

# TracerJect procedure with the TIB 40

Tracer gas procedure during running operations



- Precisely localise leaks in water pipes during running operations
- Feed detectable gas into lines and mix in water
- Locating of the smallest leaks with the assistance of the vacuum probe VSS 15



## PICTURES OF APPLICATION

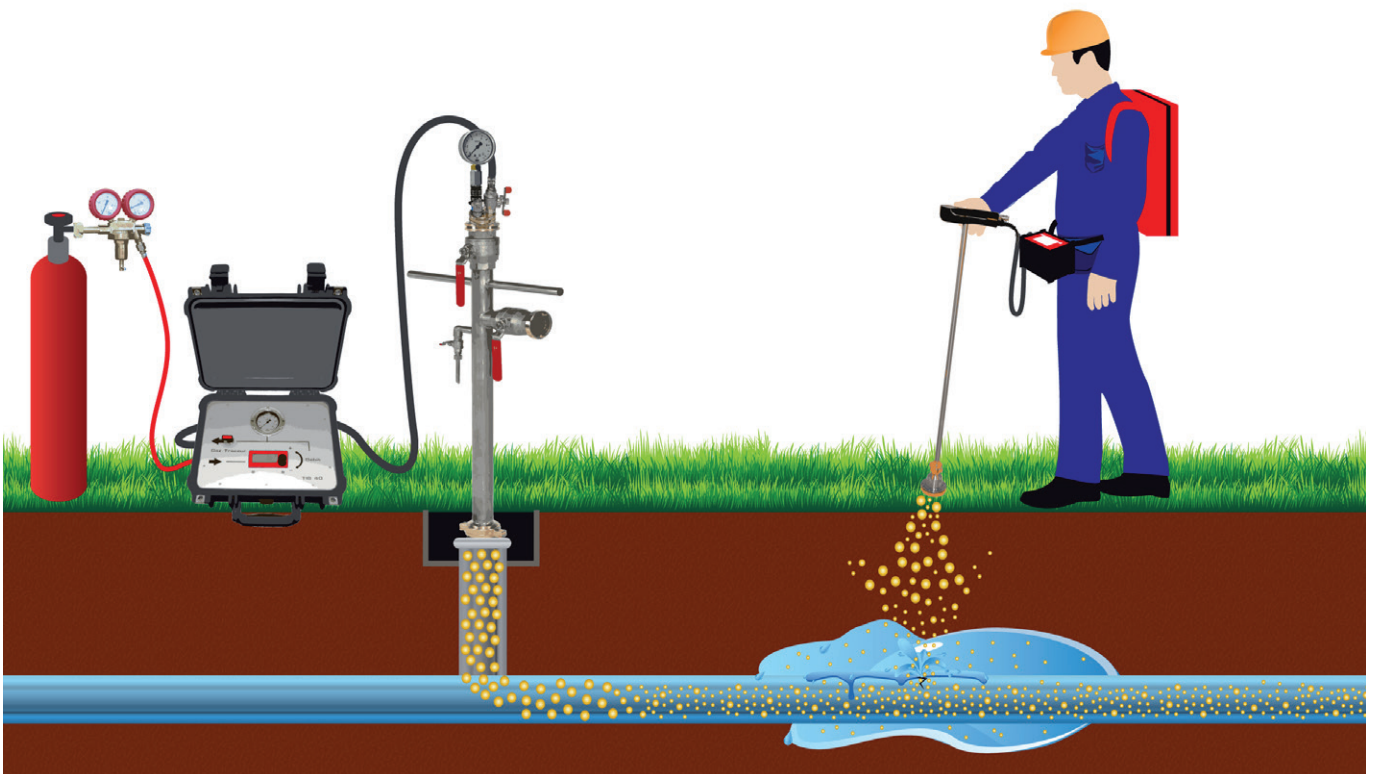


# TracerJect - tracer gas procedure



## Exact locating of leaks with tracer gas during running operations

All locating procedures are ultimately based on acoustics. These procedures are increasingly finding their limits. Worsening factors include, for example, the increasing „environmental contamination“ by disruptive noise, even at night. Acoustic measuring points (fittings) are economised on. This extends the length the sound needs to bridge. Plastic lines are especially difficult, as they inherently conduct sound poorly.



## TracerJect: What is new in comparison to the classic tracer gas procedure?

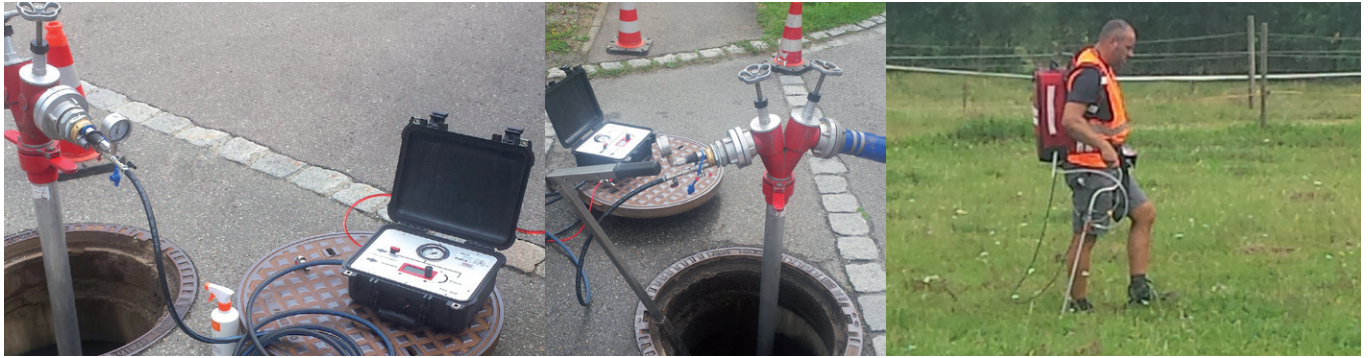
To date the line to be tested had to be taken out of operation and evacuated. This involved a lot of effort and expense, often accompanied by the frustration of those connected due to the supply interruption. There is also a risk that germs can infiltrate and find their way into the depressurised line.

### Advantages of the TracerJect procedure:

- Line stays in operation!
- No interruption of supply!
- The line remains under operating pressure!



## PRINCIPLE OF USE



An approved, detectable gas with a hydrogen proportion of approximately five percent is added to the flow of water in the network section to be tested. The proportion of the additive is in turn oriented to the prevailing water temperature and the water pressure and lies between two and more than ten percent of the water flow rate. This amount can be easily absorbed in the water and causes no problems during running

operation in terms of distribution. Even if the leak is located in the most unfavourable position, at the invert, the water-gas mixture exits there. Gas and water then separate as a result of relaxation, like with bottled carbonated water. In order to optimally trace the gas and thus the leak, the soil is vacuumed with a strong and mobile vacuum probe. A highly sensitive hydrogen detector detects the gas proportions and displays the exact position of the leak.

### Which gas is used?

The tracer gas for TracerJect is common forming gas with regard to its composition with 5 % hydrogen and 95 % nitrogen. It doesn't burn and is non-toxic. Purity is also important, as the „charged“ water can find its way to the end consumer. The gas must therefore fulfil the purity criteria for the treatment of water for human consumption.

| Water pressure-dependent addition of the tracer gas at the feed-in location [bar] |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|
| 1 bar   | 2 bar | 3 bar | 4 bar | 5 bar | 6 bar |
| 2 %   | 3 %   | 5 %   | 7 %   | 8 %   | 10 %  |

Time, pressure and movement is required for the tracer gas to enter the solution. Good results were achieved with a mixture with a water flow rate of 0.15-2.0 m/s. The duration of the gas solution in the water can be assessed at approx. 5 to 15 minutes. These factors must of course be adapted flexibly to the local situation.

### Example:

- Length of the mixing route of 80 m, DN 100 PVC
- Flow rate including network removal of 60-100 l/min
- Flow speed 0.16 m/s
- Network pressure of 5.8 bar
- Recommended tracer gas mixture of approx. 10% corresponds to 6-10 l/min

### Some practical tips

It is recommended that you ascertain at observation points (hydrants) that charged water has already arrived there. It is often still slightly milky when it exits there. Still present gas can most quickly be checked by measurement with the **HUNTER H<sub>2</sub>**.



**Note:**

Depending upon the depth of the conduit and the soil structure, it can take up to approx. 0.5 – 2 hours until detectable gas can be measured at the surface of the earth.

It should be ascertained that the line does not run at an incline in the flow direction. And this for as long as it takes for the gas to mix adequately. The tracer gas will otherwise be inadequately transported

by the water and collect at the highest point.

The injected gas is so pure that it can be consumed by humans. However, hygiene measures must be observed when feeding in. The feed-in hydrant must first be rinsed and the fittings and other contact points may need to be disinfected.



## COMPONENTS FOR THE TRACERJECT PROCEDURE

The central component is the **TIB 40, Tracergas-Injection-Box**. This is used to dispense the tracer gas. It displays the current flow rate and can be set to the desired value with the flow rate regulator. The well-thought out connection sets ensure a smooth feed from the gas vessel to the pipeline or to the stand pipe.



Item no. 212062  
Tracergas-Injection-  
Box



Item no. 212053  
Connecting set tracer  
gas bottle



Item no. 212054  
Connecting set TIB 40  
to pipe



Item no. 211050  
HUNTER H<sub>2</sub>



Vacuum-probes-  
system VSS 15

Complete the TIB 40 with the gas detection device HUNTER H<sub>2</sub> and the vacuum probe VSS 15.

## TECHNICAL DATA TIB 40 (TRACER GAS-INJECTION-BOX)

|                       |   |
|-----------------------|---|
| Flow rate display     | Mass flow sensor for tracer gas, 0 to 40 l/min                              |
| Temperature range     | 0 °C to +50 °C  |
| Gas type              | Tracer gas of up to 5 % hydrogen in nitrogen, food quality                  |
| Power supply          | Standard AA battery, service life of ca. 3-6 months                         |
| Precision             | +/- 2 % from final value  |
| Gas input             | Push-on nipple, maximum input pressure of 10 bar, with input filter         |
| Gas output            | Quick-connect coupling, manometer for output pressure 0-10 bar, check valve |
| Service interval      | 2 years   |
| Position in operation | horizontal  |
| Dimensions            | approx. 350 x 150 x 300 mm  |
| Weight                | approx. 4,300 g   |

Technical specifications subject to change! Status 2020/06



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