

**The new method for the flushing of pipe networks which will replace all others.**



**> The impulse flushing method from Hammann.**

**Clean water only comes from clean lines.** The highest demands are placed on the quality of drinking water. The efforts to keep it spotlessly clean and hygienically immaculate on the way to households are correspondingly large. In spite of all care, there is sedimentation in the network. **It must – and can be cleaned. Now better and more sustainable than ever before.** With the new impulse flushing method which challenges everyone to rethink things. Because the new technology gently cleans and at the same time has an essentially increased degree of efficiency. Without the damaging side effects of conventional processes, without an increased pressure in the network and without a wasteful water consumption. **We are happy to inform you in detail about the method.** At first on the following pages.

**> The impulse flushing method from Hammann.**

**No flushing method has previously been equal to its task.**

- The attempts to clean the lines are as old as the drinking water network itself. Flushing with large amounts of water and a high speed appeared for a long time to be the only possibility to free the lines from the contamination and the deposits. With very unsatisfactory results. And at the price of a high loss of water and pressure which endangered the network.
- Also the emerging, conventional air-water flushing or the so-called air injection methods didn't really solve the problem. They risk pressure impact and result in the loss of much water without sufficiently increasing the degree of effect.

**Only now do we have the solution for the problem.**

- A really new method which really has forwarded pipe flushing by a quantum leap. A method which measurably works, without the undesired side effects. With nothing more than air and water. And a simple physics trick.

**We introduce to you: The patented impulse flushing method by Hammann.**



- With a great deal of success we have used this method since 1998. By 2004, it had already proven itself more than 600 times and left behind clean lines and satisfied customers. But still for many it is still new, its way of working and effects are still undiscovered.
- Therefore we are happy to explain the method and clarify the advantages which the network and the network operators have from it.

**>The problem**

In spite of all care, there are deposits in the network. Then things look cloudy.



> The problem is as old as water supply itself. Even with the best water, there are impurities in the pipe system: floating, loose or muddy deposits, semi-solid incrustations as well as sand and stones. Microorganisms settle and biological films form on the walls of the pipes. The result: impurities and cloudiness. >



*"...deposits which form based on the origin and the characteristics of the water must be removed at regular intervals." (Drinking Water Ordinance)*

**>The solution**

The patented impulse flushing method. Further developed and perfected by Hammann.



> All moveable sediments are flushed out. Of course without the use of chemicals, without burdening the pipe system through an increased pressure. That is now decisively better than with the common methods. Our impulse flushing method works with a considerably increased degree of efficiency. It cleans more gently, more thoroughly and more sustainably. Which clearly extends the necessary flushing interval. And thus helps save money and inconvenience. >



*The visible and measurable success of this optimised method from Hammann is convincing time and time again.*

**>The method**

We work with water and air. The ingenious solutions are also always simple.



> We use the flowing water itself for the cleaning work. By putting it under pressure. With air scrapers! With well-dosed, computer calculated compressed air bubbles which we, carefully synchronised, inject into the water stream. That causes movement, leads to a high flowing speed, to turbulence directly on the walls of the pipes. In doing so, the water sweeps away and sucks off the impurities and transports them away – finally out of the system. >



*If necessary we increase the cleaning capacity "on the rocks" – with ice cubes which we send on the way with the pressurised air.*

Rohr Nennweite	Wasserverbrauch (m³/h) der Spülverfahren		
	Konventionelle Spülung		Impuls-Spül-Verfahren (Richtwerte)
	2m/sec	3m/sec	
80	36,2	54,3	5-15
100	56,8	84,8	8-25
125	88,4	132,5	10-30
150	127,2	190,9	20-38
200	226,2	339,3	35-70
250	353,4	530,1	42-85
300	508,9	763,4	50-100
400	904,8	1.357,2	90-150
500	1.413,7	2.120,6	140-230
600	2.035,8	3.053,6	220-330
800	3.619,1	5.428,7	430-660
1.000	5.654,9	8.482,3	700-1.000

*Not only more effective, but also more economical: The impulse flushing method works with drastically reduced water removal amounts.*

**>The technique**

New technology and precise process control make our method so effective.



> The air bubbles which our high-compression screw compressor supplies must naturally be highly purified. The pressure of the bubbles which the compressor feeds into the line system has to correspond exactly to the operating pressure that normally prevails there. Our computer control does this and also provides every bubble with its exact dimension as well as the impulse sequence which promises the greatest possible cleaning effect.>



*The computer control takes into consideration all parameters which are typical for the location such as pipe diameter, flushing length, topography, operating pressure, standing pressure, impulse pressure and cleaning task.*

**>The professional**

On location with high capacity equipment. With the white high tech mobiles from Hammann.



> They are a match for all challenges. Because in them there is everything that we need for the daily work. Our entire knowledge and the experience which we have gained from so many orders are built in. Also built in is the top technology which we have developed ourselves and complete computer equipment. Built in is an office with all working and communication possibilities. And always included are one or two of our technicians who have everything professionally under control. >



*In 2004, our mobile fleet had 12 of these completely equipped high tech vehicles. If necessary they are deployed day and night.*

**>The work**

Nothing is more convincing than the proof. When can we show it?



> Water is a valuable element, the pipe network a fragile system. In this matter trust plays an important role. Therefore "transparency and clearness" for us are not only the key words for the water quality but also for the work. From the detailed offer to the complete documentation of all working stages and the results. But ask our customers, everywhere in the country.



*Everything is recorded and documented. So that all parties can be informed at all times about the status and the progress of the work.*

## > Being deployed, everywhere in Germany.

### >The 13 advantages of the method at a glance.

- o Effective discharge of floating, loose and slime-like deposits, semi-solid incrustations such as sand, stones and other foreign bodies.
- o Excellent cost-value ration.
- o Uses up to 90% less water.
- o Cleaning of lines currently up to DN 1,000.
- o No cloudiness and pressure waste in the upstream network.
- o Sterility without the use of chemical additives such as chlorine etc.
- o Sustainable cleaning performance allows for a clear extension of the flushing intervals.
- o Reactivation or improvement of the function of blockage fittings.
- o Efficiently fight water louses and other micro organisms.
- o No burdening of the line network through shock pressure since the method works below the operating pressure in the entire process.
- o The shutting off of house connection lines is not necessary.
- o Outside the flushing section, the water supply remains intact.
- o Flushing at night is possible due to the double noise reduction system.

### The documentation of our pipe network flushing is exemplary and complete.

o We place the highest value on transparency and clearness. From the offer down to the completed work. Our service records are therefore exemplary complete and full of detail. And exemplary clear through digital photographic documentation. All results are given to you, ordered chronologically, upon the completion of the work in an order file.

### We work throughout Germany. And can be with you quickly.

o The headquarters of Hammann Wasser Kommunal is Annweiler in the Palatine. Your contact partners are here. From here, the deployment of our special vehicles and work teams is prepared and controlled. If possible, you will be served by the nearest of our locations.

### We can do much more for you when dealing with drinking water.

o Hammann Wasser-Kommunal has established its name with its know-how for the functional assurance and the purification of drinking water lines. And for years has been one of the most capable companies in Germany. Among our services are:

- o **Our patented impulse flushing method** which we have introduced to you here in detail and which we can expand upon through the
- o **Solid matter injection flushing method** with which we can increase the degree of effectiveness of our impulse flushing method by adding ice cubes.
- o **With 12 high tech mobiles** for the flushing of the pipe networks and their qualified teams, we are the strongest partner on the market.
- o **We rehabilitate slide valves.**
- o **We maintain slide valves and hydrants.**
- o **We localise lines** and are equipped with all modern techniques for this.
- o **We create digital network documentation.**
- o **We locate leaks and pipe bursts** even under the most difficult conditions.
- o **We take over individual tasks and offer you a complete service.** We can offer tasks from our service spectrum bound to your desires and long-term service.
- o **We offer technical products** dealing with the network.

