

A high-speed photograph of water splashing, showing a central column of water falling into a pool of water, creating numerous bubbles and ripples. The background is a light blue gradient.

MINIMAX

MOBILE SERVICES

EXTINGUISHING
WATER
TECHNOLOGY

**Fire protection by
Minimax Mobile Services**

Experts in fire protection

Water: Foodstuff and extinguishing agent



During the 20th century the total population has tripled and the water consumption has increased sixfold. In Germany the average daily water consumption is 125 liters per capita. As worldwide only 5 % of the sewage is treated, the increasing water pollution results in a reduction of the drinking water reservoir. For this reason keeping the drinking water clean presents a particular challenge, because drinking water is not only foodstuff but also an extinguishing agent.

The use of drinking water from the public water supply network is of major importance for an efficient fire fighting due to the availability and the already existing drinking water supply network. As fire extinguishing systems are only used if necessary, there is the risk, that the stagnant water germs in the fire extinguishing conduits and no longer meets the hygiene requirements.

Therefore you must pay attention during planning, construction and operation of fire extinguishing systems that they are connected to the drinking water network only with appropriate extinguishing water transfer points in order not to affect the quality of the drinking water and to preserve human health (DIN 1988, DIN 14462).

The fact, that drinking water is foodstuff, places high demands on planning and execution of extinguishing water systems.

Technology from Minimax is an interface between extinguishing and drinking water, which combines reliable fire protection with securing the drinking water hygiene.

High demands – professional solutions

Minimax Mobile Services extinguishing water technology	Type of extinguishing water system	Keeping clean the drinking water by means of Minimax separable valves / connecting points	Connection possibilities	Extinguishing water conduit	Extinguishing water extraction
Wall hydrant stations	wet/dry	filling and drainage station maximat FuE1	direct	is only flooded if necessary	wall-mounted hydrant Type F for fire brigade and for self-help
		in case of insufficient water supply: filling and drainage station maximat FSX LWT with pressure booster with feed tank BESV maximat MX1	indirect		
	wet	pressure booster with feed tank BESV maximat MX1	indirect	constantly filled with water	wall-mounted hydrant Type F for fire brigade and self-help
	drinking water installation with use of wall-mounted hydrants	in case of insufficient water renewal: filling and drainage station maximat FuE1 or	direct	is only flooded if necessary	wall-mounted hydrant Type S for self-help
pressure booster with feed tank BESV maximat MX1		indirect	constantly filled with water		
Water extinguishing systems with open nozzles	wet/dry	filling and drainage station maximat DN50 FuE2 for water extinguishing systems with open nozzles	direct	is only flooded if necessary	spray nozzles
Automatic auxiliary extinguishing installation	wet	pressure booster with feed tank BESV maximat MX1	indirect	constantly filled with water	sprinkler nozzles
Riser pipe dry	dry	building height with a minimum of 30 m: pressure booster maximat MX1	no connection to drinking water	is fed with water by the fire brigade	extraction device only for the fire brigader

As competent fire protection partner we offer an appropriate solution for every case of application especially in the range of extinguishing water technology. This enables us to realize the developed fire protection concept from a technical and economic point of view in an optimal way. Our services and comprehensive products combine optimal fire protection with securing the drinking water hygiene.

When planning and operating extinguishing water systems a sufficient and reliable supply of the extinguishing water at the wall-mounted hydrant has to be guaranteed additionally to the drinking water hygiene. Fire brigade and standards demand „much water with high pressure“. These requirements cannot always be met by the water supply companies. Extinguishing water systems from Minimax make sure that the extinguishing water is available immediately and in sufficient quantity with sufficient water supply, so that in case of application the first fire fighting is ensured as well by the layman as by the fire brigade.

Minimax offers different technical possibilities at the highest level in its delivery program. Years of experience combined with high research and development efforts distinguish us as reliable fire protection partner. This applies to the components, the planning know how and commissioning, but also to inspection, maintenance and repair.

Naturally all Minimax systems correspond to the valid standards and legal provisions. That guarantees highest possible quality and safety.

