

DECISION ON CERTIFICATION

Number: B/MI-001/2020-103-2

Product Water meter
Type JS
Manufacturer Apator PoWoGaz S.A.
Ul. Klemensa Janickiego 23/25
Poznan, Poland
Applicant manufacturer
Application No 2019/MI-001/B041
Evaluation report 8/1432/20 MI-001

Product classification

Water meter (MI-001) according to Annex III of Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (MID).

Regulations, harmonised standards and normative documents used for certification

Government Ordinance of the Slovak Republic No. 145/2016 Coll. relating to the making available on the market of measuring instruments, which implements in Slovakia, the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended.

OIML R 49-1 2006; OIML R 49-2 2006; EN 14154-1:2005+A2: 2011, EN 14154-2: 2005+A2: 2011; EN 14154-3: 2005+A2: 2011; WELMEC 8.11; WELMEC 11.1

Certification scheme Module B

Summary of evaluation

On the basis of tests, measurements, investigations, assessments and evaluations results, the Evaluation report No. 8/1432/20 MI-001 of 27.1.2020 and the review related to the evaluation of 27.1.2020 were worked out, upon which the conformity of product performances with the essential requirements stated in regulations given above was found.

Decision on certification

approve

reject

Date of issue

2020-01-27

Decision approved by

Ing. Štefan Král, PhD.
Director of PCB



Note:

An appeal may be brought against this decision within 15 days of the date of its notification. The appeal shall be lodged with the notified body which issued the contested decision.



EU - TYPE EXAMINATION CERTIFICATE



Reg. No. 058/P-017

No. SK 15 - 103 MI-001 Rev. 2

This revision replaces all previous versions of this Certificate in full wording

Issued by **Slovenská legálna metrologia, n. o.** Notified Body number **1432**
Hviezdoslavova 31
974 01 Banská Bystrica
Slovak Republic

In accordance with Annex II, Module B to Government Ordinance of the Slovak Republic No 145/2016 Coll. relating to the making available on the market of measuring instruments, which implements, in Slovakia, the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (MID).

Applicable essential requirements Annex I and Annex III to MID

Manufacturer **Apator PoWoGaz S.A.**
Ul. Klemensa Janickiego 23/25
Poznan, Poland

Applicant **Manufacturer**

Measuring instrument **Water meter**

Type **JS**

Trade mark see Descriptive annex

Environment classes
- climatic (+5 to +55) °C
- mechanical M1
- electromagnetic E1

Description and documentation The principal technical and metrological data, characteristics, instrument description and approval conditions are set out in the Descriptive annex to this EU - type examination certificate (21 pages), which is part of this EU - type examination certificate. The test reports, designs, schematic diagrams and documentation used during certification process are recorded under reference folder Apator Powogaz_JS_00 to 02.

Valid until **10 December 2025**

Date of issue 27 January 2020




Ing. Štefan Král, PhD.
Representative of Notified Body



Where the instrument is subject to other Directives covering other aspects, this EU - type examination certificate is valid, assuming that the instrument conforms to the provisions of those Directives. Without written permission of the notified body this certificate may be reproduced only as a whole.



1. Designation

The mechanical vane-wheel single-jet water meters series **JS** (types JS50, JS65, JS80, JS100) are designed to measure, memorise and display the volume at metering conditions of water passing through the measurement transducer. They are intended for the measurement of volumes of clean water in residential and commercial use.

The water meters series JS shall be installed to operate in the horizontal position only with the indication device positioned at the top.

The versions of the water meters type JS are marked according to the scheme JSXX (basic type) or JSXX-YY. Where:

XX - is the value of diameter DN (50, 65, 80 or 100)

YY - is the marking for the supplementary fittings as follows:

NK	-	reed contact pulse transmitter
NO	-	optoelectronic pulse transmitter
NKO	-	reed contact pulse transmitter and optoelectronic pulse transmitter
NOP	-	adapted for the installation of the optoelectronic pulse transmitter (NO)
NKOP	-	adapted for the installation of the reed contact pulse transmitter (NK) and/or optoelectronic pulse transmitter (NO)
NK-01	-	reed contact pulse transmitter with rotary counter
NO-01	-	optoelectronic pulse transmitter with rotary counter
NKO-01	-	reed contact pulse transmitter and optoelectronic pulse transmitter with rotary counter
NOP-01	-	adapted for the installation of the optoelectronic pulse transmitter (NO) with rotary counter
NKOP-01	-	adapted for the installation of the reed contact pulse transmitter (NK) and/or optoelectronic pulse transmitter (NO) with rotary counter
NK-02	-	reed contact pulse transmitter mounted in IP68 counting mechanism
NKP-02	-	adapted for the installation of the reed contact pulse transmitter (NK) mounted in IP68 counting mechanism
08	-	mechanism ready for optical and inductive technology reading with IP68 protection (IP68)

2. Description

Essential parts of the water meters series JS

- measuring mechanism – the measuring insert with the impeller with an axle perpendicular to the flow direction;
- dry type mechanical register - 6 digital drums and 3 pointers with gearing mechanism, inside air-tight housing;
- magnetic coupling for the connection of the measuring mechanism with the mechanical register.
- cast - iron housing of water meter with inlet and outlet connection;
- adjustment device – executed by turn of ribs positioned in the measuring insert.

Non-essential parts of water meter:

- strainer in the inlet of the meter (optional);
- non - return valve (optional).

2.1 Metrological functions

- measuring, memorizing and displaying the volume of water passing through the water meter

2.2 Software

- not applicable

2.3 Optional equipment and functions subject to MID requirements

- not applicable

2.4 Integrated equipment and functions not subject to MID

- reed contact pulse transmitter (optional);
- optoelectronic pulse transmitter (optional);
- radio module (optional).

Via the above mentioned parts no legally relevant data shall be altered. The above mentioned parts are outside the scope of Annex III of MID. Data displayed or transferred via these parts are not considered as a metrological relevant data in sense of MID.

3. Technical and metrological data

Meter type	Unit	JS50		JS65		JS80		JS100	
Nominal diameter DN	mm	50		65		80		100	
Permanent flowrate Q_3	m ³ /h	25		40		63		100	
Minimum flowrate Q_1	m ³ /h	0,079	0,156	0,127	0,25	0,2	0,394	0,317	0,625
Transitional flowrate Q_2	m ³ /h	0,127	0,25	0,203	0,4	0,32	0,63	0,508	1,0
Overload flowrate Q_4	m ³ /h	31,25		50		78,75		125	
Ratio Q_3/Q_1	-	315	160	315	160	315	160	315	160
Ratio Q_2/Q_1	-	1,6							
Construction length L	mm	270 / 300		300		300/350		350/360	
Installation orientation	-	H							
Water temperature range Θ	°C	T30, T50							
Maximum working pressure P_{max}	bar	16 bar							
Pressure loss class ΔP	kPa	63							
Maximum permissible error in upper flowrates range $Q_2 \leq Q \leq Q_4$	%	± 2 (at $\Theta \leq 30^\circ\text{C}$) ± 3 (at $\Theta > 30^\circ\text{C}$)							

Meter type	Unit	JS50	JS65	JS80	JS100
Maximum permissible error in lower flowrates range $Q_1 \leq Q < Q_2$	%	± 5			
Scale interval	m ³	0,0005			
Capacity of calculator	m ³	999 999			
Mechanical class	-	M1			
Climatic class	°C	+ 5 to + 55			
Electromagnetic class	-	E1			
Flow profile sensitivity class	-	U0D0			

4. Interfaces and compatibility conditions

- reed contact pulse transmitter (optional);
- opto or inductive - electronic pulse transmitter (optional);
- radio module (optional).

5. Marking and inscriptions

The following data shall be marked on the water meter:

- a) manufacturer's name or mark;
- b) manufacturer's postal address (article 8, point 6 of Directive 2014/32/EU), (Fig. 7);
- c) type of water meter;
- d) measuring unit m³;
- e) year of production and serial number;
- f) flowrate Q_3 and ratio Q_3/Q_1 ; (R);
- g) installation position of the water meter (H);
- h) maximum working pressure ($MAP\ 16$);
- i) temperature class ($T30$ or $T50$);
- j) EU - type examination certificate number;
- k) CE marking and supplementary metrology marking according to Article 21 and Article 22 of Directive 2014/32/EU (CE marking and supplementary metrology marking following with number of a notified body).

The flow direction shall be marked on a water meter's body in form of an arrow. All inscriptions on the water meter shall be in the EC official language; the international abbreviations are admitted.

