

VALVE Link

All your process control needs

iFLO



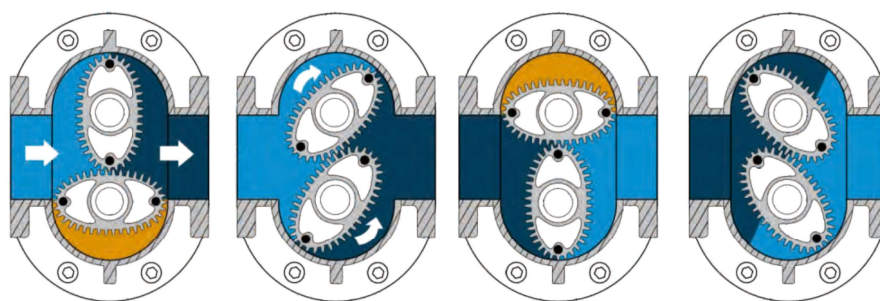
OVAL GEAR FLOW METER

Working Principle

Oval gear flowmeter is a volumetric meter used for continuous or intermittent measurement and control of liquid flow in pipelines.

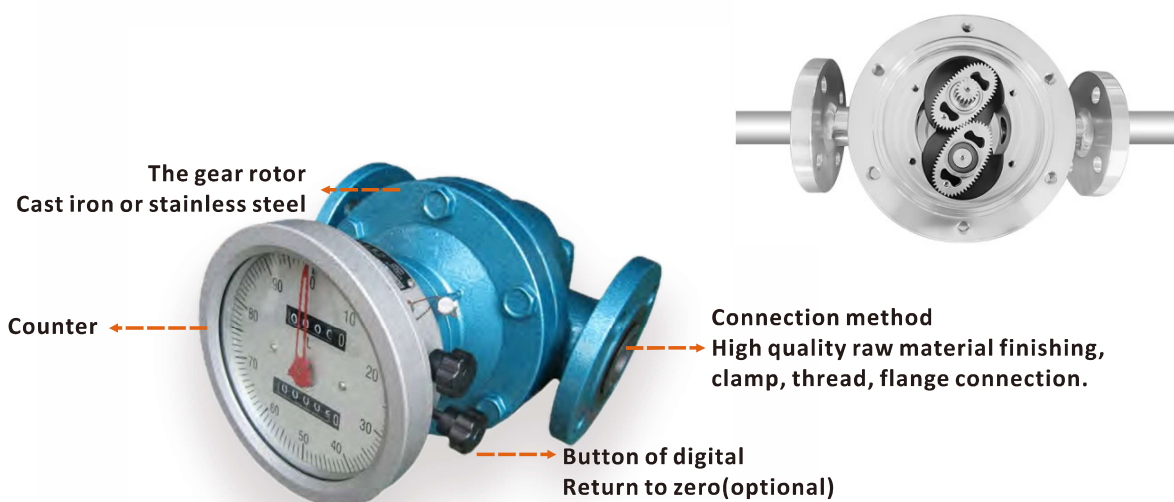
It has many advantages, such as large measuring range, high accuracy, small pressure loss, strong viscosity adaptability, high temperature and high viscosity liquid body measurement, convenient calibration, easy installation and so on. Suitable for flow measurement in petroleum, chemical engineering, chemical fiber, transportation, trade, food, medicine and health departments. LC series oval gear flowmeter is equipped with pointer and word wheel accumulator device, which can directly display liquid flow and instantaneous flow through the pipeline.

In the counting mechanism, the combination of sending signal and electric display meter can realize accumulative, constant and instantaneous remote and centralized control. The meter can measure high temperature and high viscosity liquid by adding a heat dispersing device. Different liquids (acid, alkali, salt, organic solution, etc.) can be manufactured with different materials.



- Liquid Entering the Measuring Chamber
- Liquid in Transition
- Liquid Leaving the Measuring Chamber

Structure



Features

- Spiral rotor rotates evenly with low vibration
- Wide measurement range and good repeatability
- High Accuracy up to $\pm 0.2\%$
- Not sensitive to the viscosity change
- Higher viscosity liquids measurement
- Easy installation, straight pipe is not necessary



Applications

- **Mining Industry:** In the mining industry, oval gear flowmeters can be used to measure various liquids such as lubricating oil, cooling fluids, and chemical solvents to ensure the normal operation of equipment and control of the production process.