Content:

- ▶ Minimax Service – a maximum of quality
- ▶ Filling and drainage station maximat FuE1
- ▶ Pressure booster with feed tank BESV maximat MX1
- ▶ Filling and drainage station maximat FSX LWT
- ▶ Wall hydrant line maximat
- ▶ Wall hydrants Typ F und S
- ▶ Wall hydrant line maximat special applications
- ▶ Filling and drainage station maximat DN50 FuE2 for water extinguishing stations with open nozzles
- ▶ Automatic extinguishing auxiliary installation maximat KSPA 100
- ▶ Feed and extraction device „dry“



Minimax Service – a maximum of quality

The demands and standards for the preventive fire protection systems are high – this is not limited to technology and execution, but applies also to inspection, maintenance and repair.

Due to a wide range of planning and services Minimax can offer you design features for the entire spectrum of the extinguishing water technology.

We have the know how and competence to compose tailor-made extinguishing water systems acc. to the special requirements of your fire prevention concept and the on-site conditions during the planning phase, preparation of the tender documents and the selection of components (certified by DEKRA). The skilled installation of your system is effected considering all legal regulations concerning quality, safety and keeping clean of the drinking water.

The professional support in the construction phase for execution of commissioning and acceptance of your extinguishing water system completes the planning process. All the activities are recorded in test documents, so that you always maintain an overview.

As a recognized company we offer you together with an accredited laboratory, a sampling of your drinking water in order to evaluate the drinking water quality.

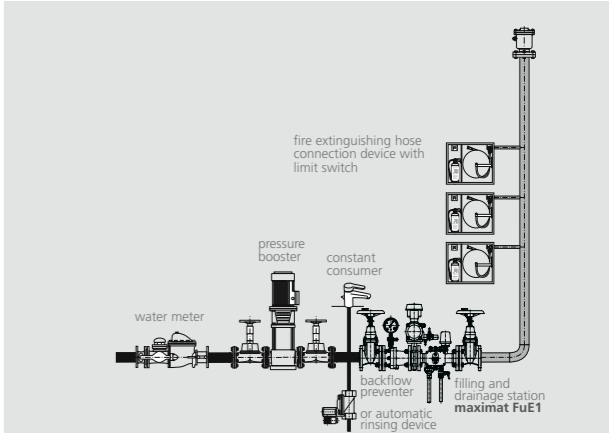
Our highly-skilled experts ensure the permanent functionality of the different extinguishing water systems within the scope of the prescribed regular maintenance. Furthermore we take care of all further fire protection measures – for your safety.

Our specialists for extinguishing water technology support you with regard to:

- ▶ project planning of extinguishing water systems
- ▶ performance of pressure loss and filling time calculations
- ▶ quotation processing and calculation
- ▶ coordination of commissioning and troubles
- ▶ support for the preparation of tender documents
- ▶ inventory (e. g. restructurings and new building projects)
- ▶ evaluation of the drinking resp. extinguishing water quality
- ▶ assistance during the execution of construction works on site
- ▶ inspection, maintenance and repair of your extinguishing water systems



Filling and drainage station maximat FuE1



Your advantages:

- ▶ no stagnant water due to compressed air controlled drives
- ▶ less required space
- ▶ DVGW- and DEKRA-certified as well as VdS-approved components
- ▶ low maintenance costs by the use of a shut-off valve without separating membrane

The filling and drainage station maximat FuE1 is a separable valve, which is especially developed for the direct connection to the drinking water network. In standby condition the extinguishing water conduit is dry, whereby no water stands in the extinguishing conduits, which could cause contamination. Even in frost-endangered areas this guarantees full safety, because the water cannot freeze in the pipes.

In case of fire a limit switch is operated by opening the hose connection valve at the wall-mounted hydrant. The limit switch is wired with the filling and drainage station maximat FuE1. After activation the extinguishing water conduit is opened by means of the filling and drainage station maximat FuE1. This allows flow velocities during the filling phase, which assure, that in case of sufficient water supply extinguishing water is available at every hydrant after a maximum of 60 seconds. After the fire fighting mission all hose connection valves are closed again and an automatic emptying of the extinguishing water conduit takes place. The initial state is automatically restored.

extinguishing water conduits „wet/dry“ with direct connection

The filling and drainage station is intended for the nominal pipe widths DN50 and DN80. In case of insufficient supply pressure the necessary flow pressure in the extinguishing water conduit can be assured by an upstream pressure booster.

