Various Complaints About Air Conditioning/Heating Output - Fault Memory Entries Regarding Component Faults of Various Servo Motors in the Air Conditioning Control Unit (J301) (SY 45/26)

Model Line: **Taycan (Y1A/Y1B/Y1C)**

Model Year: **As of 2020**

Concerns: **Servo motor**

Cause: **During the sales inspection (PDI) or by way of customer complaint, it is reported that the air conditioning is not working properly.**

One of the following fault memory entries is stored in the fault memory of the air conditioning control unit (J301):

- **B18DBF1** - Servo motor for rear right horizontal center vent, component fault (00208B)
- **B18D7F0** - Servo motor for front right horizontal center vent, component fault (00211C)
- **B18D8F0** - Servo motor for right vertical door-window vent, component fault (002122)
- **B18D9F0** - Servo motor for right horizontal door-window vent, component fault (00212C)
- **B18DAF0** - Servo motor left vertical door-window vent, component fault (002170)
- **B18DCF0** - Servo motor left horizontal door-window vent, component fault (002174)
- **B174E09** - Servo motor for rear left air flow, component fault (002131)
- **B174F09** - Servo motor for rear right air flow, component fault (002136)
- **B176E09** - Servo motor for front left horizontal center vent, component fault (002145)
- **B176F09** - Servo motor for front left vertical center vent, component fault (00214A)
- **B177A09** - Servo motor for front right vertical center vent, component fault (00214F)
- **B177B09** - Servo motor for rear left horizontal center vent, component fault (002154)
- **B177C09** - Servo motor for rear left vertical center vent, component fault (002159)
- **B177D09** - Servo motor for rear right vertical center vent, component fault (00215E)
- **B10D109** - Servo motor for rear left air distribution, component fault (00213B)
- **B10D209** - Servo motor for rear right air distribution, component fault (002140)

As a result, the affected servo motor is **frequently incorrectly** located as the component causing the damage and is replaced.

Information

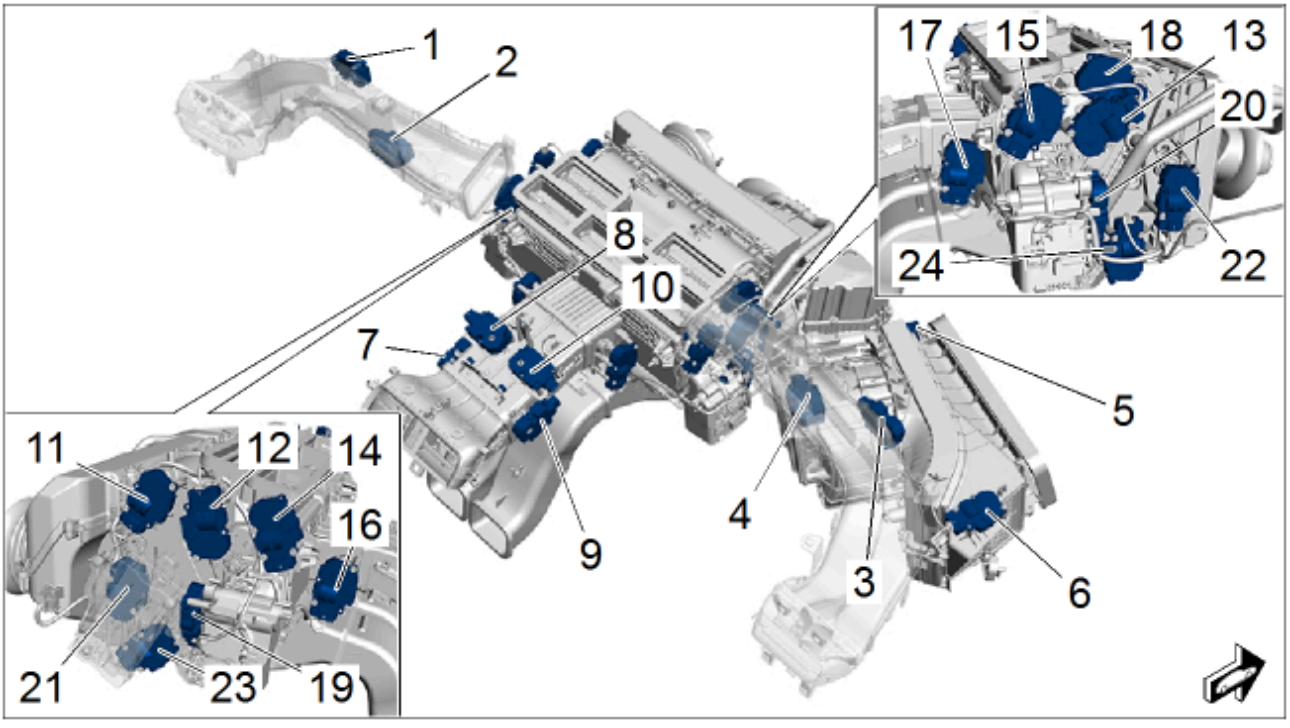
Downstream quality checks at the supplier show that most of the replaced servo motors do not have defects.

