



Fresh hot water.  
Pure safety.



# What is Legionella?



## Legionella makes the headlines:

- Legionella: More and more deaths all over the world". (ZDF.de heutigemagazin [current affairs magazine programme])
- "Several patients in hospital die of Legionnaires' disease". (Ärztzeitung [medical newspaper])
- "Dangerous organisms in open air swimming pools". (Tageszeitung Baden-Württemberg [Daily newspaper In Baden-Württemberg])
- "Legionnaires' disease - death came from the jacuzzi." (Bildzeitung [Bild newspaper])
- "More deaths from Legionella than from road traffic accidents." (Robert Koch Institute, Berlin)

### Legionella and its origin:

Legionella or Legionnaire's disease is a pathogen discovered during an epidemic of chest infections which occurred at a meeting of veterans of the "American Legion" in 1976 in Philadelphia in the USA. Hundreds of participants were infected with the rod-shaped bacterium. There were 34 fatalities.

### Legionnaires' disease. A serious infectious disease.

Legionnaires' disease is a serious infectious disease of the lungs caused by the Legionella bacterium. Without treatment with an effective antibiotic the disease leads to death in approximately 20% of cases, especially in elderly people and those with weak immune systems.

### Incidence and increase:

Legionella bacteria spread and increase predominantly in hot water at temperatures between approximately 30°C and 40°C, particularly in the hot water supply of e.g. hotels, swimming pools, schools or blocks of flats. However, humidifiers in working and living areas or even medical inhalers can also be a possible source of infection. ■



# Legionella in your hot water!



## Legionella. Brief explanation:

- Legionella is a disease pathogen.
- Legionnaires' disease is a serious infectious disease of the lungs.
- Legionella bacteria spread and increase predominantly in hot water at temperatures between approximately 30°C and 40°C, especially in the hot water supply.
- They are also found in all sorts of technical installations in the home where they can be introduced via the direct water supply.
- Breathing in fine sprays loaded with Legionella, which may be taken into the lungs in showers and baths, when cleaning the teeth or during other daily care of the body, can be dangerous to health.

### **Legionella pneumophila is in all drinking water systems:**

Legionella is a bacterium that occurs in both ground water and surface water. It can also be found in all sorts of technical installations in the home it can be introduced via the direct water supply.

Microscopic imaging and biological test procedures prove the existence of the pathogen "Legionella pneumophila" in all the drinking water systems of the world. It has been established that the biggest population of the bacterium is to be found at temperatures between 30°C and 40°C, which is the range of temperatures that human beings find most comfortable for showering. A single Legionella bacterium can increase to hundreds of thousands within three days under these conditions.

### **The hot water tank is the danger zone:**

The water supplied by the waterworks is hygienically fresh. The growth of the feared Legionella colonies first occurs in hot water systems, where the water often stands in the hot water storage tank for weeks, offering an additional breeding ground for Legionella and other bacteria. ■



## Contaminated hot water storage tanks ...



### Where does Legionella come from?

Sludge and dirt accumulate at the very bottom of a conventional hot water storage tank. This is the ideal breeding ground for bacteria.

A water temperature of 30°C - 40°C is ideal for Legionella, which can reproduce over and over again in a flash, and can be a danger to health every time that water is used on a daily basis.

It is extremely dangerous if these are then inhaled in the tiny droplets of a fine spray or mist!

The images show the interior of various hot water storage tanks in homes, hotels and swimming pools. Or even in your house? Have you ever thought what the inside of your hot water storage tank looks like?

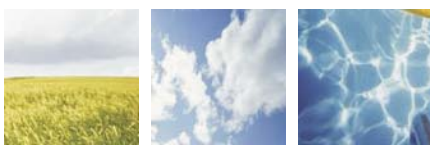
Are you sure that it is not infected with Legionella?

The danger is particularly great in all hot water installations with a storage tank with no flowing water to prevent the increase of Legionella.

