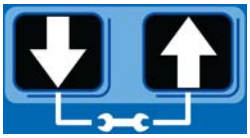
2. Press the ENTER button to set the selection.

A1 - Setting Up PIN Code

A PIN Code can be programmed into the G3 to protect the settings from inadvertently being changed by unauthorized users.

The LED next to the LOCK ICON on the display lights, indicating you have entered the PIN Mode.

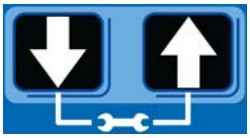
1. The cursor automatically is positioned to entered the first character of the PIN Code. Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the first number in the PIN code is displayed in the field.



2. Press the ENTER button to set the number. The cursor automatically moves to the next number field.

3. Repeat steps 1 and 2 for each PIN Code prompt field.

4. The word OFF appears in the display. Press the UP or DOWN ARROW button to change this to ON.



5. Press the ENTER button to set the PIN Code and exit Advanced Setup.

A2 - Low Level Alarm Time

Pump ON mode only.

Programs the amount of time in MM: SS (minutes and seconds) the pump can run between a Low Level Warning and a Low Level Fault to help protect unit from running dry.

The maximum recommended length of time is 3:00 minutes.

Fault, and Low Level LED illuminate. (*Max Model Display shown in illustration below*).

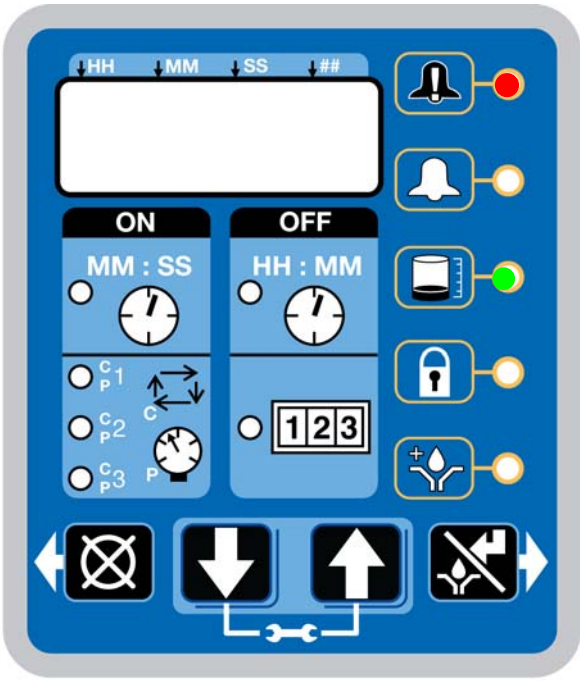
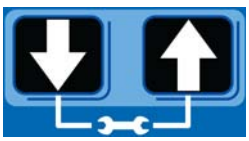


FIG. 13

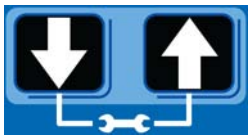
NOTE: When programming a time of less than 10 minutes you **must** program a leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the time use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the first MM (minutes) field.



2. Press the ENTER button to lock in the selection. The next MM number field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second MM number field.



4. Press the ENTER button to lock in the selection.

   The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the seconds fields.

5. Repeat steps 1 - 4 to set the SS (seconds) fields.

6. After pressing the ENTER button to set the last SS field, all the programmed ON Time information is saved.

   Unit exits Advanced Programming.

A-3 Vent Valve Time - (Max Model Only)

The Vent Valve Time is the amount of time the vent valve stays open after a cycle is completed.

The recommended Vent Valve Time is 5 minutes.

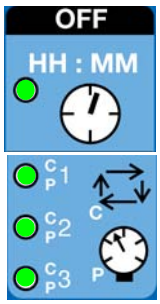
To bypass the Vent Valve Time enter a value of 00:00.

Vent Valve time must be less than the programmed OFF time (page 32). If it is not set to a value less than the programmed OFF time, the G3 will automatically adjust the time to a value 2 seconds less than the set OFF time.

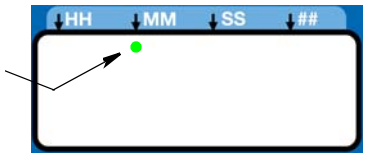
To set Vent Valve Time:

NOTE:

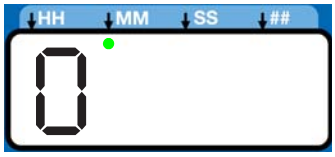
- The LED next to the clock in the OFF field lights and P1, P2, and P3, indicating the Vent Valve Time is being programmed.



- Time is set as minutes and seconds (MM:SS) only.
- The small flashing LED under the MM indicates you are setting Minutes.

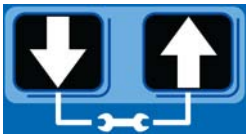


- The first field (left side of display) blinks indicating the device is ready for you to begin programming.



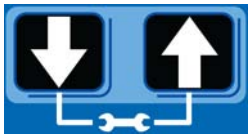
- When programming a time of less then 10 minutes you **must** program a leading zero in the first number field and press the ENTER button to save the zero selection.

1. To set the Time use the UP or DOWN ARROW button to scroll through numerals 0 to 5 until the desired number appears in the first minute field.



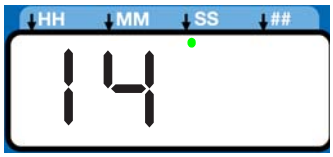
2. Press the ENTER button to lock in the selection. The next minute field to the right flashes indicating it is ready for programming.

3. Use the UP or DOWN ARROW button to scroll through numerals 0 to 9 until the desired number appears in the second minute field.



4. Press the ENTER button to lock in the selection.

5. The next number field to the right flashes and the LED lights under SS; indicating it is ready to program the Seconds fields.



6. Repeat steps 1 - 4 to set the MM (seconds) fields.

7. After pressing the ENTER button to set the last seconds field, all the programmed Time information is saved.

   Unit exits Advanced Programming.

A-4 Alarm Retry (Max Model Only)

Programs the number of times G3 will automatically retry running a lubrication cycle after a cycle or pressure alarm activates. The default setting is 0. For assistance determining a reasonable number of Alarm Retries to program for your application, contact Graco Customer Service or your local Graco distributor.

1, 2, and 3 and Fault LED's illuminate.

