Instructions

XDI12 Electronic Lubricant Meter

334852C

EN

For use with petroleum-based lubricants only. Not approved for use in explosive atmospheres or hazardous locations. For professional use only.

Models: 24V553

Measures in gallons, quarts, pints and liters*
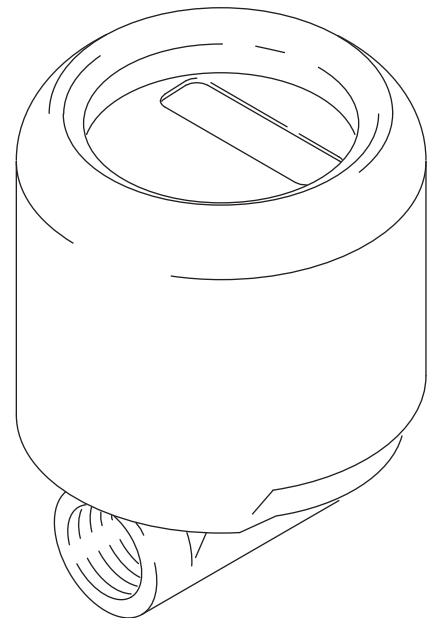*Meter is factory set in quarts.

Calibrate after electronic module replacement.

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

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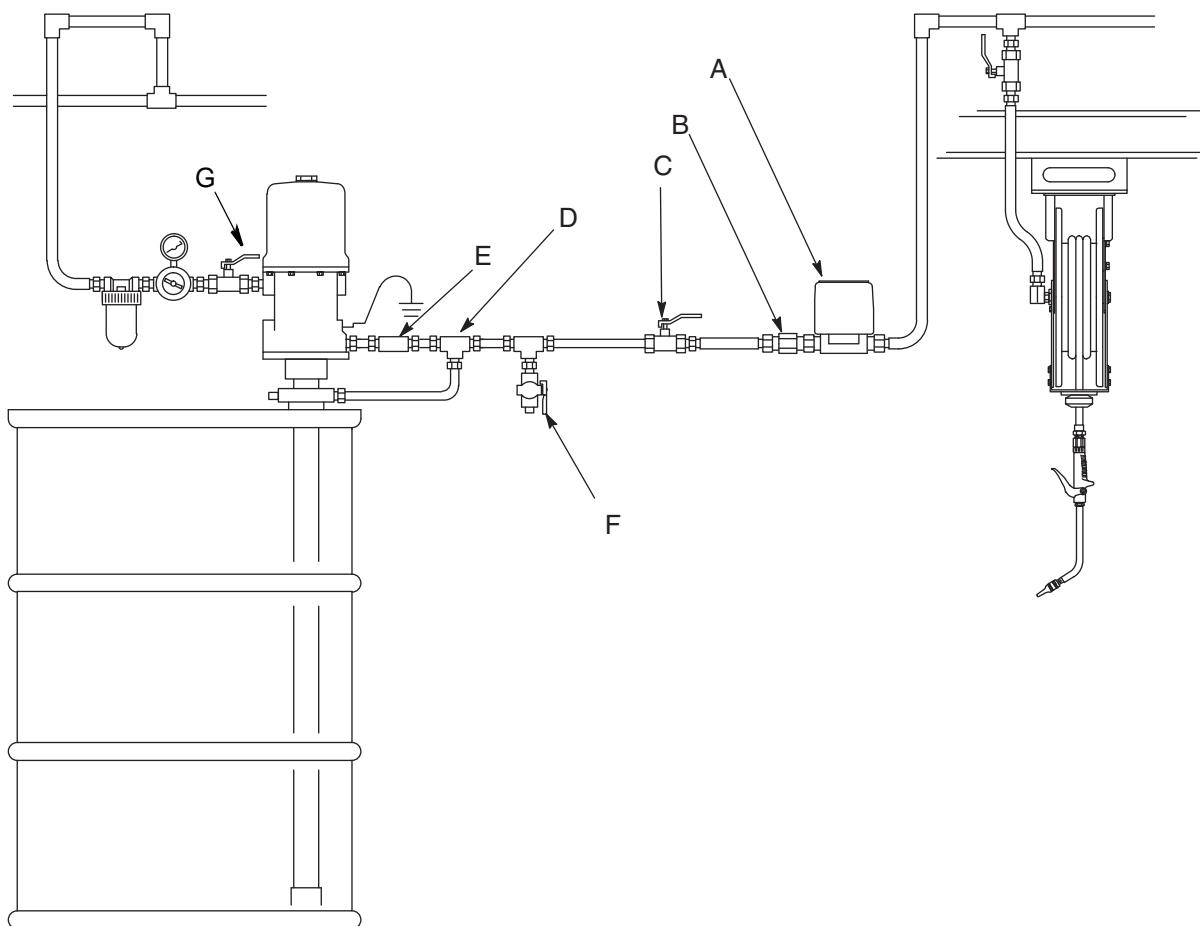
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Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual or on warning labels, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

