Installation and Service Instructions
for use by heating contractors

Neutralization System
Part no. 7441823 (Grünbeck part no. 410480)
Part no. 7437829 (Grünbeck part no. 410490)

Safety and Installation Requirements
Please ensure that these instructions are read and understood before starting any service work. Failure to comply with these instructions may cause product/property damage, severe personal injury and/or loss of life.

Working on the equipment
The installation, adjustment, service and maintenance of this product must be performed by a licensed professional heating contractor who is qualified and experienced in the installation, service, and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner or control.

Ensure that main power to the equipment being serviced is off.
Ensure that the main fuel supply valve to the boiler is closed.
Take precautions to avoid accidental activation of power or fuel during service work.
Do not perform service work on any component part without ensuring safe operation of the heating system. When replacing parts, use original Viessmann or Viessmann approved replacement parts.

Refer to the Installation and Service Instructions applicable to this boiler.

Product Information

Neutralization system
- GENO®-Neutra V N-70 (part no. 7441823)
- GENO®-Neutra V N-210 (part no. 7437829)

Suitable for neutralizing condensate (pH value raised above 6.5) from gas boilers/gas condensing boilers and/or flue systems (made from stainless steel, plastic, glass, graphite and ceramic). For condensate levels of up to max. 18.5 GPH (70 L/h) or 55.5 GPH (210 L/h).

Description
In the neutralization container, the layout is in the direction of flow: sedimentation zone for contamination, neutralizing granulate filling and condensate collection zone.
The condensate flows into the sedimentation zone of the neutralization container.

Via the integral filter plate, the condensate is separated and flows through the neutralizing granulate filling. The granulate is thereby partially dissolved and the condensate is neutralized.
Above the drain connector is an overflow aperture, which, when the condensate drain is obstructed, enables the condensate to escape from the neutralization container.
Preparing for Installation

Dimensions and connections
Part no. 7441823

Legend
A Condensate supply DN 20 (from heat source)
B Condensate drain DN 20 (to drainage system)
C Overflow aperture

Installation requirements
- Frost protection
- Protection against chemicals, dyes, solvents and dust
- Protection against high radiation temperatures and direct sunlight
- Sufficiently large, horizontal, level and load-bearing installation surface
- Easy accessibility for maintenance work
- Existing bottom drain (sewer connection min. DN 40) must allow drainage free of backpressure

Note: If the installation room does not have a bottom drain:
- Provide an alarm facility to indicate any fault and if required, stop the heat source in order to prevent a system overflow and any consequential damage.
- The condensate lifting system V AH-300 (accessories) can be connected downstream.

Choose an installation location that means the supply and drain hoses are as short as possible.
Neutralization System Installation and Service

Positioning and Connecting

1. Install the neutralization system in the required location.
2. Route the supply hose from the boiler to the neutralization system with a fall. Secure the hose with hose clips.

**IMPORTANT**

Never step on the hose. Protect the hose against mechanical damage.

**Note:** If the boiler does not have a P-trap, the supply hose must be routed in a U-bend.

3. Route the drain hose from the neutralizing system to the drainage system with a fall. Secure the hose with hose clips.

**Note:** The drain hose must not be connected directly to the drainage system. To avoid retrograde bacterial contamination from the drainage system, observe the minimum clearance of ¾ in. (20 mm), (see above diagram).

**Legend**

- **A** Neutralization system
- **B** Condensate supply from the heat source
- **C** Condensate drain to the drainage system (for part no. 7441823)
- **D** Condensate drain to the drainage system (for part no. 7437829)
- **E** Barbed Y connection (field supplied)

The barbed Y is used to connect two neutralization units to a single boiler (neutralization units must be of the same size).
Commissioning and Adjustment

1. Remove the neutralization system cover.
2. For part no. 7437829: Connect PCB insert. The size of the fill area for neutralizing granulate can be determined subject to the condensate level (see page 5).
3. Fill the relevant area provided with neutralizing granulate (see pages 5 and 6).
4. Fill the neutralization system with water.
5. Check the container and the supply and drain lines for leaks.
6. Close the neutralization system cover.
7. Start the heat source.
8. Record commissioning in report on page 11.
   **Note:** During commissioning, instruct the system user in the operation of the appliance.

