

54-097 SAS01T to SAS03T Replacement Information

TSB-54-097-WST

Creation Date: 2025-02-04

Engine or Vehicle Affected:

- ▶ 47X
- ▶ 49X
- ▶ 57X

This is an informational bulletin only. The described condition is a product improvement and is not warrantable.

Described Condition

When the Steering Angle Sensor (SAS) model SAS01T runs out of stock, it is substituted with the SAS03T model. The SAS03T is designed to be mounted in the same manner as the SAS01T. However, depending on the software package of the vehicle, changing from SAS01T to SAS03T could result in the activation of fault code 'SA 23 SPN 523021/FMI 31 - The list of Electronic Control Units (ECUs) stored in the Warning Database (WDB) does not match the list of ECUs parameterized in PID 0x20.' Due to the possibility of the fault code being activated, the parts listed in Table 1 cannot be directly superseded.

🔧 **Note:** If the SAS01T part number A14-20044-000 is installed in a vehicle with an Instrument Cluster Connect 5 (ICC5) and the vehicle has sales code 81Z-008, 81Z-308, or 81Z-808 (which is software version 22.50.30 associated with model year 2023), and fault code 'SA 23 SPN 523021/FMI 31' is activated, it should be considered a nuisance code, and no troubleshooting or programming change is required.

The troubleshooting steps and parameter adjustments listed below do not correct the nuisance code described in this note. For additional information regarding the nuisance fault, please see Western Star (WST) TSB 54-096.

Part Replacement Information

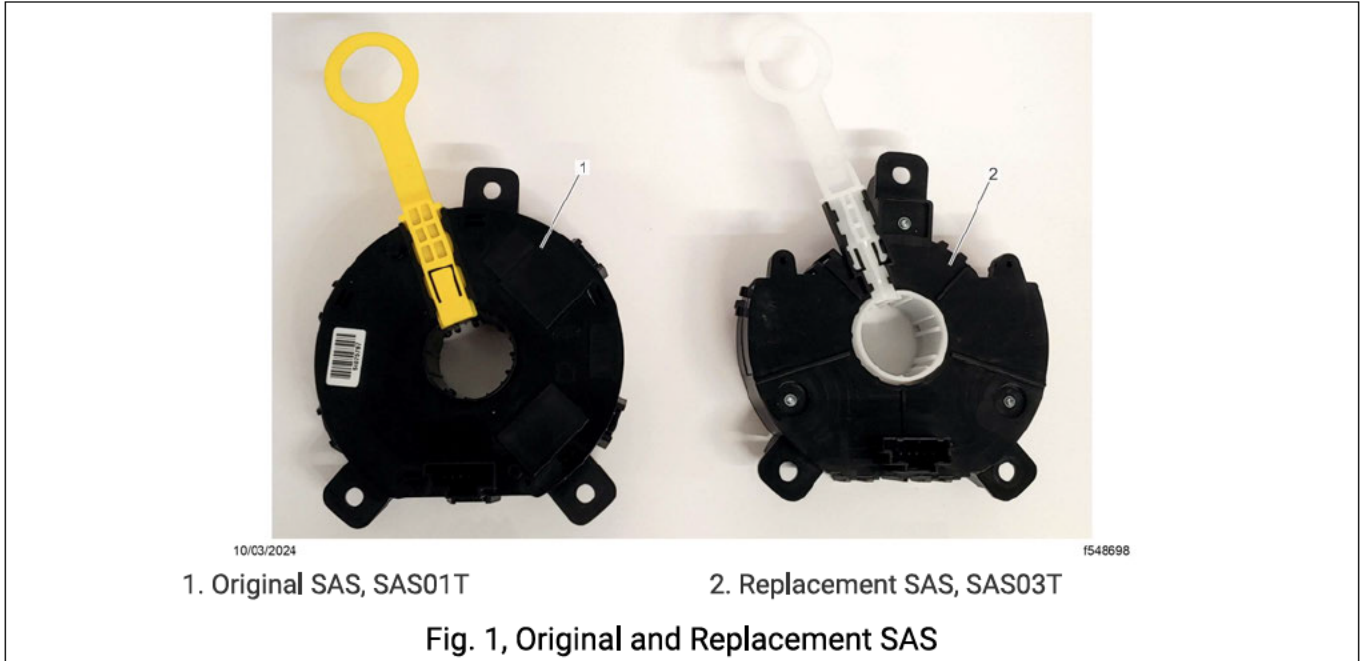
When replacing the original SAS01T, see Table 1 to find the new replacement part SAS03T.