⚠ WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.
- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See Technical Data in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDS's) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and relieve pressure 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.

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.
- Relieve the pressure 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.

CALIFORNIA PROPOSITION 65

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

Typical Installation

The typical installation shown in FIG. 1 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

Key:
A   In-line meter
B   In-line strainer
C   Shutoff valve
D   Pressure relief valve
E   Check valve
F   Bleed-off valve (drain valve)
G   Bleed-type master air valve

Operation

To Activate the Digital Display

Press the **RESET** key 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 or by running fluid through the meter. (FIG. 2)
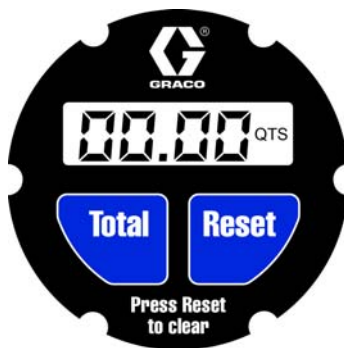

FIG. 2

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

Function of TOTAL

To see the accumulated total of fluid dispensed through the meter, press the **TOTAL** key. The meter can accumulate a running total of up to 19,999 units dispensed before returning to zero. (FIG. 3)

FIG. 3: Example of accumulated total

Function of RESET

Press the **RESET** key to clear the quantity of the last dispense cycle and return the digital display to all zeros. (FIG. 2).

Setup Mode

1. Press the TOTAL and RESET buttons (FIG. 5) together.

   • All segments of the digital display illuminate for approximately 4 seconds.

   • The software revision displays for approximately 1 second.

   • The meter goes blank and the volume unit blinks.

     The meter is now in Setup Mode.

2. Release the TOTAL and RESET buttons.

Volume Unit

3. The default Unit of Measure (UOM) is Quarts (QTS).

   Repeatedly press the TOTAL button (FIG. 2) to change the displayed UOM. FIG. 4 shows examples of each UOM screen.
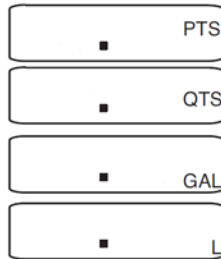

FIG. 4: Example of Units of Measure (UOM)

4. When the desired UOM is displayed, press the RESET button (FIG. 2) to save the selection.

5. CAL appears on the display as shown in FIG. 5. CAL indicates the meter is ready for Calibration Mode.

FIG. 5

6. If you do not want to Calibrate the meter, to exit Setup, press the RESET button again. To Calibrate

the meter, see Calibration Mode instructions in the following section of this manual.

Calibration Mode

• The meter has a preset calibration factor from the factory.

From the CAL screen:

NOTE: Instructions for displaying the CAL screen are provided in Setup Mode, steps 1 - 5.

1. To save the current Calibration factor, press RESET and the unit will save and exit setup.

2. To recalibrate the meter:

   a. Dispense 1 Quart (or 1 Liter) of fluid into a clean, calibrated container.

   b. When the volume of fluid in the calibrated container reaches 1 Quart (or 1 Liter), stop the dispense.

      NOTE: During the dispense the numbers on the display and the UOM flash on the screen.

   c. Press and hold the TOTAL button until 1.00 QTS (or 1.00 L) displays steady on the screen. FIG. 6 shows the meter displaying 1.00 QTS has been dispensed.

FIG. 6

   d. If you are satisfied with the dispense, press the RESET button to save the new calibration factor and exit the Setup Mode.

   e. If the dispense was not accurate and needs to be performed again, repeat Step 2, a - d.

