

GROUP MODEL CHA Multiple Models (see table below) NUMBER DATE 044 May 2014

X Parts Manager

TECHNICAL SERVICE BULLETIN

SUBJECT:

MDPS FLEXIBLE COUPLING REPLACEMENT

This bulletin provides information related to the replacement of the flexible coupling in the MDPS motor of some of vehicles, which may experience a "clicking" noise emanating from the MDPS when turning the steering wheel left or right, while stopped. This condition may be caused by premature wear of the flexible coupling in the MDPS. To correct this concern, replace the flexible coupling as outlined in this TSB. Refer to the table below for production dates and a breakdown of replacement procedures by model.

Procedure	Model/MY	Applicable Production Range	Replacement Part
1	Forte (TD) 2012~2013 From Jan. 05, 2012 ~ Mar. 31, 2013		
	Soul (AM) 2010~2013	From Sep. 01, 2009 ~ Aug. 15, 2013	
	Optima (TF) 2011~2014	From Aug. 17, 2010 ~ Dec. 18, 2013	00
2	Optima (QF) 2011~2014	From Aug. 12, 2011 ~ Dec. 18, 2013	
	Cadenza (VG) 2014	From Feb. 01, 2013 ~ Apr. 19, 2014	
	Sorento (XMa) 2013~2014	From Jul. 01, 2012 ~ Dec. 18, 2013	
	Forte (YD) 2014	From Jan. 7, 2013 ~ Dec. 18, 2013	

File Under: <CHASSIS>

Circulate To:

General Manager X Service Manager Service Advisor(s) I Technician(s) I Body Shop Manager □ Fleet Repair

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Replacement Procedure 1: This procedure applies to Forte (TD) models.

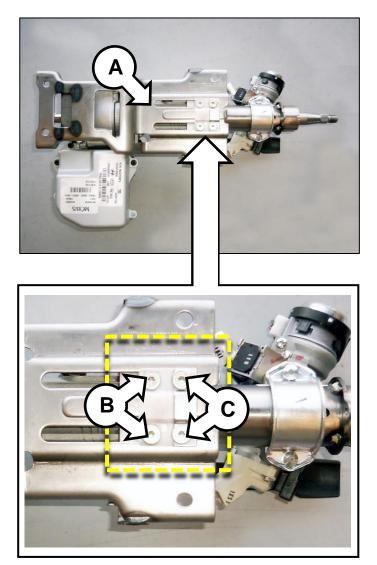
1. Remove the MPDS unit by referring to the applicable procedure on KGIS.

* NOTICE

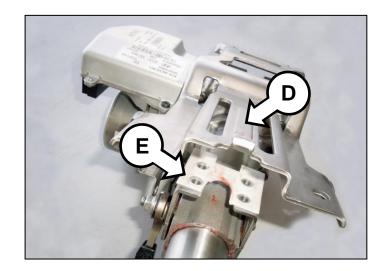
Before removing the MDPS unit, make sure to align the steering wheel to the center position.

 Locate the steering column guide bracket (A) and remove four (4) Torx[®] head screws (B/C) securing it to the steering column.

> Tightening torque: B: 3.6 lb-ft (4.9 Nm) C: 2.2 lb-ft (2.9 Nm)



 Lift the steering column guide bracket (D) and remove the plastic spacer (E). Retain all parts as they will be reused.



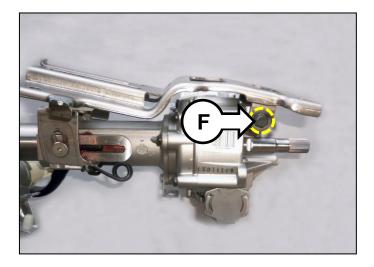
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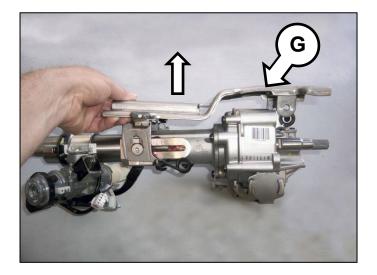
MDPS FLEXIBLE COUPLING REPLACEMENT

4. Remove the steering column guide bracket hinge bolt (F)

Tightening torque: 13~14.5lb-ft (17.7~19.6 Nm)

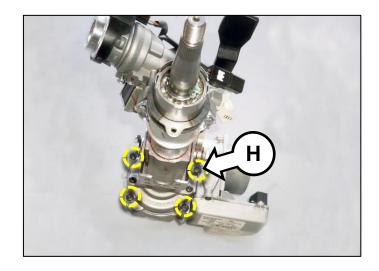


5. Remove the steering column guide bracket (G) from the steering column.



 Hold the MDPS upright and loosen four Torx[®] head screws (H) securing the column to the motor housing.