If sufficient water supply is not guaranteed by the waterworks, the required water quantity has to be stored in a feed tank BESV maximat MX1. The maximat FSX LWT with indirect connection is then used as separable valve.

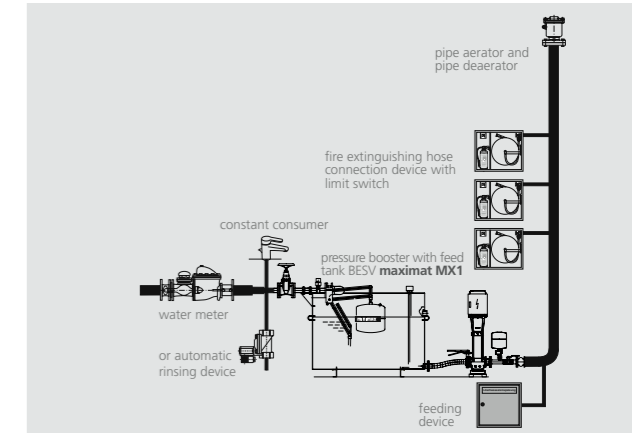
The filling and drainage station maximat FuE1 is certified by DVGW and DEKRA with VdS-approved components, guarantees highest protection of the drinking water quality and meets the current market requirements of the water utilities.

The system can be applied as well for new installations as for the restructuring of existing extinguishing water systems acc. to DIN 14462 and DIN 1988, as e. g. in parking garages, warehouses or other frost endangered areas.





Pressure booster maximat MX1



Your advantages:

- ▶ operation is also possible in fire endangered areas because water storage is effected in a steel tank
- ▶ ease of maintenance by means of optimized accessibility of the components
- ▶ optimum use of space
- ▶ DVGW- and DEKRA-certified free outlet (complete steel tank unit maximat BESV) as well as VdS-approved components

The pressure booster with feed tank BESV maximat MX1 is a compact and self-sustaining fire extinguishing system, which can be adapted individually to the corresponding requirements. The extinguishing water conduit is permanently filled with water and indirectly connected to the drinking water network by means of an open steel feed tank, which is used for the intermediate storage of necessary extinguishing water quantities as well as for hygienic separation from the drinking water network.

As the water, which is fed into the feed tank, is pressureless, a downstream pressure booster is necessary, in order to ensure the extinguishing water volume and the necessary flow pressure at the wall-mounted hydrants. Thus the extinguishing water system is continuously under pressure and always ready for use.

If necessary when operating a wall hydrant (extinguishing water demand) the pressure booster is started and the wall hydrant device is provided with the necessary water quantity with continuous

Extinguishing water conduit „wet“ with indirect connection

pressure. After termination of the fire service the pump of the pressure booster automatically resets to standby condition. An additional feeding device for the fire brigade offers utmost safety.

The use of the pressure booster with feed tank BESV maximat MX1 is also possible in fire endangered areas due to the application of a steel tank. The streamlined construction of the floating valve ensures big runoff volume quantities with low pressure loss.

The separation of the drinking water network is effected by the DVGW- and DEKRA-certified free outlet (complete steel tank unit maximat BESV) at the feed tank BESV.

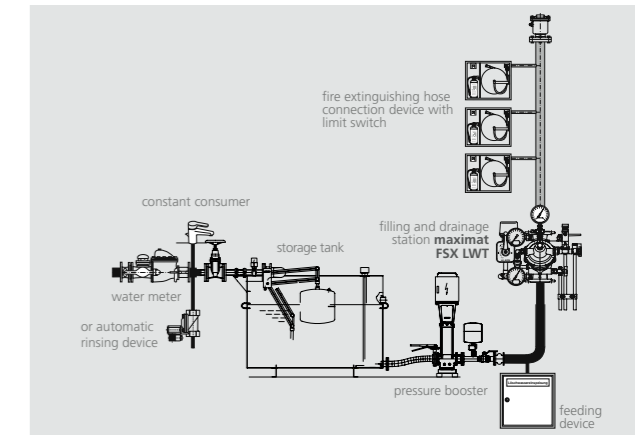
Typical applications without risk of frost are e. g. high-rise buildings, gathering places and hospitals.

