Instructions

G3® Max Gen 2 Automatic Lubrication Pump

3A9511C

EN

For dispensing NLGI grades #000 to #2 greases and oils with at least 40cST. For professional use only.

5100 psi (35.1 MPa, 351.6 bar) Pump Output Pressure
5000 psi (34.5 MPa, 344.7 bar) Fill Inlet Pressure

See page 8 for model information.

IMPORTANT SAFETY INSTRUCTIONS

Read all warnings and instructions in this manual before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.

ti01527a

Related Manuals

Find English manuals and any available translations at www.graco.com.

English Manual Number	Description
333393	Fill Valve
3A1963	Direct Mount Vent Valve for G3 Pumps
3A0533	G3 Pump Element Replacement Kit

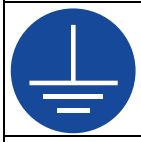
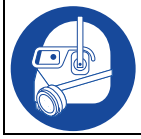
For additional support visit https://graco.com/G3Support.

Contents

Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Cleaning Solvent Hazard
	Electric Shock Hazard
	Fire and Explosion Hazard
	Moving Parts Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Splash Hazard

Symbol	Meaning
	Do Not Place Hands or Other Body Parts Near Fluid Outlet
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Follow Pressure Relief Procedure
	Ground Equipment
	Read Manual
	Wear Personal Protective Equipment

Safety Alert Symbol
This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

General Warnings

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

⚠ 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 cord before servicing equipment.
- Connect only to grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- 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 Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) 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.
- Only use attachments recommended or sold by Graco.

⚠WARNING

SKIN INJECTION HAZARD

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.**

- 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.

PRESSURIZED EQUIPMENT HAZARD

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

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

PLASTIC PARTS CLEANING SOLVENT HAZARD

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

- Use only compatible solvents to clean plastic structural or pressure-containing parts.
- See **Technical Specifications** in all equipment manuals for materials of construction. Consult the solvent manufacturer for information and recommendations about compatibility.

⚠WARNING

MOVING PARTS HAZARD

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

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

PERSONAL PROTECTIVE EQUIPMENT

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. Protective 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.

Part / Models 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 with understanding each component that makes up the Model Number, see **Understanding the Model Number**, page 10. The following tables show the relationship between each Part Number and the related Model Number.

Pumps with Cellular Connection:

Contain FCC ID MCQ-XB3M2

Contain IC: 1846A-XB3M2

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

2 Liter Models

Part Number	Model Number
96G543	G3-G-12M2-2L0L00-NMCO000VP
96G544	G3-G-24M2-2L0L00-NMCO000VP
96G545	G3-G-24M2-2L0L00-RMCD0A0VP
06G546	G3-G-ACM2-2L0L00-RMCD0A0VP
96G564	G3-G-24M2-2LFL00-NMCO000VP
96G565	G3-G-24M2-2LFL00-RMCD0A0VP
96G566	G3-G-ACM2-2LFL00-RMCD0A0VP
96G591	G3-A-24M2-2L0A00-RMCD0A0VP
96G592	G3-A-ACM2-2L0A00-RMCD0A0VP

4 Liter Models

Part Number	Model Number
96G547	G3-G-12M2-4L0L00-NMCO000VP
96G548	G3-G-24M2-4L0L00-NMCO000VP
96G549	G3-G-24M2-4L0L00-RMCD0A0VP
96G550	G3-G-ACM2-4L0L00-RMCD0A0VP
96G568	G3-G-24M2-4LFL00-NMCO000VP
96G569	G3-G-24M2-4LFL00-RMCD0A0VP
96G570	G3-G-ACM2-4LFL00-RMCD0A0VP
96G593	G3-A-24M2-4L0A00-RMCD0A0VP
96G594	G3-A-ACM2-4L0A00-RMCD0A0VP
96G601	G3-G-12MC-4LFS00-NMCOL00VP
96G602	G3-G-24MC-4LFS00-NMCOL00VP
96G603	G3-G-24MC-4LFS00-RMCDLA0VP
95G604	G3-G-ACMC-4LFS00-RMCDLAOVP
96G613	G3-A-24MC-4L0A00-RMCD0A0VP
96G614	G3-A-ACMC-4L0A00-RMCD0A0VP

8 Liter Models

Part Number	Model Number
96G551	G3-G-12M2-8L0L00-NMCO000VP
96G552	G3-G-24M2-8L0L00-NMCO000VP
96G553	G3-G-24M2-8L0L00-RMCD0A0VP
96G554	G3-G-ACM2-8L0L00-RMCD0A0VP
96G572	G3-G-24M2-8LFL00-NMCO000VP
96G573	G3-G-24M2-8LFL00-RMCD0A0VP
96G574	G3-G-ACM2-8LFL00-RMCD0A0VP
96G580	G3-G-24M2-8LAL00-NMCO000VP
96G581	G3-G-24M2-8LAL00-RMCD0A0VP
96G582	G3-G-ACM2-8LAL00-RMCD0A0VP
96G595	G3-A-24M2-8L0A00-RMCD0A0VP
96G596	G3-A-ACM2-8L0A00-RMCD0A0VP
96G605	G3-G-12MC-8LFS00-NMCOL00VP
96G606	G3-G-24MC-8LFS00-NMCOL00VP
96G607	G3-G-24MC-8LFS00-RMCDLA0VP
96G608	G3-G-ACMC-8LFS00-RMCDLA0VP
96G609	G3-G-12MC-8LAS00-NMCOL00VP
96G610	G3-G-24MC-8LAS00-NMCOL00VP
96G611	G3-G-24MC-8LAS00-RMCDLA0VP
96G612	G3-G-ACMC-8LAS00-RMCDLA0VP
96G615	G3-A-24MC-8L0A00-RMCD0A0VP
96G616	G3-A-ACMC-8L0A00-RMCD0A0VP
96G634	G3-G-ACM2-8LLL00-RMCD0A0VP

12 Liter Models

Part Number	Model Number
96G555	G3-G-12M2-120L00-NMCO000VP
96G556	G3-G-24M2-120L00-NMCO000VP
96G557	G3-G-24M2-120L00-RMCD0A0VP
96G558	G3-G-ACM2-120L00-RMCD0A0VP

16 Liter Models

Part Numbers	Model Number
96G560	G3-G-24M2-160L00-NMCO000VP
96G562	G3-G-ACM2-160L00-RMCD0A0VP
96G599	G3-A-24M2-160A00-RMCD0A0VP
96G600	G3-A-ACM2-160A00-RMCD0A0VP

Understanding the Model Number

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

NOTE: Other pump configurations are available that are not documented in this manual. Contact Graco Customer Service, or your local Graco distributor for assistance.

																	Input/Output								
	G	**3**	**-**		**-**			**M**	**2**						**0**	**0**	**N/R**	**M**	**C**	**D/0**	**L/0**	**A/0**	**0**	**V**	**P**
Code Sample:				**a**		**b**	**b**	**c**	**c**	**-**	**d**	**d**	**e**	**f**	**g**	**g**									

Code a: Pump Fluid Type

- **G** = Grease
- **A** = Oil

Code bb: Power Source

- **12** = 12 Volts DC
- **24** = 24 Volts DC
- **AC** = 100 to 240 Volt AC

Code cc: Operation Control

- **M2**= Max Generation 2
- **MC**= Max Generation 2 with Cellular

Code dd: Reservoir Capacity (Liters)

- **2L** = 2 Liters
- **4L** = 4 Liters
- **8L** = 8 Liters
- **12** = 12 Liters
- **16** = 16 Liters

Code e: Reservoir Feature

- **0** = No Follower Plate
- **A** = Auto-Fill Shut Off
- **F** = Follower Plate Installed
- **L** = Top Lid

Code f: Low Level Option

- **A** = Low Level Oil Float
- **L** = Low Level Switch
- **S** = Analog Level Sensor

Code gg: Options

- **00** = No Options

Input/Output
See FIG. 1 for these connectors.

- **A** = Alarm Output
- **C** = Cycle Count
- **D** = Power DIN
- **L** = Analog Level
- **M** = Machine Count
- **N** = CPC Power with MRB
- **P** = Pressure Analog
- **R** = Manual Run
- **V** = Vent Valve
- **0** = Not populated

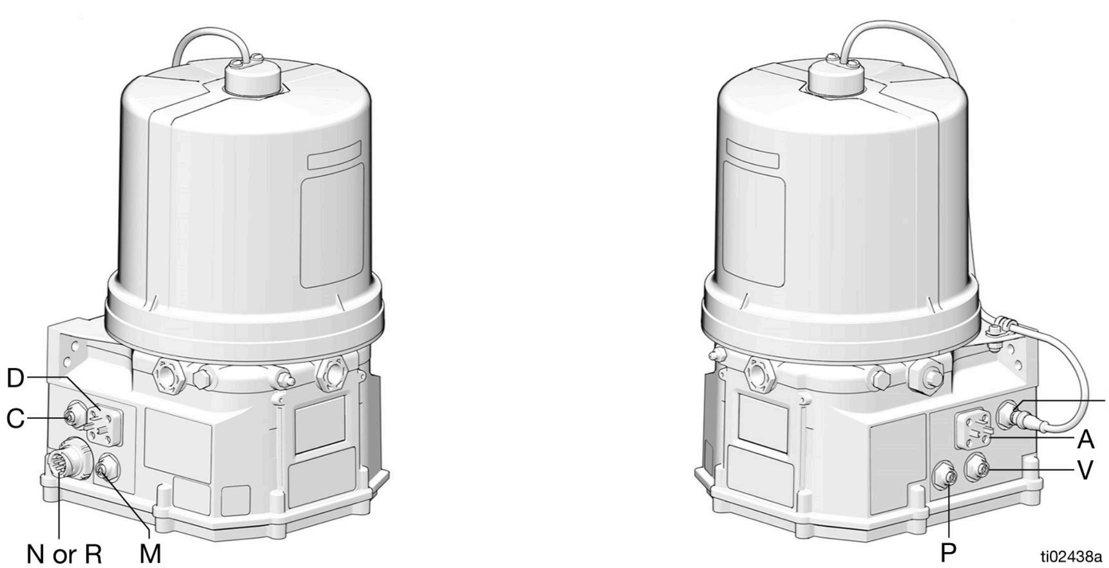


FIG. 1:

Component Identification

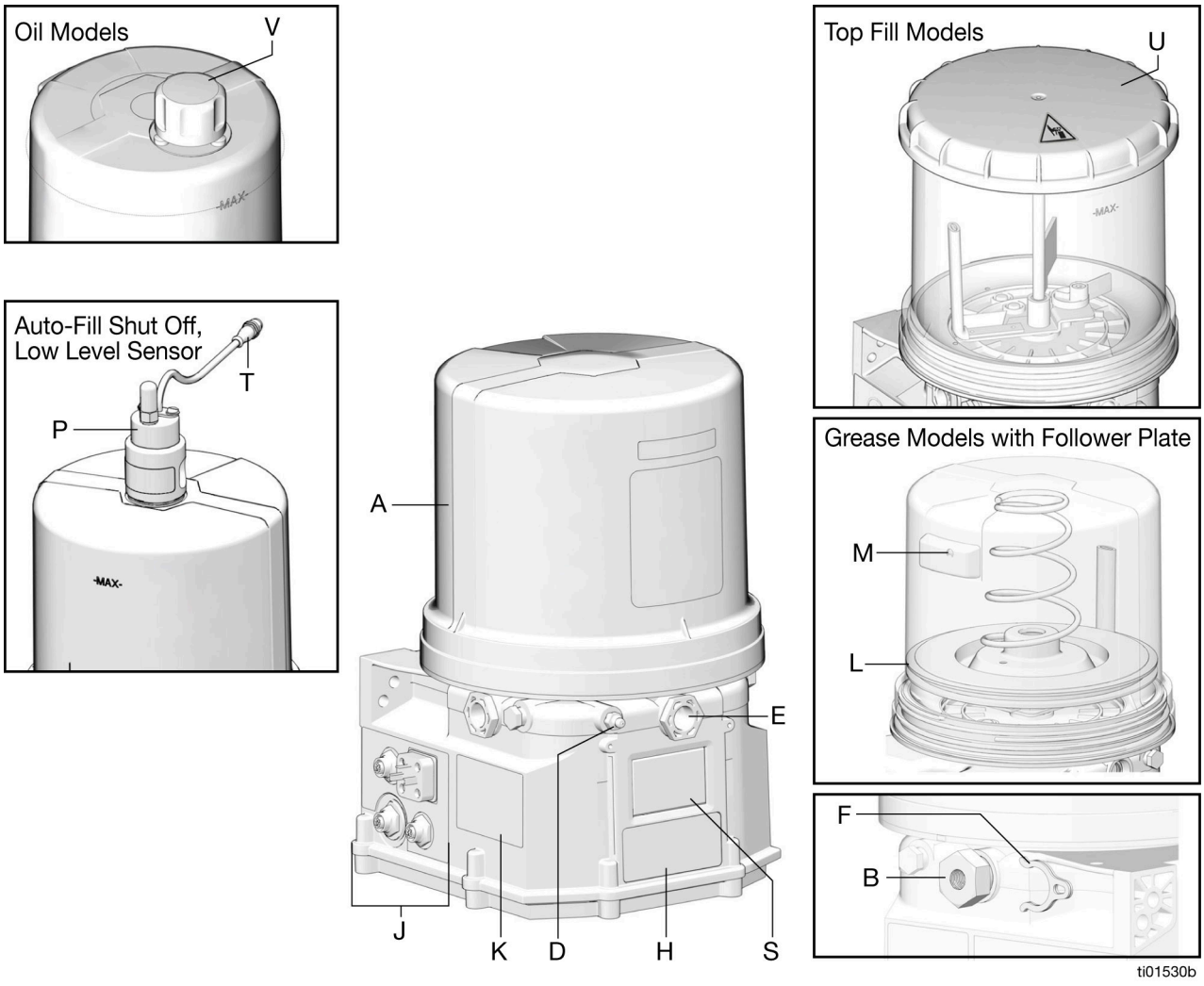


FIG. 2: Typical Installation

Key:

A Reservoir
B Pump Element (1 included. Can accommodate 3 total)
C Pressure Relief Valve (Not included (not shown) / required for each outlet - See **Pressure Relief Valves**, page 17.)
D Zerk Inlet Fill Fitting (1 included/grease models only)
E Pump Outlet Plug (2 included)
F Volume Control Spacers (2 included. More spacers = less output volume per stroke) (also see FIG. 25, page 29)
G Fuse (DC models only - Not included, not shown. Available from Graco, see **Fuses (DC Models)**, page 16.)
H Control Panel
J Power/Sensor Panel (both sides; only one side shown)
K Part Number/Model Number
L Follower Plate (grease models only / not available on all grease models)
M Vent Hole for Follower Plate (grease models only / not available on all grease models)
P Auto-Fill Shut Off (grease models only / not available on all grease models)
R Power Cord (not shown)
S LCD Display
T Level Sensor
U Top Lid
V Fill Cap (oil models only)

Typical Installation

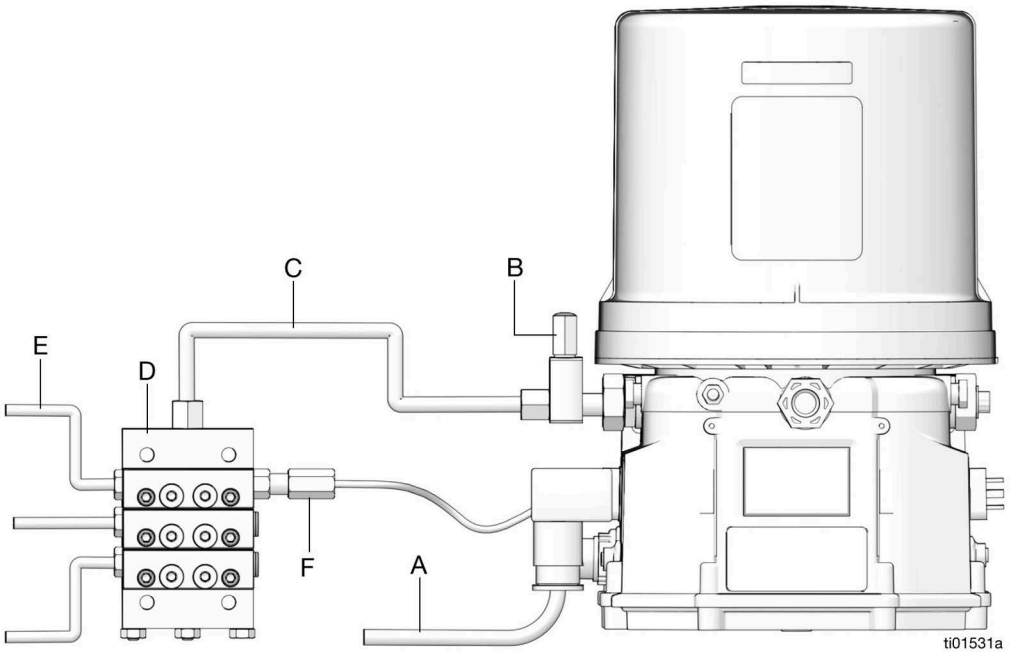


FIG. 3: Series Progressive Divider Valve

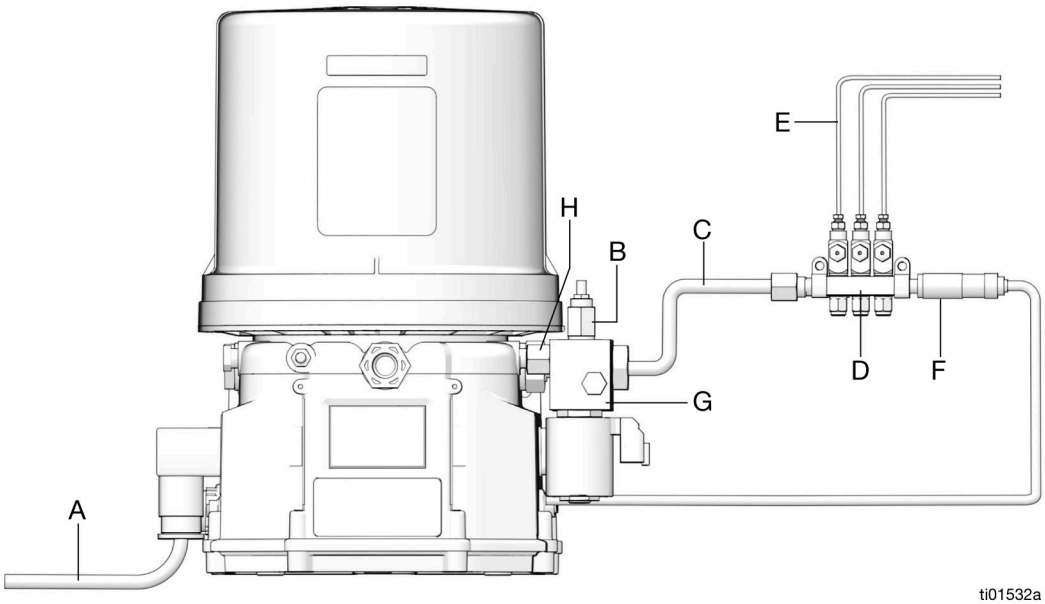


FIG. 4: Injector Installations

Key:

A Connected to fused power source
B Pressure relief valve (Required for each pump outlet - user supplied. See page 17.)
C Supply Hose (user supplied)
D Series progressive divider valves (Divider Installations)
- Injectors (Injector Installations)

E To lube points
F - Proximity Switch (Divider Installations)
- Pressure Switch or Pressure Sensor (Injector Installations)
G Vent valve (Sold separately. Reference Manual 3A1963. See **Related Manuals**, page 1.)
H Return to reservoir

Reservoir

Fill with Auto-Fill Shut Off Valve and Remote Fill Manifold

The installations shown is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to meet your needs.

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

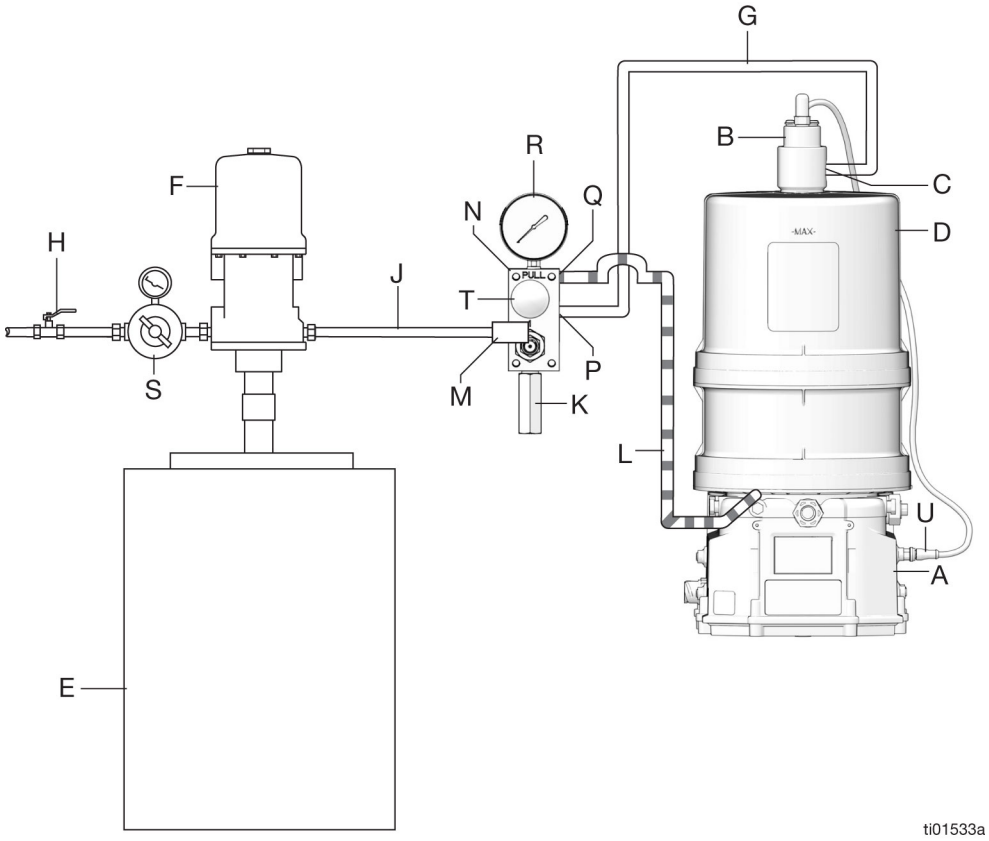


FIG. 5: With Remote Fill Manifold

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 Refilling Line
H Air Supply to Refill Pump
J Supply Hose
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
U Level Sensor

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

Fill without Remote Fill Manifold with Auto-Fill Shut Off

The installations shown is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to meet your needs.

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

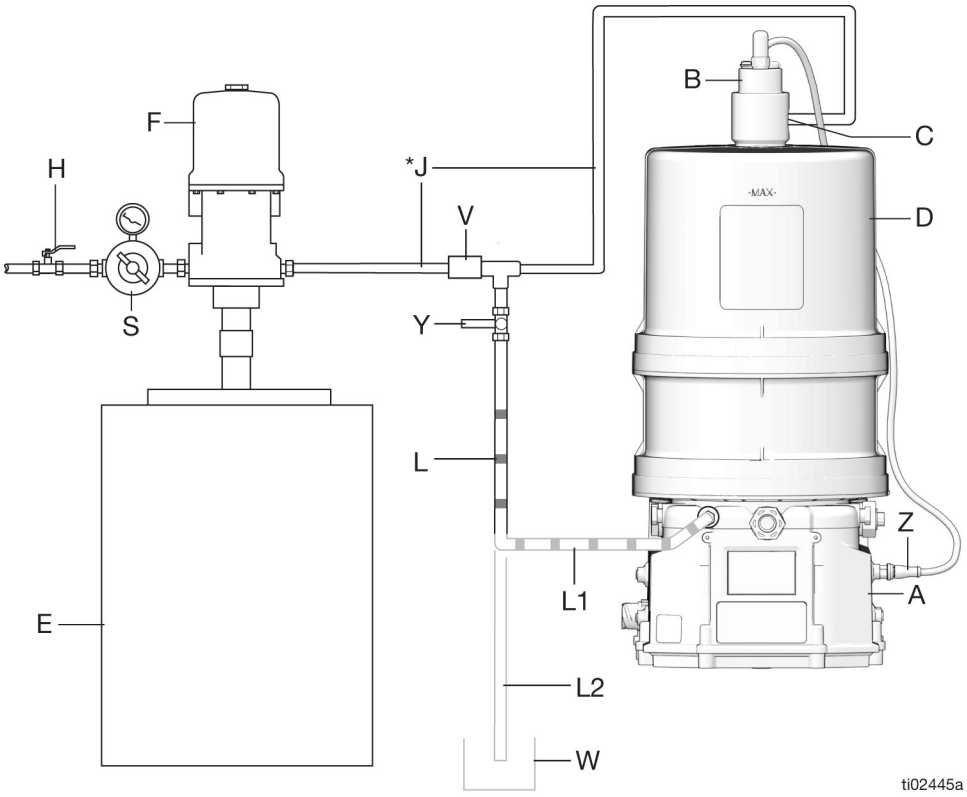


FIG. 6: Optional Installation - Without Remote Fill Manifold

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 Air Supply to Refilling Pump
J Supply Hose
L Drain Tube
L1 Option - To reservoir
L2 Option - To overflow container
S Pressure Regulator and Gauge
V Quick Disconnect
W Overflow Container
Y Supply Hose Pressure Relief Valve ❖
Z Level Sensor

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

Installation

Unpack the Pump

NOTICE

To prevent equipment damage, 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.

Choose an Installation Location

AUTOMATIC SYSTEM ACTIVATION HAZARD

The system is equipped with an automatic timer 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.

