



Czech Metrology Institute

Notified Body No. 1383, Okružní 31
638 00 Brno

EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/10 – 4759

Issued by: **Český metrologický institut**
Okružní 31
638 00 Brno
Czech Republic

Notified Body No. 1383

In accordance with: point 3 of annex 2 to Government Order No. 464/2005 Coll. (annex B of the Directive 2004/22/EC) from 19 October 2005 that lays down technical requirements on measuring instruments and implements in Czech Republic Directive 2004/22/EC of the European Parliament and of the Council.

Manufacturer: **Ningbo Water Meter Co. LTD.**
(Applicant) **No. 99, Lane 268, Beihai Road**
Ningbo 315033
China

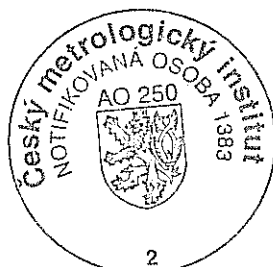
In respect of: **water meter - volumetric**
type: PD-LFC
Accuracy class: 2
Temperature class: T30 and T50


Valid until: **12 October 2020**

Document number: **0115-CS-A037-10**

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 9 pages.

Date of issue: 13 October 2010




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Notified Body No.1383

1. Measuring device description

The volumetric water meters type PD-LFC are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer in the sense of the Directive of the European Parliament and of the Council no. 2004/22/EC of measuring instruments, as amended.

The water meters type PD-LFC are positive displacement meters with rotary piston.

The water meters type PD-LFC with brass or bronze body consist of a lower and upper covers with connecting threads, a inlet strainer (optional), a wet measuring unit, a clamp frame, a transmission shaft, a semi dry mechanical indicating device, a non-return valve, a brass head ring and rubber o-ring.

There are water meters PD-LPF with plastic body also. The water meters with plastic body consist of a lower and upper covers with connecting threads, a inlet strainer (optional), a wet measuring unit, a clamp frame, a transmission shaft, a semi dry mechanical indicating device, a non-return valve, and rubber o-ring.

The measuring unit consists of an internal strainer, a piston chamber with plastic shaft with stainless steel holder, a bush, a plate, a piston with stainless steel shaft, a piston chamber lid with, a transmission shaft.

The mechanical indicating device, semi dry (Liquid Filled Calculator) with protected registered drums indicating device formed by numbered rollers with eight drums for water meters DN 15, 20 and 25 and nine drums for water meters DN 32 and 40. The first drum from right site is suitable for continual reading.

The water meters type PD-LFC can be equipped by a reed impulse transmitter which can be used for remote reading.

The water meters type PD-LFC shall be installed to operate in arbitrary positions.

The water meters type PD-LFC shall be designate by these trademarks:



NWM



Water meters type PD-LFC are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2010 Annex 2 from 1.10.2010.

2. Basic technical data

Basic technical data of water meters type PD-LFC:

Nominal diameter (DN) [mm]:	15	20	25	32	40
Overload flowrate (Q_4) [m^3/h]:	≤ 3.13	≤ 5.00	≤ 7.88	≤ 12.5	≤ 20.0
Permanent flowrate (Q_3) [m^3/h]:	$\leq 2.50^1$	$\leq 4.00^1$	$\leq 6.30^1$	$\leq 10.0^1$	$\leq 16.0^1$
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0100	≥ 0.0160	≥ 0.0252	≥ 0.0400	≥ 0.0640
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0063	≥ 0.0100	≥ 0.0158	≥ 0.0250	≥ 0.0400
Ratio Q_3 / Q_1 :	$\leq 400^2$				
Ratio Q_2 / Q_1 :	1.6				
Ratio Q_4 / Q_3 :	1.25				
Accuracy class:	2				
Maximum permissible error for the lower flowrate zone (MPE _l):	$\pm 5 \%$				
Maximum permissible error for the upper flowrate zone (MPE _u):	$\pm 2 \%$ for water having a temperature $\leq 30 \text{ }^\circ\text{C}$ $\pm 3 \%$ for water having a temperature $> 30 \text{ }^\circ\text{C}$				
Temperature class:	T30 and T50				
Water pressure classes:	MAP 16				
Pressure-loss classes:	$\Delta P 63$				
Indicating range [m^3]:	9 999			99999	
Resolution of the indicating device [m^3]:	0,00002				0,0002
Flow profile sensitivity classes:	U0 D0				

