Published: Mar 1, 2007

Specifications

Lubricants

Item	Specification
Recommended oil	API GL4 or GL5, MIL-L-2105 or MIL-L-2105B
Capacity	2.3 litres, (4.0 pints)

CAUTION: Do not use any lubricant other than that specified **General Specification - LT230Q**

Item	Specification
Transfer case type	LT230QRS
Specification	Two speed reduction on main gearbox output, front and rear drive permanently engaged via a lockable differential
Ratios:	
High	1.211:1
Low	3.269:1

Transfer case data

Item	**Metric**	**Imperial**
High/low selector finger width	15.90 to 15.95 mm	0.625 to 0.627 in
High/low selector fork finger width	7.37 to 7.47 mm	0.290 to 0.294 in
High/low selector shaft groove width	16.0 to 16.1 mm	0.63 to 0.64 in
High/low selector hub groove width	7.5 to 7.6 mm	0.295 to 0.30 in
Differential lock selector finger width	15.90 to 15.95 mm	0.625 to 0.627 in
Differential lock selector shaft groove width	16.0 to 16.1 mm	0.63 to 0.64 in
Differential lock selector fork finger width	7.92 to 7.9 mm	0.311 to 0.313 in
Differential lock selector spring free length	84.58 mm	3.33 in
Dog clutch selector fork groove width	8.05 to 8.20 mm	0.32 to 0.33 in
Differential front and rear half carrier gears load to turn:		
Used gears	0.45 kg	1.0 lb
New gears	1.72 kg	3.8 lb
Thrust washer thicknesses available	1.05 to 1.45 mm	0.04 to 0.06 in
In increments of:	0.10 mm	0.004 in
Total load to turn - both sun gears fitted:		
Used gears	0.90 kg	2.0 lb
New gears	3.44 kg	7.6 lb
Low range gear to high range hub clearance	0.05 to 0.15 mm	0.002 to 0.006 in
High range gear to high/low hub clearance	0.05 to 0.10 mm	0.002 to 0.004 in
Mainshaft input gear bearing pre-load	0.05 mm	0.002 in
Mainshaft input gear bearing shim thicknesses	3.15 to 4.00 mm	0.12 to 0.16 in
In increments of:	0.05 mm	0.002 in
Differential bearing pre-load	0.05 mm	0.002 in
Differential shim thicknesses available		
In increments of	0.05 mm	0.002 in
Transfer case gear train torque to turn	3.4 Nm max	30 lbf.in max

Torque Specifications

Description	Nm	lb-ft
Drain plug	30	22
Transfer case breather banjo	15	11
Differential carrier bolts	60	44
Differential bearing nut	72	53
Differential lock selector lever nut	25	18
* Front output housing bolts	25	18
* Rear output housing bolts	45	33
*** Output flange nuts	162	120
* Differential lock selector housing bolts	25	18
High/low selector housing bolts	25	18
* Intermediate shaft retaining plate bolt	25	18
*** Intermediate shaft stake nut - Selective length non-collapsible spacer	88	65
* Bottom cover bolts	25	18
* Bearing housing cover plate bolts and stud nut	25	18
Transmission brake backplate bolts	72	54
Interlock solenoid cover bolts - if fitted	10	8
** Neutral warning lamp switch	25	18
Transfer case front drive flange to drive shaft	47	33
Transfer case rear drive flange to drive shaft	50	37
Transfer case to gearbox extension case	47	33

* Apply Loctite 290 to threads ** Apply Hylomar PL32 to threads *** New nut must be fitted

Item	Nm	lbf-ft
METRIC		
M5	6	5
M6	9	7
M8	25	18
M10	45	33
M12	90	65
M14	105	75
M16	180	130
UNF/UNC		
1/4	9	7
5/16	25	18
3/8	40	30
7/16	80	60
½	90	65
5/8	135	100

The table above provided torque values for screws and bolts not previously specified.

Published: Sep 4, 2008

Transfer Case Draining and Filling (41.20.04)

1.

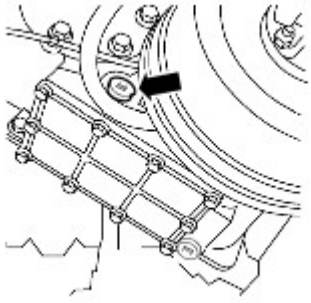
WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

Raise and support the vehicle.

2. Position a container to collect the fluid.

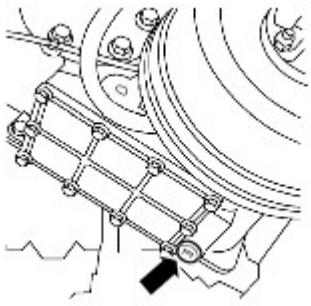
3. **NOTE:**
   Clean the area surrounding the transfer case filler/level plug.

Remove the transfer case filler plug to vent the transfer case and assist with draining.


E91241

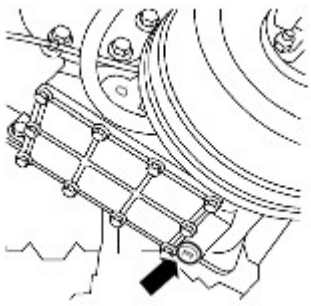
4. **NOTE:**
   Clean the area surrounding the transfer case fluid drain plug.

Remove the transfer case fluid drain plug.


E91242

5. Allow the fluid to drain.

6. Install the transfer case drain plug and clean any oil residue from the surrounding area.
   - Tighten to 30 Nm (22 lb.ft).

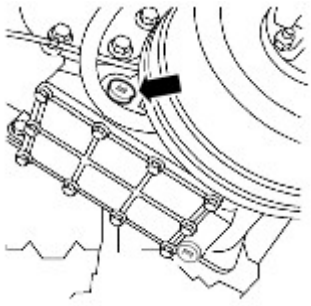

E91242

7.

CAUTION: The transfer case oil filler plug must not be used as a transfer case oil level plug. Failure to follow this instruction may result in damage to the vehicle.

Refill the transfer case with the recommended fluid.
Specifications

8. Install the transfer case filler plug and clean any oil residue from the surrounding area.
    - Tighten to 30 Nm (22 lb.ft).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9. Remove the container.

Published: Feb 7, 2007

Transfer Case High/Low Range Selector Rod Adjustment

Special Service Tools

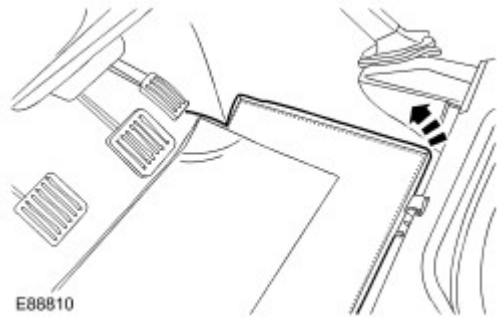
Locking Tool High/Low Selector
308-711

NOTE:

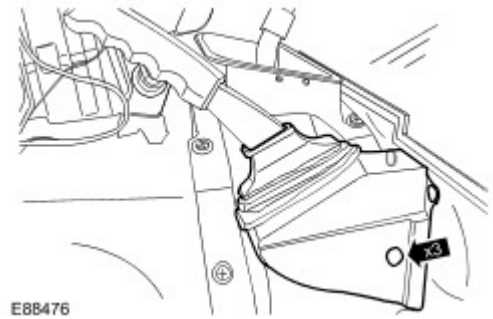
If carrying out this procedure after replacing the transfer case high/low range selector linkage, carry out steps 13 - 19.

