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> 49XWestern Star  
Service Bulletin

## General Information

On Western Star 49X vehicles equipped with Meritor drive axles built before April 18, 2022, the high temperature warning parameter is set too low for some applications. These include vehicles equipped with synthetic oil and for certain conditions that are not harmful to the axle. If the high-temperature warning appears and indicates service is required, and the axle is not above the maximum temperature cited in the *49X Driver's Manual*, the temperature parameters can be changed using DiagnosticLink®.

For vehicles not equipped with synthetic oil, the oil in these vehicle's axles must be changed to synthetic oil, which is a non-warranty repair item.

## Determining Rear Axle Oil

1. Enter the vehicle's serial number (S/N) into PartsPro® and search for module 441 in Group 35. See [Fig. 1](#).

Parts List: 441-C82917  
REAR AXLE ACCESSORIES  
This Bill of Material has been modified for this vehicle.

Ref	SL	AD	Description	Part Number	QTY	UOM	Alt Part Number
001			DOWEL-AXLE SHAFT,SOLID	23-14162-000	32	EA	
003			O-RING SEAL, AXLE SHAFT	11-30728-000	4	EA	
005			WASHER-HRDN,0.69X0.94X.117.ZN	23-09114-010	32	EA	
006			NUT-HEX,5/8-18,GR8,ZN AL	23-13830-210	32	EA	
			DWG-INST,HALF SHAFT W/DOWELS	D11-30217-000	2	EA	
	+A		AXLE TAG-0.75" EXTD LUBE FTL	11-19893-000	2	EA	
	+A		LUBE-GEAR SYNTH 75W-90 HI EFF	46-26154-000	40	QT	
	+A		PLUG,MAG U,2"10-10,2"2 LDH 1	CM 10933073	4	EA	CM 109272

Footnote: CM 109272 DOES NOT HAVE A MAGNET.

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Fig. 1, Module 441 in Group 35 of PartsPro

2. The rear axle oil will be listed in the parts list.
  - 2.1 If the vehicle has synthetic axle oil, go to the procedure below for Changing Rear Axle Temperature Parameters With DiagnosticLink.
  - 2.2 If the vehicle does not have synthetic axle oil, change the axle oil and the oil in the hub. See **Group 35** in the *49X Workshop Manual* for instructions. Refer to Meritor service literature for approved synthetic axle oils.

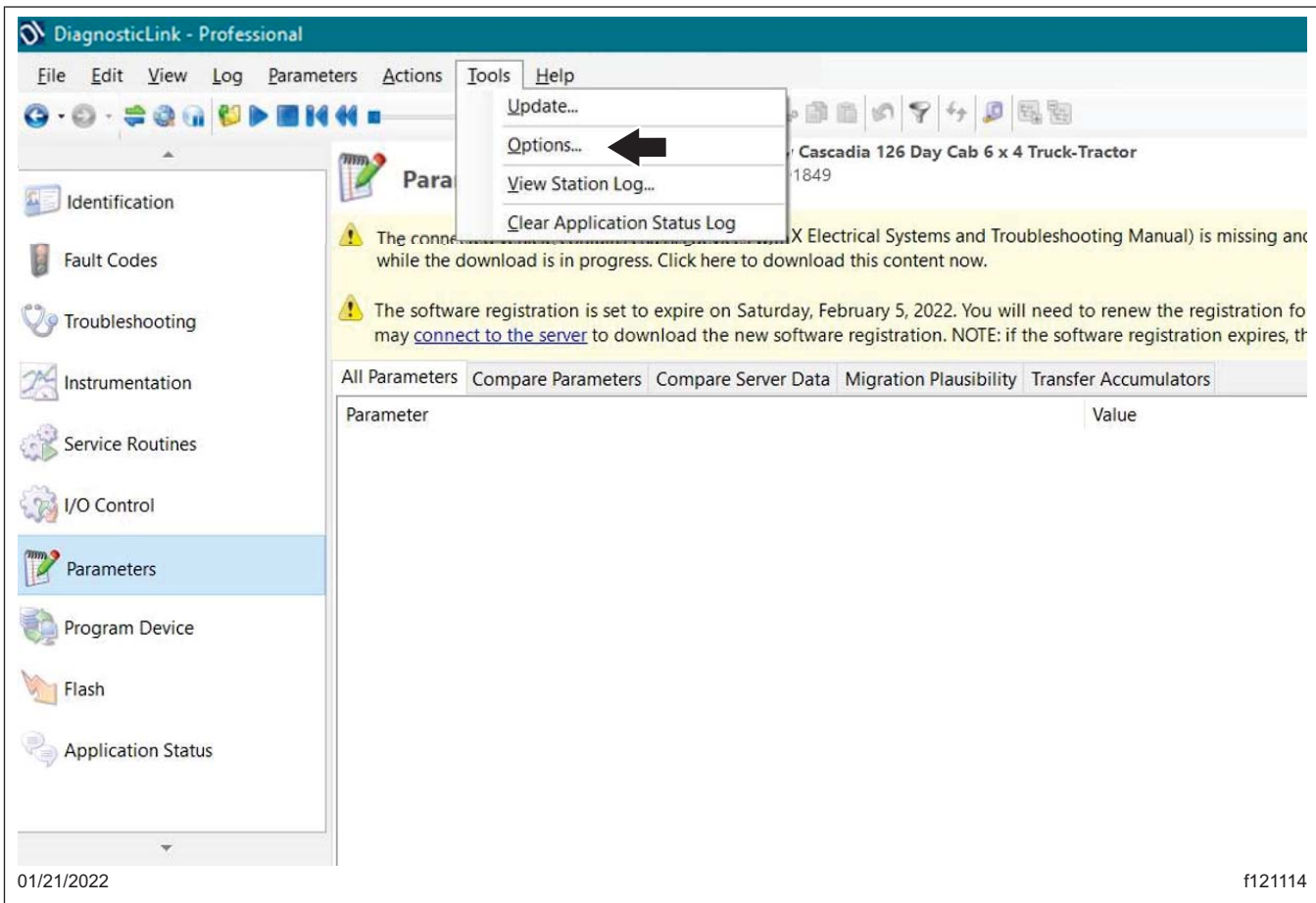
## Changing Rear Axle Temperature Parameters With DiagnosticLink

1. Park the vehicle on a level surface, shut down the engine, and apply the parking brake. Chock the tires.
2. Connect an RP1210B-compliant vehicle diagnostic adaptor to the laptop and the vehicle diagnostic port.