NOTE:

- To interrupt or restart the calibration dispense at any time during the dispense, push the TOTAL button. This will reset the display back to 00.00 to start over.

- If RESET is pressed before the calibration factor is calculated, the meter will disregard the new calibration information and exit the Setup Mode.
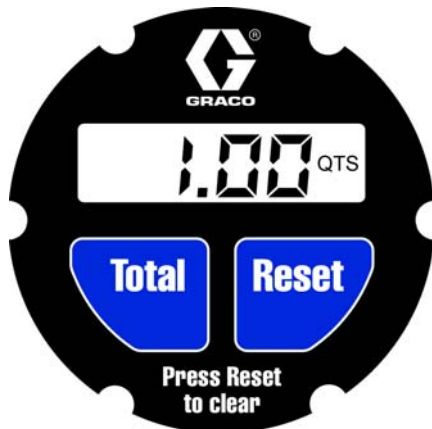
Restoring the Default Calibration Factor

From the CAL screen:

1. Start a dispense to register a count.

2. Quickly press and release the TOTAL button to reset the calibration dispense to 00.00.

   NOTE: The UOM; either QTS or L, will flash on the display.

3. Press and hold TOTAL until 1.00 displays on the screen and the UOM stops flashing.

4. Press the RESET button to save the default calibration factor and exit the Setup Mode.

FIG. 7

5.

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. Allow product to sit for 20 minutes, then compare the actual, physical measurement in the calibrated container to the measure 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 using the procedure outlined in the Calibration Mode instructions, page 5.
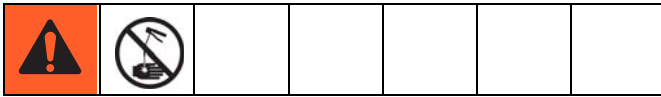
For Maximum Dispensing Accuracy

(gallon/quart/pint dispenses 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.*
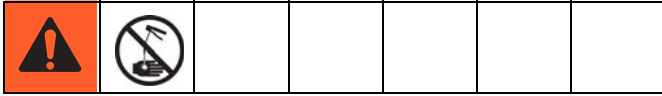
Troubleshooting

NOTE:

• **Relieve pressure.** See pressure relief procedure included in your dispense valve instruction manual.

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

Problem	Cause	Solution
Digital display is dim.	Battery in electronic control is worn out.	Replace battery. Order Part No. 24V555.
	Electronic control is malfunctioning.	Replace the electronic control. Order Part No. 24V554.
Digital display does not activate.	Battery in electronic control is worn out.	Replace battery. Order Kit No. 24V555.
	Electronic control is malfunctioning.	Replace the electronic control. Order Part No. 24V554.
There is no fluid flow.	Strainer, if used is clogged.	Remove and clean strainer.

Repair

The reference numbers used in the following Repair instructions refer to the Parts, page 10.

Battery Installation

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1. **Relieve pressure.** See pressure relief procedure included in your dispense valve instruction manual.

2. Attach the disposable grounding wrist strap (included in the kit) to your wrist. Connect the adhesive-backed copper foil at the other end of the strap 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) and the large o-ring (4). Dispose of the screws and o-ring according to all standards for disposal.

4. Insert a small, flat screwdriver or similar tool between the battery and the positive terminal (battery retainer) in the electronic control to remove the battery as shown in FIG. 8.
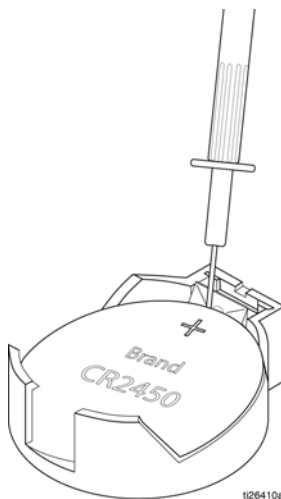

FIG. 8

5. Insert the new battery with the negative side of the battery position to the bottom of the battery holder. Press the battery firmly down until the positive terminal clips above the battery. See FIG. 9 (Battery Side View) to identify the negative and positive sides of the battery.
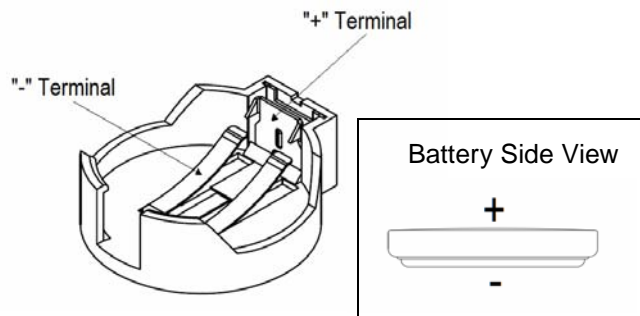

