

FMG450 Series Oval Gear Flow Meters

APPLICATION

- FMG450-A cast iron oval gear flowmeter is widely used in the measurement of various oils and liquids that do not corrode cast iron materials.
- FMG450-E cast steel oval gear flowmeter is used for the measurement of high pressure and low corrosive liquid media.
- LFMG45-Q cast iron oval gear flowmeter, the gear is aluminum alloy. It is used in the measurement of low viscosity, low corrosive (such as gasoline, etc.) liquid media.
- FMG450-B, C-type stainless steel oval gear flowmeters are widely used in the measurement of liquid media with strong corrosive liquids, such as acids, alkalis, salts and organic compounds.
- FMG450-L light oval gear flowmeter is widely used in the measurement of low corrosive liquid media, such as water and other liquids.

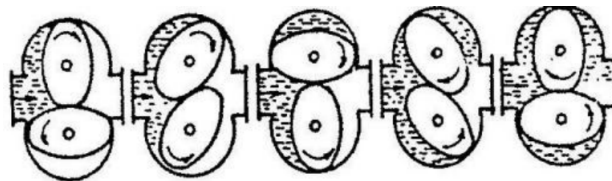


OVERVIEW

FMG450 series oval gear flowmeter is the leading product of our company. The FMG450 oval gear flowmeter is one of the typical positive displacement flowmeters, used to measure the flow of liquid filling a pipe under a certain pressure. It has the characteristics of simple structure, high accuracy, reliable use, no special requirements for the flow field in the inlet and outlet pipelines, and a wide range of viscosity and flow of the measured medium. Therefore, it is widely used in liquid flow detection in industrial and commercial sectors such as petroleum, chemical, pharmaceutical, transportation, and food. FMG450 series oval gear flowmeter is especially suitable for the measurement of oil and fuel.

WORKING PRINCIPLE

Flow meter is installed in the metering tank and the measurement of a pair of oval box gear, with the upper and lower cover an early Lunar sealed cavity (due to rotation of the gear, so sealing is not an absolute) as a unit of emissions. When measured by the pipe into the liquid flow meter, due to pressure generated by the Import and Export Department to promote a pair of differential gears for rotation, the constant measurement by cavity after the beginning of the Lunar liquid delivery to the exit, elliptical gear with each revolution time displacement is the product of four times the measured volume of liquid flow.



TECHNICAL PARAMETER

- Material of key components and nominal pressure

	Shell, front cover, rear cover	Cover	Oval gear	Axis	Bushing	Nominal pressure (MPa)
FMG450-A	cast iron	Cast iron, engineering materials		Stainless steel	Oil-impregnated bronze or rolling bearings	1.6
FMG450-E	cast steel	cast iron, stainless steel				DN50 bellow 6.3
						DN80-100 4. 1
					DN150-200	
FMG450-Q	cast iron	cast iron	Aluminum alloy		graphite	2.5
FMG450-B, C	Stainless steel	Stainless steel	Stainless steel		graphite	1.6
						2.5

Note:

1. FMG450-C material is 0Cr18Ni12Mo2Ti; FMG450-B material is 0Cr18Ni9Ti.
2. Flanges below 2.5MPa are in the form of raised surfaces; 6.3MPa flanges are in the form of concave and convex surfaces; 4.0MPa flanges are available in both forms.

Accuracy class 0.5, 0.2 (generally work at -10°C~+60°C)

Use medium temperature: (ambient temperature can be -40°C~+50°C)

FMG450-A, B, E (-20°C~+60°C); under high temperature adjustment, the heat sink with high temperature can reach 60°C~200°C

FMG450-Q, L (-20°C~+60°C)

