

G3 Max Automatic Lubrication Pump

332305G

EN

For dispensing of NLGI Grades #000 to #2 greases and oil with at least 40cSt. For Professional Use Only.

Not approved for use in explosive atmospheres or hazardous locations.

Part Nos., page 3

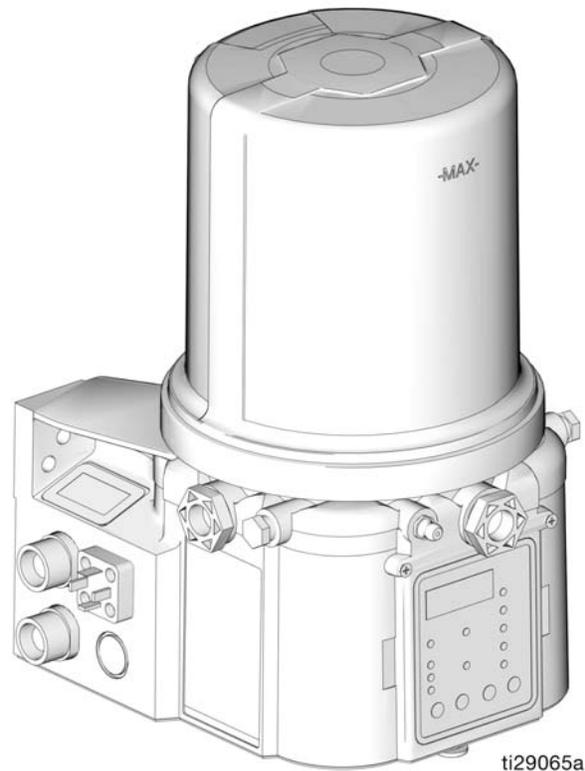
5100 psi (35.1 MPa, 351.6 bar) Pump Output Pressure

5000 psi (34.4 MPa, 344.7 bar) Maximum Working Pressure - Auto-Fill Shut Off



Important Safety Instructions

Read all warnings and instructions in this manual. Save all instructions.



ti29065a



Conforms to ANSI/UL 73
Certified to CAN/CSA
Std. 22.2 No 68-09



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Part / Model Numbers

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 5. The tables below shows the relationship between each Part Number and its related Model Number.

2 Liter Models

Part	Model Numbers
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
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
96G035	G3-G-12MX-2L0L05-10CV0000
96G036	G3-G-24MX-2L0L05-10CV0000
96G037	G3-G-ACMX-2L0L00-1D00A000
96G098	G3-G-12MX-2L0L00-UDMVA1R2
96G107	G3-A-24MX-2L0L00-1DMVA2R3
96G110	G3-G-24MX-2L0L00-UDMVA1R2
96G115	G3-G-24MX-2LFL00-UDMVA1R2
96G122	G3-A-ACMX-2L0L00-1DMVA2R3
96G125	G3-G-ACMX-2L0L00-UDMVA1R2
96G132	G3-G-ACMX-2LFL00-UDMVA1R2
96G174	G3-A-ACMX-2L0L00-UDMVA1R2
96G178	G3-G-24MX-2L0L00-0D00A100
96G190	G3-A-24MX-2L0L00-UDMVA1R2
96G206	G3-G-24MX-24L0L07-0D00A000

4 Liter Models

Part	Model Numbers
96G088	G3-G-24MX-4L0L00-10CV00R0
96G090	G3-G-24MX-4LFL00-10CV00R0
96G092	G3-G-ACMX-4L0L00-1D0V0000
96G094	G3-G-ACMX-4LFL00-1D0V0000
96G096	G3-G-12MX-4L0L00-1DMVA2R3
96G099	G3-G-12MX-4L0L00-UDMVA1R2
96G103	G3-G-24MX-4L0L00-1DMVA2R3
96G108	G3-A-24MX-4L0L00-1DMVA2R3
96G111	G3-G-24MX-4L0L00-UDMVA1R2
96G113	G3-G-24MX-4LFL00-1DMVA2R3
96G116	G3-G-24MX-4LFL00-UDMVA1R2
96G118	G3-G-ACMX-4L0L00-1DMVA2R3
96G123	G3-A-ACMX-4L0L00-1DMVA2R3
96G126	G3-G-ACMX-4L0L00-UDMVA1R2
96G128	G3-G-ACMX-4LFL00-1DMVA2R3
96G133	G3-G-ACMX-4LFL00-UDMVA1R2
96G141	G3-G-12MX-4L0L00-10C00000
96G143	G3-G-24MX-4L0L00-10C00000
96G145	G3-G-ACMX-4L0L00-1D000000
96G151	G3-G-12MX-4L0L05-10CV0000
96G153	G3-G-12MX-4L0L05-U0CV0100
96G155	G3-G-24MX-4L0L05-10CV0000
96G157	G3-G-24MX-4L0L05-U0CV0100
96G159	G3-G-12MX-4L0L05-00C0010M
96G160	G3-G-24MX-4L0L05-00C0010M
96G161	G3-G-12MX-4L0L05-U0C0010M
96G162	G3-G-24MX-4L0L05-U0C0010M
96G175	G3-A-ACMX-4L0L00-UDMVA1R2
96G181	G3-G-24MX-4L0L03-00C00100
96G183	G3-G-ACMX-4L0L00-1D00A000
96G188	G3-A-24MX-4L0L05-U0C0010M
96G212	G3-G-24MX-4LAL05-10CV0000
96G218	G3-G-12MX-4LFL00-10MVA2R3

8 Liter Models

Part	Model Numbers
96G089	G3-G-24MX-8L0L00-10CV00R0
96G093	G3-G-ACMX-8L0L00-1D0V0000
96G097	G3-G-12MX-8L0L00-1DMVA2R3
96G100	G3-G-12MX-8L0L00-UDMVA1R2
96G104	G3-G-24MX-8L0L00-1DMVA2R3
96G109	G3-A-24MX-8L0L00-1DMVA2R3
96G112	G3-G-24MX-8L0L00-UDMVA1R2
96G119	G3-G-ACMX-8L0L00-1DMVA2R3
96G124	G3-A-ACMX-8L0L00-1DMVA2R3
96G127	G3-G-ACMX-8L0L00-UDMVA1R2
96G142	G3-G-12MX-8L0L00-10C00000
96G144	G3-G-24MX-8L0L00-10C00000
96G146	G3-G-ACMX-8L0L00-1D000000
96G152	G3-G-12MX-8L0L05-10CV0000
96G154	G3-G-12MX-8L0L05-U0CV0100
96G156	G3-G-24MX-8L0L05-10CV0000
96G158	G3-G-24MX-8L0L05-U0CV0100
96G176	G3-A-ACMX-8L0L00-UDMVA1R2
96G177	G3-G-24MX-8L0L05-00C0010M
96G186	G3-A-12MX-8L0L05-U0C0010M
96G216	G3-G-24MX-8L0L08-10CV0000
96G191	G3-G-24MX-8L0L05-10CV02M3
96G195	G3-A-24MX-8L0L05-U0C0010M
96G197	G3-G-ACMX-8LFL00-1DMVA2R3
96G209	G3-G-ACMX-8LAL00-1DV00000
96G215	G3-G-24MX-8LAL05-10CV0000
96G216	G3-G-24MX-8L0L08-10CV00000

12 Liter Models

Part	Model Numbers
96G105	G3-G-24MX-120L00-1DMVA2R3
96G120	G3-G-ACMX-120L00-1DMVA2R3
96G164	G3-G-24MX-120L05-10CV00000
96G165	G3-G-24MX-120L05-U0CV0100

16 Liter Models

Part	Model Numbers
96G106	G3-G-24MX-160L00-1DMVA2R3
96G121	G3-G-ACMX-160L00-1DMVA2R3
96G166	G3-G-ACMX-160L00-1D0V0000
96G168	G3-G-24MX-160L05-10CV0000
96G169	G3-G-24MX-160L05-U0CV0100
96G185	G3-G-24MX-160L05-U0C0010M
96G201	G3-A-ACMX-160L00-UDMVA1R2
96G219	G3-G-24MX-160L08-10CV0000

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 symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

 WARNING	
 	<p>ELECTRIC SHOCK HAZARD</p> <p>This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.</p> <ul style="list-style-type: none"> • Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing 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.
 	<p>EQUIPMENT MISUSE HAZARD</p> <p>Misuse can cause death or serious injury.</p> <ul style="list-style-type: none"> • 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. • 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. Alterations or modifications may void agency approvals and create safety hazards. • Make sure all equipment is rated and approved for the environment in which you are using it. • 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.

⚠ WARNING

	<p>SKIN INJECTION HAZARD</p> <p>High-pressure fluid from dispensing 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.</p> <ul style="list-style-type: none"> • Do not point dispensing 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 the Pressure Relief Procedure 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.
	<p>PRESSURIZED EQUIPMENT HAZARD</p> <p>Over-pressurization can result in equipment rupture and serious injury.</p> <ul style="list-style-type: none"> • A pressure relief valve is required at each pump outlet. • Follow Pressure Relief Procedure in this manual before servicing.
	<p>PLASTIC PARTS CLEANING SOLVENT HAZARD</p> <p>Many solvents can degrade plastic parts and cause them to fail, which could cause serious injury or property damage.</p> <ul style="list-style-type: none"> • 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 SDSs and recommendations.
	<p>MOVING PARTS HAZARD</p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> • 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 and disconnect all power sources.
	<p>PERSONAL PROTECTIVE EQUIPMENT</p> <p>Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This protective equipment includes but is not limited to:</p> <ul style="list-style-type: none"> • Protective eye wear, and hearing protection. • Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer

Installation

Unpacking

NOTICE
Observe precautions for handling electrostatic sensitive devices. Touch ground before handling pump.