NOTE: The following steps describe changing the axle temperature values using DiagnosticLink screen shots with the values expressed in degrees Celsius (°C). If you wish to change units preferences from Fahrenheit (°F) to Celsius, follow these steps. If not, go to step 4.

3. From the laptop, open DiagnosticLink.

3.1 From the main menu, select 'Tools' and then 'Options.' See **Fig. 2**.



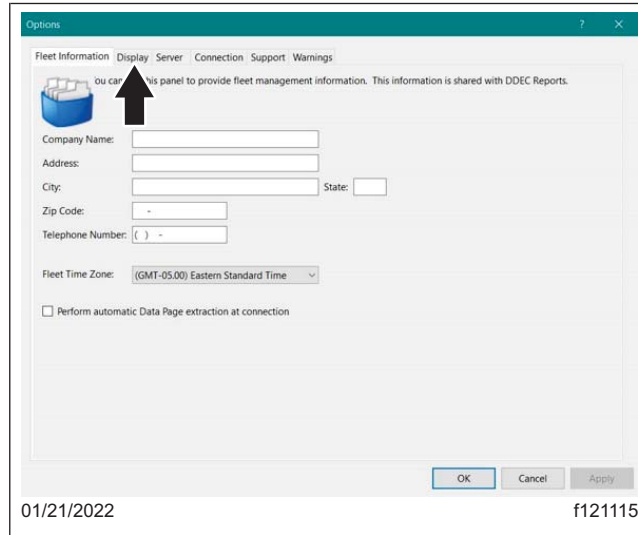
**Fig. 2, Changing DiagnosticLink Units, Step 1**

3.2 Select the 'Display' tab. See **Fig. 3**.

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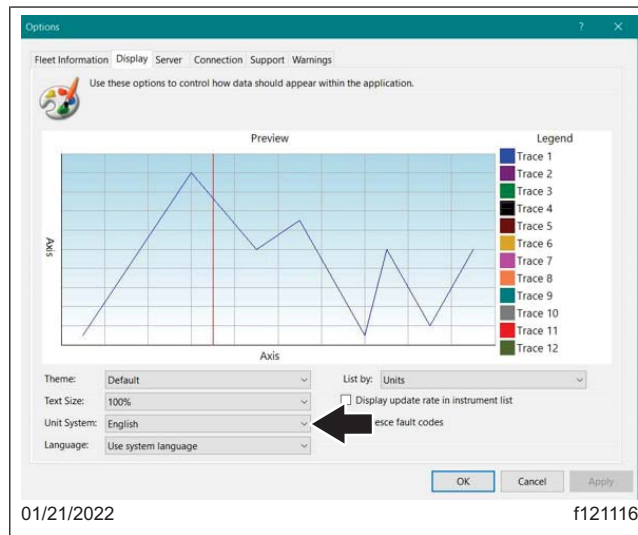
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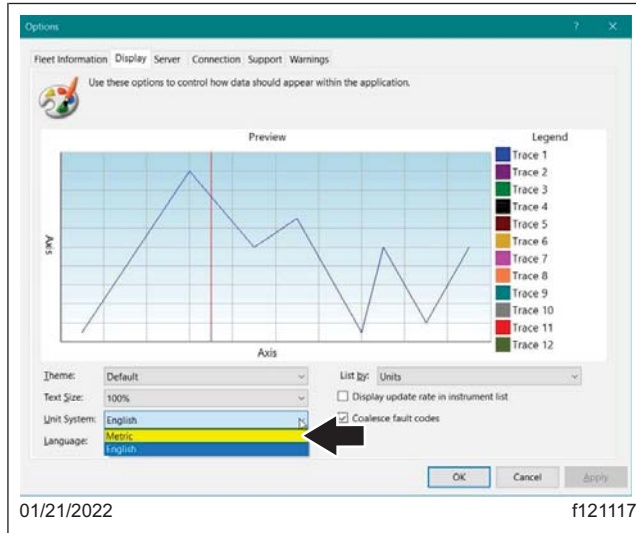
**Fig. 3, Changing DiagnosticLink Units System, Step 2**