1. Remove the floor console.
Floor Console (76.25.01)

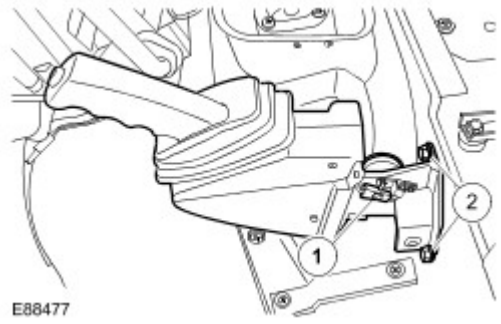
2. Reposition the LH carpet.



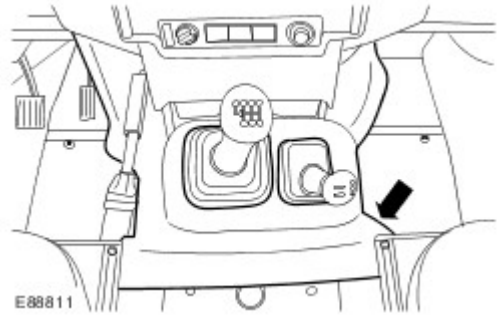
3. Remove the parking brake lever gaiter.
   - Remove the 3 clips.



4. Release the parking brake lever.
   - Disconnect the electrical connector.
   - Remove the 2 bolts.

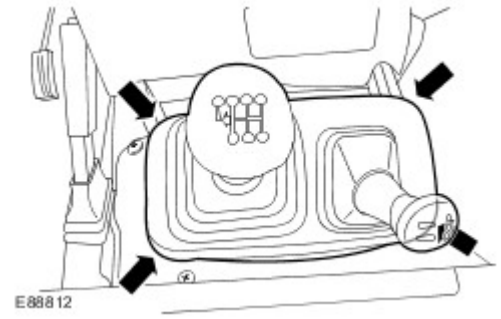


5. Remove the transmission cover panel floor covering.



6. **NOTE:**
   Do not detach the gaiter from the selector knobs.

Detach the gaiter from the transmission cover panel.

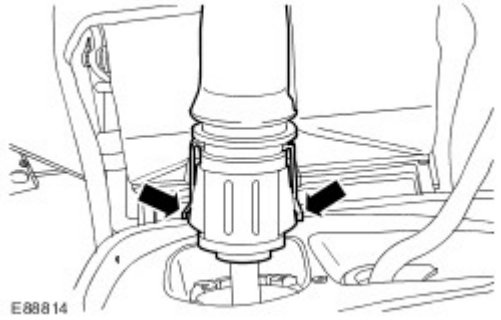


7.

WARNING: The gearshift lever knob will be released suddenly, keep face clear during removal. Failure to follow this instruction may result in personal injury.

Release the gearshift lever knob.

- Release the 2 clips.

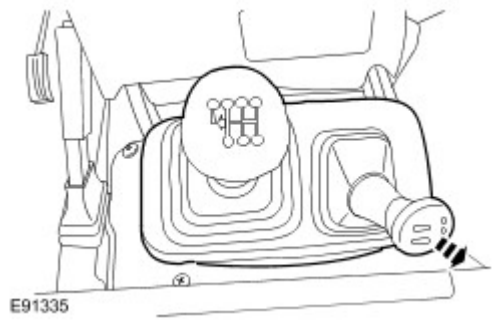


8.

WARNING: The high/low range selector lever knob will be released suddenly, keep face clear during removal. Failure to follow this instruction may result in personal injury.

Remove the gaiter and selector levers.

- Detach the high/low range selector lever.



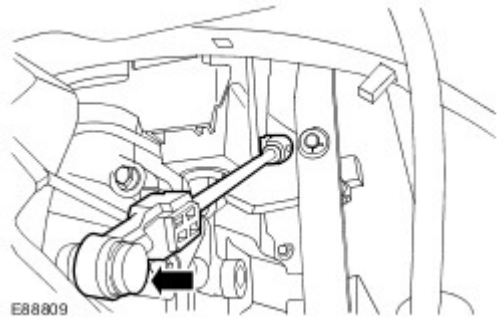
9. Remove the transmission cover panel.
   - Remove the 11 screws.

10. **NOTE:**
    Position the differential lock to the left, to reduce tension on the insulation.

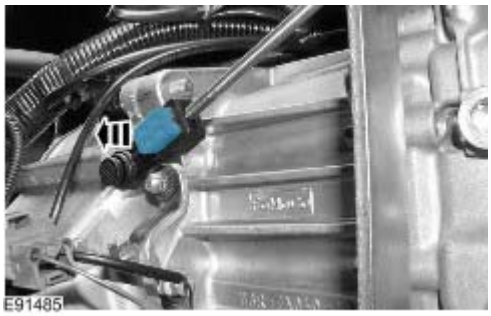
Remove the insulation pad.

11. Remove the insulation pad support bracket.

12. Disconnect the transfer case high/low range selector rod.
    - Press the button to release the transfer case high/low range selector rod.



13. Release the adjuster.
    - Release the locking block.



14.

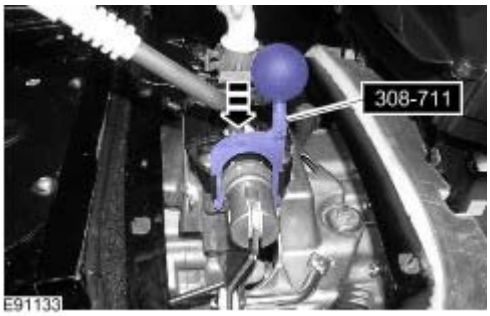
WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

Raise and support the vehicle.

15. **NOTE:**
    It may be necessary to rotate the road wheels to confirm that high range is fully engaged.

Make sure that high range is fully engaged on the transfer case.

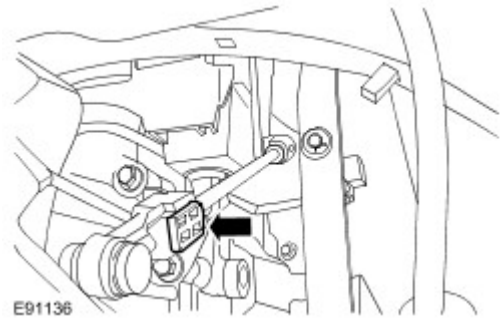
16. Using the special tool, set the transfer case high/low range selector lever in high range.
    - Insert the special tool.