The pump module was carefully packaged for shipment by Graco. When the package arrives, perform the following procedure to unpack the units:

1. Inspect the shipping box carefully for shipping damage. Contact the carrier promptly if damage is discovered.
2. Unseal the box and inspect the contents carefully. There should not be any damaged parts.
3. Compare the packing slip against all items included in the box. Any shortages or other inspection problems should be reported immediately.

Choosing an Installation Location

				
AUTOMATIC SYSTEM ACTIVATION HAZARD				
<p>If the system is equipped with has an automatic timer (user supplied) that activates the pump lubrication system when power is connected or when exiting the programming function, unexpected activation of the system could result in serious injury, including skin injection and amputation.</p> <p>Before you install or remove the lubrication pump from the system, disconnect and isolate all power supplies and relieve all pressure.</p>				

- Use designated mounting holes and provided configurations only.
- Always mount the G3 oil models upright.
- If the G3 grease model 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, otherwise the G3 must be mounted upright. Refer to your model number to confirm if a follower plate was installed on your pump. See page 5, 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.
- Some installations may require an additional reservoir support bracket. See Table below for bracket information

Part No	Description
571159	Reservoir bracket and strap
125910	L-Bracket for pump
127665	USP to G-Series mounting bracket

- 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 mounting hole layouts provided in the Mounting Pattern section of this manual, page 79. No other installation configuration should be used.

Component Identification

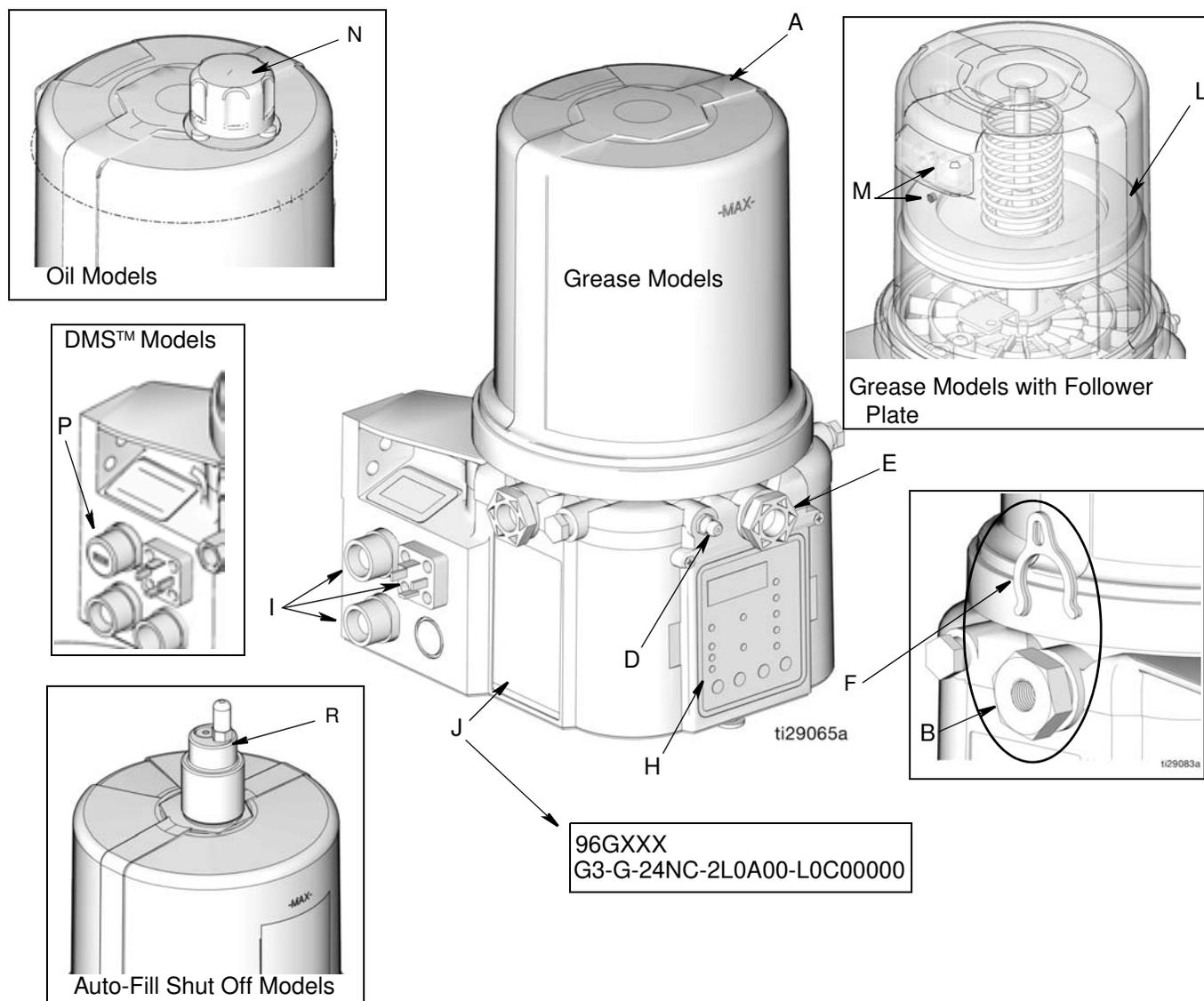


FIG. 2:

Key:

- | | |
|---|--|
| <p>A Reservoir</p> <p>B Pump Element (1 included. Can accommodate 3 total)</p> <p>C Pressure Relief Valve (Not shown. Not included / required for each outlet - Available from Graco. See Parts, page 75.)</p> <p>D Zerk Inlet Fill Fitting (1 included / grease models only)</p> <p>E Pump Outlet Plug (2 included)</p> <p>F Volume Control Spacers (2 included. More spacers = less output volume per stroke) (also see FIG. 20, page 22)</p> <p>G Fuse (DC models only - Not included, not shown. Available from Graco. See Parts, page 76.)</p> <p>H Control Panel</p> <p>I Power / Sensor Panel (both sides; only one side shown)</p> <p>J Part Number / Model Number example only shown, (see pages 5, Understanding the Model Number, for details)</p> <p>K Power Cord (not shown)</p> | <p>L Follower Plate (grease models only / not available on all grease models)</p> <p>M Vent Hole for Follower Plate (grease models only / not available on all grease models)</p> <p>N Fill cap (oil models only)</p> <p>P USB Port (DMS™ Models only)</p> <p>R Auto-Fill Shut Off</p> |
|---|--|

