

## In-Line Electronic Lubricant Meter

307965 rev.U

1500 psi (10.3 MPa, 103bar) Maximum Working Pressure

### FOR USE WITH PETROLEUM-BASED LUBRICANTS ONLY

**244075** Measures in gallons, quarts and pints\*

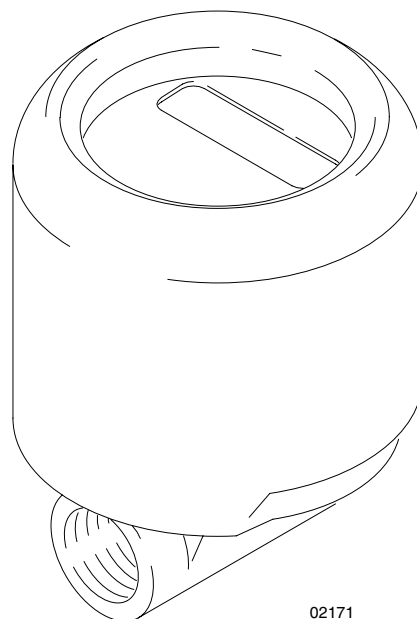
**244076** Measures in liters

\*Meter is factory-set in quarts.



#### Important Safety Instructions

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



02171

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# Symbols

## Warning Symbol



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

## Caution Symbol



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



INSTRUCTIONS

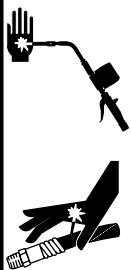
### EQUIPMENT MISUSE HAZARD

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

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before you operate the equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your Graco representative.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest-rated system component. Refer to the **Technical Data** on page 11 for the maximum working pressure of this component.
- Use fluids and solvents that are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents, or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.
- Do not use hoses to pull equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 82° C (180° F) or below -40° C (-40° F).
- Do not lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.



## WARNING



### SKIN INJECTION HAZARD

Spray from the dispensing valve, leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

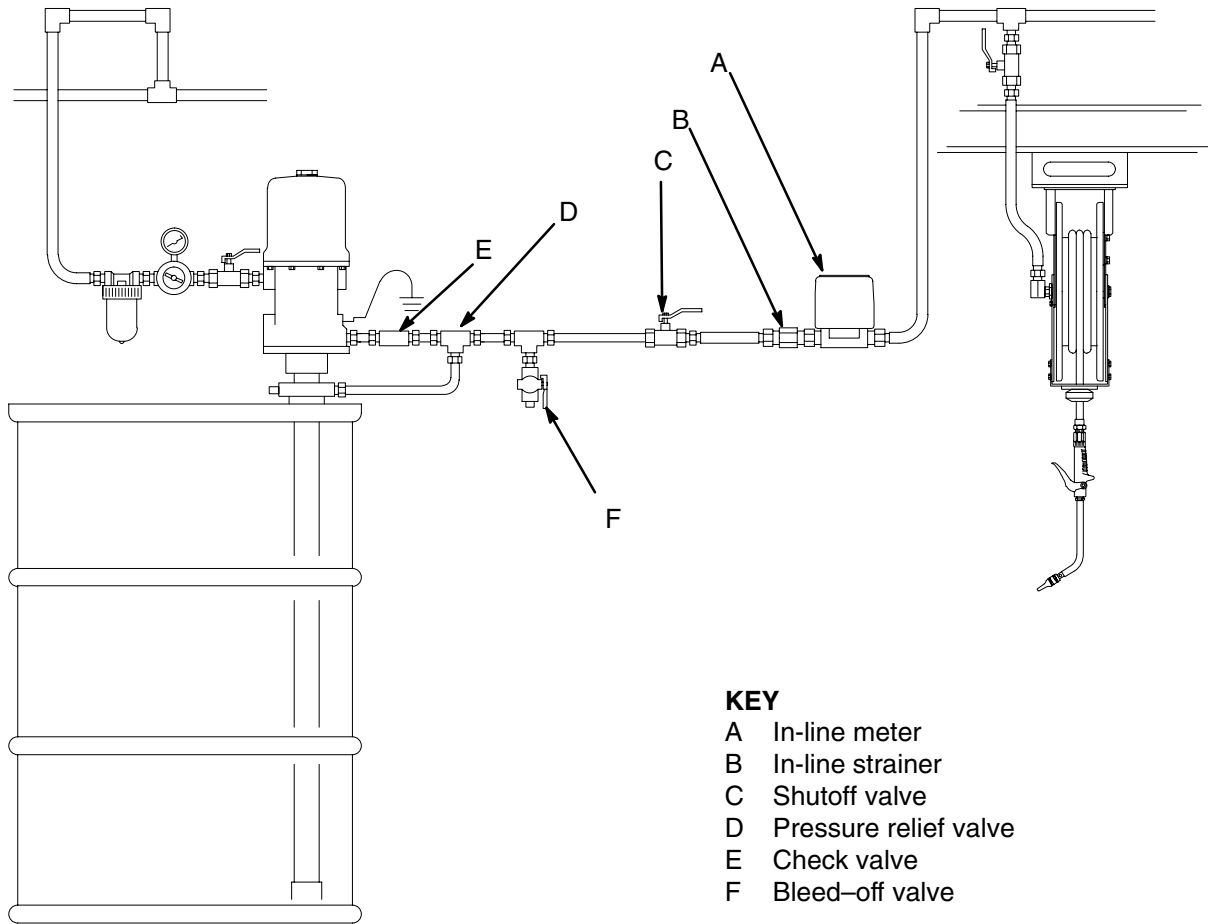
- Fluid injected into the skin may look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not point the dispensing valve at anyone or at any part of the body.
- Do not put your hand or fingers over the end of the dispensing valve.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Use only extensions and no-drip tips that are designed for use with your dispensing valve.
- Do not use a low-pressure flexible nozzle with this equipment.
- Follow the **Pressure Relief Procedure** on page 8 before cleaning, checking, or servicing the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.

