Symptom: Brakes - Brake Pedal Travel Perceived as "Too Long" and/or Reduced Braking Effect Just Before the Vehicle Comes to a Standstill: Observe Specified Procedure (SY 90/21)

Revision: This bulletin replaces bulletin Group 4 SY 90/21, dated September 17, 2021.

Model Year: **As of 2020**

Model Line: **Taycan (Y1A/Y1B)**

Concerns: **Brake system**

Symptom: The customer complains that the brake pedal travel seems "too long" and/or that the efficiency of the brake system is reduced just before the vehicle comes to a standstill (< 12 km/h (7.5 mph)).

Possible Causes:

- **'Brake Refresh' function**

This function helps to retain the friction coefficient of the brakes. After the vehicle is parked for 6 hours or more, 500 kJ of energy produced during braking is exerted on the mechanical brake. Recuperation is deactivated briefly during this time.

- **'Stiffness learning routine' function**

During regenerative braking (recuperation), the electric braking torque of the electric motors must be replaced by the hydraulic braking torque of the wheel brakes ('blending') at least once - generally shortly before the vehicle comes to a standstill - during a braking action.

To eliminate longitudinal deceleration fluctuations and brake pedal irritation during 'blending', the actual stiffness of the brakes must be indicated as accurately as possible to the control units involved (Porsche Stability Management (PSM) and Electric brake booster (eBKV)).

During charging, a defined pressure value of the electric brake booster (eBKV) is set using the lowest possible gradient and released again. While this pressure is being built up and reduced, the Porsche Stability Management (PSM) control unit learns the current stiffness of the wheel brakes and stores the values. The brake pedal is moved by approx. 2-3 cm while the function is active. The brake lights are not activated. This routine takes approx. 60 - 120 seconds.

1. The routine learns during every charging process, not just every 200 - 300 km (124 - 186 miles).
2. The learning process only takes approx. 10 seconds.
3. Learning is not performed when the brakes are hot or if the steering is turned too far.
3.1. The learning is only performed if the brake discs are < 100 deg C and the calipers are < 55 deg C.
4. There is no minimum distance between routine learning. Changing the selector lever from P to D and back to P before charging will cause the routine to run.

- **Pedal travel is generally longer when maneuvring at slow speeds.**

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For a more precise braking effect while parking, a small brake master cylinder is installed. This makes pedal travel longer to ensure better precision while parking and maneuvring. Furthermore, both brake circuits are opened fully at speeds < 12 km/h (7.5 mph) in order to reduce noise and vibrations and for improved comfort. When beginning braking at speeds below 12 km/h (7.5 mph), no recuperation is possible. This also results in longer pedal travel.

- **The friction coefficient of Porsche Ceramic Composite Brakes (PCCB) and Porsche Surface Coated Brakes (PSCB) is worse than grey cast-iron brakes in wet and/or cold weather conditions.**

This effect is significantly increased when you switch from electric to hydraulic braking. Deceleration is reduced while braking with the same pedal pressure.

Action required:

- **Routine for running in the brakes not yet completed.**

The routine for running in the brakes must be completed. Relevant fault codes in the Porsche Stability Management (PSM) control unit will be deleted after completing this routine.

Further information can be found in the 'Brakes' chapter of the Owner's Manual. ⇒ Betriebsanleitung

- **'Brake Refresh' function**

Campaign WMA5 must be carried out on model year 2020 vehicles. ⇒ *Technical Information 'WMA500 WMA500 - WMA5 Workshop campaign - Updating software for various control units'*

- **'Stiffness learning routine' function**

Campaign WMA5 must be carried out on model year 2020 vehicles. ⇒ *Technical Information 'WMA500 WMA500 - WMA5 Workshop campaign - Updating software for various control units'*

- **Pedal travel is generally longer when maneuvring.**

✳ Normal vehicle behavior has changed and driving seems unusual at first. The customer must be informed about the new functions and the change in vehicle behavior. The Owner's Manual for the vehicle may be helpful here. ⇒ Betriebsanleitung

