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› **vhbw Carbon Brushes for Roco H0 Locomotives (10-Pack, 3x2x6.5mm)**

vhbw 23240, 43221, 43001, 43005

vhbw Carbon Brushes for Roco H0 Locomotives

Model Numbers: 23240, 43221, 43001, 43005

1. PRODUCT OVERVIEW

The vhbw carbon brushes are robust and precise components designed for electric motor vehicles, specifically Roco H0 electric locomotives. These brushes are essential for transmitting electrical current to the motor's commutator or other moving parts, ensuring efficient and reliable operation.

This pack contains 10 carbon brushes, each measuring 3 x 2 x 6.5 mm. They are a direct replacement for Roco part number 89743 and are compatible with Roco H0 locomotive models 23240, 43221, 43001, and 43005.



Image 1.1: A single vhbw carbon brush, rectangular in shape, dark gray, showing its compact size and material texture.

Regular replacement of worn carbon brushes is crucial for maintaining the proper function and extending the lifespan of your model railway equipment. Worn brushes can lead to intermittent operation, reduced power, or complete motor failure.

2. INSTALLATION INSTRUCTIONS

Follow these steps to replace the carbon brushes in your Roco H0 locomotive:

- 1. Safety First:** Before beginning any work, ensure the locomotive is completely disconnected from all power sources. This includes the track power and any auxiliary power supplies.
- 2. Access the Motor:** Carefully open the locomotive casing to gain access to the motor. Refer to your locomotive's specific disassembly instructions if needed.
- 3. Locate Brushes:** Identify the motor and the existing carbon brushes. They are typically housed in small brush holders on either side of the commutator.
- 4. Remove Old Brushes:** Gently remove the old, worn carbon brushes from their holders. Note their orientation, as some brushes may have a specific fit.
- 5. Insert New Brushes:** Take a new vhbw carbon brush (3x2x6.5mm). Carefully insert it into the brush holder. Ensure it slides in smoothly and makes proper contact with the commutator. Do not force the brush.

6. **Repeat for Second Brush:** If your motor uses two brushes, repeat the process for the second brush.
7. **Reassemble:** Once both brushes are installed, carefully reassemble the motor and the locomotive casing. Ensure all connections are secure and no wires are pinched.



Image 2.1: A view of multiple vhbw carbon brushes, highlighting the quantity provided in the pack.

3. INITIAL OPERATION AFTER INSTALLATION

After installing new carbon brushes, it is recommended to perform an initial test run:

- **Low Speed Test:** Place the locomotive on the track and apply power at a very low speed setting.
- **Seating Period:** Allow the locomotive to run for a few minutes at low speed in both directions. This helps the new brushes to properly seat and conform to the shape of the commutator, optimizing contact.
- **Observe Performance:** Listen for any unusual noises and observe the motor for consistent operation. Gradually increase speed to ensure full functionality.

4. MAINTENANCE

To ensure the longevity and optimal performance of your locomotive's motor and the vhbw carbon brushes:

- **Regular Inspection:** Periodically inspect the carbon brushes for signs of wear. They will naturally shorten over time. Replace them when they become significantly shorter than new brushes or show signs of chipping or damage.
- **Commutator Cleaning:** Keep the motor's commutator clean. Dust, dirt, and carbon residue can accumulate, leading to poor electrical contact and premature brush wear. Use a soft, lint-free cloth or a specialized commutator cleaner.
- **Avoid Overloading:** Operating the locomotive within its recommended load limits will reduce stress on the motor and brushes, extending their lifespan.

5. TROUBLESHOOTING

If your locomotive experiences issues after brush replacement, consider the following:

- **Locomotive Not Running or Intermittent Operation:**
 - Ensure the carbon brushes are properly seated in their holders and making firm contact with the commutator.
 - Verify that the brushes are not excessively worn (if they are old) or damaged.
 - Check all electrical connections within the locomotive and the power supply to the track.
- **Excessive Sparking at the Motor:**
 - This can indicate worn brushes, improper seating, or a dirty commutator. Inspect and clean the commutator as necessary.
 - Ensure the brushes are correctly oriented and not jammed.
- **Reduced Motor Performance or Weak Movement:**
 - Worn brushes can lead to reduced power transmission. Replace them if wear is evident.
 - A dirty commutator can also impede performance; clean it thoroughly.

6. TECHNICAL SPECIFICATIONS

Brand	vhbw
Material	Graphite
Dimensions (L x W x H)	3 x 2 x 6.5 mm
Quantity	10 pieces per pack
Features	Low spark formation, Long service life
Compatible Track Gauge	H0
Compatible Roco H0 Models	23240, 43221, 43001, 43005
Replaces Part Number	89743
Product Weight (approx.)	5 Grams (for the pack)

7. WARRANTY AND SUPPORT

For any questions regarding the installation, compatibility, or performance of your vhbw carbon brushes, please refer to the retailer or manufacturer's support channels. Keep your purchase receipt for any warranty claims.

