

**WH01 - Replacing Lower Control Arms on the Front Axle (Workshop Campaign)**

Important: **CRITICAL WARNING** - This campaign includes steps where control unit(s) in the vehicle will be programmed with the PIWIS Tester. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage in the PIWIS Tester before starting the campaign and also document the actual voltage on the repair order.

Model Year: **As of 2017**

Model Line: **Panamera (971)**

Subject: **Lower control arms on the front axle**

Information: **Bearings for the lower control arms on the front axle with an unfavorable material pairing were fitted on the affected vehicles.**

This can result in rattling noises from around the front axle while braking and also driving on uneven road surfaces at temperatures below 50° F (10° C).

Remedial Action: Replace lower control arms on the front axle.

Affected Vehicles: Only the vehicles assigned to the campaign (see also PIWIS Vehicle information). This campaign affects 666 vehicles in North America.

**Parts required**

Parts Info: Parts for this campaign will be automatically allocated for up to 50% of the vehicles that are serviced at your dealership. In approximately 45 days of the publishing of this campaign, your dealer will be automatically allocated an additional 30% of the required parts for vehicles that are still in need of repair.



**Information**

The lower control arms to be used depend on the **front-axle load group** assigned to the respective vehicle.

**Information**

Following a change to the identification of control arms with an optimized bearing, the respective part numbers of the required control arms have been changed.

Depending on the currently available stock, both control arms with the original part number and control arms with the alternative number specified below can therefore be supplied.

The only difference in the control arms is the **identification** of the optimized control arm bearings. A **mixed installation** of the control arms is therefore possible.

When ordering parts, however, the part numbers specified in the "Part No." column of the table below **MUST** be used.

- Vehicles with **front-axle load group 1 (I-no. 0J2 or I-no. 0J3)**:

<b>Part No.</b>	<b>Designation – Additional information</b>	<b>Qty.</b>
000 043 210 61	⇒ Lower control arm, left – Alternative No.: 000 043 210 88 – FA load group 1	1 ea.
000 043 210 62	⇒ Lower control arm, right – Alternative No.: 000 043 210 89 – FA load group 1	1 ea.

- Vehicles with **front-axle load group 2 (I-no. 0J5 or I-no. 0J8)**:

<b>Part No.</b>	<b>Designation – Additional information</b>	<b>Qty.</b>
000 043 210 63	⇒ Lower control arm, left – Alternative No.: 000 043 210 90 – FA load group 2	1 ea.
000 043 210 64	⇒ Lower control arm, right – Alternative No.: 000 043 210 91 – FA load group 2	1 ea.

The following parts are also required **for each vehicle**:

Part No.	Designation – Use	Qty.
000 043 210 65	⇒ Control arm repair kit	1 ea.
<b>Includes:</b>		
N 102 861 10	Hexagon nut, M10 – Control arm to front upper cross member	2 ea.
N 912 533 01	Hexagon-head bolt, M10 x 70 – Control arm to front upper cross member	2 ea.
N 104 029 04	Hexagon nut, M12 x 1.5 – Control arm to front lower cross member – Spring strut to lower wishbone	4 ea.
N 912 534 01	Hexagon-head bolt, M10 x 70 – Trailing arm to front lower cross member	2 ea.
N 103 353 04	Hexagon nut, M14 x 1.5 – Control arm to rear cross member	2 ea.
9A7 008 423 00	Washer – Control arm to rear cross member	2 ea.
9A7 008 425 00	12 point socket, M14 x 1.5 x 105 – Control arm to rear cross member	2 ea.
N 106 283 01	Hexagon-head bolt, M12 x 1.5 x 90 – Spring strut to lower wishbone	2 ea.
WHT 005 633	12 point nut, M14 x 1.5 – Lower control arm to wheel carrier	2 ea.

**Additional** parts required if the **camber on the front axle must be corrected** during suspension alignment:



**Information**

The **camber on the front axle** cannot be adjusted, but must be **centered** evenly within the tolerance range by **moving the front-axle carrier**.