- **Middle and Small Oil Depot:** These are facilities for storing and distributing petroleum products, where oval gear flowmeters can be used to accurately measure the inflow and outflow of oil to help manage inventory and logistics.

- **Shipyard:** In the shipbuilding process, precise measurement of various liquids is required, such as paint, welding fluid, cleaning agents, etc., to ensure the quality and efficiency of shipbuilding.

- **Oil Storehouse:** Oil storehouses are facilities that store large quantities of petroleum products, and oval gear flowmeters can be used to monitor the transfer and distribution of oil to ensure safe and accurate inventory management.

- **Diesel Fuel:** Diesel is a common fuel, and oval gear flowmeters can be used to measure the transportation and distribution of diesel, especially in gas stations and during transportation.

- **Crude Oil:** Crude oil is a basic product of the petroleum industry, and oval gear flowmeters can be used to measure the flow of crude oil, particularly during refining and transportation processes.

- **Gasoline:** Gasoline is a common automotive fuel, and oval gear flowmeters can be used in gas stations and refineries to accurately measure the flow of gasoline.

- **Chemical Industry:** Used for precise measurement of high viscosity liquids such as polymer solutions to ensure control of the production process.

- **Food and Beverage:** Suitable for measuring the flow of syrup, juice, etc., meeting hygiene and accuracy requirements.





**Pointer Basic
Form Type**



**Pointer Back to
Zero Type**



**Jacket High Temperature
Pointer Type**



**High Temperature Pointer
Back to Zero Type**



**Stainless Steel Pointer
Back to Zero Type**



**Stainless Steel High
Temperature Pointer Type**



**LCD
Output Type**



**Stainless Steel LCD
Explosion-proof Type**



**LCD
Explosion-proof Type**

Technical Data

Model	IFLO-LC-A	IFLO-LC-E	IFLO-LC-Q	IFLO-LC-C
Applications	Various oil products and liquids non - corrosive to cast iron	High - pressure low - corrosive liquid media	Low - viscosity, low - corrosive liquid media (e.g., gasoline)	Liquid media with strong corrosiveness like acids, alkalis, salts, and organic compounds
Housing Material	Cast Iron	Cast Steel	Cast Iron	Stainless Steel
Measuring Range	0.3-2000 mPa·s			
Accuracy	±0.5%, ±0.2% (Generally working in -10°C...+60°C)			
Medium Temperature	-20°C...+60°C; High temp.: +60°C...+200°C		-20°C...+60°C	
Flange Standard	GB/T9113.1 - 2000			
Explosion - proof	ExdIICT6 Gb			

