Type 804 Electromagnetic Insertion Flowmeter Installation Manual

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Contents

1 Introduction

The Type 804 electromagnetic insertion flow meter is designed to accurately measure the velocity of water flowing within a water pipe, by means of penetrating the pipe wall through a gland fitting. When combined with pipe dimensional information, the volumetric flow of water is calculated.

This document is the installation manual for the Valeport Water Ltd "Type 804 Electromagnetic Insertion Flowmeter". For reasons of safety when dealing with pressurised drinking water pipes, the device should be installed by qualified personnel only.

Operating instructions for the Type 804 and its associated software are covered in a separate document.

1.1 Operating Principle

The sensor operates using Faraday's Law of Induction; briefly, this Law states that a conductor (in this case, water) moving through a magnetic field (created by the sensor) will generate an electromotive force (voltage measured by the electrodes on the side of the sensor). The magnitude of this signal is a function of the speed of the water; the precise nature of this function is derived during the calibration process at time of manufacture, and may be verified and updated during scheduled service intervals as required. Important points to note are as follows:

- The generated voltage is small, of the order of µV, and carries no health or safety risk
- Because the measurement signal is so small, the instrument is sensitive to stray electrical signals and ground loops, so it is important to ensure that the system and pipe are properly grounded.
- The instrument relies on a minimum level of conductivity in the water, but is not sensitive to increases in Conductivity above that level. The minimum conductivity required is 20µS/cm, compared to typical drinking water values of 50 – 500µS/cm.

1.2 Flow Calculation

$$\mathbf{Q = A \times V \times F_i \times F_p \times U_s}$$

Where:

Q Flow rate (in chosen units)

A Internal cross sectional area of pipe, calculated from pipe diameter (m^2)

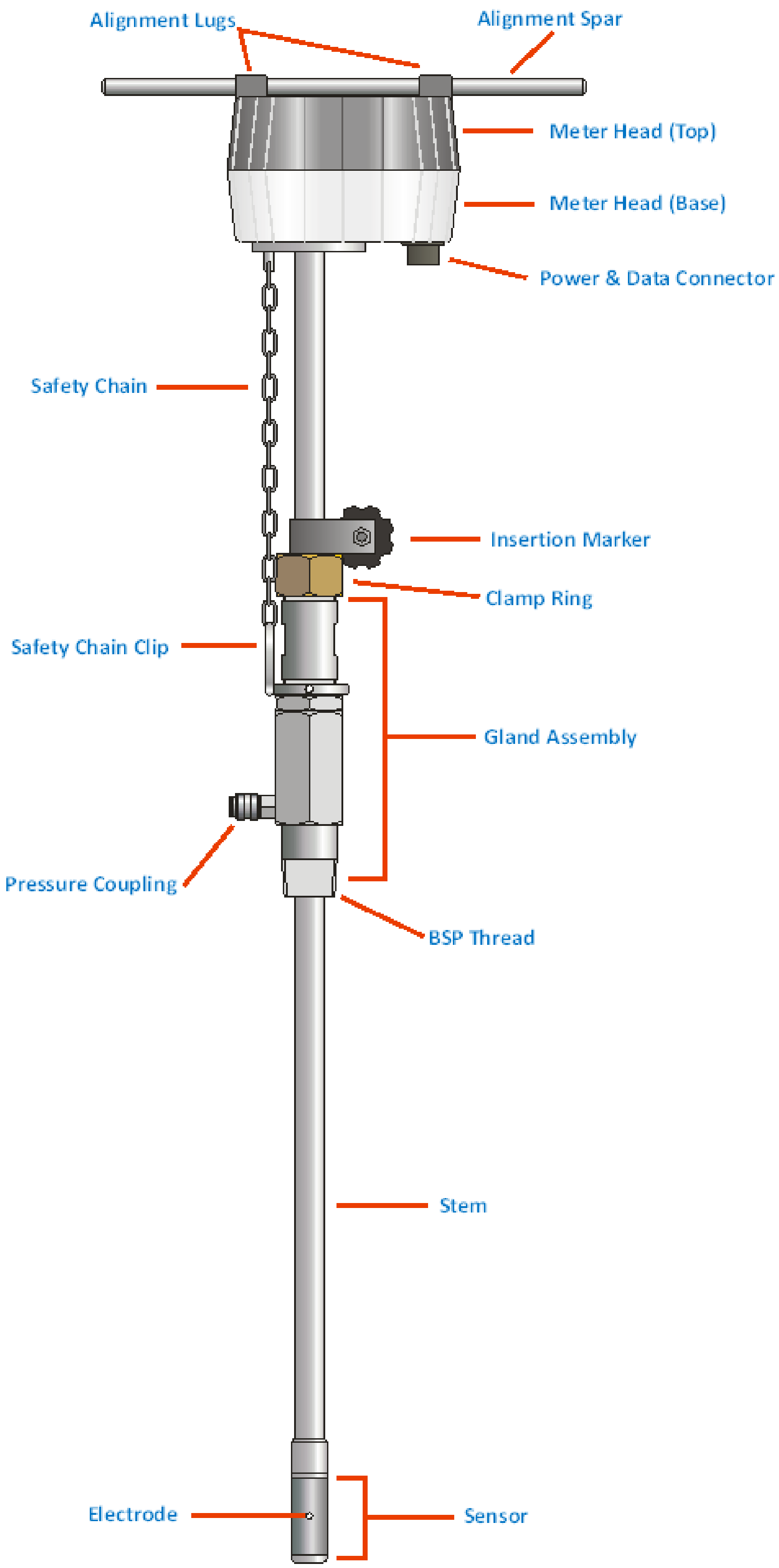
V Water Velocity measured by sensor (m/s)

$\mathbf{F_i}$ Insertion Factor adjustment based on position of sensor within pipe

$\mathbf{F_p}$ Adjustment factor based on the velocity profile within the pipe

$\mathbf{U_s}$ Units conversion factor to convert m^3/s into chosen flow units

1.3 Identifying Parts of the Type 804



The device is available in 5 versions, differing in length and sensor diameter to suit a wide range of pipe sizes. The precise dimensions of each version are discussed in Section 1.4. However, the various parts of each system are similar, as described below:

Alignment Spar	30cm long steel spar, which should be inserted through the **Alignment Lugs** on the Meter Head Top. Use the Spar to twist the meter in the valve before fully tightening the Clamp Ring, to ensure that the meter is aligned with the flow direction. To assist with this alignment procedure, there is an arrow on the label on the Meter Head Top which should be set to indicate the direction towards which the water is flowing. When new, the Alignment Spar is supplied clipped to the Stem.
Meter Head Top	The Meter Head is an IP68, (10m for 72 hours) with connector mated (housing made from polycarbonate reinforced ABS plastic (PC-ABS). The Meter Head contains all the measurement electronics and internal battery pack.
Meter Head Base	Together with the Top, the Meter Head Base forms the IP68 electronics housing. It also mounts to the Stem, contains the Power and Data Connector, and the securing point for the Safety Chain.
Power & Data Connector	The instrument is fitted with a 10 way Souriau connector (connection details given in Section 4.2). The mating connector and cable supplied with the instrument contains an electrical link, which effectively switches the instrument on when the connector is mated, and off again when disconnected. Note that this connector must be mated to ensure the IP68 integrity of the device.
Safety Chain	The Safety Chain is crucial for the safe operation of the device. Water pipes can operate at high pressure, and whilst the Gland Assembly has been tested to hold the instrument in position at up to 20Bar of pipe pressure, it relies on clamping friction only. The Safety Chain will ensure that the device is prevented from being ejected (possibly at high speed) from the pipe in the event that the clamping friction in the gland is reduced for any reason (or during removal). Once the device is in position, the Safety Chain should be attached to the Safety Chain Clip. Please refer to Section 2.4 for further details.
Safety Chain Clip	Together with the Safety Chain itself, this forms the critical backup safety system to prevent the device being ejected from the pipe under pressure. It should not be removed from the device for any reason.
Insertion Marker	Once the correct insertion distance for the device has been measured or calculated (see Section 2.3.3) the insertion marker may be moved to the right position, so that it meets the top of the Clamp Ring when the probe is inserted. This ensures the probe sits at the correct position in the pipe, and also that when the device is removed from the pipe for any reason, it may be easily inserted back to the correct distance afterwards.
Clamp Ring	The Brass Clamp Ring is used to tighten the Gland Assembly against the Stem and hold the instrument at the correct insertion distance within the pipe. It should not be completely tightened until the Alignment Spar has been used to set the correct orientation. The nut requires a 1⁵/₈" or adjustable spanner (1½" for the mini version).
Gland Assembly	The Gland Assembly consists of multiple stainless steel, brass and plastic parts, combined with nitrile o-rings, which act together to grip and provide a waterproof seal around the Stem. It also features a BSP thread on the bottom to allow mounting of the whole product into a suitable ball valve fitting on the water pipe. Note that when supplied, the Gland Assembly is pushed to the end of the Stem, providing protection for the Sensor during transit. Further protection is provided by a yellow protective cap, which should be removed from the BSP thread before attempting to insert the probe. The Gland Assembly should be