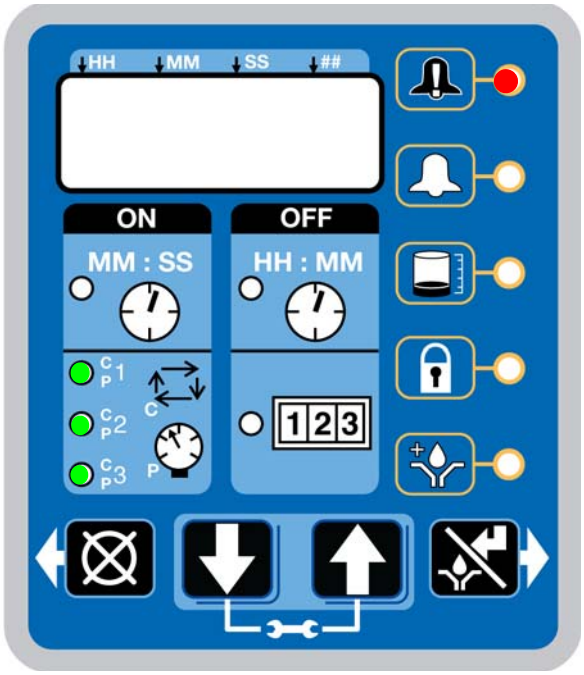
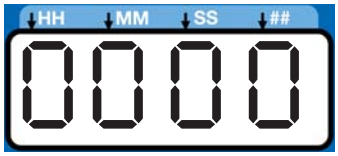


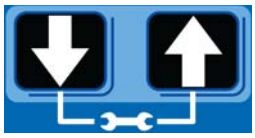
FIG. 14

To set the Alarm Retry:

1. The default value 0000 appears in the display.



2. Press the UP or DOWN ARROW button to move up or down through number 0-9.



3. When the correct number displays, press the ENTER button to set the number.

4. Repeat 2 - 3 to set the remaining fields.

Press the ENTER button to exit Advanced Programming.

A-5 Active Alarm (Max Model Only)

Changes the alarm output behavior. Uses output to determine if a fault has occurred.

Fault and ON LED's illuminate.

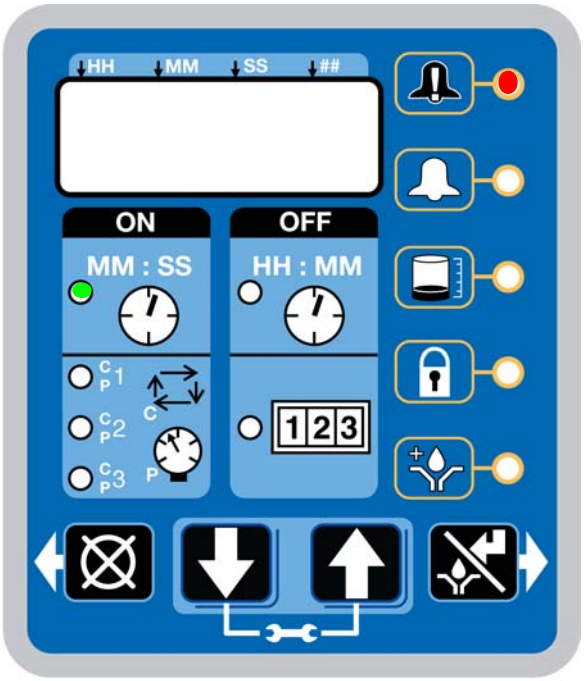
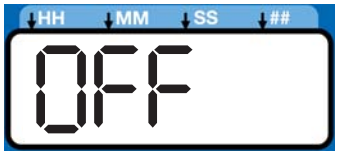


FIG. 15

1. The default OFF displays.



2. Press the UP or DOWN ARROW button to change OFF to ON on the display to activate alarm condition.

3. Press the ENTER button to exit Advanced Programming.

Run Mode

Time Control

After setup is complete, the G3 automatically begins to run the OFF Time sequence (FIG. 16).

- The G3 runs the programmed OFF sequence.

  (Notice the OFF Time LED on the display lights and the OFF Time counts down on the display.)

- The example shown in FIG. 16 shows an OFF Time of 1 hour and 32 minutes before the lubrication cycle begins.

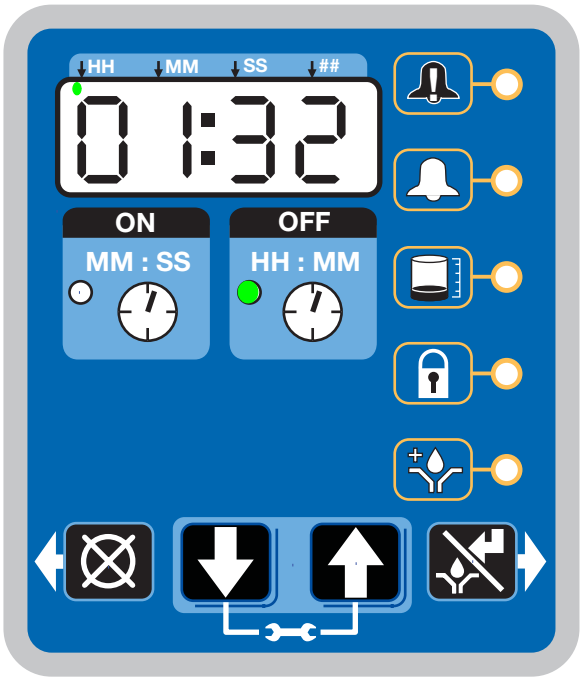


FIG. 16

- When the OFF Time count reaches zero, the G3 Automatic Lubrication Pump turns the pump on and it runs for the programmed ON Time cycle (FIG. 17).

  (Notice the ON Time LED is now illuminated on the display.)

- The example shown in FIG. 17 shows an ON Time of 8 minutes and 42 seconds before the lubrication cycle ends.

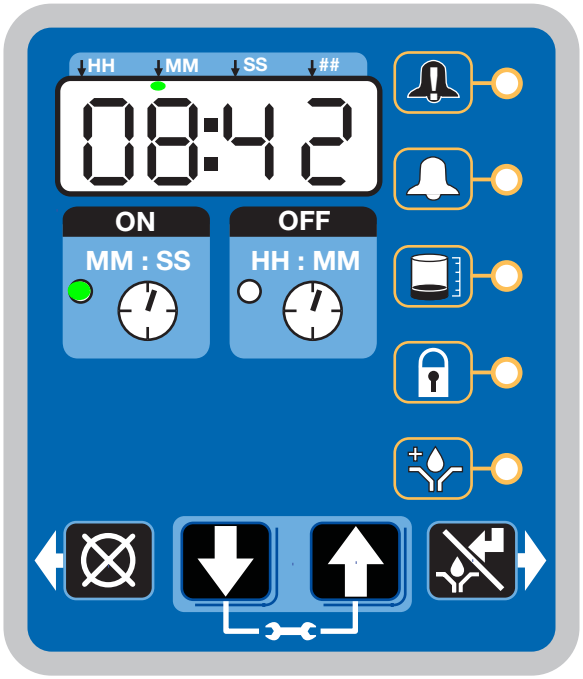


FIG. 17

- When the ON Time count reaches zero, the pump shuts off again and the system again runs OFF Time cycle and the OFF Time LED is now again illuminated (FIG. 16).

  This sequence repeats itself until the device is reprogrammed or an alarm occurs.

Max Model

Lubrication Mode (Pump ON) Controls

In Max models the Lubrication Mode (Pump ON) can be controlled by either cycle and/or pressure sensors.

If cycle and/or pressure controls have been set to something other than OFF the display will alternate between cycles (C1, C2, C3) and/or active sensors (P1, P2, P3) and Backup Time.

If cycle or pressure controls have been set to OFF then the Lubrication Mode (Pump ON) will be controlled by On Time (see Time Control, page 44).

With cycle and/or pressure controls set, the lubrication cycle (Pump ON) is ended by meeting ***all*** required cycle and/or pressure settings.

