

SDM8™ and SDM18™ Metered Dispense Valves

3A6711J
EN

For dispensing oil, automatic transmission fluid (ATF), gear oils, antifreeze, and windshield washer solvent.

Not approved for use in explosive atmospheres or hazardous locations. For professional use only.

See page 6 for model information.

1500 psi (10 MPa, 103 bar) Maximum Working Pressure



Important Safety Instructions

Read all warnings and instructions in this manual and related system manuals before using the equipment. Save all instructions.

NOTICE

The metered dispense valve is designed to dispense petroleum-based lubricants, windshield washer solvent and antifreeze only. Brake cleaner and/or harsh solvents may damage the plastic components.



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Warnings

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



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.



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.

WARNING



FIRE AND EXPLOSION HAZARD

When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode. To help prevent fire and explosion:



- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as cigarettes and portable electric lamps.
- Ground all equipment in the work area.
- Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
- Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
- Use only grounded hoses.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.



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

Models

Model	Swivel	Extension	Nozzle	Fluid	Max Volumetric Flow Rate	
					GPM	LPM
25M404	1/2 NPT	Rigid	Automatic	Oil	8	30
25M405	1/2 NPT	Rigid	Antifreeze	Antifreeze	8	30
25M406	1/2 NPT	Flexible	Automatic	Oil	8	30
25M407	1/2 NPT	Flexible	Antifreeze	Antifreeze	8	30
25M410	1/2 NPT	Rigid	High Flow	Oil	18	68
25M411	1/2 NPT	Flexible	High Flow	Oil	18	68
25M413	1/2 NPT	Gear Lube	Manual	Gear Lube	5	19
25M415	1/2 NPT	Rigid, open	None	WWS*	8	30
25M416	3/4 NPT	Rigid	High Flow	Oil	18	68
25M417	3/4 NPT	Flexible	High Flow	Oil	18	68
25M419	1/2 BSPP	Rigid	Automatic	Oil	8	30
25M420	1/2 BSPP	Rigid	Antifreeze	Antifreeze	8	30
25M421	1/2 BSPP	Flexible	Automatic	Oil	8	30
25M422	1/2 BSPP	Flexible	Antifreeze	Antifreeze	8	30
25M425	1/2 BSPP	Rigid	High Flow	Oil	18	68
25M426	1/2 BSPP	Flexible	High Flow	Oil	18	68
25M428	1/2 BSPP	Gear Lube	Manual	Gear Lube	5	19
25M430	1/2 BSPP	Rigid, open	None	WWS*	8	30
25M431	3/4 BSPP	Rigid	High Flow	Oil	18	68
25M432	3/4 BSPP	Flexible	High Flow	Oil	18	68
25M434	1/2 BSPT	Rigid	Automatic	Oil	8	30
25M435	1/2 BSPT	Rigid	Antifreeze	Antifreeze	8	30
25M436	1/2 BSPT	Flexible	Automatic	Oil	8	30
25M437	1/2 BSPT	Flexible	Antifreeze	Antifreeze	8	30
25M440	1/2 BSPT	Rigid	High Flow	Oil	18	68
25M441	1/2 BSPT	Flexible	High Flow	Oil	18	68
25M443	1/2 BSPT	Gear Lube	Manual	Gear Lube	5	19
25M445	1/2 BSPT	Rigid, open	None	WWS*	8	30
25M446	3/4 BSPT	Rigid	High Flow	Oil	18	68
25M447	3/4 BSPT	Flexible	High Flow	Oil	18	68

*WWS = Windshield Washer Solvent

Metered Dispense Valve Overview

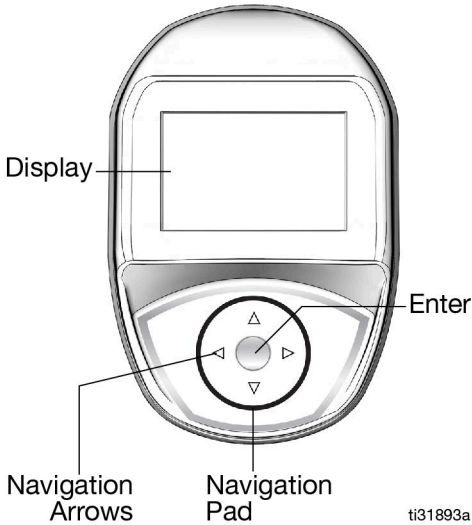


FIG. 1

Navigation Pad

The Navigation Pad (FIG. 1) includes four (4) navigation ARROWS (UP, DOWN, LEFT, RIGHT) and a center, ENTER button.

Arrows: Move the cursor on the display.

ENTER button: Use to select or store an entry.

Header Information

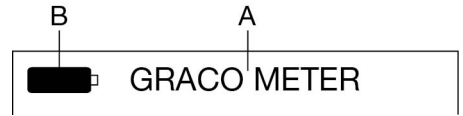


FIG. 2

The following information appears at the top of the Work Offline and Dispense screens.

- A Banner - Unique identification. For instructions on assigning a name to the meter (A), see **Utility Menu Screen**, **Banner** beginning on page 19.
- B Battery Indicator - When the batteries are fully charged, the battery icon (B) is completely filled in. As the battery discharges, the amount on the battery icon declines. When the low battery symbol is shown (FIG. 3), replace the batteries. See **Battery Replacement**, page 24.



FIG. 3

Sleep/Awake Mode

- Sleep: Battery-saving mode.
- Awake: To wake up metered dispense valve, press any ARROW or the center ENTER button on the metered dispense valve navigation pad.