The problem is even more significant with for example unoccupied **hotel rooms, sports facilities, old people's homes, hospitals, sometimes public indoor and outdoor swimming pools or schools** and last but not least **all family homes or unused flats and camp sites**, where water remains in the hot water storage tank for lengthy periods and is not replaced with fresh water. ■

When one of our customers saw the contaminated storage tank, he was horrified and said:




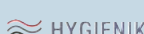



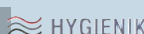

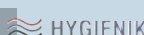
“It is incredible that we clean our teeth with this every day ...!”




... or would you rather have fresh hot water?




### Installation:


-   **250 litres**  
Treatment for  
200 to 300 litre storage tank
-   **500 litres**  
Detached house
-   **1,000 litres**  
Solar panels, heat pumps,  
multiple dwellings
-   **1,500 litres**  
Inns, guest houses, bio-  
mass, solar heating
-   **2,000 litres**  
Factories

The  **HYGIENIK** offers the solution to the problem. The highly efficient technology bypasses the sources of danger!

Legionella originates in the sludge and standing water in the storage tank. That is precisely where the new hygiene technology easily and efficiently bypasses the source of danger.

With  **HYGIENIK** you always get fresh hot water, uncontaminated with Legionella.

#### People at risk. Installing the equipment:

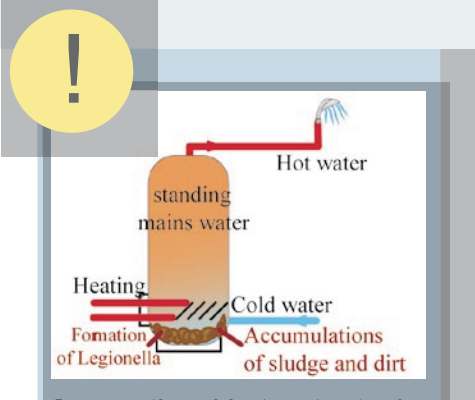
It is particularly recommended that equipment such as the  **HYGIENIK** is installed for elderly people, small children, smokers and those who have recently undergone surgery. It is also recommended for endurance athletes who shower with a weakened immune system, diabetics, the chronically ill, people whose immune systems have been weakened by cortisone, cytostatics or radiation, alcoholics, AIDS patients, people with pneumoconiosis and patients with burns and open wounds.

#### Responsibility:

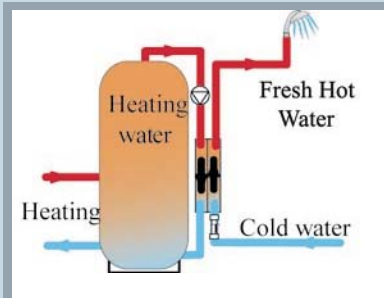
In contrast to most other diseases, the owners of public and industrial buildings are legally responsible for Legionnaires' disease. They should therefore take "Legionella" seriously and do something to prevent it, both for the sake of your health and for legal reasons. ■



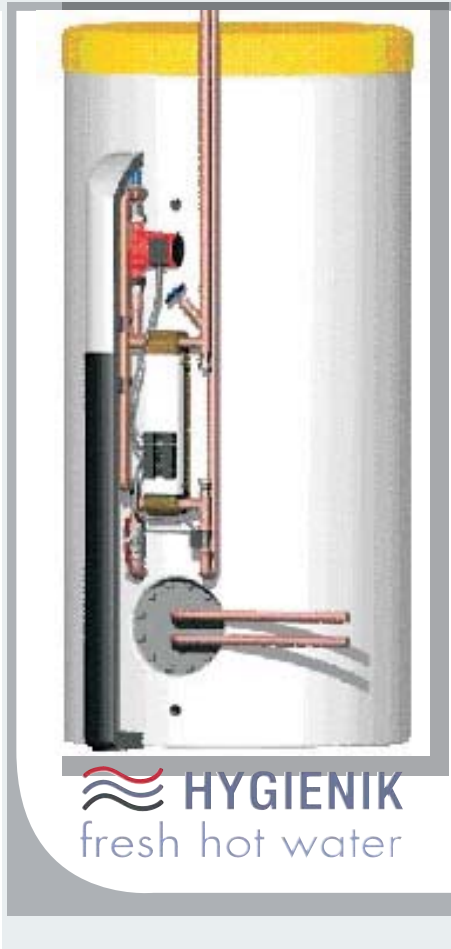
# Function and technology.




