

Technical Service Bulletin

GROUP	NUMBER
STEERING	23-ST-001H
DATE	MODEL(S)
MARCH 2023	PALISADE (LX2) SANTA FE HYBRID (TM HEV) SANTA FE PLUG-IN HYBRID (TM PHEV)

SUBJECT: PALISADE (LX2), SANTA FE HYBRID & PLUG-IN HYBRID (TM HEV/PHEV), COLUMN TORQUE RESET

Description: This bulletin describes the procedure to reset the steering system torque value to balance uneven steering feel when steering left vs right on some Palisade (LX2), Santa Fe Hybrid (TM HEV), and Santa Fe Plug-In Hybrid (TM PHEV) vehicles.



Applicable Vehicles: Certain 2022MY Palisade (LX2) produced from Oct. 1, 2021 to May 18, 2022. Certain 2022MY Santa Fe Hybrid & Plug-In Hybrid (TM HEV/PHEV) produced from Oct. 1, 2021 to May 31, 2022.

Warranty Information:

Model	Op. Code	Operation	Op. Time	Dp. ïme Causal Part		Cause
Palisade (LX2)	20D08F00	EPS Torque Offset Adjustment and Wheel Alignment [-0.7 ≤ Torque Offset < -0.3] OR [0.3 < Torque Offset ≤ 0.7]	1.3 M/H	71110-S8xxx* (LX2) 71110-S1xxx* (TM HEV/PHEV)		ZZ3
(TM HEV) Santa Fe Plug-In	20D08F01	Wheel Alignment [-0.3 ≤Torque Offset ≤ 0.3]	1.3 M/H	ALIGN-00000	111	
Hybrid (TM PHEV)	(TM PHEV) 20D08F02	EPS Torque Offset Adjustment and Wheel Alignment [-0.7 > Torque Offset] OR [0.7 < Torque Offset]	1.3 M/H 71110-S8xxx* (LX2) 71110-S1xxx* (TM HEV/PHEV)			

NOTE: Normal warranty applies

*Refer to the applicable parts catalog for the full causal part number.

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

Service Procedure:



EPS Torque Offset Inspection:



- 1. Connect to the vehicle using GDS-M. Enter Data Analysis, EPS system.
 - LX2 : Engine ON state
 - TM HEV : IG ON, HEV not ready state



2. Check and record the "Column Torque" value.

NOTICE

If the column torque value is above 0.7 Nm, or below -0.7 Nm, it will be necessary to apply some torque to the steering wheel by hand in the service procedures below.

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HOME Online	PALISADE(LX2 Stee	vci 💲 😽	58	
P, =	Data A	nalysis	0	
< Stop	Graph	Actuation Test	>	
Sensor Nam	e(12)	Value	Unit	Link Up
Battery Voltage		14.60	V	
Ignition Voltage		15.00	V	
Column Torque		0.8	Nm	
Absolute Steering Angle		0.0		
Column Velocity		0.7	'/s	
Motor Current		-4	А	
Vehicle Speed		0	MPH	
Filtered Vehicle Speed		0.0	MPH	
Engine Status		Running	-	
Filtered Engine Status		Running	-	
ECU Temperature		72	'F	
Calibration Status		Calibrated	-	

EPS Torque Offset Adjustment

- 1. Connect to the vehicle using GDS-M. Enter S/W Management.
 - LX2 : Engine ON state
 - TM HEV / PHEV : IG ON, HEV not ready state

2. Under Motor Driven Power Steering, select the function: Set the steering wheel torque to zero.



PALISADE(LX2_/2022/G 3.8 GDI A HOME -VCI 2 28 = S/W Management Unfold All Systems (#) Occupant Classification System Air Conditioner (4) 4WD Control (4) Motor Driven Power Steering Ð System Identification Steering Angle Sensor(SAS) Calibration Part replacement (Power steering motor) Part replacement (Power steering ECU) MDPS Tuning Data Setting(Backup and Write) Set the steering wheel torque to zero Rear View Monitor (ADAS Driving ECU (41) Advanced Driver Assistance Systems_Parking (4) Front View Camera • Rear Corner Radar . (4) Amplifier an. Audio Video Navination Do not touch any system buttons while performing this function.

3. Review the information and enable conditions, then select **OK**.



4. Review the information and conditions, then select **OK**.

ft.	HOME	Online		PALIS	ADE(LX2. Ste	/2022/G ering	3.8 GDI	/	VCI \$	•	5-3
				s/	W Mai	nagen	nent				Ĩ
•	Set the	steering whe	eel tor	que to	zero						
•	[Set th	ne steering v	wheel	l torqu	e to zer	no]					_
	This fu steerir	inction readj ig wheel diff	justs ferenc	the ste ce betv	eering v veen riç	vheel to ght and	orque to left.	zero to	improve	e the	
	This fu	inction need	is to p	perform	n in the	follow	ing situ	ations.			
	1. Whe occurs	n the steerin during drivi	ng wh ing	neel dif	ference	e betwe	en right	and le	ft steerir	ng whe	el
	2. Mak housin	e sure to pe g assembly	rform	n the fu	unction	during	the repl	aceme	nt of the	colum	in or
	e[Co	ndition]									
	1.10	G On, Engine	Drive	3							
	2. E	mpty Vehicle	e Stat	te							
	3. A 4. T	lign the stee ake driver's l	hands	s off th	to the c ne steer	ing whe	eel				
	A[Ca	ution]									Ξ.
	When might	the steering be unstable	whee	el diffe driving	rence o g and s	et torqu	etween ie to zer	right a o throu	nd left, s igh the	teerin	9
	corres	ponding fun	ction.								
			ок					Cance	H		
1		Do not tout	ch an	y syste	em but	tons wh	nile perf	orming	this fur	nction.	

5. Review the information and conditions, then select **OK.**



- 6. Note the Column Torque value.
 - A) If the column torque value is: -0.7 Nm < column torque < 0.7 Nm
 - Press OK without touching the steering wheel.
 - B) If the column torque value is: -0.7 Nm > column torque 0.7 Nm < column torque</p>
 - Apply a small amount of force to the steering wheel by hand until the value is less than 0.7 Nm, or greater than -0.7 Nm. Then press **OK** while holding the steering wheel in place.

HOME Online	PALISADE(LX2./2022/G 3.8 Steering	GDI VCI \$	• 50
	S/W Manageme	nt	
Set the steering whe	el torque to zero		
I Set the steering v	vheel torque to zero]		
Check the conditio	ns below to set the steering	wheel torque zero poir	nt.
Steering Ang	le Sensor : -1.9' (-3' < Steeri	ng Angle Sensor < 3')	
Column Tore	ue: 0.6 Nm (-0.7 < Column	Torque < 0.7 Nm)	
	ок	Cancel) – T
i			_

7. Turn the ignition **OFF**, wait 5 seconds, then turn the ignition back **ON**.

Press OK.

- HOME
 Define
 PALISADE(X2...72023/3 3.8 GOl Steering
 Vol R
 R
 R

 S/W Management

 Set the steering wheel torque to zero

 • [Set the steering wheel torque to zero]

 Setting the steering wheel torque to zero is in progress.

 Information

 Completed !!!

 Turn the ignition OFF, wait 5 seconds, then, turn the ignition ON and press

 [OK]

 OK
- 8. Upon completion of the function, note the new value of the column torque.

If the value is within the range below, the torque zeroing function is complete.

If the value is outside of the range below, perform the zeroing function again until it is within specification.

Column torque specification:

-0.3 Nm \leq column torque value \leq 0.3 Nm

Ħ	HOME	Online	PALISADE(L)	(2/2022/G 3.8 GDI Iteering	VCI \$	۲	2-2
			S/W M	anagement			
-	Set the st	teering wheel to	rque to zero				
	Set the	steering whee	el torque to z	ero]			_
	The fund	ction has been	completed.				
	Column	Torque : 0.2 N	m				
				ок			
1	D	o not touch a	ny system bu	ttons while perfe	orming this fur	nction.	

9. After completion of the torque zeroing function, check and adjust the vehicle's alignment. Then use GDS to reset steering angle sensor SAS calibration. Follow the applicable service manual procedures.

The service procedure is now complete.