Metered Dispense Valve Overview

Opening and Closing the Nozzle

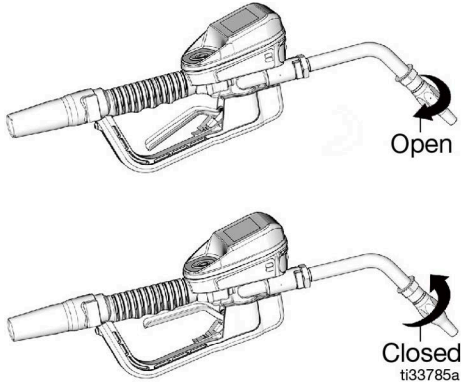


FIG. 4

- To open the nozzle, hand rotate the nozzle clockwise.
- To close the nozzle, hand rotate the nozzle counter-clockwise.

NOTE: Close the nozzle to prevent dripping when not in use.

Mount the Bracket

Mounting Bracket Kit 249440 is available for mounting the metered dispense valve on a console.

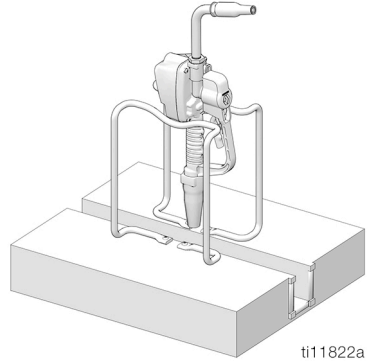


FIG. 5

Metered Dispense Valve Overview

Typical Installation

The typical installation shown in FIG. 6 is only a guide. It is not a complete system design. Contact your Graco distributor for assistance in designing a system.

The metered dispense valve is not designed for in-line installation.

ITEM	DESCRIPTION
A	Metered dispense valve
B	Fluid shut-off valve
C	Hose
D	Hose reel fluid inlet hose
E	Hose reel

A Thermal Relief Kit (not shown) is required. The kit required varies by pump selected.

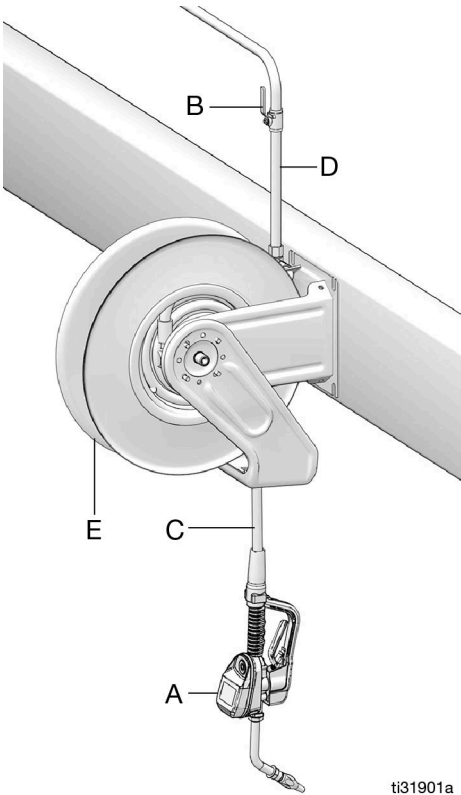


FIG. 6

Installation

Pressure Relief Procedure



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.

1. Turn off power supply to the pump or close the fluid shut off valve (B).
2. Open the nozzle.
3. Trigger the metered dispense valve into a waste container to relieve pressure.
4. Open any bleed-type master air valves and fluid drain valves in the system.
5. Leave the drain valve open until ready to pressurize the system.

Grounding



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

Follow manufacturer's recommendations to ground the pump and fluid supply container.



FIRE HAZARD

Conductive metal surfaces on the metered dispense valve must not make contact with any positively charged metal surface, including (but not limited to), the starter solenoid terminal, alternator terminal or battery terminal. Such contact could cause electrical arcing and a fire.

To maintain grounding continuity when flushing or relieving pressure, hold a metal part of the metered dispense valve firmly to the side of a grounded metal pail, then trigger the metered dispense valve.

Hoses: Only use electrically conductive hoses. Check electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace hose immediately.

Pre-Installation Procedure



1. **Relieve pressure**, page 10.
2. Close the shut-off valve (B, FIG. 6, page 9).
3. Ground the hose and reel or console. Leave at least two threads bare when using PTFE tape. The bare threads ensure a ground is maintained.

NOTICE

- If this is a new installation, or if the fluid lines are contaminated, flush the lines before installation of the metered dispense valve. Contaminated lines could cause the metered dispense valve to leak.
- Never dispense compressed air with the metered dispense valve. Dispensing compressed air will damage the metered dispense valve.

4. Flush equipment. See **Flushing**, page 11.

Flushing

The equipment was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating the fluid, flush the equipment with a compatible solvent before use.



1. Close the fluid shut-off valve (B, FIG. 6, page 9) at each dispense position.
2. Make sure:
 - the main fluid outlet valve at the pump is closed.
 - the air pressure to the pump motor is adjusted to minimize the system flow rate without the metered dispense valve attached.
 - the air valve is open.
3. Slowly open the main fluid outlet valve.
 - a. Place the hose end (with no metered dispense valve connected) into a container for waste oil.
 - b. Secure the hose in the container so it will not come out during flushing.
 - c. If there are multiple dispense positions, first flush the dispense position farthest from the pump and then work toward the pump.
4. Slowly open the shut-off valve (B) at the dispense position. Flush out a sufficient amount of oil to ensure that the entire system is clean; then close the valve.
5. Repeat Step 4 at all other positions.

Installation

Install the Metered Dispense Valve



1. **Relieve pressure**, page 11.
2. Slide the swivel boot (A) back, over the hose, small end first to access the swivel fitting (6) (FIG. 7).
3. Apply thread sealant to the male threads of the hose fitting. Thread the hose fitting (B) into the metered dispense valve swivel (6). Use two wrenches to tighten securely (FIG. 7).