## Notes

[illegible]

# Installation

These meters must be installed in-line as part of a dispense system as shown in Fig. 1; however, the typical installation shown is only a guide for selecting and installing an in-line meter. It is not an actual system design. Contact your Graco representative for assistance in designing a system to suit your needs.



**Fig. 1**

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# Operation

## CAUTION

Never operate the meter with the black plastic cover removed. The cover protects the meter from damage due to impact. Meters are factory sealed to keep moisture and dirt out. See the **Service** section before you service the meter.

## CAUTION

To prevent line contamination, which can cause equipment malfunction or damage, flush the lines before you install this equipment in the system.

## To Activate the Digital Display

Press the **RESET** key pad to clear the meter before starting a new dispense cycle. This is the best way to activate the meter, because it also clears the quantity of the last dispense cycle.

The digital display can also be activated by pressing the **TOTAL** key pad or by running fluid through the meter. See Fig. 2.

**NOTE:** The digital display of the meter goes blank after approximately two minutes of non-use.

## Function of TOTAL

When the digital display is blank, press and release the **TOTAL** key pad to display the quantity of the last dispense cycle. See Fig. 3.

To see the accumulated total of fluid dispensed through the meter, press and hold the **TOTAL** key pad. The accumulated total is shown in gallons for the gallon/quart/pint meter, and in liters for liter meter. The meter can accumulate a running total of up to 19,999 gallons (or liters) dispensed before returning to zero. See Fig. 4.

## Function of RESET

Press the **RESET** key pad to clear the quantity of the last dispense cycle and return the digital display to all zeros. See Fig. 2.

## To Change the Measurement Units

*(gallon/quart/pint meter only)*

The meter is factory-set to dispense in quarts. To change the measurement units, press and hold the **RESET** key pad until the measurement unit on the right side of the digital display is flashing. Then press the **TOTAL** key pad until the desired measurement unit is shown. Release both key pads. See Fig. 5.

## CAUTION

To be sure the proper amount of fluid is dispensed, always use the same measurement unit for a particular fluid. Units should be changed only by authorized employees.