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 mounting hole layouts provided in **Mounting Pattern**, page 80. No other installation configuration should be used.
- Use designated mounting holes and provided configurations only.
- Always mount G3 oil models upright.
- Mount top fill G3 pump models so that there is a a minimum clearance of four inches (4.0 in.) (10.2 cm) above the reservoir to allow for lid removal and filling.
- 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.
- 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.
- In high vibration environments, additional isolation at mounting point is necessary. See table below.
- AC pumps are not recommended when high vibration or shock is present.

Part No	Description
571159	Reservoir bracket and strap
125910	L-Bracket for pump
132187	Isolator mounting kit

System Configuration and Wiring

Grounding (AC Models)

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 (DC Models)

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 current must be installed in line with the power entry to the equipment.

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	10 A	25C985
24 VDC	7.5 A	25C986

Recommendations for Using Pump in Harsh Environments

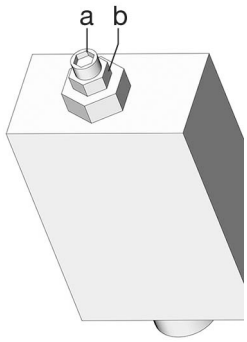
- Use pump with CPC style power cable.
- If using a DIN style power or alarm harness with a right angle mating connector, make sure the connector does not exit the unit in the UP direction.
- Use a corrosion preventative electrical grease on all contacts.

Pressure Relief Valves

Important Information regarding Pressure Relief Valve 16C807.

◆ **Pressure Relief Valve 16C807 can only be used on the G3, or G-Mini Pumps.** It is not intended for use with any other products.

The pressure relief valve uses a pressure adjustment screw (a) to set the pressure relief 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 as a means of relieving pressure in day-to-day, normal cycle operation.



a = adjustment screw
b = locking nut ti15644b

The pressure adjustment screw may 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) all the way in, and then 1/2 turn out.

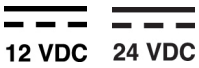
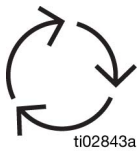
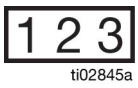
NOTE: Turning adjustment screw (a) clockwise increases pressure.

NOTE: Each pressure relief valve requires banjo kit p/n 571058. (Except 16C807 because the banjo is already included in Kit 571028) or Kit 2008155, which includes a cross fitting.

Part	Description	Qty
16C807◆	VALVE, pressure relief, 500-3500 psi (3.44 MPa, 34.4 bar - 24.1 MPa, 241 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

Wire and Installation Diagrams

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

Diagram	Symbol	Page #
Power DIN AC		**19**
Power DIN DC		**19**
Power CPC DC		**20**
Inputs (M12):		**22**
Cycle Count		
Machine Count		
Level Sensor		
Pressure Sensor		
Vent Valve Outputs		**23**
Alarm Outputs		**23**
Illuminated Manual Run Input		**20, 21, 22**

Power DIN AC - 15 foot
Part No. 2007482

AC

Pin and Related Wire Color (FIG. 7)

Pin	Pin Name	Color
1	Line	Black
2	Neutral	White
3	Unused	Unused
⏚	Ground	Green

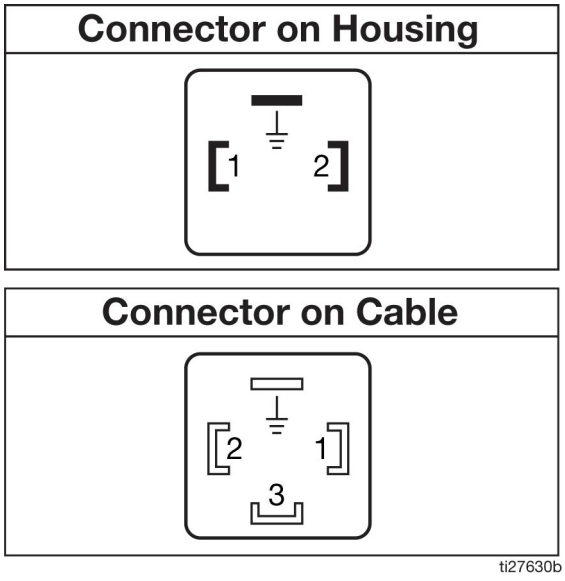


FIG. 7

Power DIN DC - 15 foot
Part No. 16U790

24 VDC

Pin and Related Wire Color (FIG. 8)

Pin	Pin Name	Color
1	-VDC	Black
2	+VDC	White
3	Unused	Unused
⏚	Unused	Green

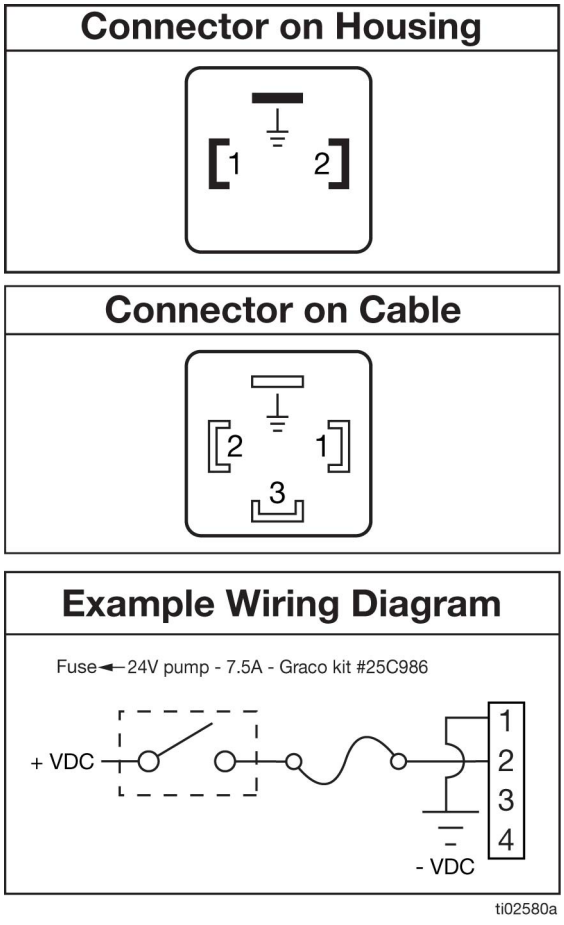


FIG. 8

Power CPC DC - 2 Wire
Part No.: 127783: 15 ft (4.5 m)

12 VDC 24 VDC

Pin and Related Wire Color (FIG. 9)

Pin	Pin Name	Color
1	Unused	Unused
2	-VDC	Black
3	+VDC	White
4	Unused	Unused
5	Unused	Unused
6	Unused	Unused
7	Unused	Green

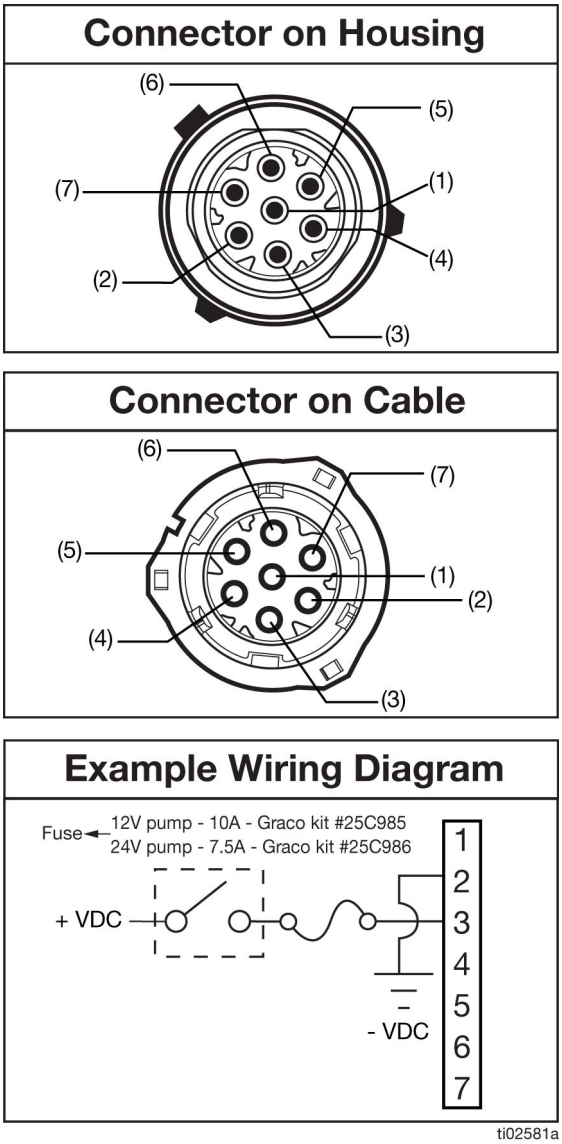


FIG. 9

Power CPC DC - 5 Wire
Part No.: 2003467: 15 ft (4.5 m)
Part No.: 2003896 30 ft (9.1m)

12 VDC 24 VDC

An Illuminated Remote Run Button kit is used to start a manual run cycle when used with a 5-wire CPC cable. Kits 571030 and 571031 are available from Graco. Contact your local Graco distributor or Graco Customer Service for information about these kits.

Pin and Related Wire Color (FIG. 10)

Pin	Pin Name	Color
1	Unused	Unused
2	-VDC	Black
3	+VDC	Red
4	LED+	White
5	Manual Run Switch	Orange
6	Unused	Unused
7	LED-	Green

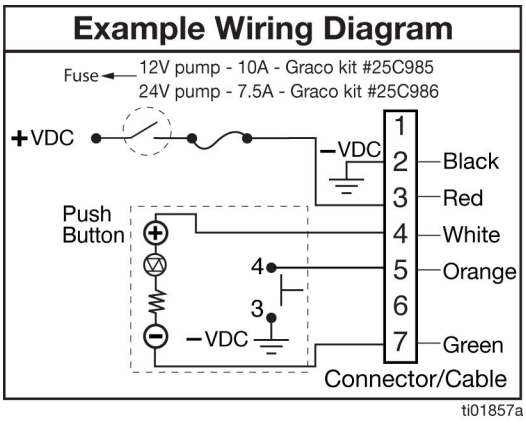


FIG. 10

Power CPC DC - 7 Wire

Part No.: 2001714: 15 ft (4.5 m)
Part No.: 2001715: 30 ft (9.1m)

12 VDC 24 VDC

An Illuminated Remote Run Button kit is used to start a manual run cycle when used with a 7-wire CPC cable. Kits 571030 and 571031 are available from Graco. Contact your local Graco distributor or Graco Customer Service for information about these kits.

Pin and Related Wire Color (FIG. 11)

Pin	Pin Name	Color
1	Signal 1 / Alarm Output Signal	Brown*
2	-VDC	Black
3	+VDC	Red
4	LED+	Yellow
5	Manual Run Switch	Orange
6	Signal 2/ Alarm Output Signal	Blue*
7	LED-	Blue

*Signal 1 and Signal 2 are terminated as 2-pin female deutsch connector cable of length 18 in.

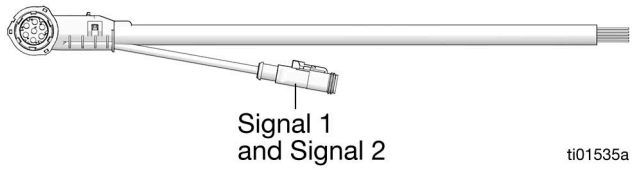


FIG. 11

Pump with 7-Pin CPC Power Connector

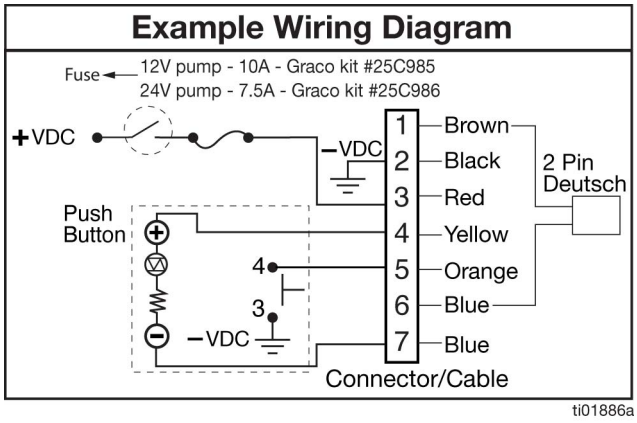
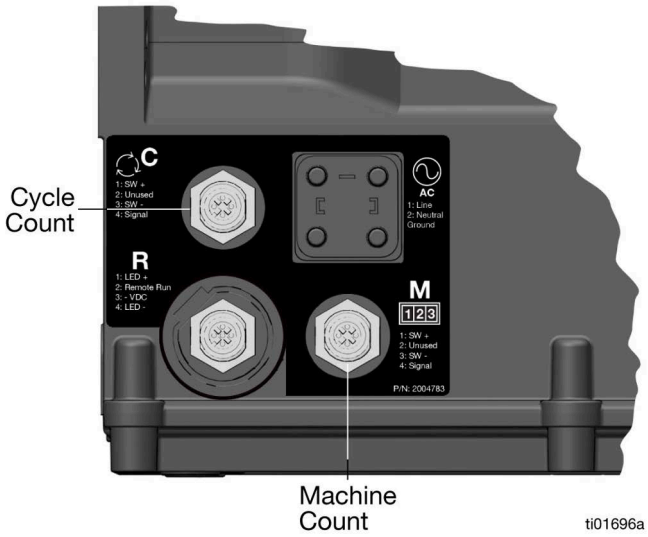
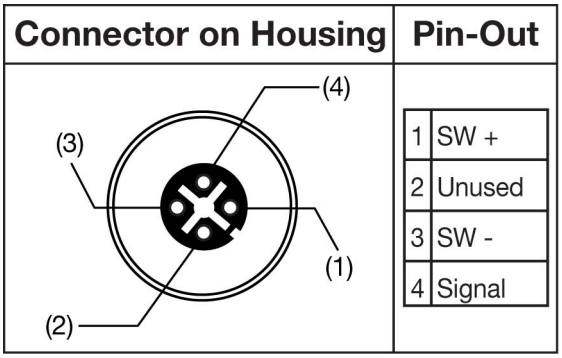


FIG. 12

Inputs (M12), Cycle Count and Machine Count

See **Technical Specifications**, page 81 for ratings.





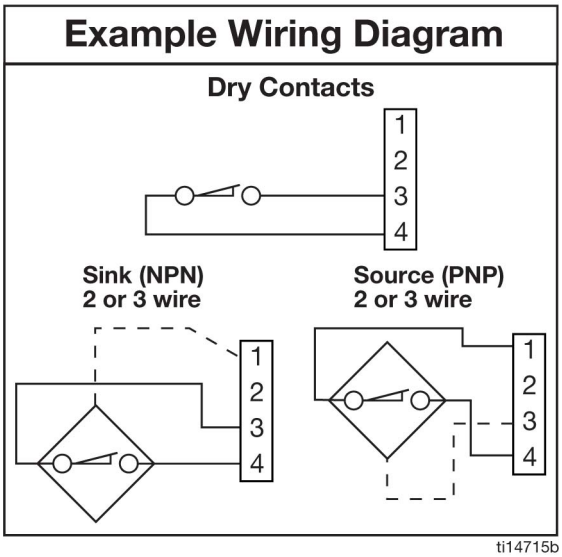
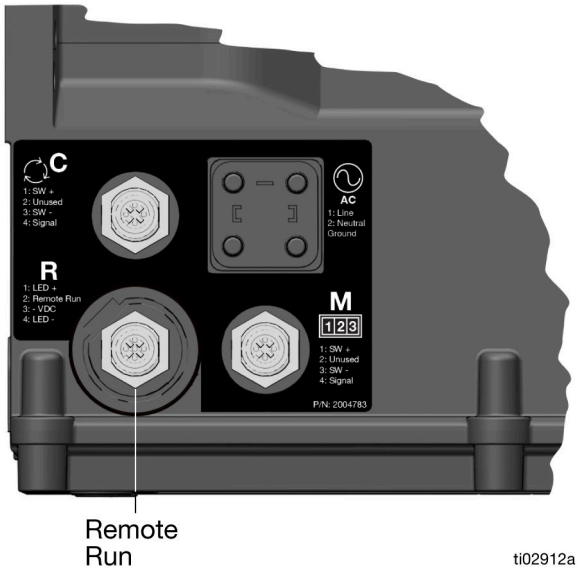


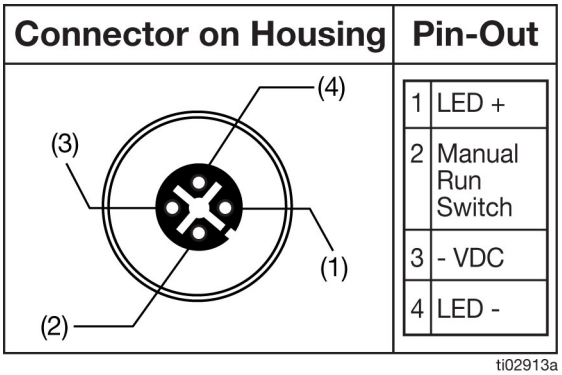
FIG. 13

Illuminated Remote Run Button (M12)

An Illuminated Remote Run Button kit is used to start a manual run cycle when used with an M12 port. Kit 571033 is available from Graco. Contact your local Graco distributor or Graco Customer Service for information about this kit.

M12 connector-only available on DIN powered pumps. For wiring the illuminated remote run button on a CPC powered pump, see FIG. 10, page 20.





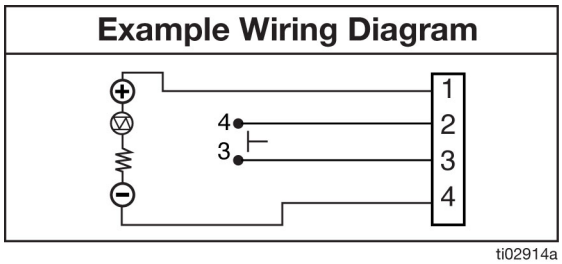
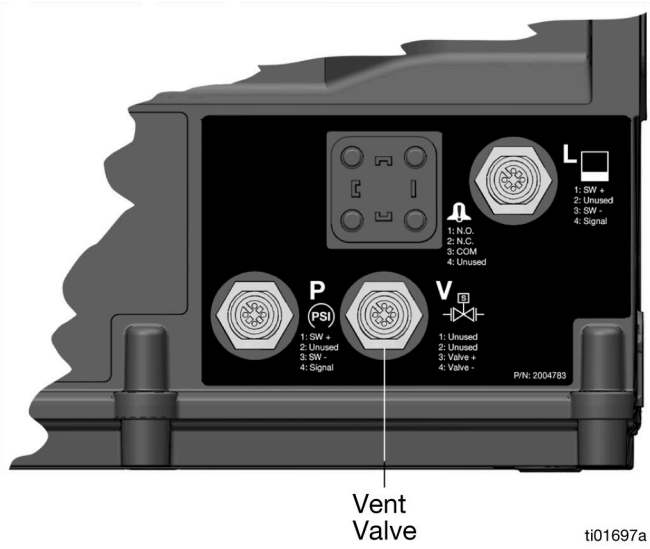
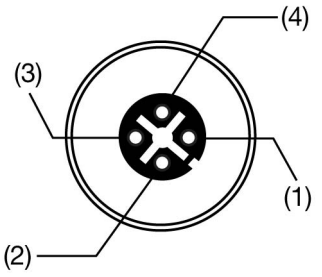


FIG. 14

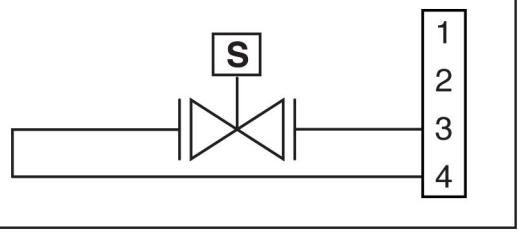
Vent Valve Outputs (M12)

See **Technical Specifications**, page 81 for ratings.



Connector on Housing	Pin-Out
	1 Unused 2 Unused 3 Valve + 4 Valve -

Example Wiring Diagram

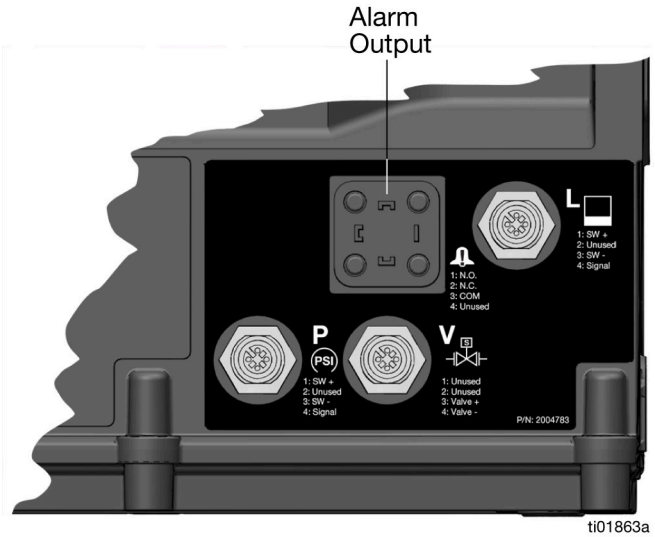


ti01529a

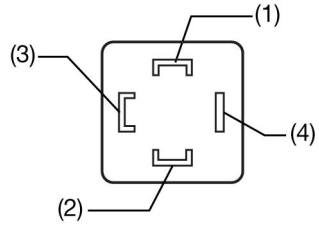
FIG. 15

Alarm Output

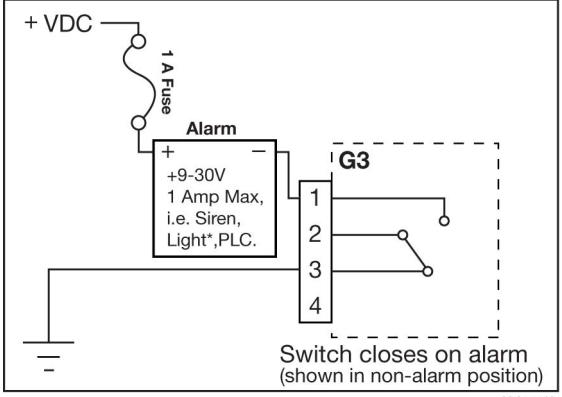
DIN Connector Powered Pumps only. See **Technical Specifications**, page 81 for ratings.



ti01863a

Connector on Housing	Pin-Out
	1 N.O. 2 N.C. 3 COM 4 Unused

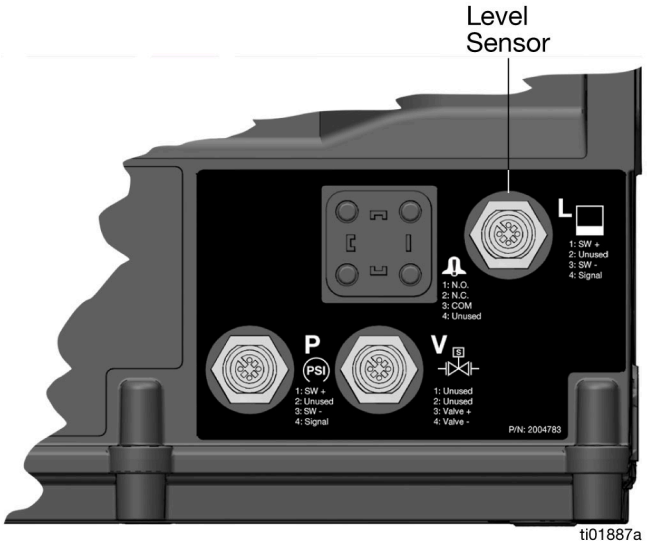
Example Wiring Diagram



ti29551b

FIG. 16

Level Sensor Input (M12)



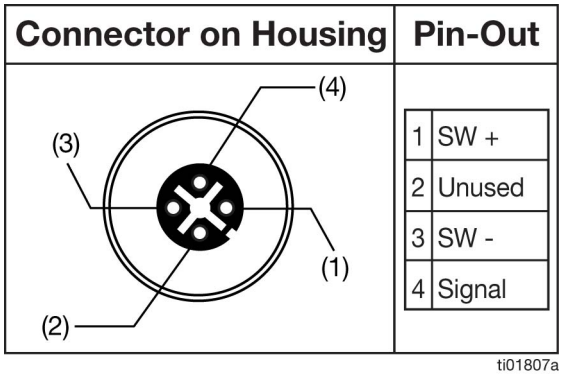
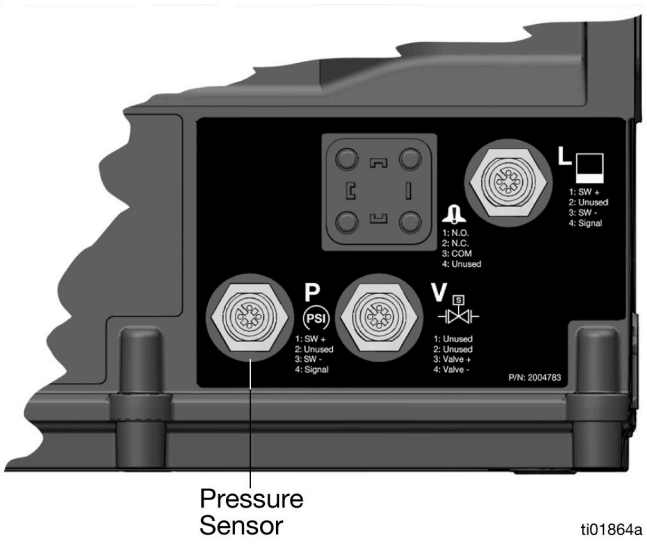
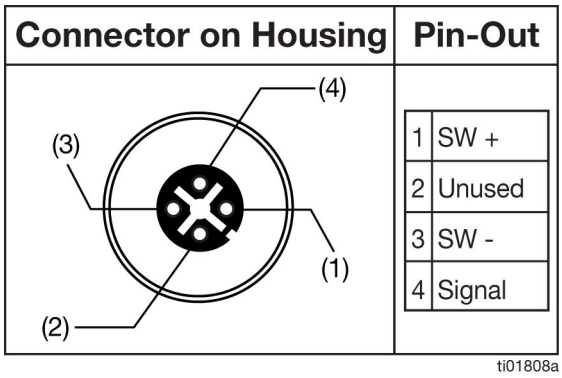


FIG. 17

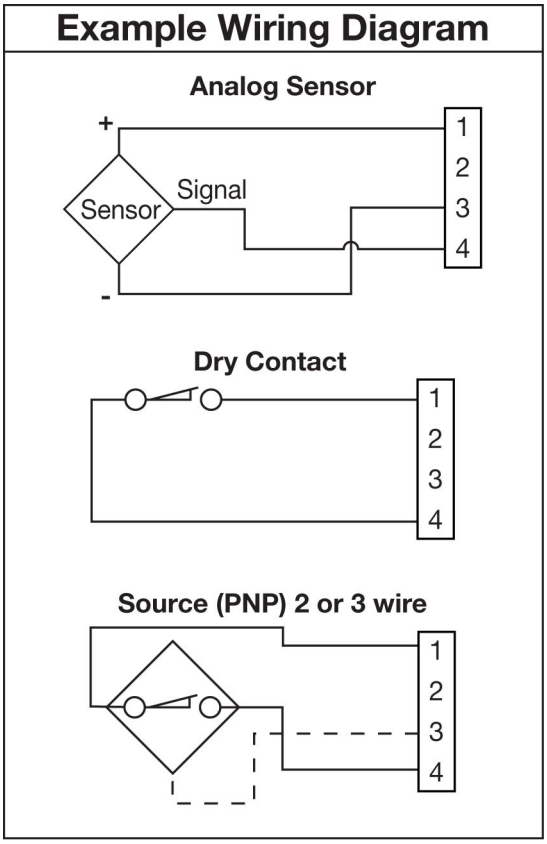
Pressure Switch/Sensor Input (M12)



ti01864a



ti01808a



ti02911a

FIG. 18

NOTE: The pressure switch should be PNP only. NPN pressure switches are not compatible with the pressure input.