3.3 In the Display, select 'Units System.' See [Fig. 4](#).

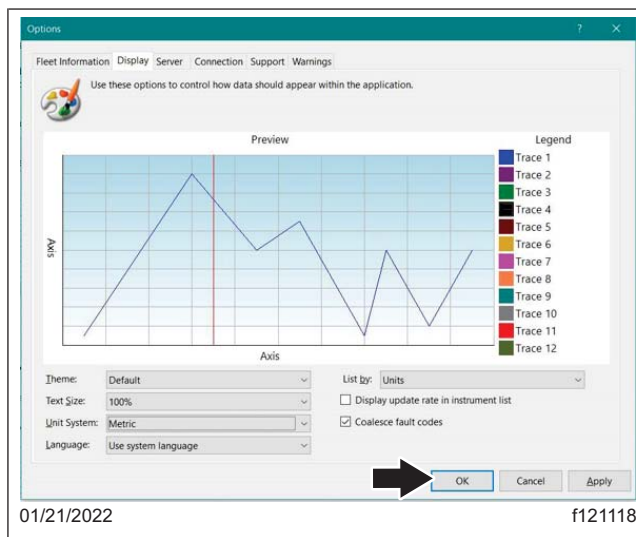


**Fig. 4, Changing DiagnosticLink Units System, Step 3**

3.4 In the dropdown menu, select 'Metric.' Then select 'OK.' See [Fig. 5](#) and [Fig. 6](#).



**Fig. 5, Changing DiagnosticLink Units System, Step 4**



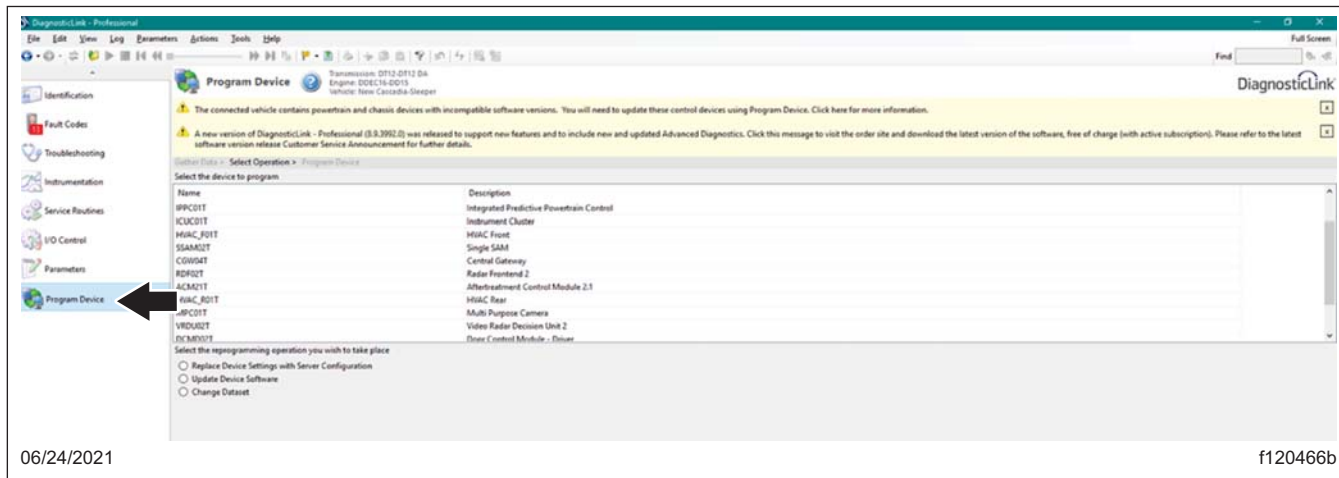
**Fig. 6, Changing DiagnosticLink Units System, Step 5**

4. Ensure that DiagnosticLink is updated to the latest version (8.16 at time of publication). To update DiagnosticLink, select 'Update' from the drop-down menu under 'Tools.' Select 'Program Device.' See [Fig. 7](#).

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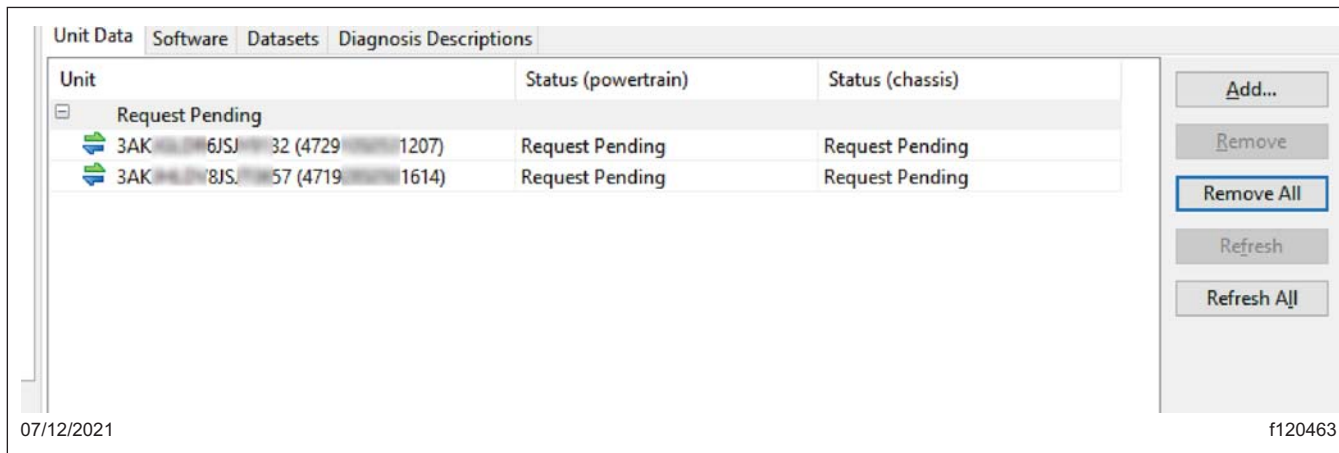
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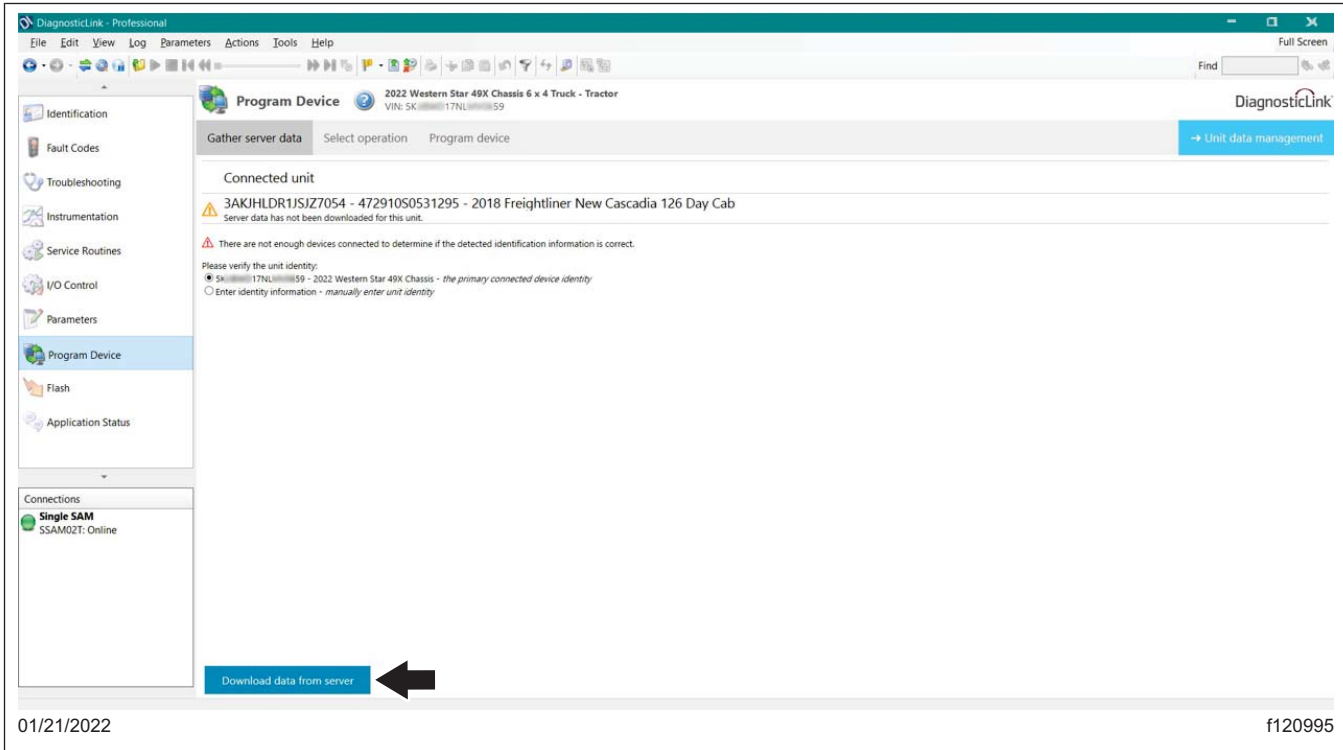
**Fig. 7, Updating DiagnosticLink**