## To Verify the Accuracy of an Electronic Meter

1. Use a clean, calibrated container. If using a single container, be sure to clean it after each dispense.
2. Have pump air pressure at the lowest possible setting for dispensing fluid.
3. Put the tip of the nozzle at the bottom of the calibrated container.
4. If the tip of the dispense valve does not reach the bottom of the calibrated container, use a length of plastic tubing over the tip of the nozzle to ensure liquid enters the container from the bottom.
5. Trigger the gun slowly so the fluid immediately covers the tip of the dispense valve.
6. Dispense 1 quart of fluid according to the metered display on the dispense valve.
7. Allow product to sit for 20 minutes, then compare the actual, physical measurement in the calibrated container to the measurement displayed on the meter.

**NOTE:** The procedure above will determine if the meter is accurately dispensing the product and minimize testing errors. Some variance may occur depending on the viscosity of the fluid. If this procedure determines that the meter is not accurate, recalibrate the meter as described in the service manual or replace the meter or the electronics as necessary.

# Operation

## For Maximum Dispensing Accuracy

*(gallon/quart/pint meter only)*

Set the meter to dispense in pints or quarts when dispensing 1 gallon or less.

Always press the **RESET** key pad to clear the meter before a new dispense cycle.

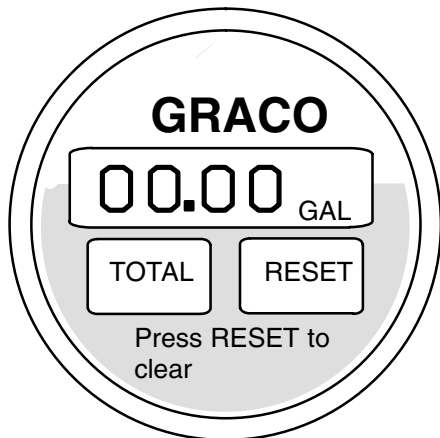
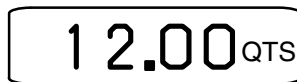
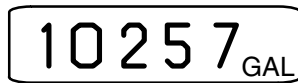


Fig. 2 DIGITAL DISPLAY



EXAMPLE OF TOTAL FOR  
LAST DISPENSE CYCLE

Fig. 3



EXAMPLE OF ACCUMULATED TOTAL

Fig. 4



EXAMPLE OF MEASUREMENT UNITS

Fig. 5

# Troubleshooting

## WARNING



### **PRESSURIZED EQUIPMENT HAZARD**

The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, accidental spray from the dispenser, or splashing fluid, follow the **Pressure Relief Procedure** whenever you

- Are instructed to relieve pressure
- Stop dispensing
- Check, clean, or service any system equipment
- Install or clean fluid nozzles

## **Pressure Relief Procedure**

1. Turn off the power supply to the pump.
2. Trigger the valve into a waste container to relieve pressure.
3. Open any bleed-type master air valves and fluid drain valves in the system.
4. Leave the drain valve open until you have completed repairs and are ready to pressurize the system.

**NOTE:** Before you check or repair the meter, be sure all other valves, controls, and the pump are operating properly.

Problem	Cause	Solution
Digital display does not activate.	Electronic control is malfunctioning.	Replace the electronic control.  For gallons/quarts/pints: <b>Order Part No. 235878</b>  For Liters: <b>Order Part No. 235901</b>
There is no fluid flow.	Strainer, if used, is clogged.	Remove and clean strainer.
Digital display is dim.	Battery in electronic control is worn out.	Replace electronic control within approximately one week of when you notice the dimness.  See the Part Numbers above.



# Service

## ⚠ CAUTION

To avoid damaging the electronic components of the control:

- **Always** use the personal grounding strap provided with a replacement metering unit and electronic control when you remove the cover (1) and while you replace the parts. This strap protects the electronic components from damage due to electrostatic discharge.
- Do not lay anything on the control.
- Be sure the open side of the control faces up if you lay it down.
- Do not twist or force parts. Align parts properly as instructed.