External Cables

Cable Pin Out (M12) for 5 m Cable Part No. 124333

Wire Colors (FIG. 19)

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

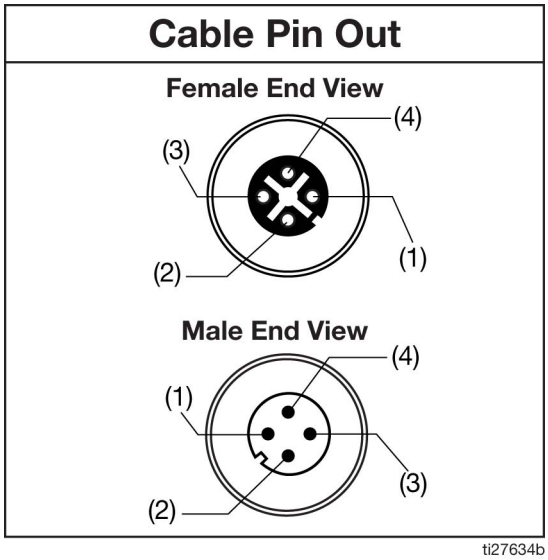


FIG. 19

Male Flying Lead Pin Out (M12) Part No. 124300

Wire Colors (FIG. 20)

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

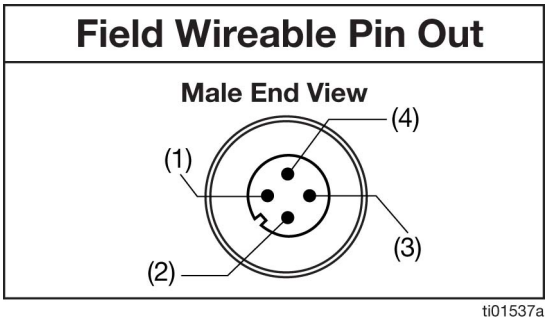


FIG. 20

4-Pin (M12) Female Field Wireable Connector for 6 to 8 mm Cable Part No. 124301

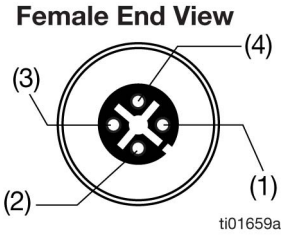


FIG. 21

4-Pin (M12) Male Field Wireable Connector for 6 to 8 mm Cable Part No. 124594

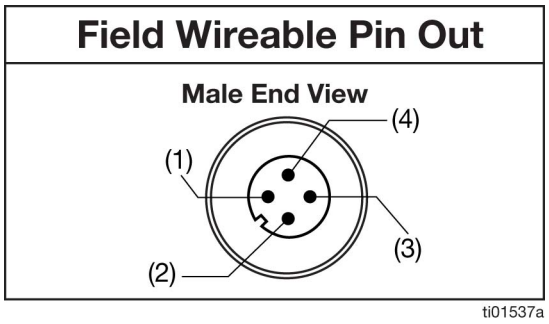


FIG. 22

NOTE: Field wireable connectors are for sensors with integrated cable.

5-Pin (M12) Male Field Wireable Connector for 8 to 11 mm Cable Part No. 124595

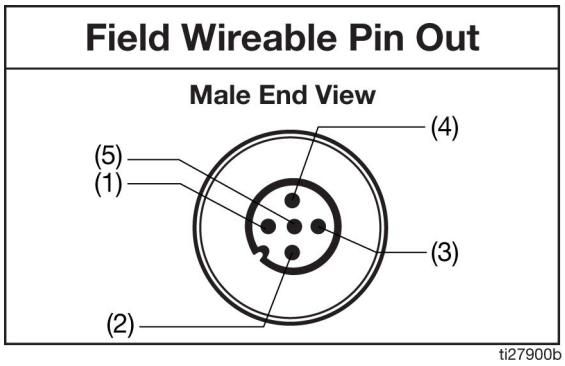
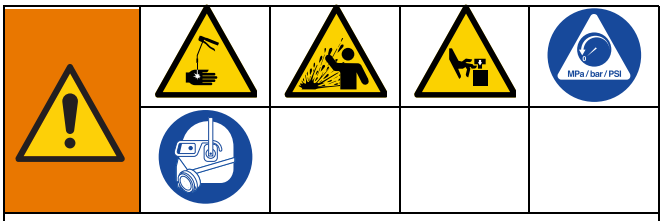


FIG. 23

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 at the pump element using two wrenches working in opposite directions on the 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. Repeat for each pump element installed (FIG. 24).

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

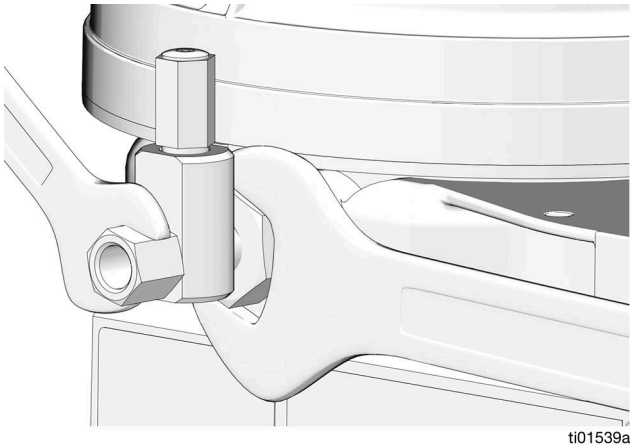
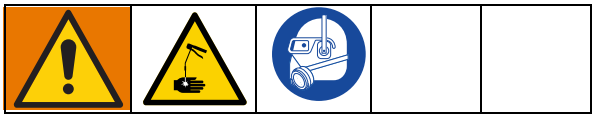


FIG. 24

Connect 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. 24 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 Specifications**, page 81.
- 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 **Pressure Relief Valves**, page 17.

Set Pump Output Volume

NOTE:

- Before making any adjustments to pump volume, follow **Pressure Relief** on page 28.
- 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. 25).

   NOTE: When adding two spacers, prime the pump element before installation of the spacers.

   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 adjustments 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).

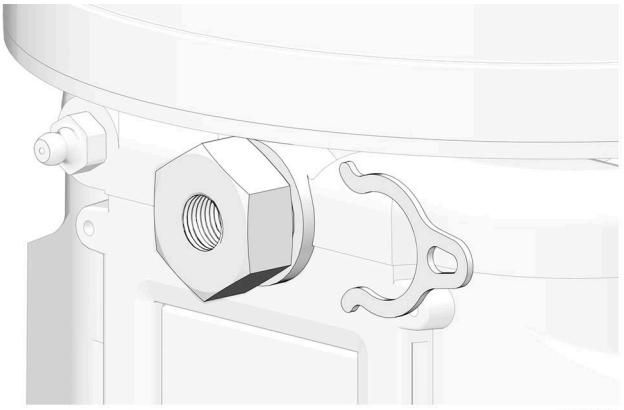


FIG. 25

Fill Reservoir - Grease Dispense Pumps

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 (see FIG. 28).
- Do not operate G3 without reservoir attached.

NOTICE

- Always clean inlet fitting (D) (FIG. 26) 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.

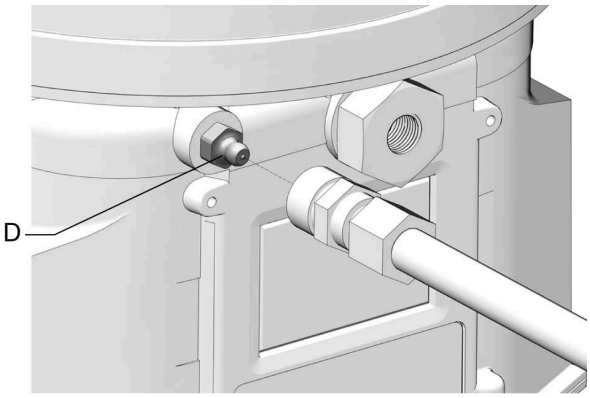


FIG. 26

Models Without a Follower Plate

1. Connect fill hose to Zerk Inlet Fill Fitting (D) (FIG. 27).

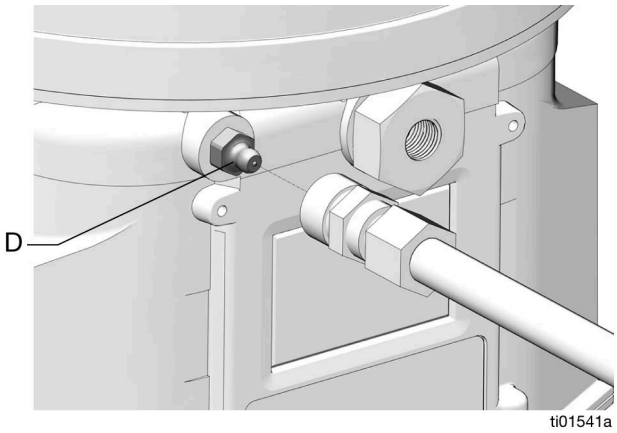


FIG. 27

2. For higher viscosity fluids, start pump to rotate stir-ring 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 to the max fill line.

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

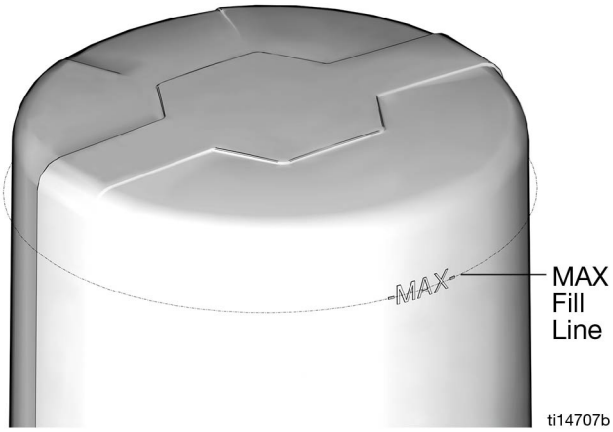


FIG. 28

4. Remove fill hose.

Models With a Follower Plate

1. Connect fill hose to inlet fitting (D) (FIG. 27).

2. For higher viscosity fluids, start pump to rotate stir-ring 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 and the majority of air is expelled from the reservoir (FIG. 29).

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

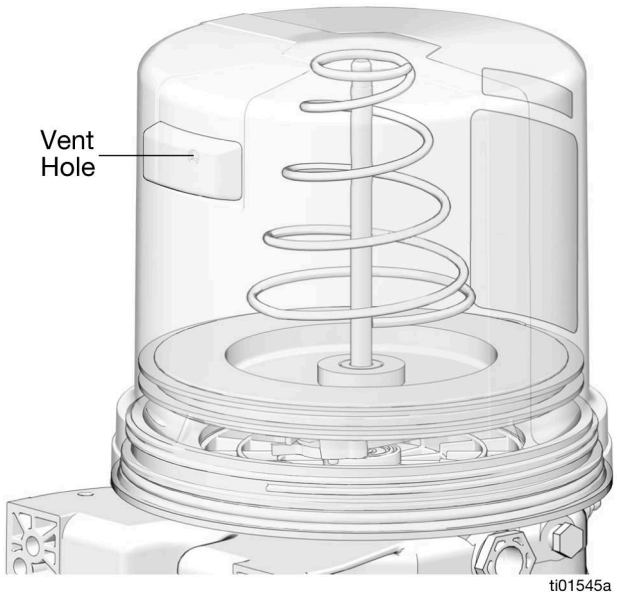


FIG. 29

4. Turn off the air supply to the refill pump.

5. Remove the fill hose.

Auto-Fill Shut Off

Load 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.

Change Greases

When changing greases, always use compatible fluids or greases.

Remote Fill With Remote Fill Manifold

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).

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.

The reference letters used in the following instructions refer to FIG. 5, page 13.

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. 30).

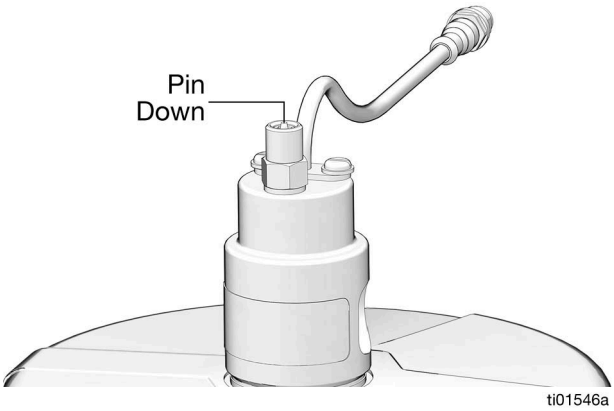


FIG. 30

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. 31
   - The Pressure Gauge (R) rises to the set pressure of the fill pump

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

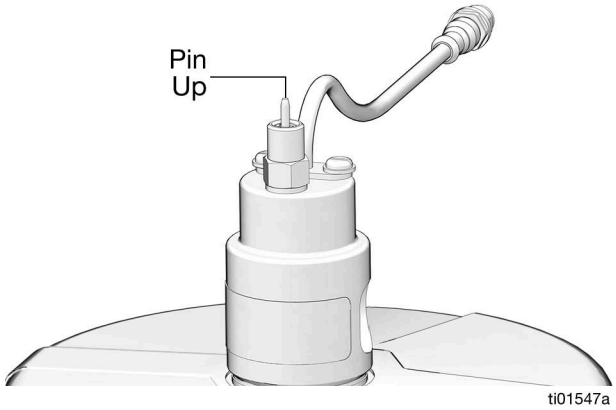


FIG. 31

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 FIG. 6, page 14.

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. 32. The pressure in the refill pump (F) builds and the pump stalls.

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

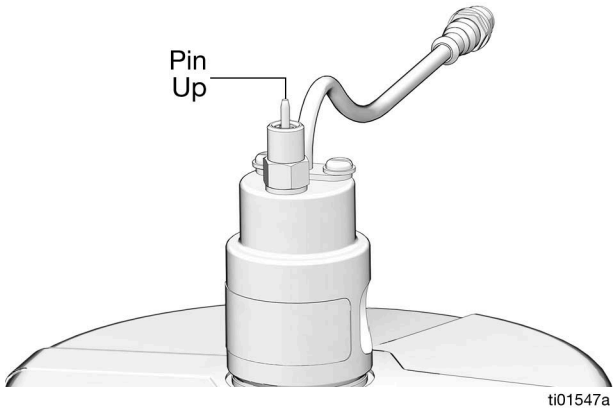


FIG. 32

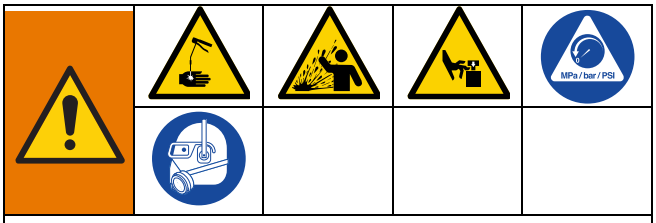
4. Turn off the air supply (H) to pump (F).

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 FIG. 6, page 14.

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 the Supply Hose Pressure Relief Valve (Y) (FIG. 33). Pressure will be released and excess fluid will drain out of the drain tube (L) and into the lubrication overflow container (W).

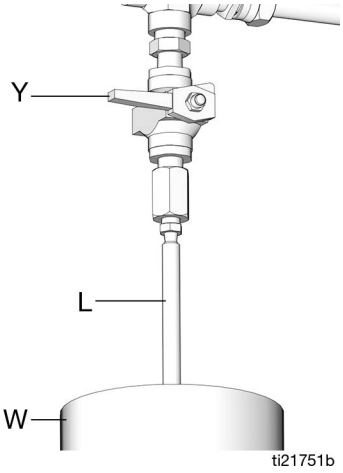


FIG. 33

b. Close Supply Hose Pressure Relief Valve (Y) when all pressure has been relieved.

6. Disconnect the supply hose (J) from Quick Connect (V).

Prime the Pump

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. 34).

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

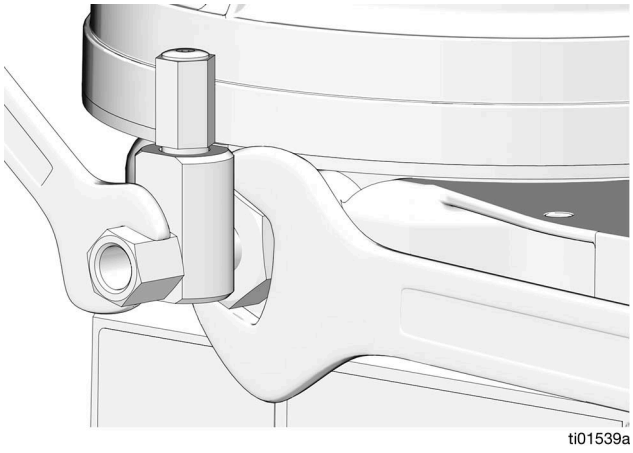


FIG. 34

2. Only run pump until air is no longer dispensed with the lubricant coming out of element fitting (FIG. 35).

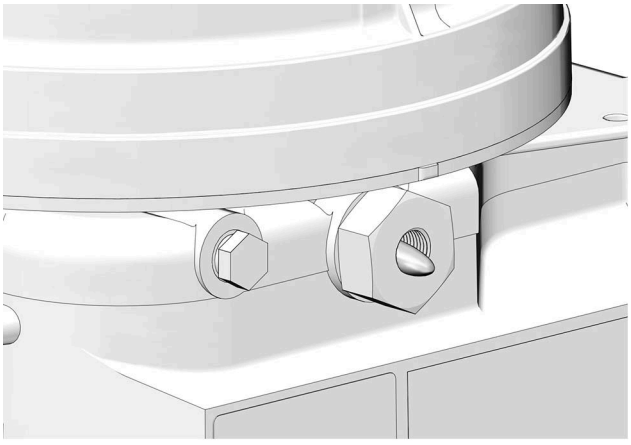


FIG. 35

3. Tighten pump element fitting using two wrenches working in opposite directions (FIG. 34).

Reservoir Level Monitoring

Low Level Switch (Grease)

The pump is equipped with a rotating paddle and as the grease level reduces to the minimum level, the paddle momentarily triggers the reed switch (one time per paddle revolution). When the set quantity of triggers are detected, it activates the low level condition.

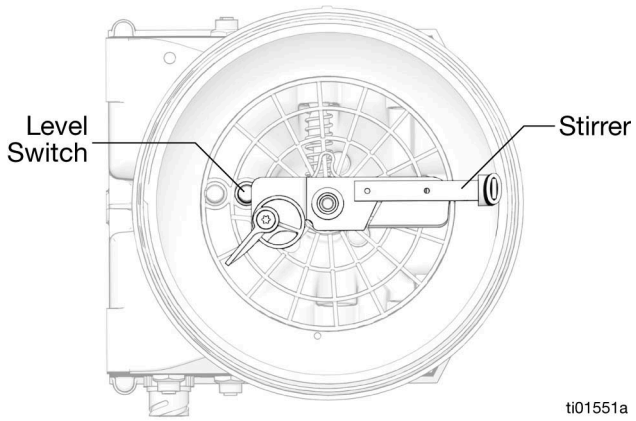


FIG. 36

Low Level Switch (Oil)

The pump is equipped with a float and when the oil level has reached a low level, it triggers a low level condition.

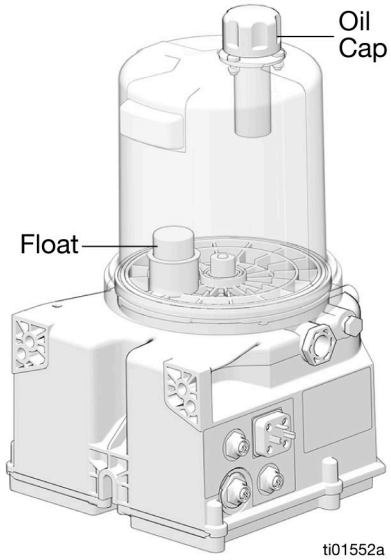


FIG. 37

Level Sensor (Grease Pump)

The level transducer continuously monitors the fluid level and warns when the follower plate (grease models) reaches the distance set in the controller programming from the bottom of the reservoir.

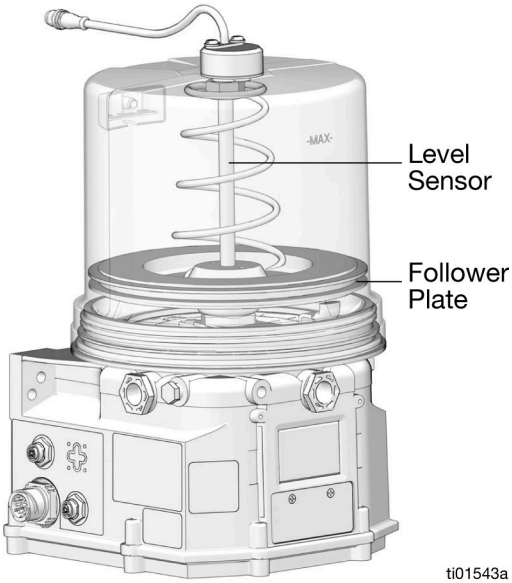


FIG. 38: Grease Pump

Max Model Set Up

Control Panel Overview

LCD DISPLAY

POWER LED

- GREEN: Normal/ON
- AMBER (Solid): System Alert and Alarm
- AMBER (Blinking): Low Level Alert and Alarm

ALARM LED

- RED (Solid): System Alarm
- RED (Blinking): Low Level Alarm

LEFT DIRECTION ARROW/RESET

- In SETUP the LEFT ARROW moves the cursor in the display one field to the left. It also navigates back to the previous screen and cancels parameter change.
- If the pump is lubricating, momentarily pressing this button cancels the event and the pump stops lubricating.
- In ALARM press and hold for 3 seconds to clear the alarm.

UP and DOWN ARROW

- Press and hold the UP and DOWN ARROW keys simultaneously for 3 seconds to enter SETUP.
- In SETUP the up and down arrow keys increase or decrease number values shown in display.

