



Czech Metrology Institute

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Notified Body

No. 1383

EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/10 – 4793

Addition 1

This addition replaces all previous versions of this certificate in full wording.

Page 1 from 17 pages

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.
No. 99, Lane 268, Beihai Road
Ningbo 315033
China

For: water meter – multi jet
type: MJ-LFC and MJ-WDC

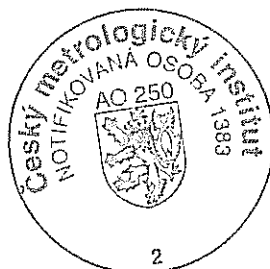
Temperature class: T30 and T50

Valid until: 30 March 2021

Document number: 0115-CS-A011-11

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 13 pages.

Date of issue: 27 October 2011



Certificate approved by:

RNDr. Pavel Klenovský

1. Measuring device description

The multi jet water meters type MJ-LFC and MJ-WDC 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 MJ-WDC are multi jet rotary vane wheel water meters with wet mechanical indicating device.

The water meters type MJ-LFC are multi jet rotary vane wheel water meters with semi dry (Liquid Filled Calculator) indicating device mechanical indicating device with protected registered drums.

The water meters type MJ-LFC and MJ-WDC consist of a brass, bronze, iron or plastic body, an inlet strainer, a wet measuring unit with a plastic distributor with tangential holes, a stainless shaft with plastic pivot, a rotary vane wheel and gears, a mechanical indicating device with rotary pointers and numbered drums, a glass and a brass or plastic head ring with a plastic cover. The numbered drums are installed in capsule filled by special liquid in case of MJ-LFC type. The adjustment is realized by adjusting screw. The access to the adjusting screw is protected by sealed screw.

The mechanical indicating device is formed by numbered rollers with five drums for water meters DN 15 to DN 32 and six drums for water meters DN 40 and DN 50 and four pointers.

The water meters type MJ-LFC admit three variants for the indicating device. For the variant MJ-LFC (F1) there is no contact of water with the window for reading the roller drums. For the variant MJ-LFC (F10) there is a top plastic cover and pointer scales printed on this cover from outside – there is no contact of water with the scales neither with the window for reading the roller drums.

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

The water meters type MJ-LFC and MJ-WDC shall be installed to operate in horizontal or vertical position only with the indicating device positioned at the top, according to used meter body.

The water meters type MJ-LFC and MJ-WDC shall be designate by these manufacturer's marks:



NWM



Water meters type MJ-LFC and MJ-WDC are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2010.3.1 from 01.07.2011.

2. Basic technical data

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 15 to DN 25:

Nominal diameter (DN) [mm]:	15	20	25
Overload flowrate (Q_4) [m^3/h]:	≤ 3.13	≤ 5.00	≤ 7.88
Permanent flowrate (Q_3) [m^3/h]:	$\leq 2.50^1$	$\leq 4.00^1$	$\leq 6.30^1$
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0200	≥ 0.0320	≥ 0.0504
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0125	≥ 0.0200	≥ 0.0315
Ratio Q_3 / Q_1 :	$\leq 200^2$		
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]:	99 999		
Resolution of the indicating device [m^3]:	0,00005		
Resolution of the device for the rapid testing [pulse/L]:	71.185	54.000	37.385
Flow profile sensitivity classes:	U0 D0		



Nominal diameter (DN) [mm]:	15	20	25
Orientation limitation:	H or V (according to used meter body)		
Length of horizontal water meter L [mm]:	110 to 190	160 to 190	160 to 260
Length of vertical water meter L [mm]:	100 to 105		105 to 110
Connection type– Screw thread size:	G¾B or G1B	G1B	G1¼B or G1½B
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

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.

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 32 to DN 50:

Nominal diameter (DN) [mm]:	32	40	50
Overload flowrate (Q_4) [m^3/h]:	≤ 12.5	≤ 20.0	≤ 31.3
Permanent flowrate (Q_3) [m^3/h]:	≤ 10.0 ¹	≤ 16.0 ¹	≤ 25.0 ¹
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0800	≥ 0.128	≥ 0.160
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0500	≥ 0.0800	≥ 0.100
Ratio Q_3 / Q_1 :	≤ 200 ²		≤ 250 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:	ΔP 63		
Indicating range [m^3]:	99 999	999 999	
Resolution of the indicating device [m^3]:	0,00005	0,00005	
Resolution of the device for the rapid testing [pulse/L]:	23.143	12.462	
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H		
Length of horizontal water meter L [mm]:	160 to 260	200 to 300	270 to 300
Connection type– Screw thread size:	G1½B	G2B	G2½B or Flange
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

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 MJ-LFC and MJ-WDC 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-A0037-11 from March 29th 2011 and test report No. 6015-PT-P0136-11 from October 25th 2011.



4. The measuring device data

The water meters type MJ-LFC and MJ-WDC 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 body and head ring has to be sealed. The connection of water meter body and reed impulse transmitter has to be sealed, if equipped.

The location of seals is described in figures below.



Figure 1: The water meter type MJ-LFC – view:

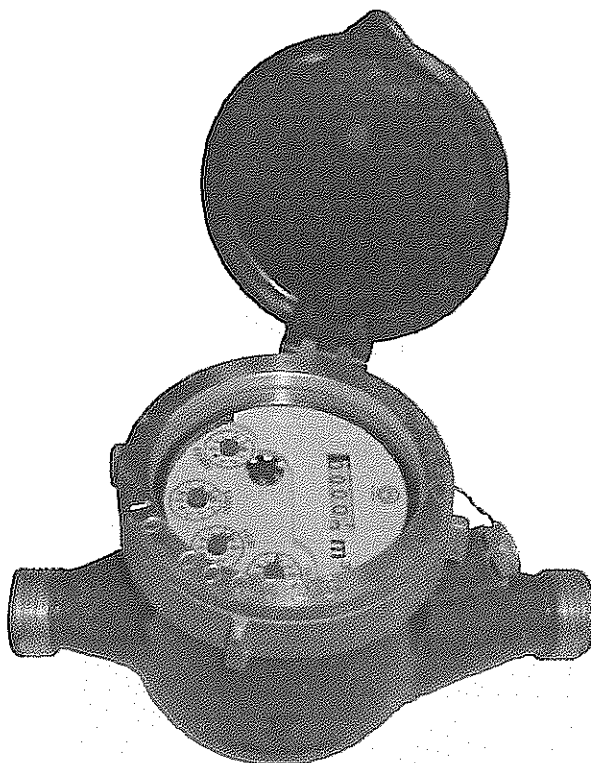


Figure 2: The water meter type MJ-WDC – view and sealing:

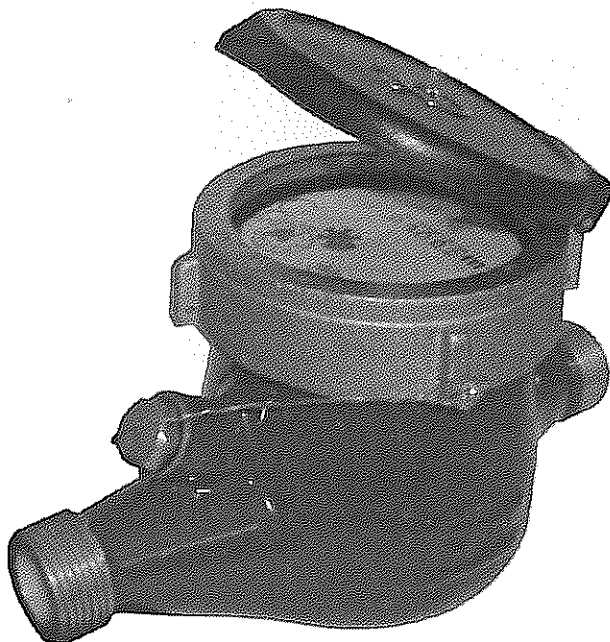


Figure 3: The water meter type MJ-LFC with vertical body – view and sealing:



Figure 4: The water meter type MJ-LFC with plastic body – view and sealing:



Figure 5: The water meter type MJ-LFC (F1) – view and sealing:

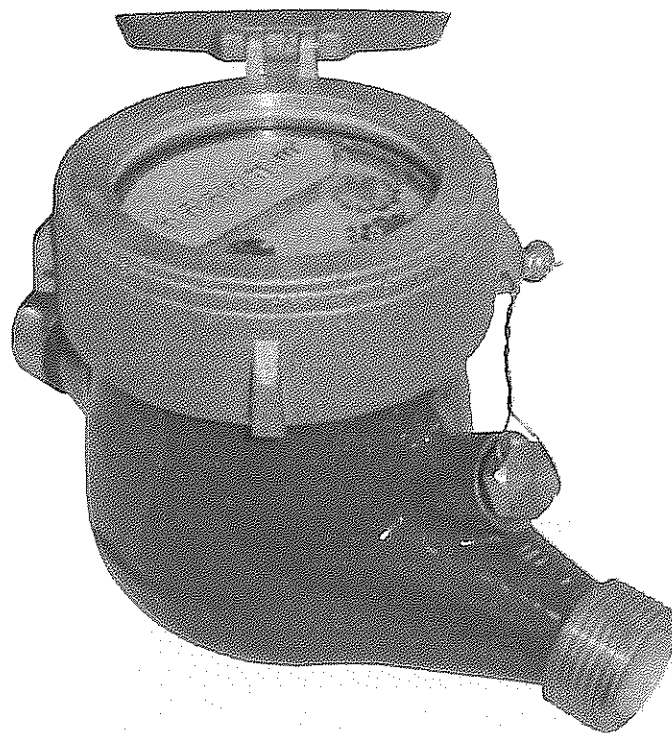


Figure 6: The water meter type MJ-LFC (F10) – view and sealing:

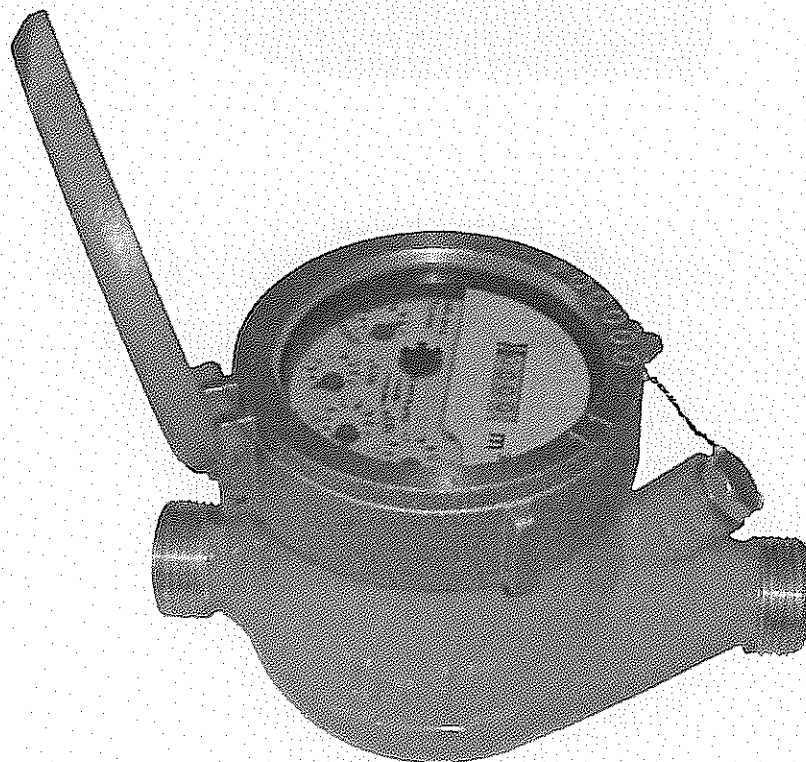


Figure 7: The water meter type MJ-LFC assembly drawings:

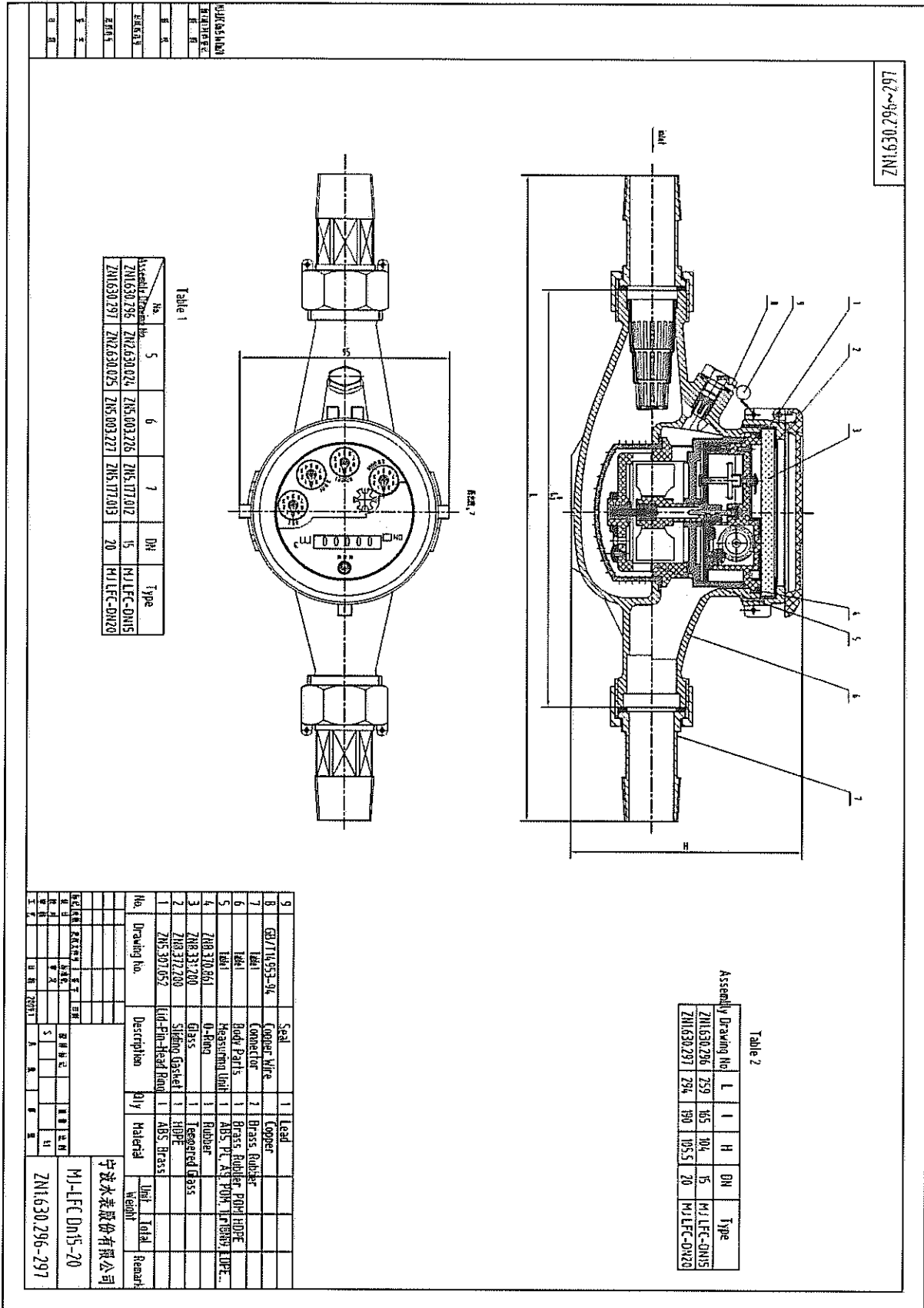


Figure 8: The water meter type MJ-WDC assembly drawings:

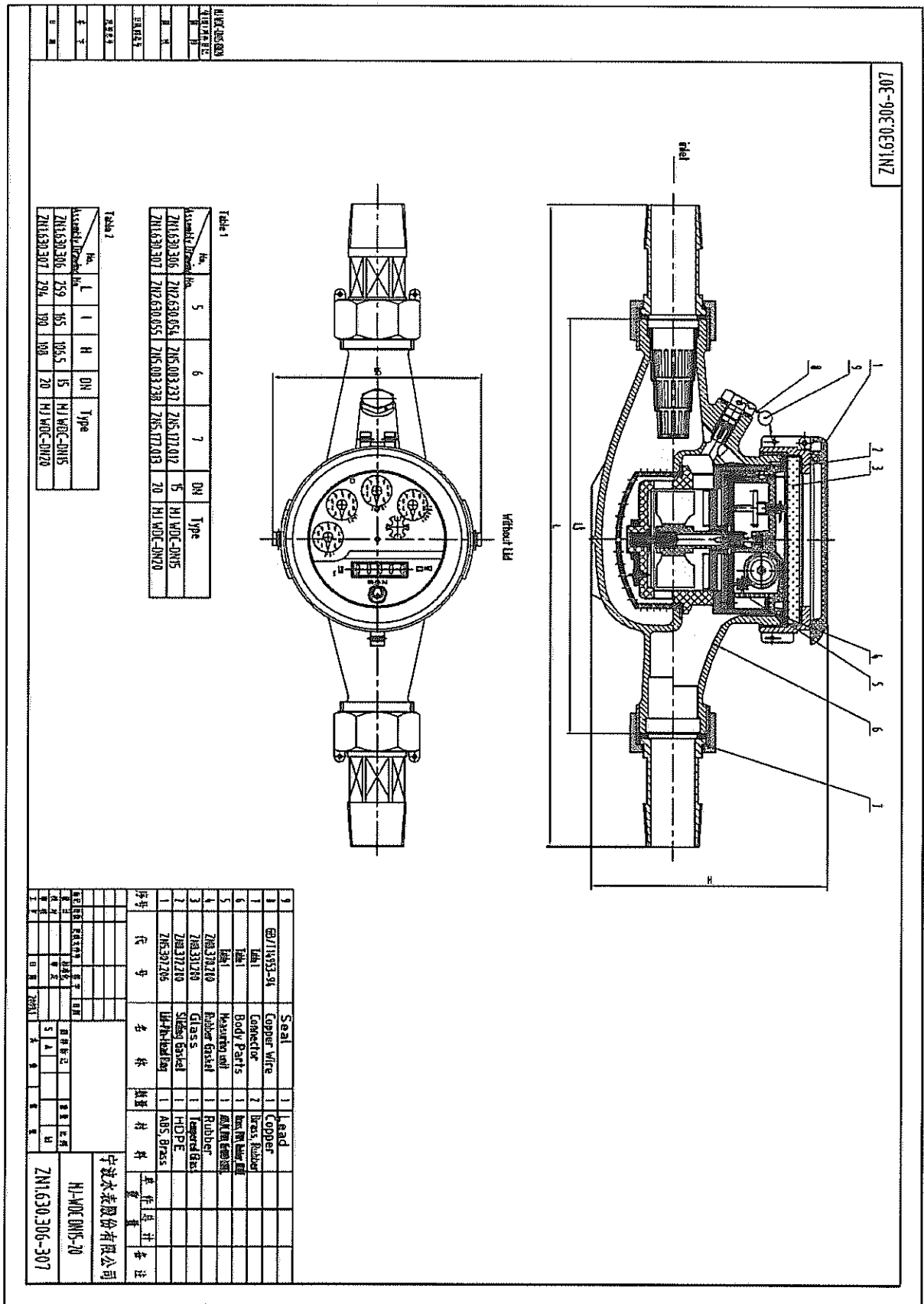


Figure 9: The water meter type MJ-LFC with reed impulse transmitter assembly drawings:

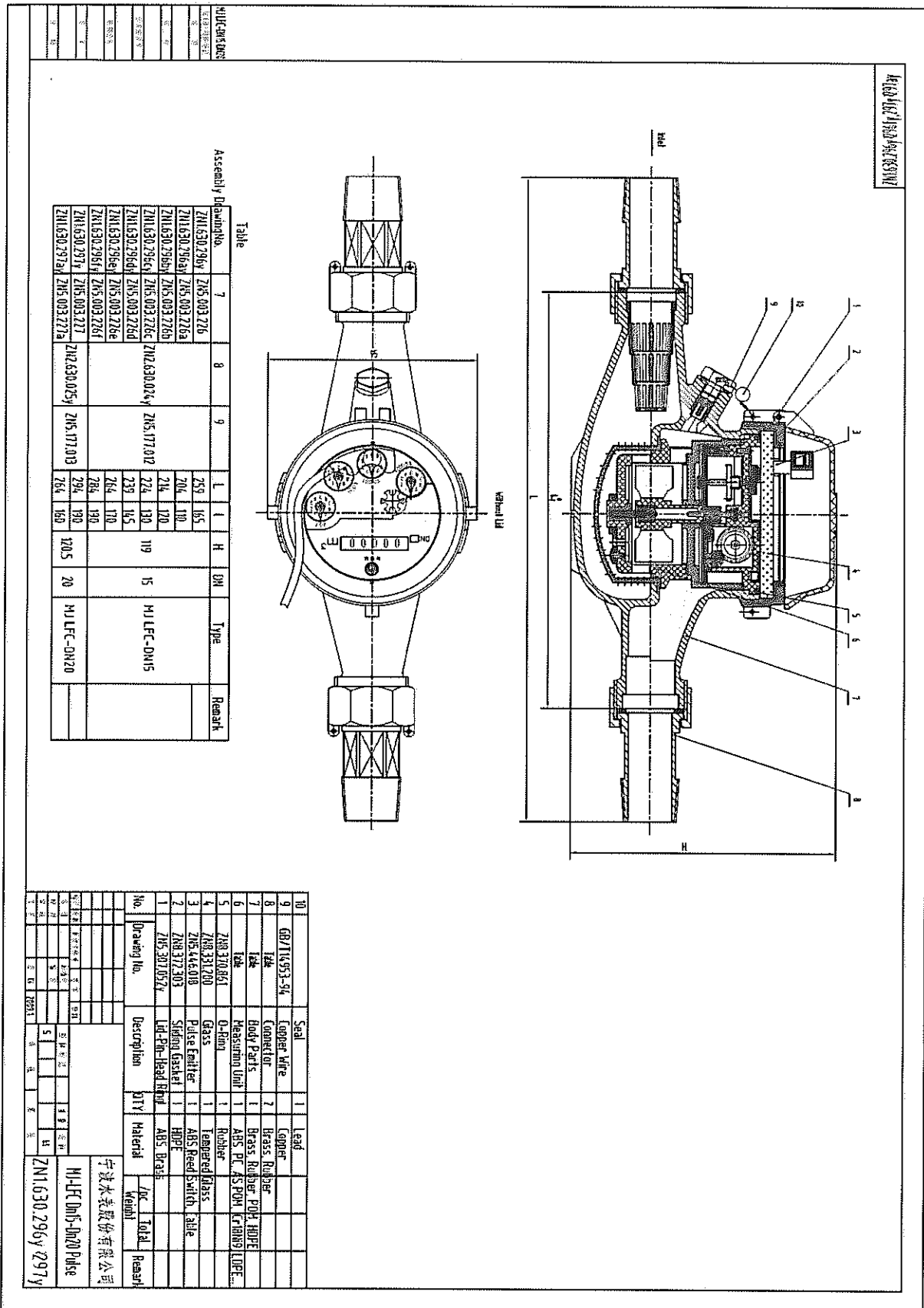


Figure 10: The water meter type MJ-WDC with reed impulse transmitter assembly drawings:

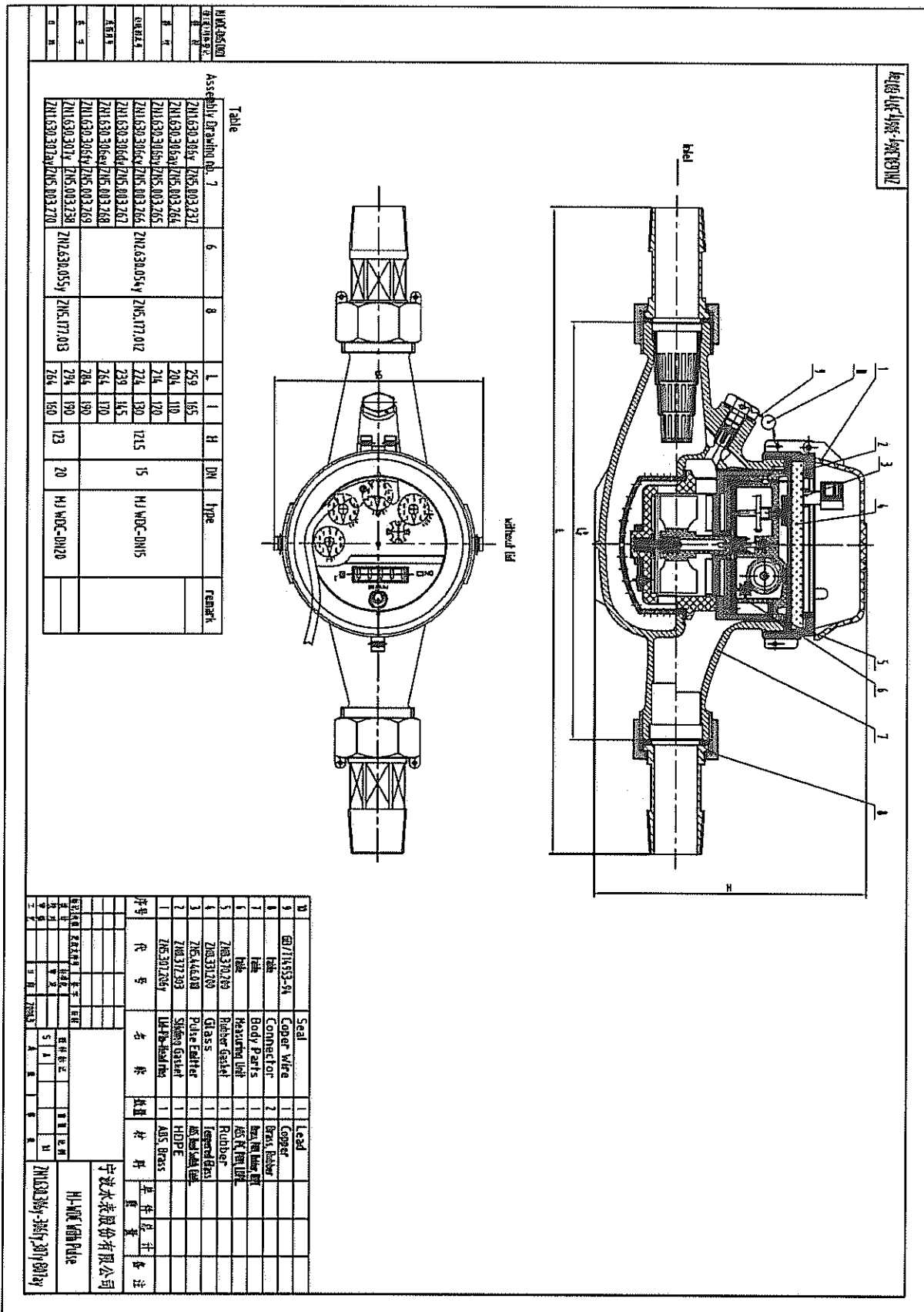


Figure 12: The water meter type MJ-WDC with plastic body assembly drawings:

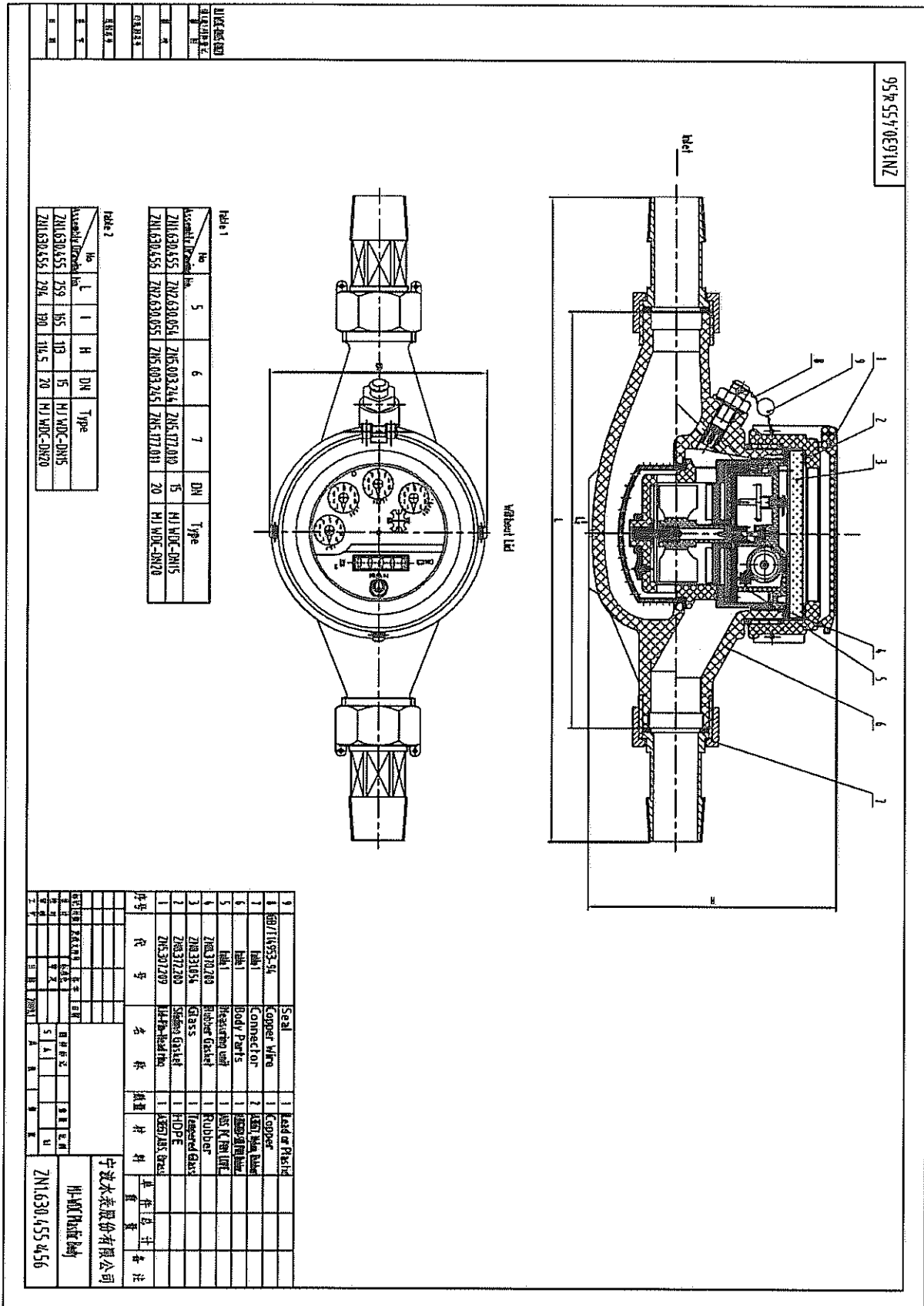


Figure 13: The water meter type MJ-LFC (F1) assembly drawings:

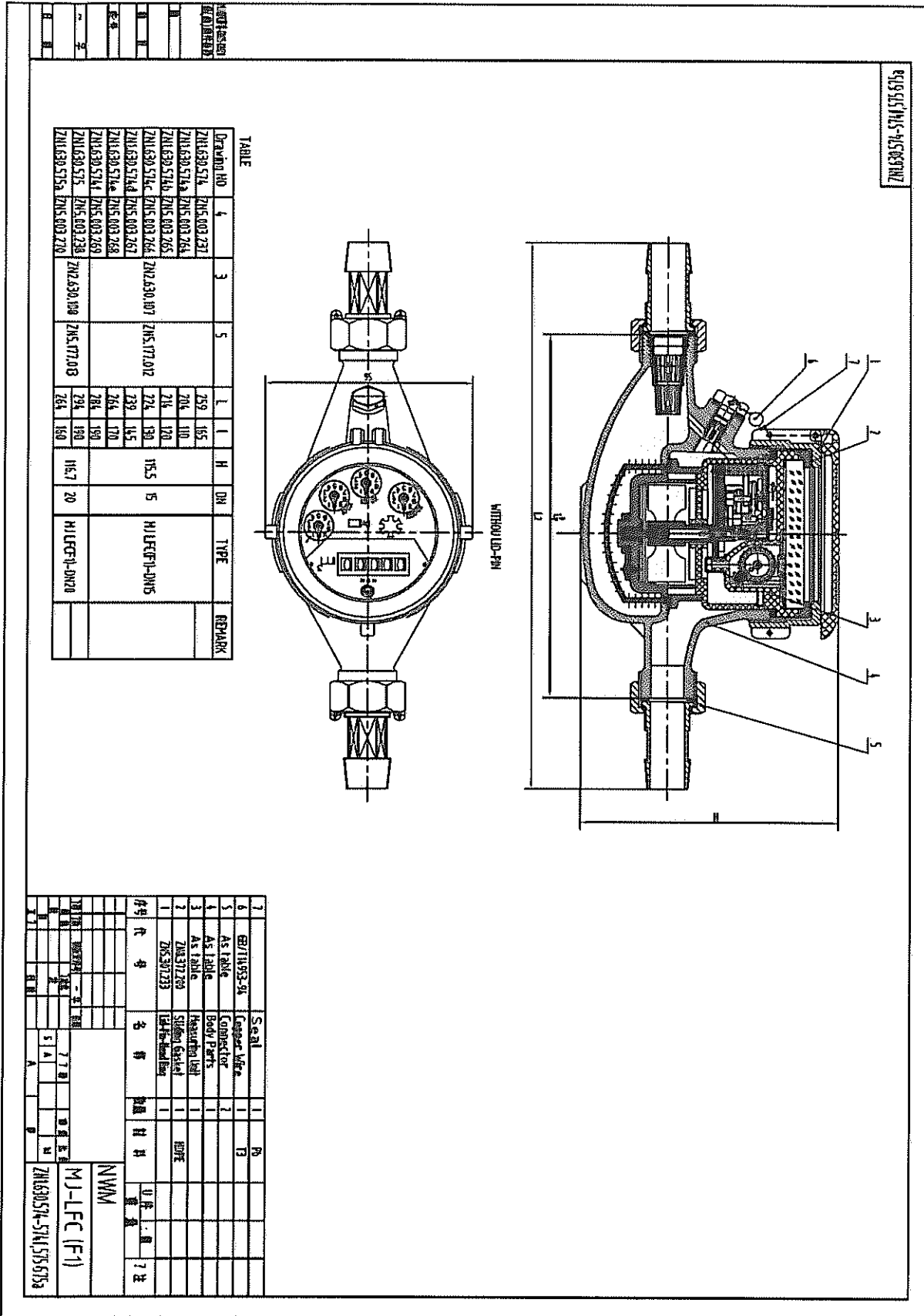


Figure 14: The water meter type MJ-LFC (F10) assembly drawings:

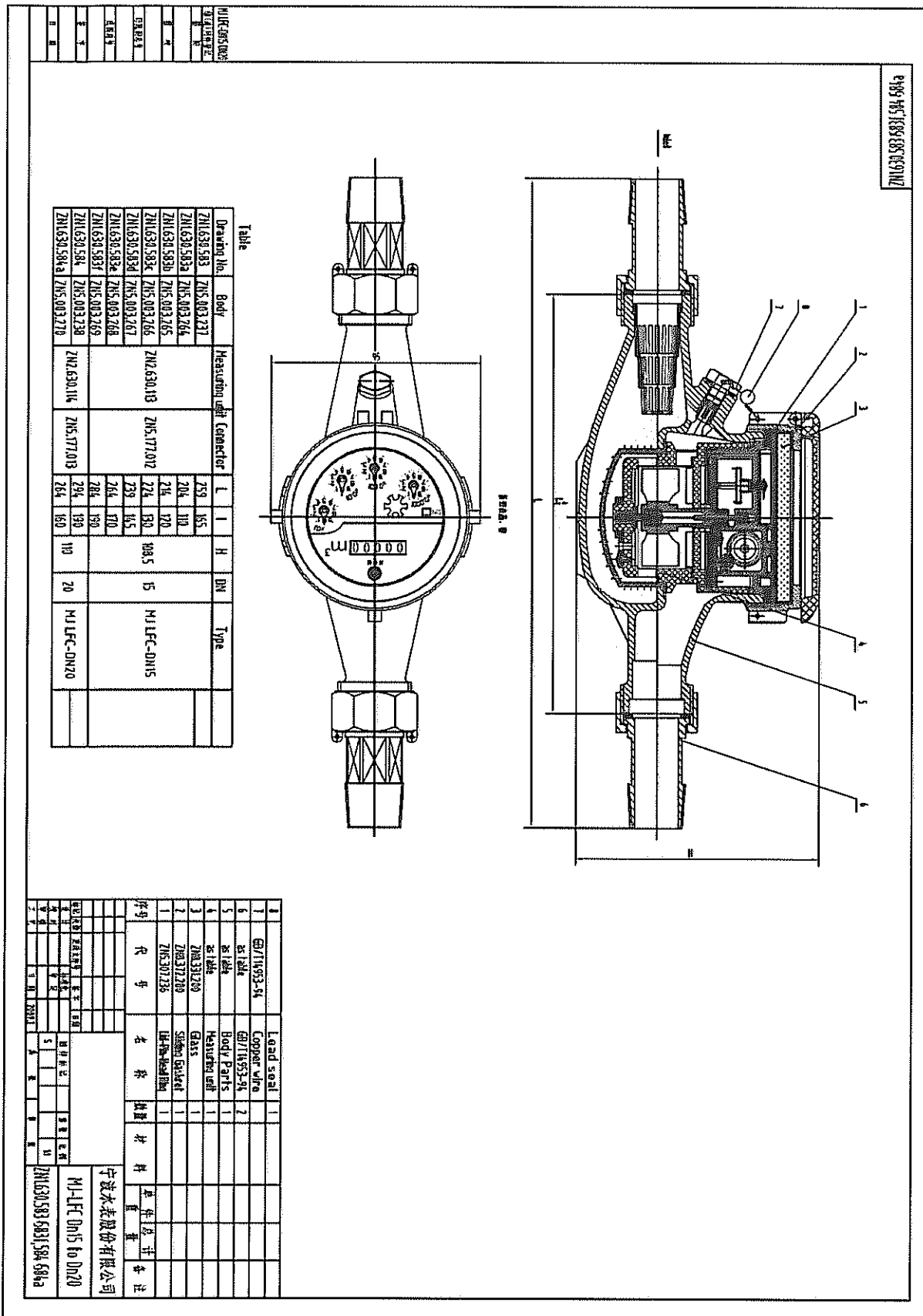


Figure 15: An example of the dial plate of the water meter type MJ-WDC:

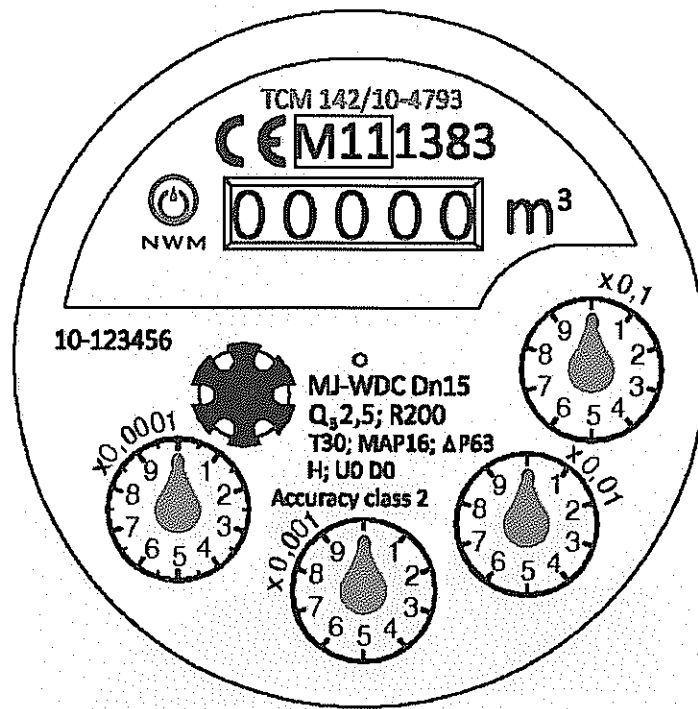


Figure 16: An example of the dial plate of the water meter type MJ-LFC:

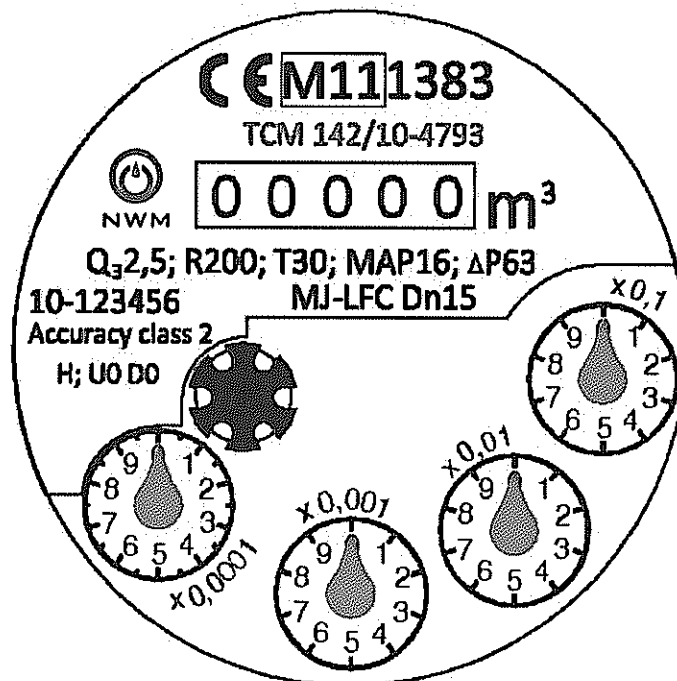


Figure 17: The dial plate of the water meter type MJ-LFC (F1):