## ⚠ WARNING

To reduce the risk of a fire, explosion, and serious burns to the body, handle and dispose of a used electronic control (103) properly.

The electronic control contains a lithium battery. Do not short circuit, charge, force over discharge, disassemble, crush, penetrate, incinerate, or heat the battery to a temperature exceeding 185° F (85° C). Any misuse or abuse of the battery may cause it to leak or explode.

## 1. Relieve the pressure.

## ⚠ WARNING

To reduce the risk of serious injury, when you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 8.

2. Attach the disposable grounding wrist strap to your wrist. Connect the adhesive-backed copper foil at the other end to any convenient electrical ground, such as the grounding screw or metal case of a grounded electrical outlet.
3. Lift the bottom edge of the black cover (1) away from the meter (2), and pull the cover off. Remove and discard the screws (6). Lift off the electronic control (3). Remove and discard the large o-ring (4).
4. Install a new electronic control (3). Install the large o-ring (4) over the lip on top of the metering unit (2). Align the notch on the side of the electronic control (3) with the notch on the side of the metering unit (2). Install new screws (6). Tighten the screws (6) 3 in-lb to 5 in-lb (0.34 N-m to 0.57 N-m) oppositely and evenly until a complete seal is obtained as shown in the DETAIL in Fig 6.
5. Install the cover so the rolled-in edges are parallel with the inlet fluid passage of the metering unit.

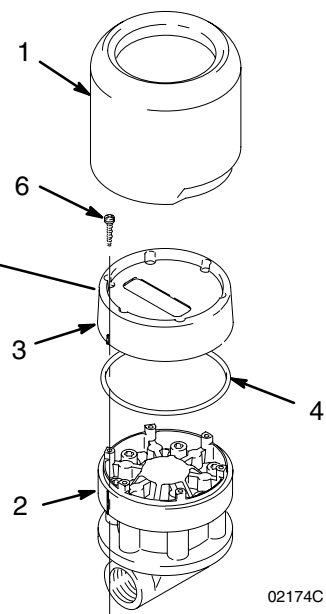
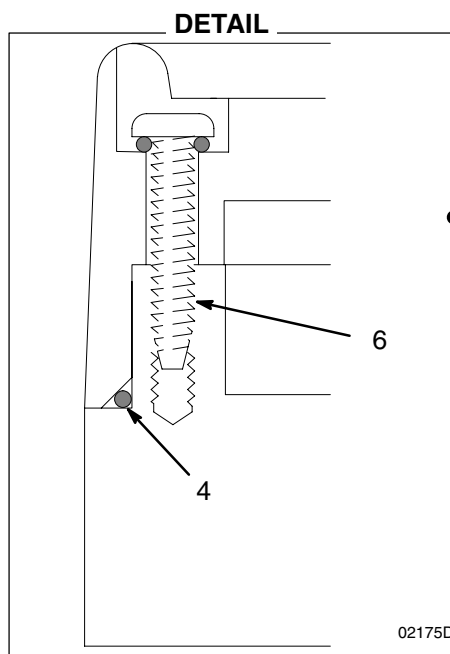
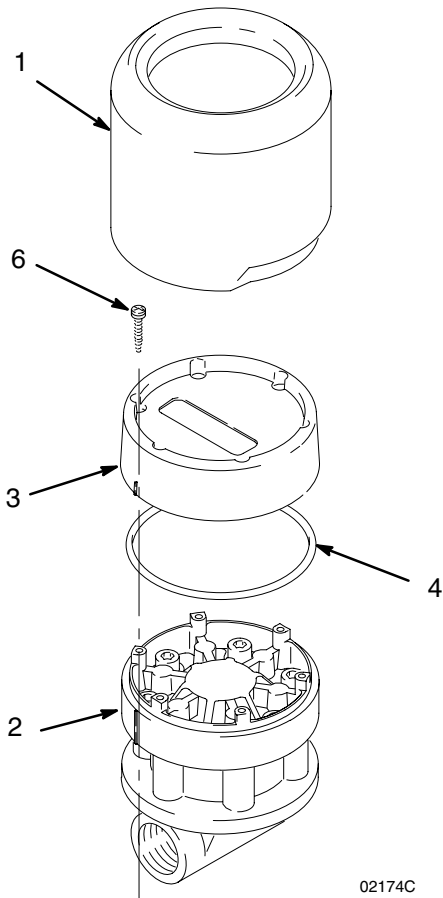


Fig. 6

# Parts



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## Model 244075, Gallon/Quart/Pint

Includes replaceable items 1, 3, 4, and 6.

