	GROUP Safety Recall Campaign	MODEL 2011MY Sorento (XM) w/2WD & 2.4L Engine
	NUMBER SC 089 [Rev 1, 6/6/2011]	DATE April 2011
VOLUNTARY SAFETY RECALL CAMPAIGN		
SUBJECT: 2011MY KIA SORENTO (XM) INTERMEDIATE SHAFT (SC089)		

***NOTICE**

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information for the voluntary safety recall campaign relating to the intermediate shaft misalignment correction on some 2011 Sorento (XM) 2WD vehicles equipped with automatic transmission, produced from the start of production through 5/22/2010. To correct the intermediate shaft misalignment issue, follow the repair procedure outlined below to replace the right side output gear and intermediate shaft.

***NOTICE**

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected 2011MY Sorento (XM) until it has been repaired pursuant to the procedures set forth in this bulletin.

***NOTICE**

All vehicles potentially subject to this campaign should be verified to be not completed. WebDCS> Warranty Coverage> Warranty Coverage Inquiry> Check Open Campaign Status.

***NOTICE**

To improve customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service> Warranty Coverage> Warranty Coverage Inquiry) for a list of any additional campaigns or service actions that may need to be performed on the vehicle before returning it to the customer.

File Under: <Voluntary Safety Recall Campaign>

- Circulate To: General Manager Service Manager Parts Manager
 Service Advisor(s) Technician(s) Body Shop Manager Fleet Repair

SUBJECT:

2011 MY KIA SORENTO (XM) INTERMEDIATE SHAFT (SC089)

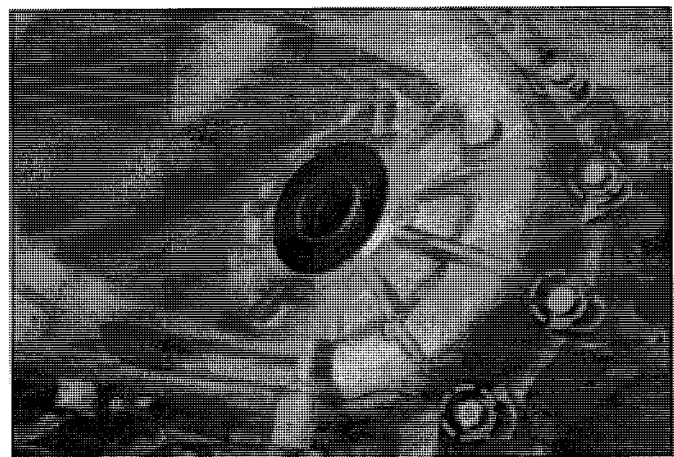
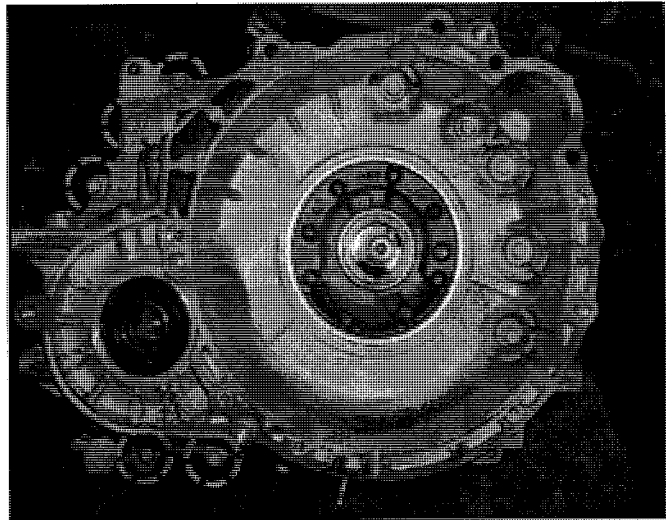
Precautions before starting this repair

- Ensure your work area is clean during this procedure
- Clean mating surfaces as instructed
- Clean out bolt holes as instructed
- Ensure O-rings are present and are not damaged
- Do Not use excessive amount of RTV as blockage and restricting of hydraulic passages can occur

1. Drain the transaxle fluid during removal of transaxle.
2. Remove the transaxle assembly according to the 2011 Sorento electronic shop manual.

***NOTICE**

KIA recommends an alternative procedure to draining the power steering fluid that requires the technician to perform one of the following to minimize complete system fluid loss: 1) Using a pair of hose pinch pliers (Snap-On: Part # HCP6A or equivalent), apply hose pinch pliers at the power steering pump and at the right fender hose to minimize fluid loss. 2) Drain power steering fluid into a clean container and refill the power steering fluid after SC089 completion.



3. Remove the converter quickly and tilt the snout of the converter up to prevent oil loss.
4. Remove the bolts on both sides of the case as outlined.

