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# **SERVICING MANUAL**

*For water meter*

Model: LXLC-50A~300A

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## **1. Application**

To total the volume of cold potable water passing through the meter.

## **2. Working conditions**

2.1 Maximum admissible temperature: 0.1 °C ~ 40 °C

0.1 °C ~ 90 °C for hot water meter

2.2 Maximum admissible working pressure: 1.0MPa (1.6MPa on request)

## **3. Special features**

The meter is dry type, magnetic drive sensitive action. The measuring element can be removed without removing the meter body from the pipeline for maintenance. It has the advantages of easy reading, easy installation and maintenance etc.

## **4. Working principle**

The water strikes the turbine and makes it rotation. The rotation of the turbine is directly proportional to the velocity of the water flow and is transmitted directly to the register component by magnetic drive after be decelerated by the worm and bevel gear, then the reduction gearing clockwork transmit the rotation to the number wheel which indicates the water volume passing through the water.

## **5. Structure**

The meter is mainly composed of the body group, measuring chamber group and the register component. Please see the attached diagram Fig.1 and Fig.2.

5.1 The measuring chamber group consists of the body, cap and lid. The body and the cap are made of brass with anti-corrosions surface treatment could afford the meter with effectively protection for the measuring insert and without any deformation during installation operations. The transparent cover can protect the register against the external damages, and the lid provides the further protection to the register.

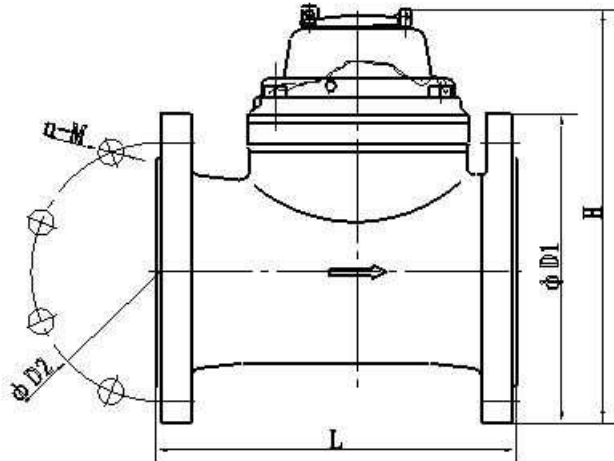
5.2 The measuring chamber group consists of the support, rectifier, turbine component, adjusting device, transmission mechanism and flange cover. It's a key group for the accuracy performance of the meter. The special structure of the turbine and the rectifier make sure the flow error curve has the better linearity in its measuring flow rang. The rotation of the turbine is decelerated by the worm and worm wheel then be transmitted to the register component. The adjusting device built in the body is used to calibrate the mater performance according to ISO4064, Class B.

5.3 The register component of the meter consists of the reduction gearing clockwork which is composed of the upper plate, lower plate, count plate, the dial, the gears, the pointers and the dry-type register which composed of the pin wheel, number wheel. The quality of the register component is important to the sensibility of the meter.

## 6. Technical specifications

Type	Size (mm)	Class	q <sub>s</sub>	q <sub>p</sub>	q <sub>t</sub>	q <sub>min</sub>	Min. Reading	Max. Reading
			Overload Flow	Permanent Flow	Transitional Flow	Min. Flow		
			m <sup>3</sup> /h				m <sup>3</sup>	
LXLC-50A	50	B	30	15	3	0.45	0.0002	999,999
LXLC-65A	65	B	50	25	5	0.75	0.0002	999,999
LXLC-80A	80	B	80	40	8	1.2	0.002	999,999
LXLC-100A	100	B	120	60	12	1.8	0.002	999,999
LXLC-125A	125	B	200	100	20	3	0.002	999,999
LXLC-150A	150	B	300	150	30	4.5	0.002	999,999
LXLC-200A	200	B	500	250	50	7.5	0.002	999,999
LXLC-250A	250	B	800	400	80	12	0.002	999,999
LXLC-300A	300	B	1200	600	120	18	0.02	9,999,999

