

(UK/0126/0035)



MI-001

United Kingdom of Great Britain and Northern Ireland

Certificate of EC type-examination of a measuring instrument

Number: UK/0126/0035

issued by the Secretary of State for Innovation, Universities & Skills
Notified Body Number 0126

In accordance with the requirements of the Measuring Instruments (Cold-water Meters) Regulations 2006 (SI 2006/1268) and the Measuring Instruments (Non-Prescribed Instruments) Regulations 2006 which implement, in the United Kingdom, Council Directive 2004/22/EC, this certificate of EC type-examination has been issued to:

Watertech SRL
Strada Antica Fornace, 2/4
14053 Canelli
AT – Italy

in respect of a cold-water meter (Manifold N 1-1,5) of rotary-piston volumetric concentric design and having a rated permanent flowrate Q3 of 1.6m³/h.

The necessary data (principal characteristics, alterations, securing, functioning etc) for identification purposes and conditions (when applicable) are set out in the descriptive annex to this certificate.

Signatory: P R Dixon
for Chief Executive
National Weights & Measures Laboratory
Department for Innovation, Universities & Skills
Stanton Avenue
Teddington
Middlesex TW11 0JZ
United Kingdom

Issue Date: 4 July 2008
Valid Until: 3 July 2018
Reference No: T1132/0018

Descriptive Annex

1 INTRODUCTION (Figure 1)

This pattern of liquid measuring instrument is for use in measuring the volume of cold water which has passed through it. It is a volumetric coaxial cold-water meter having a Q3 (permanent flowrate) of 1.6 cubic metre per hour. It incorporates a rotary piston measuring assembly mounted in a plastic body that is fitted into a cast brass alloy body for connection to a manifold in any orientation. The rotary piston drives a magnet that couples to a non-resettable totalising display (register) that indicates up to 99999.99995 m³. The register is positioned on the top of the measurement chamber and secured between the plastic snap-shut cover and sealing board.

2 FUNCTIONAL DESCRIPTION (Figure 2)

The meter body (watchcase) (21) is made of brass alloy. The main measurement components including the chamber (18), piston (16), shutter (15) and top plate (13) are all made of injection moulded plastic. These components are sealed in the watchcase with an O-ring (9) trapped between a plastic locating ring (10) and copper sealing board (8). This is all fixed in place by a plastic moulded press ring (7). The register (5) sits on top of the sealing board and is held in place by the plastic snap-shut cover (6). The strainer (19) is fitted underneath the measuring chamber. The connection to the manifold is arranged via a British Pipe Thread G 1½" male threaded co-axial inlet/outlet at the base of the meter body.

Mounted on top of the body plate is the hermetically sealed non-resettable totalising register, which indicates up to 99999.99995 m³. The register comprises an eight drum, five black and three red, mechanical counter and a dial indicator (Figure 3), the last significant drum indicates 0.001 m³ per numbered division. The least significant drum moves continuously whilst motion of the other drums from one digit to the next is completed during the time that the drum of the immediately next lowest value completes the last tenth of its revolution. The dial indicator, marked "x 0.0001", has a metallic rotating pointer which moves continuously and displays 0.0001 m³ per numbered division. The dial is sub-divided to indicate 0.00005 m³.

3 TECHNICAL DATA

3.1 Flow designation

| | |
|----------------------------------------------|------------|
| Q₃/Q₁ (R) | 200 |
| Q ₂ /Q ₁ | 1.6 |
| Q1 Minimum flowrate (m ³ /h) | 0.00800 |
| Q2 Transitional flowrate (m ³ /h) | 0.01280 |
| Q3 Permanent flowrate (m ³ /h) | 1.6 |
| Q4 Overload flowrate (m ³ /h) | 2.0 |

3.2 Other designations

| | |
|-----------------------------------|-----------------------------------------------------------------------------|
| Temperature class: | T30 (0.1°C – 30°C) |
| Orientation requirements: | None |
| Revs/litre of measuring chamber | 30 |
| Maximum admissible pressure (MAP) | 16 bar |
| Pressure Loss at Q ₃ | 0.63 bar max |
| Climatic environment: | -10°C to +55°C |
| Mechanical environment: | M1 |
| Electromagnetic environment: | n/a |
| Location: | Open/closed, condensing/non-condensing |
| Reverse Flow: | The measured volume in reverse flow is subtracted from the cumulated volume |

4 PERIPHERAL DEVICES AND INTERFACES

The meters may be permanently or temporarily fitted with a pulse giving sensor, fitted externally to the register. Pulses from this sensor can be used to transfer a repeat of the indicated volume to an ancillary device. Pulses are generated by a magnet passing a reed switch.

4.1 Inductive pointer and sensor unit

The first element of the verification scale on the meter register is equipped with a pointer incorporating a magnet. The sensor unit may be fixed to the meter by clips locating in 2 holes on the locating board or alternatively by metal screws.

5 APPROVAL CONDITIONS

The certificate is issued subject to the following conditions:

5.1 Legends and inscriptions

The instrument bears the following legends:

- ‘CE’ marking
- Supplementary metrology marking
- Notified body identification number
- Permanent flow rate Q₃
- Flowrate range Q₃/Q₁ (R)
- Serial number
- Manufacturers mark or name
- Certificate number

6 LOCATION OF SEALS AND VERIFICATION MARKS

6.1 Securing method

The measuring assembly is secured by locating the snap fit plastic cover to the meter body. The register is positioned in the plastic cover and secured by the plastic locating board. The plastic cover and locating board have integrally moulded clips and once fitted, unauthorised dismantling is not possible without leaving evidence of tampering.

6.2 Location of verification markings

The verification markings identified in 5.1 are permanently etched on the top surface of the shroud as shown in Figure 5.

7 ILLUSTRATIONS

- Figure 1 Manifold N 1-1, 5 meter
- Figure 2 Exploded diagram of manifold meter
- Figure 3 Meter register
- Figure 4 Cross section of meter
- Figure 5 Top Face of meter showing verification markings

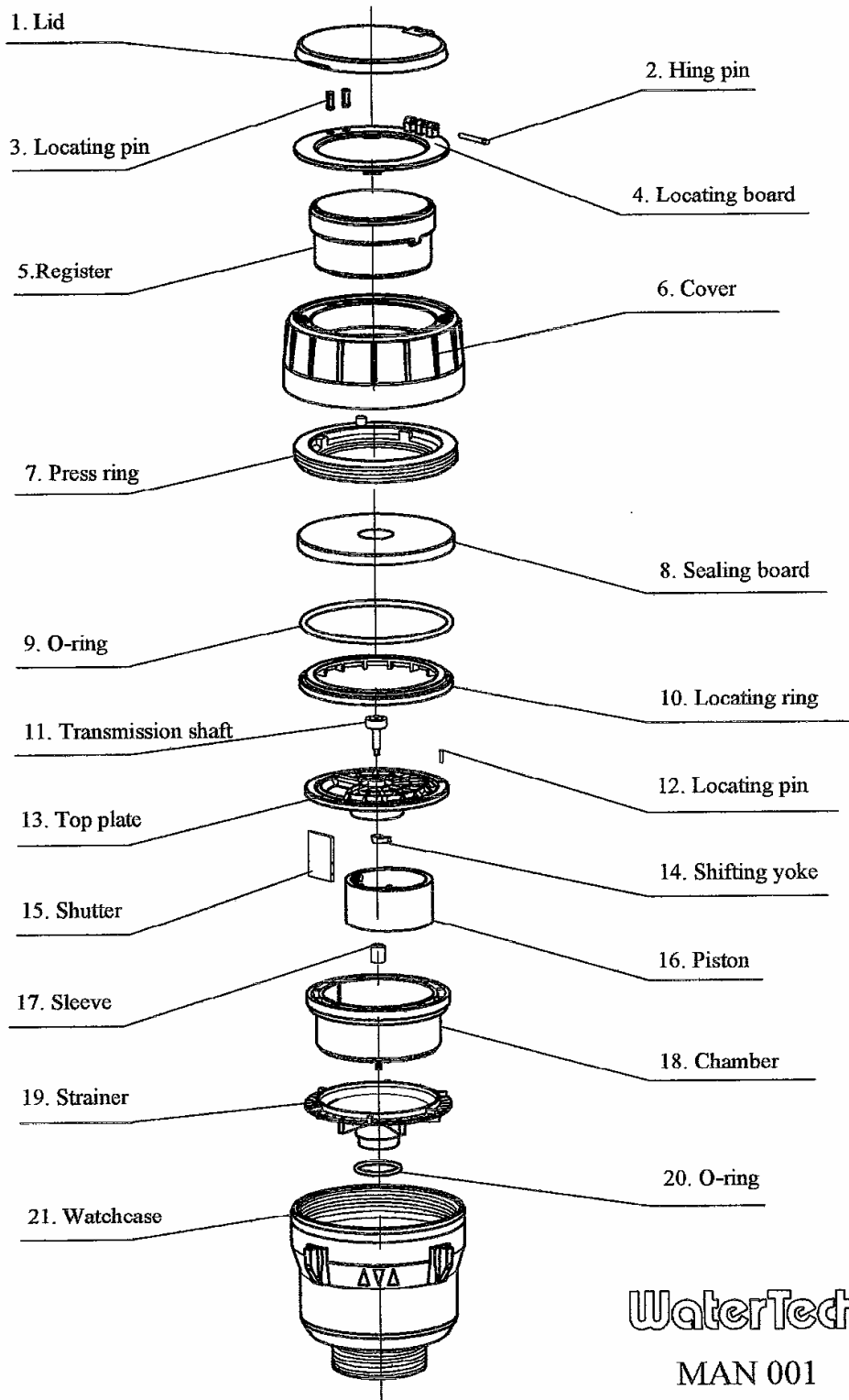
8 CERTIFICATE HISTORY

| ISSUE NO. | DATE | DESCRIPTION |
|------------------|---------------------------|--------------------------------------------|
| UK/0126/0035 | 4 th July 2008 | Type examination certificate first issued. |