Part No.	Designation – Use	Qty.
N 912 443 01	⇒ Combination screw, M12 x 1.5 x 90 – Front-axle carrier to body	8 ea.
<b>Also required for vehicles with V6 engine:</b>		
N 912 604 01	⇒ Combination screw, M10 x 45 – Front-axle carrier to body	2 ea.

### Required tools

- Tools:
- Suitable transmission and engine jack, e.g. **VAS 6931 - Engine and gearbox jack**
  - **T10187 - Press-out tool**
  - **T10188 - Open-end spanner insert**
  - **VW 552 - Spring compressor**
  - **VAS 6826 - Steering wheel balance**
  - **VAS 6918 - Quick-Clamping Unit**
  - **9229/1 - Puller hook**
  - Torque/torque angle screw tool, 20 – 400 Nm (15 – 296 ftlb.), e.g. **VAS 6942 - Torque/torque angle screw tool**
  - Torque screwdriver, 1.5 – 3 Nm (1 – 2 ftlb.), e.g. **VAS 6494 - Torque screwdriver**
  - Torque wrench, 2 – 10 Nm (1.5 – 7.5 ftlb.), e.g. **V.A.G 1783 - Torque wrench, 2-10 Nm (1.5-7.5 ftlb.)**
  - Torque wrench, 40 – 200 Nm (30 – 148 ftlb.), e.g. **V.A.G 1332 - Torque wrench, 40-200 Nm (30-148 ftlb.)**
  - **9900 - PIWIS Tester 3**
  - Battery charger with a current rating of **at least 90 A**, e.g. **VAS 5908 - Battery charger 90A**

#### Additional tools required for calibrating the driver assistance systems:

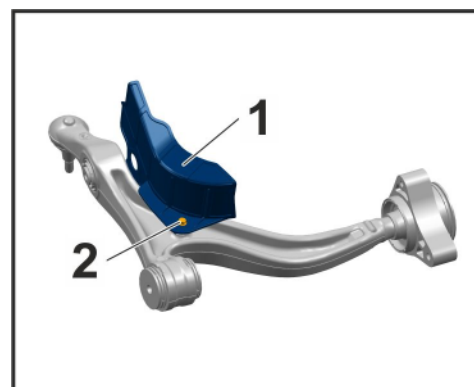
- **WE1362 - Setting device with reflector VAS 6340/1 is now VAS 6340/1A**
- **VAS 6430/3 - ACC reflector mirror**
- **VAS 6430/4 - Lane Departure Warning Calibration Plate**
- **VAS 6430/6 - Enhanced night vision calibration unit**

### Replacing both lower control arms on the front axle

- Work Procedure:
- 1 Remove plenum panel cover at the left and right ⇒ *Workshop Manual '852219 Removing and installing plenum panel cover'.*
  - 2 Raise the vehicle on a lifting platform ⇒ *Workshop Manual '4X00IN Lifting the vehicle'.*
  - 3 Remove front wheel at the left and right ⇒ *Workshop Manual '440519 Removing and installing wheel'.*

- 4 Remove cover for front underbody ⇒ *Workshop Manual '519219 Removing and installing cover for front underbody'*.
- 5 Remove front section of front wheel housing liner at the left and right.  
For instructions, see ⇒ *Workshop Manual '505619 Removing and installing front wheel housing liner'*.
- 6 Remove front air guide at the side (behind charge-air cooler) at the left and right ⇒ *Workshop Manual '211019 Removing and installing front air guide at the side (behind charge-air cooler)'*.
- 7 Replace lower control arms on the front axle.
  - 7.1 Remove lower control arm on the front axle at the **left and right**. ⇒ *Workshop Manual '401719 Removing and installing lower trailing arm'*.

7.2 Remove control arm spoiler at the left and right ⇒ *Control arm spoiler mounting -1-* on the control arms you have just removed.  
To do this, unscrew the fastening screw ⇒ *Control arm spoiler mounting -2-* and remove the control arm spoiler from each control arm.



