



Fig. 1: GENO-mat® TE-Z

## Designated application

Corresponding to its respective carbonate hardness, all water contains a certain amount of free carbon dioxide which is necessary to dissolve the carbonate hardness present in the water. If there is more free carbon dioxide contained in the water than necessary, the water is characterised as tending to precipitate lime. This aggressive carbon dioxide prevents the formation of protective scale/rust layers in the piping system and therefore should be removed by means of a deacidification filter. Concurrently with the deacidification, minor impurities are removed by means of filtration.

We would like to point out explicitly that due to the limited amount of filtration material present, only a partial deacidification can be achieved. We therefore recommend installing an EXADOS®-dosing system downstream of the deacidification filter in order to add EXADOS®-spezial.

In order to prevent the filter material from clogging and to flush out impurities, it is necessary to backwash the filter. The backwash is carried out from the bottom to the top, opposite to the regular direction of flow.

The Hydrolit-Ca deacidification material used is consumed due to the hydration of the excess carbon dioxide. (Consumption per g of converted CO<sub>2</sub> approx. 2.5 g).

It is therefore necessary to check the filling level from time to time and to refill, if necessary. The system must be flushed every time it is refilled.

If an increased germ count is to be expected from the well water, we recommend having a disinfection performed at regular intervals by our technical service.

## Function

### Filtration

The raw water flows through the raw water inlet of the control valve into the filter cylinder and then from the top to the bottom through the filter material. According to the filter type used, the dirty water is filtered from top to bottom. The filtered pure water

is then directed via the lower distributing nozzles and the riser pipe through the pure water outlet into the piping system.

During the backwash process, the filter bed is forcibly flushed from bottom to top and thus loosened up. Impurities retained during the filtration process are washed out via the drain outlet at the control valve. The filter system has to be backwashed every 6 days at the latest.

### First filtrate

By an automatic switch-over of the central control valve, the filter bed will forcibly be flushed from top to bottom. This first filtrate is discharged to the drain and afterwards, the filter system is ready for operation once again.

### Control unit

The GENO-mat® TE-Z deacidification filters are time-controlled via an electrical timer.

In order to use the time-dependent, automatic control, the time interval between two filter sequences (backwash interval in days) must be set. If the differential pressure is exceeded, the backwash has to be activated after 4 days already and the timer has to be readjusted.

## Design

5-cycle control valve made of red bronze with time-dependent control via an electric timer. Control valve top with rotating discs to set the backwash intervals; cover for protection against splash water and unauthorised access. Exchanger tank made of pressure resistant plastic with fixtures for water flow control and retention of filter material.

The control unit is interference-free. Power supply by means of a transformer plug with 1.5 m feed line. The system operation itself runs with protective low voltage 24 V/50 Hz.

## Scope of supply

Deacidification system with corresponding filter material filling and operation manual.

## Partial deacidification filter

### GENO-mat®

TE-Z 20/10  
TE-Z 25/13  
TE-Z 30/14  
TE-Z 40/17  
TE-Z 40/18  
TE-Z 50/19  
TE-Z 60/20

## Options

### Mounting set 1

For convenient hydraulic connection. Compact valve block R 1" female thread, integrated bypass with shut-off valve, shut-off valves for hard and soft water, outlet for raw water (e.g. garden hose), 2 connection hoses

Mounting set R 1" (up to type 30/14)

**Order no. 125 845**

### GENO-STOP®1"

The new safety device GENO-STOP® provides reliable and comprehensive protection against water damage.

The GENO-STOP® may be equipped with up to two wired water sensors and with five wireless water sensors.

- For further variants, please inquire -

**Order no. 126 875**

## Installation requirements

Please observe local installation directives, general guidelines and technical specifications.

The installation site must be frost-proof and ensure the system's protection from chemicals, dyes, solvents and vapours. The ambient temperature as well as the radiation temperature next to the system must not exceed 40°C.

For the electrical connection, a separate socket (230 V / 50 Hz) within approx. 1.2 m from the system is required.

The installation room must have a floor drain (DN 100). If no floor drain is available, an appropriate safety device has to be installed.

For the discharge of the backwash water, a drain connection (min. DN 50) must be available. If the waste water is directed to a lifting system, make sure that this is sufficiently dimensioned in order to cope with the waste water volume to be expected.

According to DIN EN 806-5, partial deacidification systems routinely require a functional check to be performed by the operator and maintenance to be performed by an authorised customer service company.