Cycle Control

- A set number of triggered counts in a cycle based system (C1). Typically a proximity switch connected to a divider valve.
- The LED next to the appropriate sensor (C/P1, C/P2, C/P3) illuminates.
- The display indicates the sensor (C1, C2, C3) and the remaining cycles for that sensor (FIG. 18).

  The example shown in FIG. 18 shows sensor C1 with 5 cycles remaining.

FIG. 18

Pressure Control

- A single triggered count in a ***pressure based system*** (P1). Typically a pressure switch on the end of a line of injectors.
- The LED next to the appropriate sensor (C/P1, C/P2, C/P3) illuminates (FIG. 19 and FIG. 20).
- The display indicates the sensor (P1, P2, P3) and and whether the pressure switch for that sensor has been triggered or not.

  - 01 = pressure switch has not been triggered
  - 00 = pressure switch is triggered.

  The example shown in FIG. 19 shows sensor P1 with a pressure switch that has been triggered.

  FIG. 20 (page 46) shows sensor P2 with a pressure switch that has NOT been triggered.

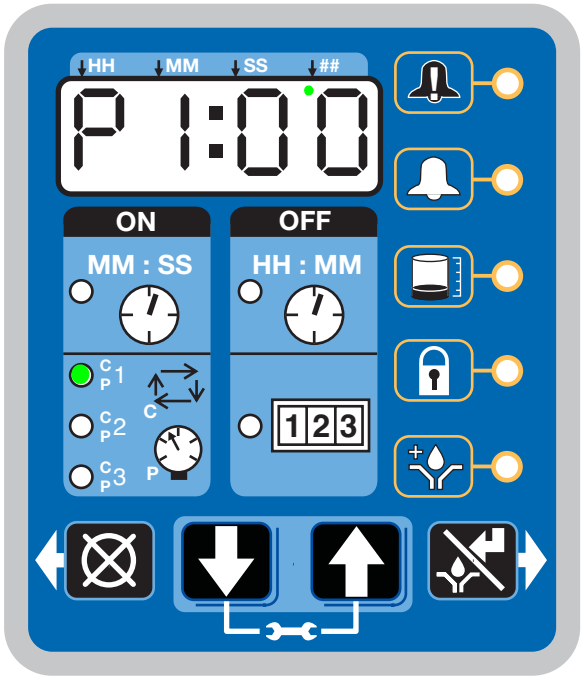


FIG. 19

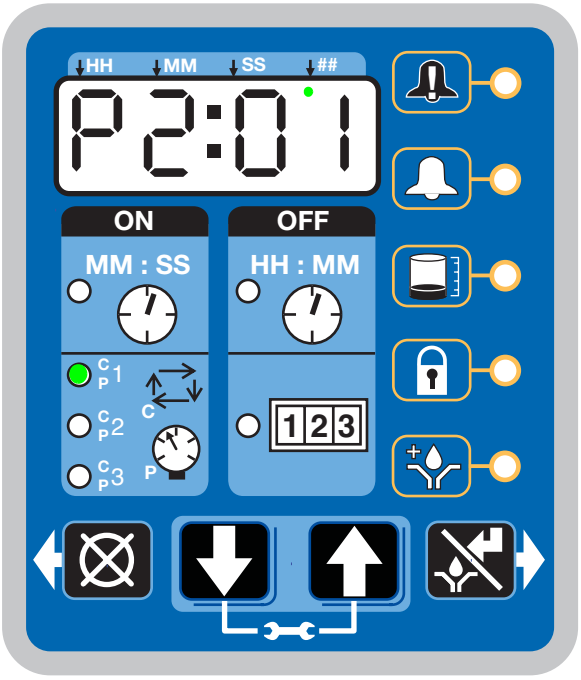


FIG. 20

Backup Time

- In both Cycle and Pressure modes a Backup Time (maximum run time) has been set.
- The LED(s) next to all programmed sensors (C/P1, C/P2, C/P3) illuminate.
- The display shows time remaining until a fault.

  The example shown in FIG. 18 shows 14 minutes and 33 seconds left until the fault occurs.
- If all cycle and/or pressure requirements are met the unit exits the lubrication cycle (Pump ON) and enter the rest cycle (Pump OFF).

FIG. 21

Max Model

Rest Mode (Pump OFF) Controls

In Max models the Rest Mode (Pump OFF) is controlled by machine counts.

If the Machine Count is set to a value greater than ***0000*** and the Backup Time option ***is activated,*** the display will alternate between Machine Counts and Backup Time.

If Machine Count has been set to a value greater than ***0000*** and the Backup Time option is ***NOT activated***, the display will only show the number of Machines Counts remaining.

With machine count set, the Rest Cycle (Pump OFF) is ended when the machine count reaches zero (0000).

Machine Count

- A set number of triggered counts.
- The LED next to 1-2-3 illuminates (FIG. 22).
- The display indicates the number of machine counts remaining.

  The example shown in FIG. 22 shows the remaining number of machine counts is 0045.

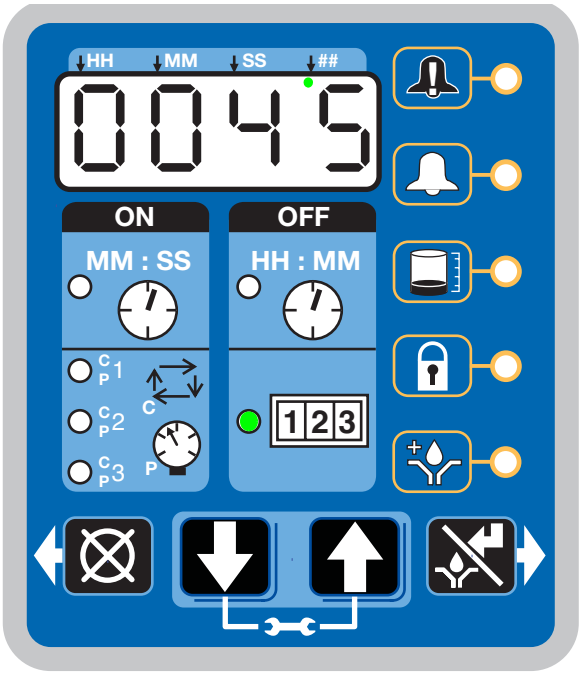


FIG. 22

Backup Time

In Machine Count mode, if a Backup Time (maximum rest time) has been set:

- The LED next to 1-2-3 illuminates (FIG. 23).
- The display shows the amount of time remaining till a fault.

  The example shown in FIG. 23 shows 4 hours and 17 minutes remaining until a fault occurs.
- If the Machine Count requirements are met the unit will exit the Rest Mode (Pump OFF) and enter the Lubrication Mode (Pump ON).