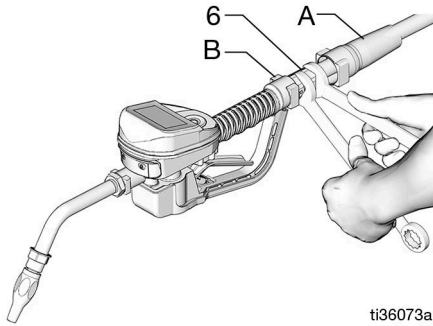


FIG. 7

NOTE: Make sure to let the sealant cure according to the manufacturer recommendations before circulating fluid through the system.

Install the Extension Tube

1. Adjust nut (C) on extension (2) so that the maximum thread engagement of the extension can be utilized (FIG. 8).
2. Thread extension (2) into housing until it bottoms out (FIG. 8).
3. Align extension (2) with metered dispense valve housing and handle (16) (FIG. 8).
4. Firmly tighten nut (C) (FIG. 8).

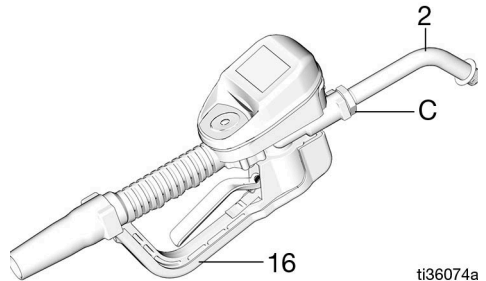


FIG. 8

Install the Nozzle

1. Thread nozzle (3) onto extension (2) (FIG. 9).

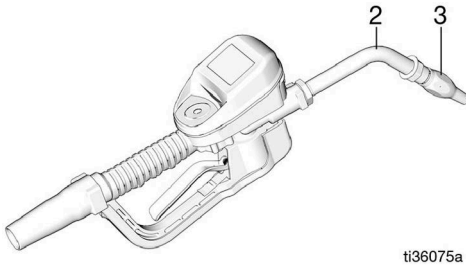


FIG. 9

2. With an open-end adjustable wrench on the flats of the nozzle bushing, tighten firmly (FIG. 10).

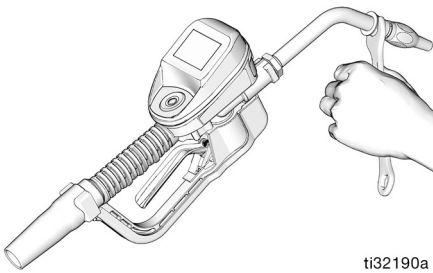


FIG. 10

3. Open the automatic twist lock nozzle and all fluid shut-off valves. Start pump to pressurize system.
4. To ensure dispensing accuracy, purge all air from the fluid lines and metered dispense valve before use.
5. Set the system flow to the desired flow rate. This is typically done by adjusting the pump air pressure.

NOTICE

- To prevent damaging nozzle, *only* tighten nozzle with wrench on flats of the nozzle bushing as shown in FIG. 10.
- Do not disassemble the bushing from the nozzle. Disassembly will affect the performance of the nozzle.

Set Up

Calibrate the Metered Dispense Valve

NOTE: This calibration procedure requires a 1 quart or 1 liter, calibrated, volumetric flask. When the meter is configured to display fluid volume in pints, quarts or gallons, the calibration procedure requires a 1 quart calibrated volumetric flask be used. When the meter is configured in liters, a 1 liter volumetric flask is required for calibration.

The metered dispense valve should be calibrated prior to using it for the first time. Calibrating the metered dispense valve assures that dispenses are accurate.

Calibration factors can vary due to fluid viscosity and flow rate. Calibrate metered dispense valves for specific fluid at nominal flow rates.

To calibrate the metered dispense valve:

1. If the system is not fully primed, flush the metered dispense valve. See **Flushing**, page 11.
2. Select the UTILITY MENU option (Fig. 11). (Instructions for accessing Menus are provided in **Menu Screens**, page 18).

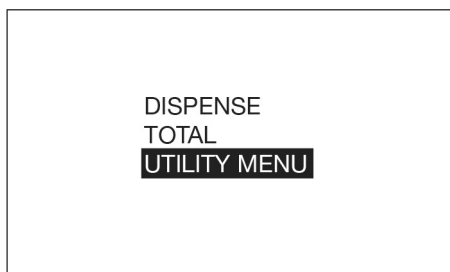


FIG. 11

3. Select the SET-UP option (Fig. 12).

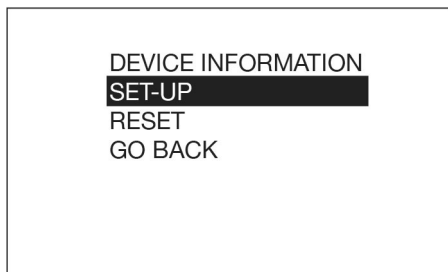


FIG. 12

4. Select the CALIBRATE option (Fig. 13) to display the calibration K-Factor screen shown in Fig. 14.

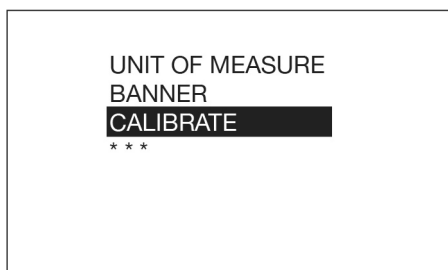


FIG. 13

5. The calibration K-Factor screen shown in Fig. 14 displays.

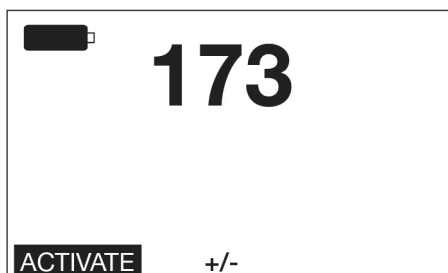


FIG. 14

- Select **ACTIVATE** and press the **ENTER** button. **DISPENSE** (as shown in FIG. 15) displays on the screen.