FIG. 9

6. Install the new large o-ring (4) over the lip on the 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).

7. Install new screws (6). Tighten the screws in a diagonal pattern to 3 in-lbs to 5 in-lbs (0.34 N.m to 0.57 N.m) until a complete seal is obtained as shown in the DETAIL in FIG. 10, page 9.

8. Install the cover so the rolled-in edges are parallel with the inlet fluid passage of the metering unit.

Electronic Control Module Replacement

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1. **Relieve pressure.** See pressure relief procedure included in your dispense valve instruction manual.

2. Attach the disposable grounding wrist strap (included in the kit) to your wrist. Connect the adhesive-backed copper foil at the other end of the strap 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), screws and electronic control according to all standards for disposal.

4. Install the new large o-ring (4) over the lip on the top of the metering unit (2). Align the notch on the side of the new electronic control module (3) with the notch on the side of the metering unit (2).

5. Install new screws (6). Tighten the screws in a diagonal pattern to 3 in-lbs to 5 in-lbs (0.34 N.m to 0.57 N.m) until a complete seal is obtained as shown in the DETAIL in FIG. 10.

6. Install the cover so the rolled-in edges are parallel with the inlet fluid passage of the metering unit.
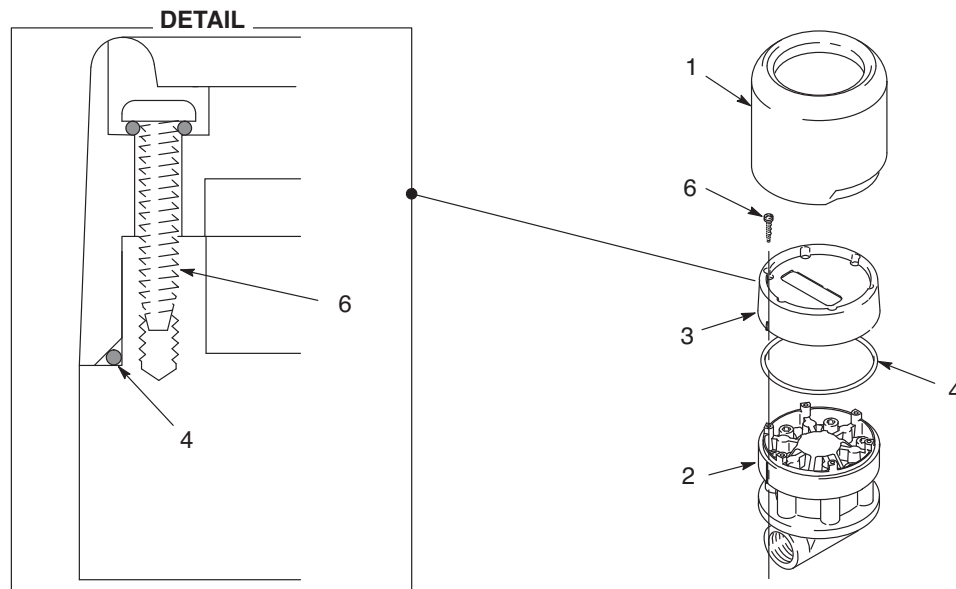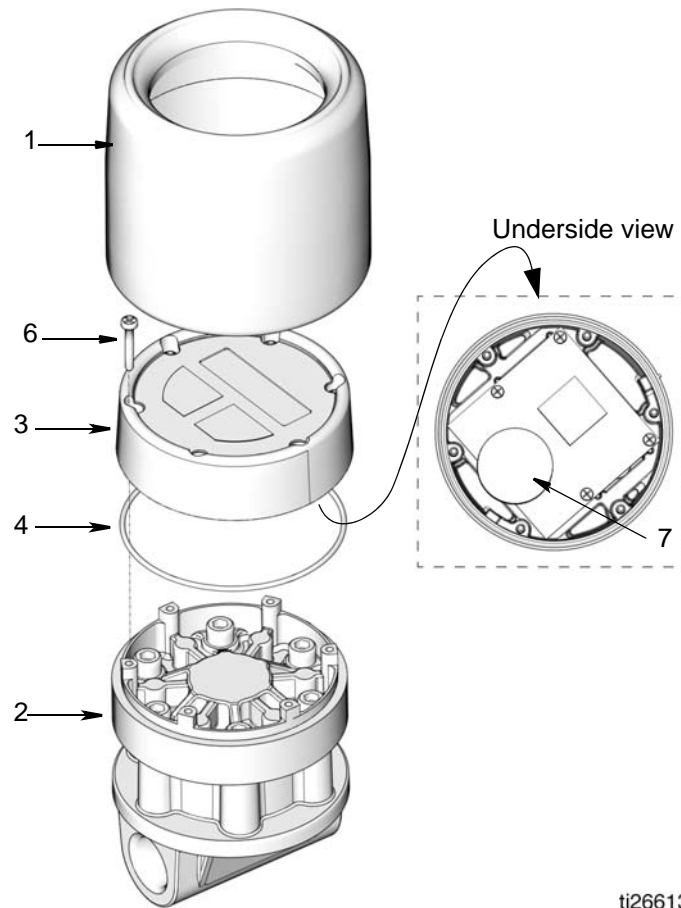