Information: In a large proportion of complaints, the fault is caused by blockages in the mechanism and/or loss of position of the respective servo motor.
The respective fault memory entries do not generally justify replacing the affected servo motor.

Action: Before replacement of the affected servo motor, the following work instructions must be performed in sequence and the individual test steps must be documented for verification.

Only replace the affected servo motor after all required test steps have been carried out and the fault can still be reproduced with the fault status **active**.

Overview: **Servo motors - Taycan, front**

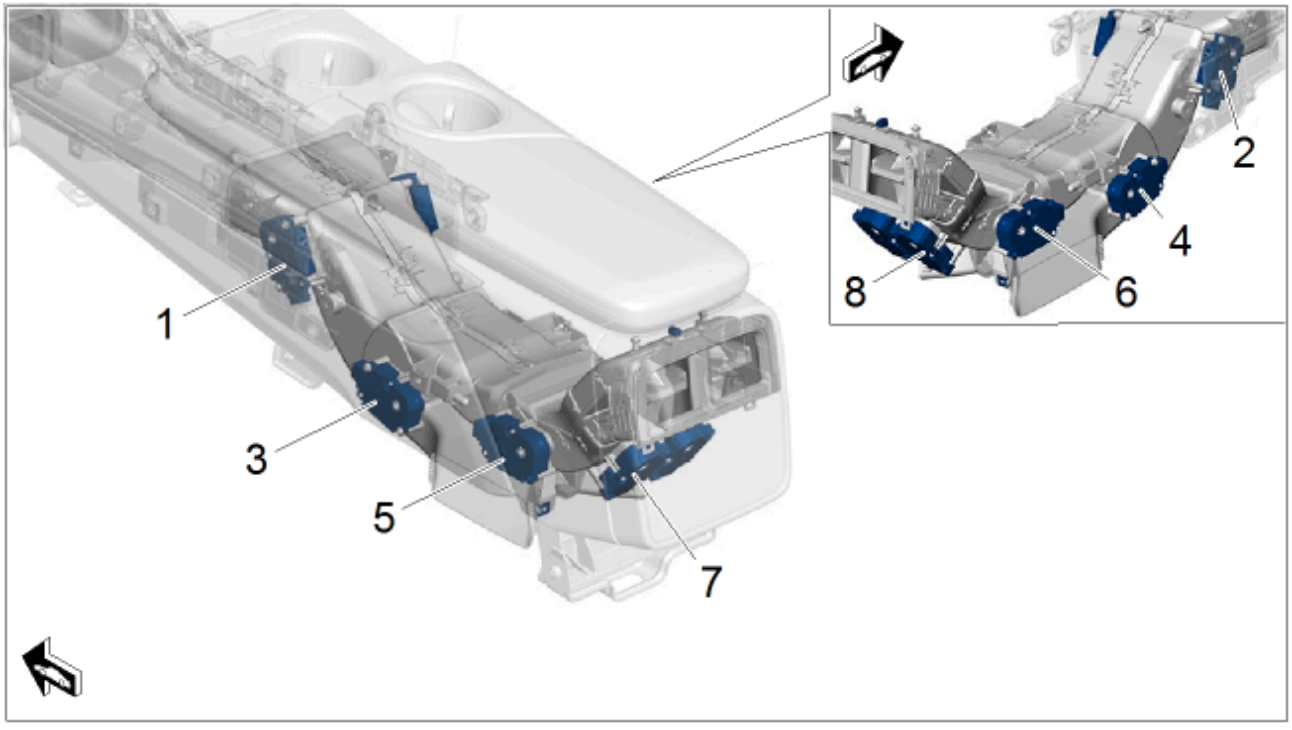


Overview of servo motors

1 – Servo motor for door-window air vent, horizontal
2 – Servo motor for left door-window air vent, vertical
3 – Servo motor for right door-window air vent, horizontal
4 – Servo motor for right door-window air vent, vertical
5 – Servo motor for fresh air/ram air flap
6 – Servo motor for front recirculated air flap
7 – Servo motor for front left center horizontal air vent
8 – Servo motor for front left center vertical air vent
9 – Servo motor for front right center horizontal air vent
10 – Servo motor for front right center vertical air vent
11 – Servo motor for extended ventilation panel
12 – Servo motor for left foot bypass
13 – Servo motor for right foot bypass
14 – Servo motor for left door-window air vent
15 – Servo motor for right door-window air vent
16 – Servo motor for front left center air vent
17 – Servo motor for front right center air vent
18 – Servo motor for defrost flap

19 – Servo motor for left footwell outlet vent
20 – Servo motor for right footwell outlet vent
21 – Servo motor for front left temperature mixing flap
22 – Servo motor for front right temperature mixing flap
23 – Servo motor for rear left temperature mixing flap
