

TC-130 Lubricators

3A1898A

EN

Electronically controlled, single point lubricator that provides lubrication to roller and slide bearings, shaft seals and chains located in areas with considerable temperature variations or where intrinsic safety is a requirement. For professional use only.



Important Safety Instructions

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

87 psi (0.6 MPa, 6 bar) Maximum Working Pressure

| Lubricator Part No. | Replacement Canister | Application |
|---------------------|----------------------|----------------------|
| 24J981 | 24M684 | Multi EP-2 |
| 24J982 | 24M685 | Construction |
| 24J983 | 24M686 | Bearing |
| 24J984 | 24M687 | Milling |
| 24J985 | 24M688 | Food Grade H1 |
| 24J986 | 24M689 | Synthetic Industrial |
| 24J987 | 24M690 | Ultra Spindle |
| 24J988 | 24M691 | Multi EP-1 |



APPROVED

Intrinsically safe apparatus, suitable for installation in Class I, II and III, Division 1, Groups A, B, C, D, E, F and G hazardous (classified) locations and Class I, Zone 1, AEx ia, IIC, and Class II, Zone 21, T-class is T4 at $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$.



0359

I M1 Ex ia I Ma

II 2 G Ex ia IIC T4 Gb

II 2 D Ex ia IIIC T135°C Db

ZELM 11 ATEX 0468X

 $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$

EX ia I Ma








EX ia IIC T4 Gb

Ex ia IIIC T135°C Db

IECEx ZLM 11.0007 X

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, 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 | |
|--|--|
|   | FIRE AND EXPLOSION HAZARD <p>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:</p> <ul style="list-style-type: none"> • Use equipment only in well ventilated area. • Eliminate all ignition sources, such as cigarettes and portable electric lamps. • 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. • Ground all equipment in the work area. • Use only grounded hoses. • If there is static sparking or you feel a shock, stop operation immediately. Do not use equipment until you identify and correct the problem. • Keep a working fire extinguisher in the work area. |
|   | Special Conditions for Safe Use <p>Equipment must comply with the following conditions when operated in a potentially explosive atmosphere or hazardous location.</p> <ul style="list-style-type: none"> • Do not clean lubrication canister with a dry cloth. Possibility of electrostatic charge exists. |
|  | TOXIC FLUID OR FUMES HAZARD <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> • Read MSDSs to know the specific hazards of the fluids you are using. • Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines. |
|  | PRESSURIZED EQUIPMENT HAZARD <p>Fluid from the equipment, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.</p> <ul style="list-style-type: none"> • Follow the Pressure Relief Procedure before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. |

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 MSDS from distributor or retailer.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Do not puncture, open or take lubricator apart.
- 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.



PERSONAL PROTECTIVE EQUIPMENT

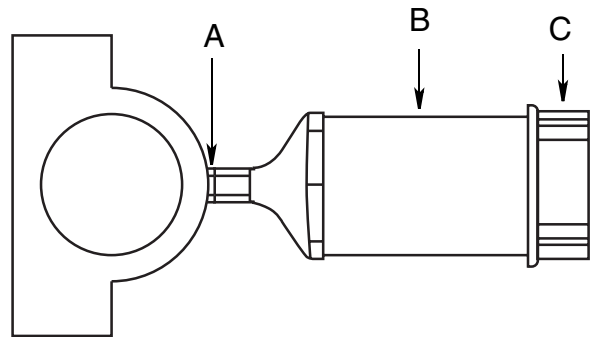
You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:

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

Pressure Relief Procedure



1. Cover lubrication point (A) and lubricator (B) with a heavy rag to absorb any fluid that may leak out while loosening the lubricator.
2. Carefully unscrew lubrication canister from the lubrication point (A).