	tightened into the ball valve using a 1 5/8" or adjustable spanner (32mm for the mini version).
BSP Thread	The instrument is supplied as standard with a 1" BSP thread (¾" BSP for mini version) for screwing into the appropriate ball valve on the pipe. The thread should be wrapped with PTFE tape to ensure smooth and waterproof connection.
Pressure Coupling	The Gland Assembly is fitted with a 1/8" BSPP Quickfit pressure coupling, which allows the hydraulic pressure within the pipe to be measured by an independent device, if required.
Stem	The stainless-steel Stem is 19mm diameter (½" for mini version), and is polished smooth when supplied. Obviously, the length varies according to the model, but in all cases, it is important to ensure that the Stem is straight and undamaged before inserting into the pipe. Severe scratches or damage to the stem may compromise the ability to form an adequate o-ring seal within the Gland Assembly, and may therefore result in leakage.
Sensor	The Sensor is a solid-state element, assembled and potted with epoxy to ensure rigidity and durability. As well as measuring the flow of water, the sensor is also fitted with a thermistor which allows measurement of water temperature in the pipe. The standard sensor is covered with WRAS approved PVC and is 21mm in diameter. The mini version uses WRAS approved PVDF and is 16mm diameter. Note that although the sensor is durable and protected by a stainless-steel tip, care should be taken when inserting and withdrawing the probe not to scratch it or damage it against the inside of the ball valve or the sides of the pipe.
Electrodes	A pair of electrodes can be seen on the sides of the Sensor – it is the voltage differential between these electrodes as the water flows past them that allows the product to measure the speed of that flow. Note that the electrodes work best when their surface has been slightly oxidised; although they are pre-conditioned before leaving the factory, you may notice an improvement in measurement stability after the first few hours of use, as the surface of the electrodes stabilises further. Conversely, you may also notice a temporary increase in signal noise after aggressive cleaning.

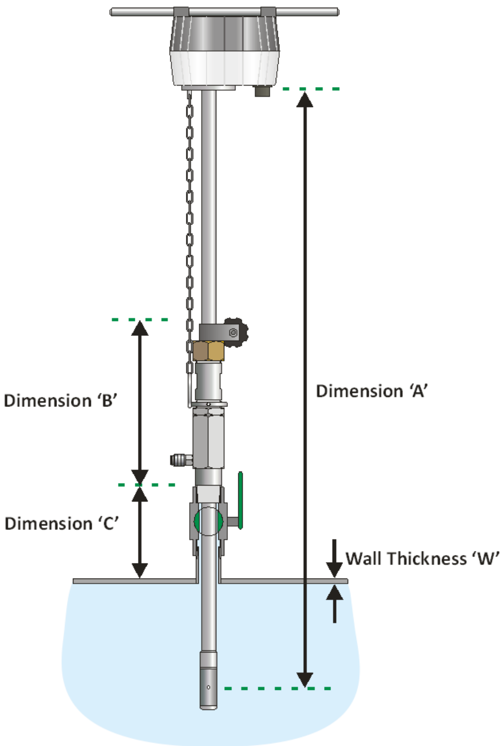
1.4 Type 804 Critical Dimensions

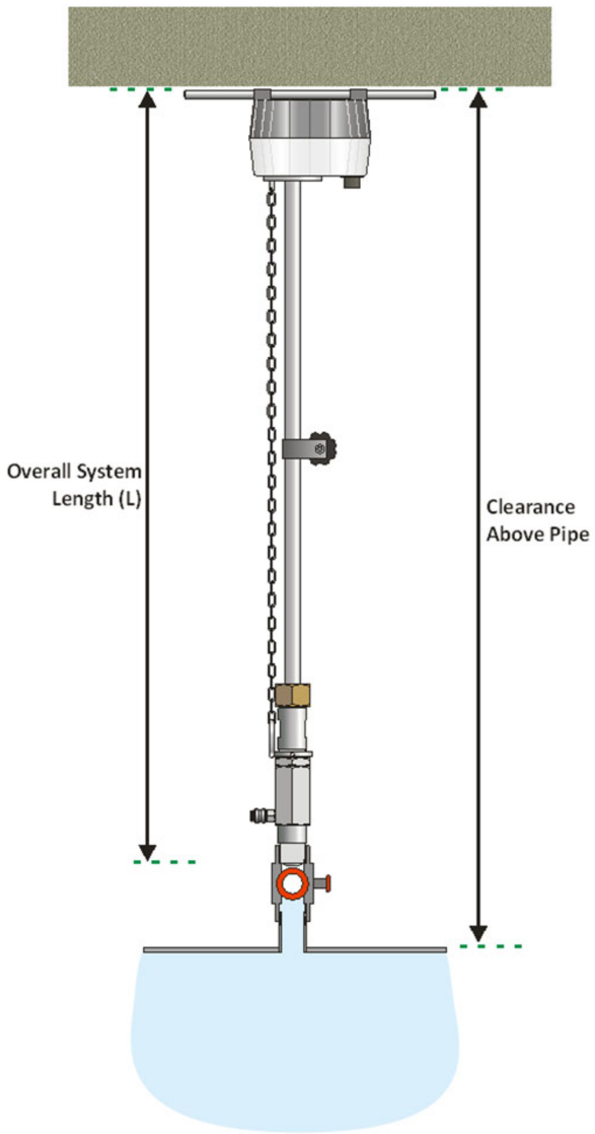
	Key	mini	300	500	700	1000
Sensor Diameter		16 mm	21 mm	21 mm	21 mm	21 mm
Fitting		¾" BSP	1" BSP	1" BSP	1" BSP	1" BSP
Overall Length	L	609 mm	798 mm	978 mm	1218 mm	1518 mm
Stem Length	A[1]	476 mm	660 mm	840 mm	1080 mm	1380 mm
Gland Length	B	149 mm	215 mm	215 mm	215 mm	215 mm
Valve Length	C[2]	120 mm	120 mm	120 mm	120 mm	120 mm
Max Insertable Length	A-(B+C+10)[3]	197 mm	315 mm	495 mm	735 mm	1035 mm
Required Clearance	L+C	729 mm	918 mm	1098 mm	1338 mm	1638 mm

1 to mid-point of sensor – nominal measurement point

2 example only – to be verified on site

3 assumed wall thickness of 10mm – to be verified on site





2 Type 804 Installation

The Type 804 Insertion Flowmeter measures the speed of the water passing over the sensor part of the device. In order to convert this speed measurement into volumetric flow, we make the assumption that the flow profile within the pipe is laminar; deviations from true laminar flow may result in errors in the volumetric calculation outside the performance limitations specified for the product. In order to minimise such errors, the device should be installed in accordance with the Standard **ISO 7145:1982** *"Measurement of fluid flow in closed conduits. Velocity area methods. Method of measurement of velocity at one point of a conduit of circular cross section."*

Critical aspects of this Standard apply to the position of the sensor within the pipe, in terms of both its linear distance relative to obstructions/events up and down stream of the installation point, and its insertion position within the diameter of the pipe.

Note that it is possible for advanced users to use the Type 804 to map the flow profile in non-laminar installations, and to therefore define their own Flow Calculation (Section 1.2) based on the precise installation characteristics of their site. This is not covered in this manual.

2.1 Linear Distance Recommendations

ISO 7145:1982 has the following recommendations for choosing a suitable insertion point for the meter. Note that all distances are given as a multiple of internal pipe diameter (D).

In all cases the device should be positioned a minimum of 5 x D upstream from any obstruction / event.