DETAIL

FIG. 10

Parts

Underside view

ti26613

Model 24V553, Gallon/Quart/Pint/Liter

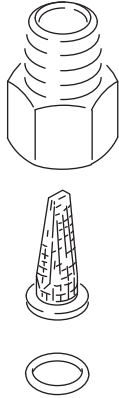| Ref.	Part	Description	Qty.
1	191782	GUARD, impact	1
2		METERING UNIT, gallon/quart/pint/liter	1
3◆	24V554	KIT, electronic control	1
4*	109137	O-RING	1
6*	112093	SCREW	6
7◆	24V555	KIT, battery replacement	1

These parts are included in Kit 24V554 and 24V555.

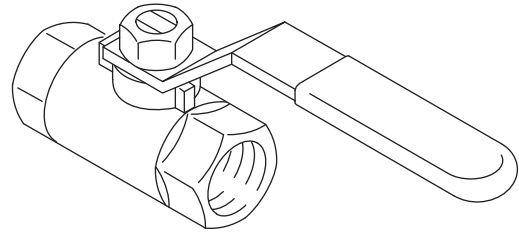◆*These kits also include a disposable grounding strap (not shown).*

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)

Shutoff Valve 108458
Install upstream from the meter. Shuts off fluid supply
from the pump. 1/2-14 npt(f) both ends.

Technical Data

In-Line Electronic Lubricant Meter		
	US	**Metric**
Maximum fluid working pressure	1500 psi	10.3 MPa, 103 bar
Flow Range	0.12 to 12 gpm	0.456 to 45.6 lpm
Meter Pressure Loss: Tested in 10W oil at 70°F (21°C). Flow rate varies with fluid pressure, temperature, viscosity.	150 psi @ 12 gpm	1.03 MPa, 10.3 bar @ 45.4 lpm
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, pints, or liters. Total displays up to 19,999 units.	
Inlet and outlet	1/2 npt, non-directional flow	
Operating temperature range	-4°F to 130°F	-2°C to 55°C
Storage temperature range	-40°F to 140°F	-40°C to 60°C
Battery Specifications	Panasonic® CR2450 3V	
Rated discharge current	200 microamps	
Rated capacity	620.0 milliamp hour	
Wetted Parts	Aluminum, carbon steel, nitrile rubber, nickel, bronze, stainless steel #304, cast ALNICO 8	

Panasonic® is a registered trademark of Panasonic Corporation.

Graco 7-Year Meter and Valve 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 from the date of sale as defined in the table shown below, repair or replace equipment covered by this warranty and 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.

Component	Warranty Period
Structural Components	7 years
Electronics (where applicable)	3 years
Wear Parts - included but not limited to o-rings, seals and valves	1 year

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 eight (8) years of the date of sale, or two (2) years for all other parts.

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

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

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

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Phone: 612-623-6928 **or Toll Free:** 1-800-533-9655, **Fax:** 612-378-3590