5.1 Designation of trademark on the water meters

- manufacturer use following trademarks on its water meters:

PoWoGaz

APATOR

6. Security measures

The water meter is protected against unauthorised manipulation by one seal (lead seal with a wire) securing the counter shelter and the water meter body. The wire with the lead seal permanently connects cover shelter (through the hole) to the one meter body screw (through the hole) such a way that the water meter cannot be dismantled without destruction. The sealing of the water meter is shown on the Figure 5.

7. Requirements on production, putting into use and utilization

7.1 Requirements on production

- no special requirements identified

7.2 Requirements on putting into use

- water meters must be installed in accordance with the requirements listed in the installation and user manual issued by the manufacturer;
- no requirements for straight pipeline length in upstream and downstream. Flow profile sensitivity class of the water meters is U0, D0;
- initial verification tests of the water meters can be carried out in line with EN 14154-1 +A2: 2011 (point 9.2)

7.3 Requirements for utilization

- in accordance with the requirements of the manufacturer's documentation.

8. Documentation used for assessment purposes

- Evaluation report No 8/1432/20 MI-001, of 27/01/2020, issued by SLM NB 1432;
- Manufacturer's technical documentation stored in folder Apator Powogaz_JS_00 to 02.

9. Standards and regulations used for assessment purposes

9.1 Regulations, harmonized standards and normative documents

- Government Ordinance of the Slovak Republic No. 145/2016 Coll. relating to the making available on the market of measuring instruments, which implements, in Slovakia, the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (MID);
- EN 14154-1: 2005 + A2: 2011 Water meters - Part 1: General requirements
- EN 14154-2: 2005 + A2: 2011 Water meters - Part 2: Installation and conditions of use
- EN 14154-3: 2005 + A2: 2011 Water meters - Part 3: Test methods and equipment.



9.2 Further applied standards and documents

- OIML R 49-1, edition 2013 (E): Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements
- EN ISO 4064-1: 2014 Water meters for cold potable water and hot water. Part 1: Metrological and technical requirements
- EN ISO 4064-5: 2014 Water meters for cold potable water and hot water. Part 5: Installation requirements
- WELMEC Guide 11.1 Measuring Instruments Directive 2004/22/EC Common application for utility meters (Issue 5: 2014)
- WELMEC Guide 11.3 Guide for sealing of Utility meters (Issue 1: 2012)

10. Final provisions on water meter

Construction, technical and metrological parameters of the water meters type series JS must comply with the documentation presented within the process of type certification. All the characteristics of the measuring instrument (including those not mentioned) shall meet the respective requirements of Government Ordinance of the Slovak Republic No. 145/2016 Coll. relating to the making available on the market of measuring instruments, which implements, in Slovakia, the Directive 2014/32/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of measuring instruments as later amended (MID).



11. Figures

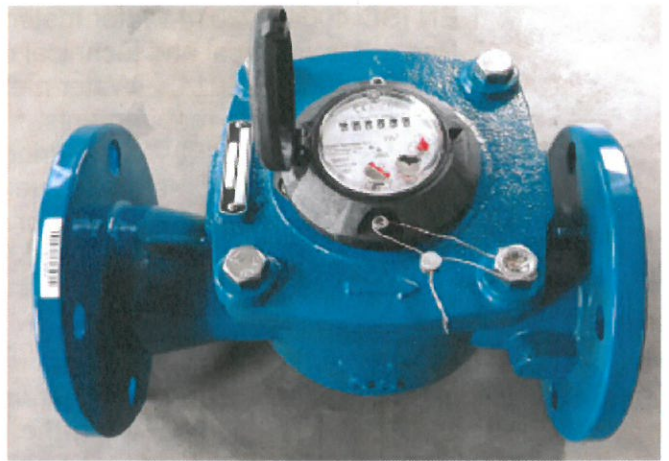
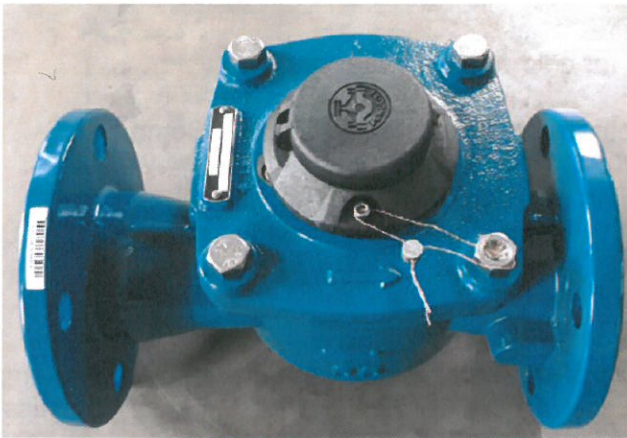


Fig. 1a: Illustrative view on the water meters JS

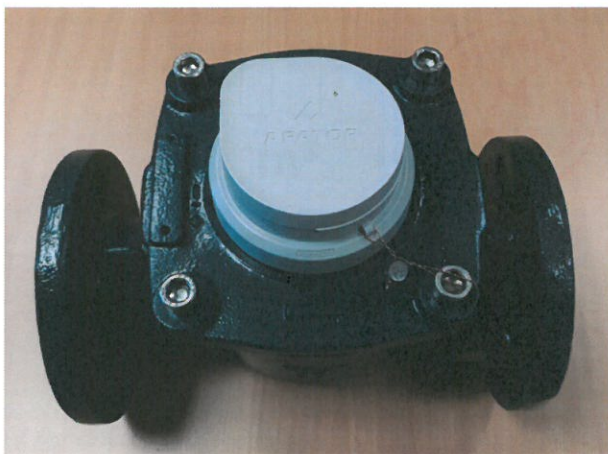
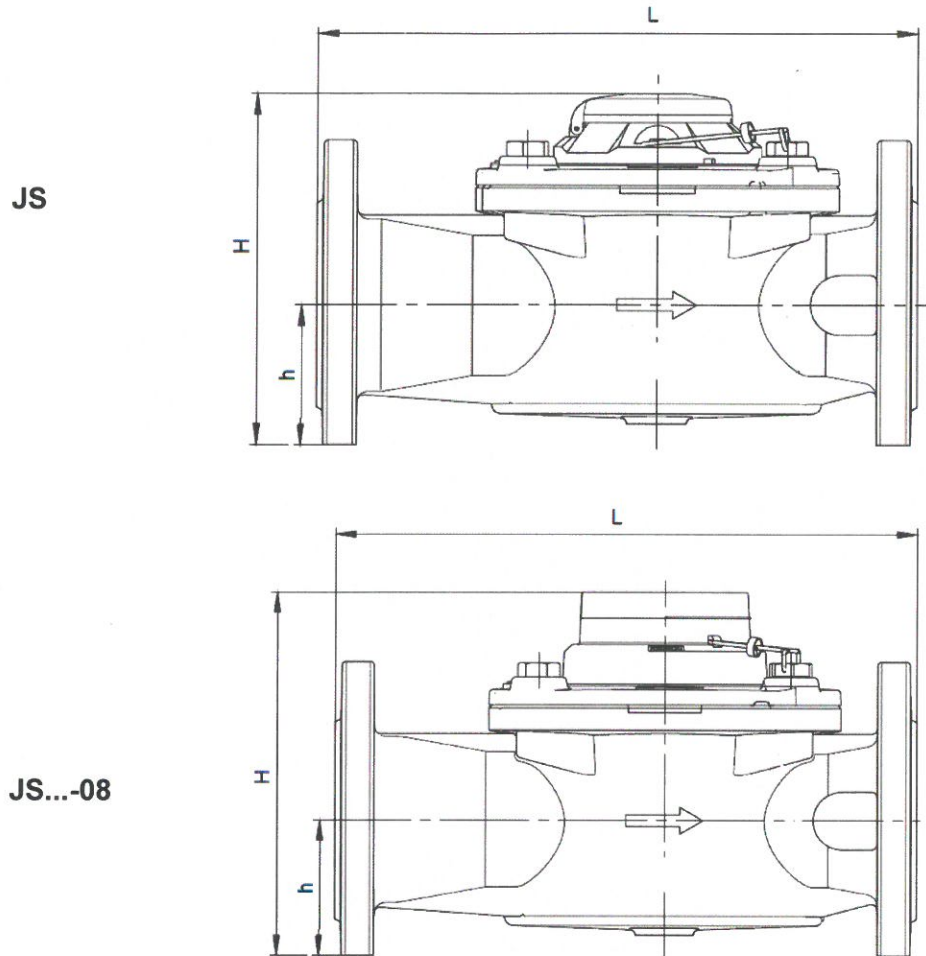