Typical Installation

Series Progressive Divider Valve Installations

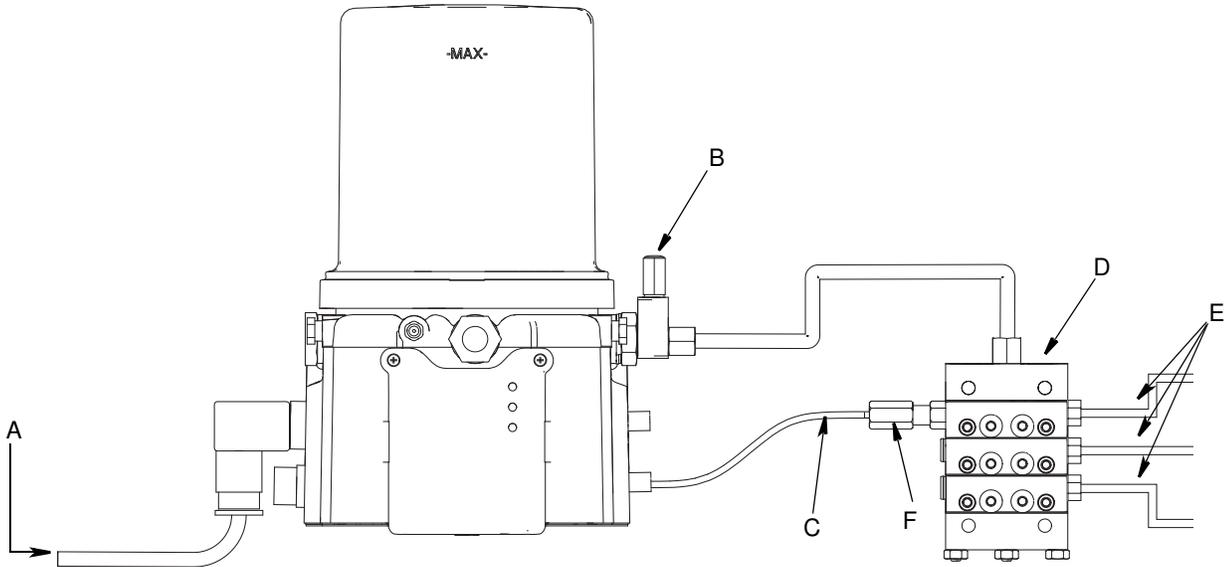


FIG. 3

Injector Installations

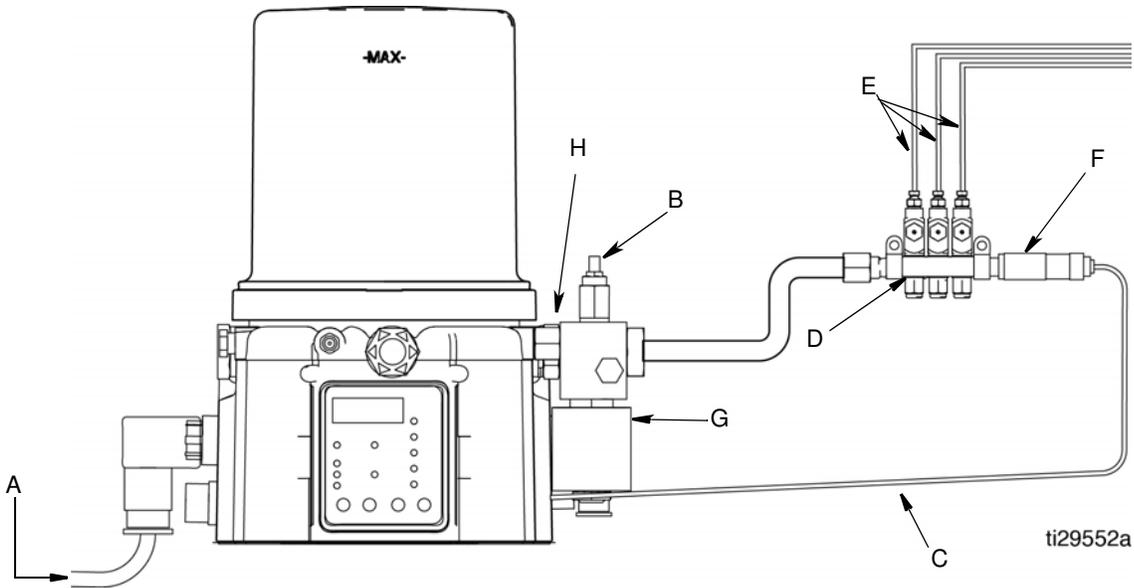


FIG. 4

- | | |
|--|---|
| <p>A Connected to fused power source</p> <p>B Pressure relief valve (Not included/required for each outlet - user supplied. See Parts, page 75)</p> <p>C - Cycle indicator sensor cable (Divider Installations)
- Pressure switch cable (Injector Installations)</p> <p>D - Series progressive divider valves (Divider Installations)
- Injectors (Injector Installations)</p> <p>E To lube points</p> | <p>F - Proximity Switch (Divider Installations)
- Pressure switch (Injector Installations)</p> <p>G Vent valve (Not included / available from Graco. See Parts, beginning on page 74.)</p> <p>H Return to reservoir</p> |
|--|---|

Typical Installation - With Remote Fill Manifold

The installation shown is only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.

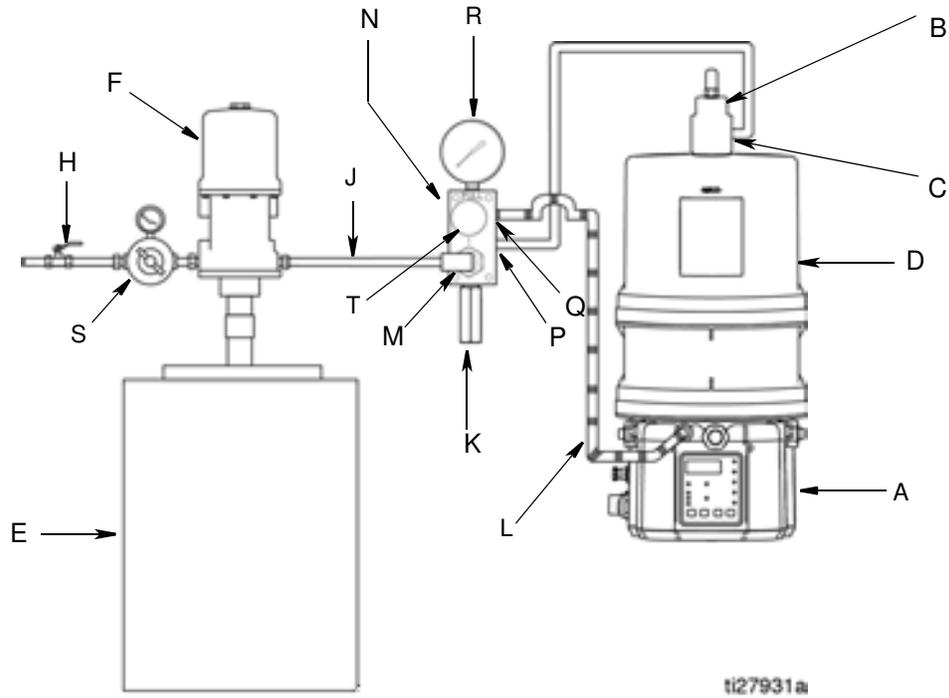


FIG. 5

Key:

- A G3 Pump
- B Auto-Fill Shut Off Valve
- C Auto-Fill Inlet
- D G3 Reservoir
- E Remote Fill Reservoir
- F Remote Fill Pump
- G Supply Hose (user supplied)
- H Air Supply to Refill Pump
- J Supply Hose (user supplied)
- K Pressure Relief Valve
- L Drain Hose
- M Fill Coupler/Inlet (quick disconnect)
- N Fill Manifold❖
- P Fill Manifold Outlet
- Q Fill Manifold Vent Port
- R Pressure Gauge
- S Pressure Regulator and Gauge
- T Pressure Relief Knob

❖ To relieve the stall pressure in the fill line a fill manifold (N) **must** be installed in the system.

Optional Installation - Without Remote Fill Manifold

The installation shown is only a guide for selecting and installing system components. Contact your Graco distributor for assistance in planning a system to suit your needs.

NOTE: The remote filling station pump stalls (dead-heads) when the reservoir is full. If the pump does not stall (dead-head) there is a leak in the system.

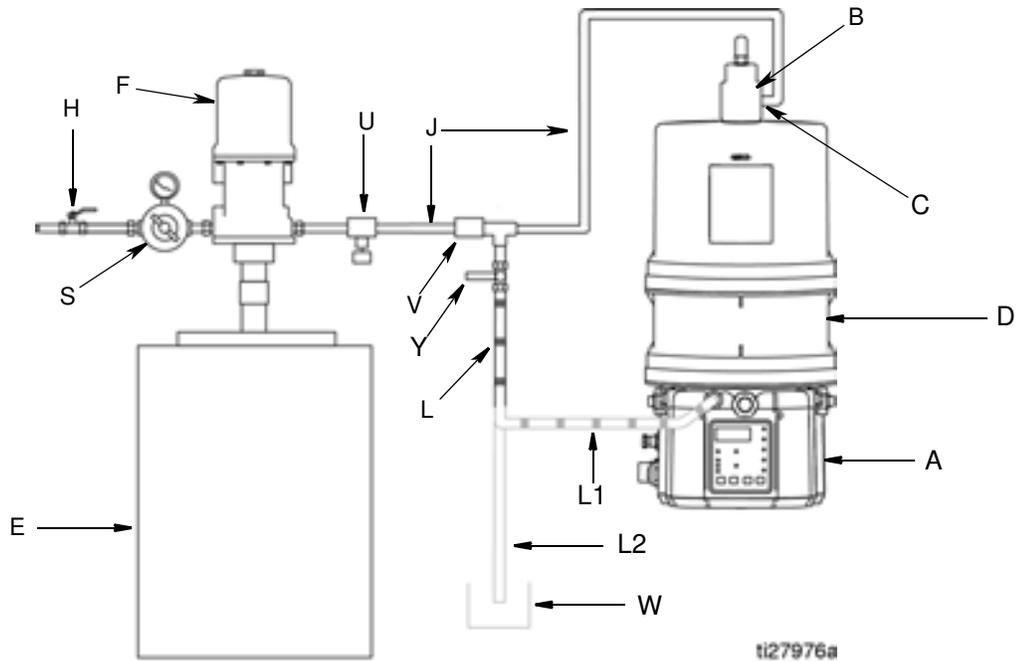


FIG. 6

Key:

- A G3 Pump
- B Auto-Fill Shut Off Valve
- C Auto-Fill Inlet
- D G3 Reservoir
- E Remote Fill Reservoir
- F Remote Fill Pump
- H Relief Valve
- J Supply Hose (user supplied)
- L Drain Tube
 - L1 Option - To reservoir
 - L2 Option - To overflow container

- S Pressure Regulator and Gauge
- U Pressure Relief Valve
- V Quick Disconnect
- W Overflow Container
- Y Supply Hose Pressure Relief Valve❖

❖ To relieve the stall pressure in the fill line a ball valve (Y) **must** be installed in the system.

System Configuration and Wiring

Grounding



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

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
<p>Fuses (user supplied) are required on all DC models. To avoid equipment damage:</p> <ul style="list-style-type: none"> • 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 (via DIN alarm relay connector)	Standard Remote Illumination (via 5 wire CPC power cable)	Tri-Color Remote Illumination (via M12 Connector)
Unit in OFF Mode	Deactivated (off)	Off	Off
Unit in ON Mode	Deactivated (off)	On	Green
Warning Condition	Deactivated (off)	Toggles On and Off once per second	Yellow
Low Level Indication (A9 OFF)	See Warning or Fault Condition	Toggles On and Off once per second	See Warning or Fault Condition
Fault Condition (Advanced Programming A7 OFF)	Toggles On and Off once per second	Toggles On and Off once per second	Red
Fault Condition (Advanced Programming A7 ON)	Activated (on)	Toggles On and Off once per second	Red

Outputs (“08” option) (via 5 wire CPC)

	Pin 4 Alarm	Pin 7 Low Level
Low Level Warning FIRMWARE 6.02 and above (A7 OFF, A9 ON)	Off	Toggles On and Off once per second
Low Level Warning (A7 OFF, A9 OFF)	Off	Activated (On)
Low Level Fault (A7 OFF, A9 OFF)	Toggles On and Off once per second	Activated (On)
Low Level Fault (A7 ON, A9 OFF)	Activated (On)	Activated (On)

Alarm Relay Response

	Output Tied to Common
No Faults or Warnings	N.O. _____ N.C. _____
Fault (Advanced Programming A7 OFF)	
Fault (Advanced Programming Setting A7 ON)	N.O. _____ N.C. _____

Wiring and Installation Diagrams

The following Table identifies the wiring and installation diagrams provided in this manual.