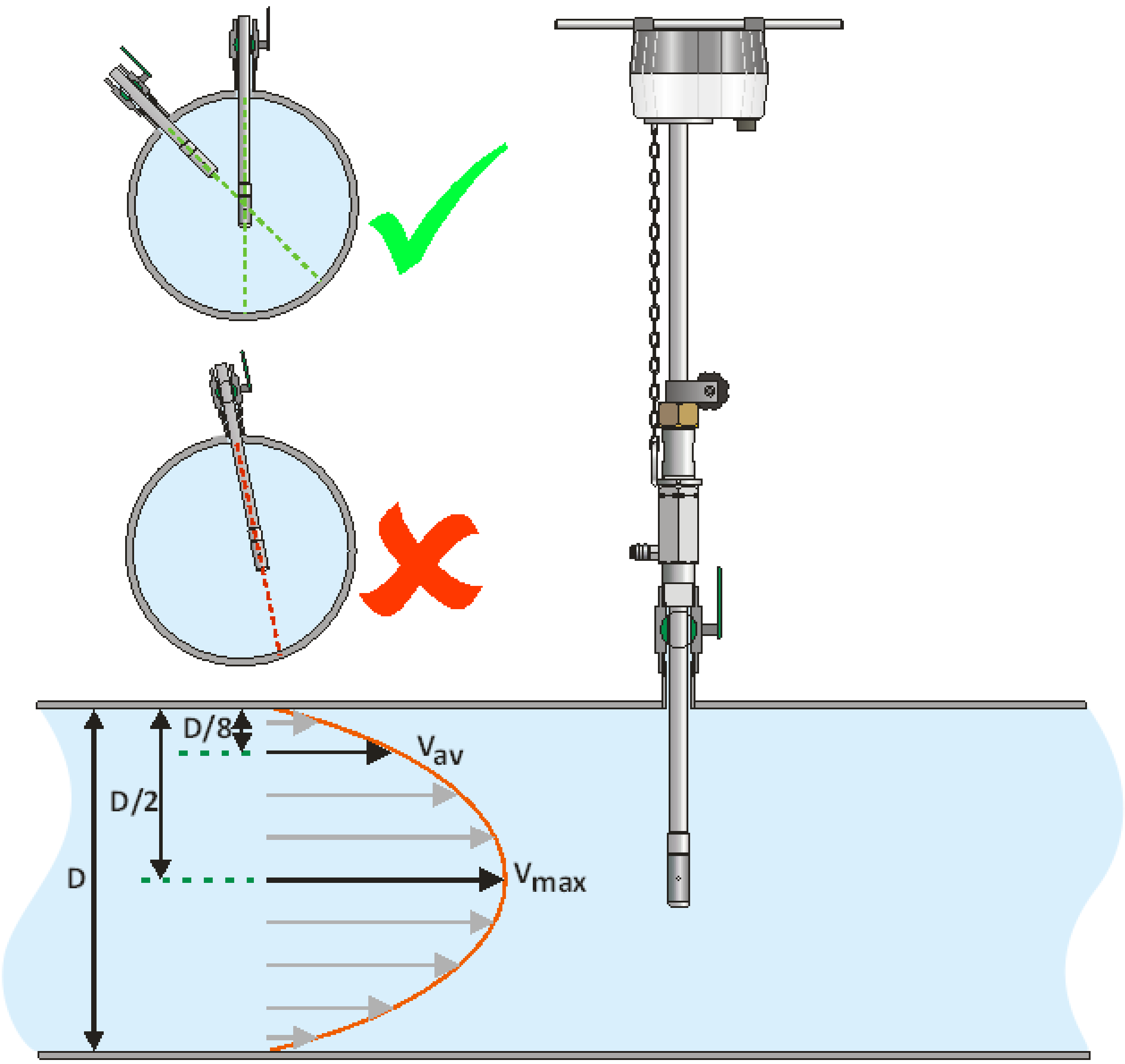
The influence of the obstruction will depend on the type of obstruction, and also the choice of sensor insertion distance (½ x D or $^1/_8$ x D – see Section 2.2).

Obstruction	Device should be positioned a minimum of these multiples of D downstream of the obstruction	
	½ x D Insertion	$^1/_8$ x D Insertion
90° Bend	25	50
Convergence (up to 36°)	10	30
Divergence (up to 28°)	25	55
Gate Valve (fully open)	15	30
Butterfly Valve (fully open)	25	45

2.2 Installation Recommendations

In a fully developed laminar flow, which should be achieved if the guidelines in Section 2.1 have been observed, ISO 7145:1982 indicates that there will be a parabolic flow profile, with maximum velocity V_{max} at the centre of the pipe (½ of pipe diameter), and average velocity V_{av} at $^{1}/_{8}$ of the internal pipe diameter. The Type 804 will perform the correct volumetric flow calculation provided the correct insertion factor is set in the instrument as described in the Setup and Operating manual.

Note that the probe must be inserted and aligned with the diameter of the pipe. Although it need not be vertical, depending on space constraints, it must not be inserted along an arc other than the diameter.



Knowledge of the internal pipe diameter is critical for two reasons:

a) So that the correct cross-sectional area can be used for the volumetric flow calculation (Section 1.2).
b) So that the probe can be inserted into the correct position within the pipe.

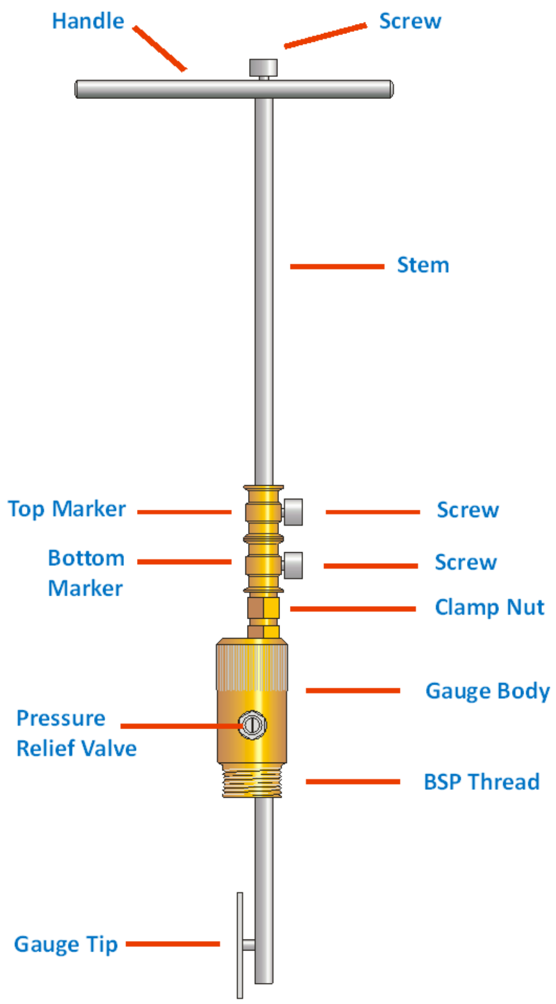
Note that in order to achieve point (b) above, it is also necessary to measure the offset distance of the ball valve; this is the distance between the top of the ball in the valve, and the inner surface of the pipe.

The simplest method of determining these values is by assuming that the pipe conforms to its nominal specification; some examples are given in Section 3 for different pipe sizes and materials. A tape measure or similar can then be used to measure the distance between the top of the ball in the valve and the outer surface of the pipe. The Offset Distance is therefore this measured value, plus the wall thickness of the pipe (also given in Section 3).

Errors in either the cross-sectional area of the pipe (from Internal Diameter) or the insertion point (½D or $^1/_8$D) can lead to significant errors in flow calculation. Therefore, in situations where the pipe specification is uncertain, or there is any doubt about the precise values of internal diameter and offset distance, it is recommended to use a Pipe Diameter Gauge to actually measure these parameters on site.