Fig. 1b: Illustrative view on the water meters JS...-08

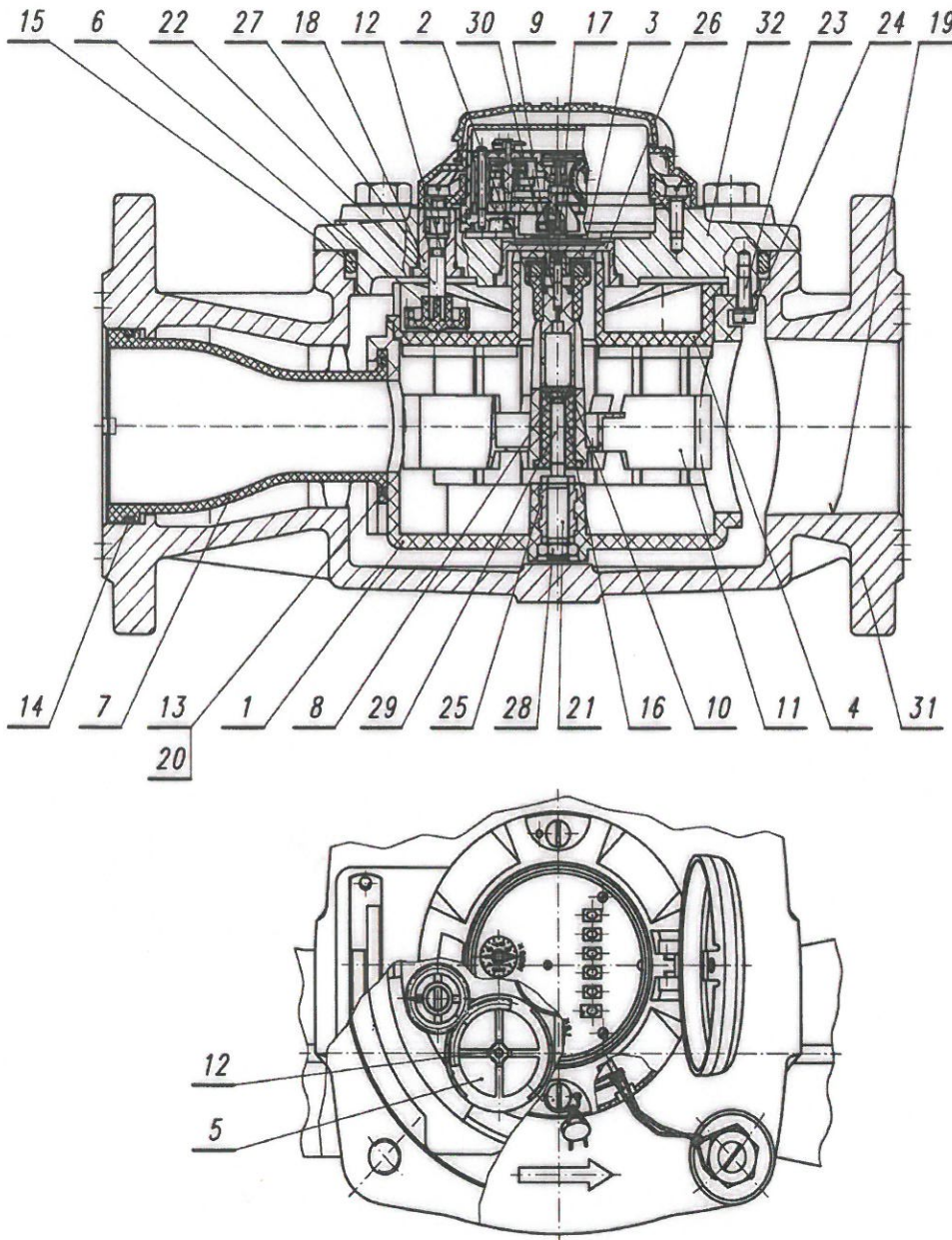




Type	Diameter DN	L (mm)	H (mm)	h (mm)
JS50	50	270 / 300	180	70,5
JS65	65	300	196	80,5
JS80	80	300 / 350	199	89,5
JS100	100	360 / 350	214	105
JS50-08	50	270 / 300	188,6	70,5
JS65-08	65	300	204,6	80,5
JS80-08	80	300 / 350	207,6	89,5
JS100-08	100	360 / 350	222,6	105

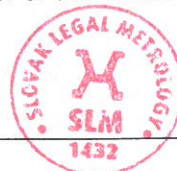
Fig. 2: Main dimensions of the water meters types JS and JS...-08

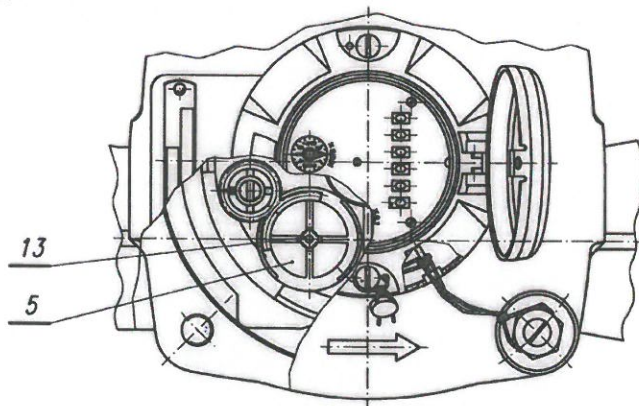
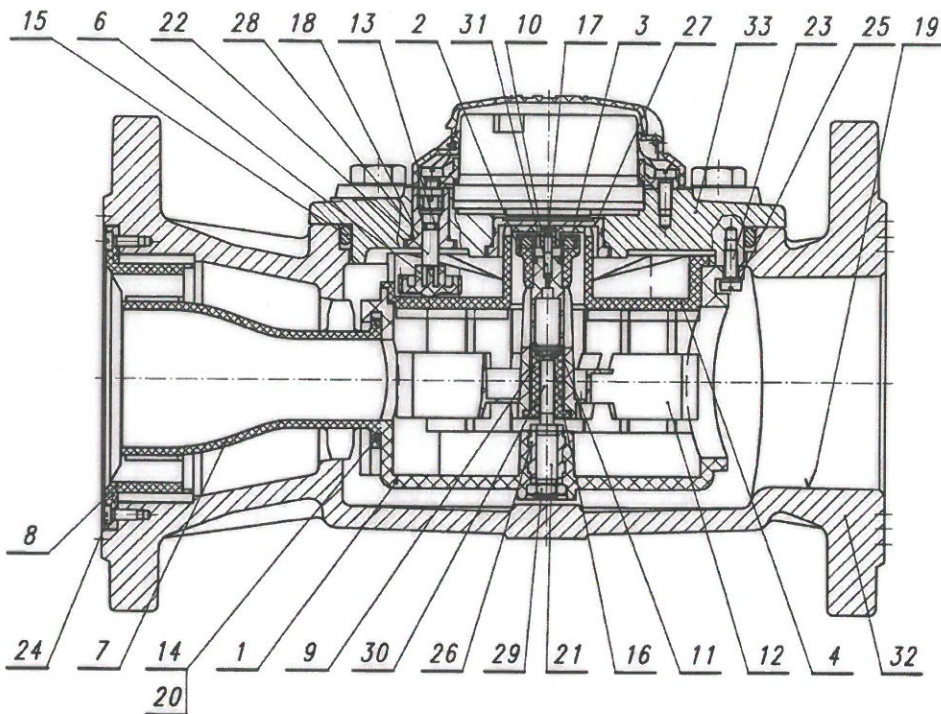




Ref. no.	Name of the part
1	Protective basin
2	Magnet mounting
3	Magnet plate
4	Upper insert
5	Regulation shield
6	Control shaft gear
7	Inlet jet JS 50 Inlet jet JS 65
8	Bearing sleeve
9	Bearing sleeve
10	Blocking plate
11	Blade JS 50
12	Packing ring 3x2
13	Packing ring 45x3
14	Packing ring JS50 60x3 Packing ring JS65 65x3
15	Packing ring 150x6
16	Hole jewel 6x2
17	Hole jewel 4x3
18	Anaerobic adhesive
19	Paint epoxide
20	Silicon grease
21	Basic axle casing
22	Control shaft
23	Screw M5x12
24	Spring washer
25	Sealed-in sleeve
26	Coupling cover
27	Adjusting shaft sleeve
28	Special nut
29	Pivot
30	Pivot bearing
31	Body JS50, Body JS 65
32	Cover