- If there are any items in the section 'Request Pending' downloads, they must be removed. To remove them, select each 'Request Pending' list item, then select 'Remove.' See [Fig. 8](#).



**Fig. 8, Removing Request Pending Downloads in DiagnosticLink**

- Select the 'Gather server data' tab and select the vehicle identification number (VIN). Then select 'Download data from server.' See [Fig. 9](#).



**Fig. 9, Downloading Data from the Server**

7. A dialog appears with a progress animation as the software is updated. See **Fig. 10**.

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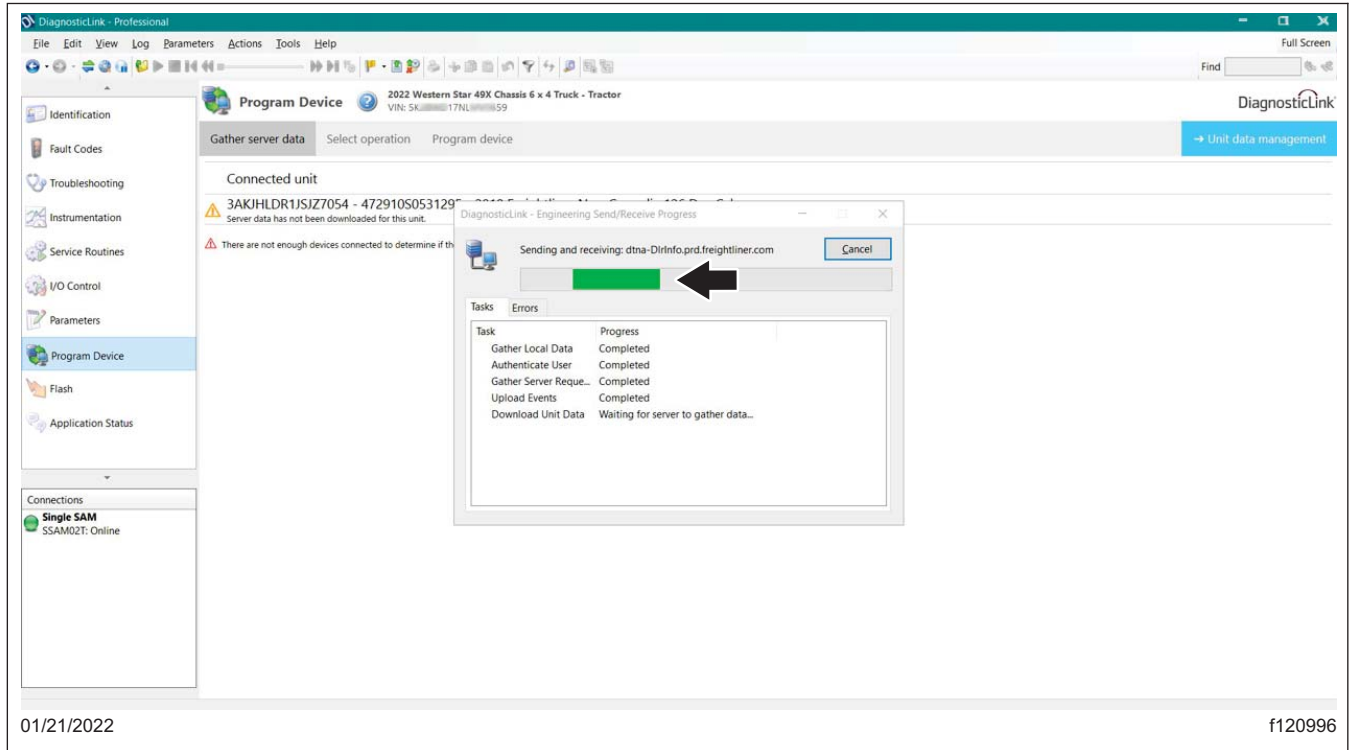
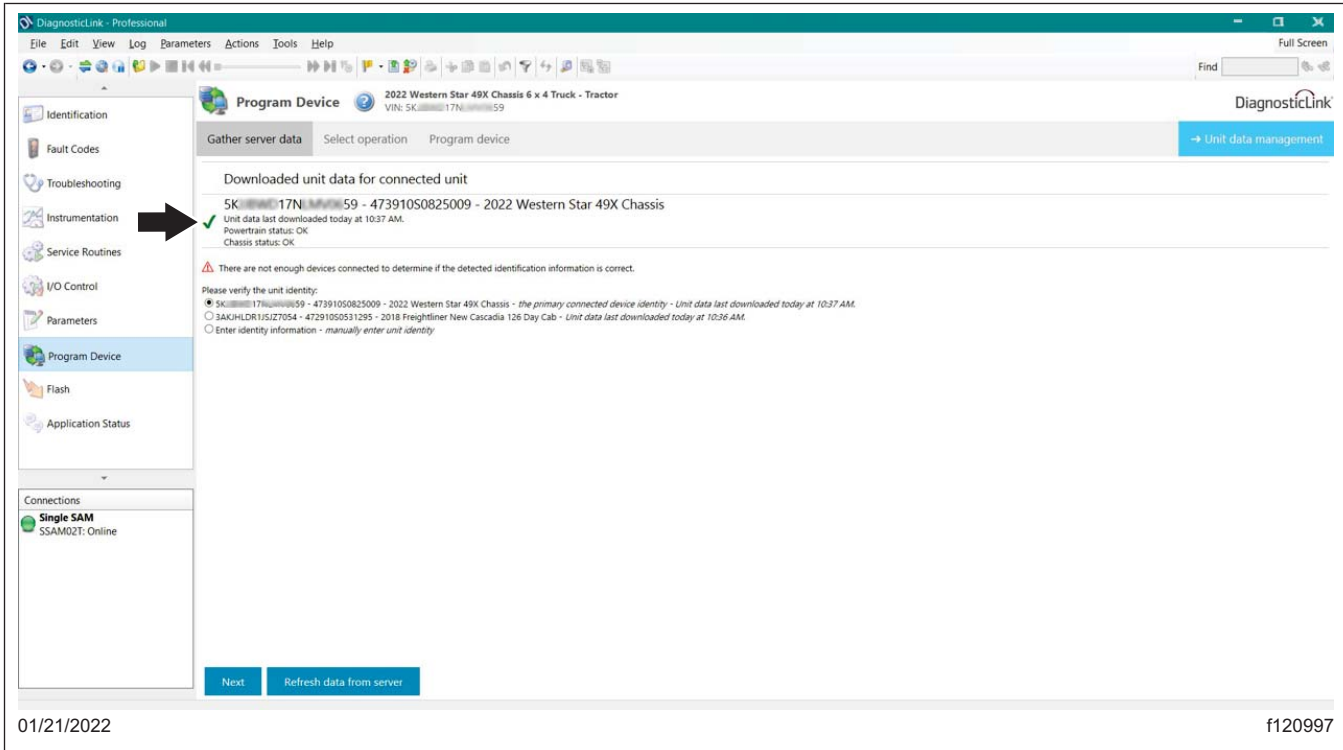