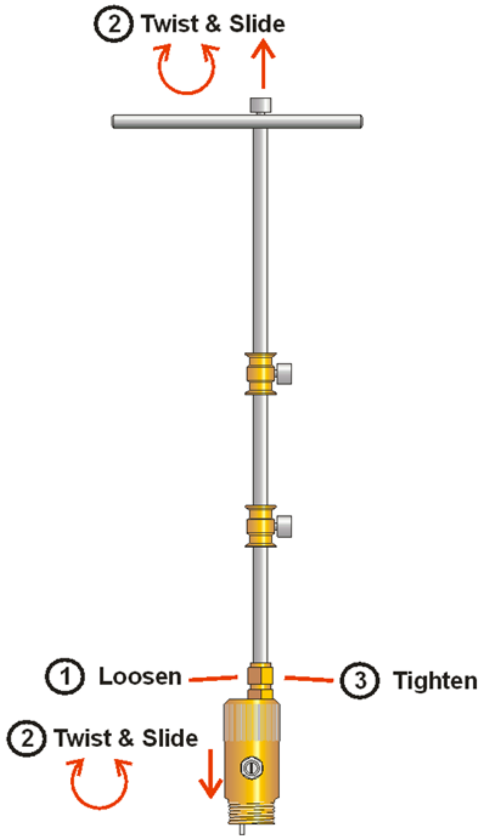
2.3 Pipe Diameter Gauge

2.3.1 Identifying Parts

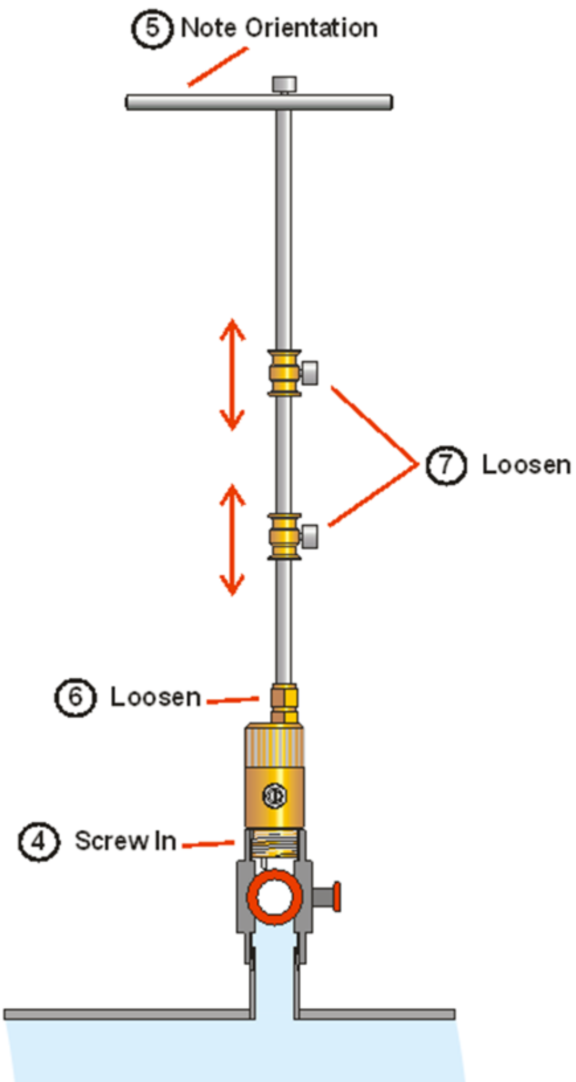


2.3.2 Measuring the Internal Diameter

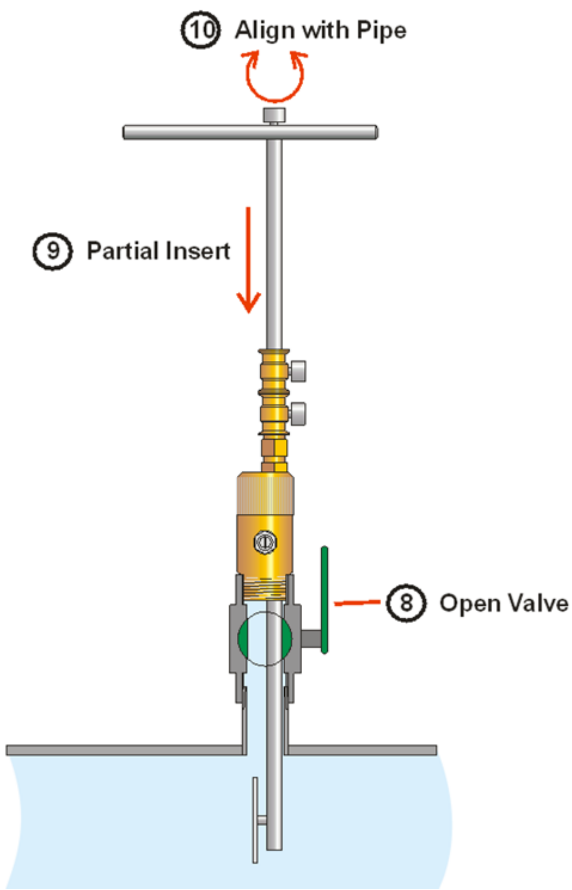
1. Loosen the Clamp Nut just enough to allow the Stem to slide freely through the Gauge Body (maximum ¼ turn of the Clamp Nut).
2. Twist the Stem to allow the Gauge Tip to be fully withdrawn inside the Gauge Body.
3. Tighten the Clamp Nut to hold the Stem in position

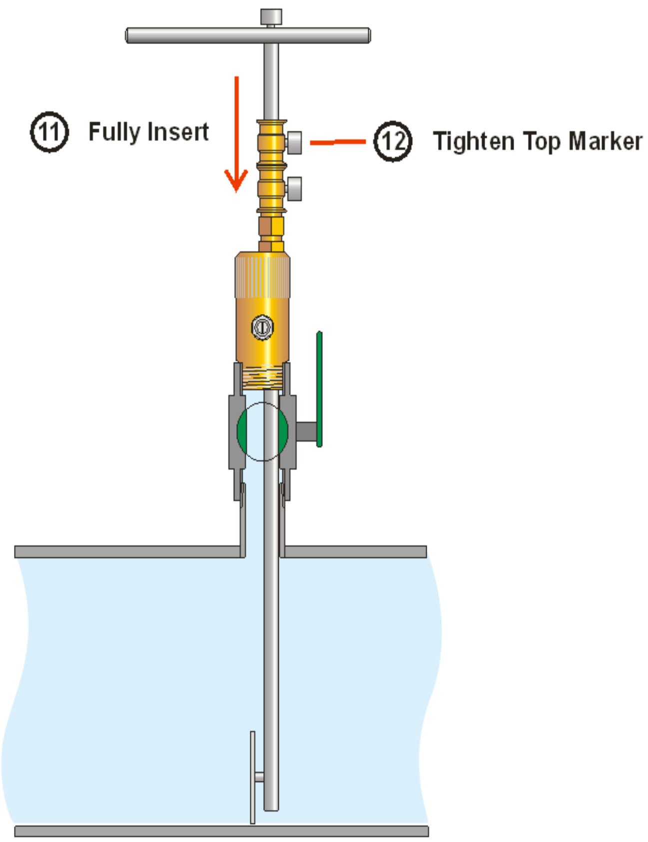


4. Fit the Pipe Diameter Gauge to the ball valve assembly by screwing in the BSP thread. This process may be eased by using PTFE tape around the thread. It should be possible to tighten the Gauge Body sufficiently by hand, but if extra force needs to be applied, the Handle may be removed from the top of the Stem and inserted into the small hole in the Gauge Body to apply additional torque. Refit the Handle to the Stem after doing this.
5. It is unlikely that the Gauge will now be in the correct orientation, with the handle parallel to the axis of the pipe. Make a note of the current orientation of the handle, since you will need to return it to the same orientation before removing the Pipe Diameter Gauge from the pipe.
6. Loosen the Clamp Nut again, as per Step 1.
7. Loosen the screws holding the Top Marker and Bottom Marker, so that they are free to slide up and down the Stem.



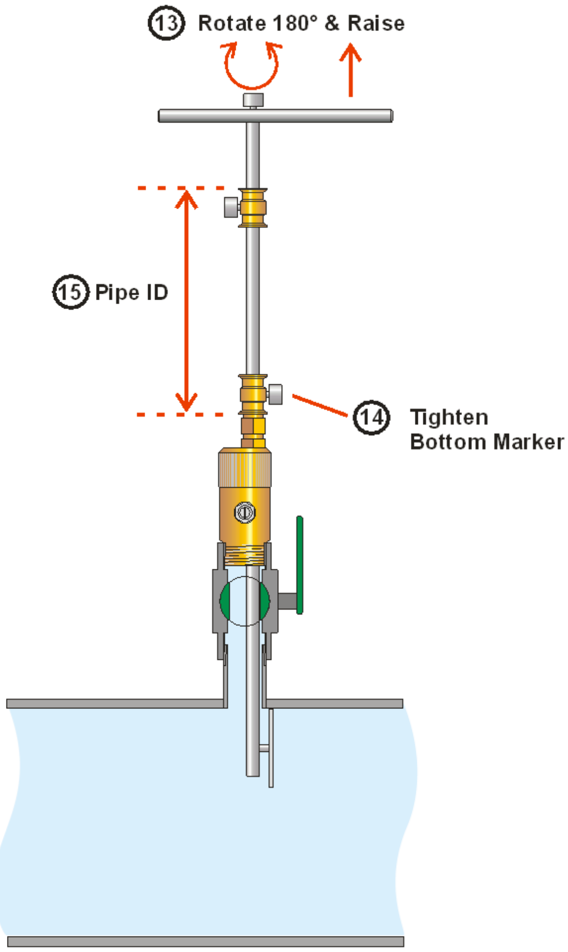
8. After checking that the Pressure Relief Valve is tightly closed, open the Ball Valve.
9. Push the Stem down through the Gauge Body, until the Gauge Tip is past the ball valve and into the open diameter of the pipe.
10. Twist the Handle so that it aligns with the axis of the pipe.

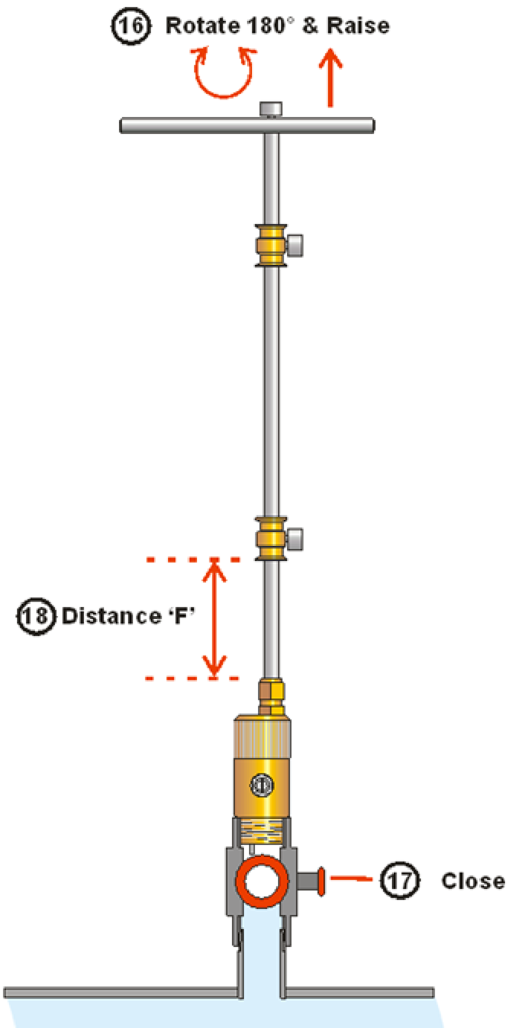




11. Lower the Stem until the Gauge Tip rests against the inside wall of the pipe (the bottom of the pipe if the gauge is installed vertically).
12. Ensure that the Top and Bottom marker as far down the Stem as they can go, resting against the Clamp Nut. Tighten the screw holding the Top Marker only in position.

13. Rotate the handle 180° withdraw the Stem at the same time, until the upper edge of the Gauge Tip touches the inside wall at the top of the pipe. Check the that the Top Marker remains fixed in position on the Stem, but the Bottom Marker remains resting against the Clamp Nut.
14. Tighten the screw holding the Bottom Marker in position on the Stem.
15. The **Internal Diameter** of the pipe is given by measuring the distance between the outer ends of the two Markers.





2.3.3 Calculating the Correct Insertion Distance

Continuing from the previous process:

16. Twist the handle back to the initial orientation as recorded under Step 5 in the measurement procedure above. The Stem should now be free to be withdrawn back through the ball valve and into the Gauge Body.
17. Close the ball valve, and allow the Gauge Tip to rest against the ball. Loosen the Pressure Relief Valve.
18. Measure the distance between the lower surface of the Bottom Marker and the top of the Clamp Nut as distance 'F'.

The Insertion Length (mm) for ½D insertion (IL½) is given by: **IL½ = (0.5 x ID) + E + (F – 60)**

The Insertion Length in mm for $^{1}/_{8}$D insertion (IL$^{1}/_{8}$) is given by: **IL$^{1}/_{8}$ = (0.125 x ID) + E + (F - 60)**

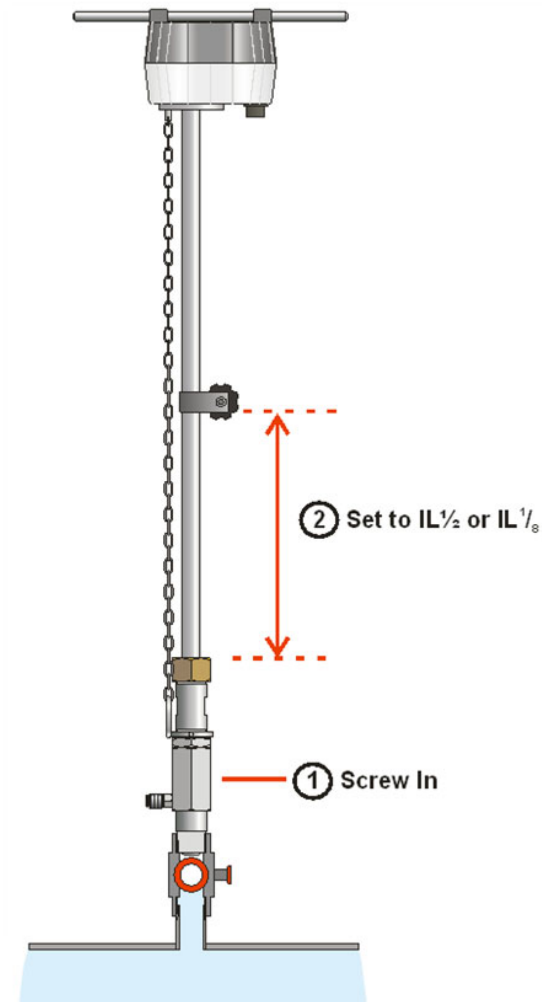
'E' = distance from tip of the sensor of the Model 804 to the electrode, 29mm (24mm for mini).

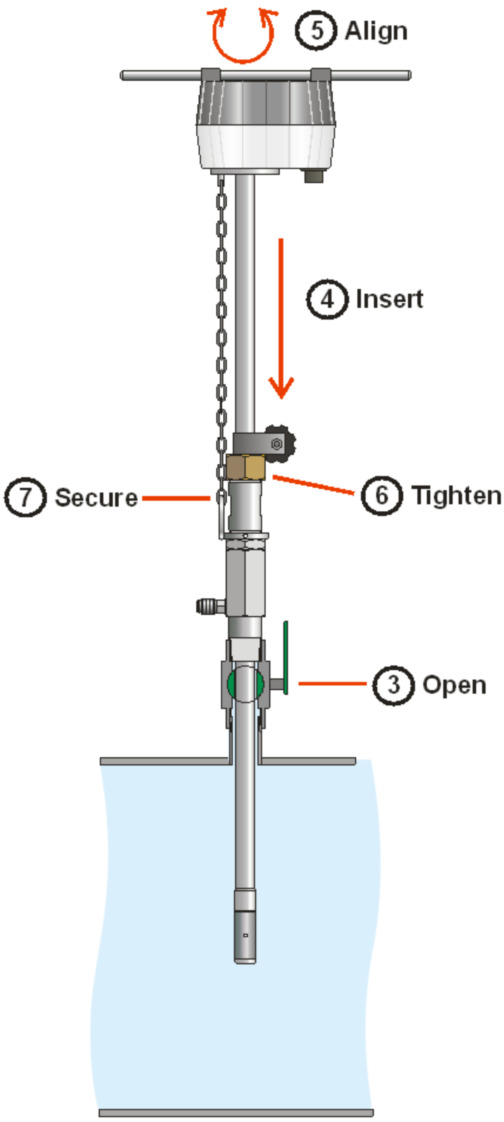
Note that the term (F – 60) equates to the "Offset Distance" referred to in Section 2.2.

2.4 Inserting the Type 804

1) Fit the Type 804 into the ball valve, tightening the gland assembly using the tools as described in Section. Leave the Clamp Ring loose, to allow the probe to be free inserted.

2) With the Type 804 sensor resting against the ball valve, position the Insertion Marker so that the distance between its lower surface and the top of the Clamp Ring is equal to the required Insertion Length as calculated in the Section 2.3.3 above (IL½ or IL$^{1}/_{8}$).





3) Open the ball valve

4) Push the Type 804 into the pipe until the Insertion Marker touches the Clamp Ring

5) Use the Alignment Spar to correctly align the Type 80 with the axis of the pipe

6) Tighten the Clamp Ring to hold the instrument in position.

7) Finally, adjust the Safety Chain length using the Clip, to ensure that the instrument cannot be ejected from the valve.

3 Standard Pipe Specifications

The table below details some standard pipe diameters, which may be used if it is not possible to measure the internal pipe diameter as detailed in Section 2.3.2. Please note that these values are typical only, and Valeport Water accepts no liability should the actual pipe dimensions differ from those shown below.

> Do not use the pipe's Nominal Diameter (DN number) to calculate flow volume in the Model 804; this mistake can cause large errors in volumetric calculations. For example, in the case of a mild (black) steel pipe, a size DN250 is in fact 260.4mm internal diameter. If the nominal diameter value of 250mm were used instead of the typical value of 260.4mm, it would result in approximately <u>8% under-reading</u> of flow.
> Conversely, a DN350 pipe *of the same material* actually has a typical internal diameter of 339.6mm, which would lead to a <u>6% over-reading</u>.

Typical Internal Diameters (mm) & Wall Thickness (mm) for a Range of Common Pipe Materials in Various Nominal Sizes (DN)							
Material	**HDPE (PE100 SDR11)**	**PVC**		**Mild Steel**	**Ductile Iron**		
Type	**PN16**	**PN10**	**PN16**	**PN16**	**Class 40**	**K9**	**K10**
DN90	72.6 (8.7)	81.4 (4.3)	76.8 (6.6)				
DN100				107.1 (3.6)	108.4 (4.8)	106.0 (6.0)	106.0 (6.0)
DN110	88.8 (10.6)	99.4 (5.3)	93.8 (8.1)				
DN125	100.8 (12.1)	113.0 (6.0)	106.6 (9.2)	131.7 (4.0)	134.4 (4.8)	132.0 (6.0)	132.0 (6.0)
DN140	113.1 (13.5)	127.8 (6.1)	121.4 (9.3)				
DN150				159.3 (4.5)	160.0 (5.0)	158.0 (6.0)	157.0 (6.5)
DN160	129.1 (15.5)	147.6 (6.2)	141.0 (9.5)				
DN180	145.2 (17.4)						
DN200	161.4 (19.3)	184.6 (7.7)	176.2 (11.9)	207.3 (5.9)	211.2 (5.4)	209.4 (6.3)	208.0 (7.0)
DN225	181.5 (21.8)	207.8 (8.6)	198.2 (13.4)				
DN250	201.9 (24.1)	230.8 (9.6)	220.4 (14.8)	260.4 (6.3)	262.4 (5.8)	260.4 (6.8)	259.0 (7.5)
DN300				309.7 (7.1)	313.6 (6.2)	311.6 (7.2)	310.0 (8.0)
DN315	254.4 (30.3)	290.8 (12.1)	277.6 (18.7)				
DN350				339.6 (8.0)	364.0 (7.0)	362.6 (7.7)	361.0 (8.5)
DN355		327.0 (14.0)					
DN400	323.0 (38.5)	369.4 (15.3)		390.4 (8.0)	413.4 (7.8)	412.8 (8.1)	411.0 (9.0)
DN450						462.8 (8.6)	461.0 (9.5)
DN500	403.8 (48.1)	461.0 (19.5)		492.0 (8.0)		514.0 (9.0)	512.0 (10.0)
DN600				592.4 (8.8)		615.2 (9.9)	612.8 (11.1)
DN630	508.7 (60.7)	581.0 (24.5)					
DN700				693.4 (8.8)		716.2 (10.9)	714.0 (12.0)
DN710	573.3 (68.4)	654.0 (28.0)					
DN800	646.1 (77.0)	738.0 (31.0)		793.0 (10.0)		818.6 (11.7)	816.0 (13.0)
DN900	726.8 (86.6)			894.0 (10.0)		919.2 (12.9)	916.8 (14.1)
DN1000	808.8 (95.6)			996.0 (10.0)		1021.0 (13.5)	1018.0 (15.0)

4 Electrical Connection

4.1 Power Requirements – Type 804 standard

The Type 804 is supplied with an internal 19Ah battery, a total of two can be fitted.

The Type 804 can also be powered from an external source. If external power is applied, it MUST be a regulated supply of 3.6 VDC. Voltage drop over a long cable should be taken into consideration; an absolute minimum of 3.1 VDC is required.

4.2 Connections

10 Way Connector [female on the device]	
Pin	Function
C	Power Ground
D	+3.6V DC
A	Pulse Out Ground
H	Pulse Output 2
B	Pulse Output 1
J	RS 232 RXD / RS485B (+’ve)
K	RS 232 TXD / RS485A (-‘ve)
F	RS232 / RS485 Ground
G	Battery Switch
E	Link to Pin G to power unit

In May 2022 the Type 804 ExP (External Power) was introduced.

4.3 Power Requirements – Type 804 ExP

The Type 804 ExP is supplied with an internal 19Ah battery, only 1 battery can be fitted.

The Type 804 ExP can also be powered from an external source – 12 to 28 V DC.

4.4 Connections

10 Way Connector [male on the device]	
Pin	Function
C	OV_MS
D	+V IN_MS
A	Pulse Out Common
H	Pulse Output 2
B	Pulse Output 1
J	RS 232 RXD / RS485B (+’ve)
K	RS 232 TXD / RS485A (-‘ve)
F	RS232 / RS485 Ground
G	Battery Switch
E	Link to Pin G to power unit

4.5 Earthing

Each installation is unique and with variations in pipe size, material, lining, corrosion prevention systems and general electrical noise all sites are specific to themselves. If noisy signals are experienced there are a number of things to try before contacting your service provider.

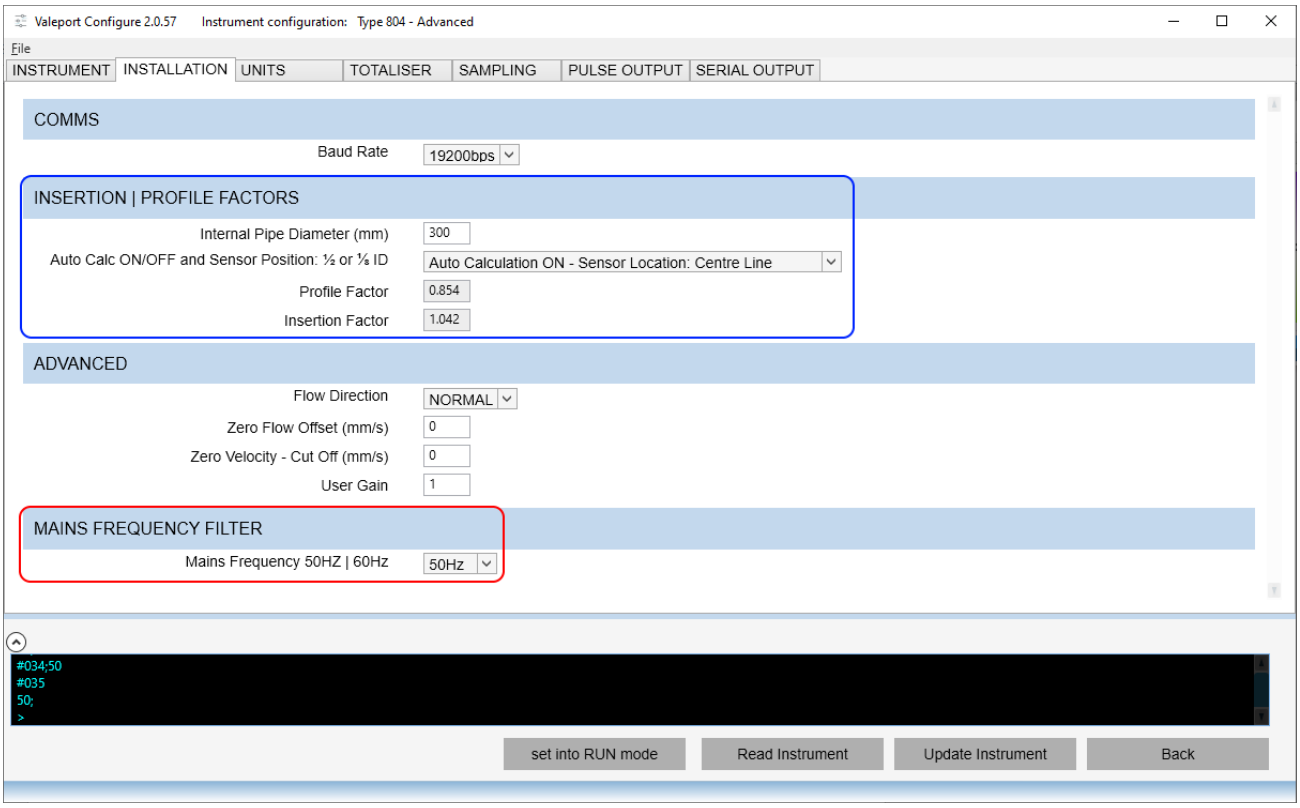
The stem provides the ground connection to the water in the pipe which is critical to the flowmeter's operation. For best results the Type 804 should be isolated from the pipe. There is an isolation layer in the gate valve attachment mechanism.

Do not connect the screen at the customer end of the data cable; this is because the screen is connected to the stem internally. By correctly configuring the cable a difference in DC potential between the two ends of the cable will be prevented.

Any external power provided, whether it be regulated 3.6 V DC for the standard unit or 12 to 28 V DC for the ExP variant the supply must be 'clean'.

If you are experiencing noisy 'data':

1. Insure there is sufficient stem in the water. If you are operating at ⅛ depth try ½, be sure to change your insertion and profile factors accordingly.
2. Check your mains frequency filter



If the pipe is lined check for a DC potential difference between the water and the pipe. The pipe should be earthed to the same potential as the water.

In some situations, bonding the spar to the pipe may help.

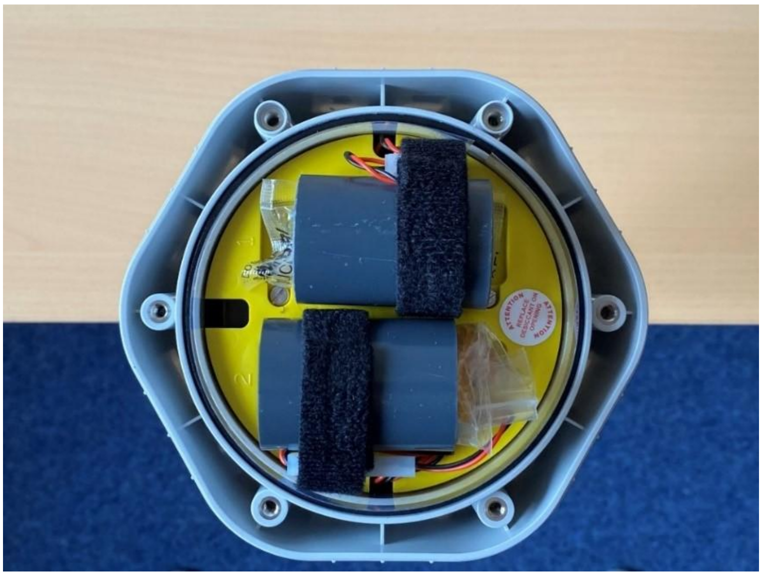
5 Maintenance

5.1 Battery Change

Tools needed :

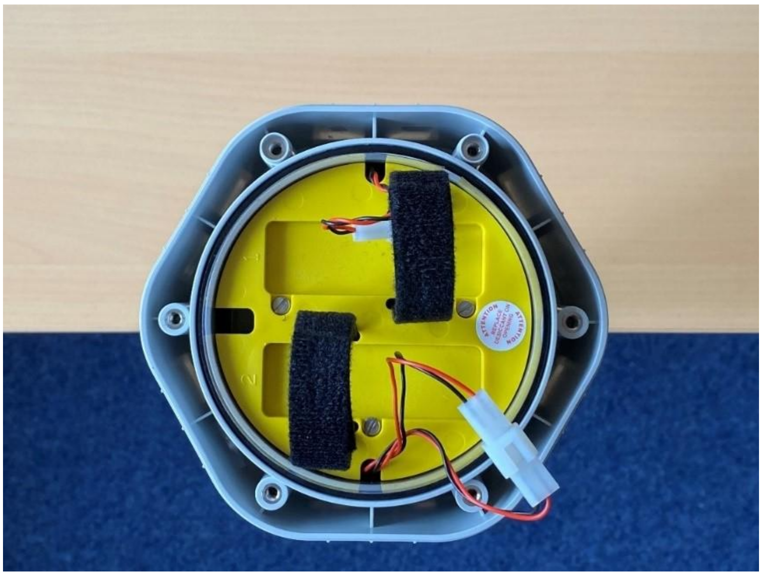
- 0.85Nm torque screw driver
- Desiccant bag
- Type 804 Lithium battery
- Communication cable
- Valeport Configure software

- Loosen the six screws around the lid using a 0.85Nm torque screw driver

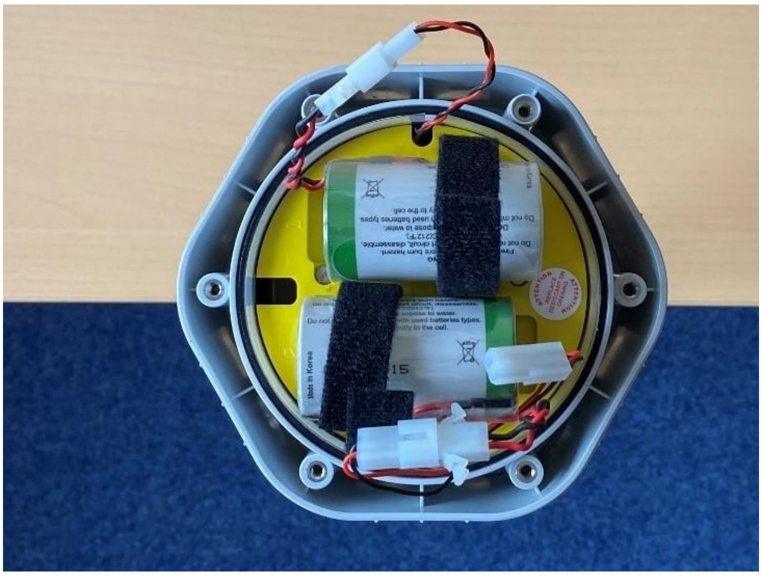


- If fitted, remove the false batteries and the desiccant bags

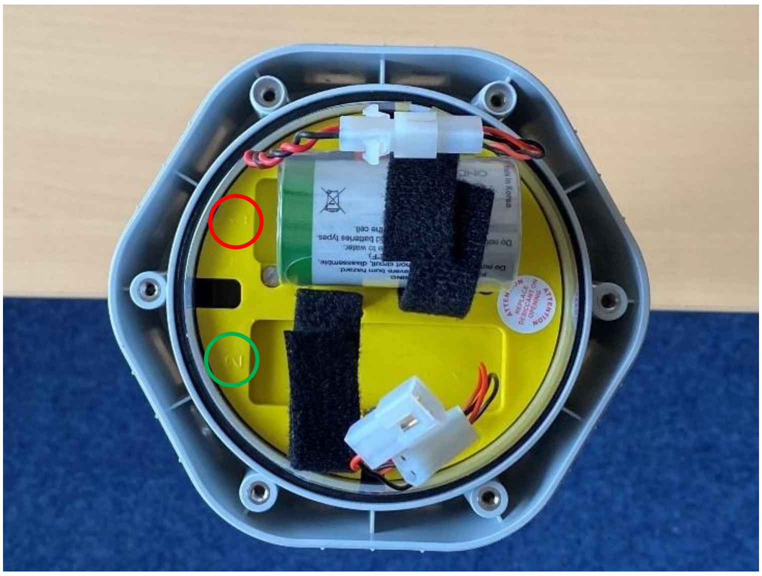
- If this is the first battery installation, you should have removed the items shown
- Keep them safe in case the flowmeter is to be returned to Valeport in the future without batteries fitted



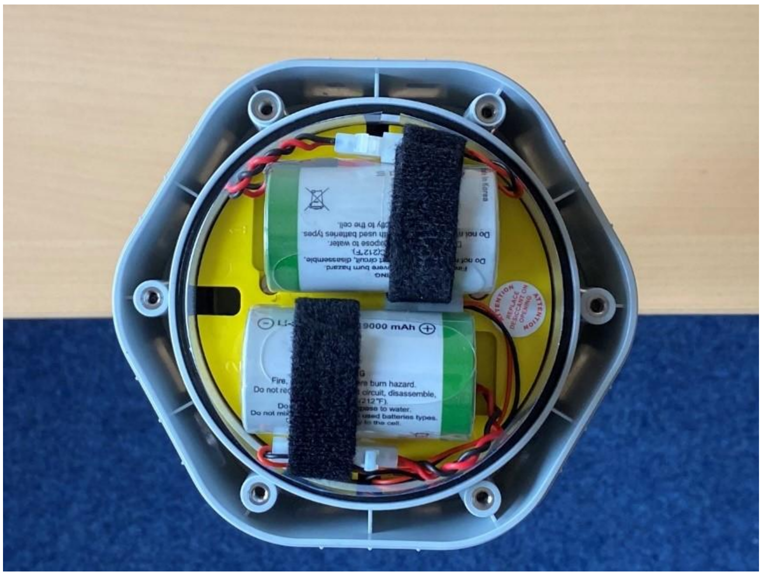
- As shown in the picture the unit is set up to use external power with the lower two plugs connected
- If external power is not to be used disconnect the two plugs



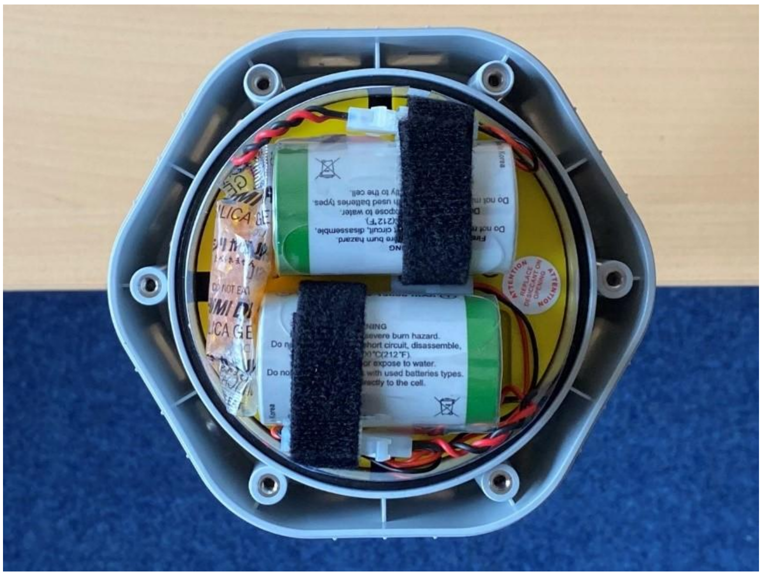
- Connect battery 1 and battery 2:



- If external power is to be used with a single back up, internal battery:
  - fit one battery in slot 1
  - Connect the two plugs associated with slot 2
    (These are shown disconnected in the picture)



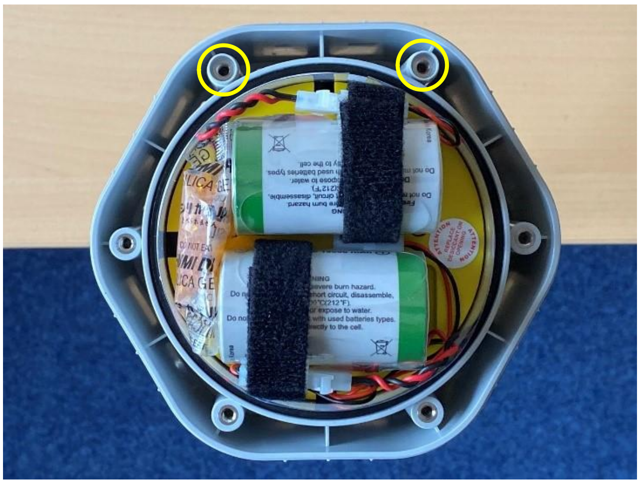
- If both internal batteries are to be fitted (no external power):
  - Connect the two batteries and using the securing strap hold both battery and connector in place as shown
  - place the unused external power connector between the batteries
  - everything should be neatly inside the clear plastic band



- Replace the desiccant bag:

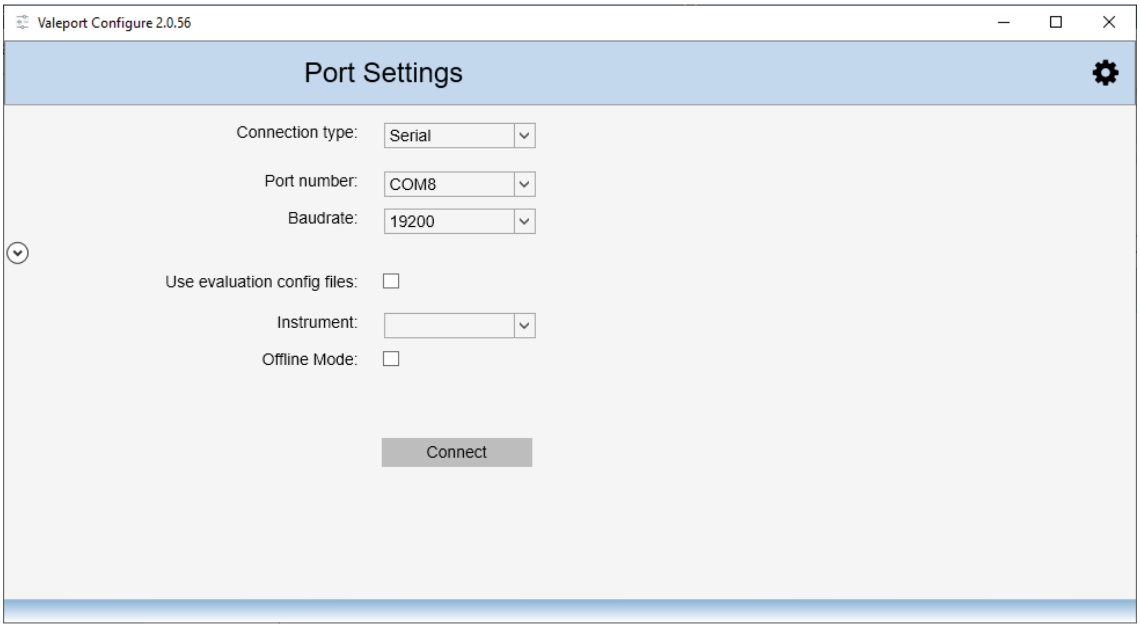
- Make sure the O-rings are correctly set inside the sealing ring
- Verify that the O-rings aren't pinched as the ring is put in place and the lid fitted.

- Make sure to correctly align the guide pins on the lid and the main body of electronics case
- Close the lid and using a 0.85Nm torque screwdriver tighten the 6 screws
- This operation should be carried out with the greatest of care. Failure to reassemble the unit correctly will invalidate your warranty.

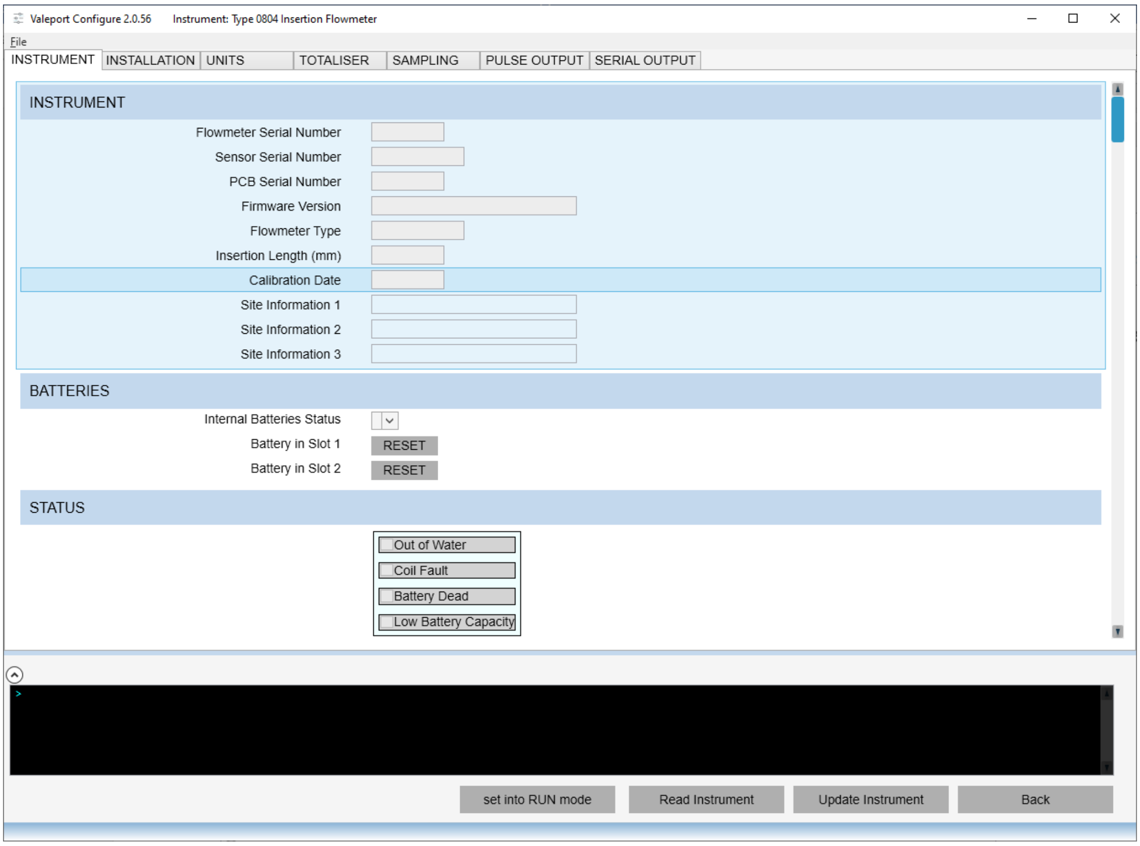


5.1.1 Reset the battery usage using Valeport Configure

Select the correct COM port "Port number" and setting for your installation



On "INSTRUMENT" tab, select the number of internal batteries, then click on "RESET" for each battery:



5.2 Cleaning

The flowmeter should be kept as clean as possible. On removal from the pipe the shaft and sensor should be wiped clean using fresh water and if badly stained a non-abrasive cleaner can be used – do not use excessive force to clean the sensor.

Rinse in fresh water and remove the batteries if the flowmeter is to be stored for any length of time or is to be returned to Valeport for service or calibration.

6 Declarations of Conformity

Any changes or modifications to the product or accessories supplied, that are not authorised by Valeport Ltd, could void the CE compliance of the product and negate your authority to operate it. This product has demonstrated CE compliance under conditions that include the use of shielded cables. It is important that you use shielded cables compliant with the product's conformance, to protect from potential damage and reduce the possibility of interference to other electronic devices

EU Declaration of Conformity

Manufacturer:	Valeport Ltd
Address:	St Peter's Quay, Totnes, Devon, TQ9 5EW
Certification marking:	CE
Product Description:	Type 804, Type 804 ExP

We the manufacturer declare that the product Type 804, Type 804 ExP is in conformity with the following EU Directives and harmonised standard(s):

EMC Directive 2014/30/EU	**Standards**
EMC (Article 3.1b)	BS EN 61326-1:2021 (Basic Level)

RoHS Directive 2015/863/EU	**Standards**
Prevention (Article 4.1)	BS EN IEC 63000:2018

Name:	Surya Dinesh
Position:	Product Support Manager
Place of issue:	Valeport Ltd, Totnes, UK
Date of issue:	31 March 2022
Signature:	

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VAT No: GB 165 8753 67
Registered in England No. 1950444

UK Declaration of Conformity

Manufacturer:	Valeport Ltd
Address:	St Peter's Quay, Totnes, Devon, TQ9 5EW
Certification marking:	UKCA
Product Description:	Type 0804, Type 804 ExP

We the manufacturer declare that the product Type 804, Type 804 ExP is in conformity with the following UK Statutory requirements and designated standard(s):

Electromagnetic Compatibility Regulations 2016	**Standards**
EMC (SI 2016 No.1091)	BS EN 61326-1:2021 (Basic Level)

ROHS Regulations 2012	**Standards**
SI 2012 No. 3032	BS EN IEC 63000:2018

Name:	Surya Dinesh
Position:	Product Support Manager
Place of issue:	Valeport Ltd, Totnes, UK
Date of issue:	31 March 2022
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