SUBJECT:

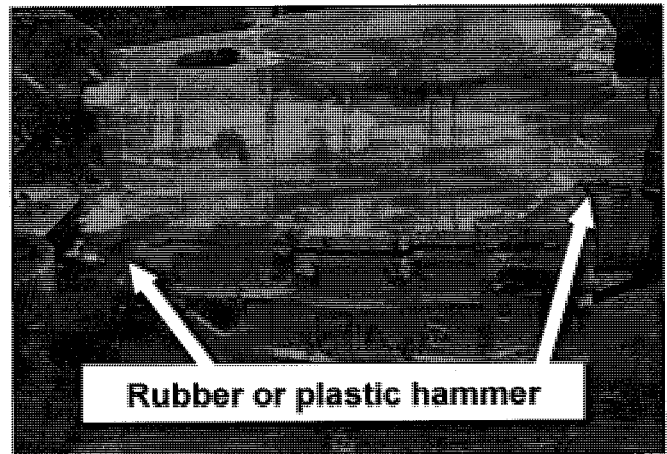
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5. Use a rubber hammer to loosen the front transaxle case from the rear transaxle case. Separate as instructed, then remove case half.

⚠ CAUTION

Do not use screwdriver to separate the case as this may damage the case.

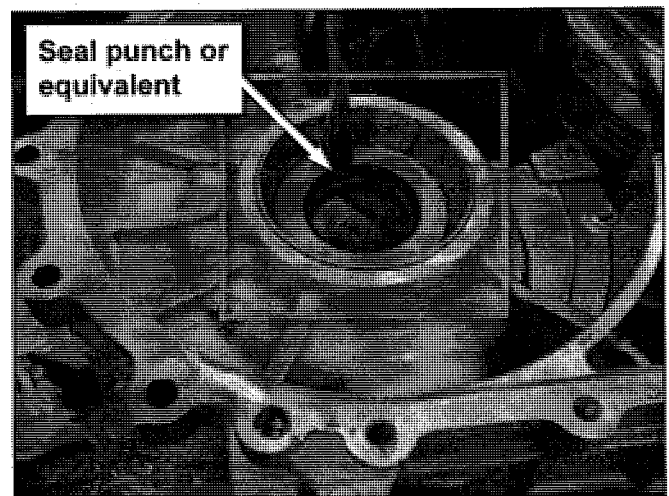
Clean RTV from sealing surfaces then wipe with brake clean to remove oil film. Do not use power- tools to clean case half, damage and operational concerns can occur, razor blade scraper is preferred.



6. Use a seal punch to remove the output shaft oil seal from the transmission housing.

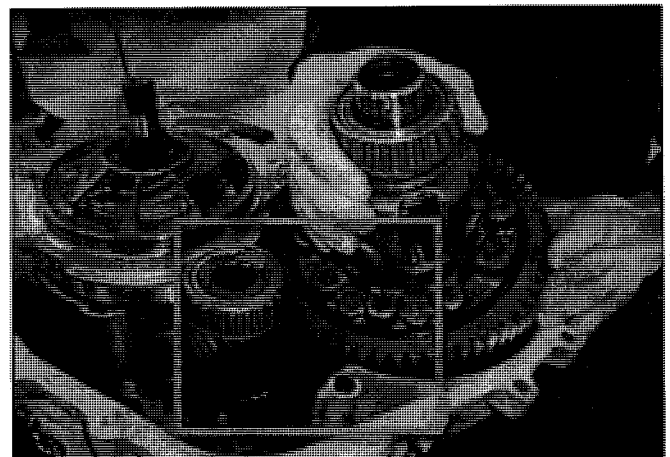
*** NOTICE**

DO NOT damage flat washer during removal

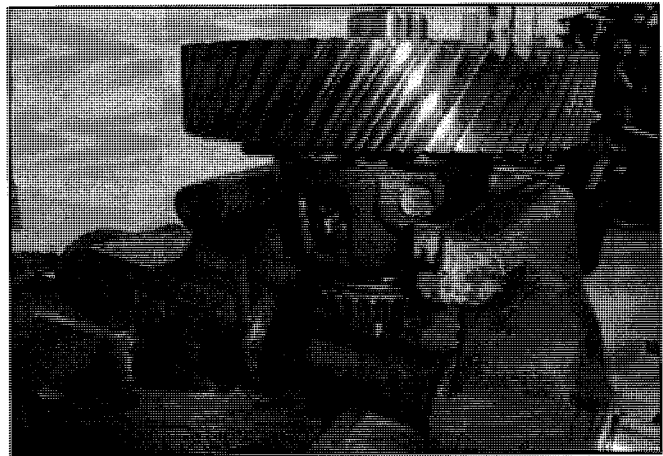


7. Remove the differential assembly by tilting up and removing as shown.

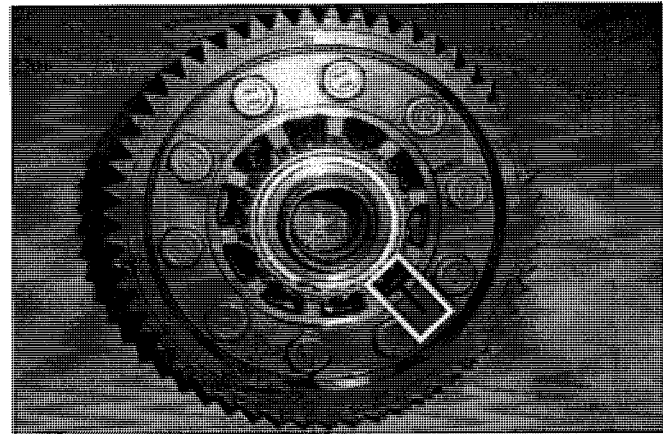
Use a seal punch to remove the 2nd oil seal from the case located under the ring gear assembly.