FLOW RANGE

 Unit: m³/h

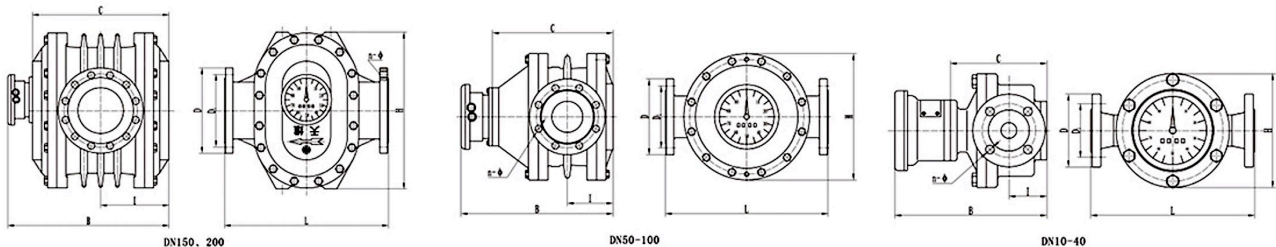
Model	DN	Measured liquid viscosity mPa.s								
		<0.3	0.3 ~0.8	0.8-2	2 ~200	200~1000	1000~2000			
FMG450-10	10		0.2-0.5	0.12-0.5	0.12-0.5	0.1-0.5	0.08-0.3	0.06-0.3	0.06-0.2	
FMG450-15	15		0.75-1.5	0.3-1.5	0.3-1.5	0.15-1.5	0.2-1.0	0.1-1.05	0.07-0.75	
FMG450-20	20		1.5-3	1-3	0.5-3	0.5-3	0.3-3	0.4-2.1	1.2-2.1	0.15-1.5
FMG450-25	25	4-6	3-6	2-6	1-6	1-6	0.6-6	0.8-4.2	0.4-4.2	0.3-3
FMG450-40	40	9-15	7.5-15	5-15	2.5-15	2.5-15	1.5-15	2.1-10.5	1.0-10.5	0.7-7.5
FMG450-50	50	10-24	8-24	8-24	4.8-24	4.8-24	2.4-24	2.4-16.8	1.6-16.8	1.2-12
FMG450.B40,50	40	8-20	6-20	6-20	4-20	4-20	2-20	2.8-14	1.4-14	1.0-10
FMG450-65	65	27-40	20-40	15-4	8-40	8-40	4-40	5.6-28	2.8-28	2-20
FMG450-80	80	40-60	30-60	20-60	12-60	12-60	6-60	8.4-42	4.2-42	3-30
FMG450-100	100	64-100	50-100	34-100	20-100	20-100	10-100	14-70	6-70	5-50
FMG450-150	150	127-190	95-190	64-190	38-190	38-190	19-190	26.6-133	13.3-133	9.5-95
FMG450-200	200	227-340	170-340	114-340	56-340	56-340	34-340	47.6-238	23.8-238	17-170
Accuracy		0.2	0.5	0.2	0.5	0.2	0.5	0.2	0.5	0.5

Note:

- When the temperature of the measured liquid is higher than 80°C, the maximum flow rate of the flowmeter is 90% of the original maximum flow rate of the flowmeter, and the minimum flow rate should be 120% of the original minimum flow rate.
- When the viscosity of the tested liquid is higher than 2000mpa.s or higher. Parameters such as flow range are negotiable

DIMENSION

Only the value-reading type is equipped with A or J1 counter. For other configurations, please follow the accessories size of the flowmeter.


• Dimensions and weight of cast iron type (B dimension is the dimension of the configuration A or J1 counter)

Unit:mm

DN	L	H	B	C	I	D	D1	N	Φ	Weight Kg/PC
10	150	100	213	135	45	90	60	4	14	6
15	170	118	226	147	48	95	65	4	14	8
20	200	150	238	155	53	105	75	4	14	11
25	260	180	246	164	60	115	85	4	14	18
40	245	180	271	199	77	145	110	4	18	20
50	340	250	379	249	88	160	125	4	18	46
80	420	325	441	311	118	195	160	8	18	87
100	515	418	467	337	131	215	180	8	18	160
150	540	515	565	435	210	280	240	8	23	245
200	650	650	624	494	247	335	295	12	23	400

• **The reference dimensions and weight of the cast steel shape (B dimension is the dimension of the counter configuration A or J1)**

Unit:mm

DN	L	H	B	C	I	D	D1	N	Φ	Weight Kg/PC
15	200	138	228	150	46	95	65	4	14	12
20	250	164	240	162	54	105	75	4	14	18
25	300	202	248	170	55	115	85	4	14	22
40	300	202	340	210	79	145	110	4	18	60
50	384	262	340	210	79	165	125	4	18	66
80	450	337	504	364	169	200	160	8	18	118
100	555	442	485	355	131	235	190	8	22	210
150	540	510	565	435	210	300	250	8	26	260
200	650	650	625	495	247	360	310	12	26	430

• **Dimensions and weight of B.C type stainless steel oval gear**

Unit:mm

DN	L	H	B	C	I	D	D1	N	Φ	Weight Kg/PC
10	170	100	216	133	45	90	60	4	14	7
15	200	120	228	150	46	95	65	4	14	11
20	230	150	240	162	54	105	75	4	14	17
25	280	195	248	170	55	115	85	4	14	21
40	265	184	340	210	79	150	110	4	18	24
50	265	184	340	215	79	165	125	4	18	24
65	300	247	504	364	169	185	145	4	18	56
80	300	247	504	364	169	200	160	8	18	60
100	515	400	538	400	180	220	180	8	18	127
L100	380	395	470	337	131	220	180	8	18	95
150	540	515	575	435	210	280	240	8	23	280
200	650	650	637	495	247	335	295	12	23	435

FMG450-B Series micro flowmeter

MAIN FEATURES

- Simple structure, small size and light weight
- Small flow, high precision, long life
- The flowmeter has on-site display and remote transmission functions
- The power consumption of the meter is low, and it can be continuously powered for more than two years with only the built-in battery (can also be powered by external power supply)



OVERVIEW

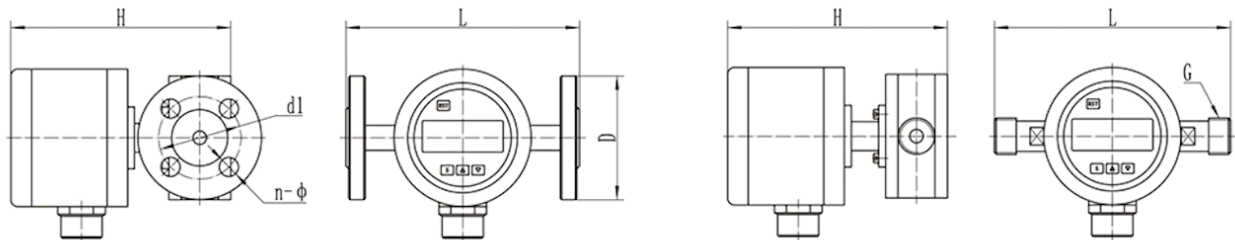
FMG450-B series micro flowmeter is a novel micro flowmeter developed on the basis of absorbing domestic and foreign advanced technology according to market demand. It has the characteristics of small flow, simple structure, high measurement accuracy, convenient use and long service life. It has strong adaptability to the viscosity of the liquid to be measured and no requirements for the flow state of the liquid to be measured, and no special requirements for the pressure of the liquid to be measured. The display instrument has the functions of displaying total flow, cumulative flow, instantaneous flow and zero return, and can realize on-site display and remote transmission functions, especially suitable for accurate measurement of small flow of boiler fuel, oil, chemical and other liquids. The flowmeter made of all stainless steel can measure the tiny flow of various liquid foods such as wine, milk and vegetable oil.

TECHNICAL PARAMETER

Material	Body material	Stainless steel
	Metering gear	stainless steel/copper/aluminum alloy
	bearing	graphite
	Axis	Stainless steel
Main technical parameters	Nominal diameter	6-10 mm
	Nominal pressure	1.0, 1.6, 2.5, 4.0MPa
	Accuracy class	0.5
	Dosing medium	Oil, chemical, cream, alcohol, vegetable oil
	medium temperature	-20+80C
	Viscosity range	0.6-1000 mPa. s
Electronic display instrument parameters	Display function	Can display instantaneous flow, accumulated flow, total accumulated flow and zero return function
	Operating Voltage	3±0. 4VDC
	Working current	< 50uA
	output signal	1. Pulse signal 2. 4-20mA current signal. 3. RS485 signal
	long distance	≤ 1kM
	External power supply	24VDC
	Explosion-proof grade	Exd IIC T6 Gb

• Flow range

Flow range L/H	
DN mm	2~200mPa.s
DN6	10-100
DN8	30-300
DN10	60-600

DIMENSION


DN (mm)	Installation dimension (mm)				kg
	L	H	D	D1	
4	88	160	G1/8 thread, or special customized		5
6	89	160	G1/4 thread, or special customized		5
8	114	160	G1/4 thread, or special customized		5
10	170	160	90	60	7

FMG450-L Series Light Duty Super Oval Gear Flow Meter

OVERVIEW

FMG450-L series light-duty oval gear flowmeter is a light-duty flowmeter developed and manufactured by our factory according to market needs. The product is novel in design and reasonable in structure. It has the characteristics of light weight, beautiful appearance and high accuracy. Widely used in various oil products and low corrosive media and filling metering.