Figure 1 **Manifold N 1-1, 5 meter**

Manifold N 1-1,5 Rotary-piston Volumetric Concentric Water Meter



WaterTech
MAN 001

Figure 2 Exploded diagram of manifold meter

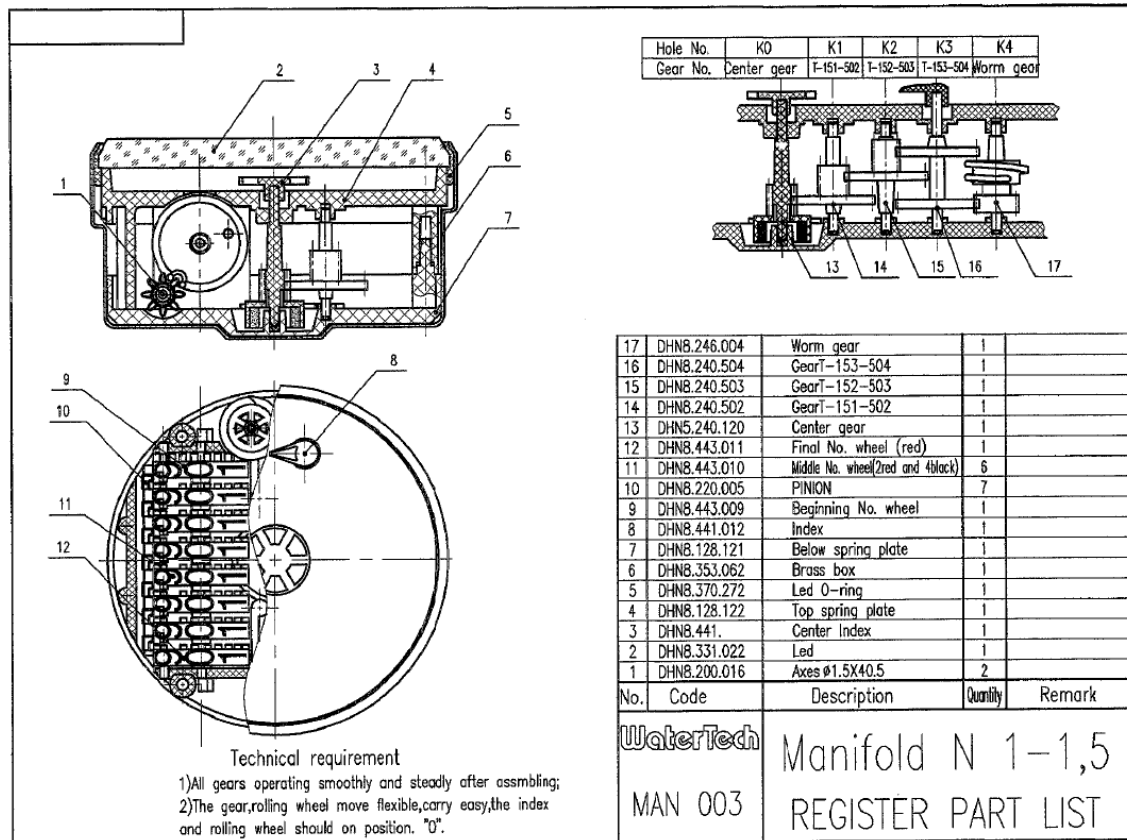
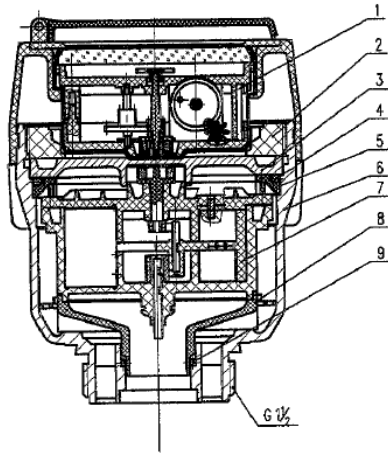


Figure 3 Meter register



| 9 | DHN8.370.277 | O-ring $\varnothing 24$ | 1 | |
|----------------------|--------------|-----------------------------------|----------|--------|
| 8 | DHN8.468.033 | Strainer locating board | 1 | |
| 7 | DHN4.003.092 | Measure device | 1 | |
| 6 | DHN8.302.210 | Watchcase | 1 | |
| 5 | DHN8.370.275 | Flow guiding locating ring | 1 | |
| 4 | DHN8.370.273 | O-ring $\varnothing 78$ | 1 | |
| 3 | DHN8.128.123 | Sealing board | 1 | |
| 2 | DHN8.370.276 | Press ring | 1 | |
| 1 | DHN5.307.027 | Cover group accessory | 1 | |
| No. | Code | Description | Quantity | Remark |
| WaterTech MAN 002 | | Manifold N 1-1,5 CROSS SECTION | | |

Figure 4 Cross section of meter



Figure 5 Top Face of meter showing verification markings