Fig. 3a: Cross-section of the water meter JS50 and JS65





Ref. no.	Name of the part
1	Protective basin
2	Magnet mounting
3	Magnet plate
4	Upper insert
5	Regulation shield
6	Control shaft gear
7	Inlet jet JS 80 Inlet jet JS 100
8	Guide ring of jet JS 80 Guide ring of jet JS 100
9	Bearing sleeve
10	Bearing sleeve
11	Blocking plate
12	Blade JS 50
13	Packing ring 3x2
14	Packing ring 45x3
15	Packing ring 150x6
16	Hole jewel 6x2
17	Hole jewel 4x3
18	Anaerobic adhesive
19	Paint epoxide
20	Silicon grease
21	Basic axle casing
22	Control shaft
23	Screw M5x12
24	Screw M4x10
25	Spring washer
26	Sealed-in sleeve
27	Coupling cover
28	Adjusting shaft sleeve
29	Special nut
30	Pivot
31	Pivot bearing
32	Body JS 80 Body JS 100
33	Cover

Fig. 3b: Cross-section of the water meter JS80 and JS100

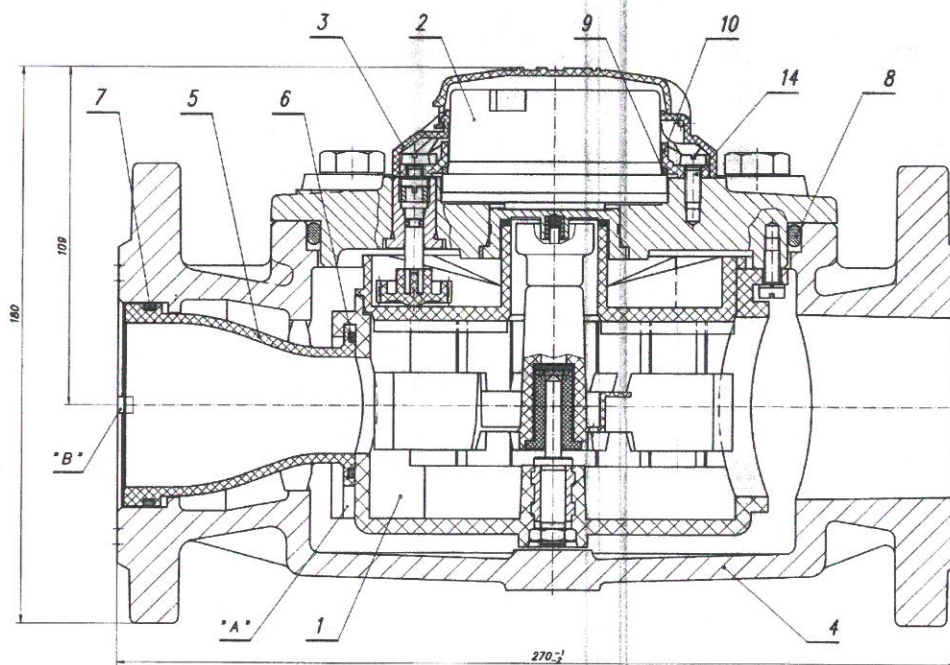
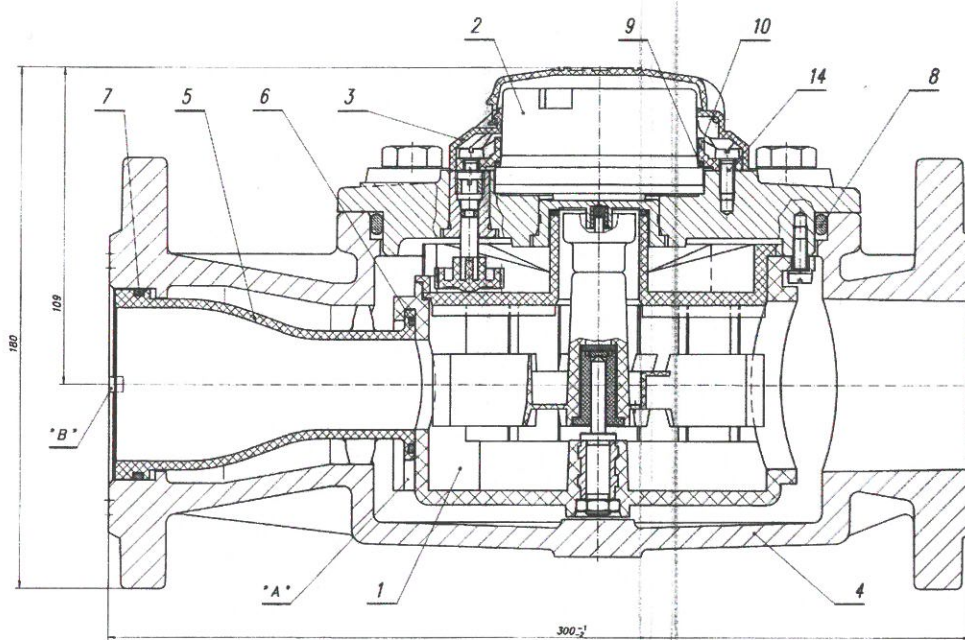


Fig. 3c Cross-section of the water meter with various length –
 e.g. JS50 (300 mm) and JS50 (270 mm)