Fig. 10, Server Gathering Information Screen 1

- When the data download is complete, a green check mark appears next to the VIN on the 'Gather server data' screen. See Fig. 11.



**Fig. 11, Server Downloading Data**

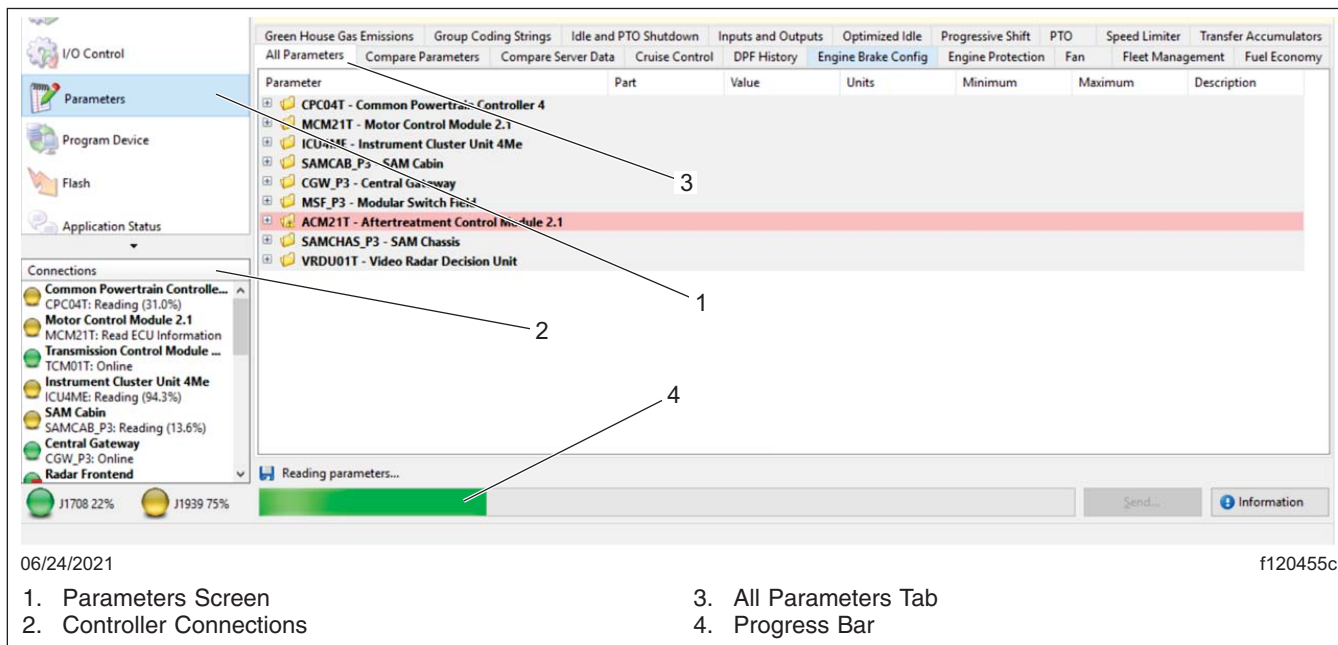
9. Select 'Parameters,' as shown in **Fig. 12**, item 1.