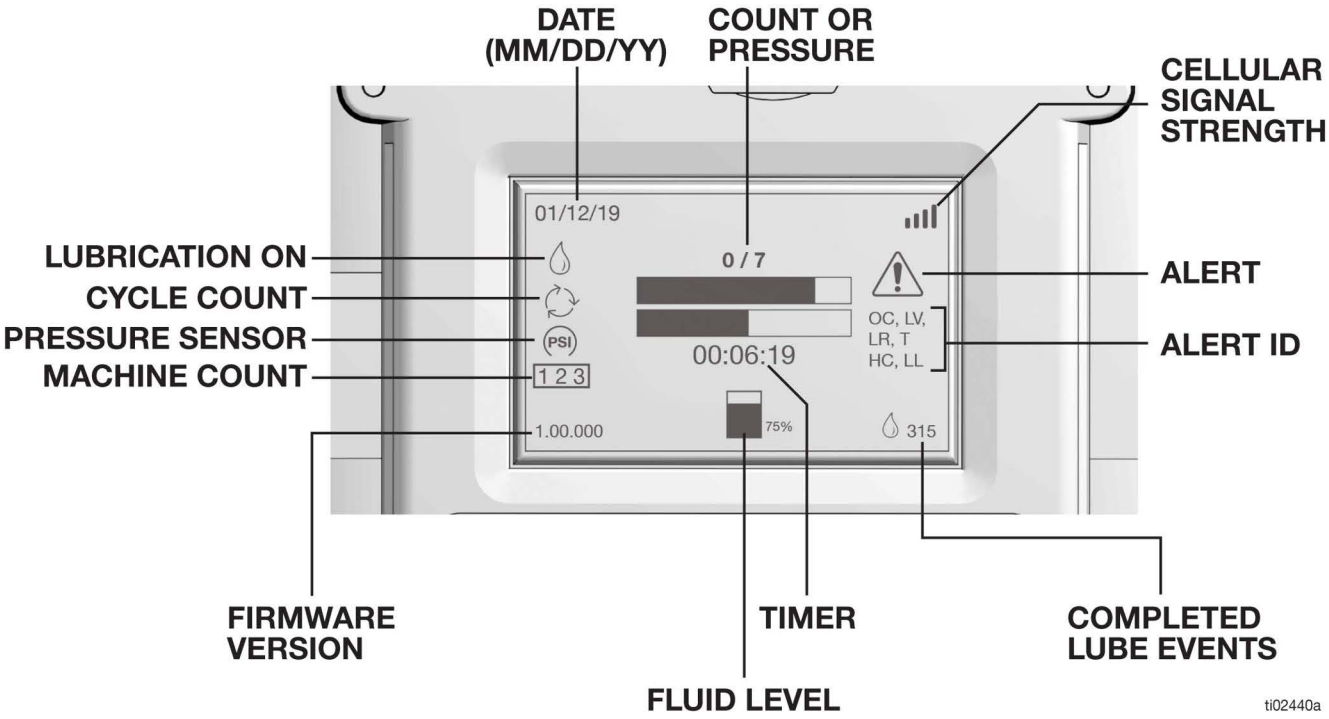
RIGHT DIRECTION ARROW/MANUAL RUN/ENTER

- In SETUP the RIGHT ARROW saves the entry or selects a menu choice.
- When not in SETUP, the RIGHT ARROW starts the pump for one complete lubrication event.

ti01554a

FIG. 39

LCD Screen Details



NOTE: Clean with water and soft towel only.

FIG. 40

Program the Max Controller

NOTE: Some pumps have different menu features available, depending on the pump part number.

Navigating Setup and Data Entry

UP and DOWN Arrows:

- Press both the UP and DOWN arrows simultaneously for 3 seconds to enter SETUP.
- Use the UP and DOWN arrows to navigate screens in the up or down direction, or to adjust parameters.


ti01555a

- Use these buttons to adjust parameters and data values.

Right Arrow:

- Use this button to move the cursor to the right or to select menu items.
- Use this button to save any parameter changes.


ti01542a

Left Arrow:

- Use this button to move the cursor to the left.
- Use this button to navigate to the previous screen. This cancels any parameter change made.


ti01557a

Change Settings

- Press both the UP and DOWN arrows simultaneously for 3 seconds to enter SETUP and to change settings.


ti01555a

While in SETUP, if a button is not pushed for 2 minutes the pump controller returns to idle.

NOTE: Setting changes are not saved until Accept is selected.

Lube Mode

Determines how long and how frequently the pump lubricates.

NOTE: Each installation requires configuring these settings to fit the specific application.

Interval

Configures how frequently the pump lubricates the product.

- Select either Timer or Machine Count.

Timer Interval Mode

This uses a timer to determine when to lubricate.

- Interval: defines the time between the start of each lubrication event.

For more information on Interval timers, see page 44.

Machine Count Interval Mode

This configures the device to wait for a specific number of machine actions between lubrication events.

The actions must be presented to the device as a machine count input. This is a digital signal input, such as a proximity switch. See wiring the machine count input, page 22.

- Count: Specify the number of machine count inputs between lubrication events.
- Timeout: Enables/disables an interval timeout.
- Interval: When timeout is enabled, this defines the time when an action (lube or alarm) is taken.

- Action: Select the action taken (either Lube or Alarm) when a machine count interval timeout occurs.

  Lube: The lubrication event starts if the target machine counts do not occur within the interval timeout.

  Alarm: An alarm occurs if the target machine counts do not occur within the interval timeout.

Lube End

Configures when a lubrication event ends. Selects the method the controller uses to transition from lubrication to idle.

NOTE: The pump should not lubricate for more than 30 minutes at a time, and needs to follow a 33% duty cycle. For example, with a 15 minute interval, the pump lubrication time must be 5 minutes or less.

Timer Mode

The lubrication event ends after a specified amount of time.

- Timeout: defines the amount of time that the system is lubricating.

Pressure Switch Mode

The lubrication event ends when the system reaches a specific pressure. This is commonly used with Single Line Parallel (Injector) systems that utilize a pressure switch.

The pressure switch must be physically set to the appropriate target pressure. Only use a PNP style or dry contact pressure switch. For wiring the pressure input, see page 25.

- Timeout: Defines the maximum allowable time to reach the target pressure. If the pump does not receive an input from the pressure switch before the specified timeout, the pump enters an alarm state.

Pressure Sensor Mode

The lubrication event ends when the system reaches a specific pressure. This is commonly used with Single Line Parallel (Injector) systems that use a pressure sensor.

The pressure sensor must have a voltage range of either 0.5-4.5 V, 0-5 V, 1-5 V, or 0-10 V. For wiring the pressure input, see page 25.

- Timeout: Defines maximum allowable time to reach the target pressure. If the pump does not reach the specified pressure threshold before the set timeout, the pump enters an alarm state.

- Type: Selects the pressure sensor voltage range (0.5-4.5 V, 0-5 V, 1-5 V, or 0-10 V).

- Units: Select the units label to display with the pressure measurement: Percent, PSI, and bar.

- Full Scale: The maximum pressure that the sensor can read.

- Threshold: The target pressure the system must reach to end the lubrication event.

Cycle Count Mode

The lubrication event ends after a number of pulsed inputs from a cycle counter. This is commonly used with Series Progressive (Divider Valve) systems.

The cycle input must be a digital signal input, such as a proximity switch. It can be either a dry contact, PNP or NPN style switch. For wiring the cycle count input, see page 22.

- Timeout: Defines the maximum allowable time to accumulate cycle counts. If the pump does not reach the specified counts before the set timeout, the pump enters an alarm state.

- Cycles: Defines the number of cycle inputs required per lubrication event.

Low Level

The pump stops lubricating when low level is detected. Certain types of low level detection methods are available, depending on the pump part number.

NOTE: The pump program is preconfigured to match the low level detection method installed at the factory.

Paddle (Grease Pumps)

Used with paddle-style low level sensors in grease reservoirs. When the reservoir is nearly empty, a paddle will trigger a switch while the pump rotates.

Once the pump accumulates enough paddle switch triggers, the pump enters an alert or alarm state.

If the pump runs for at least 30 seconds with no paddle switch triggers, the accumulated triggers reset.

- Alert: Enable/disable low level Alert. The pump continues to lubricate while in an Alert state.
- Alert Count: The number of low level triggers to cause an Alert. The default setting for Alert Count is 10 triggers.
- Alarm: Enable/disable low level Alarm.The pump stops lubrication while in an Alarm state.
- Alarm Count: The number of low level triggers to cause Alarm. The default setting for Alarm Count is 80 triggers.
- Auto-Clear: If the pump is power cycled while in a low level alarm, it starts a lube event on power up to automatically check for grease.

NOTE: See **Low Level Alert/Alarm Auto-Clear**, page 46.

Switch (Oil Pumps)

Use with float-style low level sensors in oil reservoirs. When the reservoir is almost empty, the float triggers a switch.

Select either an alert or alarm state when the float-style sensor is triggered.

Sensor

Use with continuous, analog level sensors. The level is displayed as a percentage (%).

- Sensor Type: Select the type of level sensor output: 0.5-4.5 V or 0-10 V. The default is 0.5-4.5 V, and is required for use with the included level sensor.
- Alert: Enable/disable the low level Alert. The pump will continue to lubricate while in an Alert state.
- Alert %: Defines the reservoir level that triggers a low level Alert.
- Alarm: Enable/disable the low level Alarm. While the pump is in an alarm state, it will stop lubrication.
- Alarm %: Defines the level that triggers a low level Alarm.

NOTE: It is expected that some lubricant is in the reservoir when the low level alarm is reached.

PIN Lock

The controller, by default, does not require a PIN to access the programming features of the pump. However, an option for adding a PIN lock out is available.

Enable a Lock out PIN

Enter SETUP, then enter the LOCK menu.

- Lock: Toggles on/off lock out PIN protection.
- PIN: Enter a 4 digit code to unlock the device.

Entering a PIN

If the PIN lock is enabled when entering SETUP, the PIN entry screen appears with the first digit highlighted. Use the arrow buttons to enter the PIN.

After entering the last digit, press the RIGHT ARROW button to accept the PIN.

If the PIN is correct, the device enters SETUP.

If the PIN is incorrect, the device returns to the main screen.

Start Up

Defines the behavior of the pump at power up.

Enter SETUP then navigate to the START UP menu.

- Pre-lube: Configures the pump to immediately start a lubrication event when powered on.
- Delay: Enables/disables a delay between the time the device is powered on and when the pump resumes normal operation.This delays the pre-lube event.
- Delay Time: Sets the duration of the start up delay.

Advanced Options

Contains advanced options for various pump behaviors and outputs.

Different outputs for system monitoring end control are available, depending on the pump part number.

Enter SETUP then navigate to ADVANCED menu.

Relay Output (DIN pumps only)

Pumps that are configured with DIN connections may have a dry contact relay output for use with switching external devices, such as a stack light. This output assists in monitoring the pump status.

- Type: Selects the conditions that will activate the dry contact relay.
- Pulsed: This option is only available when the Type is set to ALARM & ALERT. While this setting is enabled, the relay output toggles between open and closed every 1 second during an alarm. This assists in distinguishing between an alert or alarm state. See **Pulsed Alarm Relay Response**, page 41.

NOTE: The relay output is not powered, external power needs to be provided. Ensure that the provided power and load device are within the maximum ratings.

Signal Outputs (CPC pumps only)

Pumps that are configured with CPC power connectors have additional signal outputs available to assist in monitoring the pump status.

These are OPEN to Ground (-VDC) style outputs and are used with external monitoring systems, such as a PLC.

There are two signal outputs available, and each can be configured separately. For wiring the signal outputs, see page 21.

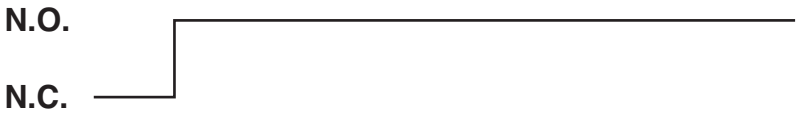
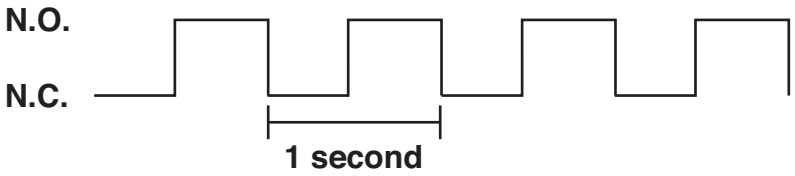
- Source: Selects what activates the selected signal output.

  All: Activate during any system alert or alarm.

  Level: Only activates during a low level alert or alarm.

  Motor: Activates when the motor is running and the system is lubricating.
- Type: Specifies if an alert or alarm will activate the selected signal output. This is only available when the Source is set to All or Level.
- Active: Specifies the active state of the selected signal output.
- Pulsed: Only available when the Type is set to ALARM & ALERT. While this setting is enabled, the output toggles between Open and Ground (-VDC) every 1 second during an alarm. This assists in distinguishing between an alert or alarm state. See **Pulsed Alarm Relay Response**, page 41.

Pulsed Alarm Relay Response

	Output Tied to Common
Normal Status	
Alert	
Alarm	

Default Remote Illumination, Signal Output, and Relay Alarm Responses

The pump has several outputs available that provide information about the system status:

- Tri-Color Remote Illumination: An external, remote manual run button with built in LED.
- Relay Alarm Output (DIN power pumps only): The pump contains an internal dry-contact relay to switch external power for another device, such as an external stack light.
- Signal Outputs (CPC power pumps only): NPN style signal outputs for use with PLC or other monitoring devices.

The table describes the default behaviors of the relay alarm, signal outputs, and remote illumination.

	Tri-Color Remote Illumination	Relay Alarm Output (DIN Power Only)	Signal Output 1 (CPC Power Only)	Signal Output 2 (CPC Power Only)
Unit is Idle	Off	Off	Open	Open
Unit is Lubricating	Green (solid)	Off	Open	Open
System Alert	Amber (solid)	On	Open	Open
System Alarm	Red (solid)	Toggles On/Off once per second	Closed to -VDC	Open
Low Level Alert	Amber (flashing)	On	Open	Closed to -VDC
Low Level Alarm	Red (flashing)	Toggles On/Off once per second	Closed to -VDC	Toggles Open/Closed once per second

Vent Valve

Single Line Parallel (Injector) systems use an external vent valve solenoid to control pressure buildup.

Some lubrication systems require additional time at pressure to allow for the injectors to fire. Setting a dwell time delays when the vent valve relieves pressure.

- Dwell: Specifies the length of time to keep the vent valve energized after the end of a lubrication event.

Lubrication Retry

If the system is unable to complete a lubrication event, by default the pump enters an alarm state.

When the pump enters an alarm state, operation stops and waits for the user to address and clear the alarm.

In some instances, it may be best to allow the pump to retry lubrication and give the system an opportunity to automatically recover.

- Retries: Specifies the number of retry attempts before the pump enters an alarm. A Lubrication Retry (LR) alert is displayed to indicate the pump has recently retried a lubrication cycle.

  NOTE: This only affects the following alarms:

  - Cycle Timeout
  - Pressure Timeout

LCD

The pump has an LCD display with an integrated back-light that can be configured to always remain on, to turn off after a period of inactivity, or to always remain off.

System

The system menu includes options for setting the date and time or updating the system firmware. See **Update Firmware**, page 51.

Change Date and Time

Enter SETUP, navigate to the SYSTEM menu, then navigate to the DATE TIME menu.

- Date: Defines the current date.
- Time: Defines the current time. This clock runs on a 24-hour clock (9 a.m. = 9; 2 p.m. = 14).

Program Settings

Feature	Description	Modes of Operation Maximum/Minimum and Additional Comments
Interval, page 37	Modes	Timer, Machine Count
	Machine Count	1 to 9,999
	Interval Time	HH:MM:SS (00:01:00 to 99:59:59) The pump must adhere to the maximum allowable duty cycle (2 min of idle time for 1 min of run time)
Lube End, page 38	Modes	Timer, Pressure Switch, Pressure Sensor, Cycle
	Lubrication Time	MM:SS (00:00:10 to 30:00) The pump must adhere to the maximum allowable duty cycle (2 min of idle time for 1 min of run time)
	Pressure Sensor Types	0.5 to 4.5 V, 0-5 V, 1-5 V, 0-10 V
	Pressure Units	PSI, percentage, bar
	Pressure Sensor Full Scale	1 to 10,000 Threshold must be less than or equal to Full Scale
	Pressure Sensor Threshold	1 to 5,000 Threshold must be less than or equal to Full Scale
	Cycle Counts	1 to 99
Low Level, page 39	Low Level Modes	Paddle, Float, Sensor
	Paddle Low Level Alert Threshold	00 to 99 The alarm threshold must be greater than the alert threshold. Recommended setting is 10 counts.
	Paddle Low Level Alarm Threshold	00 to 99 The alarm threshold must be greater than the alert threshold. Recommended setting is 80 counts.
	Paddle Alarm Auto-Clear	Enables a feature that automatically clears a low level alarm and starts a lubrication event to check if the reservoir is still empty. This occurs when the power to the pump is cycled.
	Float Type	Sets the response of the pump to the low level float switch as either low level alert or alarm.
	Level Sensor Type	0.5 to 4.5 V Recommended setting is 0.5-4.5 V for use with a Graco level sensor.
	Level Sensor Alert Threshold	0 to 99% The alarm threshold must be lower than the alert threshold. Recommended setting is 24 percent.
	Level Sensor Alarm Threshold	1 to 99% The alarm threshold must be lower than the alert threshold. Recommended setting is 5 percent.
PIN Lock, page 39	Lock	Enables or disables requiring a PIN to enter the SETUP menu.
	PIN	Enter a 4-digit PIN that allows access to the SETUP menu.
Start Up, page 40	Delay Time	MM:SS (00:01 to 59:59)
Advanced Options, page 40.	Vent Valve Dwell Time	SS (0 - 59) Setting to 0 (zero) seconds disables the dwell time.
	Retry Attempts	0 - 20
System, page 42	Date	Month: 1 - 12 Day: 1 - 31 Year: 24 - 99
	Time	HH;MM:SS (00:00:00 to 23:59:59) 24-hour time

Interval

The interval defines how frequently the pump lubricates. For lubrication systems such as Series Progressive or Single Line Parallel, that have a varied lubrication event duration (due to environmental conditions such as temperature), the pump adjusts the idle time automatically to meet the interval requirements.

Such as, if the pump is configured to lubricate every 60 minutes:

- If the lubrication event is 15 minutes, the idle timer is adjusted to start at 45 minutes.
- If the lubrication event is 17 minutes, the idle timer is adjusted to start at 43 minutes.

These examples maintain an interval of 60 minutes between the start of each lubrication event.

Operation

Controller Operation

Main Screens

Refer to the following illustrations for examples of typical operation screens.

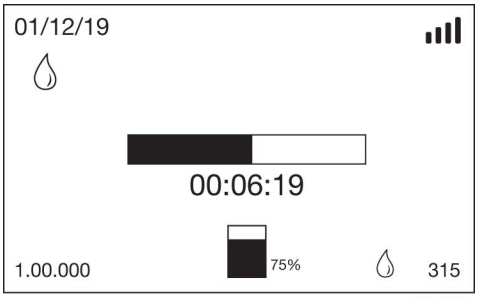


FIG. 41 Lubrication Event: Pressure Switch

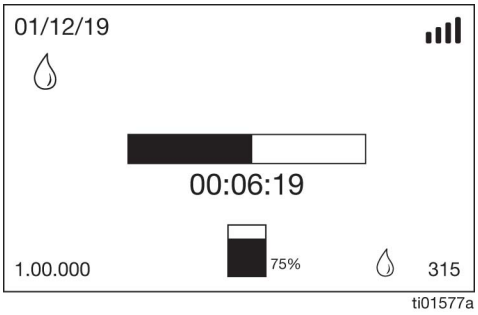


FIG. 44 Lubrication Event: Time

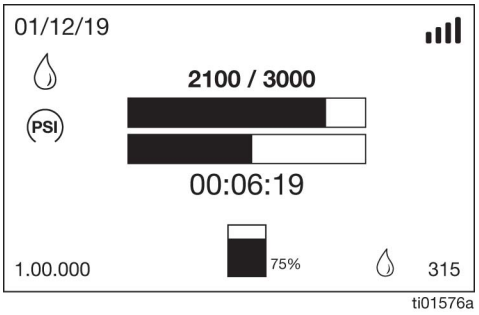


FIG. 42 Lubrication Event: Pressure Sensor

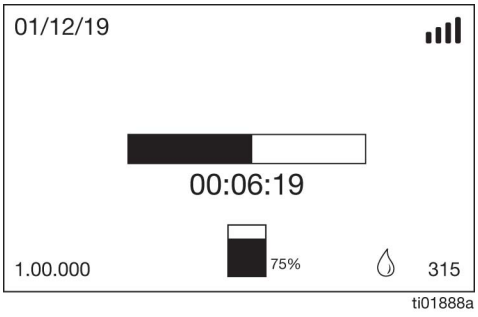


FIG. 45 Idle: Timer

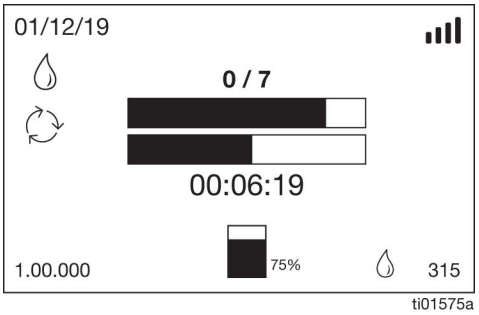


FIG. 43 Lubrication Event: Cycle

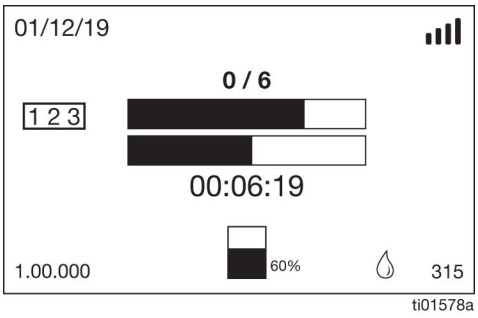


FIG. 46 Idle: Machine Count

Alerts and Alarms

Additional support on alerts, alarms, and troubleshooting can be found at https://graco.com/G3Support.

When the pump has detected an issue with the lubrication system, it may enter an alert or alarm state.

During an alert:

- The pump continues to operate.
- The POWER LED turns amber. During a low level alert, the POWER LED flashes (FIG. 47).
- The screen will display an alert icon and an Alert ID (FIG. 47).See **Alert Types**, page 47, for details.

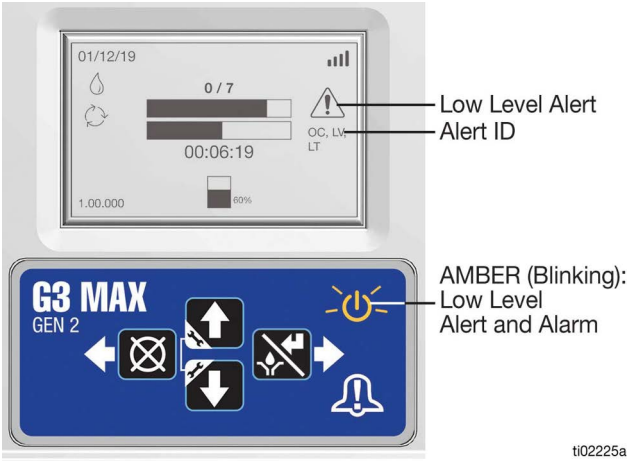


FIG. 47

During an alarm:

- The pump immediately stops operation.
- The POWER LED turns amber. The ALARM LED turns red. During a low level alarm, both LEDs flash (FIG. 48).
- An alarm screen displays (FIG. 48).

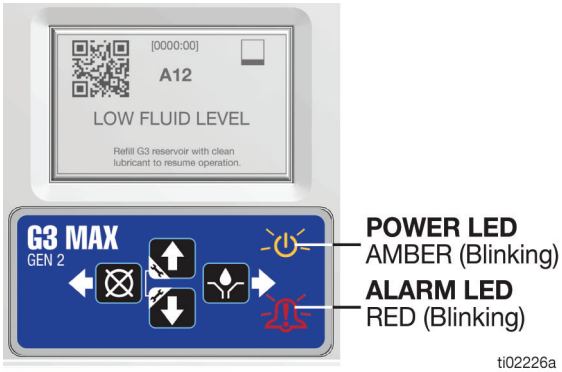


FIG. 48

Clear an Alert

Alerts automatically clear when the issue is resolved. For example, the low level alert automatically clears once the reservoir is filled.

Clear an Alarm

Alarms typically require an operator to resolve the issue. See **Alarm Types**, page 47 for types and solutions, and **Troubleshooting**, page 55, for recommended actions.

- Resolve the issue that caused the alarm.
- Press and hold the RESET/Left Arrow button for at least 3 seconds. The alarm screen is removed and the pump resumes operation.

NOTE: If the issue is still present after clearing the alarm screen, the alarm screen may reappear.

Low Level Alert/Alarm Auto-Clear

Low level alerts and alarms are expected as the pump depletes the lubricant in the reservoir.

Float or Sensor: Refilling the reservoir will automatically clear the alert or alarm.When a low level alarm is cleared, the pump immediately starts a lube event.

Paddle Low Level: Refilling the reservoir automatically clears a low level alert after the pump runs for 30 seconds. A paddle low level alarm must be manually cleared by pressing the LEFT ARROW/RESET for 3 seconds unless the Paddle Auto Clear feature is enabled.

Paddle Auto-Clear: A pump in a low level alarm state will attempt to lubricate automatically when the pump power is cycled. This gives the system an opportunity to automatically clear the low level status if the pump runs without any paddle triggers.

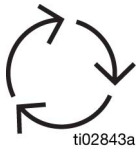
Alert Types

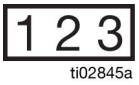
See **Troubleshooting**, page 55 for more information.

Alert ID	Short Description	Explanation
LL	Low Level	The lubricant has been depleted from the reservoir. Refill soon.
LR	Lubrication Retry	The lubrication cycle timed out before completion. The system retries lubrication program (idle + Lubrication) again.
OC	Motor Overcurrent	The motor was detected operating at a very high current. As a protection, the motor stopped and will retry the lubrication event after it idles. If the problem persists, the system will enter an alarm.
LV	Low Voltage	The voltage provided is low. Check or replace the battery or power source for the pump.
T	Temperature	The system is outside of the operating temperature specifications. Low temperatures may make dispensing grease difficult. Ensure that appropriate temperature grease is being used or the system may fail to apply lubrication.
HC	Motor High Current	The motor is operating at higher than expected current. Check for debris and blockage in the lubrication system to prevent motor damage. If the lubricant is contaminated or has a high solids content, the pump element may need to be replaced. Replacement pump elements are available from your Graco Lubrication Equipment distributor.

Alarm Types

See **Troubleshooting**, page 55 for more information.