TECHNICAL PARAMETER

Accuracy class: 0.5 class, 0.2 class

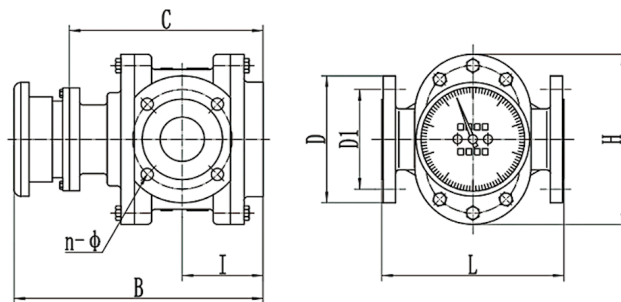
Use medium temperature: generally work at -10°C~+60°C.

Nominal pressure: 1.6MPa, 2.5MPa, 6.3MPa

- Main component material and nominal pressure

Model	Caliber	Shell, front and rear cover	Cover	Oval gear	Axis	Bushing
FMG450-L	Bellow DN80	Aluminum alloy, cast iron, cast steel	cast iron, stainless steel	Aluminum alloy, stainless steel, cast iron	Stainless steel	Oil-impregnated bronze, graphite, roller bearings

DIMENSION



• Dimensions of FMG450-LA type light cast iron flowmeter

Nominal diameter	L	H	B	C	1	D	D1	n	Φ	Weight Kg/PC
LA50	287	218	310	232	103	165	125	4	18	28
LA50II	265	190	290	211	90	165	125	4	18	23
LA65	265	248	378	284	120	185	145	4	18	40
LA80	265	248	378	284	120	200	160	8	18	67
LA100	380	395	470	337	131	220	180	8	18	100

• Dimensions of FMG450-LE light cast steel flowmeter

Nominal diameter	L	H	B	C	1	D	D1	n	Φ	Weight Kg/PC
LE15	200	120	228	150	46	95	65	4	14	8
LE20	230	150	240	162	54	105	75	4	14	12
LE25	280	195	248	170	55	115	85	4	14	16
LE40	265	184	340	210	79	145	110	4	18	20
LE50	265	184	340	210	79	165	125	4	18	40
LE65	300	247	504	364	169	185	145	8	18	56
LE80	300	247	504	364	169	200	160	8	18	56
LE100	380	395	470	337	131	235	190	8	22	60

ORDER CODE

Model	Code	Function	Shell	Rotor	DN	Special	Pressure	Counter	Sender	Accuracy	Remark
FMG450											Oval Gear Flow Meter
	U										With insulation jacket structure
	G										pipe thread connection
	L										Lightweight Flowmeter
	P										nuclear power products
	PI										Nuclear power seismic products
		N									High viscosity liquid hairpin meter
		SP									food flow meter
		T									High temperature belt heat sink (1 long and 2 sections)
		Q									Metering Gasoline Flow Meters
			A								cast iron flowmeter
			B/C								Stainless steel flowmeter
			E								Cast steel flowmeter
			L								Aluminum alloy flowmeter
				A							Material is cast iron
				B/C							Material is stainless steel
				L							Material is aluminum alloy
				Z							Material is engineering material
					10						Nominal diameter 10mm
				
					200						Nominal diameter 200mm
						S(K)					Flange necking (flaring)
						II					Improved model
							.2/				1.6Mpa
							.3/				2.5 Mpa
							.4/				4.0 Mpa
							.6/				6.3 Mpa
								A、A1			For counters below DN40
								A5、J1			For counters above DN50
								ELZ			Electronic digital display counter
								A6、Z			Return to zero counter
									KF		For Type 13 Filling Flow Meters
									QF-I		12V/24V 3-wire photoelectric transmitter
									MF		4-20mA analog output transmitter
										J	High-precision flowmeter