PROBLEM	CAUSE	SOLUTIONS
Unsatisfactory Precision	Incorrect setting	Repeat setting
	Measurement chamber dirty or clogged	Clean measurement chamber
	Presence of air in liquid	Identify and eliminate leaks in suction lines or add foot valve
Low flow	Measurement chamber dirty or clogged	Clean measurement chamber
	Filter dirty of clogged	Clean filter

MAINTENANCE

The liter-counter requires on routine maintenance if it has been installed and used correctly. Check the filtration performed upstream from the liter-counter. Inadequate filtration can clog or wear out the measurement chamber and compromise precision. If this ever happens, have the measurement chamber disassembled by a qualified technician after first making sure that all the liquid has been drained from the liter-counter and the tubing connected. Whenever the liter-counter is disassembled and opened, make sure that the gear teeth mesh perfectly during reassembly operations in order to prevent damage or breakage. Reset the liter-counter after the cleaning operations or any replacement of obstructions.Remove the liter-counter from the system before proceeding to disassembly.

IMPORTANT!

READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL CAREFULLY. THE INCORRECT USE OR INSTALLATION OF THE LITER-COUNTER CAN CAUSE SERIOUS DAMAGE TO PROPERTY AND / OR RISK OF INJURY.

OPERATING INSTRUCTION

MD 4

GENERAL DATA

The MD 4 is an oscillating disk mechanical volumetric liter-counter designed and constructed for precise measurements during the transfer of Diesel oil and any other liquids compatible with the construction material.

TECHNICAL DATA

Mechanism	Oscillating disk	
Flow	20-80	liters/min
Work pressure	0.1-3.5	bar
Operation temperature	-10--+50	℃
Flow resistance(at 80 l/min of Diesel oil)	0.3	bar
Precision after setting	± 1	%
Partial indicator	max 9999	liters
Total indicator	max 99999999	liters
Connections	1″G(BSP)	
Weight	2	kg

USE

The liter-counter can be used in both gravitational systems and circuits with motor pumps or manual circuits equipped with a by-pass. Following installation and setting, the liter-counter is ready for use. In order to set the partial counter to zero, rotate the reset knob .clockwise, whereas the total indicator cannot be set to zero. We discourage using the MD 4 on surfaces exposed to direct sunlight where temperatures may exceed the maximum recommended values(+50℃) . In order to ensure ideal operation, we recommend using the liter-counterIn combination with another filter.

INSTALLATION

Constructed for operation at a maximum pressure of 3.5bar, the liter-counter must be mounted in such way that no unfiltered liquid or air is sucked.The two directional arrows in relief on the rear part of the liter-counter indicate the direction that the flow of liquid to be transferred must follow.The inlet can be rotated to the desired position after first unscrewing the retaining screws.We recommend installing an overpressure valve set to 4 bar in the pump for the purpose of preventing overpressure in the system.In the case of gravitational systems (without pumps), there must be a difference in height of at least 1 meter between the outlet of the tank and the PG 121 Or PG 120 type delivery gun to ensure optimum operation.

SETTING

The liter-counter has been set in the factory to a pressure of 1.5 bar while transferring Diesel oil. Given that the operating pressure is a fundamental factor for the measurement mechanism, we recommend repeating the setting operation every time different pressures and / or liquids are used.The liter-counter must be reset every time it is disassembled for maintenance or the use of liquids other than Diesel oil.

INSTRUCTIONS FOR SETTING

1. Unscrew the setting plug.
2. Stop the flow by closing the delivery gun without stopping the pump.
3. Set the partial indicator to zero.
4. Perform the delivery at the flow rate for which the finest precision is required by transferring into a container calibrated for no less than 20 liters. Compare the value indicated on the partial/total counter with the value of the container (the real value). Turn the adjustment screw clockwise if the value is lower and counter-clockwise if the value is higher.
5. repeat operation 4 until the measurement is satisfactory.
6. Re-screw the setting plug back in place.