

The Growco LS Series PD BiRotary Master Flow Meters are designed in double case construction.

➤ **TYPICAL FEATURES OF LS SERIES:**

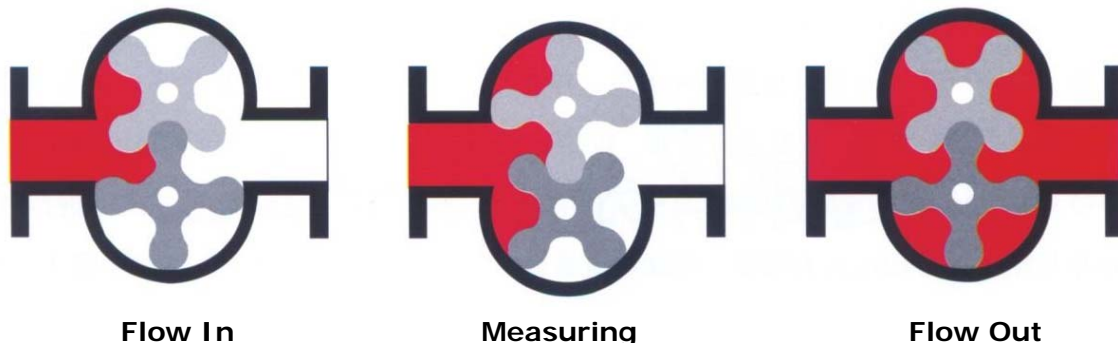
- Stable and reliable operations.
- Straight through flow design.
- Simple structure and easy maintenance.
- BiRotary design rotors allow high accuracy and stable repeatability.
- Options for horizontal or vertical installation.
- Optional with pulse transmitter for remote pulses output.



Typical LS Series Double Case PD Master Meter

➤ **PRINCIPLE OF OPERATIONS**

When the fluid flows through the casing, its pressure push the two BiRotary rotors to rotate, the fluid is then displaced out of the measuring chamber. The volume of the measuring chamber is constant with the rotation of the BiRotary rotors and the fluid volume flowing through the rotors can be calculated. See the below schematic sketches of the rotors rotation with the fluid flows.



The BiRotary rotation of the rotors is transmitted to the adjusting unit by the sealed shaft connected to the mechanical counter. There is an option of installing a pulse transmitter to provide pulses output for remote indication or batch controller.

➤ **GENERAL SPECIFICATIONS**

Table 1 – Typical Capabilities

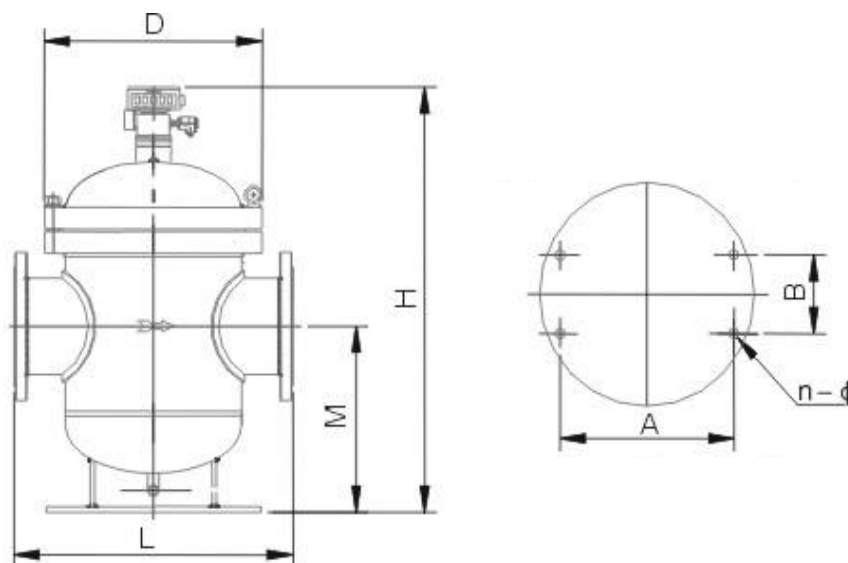
Nominal Diameter Range (mm)*	DN 8 ~ 400
Working Fluid	Petroleum products such as diesel, gasoline, kerosene & crude oil; water or consult factory for other fluids
Accuracy*	+/-0.1%
Nominal Pressure Type*	1.6 ; 2.5 ; 4.0 ; 6.4 MPa
Temperature ranges*	-20°C ~ +80°C ; 0°C ~ +150°C ; 0°C ~ 250°C
Fluid Viscosity*	0 ~ 20,000 mPa.s
Ambient temperature	-30°C ~ +70°C
Material of Construction	Standard : Cast Steel Option : 304 SS & 316 SS
Power Supply (For pulse transmitter, if provided)	+ 12 VDC or +24 VDC
Output Signal, if provided	Pulse
Classification	Exd II CT6
Enclosure	IP65

