



46-19-01 - Brake Noise or Pulsation during PDI Process (U.S. Only)

Release date: 7/13/2023

Condition

Applicable Vehicles					
Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
All	2023-2024	All	All	All	All

Revision Table			
Instance Number	Published Date	Version Number	Reason For Update
2010245/30	7/13/23	46-19-01	Updated to include additional model year applicability.
2010245/29	6/22/22	46-19-01	Addition of mandatory brake form and reference to Volkswagen Warranty Policy and Procedures Manual.
2010245/1	9/9/04	V460402	Original publication.



Note:

As extracted from the Volkswagen Warranty Policy and Procedures Manual, in order to support a positive customer experience, improve quality efforts and reduce repeat repairs, Volkswagen Warranty is introducing the new Brake Diagnostic Worksheet. More information can be found under the Warranty Heading of this Technical Service Bulletin.

Technical Background

Vibration / Pulsation or noise when braking may be due to Brake Disc corrosion protection which has not been completely removed by normal braking or surface rust built up during transportation.



Note:

This Technical Bulletin only applies once at PDI. Please note that vehicles in dealer inventory should be maintained per the recommended 30 days maintenance procedure to prevent excessive rust build up.



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## Production Solution

No production change required.

## Service

### Vehicle Inspection

**Note:**

Abide by ALL traffic laws and be mindful of the vehicles around you while operating the vehicle.

#### Step 1:

- Check and adjust the Tire pressure.
- Accelerate the vehicle to greater than 55 MPH (80 km/h).
- Apply the brakes firmly.

#### Step 2:

#### **The following steps only apply to vehicles with Electronic Parking Brake (EPB):**

- For vehicles equipped with Electronic Parking Brake (EPB), DO NOT APPLY PARKING BRAKE WHILE VEHICLE IS IN MOTION.
- Affected rear brake discs will have uneven color across the friction surface. This will determine if the rear discs need to be sanded.
  - If it was determined that the rear brake discs need to be sanded, clean the rear brake discs. Once completed, road test the vehicle to determine if the noise/vibration was eliminated. If the noise/vibration has not been eliminated, clean the front brake discs.
  - If it was determined that the rear discs do not need to be sanded, clean the front brake discs.

#### **The following steps only apply to vehicles without Electronic Parking Brake (EPB):**

- Accelerate vehicle to 30 MPH (50 km/h).
- Carefully apply Parking Brake.
  - If vibration or noise is observed from the rear of the vehicle, clean the rear brake discs. Once completed, road test the vehicle to determine if the noise/vibration was eliminated. If the noise/vibration has not been eliminated, clean the front brake discs.
  - If vibration or noise is only observed from the front of the vehicle, clean the front brake discs.

### Disassembly Inspection

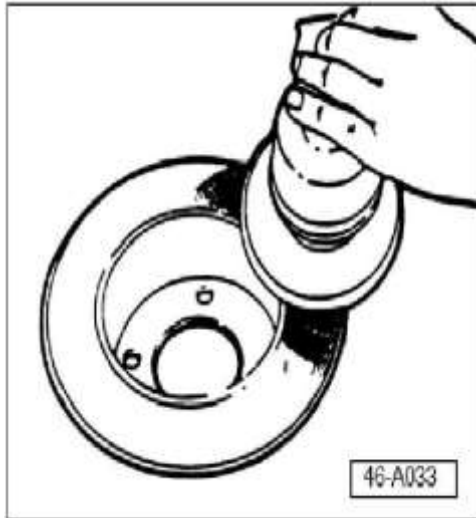
- Remove Wheels, disassemble Brake Calipers, and remove Brake Disc. See the appropriate Repair Manual for the vehicle you are servicing.
- Paint mark Brake Discs for reinstallation (Left/Right).



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- Paint mark Brake Pads for reinstallation (Left/Right, Inner/Outer).
- Using a micrometer, measure Brake Disc thickness. See appropriate Repair Manual in Elsa for minimum brake disc thickness.
- Inspect all brake components for damage from outside influences.

**Brake Disc Surface Cleaning**

Remove remaining corrosion protection coating or surface rust as follows:

- Sand Brake Disc surfaces until clean metal is visible using leading edge of 40-grit sanding disc in a clockwise direction (1-2 minute per surface).



Replace sanding disc prior to moving to next Brake Disc surface.

To achieve a crosshatch pattern:

- Repeat sanding process using trailing edge of 80-grit sanding disc in a counterclockwise direction.

Replace sanding disc prior to moving to next Brake Disc surface.

Clean all Brake Disc friction surfaces using soap and water solution.

**Tip:**

Brake Discs must be free of dust and particles left behind due to the sanding process.



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**Deglaze and Clean Brake Pads**

- Place 80-grit sand paper on flat hard surface.
- Carefully sand Brake Pads until the surface glazing is removed.

**Note:**

Use one new 80 grit sand paper sheet per set of brake pads.