Conventional hot water tank: Here, the hot water remains in the storage tank for a long period and sludge and dirt accumulate at the base, the ideal breeding ground for bacteria and amoebae.




The fresh water principle from IDM:  
The drinking water runs over a large surface stainless steel heat exchanger only when the hot water tap is turned on and is heated up by the heat from the hot water buffer storage tank within seconds, so that the hot water is always fresh. The only water in the storage tank is for heating, and this is pumped round to the heat exchanger when the tap is turned on. It is therefore only heat that is stored in the heat buffer, and not the hot water.



The  HYGIENIK is a layered storage tank where the upper area is heated up ready for heating the mains water.

The mains water is therefore always fresh and hygienically clean.

In the  HYGIENIK the heat is stored in the form of water for heating, so you do not need a hot water boiler.

The revolutions of the circulating pump are adjusted as required, depending on the quantity drawn off when the tap is turned on. ■

IDM Heat Exchange Station  
The IDM heat exchange station can also be built onto an existing heat storage system. This means:





- old installations can be modernised
  - special storage tanks (for solar heating, district heating, block heating generators and similar) can be equipped with fresh water technology
  - larger installations can be carried out (with several heat exchanger stations)
- There are heat exchanger stations with tap capacity from 25 litres/min to 70 litres/min. ■

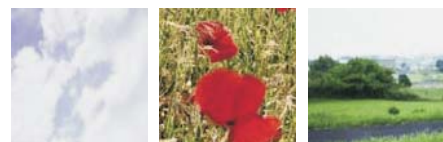
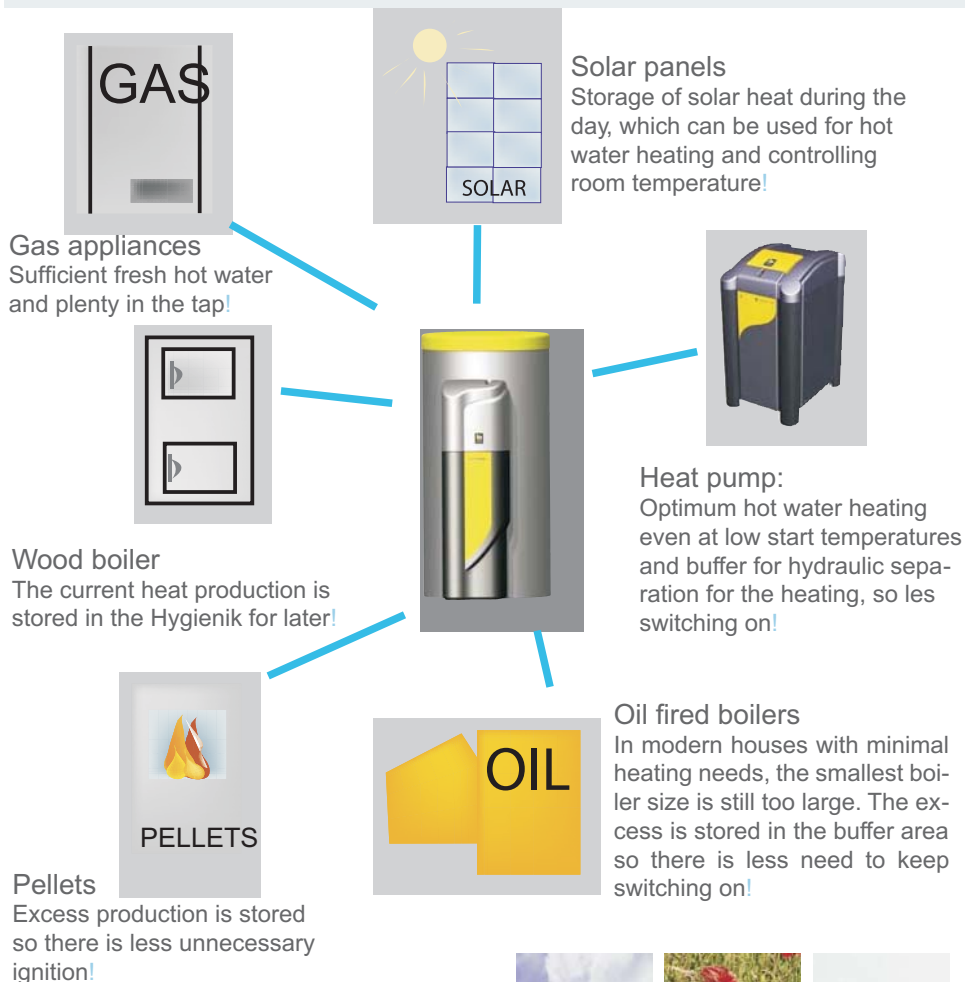