* **Note:** Please provide the information during inquiry.

Table 2 – Typical Flow Range Data

Liquid Name	Gasoline / LPG	Kerosene (Water)	Diesel Oil	Crude / Heavy Oil	High Viscosity Liquid	Extreme Viscosity Liquid
Accuracy	+/-0.1%	+/-0.1%	+/-0.1%	+/-0.1%	+/-0.1%	+/-0.1%
Viscosity (mPa.s)	0.32 ~ 2	0.32 ~ 2	2 ~ 5	5 ~ 400	400 ~ 2,000	2,000 ~ 20,000
Code DC	Flow Range (m3/h)					
40 (1.5")	11~22	9~22	7.5~22	7.5~22	4~12	3.3~10
50 (2")	18~36	14.4~36	12~36	12~36	7.5~22	6~18
80 (3")	40~80	32~80	26.7~80	26.7~80	16~48	13~40
100 (4")	50~100	40~100	34~100	34~100	24~72	18~54
150 (6")	115~220	90~220	73~220	73~220	40~120	30~90
200 (8")	180~360	144~360	120~360	120~360	60~180	50~150
250 (10")	270~540	216~540	180~540	180~540	100~300	60~180
300 (12")	450~900	360~900	300~900	300~900	200~600	150~450
400 (16")	800~1600	640~1600	530~1600	530~1600	400~1200	250~700

➤ **APPROX. OUTLINE DIMENSIONS AND WEIGHTS OF VERTICAL TYPE DESIGN**



Vertical Type

➤ **TABLE 3 - APPROX. OUTLINE DIMENSIONS AND WEIGHTS OF VERTICAL TYPE DESIGN**

DN(mm)	Flange Distance (L)		Total Height (H)	Center Height (M)	Upper Dia (D)	Install Dim. A × B	Bolt hole size n-φ	Weight (Kg)
	Standard	Special						
40	250	300	500	126	185			40
50	360	370	580	150	235			60
80	400	380	700	222	305			115
100	450	500	780	270	325	340×215	4-φ23	150
150	560	650	828	318	415	450×240	4-φ23	320
200	700		1180	450	530	445×200	4-φ23	560
250	1000		1270	500	620	524×250	4-φ25	1000
300	1000		1540	640	780	645×300	4-φ25	1460
400	1200		1830	750	980	φ700	6-φ25	2000

- Notes:**
- 1) All dimensions and weights shown in table 3 are approximate for reference only. We can make the "L" flange to flange length to suit clients' requirements. Consult us if in doubt
 - 2) We are able to make either smaller flange size or larger flange size irrespective of the flow range of the meter's nominal diameter. Please consult us with your flange size requirements.
 - 3) DN 8 mm is available on electric meter head upon request.
 - 4) DN - Nominal Diameter based on flange connection. Consult us when necessary.

➤ **CAUTIONS FOR THE INSTALLATION:**

- ❑ Welding slug, foreign particles, etc. in the pipe must be cleared up before the Flow meter is installed.
- ❑ Install the Flow meter correctly (eg. Horizontally or Vertically based on purchased requirement)
- ❑ The strainer must be installed at the upstream of the Flow meter.
- ❑ Please also follow any required local standard recommendations of pipelines installations to ensure compliance to local safety requirements.

➤ **NOTICE WHEN ORDERING:**

- Describe its application
- Specify accuracy type
- Specify its model/series or size
- Specify working & maximum pressures
- Specify product & maximum viscosity
- Specify voltage if pulse transmitter is required
- Specify horizontal or vertical installation
- Other useful details or contact us

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