46-19-02 - Brake Rotor, Vibration / Pulsation (U.S. Only)

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Condition

Applicable Vehicles

Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
All (except Routan)	2014-2023	All	All	All	All

Revision Table

Instance Number	Published Date	Version Number	Reason For Update
2015173/31	6/22/22	46-19-02	Addition of mandatory brake form and reference to Volkswagen Warranty Policy and Procedures Manual.
2015173/30	02/3/22	46-19-02	To include model year 2022 applicability.
2015173/28	6/4/2020	46-19-02	To include model year 2021 applicability.
2015173/1	6/11/07	V46-07-01	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.

When applying the brakes at highway speeds the following symptoms may occur:

- Brake Pedal pulsation
- Vibration felt in Vehicle Body
- Steering Wheel shakes

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Technical Background

For brake vibration or pulsation concerns, brake rotor machining is allowed between 6 and 12 months or 6,000 and 12,000 miles (whichever comes first) from the warranty in service date.

Production Solution

No production change required.

Service

Note:

All policies and procedures outlined in this technical bulletin also apply to sublet brake rotor machining. Improperly machined brake rotors may cause brake pulsation/vibration after several months in service. The servicing facility will be responsible for these failures.

Procedure:

- Remove Wheels and separate Brake Calipers from Carrier as outlined in Repair Manual Group 44 in Elsa.

Brake Rotor Inspection

A detailed brake rotor inspection is needed to determine if the brake rotor should be machined or replaced.

Inspect the brake rotor friction surfaces on both sides of the brake rotor for:

- Severe discoloration (bluing)
- High heat surface damage (raised hard spots)
- Visible cracks

Note:

Brake rotors showing any of the above described conditions are **NOT** serviceable. Parts must be replaced in accordance with the Volkswagen Warranty Policy and Procedure Manual.

Please see the example pictures below of damage NOT covered under warranty.

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Figure 1: Brake pad imprint.

Figure 2: Brake pad imprint.

Figure 3: Brake pad imprint.

Figure 4: Brake pad imprint.

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Figure 5: Corrosion.

Figure 6: Corrosion, brake pad stuck to brake rotor.

Figure 7: Corrosion, brake pad stuck to brake rotor.

Figure 8: Corrosion, brake pad stuck to brake rotor.

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Figure 9: Brake pad stuck to brake rotor

Figure 10: Brake pad stuck to brake rotor.

Figure 11: Brake pad imprint.

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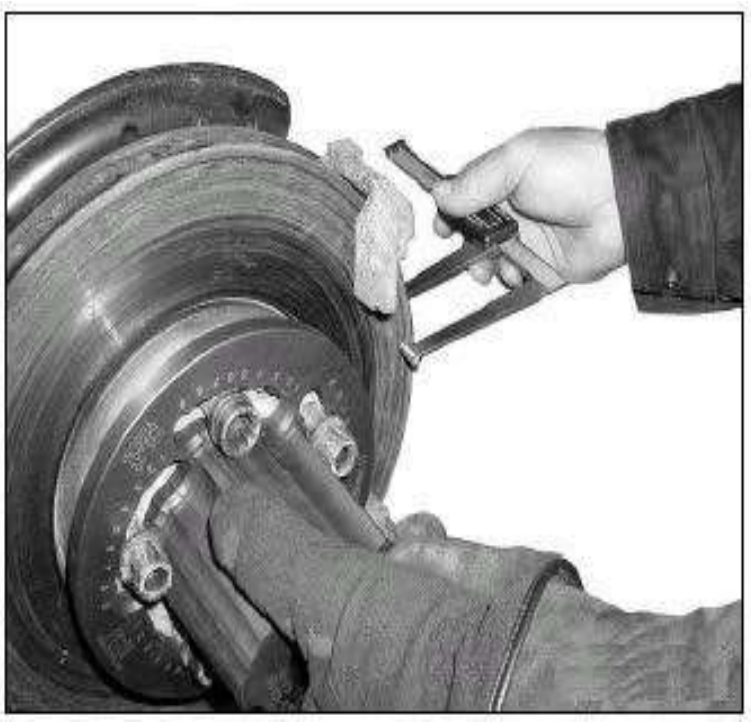

Disc Thickness Measuring

Technician must record the beginning thickness measurements on the back of the repair order.

