



**GREAT PLAINS INDUSTRIES, INC.**

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**LM50PB / LM50PN (REED/HALL EFFECT)  
POSITIVE DISPLACEMENT FLOWMETERS  
INSTRUCTION MANUAL**



The GPI quality Positive displacement flowmeter has incorporated the oval rotor principal into its design. This has proven to be a highly reliable and highly accurate method of measuring flow, providing exceptional repeatability and high accuracy.

This meter is designed for in line use with Engine Oil & ATF up to a maximum viscosity of SAE 140, Diesel & Water Glycol mixtures with a maximum water content of less than 50%.

Please read and retain this instruction manual to assist you in the operation and maintenance of this quality product.

**GENERAL INFORMATION**

This manual assists you in operating and maintaining your new positive displacement flowmeter. The information contained will help you ensure many years of dependable performance and trouble free operation.

Please take a few moments to read through this manual before installing and operating your new meter. If you experience problems with this product, refer to the Maintenance and Trouble Shooting sections of this manual. If you require further assistance please contact your local GPI Distributor.



**IMPORTANT INFORMATION**

GPI recommends, that if you are using your meter as an in-line application you should install a filter before the inlet of the meter. Contact your local GPI distributor for further details.

**INSTALLATION**

- 1) Do not over tighten connections.
- 2) Ensure the meter is connected so as the fluid is flowing through the meter in the correct direction (refer to Fig 3).



**CAUTION**

Ensure the fluid supply to the meter is disconnected and the line pressure is released before disassembly.

**METER DISASSEMBLY**

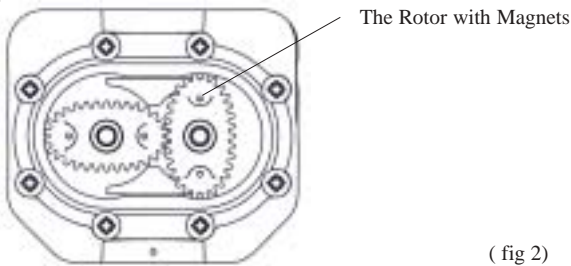
**Note:** The electronic computer circuit board is non-repairable. The meter will need to be replaced if found to be damaged or faulty.

- 1) Remove the 8 x philips head screws (1) from the meter cover.
- 2) Remove the meter cover (2) and o'ring (3).
- 3) Remove both rotors (4).
- 4) Clean and inspect all parts. Replace any suspect, worn or damaged components.

**METER REASSEMBLY**

**NOTE:** Ensure the rotor with the magnets is assembled on the opposite side to the batteries. The magnets in the rotor must face towards the electronic display .

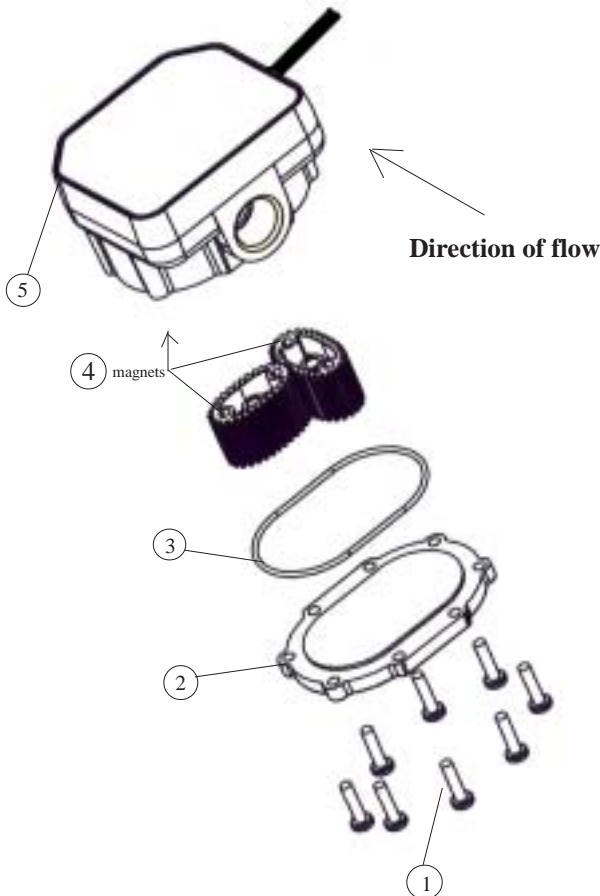
- 1) Replace both rotors (4) so as they are at 90° to each other. (see fig 2). Check the rotor rotation by turning either of the rotors. If the rotors are not in mesh correctly or do not rotate freely remove one of the rotors and replace it correctly at 90° to the other rotor. Re-check the operation of the rotors.
- 2) Lightly grease the o'ring (3) and place it on the meter body.
- 3) Clean the meter cover plate (2) and place it on the body. Take care not to damage the o'ring (3).



(fig 2)

- 4) Install the 8 screws (1) and tighten in a diagonal pattern to 1nm (0.73 ft.lb). Visual check the cap has been pulled down evenly.
- 5) Test the meter by turning the rotors with a finger or by applying low air pressure (No more than a good breath) to the inlet port of the meter. This will confirm the meter is operating correctly.

## PARTS DIAGRAM



(Fig3)

## REMOVE THE CIRCUIT BOARD

- 1) Remove the decal from the meter face.
- 2) Remove the 4 screws holding the meter cover plate.
- 3) Unscrew the cable grommet and remove the circuit board from the meter body.