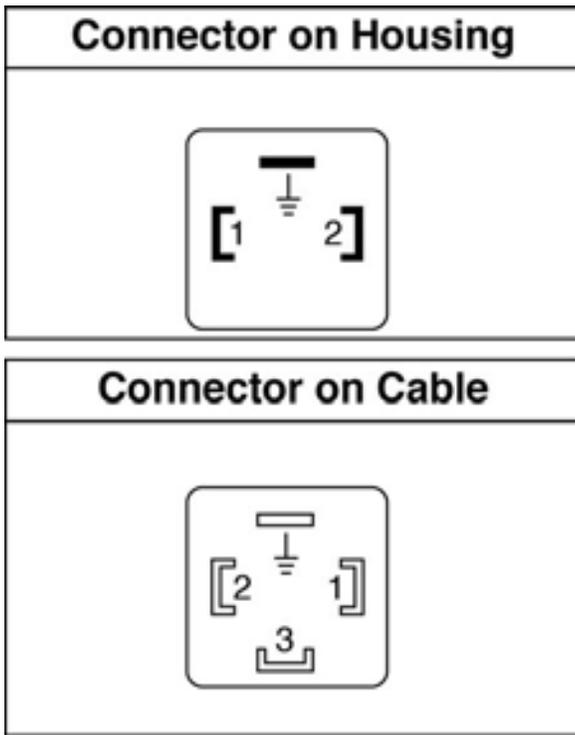
Diagram	Symbol	Page #
Power DIN AC		16
Power DIN DC		16
Power CPC DC		17
Inputs (M12)		18
Vent Valve Outputs		19
Alarm Outputs		19
Illuminated Manual Run Input		Kits: 571030, 571031, 571032, 571033



Power DIN AC - 15 foot: Part No. 16U790

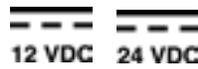
Pin and Related Wire Color (FIG. 7)

Pin	Pin Name	Color
1	Line	Black
2	Neutral	White
3	Not Used	Not Used
	Ground	Green



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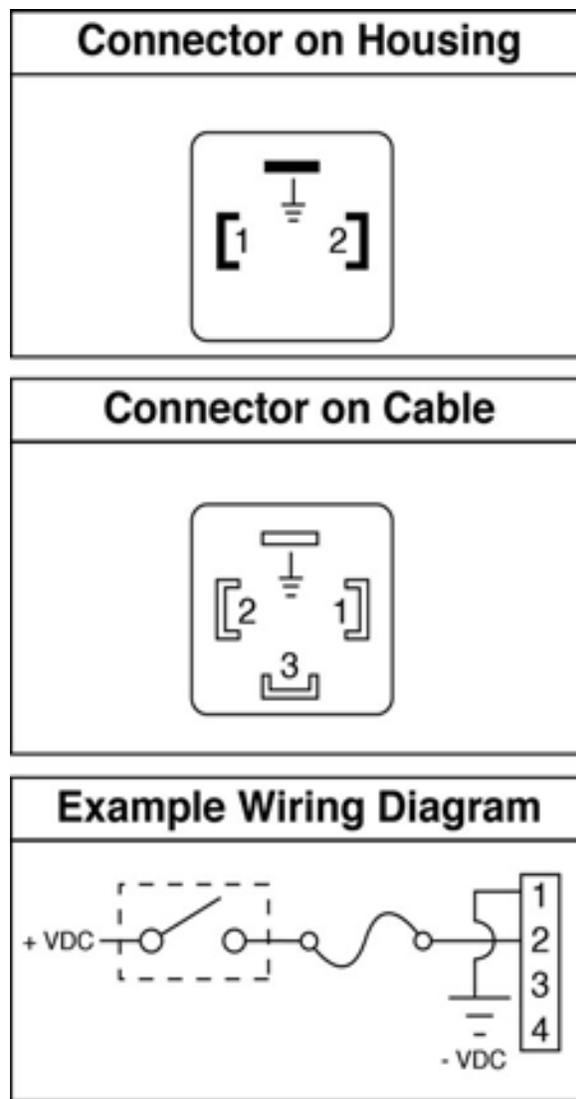
FIG. 7



12 VDC 24 VDC Power DIN DC - 15 foot

Pin and Related Wire Color (FIG. 8)

Pin	Pin Name	Color
1	-VDC	Black
2	+VDC	White
3	Not Used	Not Used
	Not Used	Green



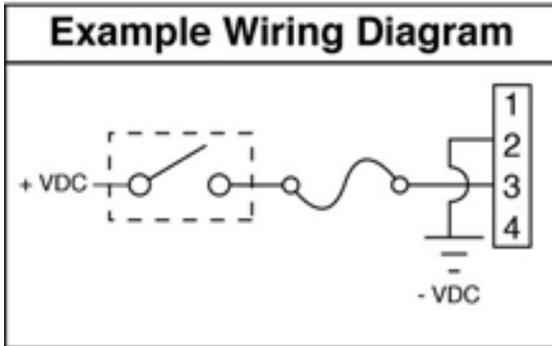
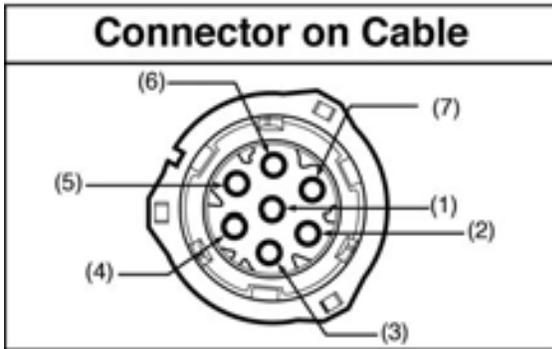
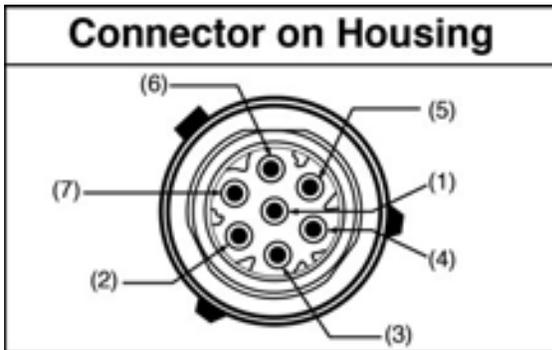
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FIG. 8

12 VDC 24 VDC Power CPC DC -15 foot

Pin and Related Wire Color (Fig. 9)

Pin	Pin Name	Color
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



ti29557a

FIG. 9

12 VDC 24 VDC Power CPC DC - 5 Wire

- Part No.: 127780: 15 ft (4.5 m)**
- Part No.: 127781: 20 ft (6.1 m)**
- Part No.: 127782: 30 ft (9.1 m)**

An Illuminated Remote Run Button Kit: 571030, 571031 for starting a manual run cycle if used in conjunction with a 5-wire CPC cable, is available from Graco. Contact your local Graco distributor or Graco Customer Service for additional information about these kits.

Pin and Related Wire Color (Fig. 10)

Pin	Pin Name	Color
1	Not Used	Not Used
2	-VDC	Black
3	+VDC	Red
4	LIGHT	White
5	Manual Run Switch	Orange
6	Not Used	Not Used
7	Not Used	Green

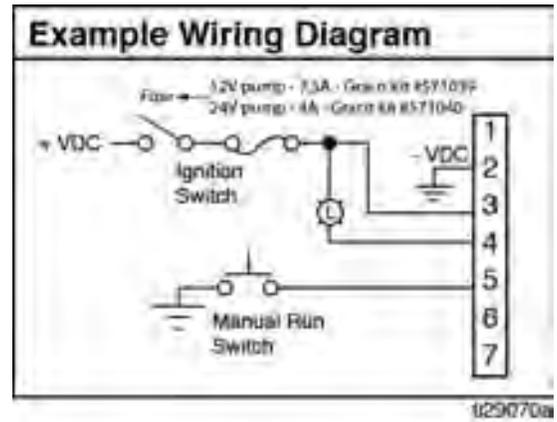


FIG. 10

**Pin and Related Wire Color (FIG. 11)
Wiring for "08" Option**

CPC Pin	Pin Name	Wire Color
1	Not Used	Not Used
2	-VDC/Com	Black
3	+VDC	Red
4	Alarm	White
5	Manual	Orange
6	Not Used	Not Used
7	Low Level Warning	Green

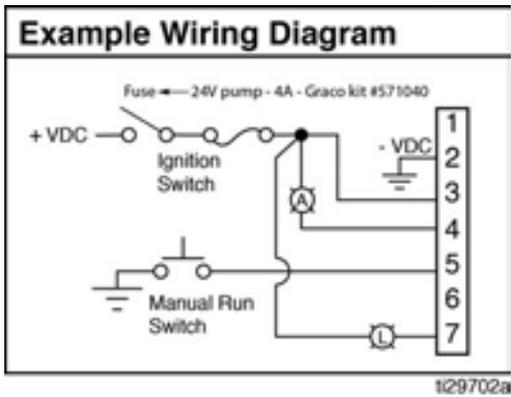
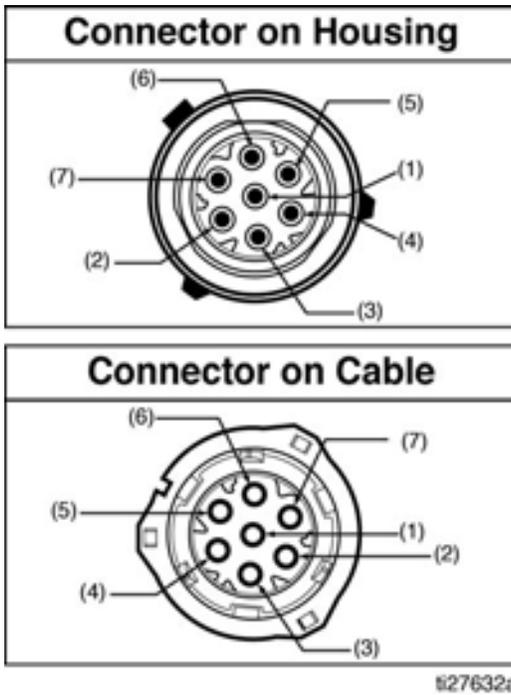


FIG. 11



Inputs (M12)

See Technical Data, page 77 for ratings.