Alarm ID	Alarm Type	Alarm Icon	Explanation
A11	Low Cycle Count	 ti02843a	The divider valve (metering device) has not fully cycled within the allowed time. The Cycles and Timeout are configurable in the pump menu. Select a Timeout length long enough for the number of cycles, plus add 50 percent more to the time, to prevent a false alarm. Note that colder temperatures may cause the system to move slower, and require a longer Timeout setting. If the configuration appears correct, check for broken or blocked lubrication lines, and replace as needed. Purge air from any new lines. Check the proximity switch or cycle switch, along with the wiring from the switch to the pump. Repair or replace any damaged components. To confirm pump operation, check the system pressure at the pump outlet. If the pump does not build pressure, it may need to be repaired or replaced. Replacement pump elements are available from your Graco Lubrication Equipment distributor.
A12	Low Fluid Level	 ti02844a	Lubricant has been deleted from the reservoir. Refill immediately to resume lubrication system operation.

A13	Low Machine Count	 ti02845a	The pump setup menu is configured to receive a signal from the machine when lubricated within the Timeout setting. If this is not received during the Timeout setting, the alarm activates. Verify that the pump is operational and that the switch or sensor for the machine count and wiring are in good condition. Replace any damaged components. Verify that the Timeout has been set with enough time to receive the correct number of machine count signals.
A14	Low Pressure	 ti02846a	The injectors (metering devices) require system pressure to trigger lubrication dispensing. To make sure that the necessary pressure is achieved during each lubrication event, the system is monitored by a pressure sensor. The Pressure setting and the Timeout length are configurable in the pump setup menu. Select a Timeout length long enough for the number of cycles, plus add 50 percent more to the time, to prevent a false alarm. Note that colder temperatures may cause the system to move slower, and require a longer Timeout setting. If the configuration appears correct, check for broken or blocked lubrication lines, and replace as needed. Check the pressure sensor and wiring from the sensor to the pump. Repair or replace any damaged components. Verify that the part number on the vent valve is the number for a Normally Open vent valve. The vent valve may not be holding pressure. Replace vent valve. To confirm pump operation, check the system pressure at the pump outlet. If the pump does not build pressure, it may need to be repaired or replaced. Replacement pump elements are available from your Graco Lubrication Equipment distributor.

A15	Pressure Not Vented	 ti02846a	The injectors (metering devices) require system pressure to trigger lubrication dispensing, and that pressure is vented between lubrication events to allow for the injectors to reset for the next lubrication event by a vent valve. The vent valve returns some lubricant to the reservoir. If the vent valve is not operating correctly, the injectors are unable able to reset between lubrication events, and prevent functioning. Verify that the part number on the vent valve is the number for a Normally Open vent valve. If it is for a Normally Closed vent valve, it needs to be replaced. Inspect the vent valve and the electrical connector for damage, and replace as needed. Verify that the cable from the pump base to the vent valve is intact and connected at both ends. Replace the cable as needed. Make sure that enough power is being delivered to the vent valve, and that there are no short circuits. Test the electrical solenoid by holding a piece of ferrous metal near the solenoid during pump operation. The solenoid is an electro-magnet, so it should attract ferrous metal during operation. If it does not attract the ferrous metal, it is not functioning properly.
A16	Pressure Sensor	 ti02848a	Review the documentation for the sensor output signal range. Compare this to the setup menu to verify that the pump is programmed to receive the correct signal. Verify that the sensor is wired correctly. Make sure the pins on the pump are connected to the correct pins on the sensor. For example, Pin 1 of the pump may not connect to Pin 1 of the sensor.
A17	Level Sensor	 ti02844a	Review the documentation for the sensor output signal range. Compare this to the setup menu to verify that the pump is programmed to receive the correct signal. Verify that the sensor is wired correctly. Make sure the pins on the pump are connected to the correct pins on the sensor. For example, Pin 1 of the pump may not connect to Pin 1 of the sensor.
A18	Motor Short	 ti02847a	Verify that a pressure relief valve is installed in the lubrication system. The pressure relief valve is normally teed into the outlet of the pump element, or incorporated into the vent valve manifold. If no pressure relief valve is installed, contact your Graco Lubrication Equipment distributor to order one, and install as soon as possible, This is a safety device and is required for every system, see page 28. When the temperature is cold, warm the system up for a few minutes, and then clear the alarm. Then try to run the pump again. If the Overcurrent alarm returns, even after the system is warm, the motor may need to be replaced.

A19	Sensor Power Short	 ti02847a	Check the sensor and wiring for short circuits or other damage. Replace any damaged components as needed. Verify that the sensor is wired correctly. Make sure the pins on the pump are connected to the correct pins on the sensor. For example, Pin 1 of the pump may not connect to Pin 1 of the sensor. An electrician may be required to ensure correct wiring of the sensor to the pump.
A20	Low Input Voltage	 ti02847a	The voltage to the lubrication system is low. Check the battery or power source for the pump, and replace as needed.
A21	Vent Valve Short	 ti02847a	Troubleshoot the electrical solenoid and the wiring from the pump to the vent valve solenoid. Replace any damaged components.
A23	Motor Overcurrent	 ti02847a	Verify that a pressure relief valve is installed in the lubrication system. The pressure relief valve is normally tied into the outlet of the pump element, or incorporated into the vent valve manifold. If no pressure relief valve is installed, contact your Graco Lubrication Equipment distributor to order one, and install as soon as possible. This is a safety device and is required for every system, see page 28. When the temperature is cold, warm the system up for a few minutes, and then clear the alarm. Then try to run the pump again. If the Overcurrent alarm returns, even after the system is warm, the motor may need to be replaced.
A25	Power Brownout	 ti02847a	There is not enough current to power the pump. If the pump is DC powered, try a different ground. For mobile equipment, check the age of the battery.

Update Firmware

- Follow **Pressure Relief**, page 28.
- Make sure that the pump is powered on and in idle.
- Remove the USB plug from the bottom cover (FIG. 49).

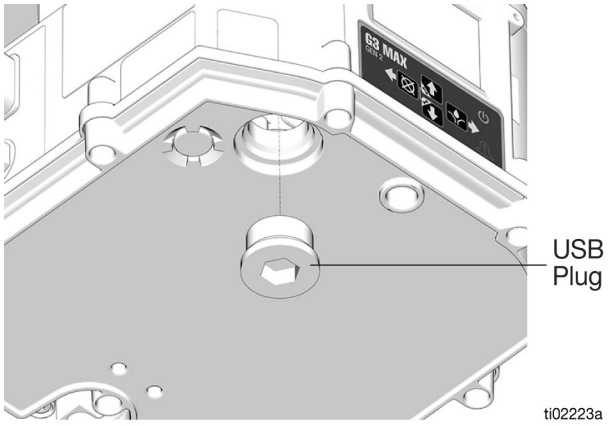


FIG. 49

- Insert a USB drive that contains the latest firmware.

  The USB drive must be formatted as FAT32.

  Only use firmware provided directly from Graco.
- Enter SETUP and navigate to SYSTEM.
- In the SYSTEM menu, navigate to USB.
- Highlight the FIRMWARE UPDATE (MAIN) option on the screen, and press ENTER/Right arrow.
- Confirm that the firmware file is correct to start the update.

NOTICE

The update process may take several minutes. Do not remove power to the pump while updating. This may damage the pump.

- When the update is complete, the pump resumes normal operation.
- Verify the update is complete by checking the firmware version on the main screen (FIG. 50).
- Remove the USB drive.
- Replace the USB plug, and torque to 65 in. lb. (7.3 N•m)

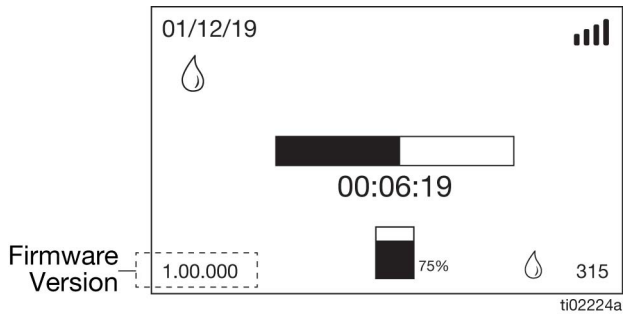


FIG. 50

NOTE: Confirm that the pump settings have not changed after firmware update.

NOTE: If the update fails, try reseating the USB. Verify the USB is formatted as FAT32.

Cellular Connected Pumps

Certain pump configurations come equipped with integrated cellular connectivity to allow for remote monitoring and configuration of the pump through the Graco Trace website.

NOTE: Cellular connected pumps rely on cellular service to communicate. Make sure that the installation site has sufficient cellular coverage prior to installation.

NOTE: External cellular signal boosters can be used to increase cellular connectivity at installation sites. See **Technical Specifications**, page 81 for information regarding cellular bands used.

Initial Cellular Setup

To use the pump remote monitoring features, access the Graco Trace website at https://glc.gracotrace.com using your web browser.

For additional information on how to use Graco Trace, access https://graco.com/trace for Graco Trace supporting information.

- Graco Trace Quick Start Guide
- Graco Trace User Guide
- Other information

Accessing the UID

When adding pumps to Graco Trace, a pump unique identification number (UID), a 15 digit unique identifier, is required. The UID is located on the serial label on the side of the pump.

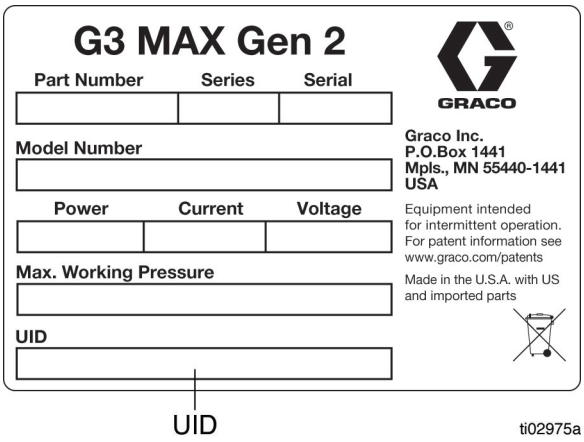


FIG. 51

The UID is also be found by accessing the pump setup menu, navigating to SYSTEM -> CELLULAR -> VERSION INFO. The UID is listed as the RADIO IMEI in this menu.

Cloud Configured Pumps

Graco Trace provides the option to remotely configure the lubrication settings for the pump. After a pump is configured remotely through Graco Trace, the configuration is managed by the cloud.

NOTE: When a pump configuration is managed by the cloud, users can only make changes to the pump settings by accessing Graco Trace.

A PIN code is automatically applied to the pump when the configuration is managed by the cloud. The set PIN code can be accessed through Graco Trace when the pump is disconnected from the cloud.

If the pump loses cellular connection, the pump configuration may be temporarily overridden. Access the pump setup menu, navigate to SYSTEM -> CLOUD OVERRIDE. Selecting CLOUD OVERRIDE refreshes the setup menu and provides temporary access to all of the pump settings.

NOTE: Once the pump reconnects to cellular service, any temporary changes will be reverted. To make the changes permanent, either update the pump configuration to match the new settings through Graco Trace, or set the pump as a locally managed configuration through Graco Trace.

Series Code

Each pump includes a serial label that contains a 6-digit Series Code. The code is used to determine the manufacturing date of the pump.

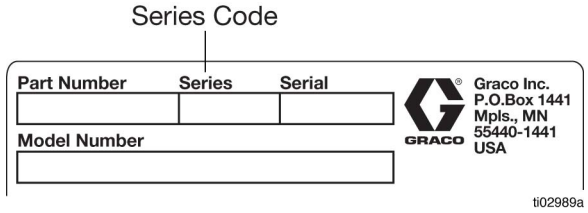


FIG. 52

The table shows the breakdown for the Series Code.

Month Code		Year Code (2-digit)		Day Code (2-digit)	Series Letter
A	January	95	1995	01 - 31	A
B	February	03	2003		B
C	March	04	2004		
D	April	05	2005		
E	May				
F	June				
G	July				
H	August				
I	September				
J	October				
K	November				
L	December				

A pump manufactured on August 9, 2004 would have a Series Code of 09H04B.

Maintenance

Frequency	Component	Required Maintenance
Daily and at refill	Zerk Fitting	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	Clean with water and soft towel only.
Monthly	External Wiring Harness	Verify external harnesses are secure.

Recycling and Disposal

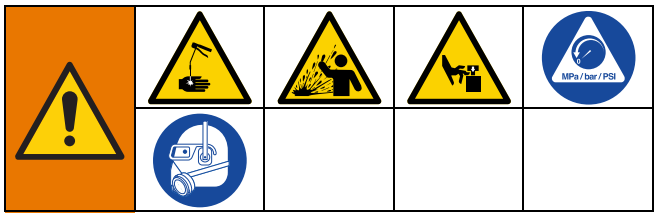
End of Product Life

At the end of the product's useful life, dismantle and recycle it in a responsible manner.

- Perform the **Pressure Relief Procedure**, page 28.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.
- Remove motors, batteries, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of batteries or electronic components with household or commercial waste.

- Deliver remaining product to a recycling facility.

Troubleshooting



See **Alert Types**, page 47, and **Alarm Types**, page 47, for more information.

Additional support on troubleshooting can be found at https://graco.com/G3Support.

Follow **Pressure Relief** procedure, page 28, before checking or repairing the equipment.

NOTE: Check all possible problems and causes before disassembling the equipment.

Problem	Cause	Solution
Unit does not power on	Incorrect/loose wiring	Refer to **System Configuration and Wiring** instructions, page 16.
Unit does not power on (DC models only)	Tripped external fuse due to internal component failure	Check wiring. If problem persists contact your local Graco distributor.
	Tripped external fuse due to pumping non-cold weather lubricant in cold weather -13°F (-25°C)	Replace lubricant with pumpable lubricant, rated for environmental conditions and application. Replace fuse.
Unit does not power on (AC models only)	Power supply failure	Check wiring. If problem persists contact your local Graco distributor.
Can't set desired Interval/Lube times	Maximum duty cycle is 33%	Adhere to allowable duty cycle. Contact Graco Customer Support if other duty cycles are required for application, see page 84.
Lubricant leaks past seal located on the bottom of the reservoir	Reservoir retaining tabs are cracked or broken	Replace reservoirs. If problem persists contact your local Graco distributor.
	Reservoir is being pressurized during filling	Ensure vent hole is not plugged. If problem persists, contact your local Graco distributor.
Unit not pumping during ON cycle, but controller lights and functions	Failed motor	If problem continues contact your local Graco distributor.
Follower plate is not going down	Air is trapped in the reservoir between the follower plate and lubricant	Add grease following **Load Grease** instructions, page 31. Ensure air is purged.
Pump takes several minutes before it begins pumping at the highest pump volume setting (no stroke adjust spacers installed)	Pumping non-cold weather lubricant in cold weather -13°F (-25°C)	Add 1 stroke adjust spacer and adjust lube cycle time to accommodate the difference in pump volume per stroke.
Unit indicates a cycle or pressure alarm before the lubrication cycle could complete	No cycle switch or pressure switch/sensor input within the Time Out	Check cycle switch or pressure switch/sensor wiring. Set Time Out correctly.

Problem	Cause	Solution
Display refreshes slowly.	Low ambient temperature	Take pump to warmer environment. This is expected with LCD displays.
The system is over pressurized and grease is leaking from the pressure relief valve.	In injector system, the pressure switch/sensor is not working	Set the pressure switch/sensor to the correct pressure. Check the pressure switch/sensor wiring.
	There is system blockage	Check the metering devices for any blockages.
The pump is not building pressure.	The reservoir is low on grease	Add grease following **Load Grease** instructions, page 31.
	There is leakage in the pipeline	Repair the leakage problem.
	The pump elements are not working	Replace pump elements.
	The vent valve is not closed or is leaking internally.	Check the vent valve wiring. Replace the vent valve.
The pressure is not venting in an injector system.	The vent valve is clogged	Replace the vent valve.

Repair

All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

Refer to FIG. 53 for this section.

1. Follow **Pressure Relief**, page 28 to depressurize the pump.
2. Turn off the power to the pump.
3. Disconnect the power cord.
4. Remove the screws (3) from the bottom of the pump.
5. Remove the cover (2).

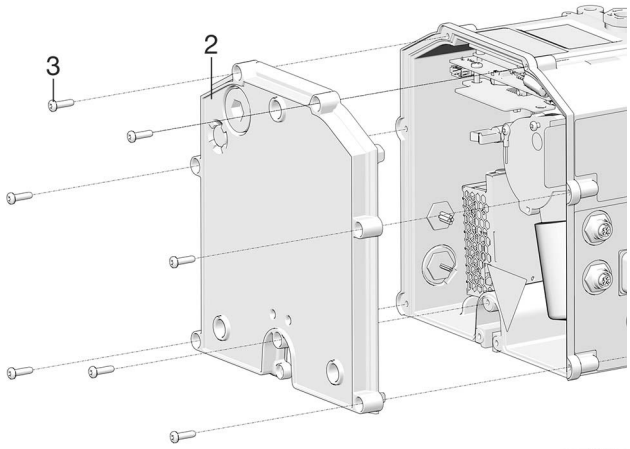


FIG. 53

- After steps 1 through 5 are completed:

Remove Power Supply

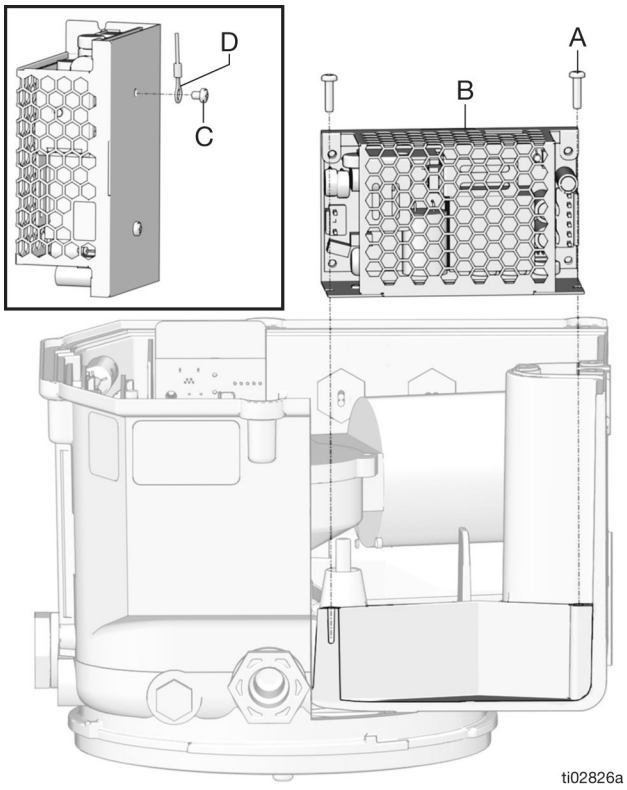


FIG. 54

Refer to FIG. 54 for these sections.

1. Loosen and remove the two screws (A) from the power supply (B), beginning with the bottom screw.
2. Pull the power supply partially out of the pump housing, there are three hanging connections.
3. Disconnect the grounding wire screw (C).
4. Disconnect the two locking connectors.
5. Remove the power supply (B) from the pump housing.

Replace Power Supply

1. Connect the new power supply (B) to the two locking connectors.
2. Connect the grounding wire screw (D) to the new power supply (B).
3. Place the power supply (B) partially into the pump housing, and place the two screws (A) and slightly tighten.
4. After fully placing the power supply (B), tighten the two screws (A), but do not over tighten.

NOTE: The pump may be damaged if the screws (A) are overtightened.

Remove Cellular Board

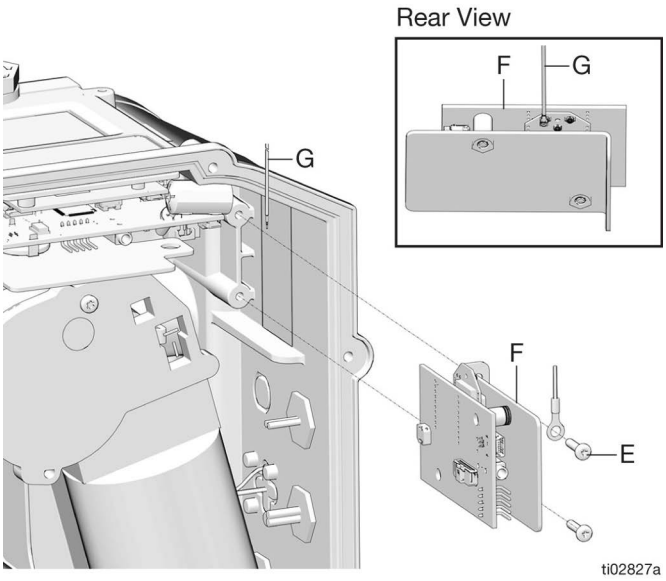


FIG. 55

Refer to FIG. 55 for this section.

1. Loosen and remove the two screws (E) from the cellular board (F).
2. Disconnect the interlocking connectors from the cellular board (F).
3. Remove the pop-on connector for the antenna (G), mounted on the inside wall.
4. If needed, remove the antenna (G) from the base of the pump unit and discard.

   To replace the antenna (G):

   a. Remove half of the paper adhesive on the back of the antenna.

   b. Position the antenna (G) with the cable facing upward.

   c. Remove the other half of the paper adhesive and push the antenna against the wall until secure.

5. Disconnect the cable interlocking connectors to the cellular board (F).

Replace Cellular Board

1. Reconnect the cable interlocking connectors to the cellular board (F).
2. Reconnect the antenna (G) to the cellular module board bracket.

NOTE: Be sure to connect to the correct spot or the cell will not work.

3. Tuck the cable into the base wall.
4. Set the bracket into the base wall, lining up the mounting holes.
5. Reconnect the cable between the main board and the cellular bracket.
6. Replace the bottom screw (E) and partially tighten.
7. Line the bracket up with the eyelet ground wire.
8. Replace the top screw (E) and tighten.
9. Tighten the bottom screw (E).

NOTE: The pump may be damaged if the screws (E) are overtightened.

Verify Cellular Connectivity

Refer to FIG. 53, page 57, for this section

1. Connect the cover (2) to the pump.
2. Replace the screws (3).
3. Turn power on.
4. Check the display:

   If there is a bars symbol in the upper right-hand corner of the display, the cellular board is connected.

   If there is no symbol display, the cellular board is not connected.

NOTE: If the pump shows faded bars and does not connect to cellular service after a few minutes, check the antenna connection.

Remove Main Board

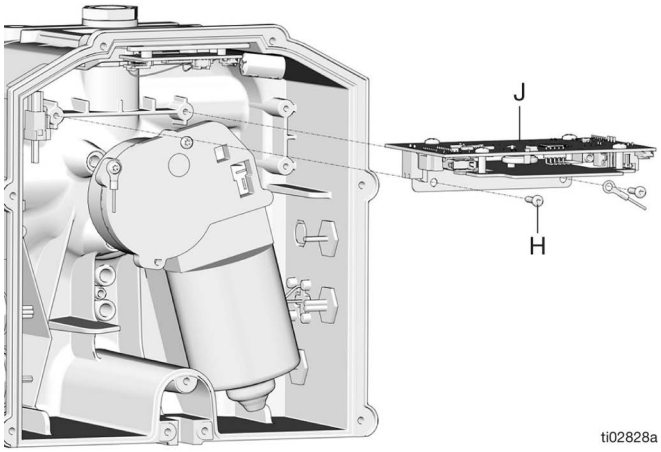


FIG. 56

Refer to FIG. 56 for these sections.

1. Disconnect the four interlocking connectors on the left side of the pump.
2. Remove the main board two bracket screws (H).
3. Disconnect the four (or five) interlocking connections on the right side of the pump.
4. Remove the main board bracket assembly (J).

Replace Main Board

1. Connect the main board assembly (J) starting with the screw through the ground eyelet on the bottom right of the bracket.
2. Replace the main board two bracket screws (H) and partially tighten.
3. Reconnect the four (or five) interlocking connectors on the right side of the pump.
4. Tighten the main board two bracket screws (H).

NOTE: The pump may be damaged if the screws (H) are overtightened.

5. Reconnect the four interlocking connectors on the left side of the pump.

Remove Level Sensor

The reservoir needs to be empty for this process.

If the reservoir is not empty:

1. On the display, set level sensor type to 0 - 10 V.
2. Disable the Low Level Alert and Alarm features.
3. Accept the changes.
4. Run the pump to empty grease from the reservoir.

After the reservoir is empty:

1. Disconnect the power to the pump.
2. Disconnect the level sensor (M) from the base of the pump (FIG. 57).

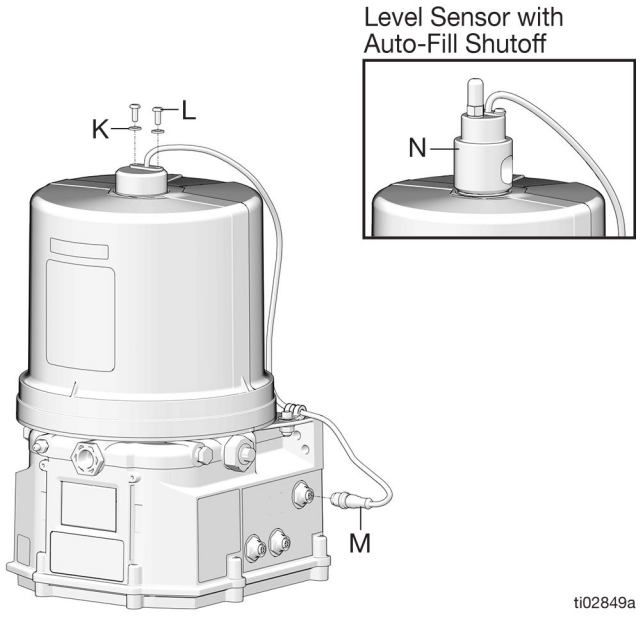


FIG. 57

3. Use a hex key and wrench to loosen and remove fasteners (P, S, and T) (FIG. 58).

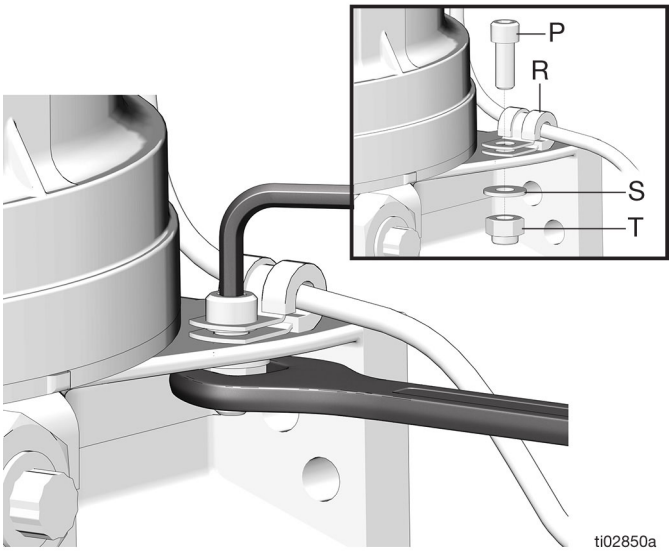


FIG. 58

4. Remove the holding clip (R).

NOTE: The reservoir is spring loaded.