## REPLACE THE CIRCUIT BOARD

- 1) Thread the cable on your new circuit board through the cable opening and grommet inside the meter housing and carefully place your new circuit board into position.

**Note: Be careful not to force or damage the circuit board.**

- 2) Carefully place the cover plate over the circuit board and screw the coverplate into position.
- 3) Fit a new facia cover to the meter face
- 4) Slide the cable grommet nut over the cable and tighten to secure the cable.

## CIRCUIT BOARD CONNECTIONS

The following are the wiring connections for the LM50PB and LM50PN pulses meters. Note: the meter can be wired using the Reed switch sensor, the Hall Effect sensor or both Reed and Hall Effect sensors. For electrical specifications on the Reed and Hall Effect switches refer to the meter specifications on Page 4.

### Reed switch wiring;

Green Wire - Not polarity sensitive  
Yellow Wire - Not polarity sensitive

### Hall Effect switch wiring;

Red Wire - Sensor Power (+)  
Black Wire - Sensor Negative (-)  
White Wire - Sensor Signal

## PARTS LIST

ITEM	PART NO	No. off	ORDER FOR REPLACEMENT		DESCRIPTION
			PART/SET		
1	N65	8		LM50K02	Screw set
2	IM011	1			Meter cover plate set
3	BS035	1		LM50K01	O'ring
4	IM020	2			Rotor set
5		1	N/A		Meter body
6	IM040RHA	1	LM50K04, includes item 7		Reed/Hall Effect Circuit board
7	IM057	1	N/A		Decal (Not shown)
8	N87	4	N/A		Face plate screw set (not shown)
9	IM685	1	LM50K05		Cable grommet set (not Shown)

**NOTES:**

## TROUBLE SHOOTING GUIDE

TROUBLE	CAUSE	REMEDY
No fluid passing through the meter	a) Dirt particles jamming the rotors	a) Remove rotors and remove any dirt or contamination
The meter is not registering fluid output	a) No signal from rotor the magnets	a) Check magnets and replace rotors if required
	b) No signal from rotor the magnets	b) Check magnets and replace rotors if required
	c) Damaged computer ( reed switch unit )	c) Replace meter
Meter not accurate	a) Flowrate outside recommended flow rate	a) Adjust flowrate to

## SPECIFICATIONS

Accuracy	+ / - 0.5% of Reading
Type	Oval Gear
"K" Factor	112 pulses per Litre (424 pulses per US gallon)
Flow rate	1 Ltr -30 Ltr (0.26 - 7.8 US Gal) per minute
Voltage - Hall Effect	4.5 to 24 volts DC, maximum current draw 25mA, Open Collector
Voltage - Reed Sw itch	5 to 30 volts DC
Maximum Pressure	6900kPa / 1000psi / 69 Bar
Suitable for use with :	Engine Oil, Diesel Oil, Automatic Transmission Fluid (Maximum Viscosity SAE140), Ethelene Glycol Based Anti-Freeze / Anti-Boil mixture (Max 50% water)
Wetted Materials	Acetal, Aluminium, Steel, Nitrile Rubber
Connections	1/2" BSP or 1/2" NPT
Maximum Temperature	55 deg C (131 deg F)
Minimum Temperature	-5 deg C ( 23 deg F)

Great Plains Industries, Inc. 5252 E. 36<sup>th</sup> Street North, Wichita, KS USA 67220-3205, hereby provides a limited warranty against defects in material and workmanship on all products manufactured by Great Plains Industries, Inc. This product includes a 1 year warranty. Manufacturer's sole obligation under the foregoing warranties will be limited to either, at Manufacturer's option, replacing or repairing defective Goods (subject to limitations hereinafter provided) or refunding the purchase price for such Goods theretofore paid by the Buyer, and Buyer's exclusive remedy for breach of any such warranties will be enforcement of such obligations of Manufacturer. The warranty shall extend to the purchaser of this product and to any person to whom such product is transferred during the warranty period.

The warranty period shall begin on the date of manufacture or on the date of purchase with an original sales receipt. This warranty shall not apply if:

- A. the product has been altered or modified outside the warrantor's duly appointed representative;
- B. the product has been subjected to neglect, misuse, abuse or damage or has been installed or operated other than in accordance with the manufacturer's operating instructions.

To make a claim against this warranty, contact the GPI Customer Service Department at 316-686-7361 or 888-996-3837. Or by mail at:

Great Plains Industries, Inc.  
5252 E. 36<sup>th</sup> St. North  
Wichita, KS, USA 67220-3205

The company shall, notify the customer to either send the product, transportation prepaid, to the company at its office in Wichita, Kansas, or to a duly authorized service center. The company shall perform all obligations imposed on it by the terms of this warranty within 60 days of receipt of the defective product.

GREAT PLAINS INDUSTRIES, INC., EXCLUDES LIABILITY UNDER THIS WARRANTY FOR DIRECT, INDIRECT, INCIDENTAL AND CONSEQUENTIAL DAMAGES INCURRED IN THE USE OR LOSS OF USE OF THE PRODUCT WARRANTED HEREUNDER.

The company herewith expressly disclaims any warranty of merchantability or fitness for any particular purpose other than for which it was designed.

This warranty gives you specific rights and you may also have other rights which vary from U.S. state to U.S. state.

Note: In compliance with MAGNUSON MOSS CONSUMER WARRANTY ACT - Part 702 (governs the resale availability of the warranty terms).