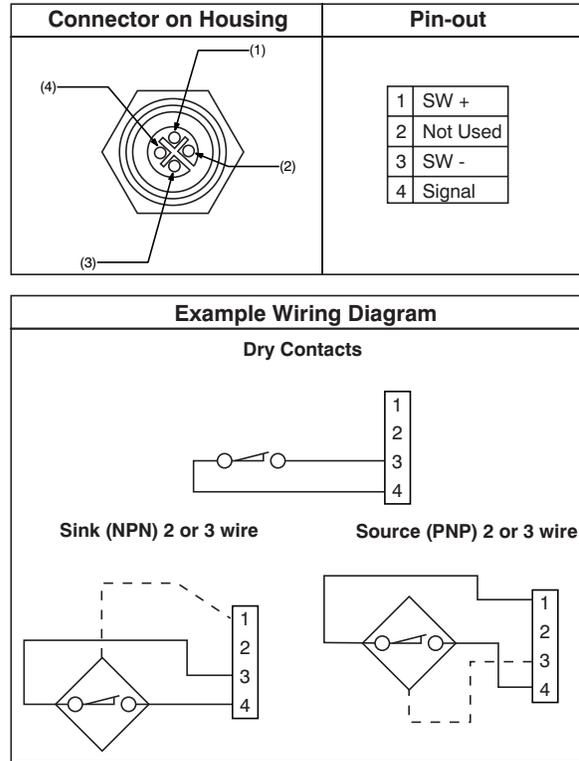


FIG. 12



Vent Valve Outputs

See Technical Data, page 77 for ratings.

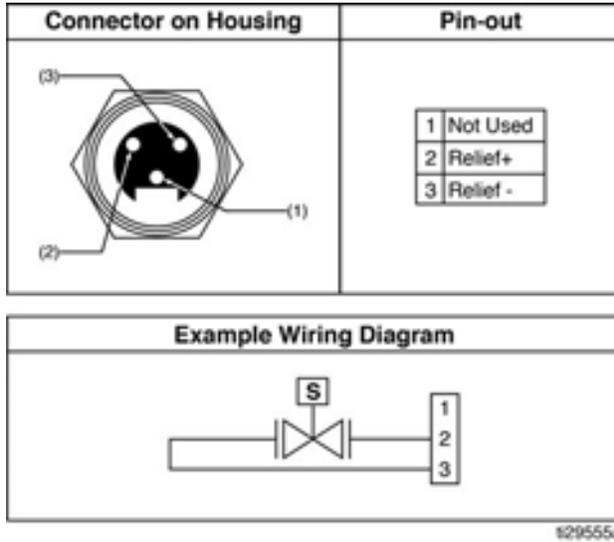


FIG. 13



Alarm Outputs

DC example shown. See Technical Data, page 77 for ratings.

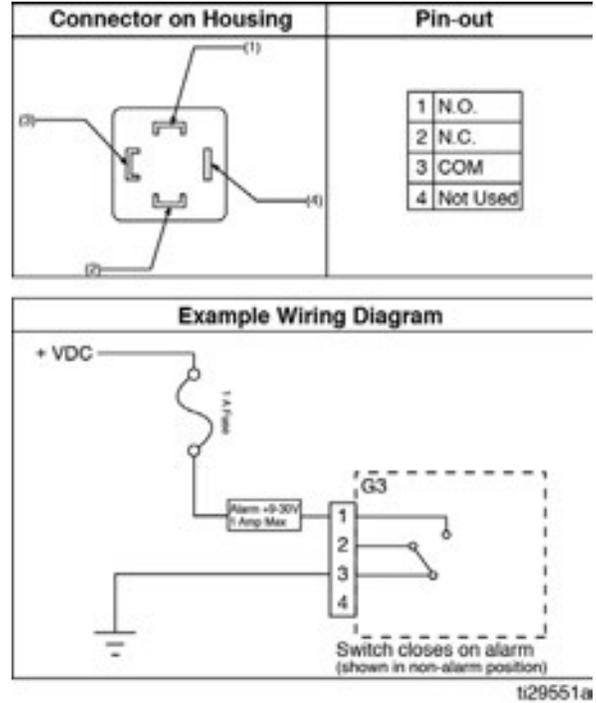


FIG. 14

1

1.

Part No. 124333: Cable Pin Out (M12)

Wire Colors (FIG. 15)

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

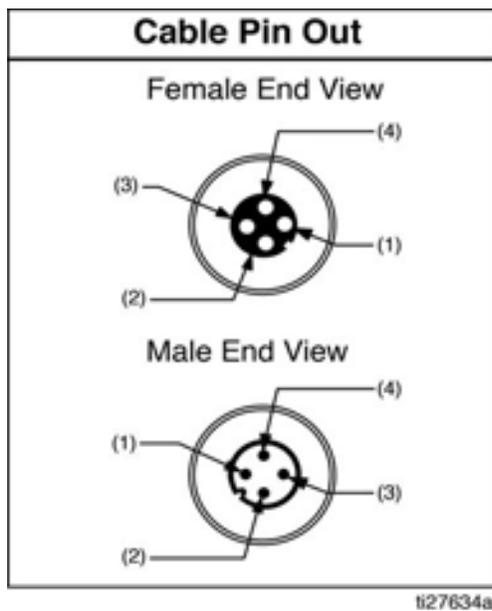


FIG. 15

Part No. 124300: Field Wireable Pin Out (M12)

Wire Colors (FIG. 17)

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

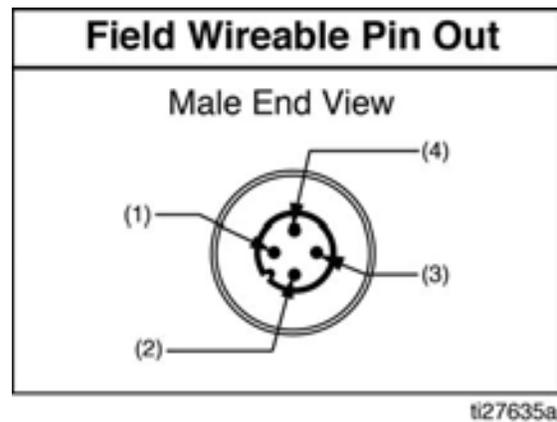


FIG. 17

Part No. 124594: 4 Pin Eurofast Field Wireable Connector

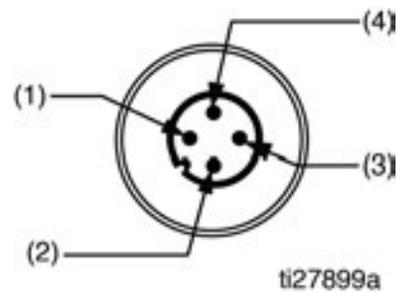


FIG. 18

Part No. 124595: 5 Pin Eurofast Field Wireable Connector

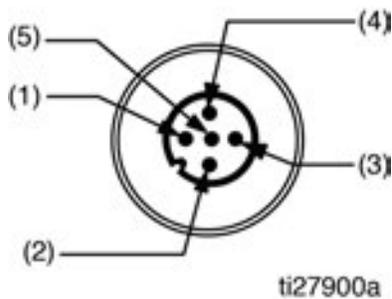


FIG. 16

Setup

Pressure Relief



Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

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.

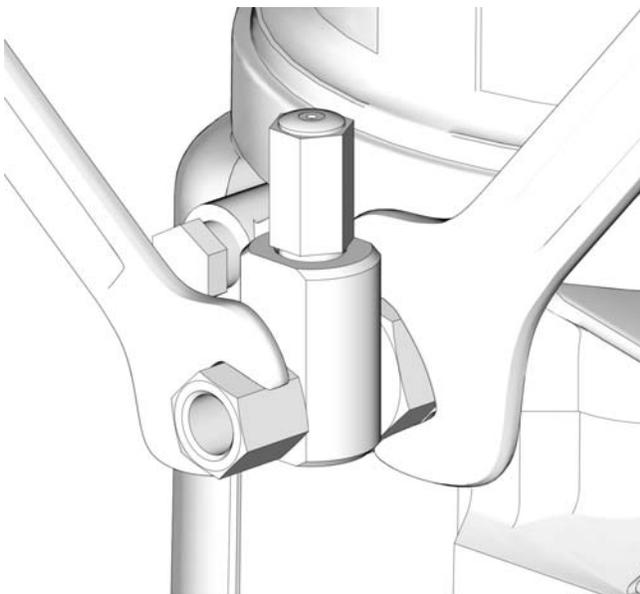


FIG. 19

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. 19 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



To prevent over-pressurization, which can result in equipment rupture and serious injury, 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 any component installed in the system. See Technical Data, page 73.
- 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 75.

Setting Pump Outlet Volume



NOTE:

- Before making any adjustments to pump volume, **Relieve Pressure** following procedure on page 21.
 - Only use Graco supplied spacers to control output volume.
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. 20).

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).

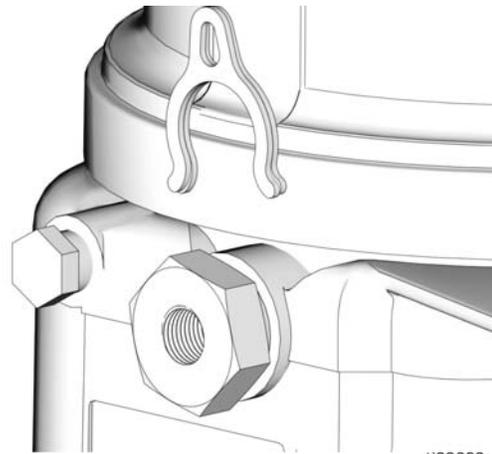


FIG. 20

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. 23).
- Do not operate G3 without reservoir attached.

NOTICE
<ul style="list-style-type: none"> • Always clean inlet fitting (D) (FIG. 21) 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.