Each brake rotor has the minimum allowed thickness cast, stamped or laser-etched into the rotor hub.

- Measure the brake rotor thickness in 4 locations using a digital or mechanical caliper/micrometer. Measurements **MUST** be taken at the same distance from the brake rotor outer circumference to ensure consistency.

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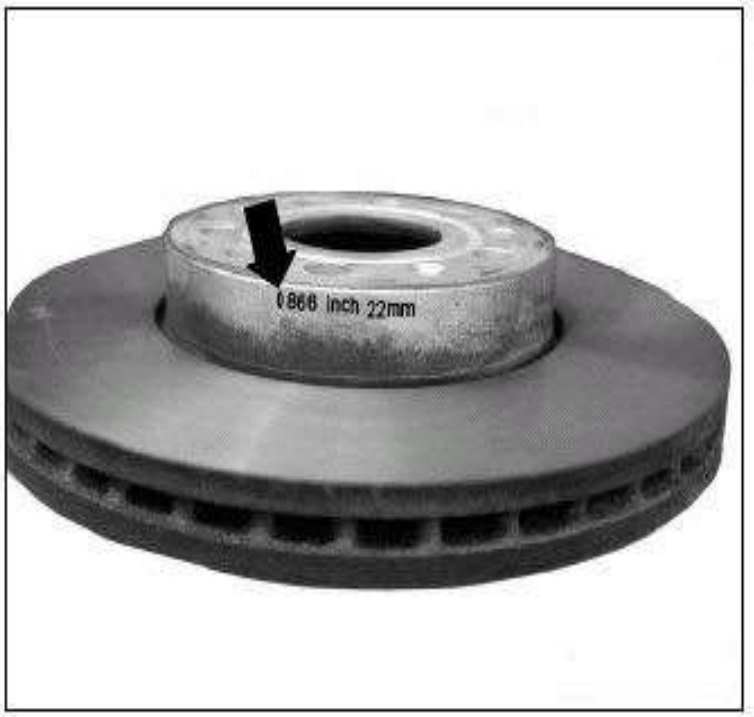

Note:

The brake rotor thickness measurement must exceed the minimum specification **after** the machining process is completed in order to be re-used. If the brake rotor thickness measurement does not meet this requirement after machining, replace the brake rotor.

Brake Rotor Machining

Note:

All Brake Rotors must be machined.

Recommended on-car brake lathe is the PRO-CUT International ™ PFM 9.2 (or equivalent – can be locally sourced). This design of brake lathe will produce a surface quality which will provide proper brake performance without a brake pad to brake rotor break-in period.

To ensure that a high quality brake rotor finish is produced, brake lathe cutting tools must be maintained as directed by the lathe or tool manufacturer.

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- Follow the brake lathe manufacturer’s instructions for set-up and machining.
- Wash the brake rotor with a soap and water solution upon completion of resurfacing to remove all machining particles.