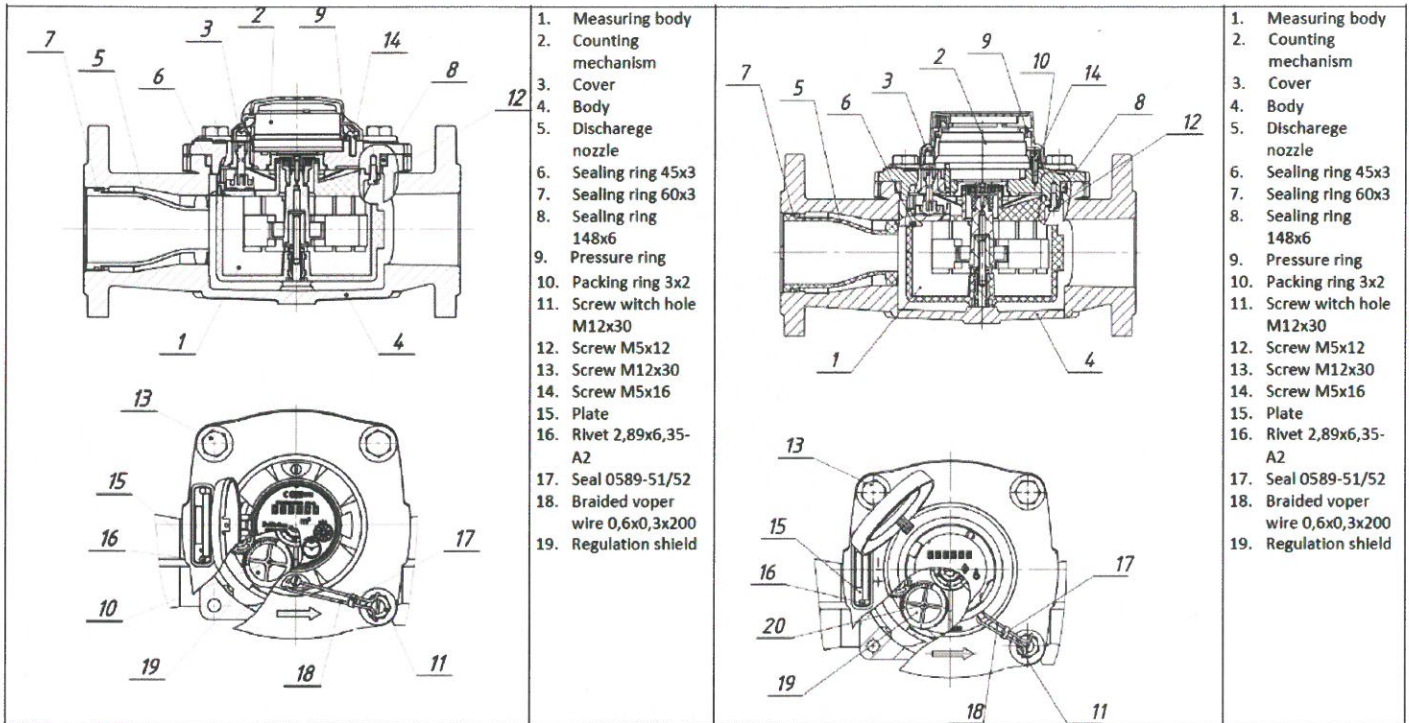


Fig. 3d: Illustrative cross-section of the water meter JS and JS...-08



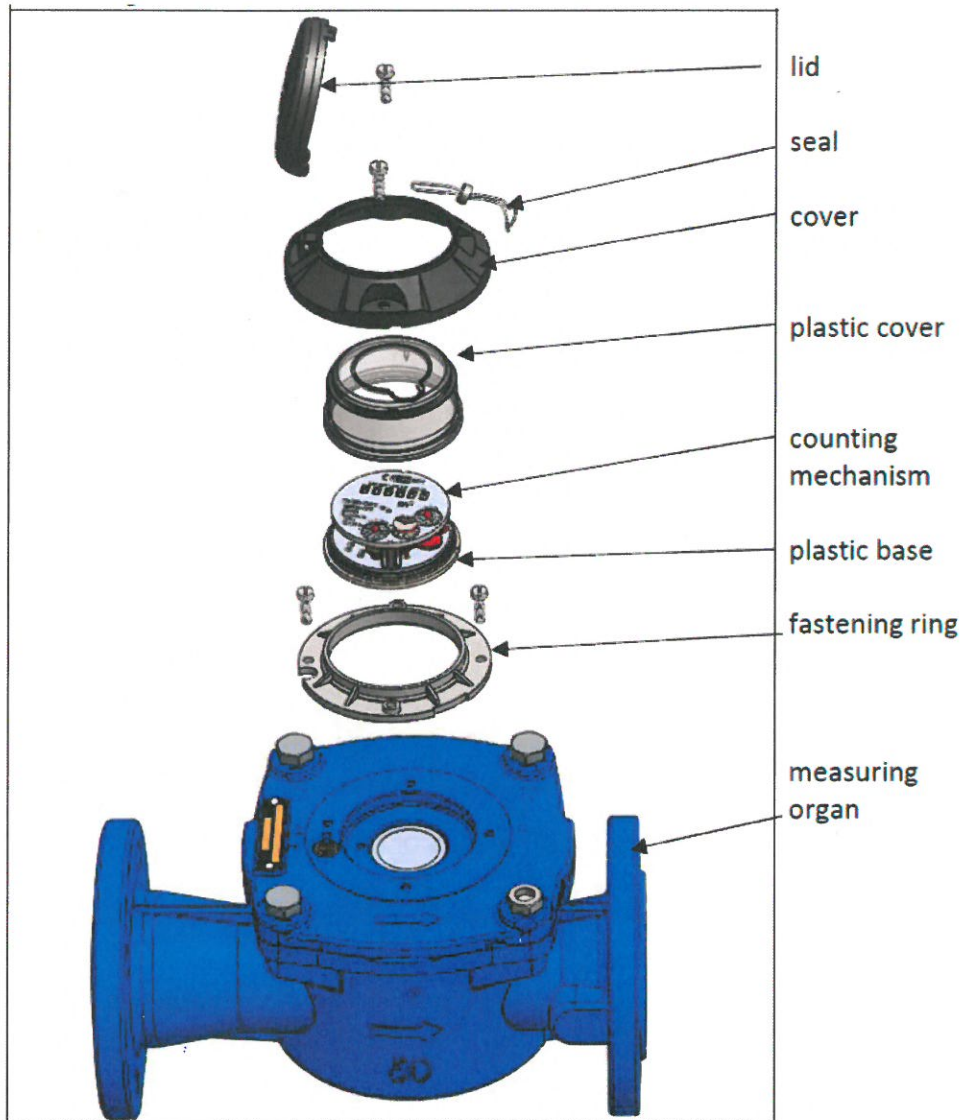


Fig. 4a: Illustrative exploded view of the water meters type JS



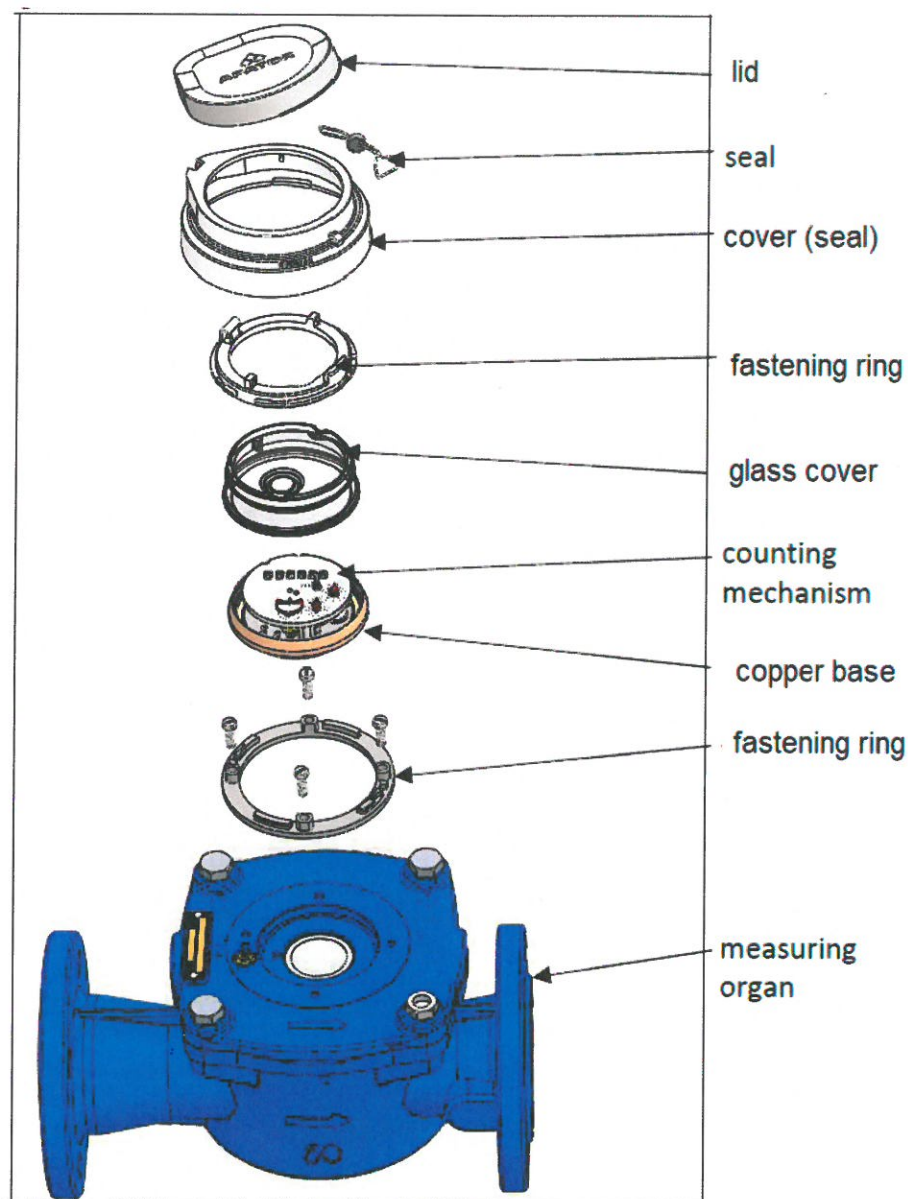