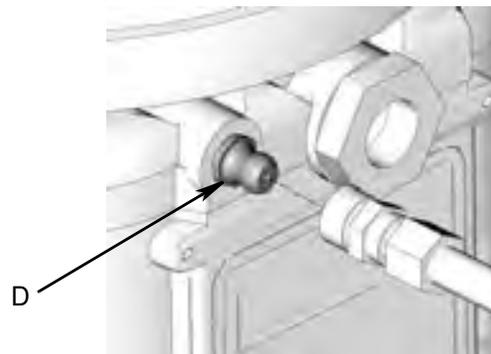
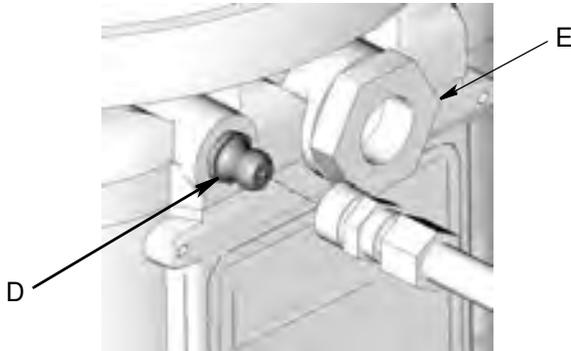


FIG. 21

Models without a follower plate:

1. Connect fill hose to inlet fitting (D) (FIG. 22).

**FIG. 22**

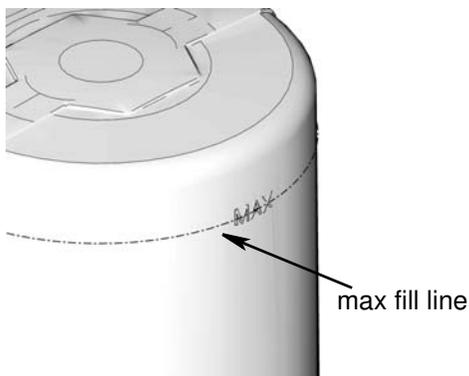
2. For higher viscosity fluids, start pump to rotate stirring paddle during fill to prevent air pockets from forming in grease.

To start the pump 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. 23**

4. Remove fill hose.

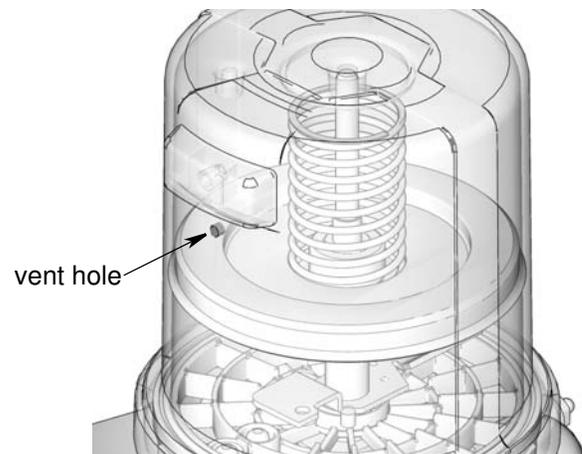
Models with a follower plate:

1. Connect fill hose to inlet fitting (D) (FIG. 22).
2. For higher viscosity fluids, start pump to rotate stirring paddle during fill to prevent air pockets from forming in grease.

To start the pump press the manual run button.



3. Fill reservoir with grease until seal of follower plate breaches the vent hole (FIG. 24) and the majority of air is expelled from the reservoir.

**FIG. 24**

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

4. Remove fill hose.

Changing Greases

When changing greases, always use compatible fluids or greases.

Auto-Fill Shut Off

Loading Grease

To ensure optimal performance from the G3:

- Only use NLGI #000 - #2 greases appropriate for your application, automatic dispensing, and the temperature. Consult with machine and lube manufacturer for details.
- Do not overfill.
- Do not operate G3 without reservoir attached.

NOTICE

Care must be used when filling the reservoir using a pneumatic or electric transfer pump to not pressurize and break the reservoir.

Changing Greases

When changing greases, always use compatible fluids or greases.

The Auto-Fill Shut Off is used for refilling the G3 reservoir in an automatic lubrication system. As fluid is added to the reservoir, it pushes the plate valve up to the top of the reservoir. The plate valve then pushes the valve pin and closes the inlet fluid path.

When the fluid refilling path closes, the refilling line pressurizes and brings the refilling pump to a pressurized stall condition.

NOTE: The operator must monitor system while filling the reservoir to prevent overfilling.

--	--	--	--

The remote filling station pump stalls (dead-heads) when the reservoir is full, causing the supply system pressure to rise to the maximum output pressure of the filling station pump. To help prevent equipment damage or serious injury caused by pressurized fluid, such as skin injection or injury from splashing fluid, always use a remote filling station pump with a maximum output pressure of 5100 psi (35.1 MPa, 351.6 bar) and use supply hoses with a minimum pressure rating of 5100 psi (35.1 MPa, 351.6 bar).

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COMPONENT RUPTURE HAZARD
 The maximum working pressure of each component in the system may not be the same. To reduce the risk of over-pressurizing any component in the system, be sure you know the maximum working pressure of each component. **Never** exceed the maximum working pressure of the lowest rated component in the system. Over-pressurizing any component can result in rupture, fire, explosion, property damage and serious injury.

Regulate input pressure to the remote fill pump so that no fluid line, component or accessory is over pressurized.

Remote Fill with Remote Fill Manifold

The reference letters used in the following instructions refer to the Typical Installation diagram, page 11.

The fill valve is used to relieve pressure in the refill line and to reset the Auto Fill Shut Off. See Fill Valve instruction manual 333393. Graco fill valve, part no. 77X542 is available. Contact your local Graco distributor.

1. Pull out and hold the Pressure Relief Knob (T) long enough to relieve line pressure between Fill Manifold (N) and Auto-Fill Shut Off Valve (B).
2. Verify the Auto-Fill Shut Off (B) pin is down, indicating it is reset (FIG. 25).

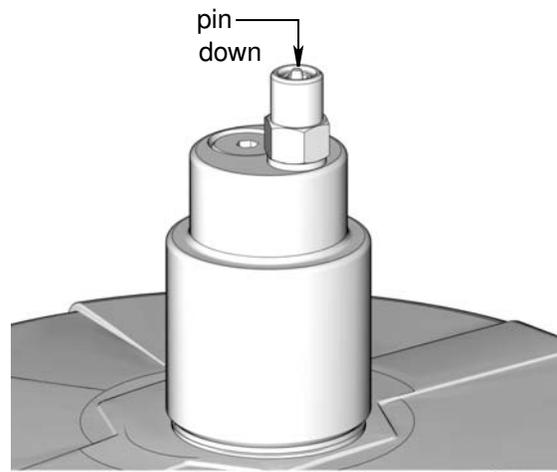


FIG. 25

ti28218a

3. Remove yellow Dust Cover from Fill Coupler (M).

4. Connect Supply Hose (J) between the Remote Filling Station Pump (F) and Fill Coupler port marked with an "I".
5. Start Remote Filling Station Pump (F).
6. When the G3 Reservoir (D) is filled:
 - the Remote Filling Station Pump (F) stalls (dead-heads),
 - the Auto-Fill Shut Off (B) pin pops up as shown in FIG. 26,
 - the Pressure Gauge (R) rises to the fill pump's set pressure.

NOTE: If the pump does not stall (dead-head) there is a leak in the system.

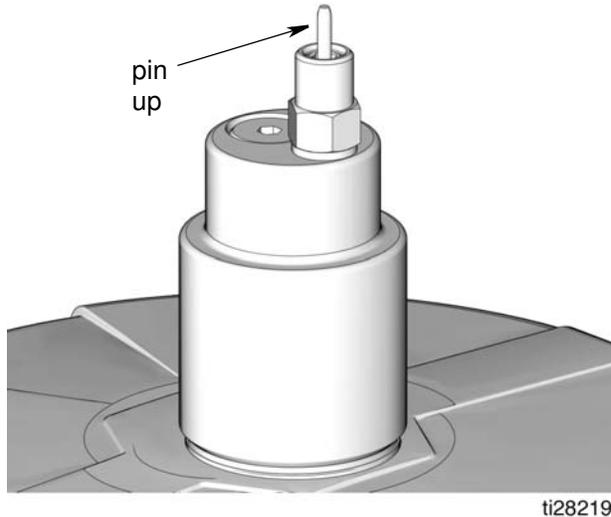


FIG. 26

7. Turn off the Remote Filling Station Pump (F).
8. Pull out and hold the Pressure Relief Knob (T) long enough to relieve line pressure between Fill Manifold (N) and Auto-Fill Shut Off Valve (B) and between Remote Filling Station Pump (F) and Fill Manifold (N).

NOTE: The length of time it takes to vent varies depending on the system design and installation. In some installations it may be necessary to repeat Step 8 to ensure pressure is relieved.

9. Disconnect Supply Hose (J) at Fill Coupler (M).
10. Replace yellow Dust Cover over Fill Coupler (M).

Remote Fill without Remote Fill Manifold

The reference letters used in the following instructions refer to the Typical Installation diagram, page 12.

1. A supply hose pressure relief valve (Y) and overflow container (W) (for collecting excess fluid that drains during pressure relief) **must** be installed in an easily accessible location between the remote filling station pump (F) and the Auto-Fill Shut Off (B). This pressure relief valve is used to relieve pressure in the refill line and to reset the Auto-Fill Shut Off. See Typical Installation, starting on page 12.

A Pressure Relief Kit: 247902 is available from Graco. Contact your distributor or Graco Customer Service for additional information about this kit.

2. Connect Supply Hose (J) at Quick Connect (V).
3. Turn on remote filling station pump (F) and fill the G3 reservoir (D) until the indicator pin on the Auto-Fill Valve pushes up as shown in FIG. 27. The pressure in the refill pump (F) builds and the pump stalls.