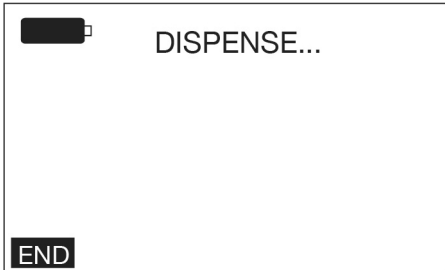


FIG. 15

- Dispense exactly 1 quart or 1 liter of fluid into a clean, calibrated, volumetric flask.

IMPORTANT! The metered dispense valve will not display the volume dispensed. The volume dispensed is only determined by the flask measurement.

- When exactly 1 quart or 1 liter of fluid is dispensed into the flask, select **END** and press the **ENTER** button. The new calibration factor displays.
- Select **END** and the **ENTER** button again to complete the operation and save the new calibration factor.



FIG. 16

Alternate Calibration

NOTE: This alternate calibration procedure is used when a 1 quart or 1 liter, calibrated, volumetric flask is not available.

- If the system is not fully primed, flush the metered dispense valve. See **Flushing**, page 11.
- Dispense a known volume of fluid into a clean, calibrated, volumetric flask. Note this volume as the **VOLUME DISPENSED** (see Calculating K-Factor, Step 9, page 16).
- Record the volume displayed on the metered dispense valve. Note this volume as the **VOLUME DISPLAYED ON THE metered dispense valve** (see Calculating the K-Factor, Step 9, page 16).
- Select the **UTILITY MENU** option (FIG. 17).

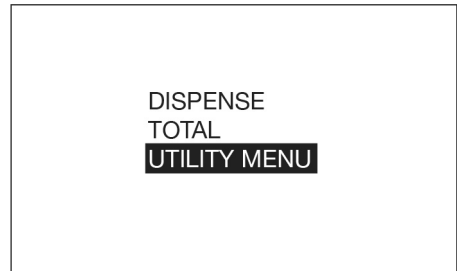


FIG. 17

- Select the **SET-UP** option (FIG. 18).

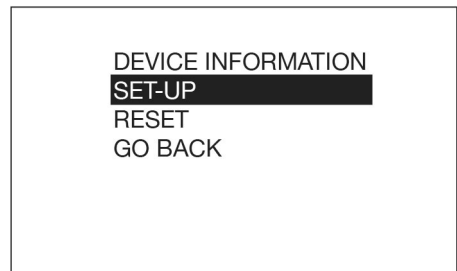


FIG. 18

Set Up

6. Select the CALIBRATE option (Fig. 19).

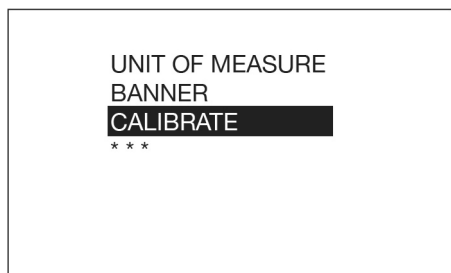


FIG. 19

7. Use the LEFT or RIGHT ARROWS to select +/- and press the ENTER button (Fig. 20).

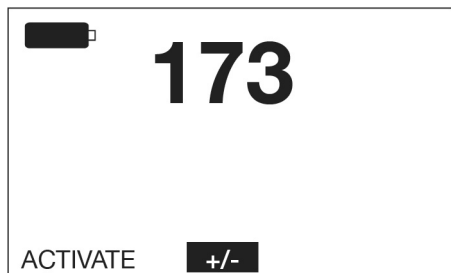


FIG. 20

8. Note the current K-FACTOR is displayed. In the example shown in Fig. 21 the K-FACTOR is 173 (Fig. 21).

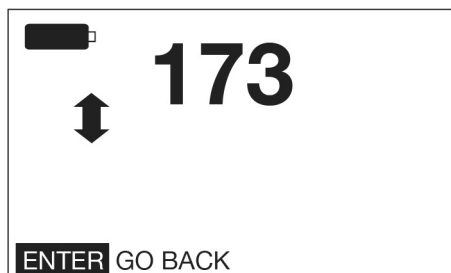


FIG. 21

9. Calculate the new K-Factor using the following equation:

$$K_{\text{new}} = \frac{(K_{\text{current}}) \times (\text{VOLUME DISPLAYED ON METER})}{(\text{VOLUME DISPENSED})}$$

Example:

$K_{\text{current}} = 169$

Volume displayed on metered dispense valve = 0.970 quart

Volume dispensed = 1 quart

$$K_{\text{new}} = \frac{(169) \times (0.970 \text{ quarts})}{(1.0 \text{ quarts})} = 163.9$$

Round to the nearest whole number: 163.9 = 164.

NOTE: The unit of measurement for both volumes must be the same in the above equation.

10. Use the UP or DOWN ARROWS to adjust the K-FACTOR to the K-FACTOR (K_{new}) calculated in Step 9.

See **Table 1**, page 16 for recommended fluid calibration factors.

NOTE: The calibration number may vary slightly due to temperature or rate of flow.

Table 1

Fluid	Calibration Factor
Oil (10W30)	173
Gear Lube	173
ATF	173
Antifreeze	150
Windshield Washer Solvent	150

11. Press the ENTER button to complete the calibration operation and save the new calibration factor.

Operation



1. Open nozzle.
2. If The Meter Is Already Awake: On the Main Menu screen, select DISPENSE.

If The Meter Is Not Awake: Wake up the metered dispense valve by pressing any button on the metered dispense valve key pad.

3. The Dispense screen displays (FIG. 22).
4. Select RESET and press ENTER to display the volume totalizer and reset the previous dispense.

NOTE: If RESET is not selected/entered, the meter continues with the previous dispense.

5. Pull the trigger to dispense fluid.
6. When the desired amount of fluid has been dispensed, release the trigger to stop the fluid flow.

