

IM012M MECHANICAL INLINE

POSITIVE DISPLACEMENT FLOWMETER

INSTRUCTION MANUAL

INTRODUCTION

The IM012M has been designed specifically to dispense lubricating oils, diesel and kerosene. This high pressure, positive displacement-type meter is suitable for all in-line and end-of-line applications and features a rugged and robust register with Total and re-settable Totals.

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

GENERAL INFORMATION

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 IM012M Distributor.



IMPORTANT INFORMATION

Macnaught 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 distributor for further details.

INSTALLATION

1) Do not over tighten connections.

NOTE: If using in an in line application open the valve slowly to prevent over spinning the rotors.

OPERATION

RESET BUTTON

The **RESET** button allows you to reset the Reset Total to zero.



CAUTION

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

REGISTER AND GEAR TRAIN REMOVAL

- 1) Remove the protective shroud (1).
- 2) Peel off the meter faceplate (2).
- 3) Remove the 4 x Philips head screws (3).
- 4) Remove the register assembly (4).



5) Take careful note of the orientation of the gears on the gear train, then carefully remove the gears

Note: Assembly is a reversal of the assembly procedure.

6) Replace the gears (7,6,5,8) litre and quart versions and (3x5,7,8,9) gallon version.

Note: The register (4) is not repairable and will need to be replaced if faulty or damaged.

7) Replace the register (4) and screws (3).

8) Fit a new faceplate (2) onto the register face (4).

9) Re-fit the protective shroud (1).

ROTOR REPLACEMENT

1) Remove the 8 x Philips head screws (14) from the underside of the meter.

2) Remove the cover plate (13) and O-ring (12).

3) Remove both rotors (11) and inspect for any signs of wear or damage. (Replace if worn or damaged).

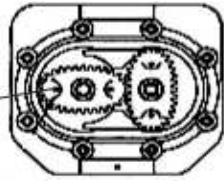
NOTE: Ensure the rotor with the magnets is assembled on the correct side (Ref fig 2).

The magnets in the rotor must face towards the mechanical display.

1) Replace both rotors (11) positioned 90 Deg to each other. (see fig 2). Check rotation by turning the rotors. If the rotors do not rotate freely remove one of the rotors and replace it correctly at 90 Deg to the other rotor. Re-check the operation of the rotors.

2) Lightly grease the O-ring (12) and place it on the meter body.

3) Clean the meter cover plate (13) and place it on the body. Take care not to damage the o'ring (12).



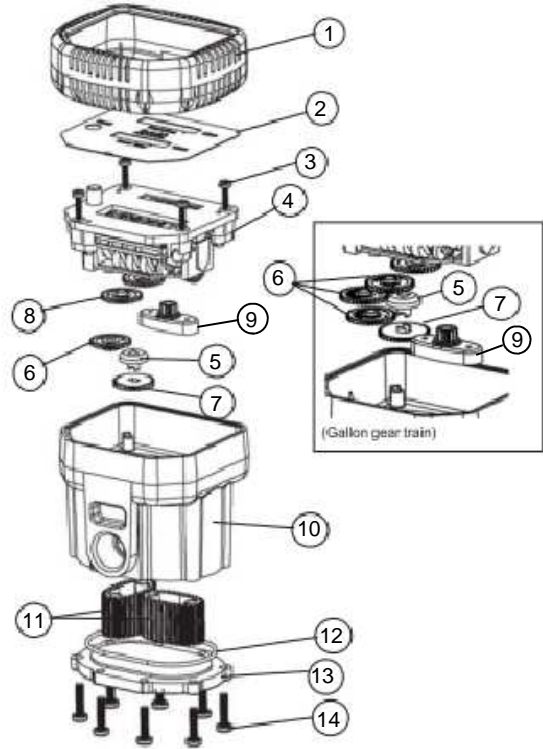
The Rotor with Magnets

(fig 2)

4) Install the 8 screws (14) 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



PARTS LIST

Order for replacement			
Item	No. off	Part or Set	Description
1	1	IM071BKS = (BLACK)	Protector shroud set
1	1	IM071BUS = (BLUE)	Protector shroud set
1	1	n/a	Protector shroud set
1	1	n/a	Protector shroud set
1	1	n/a	Protector shroud set
2	1	IM166Ls (Litre)	Face plate
2	1	IM166Qs (Quart)	Face plate
2	1	IM166GS (Gallon)	Face plate
3	4	n/a	Screw set
4		IM168As (Litre / Quart)	Register assembly
4	1	IM168A-Gs (Gallon)	Register assembly
5			Bevel gear
6	1	IM176s (LITRE) incl 5,6,7,8,9	Gear set - Litres
7	1	IM177s (QUART) incl 5,6,7,8,9	Gear - Quarts
8	1	IM178s (Gallon) incl 3x5, 7,8,9	Gear - Gallons
9	1		Magnet housing assy
10	1	n/a - new meter required	Meter body
11	2	IM181s - incl item 14	Rotor Set
12	1		O'ring (BS035)
13	1	n/a	Cover plate
14	8	n/a	screw set (M4 x16)

TROUBLE SHOOTING GUIDE

TROUBLE	CAUSE	REMEDY
Meter not accurate	Flow rate not correct	Adjust flow rate to correct rate (1-30 Ltr/min)
No fluid passing through the meter	b) Dirt particles jamming the rotors	b) Dismantle meter assembly and clean (refer to meter disassembly)
	b) Dirt particles jamming the rotors	
The meter is not registering fluid output	a) Damaged register assembly (4)	a) Replace register assembly
	b) Damaged gear or gears (5,6,7,8)	b) Replace complete gear set.
Oil leak from coverplate (13)	Damaged o'rings (12)	Replace damaged o'ring



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SPECIFICATIONS

Wetted components:	Acetal, aluminium, nitrile (NBR), mild steel
*Accuracy:	+/- 1%
Flow Range:	1-30 litres/minute (0.26-8 US gal/min)
Max. working pressure:	6900 kPa / 1000 psi / 69 Bar
Inlet thread:	½" BSPT or NPT (F)
Outlet thread:	½" BSPT or NPT (F)
Operating temperature:	-10°C (14°F) to +55°C (131°F)
Weight (approx):	490g (1.08lbs)

* When tested with lubrication oil @ 25°C. Allowances should be made for changes to these parameters.