Inspection and Maintenance

**Inspection and maintenance intervals**

- **Regular inspection** (every 6 months) can be carried out by the user or any authorized, qualified person. Inspection should initially be carried out at short intervals, then as required.

- **Maintenance work** (once a year) must be carried out regularly subject to the volume, contamination and pH value of the condensate, but at least one year. It must be carried out by an approved heating contractor or personnel trained by this approved heating contractor.
Neutralization System Installation and Service

Inspection and Maintenance (continued)

Legend (V N-70 part no. 7441823)
A  Cover
B  Granulate fill level
C  Fill area for the neutralizing granulate

Legend (V N-210 part no. 7437829)
A  Cover
B  Granulate fill level
C  PCBs

Inspection

1. Remove neutralization system cover A.
   If an overflow alarm switch (accessory) is installed, isolate this from the power supply and remove it together with cover A from the neutralization system.

2. Check the supply and drain hose for deposits and clean if required.

3. Check the water level in the neutralization system.
   Top up the water if required.

4. Check the pH value at the condensate drain.
   The measured value must be above 6.5.

5. Top up neutralizing granulate if required. Observe granulate fill level B.

Note: Only use original GENO®-Neutralit Hz neutralizing granulate.

6. Check the tightness of the neutralization container and the condensate supply and drain lines.

7. Close cover A again.
   If an overflow alarm switch (accessory) is installed, before closing the cover:
   - Reconnect the power supply for the overflow alarm switch
   - Check the fault message function: simulate backpressure by raising the drain hose temporarily and filling the container with water to the level of the overflow aperture
   - Close the cover
   - The overflow alarm switch must be fully inserted into the locking ring fitting

8. Record inspection in report on page 11.
Neutralization System Installation and Service

Inspection and Maintenance (continued)

Legend (Part no. 7437829)
- D Up to 110 L/h (3 fields)
- E Up to 160 L/h (4 fields)
- F Up to 210 L/h (5 fields)

Service

1. Stop the condensate or divert it into a suitable collector tank.

2. Remove neutralizing system cover A. If an overflow alarm switch (accessories) is installed, isolate this from the power supply and remove it together with cover A from the neutralizing system.

3. Remove neutralizing granulate from the system and pour into the foil bag provided with the maintenance set.
   Note: ■ Use a wet vacuum cleaner.
   ■ For disposal, see page 7.

4. Clean container.

5. Check the supply and drain hose for deposits and clean if required.

6. Fill the relevant fill area of the neutralizing container with neutralizing granulate. Observe granulate fill level B (see page 5).
   Note: Only use original GENO®-Neutralit Hz neutralizing granulate.

7. Fill the system with water.

8. Check the tightness of the neutralizing container and the condensate supply and drain lines. If required, replace damaged or old components.

   If an overflow alarm switch (accessories) is installed, before closing the cover:
   ■ Reconnect the power supply for the overflow alarm switch.
   ■ Check the fault message function:
     simulate backpressure by raising the drain hose temporarily and filling the container with water to the level of the overflow aperture.
   ■ Close the cover.
   ■ The overflow alarm switch must be fully inserted into the locking ring fitting.

10. Record the maintenance on page 11.
Disposal of neutralizing granulate

- Neutralizing granulate in the delivered condition, can be disposed of with domestic waste in accordance with the relevant regulations after consulting the disposal company and the relevant authorities.

- Hydroxide sludge, which can occur when the system is cleaned, must be separately collected and disposed of using a suitable container via local approval bodies. It can be declared as “hydroxide sludge containing metal”.

Maintenance

1. Stop the condensate or divert it into a suitable collector tank.
2. Remove neutralization system cover ▲ see page 5. If an overflow alarm switch (accessory) is installed, isolate this from the power supply and remove it together with cover ▲ from the neutralization system.
3. Remove neutralizing granulate from the system and pour into the foil bag provided with the maintenance set.

