

## SERVICE BULLETIN

### Intellisonde Installation



#### **HIGH PRESSURE WARNING**

*The water mains may be under high water pressure and extreme care must be taken when establishing the insertion depth and subsequent insertion of the Intellisonde into the valve/water pipe.*

Ideally, once fitted, the sensor head should be positioned in the centre of the pipe. This will vary depending on the mains pipe diameter. It is important to set the depth and orientation of the Intellisonde to ensure the flow sensors are correctly located in the water flow and to avoid the Intellisonde hitting the bottom of the water pipe.

**Before installing the sonde, the sensors must be pre-soaked in strong chlorine solution (details below). Mechanical preparation for insertion should be completed before this pre-soaking to avoid drying the sensors.**

#### **Pre-Soaking/Sensor Cleaning and Hydration Solution**

To prepare the sensors for use, you will need;

1. Fresh, concentrated bleach solution (NaClO (aq), 4% or greater. Some cheap domestic bleach, with no thickeners or perfume, may be suitable, or reagents can be purchased from chemical suppliers (possibly pool maintenance suppliers).
2. Sodium Bicarbonate (suitable for cooking is OK – not baking powder).
3. Isopropyl Alcohol (IPA) for removing grease (available as a cleaner for electronic components).
4. De-ionised water (battery top-up water may be suitable) for rinsing.
5. Kettle descaling compound (to remove limescale deposits and for cleaning optical sensors).
6. Soft tissue (to wipe delicate sensor surfaces).
7. Cotton buds (for cleaning optical surfaces).
8. Ascorbic acid for use in high manganese water.

#### **Lubricate Shaft**

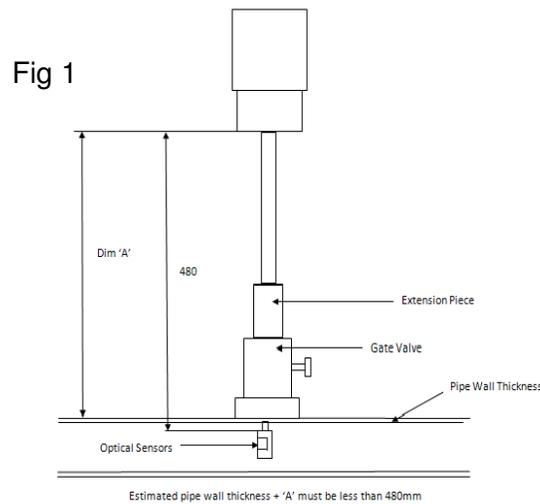
Lightly lubricate the length of the shaft using drinking water approved silicone grease before each insertion into a valve. This will ensure a watertight seal between the shaft and the shaft seal.

Ensure all sensors and electrodes are fully inserted before each insertion into a valve.

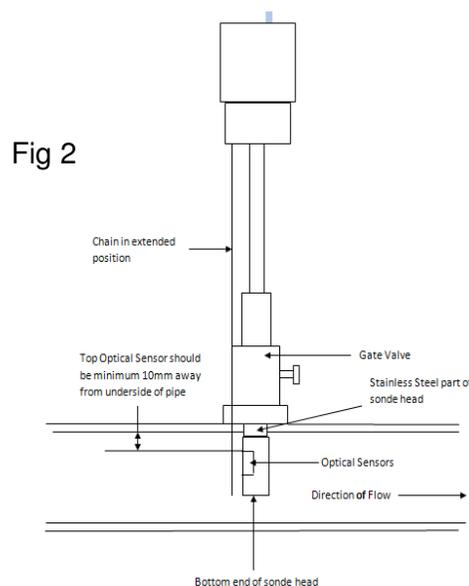
## Set Depth

Fit the Extension Piece to the valve. This may need thread sealing tape and a tool to tighten fully to seal. Set the Shaft Locking Assembly depth by estimating the pipe thickness and add Dimension A as in Fig 1. Note - Dimension A must be less than 480mm.

Ensure that the sonde head will be fully inserted into the water flow. Failure to do this will lead to meaningless data.



*Tip – The safety chain can be used as an insertion gauge. When the chain is in its extended position, the end of the chain (including quick link) will be in the same relative position as the bottom of the sonde head in the water pipe, see Fig 2.*



## Aligning Collar

With the height of the collar determined, orient the collar such that the blue (or white) knob is parallel to the flow direction arrow on the sonde lid, see Fig 3.



Fig 3

## Pre-Soaking/Sensor Cleaning and Hydration.

The settling in time can be reduced by hydrating the sonde in a strong bleach solution prior to inserting the probe in the system. Optimum hydration may depend on water type. Concentrated, fresh NaClO with approx. 5g/200ml of bicarbonate of soda added (solution 1), or concentrated bicarbonate of soda with 20ml concentrated NaClO solution in 200ml (solution 2).

Prior to insertion of the probe, after all the mechanical preparations have been made, rinse the sensors with a jet of DI water from a squeeze bottle, then gently clean the sensor(s) using a soft tissue soaked in IPA (make sure that any wiping of chlorine sensors is in the direction of the lines, not across them) to remove traces of grease. Then soak the sonde in solution 1 for 15 seconds (no power required) or run the sonde in solution 2 for up to 15 minutes (minimum 5 minutes) until the chlorine sensor outputs are stable.

This soaking process can take place in a small cup, or with the sonde inverted and the extension piece fitted. The advantage of using the extension piece is that by sliding the shaft seal and extension assembly back up the sonde shaft after soaking, the rest of the sonde assembly can be disinfected.

It is important to use fresh (at least the same day) soaking solution.

When finished, install the unit immediately. Open the pressure fitting and crack the valve open to flush the valve and extension before full insertion.

## Insertion into Extension Piece and Gate Valve:

Orientate the Intellisonde upstream and insert the Intellisonde into the top of the Extension Piece and tighten the knurled sealing ring by hand until the Sealing plug 'O' seal can be felt to compress ('O' ring situated in sealing ring, PTFE tape should not be used).

**NOTE: Do not allow the Intellisonde to bottom on the Gate Valve as damage may occur to the stirrer and sensors.**

## Secure Safety Chain

Attach the safety chain to the eye bolt on the shaft by adjusting the chain to the shortest length available and tighten the link hex barrel locking nut, see Fig 4.

**The safety chain must always be used to safeguard against injury if the collar is not fastened securely and pressure in the pipe pushes the sonde out. Be warned that a high mains pressure will eject the sonde at high speed if the collar and chain are not fastened correctly.**

Fig 4



## Full Insertion into Water Pipe:

Ensure that the probe is at maximum extension whilst slowly opening the gate valve to its maximum open position. Carefully push the Intellisonde into the gate valve rotating it so that the collar engages with the bayonet pins, see Fig 5. **Failure to do so could result in injury to the operator and damage the probe.**

Fig 5