The system is appropriate for new installations as well as for restructuring existing extinguishing water systems acc. to DIN 14462 and DIN 1988.





Filling and drainage station maximat FSX LWT



Your advantages:

- ▶ VdS-approved components
- ▶ DEKRA-certified
- ▶ cost-efficient, because a DVGW certification is not necessary
- ▶ High flexibility in the installation phase with minimum space required
- ▶ streamlined construction of the fittings guarantees high flow rates with low pressure loss

The filling and drainage station maximat FSX LWT is a separable valve which is especially developed for the wall hydrant technology with indirect connection to the drinking water network. In the same way as in the filling and drainage station maximat FuE1 the extinguishing water conduit is dry in standby condition. However the water volume provided by the water supply network does not suffice, in order to guarantee the flooding of the pipeline system within 60 seconds. Insofar the required water volume must be stored in an open feed tank. In order to be able to guarantee in turn the preset minimum flow pressure at all wall hydrants, a downstream pressure booster is provided.

Thus the application of this filling and drainage station is possible in combination with the pressure booster maximat M1, whereby also the use in frost endangered areas is ensured. If extinguishing water is needed, now the filling and drainage station maximat FSX LWT with the pressure booster is activated by operation of the limit switch at the hose connection valve of a wall hydrant. After a

Extinguishing water conduit „wet/dry“ with indirect connection

maximum of 60 seconds extinguishing water is available in sufficient quantity and with sufficient pressure at every wall hydrant. After termination of the fire service the extinguishing water conduit is emptied by closing all hose connection valves.

An additional feeding device for the fire brigade offers the utmost safety. The filling and drainage station FSX LWT is VdS-approved and DEKRA-certified. A DVGW certification is not necessary, because the system is used in the non-potable water range. The drinking water technical separation is effected by means of the DVGW and DEKRA-certified free outlet (complete steel tank unit maximat BESV) at the feed tank BESV of the maximat MX1.

The system is suitable for new installations and also for restructuring of existing extinguishing water systems acc. to DIN 14462 and is applicable e. g. in parking garages, underground parkings or other frost endangered areas.





Wall hydrant line maximat



Water supply points in buildings, which are designed for first fire fighting, are called wall hydrant.

The wall hydrant consists essentially of a hose fixture (reel), a dimensionally stable hose as well as of a manually operated hose connection valve, which are situated in a protection cabinet on the wall or in a wall niche depending on the condition on site. The hose, which is rolled onto the reel, is at one end connected to the extinguishing water conduit by means of the hose connection valve and can be flown through by water also in rolled up condition. At the other end a steel pipe or an Euro nozzle is located. By the operation of the hose connection valves the wall hydrant is put into operation.



Wall hydrants are prepared not only for the fire brigade, but serve also as fire protection devices, which are assigned for self-help, in order to be able to fight a fire in the formation period. Next to the wall hydrant a fire extinguisher and a push button alarm are often situated, which give the alarm when manually operated.

The Minimax wall hydrant cabinet is available in all RAL-colours, in airbrush design as well as with stainless steel surface. So it adapts optimally to every kind of interior design.



Wall hydrant type F

The wall hydrants of type F are constructed so that they cannot only be used for first fighting of a fire by the user of the building, but they provide also an effective water capacity for the fire brigade operation. These extinguishing water systems have always from the drinking water network acc. to DIN 1988 by means of an appropriate separable valve (extinguishing water connecting point).

In areas free of frost the pressure booster with feed tank BESV maximat MX1 is used preferentially. In frost endangered areas the filling and drainage station maximat FuE1 is used with sufficient water supply. As nowadays normally bigger water quantities are no longer made available by the water utilities, the required water quantity has to be stored in a feed tank BESV maximat MX1 if necessary for bigger filling volumes. As separable valve the filling and drainage station maximat FSX LWT is used.