24 – Servo motor for rear right temperature mixing flap

Servo motors - Taycan, rear



Overview of servo motors

1 – Servo motor for rear left air flow
2 – Servo motor for rear right air flow
3 – Servo motor for rear left air distribution
4 – Servo motor for rear right air distribution
5 – Servo motor for rear left center horizontal air vent
6 – Servo motor for rear right center horizontal air vent
7 – Servo motor for rear left center vertical air vent
8 – Servo motor for rear right center vertical air vent

Required tools

Tools:

- **P90999 - Porsche Tester 4**
- Battery charger with a current rating of **at least 90 A** and a **current and voltage-controlled charge map** for lithium starter batteries, e.g. **VAS 5908 - battery charger 90 A**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charge battery and vehicle electrical system'*

Check servo motor

Work Procedure: 1 Connect and switch on the battery charger.
⇒ *Workshop Manual '270689A4 Charge battery and vehicle electrical system'*

2 Place original remote control in emergency start tray.

3 Connect **P90999 - Porsche Tester 4**, establish readiness for operation and start the diagnostic application.

4 Check **General fault memory entries** in the air conditioning control unit **(J301)** for its supply voltage, software, coding, network or defects, and work through them using the guided fault finding.

For more information, see:
The fault memory entry for the affected servo motor, see section "Cause", is processed from step 5.

5 Check the cause of the fault of the affected servo motor.

5.1 Select the **Air conditioning control unit" (J301)** in the control unit overview.

5.2 Select the **"Actual values/input signals"** tab.

5.3 Under the **"Flap servo motors"** function, read out the exact **active cause of the fault** for the affected servo motor.

