
Driveline (05.00)

Contents

Driveshaft (05.01)	5-1-2
Description	1-2
Specifications	1-2
Maintenance	1-2
Torque Tube.....	1-2
Remove.....	1-2
Installation	1-5
Halfshafts (05.05)	5-2-1
Specifications	2-1
Maintenance	2-1
Halfshaft	2-1
Removal.....	2-1
Installation	2-1

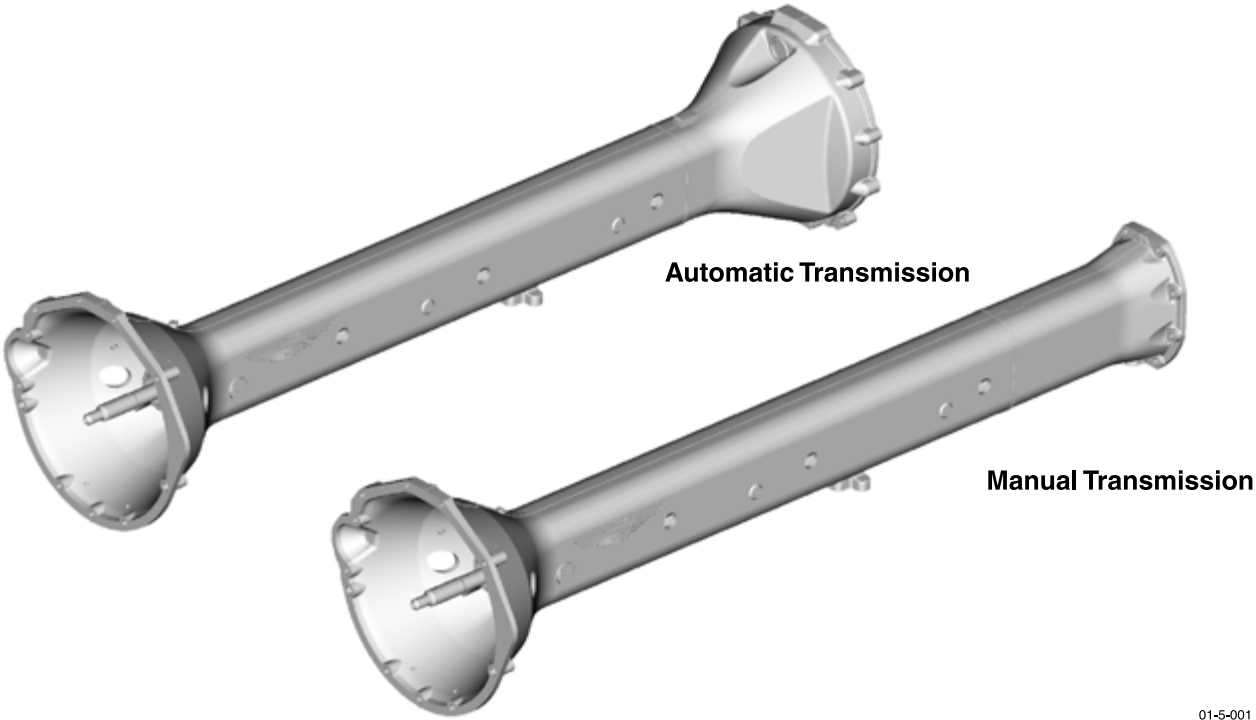


Driveline (05.00)

Driveshaft (05.01)

Description

The driveshaft consists of a torque tube assembly, incorporating the propshaft, transferring drive from the power unit to the gearbox.



Engine power is transmitted to the rear wheels via a carbon fibre prop shaft. To prevent any shunting of the engine under high acceleration, the engine and transaxle are connected with an aluminium torque tube which surrounds the prop shaft. This arrangement is used on both the automatic and manual transmission cars.

