



Technical Service Bulletin

GROUP STEERING	NUMBER 20-ST-001H
DATE JANUARY, 2020	MODEL(S) See Below

SUBJECT: COLUMN-MOUNTED MDPS REPAIR INFORMATION

THIS TSB SUPERSEDES 19-ST-001H TO INCLUDE NEW MODELS AND COLUMN & HOUSING ASSY NOISE REPAIR RECOMMENDATION.

Description: This bulletin provides information regarding replacement of the column-mounted Motor Driven Power Steering (MDPS) system as separate components.



Applicable Vehicles: Accent (RB/HC), Azera (HG), Elantra (MD/UD/AD), Elantra Coupe (JK), Elantra GT (GD/PD), Ioniq Hybrid/Plug-In/Electric Vehicle (AE HEV/AE PHEV/AE EV), Kona (OS), Kona EV (OS EV), Palisade (LX2), Santa Fe (TMA), Santa Fe/XL (NC), Santa Fe Sport (AN), Sonata (YF/LF), Sonata Hybrid/Plug-In (YF HEV/ LF HEV/LF PHEV), Tucson (LM/TL), Tucson Fuel Cell (LM FCEV), Veloster (FS/JS)

NOTICE

- **Refer to the applicable model shop manual for the detailed diagnostic and repair service procedures.**

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

Parts Information:

Partial Parts of MDPS System	
<ol style="list-style-type: none"> 1. Column & Shaft Assembly (MDPS full assembly) 2. Column & Housing Assembly 3. MDPS Motor 4. MDPS ECU 5. Universal Joint Assembly 6. Electric Power Pack (MDPS Motor and MDPS ECU assembly. Applicable to Palisade (LX2) and Santa Fe (TMa).) 	

NOTICE

- Refer to the applicable parts catalog for specific application part numbers.

Grease for Mando Systems	Remarks
	<p>For Mando MDPS vehicles below: <u>Santa Fe Sport (AN)</u> <u>Accent (RB/HG)</u> <u>Tucson (LM/TL)</u> <u>Tucson Fuel Cell (LM FCEV)</u></p> <p>The proper amount of grease is equivalent to a 50mm bead.</p> <p>*Each tube of grease can be used on approximately 15 vehicles.</p>
<p>Part Number: YSBB0-91105-FFF</p>	

SUBJECT: MDPS MOTOR AND ECU REPLACEMENT INFORMATION

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Accent (RB/HC) Azera (HG) Elantra (MD/UD/AD) Elantra Coupe (JK) Elantra GT (GD/PD) Ioniq (AE HEV/PHEV/EV) Kona (OS/OS EV) Santa Fe / XL (NC) Santa Fe Sport (AN) Sonata (YF/LF) Sonata Hybrid (YF HEV/LF HEV/LF PHEV) Tucson (LM/TL) Tucson Fuel Cell (LM FCEV) Veloster (FS/JS)	56330R00	MDPS (EPS) Motor	Please see WEB LTS for current LTS time	56330*	I11	ZZ3
Accent (RB/HC) Elantra (MD/UD/AD) Elantra Coupe (JK) Elantra GT (GD/PD) Ioniq (AE HEV/PHEV/EV) Kona (OS/OS EV) Santa Fe / XL (NC) Santa Fe Sport (AN) Sonata (YF/LF) Sonata Hybrid (YF HEV/LF HEV/LF PHEV) Tucson (TL) Tucson Fuel Cell (LM FCEV) Veloster (FS/JS)	56345R00	MDPS-ECU Assy	Please see WEB LTS for current LTS time	56340*	I11	ZZ3
Azera (HG) Tucson (LM)	56345R00	MDPS-ECU Assy	Please see WEB LTS for current LTS time	56345*	I11	ZZ3
Palisade (LX2) Santa Fe (TMa)	56370R00	Electronic Power Pack Assy	Please see WEB LTS for current LTS time	56370*	I11	ZZ3

NOTE: Dealers may claim \$0.10 on sublet for reimbursement of grease.