For example:

Servo motor for right vertical door-window air vent (VX31) – **end stop implausible**	**active**
Servo motor for right vertical door-window air vent (VX31) - undervoltage	not active
Servo motor for right vertical door-window air vent (VX31) – internal electrical fault	not active
Servo motor for right vertical door-window air vent (VX31) – **no end stop detected**	not active
Servo motor for right vertical door-window vent (VX31) - overvoltage	not active
Servo motor for right vertical door-window vent (VX31) - overtemperature	not active

5.4 Determine further procedure with regard to the **active cause of the fault** of the affected servo motor.

Assessment	Action
Mechanical cause of fault. For example: ▪ End stop implausible ▪ no limit stop detected	Continue with Step ⇒ 6.
Electrical cause of fault. For example: ▪ Undervoltage ▪ Internal electrical fault ▪ Overvoltage ▪ Overtemperature	Work through the fault memory entry of the affected servo motor using the guided troubleshooting function. **End of action.**

6 Teach-in the affected servo motor and check the complaint again.

6.1 Select the **Air conditioning control unit" (J301)** in the control unit overview.

6.2 Select **"Maintenance/repairs"**.

6.3 Select the **"Teach-in and check flap servo motors"** function and press F12 ('Next') to confirm, then follow the menu guidance.

6.4 After completion of the teach-in procedure, check the complaint using the fault memory.

Assessment		Action
(✓)	The complaint and the respective fault memory entry are **no longer** present.	▪ End the diagnostic application, end readiness for operation and disconnect **P90999 - Porsche Tester 4** from the vehicle. ▪ Switch off and disconnect the battery charger. **End of action.**
(✗)	The complaint and the associated fault memory entry **are still** present.	Continue with Step ⇒ 7.

7 End operational readiness and restore it after a waiting time of approx. 10 seconds.

8 Repeat **steps 6 and 7** a maximum of 2 times and check the complaint again each time using the fault memory.

Information

In rare cases, the "Teach-in and check flap servo motors" function must be carried out twice to ensure that the servo motor is adjusted correctly.

Assessment		Action
(✓)	The complaint and the respective fault memory entry are **no longer** present.	▪ End the diagnostic application, end readiness for operation and disconnect **P90999 - Porsche Tester 4** from the vehicle. ▪ Switch off and disconnect the battery charger. **End of action.**
(✗)	Even after the second additional teach-in attempt of the affected servo motor, the complaint and the associated fault memory entry **are still** present.	Continue with Step ⇒ 9.

9 Remove the affected servo motor.
For work procedure, see: ⇒*Workshop Manual '87201904 Removing and installing servo motor for right vertical door-window air vent'*

10 Check the flap mechanism of the affected servo motor for breakage, stiffness or dirt ingress.

Assessment		Action
(✓)	Air vent flap mechanism is OK:	Continue with action step ⇒ 11.
(✗)	Air vent flap mechanism is **not** OK:	Repair flap mechanism **and then** install the affected servo motor. For work procedure, see: ⇒*Workshop Manual '87201904 Removing and installing servo motor for right vertical door-window air vent'* **End of action.**

11 Check the supply voltage (positive and ground side) of the affected servo motor.

Assessment		Action
(✓)	Supply voltage is OK	Continue with action step ⇒ 12.
(✗)	Supply voltage is **not** OK.	Locate and repair the cause of the missing supply voltage of the affected servo motor. **and then** install servo motor. For work procedure, see: ⇒*Workshop Manual '87201904 Removing and installing servo motor for right vertical door-window air vent'* **End of action.**

12 If all required test steps have been performed and the fault is still reproducible **actively** on the originally complained-about servo motor:
Replace the **affected** servo motor.
For work procedure, see: ⇒*Workshop Manual '87201904 Removing and installing servo motor for right vertical door-window air vent'*

Labor position and PCSS encryption

Information
The correct PCSS encryption must be specified in accordance with the existing damage pattern.

Labor position:

APOS	Labor operation	I No.
87200140	Check servo motor (cause of fault)	
87200141	Check servo motor (one-time teach-in)	
87200142	Check servo motor (repeated teach-in)	
87200143	Check servo motor (flap mechanism)	
87200144	Check servo motors (power supply)	

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1611	does not function

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1613	occasionally not functioning

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1616	reaction too slow

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1711	sluggish, jams, too little play

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1712	catches/gets stuck

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1714	touches, rubs

PCSS encryption:

Location (FES5)	87200	Servo motor
Damage type (SA4)	1111	adjustment fault

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