Once all controllers are connected, as shown in **Fig. 12**, item 2, select the 'All Parameters' tab, shown in **Fig. 12**, item 3, to read the vehicle parameters.

A green progress bar appears at the bottom of the screen. See **Fig. 12**, item 4.

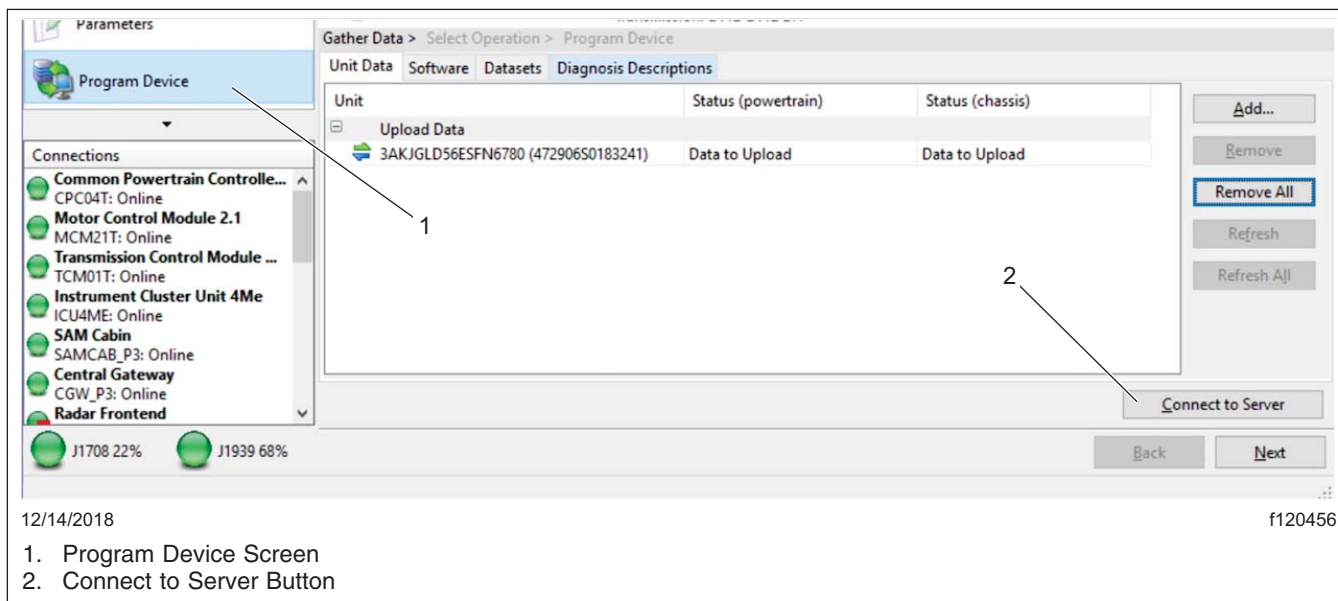
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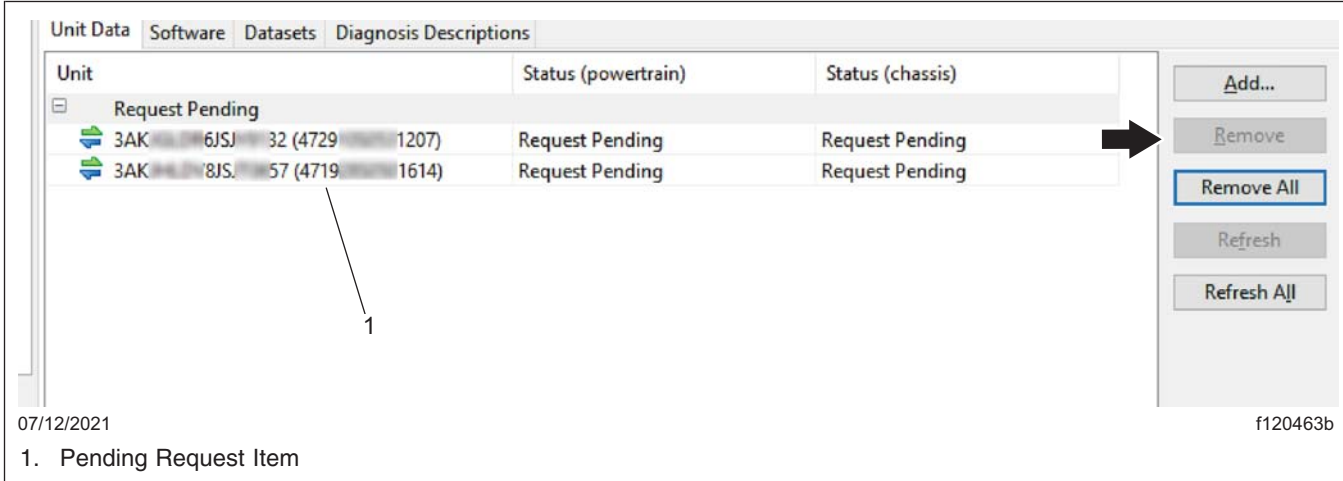
**Fig. 12, Server Reading Parameters**

10. Select 'Program Device.' See [Fig. 13](#), item 1. There should be data to upload. Select 'Connect to Server' to upload vehicle parameters to the server. See [Fig. 13](#), item 2.