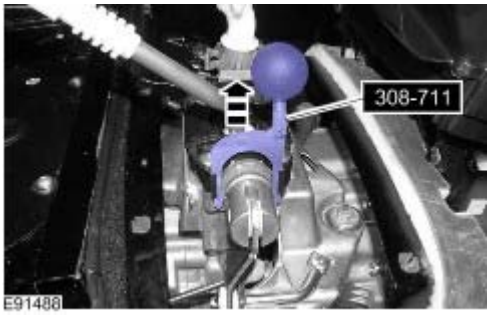
17. **NOTE:**
    Make sure the transfer case high/low range selector rod is fully engaged on the ball joint and not the foam washer.

Connect the transfer case high/low range selector rod.

18. Push in the locking block.
    - Fully engage the locking block.



19. Remove the special tool.



20. Install the insulation pad support bracket.

21. **NOTE:**
    Position the differential lock to the left, to reduce tension on the insulation.

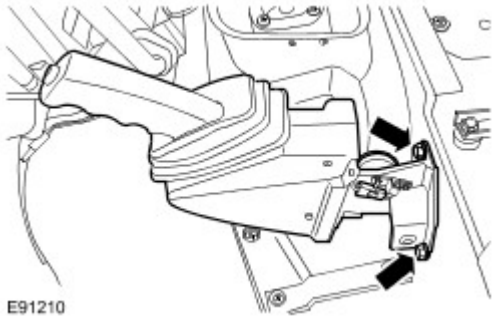
Install the insulation pad.

22. Install the transmission cover panel.
    - Install the screws.

23. Install the gaiter with the selector levers attached.
    - Install the selector levers.
    - Fully seat the gaiter.

24. Install the transmission cover panel floor covering.

25. Install the parking brake lever.
    - Tighten to 25 Nm (18 lb.ft).



26. Install the parking brake lever gaiter.
    - Install the clips.

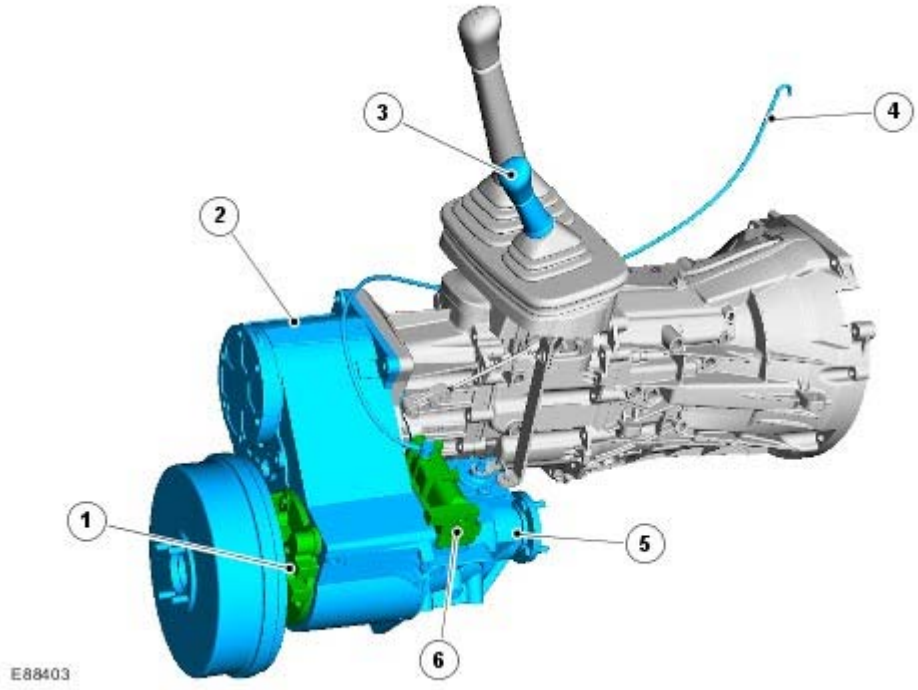
27. Reposition the LH carpet.

28. Install the floor console.
Floor Console (76.25.01)

Published: Jan 24, 2007

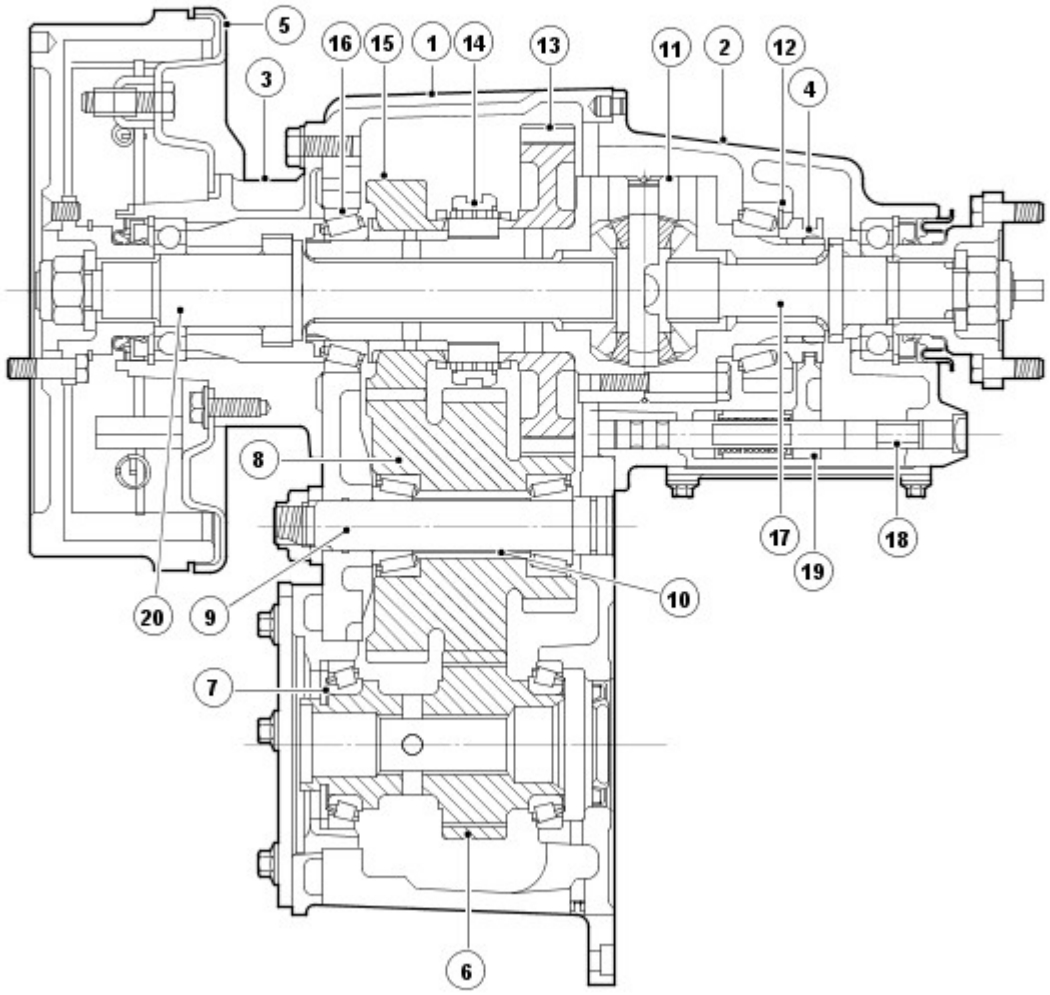
Transfer Case - Vehicles With: 6-Speed Manual Transmission (MT82)