> Tightening torque: 6.5~9.4lb-ft (8.8~12.7 Nm)

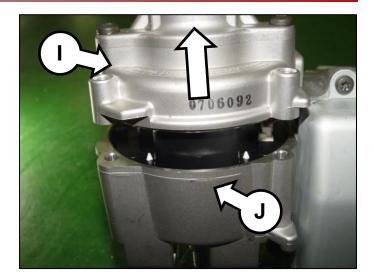


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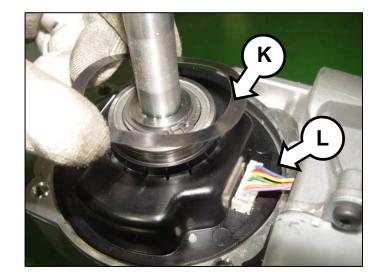
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7. Separate the upper half (I) of the motor housing from the lower half (J).



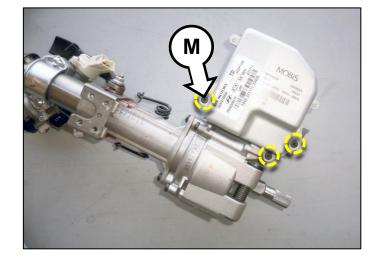
8. Remove the washer-gasket (K) and connector (L) from lower portion of the MDPS.

To avoid damage, use caution when removing the connector.



 Remove three (3) Torx[®] head screws (M) securing the MDPS ECU cover.

Tightening torque: 3.6~5.1lb-ft (4.9~6.9Nm)



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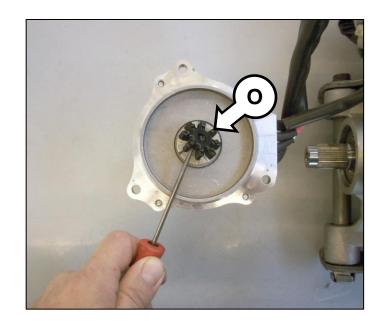
Remove four (4) Torx[®] head screws
 (N) securing the MDPS motor cover.

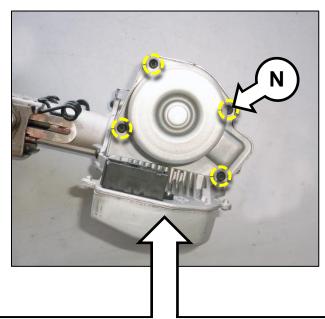
Tightening torque: 3.6~5.1lb-ft (4.9~6.9Nm)

11. Remove the MDPS motor cover.

To avoid damage, use caution when removing the connector and the wiring harness.

 Remove the original flexible coupling (O) from the housing. In addition, use an air gun to remove any foreign matter from the motor and/or the housing.







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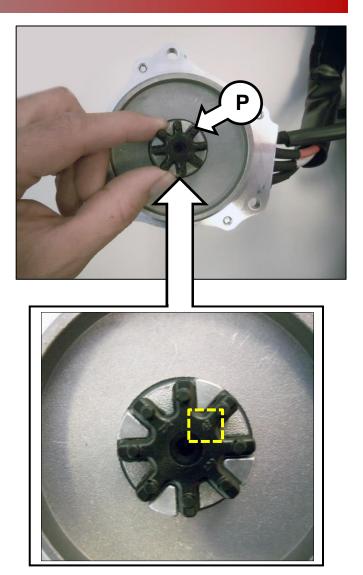
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 Replace the original flexible coupling with the new part (P). Refer to the graphic below to properly align the flexible coupling with the motor housing.

***** NOTICE

Before installing the new part, make sure it has "4P" embossed on the surface.



14. Reinstall all removed components by reversing the order of removal.

***** NOTICE

Before re-installing the MDPS unit, make sure the front wheels are pointing straight ahead.

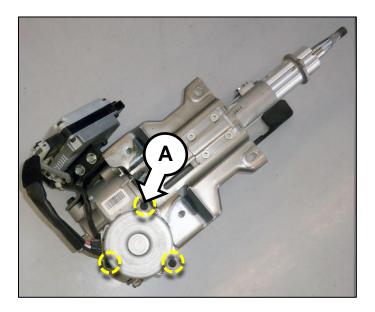
MDPS FLEXIBLE COUPLING REPLACEMENT

Replacement Procedure 2: This procedure applies to Soul (AM), Optima (QF/TF), Cadenza (VG), Sorento (XMa) and Forte (YD) models.

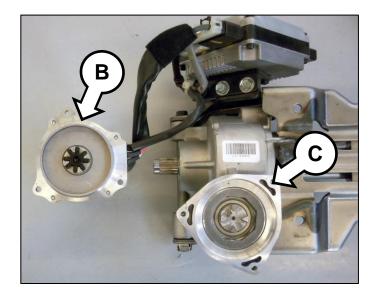


Before removing the MDPS unit, make sure to align the steering wheel to the center position.

- 1. Remove the MPDS unit by referring to the applicable procedure on KGIS.
- 2. Remove 3 bolts (A) securing the MPDS motor to the housing.



3. Separate the MDPS motor (B) from the housing (C), as shown.

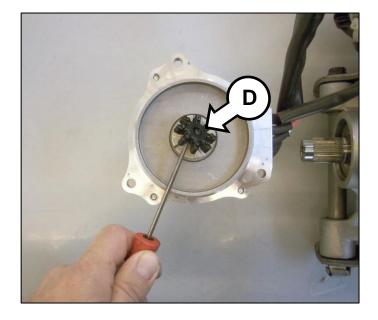


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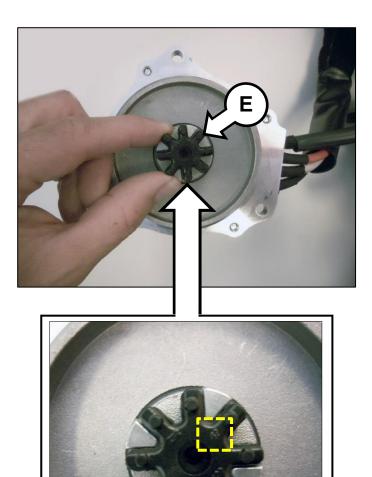
 Remove the original flexible coupling (D) from the motor. In addition, use an air gun to remove any foreign matter from the motor and/or the housing.



5. Install the new flexible coupling (E) onto the MDPS motor, as shown.

***** NOTICE

Before installing the new flexible coupling, make sure it has "4P" embossed on the surface.



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***** NOTICE

Before re-installing the MDPS unit, make sure the steering wheel is aligned to the center position, with the front wheels pointing straight ahead.

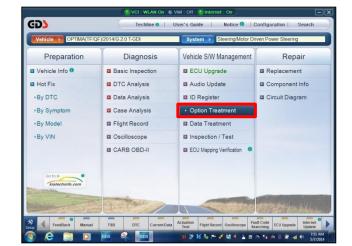
6. Reinstall all removed components by reversing the order of removal.

Calibration Procedure:

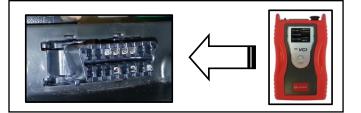
- 1. Connect the power supply cable to the GDS.
- 2. Connect the USB cable between the VCI and the GDS.
- 3. Connect the Main 16-pin DLC cable (GHDM 241000) to the VCI.
- Connect the Main 16-pin DLC cable (GHDM – 241000) to the OBD-II connector, located under the driver's side of the instrument panel.
- 5. Select **EPS** and click on **OK**.



6. Select **Option Treatment** under the Vehicle S/W Management tab.



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7. Select **ASP Calibration**.

	💽 VCI	WLAN On 🕤 VMI : I	Off 🕘 Internet : On		- ×					
GD	Preparation	Diagnosis	Vehicle S/W Managemen	Repair	0					
Vehicle > OPTIMA(TR	F/QF)/2014/G 2.0 T-GDI	S	stem 🕨 Steering/Motor Dr	ven Power Steering	i 🕀					
Vehicle S/W Management	Vehicle S/W Manageme	nt								
ECU Upgrade	ID Register									
Audio Update	System Ident	tification								
ID Register										
Option Treatment	Data Treatment									
This item is not supporte										
	ASP Calibrat	ion								
	Seps Type Re	cognition								
< +										
Data Treatment										
Inspection / Test										
ECU Mapping Verification										
Setup FeedBack N	anual TSB DTC	Current Data Actua	Ion Flight Record Oscilloscope	Fault Code Searching ECU Upgrade	Internet Update					
💿 🤗 🚞	D 605 😪 🛛	GDS 🕌	2 K N P 🖌 Q 4 L	a a si é i i i a	40 7:51 AM 5/7/2014					

8. Click **OK** to continue with ASP calibration.

	💽 VCI :	WLAN On S VMI: 0	Off 💽 Internet : On		- ×
GD	Preparation	Diagnosis	Vehicle S/W Management	Repair	0
Vehicle D OPTIMA(TF/QF)/2014/G 2.0 T-GDI	Sy	stem 🕨 Steering/Motor Driven F	Power Steering	08
Venicle S/WII 2 APFCII ECU Upgr ID Registe Option Treat This Rem is		c exitating ASP Calibration, Perform this B EPIS (CU or do work related to EPIS, R) button.	3		
Data Treatr Inspection / .co. ECU Mapping Verification I PreedBack	Marroal TSB DTC	Current Data Actual	OK Cancel	Code ECU Upgrade II	lernet O

9. Start the engine and center the steering wheel. Then, click on **OK**.

UCI	: WLAN On S VMI : Off S Internet : On		
GDS Preparation	Diagnosis Vehicle S/W Management Repair	0	
Vehicle > OPTIMA(TF/QF)/2014/G 2.0 T-GDI	System > Steering/Motor Driven Power Steering	1	
hicle 3/WM \$ ASP Calibration		5	
Registe plon Treat This item is	(AP Catatation) This function is used for initiating ASP Catatration, Partorm this function when you replace EPIS ECU or do work initiated to EPIS Pryoute ready, press (PIQ button,		
Data Treatr nspection / .co.	ОК Салсеі		
CU Mapping Verification II		- 0	
FeedBack Manual TSB DTC	Current Data Actuation Test Flight Record Oscilloscope Fault Code Searching ECU Upgrade It	ternet Ipdate	
) 🥭 📋 🖸 🚥 🔍	605 🔉 🕹 🖉 😼 🗠 🖻 💉 🖬 🔨 🛓 🗷 🖓 🏟 🖹 🗃 👍 🕂	7:52 AM 5/7/2014	

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10. Turn the ignition **OFF** and wait 15 seconds. Then, turn the ignition **ON** and click on **OK**.



11. Access **Current Data** and verify the Steering Angle Sensor value is at 0.0 \pm 5.0 degrees.

GD	Preparation	Diagnosis	Vehicle S/W	Management	Repair	0
Vehicle 🕨 OPTIMA(T	F/QF)/2014/G 2.0 T-GDI		System 🕨 Steerin	ng/Motor Driven Pr	ower Steering	0
	Current Data				Swarch 👘 🕮	
Basic Inspection	Selective Display Full Li	st 🗧 Graph :	items List : Res	et Min Max Record	d Stop 😂 Grou	ping VSS
DTC Analysis	Sensor Name			Value	Unit	
Data Analysis	Battery Voltage			12.25	V	
OSelect a Sensor Data	Steering Angle Sensor			3.6		
tem to view its relative	Steering Weet Velocity More Current Target Motor Current Target Motor Current Target Motor Torque ECU Temperature Metor Temperature Percentage of Derating Vehicle Speed Filtered Vehicle Speed Galibration Status Calibration Status	i		0 0 15 15 0 0 0		
Case Analysis						
Flight Record						
Oscilloscope CARB OBD-II						
FeedBack	Manual TSB DTC	Current Data	ation Flight Record	Oscilloscope Fault C	Code ECU Upgrade	Internet Update

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AFFECTED VEHICLE PRODUCTION RANGE:

Model	Applicable Production Range
Forte (TD) 2012~2013	From Jan. 05, 2012 ~ Mar.31, 2013
Soul (AM) 2010~2013	From Sep. 01, 2009 ~ Aug. 15, 2013
Optima (TF) 2011~2014	From Aug. 17, 2010 ~ Dec.18, 2013
Cadenza (VG) 2014	From Feb. 01, 2013 ~ Apr.19, 2014
Sorento (XMa) 2013~2014	From Jul. 01, 2012 ~ Dec.18, 2013
Forte (YD) 2014	From Jan. 7, 2013 ~ Dec.18, 2013
Optima (QF) 2011~2014	From Aug. 12, 2011 ~ Dec.18, 2013

PART INFORMATION:

Part Name	Part No.	Qty.	Replacement Part
Flexible Coupling	56315 2K000FFF	1	

WARRANTY INFORMATION: N CODE = N29 C CODE = C63

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	QTY.																						
Soul (AM)		56310 2K625			56315F00	1.3 M/H																								
Optima (QF)		56310 2T301			50515F00	1.5 M/H																								
Forte (TD)		56310 1M550				1.6 M/H																								
Optima (TF)	W	56310 2T305	0	(CHA 044) MDPS Flexible Coupling		1.3 M/H	56315 2K000FFF	1																						
Cadenza (VG)		56310 3R561		Replace	56315F02	1.5 M/H																								
Sorento (XMa)		56310 1U500	-]																				1.4 M/H	
Forte (YD)		56310 A7410								1.3 M/H																				