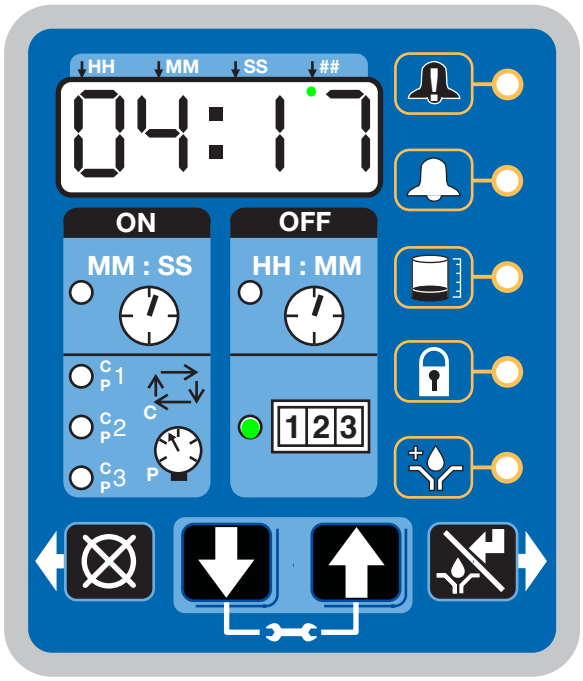


FIG. 23

OFF Time

In Max models if the Machine Count is set to ***0000*** then Reset Mode (Pump OFF) is controlled with OFF Time (see Time Control, page 44).

Additional Controls

Venting

In Max models a Vent Time can be set using the Advanced Programming mode (page 42). This is typically done in a Pressure Based System (P1) to allow injectors to reset.

- Unit vents for a set amount of time (not displayed).
- The LED's next to C/P1, C/P2, C/P3 flash while unit is venting.
- If Machine Count is set, the display will alternate between machine counts remaining and backup time (Max Model Rest Mode, page 47).
- If Machine Count has been set the LED next to 1-2-3 illuminates (FIG. 22, page 47).
- If Machine Count has not been set the display shows OFF Time (See Time Control, page 44).
- If Machine Count has not been set the LED next to the clock in the OFF field illuminates (See Time Control, page 44).

Prelube / Prelube Delay

In all models a power OFF/ON cycle can be controlled with the Prelube and Prelube Delay functions.

Prelube

The Prelube function has been selected. Prelube delay is set to 00:00:

- Power to the unit cycles OFF then ON.
- Unit immediately begins a lubrication cycle.
- Pro Model - display shows ON Time (See Time Control, page 44).
- Max Model - display shows Cycle/Pressure/Backup Time (See Max Model Lubrication Mode Controls, page 45).

Prelube Delay

The Prelube function has been selected. Prelube delay is set to something other than 00:00:

- Power to the unit cycles OFF then ON.
- Unit immediately begins the Prelube Delay count down until the lubrication cycle begins.
- The LED next to the clock in the OFF field is illuminated (FIG. 24).
- The Prelube LED lights (FIG. 24).
- The display shows time remaining until lubrication cycle begins. The example shown in FIG. 24 shows 8 minutes and 14 seconds left until a lubrication cycle begins.

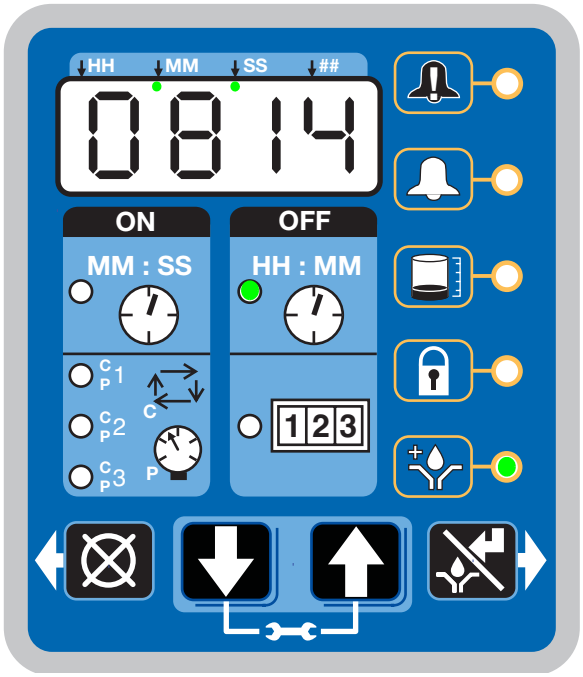


FIG. 24

Manual Run Cycle

To run an extra (non-programmed) lubrication cycle, push the Manual Start button.

NOTE: Manual Run option is not available while unit is in Vent Mode.

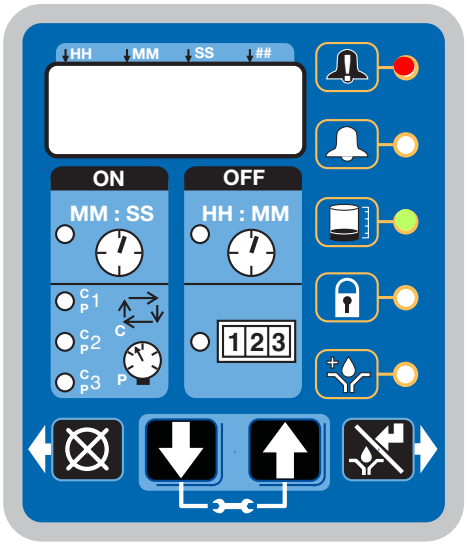
Alarms

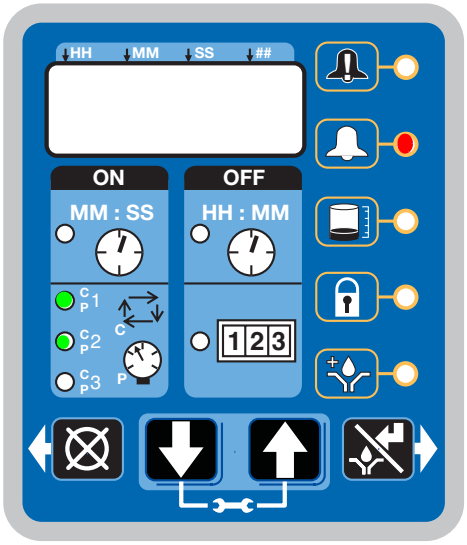
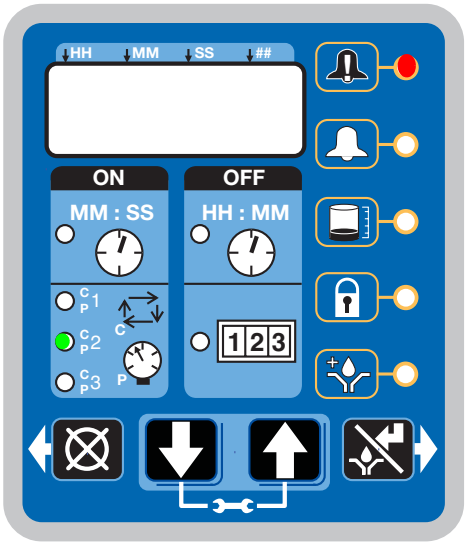
Any time a Fault / Warning occurs, a combination of LED's will illuminate to notify you there is a problem and help identify the kind of Fault / Warning has occurred.