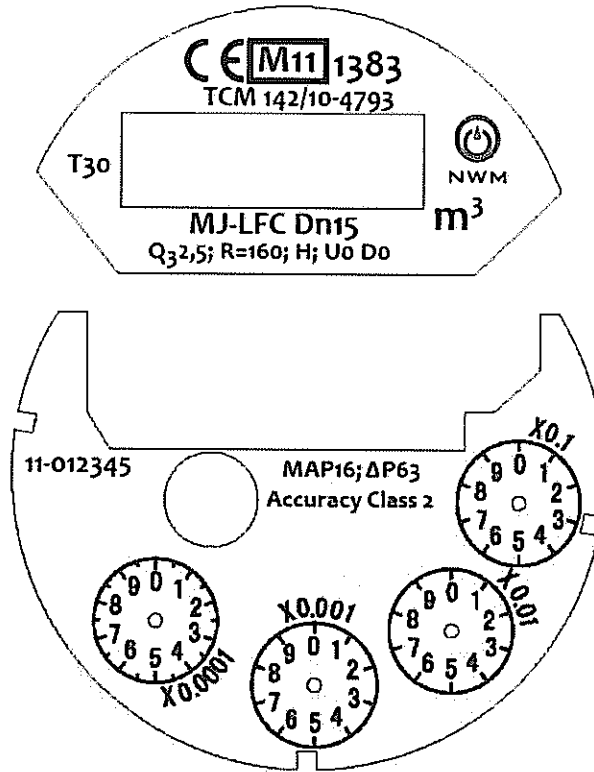
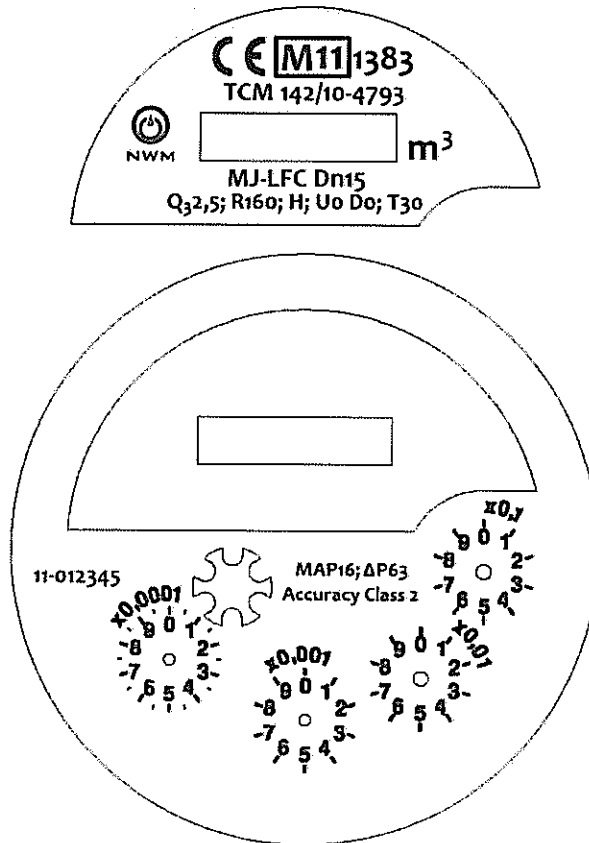


Figure 18: The dial plate of the water meter type MJ-LFC (F10):





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

For: water meter – multi jet
type: MJ-LFC and MJ-WDC

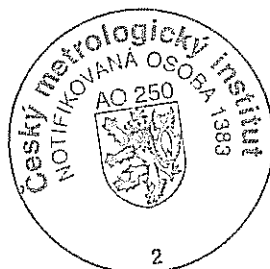
Temperature class: T30 and T50

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1. Measuring device description

The multi jet water meters type MJ-LFC and MJ-WDC 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 MJ-WDC are multi jet rotary vane wheel water meters with wet mechanical indicating device.

The water meters type MJ-LFC are multi jet rotary vane wheel water meters with semi dry (Liquid Filled Calculator) indicating device mechanical indicating device with protected registered drums.

The water meters type MJ-LFC and MJ-WDC consist of a brass, bronze, iron or plastic body, an inlet strainer, a wet measuring unit with a plastic distributor with tangential holes, a stainless shaft with plastic pivot, a rotary vane wheel and gears, a mechanical indicating device with rotary pointers and numbered drums, a glass and a brass or plastic head ring with a plastic cover. The numbered drums are installed in capsule filled by special liquid in case of MJ-LFC type. The adjustment is realized by adjusting screw. The access to the adjusting screw is protected by sealed screw.

The mechanical indicating device is formed by numbered rollers with five drums for water meters DN 15 to DN 32 and six drums for water meters DN 40 and DN 50 and four pointers.

The water meters type MJ-LFC admit three variants for the indicating device. For the variant MJ-LFC (F1) there is no contact of water with the window for reading the roller drums. For the variant MJ-LFC (F10) there is a top plastic cover and pointer scales printed on this cover from outside – there is no contact of water with the scales neither with the window for reading the roller drums.

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

The water meters type MJ-LFC and MJ-WDC shall be installed to operate in horizontal or vertical position only with the indicating device positioned at the top, according to used meter body.

The water meters type MJ-LFC and MJ-WDC shall be designate by these manufacturer's marks:



NWM



Water meters type MJ-LFC and MJ-WDC are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2010.3.1 from 01.07.2011.

2. Basic technical data

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 15 to DN 25:

Nominal diameter (DN) [mm]:	15	20	25
Overload flowrate (Q_4) [m^3/h]:	≤ 3.13	≤ 5.00	≤ 7.88
Permanent flowrate (Q_3) [m^3/h]:	$\leq 2.50^1$	$\leq 4.00^1$	$\leq 6.30^1$
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0200	≥ 0.0320	≥ 0.0504
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0125	≥ 0.0200	≥ 0.0315
Ratio Q_3 / Q_1 :	$\leq 200^2$		
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]:	99 999		
Resolution of the indicating device [m^3]:	0,00005		
Resolution of the device for the rapid testing [pulse/L]:	71.185	54.000	37.385
Flow profile sensitivity classes:	U0 D0		



Nominal diameter (DN) [mm]:	15	20	25
Orientation limitation:	H or V (according to used meter body)		
Length of horizontal water meter L [mm]:	110 to 190	160 to 190	160 to 260
Length of vertical water meter L [mm]:	100 to 105		105 to 110
Connection type– Screw thread size:	G¾B or G1B	G1B	G1¼B or G1½B
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

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.

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 32 to DN 50:

Nominal diameter (DN) [mm]:	32	40	50
Overload flowrate (Q_4) [m^3/h]:	≤ 12.5	≤ 20.0	≤ 31.3
Permanent flowrate (Q_3) [m^3/h]:	≤ 10.0 ¹	≤ 16.0 ¹	≤ 25.0 ¹
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0800	≥ 0.128	≥ 0.160
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0500	≥ 0.0800	≥ 0.100
Ratio Q_3 / Q_1 :	≤ 200 ²		≤ 250 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:	ΔP 63		
Indicating range [m^3]:	99 999	999 999	
Resolution of the indicating device [m^3]:	0,00005	0,00005	
Resolution of the device for the rapid testing [pulse/L]:	23.143	12.462	
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H		
Length of horizontal water meter L [mm]:	160 to 260	200 to 300	270 to 300
Connection type– Screw thread size:	G1½B	G2B	G2½B or Flange
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

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 MJ-LFC and MJ-WDC 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-A0037-11 from March 29th 2011 and test report No. 6015-PT-P0136-11 from October 25th 2011.



4. The measuring device data

The water meters type MJ-LFC and MJ-WDC 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 body and head ring has to be sealed. The connection of water meter body and reed impulse transmitter has to be sealed, if equipped.

The location of seals is described in figures below.



Figure 1: The water meter type MJ-LFC – view:

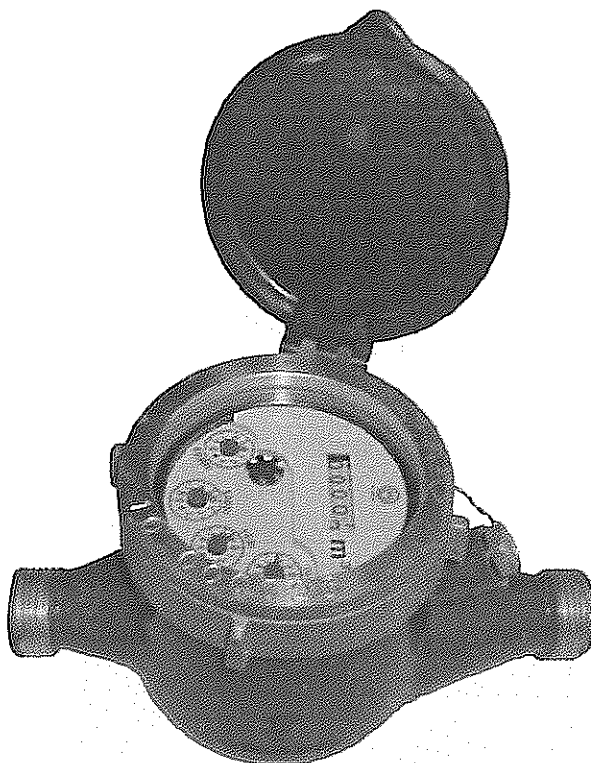


Figure 2: The water meter type MJ-WDC – view and sealing:

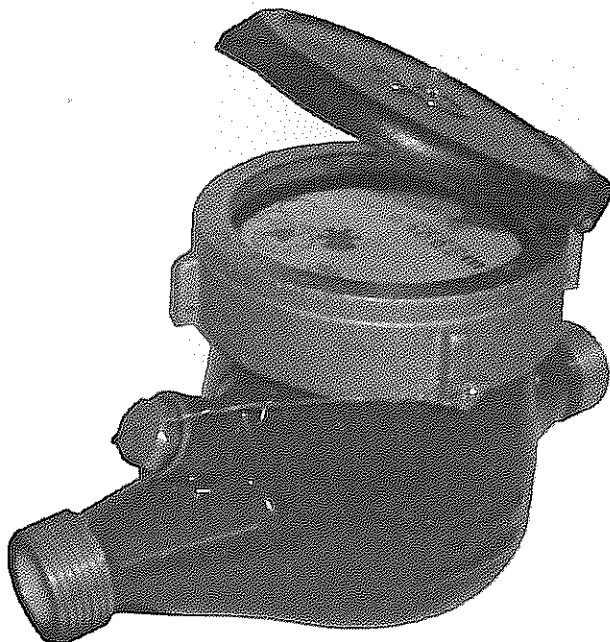


Figure 3: The water meter type MJ-LFC with vertical body – view and sealing:



Figure 4: The water meter type MJ-LFC with plastic body – view and sealing:



Figure 5: The water meter type MJ-LFC (F1) – view and sealing:

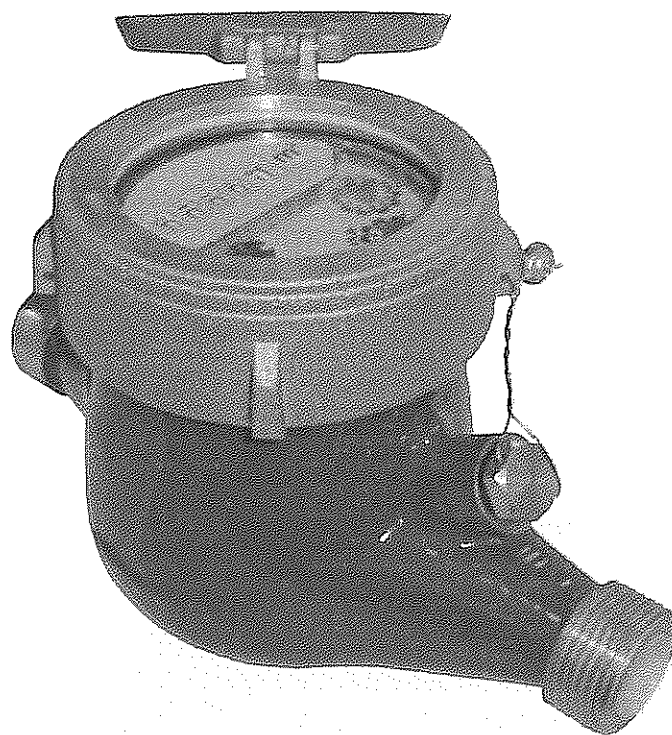


Figure 6: The water meter type MJ-LFC (F10) – view and sealing:

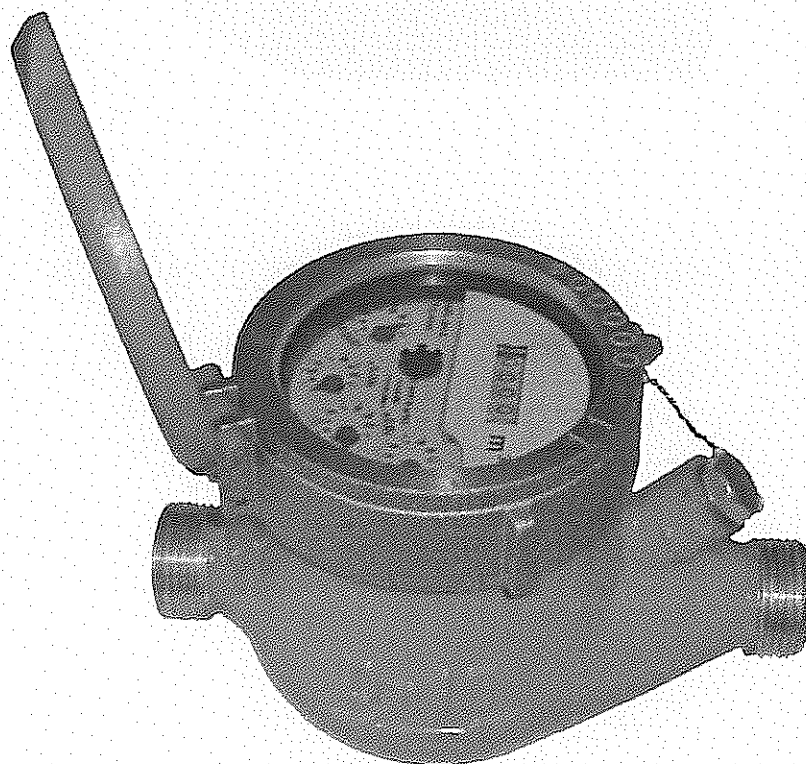


Figure 8: The water meter type MJ-WDC assembly drawings:

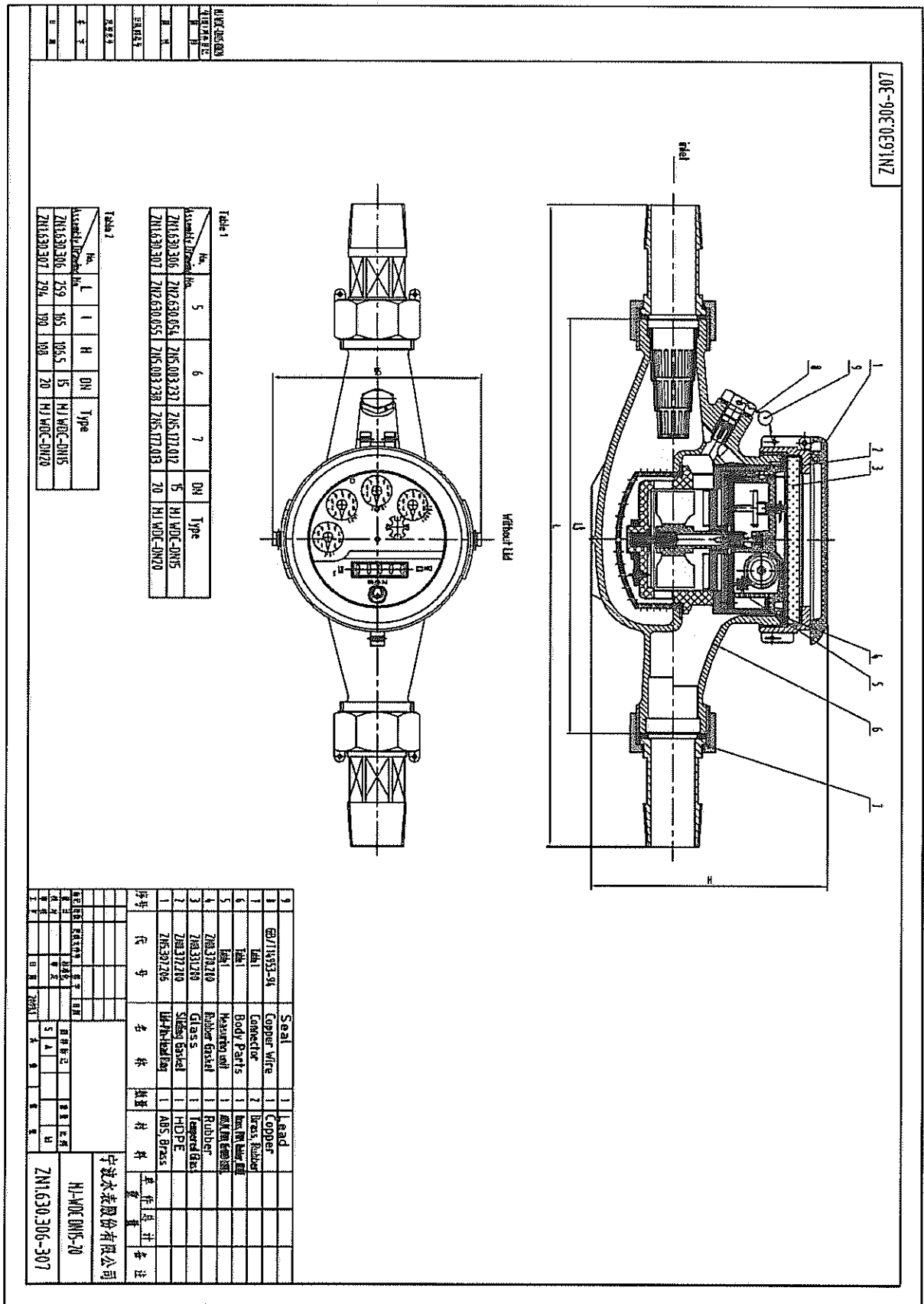


Figure 9: The water meter type MJ-LFC with reed impulse transmitter assembly drawings:

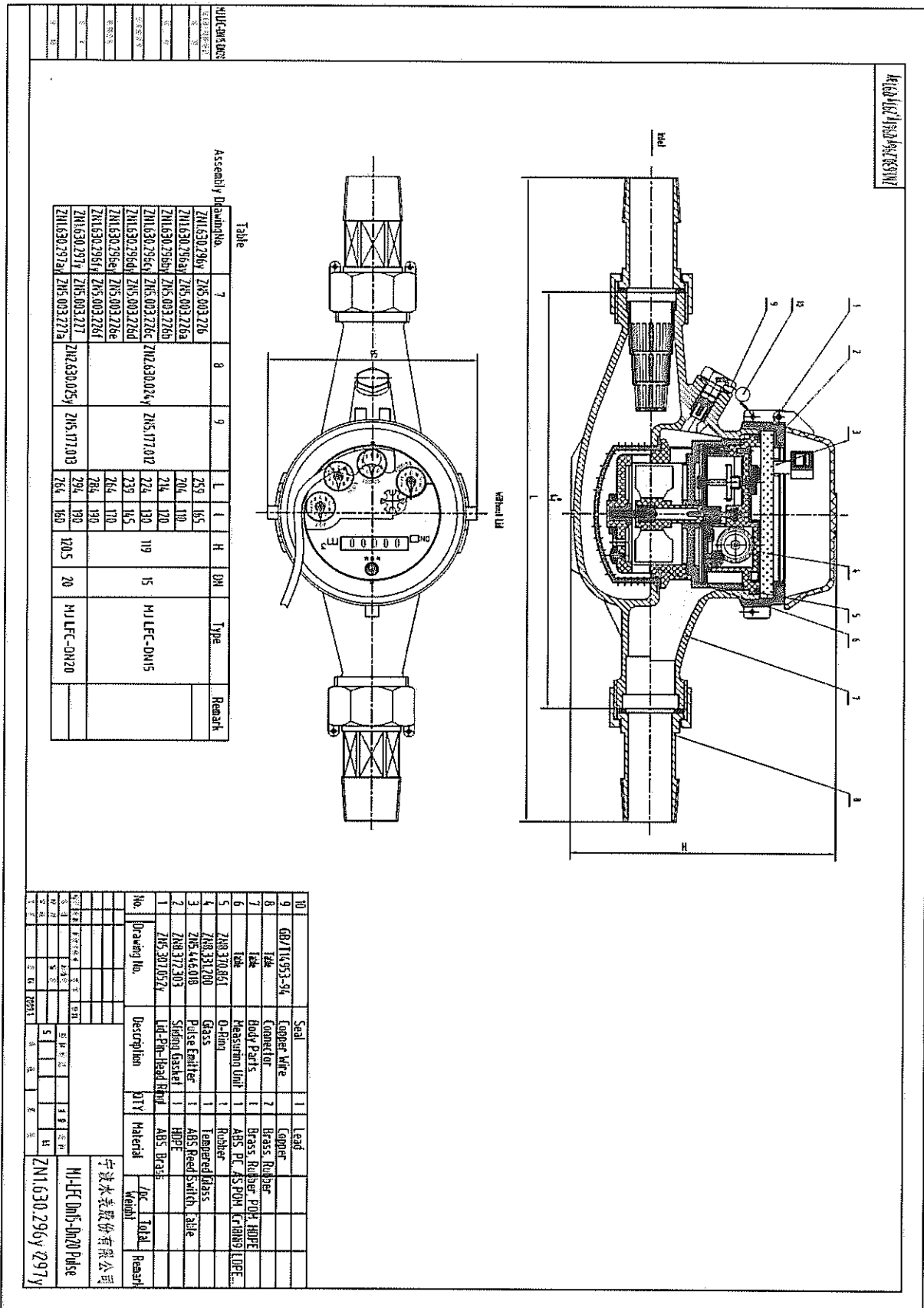


Figure 10: The water meter type MJ-WDC with reed impulse transmitter assembly drawings:

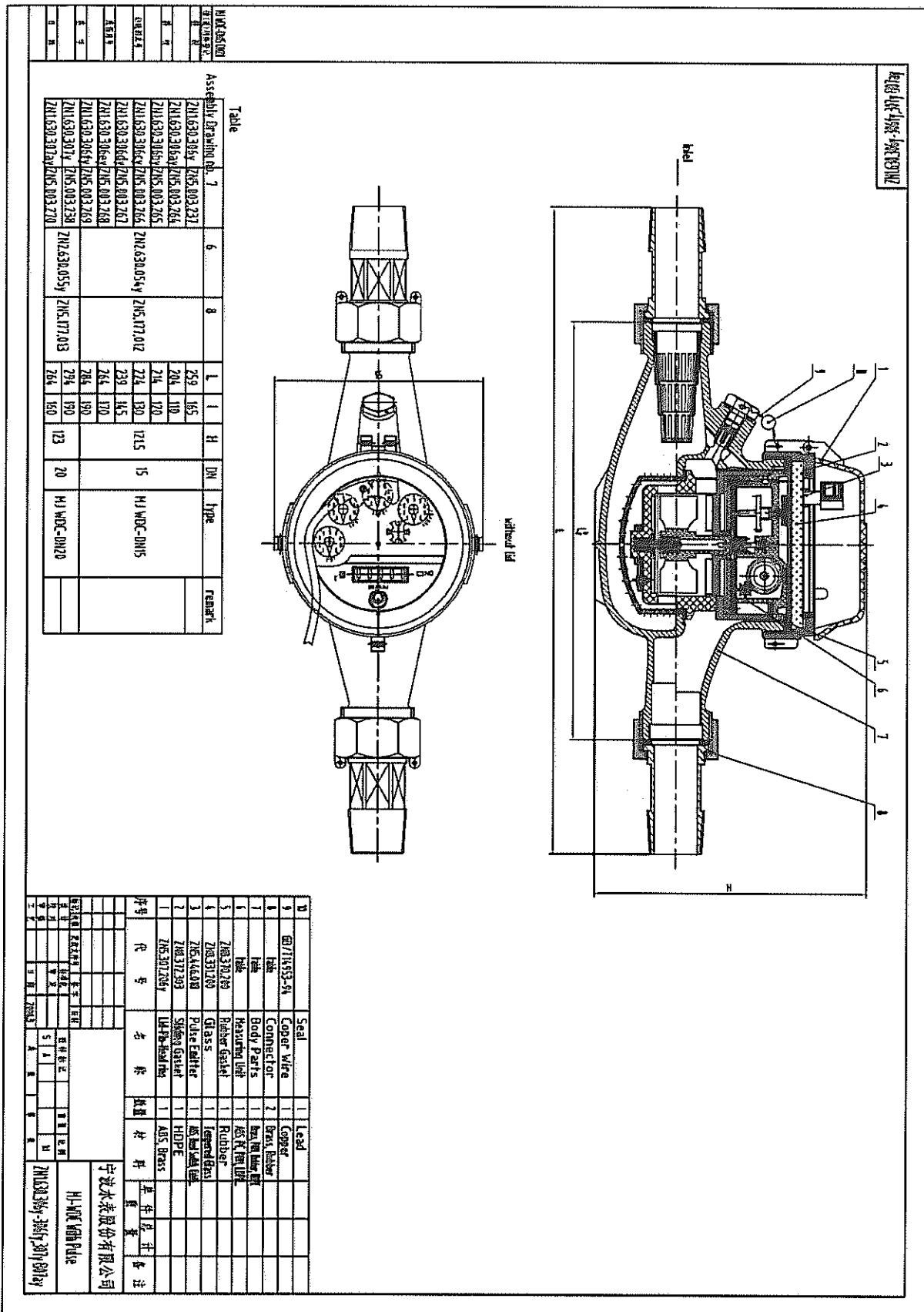


Figure 12: The water meter type MJ-WDC with plastic body assembly drawings:

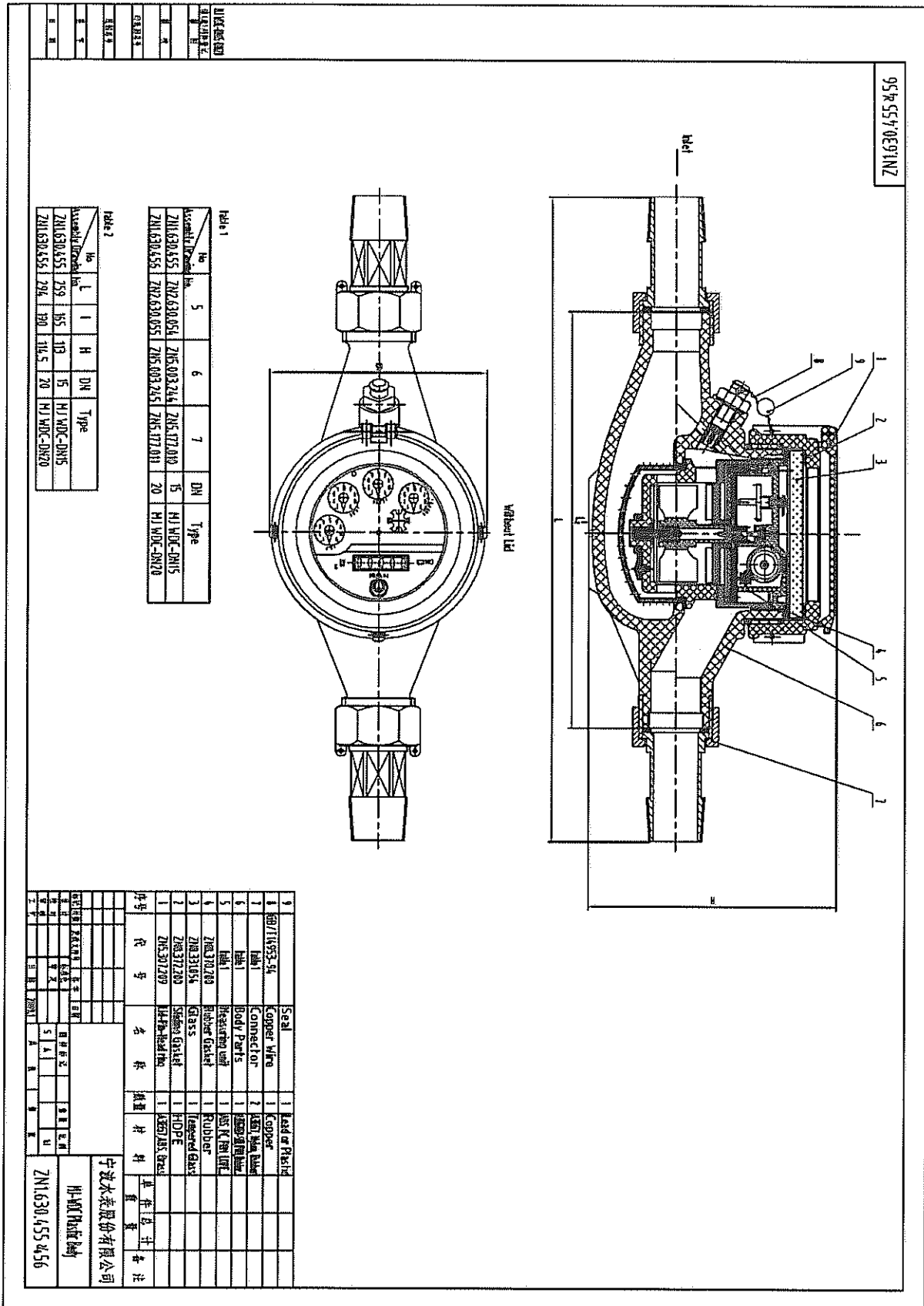


Figure 13: The water meter type MJ-LFC (F1) assembly drawings:

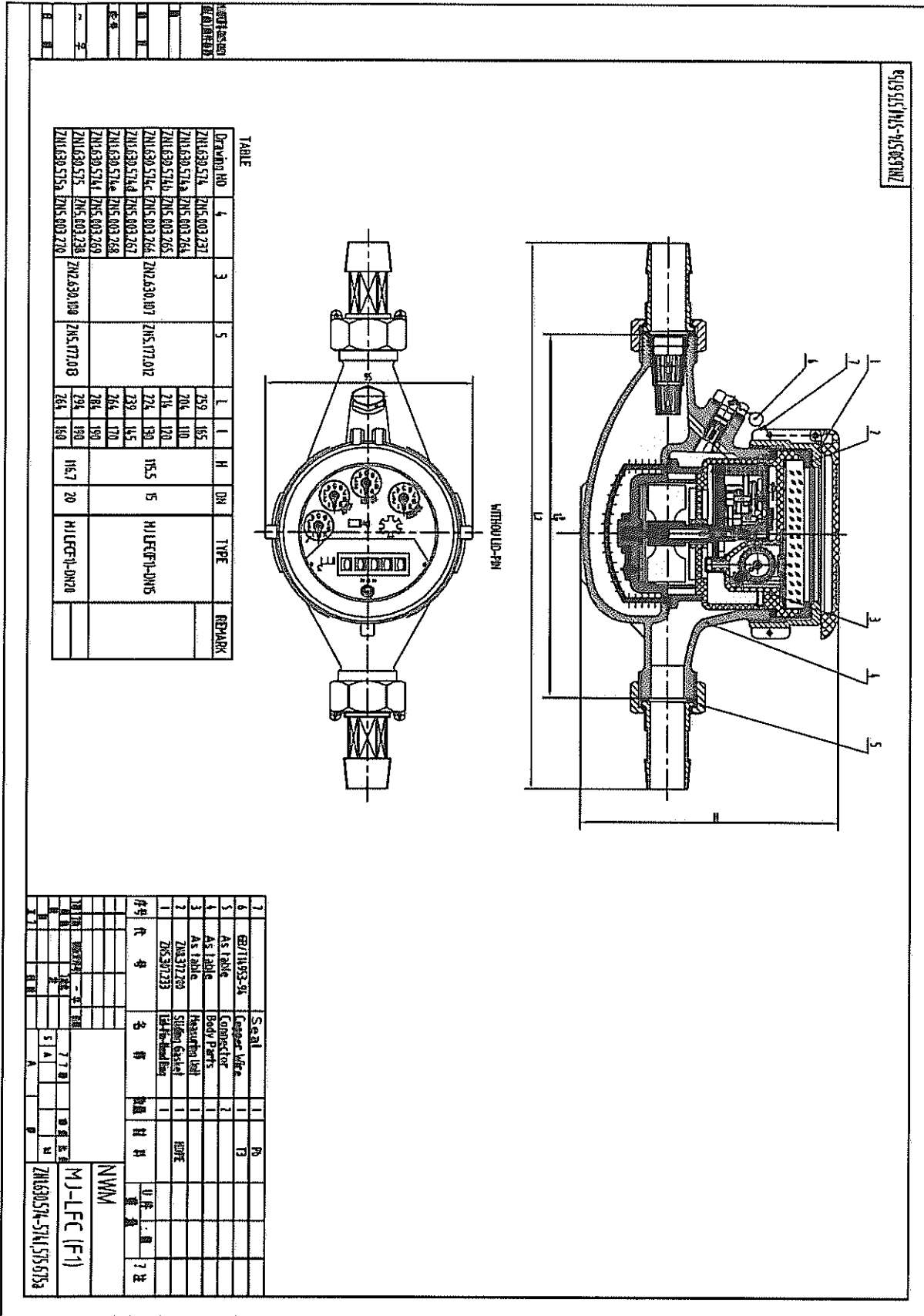


Figure 14: The water meter type MJ-LFC (F10) assembly drawings:

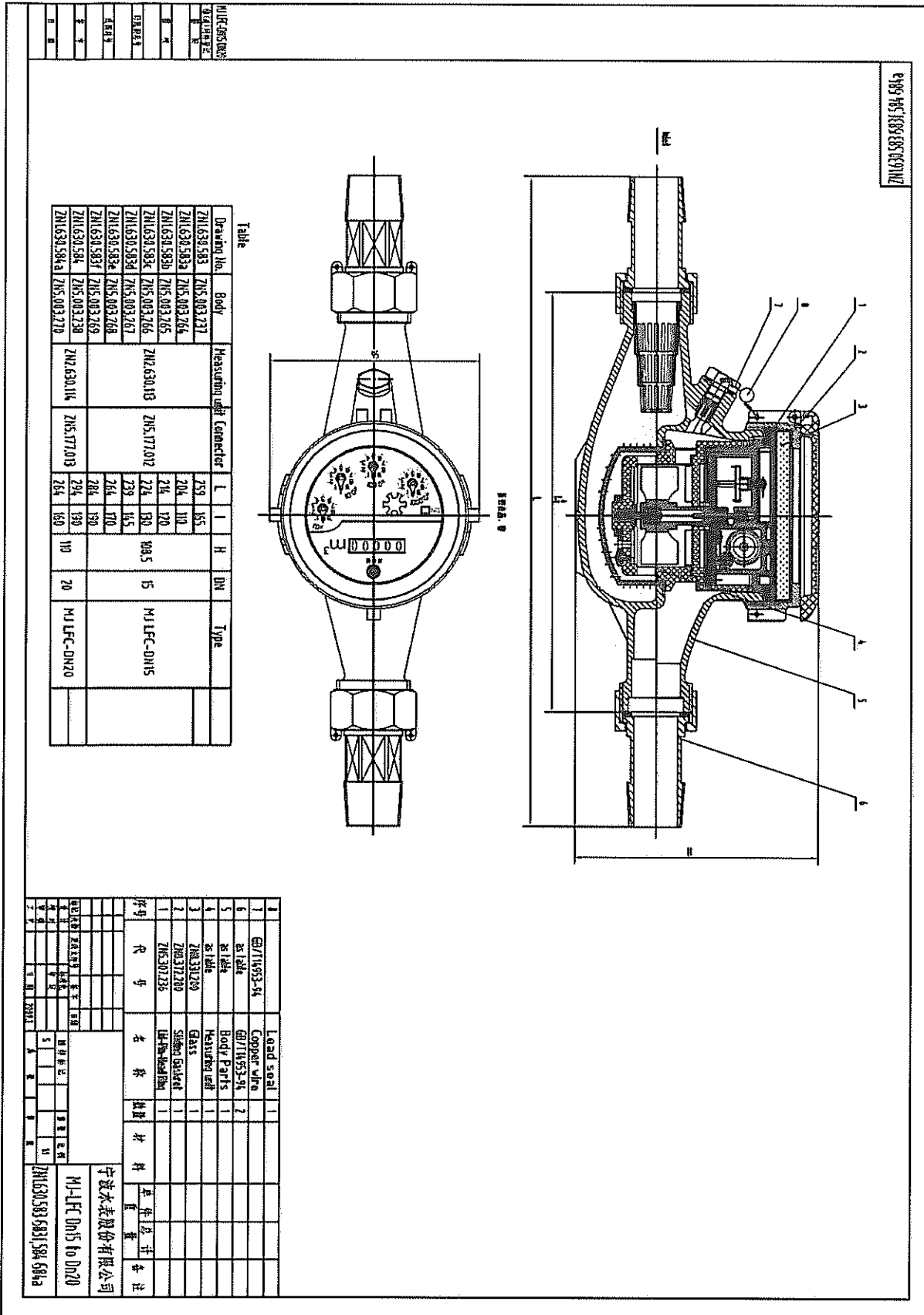


Figure 15: An example of the dial plate of the water meter type MJ-WDC:

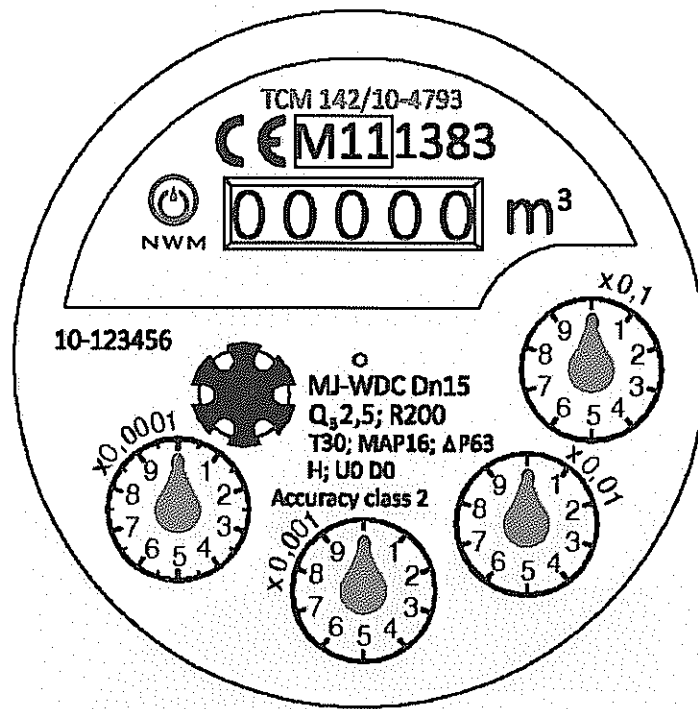


Figure 16: An example of the dial plate of the water meter type MJ-LFC:

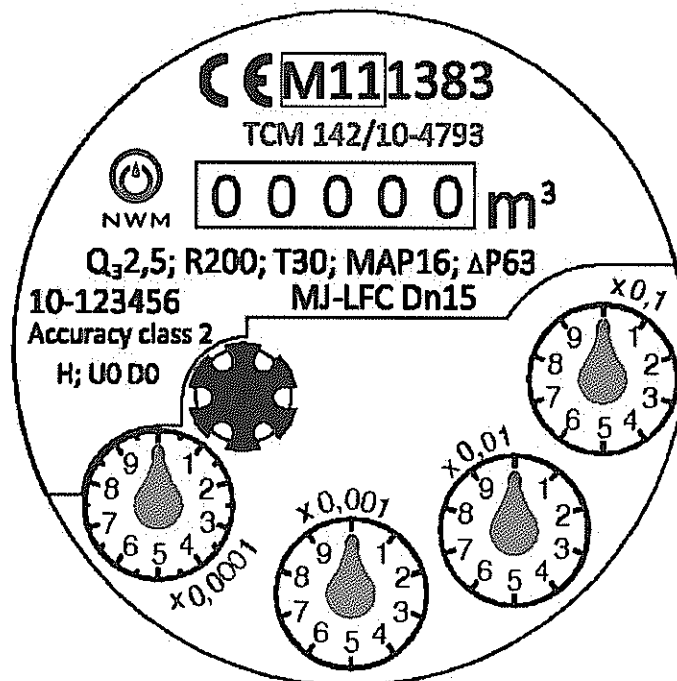


Figure 17: The dial plate of the water meter type MJ-LFC (F1):