Table 1, SAS Replacement Parts List

Chassis CAN Baud Rate	Original Part Number (SAS01T)	Replacement Part Number (SAS03T)
500kb Chassis CAN	A14-19418-000	A14-21040-307
667kb Chassis CAN	A14-20044-000	A14-21040-106

Table 1, SAS Replacement Parts List

The SAS03T appears slightly different compared to the SAS01T as shown in Fig. 1. However, the process of replacing and mounting the SAS remains the same. For instructions, see **Group 20** of the applicable workshop manual.



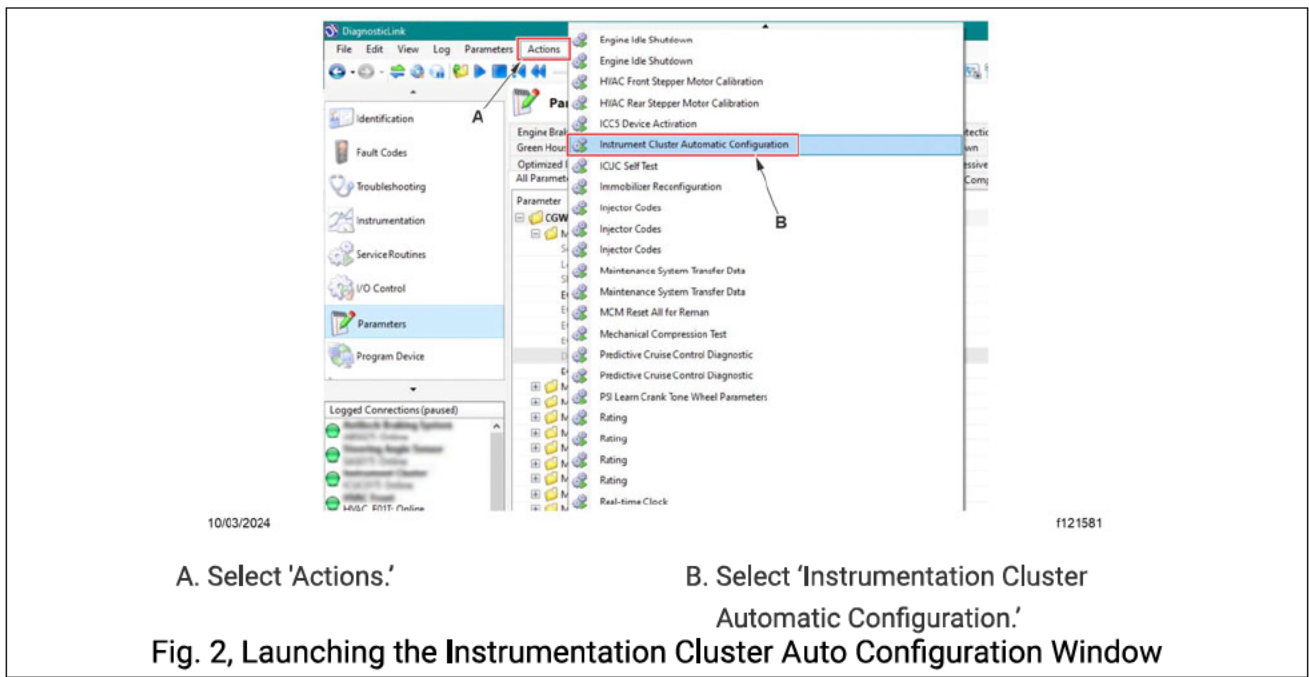
Running Auto-Configuration and Programming of the Central Gateway (CGW04T)

Once the SAS is replaced, it is necessary to run auto-configuration and program the CGW04T using the procedure below.

1. Park the vehicle on a level surface, place the vehicle in neutral, shut down the vehicle, and set the park brake. Chock the tires.
2. Connect an RP1210B-compliant vehicle diagnostic adaptor to the diagnostic connector on the vehicle.
3. Connect the other end of the RP1210B-compliant vehicle diagnostic adaptor to the laptop.

Note: Make sure that DiagnosticLink is updated to the latest version (8.20 at the time of publication, or newer) before programming the vehicle.

4. Open DiagnosticLink®.
5. From the menu bar, select 'Actions,' then select 'Instrument Cluster Automatic Configuration.' See Fig. 2.