Note:

- Use a wet vacuum cleaner
- For disposal, see disposal section
4. Clean the container.
5. Check the supply and drain hose for deposits and clean if required.
6. Fill the relevant fill area of the neutralization container with neutralizing granulate. Observe granulate fill level △ (see page 5).

Note: Only use original GENO®-Neutralitz Hz neutralizing granulate.

7. Fill the system with water.
8. Check the tightness of the neutralization container and the condensate supply and drain lines. If required, replace damaged or old components.
9. Close cover ▲ again.
   - If an overflow alarm switch (accessory) is installed, before closing the cover:
     - Reconnect the power supply for the overflow alarm switch
     - Check the fault message function: simulate backpressure by raising the drain hose temporarily and filling the container with water to the level of the overflow aperture
     - Close the cover
   - The overflow alarm switch must be fully inserted into the locking ring fitting
10. Record maintenance in the report on page 11.
**Troubleshooting**

<table>
<thead>
<tr>
<th>System characteristics</th>
<th>Cause</th>
<th>Measure</th>
</tr>
</thead>
</table>
| pH value at the drain briefly above 10 | Longer idle period | ■ No immediate measures required  
■ Repeat pH value check after constant operation over an extended period |
| pH value at the drain below 6.5 after extended operating time | Neutralizing granulate used up | ■ Top up neutralizing granulate  
■ Where there are sludge deposits, clean the system |
| | Neutralizing granulate sticking or hardened due to deposits  
Neutralizing granulate dried out and hardened due to extended idle period | ■ Loosen neutralizing granulate by adding water, and carry out maintenance if required |
| | Filter plates contaminated | ■ Clean the filter plates |
| pH value at the drain is constantly above 10 or below 6.5 | Inappropriate neutralizing granulate fill volume | ■ Change the neutralizing granulate fill volume (change the fill area)  
pH > 10: less granulate  
pH < 6.5: more granulate |

**Function Description**

In the neutralizing container, the layout is in the direction of flow: sedimentation zone for contamination, neutralizing granulate filling and condensate collection zone.

The condensate flows into the sedimentation zone of the neutralizing container. Via the integral filter plate, the condensate is separated and flows through the neutralizing granulate filling. The granulate is thereby partially dissolved and the condensate is neutralized.

For part no. 7441823, above the drain connector is an overflow aperture, which, when the condensate drain is obstructed, enables the condensate to escape from the neutralizing container.
Neutralization System Installation and Service

**Parts List (for part no. 7441823)**

When ordering spare parts:
Quote the part no. (see type plate) and the position number of the required part (as per this parts list).
Obtain standard parts from your local supplier.

<table>
<thead>
<tr>
<th>Parts</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Casing</td>
</tr>
<tr>
<td>002</td>
<td>Cover</td>
</tr>
<tr>
<td>004</td>
<td>Hose DN 20 16.5 ft. (5 m)</td>
</tr>
<tr>
<td>007</td>
<td>pH indicator stick (3 piece)</td>
</tr>
<tr>
<td>009</td>
<td>Installation and service instructions</td>
</tr>
</tbody>
</table>

**Parts not shown**
010 Bag with neutralizing granulate 17.6 lbs. (8 kg)

**Optional parts (order separately)**
- 003 Plug
- 005 Overflow alarm switch (accessory)
- 006 Maintenance set for the neutralization system:
  - Bag with neutralizing granulate 17.6 lbs. (8 kg)
  - pH indicator stick (3 piece)
  - Foil bag for disposal of used neutralizing granulate
  - Installation and service instructions
- 008 pH indicator stick (100 piece)
- 012 Alarm delay (accessory)
Parts List (for part no. 7437829)

When ordering spare parts:
Quote the part no. (see type plate) and the position number of the required part (as per this parts list).
Obtain standard parts from your local supplier.