Orientation limitation:	Arbitrary orientation				
Length L [mm]:	110 to 170	130 to 190	170 to 260	260	300
Connection type– Screw thread size:	G¾B or G1B	G1B	G1¼B	G1½B	G2B
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A				
Reed switch K-faktor [impulse / L]:	2				0,2

¹ The value of Q_3 shall be chosen from the R5 line of ISO 3:1973.

² The ratio Q_3 / Q_1 shall be chosen from the R10 line from ISO 3:1973 and this value shall be higher than 10.

3. Test

Technical tests of the water meters type PD-LFC were performed in compliance with the International Recommendation OIML R 49 Edition 2006 (E) with conformity to EN 14154-1:2005+A1:2007, Test Report No. 6015-PT-A0043-10 from October 11th 2010.

4. The measuring device data

The water meters type PD-LFC shall be clearly and indelibly marked with the following information:

- The “CE” marking and supplementary metrology marking
- Number of EC-type examination certificate
- Name or trademark of manufacturer
- Year of manufacturer (last two digit) and serial number (as near as possible to the indicating device)
- Measuring device type
- Unit of measurement (m^3)
- Numerical value Q_3 in m^3/h ($Q_3 \times \times$)
- The ratio Q_3 / Q_1 , ($R \times \times$)
- The temperature class ($T \times \times$)
- The maximum admissible pressure (MAP $\times \times$)
- The pressure loss class ($\Delta P \times \times$)
- Classes on sensitivity to irregularities in velocity field ($U \times D \times$)
- Direction of flow arrow on both sides of the meter body

There are additional data required if the water meter is equipped with impulse transmitter:

- Output signals for ancillary devices (type / levels)
- External power supply requirements (voltage – frequency)

5. Sealing

The connection of water meter upper brass body and brass head ring has to be sealed on water meters with brass body and upper plastic body and lower plastic body has to be sealed on water meters with plastic body.

The connection of water meter body and reed impulse transmitter has to be sealed, if equipped.

The location of seal is described in Figure 1 and Figure 2.

Figure 1: The water meter type PD-LFC with brass body – view and sealing:

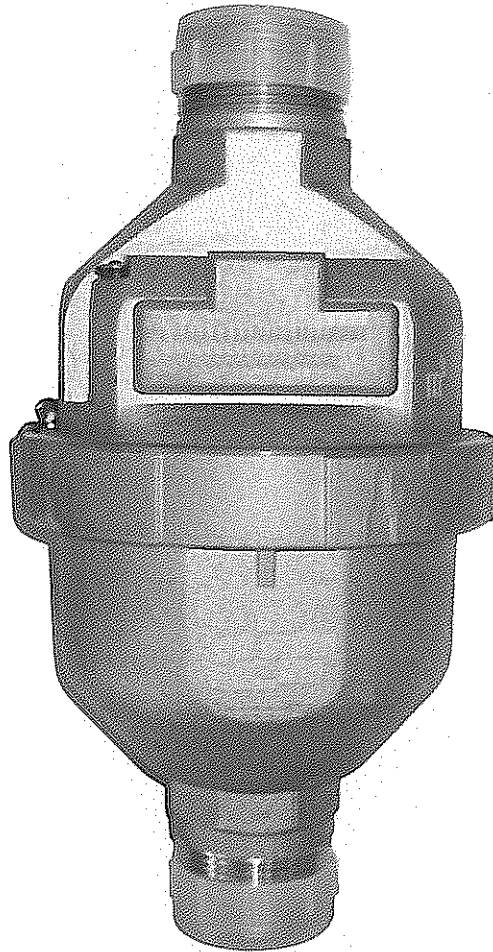


Figure 2: The water meter type PD-LFC with plastic body – view and sealing:



Figure 3: The water meter type PD-LFC assembly drawings:

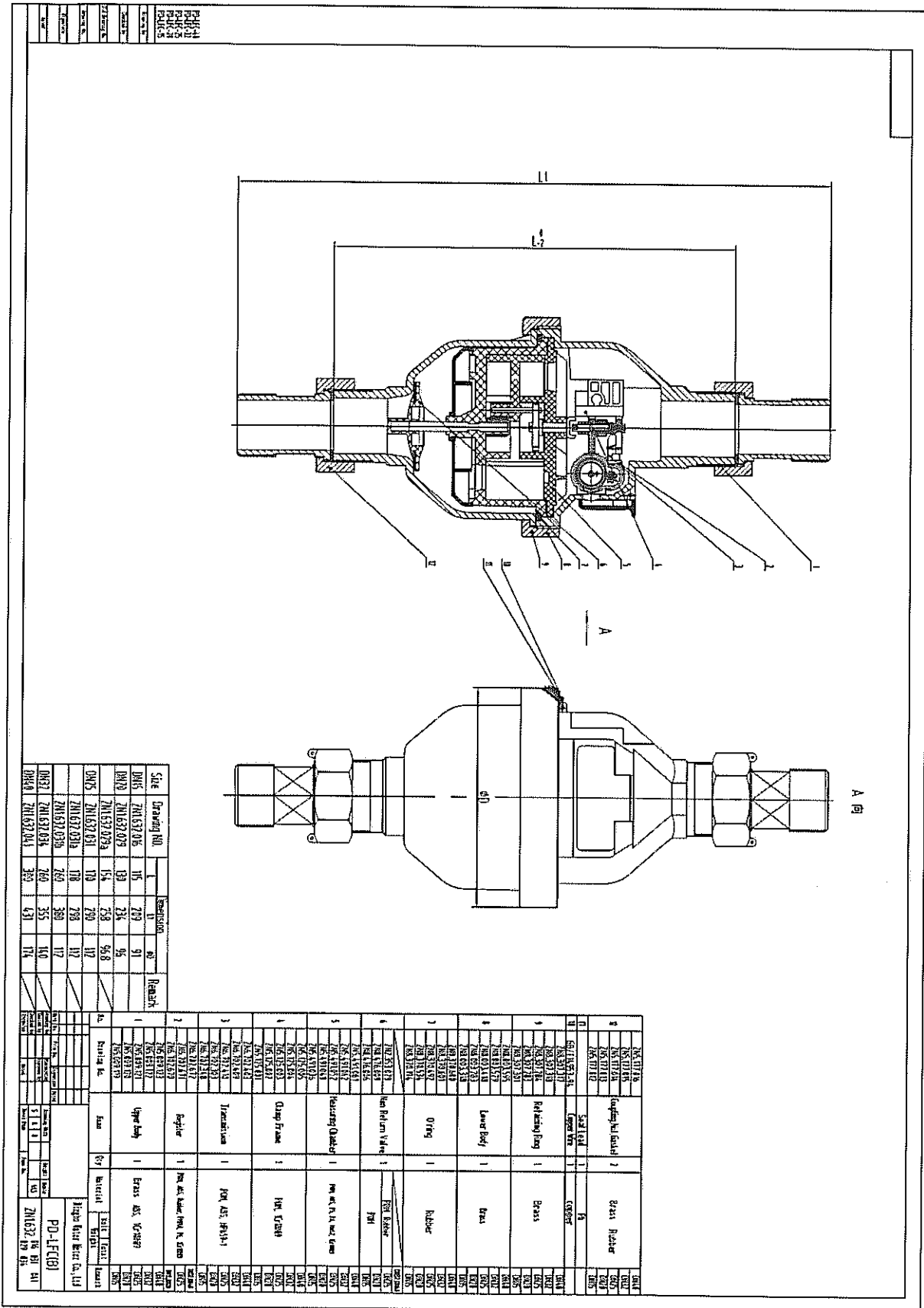


Figure 4: The water meter type PD-LFC with reed impulse transmitter assembly drawings:

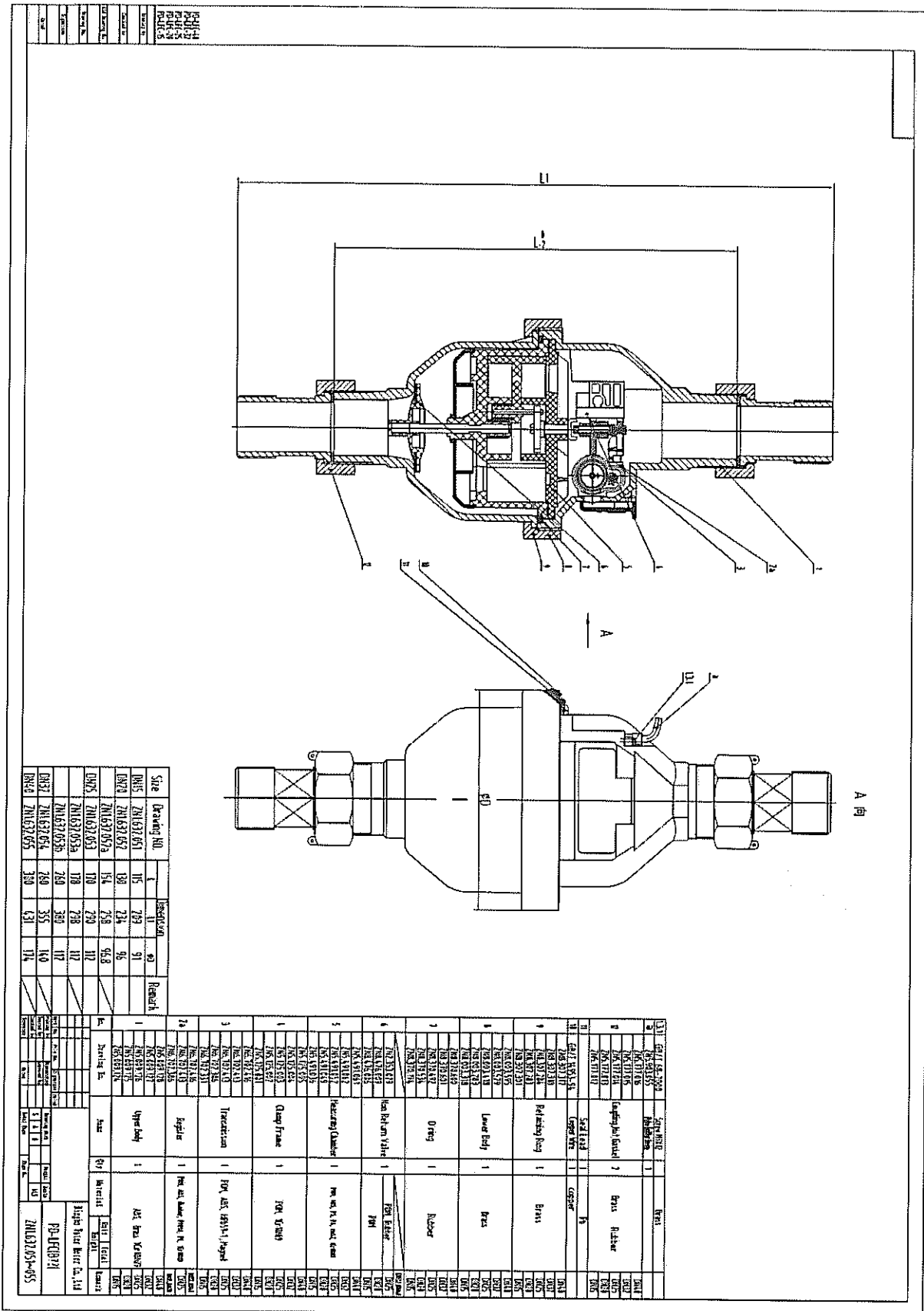


Figure 5: The water meter type PD-LFC with plastic body assembly drawings:

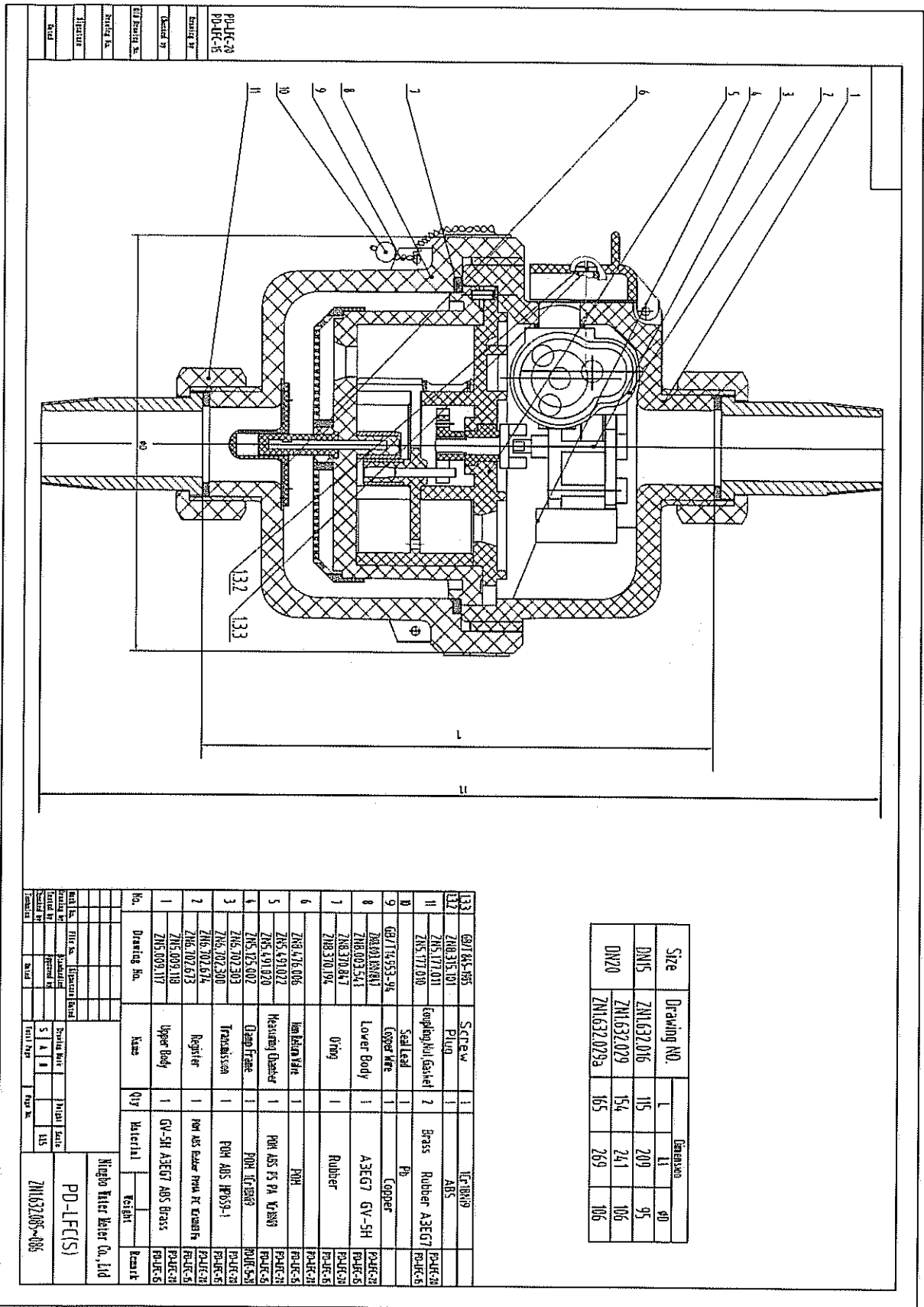


Figure 6: The water meter type PD-LFC with plastic body and reed impulse transmitter assembly drawings:

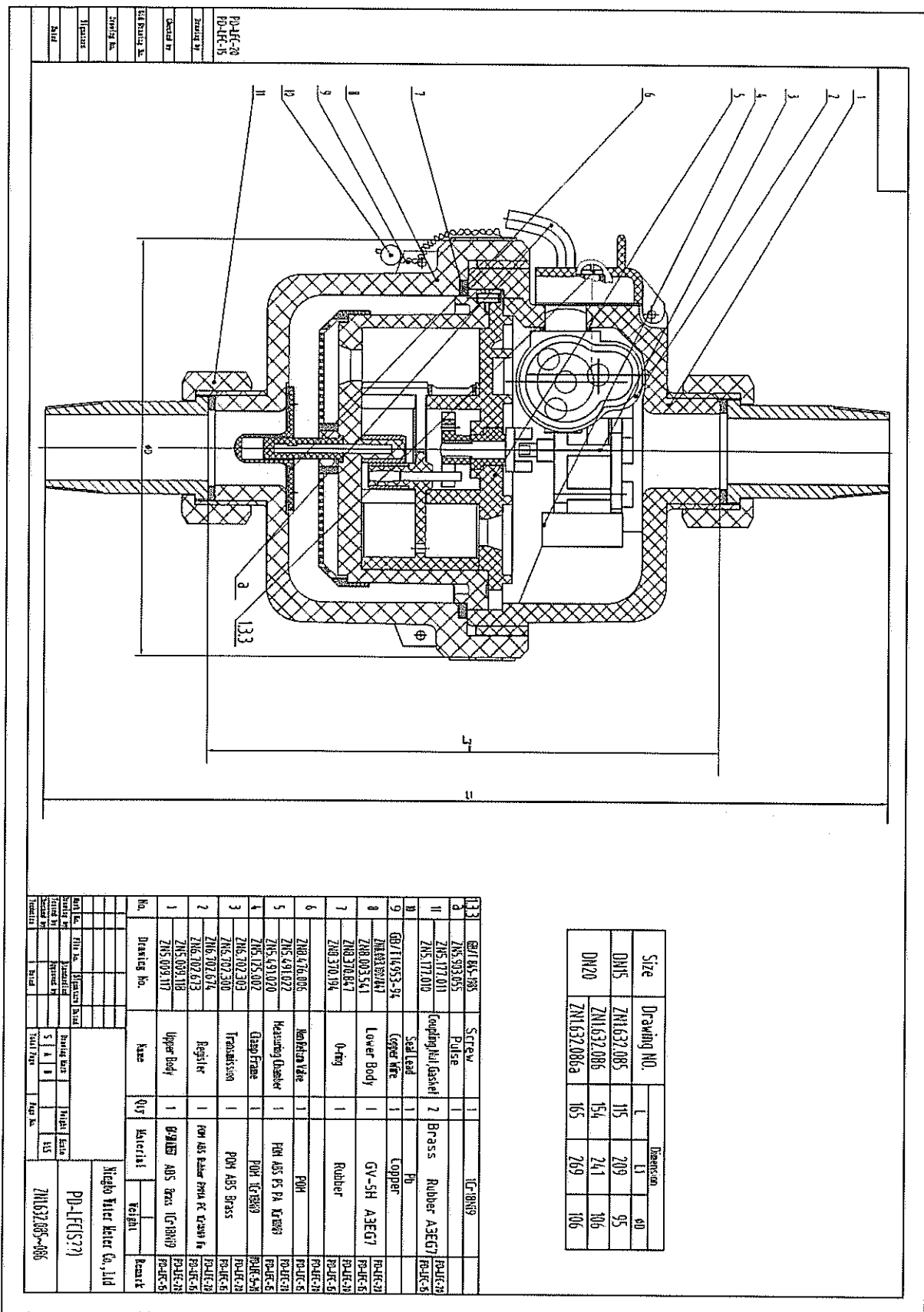


Figure 7: The dial plates of the water meter type PD-LFC:

