

OGM-SERIES OVAL GEAR FLOWMETER

INSTALLATION & INSTRUCTIONS

OGM-25/40/50 OGM-25E/40E/50E
 OGM-25P/40P/50P OGM-25S-SS 304
 OGM-E-25S-SS 304



OGM- machinery and electronic series aluminum oval gear meter has the ability to handle a wide range of fluid viscosities with exceptional levels of repeatability and durability, applying in the petroleum, chemical, food industry, etc.

I. MAIN FEATURES:

- The OGM Series oval rotor positive displacement flow meters will measure your high or varying viscosity liquids.
- The body takes high pressures and is available in aluminum PPS. or stainless steel.
- The meter can be supplied with a low cost mechanical totaliser or an LCD display mounted on the top of the flow meter.
- We have a range of instruments to suit all your requirements.
- The rotors are either ryton (PPS) or stainless steel making it suitable for a wide range of fuels, oils and chemicals.
- The OGM Series operates on the oval rotor principle. Two oval rotors rotate on stainless steel shafts and sweep the measuring chamber. Each revolution of the rotors measures a precise volume of liquid through the meter. This volume is independent of the viscosity and density of your liquid.
- You can mount the flow meter either horizontally or vertically and can use it in either pumped or gravity feed applications. An upstream filter is recommended to prevent particles damaging your flow meter.

II. TECHNICAL SPECIFICATION:

Model	OGM-25 OGM-25S-SS304	OGM-40	OGM-50	OGM-25E OGM-25P OGM-E-25S-SS304	OGM-40E OGM-40P	OGM-50E OGM-50P
Size	25MM	40 MM	50MM	25MM	40 MM	50MM
Min.Flow Rate	20L/min	25L/min	30L/min	20L/min	25L/min	30L/min
Max.Flow Rate	120L/min	250L/min	300 L/min	120L/min	250L/min	300 L/min
Accuracy	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
Repeatability	≤0.03%	≤0.03%	≤0.03%	≤0.03%	≤0.03%	≤0.03%
Max.viscosity	1000CPS	1000CPS	1000CPS	1000CPS	1000CPS	1000CPS
Working Pressure	0.3Mpa	0.3Mpa	0.3Mpa	0.3Mpa	0.3Mpa	0.3Mpa

III. WORKING PRINCIPLE DIAGRAM:

Oval gear flow meter measurement part is mainly composed of two pitch elliptical gear and its housing component. According to the gear turned laps to calculate the volume of liquid flow.

IV. OPERATION MANUAL OF ELECTRONIC OGM-E FLOWMETER:

- 1.Start: Pressing the "SETUP" button.
- 2.The flow meter will closed without any operation within 8 minutes.
- 3.Clear Date: Press "CLEAR" butt on when the flow meter works, the current data can be deleted.
- 4.Check total: Press "TOTAL" button, on the second row of the screen will show the letter of "total" .the number under the "total" Letter is totalize. The totalize can not be reset.
- 5.Clear the partial Total: Press "TOTAL" button 2 seconds, it will show the flash number, then press the "CLEAR" button to delete the partial total.
6. The machinery OGM flow meter has the total reset function.

V. PARAMETER SETTING:

By Pressing the "SETUP" button 10 seconds while the flow meter is in standby, Five-digit number will show on the screen, the last number flash, Press "SETUP" button ,the flash number moves. Press "Clear " button means "+", Press "TOTAL" button means "-."The output decrease while the parameter increase, and vice versa. Stay 5 Seconds, end setting and return to standby. After reset the parameter, the meter will use the new parameter next time. The Parameter is from 2500-3000.

VI. THE UNIT SETTING

By pressing the "SETUP" button 10 seconds, while the flow meter is in standby, Five-digit number will show on the screen, the last number flash, then press the " SETUP" button 5 times, the display will show "UNIT", Press "CLEAR" or "TOTAL" to set the unit. "US-GA-L-KG". Press "SETUP" button 2 times or no operation for 5 seconds, exit the setting.

VII. MAINTENANCE

When low battery, the battery sign will show on the LCD display. Change old battery to avoid damage to the flow meter. The battery can be used for 2 years, but we suggest user to change the battery once a year. Check the electrode and clear the cross ion. If the flow meter is not used for long time, It is suggested to pick out the battery.