Ref No.	Part No.	Description	Qty
1	191782	COVER	1
2		METERING UNIT, gallon/quart/pint (cannot be ordered separately)	1
3	235878*	ELECTRONIC CONTROL, gallon/quart/pint	1
4	109137	O-RING	1
6	112093	SCREW	6

## Model 244076, Liter

Includes replaceable items 1, 3, 4, and 6.

Ref No.	Part No.	Description	Qty
1	191782	COVER	1

2		METERING UNIT, liter (cannot be ordered separately)	1
3	235901*	ELECTRONIC CONTROL, liter	1
4	109137	O-RING	1
6	112093	SCREW	6

\* Replacement screws and o-rings are included with item 3.

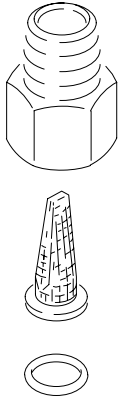
## WARNING

Use only genuine Graco replacement parts. This could result in a failure, which could cause serious bodily injury and/or substantial property damage.

# Accessories

## Strainer 223179

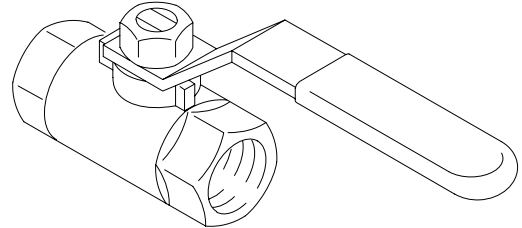
Install between the shutoff valve and the meter.  
Removes particles from the lubricant. 40-mesh. 1/2 in.  
npt (m x f).



02177

## Shutoff valve 108458

Install upstream from the meter. Shuts off fluid supply  
from the pump. 1/2–14 npt(f) both ends.



# Technical Data

Flow range *	0.12 to 12.0 gpm (0.456 to 45.6 lpm)
Maximum working pressure	1500 psi (10.3 MPa, 103 bar)
Weight	1.9 lb (0.95 kg)
Units of measurement	Factory-set in quarts. Display shows quantity in 0.01 increments up to 199.99 gallons, quarts, or pints. Totalizes in gallons or liters up to 19,999 units.
Inlet and outlet	1/2 npt, non-directional flow
Operating temperature range	−4° F to 130° F (−20° C to 55° C)
Storage temperature range	−40° F to 140° F (−40° C to 60° C)
Battery specifications	
Rated discharge current	100 microamps
Rated capacity	1.0 amp hour
Maximum continuous discharge current	1.0 milliamp
Wetted parts	aluminum, carbon steel, nitrile rubber, nickel, bronze, stainless steel #304, cast ALNICO 8

\* Tested in No. 10 motor oil. Flow rates vary with fluid pressure and viscosity.

# The Graco Electronic Dispense Valve Warranty and Disclaimers

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven defective, with the exception of defects in the electronic meter control, including the battery, which will be repaired or replaced for twenty-four months from the date of sale. 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, 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 with Graco equipment of 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 claim. 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.

Disclaimers and Limitations. The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), including **warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Equipment not covered by Graco Warranty. Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, 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.

## **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

**TO PLACE AN ORDER**, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

**1-800-533-9655 Toll Free**

**612-623-6928**

**612-378-3590 Fax**

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MM 307965

**Graco Headquarters:** Minneapolis  
**International Offices:** Belgium, Korea, China, Japan

**[www.graco.com](http://www.graco.com)**

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