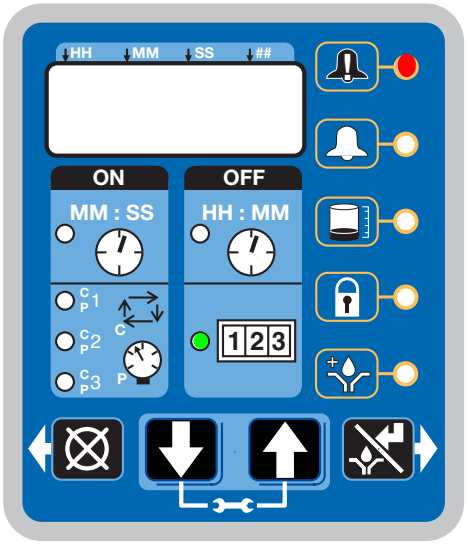
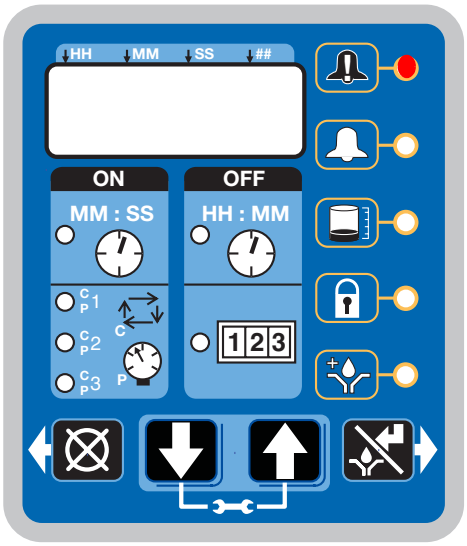
- Faults and Warnings will not automatically clear.
- To clear an fault, press and hold the RESET button on the display button pad for 3 seconds. 
- To clear a warning press and immediately release the RESET button. 

Fault / Warning Scenarios

The following pages describe the most likely fault / warnings you could receive.

Alarm Type	What it Looks Like	What it Indicates	Solution
Low Level Warning		Level of grease in reservoir is low and additional grease needs to be added. Unit continues to operate as normal for a limited period of time until a low level alarm is triggered.	Add grease to reservoir. After grease is added, press the RESET button to clear the warning. 
Low Level Fault		Level of grease in reservoir is low and additional grease needs to be added. Unit stops pumping and displays amount of accumulated time since the alarm was triggered.	Add grease to reservoir. After grease is added press and hold the RESET button to clear fault.  If repriming pump is required, the low level alarm time should be decreased. See A-2: Advanced Programming, Low Level Alarm Time page 41.

Cycle / Pressure Warning		System fails to relieve pressure or a lubrication cycle was not completed in the user-defined amount of time. Unit will continue to operate for the number of lubrication cycles set by the warning retry parameter (see Advanced Programming, page 40). If the warning condition clears itself on the next automatic lubrication cycle, the warning is cleared and the unit continues normal operation.	Examine system to determine if you have a plugged or broken line or other component failure, i.e., divider valve, injector. Press the RESET button to clear warning. 
Cycle / Pressure Fault		In **pressure mode** indicates that unit is over pressurized or a lubrication cycle was not completed in the user-defined amount of time. In **cycle mode** indicates that a cycle was not completed in the user-defined amount of time. LED corresponding to the affected sensor input blinks. Could be more than one sensor alarm at the same time.	Examine system to determine if you have a plugged or broken line or other component failure, i.e., divider valve, injector. Press and hold the RESET button to clear fault. 

Machine Count Fault		Unit has not received the correct number of machine counts in the user defined Backup Time.	Examine system to determine if the machine sensor is operating properly. Press and hold the RESET button to clear fault. 
System Fault		An internal fault has occurred.	Contact Graco Customer Service.

Troubleshooting

Problem	Cause	Solution
Unit does not power on	Incorrect/loose wiring	Refer to Installation instructions, page 7.
Unit does not power on (DC models only)	Tripped external fuse due to internal component failure	Contact Graco Customer Service.
	Tripped external fuse due to pumping non-cold weather grease in cold weather -13°F (-25°C)	Replace grease with pumpable grease, rated for environmental conditions and application. Replace fuse.
Unit does not power on (AC models only)	Tripped internal power supply fuse due to power supply failure	Contact Graco Customer Service.
Can’t set desired ON/OFF times	Maximum duty cycle is 33% (2 minutes OFF for each minute ON)	Adhere to allowable duty cycle. Contact Graco Customer Support if other duty cycles are required for application.
Unit is not operating based on the time that was programmed	Time entered was misinterpreted as MM:SS instead of HH:MM (or visa versa)	Verify the unit was programmed as intended, referencing programming instructions. Note the dot designation for hours, minutes, seconds on the top row of the display.
Grease leaks past seal located on the bottom of the reservoir	Reservoir retaining tabs are cracked or broken	Replace reservoir.
	Reservoir is being pressurized during filling	Ensure vent hole is not plugged. If problem persists, contact Graco Customer Service or your local Graco distributor for assistance.
Unit not pumping during ON cycle, but controller lights and functions	Failed motor	Replace unit.
Follower plate is not going down	Air is trapped in the reservoir between the follower plate and grease	Add grease following Loading Grease instructions, page 26. Ensure air is purged.
Pump takes several minutes before it begins pumping at the highest pump volume setting (no shims installed)	Pumping non-cold weather grease in cold weather -13°F (-25°C)	Add 1 shim and adjust lube cycle time to accommodate the difference in pump volume per stroke.
Dim display, unit is not operating	Tripped internal, resettable fuse due to internal component failure or sensor short circuit condition	Verify sensor and manual run inputs have not created a short circuit condition. Cycle power.
Unit indicates a cycle or pressure alarm before the lubrication cycle could complete	The ON Time was not entered correctly	Refer to programming ON Time, pages 31 and 35.
In an Injector System without sensor feedback, unit does not vent properly	Vent valve time needs to be configured	Refer to Advanced Programming to set ON Time, page 40.

Maintenance

Frequency	Component	Required Maintenance
Daily and at refill	Zerk Fittings	Keep all fittings clean using a clean dry cloth. Dirt and/or debris can damage pump and/or lubrication system.
Daily	G3 Pump Unit and Reservoir	Keep pump unit and reservoir clean using a clean dry cloth.
Daily	Display	Keep display clean using a clean dry cloth.
Monthly	External Wiring Harness	Verify external harnesses are secure.