- **The friction coefficient of Porsche Ceramic Composite Brakes (PCCB) and Porsche Surface Coated Brakes (PSCB) is worse than grey cast-iron brakes in wet and/or cold weather conditions.**

✳ Normal vehicle behavior has changed and driving seems unusual at first. The customer must be informed about the differences between the brake systems and how they behave in different weather conditions. **Chapter: 'Brakes'**⇒ Betriebsanleitung

Further measures:

After working through and taking note of all listed points, if the brake pedal travel that is set is still not the same as that of comparison vehicles, the following additional steps must be carried out:

1 Bleed the brake system. ⇒ *Workshop Manual '470107 Bleeding the brake system'*

Information
The bleeding routine must be performed in accordance with Step 1) in the table in the Workshop Manual '470107 Bleeding the brake system' even if the electric brake booster (eBKV) has not yet been replaced.

2 If the problem persists, the electric brake booster (eBKV) including the brake master cylinder must be replaced.
For instructions, see:
⇒ *Workshop Manual '477019 Removing and installing brake booster'*
⇒ *Workshop Manual '471519 Removing and installing brake master cylinder'*

3 If the problem persists, contact Technical Support.

Required parts and materials if necessary

Information
All listed **parts** will only be required if the electric brake booster (eBKV) and the brake master cylinder have to be replaced.
If the brake booster (eBKV) and brake master cylinder are replaced **after bleeding** the hydraulic system, you will need **double the specified amount** of brake fluid.

Parts Info:

Part No.	Designation – Location	Qty.
9J1614019	⇒ Brake master cylinder	1 ea.
992698181A	⇒ Repair set – Brake master cylinder	1 ea.
9J1612161	⇒ Seal – Brake booster	1 ea.
PAF912040	⇒ Hexagon-head bolt, M8 x 50 – Strut	4 ea.
	Only for left-hand drive vehicles:	
9J1614105F	⇒ Brake booster – M-no. L0L	1 ea.
	or	
9J1614105H	⇒ Brake booster – M-no. K8S, K8X + L0L	1 ea.

	Only for right-hand drive vehicles:	
9J1614105G	⇒ Brake booster – M-no. L0R	1 ea.
	or	
9J1614105J	⇒ Brake booster – M-no. K8S, K8X + L0R	1 ea.

Materials:

Part No.	**Designation**	**Qty.**
00004321086	⇒ Brake fluid	30-liter/ 7.92 gal container (approx. 1 liter/ 33.8 fl oz required per vehicle)

Invoicing:

Information

Invoicing is only possible if none of the specified causes were the reason for the complaint and repairs were carried out.

Invoicing: For documentation and warranty invoicing, enter the labor operations and PQIS coding specified below in the warranty claim:

APOS	Labor operation	I No.
47010750	Bleeding the brake system	
47151900	Removing and installing brake master cylinder	
47701900	Removing and installing brake booster	

PQIS coding:

Location (FES5)	47010	Brake system
Damage type (SA4)	1615	Function subjectively uncomfortable

Parts Info:

Part No.	**Designation**	**Qty.**
9J1614019	Brake master cylinder	1 ea.
992698181A	Repair set	1 ea.
9J1612161	Seal	1 ea.

PAF912040	Hexagon-head bolt, M8 x 50	4 ea.
	Only for left-hand drive vehicles:	
9J1614105F	Brake booster	1 ea.
	or	
9J1614105H	Brake booster	1 ea.
	Only for right-hand drive vehicles:	
9J1614105G	Brake booster	1 ea.
	or	
9J1614105J	Brake booster	1 ea.

Materials:

Part No.	**Designation**	**Qty.**
00004321086	Brake fluid	approx. 1 liter/ 33.8 fl oz

References:

⇒ Owner's Manual

⇒ *Technical Information 'WMA500 WMA500 - WMA5 Workshop campaign - Updating software for various control units'*

⇒ *Workshop Manual '470107 Bleeding the brake system'*

⇒ *Workshop Manual '471519 Removing and installing brake master cylinder'*

⇒ *Workshop Manual '477019 Removing and installing brake booster'*