COMPONENT LOCATION



Item	Part Number	Description
1		Rear output housing
2		Main casing
3		Transfer box selector lever
4		Breather pipe
5		Front output housing
6		Selector housing

TRANSFER CASE CROSS SECTION



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Item	Part Number	Description
1		Main casing
2		Front output housing
3		Rear output housing
4		Dog clutch
5		Transmission brake
6		Mainshaft input gear
7		Selective shim - input gear bearing pre-load
8		Intermediate gear cluster
9		Intermediate shaft
10		Spacer
11		Differential assembly
12		Selective shim - differential bearing pre-load
13		Low range gear

14		High/low selector sleeve and hub
15		High range gear and bush
16		Differential rear bearing
17		Front output shaft
18		Differential lock selector shaft
19		Selector fork
20		Rear output shaft

OVERVIEW

The transfer box is a permanent 4-wheel drive, 2-speed ratio reducing transmission, incorporating high and low range outputs with mechanically lockable centre differential (diff-lock). High range has a ratio of 1.211:1 and low range 3.269:1.

High/low range and diff-lock selection are made via a single lever located next to the main gear lever.

The unit is mounted at the rear of the main transmission and transmits drive to the front and rear drive axle differentials via the drive shafts.

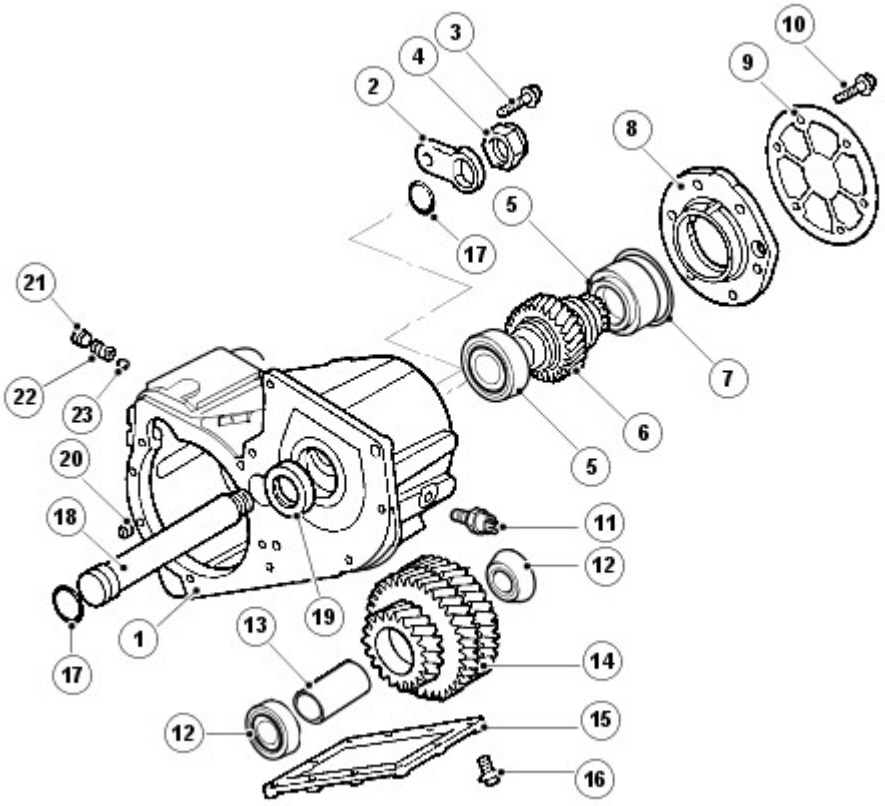
Integral with the output shafts is a differential assembly, which compensates for speed differences between the front and rear drive shafts. To improve traction and prevent all the power being transmitted to the drive axle differential offering the least traction, a diff-lock is provided. The diff-lock should only be engaged during severe off-road conditions where traction is poor and should be disengaged as soon as conditions permit, for example, when good traction is available. Selection of differential lock engages, through mechanical linkage, a dog clutch with the front output shaft, this action locks the centre differential and provides a fixed drive, giving equal power to the front and rear drive shafts.

The transfer box comprises 3 main assemblies:

- The main casing
- The front output housing
- The rear output housing

All housings and cover plates are sealed to the main casing by sealant. Output flange rotary seals are protected against mud and water ingress by mud shield flingers.

THE MAIN CASING



Item	Part Number	Description
1		Main casing
2		Retaining plate
3		Bolt - retaining plate
4		Stake nut - intermediate shaft
5		Bearings and outer tracks - mainshaft input gear
6		Mainshaft input gear
7		Selective shim
8		Mainshaft input gear bearing housing
9		Cover plate/power take-off cover
10		Bolt - cover plate
11		Oil temperature switch (if fitted)
12		Bearings and outer tracks - intermediate gears
13		Collapsible spacer
14		Intermediate gears
15		Bottom cover plate
16		Bolt - bottom cover plate
17		O-rings - intermediate shaft
18		Intermediate shaft
19		Mainshaft oil seal
20		Locating dowel
21		Detent plug - high/low selector
22		Detent spring - high/low selector
23		Detent ball - high/low selector

The main casing carries:

- the mainshaft input gear
- the intermediate gears
- the centre differential assembly

The front and rear output housings are bolted to either side of the main casing.

Mainshaft Input Gear

The transmission output shaft is splined into the mainshaft input gear, which is supported by taper roller bearings.

Input gear bearing pre-load is achieved by the use of a selective shim located in the bearing housing.