5. Remove the two screws (L) and washers (K) from the level sensor (M) (see FIG. 57).
6. Use a flat screwdriver and lightly tap the flange to rotate the flange until the screwdriver fits underneath.
7. Use the flat screwdriver to push up on the flange (FIG. 59).

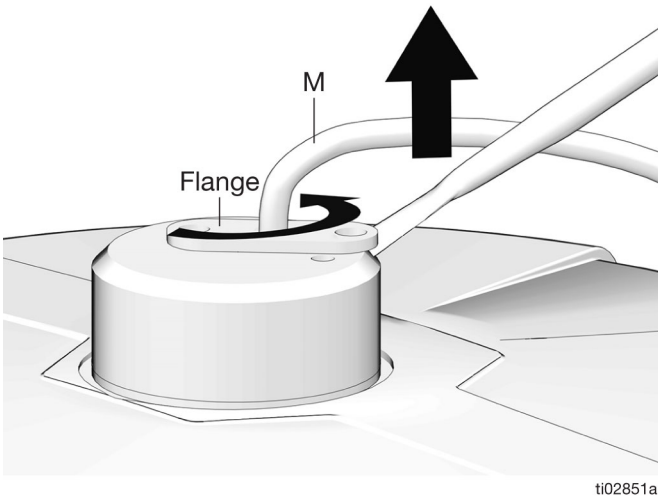


FIG. 59

8. Pull the level sensor (M) out of the reservoir.

Replace Level Sensor

1. Lubricate the level sensor (M) stem lightly with grease.
2. Replace the level sensor (M) through the top of the block on the reservoir (FIG. 60).
3. Push the level sensor (M) through the hole in the follower plate (V).

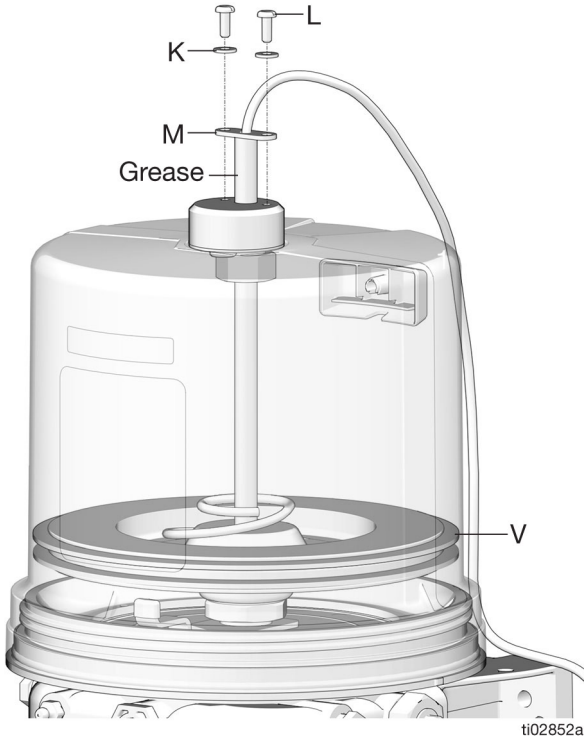


FIG. 60

4. Align the level sensor flange over the screw holder.
5. Replace the two washers (K) and screws (L), and torque to 15 - 25 in.-lb (1.7 -2.8 N•m).
6. Attach the fastener clip (R) to the level sensor cord.
7. Place the fastener clip (R) with the screw (P) and washer (S) and tighten (FIG. 61).

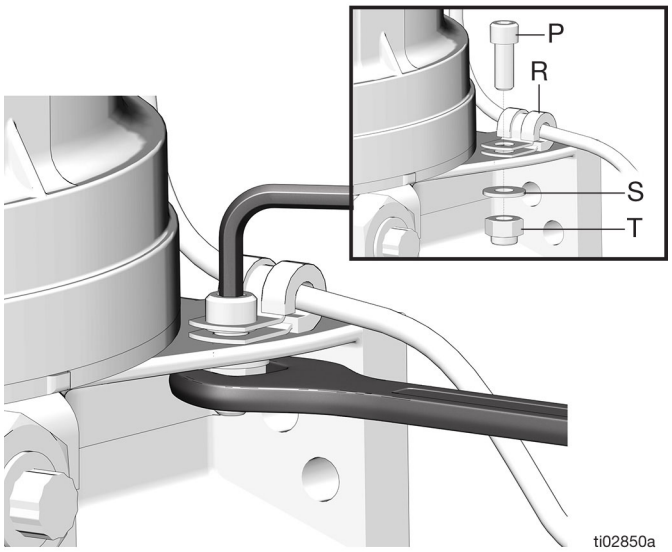


FIG. 61

8. Reconnect the level sensor (M) to the pump base (FIG. 62).

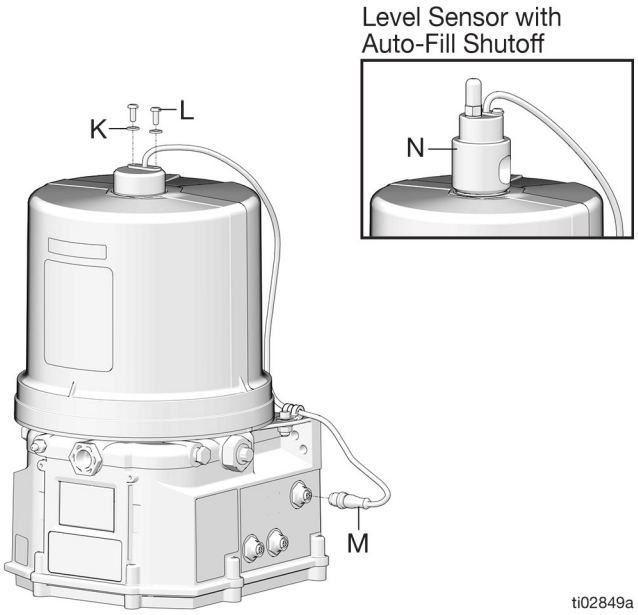


FIG. 62

9. Restore power to the pump.
10. On the display, set level sensor type to 0.5 - 4.5 V.
11. Enable the Low Level Alert and Alarm features.
12. Follow the installation procedure.

Remove Reservoir with Level Sensor

The reservoir needs to be empty for this process.

If the reservoir is not empty:

1. On the display, set level sensor type to 0 - 10 V.
2. Disable the Low Level Alert and Alarm features.
3. Accept the changes.
4. Run the pump to empty grease from the reservoir.

After the reservoir is empty:

1. Disconnect the power to the pump.
2. Disconnect the level sensor (M) from the base of the pump (FIG. 63).

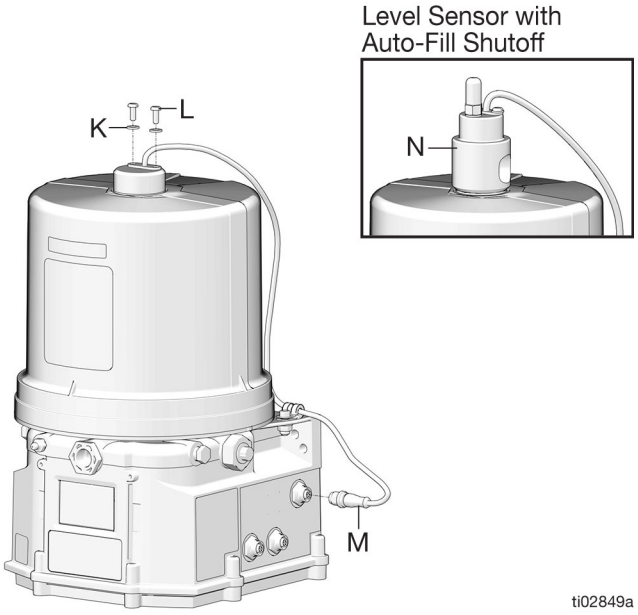


FIG. 63

3. Use a hex key and wrench to loosen and remove fasteners (P, S, and T) (FIG. 64).

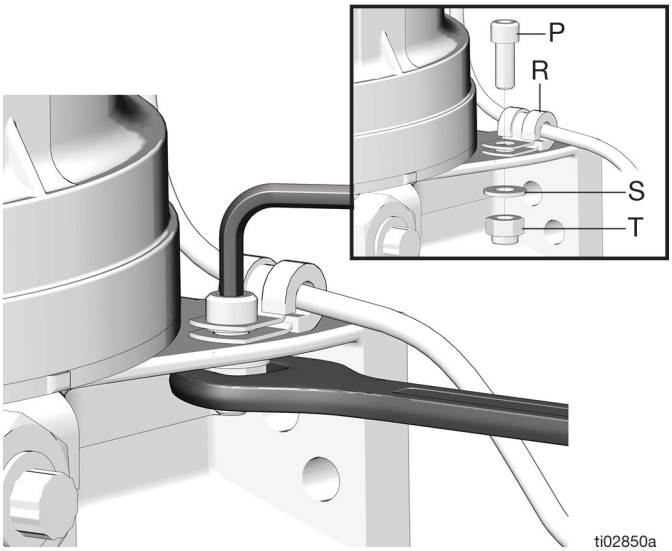


FIG. 64

4. Remove the holding clip (R).

NOTE: For removal of 4 L or larger reservoirs, use special tool 133410 to prevent adapter ring rotation while turning the reservoir. The tool is installed with two sets of fasteners to the back of the pump (FIG. 65.).

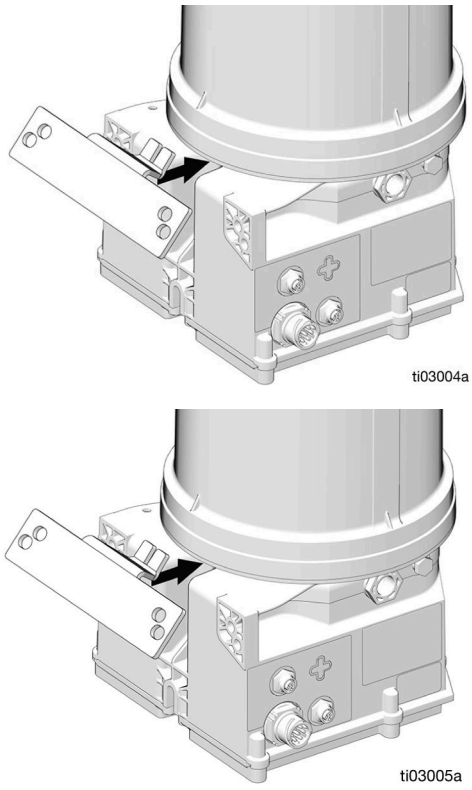


FIG. 65

NOTE: The reservoir (W) is spring loaded.

5. Position the strap wrench over the reservoir (W) and turn counter-clockwise to remove from the pump base (FIG. 66).

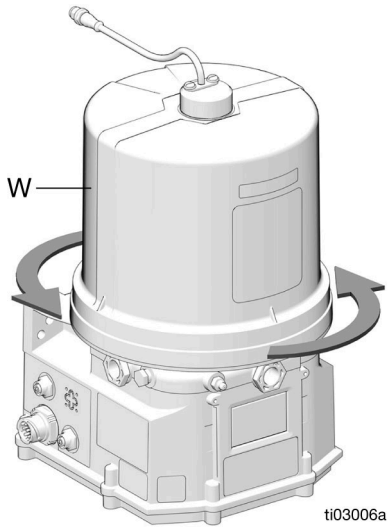


FIG. 66

6. Remove the spring (Y) (FIG. 67).
7. Remove the follower plate (Z) (FIG. 67).
8. Remove the bearing (AA) (FIG. 67).

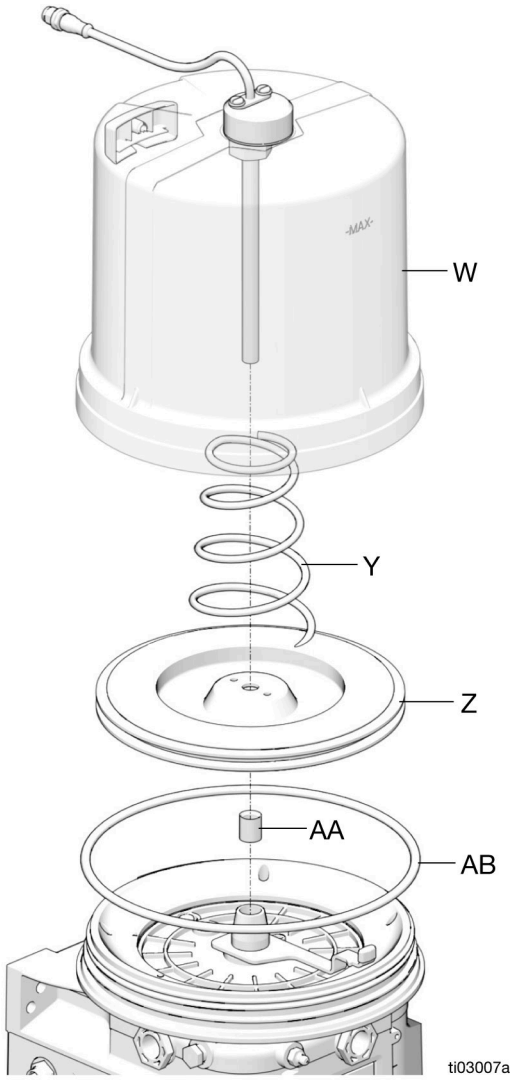


FIG. 67

9. Remove the stirrer (AC) by rotating clockwise (left hand threaded) (FIG. 68).

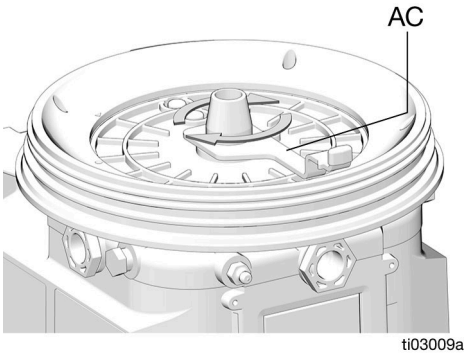


FIG. 68

10. Remove the o-ring (AB) from the adapter ring (B) (FIG. 69).

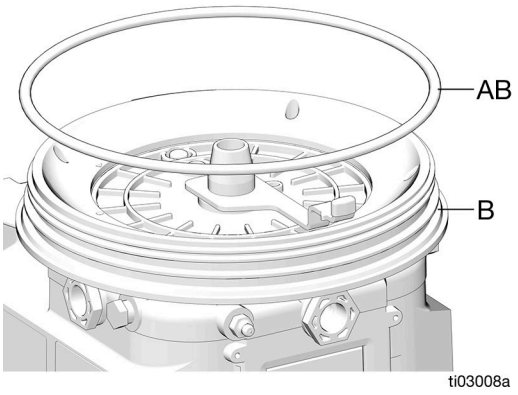


FIG. 69

11. Discard all parts.

Replace Reservoir with Level Sensor

1. Place new o-ring (AB) on adapter ring (B).

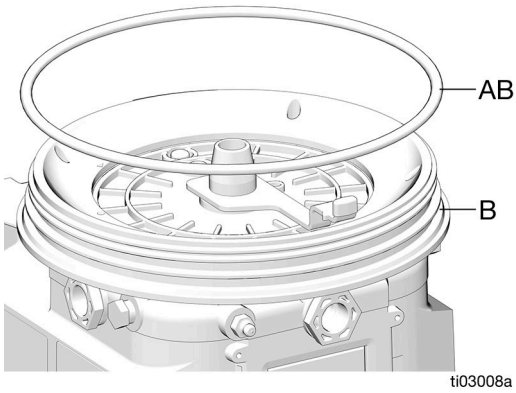


FIG. 70

2. Apply grease to adapter ring (B).

3. Place and tighten new stirrer (AC) by rotating counter-clockwise (left hand threaded) (FIG. 71).

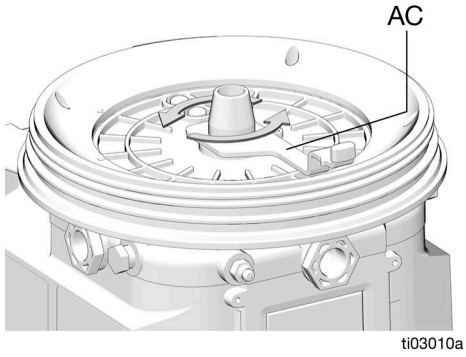


FIG. 71

4. Place the new bearing (AA) into the center of the stirrer (AC) (FIG. 72).

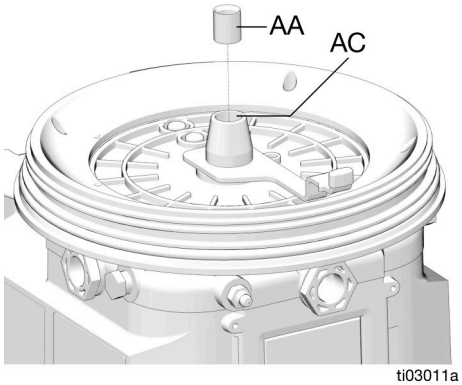


FIG. 72

5. Place the new follower plate (Z) onto the stirrer (AC).

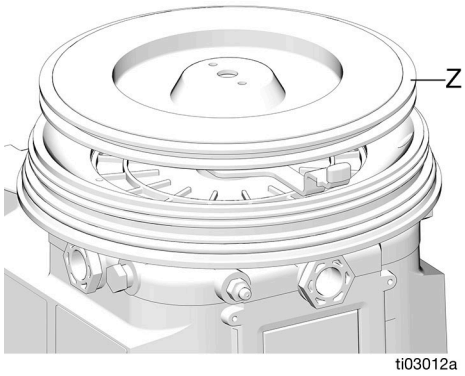


FIG. 73

6. Apply grease to the follower plate (Z) seal.
7. Place new spring (Y).
8. Put the new reservoir (W) with the level sensor (M) on the base, and align the level sensor (M) rod with the center hole. Push down and turn clockwise (FIG. 74).

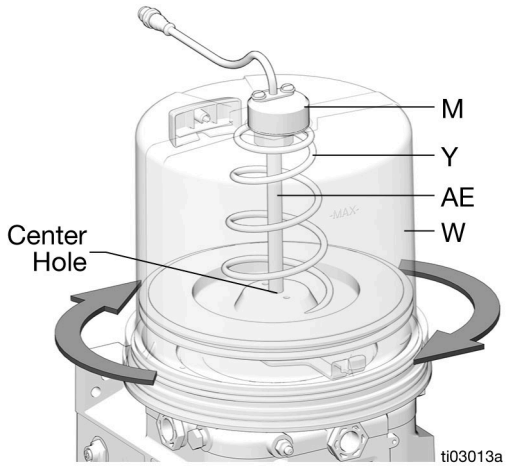


FIG. 74

9. Position the strap wrench around the reservoir (W) and turn the reservoir (W) two full turns clockwise, until the front of the reservoir aligns with the front of the pump base, (FIG. 75).
10. Replace the two washers (K) and screws (L), and torque to 15 - 25 in.-lb (1.7 -2.8 N•m) (FIG. 75).
11. Attach the fastener clip (R) to the level sensor cord (M) (FIG. 75).

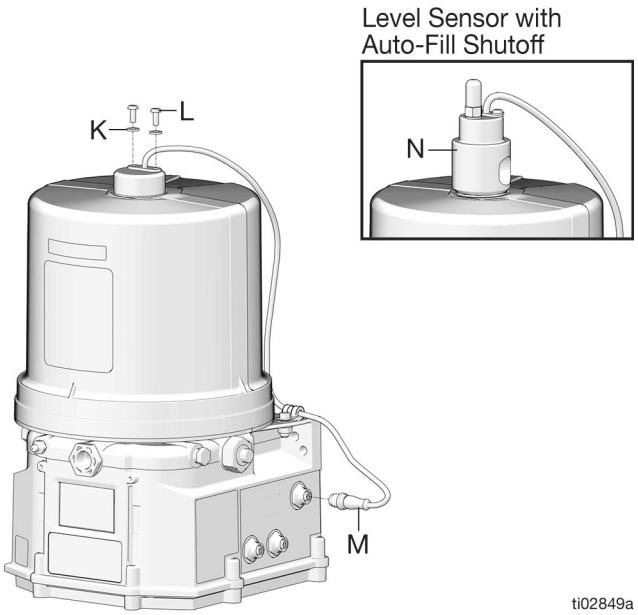


FIG. 75

12. Place the fastener clip (R) with the screw (P) and washer (S) and tighten (FIG. 76).

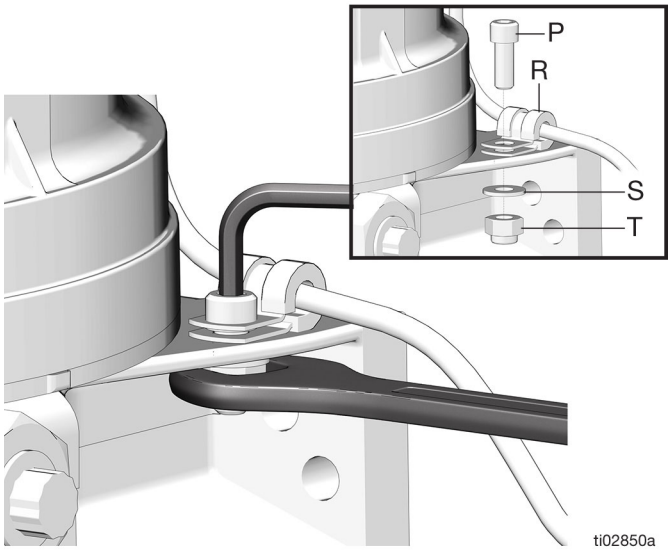


FIG. 76

13. Restore power to the pump.
14. On the display, set level sensor type to 0.5 - 4.5 V.
15. Enable the Low Level Alert and Alarm features.
16. Follow the installation procedure.

Remove Reservoir with Level Sensor and Auto-Fill Shut Off (AFSO)

The reservoir needs to be empty for this process.

If the reservoir is not empty:

1. On the display, set level sensor type to 0 - 10 V.
2. Disable the Low Level Alert and Alarm features.
3. Accept the changes.
4. Run the pump to empty grease from the reservoir.

After the reservoir is empty:

1. Disconnect the power to the pump.
2. Disconnect the level sensor (M) from the base (FIG. 77).

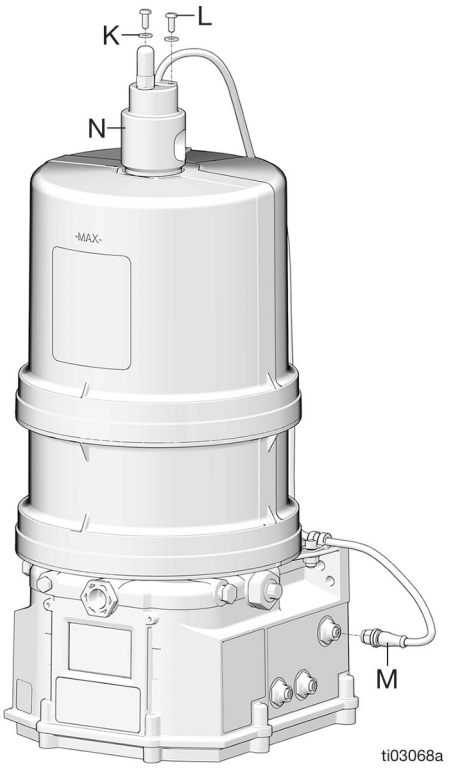


FIG. 77

3. Use a hex key and wrench to loosen and remove fasteners (P, S, and T) (FIG. 78).

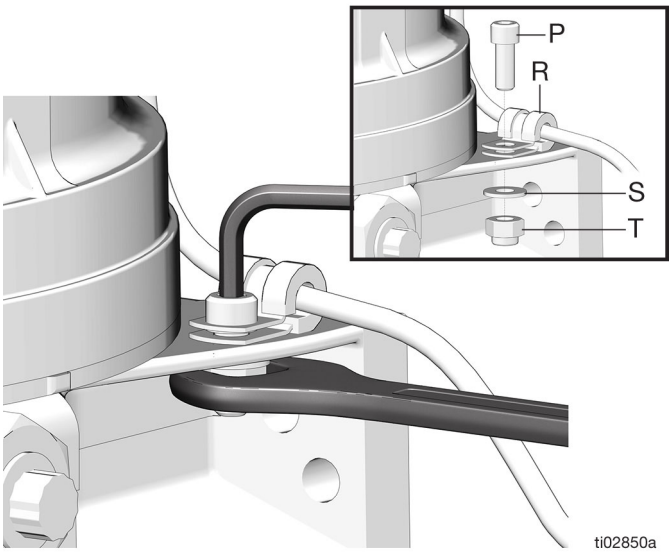


FIG. 78

4. Remove the holding clip (35).

NOTE: For removal of 4 L or larger reservoirs, use special tool 133410 to prevent adapter ring rotation while turning the reservoir. The tool is installed with two sets of fasteners to the back of the pump. (FIG. 79).

