

Technical Data

Mechanical BiRotor

B037 [1^{1/2}"



General

The BiRotor Meter is a positive displacement meter utilized in the most demanding applications requiring accuracy, long life and ruggedness.

The Mechanical BiRotor Meter utilizes the exclusive BiRotor principle. There are no sliding, oscillating, or reciprocating

Accuracy

The Mechanical BiRotor's accuracy is attained by the unique BiRotor design which features two finely balanced rotors. An adjuster, incorporated on the meter, is used to assure maximum accuracy within the meter's flow range.

Dependability

There is no metal to metal contact between the rotors and the measurement chamber. The meter is therefore extremely durable. The rotors, bearings and timing gears are the only moving parts. Maintenance requirements are the lowest in the industry.

Affordability

In spite of its superior performance, Brodie can offer the Mechanical BiRotor at a very competitive price.

Principle of Operation

The two spiral fluted rotors within the measuring unit are dynamically balanced to minimize bearing wear. (Refer to Figure 1). As the product enters the intake of the measuring unit, the two rotors divide the product into precise segments of volume momentarily and then return these segments to the outlet of the measuring unit. During this "liquid transition", the rotation of the two rotors is directly proportional to the flow rate of the liquid thruput. A gear train located outside the measuring unit chamber conveys mechanical rotation of the rotors to a mechanical or electronic register for totalization of liquid thruput.

Design Features

- Extremely long service life
- Economical low maintenance
- Two simple rotors with no metal-to-metal contact are the only moving parts in the measuring chamber.
- No oscillating, reciprocating or sliding parts or cranks to wear or disturb the balanced rotary.
- Conforms with International standards of flowmeter accuracy.

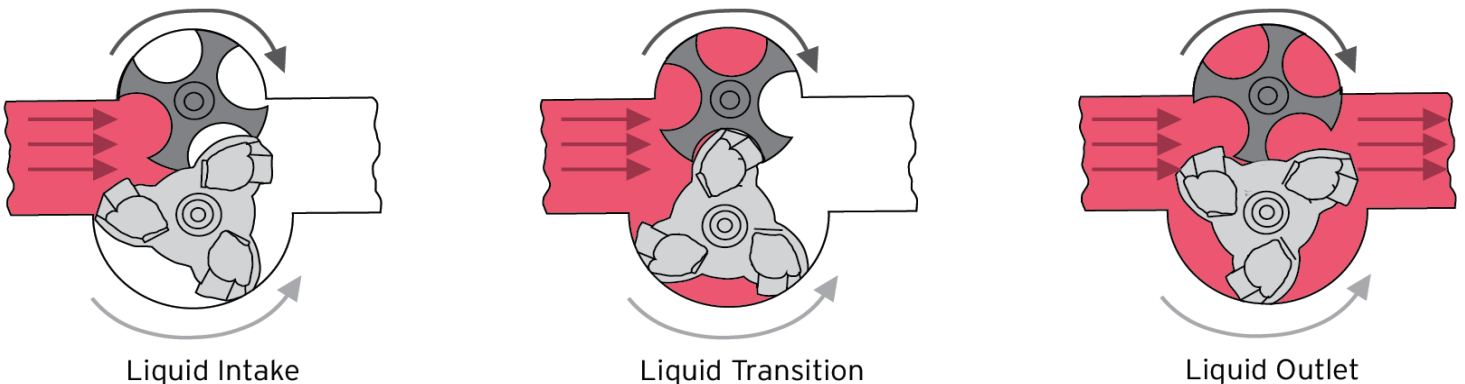


Figure 1 - BiRotor Meter Principle of Operation Diagram

Accessories

- Preset Counters
- Control Valves
- Large Numerical Registers
- Strainers
- Pulse Transmitters
- Ticket Printers

Materials of Construction

- Housing: Ductile Iron (Model B037)
- Body and End Plates: Aluminum
- Rotors: Aluminum with E.T.D. 150 Shaft
- Timing Gears: Stainless Steel
- Drive Gears: Celcon Acetal Copolymer Resin and Stainless Steel
- Bushings: Carbon Filled Teflon - B037
- Ball Bearings: Stainless Steel - B037

Flow Ranges

Meter Model B037		Viscosity							
		1.25 cSt.		6.25 cSt.		25 cSt.		125 cSt.	
		Accuracy		Accuracy		Accuracy		Accuracy	
		+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%	+/- 0.25%	+/- 0.50%
GPM	60	12	C/F	6	C/F	1.2	C/F	0.6	C/F
LPM	227	15	C/F	23	C/F	5	C/F	3	C/F
BPH	85	17	C/F	9	C/F	2	C/F	1	C/F

Max Working Pressure [at 100 F, 38 C]