Wall hydrant type S

Similar to hand fire extinguishers these special wall hydrants allow laypersons the first fighting of a fire outbreak. Thus they are only intended for self-help. The wall hydrants type S are directly connected to the drinking water network (so called drinking water installations with wall hydrant use).

The separation between extinguishing water and drinking water is effected by means of the hose connection acc. to DIN 14461-3, which is integrated into the wall hydrant cabinet. But if an insufficient water renewal acc. to DIN 1988 arise, this system will have to be separated from the drinking water network by means of a pressure booster with feed tank BESV maximat MX1 or a filling and drainage station maximat FuE1.



Filling and drainage station maximat DN50 FuE2

Your advantages:

- ▶ individually plannable „modular system“ for low and middle fire loads for 10 m², 20 m² or 50 m² surface to be protected
- ▶ fire protection as well as drinking water suitability as by DVGW- and DEKRA-certification as well as VdS-approved components
- ▶ low maintenance costs due to the use of a separable valve without separating membrane

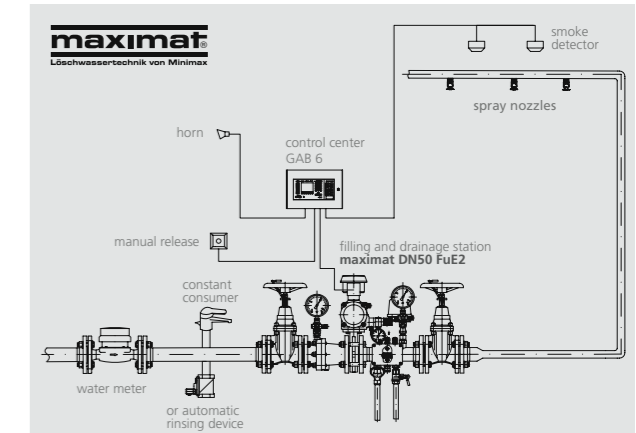


The filling and drainage station maximat DN50 FuE2 is a separable valve, especially developed for water extinguishing systems with open nozzles. The water extinguishing system is directly connected to the drinking water network by means of the extinguishing water pipe.

In standby condition the water extinguishing conduit is dry. This avoids stagnant water and thus a contamination. Keeping drinking water clean resp. the drinking water quality is ensured.

In case of fire the release is effected, depending on the fire protection concept of the building, either automatically in form of an optical smoke detector resp. heat detector or manually by means of a manual triggering. These are controlled by means of the control and supply centre GAB 6. A horn serves as acoustic signal.

By the activation of the filling and drainage station maximat DN50 FuE2 a water discharge is effected by means of an open nozzle system.



water extinguishing conduit „wet/dry“ with direct connection

The quantity of water in mm (height), which sprays per minute onto the surface to be protected, is determined by the water discharge.

The open nozzles now spread the extinguishing water in the whole protection area. After termination of the fire fighting mission the system empties automatically by means of the filling and drainage station.

This water extinguishing system is offered for low and middle fire loads in form of a „modular system“ for 10 m², 20 m² and 50 m² surface to be protected. Acc. to DIN 14463-2 the DVGW- und DEKRA-certified filling and drainage station maximat DN50 FuE2 guarantees highest protection of the drinking water quality and meets the current requirements of the water companies.

The system can be used as well for new installations as for system separation of existing extinguishing water systems acc. to DIN 14494 and DIN 1988 up to 50 m² surface to be protected, e. g. kiosks or stages.