**Tip:**

See appropriate Repair Manual in Elsa for new Brake Pad thickness dimensions.

**Reassembly**

- Install Brake Discs, Brake Pads, Brake Calipers, and Wheels. See appropriate Repair Manual in Elsa for vehicle you are servicing.
- Road test vehicle to confirm vibration or noise concern is corrected.



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Warranty

The Brake Diagnostic Worksheet is required to be filled out and uploaded to Doc-IT for warranty reimbursement on all Brake claims including repair/replacement of Discs/Drums and Pads/Shoes, DICE claims where the Customer’s concern involves Brakes and applicable Technical Service Bulletins. Claims may be subject to cancellation when the worksheet is incomplete or missing.

This new worksheet was developed to provide greater detail and assist with documenting the warranty justification. For your convenience, the worksheet can either be completed electronically online and saved to your files or downloaded and printed. The Brake Diagnostic Worksheet replaces the Brake Disc Measurement Form.

The Brake Diagnostic Worksheet is located in WISE under Resource Center > Forms > Brakes and is also located on the attachment page of Technical Service Bulletin 2010245, 2015173 and 2067177 within Elsa.



All documentation is needed for reimbursement and must be uploaded to WISE. For information on uploading documents and pictures in WISE, go to WISE > Resource Center > Dealer Processes & Guide, select pdf file: Wise Operations Section – Doc-IT Technical Bulletin Uploading Process Job Aid.

<b>To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual <sup>1)</sup></b>					
Model(s)	Year(s)	Eng. Code(s)	Trans. Code(s)	VIN Range From	VIN Range To
All	2023-2024	All	All	All	All
<b>SAGA Coding</b>					
<b>Claim Type:</b>	<b>Use applicable Claim Type <sup>1)</sup></b>				
Service Number	Damage Code	HST	Damage Location		
4650	0020	--	001 – Left 002 – Right		
4653	0020	--	001 – Left 002 – Right		
<b>Parts Manufacturer</b>	Golf R, GTI, Atlas, Atlas Cross Sport, Arteon, ID.4			WWO <sup>2)</sup>	



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	Jetta, Tiguan LWB, Taos	3ME <sup>2)</sup>
<b>Arteon</b>		
<b>Front Brake Service Only</b>		
<b>Labor Operation 3):</b> Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502050 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU	
<b>OR</b>		
<b>Rear Brake Service Only</b>		
<b>Labor Operation 3):</b> Remove and Reinstall Rear Wheels	44052000 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Remove and Reinstall Rear Brake Carriers	46152050 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs	46532050 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Sanding Rear Discs and Pads	46503099 = 35 TU	
<b>OR</b>		
<b>Front and Rear Brake Service</b>		
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units	
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units	
	and 46152050 = See Elsa for latest time units	



<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Discs	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front and Rear Discs and Pads	46503099 = 50 TU
<b>OR</b>	
<b>Atlas, Atlas Cross Sport, Tiguan LWB</b>	
<b>Front Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Rear Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Rear Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Brake Carriers	46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs	46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Rear Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Front and Rear Brake Service</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear	44052004 = See Elsa for latest time



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Wheels	units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units and 46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Discs	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front and Rear Discs and Pads	46503099 = 50 TU
<b>OR</b>	
<b>Jetta</b>	
<b>Front Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU
<b>Rear Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Rear Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs	46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Brake Carriers	46152050 = See Elsa for latest time units





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<b>Labor Operation 3):</b> Sanding Rear Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Front and Rear Brake Service</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Discs	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Brake Carriers	46142050 = See Elsa for latest time units and 46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front and Rear Discs and Pads	46503099 = 50 TU
<b>OR</b>	
<b>GTI/Golf R</b>	
<b>Front Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Rear Brake Service Only</b>	



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<b>Labor Operation 3):</b> Remove and Reinstall Rear Wheels	44052000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Brake Carriers	46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs (Golf R)	46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs (Golf GTI)	46532050 = See Elsa for latest time units (carrier included)
<b>Labor Operation 3):</b> Sanding Rear Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Front and Rear Brake Service</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units and 46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Discs	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front and Rear Discs and Pads	46503099 = 50 TU
<b>ID.4</b>	
<b>Front Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units



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<b>Labor Operation 3):</b> Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU
<b>Taos</b>	
<b>Front Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front Discs	46502000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front Discs and Pads	46503099 = 35 TU
<b>Rear Brake Service Only</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Rear Discs	46532000 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Rear Discs and Pads	46503099 = 35 TU
<b>OR</b>	
<b>Front and Rear Brake Service</b>	
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units and 46152050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Remove and Reinstall Front and Rear Discs	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units
<b>Labor Operation 3):</b> Sanding Front and Rear Discs and Pads	46503099 = 50 TU
<b>Causal Part:</b>	Select 46503099