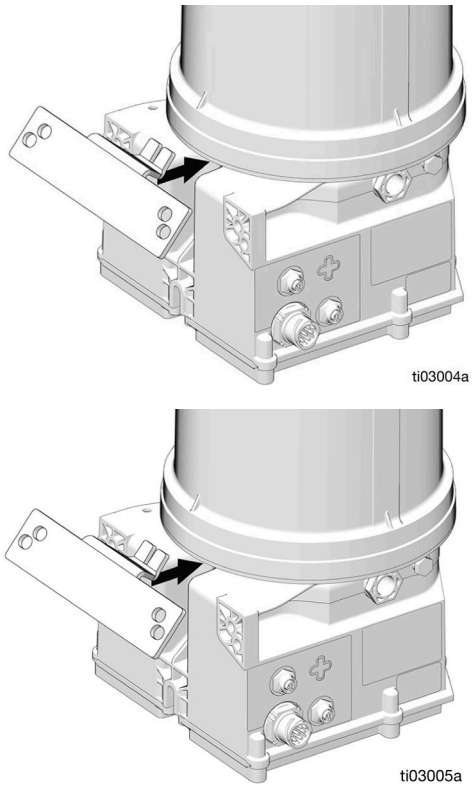


FIG. 79

NOTE: The reservoir (W) is spring loaded.

5. Position the strap wrench over the reservoir (W) and turn counter-clockwise to remove from the pump base (FIG. 80).

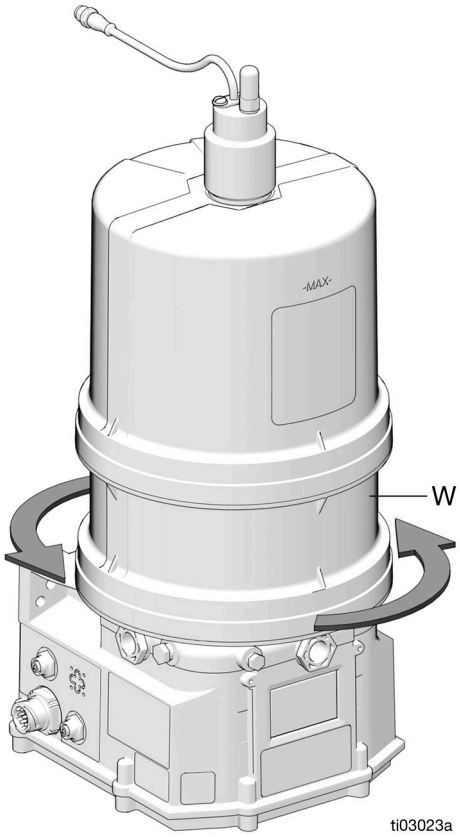


FIG. 80

6. The reservoir should come apart as an assembly. Remove and discard.

NOTE: If it does not come apart as an assembly, remove and discard all individual components in the reservoir.

7. Remove stirrer (AC) by turning clockwise (left hand threaded).

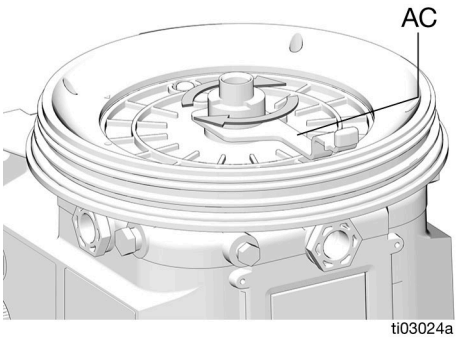


FIG. 81

8. Remove the o-ring (AB) from the adapter ring (B).

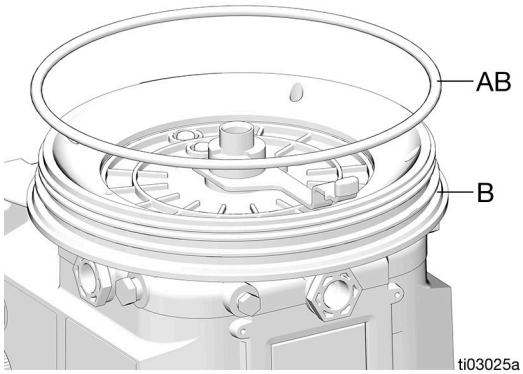


FIG. 82

9. Discard all of the parts

Replace Reservoir with Level Sensor and Auto-Fill Shut OFF (AFSO)

1. Place the new o-ring (AB) on the adapter ring (B (FIG. 83).

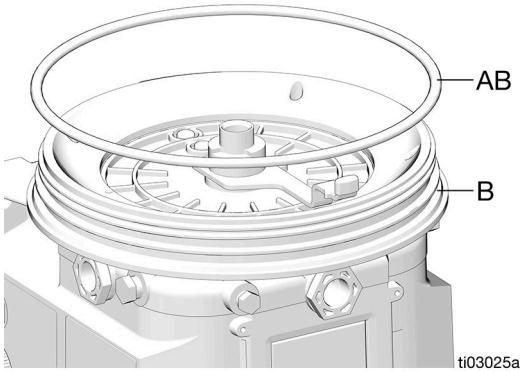


FIG. 83

2. Apply grease to the adapter ring (B).

3. Place the new stirrer (AC) onto the adapter ring (B), rotate counter-clockwise (left hand threaded) to tighten (FIG. 84).

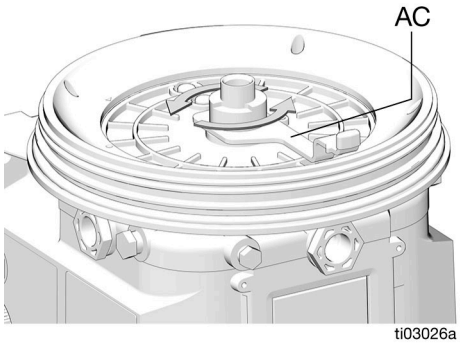


FIG. 84

4. Place the new reservoir with Level Sensor and Auto-Fill Shut Off onto the base (FIG. 85).

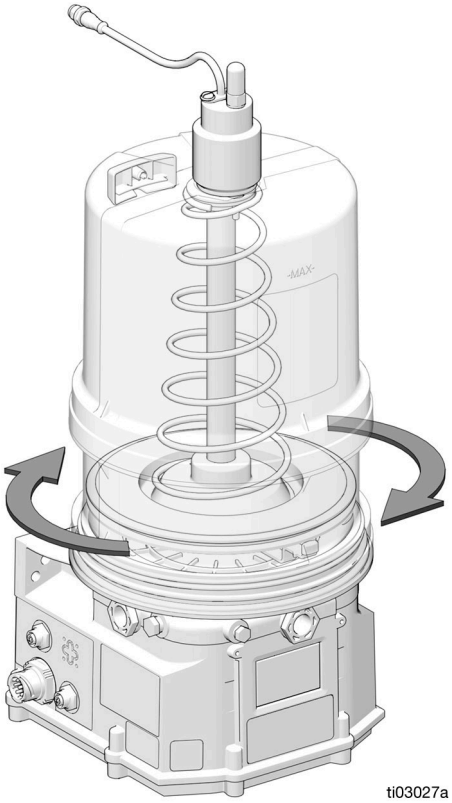


FIG. 85

5. Position the strap wrench around the reservoir (W) and turn the reservoir (W) two full turns clockwise, until the front of the reservoir aligns with the front of the pump base, (FIG. 86).

6. Replace the two washers (K) and screws (L), and torque to 15 - 25 in.-lb (1.7 -2.8 N•m) (FIG. 86).

7. Attach the fastener clip (R) to the level sensor cord (M) (FIG. 86).

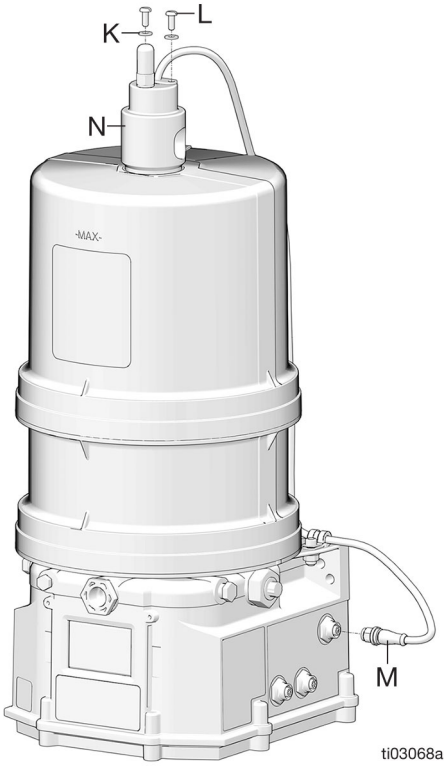


FIG. 86

8. Place the fastener clip (R) with the screw (P) and washer (S) and tighten (FIG. 87).

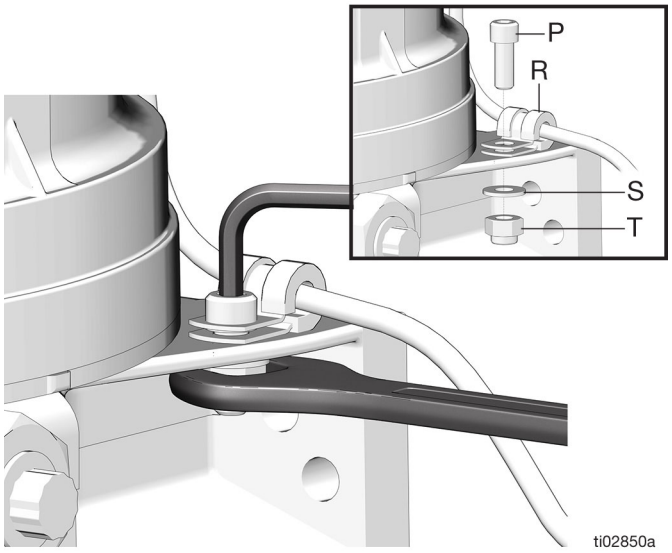
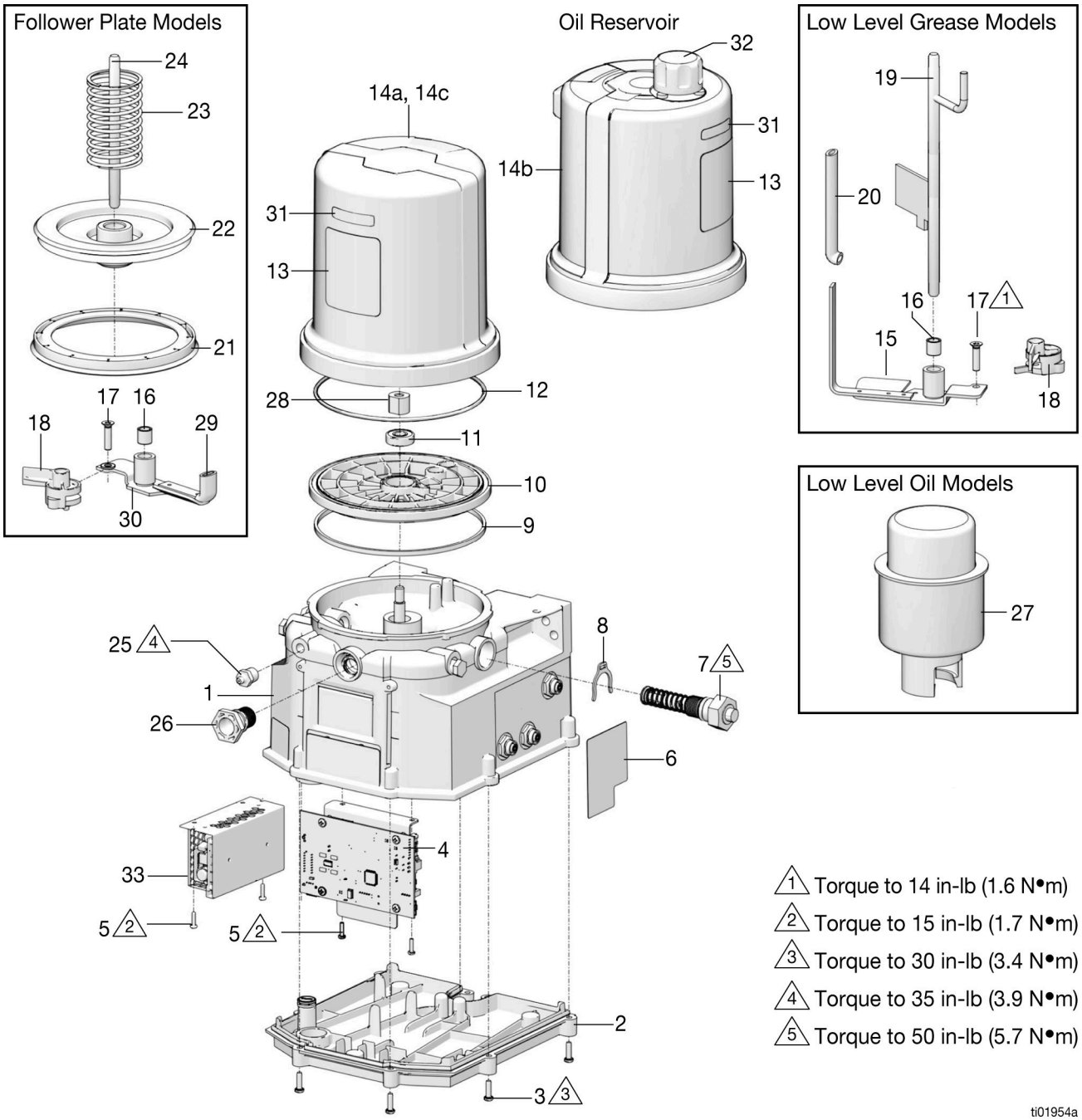


FIG. 87

9. Restore power to the pump.
10. On the display, set level sensor type to 0.5 - 4.5 V.
11. Enable the Low Level Alert and Alarm features.
12. Follow the installation procedure.

Parts

G3 Max Gen 2 Pump 2 L Model



G3 Max Gen 2 Pump 2 L Model

Ref.	Part	Description	Qty
1		Base, 3 pump housing	1
2		Cover, bottom	1
3		Screw, mach, torx pan hd, o-ring	9
4◆		Main controller board w/bracket	1
5◆●		Screws	4
6▲	2000937	Label, safety	1
7†		Pump Element (included in Kit 571041)	1
8†		Spacer, stroke adjust (included in Kit 571041)	2
9$#@		RECT-seal	1
10		Plate, ricer	1
11		Bearing, ball	1
12$#@*%		O-ring	1
13$#@		Label, brand	1
14a#		Reservoir, 2 L, grease	1
14b@		Reservoir, 2 L, oil	1
14c$		Reservoir, 2 L, grease for follower plate	1
15%		Paddle, stirring, 2 L, grease models without follower plate	1
16%*	117156	Bearing, sleeve	1
17%*		Screw, M6	1
18%*		Paddle, low level (grease models)	1
19✺	24D838	Baffle, low level, 2 L models	1
20%		Wiper, stirring	1
21$		Seal, follower plate, 2 L models	1
22		Plate, follower, 2 L models	1
23		Spring, compression	1
24		Rod, follower plate, 2 L models	1
25	555888	Grease fitting	1
26	278145	Plug, pump element, 3/4 - 16	2
27	24N806	Oil, float switch	1
28		Nut, oil	1
29*		Wiper, stirring, 2 L, follower plate	1
30*		Paddle, stirring, 2 L, grease models with follower plate	1
31$#@		Label, Max Fill	1
32@	16G022	Cap filler	1
33●		Power supply	1

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

◆ *Main controller board kit (PN 2008169)*

† Parts included in Kit 571041 (purchase separately)

● *Repair Kit power supply (PN 2008171)*

✺ *Also order 16, part number 117156*

$ Reservoir Kit, 2 L, grease, follower plate (PN 571069)

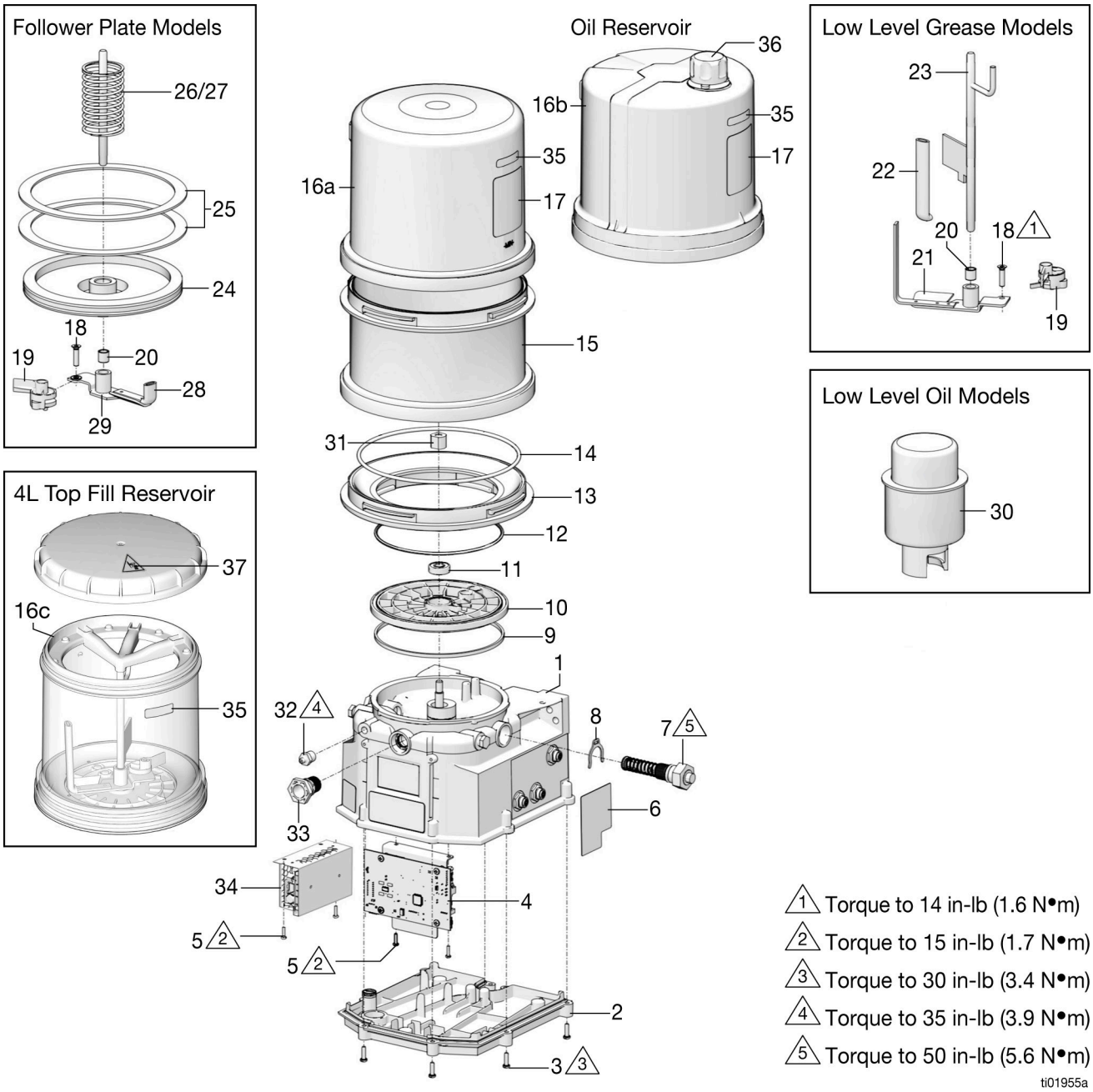
 # Reservoir Kit, 2 L, grease (PN 571042)

@ Reservoir Kit, 2 L, oil (PN 571179)

** Repair Kit, 2L, replacement paddle, with follower plate (PN 571045)*

% Repair Kit, 2 L, replacement paddle, grease (PN 571044)

G3 Max Gen 2 Pump 4 L and Larger Reservoir



1 Torque to 14 in-lb (1.6 N•m)
2 Torque to 15 in-lb (1.7 N•m)
3 Torque to 30 in-lb (3.4 N•m)
4 Torque to 35 in-lb (3.9 N•m)
5 Torque to 50 in-lb (5.6 N•m)

ti01955a

G3 Max Gen 2 Pump 4 L and Larger Reservoir

Ref.	Part	Description	Qty
1		Base, 3 pump housing	1
2		Cover, bottom	1
3		Screw, mach, torx pan hd, o-ring	9
4◆		Main controller board w/bracket	1
5◆●		Screws	4
6▲	2000937	Label, safety	1
7†		Pump Element (included in Kit 571041)	1
8†		Spacer, stroke adjust (included in Kit 571041)	2
9		RECT-seal	1
10		Plate, ricer	1
11		Bearing, ball	1
12 ✓✦		O-ring	1
13 ✓✦		Adapter, reservoir	1
14 ✓✦☆ ✪		Seal, oval, 4 L, 8L	1
15★	25C764	Reservoir mid-section, 8 L (includes 14)	1
★		Reservoir mid-section, 12 L (includes 14)	2
★		Reservoir mid-section, 16 L (includes 14)	3
16a ✓		Reservoir, 4 L, grease	1
16b✦		Reservoir 4 L, oil	1
16c⁜		Reservoir, top fill	1
17✓✦		Branding label	1
18☆ ✪		Screw, M6	1
19☆ ✪		Paddle, low level, grease models	1
20☆ ✪		Bearing, sleeve	1
21☆		Paddle, stirring, 4L grease models, w/o follower plate	1
22☆		Wiper, stirring	1
23	24E246	Baffle, low level, 4 L models	1
	24F836	Baffle, low level, 8 L models	1
	24F923	Baffle, low level, 12 L models	1
	24F924	Baffle, low level, 16 L models	1
24▼		Plate, follower, 4 L, 8 L models	1
25▼		Seal, follower, 4 L, 8 L models	2
26		Spring, follower, 4 L models	1
27		Spring, follower, 8 L models	1
28✪		Wiper, stirring, 4 L, 8 L follower plate models	1
29✪		Paddle, stirring, 4 L, 8 L, grease models with willower plate	1
30	24N806	Oil, float switch	1
31		Nut, oil	1
32	555888	Grease fitting	1
33	278145	Plug, pump element, 3/4 - 16	2
34●		Power supply	1
35✓✦⁜		Label, max fill	1
36✦	16G022	Cap filler	1
37▲	15H108	Label, safety, pinch	1

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

◆ *Main controller board kit (PN 2008169)*

† Parts included in Kit 571041 (purchase separately)

✓ *Reservoir Kit 571183, 4 L model, grease low level*

● *Repair Kit power supply (PN 2008171)*

★ *For reservoir 8 L, 12 L, 16 L, order required number of mid-sections*

✦ *Reservoir Kit 571182, 4 L model, oil low level*

⁜ *Reservoir Kit top fill, 4 L model (PN 571299)*

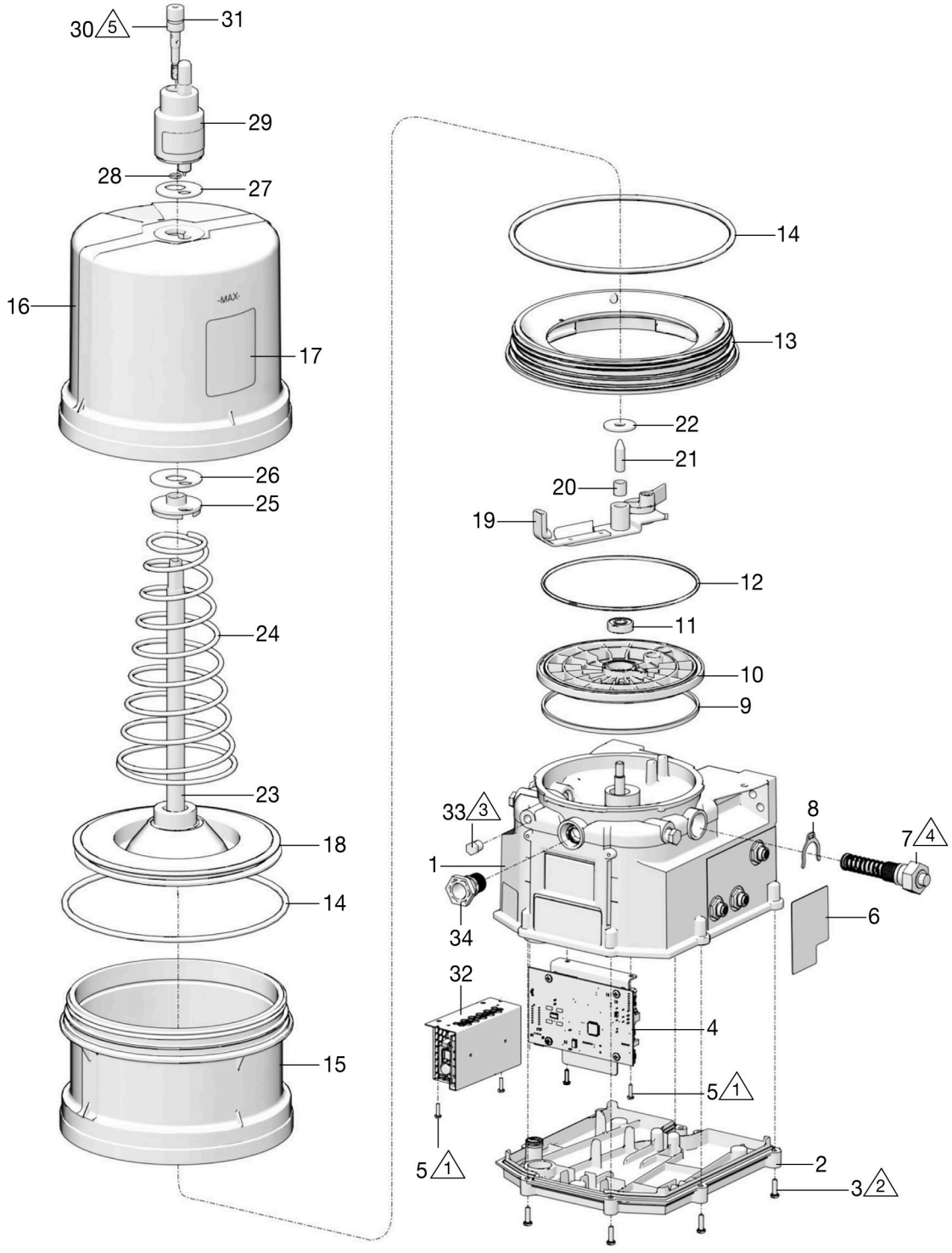
▼ *Repair Kit follower plate (PN 24X192)*

☆ *Repair Kit, 4 L, replacement paddle, without follower plate (PN 571046)*

✪ *Repair Kit,4 L, replacement paddle, with follower plate (PN 571047)*

NOTE: For removal of 4L or larger reservoir, use special tool 133410.