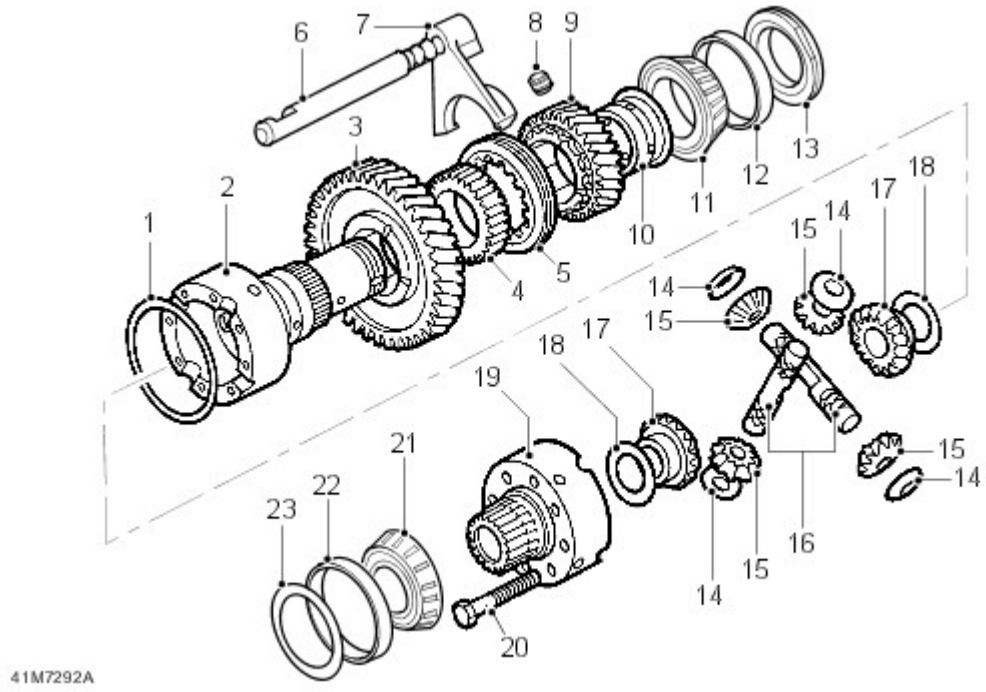
Intermediate Gears

The intermediate gear cluster is supported by the taper roller bearings located at each end of the cluster and runs on the intermediate shaft, which in turn, is supported at the front and rear by the main casing.

Intermediate gear bearing pre-load is achieved by means of a collapsible spacer positioned between the bearings, the amount of compression applied to the spacer is by means of a nut on the end of the intermediate shaft.

The bore of the intermediate gear is machined with a shoulder at each end to locate the bearings.

Centre Differential Assembly



Item	Part Number	Description
1		Retaining ring
2		Differential carrier - rear half
3		Low range gear
4		High/low hub
5		High/low selector sleeve
6		High/low selector shaft
7		High/low selector fork
8		Setscrew - high/low selector fork
9		High range gear
10		High range gear bush
11		Differential rear bearing

12		Bearing outer track
13		Bearing retaining nut
14		Dished thrust washers
15		Differential planet gears
16		Cross shafts
17		Differential side gears
18		Selective thrust washers
19		Differential carrier - front half
20		Bolt - differential carriers
21		Differential front bearing
22		Bearing outer track
23		Selective shim

The centre differential assembly is supported at the front and rear by taper roller bearings, the front bearing outer track is located in the front output housing and the rear bearing outer track is located in the main casing by the rear output housing. Bearing pre-load is achieved by means of a selective shim located in the front output housing.

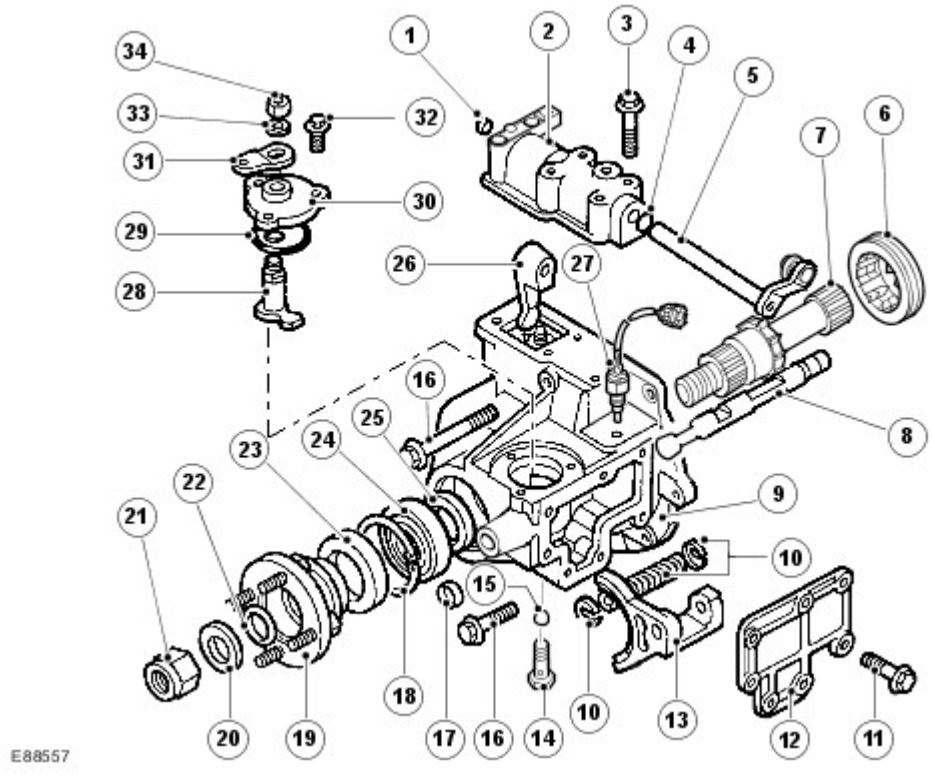
The centre differential rear shaft carries the low range gear, high/low selector sleeve and hub, high range gear and bush and the differential rear bearing; these components being secured to the shaft by a special staked nut.

The assembly comprises front and rear half carriers with integral shafts connected to differential side gears and planet gears mounted on cross shafts within the half carriers. Dished, non-selective thrust washers control the engagement of the planet gears with the differential side gears, whilst selective thrust washers are used to control engagement of the differential side gears and 'torque to turn' of the differential. The differential carrier halves are bolted together, a retaining ring providing positive location of the cross shafts.

The high/low selector shaft and fork are located at the side of the differential, movement of the shaft, fork and selector sleeve being controlled by the high/low selector finger. A spring loaded detent ball fitted in the main casing, locates in grooves in the shaft.

The selector fork is fitted with a spring assister and clips to reduce the effort required to move the selector lever.

FRONT OUTPUT HOUSING



Item	Part Number	Description

1		Hollow plug
2		High/low cross shaft housing
3		Bolt - high/low cross shaft housing
4		O-ring
5		High/low cross shaft and lever with cable ball end
6		Dog clutch
7		Front output shaft
8		Differential lock selector shaft
9		Front output housing
10		Spring and clips - differential lock
11		Bolt - Cover plate
12		Cover plate
13		Differential lock selector fork
14		Detent plug and spring - differential lock
15		Detent ball - differential lock
16		Bolt - front output housing
17		Plug
18		Circlip
19		Output shaft flange and mud shield
20		Steel washer
21		Self-locking nut
22		Felt washer
23		Oil seal
24		Output shaft bearing
25		Bearing spacer
26		High/low selector finger
27		Differential lock warning indicator switch
28		Differential lock selector finger and shaft
29		O-rings
30		Differential lock selector housing
31		Selector lever
32		Bolt - housing
33		Washer
34		Self-locking nut

The front output housing carries:

- the front output shaft and flange
- the housing and selector
- the differential lock selector shaft and fork

Front Output Shaft and Flange

The front output shaft is supported in the housing by a single bearing and is splined into the differential front sun gear.