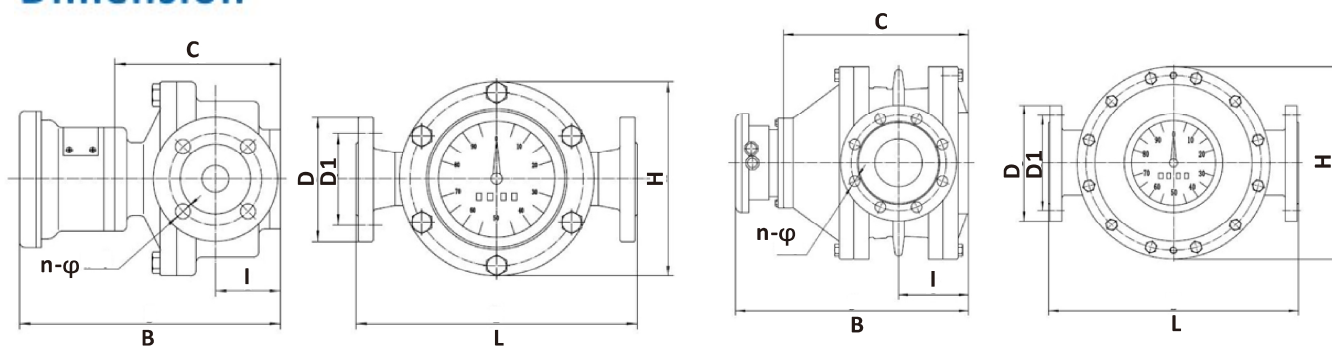
Flow Range

Diameter (mm)	Flow Range (m³/h)		
	Viscosity: 3 - 20mPa·s		Viscosity: 200 - 2000mPa·s
	±0.5% Accuracy	±0.2% Accuracy	±0.5% Accuracy
8	0.03 - 0.3	0.06 - 0.6	0.04 - 0.2
10	0.1 - 0.6	0.15 - 0.6	0.05 - 1
15	0.25 - 1.5	0.3 - 1.5	0.15 - 1
20	0.5 - 3	0.6 - 3	0.3 - 1.5
25	1 - 6	1.2 - 6	0.6 - 3
40	2.5 - 15	3 - 15	1.5 - 10
50	4 - 24	4.8 - 24	2.4 - 15
65	6 - 40	8 - 40	4 - 20
80	8 - 50	10 - 50	5 - 26
100	16 - 100	20 - 100	10 - 50
150	32 - 190	38 - 190	19 - 100
200	54 - 340	68 - 340	34 - 190

Viscosity

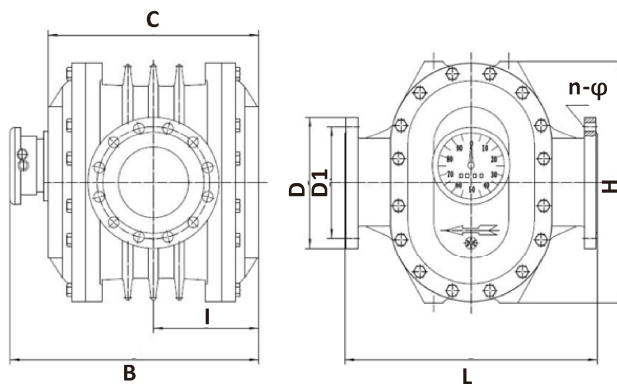
Model	Diameter	Measured Liquid Viscosity (mPa·s)								
		<0.3	0.3-0.8	0.8-0.2		2-200		200-1000		1000-2000
IFLO-LC-10	10		0.2-0.5		0.08-0.5	0.08-0.5	0.05-0.5	0.06-0.3	0.03-0.3	0.03-0.2
IFLO-LC-15	15		0.75-1.5		0.3-1.5	0.3-1.5	0.15-1.5	0.2-1.0	0.1-1.05	0.07-0.75
IFLO-LC-20	20		1.5-3	1-3	0.5-3	0.5-3	0.3-3	0.4-2.1	1.2-2.1	0.15-1.5
IFLO-LC-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
IFLO-LC-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
IFLO-LC-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
IFLO-LC-B40/50	40/50	8-20	6-20	6-20	4-20	4-20	2-20	2.8-14	1.4-14	1.0-10
IFLO-LC-65	65	27-40	20-40	15-4	8-40	8-40	4-40	5.6-28	2.8-28	2-20
IFLO-LC-80	80	40-60	30-60	20-60	12-60	12-60	6-60	8.4-42	4.2-42	3-30
IFLO-LC-100	100	64-100	50-100	34-100	20-100	20-100	10-100	14-70	6-70	5-50
IFLO-LC-150	150	127-190	95-190	64-190	38-190	38-190	19-190	26.6-133	13.3-133	9.5-95
IFLO-LC-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

Dimension



DN10-DN40

DN50-DN100



DN150-DN200

A.Type of cast iron, cast iron blood type, high temperature cast iron, cast iron oval gear flow meter type deformation dimension

DN	L	H	A	B	D	D1	N	Φ
10	150	100	165	210	90	60	4	14
15	170	118	172	226	95	65	4	14
20	200	150	225	238	105	75	4	14
25	260	180	232	246	115	85	4	14
40	245	180	249	271	150	110	4	18
50	340	250	230	372	165	125	4	18
65	420	325	270	386	185	145	4	18
80	420	325	315	433	200	160	8	18
100	515	418	370	458	220	180	8	18
150	540	515	347	557	285	240	8	22
200	650	650	476	720	340	295	12	22

