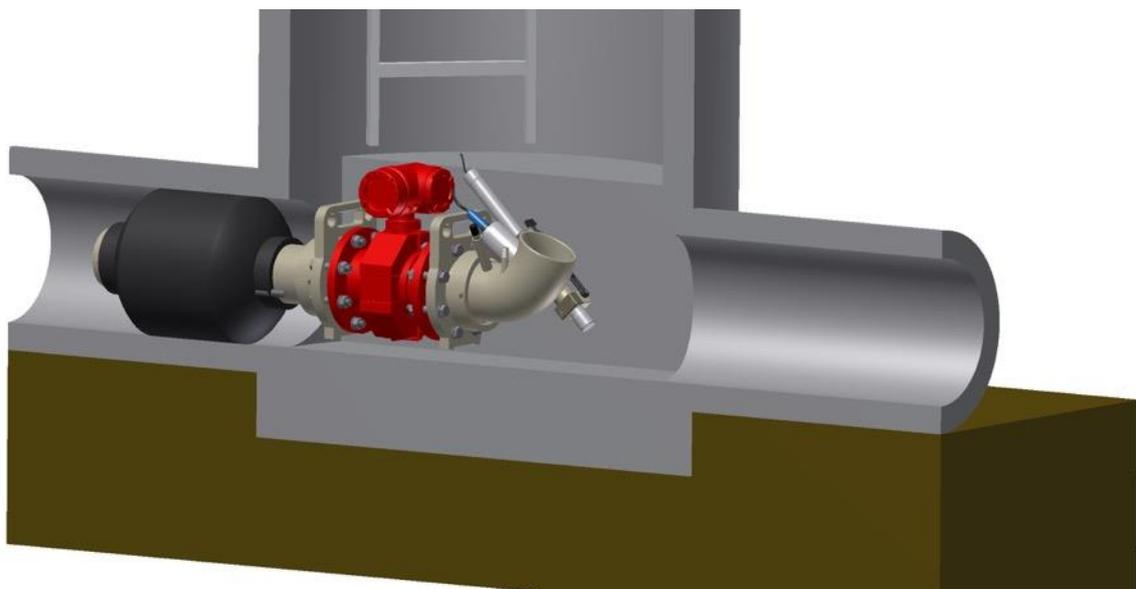


Technical Bulletin

«Portable» – the flow metering system

Magnetic-inductive flow metering system for measuring the amount of liquids in water and waste water applications

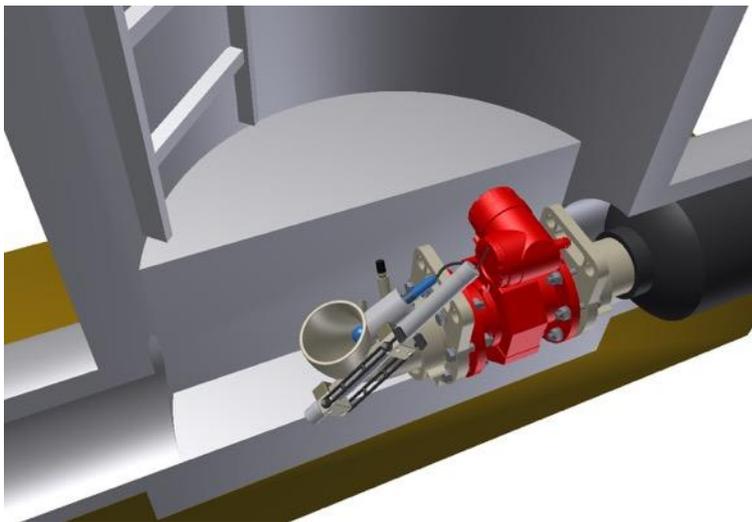


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Applications

- Extraneous water measurement
- Rain water measurement
- Checking of existing measuring points
- Load survey, compatible with automatic samplers and online analyzers



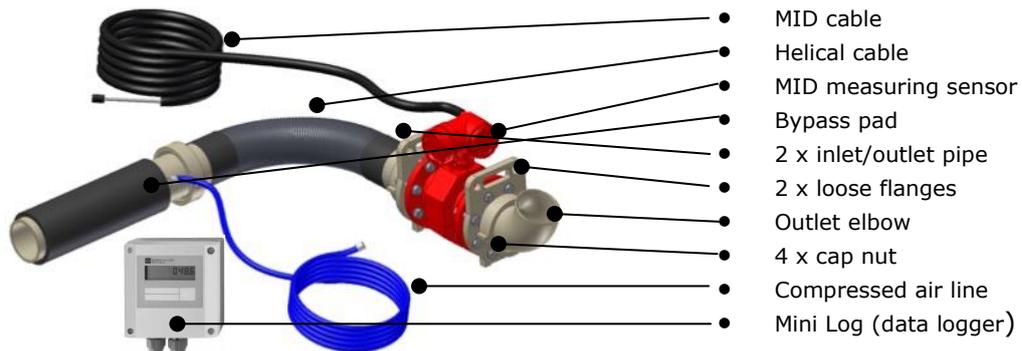
The multiple sensor elbow not only measures the flow, it also provides online data such as COD, conductivity, pH value and the temperature of the medium. A sampling port is also available.

Connection in the pipe:

„Portable“ diam. (mm)	Pipe connection (mm)	Measuring range (l/s, maximum spec. with 1 m impoundment)
80	125-250	0.1-15
100	125-250 or 200-500	0.16-20
150	200-500	0.35-40
250	300-600	0.98-110
350	400-800	1.92-200
500	700-1200	3.93-350

Connection in the sewer according to local conditions and agreement.

Technical design



Operation

The inflatable pad seals the sewer/duct so that all medium flows through the metering system, where the outlet elbow causes impoundment so that the measuring sensor is filled.

The «Portable» takes bidirectional measurements, i.e., even backflow medium is measured.

If required, the connecting components can be laid out in any required configuration. It is important to ensure that the measuring sensor is always fully filled.

Installation

Observe all relevant safety instructions.

A hoisting tool (e.g. rope winch, pulley or crane) should be used for safe installation of the system in shafts or sewers. This allows confident handling of the «Portable» by the workers.

Make sure not to put down or bump the unit heavily to avoid damage to the paint or the hardware.

Do not pull or kink cables or hoses. Do not use hardware with visible damage; contact STEBATEC without delay.

Remove sharp edges or pointed objects projecting into the sewer section so that the inflatable pad is not damaged.

Deflate the bypass pad for removing the unit. Make sure that everyone leaves the shaft until the tailback caused by the «Portable» has subsided.

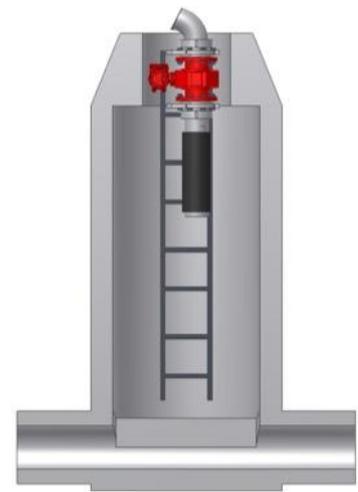
Typical installation procedure



«Portable» above manhole entry
Reel up MID cable
Reel up air hose



Place «Portable» upright
Lower it on ropes
Do not pull the cable/hose



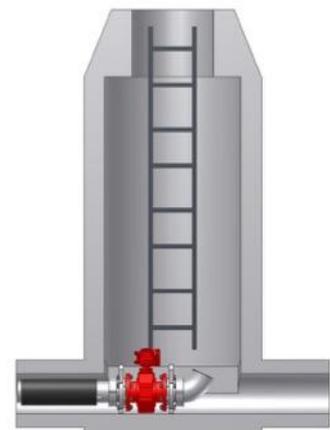
Lower carefully not to touch wall
Do not damage paint



Thread «Portable» in sewer pipe; control with rope

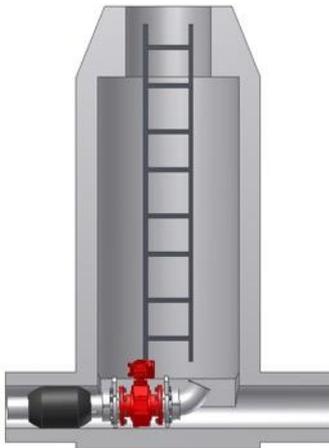


Carefully lower «Portable»



Place «Portable» to required position
Make sure to fill it fully.

The MID cable runs in opposite direction of flow!



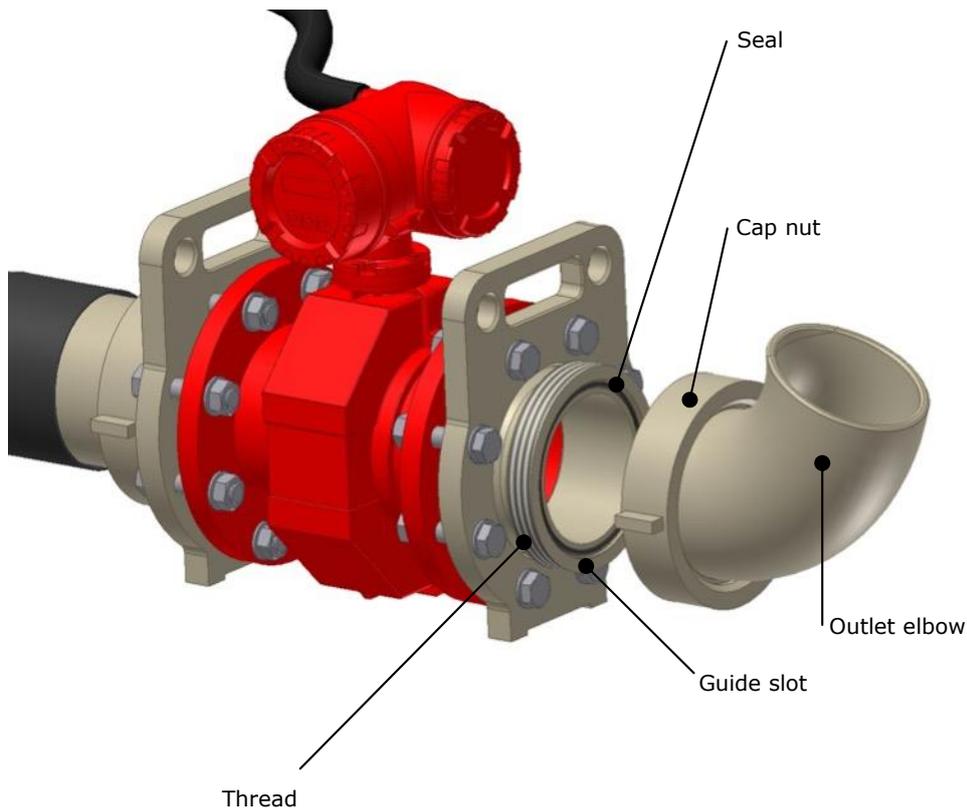
Inflate the bypass pad



Flow direction 

«Portable», installation system with cap nut

Simple installation, reliable and durable connection by guide slot.

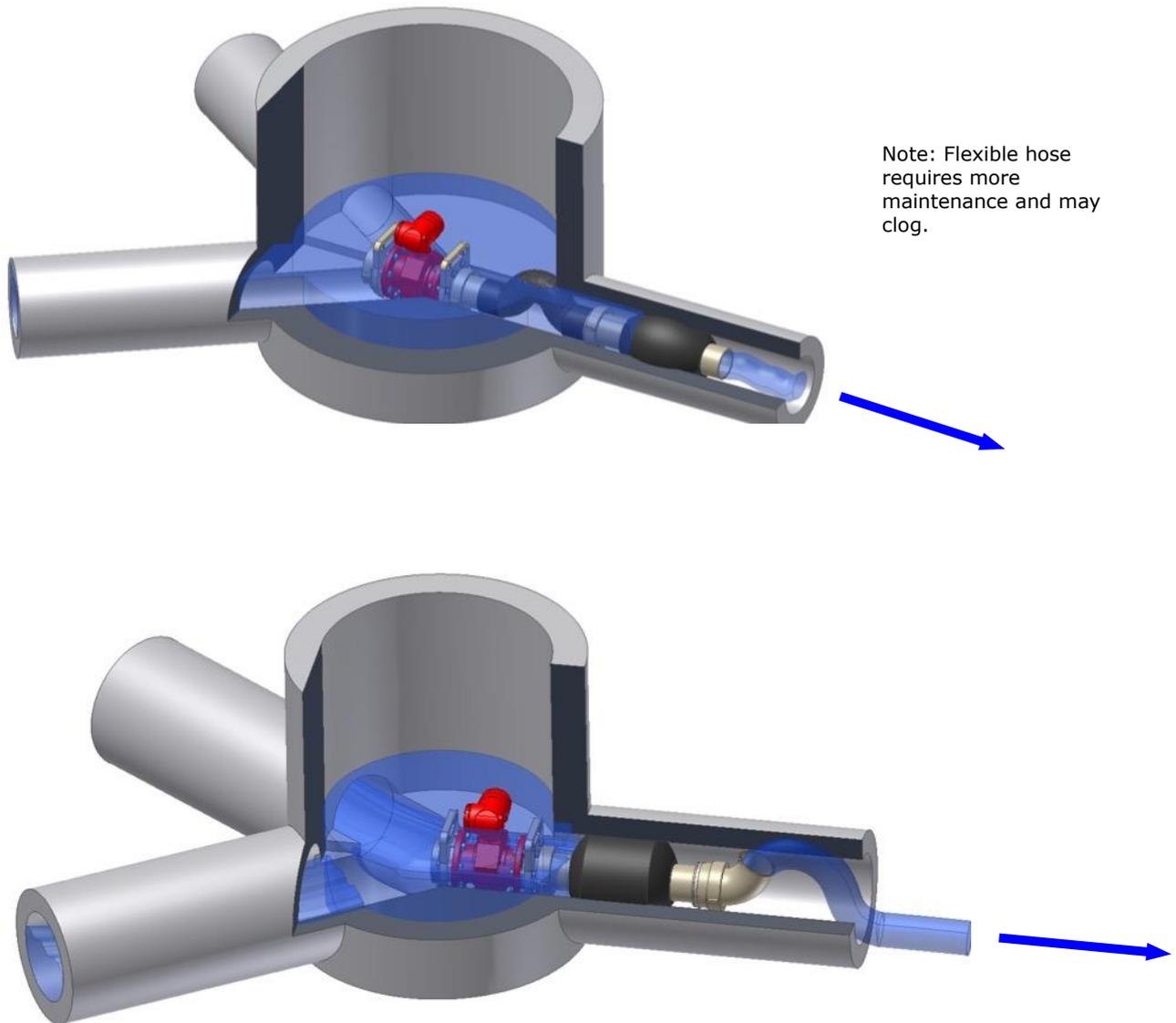


Installation options

«Seal outlet» version

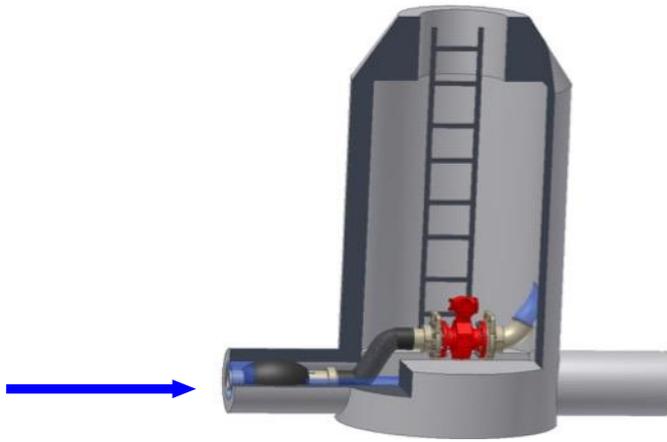
To make the installation of two measuring systems unnecessary in manholes with two inflows, the «Portable» system can seal the outlet.

With that configuration, the MID can be filled fully with a flexible hose (top figure) or with an overflow elbow (bottom figure) when the pipe is large.



«No space» version

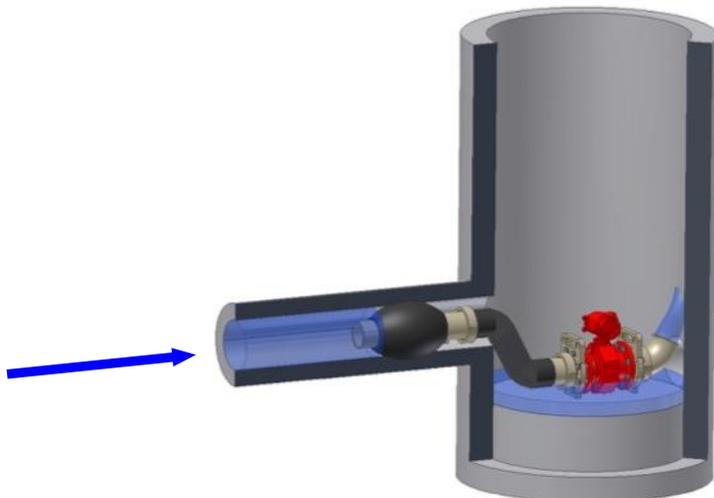
When there is not enough space to fit the measuring unit between the berms, either the place can be reconstructed to provide the required space or – as shown in the figure – the unit can be installed above the berm by means of a flexible hose.



Note: Flexible hose requires more maintenance and may clog.

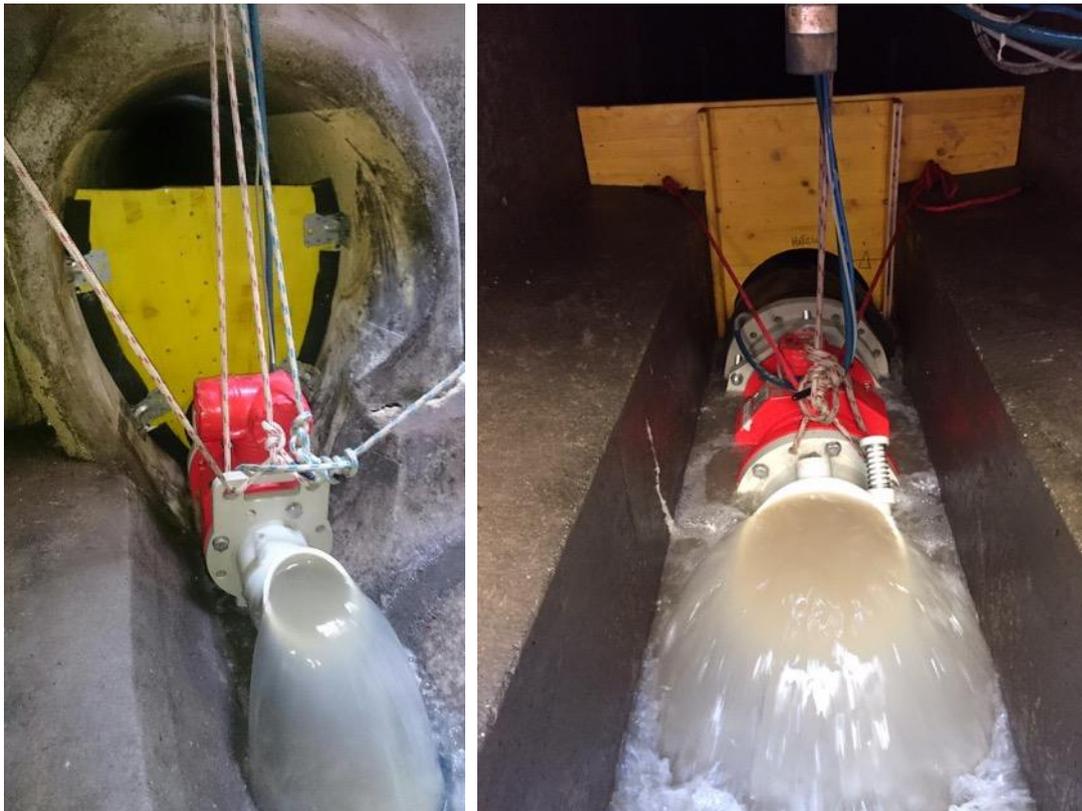
«Not enough impoundment» version

If the target is to keep the impoundment low, the MID can be installed with a flexible hose at a lower place if space permits.



«Flow barrier with emergency overflow» version

Optimum solution avoiding uncontrolled tailback because the water can flow over the barrier. Besides the flow barrier permits the installation of the metering system in very large sewers or sewers of unusual shape.



Water level/tailback/impoundment

When the «Portable» is installed the water in the sewer is impounded until the system is filled fully. In case of large water volumes higher pressure is needed to force the water through the pipe. This causes the water level and the tailback in front of the measuring point to rise. Both should be considered carefully to prevent a possible crash.



Advantages

- MID = approved measuring method, most exact measuring method in waste water
- Measuring error < 1%, controlled, intrinsically calibrated
- Measuring ranges 0.1 – 500 l/s
- No settings required on site
- Fast installation – completed within 5–15 min.
- Can be installed without anyone entering the manhole

Material

Pipe wall material:	Polypropylene (PP)
Protection class:	IP 68
Ex certification:	ATEX II 2GD EEx de, wired. EEx e
Seal material:	EPDM
Temperature range:	0 – 80 °C
pH range:	6 – 9
MID lining:	hard rubber

Impoundment/flow: benchmarks

Impound. from outlet top edge	«Portable» DN 100mm	«Portable» DN 150mm	«Portable» DN 200mm	«Portable» DN 250mm	«Portable» DN 300mm	«Portable» DN 350mm	«Portable» DN 500mm
200 mm	8 l/s	22 l/s	40 l/s	60 l/s	90 l/s	120 l/s	250 l/s
500 mm	15 l/s	32 l/s	60 l/s	95 l/s	140 l/s	190 l/s	350 l/s
800 mm	18 l/s	40 l/s	79 l/s	120 l/s	175 l/s	240 l/s	530 l/s
1000 mm	20 l/s	45 l/s	85 l/s	135 l/s	195 l/s	285 l/s	600 l/s

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