Parts

Ref	Part	Description	Qty
1		BASE, three pump housing	1
3	278142	COVER, bottom, with seal	1
4	115477	SCREW, mach, torx pan hd	9
13	124396	O-RING, 258, included in Kit 571042, 571043, 571044, 571045	2
14		PLATE, ricer	1
15		BEARING, ball	1
16		PADDLE, stirring, models without follower plate - models 96G000, 96G001, 96G002, 96G003, 96G005, 96G007, 96G009, 96G011, 96G013, 96G015, 96G017, 96G019, 96G021, 96G023, 96G025-96G032 included in Kit 571044	1
		PADDLE, stirring, models with follower plate - models 96G004, 96G005, 96G006, 96G008, 96G010, 96G012, 96G014, 96G018, 96G020, 96G022, 96G024, 96G026 included in Kit 571045	1
17		PUMP, element, included in Kit 571041	1
18	15X981	SPACER, pump shim, included in Kit 571041	2
21	278145	PLUG, pump, 3/4-16	2
23❖	278136	PADDLE, low level, models 96G003 - 96G008	1
27	123025	SCREW, M6, models 96G003, - 96G008, 96G015 - 96G026	1
30‡✿	258760	BOARD, circuit, Pro, models 96G009 - 96G014, 96G027-96G029	1
‡★	258697	BOARD, circuit, Max, models 96G015 - 96G026, 96G030-96G032	
31	119228	SCREW, machine, flat head, models 96G009 - 96G032	2
33▲	16A579	LABEL, safety, included in Kit 571041	1
34	16C473	LABEL, controller blank, models 96G000 - 96G008	1
	16A578	LABEL, overlay, models 96G009, 96G010 - 96G014, 96G027-96G029	1
	16A073	LABEL, overlay, models 96G015-9GG025, 96G030-96G032	
35		WIPER, stirring, models without follower plate - models 96G000, 96G001, 96G002, 96G003, 96G005, 96G007, 96G009, 96G011, 96G013, 96G015, 96G017, 96G019, 96G021, 96G023, 96G025, 96G027-96G032 included in Kit 571044	1
		WIPER, stirring, models with follower plate - models 96G004, 96G006, 96G008, 96G010, 96G012, 96G014, 96G016, 96G018, 96G020, 96G022, 96G024, 96G026, included in Kit 571045	1
36		LABEL, brand	1
37	123741	FITTING, zerk, grease	1
40		RESERVOIR, 2 liter, included in Kit 571042	1
41	278139	SEAL, follower plate, models 96G004, 96G006, 96G008, 96G010, 96G012, 96G014	1
42		PLATE, follower, models 96G004, 96G006, 96G008, 96G010, 96G012, 96G014	1
43		ROD, follower plate, models 96G004, 96G006, 96G008, 96G010, 96G012, 96G014	1
44		SPRING, compression, models 96G004, 96G006, 96G008, 96G010, 96G012, 96G014, 96G016, 96G018, 96G020, 96G022, 96G024, 96G026	1

Ref	Part	Description	Qty
45†	24D838	BAFFLE, low level, models 96G003, 96G005, 96G009, 96G011, 96G013, 96G015, 96G017, 96G019, 96G021, 96G023, 96G025, 96G030 - 96G032.	1
57	117156	BEARING, sleeve, models 96G003 - 96G026, 96G032	1
58▲	196548	LABEL, models 96G002, 96G007, 96G008, 96G014, 96G032	
60	16D984	WASHER, low level, models 96G003 - 96G026, 93G032	2
200	123749	CABLE,15 ft, SOOW w/7pos, 3 pin, 90 deg (See Wiring Diagram, page 20)	1
	123750	CABLE, 15 ft., SOOW w/7 pos, 5 pin, 90 deg, (See Wiring Diagram, page 22)	1
	123358	CABLE, DIN, bare, (See Wiring Diagram, page 22)	1
201	124300	CABLE, M12, 5 ft., 4 wire, straight male and female (See Wiring Diagram, page 23)	1
	124333	CABLE, M12, 5 ft., 4 wire, straight male to flying leads (See Wiring Diagram, page 23)	1
202	124301	CONNECTOR, Eurofast, fem, straight, 4P	1

▲ *Replacement Danger and Warning labels, tags and cards are available at no cost.*

❖ Also order Ref 27, Part No. 123025 and Ref 60, Part No. 16D984

‡✿ For Pro Models Only - Also order Ref 31, Part No. 119228 and Ref 34, Part No. 16A578

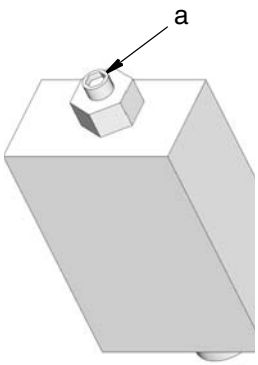
‡★ For Max Models Only - Also order Ref 31, Part No. 119228 and Ref 34, Part No. 16A073

† Also order Ref. 57, Part No. 117156 when ordering this part.

Pressure Relief Valves

◆ ***Important Information regarding Pressure Relief Valve 16C807.***

Pressure Relief Valve 16C807 can only be used on the G3 Pump. It is not intended for use with any other products.



The pressure relief valve uses a pressure adjustment screw (a) to set the pressure release point. ***It is not intended as a way to relieve pressure during normal operation,*** but as a protective measure in the event there is an unintended pressure increase in the system. Do not use this pressure relief valve a means of relieving pressure in day-to-day, normal cycle operation.

The pressure adjustment screw will require periodic adjustments. Whenever the valve is set/adjusted (after the set point is found) it is important to ensure that the valve is not bottomed out and there is at least 1/2 turn of adjustment remaining. This is determined by turning the screw (a) 1/2 turn and then back turning it out again.

Part	Description	Qty
16C807◆	VALVE, pressure relief, 500-5000 psi (3.44 MPa, 34.4 bar - 34.47 bar, 344 bar), Set pressure 3000 psi ± 10% (20.68 MPa, 206.8 bar ± 10%) Included in Kit 571028	1
563156	VALVE, pressure relief, 750 psi (5.17 MPa, 51.71 bar)	1
563157	VALVE, pressure relief, 1000 psi (6.89 MPa, 68.95 bar)	1
563158	VALVE, pressure relief, 1500 psi (10.34 MPa, 103.42 bar)	1
563159	VALVE, pressure relief, 2000 psi (13.78 MPa, 137.89 bar)	1
563160	VALVE, pressure relief, 2500 psi (17.23 MPa, 172.36 bar)	1
563161	VALVE, pressure relief, 3000 psi (20.68 MPa, 206.84 bar)	1
563190	VALVE, pressure relief, 5500 psi (37.92 MPa, 379.21 bar)	1