Housing and Selector Assembly

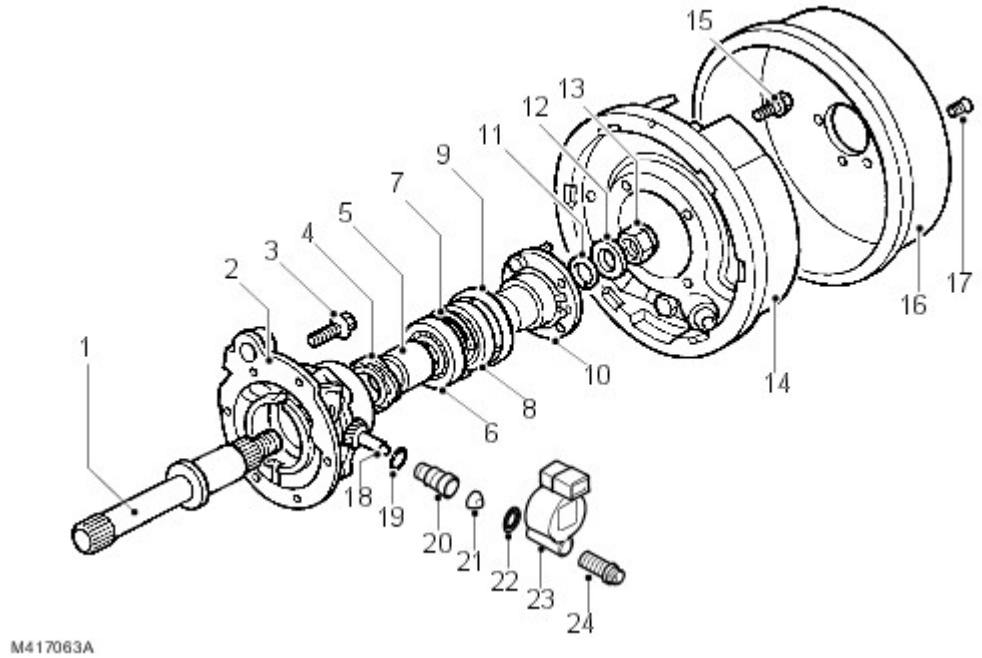
A high/low cross shaft is located in a housing bolted to the top of the output housing and is connected to the high/low selector finger, which locates in a slot in the selector shaft.

Differential Lock Selector Shaft and Fork

The differential lock selector housing is bolted to the top of the front output housing, the selector finger passes

through the housing, locating in a slot in the differential lock selector shaft. The differential lock selector shaft passes through the selector fork, which is located beneath a plate bolted to the side of the output housing. The selector fork engages the dog clutch sleeve with the differential rear shaft when the splines of the sleeve and differential rear shaft are aligned. A spring loaded detent ball fitted in the output housing locates in grooves in the shaft.

REAR OUTPUT HOUSING



Item	Part Number	Description
1		Rear output shaft
2		Rear output housing
3		Bolt - rear output housing
4		Speedometer drive gear
5		Spacer
6		Output shaft bearing
7		Circlip
8		Oil seal
9		Mud shield
10		Output shaft flange
11		Felt washer
12		Steel washer
13		Self-locking nut
14		Transmission brake backplate
15		Bolt - transmission brake backplate
16		Transmission brake drum
17		Countersunk screw
18		Speedometer driven gear
19		O-ring
20		Speedometer driven gear housing
21		Seal
22		O-ring
23		Vehicle speed sensor (if fitted)
24		Allen screw (if fitted)

The rear output housing carries the output shaft and flange and the speedometer drive and driven gears. A mechanically operated transmission brake is attached to the housing, the brake drum being attached to the output flange.

The rear output shaft is supported in the rear output housing by a single bearing and is splined into the differential rear shaft. The output shaft also carries the speedometer drive gear, which meshes with the speedometer driven gear located in the rear output housing.

A differential lock warning lamp switch operated by movement of the selector fork and shaft is screwed into the top of the output housing.

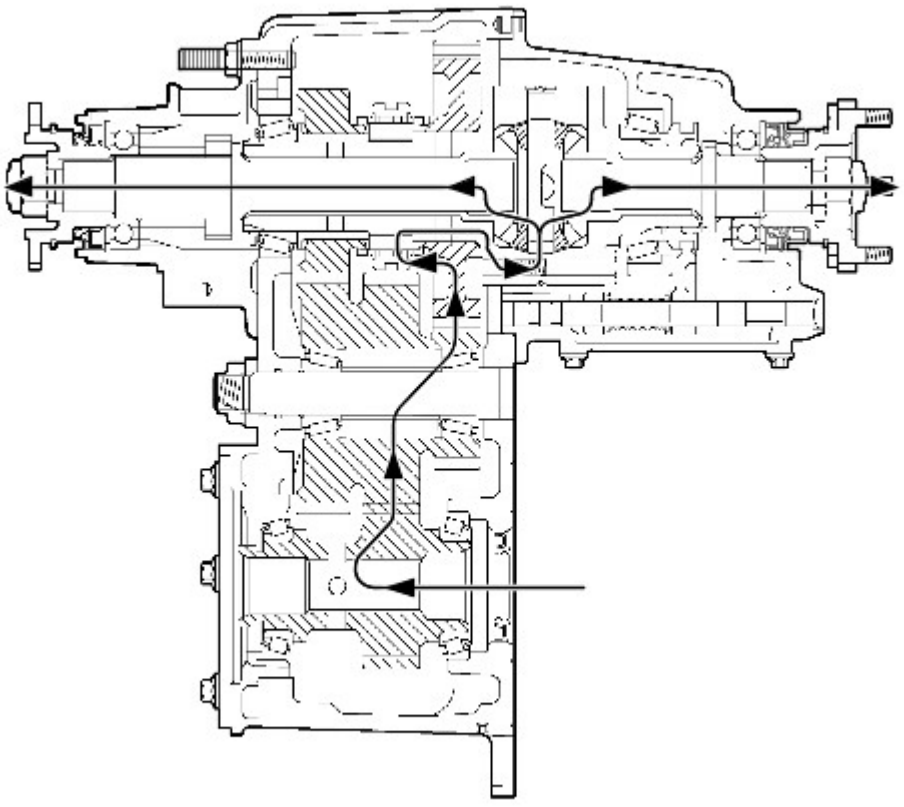
LUBRICATION

Lubrication is by splash, oil filler/level and drain plugs being located in the main casing.

Internal pressures caused by thermal expansion and contraction are avoided by the use of a plastic breather pipe venting the interior of the box to atmosphere. The pipe is attached to the top of the high/low selector housing and is routed in a continuously rising path into the engine compartment where the open end is secured to the engine cylinder block.