# The HYGIENIK. A System for the Future.





## Advantages

- Energy saving during heat production
- CO<sub>2</sub> reduction:  
The  HYGIENIK optimises the switch frequency of heating boilers and reduces emissions
- More hot water with intelligently regulated storage pump
- The tank will not rust through.
- The  HYGIENIK can also run a bath radiator in the summer time
- Solar panel integration:  
free solar energy for mains water and heating
- Heat pump:  
Releases heat without any loss of temperature directly into the  HYGIENIK. The lower area serves as a load balancing storage tank and the upper area is heated to higher temperatures using HGL technology for heating the hot water
- Biomass:  
The  HYGIENIK is the solution for hot water and load balancing storage using wood burning heating systems



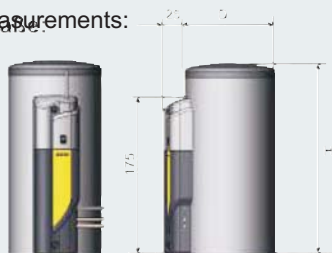
# Technical data for the HYGIENIK

 HYGIENIK	Type	250/25	500/25	500/35	1000/25	1000/35	1000/50	1500/25
Storage capacity	Litres	250	500	500	920	920	920	1500
Tap output	L/min	25	25	35	25	35	50	25
Single tap use quantity at 45 °C *	Litres	220	480	480	900	900	900	1400
NL figure		2	4	6	8	10	12	12
Measurements (DxH) with insulation	cm	60x200	85x185	85x185	100x210	100x210	100x210	120x230
Insulation measurement	cm	45	65	65	79	79	79	100
Insulation thickness	cm	8	10	10	10	10	10	10
Gross weight, empty	kg	90	130	132	175	177	182	230

 HYGIENIK	Type	1500/35	1500/50	1500/70	2000/25	2000/35	2000/50	2000/70
Storage capacity	Litres	1500	1500	1500	2000	2000	2000	2000
Tap output	L/min	35	50	70	25	35	50	70
Single tap use quantity at 45 °C *	Litres	1400	1400	1400	1800	1800	1800	1800
NL figure		12	12	12	12	12	12	12
Measurements (DxH) with insulation	cm	120x230	120x230	120x230	130x240	130x240	130x240	130x240
Insulation measurement	cm	100	100	100	110	110	110	110
Insulation thickness	cm	10	10	10	10	10	10	10
Gross weight, empty	kg	232	237	250	275	277	282	295

\* You can get all further details from your IDM adviser or directly from us at the contact address below.

Measurements:



## Range

Storage tanks of sheet steel with all necessary connections, soft foam insulation with plastic jacket, cover hood for insulation; heat exchanger station with stainless steel plate exchanger, circulation pump, flow window, cut-off valve and connection pipe; insulating cover hood for heat exchange station in modern design (for types 500 and 1000)

## Accessories

- dial for regulating the plate exchanger pump
- indicator thermometer
- heat exchanger for hot water circulation
- electrical heating bars in various sizes
- layer separation plate
- solar heat exchanger