8. Put the differential housing in a vise. Align the flat in differential housing to the open vise and clamp firmly, do not over-tighten housing in vise.



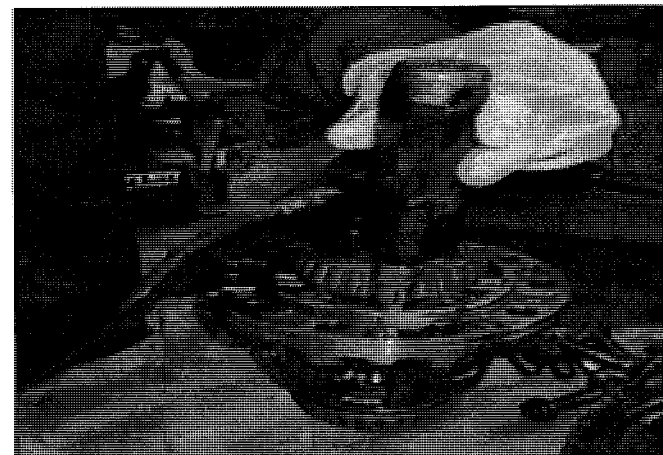
9. Mark the ring gear to differential housing and remove the 10 bolts holding the differential ring gear to the differential housing, remove the differential gear.



10. Remove the two bolts that secure the differential housing cover to the differential housing.

***NOTICE**

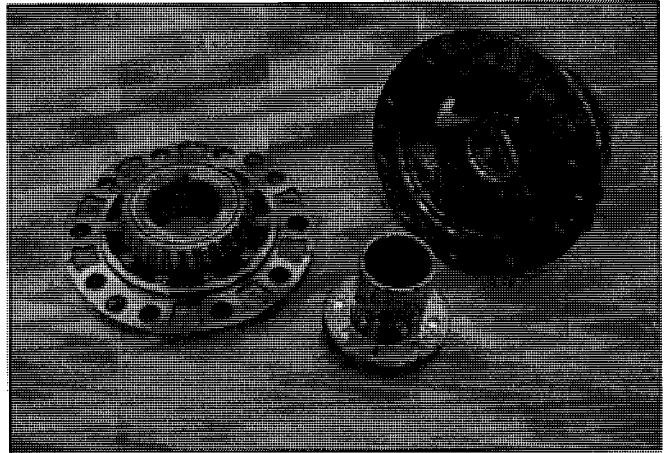
The bolts may be T30 torx or philips. If they are philips use a impact screwdriver to loosen.



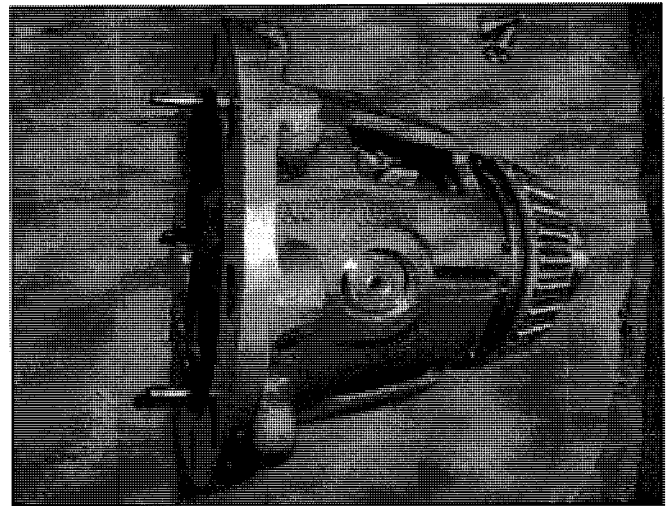
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11. Separate the differential and remove the differential side gear from the cover.

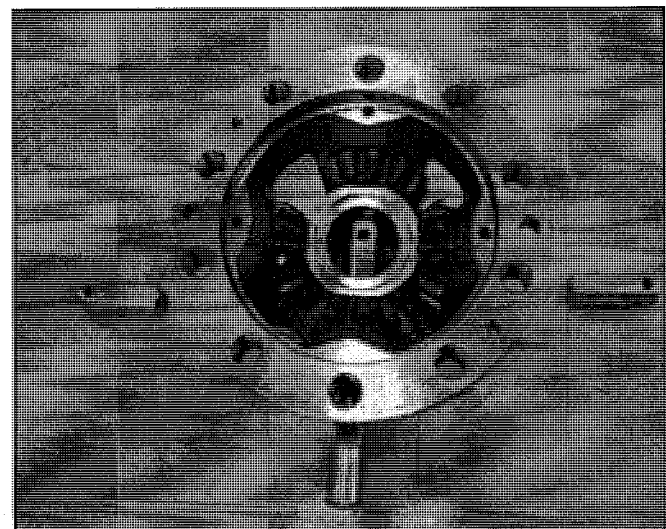
No action is required for the left side output gear.