Fig. 4b: Illustrative exploded view of the water meters type JS...-08 with IP68



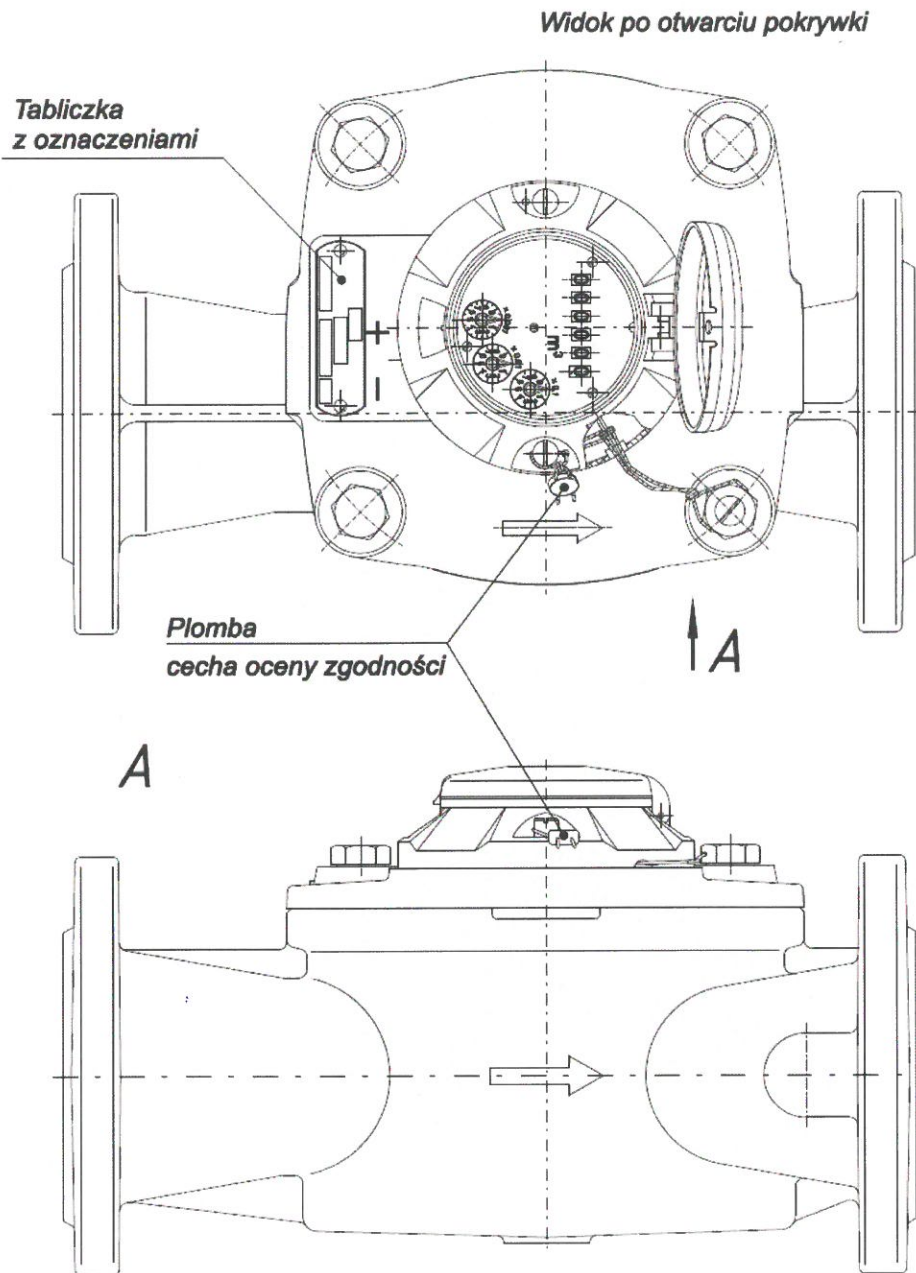


Fig. 5a: Location of the seal (sample type JS50 - JS100)



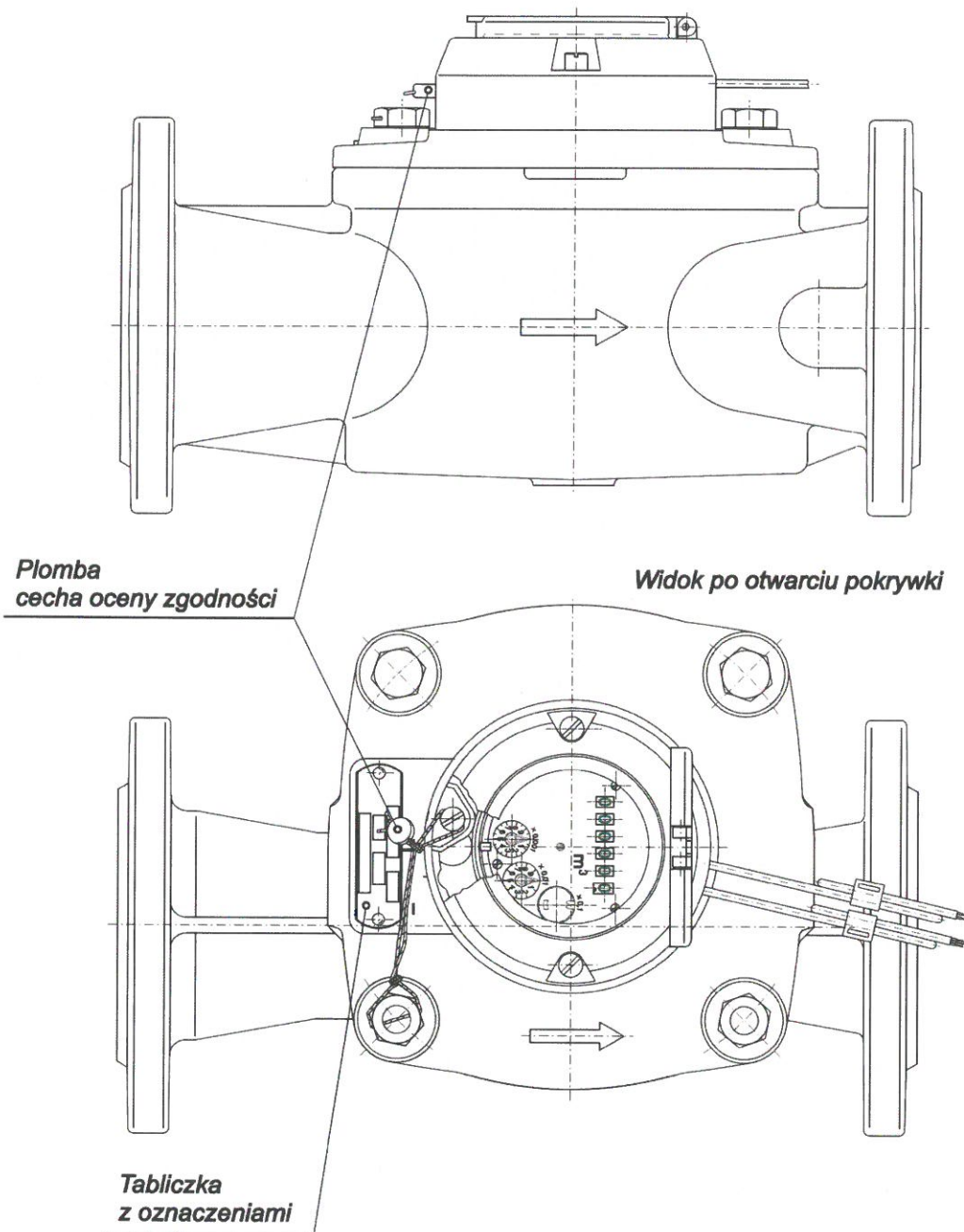


Fig. 5b: Location of the seal (sample type JS50 - JS 100 NKO)