*Control arm spoiler mounting*

7.3 Position control arm spoiler ⇒ *Control arm spoiler mounting -1-* on the **new control arm at the left and right** and secure it with the fastening screw ⇒ *Control arm spoiler mounting -2-*.

**Tightening torque 8 Nm (6 ftlb.)**



**Information**

Following a change to the identification of control arms with an optimized bearing, the respective part numbers of the required control arms have been changed. Depending on the currently available stock, both control arms with the original part number and control arms with the alternative number specified below can therefore be supplied. The only difference in the control arms is the **identification** of the optimized control arm bearings. A **mixed installation** of the control arms is therefore possible.

Part No.	Alternative No.	Designation	Qty.
000 043 210 61	000 043 210 88	Lower control arm, left – FA load group 1	1 ea.
000 043 210 62	000 043 210 89	Lower control arm, right – FA load group 1	1 ea.
<b>or:</b>			

000 043 210 63	000 043 210 90	Lower control arm, left – FA load group 2	1 ea.
000 043 210 64	000 043 210 91	Lower control arm, right – FA load group 2	1 ea.

- 7.4 Install new lower control arms on the front axle at the **left and right**. ⇒ *Workshop Manual '401719 Removing and installing lower trailing arm'*.
- 8 Install front air guide at the side (behind charge-air cooler) at the left and right ⇒ *Workshop Manual '211019 Removing and installing front air guide at the side (behind charge-air cooler)'*.
- 9 Install front section of front wheel housing liner at the left and right.  
For instructions, see ⇒ *Workshop Manual '505619 Removing and installing front wheel housing liner'*.
- 10 Install cover for front underbody ⇒ *Workshop Manual '519219 Removing and installing cover for front underbody'*.
- 11 Install front wheel at the left and right ⇒ *Workshop Manual '440519 Removing and installing wheel'*.
- 12 Lower the vehicle and remove it from the lifting platform.
- 13 Install plenum panel cover at the left and right ⇒ *Workshop Manual '852219 Removing and installing plenum panel cover'*.
- 14 Perform suspension alignment and adjust the vehicle.



#### Information

The **camber on the front axle** cannot be adjusted, but must be **centered** evenly within the tolerance range by **moving the front-axle carrier**.

If the camber on the front axle must be adjusted, first adjust the front-axle carrier and screw it to the body **using the old fastening screws** and then **replace all relevant fastening screws one after the other** with new screws.

For instructions, see:

- ⇒ *Workshop Manual '449503 Performing front and rear suspension alignment'*
- ⇒ *Workshop Manual '4495TW Adjustment values for suspension alignment'*

- 15 After correcting the wheel alignment values, carry out the following required subsequent work.
- 15.1 Calibrate steering-angle sensor ⇒ *Workshop Manual '456005 Initialising and calibrating steering-angle sensor'*.
- 15.2 Teach steering lock settings for the power-steering gear ⇒ *Workshop Manual '489025 Teaching power-steering gear'*.

- 15.3 **If installed:** Calibrate control unit for distance measuring sensor (ACC) ⇒ *Workshop Manual '278515 Adjusting control unit for distance measuring sensor'*.
- 15.4 **If installed:** Calibrate front camera.  
For instructions, see ⇒ *Workshop Manual '963855 Replacing front camera'*.
- 15.5 **If installed:** Calibrate infrared camera.  
For instructions, see ⇒ *Workshop Manual '908055 Replacing infrared camera'*.

