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Countries:

Availability: FleetSIS, Body Builder, IsSIR

Major System: PROGRAMMING SUPPORT

Current Language: English

Other Languages: NONE

Viewed: 923

Document ID: IK2600264

Revision: 4

Created: 5/17/2024

Last Modified: 4/10/2025

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Coding Information

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Title: Programming Instructions For S13 Engine Swaps

Applies To: Vehicles with S13 engines

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

04/10/2025 - Added additional SDS TCM procedure info
04/09/2025 - Updated procedure to use original ECM.
04/03/2025 - Updated procedure to use new ECM.
05/20/2024 - Initial Article Release

DESCRIPTION

This document provides instructions for the programming changes that will be needed when performing an S13 engine swap.

S13 ENGINE SWAP STEPS (RELATED TO PROGRAMMING)

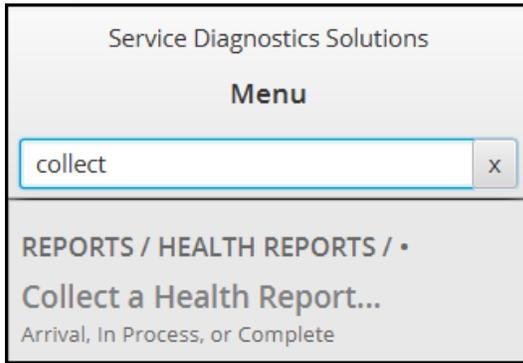
Requirements:

1. Internet connection
2. Interface cable ([Nexiq USB Link 2](#), [Nexiq USB Link 3](#), [Noregon DLA+ 2.0](#), or [Noregon DLA+ 3.0](#). *Other RP1210 compliant communication cables might work. However, issues associated with programming done through other cables cannot be supported. We recommend using one of the 3 previously mentioned cables.*)
3. [While both engines are out of the chassis:](#)
 1. [Remove ECM from original engine](#)
 2. [Install that same ECM on the new engine](#)

Steps to perform after engine has been replaced:

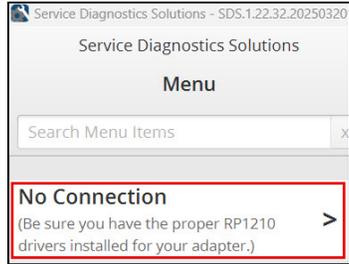
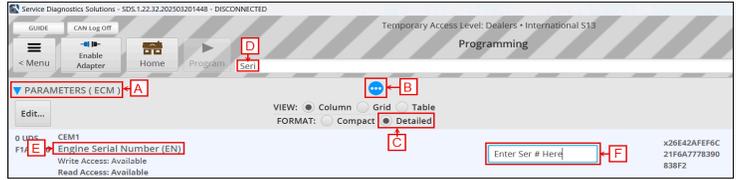
1. Open Service Diagnostic Solutions (SDS)
 - o If not installed, it can be downloaded [HERE](#)
2. Log into SDS with International user ID (for example, dy12345) and password
3. After engine installation and ECM swap is complete, update Engine Serial Number parameter in ECM with updated serial number for new engine (see instructions on this procedure [below](#)).
4. After ESN update is complete perform the SDS procedures listed below:
 1. (ECM) Reset: Injector Adaptation Procedure ([see software instructions below](#))

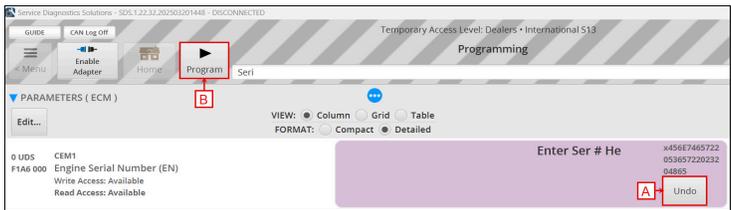
2. (ECM) Reset: Crankcase Breather Oil Separator Adaptation ([see software instructions below](#))
3. (ECM) Reset: Intake and Exhaust Pressure Sensors Adaptation ([see software instructions below](#))
4. (TCM) Reset: Clutch System Part Replacement ([see software instructions below](#))
5. (TCM) Reset: Clutch Adaptation ([see software instructions below](#))
5. Using Case File, update the International Tech Services team with the new Engine Serial Number.
6. Click Menu-->Collect Health Report; select In Process
 - o Hint: Use Search box to find items as needed



7. Confirm Miles / Hours / Fuel show correctly in SDS. If any of them are incorrect, update the case with correct values so Tech Services can adjust them accordingly.