A. Select 'Actions.'

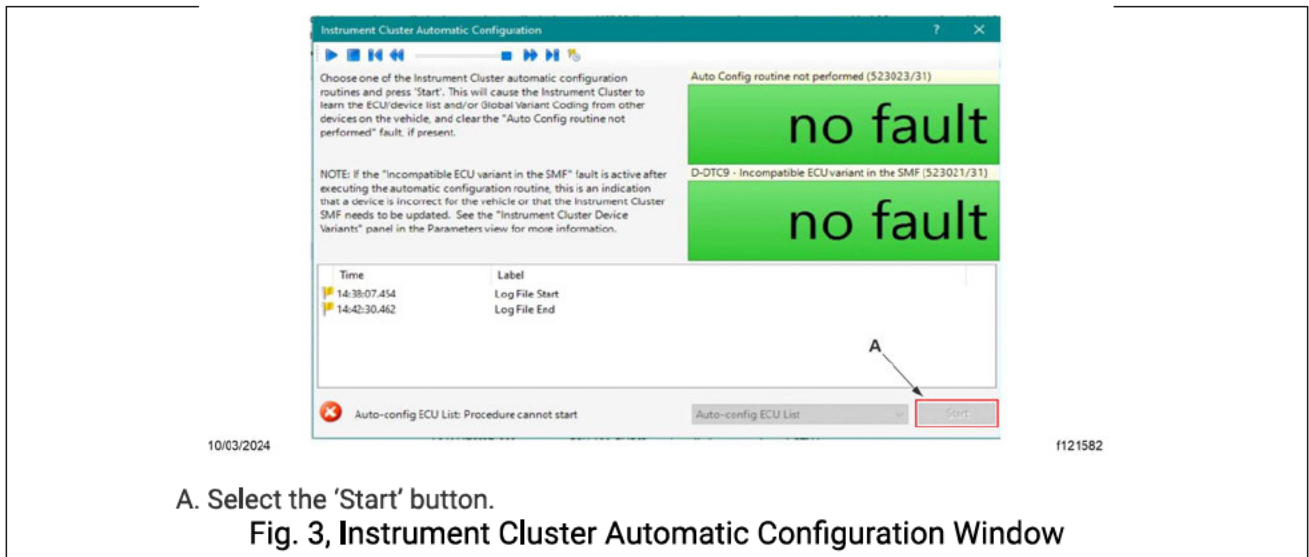
B. Select 'Instrumentation Cluster Automatic Configuration.'

Fig. 2, Launching the Instrumentation Cluster Auto Configuration Window

6. The 'Instrument Cluster Automatic Configuration' window opens. Select 'Start' to run the auto-configuration. See Fig. 3. Does the fault code 'SA 23 SPN 523021/FMI 31' appear after running the auto configuration?

YES → It is required to program the CGW04T. Go to step 7.

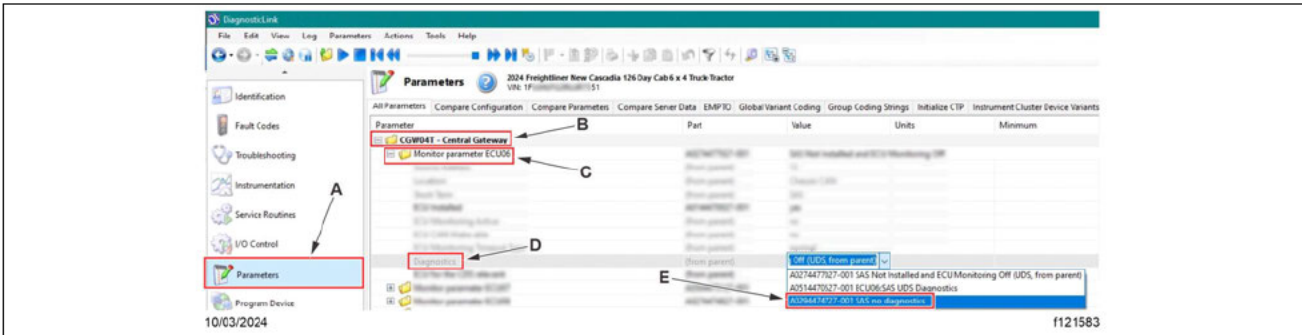
NO → No further action is required.