Specifications

Torque Figures			
Description		Nm.	lb. / ft.
Torque Tube (front)	M8	25	18.5
	M10	50	37
Torque Tube (rear)		43-57	32-42.5
Exhaust Manifold		18-22	13.5-16.5
Starter Motor		50	37
Drive Plate (Auto only) - Torque converter to prop shaft		72	53.5

Maintenance

Torque Tube

Repair Operation Time (ROT)	
Item	Code
Torque Tube Renew	05.01.AB

Remove

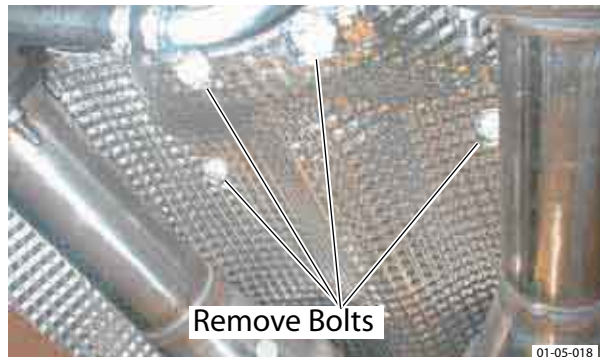
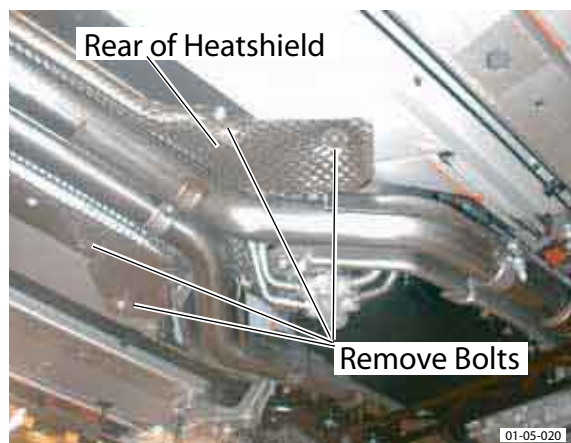
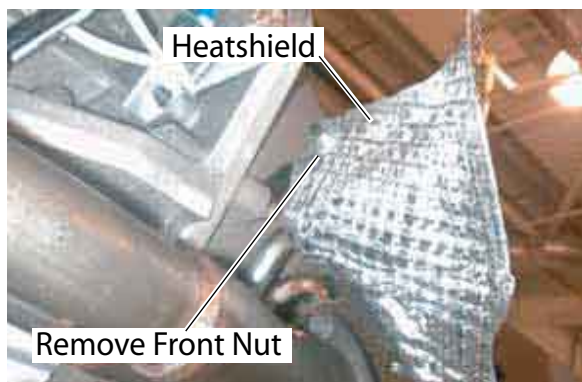
1. Disconnect the vehicle battery. Raise the vehicle and make safe.

Caution
On a two post ramp ensure vehicle is 'strapped' to the lift.

If using a two post vehicle lift, remove the screws that secure the rear section of the front road wheel arch liners. Hold back the rear section of the road wheel arch liner to allow the foot of the vehicle lift to be positioned correctly. (Refer to 'Jacking Points', page I-I-IX)

2. Remove the front road wheels and road wheel arch liners.
3. Remove the shear panel and both undertrays.
4. Remove the exhaust system (Refer to 'Exhaust System', page 9-2-1).

5. Remove the heat shields.



6. Remove the lower steering column (LH drive only).
7. Remove the dip stick tube.
8. Remove the LH exhaust heat shields and manifold.

Remove the manifold and lay to one side.

9. Automatic Gearbox Only.

Remove the rear subframe complete with the transaxle (Refer to 'Rear Subframe', page 2-1-4).

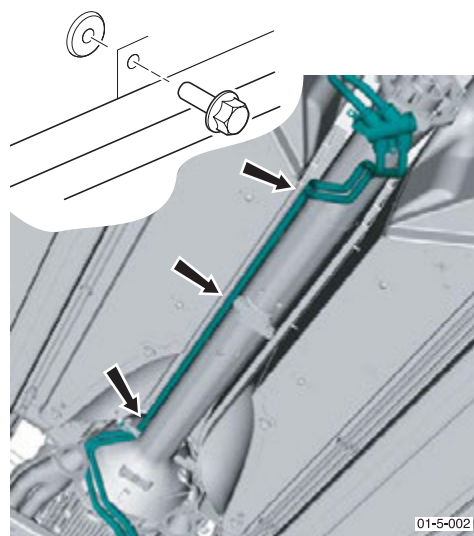
10. Manual Gearbox Only.

Remove the transaxle (Refer to 'Manual Transmission (07.03)', page 7-3-1).