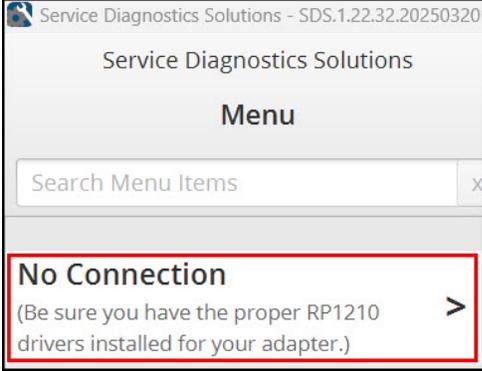
How to change an S13 ESN in SDS

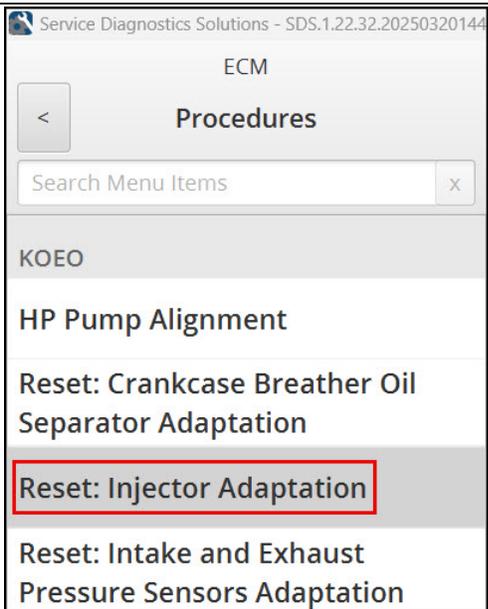
1	Launch SDS	
2	Click "Menu"	
3	Select Communication Cable	
4	Select ECM "Programming"	
5	Follow steps to find the ESN parameter and modify it.	

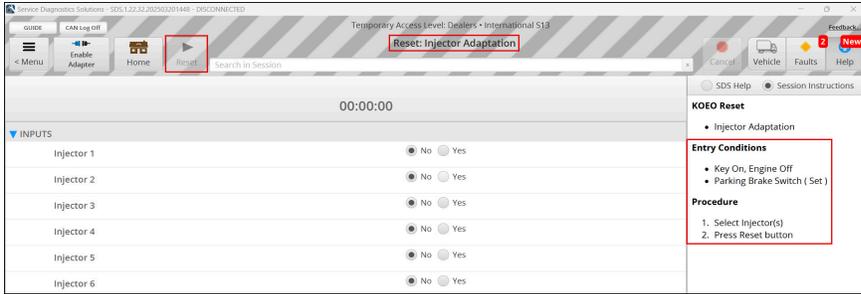
6	<p>Once you input the new ESN into the Engine Serial Number Field, click anywhere outside of the box - that will deselect the input field and will then show an "undo" button and "Program" button. Click the "Program" button.</p> <p>A. As a sign that SDS has accepted the ESN you entered in step 5 (letter "F" in picture) previously, an "Undo" button will appear when you click outside the ESN field.</p> <p>B. Click "Program" button</p>	
7	<p>Disconnect SDS, then reconnect SDS. This step is VERY IMPORTANT as the connection process in SDS will read the new ESN and will upload the newly changed ESN to our system.</p>	

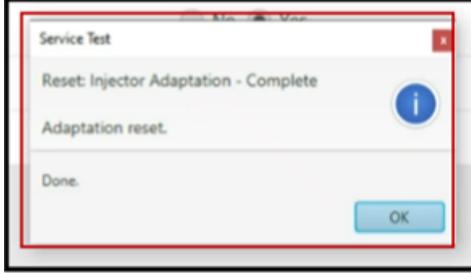
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How to Reset Injector Adaptations For S13 in SDS