16 Enter the campaign in the Warranty and Maintenance booklet.

- References:
- ⇒ *Workshop Manual '211019 Removing and installing front air guide at the side (behind charge-air cooler)'*
  - ⇒ *Workshop Manual '278515 Adjusting control unit for distance measuring sensor'*
  - ⇒ *Workshop Manual '4X00IN Lifting the vehicle'*
  - ⇒ *Workshop Manual '401719 Removing and installing lower trailing arm'*
  - ⇒ *Workshop Manual '440519 Removing and installing wheel'*
  - ⇒ *Workshop Manual '449503 Performing front and rear suspension alignment'*
  - ⇒ *Workshop Manual '4495TW Adjustment values for suspension alignment'*
  - ⇒ *Workshop Manual '456005 Initialising and calibrating steering-angle sensor'*
  - ⇒ *Workshop Manual '489025 Teaching power-steering gear'*
  - ⇒ *Workshop Manual '505619 Removing and installing front wheel housing liner'*
  - ⇒ *Workshop Manual '519219 Removing and installing cover for front underbody'*
  - ⇒ *Workshop Manual '852219 Removing and installing plenum panel cover'*
  - ⇒ *Workshop Manual '908055 Replacing infrared camera'*
  - ⇒ *Workshop Manual '963855 Replacing front camera'*

## Warranty processing

Information:



### Information

The working times specified below were determined specifically for carrying out this campaign and may differ from the working times published in the Labor Operation List in PIWIS.

Scope 1:

### Replacing both lower control arms on the front axle

- Vehicles with **front-axle load group 1 (I-no. 0J2 or I-no. 0J3)**
- **None** of the **driver assistance systems** specified below must be calibrated.
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)

**Working time:**

Replacing both lower control arms on the front axle

Labor time: **334 TU**

Includes: Removing and installing plenum panel cover at the left and right  
 Raising and lowering the vehicle  
 Removing and installing front wheel at the left and right  
 Removing and installing cover for front underbody  
 Removing and installing front section of front wheel housing liner at the left and right  
 Removing and installing front air guide at the side (behind charge-air cooler) at the left and right  
 Converting control arm spoiler at the left and right  
 Performing suspension alignment and adjusting the vehicle  
 Calibrating steering-angle sensor  
 Teaching steering lock settings

Without: Calibrating control unit for distance measuring sensor  
 Calibrating front camera  
 Calibrating infrared camera

**Parts required:**

000 043 210 61	Lower control arm, left - FA load group 1	1 ea.
000 043 210 62	Lower control arm, right - FA load group 1	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ Damage Code WH01 066 000 2

Scope 2:

**Replacing both lower control arms on the front axle**

- Vehicles with **front-axle load group 1** (I-no. **0J2** or I-no. **0J3**)
- **One of the driver assistance systems specified below must be calibrated.**
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)



**Working time:**

Replacing both lower trailing arms on the front axle

Labor time: **370 TU**

- Includes:
- Removing and installing plenum panel cover at the left and right
  - Raising and lowering the vehicle
  - Removing and installing front wheel at the left and right
  - Removing and installing cover for front underbody
  - Removing and installing front section of front wheel housing liner at the left and right
  - Removing and installing front air guide at the side (behind charge-air cooler) at the left and right
  - Converting control arm spoiler at the left and right
  - Performing suspension alignment and adjusting the vehicle
  - Calibrating steering-angle sensor
  - Teaching steering lock settings
  - Calibrating control unit for distance measuring sensor or front camera or infrared camera

**Parts required:**

000 043 210 61	Lower control arm, left - FA load group 1	1 ea.
000 043 210 62	Lower control arm, right - FA load group 1	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ **Damage Code WH01 066 000 2**

Scope 3:

**Replacing both lower control arms on the front axle**

- Vehicles with **front-axle load group 1 (I-no. 0J2 or I-no. 0J3)**
- **Two or three** of the **driver assistance systems specified below must be calibrated.**
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)

**Working time:**

Replacing both lower control arms on the front axle

Labor time: **417 TU**

Includes:

- Removing and installing plenum panel cover at the left and right
- Raising and lowering the vehicle
- Removing and installing front wheel at the left and right
- Removing and installing cover for front underbody
- Removing and installing front section of front wheel housing liner at the left and right
- Removing and installing front air guide at the side (behind charge-air cooler) at the left and right
- Converting control arm spoiler at the left and right
- Performing suspension alignment and adjusting the vehicle
- Calibrating steering-angle sensor
- Teaching steering lock settings
- Calibrating control unit for distance measuring sensor
- Calibrating front camera
- Calibrating infrared camera