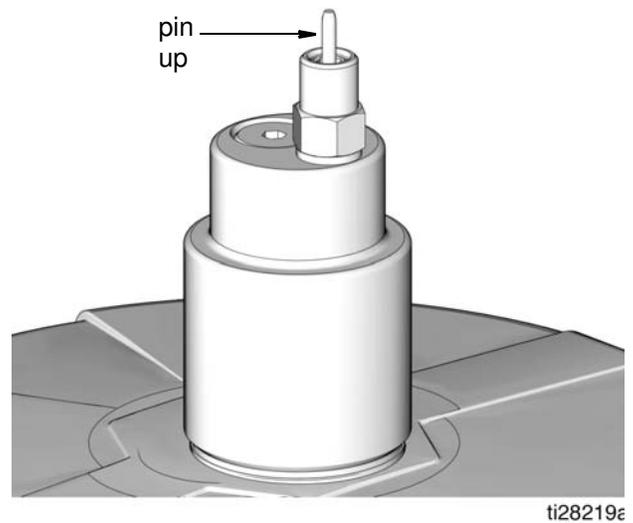


FIG. 27

4. Turn off the air supply (H) to pump (F).
5. Relieve remote filling station pump pressure using the following Remote Filling Station Pressure Relief procedure:

Remote Filling Station Pressure Relief

The reference letters used in the following instructions refer to the Typical Installation diagrams starting on page 10.

 The following Pressure Relief Procedure is only used with the Auto-Fill Shut Off Valve to relieve remote filling station and lubricant supply line pressure.

This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

- a. To relieve pressure between the Refill Pump (F) and Auto-Fill Shut Off (B), open ball valve (bv) (FIG. 28). Pressure will be released and excess fluid will drain out of the drain tube (L) and into the lubrication overflow container (W).

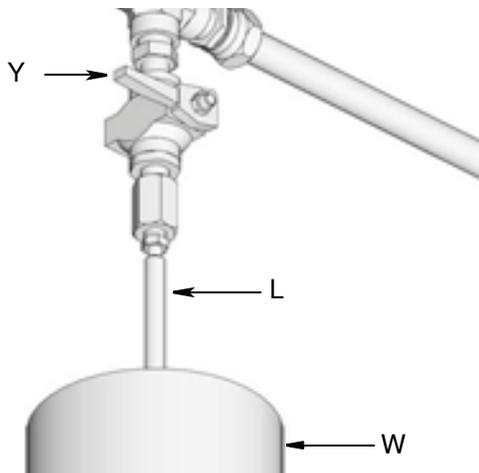


FIG. 28:

- b. Close supply hose pressure relief valve (Y) when all pressure has been relieved.
6. Disconnect the supply hose (J) from Quick Connect (V).

Filling Oil Unit

- Only use oil appropriate for your application, automatic dispensing, and the equipment's operating temperature. Consult with machine and lube manufacturer for details.
- Do not overfill (FIG. 29).
- Do not operate G3 without reservoir attached.
- Only use oils with viscosity at least 40 cSt.

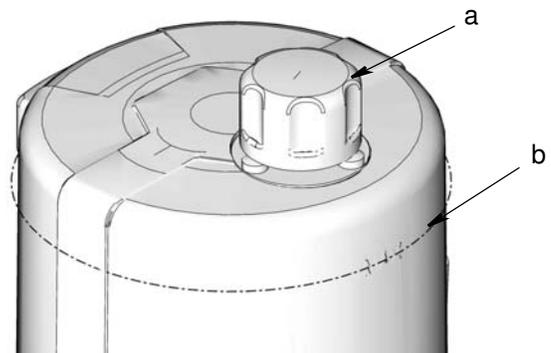


FIG. 29

1. Remove fill cap (a).
2. Pour oil into reservoir to max fill line (b).
3. Replace fill cap. Hand tighten cap, securely.

Priming

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

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

1. Loosen pump element fitting (FIG. 30).

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

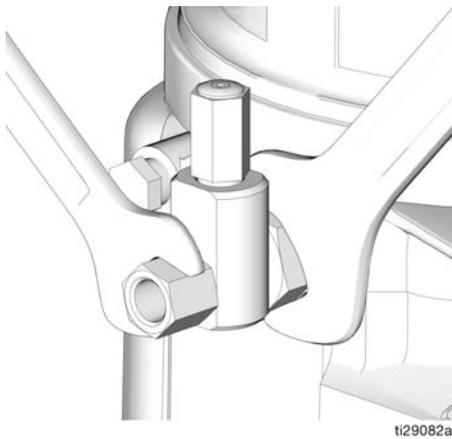


FIG. 30

2. Only run pump until air is no longer dispensed with the lubricant coming out of element fitting (FIG. 31).

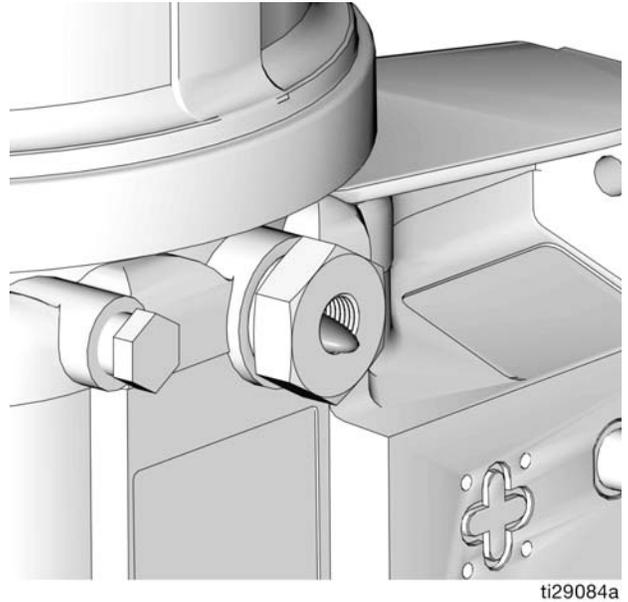
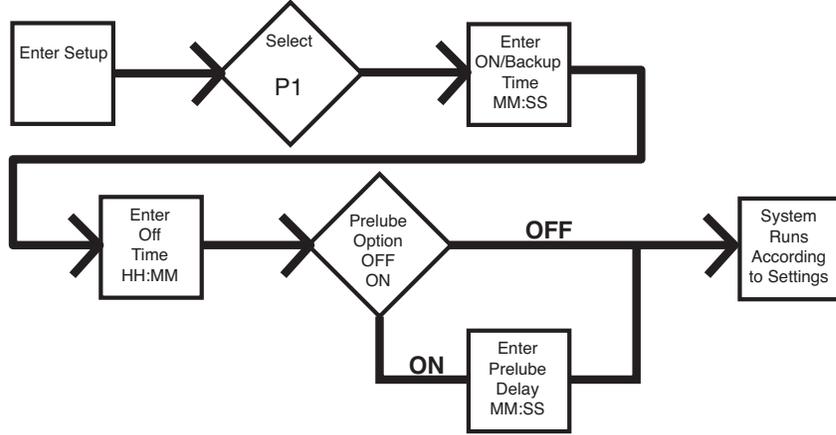


FIG. 31

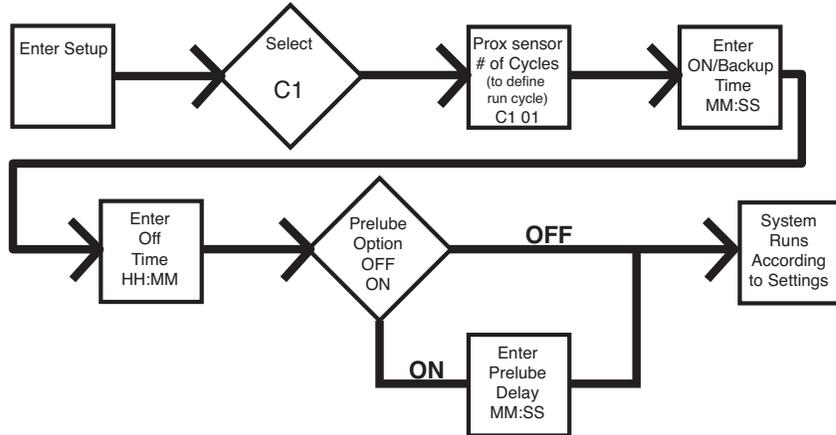
3. Tighten pump element fitting using two wrenches working in opposite directions (FIG. 30).

Quick Setup Guide

Max Model System - Injector System with Single Sensor Input



Max Model System - Divider Valve System with Single Sensor Input



Max Model Setup

Control Panel Overview (FIG. 32)

NOTE: Programming instructions begin on page 30.

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.

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.

LEFT DIRECTION ARROW / RESET

- In SETUP MODE: moves cursor in display one field to the left.
- In RUN MODE: single press clears warning.
- In RUN MODE: pressing for one second ends run cycle if no warnings.
- 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.

ALARM ICONS

LED next to icon lights when a fault / warning event occurs during a run cycle. See page 58 for a complete description of these alarm scenarios.

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.

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.

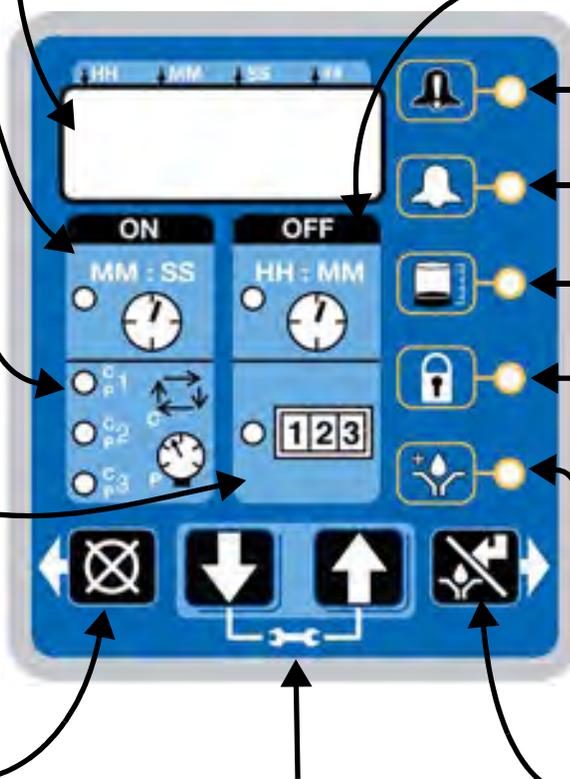


FIG. 32

Programming the Max Model

Checking the Firmware Version

To check the firmware version installed on the pump:

1. Remove power to the pump by disconnecting the power cable from the connection.
2. Reconnect the power cable to the power connection.

This creates a power cycle and the firmware version displays on the screen during the first few seconds of power up. See FIG. 33.



FIG. 33

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 1 second to move to the OFF mode.



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 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 47.

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.



- 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.



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



- 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.

Setting the Real Time Clock

DMS™ Equipped Models Only

NOTE: Set the real time clock prior to plugging the USB flash drive into the pump.

Enter the Year:

- The year displays. The first programmable character, the decade, blinks indicating the device is ready to program the decade digit of the year.



- The LED under the # sign lights while setting the year.

- Use the UP and DOWN arrow buttons to move up and down through the number 0-9 until the number for the current decade is displayed in the field.



- Press the ENTER button to set the decade number. The cursor automatically moves to the next field, the year number.



- Use the UP and DOWN arrow buttons to move up and down through the number 0-9 until the number for the current year is displayed in the field.



- Press the ENTER button to set the year number.



The 3-character month displays indicating the G3 is now ready to program the month.

Enter the Month:

JAN FEB MAR APR MAY JUN
JUL AUG SEP OCT NOV DEC

- Set the 3 character month by using the UP and DOWN ARROW buttons to move up and down through the list of months until the current month is displayed in the field.



- Press the ENTER button to set the month.



The 2-digit date displays indicating the G3 is now ready to program the date.

Enter the 2-digit Date:

The first programmable character of the 2-digit date blinks indicating the device is ready to program the first digit of the date.



The LED under the # sign lights while setting the date.

- Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-3 until the first digit of the date is displayed in the field.



- Press the ENTER button to accept the selection. The cursor automatically moves to the second digit of the date.

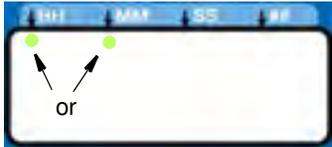


- Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the second digit of the date is displayed in the field. 

- Press the ENTER button to set the date. 

The time displays indicating the G3 is now ready to program the time.

Enter the Time:

- The time displays in 24-Hour format. i.e., 2:45 PM displays as 14:45.
- The clock is set in Hours and Minutes (HH:MM).
- The LED under the HH lights when setting hours and the LED under the MM lights when setting minutes. 

The diagram shows a digital display with four fields: HH, MM, SS, and PF. Two green LEDs are shown above the HH and MM fields, with arrows pointing to them and the word 'or' between the arrows.
- The first programmable number of the HH (hour) field blinks, indicating the device is ready to program the first digit of the hour.
- When programming a time of less than 12 hours, you must program a leading zero in the first number field and press the ENTER button to save the zero.

- Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-2 until the desired number appears in the first hour (HH) field. 

- Press the ENTER button to set the number. 

- Use the UP and DOWN ARROW buttons to move up and down through the numbers 0-9 until the desired number for the second HH number field appears.

- Press the ENTER button to set the number. 

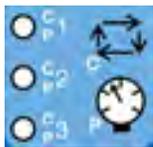
- The next number field to the right blinks and the LED under the MM lights indicating the G3 is ready to program the minutes fields.

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

- After pressing the ENTER button to set the time, the programmed Time information is saved. 

Programming ON Duration

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

The image shows a digital display with four fields: HH, MM, SS, and PF. The display shows '01' in the SS field.
- 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. 

The diagram shows four circular indicators labeled C1, C2, C3, and P1, P2, P3. A clock icon is shown next to the indicators.
- 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.
- Use UP or DOWN arrow button to toggle display between OFF / C1 / P1 on the display. 

- 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.



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



- 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.

- 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.

- After you set the last field and press the ENTER button, the G3 saves the Cycle information and moves to setting Backup Time, page 36.



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 pre-set maximum, activating the (user supplied) 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.

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



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



- 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 48.)

Input Not Used

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

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



- 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.

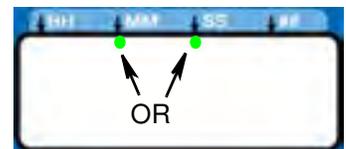
ON Time

- 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.

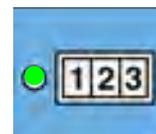
PUMP OFF / REST Setup

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.

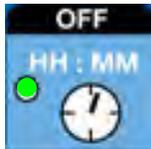


3. Press the ENTER button to set the selection.



Backup Time

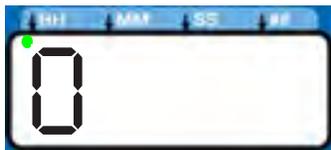
- The LED next to the clock in the OFF field lights, indicating you are setting the Backup Time parameters.
- OFF Time is set in Hours and Minutes (HH: MM).



- 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.

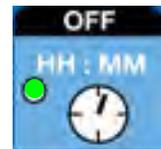


7. After selecting ON, refer to page 33.

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

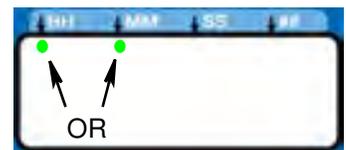
OFF Time

- 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.

- 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.



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



- 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.



- 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.

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

- 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.



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



- Press the ENTER button to set the selection.



- 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.



DMS™ Models Only

Downloading Data

1. Plug the USB flash drive into the USB port.

NOTE: The G3 pump stops pumping as soon as the USB flash drive is plugged into it.

2. The system automatically begins downloading data to the USB drive.

3. "data" is displayed while the system is downloading files.

data

4. When download is finished, "done" is displayed.

done

5. G3 pump restarts cycle in the OFF mode.

6. Remove the USB flash drive.

Storing Pump Program Settings to the Flash Drive

The pump program settings file is named:

GRACO/G3Config/g3config.bin. This file cannot be modified. Modification of the file or file name may cause it to be unusable.

1. Plug the USB flash drive into the USB port.

NOTE: The G3 pump stops pumping as soon as the USB flash drive is plugged into it.

2. The system automatically begins downloading data to the USB drive.

3. "data" is displayed while the system is downloading files.

data

4. When download is finished, "done" is displayed.

done

5. G3 pump restarts cycle in the OFF mode.

6. After the download is complete, press and hold the UP and DOWN ARROW button for 3 seconds to store the current setup to the USB flash drive.



7. "data" is displayed while the unit is downloading and storing the configuration on the USB drive.

data

8. When configuration is stored, "done" is displayed.

done

9. G3 pump restarts cycle in the OFF mode.

10. Remove the USB flash drive.

Uploading Pump Program Settings to the Pump

1. Plug the USB flash drive into the USB port.

NOTE:

- The USB flash drive must contain file GRACO/G3Config/g3config.bin.
- The G3 pump stops pumping as soon as the USB flash drive is plugged into it.

2. The system automatically begins downloading data to the USB drive.

3. "data" is displayed while the system is downloading files.

data

4. When download is finished, "done" is displayed.

done

5. G3 pump restarts cycle in the OFF mode.

6. After the download is complete, press and hold the RESET button and UP ARROW button for 3 seconds to upload the setup stored in the USB flash drive.



7. "data" is displayed while the unit is uploading the configuration data.

data

8. When upload is finished, "done" is displayed.

done

9. G3 pump restarts cycle in the OFF mode.

10. Remove the USB flash drive.

11. After the USB flash drive is removed, press and hold the UP and DOWN ARROW buttons for 3 seconds to enter the SETUP MODE (see Entering Setup Mode, page 30).



12. In SETUP MODE, set the YEAR, MONTH, DATE and TIME (see Setting the Real Time Clock, page 31).

13. After pressing the ENTER button to set the TIME, press the RESET button to exit the SETUP MODE.



Viewing the UNIT DMS ID Number

1. In RUN mode, press and hold the DOWN ARROW button.
2. The Unit DMS ID number displays. The unit continues to normal operation while the DMS ID is displayed.
3. Release the DOWN ARROW button after viewing the DMS ID number.



Operation / Data Log

During operation the G3 Pump stores information as Log and Summary Files.

Logs contain the following information:

- Log Name
- DMS ID Number
- Current Software Graco Part Number
- Current Software Version
- Date and Time of Upload

System Event Log

The System Event Log lists the date and time of the last 800 common system events such as pump cycles, manual run and setting changes. The most recent event is listed first.

The log file is stored in a folder structure created by the pump DMS ID and download date. If multiple downloads are done on the same date, the existing files will be written over.

The folder structure is as follows:

GRACO/G3_{DMS_id}/{download date - YYYYm-mDD}/EVENTLOG.CSV

Example: GRACO/G3_00025/20100911/EVENT-LOG.CSV.

Sample System Event Log

Example Event Log 1: Pump cycle of a divider valve system with a proximity switch set to detect 5 divider valve cycles.

G3 System Event Log
 DMS ID Number: 0025 (see page 39)
 Software Part Number: 16F821
 Software Version: 1019
 09/29/2010 14:1400

Date	Time	Description
9/29/2010	14:13:02	Pump Run Off
9/29/2010	14:13:02	C1 Cycle Completed
9/29/2010	14:12:39	C1 Cycle Detected
9/29/2010	14:12:34	C1 Cycle Detected
9/29/2010	14:12:28	C1 Cycle Detected
9/29/2010	14:12:23	C1 Cycle Detected
9/29/2010	14:12:17	Pump Run On