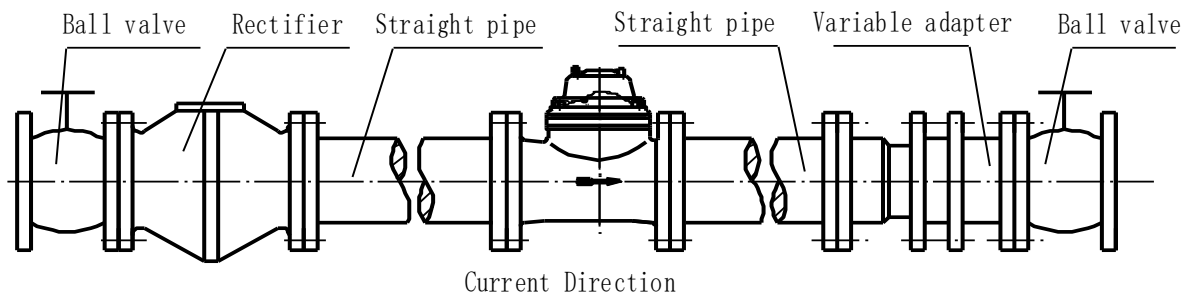
### Dimensions



Type	Size	L Length	H Height	Connecting flange		
				φ D1 Outside diameter	φ D2 Bolt circle diameter	Connecting Bolts (n-M)
		mm				
LXLC-50A	50	200	261	165	125	4-M16
LXLC-65A	65	200	271	185	145	4-M16
LXLC-80A	80	225	279	200	160	8-M16
LXLC-100A	100	250	289	220	180	8-M16
LXLC-125A	125	250	299	250	210	8-M16
LXLC-150A	150	300	319	285	240	8-M20
LXLC-200A	200	350	346	340	295	8-M20(1.0MPa)
						12-M20(1.6MPa)
LXLC-250A	250	400	434	395	350	12-M20(1.0MPa)
		450	434	405	355	12-M24(1.6MPa)
LXLC-300A	300	450	459	445	400	12-M20(1.0MPa)
		500	459	460	410	12-M24(1.6MPa)

## 7. Installation and service

- 7.1 To select the proper meter, it is recommended that flow rate often passed the pipeline is equal or less than the  $q_p$  of the meter.
- 7.2 Before setting up the meter with the pipe, the pipeline should be purged with water to clean up the system.
- 7.3 The meter should be installed in horizontal position, and the arrow on the body indicates the flow direction and set the dial upward. For more accuracy operation of the meter, the installation site should far from the water pump and it is suggested that a straight pipe or rectifier should be installed upstream the meter. The length of the straight pipe should be more than 10 times the meter nominal size and more than 5 times for downstream.
- 7.4 The meter should not suffer the excessive press caused by the pipe. The meter should be installed on the base or bracket on request.
- 7.5 The installation site of the meter should be protected against directly sunshine, frost, contamination and flood.
- 7.6 The quality of the cold water in the pipeline should conform to nation standard for potable water. A filter should be installed inlet the meter and be cleaned regularly to clean out the sundries.
- 7.7 In order to compensate the length error during the installation and for easy removing, a variable adapter may be mounted upstream the meter.
- 7.8 An o-type ball valve should be installed upstream and downstream the meter.
- 7.9 To install a non-return valve downstream the meter if need.



## 8. Trouble shooting and repairing

For accuracy long life service of the meter, it's needed to check up the meter regularly and follow the following procedures:

- 8.1 Take away the lead sealing, unscrew the screw which connect the body with the flange cover. Take out the measuring insert of the meter, knock down the measuring chamber group to clean up all the parts of the group. At the same time to check if there is the parts worn out, and replace it with the new ones. Do not change the position of the adjusting lever.
- 8.2 To assemble the measuring insert in turn and check the clockwork and the register sensibility with the spy star by blowing the turbine rotation.

Note: It's important to follow the assembling procedures for the quality of the meter.

## **9. Assembly procedures and important**

For detailed meter parts, please refer to the “FIG.2 illustrated list of spare parts” attached. The register component is a factory assembled component.