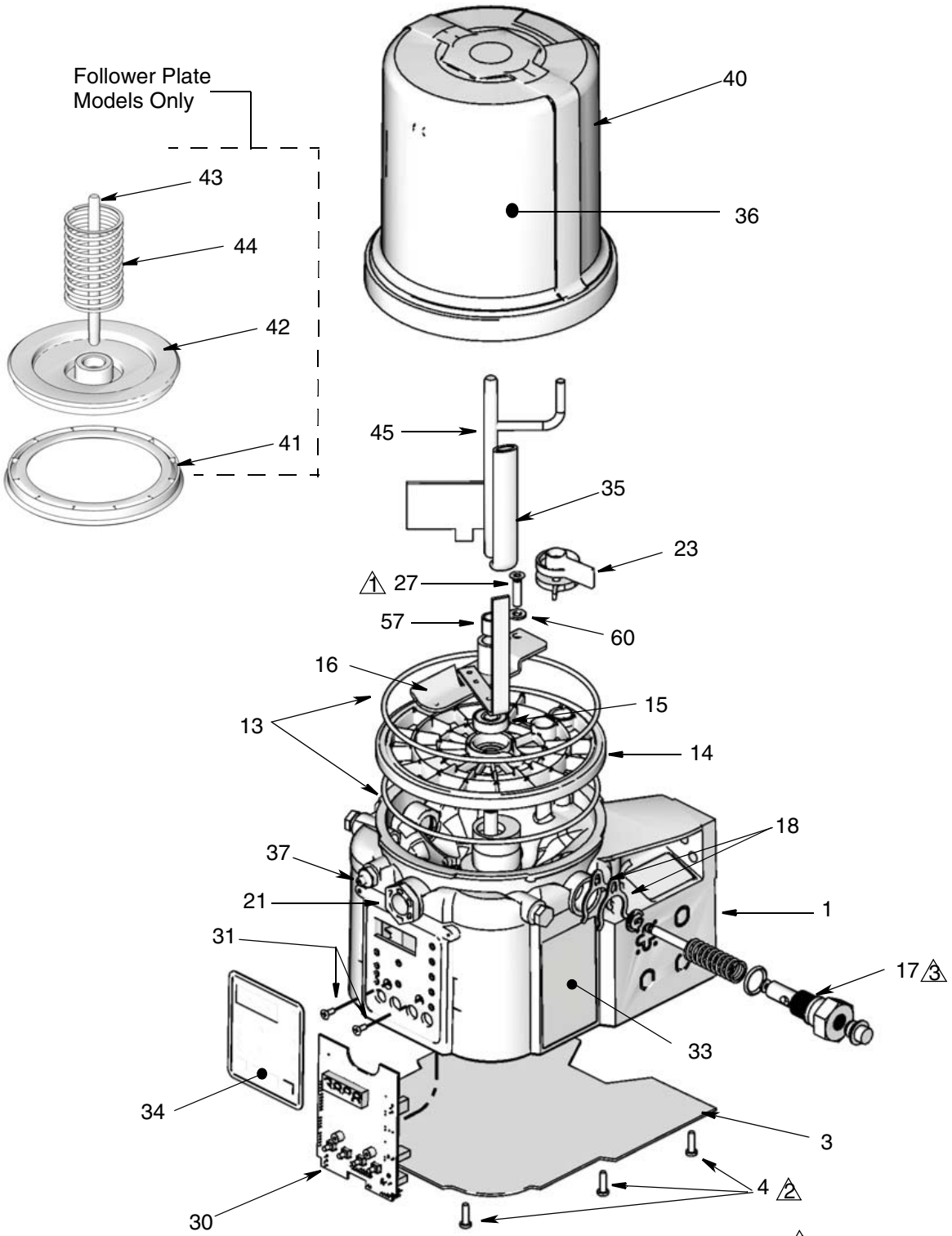
Fuses

Part	Description	Qty
571039	FUSE, 12 volt DC	1
571040	FUSE, 24 volt DC	1

Installation and Repair Kits

Kit No.	Description	Manual Number
571026	KIT, output union, 3 pump	3A0523
571063	KIT, output union, 2 pump	
571028	KIT, return to reservoir NPT, includes pressure relief valve 16C807	3A0525
571071	KIT, return to reservoir BSPP, includes pressure relief valve 16C807	
571029	KIT, vent valve, 24 volt DC	3A0526
571061	KIT, vent valve, 12 volt DC	
571030	KIT, remote manual run, 12 volt DC	3A0528
571031	KIT, remote manual run, 24 volt DC	
571032	KIT, remote manual run, 12 volt DC, with cable	
571033	KIT, remote manual run, 24 volt DC with cable	
571036	KIT, cover with “G” label	NA
571041	KIT, pump element, includes Ref 17, 18, 33	3A0533
571042	KIT, repair, 2 L reservoir, includes Ref 13, 36, 40	3A0534
571069	KIT, repair, 2 L reservoir, for models with follower plate, includes Ref 13, 36, 40	
571044	KIT, replacement, paddle, for models without follower plate, includes Ref 13, 16, 35, 57	3A0535
571045	KIT, replacement, paddle, for models with follower plate, includes Ref 13, 16, 35, 57	
571058	KIT, output adapter, NPT	3A0522
571070	KIT, output, adapter, BSPP	
571060	KIT, fill, zerk, leakproof	NA

Parts



1 Torque to 4 in. lbs (0.45 N.m)

2 Torque to 30 in. lbs (3.4 N.m)

3 Torque to 50 in. lbs (5.6 N.m)

Technical Data

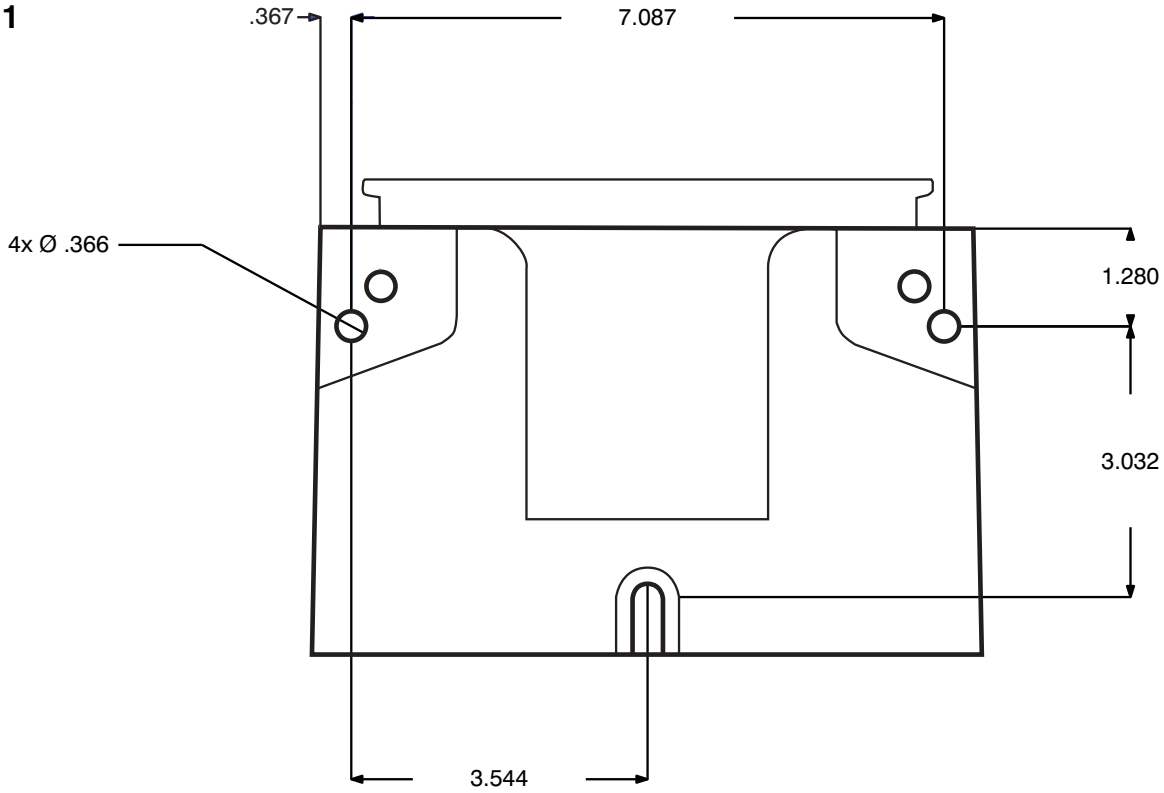
Maximum Working Pressure	5100 psi (35.1 MPa, 351.6 bar)
Power	
100-240 VAC	88 - 264 VAC; 0.8 A current, 90 VA Power, 47/63 Hz, Single phase
12 V DC	9 - 16 VDC; 5 A current, 60 W
24 V DC	18 - 32 VDC; 2.5 A current, 60 W
Outputs - Alarm Relay	
Rated Load	Resistive: 0.4 A at 125 VAC, 2 A at 30 VDC Inductive: 0.2 A at 125 VAC, 1 A at 30 VDC
Max Operation Voltage	Resistive: 250 VAC, 220 VAC Inductive: 250 VAC, 220 VDC
Max Operating Current	Resistive: 3 A (AC), 3A (DC) Inductive: 1.5A (AC), 1.5 A (DC)
Max Switching Capacity	Resistive: 50 VA, 60 W Inductive: 25 VA, 30 W
Min Permissible Load	Resistive: 10 µA, 10m VDC Inductive: 10 µA, 10m VDC
Outputs - Vent Valve	
Required Vent Valve Type	Normally closed
Output Voltage	
100/240 VAC	24 VDC
12 VDC	Input Voltage
24 VDC	Input Voltage
Max Operating Current	2A
Max Operating Power	48W
Outputs - Low Level (Dry Contact)	
Contact Rating	10 Watts Maximum
Switch Rating	200 VDC Maximum
Switching Current	0.5 Amps Maximum
Carry Current	1.2 Amps Maximum
Inputs - Cycle Pressure, 1, 2, 3, Machine Count	
Required Switch Type	Normally open (sink, source, or dry contact)
Sensor Voltage	
100/240 VAC	24 VDC
12 VDC	Input Voltage
24 VDC	Input Voltage
Load Current	
100/240 VAC	22mA @ 24 VDC
12 VDC	11mA @ 12 VDC
24 VDC	22mA @ 24 VDC
Maximum Residual Voltage	
100/240 VAC	4V
12 VDC	2V
24 VDC	4V
Maximum Off Current	
100/240 VAC	1.5 mA
12 VDC	1 mA
24 VDC	1.5 mA
Input Impedance	1.1 K
Response Time	60 ms
Cycle Rate	8.0 Hz (50% duty cycle)
Frequency Limits	47-63 Hz