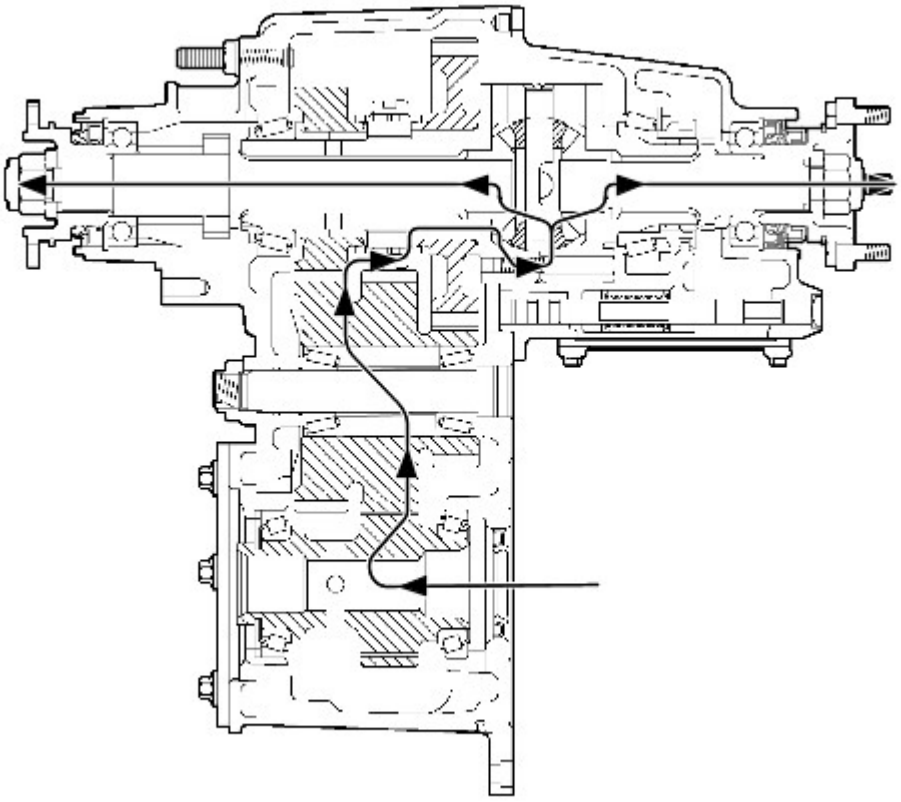
OPERATION

Power Flow - Transfer Box in LOW Range



E88559

Power Flow - Transfer Box in HIGH Range



E88560

The gearbox output shaft transmits power to the mainshaft input gear which is in constant mesh with one of the intermediate gears. The intermediate gears are in constant mesh with the high and low range output gears running on the differential rear shaft.

Power is transmitted to the output shafts via the differential assembly by locking either the high or low range gears to the differential rear shaft. This is achieved by means of the high/low selector fork, sleeve and splined hub.

Published: Feb 12, 2007

Transfer Case (41.20.25.99)

Special Service Tools

Power train Assembly Jack
HTJ1200-02

Transfer Case Support
100-045

Removal

1 . Disconnect the battery ground cable.
For additional information, refer to Battery Disconnect and Connect

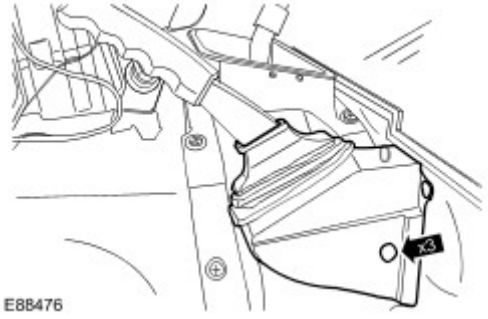
2 . **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

Raise and support the vehicle.

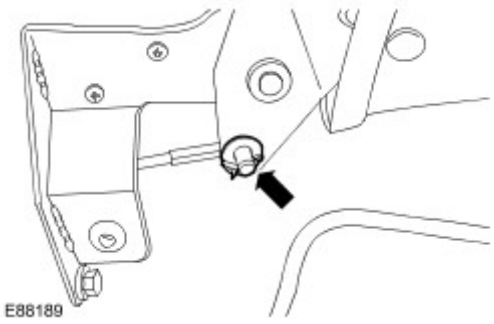
3 . **WARNING: Make sure the wheels are chocked and that all personnel are clear of the vehicle before carrying out the following procedure.**

Release the parking brake lever.

4 . Release the parking brake lever gaiter.
- Release the 3 clips.



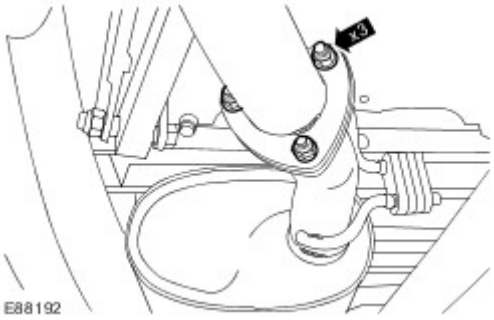
5 . Remove the parking brake lever clevis pin.
- Remove the pin.



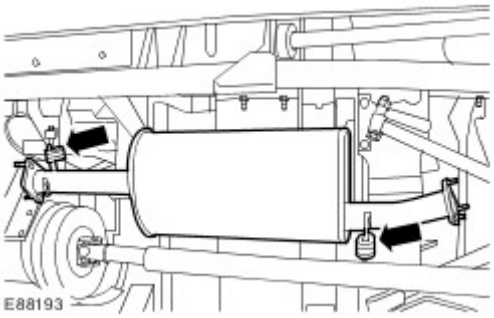
6 . Remove the catalytic converter.
For additional information, refer to Catalytic Converter (17.50.01)

7 . Release the tail pipe from the intermediate pipe.

- Remove and discard the 3 nuts.
- Remove and discard the gasket.

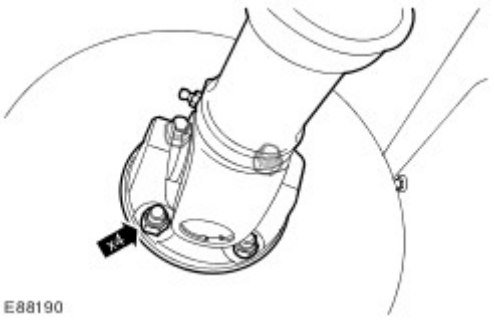


8 . Remove the intermediate pipe and muffler.

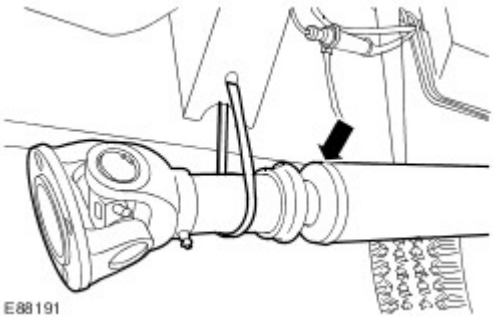


9 . Remove the 4 nuts from the rear driveshaft to transfer case.

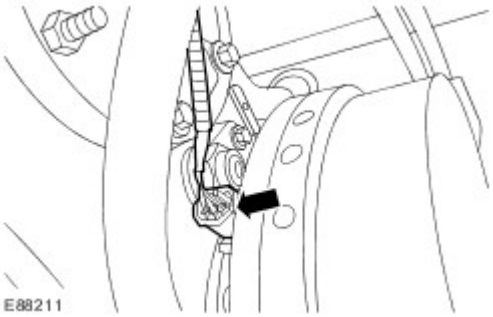
- Mark the position of the driveshaft in relation to the drive pinion flange.