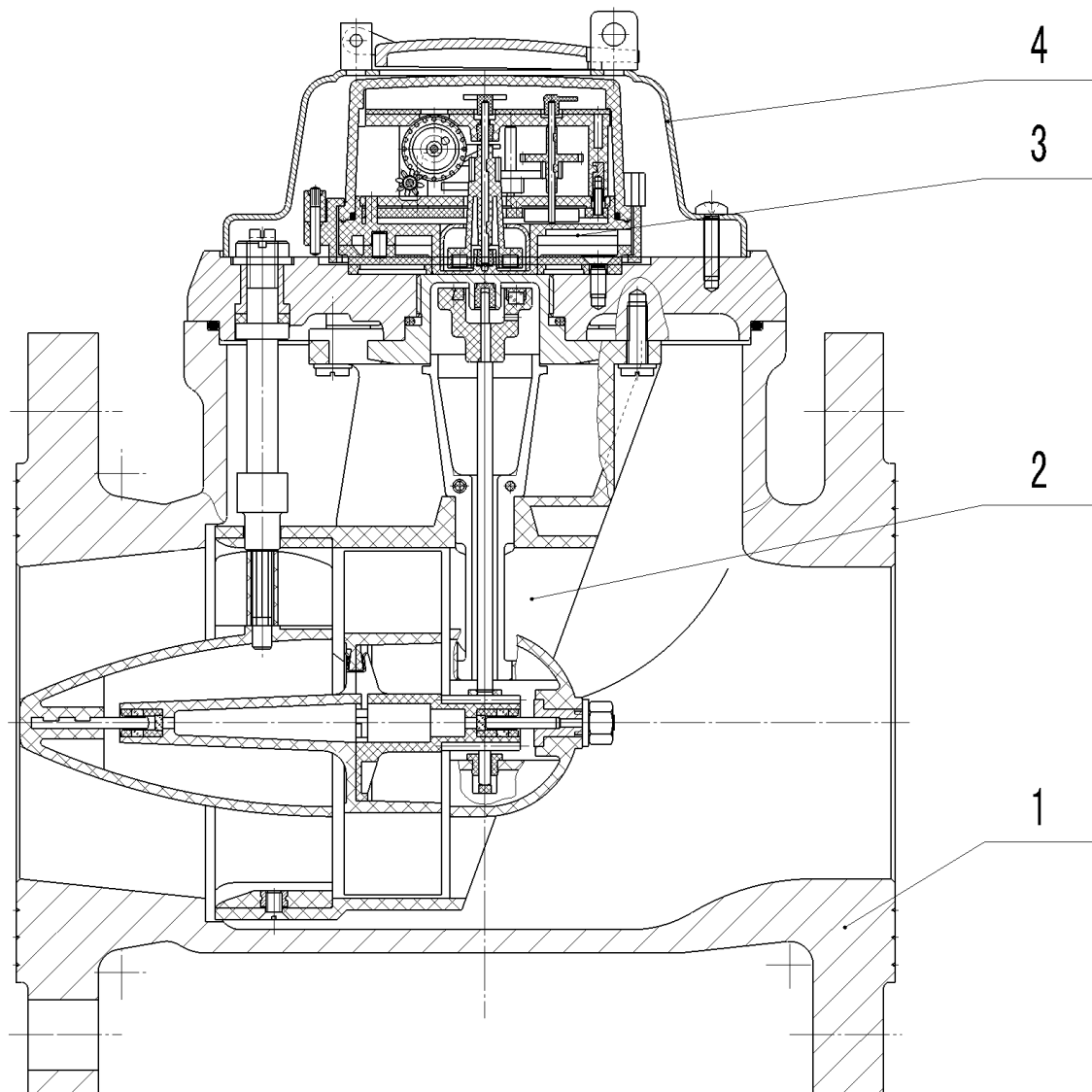
- 9.1 To set the turbine shaft into the support, then set on the gasket and screw them tightly with nut;
- 9.2 Set the lower bearing into the support;
- 9.3 Set the turbine component and the rectifier into the support then screw the sunk screw tightly. Blow the turbine and check the rotation condition;
- 9.4 To set the connecting lever and the adjusting plate into the support then set the sheath and the bevel gear component into the support;
- 9.5 To set the aforementioned component to the flange cover, and screw them with screw;
- 9.6 To set the measuring chamber group into the body and screw on four bolt(model:M12×35) then tightened them;
- 9.7 Encase the register and the cover(with lid);
- 9.8 To retest the repaired meter up to the standard.

## **10. Consumable parts**

Consumable parts:

- Turbine component
- Turbine shaft
- Lower bearing

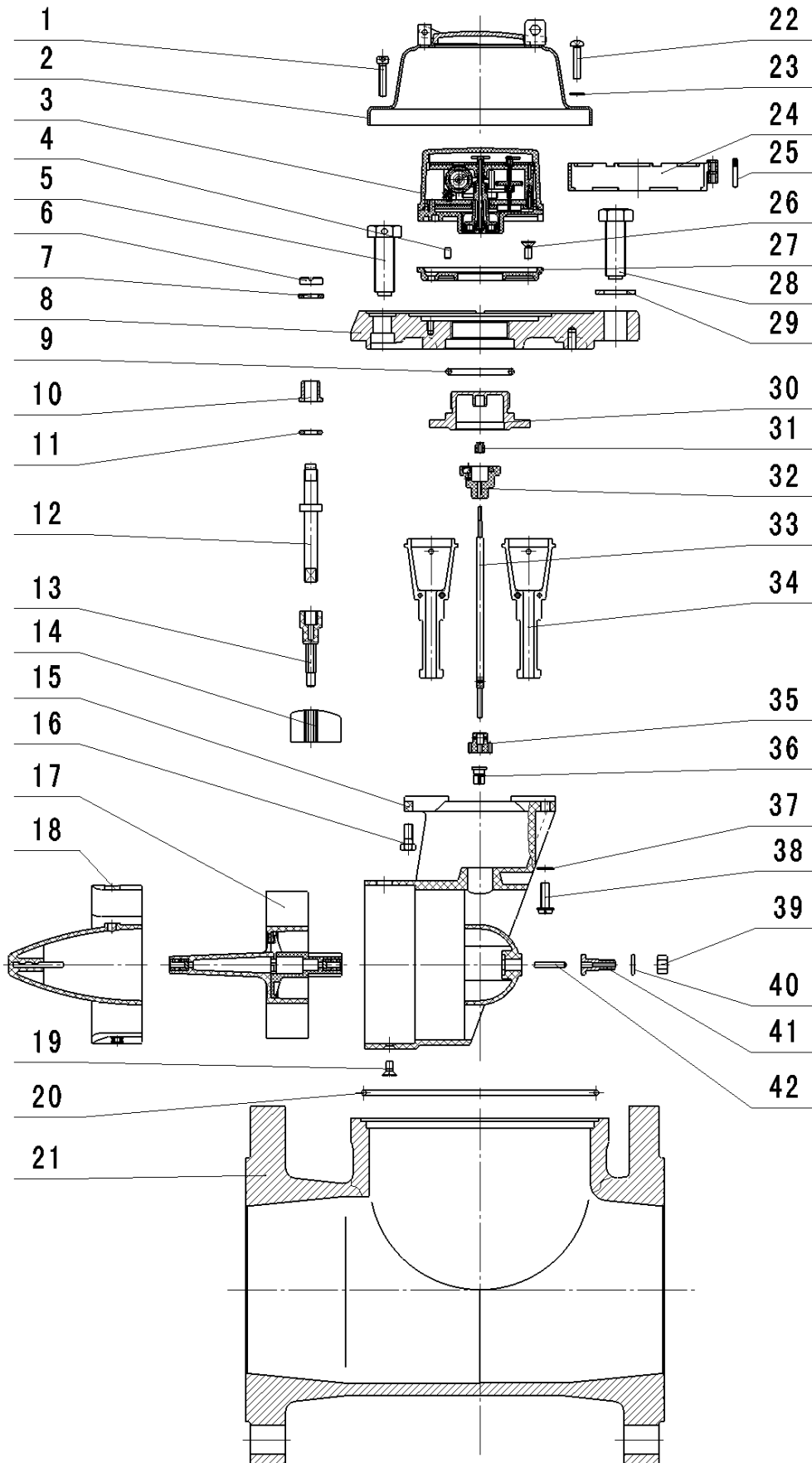
## 11. Fig.1 Assembly diagram



1. The body
2. The measuring chamber group
3. The register component
4. The cover with lid

## 12. Fig.2 Illustrated list of spare parts

For WATER METER, MODEL: LXDG-15~25





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Code	Description	Material	QTY
1	Screw For Sealing	Stainless Steel	2
2	Cover With Lid	Assembly	1
3	Sealed Register	Assembly	1
4	Position Pin	Stainless Steel	1
5	Lead Seal Bolt	Stainless Steel	2
6	Adjusting Nut	Brass	1
7	Gasket	Brass	1
8	Flange Cover	Cast Iron	1
9	O-ring	Silicon Rubber	1
10	Bush	Brass	1
11	Gasket	Synthetic Rubber	1
12	Adjusting Lever	Brass	1
13	Connecting Lever	MPPO	1
14	Adjusting Plate	MPPO	1
15	Support	MPPO	1
16	Bolt	Brass	1
17	Turbine Component	Assembly	1
18	Rectifier	MPPO	1
19	Screw	Brass	1
20	O-ring	Synthetic Rubber	1
21	Body	Cast Iron	1
22	Screw M4×20	Stainless Steel	2
23	Gasket	Stainless Steel	3
24	Retainer	ABS	1
25	Fixing pin	Brass	1
26	Screw	Brass	4
27	Support	ABS	1
28	Bolt M12×35	Stainless Steel	2
29	Gasket	Stainless Steel	4
30	Upper Bearing Plate	Brass	1
31	Upper Bearing	Nylon With Graphite	1
32	Magnet Component	Component	1
33	Transmission Shaft	Stainless Steel	1
34	Sheath	MPPO	2
35	Bevel Gear	Nylon	1
36	Lower Bearing	Nylon With Graphite	1
37	Gasket	Brass	4
38	Screw	Brass	3
39	Nut	Brass	1
40	Gasket	Brass	1
41	Turbine Shaft Hold	Brass	1
42	Turbine Shaft	Tungsten Steel	1