**Technical specifications/Dimensions**

GENO-mat® TE-Z	20/10	25/13	30/14	40/17	40/18	50/19	60/20	
<b>Connection data</b>								
Nominal connection diameter	DN 25 (1")			DN 40 (1½")				
Min. drain connection	DN 50				DN 70			
Max. nominal flow [m³/h]	0.5	1.0	1.5	2.0	2.5	3.0	4.0	
Power supply [V/Hz]	230 V, 50 Hz operation with protective low voltage 24 V/50 Hz							
Connected load [VA]	10							
Protection	IP 54							
<b>Performance data</b>								
Nominal pressure (PN)	8.0							
Min./max. operating pressure [bar]	2.5/6.0							
<b>Filling volumes and consumption data</b>								
Quartz gravel 3.0 - 5.6 l [kg]	9	15	20	20	20	30	30	
Hydrolit-Ca 1.0 - 3.0 l [kg]	20	25	70	90	120	220	320	
<b>Dimensions and weights<sup>1)</sup></b>								
Total weight empty [kg]	39	53	106	137	168	290	399	
Operating weight (incl. water) [kg]	57	93	163	214	257	456	633	
Filling level in mm	<b>a</b>	880	1100	1130	1430	1460	1380	1620
	<b>b</b>	300	620	340	590	540	460	530
A Total height [mm]	1360	1620	1620	1900	1900	1870	2100	
B Pressure cylinder Ø [mm]	210	260	340	370	420	550	620	
E Connection height/raw water piping [mm]	1160	1420	1420	1710	1710	1680	1910	
F Connection height/pure water piping [mm]	1210	1470	1470	1735	1735	1705	1935	
H Distance to wall [mm]	200	230	280	280	300	365	405	
I Depth of foundation [mm]	400	450	500	500	550	600	650	
K Length of foundation [mm]	705	755	860	860	900	1030	1110	
<b>Amount of regeneration agent required</b>								
Backwash capacity [m³/h]	1.6	2.3	3.4		5.7			
Duration of backwash [min]	10							
<b>Ambient data</b>								
Max. water/ambient temperature [°C]	30/40							
<b>Order no.</b>	<b>129 850</b>	<b>129 855</b>	<b>129 860</b>	<b>129 865</b>	<b>129 870</b>	<b>129 875</b>	<b>129 880</b>	

<sup>1)</sup> All indications are approximate.

**Filling of filter layers**

Filter layer I bottom  
Filter layer II top

- ① Pump (provided by others)
- ② Membrane expansion vessel (provided by others)
- ③ Pressure gauge inlet pressure (provided by others)
- ④ Control valve for operating voltage 24 V/50 Hz
- ⑤ Partial deacidification system
- ⑥ Pressure gauge outlet pressure (provided by others)

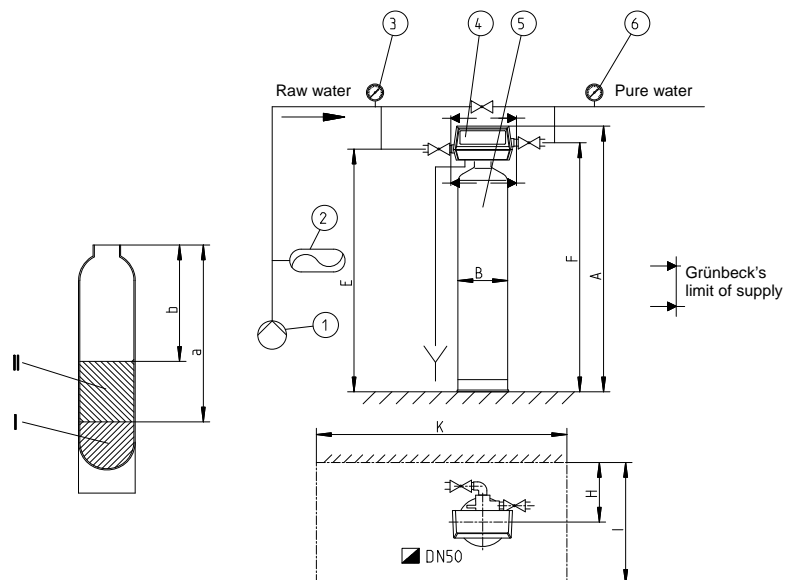


Fig. 2: Erection drawing with foundation plan