1	Select "Menu"	
2	Connect with SDS	
3	Select ECM "Procedures"	

<p>4 Select ECM Procedure "Reset: Injector Adaptation"</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320144</p> <p>ECM Procedures</p> <p>Search Menu Items</p> <p>KOEO</p> <p>HP Pump Alignment</p> <p>Reset: Crankcase Breather Oil Separator Adaptation</p> <p>Reset: Injector Adaptation</p> <p>Reset: Intake and Exhaust Pressure Sensors Adaptation</p>
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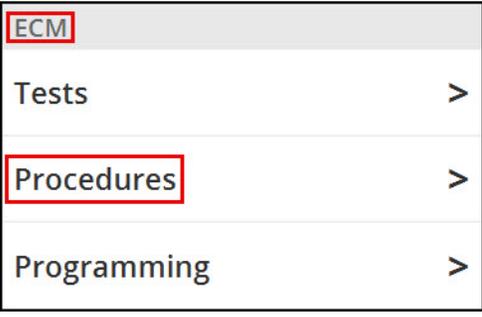
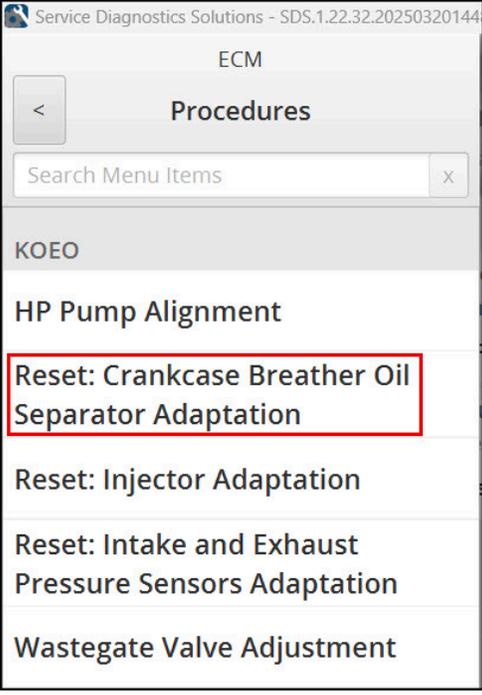
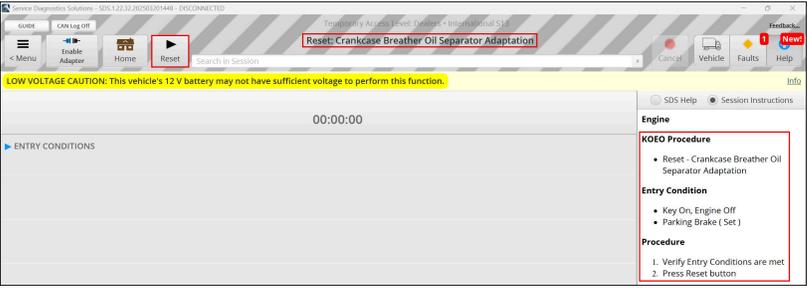
<p>5 Follow Procedure Instructions</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320144 - DISCONNECTED</p> <p>Temporary Access Level: Dealers - International S13</p> <p>Reset: Injector Adaptation</p> <p>00:00:00</p> <p>INPUTS</p> <table border="1"> <tr><td>Injector 1</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> <tr><td>Injector 2</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> <tr><td>Injector 3</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> <tr><td>Injector 4</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> <tr><td>Injector 5</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> <tr><td>Injector 6</td><td><input type="radio"/> No <input type="radio"/> Yes</td></tr> </table> <p>KOEO Reset</p> <ul style="list-style-type: none"> Injector Adaptation <p>Entry Conditions</p> <ul style="list-style-type: none"> Key On, Engine Off Parking Brake Switch (Set) <p>Procedure</p> <ol style="list-style-type: none"> Select Injector(s) Press Reset button 	Injector 1	<input type="radio"/> No <input type="radio"/> Yes	Injector 2	<input type="radio"/> No <input type="radio"/> Yes	Injector 3	<input type="radio"/> No <input type="radio"/> Yes	Injector 4	<input type="radio"/> No <input type="radio"/> Yes	Injector 5	<input type="radio"/> No <input type="radio"/> Yes	Injector 6	<input type="radio"/> No <input type="radio"/> Yes
Injector 1	<input type="radio"/> No <input type="radio"/> Yes												
Injector 2	<input type="radio"/> No <input type="radio"/> Yes												
Injector 3	<input type="radio"/> No <input type="radio"/> Yes												
Injector 4	<input type="radio"/> No <input type="radio"/> Yes												
Injector 5	<input type="radio"/> No <input type="radio"/> Yes												
Injector 6	<input type="radio"/> No <input type="radio"/> Yes												