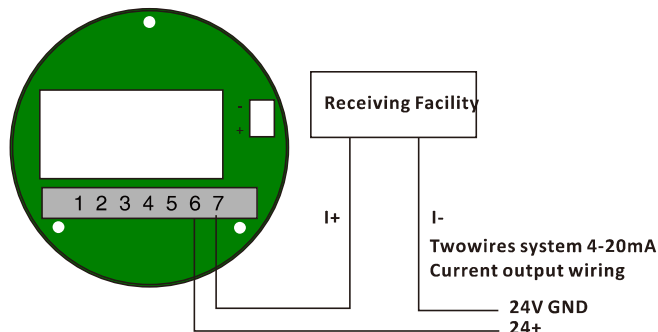
DN	L	H	B	A	D	D1	N	Φ
15	200	138	232	180	95	65	4	14
20	250	164	220	160	105	75	4	14
25	300	202	252	185	115	85	4	14
40	300	202	293	208	150	110	4	18
50	384	262	394	312	165	125	4	18
80	450	337	452	332	200	160	8	18
100	555	442	478	310	220	180	8	18
150	540	510	557	347	285	240	8	22
200	650	650	720	476	340	295	12	22

Cast iron, cast steel oval gear flow meters type high-temperature size: DN15 ~ DN25, A, B according to the table, data size plus 160mm extension tube heat: DN40 ~ DN80, A, B-size table size increases by thermal extension of 300mm pipe, rest size of the corresponding size table Ibid.

C. Type of stainless steel oval gear flow meter size

DN	L	H	B	A	D	D1	N	Φ
15	208	120	228	172	95	65	4	14
20	236	150	238	225	105	75	4	14
25	287	195	246	232	115	85	4	14
40	265	178	349	265	150	110	4	18
50	265	178	349	265	165	125	4	18
65	365	260	436	319	185	145	4	18
80	420	305	459	324	200	160	8	18
100	515	400	554	373	220	180	8	18
150	540	515	607	397	285	240	8	22

Wiring



1	Connect to DC24V power+
2	Connect to DC24V power- (when two - wire system 4 - 20mA, 1, 2 are not connected)
3	Pulse output
4	Communication RS485A+
5	Communication RS 485B-
6	Two - wire system 4 - 20mA +
7	Two - wire system 4 - 20mA -

Model	Suffix Code							Description
IFLO-LC	1	2	3	4	5	6	7	Oval Gear Flow Meter
Diameter								010: DN10 100: DN100 200: DN200
Converter Type		M0						Mechanical Display; No Output
		M1						Mechanical Display; Pulse Output; 24V DC
		M2						Mechanical Display; 4-20mA Output; 24V DC
		B						LCD Display; No Output; Battery
		L1						LCD Display; Pulse Output; 24V DC; RS485
		L2						LCD Display; 4-20mA Output; 24V DC; RS485
		L3						LCD Display; 4-20mA & Pulse Output; 24V DC; RS485
Reset		Y						Yes
		N						None
Accuracy				02				±0.2% of rate
				05				±0.5% of rate
Structure					S			Standard Type
					T			High Temperature Type(280°C)
					V			High Viscosity Type(3000 mPa.s)
Body Material						CI		Cast Iron(default material of gear is cast iron)
						CS		Cast Steel (default material of gear is cast iron, SS304 as option)
						S4		SS304 (default material of gear is SS304, SS316 as option)
						S6		SS316 (default material of gear is SS316)
Connection						DXX		D16: DIN PN16 Flange; D25: DIN PN25 Flange...
						AXX		A15: ANSI 150# Flange; A30: ANSI 300# Flange...
						JXX		J10: JIS 10K Flange; J20: JIS 20K Flange...
						THR		Thread Connection (stainless steel only)

Oval Gear Flow Meter Selection Guide

IFLO-LC-50-M0-Y-02-S-CI-D16
IFLO-LC:Oval Gear Flow Meter

50: DN50

M0: Mechanical Display; No Output

Y: Yes

02: ±0.2% of rate

S: Standard Type

CI: Cast Iron

D16: DIN PN16 Flange



Horizontal Installation



When installing, be sure to check the mounting arrows on the body and read the data for ease of access.



Vertical Installation

- Pipes should be thoroughly cleaned before installing, and a strainer installed before the flow meter to prevent debris entering the flow meter. The air separator should be installed if the measured liquid containing gas.
- Attention the gear axis of the flow meter installed must be horizontal position, that is, the counter vertical dial. Regulation valve, starting valve and closing valve should installed on the meter side of the entrance and exit.
- The direction of arrows on the shell should be installed with the liquid pipe flow direction.
- A bypass can be installed horizontally in order to clean and maintenance with continuous flow. If the flow meter is installed on the vertical pipe, we can install it on the bypass pipe to prevent debris from falling into the instrument.
- Under the right conditions, according to the needs of the custom, the counter of flow meter can be rotated 180 or 90 degree.