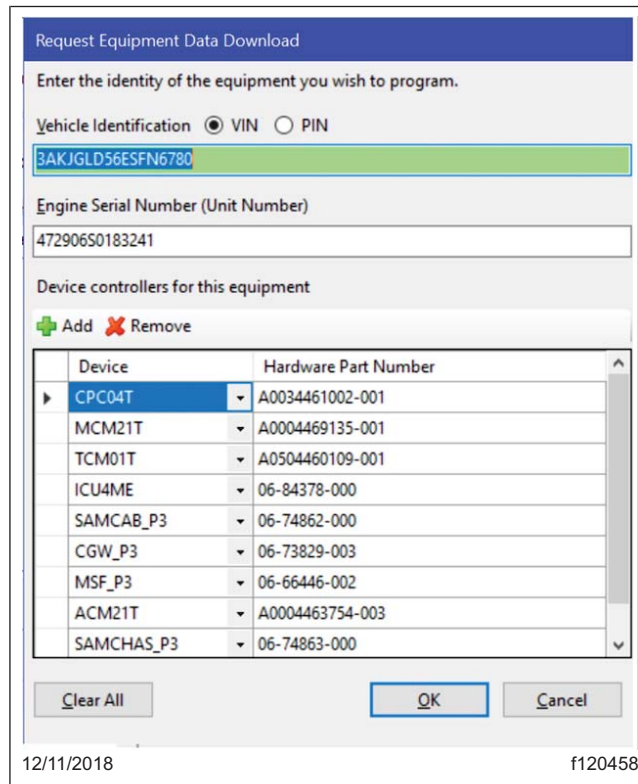
**Fig. 13, Connecting to Server Screen**

11. Remove any items in the 'Request Pending' section by selecting each 'Request Pending' list item and then selecting 'Remove.' See [Fig. 14](#).



**Fig. 14, Removing Old Pending Requests**

12. Ensure the correct VIN and hardware is populated, then select 'OK.' See [Fig. 15](#).

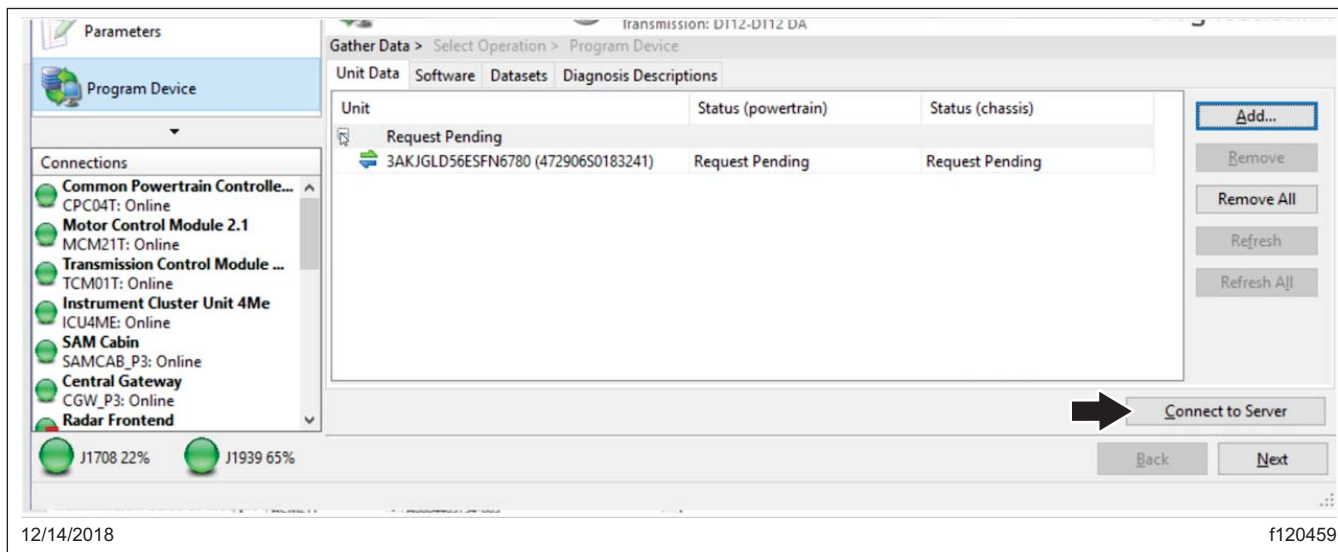


**Fig. 15, VIN and Hardware Number Verification**

13. A 'Request Pending' status for the VIN appears in the 'Unit Data' window. Select 'Connect to Server' to download the updated unit data. See [Fig. 16](#).

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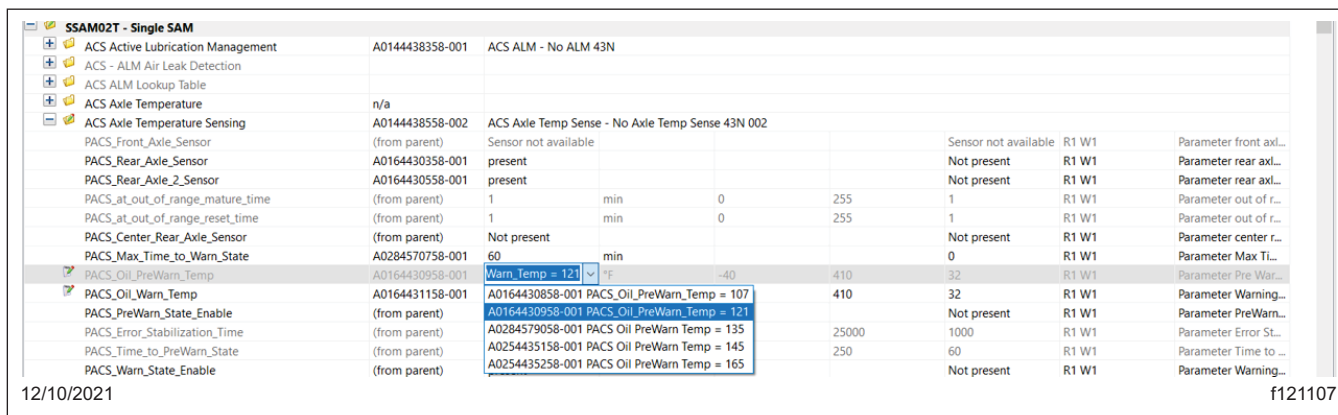
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**Fig. 16, Connecting to the Server to Download Data**

- In the list of parameters, locate 'PACS\_Oil\_PreWarn\_Temp.' Expand the dropdown menu in the 'Value' column. Select the value, '0164430958-001 PACS\_OIL\_PREWARN\_TEMP = 121' as shown in Fig. 17.