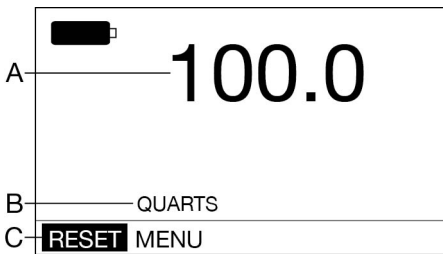


FIG. 22

7. (OPTIONAL) Select RESET and press ENTER to reset the totalizer for the next metered dispense (if desired).
8. (OPTIONAL) Select MENU to return to the main menu.
9. Close nozzle when fluid dispense is completed.

Menu Screens

Menu Screens

Main Menu Screen

This screen provides access to the main metered dispense valve functions (FIG. 23):

- DISPENSE, page 18
- TOTAL, page 18
- UTILITY MENU, page 20

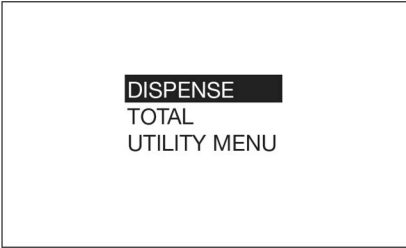


FIG. 23

Dispense Screen

The screen is used for dispensing fluid.

- A Volume of fluid dispensed - this number increases to reflect the quantity of fluid that is dispensed. The maximum quantity that can be displayed is 9999 units.
- B Unit of measure, US or Metric. For instructions for changing the units of measure see Utility Menus, Set-Up, Units of Measure on page 20.
- C RESET - Resets the resettable totalizer back to zero.
- D MENU - Takes meter back to Main Menu screen.

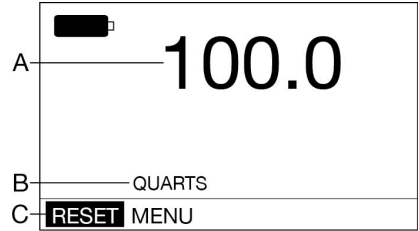


FIG. 24

Total Screen

- E Non-Resettable Totalizer - Lifetime running total of the quantity of fluid dispensed through the meter. The unit of measurement displayed is determined by the Unit of Measurement criteria selected in SET-UP (see SET-UP, page 20). When Pints, Quarts or Gallons are selected, the Unit of Measurement will be shown as Gallons. When Liters are selected, the Unit of Measurement will be shown as Liters.
- F Resettable Totalizer - Running total of the quantity of fluid dispensed through the meter since the last time the total was reset. The unit of measurement displayed is determined by the Unit of Measurement criteria selected in SET-UP (see , page 20).
- G GO BACK - Takes meter back to Main Menu screen.
- H RESET - Resets the Resettable Total (F) back to zero.

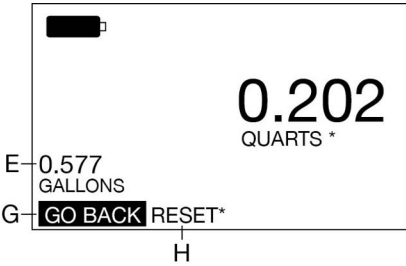


FIG. 25

Utility Menu Screen

There are four functions available from the Utility Menu Screen.

NOTE: Some screens provide additional function screens when selected.

- **Device Information**, page 20
- , page 20
- **Reset**, page 23
- **Go Back**, page 23

To select one of the Utility Menu screens:

1. Use the UP or DOWN ARROW button to select the desired screen from the list.
2. When the screen is highlighted, press the ENTER button.

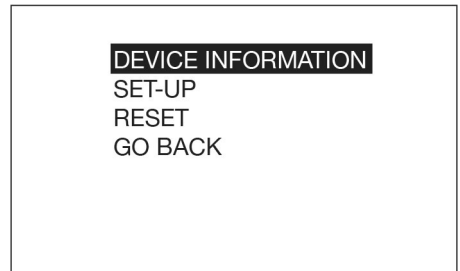


FIG. 26

Menu Screens

Device Information

The Device Information Screen is used for diagnostics only.

Device Information Screen

Unique Device
Identification Number

e7fb8-e0244-fff012-fff109-fff102

(00): 0000000	(01):0000000	(02): 0000000
(03): 0000000	(04):0000000	(05): 0000000
(06): 0000000	(07):0000000	(08): 0000000
(09): 0000000	(10):0000000	(11): 0000000
(12): 0000000	(13):0000000	(14): 0000000

[1_00_016] [0000]

Indicates Meter Firmware
Version 1_00_016

FIG. 27

Set-Up

The SET-UP Menu includes the following options: UNIT OF MEASURE, BANNER, CALIBRATE and ***.

On the second SET-UP screen (accessed by selecting the ***) LANGUAGE and LOCK

SETTINGS are also available. This screen also includes a GO BACK option to return the user to the UTILITY Menu screen.

UNIT OF MEASURE

BANNER
CALIBRATE
* * *

LANGUAGE

LOCK SETTINGS
GO BACK

FIG. 28

Unit of Measure

The meter is factory-set to quarts. The UNIT OF MEASURE screen is used to configure the meter to dispense in PINTS, QUARTS, GALLONS OR LITERS. This screen also includes a GO BACK option to return the user to the Utility Menu screen.



FIG. 29

1. Use the UP or DOWN ARROW button to select the desired unit of measure from the displayed list: PINTS, QUARTS, GALLONS or LITERS.
2. When the desired unit of measure is highlighted, press the ENTER button.

Banner

The banner screen is used to assign a name to the meter, such as Bay 1, Bay 2, etc. This is useful in shops that have more than one meter in their system.

Names can be made up of any combination of letters or numbers.

The maximum number of characters is 15.

The banner is only displayed on the initial dispense screen and the TOTAL screen.