<p>6 Procedure typically completes successfully within 15 seconds</p>	 <p>Service Test</p> <p>Reset: Injector Adaptation - Complete</p> <p>Adaptation reset.</p> <p>Done.</p> <p>OK</p>
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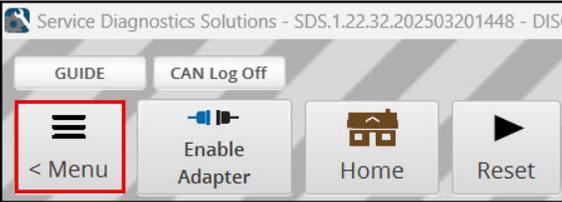
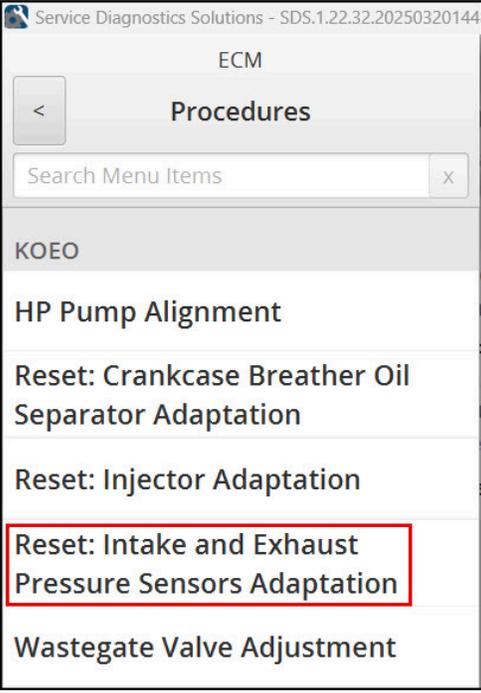
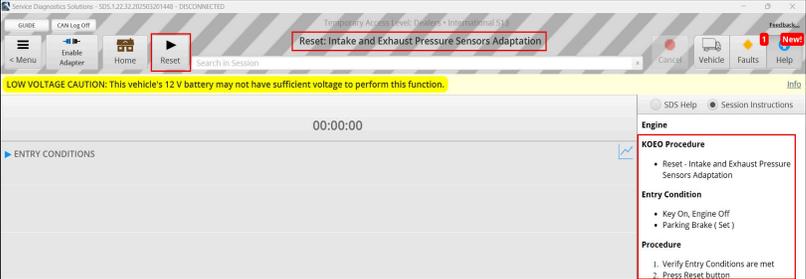
How to Reset Crankcase Breather Oil Separator Adaptations for S13 in SDS

<p>1 Select "Menu"</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.202503201448 - DISCONNECTED</p> <p>GUIDE CAN Log Off</p> <p>< Menu Enable Adapter Home Reset</p>
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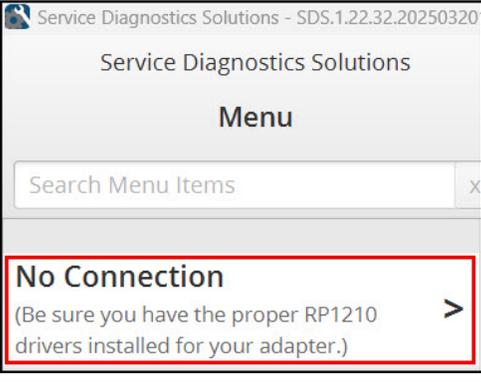
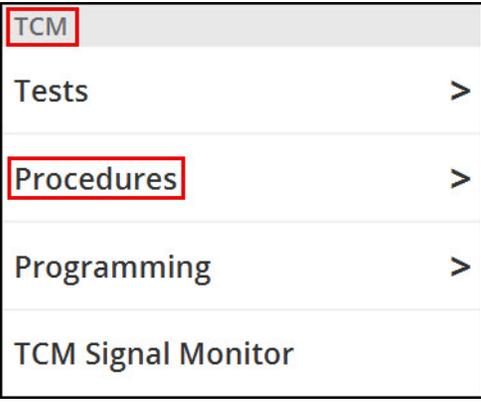
2	Connect with SDS	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320</p> <p>Service Diagnostics Solutions</p> <p>Menu</p> <p>Search Menu Items</p> <p>No Connection (Be sure you have the proper RP1210 drivers installed for your adapter.)</p>
3	Select ECM "Procedures"	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320</p> <p>ECM</p> <p>Tests</p> <p>Procedures</p> <p>Programming</p>
4	Select ECM Procedure "Reset: Crankcase Breather Oil Separator Adaptation"	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320144</p> <p>ECM</p> <p>Procedures</p> <p>Search Menu Items</p> <p>KOEO</p> <p>HP Pump Alignment</p> <p>Reset: Crankcase Breather Oil Separator Adaptation</p> <p>Reset: Injector Adaptation</p> <p>Reset: Intake and Exhaust Pressure Sensors Adaptation</p> <p>Wastegate Valve Adjustment</p>
5	Follow Procedure Instructions	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320144 - EDCCONNECTED</p> <p>Reset: Crankcase Breather Oil Separator Adaptation</p> <p>LOW VOLTAGE CAUTION: This vehicle's 12 V battery may not have sufficient voltage to perform this function.</p> <p>00:00:00</p> <p>ENTRY CONDITIONS</p> <p>Engine</p> <p>KOEO Procedure</p> <ul style="list-style-type: none"> Reset - Crankcase Breather Oil Separator Adaptation <p>Entry Condition</p> <ul style="list-style-type: none"> Key On, Engine Off Parking Brake (Set) <p>Procedure</p> <ol style="list-style-type: none"> Verify Entry Conditions are met Press Reset button

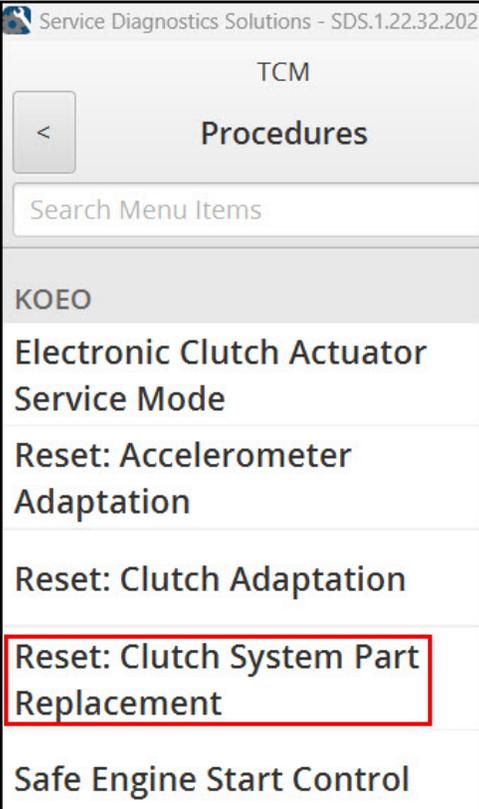
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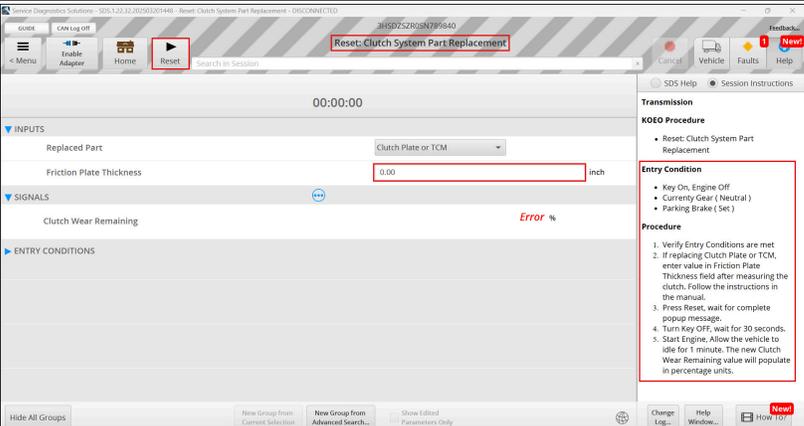
How to Reset Intake & Exhaust Pressure Sensors Adaptations for S13 in SDS