Automatic auxiliary extinguishing installation maximat KSPA 100



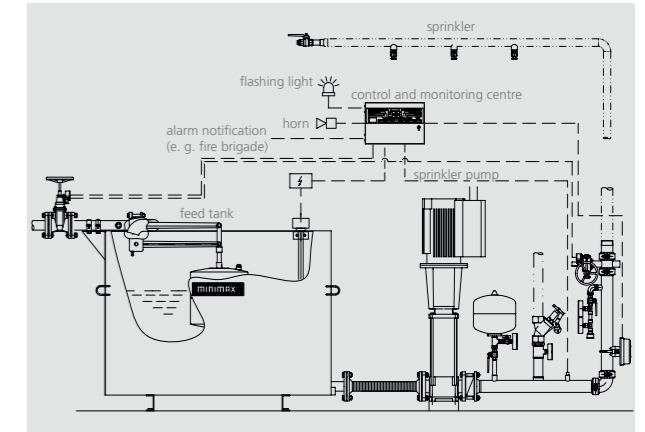
Your advantages:

- ▶ less required space by compact construction of the water supply
- ▶ ideal for retrofitting existing buildings
- ▶ efficient fire fighting by selectively acting sprinklers
- ▶ fire protection and drinking water suitability by certified components (e. g.):
 - free outlet (complete steel tank unit maximat BESV)
 - floating valve
 - rinsing device



The automatic auxiliary extinguishing installation maximat KSPA 100 is a compact extinguishing station following the classical sprinkler system technology. The system is indirectly connected to the drinking water network by means of an open feed tank. In the standby condition the extinguishing water conduit is permanently filled with water. The feed tank separates it hygienically from the drinking water network and serves furthermore as storage of the extinguishing water.

The KSPA 100 is dimensioned for risks with a water discharge for low fire loads. In case of a fire only the sprinklers open, which are in close proximity to the source of fire. Due to the pressure drop in the system the sprinkler pump of the water supply is started and the extinguishing water is transported out of the feed tank (with automatic water make-up) to the sprinklers. By means of the special construction of the sprinklers the extinguishing water is evenly and targeted distributed over the source of fire and the fire is fought.



water extinguishing conduit „wet“ with indirect connection

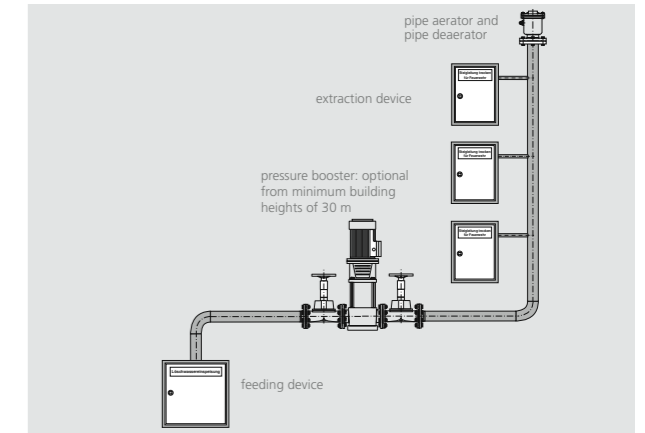
In case of fire the control and monitoring centre generates an optical and acoustic alarm. The alarm notification to the fire brigade or to a continuously attended station (e. g. central building control system) is also possible with potential free contacts.

Due to the low use of extinguishing water this system is environmentally friendly and offers besides the protection of the drinking water quality high personal protection.

By the certified components an easier expert acceptance is ensured. The automatic extinguishing auxiliary installation maximat KSPA 100 is intended for risks up to an area of 100 m², for which fire protection is demanded by the fire brigade resp. as self-protection measure, e. g. winter gardens or kiosks. Furthermore there is the possibility of retrofitting existing buildings.




Feed and extraction device „dry“



riser pipe „dry“

The extinguishing water is fed by the fire brigade into the extinguishing water conduits „dry“ (DIN 14462) only if necessary. This pipe will be useful, if the construction of the supply by means of hoses is very complex and the fire fighting is effected exclusively by the fire brigade. The piping system is supplied by the fire brigade vehicle with extinguishing water, which can be taken from hydrants, ponds or

nearby rivers. If sufficient water pressure is not guaranteed by the fire brigade vehicle an additional pressure booster maximat MX1 must be installed from a minimum building height of 30 m. The dry extinguishing water conduit must not have a direct connection to the drinking water network.



Do you have any
questions?
We look forward to
talking to you
personally.



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