**Parts required:**

000 043 210 61	Lower control arm, left - FA load group 1	1 ea.
000 043 210 62	Lower control arm, right - FA load group 1	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ **Damage Code WH01 066 000 2**

Scope 4:

**Replacing both lower control arms on the front axle**

- Vehicles with **front-axle load group 2 (I-no. 0J5 or I-no. 0J8)**
- **None** of the **driver assistance systems** specified below must be calibrated.
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)

**Working time:**

Replacing both lower control arms on the front axle

Labor time: **334 TU**

- Includes:**
- Removing and installing plenum panel cover at the left and right
  - Raising and lowering the vehicle
  - Removing and installing front wheel at the left and right
  - Removing and installing cover for front underbody
  - Removing and installing front section of front wheel housing liner at the left and right
  - Removing and installing front air guide at the side (behind charge-air cooler) at the left and right
  - Converting control arm spoiler at the left and right
  - Performing suspension alignment and adjusting the vehicle
  - Calibrating steering-angle sensor
  - Teaching steering lock settings
- Without:**
- Calibrating control unit for distance measuring sensor
  - Calibrating front camera
  - Calibrating infrared camera

**Parts required:**

000 043 210 63	Lower control arm, left - FA load group 2	1 ea.
000 043 210 64	Lower control arm, right - FA load group 2	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ **Damage Code WH01 066 000 2**

Scope 5:

**Replacing both lower control arms on the front axle**

- Vehicles with **front-axle load group 2 (I-no. 0J5 or I-no. 0J8)**
- **One of the driver assistance systems specified below must be calibrated.**
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)

**Working time:**

Replacing both lower control arms on the front axle

Labor time: **370 TU**

Includes:

- Removing and installing plenum panel cover at the left and right
- Raising and lowering the vehicle
- Removing and installing front wheel at the left and right
- Removing and installing cover for front underbody
- Removing and installing front section of front wheel housing liner at the left and right
- Removing and installing front air guide at the side (behind charge-air cooler) at the left and right
- Converting control arm spoiler at the left and right
- Performing suspension alignment and adjusting the vehicle
- Calibrating steering-angle sensor
- Teaching steering lock settings
- Calibrating control unit for distance measuring sensor or front camera or infrared camera

**Parts required:**

000 043 210 63	Lower control arm, left - FA load group 2	1 ea.
000 043 210 64	Lower control arm, right - FA load group 2	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ **Damage Code WH01 066 000 2**

Scope 6:

**Replacing both lower control arms on the front axle**

- Vehicles with **front-axle load group 2 (I-no. 0J5 or I-no. 0J8)**
- **Two or three** of the **driver assistance systems specified below must be calibrated.**
  - Adaptive cruise control ACC (I-no. 3V1 or 8T3)
  - Front camera (I-no. 3V1 or 8IU)
  - Infrared camera (I-no. 9R1)

**Working time:**

Replacing both lower control arms on the front axle

Labor time: **417 TU**

- Includes:
- Removing and installing plenum panel cover at the left and right
  - Raising and lowering the vehicle
  - Removing and installing front wheel at the left and right
  - Removing and installing cover for front underbody
  - Removing and installing front section of front wheel housing liner at the left and right
  - Removing and installing front air guide at the side (behind charge-air cooler) at the left and right
  - Converting control arm spoiler at the left and right
  - Performing suspension alignment and adjusting the vehicle
  - Calibrating steering-angle sensor
  - Teaching steering lock settings
  - Calibrating control unit for distance measuring sensor
  - Calibrating front camera
  - Calibrating infrared camera

**Parts required:**

000 043 210 63	Lower control arm, left - FA load group 2	1 ea.
000 043 210 64	Lower control arm, right - FA load group 2	1 ea.
000 043 210 65	Control arm repair kit	1 ea.

**Additional parts required if the camber on the front axle was corrected:**

N 912 443 01	Combination screw, M12 x 1.5 x 90	8 ea.
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**Also required for vehicles with V6 engine:**

N 912 604 01	Combination screw, M10 x 45	2 ea.
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⇒ Damage Code WH01 066 000 2

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