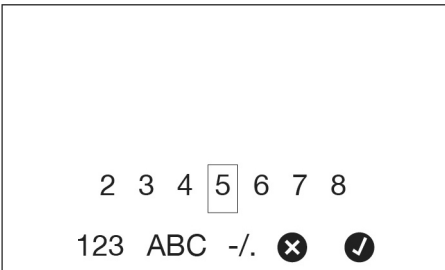


FIG. 30

1. Use the UP, DOWN, LEFT and RIGHT ARROW buttons to select letters and numbers needed to name the meter.
2. Push the ENTER button after each desired letter or number is highlighted to select it.
3. When finished naming the meter, select the ✓ symbol to return to the SET-UP Menu Screen.

Calibrate

Calibrating the metered dispense valve assures that dispenses are accurate. See **Calibrate the Metered Dispense Valve** instructions beginning on page 14.

Indicates there are additional functions; LANGUAGE, LOCK SETTINGS and GO BACK available on the next screen.

Language

The meter is factory-set to English. On the first language screen it can be configured to display ENGLISH, FRENCH, GERMAN, ITALIAN, ***.

On the second language screen (accessed by selecting ***) POLISH, PORTUGUESE,

RUSSIAN AND SPANISH are available. This screen also includes a GO BACK option to return the user to the SET UP Menu screen.

Menu Screens

ENGLISH

FRENCH

GERMAN

ITALIAN

* * *

POLISH

PORTUGUESE

RUSSIAN

SPANISH

1. Use the UP or DOWN ARROW button to select the desired unit of measure from the displayed list: ENGLISH, FRENCH, GERMAN, ITALIAN, ***.
2. When the desired unit of measure is highlighted, press the ENTER button.

FIG. 31

Lock Settings

Prevents unauthorized access to meter settings.

To lock the meter:

1. Use the DOWN ARROW button to select LOCK SETTINGS in the list.



FIG. 32

To UNLOCK the meter:

1. Use the DOWN ARROW button to highlight RESET in the list.

Do Not Press The Center Enter Button!

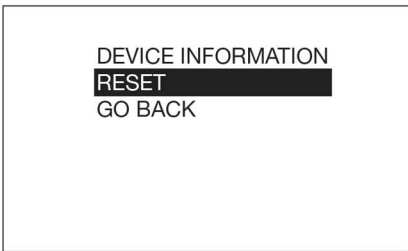


FIG. 33

2. Press and hold the LEFT ARROW button.
3. While still holding down the LEFT ARROW button, press the CENTER button.

Go Back

The GO BACK option returns the user to the UTILITY MENU screen

Reset

Reboots the meter.

Go Back

Returns to the Main Menu Screen, page 14.

Service

Battery Replacement

- Replace batteries with four (4) AA, alkaline batteries.
- Be sure to follow the correct polarity as shown on the installation labels located on either side of the metered dispense valve when installing batteries in the battery compartment (FIG. 35).
- Do not mix different types of batteries together or old batteries with fresh ones. Always replace all four (4) batteries with four (4), fresh, new AA batteries.

To change the battery:

1. Remove screws (36) from the battery compartment cover (5).
2. Use a small, flat screwdriver to gently pry the cover away from the metered dispense valve housing on the bottom side of the cover, near the extension attachment as shown in FIG. 34.

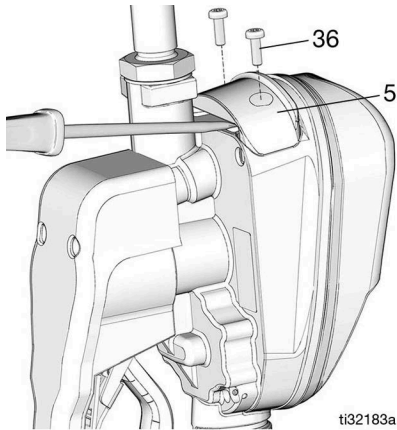


FIG. 34

3. Remove and separately recycle batteries according to all applicable regulations. Do not dispose of with household or commercial waste.
4. Install four (4) new batteries. See labels on the each side of the housing and FIG. 35 for battery orientation.

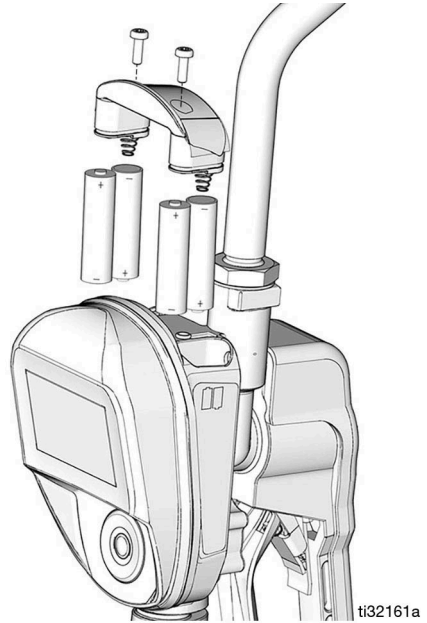


FIG. 35

5. Replace cover (5) and screws (36). Do not over-tighten screws (FIG. 36).

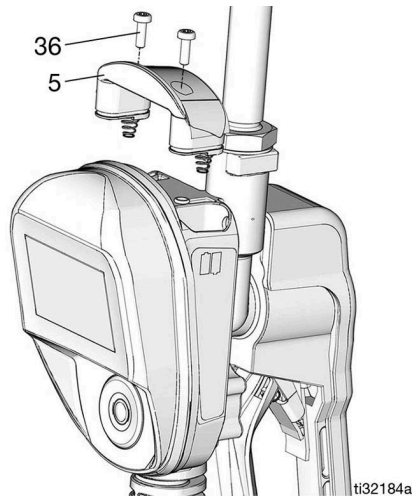


FIG. 36

Troubleshooting



Perform pressure relief procedure, page 10, before checking or repairing the metered dispense valve. Be sure all other valves, controls and pump are operating properly.