12. Remove the differential from the vise then turn the differential case upside down to remove the 3 pins that hold the pinion shafts into the differential case.

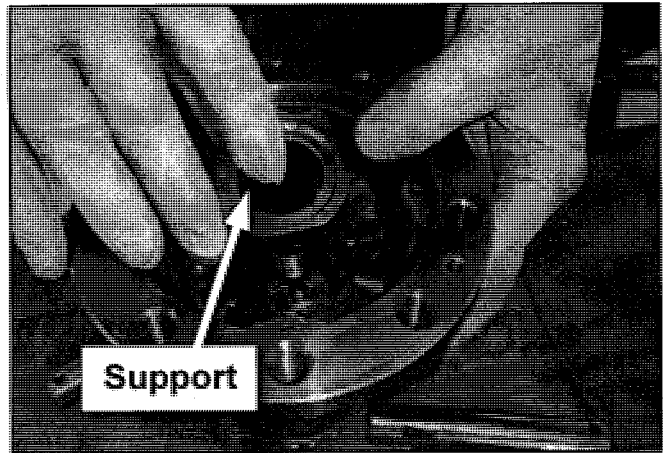


13. Remove the 3 pinion shafts from the differential case.



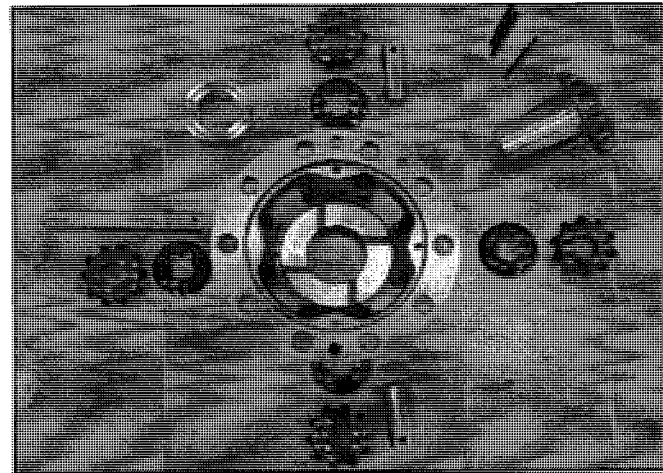
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14. Remove the pinion shaft support.



15. Remove the pinion gears and differential side gear.

Lay-out pieces when disassembling, do not mix parts.



***NOTICE**

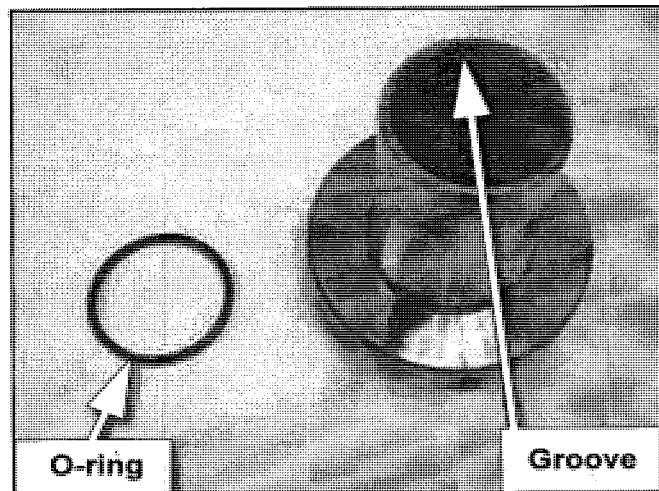
Keep the same washer(s) with same spider gear(s)

ASSEMBLY:

16. Lightly coat the new O-ring (P/N: 45838 3B000) with McLube MoS2-400 grease. Install the O-ring into the outer groove of the left side differential output gear.

The right side O-ring has been installed by the supplier of the repair kit.

Lubrication of the axle spline (s) will be done during assembly step #31

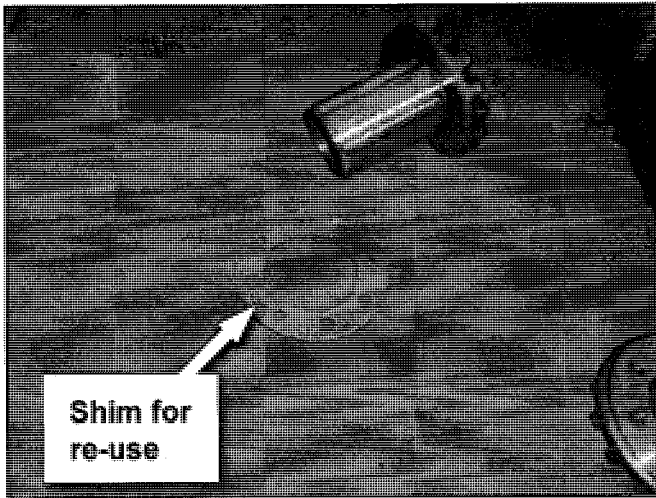


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17. Install the old shim on the new differential side gear.

***NOTICE**

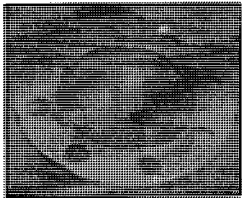
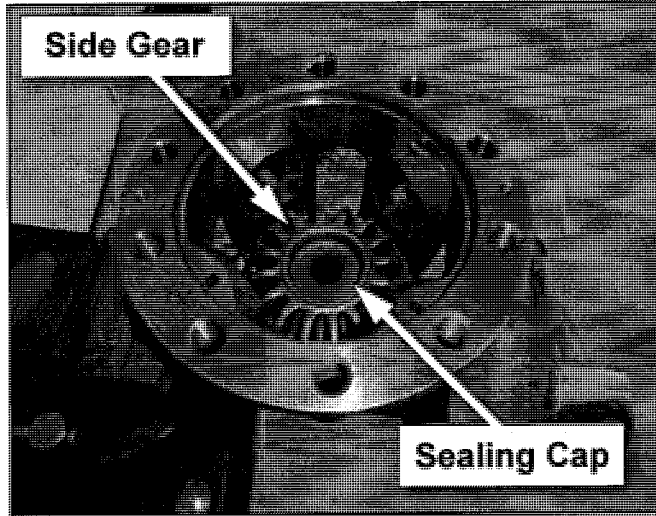
Keep the same washer(s) with same spider gear(s)



18. Place the differential case back in the vise and install the new side gear. Make sure the sealing cap is installed.

***NOTICE**

Make sure the shim was transferred to the new side gear.

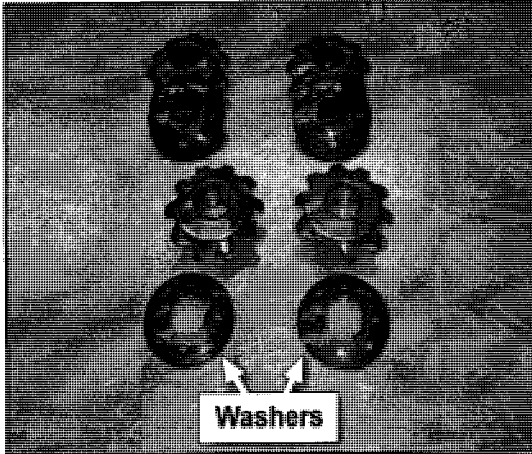


Side Gear Shim

19. Install the original washers onto the pinion gears.

***NOTICE**

The washers are slotted to align with the pinion shafts, rotate retaining pin as required to align washers.

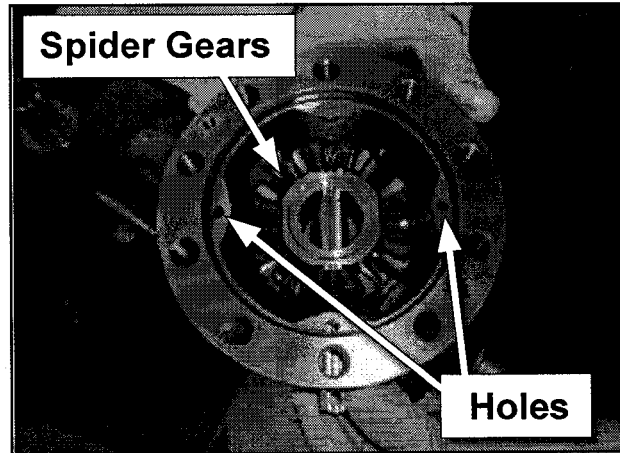


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20. Install the 4 pinion gears and washers in the differential case.

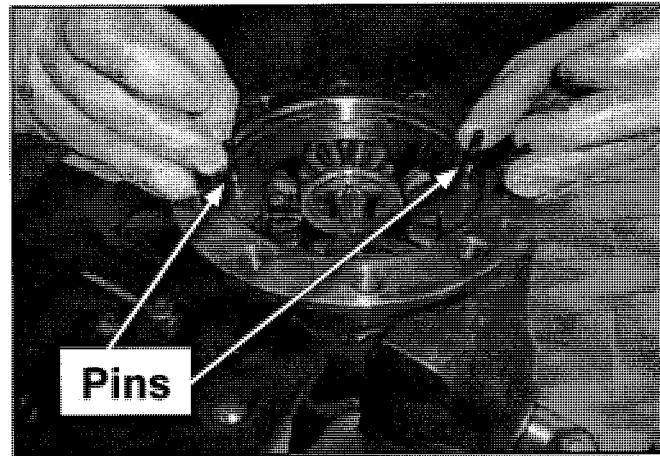
Install the pinion support.

Install the long pinion shaft aligning the holes in the differential case with the hole in the pinion shaft.



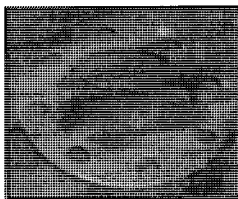
21. Install the short pinion shafts in the differential case aligning the holes in the differential case with the holes in the pinion shafts.

Install the 3 locking pins to hold the shafts in place.

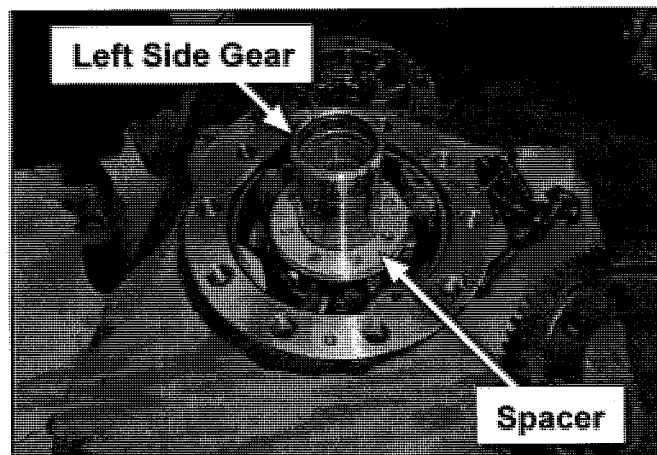


22. Install the left output side gear and spacer.

***NOTICE**
Make sure the shim is present.



Side
Gear
Shim

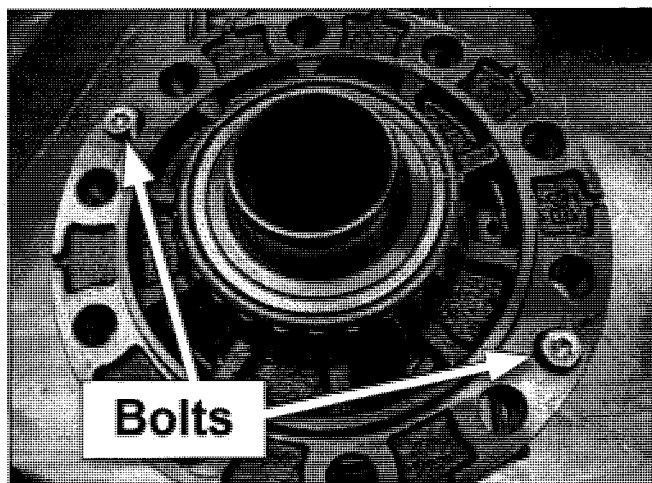


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23. Install the differential cover on the differential case and install the 2 bolts. Torque the bolts to the specification.

Torque: 96 inch lbs. (10.8 Nm).

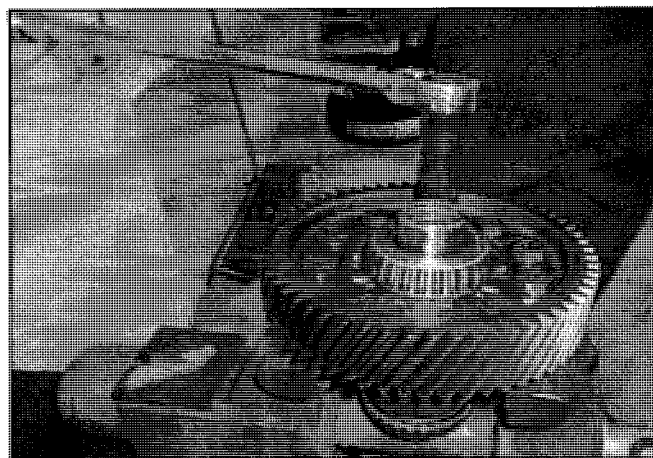


24. Assemble the ring gear to the differential case. Install the the bolts and torque to specification in a star pattern.

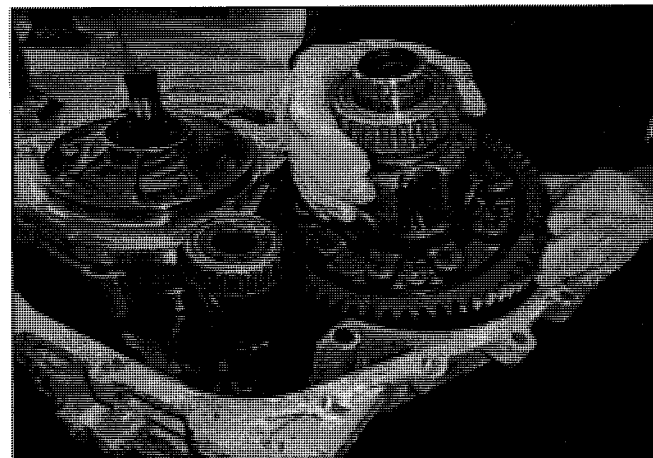
Torque: 94~101 ft. lbs. (130~140 Nm)

***NOTICE**

The machined shiny surface of the ring gear must face the differential case. Align marks made during dis-assembly.



25. Tilt the differential assembly and install in the transaxle case as required.



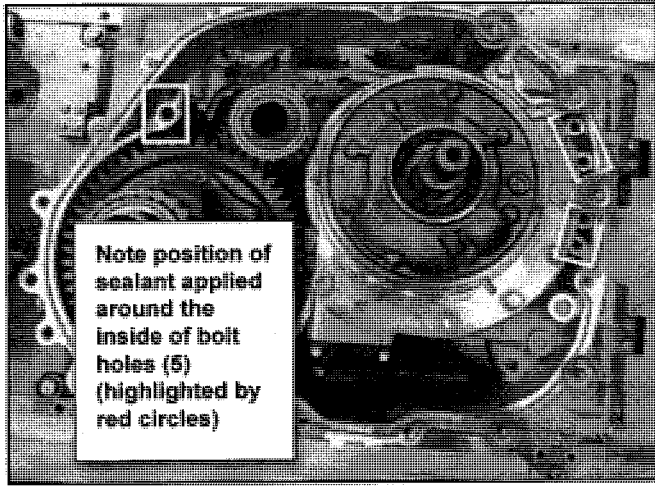
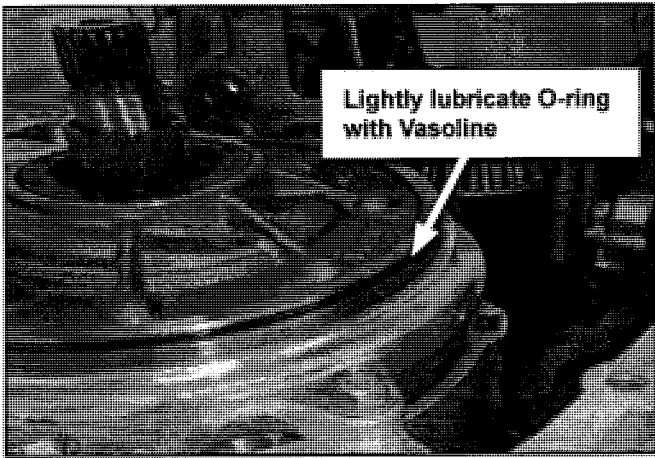
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26. Apply Kia RTV gasket maker P/N: UM010 CH046 to the mating surfaces of the transaxle case using a 1 mm bead. Sealant should be used on the inner bolt holes (5) as shown (see photo).

⚠ CAUTION
Be careful not to allow any sealant inside the case, clean out bolt holes of any AT fluid that may prevent proper sealing.

Make sure O-rings are in place.

*** NOTICE**
Use of excessive sealant can cause restriction of oil flow and is subject to chargeback.
Use RTV around these bolt holes as outlined in photo



27. Install the converter case. Install the bolts to the transaxle case and tighten the bolts to specification.

Torque: 23 ft. lbs (31.1 Nm).



SUBJECT:

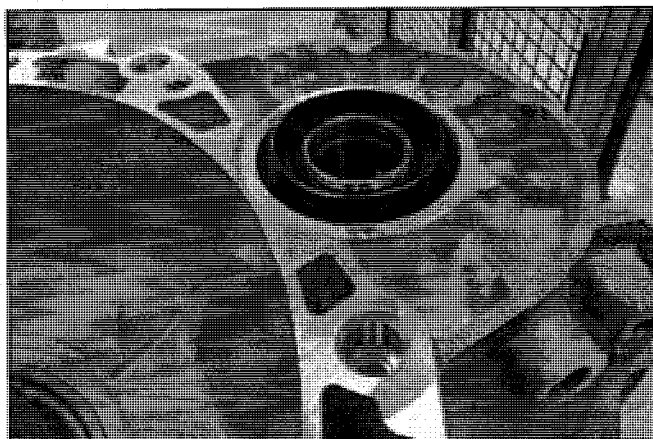
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28. Right side axle seal installation:

Install the replacement axle seals using SST- K95B-50003-D and K95U- 003-G.

Axle seal must be 1~1.3mm below case surface.

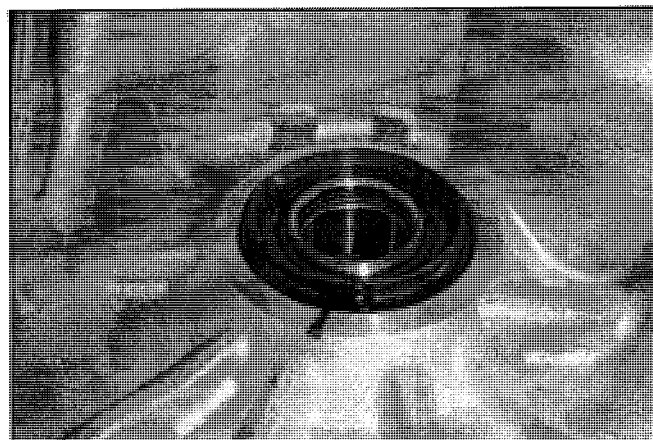
Ensure axle seal are at the correct depth, the seal tool does not have a stop applied so take care not to drive the seal in too far.

29. Left Side axle seal installation:

Install the replacement axle seals using SST- K95B-50003-D and K95U- 003-G.

Axle seal must be 1~1.3 mm below case surface.

Ensure axle seal are at the correct depth, the seal tool does not have a stop applied so take care not to drive the seal in too far.



30. Install the torque converter. Rotate the converter while pushing inward and upward until the converter is fully seated within the case.

Clean excess oil out from behind the torque converter as some fluid may of leaked out during installation of the T/C.

Depth: 9/16~5/8" (14-16mm)

**CAUTION**

Oil pump damage can occur if the torque converter is not installed properly.

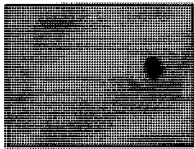


SUBJECT

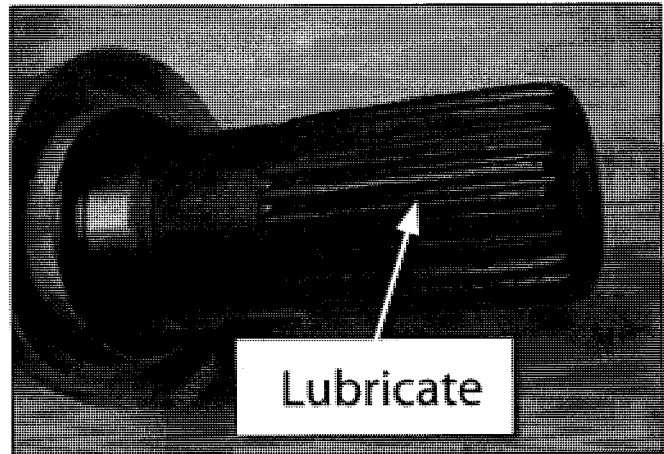
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31. Install the transaxle in the reverse order of removal.

Apply McLube MoS2-400 grease (Petroleum grease with molybdenum Disulfide), P/N UM010 CH047 to the splines on the left and right side output gears/CV joint, intermediate shaft splines in the transmission



Shown on teaspoon is proper amount of grease to use on axle splines.



Use approximately 1.5 ~ 2.5 grams of grease per axle spline.

32. Remove the fill plug on the converter housing. Use a clean funnel to add approx. 5-6qts of SP-IV ATF.

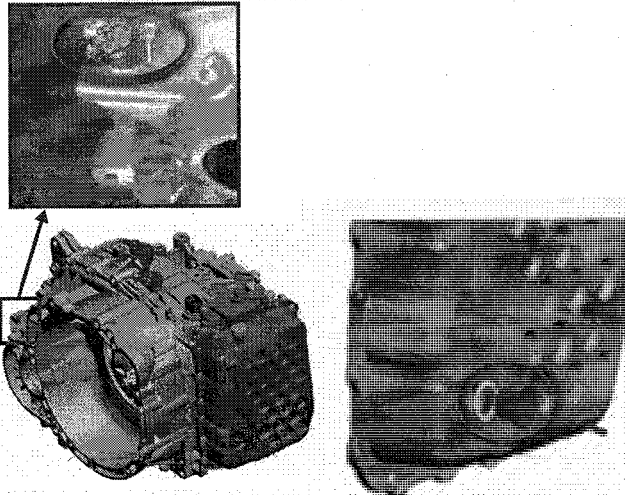
After installing the fluid remove the level checking plug and ensure oil flows out in a thin steady stream.

Reinstall and tighten both plugs to 25~32 ft Lbs (34~44 Nm)

***NOTICE**

Collect and dispose of any excess fluid in accordance with local regulation.

Checking of fluid level is done through valve body side cover



Fill Plug shown Level Checking Plug

ATF TEMPERATURE = 122 ~ 140F (50~60C)
SHIFT LEVER IN "P" AND ENGINE RUNNING

33. Drive the vehicle to confirm the correct operation of the transaxle and the differential Gear replacement. After completing road test inspect for fluid leaks and proper fluid level.

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AFFECTED PRODUCTION RANGE:

MODELS	PRODUCTION DATE RANGE
2011 Sorento (XM)	Start of production to May 22, 2010

REQUIRED PARTS

Part Name	Part Number	Qty	Remark
Axle Shaft Repair Kit	49560 2PA00QQK	1	Includes Int. Shaft, O-rings, Axle seals, side output gear (transfer heat shield on axle bracket)
RTV	UM010 CH046	1	Order through Kia Chemical Program @ kiachemicals.com
ATF (SP-IV)	UM090 CH042	6 qts	

WARRANTY CLAIM INFORMATION:

Claim Type	Causal P/N	Qty.	N Code	C Code	Repair Description	Labor Op Code	Time	Replacement P/N	Qty
R	49560 2P200	0	N29	C23	(SC089) - Repair differential, replace shaft and apply grease (2WD)	111A04R0	5.2 M/H	49560 2PA00QQK	1
								UM010 CH046	1
								UM090 CH042	6

Note: Use sublet code X1 for reimbursement of the McLube Moly MoS2-400, and PSF-3 power steering fluid.

- **\$3.00 per claim for 2WD (both left and right side axle spline lubrication)**
- **If rental car is provided, enter rental amount in the X1 sublet total along with cost related to lubricant (2WD only). This can only be submitted with 2WD transmission repair due to time required to complete repair.**
- **\$2.00 per claim for PSF-3 power steering fluid**

***NOTICE**

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service>Warranty Coverage>Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.