Flange Ratings	PSI	bar
ANSI 1-1/2" NPT	350	24.1
DIN C/F	C/F	C/F

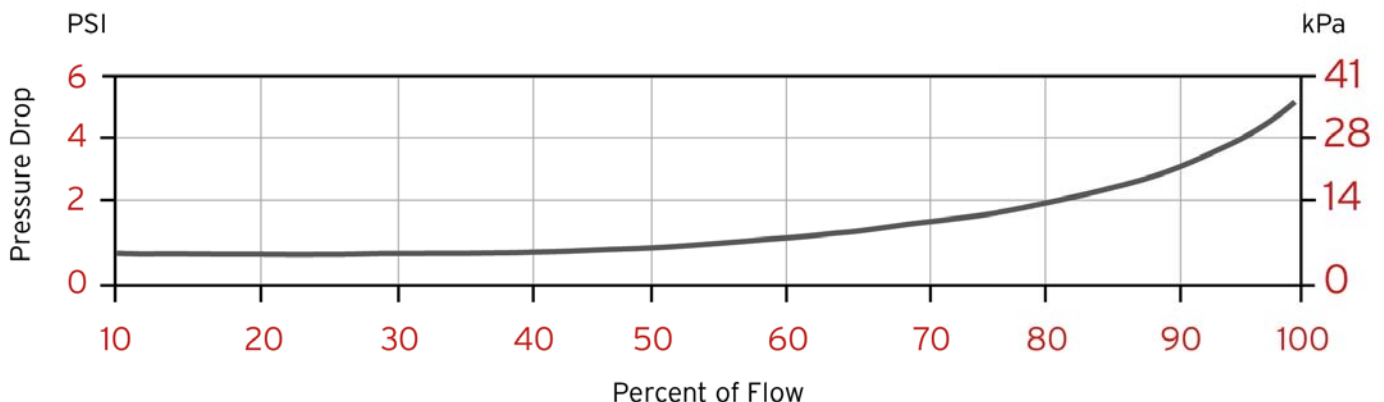
To convert pressure drop value to the actual process fluid, use the following equation:

$$\Delta PA = (cPA)^{0.25} * (SGA)^{0.75} * \Delta Pm$$

Delta PA = Pressure Drop on Actual Fluid in PSI
 cPA = Viscosity of Actual Fluid in cP
 SGA = Density of Actual Fluid in SG
 Delta Pm = Pressure Drop on Mineral Spirits
 (See Graphs below for Reference)

Pressure Drop

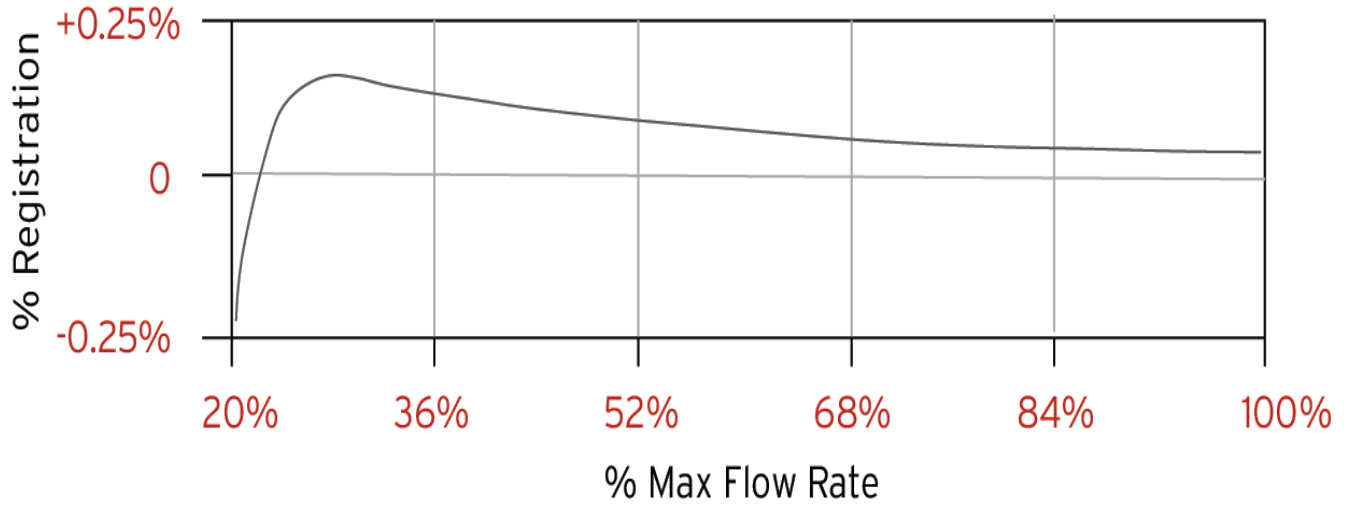
Test Solution: Mineral Spirits



Accuracy

Capable of +/- 0.15%; Contact Factory for viscosity corrections.