*** Refer to applicable parts catalog for full causal part numbers.**

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
Accent (RB/HC) Azera (HG) Elantra (MD/UD/AD) Elantra Coupe (JK) Elantra GT (GD/PD)	56300R0S	Steering Column Shaft Assembly (MDPS)	Please see WEB LTS for current LTS time	56310*	I11	ZZ3
Ioniq (AE HEV/PHEV/EV) Kona (OS/OS EV) Palisade (LX2) Santa Fe (TMa)	56390R00	Steering Column & Housing Assy (C-MDPS)		56390*		
Santa Fe / XL (NC) Santa Fe Sport (AN) Sonata (YF/LF) Sonata Hybrid (YF HEV/LF HEV/LF PHEV) Tucson (LM/TL) Tucson Fuel Cell (LM FCEV) Veloster (FS/JS)	56400R00	Joint And/Or Coupling Assy-Universal		56400*		

NOTE: Dealers may claim \$0.10 on sublet for reimbursement of grease.

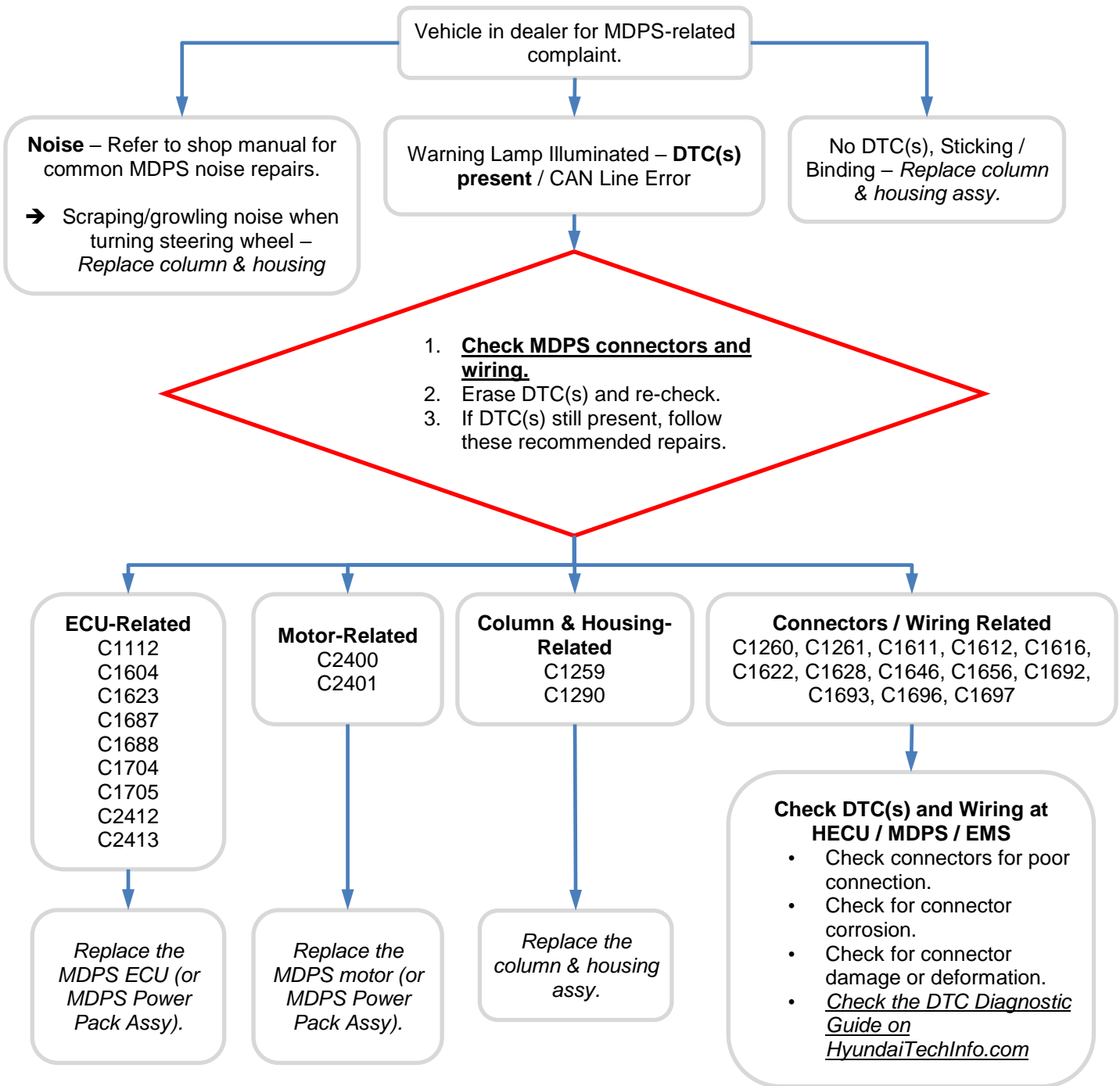
*** Refer to applicable parts catalog for full causal part numbers.**

Service Procedure:

NOTICE

- MDPS Repair Flowchart is meant to be used as reference guide only. See MDPS DTC table for more details.
- It is recommended to replace the column & housing assembly,
 - In cases of no DTC(s) with symptoms of binding/sticking steering feel.
 - Noise diagnosed to be coming from column & housing assembly.
- Refer to the shop manual for other common MDPS noise repairs.
- If an MDPS component is replaced, but the concern is not resolved, please contact the Hyundai Technical Assistance Hotline at 1-800-325-6604 for further assistance.
- Note that some DTCs may be found in systems other than EPS (electric power steering) in GDS. They may be found in the Brake/ABS/ESC system. Check all systems for DTCs.
- Always refer to the applicable model shop manual for detailed information regarding DTC diagnosis and component replacement procedures.

MDPS Repair Flowchart



NOTICE

- **For cases with multiple DTCs:**
 - If the DTCs relate to more than a single MDPS component, it is recommended to replace the full MDPS assembly (56310).
 - If the DTCs relate only to a single MDPS component, it is recommended to replace only the suspect component.
- DTCs shown are based on the 5-digit DTC system. For vehicles showing 7-digit DTCs, refer to the DTC that matches only the first 5-digits.

MDPS DTC Table

DTC	Issue	First Inspection Method	Repair Recommendations
C1102	Battery voltage problem	Check battery voltage condition.	Recharge battery voltage.
C1603	MDPS thermal protection	Investigate driving conditions DTC is set. This DTC protects motor from overheating.	No replacement necessary.
C1611	CAN time out EMS	<ol style="list-style-type: none"> 1. Check GDS condition. 2. Check wiring and connector condition. 3. Check ECU CAN line. 4. Check MDPS ground. 	Check EMS CAN line.
C1616	CAN BUS OFF		Check the chassis CAN line.
C1622	Vehicle speed signal error		Check the EMS (Engine ECU).
C1696, C1697	SPAS signal error		Check SPAS and associated wiring.
C1612, C1646	TCU signal error	Check TCU and associated wiring.	Repair as necessary. Erase DTC(s). MDPS assembly is not to be replaced.
C1628, C1656	Instrument cluster signal error	Check instrument cluster and associated wiring.	
C1692, C1693	VSM signal error	Check VSM and associated wiring.	
C1259	Steering angle sensor signal error	Reset steering angle sensor calibration and erase DTC(s). Check wiring and connector condition.	
C1260	Steering angle sensor signal error	Reset steering angle sensor calibration.	If DTC returns, inspect wiring and connector condition.
C1261	Zero-setting error		
C1290	Torque sensor signal error	First erase DTC, then check wiring and connector condition.	If DTC returns, replace column & housing assembly.
C1112	Torque sensor voltage error	Check wiring and connector condition between torque sensor and ECU.	If DTC returns, replace MDPS ECU (or Power Pack Assy).
C1704	ECU fail-safe relay fault	First erase DTC, then check wiring and connector at ECU.	
C1705	ECU hardware error		
C1604	ECU over/discharge error		
C2413	ECU hardware error		
C2400	Motor signal error		
C2401	Motor circuit error		
C2412	Motor voltage supply error		First erase DTC, check wiring and connector between ECU and motor.
C1623	CAN time out SAS	<ol style="list-style-type: none"> 1. Check MDPS power connector and fuse. 2. Check MDPS ground line. 3. Check MDPS ECU / VSM CAN line. 4. Communication status with GDS. 5. Check for C1259 -> if present with these DTCs, replace column and housing assembly. 	If DTC returns, replace MDPS ECU (or Power Pack Assy).
C1687	CAN time out VSM		
C1688	VSM signal error		