A. Select the 'Start' button.

Fig. 3, Instrument Cluster Automatic Configuration Window

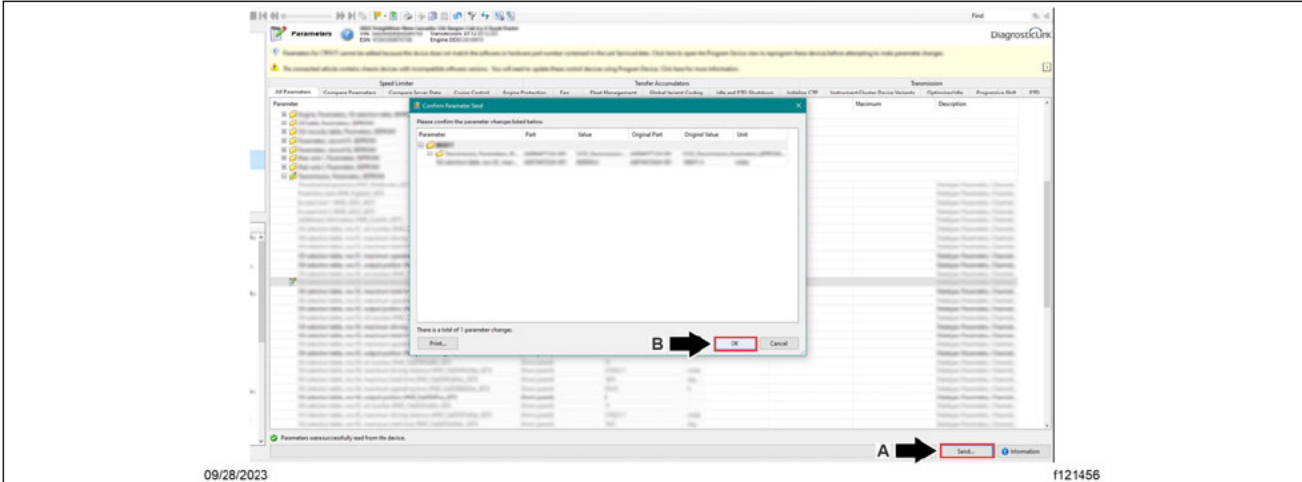
7. Close the 'Instrument Cluster Automatic Configuration' window.
8. Go to the 'Parameters' tab, then select and expand the 'CGW04T - Central Gateway' parameter folder. See Fig. 4.
9. Select and expand the 'Monitor parameter ECU06' parameter sub-folder. See Fig. 4.
10. Select the 'Diagnostics' parameter, and set the parameter value to 'A0294474727-001 SAS no diagnostics.' See Fig. 4.



- A. Go to 'Parameters' tab.
- B. Select and expand the folder 'CGW04T - Central Gateway.'
- C. Select and Expand the 'Monitor parameter ECU06' sub-folder.
- D. Select the 'Diagnostics' parameter.
- E. Set the parameter value to 'A0294474727-001 SAS no diagnostics.'

Fig. 4, Setting the Diagnostics Parameter Value

11. Select the 'Send' button to write the parameter change to the CGW04T ECU in the vehicle. A window opens asking to confirm the parameter changes. Select 'OK.' See Fig. 5.



- A. Select the 'Send' button.
- B. Select 'OK' to confirm the parameter changes.

Fig. 5, Writing the Parameter Changes to the Vehicle

- 12. Once the parameter change is written to the ECU, run the instrument cluster auto-configuration again; repeat steps 5 and 6.
- 13. For vehicles equipped with an Instrumentation Control Unit (ICUC), the fault becomes inactive immediately after the auto-configuration is complete.
- 14. For vehicles equipped with an ICC5, follow the substeps to clear the fault code.
 - a. Ensure that the instrument cluster is turned off so the fault code can reset.
 - b. Unplug the 9-pin diagnostic connector.
 - c. Turn the keyswitch to the OFF position.

d. Once the display goes blank, wait for 20 seconds.

[Redacted]

e. Turn the keyswitch to the ON position, and verify that the fault code is no longer active.

[Redacted]

15. Connect the vehicle to DiagnosticLink again and verify that the fault code 'SA 23 SPN 523021/FMI 31' is no longer active. Then, disconnect the vehicle from DiagnosticLink.

[Redacted]

16. Turn the keyswitch to the OFF position.

[Redacted]

Warranty

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Note:

W12

W14

W15

W17

W16

SAS03T

CGW04T

JCUC01T

ICC501T

REPLACE

TROUBLESHOOT

015-002-029

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