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<b>Outside Material</b>		
<b>1 Axle Serviced</b>		
40-grit, 6-inch sanding disc And 80-grit, 6-inch sanding disc	Part No: PN01117 or equivalent and Part No: PN01116 or equivalent	\$10.00
<b>OR</b>		
<b>2 Axles Serviced</b>		
40-grit, 6-inch sanding disc And 80-grit, 6-inch sanding disc	Part No: PN01117 or equivalent and Part No: PN01116 or equivalent	\$20.00
<b>Diagnostic Time <sup>4)</sup></b>		
<b>GFF Time expenditure</b>	01500000 = Up to 50 TUs	YES
<b>Road Test</b>	01210002 = 10 TU 01210004 = 10 TU	YES
<b>Technical Diagnosis</b>	01320000 = 00 TU max.	NO
<b>Claim Comment:</b> Input "As per Technical Bulletin 2010245" in comment section of Warranty Claim.		
<p>1) Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only.</p> <p>2) Code per warranty vendor code policy.</p> <p>3) Labor Time Units (TUs) are subject to change with ELSA updates.</p> <p>4) Documentation required per Warranty Policies and Procedures Manual.</p>		



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## Required Parts and Tools

No Special Parts required.

Tool Description	Tool No:	Quantity
6-inch Dual Action sander (Blue Point® )	AT441A or equivalent	-
40-grit, 6-inch sanding disc (3M®)	PN01117 or equivalent	4 (One Axle Serviced) or 8 (Two Axles Serviced)
80-grit, 6-inch sanding disc (3M®)	PN01116 or equivalent	4 (One Axle Serviced) or 8 (Two Axles Serviced)
80-grit sand paper	Obtain from local supplier	4 Sheets
Micrometer (7mm-22mm)	-	-
Metric Scale (0mm-20mm)	-	-

## Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.



# Volkswagen Brake Diagnostic Worksheet

**NOTE: The Brake Diagnostic Worksheet is required for all Warranty reimbursement of brake pads and rotors. The form can be completed electronically or printed. Completed forms must be uploaded to Doc-IT upon SAGA claim submission. Always, refer to the Volkswagen Policies and Procedures Manual to validate warranty eligibility prior to performing warranty repairs.**

**Dealer Code:** \_\_\_\_\_  
**Repair Order:** \_\_\_\_\_  
**Odometer:** \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**VIN:** \_\_\_\_\_

**MANDATORY This section must be completed in its entirety.**

**Technician Findings:**

<b>Manufacturers Defect:</b> <input type="radio"/> Cracks <input type="radio"/> Breaks <input type="radio"/> Porous Casting <input type="radio"/> Other: _____	<b>Applicable Technical Bulletin</b> <input type="radio"/> 2010245 <input type="radio"/> 2015173 <input type="radio"/> None	<b>The following conditions are not covered by Warranty:</b> <ul style="list-style-type: none"> <li>• Rust/Corrosion</li> <li>• Brake pad mark</li> <li>• Discoloration (bluing)</li> <li>• High heat damage (raised hard spots)</li> </ul>
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**What is the concern the customer is experiencing? Check all that apply.**

Brake Noise     
  Vibration     
  Pulsation     
  Corrosion/Discoloration

Location of the concern	How often does it occur?	When does it happen?	At what speed does it occur?	Is the vehicle?	Road Condition	What's the outside condition
Front Left	<input type="radio"/> Constant	<input type="radio"/> At start-up	<input type="radio"/> <5 MPH	<input type="radio"/> Turning Left	<input type="radio"/> Paved (smooth)	<input type="radio"/> Freezing
Front Right	<input type="radio"/> A.M./P.M.	<input type="radio"/> At cruising speed	<input type="radio"/> 5-24 MPH	<input type="radio"/> Turning Right	<input type="radio"/> Rough (gravel)	<input type="radio"/> Normal
Rear Left	<input type="radio"/> Weekly	<input type="radio"/> While turning	<input type="radio"/> 25-49 MPH	<input type="radio"/> Going Uphill	<input type="radio"/> Bumpy	<input type="radio"/> Hot
Rear Right	<input type="radio"/> Intermittent	<input type="radio"/> Normal Braking	<input type="radio"/> 50-70 MPH	<input type="radio"/> Going Downhill	<input type="radio"/> Wet	<input type="radio"/> Rain
Other:	<input type="radio"/> Other:	<input type="radio"/> Hard Braking	<input type="radio"/> >70 MPH	<input type="radio"/> Forward	<input type="radio"/> Dry	<input type="radio"/> Mud
		<input type="radio"/> Other:	<input type="radio"/> Other:	<input type="radio"/> Reverse	<input type="radio"/> Other:	<input type="radio"/> Humid
				<input type="radio"/> Other:		<input type="radio"/> Other:

**Other conditions not listed above:**

**Is the Technician able to duplicate the concern?**

<b>Yes</b> <input type="radio"/>	<b>No</b> <input type="radio"/>
If the repair is warrantable, proceed with claiming in SAGA	Review DICE policy for potential reimbursement

**Additional notes (optional):**