G3 Max Gen 2 Pump 8 L Reservoir with Auto-Fill Shut Off



1 Torque to 15 in-lb (1.7 N•m)

2 Torque to 30 in-lb (3.4 N•m)

3 Torque to 35 in-lb (3.9 N•m)

4 Torque to 50 in-lb (5.6 N•m)

G3 Max Gen 2 Pump 8 L Reservoir with Auto-Fill Shut Off (AFSO)

Ref.	Part	Description	Qty
1		Base, 3 pump housing	1
2		Cover, bottom	1
3		Screw, mach, torx pan hd, o-ring	9
4◆		Main controller board w/bracket	1
5◆●		Screws	4
6▲	2000937	Label, safety	1
7†		Pump Element (included in Kit 571041)	1
8†		Spacer, stroke adjust (included in Kit 571041)	2
9		RECT-seal	1
10		Plate, ricer	1
11		Bearing, ball	1
12		O-ring	1
13		Adapter, reservoir	1
14		Seal, oval, 4 L, 8 L	2
15❀	25C764	Reservoir mid-section. 8 L, (includes 14)	1
16❀		Reservoir, 4 L, grease, AFSO	1
17❀		Branding label	1
18❀		Follower plate assy, AFSO,	1
19❀		Stirring paddle, AFSO, level switch	1
20❀		Bearing, sleeve	1
21❀		PIN, alignment	1
22❀		Washer, plain	1
23❀		Tube center fill, AFSO, 8 L	1
24❀		Spring AFSO, AFSO, 8 L	1
25❀		Spacer, seal, base	1
26❀		Seal, lower, reservoir	1
27❀		Seal, upper, reservoir	1
28❀		Packing, o-ring	1
29❀		Valve, AFSO	1
30❀		Bolt, mounting	1
31❀		Packing, o-ring	1
32●		Power supply	1
33		Plug, 1/8 in.	1
34	278145	Plug, pump element, 3/4 - 16	2

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

◆ *Main controller board kit 2008169*

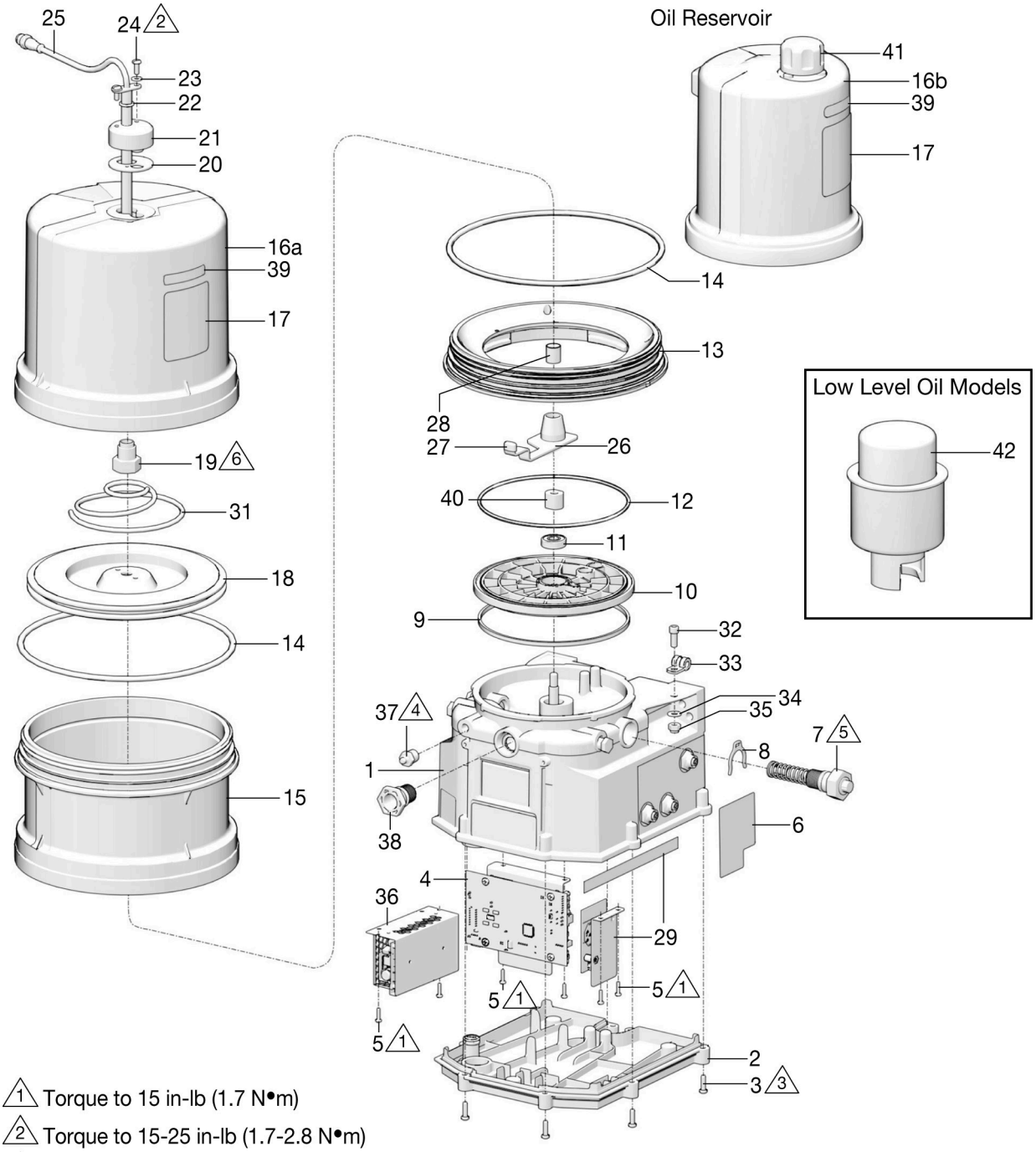
† Parts included in Kit 571041 (purchase separately)

❀ *Reservoir Conversion Kit, 8 L (PN 571287)*

● *Repair Kit power supply (PN 2008171)*

NOTE: For removal of 4L or larger reservoir, use special tool 133410.

G3 Max Gen 2 Pump 4 L and 8L Reservoir with Level Sensor and Cellular Connectivity



1 Torque to 15 in-lb (1.7 N•m)
2 Torque to 15-25 in-lb (1.7-2.8 N•m)
3 Torque to 30 in-lb (3.4 N•m)
4 Torque to 35 in-lb (3.9 N•m)
5 Torque to 50 in-lb (5.7 N•m)
6 Torque to 20 ft-lb (28 N•m)

ti01966a

G3 Max Gen 2 Pump 4 L and 8L Reservoir with Level Sensor and Cellular Connectivity

Ref.	Part	Description	Qty
1		Base, 3 pump housing	1
2		Cover, bottom	1
3		Screw, mach, torx pan hd, o-ring	9
4◆		Main controller board w/bracket	1
5◆● ✠		Screws	6
6▲	2000937	Label, safety	1
7†		Pump Element (included in Kit 571041)	1
8†		Spacer, stroke adjust (included in Kit 571041)	2
9		RECT-seal	1
10		Plate, ricer	1
11		Bearing, ball	1
12		O-ring	1
13		Adapter, reservoir	1
14&+		Seal, oval, 4 L, 8L	1
15+✦	25C764	Reservoir mid-section, 8 L (includes 14)	1
16a&+		Reservoir, 4 L, grease, level sensor	1
16b✦		Reservoir, 4 L, oil	
17&+✦		Branding label	1
18&+		Follower plate assy with seal magnet for level sensor, 4 L, 8 L	1
19&+		Spacer, seal cap	1
20&+		Seal, upper reservoir	1
21&+		Block cap	1
22&+		O-ring, level sensor	1
23&+✿❖		Washer, flat	2
24&+✿❖		Screw machined	2
25&✿		Level sensor 4 L	1
+❖		Level sensor, 8 L	1
26&+		Paddle, stirring, 4 L grease models, level sensor	1
27&+		Wiper, stirring, level sensor	1
28&+		Bearing, sleeve, level sensor	1
29✠		Cell board with bracket and antenna	1
31&		Spring reservoir level sensor 4 L	1
+		Spring reservoir level sensor 8 L	1
32&+✿❖		Screw clip level sensor	2
33&+✿❖		Clip level sensor	1
34&+✿❖		Washer clip level sensor	1
35&+✿❖		Lock nut clip level sensor	1
36●		Power Supply AC	1
37	555888	Grease fitting	1
38	278145	Plug, pump element, 3/4 - 16	2
39&+		Label, max fill	1
40		Nut, oil pump	1
41✦	16G022	Cap filler	1
42✦	24N806	Oil, float switch	1

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

◆ *Main controller board kit 2008169*

† Parts included in Kit 571041 (purchase separately)

& Reservoir Kit 2008166, 4 L model, grease low level

+ Reservoir Kit 2008167, 8 L model, grease low level

✿ *Level Sensor, 4 L, Kit 2008008*

❖ *Level Sensor, 8 L, Kit 2008010*

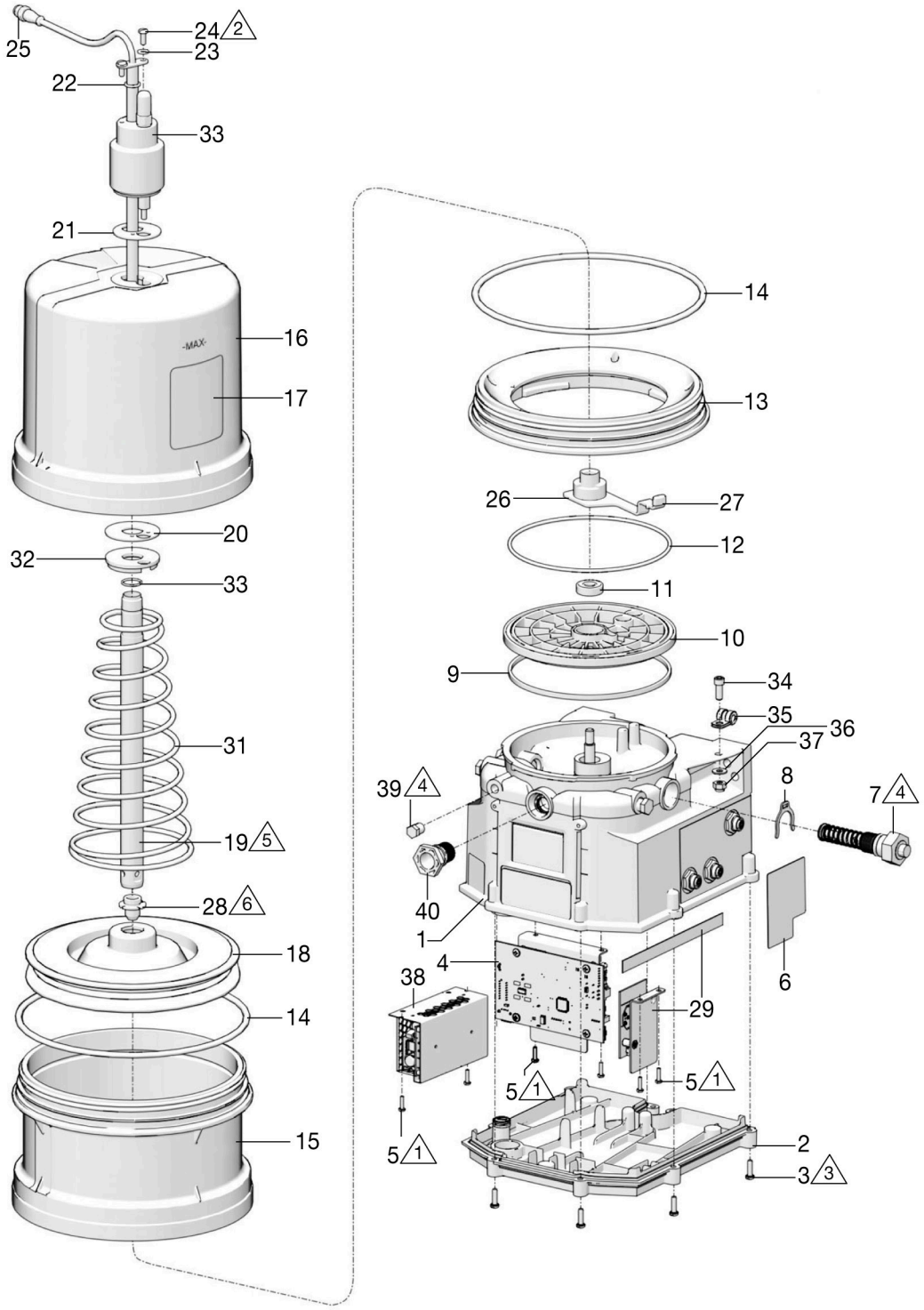
✠ *Cellular Board Kit 2008170*

● *Repair Kit power supply (PN 2008171)*

✦ *Reservoir Kit 571182, 4 L model, oil low level (order 15, PN 25C764 for 8 L model)*

NOTE: For removal of 4L or larger reservoir, use special tool 133410.

G3 Max Gen 2 Pump 8 L Reservoir with Auto-Fill Shut Off, Level Sensor, and Cellular Connectivity



1 Torque to 15 in-lb (1.7 N•m)

2 Torque to 15-25 in-lb (1.7-2.8 N•m)

3 Torque to 30 in-lb (3.4 N•m)

4 Torque to 50 in-lb (5.6 N•m)

5 Torque to 20 ft-lb (28 N•m)

6 Left Hand Thread
Torque to 12 ft-lb (16.3 N•m)

ti01967a

G3 Max Gen 2 Pump 8 L Reservoir with Auto-Fill Shut Off, Level Sensor, and Cellular Connectivity

Ref.	Part	Description	Qty
1		Base, 3 pump housing	1
2		Cover, bottom	1
3		Screw, mach, torx pan hd, o-ring	9
4◆		Main controller board w/bracket	1
5◆● ✠		Screws	6
6▲	2000937	Label, safety	1
7†		Pump Element (included in Kit 571041)	1
8†		Spacer, stroke adjust (included in Kit 571041)	2
9		RECT-seal	1
10		Plate, ricer	1
11		Bearing, ball	1
12		O-ring	1
13		Adapter, reservoir	1
14■		Seal oval, 8 L	2
15■	25C764	Reservoir mid-section, 8 L (includes 14)	1
16■		Reservoir, 4 L, grease, level sensor, AFSO	1
17■		Branding label	1
18■		Follower plate assy with seal magnet for level sensor, AFSO, 8 L	1
19■		Tube center fill, AFSO and level sensor, 8 L	1
20■		Seal, lower, reservoir	1
21■		Seal, upper, reservoir	1
22■		O-ring, level sensor	1
23■ ^		Washer, flat	2
24■ ^		Screw, machined	2
25■ ^		Level sensor, 8 L, AFSO	1
26■		Paddle, stirring, 4L grease models, level sensor, AFSO	1
27■		Wiping, stirring, level sensor, AFSO	1
28■		Bearing, level sensor, cap	1
29✠		Cellular board with bracket and antenna	1
31■		Spring reservoir level sensor, 8 L	1
32■		Spacer, seal, torque limiting	2
33■		O-ring refill tube	1
34■ ^		Screw clip level sensor	1
35■ ^		Clip level sensor	1
36■ ^		Washer clip level sensor	1
37■ ^		Lock nut clip level sensor	1
38●		Power supply AC	1
39		Plug, 1/8 in.	1
40	278145	Plug, pump element, 3/4 - 16	2

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

◆ *Main controller board kit 2008169*

† Parts included in Kit 571041 (purchase separately)

■ *Reservoir Kit 2008168, 8 L model, grease level sensor*

^Level Sensor Kit 2008018, 8L with AFSO

✠ *Cellular Board Kit 2008170*

● *Power Supply Kit 2008171*

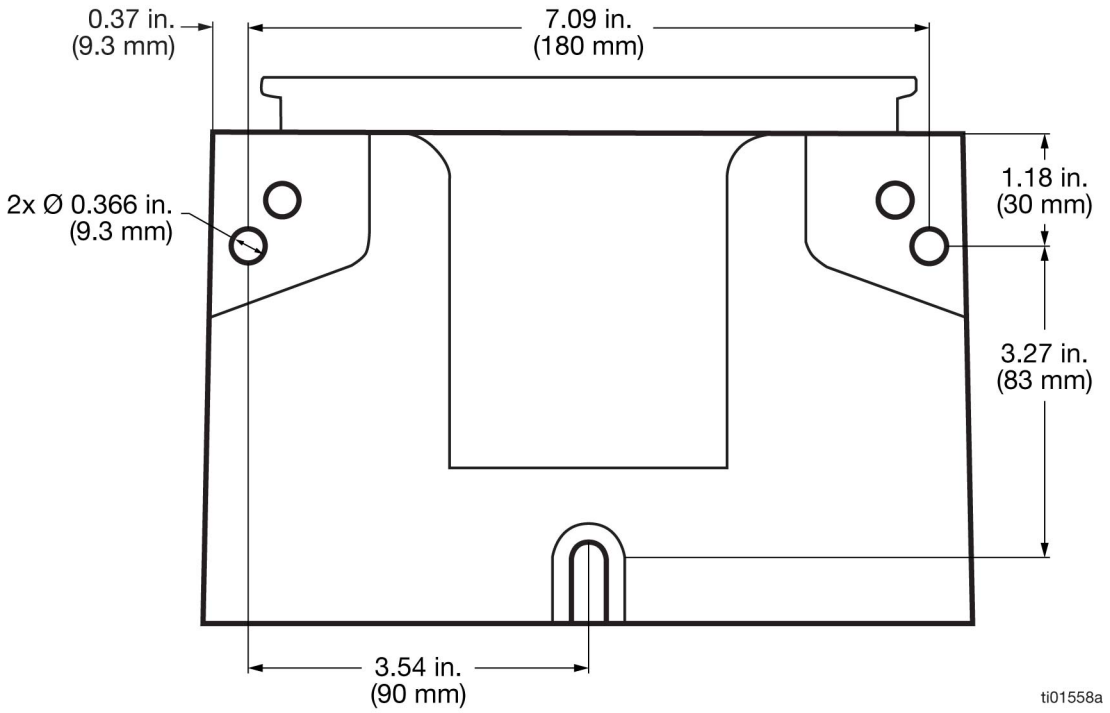
NOTE: For removal of 4L or larger reservoir, use special tool 133410.

Dimensions

Mounting Pattern

(For correct mounting configuration, choose either Option 1 or Option 2). See P/N 126916 template.

Option 1



Option 2

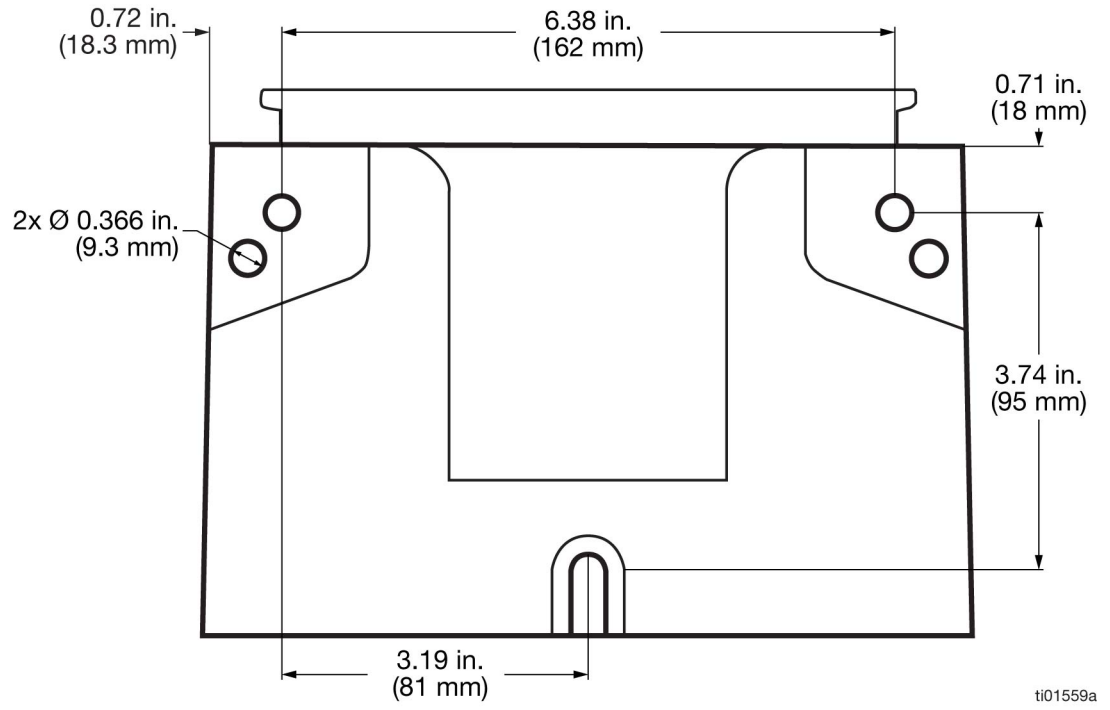


FIG. 88

Technical Specifications

G3 Max GEN 2 Automatic Lubrication Pump		
	US	**Metric**
Pump output pressure	5100 psi	35.1 MPa, 351.6 bar
Auto-Fill Shut Off maximum inlet pressure	5000 psi	34.4 MPa, 344.7 bar
Power		
100 - 240 VAC	102 VA; 0.85 A / 120 VAC, 0.43A / 240 VAC; 50/60 Hz; single phase	
12 VDC	9-16 VDC; 5 A current (6.6 A with vent valve), inrush/locked rotor 12 A	
24 VDC	18-30 VDC; 2.5 A current (3.3 A with vent valve), inrush/locked rotor 6 A	
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 Operating Voltage	Resistive: 250 VAC, 220 VAC Inductive: 250 VAC, 220 VAC	
Max Operating Current	Resistive: 3 A (AC), 3 A (DC) Inductive: 1.5 A (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		
Vent Valve Type	Normally open	
Vent Valve Voltage		
100 - 240 VAC	24 VDC	
12 VDC	Input Voltage	
24 VDC	Input Voltage	
Power		
100 - 240 VAC	0.8 A current, 19 W	
12 VDC	1.6 A current, 19 W	
24 VDC	0.8 A current, 19 W	
Outputs - Signal Output 1 and 2		
Max Operating Voltage	30 VDC	
Max Operating Current	50 mA, sinking	
Closed Impedance	130 ohms, +/- 20 percent	
Cellular		
Frequency Bands	2*, 4*, 5, 12*, 14, 17 (* minimum required bands)	
Fluid		
Grease Models	Grease NLGI #000 - #2	
Oil Models	At least 40 cSt. oil	
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	

G3 Max GEN 2 Automatic Lubrication Pump		
	US	**Metric**
Reservoir Size	2, 4, 8, 12, 16 Ls	
Sensor Inputs	1 each cycle count, machine count, level sensor, pressure sensor or pressure switch	
IP Rating	IP69K	
Ambient Temperatures	-22°F to 158°F	-30°C to 70°C
Noise (dBa)		
Maximum sound pressure	<70dBa	
Materials of Construction		
Wetted Parts	nylon 6/6 (PA), amorphous polyamide, zinc plated steel, carbon steel, alloy steel, stainless steel, nitrile rubber (buna-N), bronze, nickel plated alnico, chemically lubricated acetal, aluminum, PTFE	
*Minimum required for coverage.		
All trademarks or registered trademarks are the property of their respective owners.		

Pump Maximum Weight (lbs)			
Model	**With follower plate**	**Without follower plate**	**With auto-fill shut off**
2L	12.4	11.4	N/A
4L	15.3	13.1	17.9
8L	16.8	14.6	19.7
12L	18.4	16.1	21.6
16L	19.9	17.6	23.4

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Graco Standard Warranty

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

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

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

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

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

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

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

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

Graco Information

For the latest information about Graco products, visit www.graco.com.
For patent information, see www.graco.com/patents.
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

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

Original instructions. This manual contains English. MM 3A9511
Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

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

www.graco.com
Revision C, November 2024