NOTE: The values in this menu are stated in °C; this selection corresponds to 250°F.



**Fig. 17, Parameters Screen Pt. 1**

- In the list of parameters, locate 'PACS\_Oil\_PreWarn\_Temp.' Expand the dropdown menu in the 'Value' column. Select the value, 'A0164431158-001 PACS\_OIL\_WARN\_TEMP = 135' as shown in Fig. 18.

NOTE: The values in this menu are stated in °C; this selection corresponds to 275°F.

Parameter	Part	Value	Units	Minimum	Maximum
SSAM02T - Single SAM					
ACS Active Lubrication Management	A0144438358-001	ACS ALM - No ALM 43N			
ACS - ALM Air Leak Detection					
ACS ALM Lookup Table					
ACS Axle Temperature	n/a				
ACS Axle Temperature Sensing	A0144438558-002	ACS Axle Temp Sense - No Axle Temp Sense 43N 002			
PACS_Front_Axle_Sensor	(from parent)	Sensor not available			
PACS_Rear_Axle_Sensor	A0164430358-001	present			
PACS_Rear_Axle_2_Sensor	A0164430558-001	present			
PACS_at_out_of_range_mature_time	(from parent)	1	min	0	255
PACS_at_out_of_range_reset_time	(from parent)	1	min	0	255
PACS_Center_Rear_Axle_Sensor	(from parent)	Not present			
PACS_Max_Time_to_Warn_State	A0284570758-001	60	min	0	410
PACS_Oil_PreWarn_Temp	A0164430958-001	250	*F	-40	410
PACS_Oil_Warn_Temp	A0164431158-001	Warn_Temp = 135	*F	-40	410
PACS_PreWarn_State_Enable	(from parent)	A0164431058-001 PACS_Oil_Warn_Temp = 121			
PACS_Error_Stabilization_Time	(from parent)	A0164431158-001 PACS_Oil_Warn_Temp = 135		25000	1000
PACS_Time_to_PreWarn_State	(from parent)	A0284578958-001 PACS Oil Warn Temp = 148			
PACS_Warn_State_Enable	(from parent)	A0254435258-002 PACS Oil Warn Temp = 165			
PACS_at_Reserved01_U8	(from parent)	A0164431258-001 PACS_Oil_Warn_Temp = 180			

Fig. 18, Parameters Screen Pt. 2

16. In the list of Parameters, locate 'PACS\_Max\_Time\_to\_Warn\_State.' Expand the dropdown menu in the Value column. Select the value, 'A0284570758-001 PACS\_MAX\_TIME\_TO\_WARN\_STATE = 60' as shown in Fig. 19.

Parameter	Part	Value	Units	Minimum	Maximum
SSAM02T - Single SAM					
ACS Active Lubrication Management	A0144438358-001	ACS ALM - No ALM 43N			
ACS - ALM Air Leak Detection					
ACS ALM Lookup Table					
ACS Axle Temperature	n/a				
ACS Axle Temperature Sensing	A0144438558-002	ACS Axle Temp Sense - No Axle Temp Sense 43N 002			
PACS_Front_Axle_Sensor	(from parent)	Sensor not available			
PACS_Rear_Axle_Sensor	(from parent)	Not present			
PACS_Rear_Axle_2_Sensor	(from parent)	Not present			
PACS_at_out_of_range_mature_time	(from parent)	1	min	0	255
PACS_at_out_of_range_reset_time	(from parent)	1	min	0	255
PACS_Center_Rear_Axle_Sensor	(from parent)	Not present			
PACS_Max_Time_to_Warn_State	(from parent)	60	min	0	410
PACS_Oil_PreWarn_Temp	(from parent)	A0284570758-001 PACS_Max Time to Warn State = 60		-40	410
PACS_Oil_Warn_Temp	(from parent)	250	*F	-40	410
PACS_PreWarn_State_Enable	(from parent)	present			
PACS_Error_Stabilization_Time	(from parent)	1000	ms	0	25000
PACS_Time_to_PreWarn_State	(from parent)	60	s	0	250
PACS_Warn_State_Enable	(from parent)	present			
PACS_at_Reserved01_U8	(from parent)	0			
PACS_at_Reserved02_U8	(from parent)	0			
PACS_at_Reserved03_U8	(from parent)	0			
PACS_at_Reserved04_U8	(from parent)	0			
PACS_at_Reserved05_U8	(from parent)	0			

Fig. 19, Changing the Max Time to Warn Parameter

17. Select 'SEND' and then select 'OK' to confirm the changes.
18. Select 'Program Device.' See Fig. 13, item 1. There should be data to upload. A 'Data to Upload' item appears in the 'Unit Data' window. Select 'Connect to Server' to upload vehicle parameters to the server. See Fig. 13, item 2.

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## Warranty

This procedure is warrantable only if the described condition exists and the repair is performed within the applicable base or extended coverage warranty period. If a failure is not found, this procedure is considered preventive and warranty does not apply.

Normal warranty applies. See [Table 1](#) for OWL VMRS codes and labor allowance information. Enter this service bulletin number in the *Service Bulletin #* field.

OWL VMRS Codes and Labor Allowance						
Primary Failed Part	Component Code	Cause Code	Correction Code	SRT Code	Description	Time: Hours
A66-10744-002	003-006-008	93	23	32A-5004B	PARAMETER, AXLE TEMP CHANGE SSAM, (SB54-086)	0.3

Table 1, OWL VMRS Codes and Labor Allowance