- A Lubrication Point
- B Lubrication Canister
- C Electronic Control Cover

Component Identification

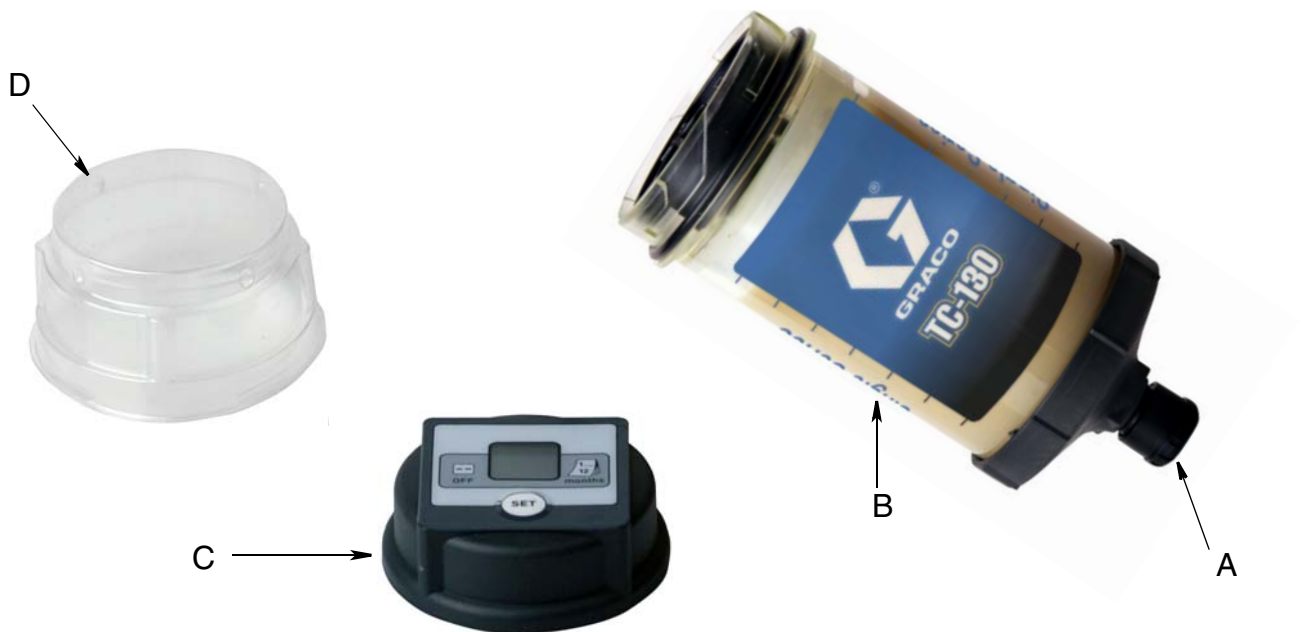


FIG. 1

- A Plug
- B Lubrication Canister
- C Reusable Electronic Control
- D Protective Cover

NOTE: Canister cannot be refilled.





Installation and Setup

Determining Correct Mounting Method

NOTE:

- Direct mounting should be used for lubrication points that are easily accessible.
 - Remote mounting is recommended if you answer **YES** to any of the questions below.
1. Is the ambient temperature at the lubrication point higher than +60°C (140°F)?
 2. Is it necessary to remove protective screens, walls or other types of protection in order to reach the lubrication point?
 3. Is the lubrication point exposed to high vibrations?
 4. Is it difficult to access the lubrication point during operation of the machine?
 5. Is the lubrication point exposed to any of the following:
 - corrosive chemicals?
 - high temperatures?
 - falling materials?

Installation Guidelines

| | | | | | |
|---|---|---|---|--|--|
|  |  |  |  | | |
| Do not puncture, open or take canister apart. Opening or breaking the canister will expose users to the fluid and gases contained inside. | | | | | |

- Before installing the lubricator, the lubrication points and any extensions must be adequately pre-lubricated with the same lubricant contained in the lubricator. A 400 gram lubricant cartridge for grease guns is available from Graco. See Parts, page 13 for a complete list of available lubricant cartridges.
- Install one lubricator per lubrication point.
- The grease nozzle of the lubricator has an *R 1/4* male thread. If your application has a different thread you may need to use a reducer.
- Do not overtighten the plastic thread of the lubricator.
- For all metal to metal connections (i.e., extensions, reducers, etc.), to prevent leakage, make sure to use LOCTITE® 243* or a similar product (semi-tight screw locking).

*Loctite® is a registered trademark of the Loctite Corporation.

Electronic Control Setup

The discharge settings can be programmed for any length of time between 1 to 12 months and the interval may be changed at any time.

The following instructions assume this is an existing installation and you are replacing the lubrication cartridge. If this is a new electronic control and a first time installation, you may skip Steps 1- 4.

Installing the Electronic Control Cover

1. **Relieve pressure,**
page 5.
2. Remove the protective plastic cover over the electronic control. Keep this cover to reinstall after setup is complete to protect the display during operation.
3. If this is an existing installation and you are replacing the lubrication cartridge turn the electronic control cover counter-clockwise, to remove the cover.
4. Turn the cover clockwise to secure it to the lubrication canister until a corner of the cover aligns with the arrow on the body.



Setting Up the Electronic Control

1. Repeatedly press the **SET** button on the electronic control cover until the number of months you are setting is displayed on the screen.



You are setting the length of time in months that you want it to take to discharge the entire 130 cc of fluid in the canister.

NOTE:

The entire volume of the lubricator will be dispensed in the number of months displayed

- (more months = slower discharge).
 - (fewer months = quicker discharge).
2. Install transparent cover over electronic control to protect it from dust and dirt.
 3. Write the installation date on the label located on the side of the lubrication canister (FIG. 2).



FIG. 2

NOTE:

- ***If at anytime during operation you need to turn the unit OFF, press the SET button repeatedly until two horizontal lines appear on the display. This indicates the control is OFF.***
- ***The discharge period can be changed at anytime to suit equipment demands or planned maintenance cycles.***
- ***The current discharge setting is always displayed.***



Graco recommends checking the counter pressure by connecting an EM-Single Point Lubricator to a pressure manometer (user supplied).

A pressure manometer is a simple device that measures pressure output. To build a pressure manometer you need a pressure gage (aa), tee fitting (bb) and stop valve (cc). FIG. 3 shows a correctly assembled pressure manometer, connected to the lubricator and a lubrication point.

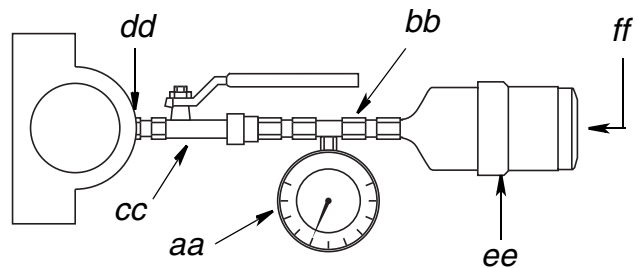


FIG. 3

| | |
|----|-----------------|
| aa | Pressure Gage |
| bb | Tee Fitting |
| cc | Stop Valve |
| dd | Lube Point |
| ee | Lubricator |
| ff | ON / OFF Switch |

Preparing for Installation

Use the following procedure to check the counter pressure of the application prior to installation.

NOTE:

- Be sure to use a lubricant cartridge that contains the same grease used in the application.
- The best measurement results are achieved during operation.

Checking the Counter Pressure

NOTE: An EM-Single Point Lubricator containing the same lubricant you are dispensing is required to perform the Counter Pressure test correctly. Contact Graco Customer Service or your local Graco distributor to order this part.

Counter Pressure Test Procedure

1. Clean the lubrication point to remove any potential contaminants.
2. Remove the plug (A).



3. Install lubricator unit into adapter (B).



4. Install reducers, extensions, grease line, etc. (if necessary).
5. Screw a pressure manometer into the lubrication point (*dd*) (FIG. 3, page 8).
6. Ensure the stop valve (*cc*) of the pressure manometer is open.
7. Attach lubricator and adapter (B) to the pressure manometer as shown in FIG. 3 and turn the switch to “ON” (*ff*).
8. Run manometer for about 20 seconds. Observe gauge and repeat this procedure until pressure registered on gauge stays constant.
9. To determine counter pressure, wait approximately 5 minutes until system has relaxed. Do one more discharge by turning unit OFF; then ON again until it dispenses for **no more than 5 seconds**.
10. Wait approximately 5 more minutes to make sure system does not lose pressure and remains constant.
11. Disconnect adapter (B) from manometer.

NOTICE

Do NOT disconnect lubricator from adapter (B). Screwing anything into end of lubricator a second time will damage self-sealing threads.

12. If counter pressure is 4 bar (58 psi) or higher, flush lubrication point with a grease gun.

If the counter pressure does not decrease you may need a different lubricant or size lubricator canister. Contact Graco Customer service for assistance.

Priming / Prefilling Fittings and Grease Lines

All accessories and grease lines must be primed/pre filled. Without this priming/pre filling, the lubricator would first have to fill the accessories with lubricant.

Example: A tube that is one meter long requires about 28 cm³ of lubricant. It would take the lubricator with a 12 month setting and an TC-130 grease canister about 3 months to fill this 1 meter tube.

FIG. 4 illustrates one way to pre fill using a grease gun to dispense the grease.



FIG. 4

Remote Mounting Installations

- Installations up to 3 ft away from the lubrication point can be mounted with flexible tubes and a bracket. Refer to FIG. 5, FIG. 6 and FIG. 7 for examples of correct remote mounting installations.
 - Remote installations require a grease line. Graco recommends using a tube with an inside diameter of at least 6 mm (1/4 inch).
1. Select a position for the lubricator that is easy to access and protected from high-pressure water jets, falling materials, corrosive chemicals and extreme temperatures. Temperature must be below +60°C (+140°F).
 2. Prime the grease line and all accessories with the same grease that is contained in the lubricator.
 3. Secure grease lines with ties or similar means.

Direct Mounting

Reducer (optional)

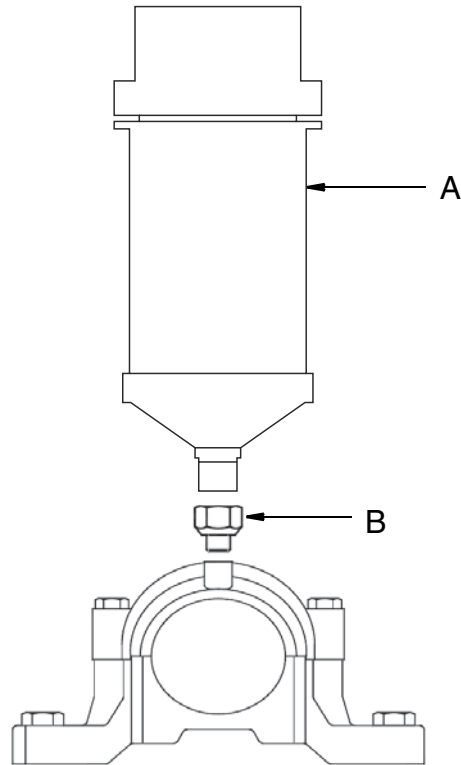


FIG. 5

A Lubrication Canister

B Reducer

With Tube and Grease

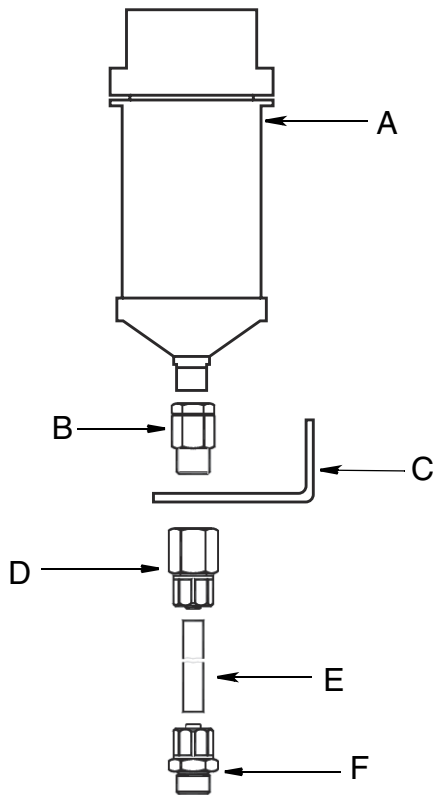


FIG. 6

- A Lubrication Canister
- B Insert for Bracket, 124088
- C Mounting Bracket, 124304
- D Tube connector (user supplied)*
- E Nylon tube (user supplied)*
- F Tube connection (User supplied)*

**Graco recommends only using tubes with an inside diameter of at least 6 mm (1/4 inch) and a maximum length of 1 meter (3 feet).*

With Tube and Oil

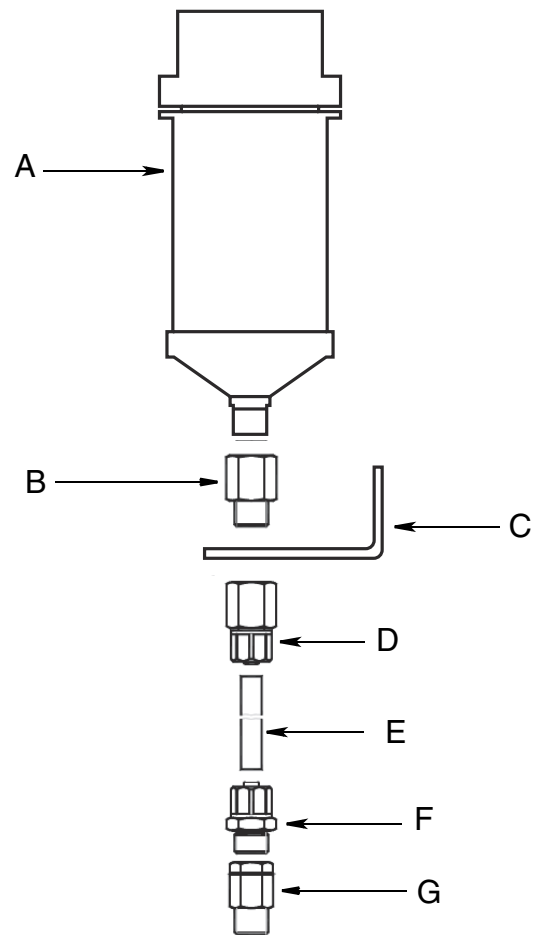


FIG. 7

- A Lubrication Canister
- B Insert for Bracket, 124088
- C Mounting Bracket, 124304
- D Tube connector (user supplied)*
- E Nylon tube (user supplied)*
- F Tube connection (user supplied)*
- G Oil throttle, 124102

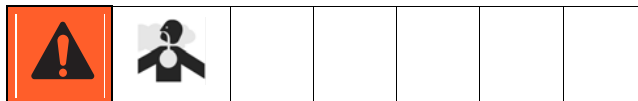
**Graco recommends only using tubes with an inside diameter of at least 6 mm (1/4 inch) and a maximum length of 1 meter (3 feet).*

Changing the Lubrication Canister

1. **Relieve pressure**, page 5.
2. Unscrew the lubrication canister and remove from grease port.
3. Remove the protective plastic cover over the electronic control. Keep this cover to reinstall after setup is complete to protect the display during operation.
4. Turn the electronic control cover counter-clockwise, to remove the cover.



Canister Disposal



1. Use a spanner wrench to separate battery from lubrication canister.
2. Dispose of the battery and lubrication canister in approved containers, and according to applicable local and state guidelines.

Read the MSDS to know the specific hazards of the fluids you are using.

Storage

When lubricators are not immediately installed, they must be stored in a dry, dust free, sunlight protected room, indoors.

Replacement Canisters

Replacement canisters are available from Graco. Refer to the chart below to select the correct canister for your application.

| Part No. | Application |
|----------|----------------------|
| 24M684 | Multi EP-2 |
| 24M685 | Construction |
| 24M686 | Bearing |
| 24M687 | Milling |
| 24M688 | Food Grade H1 |
| 24M689 | Synthetic Industrial |
| 24M690 | Ultra Spindle |
| 24M691 | Multi EP-1 |

Troubleshooting



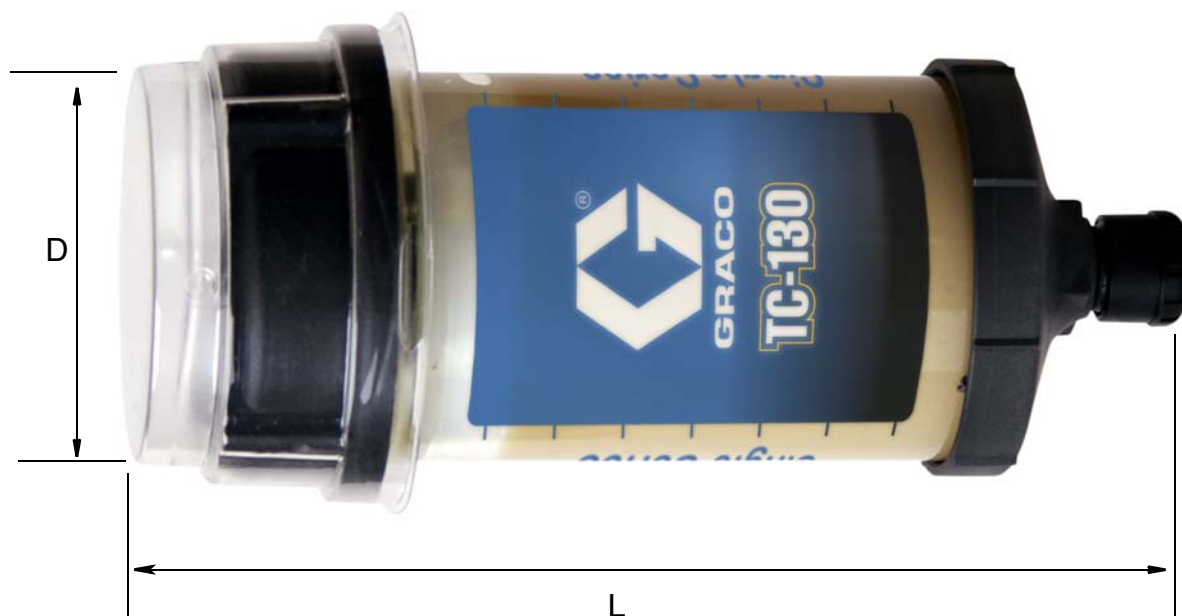
| Malfunction | Possible Cause | Solution |
|---|--|---|
| No lubrication | Canister empty | Replace canister |
| | Lubricator off | See Setting Up Electronic Control, page 7 |
| Grease spurts from lubricator when removed from service | Resistance to grease flow too high | <ul style="list-style-type: none"> Manually purge point to ensure that grease can be freely received by bearing. Reduce grease line length and/or increase line diameter |
| | | Eliminate restrictions caused by small orifice fittings |
| | | Use a higher pressure lubricator for dispensing |
| Grease dispensing too fast | Wrong month setting selected | Select a more appropriate discharge period. <ul style="list-style-type: none"> fewer months = faster discharge more months = slower discharge. See Setting Up Electronic Control, page 7. |
| | Average ambient temperature or vibration too high for activator type | Remote mount lubrication canister away from heat source |
| | For Oil Filled Lubricators Only: Oil throttle not installed | Install oil throttle |

| Malfunction | Possible Cause | Solution |
|------------------------------|---|--|
| Grease dispensing too slowly | Average ambient temperature is below -20°C (-4°F) | Remote mount lubricator in area with an ambient temperature within specified range of -20°C - +60°C (-4°F - +140°F) |
| | Resistance to grease flow too high | <ul style="list-style-type: none"> Manually purge point to ensure that grease can be freely received by bearing. Reduce grease line length and/or increase line diameter |
| | | Eliminate restrictions caused by small orifice fittings |
| | | Set discharge to a shorter period (fewer months). See Setting Up the Electronic Control, page 7 |
| | | Select grease with better pump-ability |
| | Counter pressure is too high | Check lubrication point for obstructions |

Technical Data

| | |
|--------------------------------|--|
| Housing Material | Transparent plastic |
| Lubricants | Grease and oil |
| Drive | Electrochemical |
| Grease Nozzle Thread | R1/4 male |
| Lubricant Volume | 130 cm ³ (8 in. ³) |
| Length (L) | 145 mm (5.71 in.) |
| Maximum Diameter (D) | 65 mm (2.5 in.) |
| Weight | Full = 130 g (4.6 oz) Empty = 250 g (5.3 oz) |
| Discharge Period | 1-12 months |
| Temperature Range | -20°C - +60°C (-4°F - +140°F) |
| Maximum Output Pressure | 6 bar (87 psi) |
| Storage | |
| Conditions | Dry, dust free, do not expose to direct sunlight |
| Temperature | +20°C (+68°F) |

Dimensions



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www.graco.com
2/2012

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

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Graco Information

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

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