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<tr>
<th>Parts</th>
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<tbody>
<tr>
<td>001 Casing</td>
<td>002 Cover</td>
<td>003 PCB set</td>
<td>004 Hose DN 20 16.5 ft. (5 m)</td>
<td>005 Hose DN 25 16.5 ft. (5 m)</td>
</tr>
<tr>
<td>006 Hose connection DN 20</td>
<td>007 Flat gasket</td>
<td>008 Hose connection DN 25</td>
<td>009 Supporting rod</td>
<td>012 pH indicator stick (3 piece)</td>
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<tr>
<td>014 Installation and service instructions</td>
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Optional parts (oder separately):
010 Overflow alarm switch (accessories)
011 Maintenance set for the neutralizing system:
- Bag with neutralizing granulate 3x17.6 lbs. (3x8 kg)
- pH indicator stick (3 piece)
- Foil bag (3 piece) for disposal of used granulate
- Installation and service instructions
013 pH indicator stick (100 piece)
015 Bag with neutralizing granulate 17.6 lbs. (8 kg)
016 Bag with neutralizing granulate 53 lbs. (24 kg)
018 Alarm delay (accessories)
## Specifications

<table>
<thead>
<tr>
<th>Part no.</th>
<th>7441823</th>
<th>7437829</th>
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<tbody>
<tr>
<td>Grünbeck part no.</td>
<td>410480</td>
<td>410490</td>
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<tr>
<td>Fuel/process</td>
<td>Gas condens. technology</td>
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<tr>
<td>Max. Neutralizing output</td>
<td>18.5 GPH (70 L/h)</td>
<td>55.5 GPH (210 L/h)</td>
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<td>Neutralizing granulate</td>
<td>GENO®-Neutralit Hz</td>
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<tr>
<td>Neutralizing granulate fill volume</td>
<td>17.6 lbs. (8 kg)</td>
<td>53 lbs. (24 kg)</td>
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<tr>
<td>Service life</td>
<td>12 months</td>
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**Neutralizable condensate amount**
- With standard condensate to DVGW-VP-114, pH 3
  - 2225 ft.³ (63 m³)
  - 6710 ft.³ (190 m³)
  - This corresponds to full boiler utilisation hours
    - 900 bVH
    - 900 bVH
- With standard condensate with min. pH 3.2
  - 3708 ft.³ (105 m³)
  - 11124 ft.³ (315 m³)
  - This corresponds to full boiler utilisation hours
    - 1500 bVH
    - 1500 bVH

**Weight**
- In the delivered condition
  - 26.5 lbs. (12 kg)
  - 72.8 lbs. (33 kg)
- In operation (filled) approx.
  - 33 lbs. (15 kg)
  - 99.2 lbs. (45 kg)

## Report

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<tr>
<th>Date:</th>
<th>Commissioning</th>
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Herstellererklärung

Hiermit erklären wir, dass die nachstehend bezeichnete Anlage in ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Anforderungen der zutreffenden Richtlinien entspricht.

Bei einer mit uns nicht abgestimmten Änderung der Anlage verliert diese Erklärung ihre Gültigkeit.

Hersteller: Grünbeck Wasseraufbereitung GmbH
Industriestraße 1
89420 Höchstädt/Do.

Dokumentationsbevollmächtigter: Markus Pöpperl

Bezeichnung der Anlage: Neutralisation

Anlagentyp: GENO®-Neutra V N-70, V N-210

Anlagen-Nr.: 410 480 410 490

Viessmann-Bestell-Nr.: 7441 823 7437 829

Sinngemäß angewandte EG-Richtlinien: RoHS (2002/95/EG)

Angewandte harmonisierte Normen insbesondere:

Angewandte nationale Normen und technische Spezifikationen, insbesondere:
ATV- DVGW-A 251 (08/03); DVGW-VP 114;
E DIN 4716-2 (04/03)

Datum / Hersteller-Unterschrift: 23.10.12

Funktion des Unterzeicheners: Abteilungsleiter Konstruktion Serie

Manuel Pöpperl
Dipl.-Ing. (FH)