11. Allow the torque tube to lower until the engine is resting on the front subframe rear crossmember.

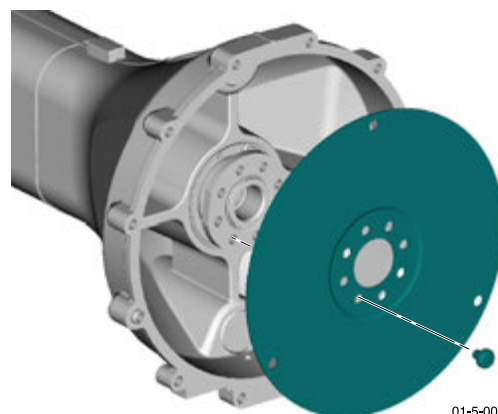
12. Automatic Gearbox Only.

Remove the transmission oil coolant pipes from the torque tube.



13. Automatic Gearbox Only.

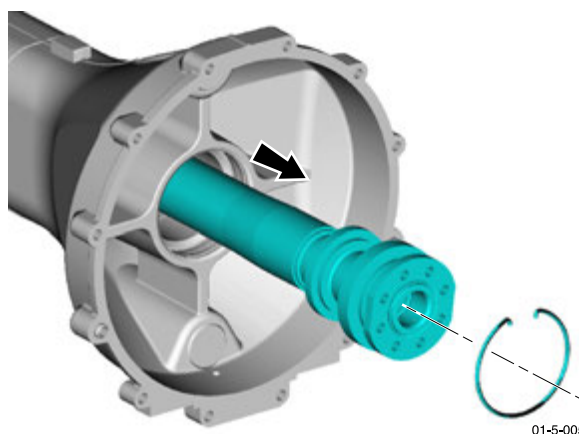
Remove the drive plate.



14. Automatic Gearbox Only.

Remove the propshaft.

Remove the wire clip and pull the propshaft from the torque tube.

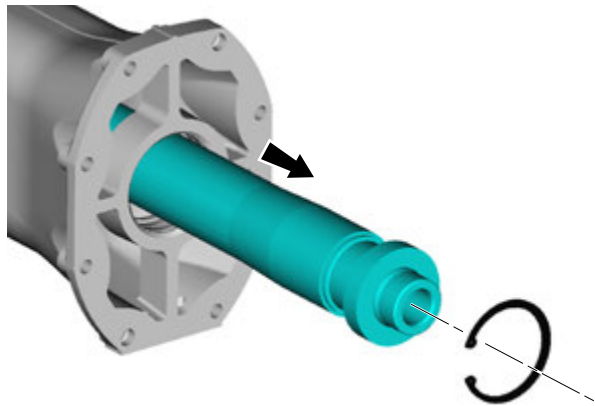


15. Manual Gearbox Only.

Remove the propshaft.

Remove the horseshoe clip and pull the propshaft from the torque tube.

Suggestion: To pull the prop shaft from the torque tube install a jubilee clip around the end of the prop shaft and use this to lever against.



01-5-005

16. Manual gearbox Only.

Warning

Avoid skin / eye contact or ingestion of clutch fluid. If skin or eyes are splashed with clutch fluid, rinse the affected area immediately with plenty of water and obtain medical attention. If clutch fluid is ingested, obtain immediate medical attention.

Caution

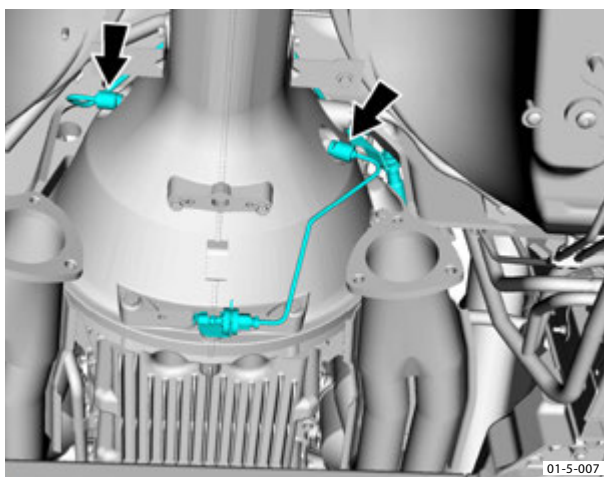
Clutch fluid must not be allowed to contact the vehicle paint work. Remove spilt clutch fluid from the paint work by rinsing away with running water.

Place suitable absorbent material around the affected area to absorb any possible clutch fluid spillage.

Disconnect the clutch slave cylinder bleed and supply pipes. Pull the wire clips back to release the unions.

Caution

Ensure that the seal on the 'male' end remains connected to the 'male' end when disconnecting.



01-5-007

Warning

The torque tube is heavy. To avoid personal injury or damage to the torque tube, torque tube removal is at least a two person operation.

17. Remove the bolts (x2) that secure the starter motor.

Withdraw the starter motor and place to one side.

18. Disconnect the earth cable.

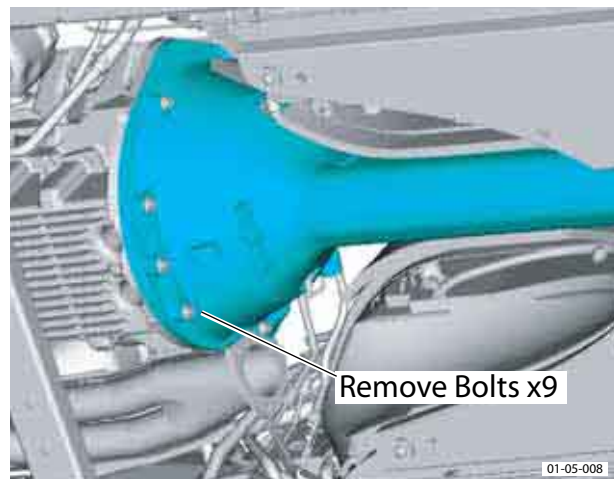


19. Loosen and undo the engine mount nuts sufficiently to allow the front of the engine to be raised.

Do not remove the nuts - leave them in place, one or two threads only.

20. Raise the front of the engine. This then provides access to the two top bolts of the torque tube and enables move movement of the torque tube.

21. Ensure the torque tube is supported. Remove the bolts (x9) that secure the torque tube to the engine block. Withdraw the torque tube.



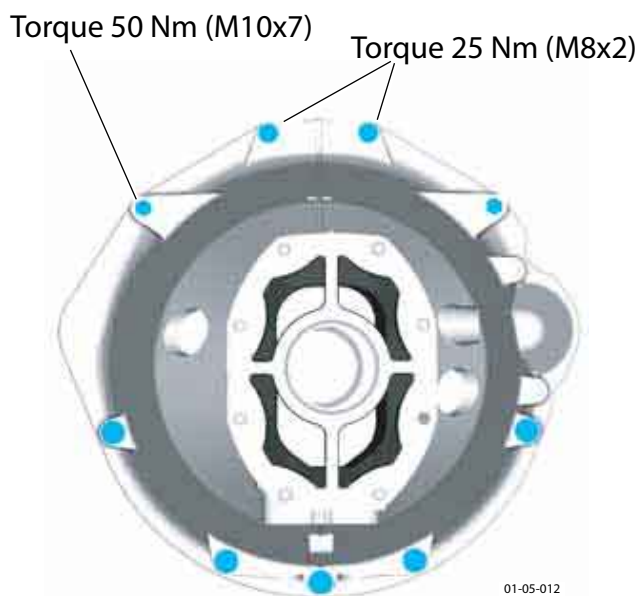
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Installation

Warning

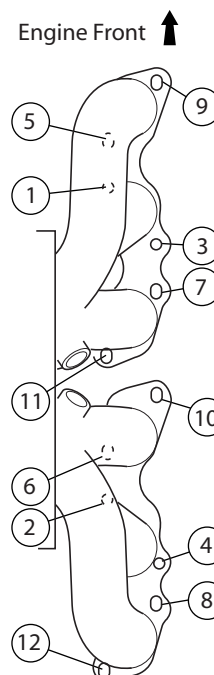
The torque tube is heavy. To avoid personal injury or damage to the torque tube, torque tube removal is at least a two person operation.

1. Feed the torque tube into position against the engine block.
2. Secure the torque tube to the engine block.
 - M8 25 Nm.
 - M10 50 Nm.



3. Lower the engine onto its mounts. Torque the two engine mount nuts to **47 Nm**.

4. Install the exhaust manifold. Torque the nuts, in sequence shown, to **18-22 Nm**.



5. Install the exhaust heat shields.
6. Install the lower steering column (LH drive only) and the dip stick tube.
7. Install the earth cable.
8. Install the starter motor. Torque bolts to **50 Nm**.
9. **Automatic Gearbox Only.**

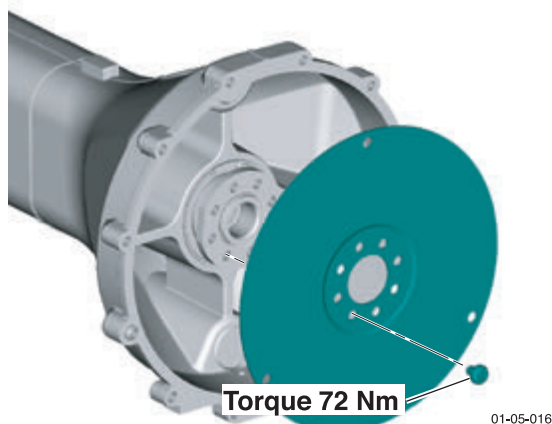
Install the propshaft to the torque tube. Install the wire clip.

When installing the propshaft use a lever through the opening in the bell housing to manoeuvre the splines of the propshaft to the crankshaft.

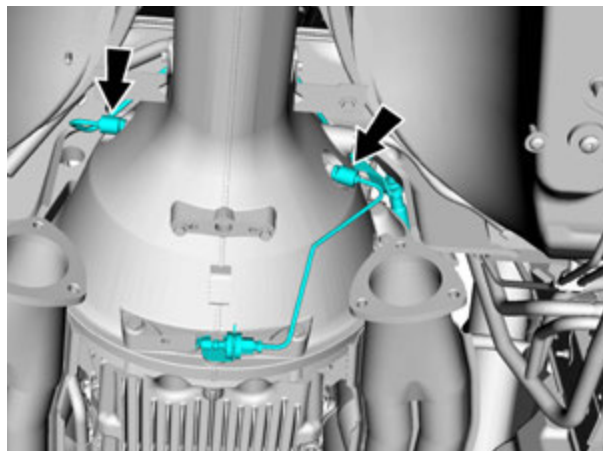
Use a soft face hammer to fully locate the propshaft

10. Automatic Gearbox Only.

Install the drive plate. Torque bolts to **72 Nm**.



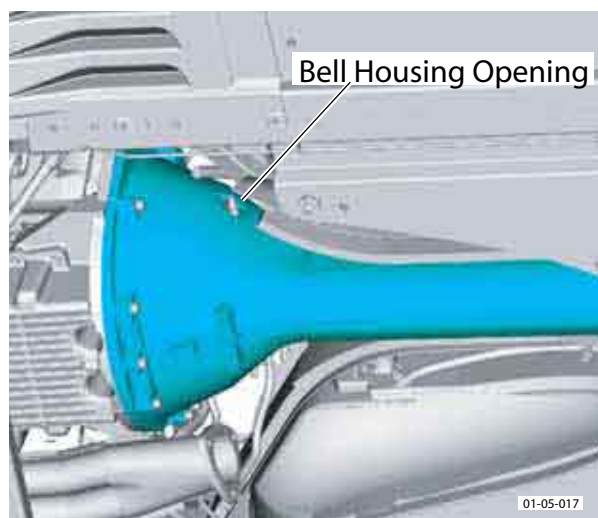
Push the wire clip back into position on the female end, then connect the male to the female.

**11. Manual Gearbox Only.**

Install the propshaft to the torque tube. Install the horseshoe clip.

When installing the propshaft use a lever through the opening in the bell housing to manoeuvre the splines of the propshaft to the crankshaft.

Use a soft face hammer to fully locate the propshaft.

**13. Automatic Gearbox Only.**

Install the transmission oil coolant pipes to the torque tube.

14. Install the heat shield brackets to the torque tube.**15. Automatic Gearbox Only.**

Install the rear subframe complete with the transaxle (Refer to 'Rear Subframe', page 2-1-4).

16. Manual gearbox Only.

Install the transaxle (Refer to 'Manual Transmission (07.03)', page 7-3-1).

17. Manual gearbox Only.

Bleed the clutch.

18. Install the heat shields.**19.** Install the exhaust system (Refer to 'Exhaust System', page 9-2-1).**20.** Install the shear panel and both undertrays.**21.** Install the road wheel arch liners and road wheels. (Refer to 'Road Wheel Nut Torque Tightening', page 4-5-7).**22.** Connect the vehicle battery.**12. Manual gearbox Only.**

Warning

Avoid skin / eye contact or ingestion of clutch fluid.

If skin or eyes are splashed with clutch fluid, rinse affected area immediately with plenty of water and obtain medical attention.

If clutch fluid is ingested, obtain immediate medical attention.

Caution

Clutch fluid must not be allowed to contact the vehicle paint work. Remove spilt clutch fluid from the paint work by rinsing away with running water.

Place suitable absorbent material around the affected area to absorb any possible clutch fluid spillage.

Install the clutch slave cylinder bleed and supply pipes.

Driveline (05.00)

Halfshafts (05.05)

Specifications

Torque Figures

Description	Nm.	lb. / ft.
Halfshaft nut	300	221.5
Halfshaft to differential	70	52

Maintenance

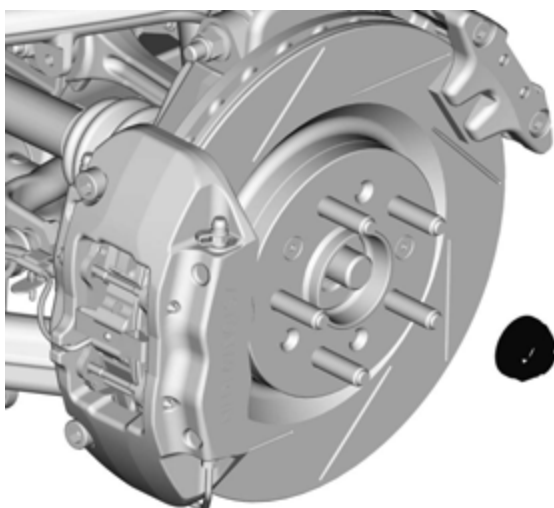
Halfshaft

Repair Operation Time (ROT)

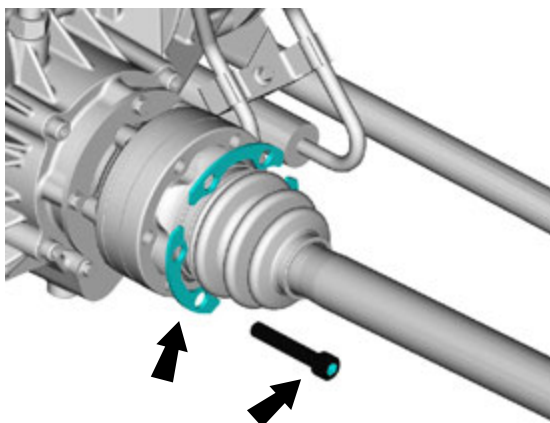
Item	Code
Halfshaft Renew	(LH) 05.05.AB
	(RH) 05.05.BB

Removal

1. Raise the vehicle and make safe.
2. For each affected wheel station remove the road wheel(s).
3. Remove the halfshaft nut.



4. Remove bolts (x6) and washer tabs (x3). Discard bolts.



5. Withdraw the halfshaft.

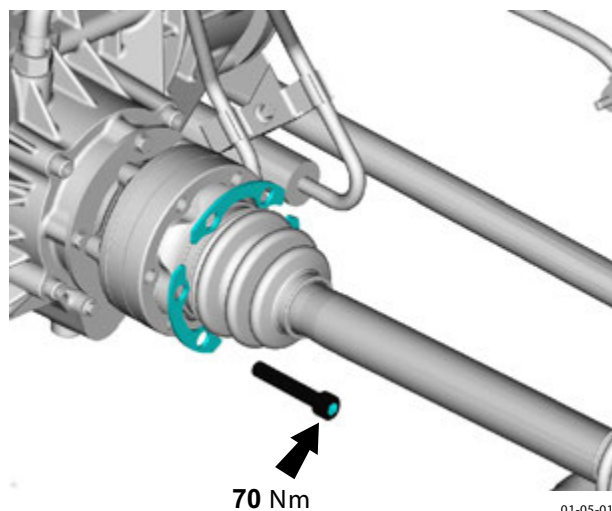
Installation

1. Position the halfshaft through the vertical link.



01-05-013

2. Place the halfshaft up to the differential output.



01-05-014

3. Install the washer tabs (x3) and **new** bolts (x6). Torque bolts to **70 Nm**.

New bolts should have a thread lock coating.

4. Install the halfshaft nut. Torque nut to **300 Nm**.
5. Install the road wheel(s) (Refer to 'Road Wheel Nut Torque Tightening', page 4-5-7).



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