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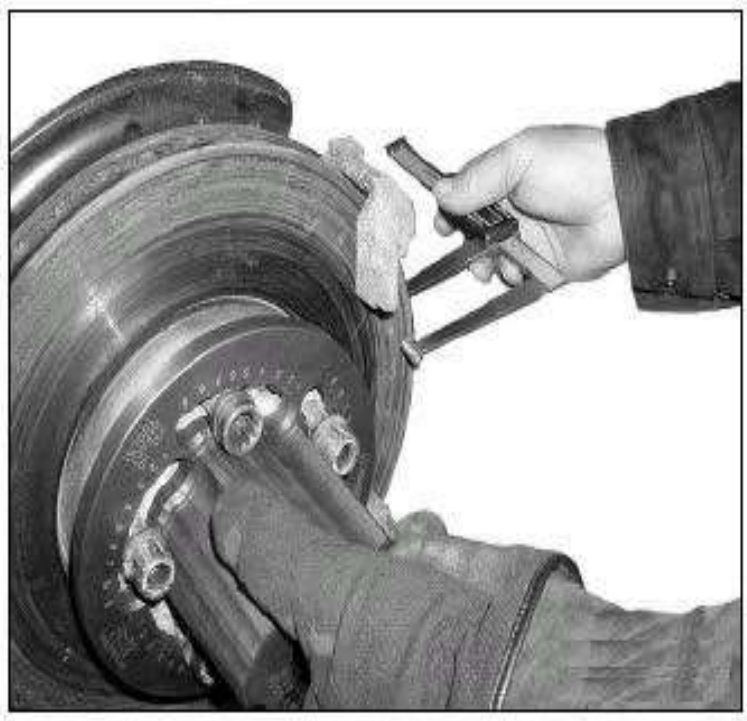

Technician must record the final thickness measurements after machining on the back of the repair order.

- Re-measure brake rotor thickness in 4 locations using a digital or mechanical caliper/micrometer. If recorded brake rotor measurement is less than the minimum thickness after machining, the brake rotor **MUST** be replaced.

Note:

Always replace brake rotors in pairs (front axle or rear axle). Do not replace all 4 brake rotors unless it is required.

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- Measure brake rotor lateral run out using a caliper and dial gauge set.
- Run out must not exceed 0.1mm after machining.
- If brake rotor exceed the 0.1mm specification after machining replace the applicable brake rotors.

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.

Note:

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.

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To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual [1)]

Model(s)	Year(s)	Eng. Code(s)	Trans. Code(s)	VIN Range From	VIN Range To
All (except Routan)	2014-2023	All	All	All	All

Claim Type:	**Use applicable Claim Type [1)]**

SAGA Coding

Service Number	Damage Code	HST	Damage Location
4650	0013	--	001 – Left 002 – Right
4653	0013	--	001 – Left 002 – Right

Parts Manufacturer	Passat, CC, Tiguan, Eos, Touareg, Golf R, e-Golf and MY14 Golf ,Atlas, Atlas Cross Sport, Arteon, ID.4	WWO [2)]
	Jetta, Beetle, Beetle Cabrio, MY14 Jetta SportWagen and MY15-20 Golf, Golf SportWagen, Alltrack, Tiguan LWB, Taos	3ME [2)]

On Car Lathe is available (All vehicles)

Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotor Resurfacing – On Vehicle	46504699 = 120 TU And 46534699 = 120 TU

Or

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If On Car Lathe is unavailable:	
CC/Tiguan/Eos/Arteon	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units And 46152050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotor Machining	46504699 = 160 TU And 46534699 = 160 TU
OR	
Tiguan LWB	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units And 46152050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotor Machining	46504699 = 160 TU And 46534699 = 160 TU
OR	

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Atlas/Atlas Cross Sport	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units And 46152050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
Passat	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
Jetta, Beetle, Beetle Cabrio and MY14 Jetta SportWagen	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units

Labor Operation 3): Remove and Reinstall Front and Rear Brake Carriers	46142050 = See Elsa for latest time units And 46152050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
Touareg	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
MY15-22 Golf SportWagen, Alltrack	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front Carrier	46142050 = See Elsa for latest time units

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Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units (includes carrier)
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
MY14 Golf	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Carrier	46142050 = See Elsa for latest time units And 46152050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
MY15-22 Golf/GTI/Golf R/eGolf	
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front Carrier	46142050 = See Elsa for latest time units

Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units And 46532050 = See Elsa for latest time units (includes carrier)
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU And 46534699 = 160 TU
Or	
ID.4	
Front Brake Service Only	
Labor Operation 3): Remove and Reinstall Front Wheels	44052000 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front Brake Carriers	46142050 = See Elsa for latest time units
Labor Operation 3): Remove and Reinstall Front Rotors	46502050 = See Elsa for latest time units
Labor Operation 3): Machining Front Rotors	46504699 = 160 TU
Taos	
Front Brake Service Only	
Labor Operation 3): Remove and Reinstall Front Rotors	46502000 = See Elsa for latest time units
Labor Operation 3): Machining Front Rotors	46504699 = 160 TU
Rear Brake Service Only	
Labor Operation 3): Remove and Reinstall Rear Rotors	46532000 = See Elsa for latest time units
Labor Operation 3): Machining Rear Rotors	46534699 = 160 TU
OR	

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Front and Rear Brake Service		
Labor Operation 3): Remove and Reinstall Front and Rear Wheels	44052004 = See Elsa for latest time units	
Labor Operation 3): Remove and Reinstall Front and Rear Carriers	46142050 = See Elsa for latest time units and 46152050 = See Elsa for latest time units	
Labor Operation 3): Remove and Reinstall Front and Rear Rotors	46502050 = See Elsa for latest time units and 46532050 = See Elsa for latest time units	
Labor Operation 3): Front and Rear Rotors Machining	46504699 = 160 TU and 46534699 = 160 TU	
Or		
If sublet machining is used:		
Outside Labor: Sublet Machining	Sublet Machining not to exceed Elsa SRT	
Causal Part:	Select Labor	
Diagnostic Time [4)]		
GFF Time expenditure	01500000 = 00 TU max.	NO
Road Test	01210002 = 10 TU 01210004 = 10 TU	YES
Technical Diagnosis	01320000 = 00 TU max.	NO
Claim Comment: Input “As per Technical Bulletin 2015173” in comment section of Warranty Claim.		

[1)] Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only.

[2)] Code per warranty vendor code policy.

[3)] Labor Time Units (TUs) are subject to change with Elsa updates.

[4)] Documentation required per Warranty Policy Procedures Manual.

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Required Parts and Tools

No Special Parts required.

Suggested tools and tool part numbers are current at the time of publication and listed below.
(*Equivalent tools can be used or locally sourced as needed).

Suggested Brake Lathe		
Description	**Part No:**	**Quantity**
PFM 9.2	PCI92BASEIBT	1
Suggested Brake Measuring Tools		
Caliper and Dial Gauge Set	VAS6668	1

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:

Manufacturers Defect:

- ◯ Cracks
- ◯ Breaks
- ◯ Porous Casting
- ◯ Other: _____

Applicable Technical Bulletin

- ◯ 2010245
- ◯ 2015173
- ◯ None

The following conditions are not covered by Warranty:

- Rust/Corrosion
- Brake pad mark
- Discoloration (bluing)
- High heat damage (raised hard spots)

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 ◯	Constant ◯	At start-up ◯	<5 MPH ◯	Turning Left ◯	Paved (smooth) ◯	Freezing ◯
Front Right ◯	A.M./P.M. ◯	At cruising speed ◯	5-24 MPH ◯	Turning Right ◯	Rough (gravel) ◯	Normal ◯
Rear Left ◯	Weekly ◯	While turning ◯	25-49 MPH ◯	Going Uphill ◯	Bumpy ◯	Hot ◯
Rear Right ◯	Intermittent ◯	Normal Braking ◯	50-70 MPH ◯	Going Downhill ◯	Wet ◯	Rain ◯
Other: ◯	Other: ◯	Hard Braking ◯	>70 MPH ◯	Forward ◯	Dry ◯	Mud ◯
		Other: ◯	Other: ◯	Reverse ◯	Other: ◯	Humid ◯
				Other: ◯		Other: ◯

Other conditions not listed above:

Is the Technician able to duplicate the concern?	
Yes ◯	**No** ◯
If the repair is warrantable, proceed with claiming in SAGA	Review DICE policy for potential reimbursement

Additional notes (optional):