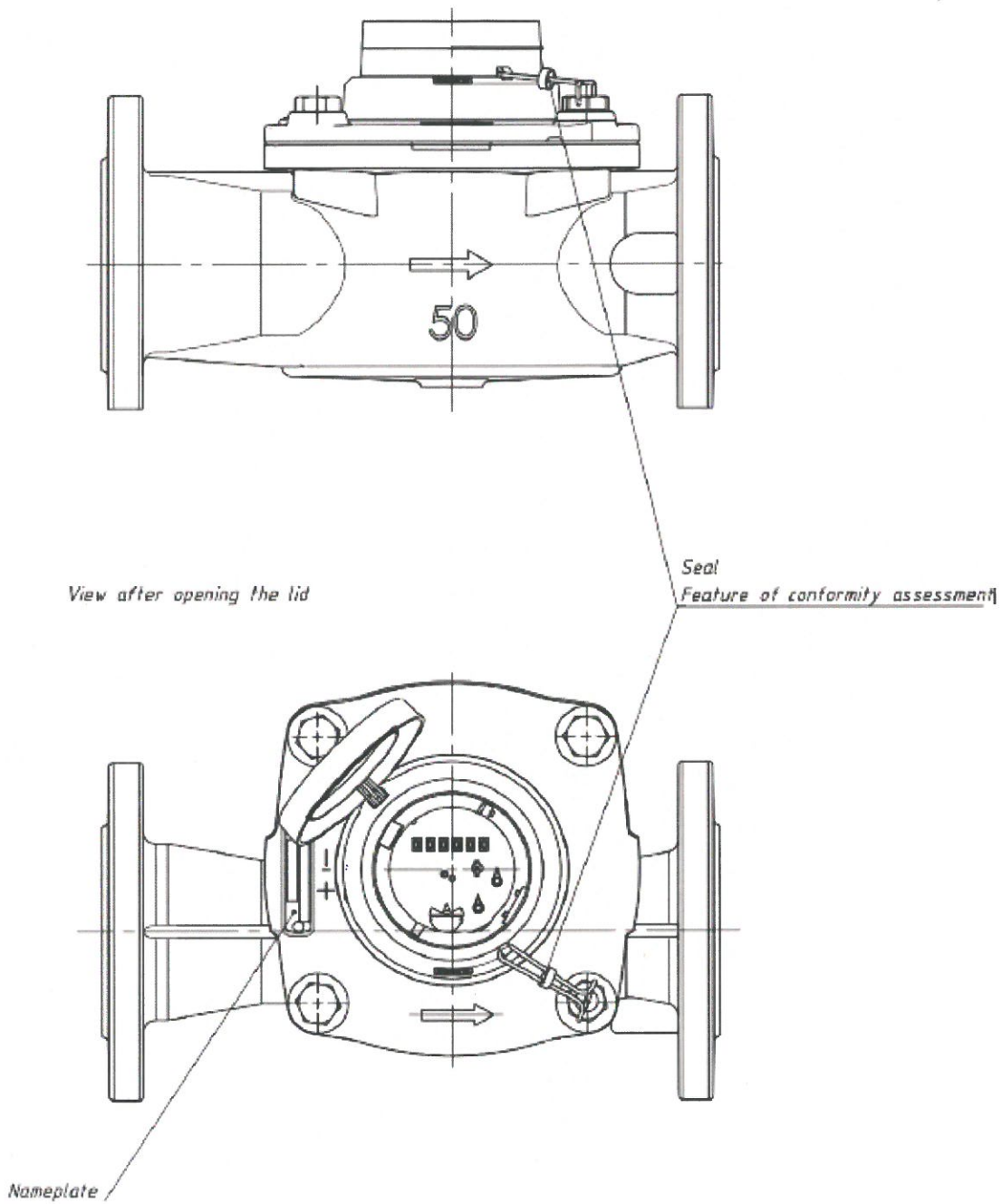
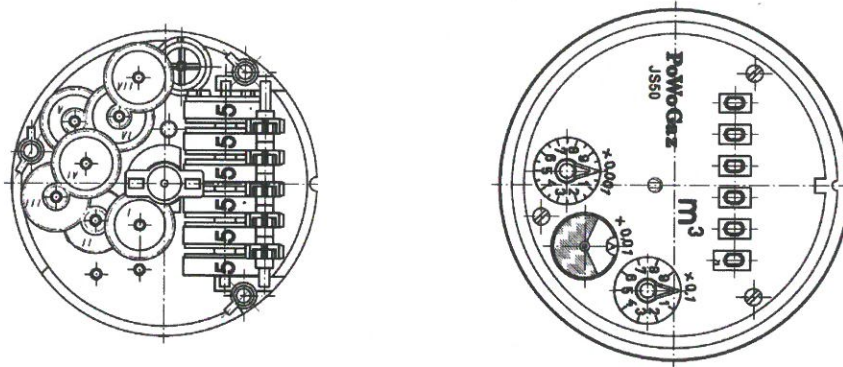


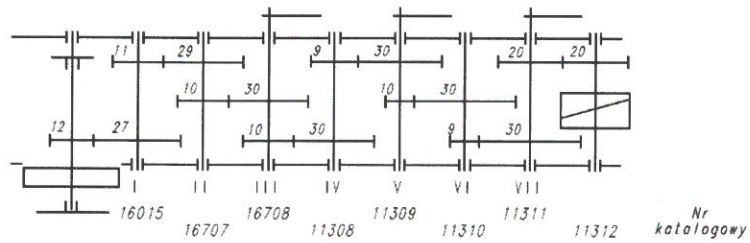
Fig. 5c: Location of the seal (sample type JS50-08 to JS100-08)



Widok po zdjęciu podstawy i płyty dolnej



Schemat kinematyczny przełożeń (bez podziałki)