Picture4



picture 5

2. The direction of the flow meter installation should be the same as shown in the direction of the arrow with the liquid flow to the meter shell; installation position should pay attention to the ease of reading.
3. The flow meter should be installed on the output end of the pump, if installed in the suction side, the pressure loss of the flow meter filter will lead to the increase of the pump negative suction pressure, the liquid at the outflow of the pump shaft also causes the flow meter error increases, the flange of the pump suction side should be designed to prevent leakage, otherwise, it can also cause the error increases to the flow meter.
4. 5. A filter should be installed at the front of the flow meter, to prevent greater than 0.2 mm tiny particles blocking the flow meter, and the filter should be easy to clean.
5. The flow meter is preferably mounted in front of the one-way valve, only unidirectional flow of the liquid within the pipe, to prevent the reverse rotation of the counting gear.
6. The flow meter recommendations shown in Picture 5, the bypass valve can be installed in the vertical or the other direction of the pipeline, from the top down, from bottom to top, right to left, from left to right.
7. When using the flow meter, make sure the internal filled with liquid, if the liquid to be measured mixed with a gas, otherwise the measured gas and liquid mixing volume, it will cause the measurement in an error accuracy, if the liquid is mixed with the gas, an oil and gas separator must be installed.
8. When the flow rate traffic exceeds the specified maximum flow, the speed of the oval gear is increased and wear increases, and the pressure loss is increased dramatically, and so it should be avoided, though still measured at below the minimum flow, the error increases, the viscosity of a liquid flow meter 10·Pa.s start the flow of about 1% of the maximum flow rate.
9. When each flow meter is out the factory, were used on the 7th mechanical oil calibration under ambient conditions, the viscosity of the oil due to room temperature changes, and about 13·Pa.s at room temperature. Theoretical volumetric flow meter measuring the viscosity of the liquid changes, does not affect the measurement accuracy, because the measurement of the amount of leakage is generated in the gap, the gap exists between the inner wall and the oval gear influenced by the viscosity of the liquid varies, but actually in a small flow liquid viscosity greater impact.
10. When used for measuring the high-viscosity liquid, generally the liquid heating, reduce viscosity, and then flow within the duct, when the stop using the flow meter, because the liquid inside cooling becomes viscous. If enabled, the flow meter external steam liquid shall get heat until the liquid viscosity has been reduced in order to use the flow meter otherwise the mucus will bite transmission parts and cause damage.
11. The measured liquid temperature should not be higher than the predetermined value, if it exceed and it will cause jammed and can not move, the liquid temperature change will cause additional error of the viscosity affect the addition, the temperature increase will cause the increase in volume of the crescent-shaped space so that the flow will become slowly.
12. Pressure loss proportional to the square of the liquid flow, the liquid viscosity increases, the pressure loss is also increased.

IX.INSPECTION & ELIMINATION OF THE FAULT

Phenomenon	Reason	Measurement	Remarks	
The failure of the oval gear rotation	1.Installation is jammed when the gear impurities fall into the flow meter	Reinstall removed after cleaning, installation follows the mark on the oval gear.	An annotated mark installed oval gear	
	2.The measured liquid impure, filter clogging impurities	Cleaning filter to remove impurities		
	3.The measured pressure of the liquid is too small	Increase the pressure		
Oval gear rotates, but the word wheel fixed	1.The drive wheel stuck	Remove impurities, if cause gear damage and replace the gear		
Gear turns, abnormal noise	1.Exceeding the specified value due to the over run of the flow rate	Adjust the flow rate to the specified value		
The counter-turning of the word wheel	1.The flow direction of the liquid is the opposite way to the arrow of the meter shell	Disassemble the flow meter as the arrow direction		
The error is too large	Negative difference	1. The flow is too small and below the specified value	Change a smaller diameter flow meter	
		2.Bypass leak	Check the bypass to prevent a leak	
		3. Useful lives for too long, oval gear wear serious	Adjust the oval gear according to the change range of the error data	
	Positive difference	4.Liquid containing gas	An oil and gas separator should be installed at the front of the flow meter to prevent the leak of the joint of the flange	
		5. The Liquid viscosity has a large difference with the testing liquid viscosity.	Choose a proper liquid viscosity	Negotiate with the Manufacturer