1	Select "Menu"	
2	Connect with SDS	
3	Select ECM "Procedures"	
4	Select ECM Procedure "Reset: Intake and Exhaust Pressure Sensors Adaptation"	
5	Follow Procedure Instructions	

How To Reset Clutch System Part Replacement For S13 In SDS

1 Select "Menu"	 The screenshot shows the main interface of the Service Diagnostics Solutions application. At the top, there are buttons for 'GUIDE' and 'CAN Log Off'. Below these are four larger buttons: '< Menu' (highlighted with a red box), 'Enable Adapter', 'Home', and 'Reset'.
2 Connect with SDS	 The screenshot shows the 'Menu' screen. It has a search bar labeled 'Search Menu Items'. Below the search bar, there is a red-bordered box containing the text: 'No Connection (Be sure you have the proper RP1210 drivers installed for your adapter.)' with a right-pointing chevron.
3 Select TCM "Procedures"	 The screenshot shows a list of menu options under the 'TCM' heading. The options are: 'TCM' (highlighted with a red box), 'Tests', 'Procedures' (highlighted with a red box), 'Programming', and 'TCM Signal Monitor'. Each option has a right-pointing chevron.

<p>4 Select "Reset: Clutch System Part Replacement"</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.202</p> <p>TCM</p> <p>Procedures</p> <p>Search Menu Items</p> <p>KOEO</p> <p>Electronic Clutch Actuator Service Mode</p> <p>Reset: Accelerometer Adaptation</p> <p>Reset: Clutch Adaptation</p> <p>Reset: Clutch System Part Replacement</p> <p>Safe Engine Start Control</p>
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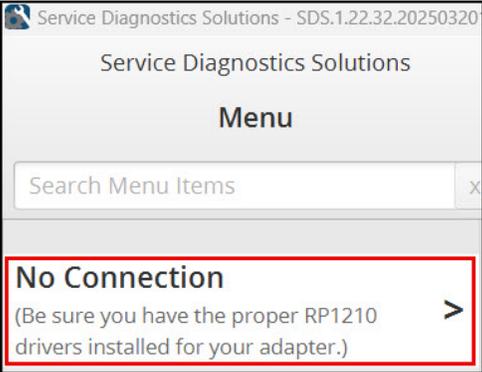
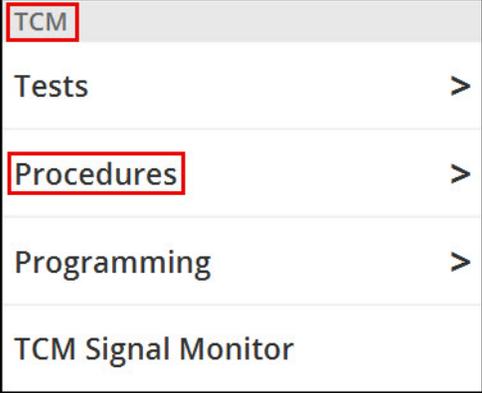
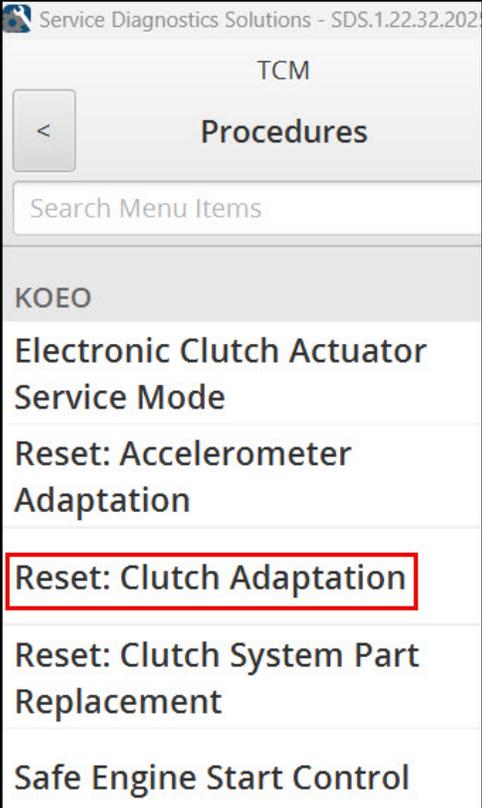
<p>5 Follow Procedure Instructions</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.202503201448 - Reset: Clutch System Part Replacement - DISCONNECTED</p> <p>2HSD75ZP02N795840</p> <p>Reset: Clutch System Part Replacement</p> <p>00:00:00</p> <p>INPUTS</p> <p>Replaced Part Clutch Plate or TCM</p> <p>Friction Plate Thickness 0.00 inch</p> <p>SIGNALS</p> <p>Clutch Wear Remaining Error %</p> <p>ENTRY CONDITIONS</p> <p>Transmission</p> <p>KOEO Procedure</p> <ul style="list-style-type: none"> Reset: Clutch System Part Replacement <p>Entry Condition</p> <ul style="list-style-type: none"> Key On, Engine Off Current Gear (Neutral) Parking Brake (Set) <p>Procedure</p> <ol style="list-style-type: none"> Verify Entry Conditions are met If replacing Clutch Plate or TCM, enter value in Friction Plate Thickness field after measuring the clutch. Follow the instructions in the manual. Press Reset, wait for complete popup message. Turn Key OFF, wait for 30 seconds. Start Engine. Allow the vehicle to idle for 1 minute. The new Clutch Wear Remaining value will populate in percentage units.
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<p>6 If needed, click this link for information on the rest of the S13 Engine Replacement Procedure > Procedure Follow-On > Step 32</p>	<p>Engine Replacement - Service Information Home</p>
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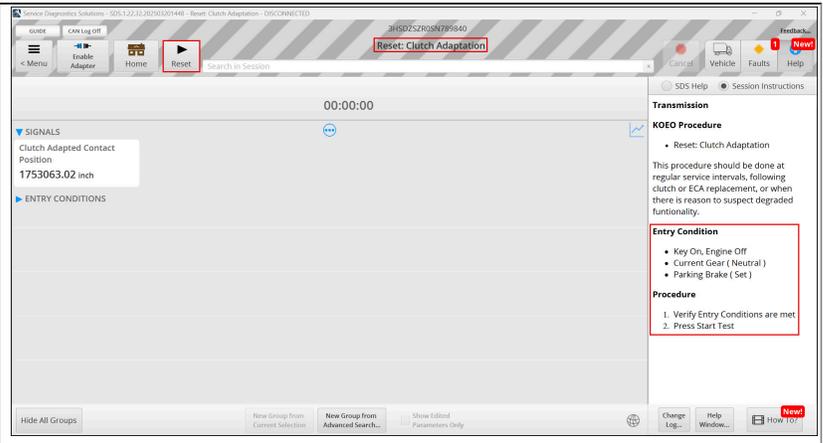
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How to Reset Clutch Adaptation For S13 in SDS

<p>1 Select "Menu"</p>	 <p>Service Diagnostics Solutions - SDS.1.22.32.202503201448 - DIS</p> <p>GUIDE CAN Log Off</p> <p>Menu Enable Adapter Home Reset</p>
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2	Connect with SDS	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320</p> <p>Service Diagnostics Solutions</p> <p>Menu</p> <p>Search Menu Items</p> <p>No Connection (Be sure you have the proper RP1210 drivers installed for your adapter.)</p>
3	Select TCM "Procedures"	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320</p> <p>TCM</p> <p>Tests</p> <p>Procedures</p> <p>Programming</p> <p>TCM Signal Monitor</p>
4	Select "Reset: Clutch Adaptation"	 <p>Service Diagnostics Solutions - SDS.1.22.32.20250320</p> <p>TCM</p> <p>Procedures</p> <p>Search Menu Items</p> <p>KOEO</p> <p>Electronic Clutch Actuator Service Mode</p> <p>Reset: Accelerometer Adaptation</p> <p>Reset: Clutch Adaptation</p> <p>Reset: Clutch System Part Replacement</p> <p>Safe Engine Start Control</p>

5 Follow Procedure Instructions



6 If needed, click this link for information on the rest of the S13 Engine Replacement Procedure > Procedure Follow-On > Step 32

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