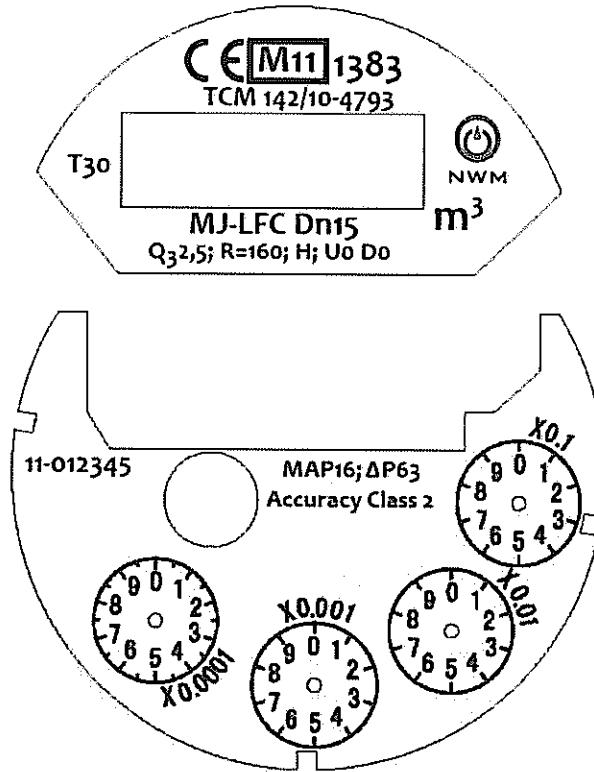
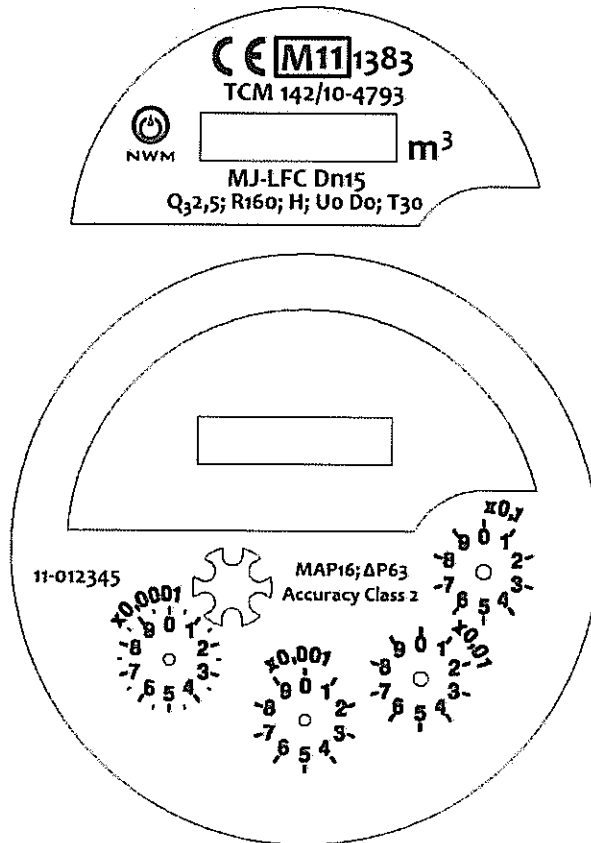


Figure 18: The dial plate of the water meter type MJ-LFC (F10):





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Notified Body

No. 1383

EC-TYPE EXAMINATION CERTIFICATE

Number: TCM 142/10 – 4793

Page 1 from 13 pages

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.
No. 99, Lane 268, Beihai Road
Ningbo 315033
China

For: water meter – multi jet
type: MJ-LFC and MJ-WDC

Temperature class: T30 and T50

Valid until: 30 March 2021

Document number: 0115-CS-A011-11

Description: Essential characteristics, approved conditions and special conditions, if any, are described in this certificate. This certificate contains 13 pages.

Date of issue: 31 March 2011

Certificate approved by:




RNDr. Pavel Klenovský

1. Measuring device description

The multi jet water meters type MJ-LFC and MJ-WDC 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 MJ-WDC are multi jet rotary vane wheel water meters with wet mechanical indicating device.

The water meters type MJ-LFC are multi jet rotary vane wheel water meters with semi dry (Liquid Filled Calculator) indicating device mechanical indicating device with protected registered drums.

The water meters type MJ-LFC and MJ-WDC consist of a brass, bronze, iron or plastic body, an inlet strainer, a wet measuring unit with a plastic distributor with tangential holes, a rotary vane wheel and gears, a mechanical indicating device with pointers and registered drums, a glass and a brass or plastic head ring with a plastic cover. The numbered drums are installed in capsule filled by special liquid. The adjustment is realized by adjusting screw. The access to the adjusting screw is protected by sealed screw.

The mechanical indicating device is formed by numbered rollers with five drums for water meters DN 15 to DN 32 and six drums for water meters DN 40 and DN 50 and four pointers.

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

The water meters type MJ-LFC and MJ-WDC shall be installed to operate in horizontal or vertical position only with the indicating device positioned at the top, according to used meter body.

The water meters type MJ-LFC and MJ-WDC shall be designate by these manufacturer's marks:



NWM

NWM



Water meters type MJ-LFC and MJ-WDC are manufactured according to technical documentation of manufacturer No. Q/ZNJ 17005-2010.3.1 from 23.12.2010.

2. Basic technical data

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 15 to DN 25:

Nominal diameter (DN) [mm]:	15	20	25
Overload flowrate (Q_4) [m^3/h]:	≤ 3.13	≤ 5.00	≤ 7.88
Permanent flowrate (Q_3) [m^3/h]:	$\leq 2.50^1$	$\leq 4.00^1$	$\leq 6.30^1$
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0200	≥ 0.0320	≥ 0.0504
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0125	≥ 0.0200	≥ 0.0315
Ratio Q_3 / Q_1 :	$\leq 200^2$		
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:	ΔP 63		
Indicating range [m^3]:	99 999		
Resolution of the indicating device [m^3]:	0,00005		
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H or V (according to used meter body)		
Length of horizontal water meter L [mm]:	110 to 190	160 to 190	160 to 260
Length of vertical water meter L [mm]:	100 to 105		105 to 110
Connection type– Screw thread size:	G $\frac{3}{4}$ B or G1B	G1B	G1 $\frac{1}{2}$ B or G1 $\frac{1}{2}$ B

Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1

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.

Basic technical data of water meters type MJ-LFC and MJ-WDC DN 15 to DN 25:

Nominal diameter (DN) [mm]:	32	40	50
Overload flowrate (Q_4) [m^3/h]:	≤ 12.5	≤ 20.0	≤ 31.3
Permanent flowrate (Q_3) [m^3/h]:	≤ 10.0 ¹	≤ 16.0 ¹	≤ 25.0 ¹
Transitional flowrate (Q_2) [m^3/h]:	≥ 0.0800	≥ 0.128	≥ 0.160
Minimum flowrate (Q_1) [m^3/h]:	≥ 0.0500	≥ 0.0800	≥ 0.100
Ratio Q_3 / Q_1 :	≤ 200 ²		≤ 250 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:	ΔP 63		
Indicating range [m^3]:	99 999	999 999	
Resolution of the indicating device [m^3]:	0,00005	0,00005	
Flow profile sensitivity classes:	U0 D0		
Orientation limitation:	H		
Length of horizontal water meter L [mm]:	160 to 260	200 to 300	270 to 300
Connection type– Screw thread size:	G1½B	G2B	G2½B or Flange
Reed switch power supply (U_{max} / I_{max}):	max. 24 V / 0.01 A		
Reed switch K-faktor [impulse / L]:	0,001; 0,01; 0,1 and 1		

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 MJ-LFC and MJ-WDC 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-A0037-11 from March 29th 2011.

4. The measuring device data

The water meters type MJ-LFC and MJ-WDC 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 body and head ring has to be sealed. 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.

Figure 1: The water meter type MJ-LFC – view:

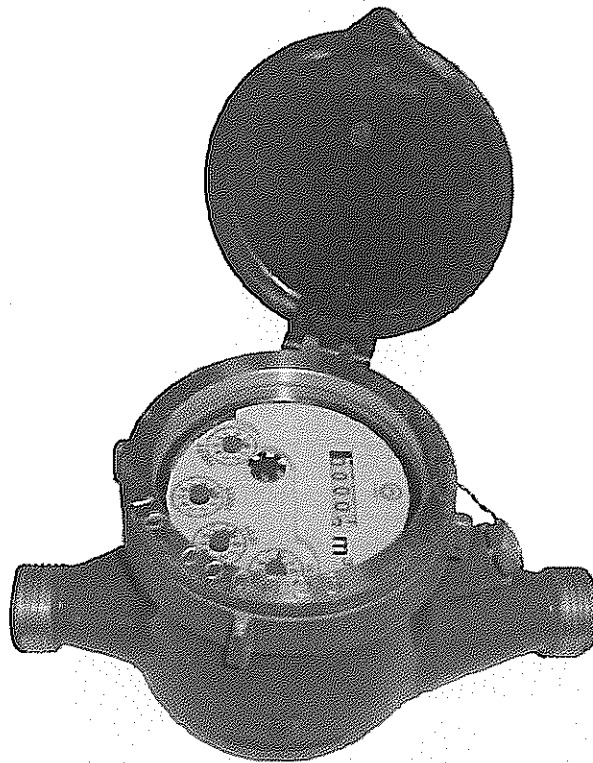


Figure 2: The water meter type MJ-WDC – view and sealing:



Figure 3: The water meter type MJ-LFC with vertical body – view and sealing:



Figure 4: The water meter type MJ-LFC with plastic body – view and sealing:



Figure 5: The water meter type MJ-LFC assembly drawings:

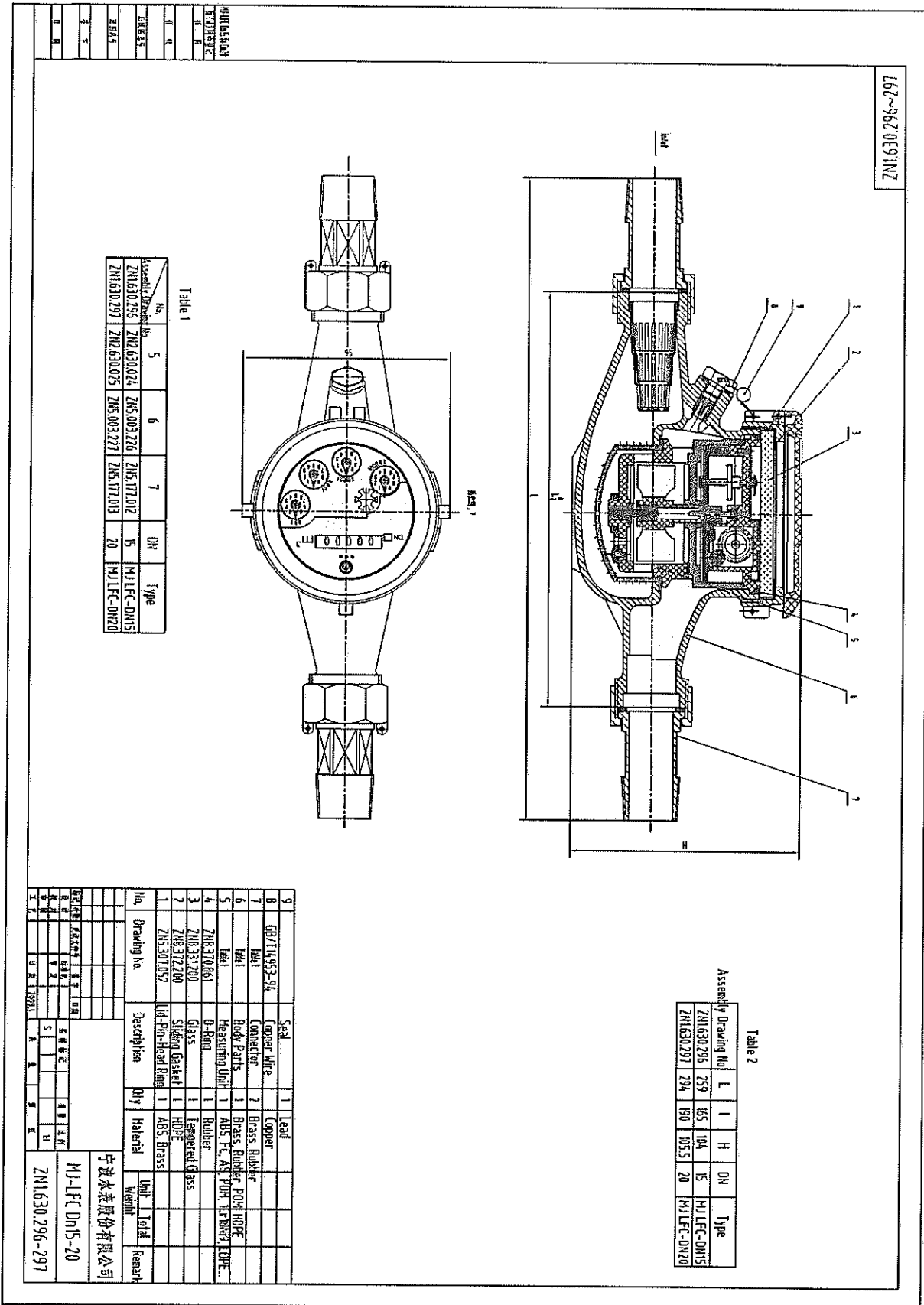


Figure 6: The water meter type MJ-WDC assembly drawings:

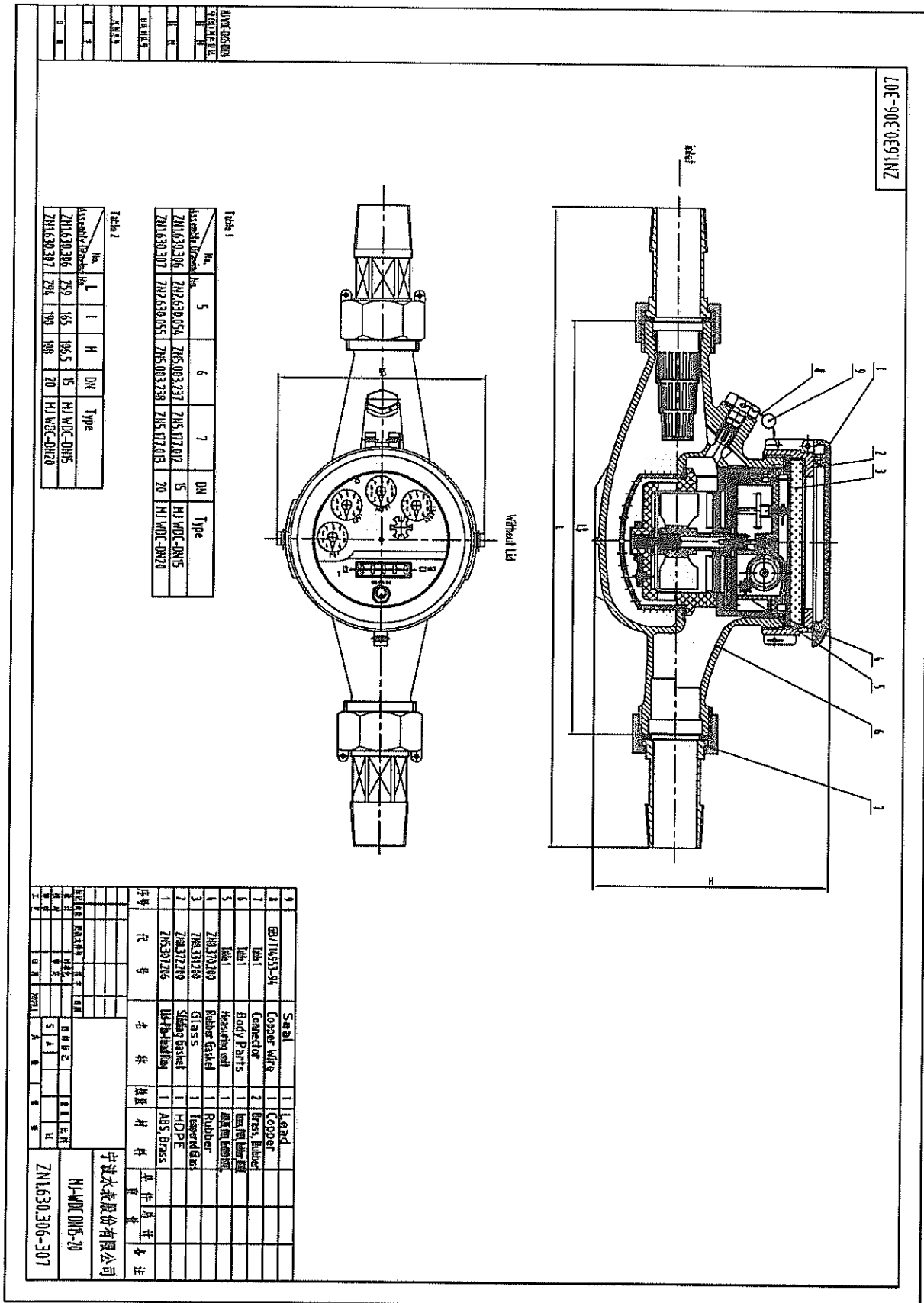


Figure 8: The water meter type MJ-WDC with reed impulse transmitter assembly drawings:

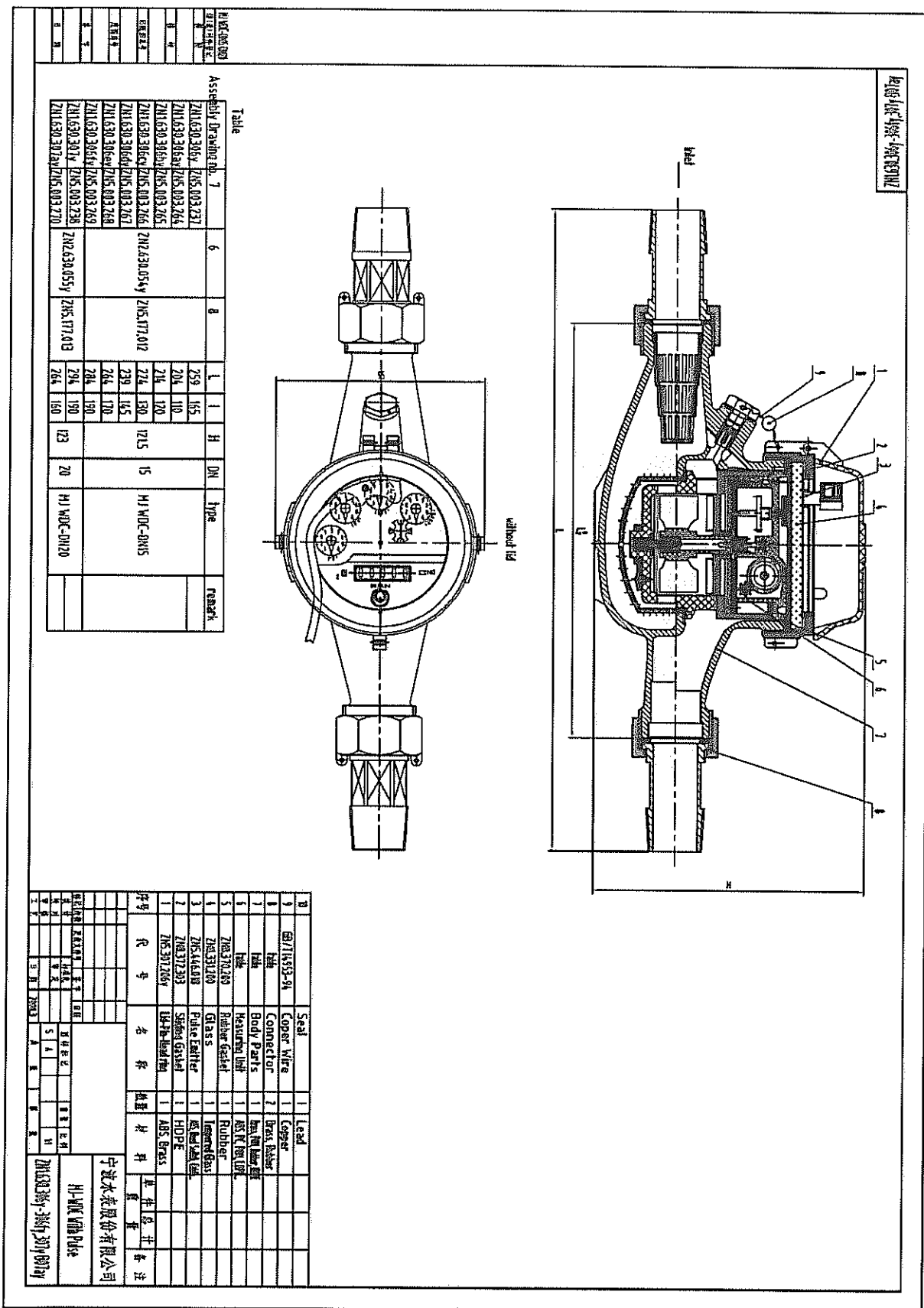


Figure 9: The water meter type MJ-LFC with plastic body assembly drawings:

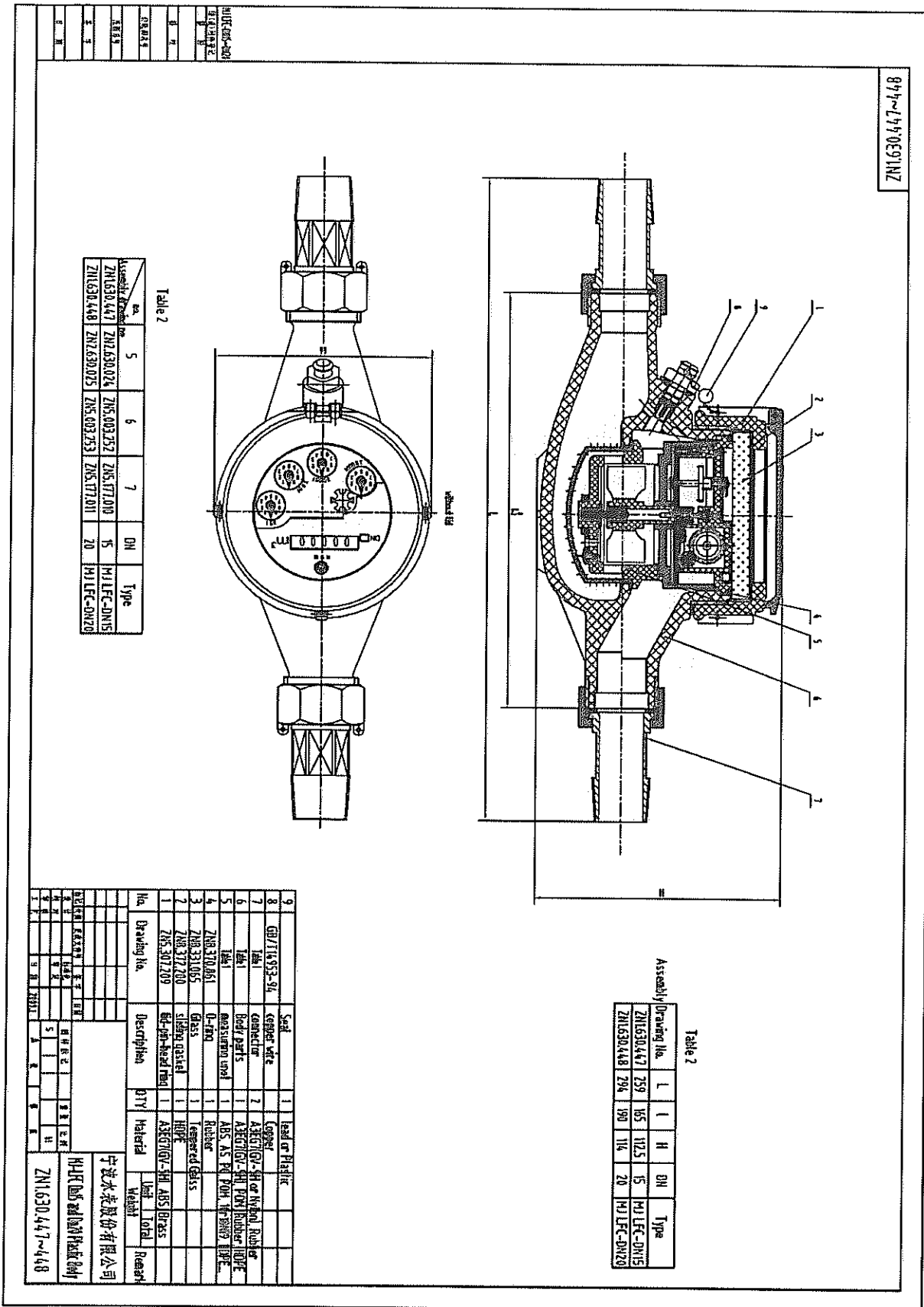


Figure 10: The water meter type MJ-WDC with plastic body assembly drawings:

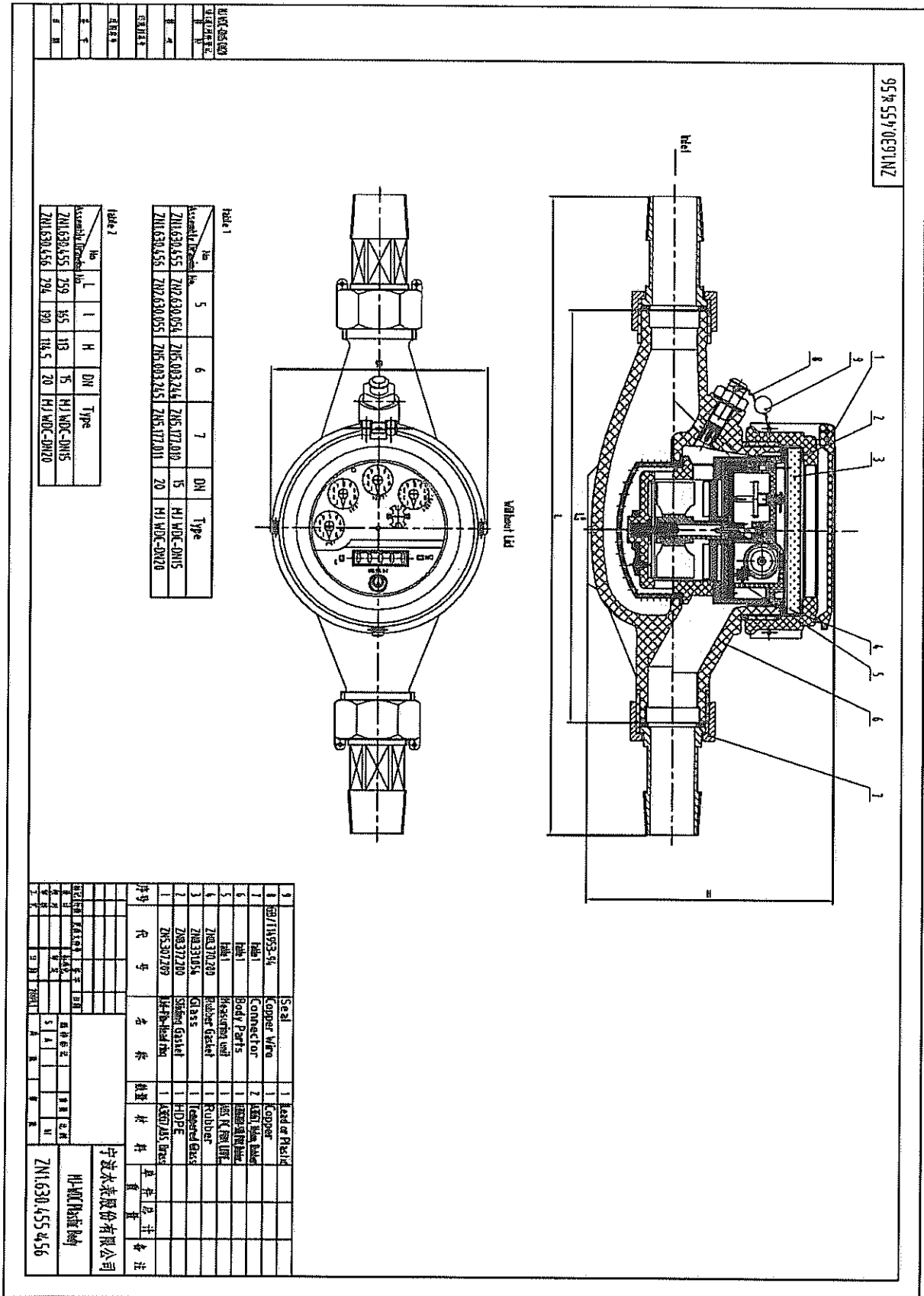


Figure 11: The dial plates of the water meter type MJ-WDC:

