

Your drinking water.  
Now according to  
the purity laws.



> The impulse flushing method in the house installation.

**Clean water only comes from clean lines.** The highest demands are made for the quality of drinking water. In the household as well as in the hospital. From the water treatment plant to the tapping place. The water suppliers make great efforts to bring the water cleanly to your building. Our impulse flushing method has made an important contribution for years. In the house where drinking water – often after a longer rest period – is taken from its packaging, only you decide if you want the unclouded enjoyment of all hygienic efforts. **The purification of water lines in house installations** is our profession. Our patented methods have been improved and optimised for this purpose. It cleans gently, thoroughly, sustainably. Without chemistry and additives. **Only with pure air and water.**

> The impulse flushing method from Hammann.

We take the  
lead for the quality  
of drinking water.



>The problem

In any building  
there are deposits  
in the network. They hide  
germs and risks.



> The problem has been known for a long time. Impurities in the pipe system also come about with the best water. Floating, loose and sludge-like sediments which gradually solidify. Especially general retrograde water consumption in many buildings leads to long retention periods and low backflow in the line. Bio-organic films can form on the walls of the pipes. The result: Germs and micro-organisms find their nutrition and endanger the quality of the water. >



*"...Deposits which form based on the origin and the characteristics of the water must be removed at regular intervals." (DVGW-W291)*

>The solution

The patented  
impulse flushing method.  
Now especially adjusted to  
the building installation.



> All moveable sediment is flushed out. Only with water and air. Without the use of chemicals without the burdening of the pipe system through increased pressure. The demands of DIN 1988 are now for the first time also realisable for the pipes in operation. Our impulse flushing method works with a considerably increased level of efficiency. It cleans more gently, thoroughly and sustainably. From the water meter to the last tapping location, we create the conditions for hygiene in the entire network. >



*Our impulse flushing method works during the entire cleaning process below the normal pipe operational pressure. Damage to the installation are thus almost excluded.*

### >The principle

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



> We utilise the flowing water itself in the cleaning work by applying pressure to it – with “air scrapers”! With well-dosed, computer-calculated compressed air bubbles which we, carefully timed, inject into the water stream. This brings motion into play, leads to a high flow velocity, whirlpools and turbulences especially on the walls of the pipes. In doing so, the water sweeps the impurities away and finally transports them out of the system. >

Leitungen von Hausinstallationen Wasserverbrauch (m <sup>3</sup> /h)			
Rohr Nennweite mm / Zoll	Konventionelle Spülung		Impuls- Spül-Verfahren (Richtwerte)
	2 m/sec	3 m/sec	
12,7/0,5	0,9	1,4	0,1-0,3
19,5/0,7	2,1	3,1	0,3-0,7
25,4/1,0	3,6	5,5	0,5-1,3
38,1/1,5	8,2	12,3	1,3-2,8
50,8/2,0	14,6	21,9	2,2-5,0
63,5/2,5	22,8	34,2	3,4-7,7
76,2/3,0	32,8	49,3	5,0-11,1

Leitungen kommunaler Versorger Wasserverbrauch (m <sup>3</sup> /h)			
Rohr Nennweite	Konventionelle Spülung		Impuls- Spül-Verfahren (Richtwerte)
	2 m/sec	3 m/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 economic. The impulse flushing method works with a drastically reduced need for drinking water.*

### >The technology

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



> The air bubbles which our high-compression screw compressor supplies must of course 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 also takes care of this. It 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 the parameters which are specific to the building such as pipe diameter, differences in heights, floors, operating pressure and consumer situation.*

### >The additional technology

Proven methods in a new dimension: in the house there are special parameters.



> We have transferred our impulse flushing technology to the smaller pipe dimensions and environments in buildings. A mobile control of all processes, fully uncoupled from the compressor unit, creates freedom of movement and avoids loud noises. The team of four to six persons systematically processes the individual flushing sections up to the last tapping location so that off the current flushing stretch the water supply in the building remains intact. >



*Master and satellite boxes enable flexible, independent work in the building. They show all of the current parameters and ensure optimal impulses at any time.*

**>The planning**

**Our deployment according to plan. Thanks to the immaculate preparation.**



> Before the flushing is performed, we get a precise image of your installation. Based on the network plans which you have provided, we determine the individual flushing sections and the optimal sequence of processing. If the system is not documented in detail, we work it out together. We determine the team size and are on location on the agreed upon date on time. Good preparatory work pays off: with greater efficiency, more expedient processing and an absolute minimum of inconvenience. >



*Obscurities are quickly cleared. Even where the network plans are missing, the water specialists are in their element. They record the running, nominal diameter, material and problem zones in your building.*

**>The team**

**Our high tech mobiles are fully equipped. And our technicians are up to the task regarding all water matters.**



> The established team of four to six technicians are well prepared to go to work for you. We are only noticed little in the house. Outside, in the white high tech mobiles, is the compressor unit which we can completely control remotely. Our entire knowledge is built in as well as the experience which we have won over the years. The top-notch technology which we have developed ourselves and the complete computer equipment is built in. Also built in is an office with all communication possibilities.>



*Team work: The specialist for the basic technology can come from a base near you, three technicians with the additional technology from the headquarters in Annweiler. On location all keep in continuous mobile contact. Our system can even be used in the area of hospitals.*

**>The safety**

**Water hygiene, cleanly documented. Transparency and clearness are the basis of our work.**



> Water is a valuable good. We are happy to prove to you how much more valuable your water can become thanks to us. With taking water samples as a basis for a laboratory analysis. We prove the absence of leaks in the system with measurements and pressure tests. We record the pressure values for the entire deployment duration and record every step in words and images. A documentation file contains all information and provides the good feeling of well-done work.



*Hammann Wasser-Kommunal, at home in Annweiler am Trifels. Being deployed with more than 700 customers domestically and abroad. What can we do for you?*

## > Now also for the house installation.

### >The water lines are the packaging for our most important foodstuff.

o Even if we are not aware of it, drinking water has an expiration date. The duration and the quality of its storage decisively define its quality and hygiene.

*"As a foodstuff, water underlies a change of its characteristics with time, it is only to be used as a foodstuff for a limited time" (compare DIN 1988-7). "With longer resting periods (through holidays, fire extinguishing pipes, disused tapping locations) through an increased concentration of working and operating means in the solution as well as increased germs, the water quality can as well be strongly impaired." (Compare DIN 1988-4)*

o Deposited solid material in the water lines form the biological film, a spongy soft layer, which makes up the culture medium for micro organisms, germs, bacteria, legions etc. and in the course of time bake to incrustations which can no longer be moved. *"A legion free system, above all in large systems, will not often be found." (Commentary on DVGW-W551)*



### What to do to ensure pure water.

o The cleaning and maintenance of the water pipes in the house is the duty of the building management. For the maintenance or the re-creation of pure drinking water quality, as the water plants provide it, they must be completely cleaned. The fighting of micro-organisms which have embedded themselves into the surfaces of impurities requires with the common methods a high concentration of disinfection means with a long working time and is therefore questionable and not very effective. *"The success of the disinfection is significantly advanced through a previous cleaning of the system parts to be disinfected." (Commentary on DVGW-W551)*  
*"The first step for elimination of a contamination should at any rate be a cleaning. The disinfection is to be provided as an additional safety measure." (DVGW-W291)*

o According to W 291, the flushing of pipe lines with a mixture of air and water is to be preferred which avoids the application of additional materials which in turn could lead to hygienic impairment. Through periodic flushing of the line, the deposits which are still soft with all of their growths can be flushed out. Thus a germination through bacteria and an impairment of the flowing behaviour and the capacity of the pipe system is prevented. *"With the flushing of pipelines, the flushing with an air-water mixture, where possible, is to be preferred due to better abrasive effects." (Commentary on DVGW-W551)*

### The flushing method which will take the place of all others. From Hammann.

o The patented impulse flushing method for the flushing of pipe networks has been highly recognised for years. Clean lines are the basis for our connection to more than 700 customers (status 2005), mostly community water suppliers domestically and abroad. The impulse flushing method has lead to a quantum leap in the flushing of pipes. Finally sediments, floating, slime-like deposits and even semi-solid incrustations can be gently and reliably removed from the pipe network. A method with an effectiveness which can be measured without undesired side effects. Only with air, water and a simple physics trick.

o The method is based on controlled, impulse like addition of compromised, technically pure air within the pressure-reduced flushing section. The so-called "air sweepers" run along the pipe. The cleaning power is released on the boundaries between the air bubbles to the water and the pipe wall. There are turbulent whirlpools which dissolve all moveable deposits from the walls of the pipes.

### The proven principle is now adapted. With new impulses and in a new scale.

o What has been proven in the supply networks of the community water providers now functions in the building. We have developed an additional technique which is adapted to the smaller pipe nominal diameters of the house installation. With this we can highly effectively clean water lines with minimum burden. Through the deployment of our flushing method, the freedom from germs of pipelines has been proven – an optimal prerequisite for the following disinfection. Here we will introduce you to the process and the advantages of our method. We would also be happy to inform you personally on location.

## > Being deployed, everywhere in Germany.

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

- Effective discharge of floating, loose and slime-like deposits.
- Excellent cost-value ration.
- Uses up to 90% less water.
- Cleaning of lines as of ½ inch.
- Sterility without the use of chemical additives such as chlorine and other agents.
- Reactivation or improvement of the function of blockage fittings.
- Efficiently fight micro-organisms.
- No burdening of the line network through shock pressure since the method works below the operating pressure in the entire process and damages are thus excluded.
- Off the flushing section, the water supply remains mainly intact since individual sections / rising ducts are flushed one after the other.
- Recording and evaluation of all operating conditions using data loggers.
- Complete and detailed documentation of all working stages. Proof of the improvement of the bacteriology.
- Pressure test for the proof of the leak tightness of the pipe system.

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

○ 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.

○ 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.

- We have established our name with the functional assurance and the purification of drinking water lines. And for years we have been one of the most capable companies in Germany. Among our services are:
- The patented impulse flushing method which we introduce in detail in a separate brochure.
- Solid matter injection flushing method, an additional method with which we can increase the degree of effectiveness of our impulse flushing method by adding ice cubes.
- With 12 high tech mobiles for the flushing of pipe networks and their qualified teams, we are the strongest partner on the market.
- Flushing of house installations. Additional technology, based on the impulse flushing method.
- We rehabilitate slide valves.
- We maintain slide valves and hydrants.
- We localise lines.
- We create digital network documentation.
- We locate leaks and pipe bursts even under the most difficult conditions.
- 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.
- We offer technical products dealing with the network.



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