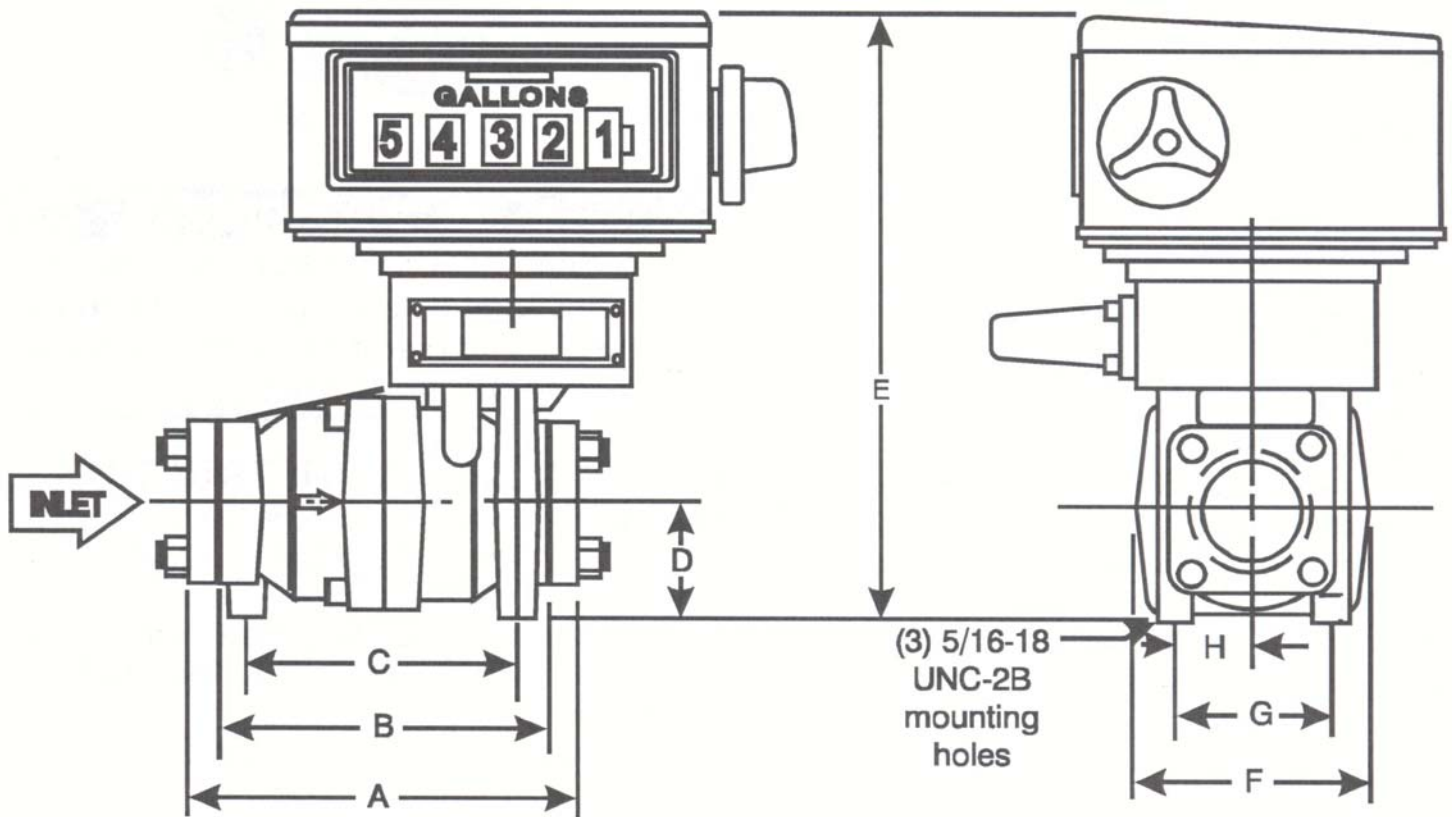
Test Solution: Mineral Spirits



Shipping Weights and Volume

Model	Unit	Volume	Unit	Weight
B037	Cu. Feet	1.2	lb	40
	Cu. Meters	0.03	kg	18

Dimensions



Model	Dimensions								
		A	B	C	D	E	F	G	H
B037	mm	206	171	145	67	349	121	91	45
	inches	8 1/2	6 3/4	5 11/16	2 5/8	13 3/4	4 3/4	3 9/16	1 25/32

*For Certified Dimensional Prints - Consult Factory

NOTE:

Do NOT operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

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