Problem	Cause	Solution
Battery dead icon is present.	Batteries are low.	Battery Replacement , page 24.
Display does not activate	Batteries are dead.	Battery Replacement , page 24.
	Electronic control is malfunctioning.	Replace the electronic bezel assembly. Contact your Graco distributor for assistance ordering this part.
Slow or no fluid flow	Filter is clogged.	Relieve pressure , page 10. Clean or replace filter. If the problem remains, contact your Graco distributor for repair or replacement.
	Pump pressure is low.	Increase pump pressure.
	Twist lock nozzle not fully open.	Aim nozzle into bucket or rag. Fully open nozzle. Do not trigger metered dispense valve when nozzle is closed! If you do accidentally trigger the metered dispense valve with the nozzle closed, point nozzle into a waste bucket and open the nozzle to relieve pressure and expel built up fluid.
	Shut-off valve is not fully open.	Fully open shut-off valve.
	Foreign material is jammed in the metered dispense valve housing.	Contact your Graco distributor for repair or replacement.
Displayed dispensed amount is not accurate	Unit needs to be calibrated for the fluid that is being dispensed.	Calibrate the metered dispense valve for the fluid that is being dispensed.
	Displayed dispensed amount not reset before starting new dispense.	Reset the fluid dispensed before performing dispense.

Troubleshooting

Problem	Cause	Solution
Metered dispense valve leaks from cover/control	Poor seal at metering cover chamber	Contact your Graco distributor for repair or replacement.
Metered dispense valve leaks from the nozzle when the nozzle is left in the closed position.	Nozzle has a damaged seal.	Replace nozzle. See Install the Nozzle , page 13.
Metered dispense valve leaks from the nozzle when the nozzle is left in the open position. It is important to distinguish between the two states of the nozzle to determine the cause of this problem. a new nozzle in the open state will NOT correct a fluid leak caused by a faulty valve.	Metered dispense valve with MANUAL nozzle should be closed after each use.	Close MANUAL nozzle when meter is not in use.
	Metered dispense valve with AUTOMATIC nozzle left open exasperated by thermal expansion inside the meter.	Close nozzles when meters are not in use. Wipe nozzle tip after each use.
	Valve cartridge has damaged seals.	Close nozzles when meters are not in use. Wipe nozzle tip after each use. Replace valve cartridge. Replacement Kit Part 25D904.
Metered dispense valve leaks from swivel	Poor swivel/hose connection.	Apply PTFE tape (leave a minimum 2 engaged threads uncovered for electrical continuity) or sealant to threads of hose and tighten the connection.
	Poor swivel/metered dispense valve housing connection.	Torque the fitting to 20-25 ft.-lb (27.12 - 34 N•m).
	Swivel seals have deteriorated and leak.	Replace swivel. Use Swivel Seal and Filter Replacement Kit 25D906. See Swivel Seal and Filter Replacement instructions page
Screen locks up or freezes		Remove batteries. Wait 5 minutes, then replace batteries and restart.
SET-UP screen is missing in Utility Menu	Meter settings are locked.	Unlock meter. See Lock Settings instructions, page 23.

Fault Codes

Fault codes are listed below. Even in a fault condition the unit keeps track of the amount dispensed. Whenever a fault code is displayed, the operator must end the dispense.

Fault Code	Cause	Solution
Fault 2	Reed Switch Fault: Fault occurred with pick-up in internal gear.	Ensure that the flow rate is not higher than 18 gpm (68 lpm). For further assistance, contact your Graco distributor.
	Reed switch malfunction.	Replace electronic bezel housing.
	Unit was dropped or unit encountered excessive vibration during shipping.	End dispense
	Air in fluid line.	Fix leaks in pump suction line.
	Excessive pulsation.	Re-plumb suction line to a larger size.

Definition of Terms

Terms	Definition
CALIBRATE	UTILITY MENU/SET-UP option. Calibrating the metered dispense valve ensures dispenses are accurate.
DEVICE INFORMATION	UTILITY MENU option. Used for diagnostics and firmware verification.
DISPENSE	Selecting DISPENSE displays the DISPENSE Screen.
GO BACK	Returns the user to the previous screen.
MANUAL DISPENSE	Amount of fluid dispensed is determined by the operator.
SET-UP	List of metered dispense valve function related to initial set up: UNIT OF MEASURE, BANNER, CALIBRATE, LANGUAGE, and LOCK SETTNGS.
UTILITY MENU	List of metered dispense valve functions: DEVICE INFORMATION, SET-UP, RESET, GO BACK.

Recycling and Disposal


End of Product Life

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

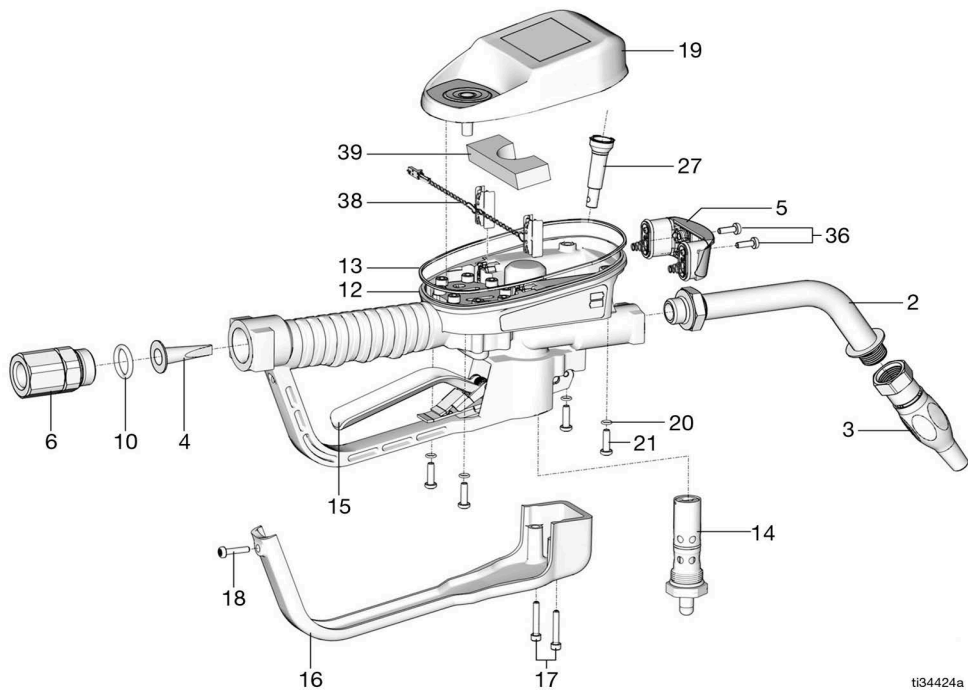
Preparation:

- Perform the **Pressure Relief Procedure**.
- Drain and dispose of fluids according to applicable regulations. Refer to the material manufacturer's Safety Data Sheet.

Dismantle and recycle:

- Remove motors, circuit boards, LCDs (liquid crystal displays), and other electronic components. Recycle according to applicable regulations.
- Do not dispose of electronic components with household or commercial waste. 
- Deliver remaining product to a recycling facility.

Parts



ti34424a

Parts

Ref	Part	Description	Qty
1		VALVE, metered dispense valve (see models page 4)	1
2		EXTENSION	
	16Y863	<i>Flex</i>	
	255194	<i>Rigid</i>	1
	255854	<i>Gear Lube</i>	
	273079	<i>Windshield washer solvent</i>	
3		NOZZLE	
	17R220	<i>Automatic, quick close</i>	1
	17T207	<i>Manual Antifreeze</i>	
	255461	<i>High Flow</i>	
	255470	<i>Gear Lube/ATF</i>	
4★★		STRAINER, mesh	1
5 †	25M593	COVER, battery	1
6		SWIVEL, straight	
	247344	<i>1/2 in. NPT</i>	1
	247345	<i>3/4 in. NPT</i>	
	24H097	<i>1/2 - 14 BSPT</i>	
	24H098	<i>1/2 - 14 BSPP</i>	
	24H099	<i>3/4 - 14 BSPT</i>	
	24H100	<i>3/4 - 14 BSPP</i>	
10★	155332	PACKING, o-ring	1
12		HOUSING, metered dispense valve	1
13	131258	PACKING, square ring	1
14	25D904	VALVE, metered dispense valve, assy	1
15	25M723	TRIGGER, assy	1
16	129830	COVER, trigger guard	1
17	16E337	SCREW, cap, sch, sst	2

Ref	Part	Description	Qty
18	131256	SCREW, mach, torx pan hd	1
19	26C484	KIT, BEZEL, electrical	1
20	131257	PACKING, o-ring	4
21	25N342	SCREW, mach, torx pan hd	4
27 ❖		ROD, trip	1
28 ❖	129623	SEAL, molded	1
33	121413	BATTERY, pkg, 4 ct, alkaline AA (not shown)	1
36 †	112380	SCREW, mach, pan hd	2
38*		Power Cable	1
39*		Foam	1

Related Kits


Ref	Part	Description
†	25D907	KIT, Battery Cover, includes 5 and 36
❖	26C394	KIT, Trip rod repair, includes 27 and 28
*	25P665	Kit, Power Cable, includes 38 and 39 For oil and ATF applications order Kit 25D906 (includes 80 mesh strainer (4) and swivel o-ring (10))
★		For anti-freeze applications order Kit 25U000 (includes 200 mesh strainer (4) and swivel o-ring (10))

Technical Specifications

SDM8 and SDM18 Metered Dispense Valve		
	US	Metric
Flow range*	0.25 to 18 gpm	0.9 to 68 lpm
<i>*Tested in 10W motor oil. Flow rates vary with fluid pressure, temperature and viscosity.</i>		
Maximum Working Pressure	1500 psi	103.4 bar
Units of Measure (factory set to quarts)	pints, quarts, gallons	liters
Weight	5.3 lb	2.4 kg
Dimensions (without extension)		
Length	13 in.	33 cm
Width	3.75 in.	9.5 cm
Height	5.75 in.	14.6 cm
Units of measure (factory set in quarts)	maximum recorded dispensed volume = 9999 units	
Inlet	1/2-14 npt or 3/4-14 npt 1/2 bspp/bspt or 3/bspp/bspt	
Outlet	3/4-16 straight thread o-ring boss	
Operating temperature range	4 °F to 158°F	-16°C to 70°C
Storage temperature range	-40°F to 158°F	-40°C to 70°C
Battery**	4AA alkaline batteries	
**Recommended battery: Energizer® Alkaline E91.		
Wetted parts	aluminum, stainless steel, PBT, nitrile rubber, zinc plated carbon steel, nickel plated carbon steel	
Fluid compatibility	antifreeze, gear oil, crankcase oil, ATF, windshield washer fluid (up to 50% alcohol-based solutions)	
Metered Dispense Valve Accuracy†	+/- 0.5 percent	
<i>† At 2.5 gpm (9.5 lpm), at 70°F (21°C), with 10-weight oil and 1 gallon dispensed. May require calibration.</i>		

California Proposition 65

CALIFORNIA RESIDENTS

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

Graco 5-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 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.

Graco 5-Year Meter and Valve Extended Warranty	
Components	Warranty Period
Structural Components	5 years
Electronics	3 years
Wear Parts - including but not limited to o-rings, seals and valves	1 year

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 one (1) year past the warranty period, or two (2) years for all other parts.

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

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

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

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

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

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

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