Wersja II

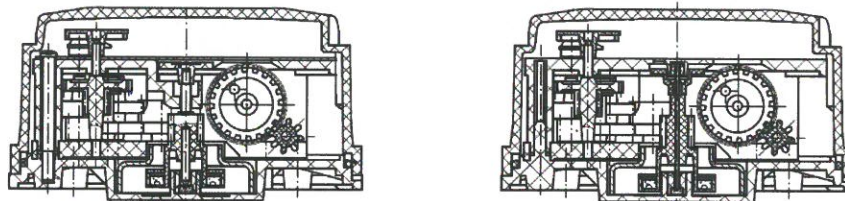


Fig. 6a: The scheme of the mechanical register of the water meters JS



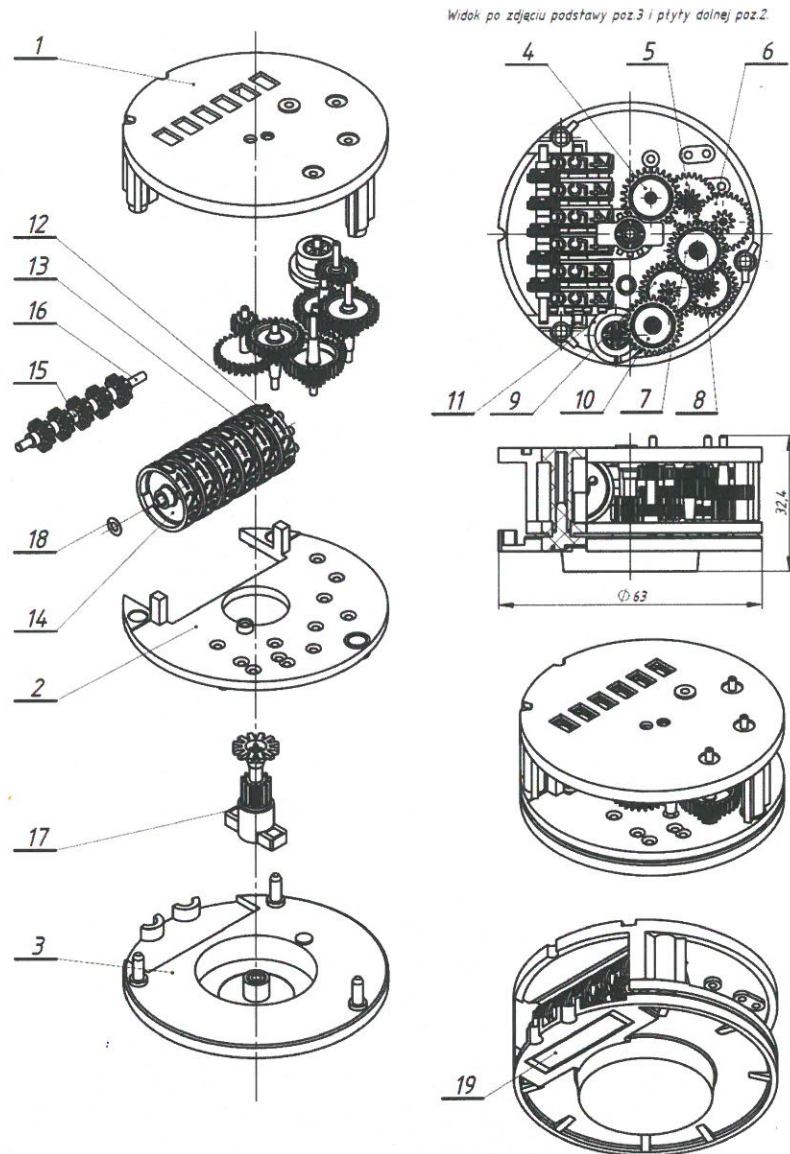


Fig. 6b: The scheme of the mechanical register of the water meters JS...-08

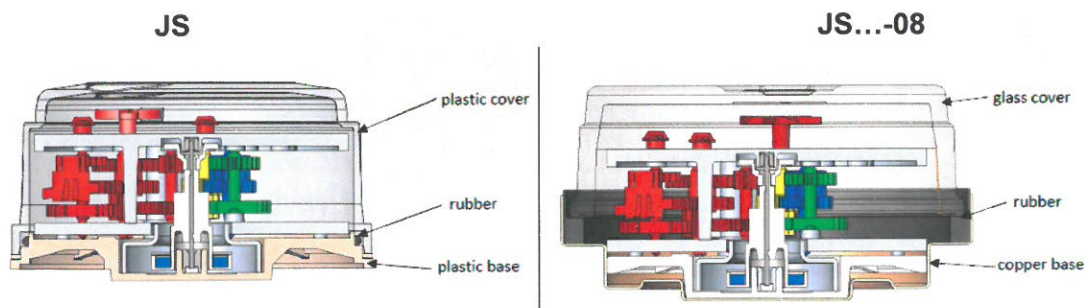


Fig. 6c: The counting mechanism JS and JS...-08

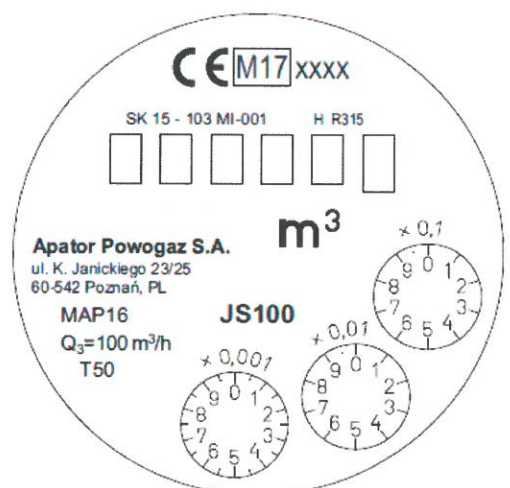
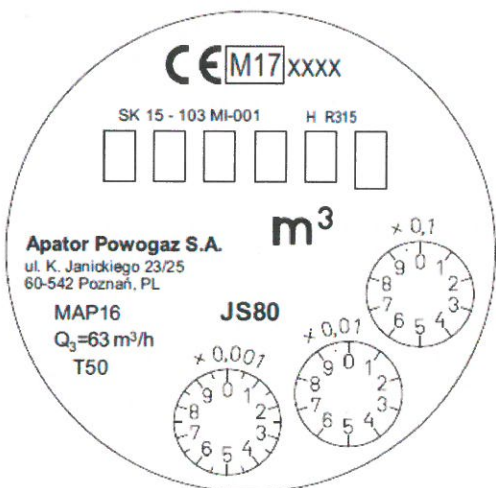
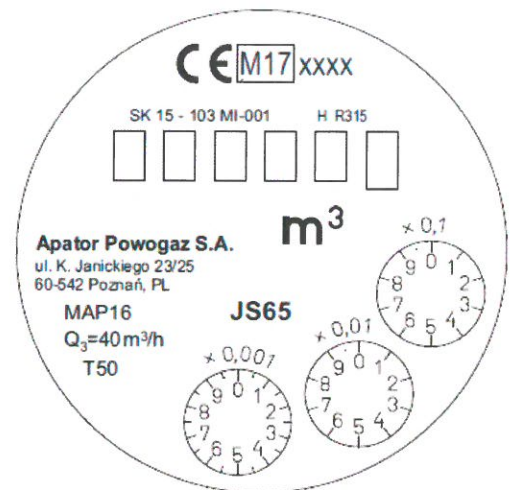
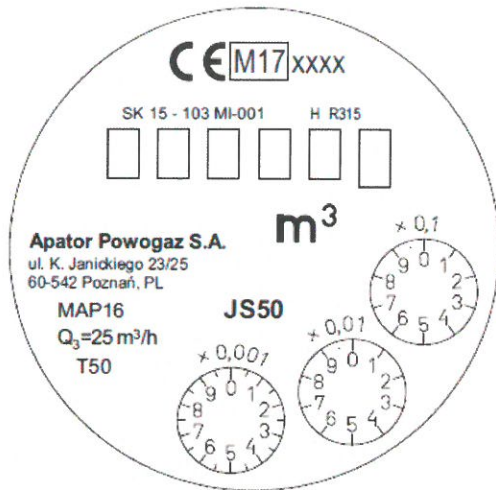


Fig. 7a: Examples of the dial and marking of the water meters JS (samples for R315) and marking and inscriptions of manufacturer's postal address



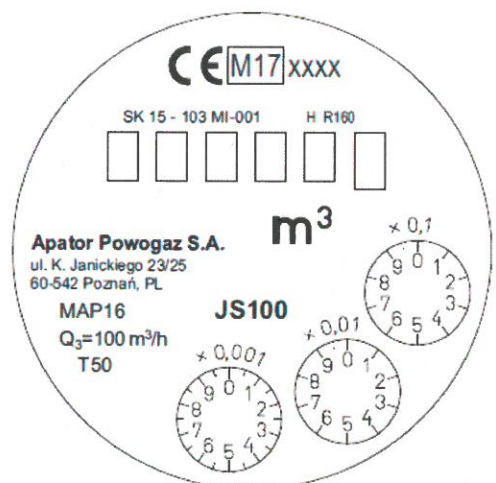
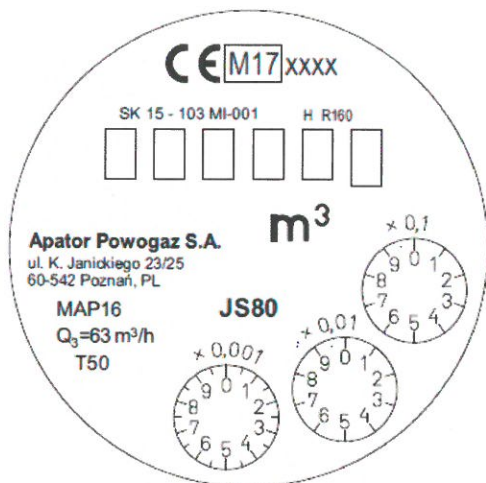
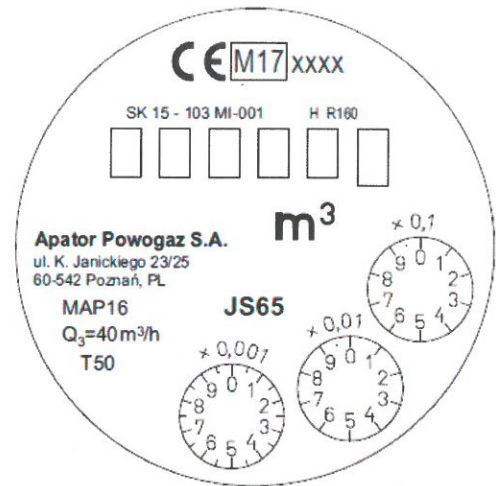
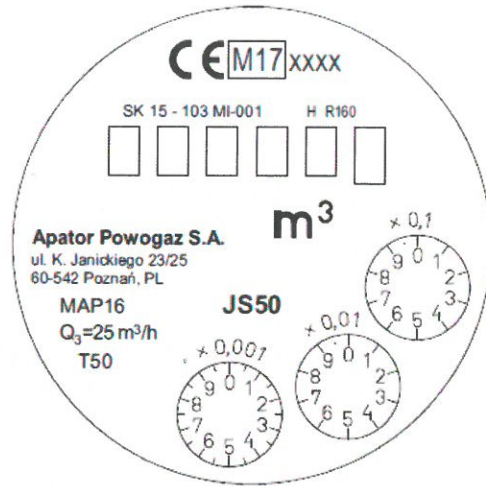


Fig. 7b: Examples of the dial and marking of the water meters JS (samples for R160) and marking and inscriptions of manufacturer's postal address



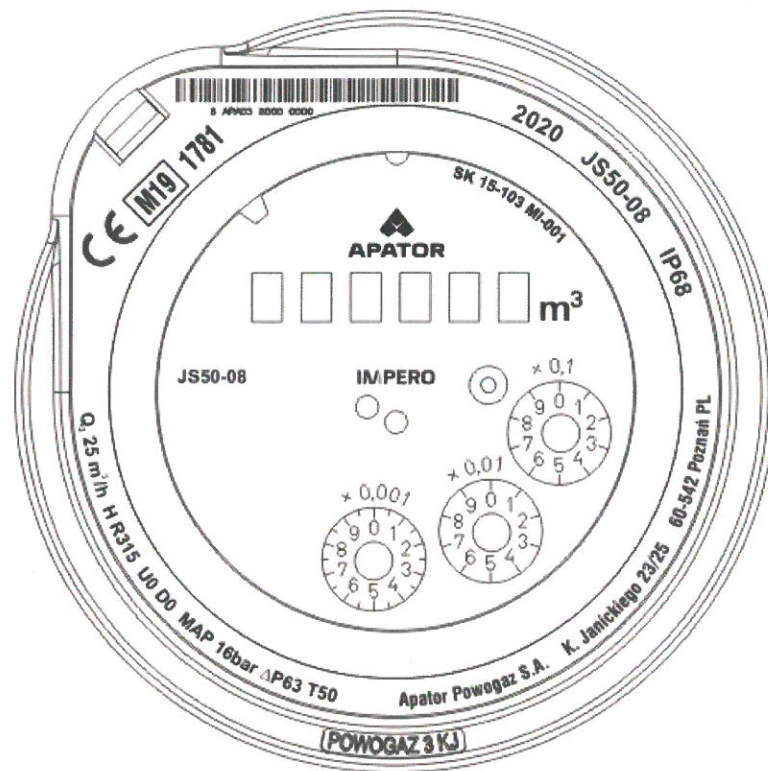


Fig. 7c: Example of the dial and marking of the water meters JS...-08 (samples for DN50, R315) and marking and inscriptions of manufacturer's postal address

