

# Instructions – Parts List



## Mechanical Pulse Meter 308847 rev.D

### Part No. 215474

Measures in pints, quarts, and gallons

### Part No. 215475

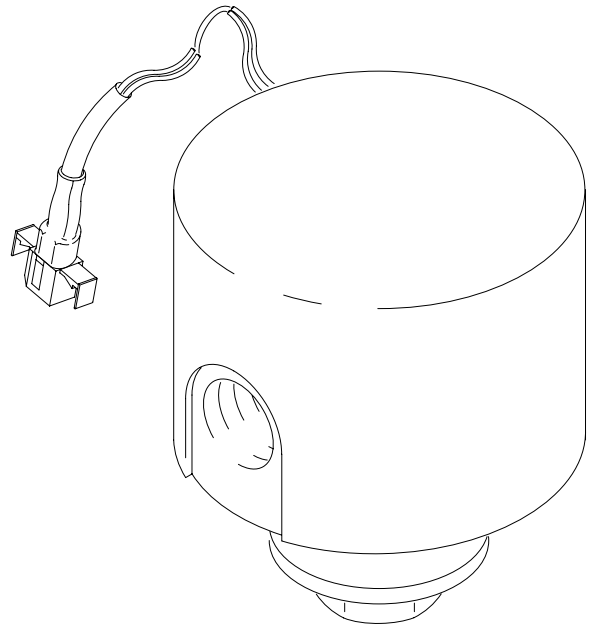
Measures in liters

For antifreeze or oil. Sends 10 pulses per quart (11 pulses per liter) of fluid that flows through the meter.



#### Read warnings and instructions.

Refer to your Horizon™ system manual 308607  
or Modular Commander system manual 307362.



# Installation

Install the pulse meter as instructed in your system manual.

## RC Filter

An RC Filter (Graco Part No. 113837) is sent with the pulse meter.

*If the meter is used with the Horizon™ system, the RC Filter must be installed as shown in the Horizon system manual 308607.*

*If the meter is used with the Modular Fluid Commander system, the RC Filter can be discarded.*

# Service

## To Inspect, Adjust, or Service Fluid Meter

Remove cover and proceed as follows:

*To inspect or replace cam wheel, pull up on cam to see if it is loose; tighten both setscrews, if necessary. Inspect cam for damage or wear. Loosen setscrews and remove cam from shaft if damaged or worn. Install new cam on shaft, then adjust micro-switch (see Fig. 1) and install cover.*

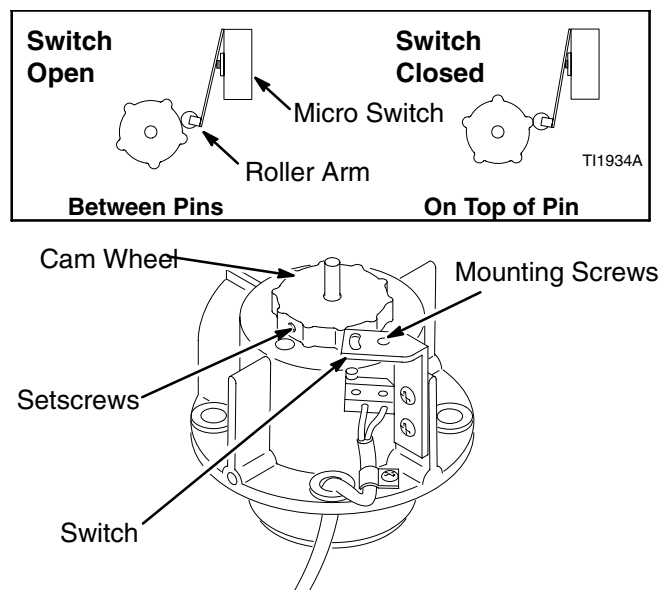


Fig. 1

TI1933A

**NOTE:** The normally open micro-switch must close each time its roller rides over cam wheel lobes. A quart meter has five lobes and a liter meter has ten lobes. To find out if micro-switch is faulty or needs adjustment, see below:

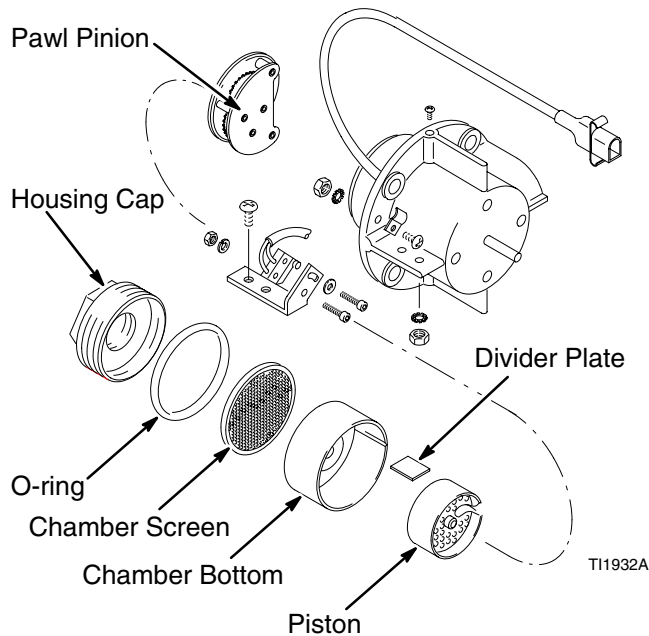
*To check for a faulty micro-switch, push switch roller arm in all the way and use an ohmmeter or other suitable instrument on soldered terminals of switch to see if switch is closed. If not closed, remove switch, install new switch, and adjust.*

*To adjust micro-switch, loosen both cam wheel set-screws. Rotate cam until switch roller rests on top of a lobe, and use an ohmmeter or other suitable instrument to see if switch is closed. If it is not closed, loosen both switch mounting screws, move switch in until it closes, rotate cam wheel until roller rests on cam between two lobes, and check with ohmmeter to see if switch is open. Tighten mounting screws where switch opens and closes properly and install cover.*

**NOTE:** Do not bend micro-switch roller arm. If switch cannot be adjusted properly, replace switch.

# Service

To clean meter fluid piston, proceed as follows (see Fig. 2):



**Fig. 2**

1. Stop pump, dispense fluid at a station supplied by this pump to relieve line pressure, close gate valve downstream of meter and disconnect electric power from Power Supply Module.
  2. Disconnect fluid hose from gate valve and meter, and meter from pump.
  3. Secure meter in a vise and screw cap out of meter housing. Carefully remove o-ring packing, using a small straight-blade screwdriver. Then remove piston and chamber assembly.
  4. Insert screwdriver into notch of chamber, pry off top, and remove inner parts.
  5. Clean all parts, including meter housing, in solvent, and blow dry. Inspect all parts for damage or wear. Especially check outer surfaces of piston and inner surfaces of chamber bottom for pitting or scoring, and replace these parts, if necessary, with a complete meter assembly.
- NOTE:** Be careful not to damage cam wheel or micro-switch, or get solvent in switch when servicing fluid piston.
6. To assemble, insert piston into chamber bottom so the divider plate is centered in slot of piston. Turn the pawl pinion on gear box so the notch in small disk on opposite side of gear box is centered on the groove in the larger disk. Align the divider plate in chamber bottom with groove in bottom of gear box and snap together.
  7. Place chamber, gears first, and piston assembly in meter housing and turn it to be sure gears mesh. When properly engaged, meter cam wheel will turn as chamber and piston assembly turns.
  8. With chamber screen and o-ring in place, screw cap tightly into meter housing, install cover, and reinstall meter.
  9. Start pump and dispense fluid to test meter and system operation, and to purge all air from system.

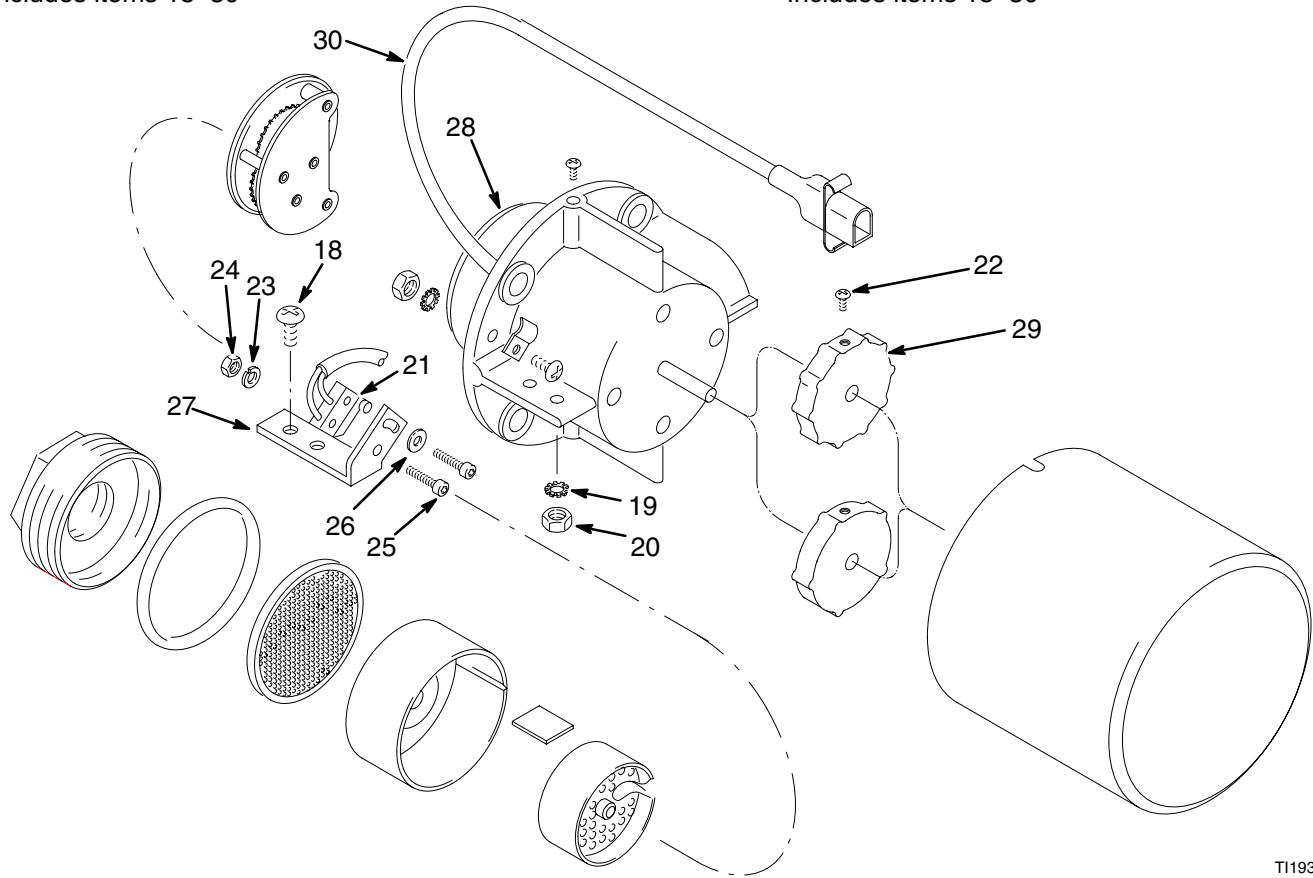
# Parts

## Model 215475 Fluid Meter (Metric)

Includes items 18–30

## Model 215474 Fluid Meter (U.S.)

Includes items 18–30



TI1931A

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
18	101791	SCREW	2	28		METER, liquid (U.S. quart) <i>Cannot be ordered separately</i>	1
19	101792	LOCKWASHER	2			METER, liquid (liter) <i>Cannot be ordered separately</i>	1
20	101965	LOCKNUT	2	29	176794	CAM, meter <i>Model 215474 only</i>	1
21	102489	SWITCH, sensitive (Micro-switch)	1		176796	CAM, meter <i>Model 215475 only</i>	1
22	102491	SETSCREW, hex, socket	2	30	215473	HARNESS, wiring	1
23	102493	NUT, plain, hex	2				
24	102494	LOCKWASHER	2				
25	103178	SCREW, mach, pnhd	2				
26	157229	WASHER, flat	1				
27	169509	BRACKET, switch	1				

# Technical Data

Category	Data
Electrical Input Voltage	24 VDC Maximum
Signal Output	0 VDC (OFF) 24 VDC Maximum (ON)
Maximum Fluid Flow	4 gpm (15 liter/min.)
Maximum Operating Pressure	1000 psi (7 MPa, 69 bar)
Inlet/Outlet	1/2 npt
Wiring Gauge Required	18 AWG 2 wire / 90 V
Pulses	5 pulses per pint 10 pulses per quart (11 pulses per liter)

# Graco Standard Warranty

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

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

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

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

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

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

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

## **FOR GRACO CANADA CUSTOMERS**

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

# Graco Information

**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**

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

**Sales Offices:** Minneapolis, Detroit

**International Offices:** Belgium, Korea, Hong Kong, Japan

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**

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

PRINTED IN USA 308847 02/1998, Revised 02/2002