Fluid	Grease NLGI 000 - #2
Pumps	Up to 3
Pump Output	0.12 in.^{3} (2 cm^3) / minute per outlet - 2 spacers 0.18 in.^{3} (3 cm^3) / minute per outlet - 1 spacer 0.25 in.^{3} (4 cm^3) / minute per outlet - 0 spacers
Pump Outlet	1/4-18 NPSF. Mates with 1/4-18 NPT male fittings
Reservoir Size	2 Liters
IP Rating	IP69K
Sensor Inputs	3 (any of pressure or cycle) 1 (machine count)
Ambient Temps	-13°F - 158°F (-25°C to 70°C)
Weight (Dry - includes power cord and plug)	
Without follower plate	13.3 lbs (6.03 kg)
With follower plate	14.2 (6.44 kg)
Wetted Parts	nylon 6/6 (PA), trogamid T5004-060, zinc plated steal, carbon steel, alloy steel, stainless steel, nitrile rubber (buna-N), bronze, nickel plated alnico, chemically lubricated acetal, aluminum, PTFE
Sound Data	<60 dB

Mounting Pattern

(All dimensions shown in inches. For correct mounting configuration, choose either Option 1 or Option 2).

Option 1



Option 2

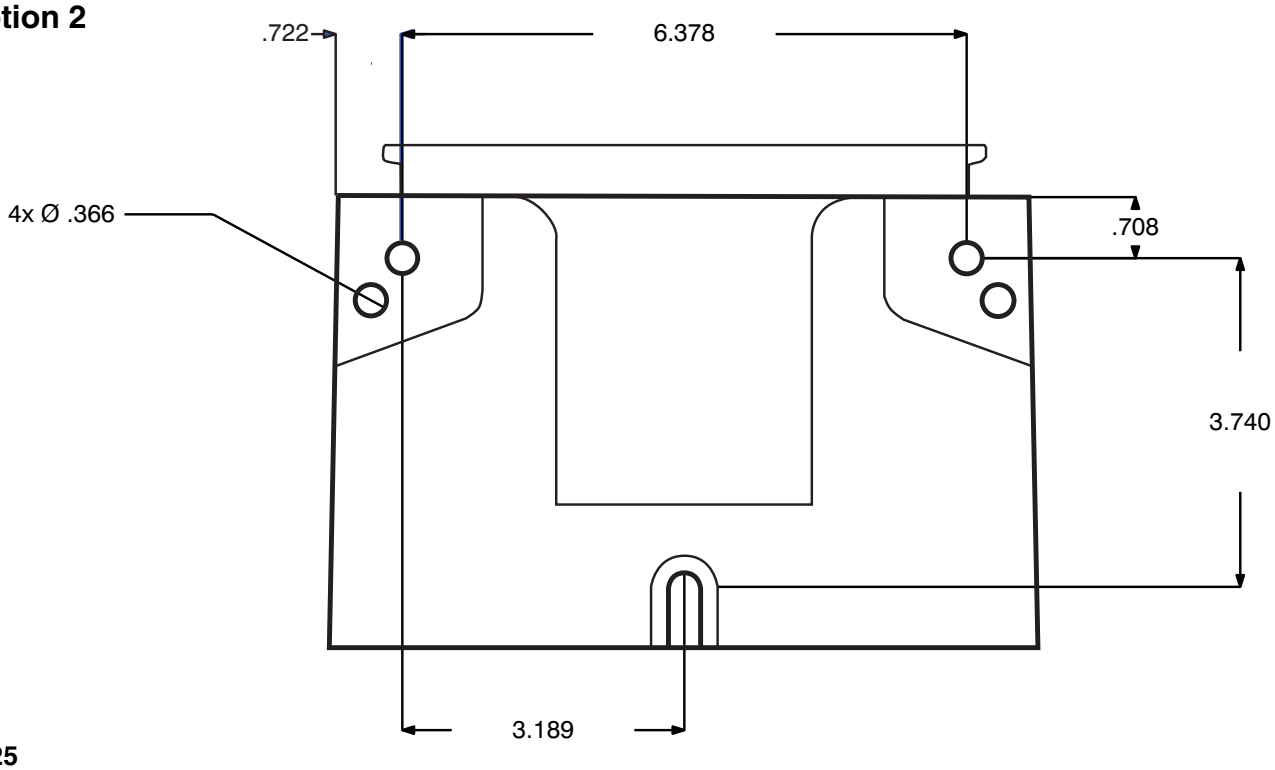


FIG. 25

Notes

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.

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For the latest information about Graco products, visit www.graco.com.

TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590

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Original instructions. This manual contains English. MM 3A0414

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