10 . Using a suitable tie strap, secure the rear driveshaft to the chassis.

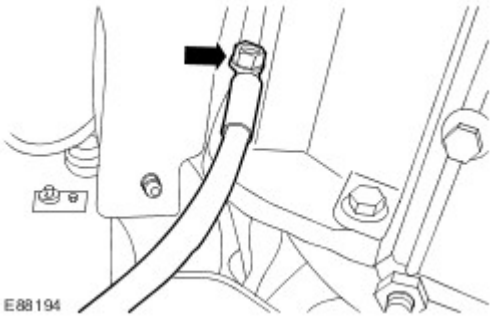


11 . Disconnect the electronic speedometer electrical connector from the transfer case.



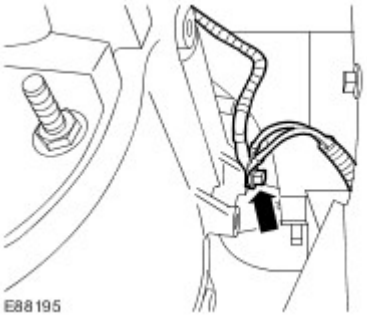
12 . Disconnect the LH earth cable from the transfer case.

- Remove the nut.



13 . Disconnect the RH earth cables from the transfer case.

- Remove the bolt.

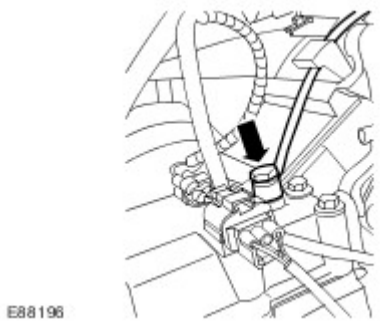


14 . **NOTE:**

Make sure that all openings are sealed. Use new blanking caps.

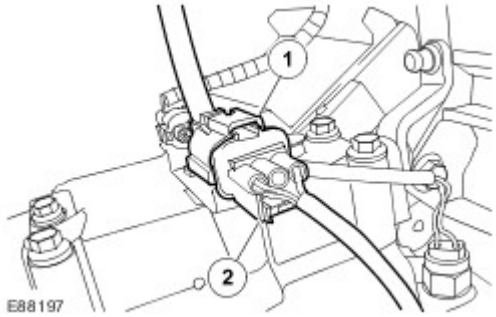
Remove the transfer case breather pipe bolt.

- Remove and discard the sealing washers.



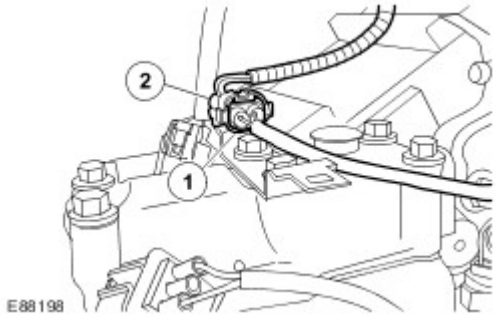
15 . Disconnect the transmission range selector warning lamp electrical connector.

1) Disconnect the electrical connector.
2) Release the electrical connector from the bracket.



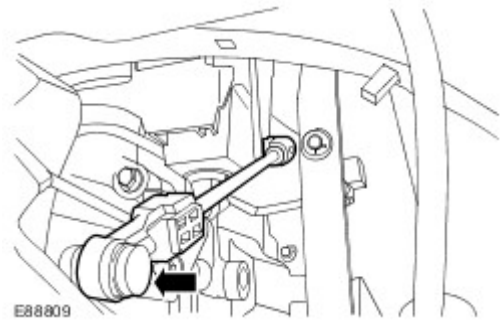
16 . Disconnect the differential lock detection switch electrical connector.

1) Disconnect the electrical connector.
2) Release the electrical connector from the bracket.



17 . Disconnect the transmission range selector rod.

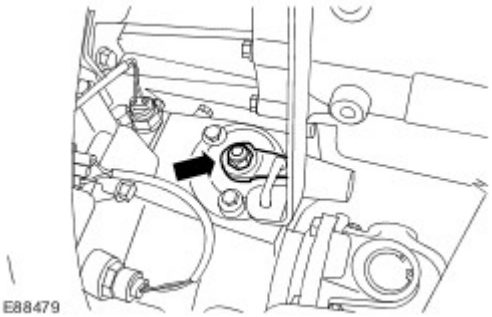
- Press the button to release the fitting before disconnecting the rod.



18 . Remove the retaining clip at the lower end of the pivot arm.

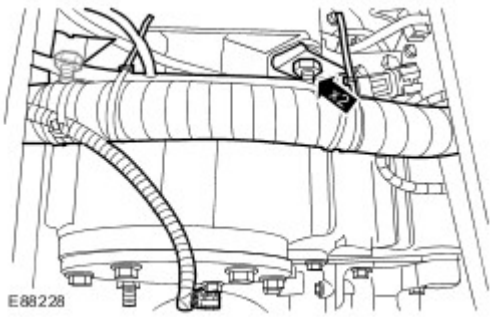
19 . Release the differential lock control operating rod from the transfer gearbox.

- Remove the nut.



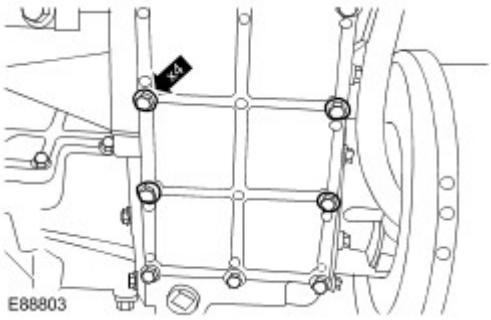
20 . Release the transmission wiring harness.

- Remove the nut and bolt.

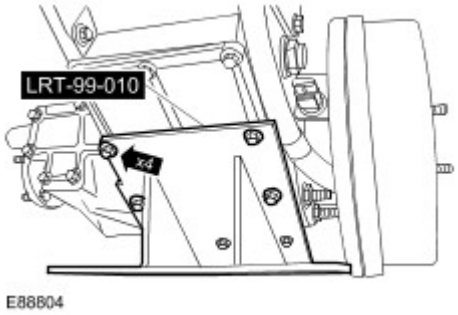


21 . Drain the transfer case.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

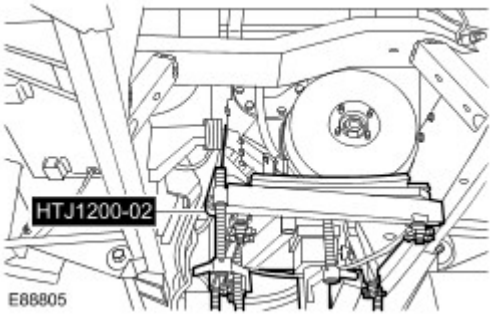
22 . Remove the 4 bolts.



23 . Install the special tool.



24 . Install the special tool.

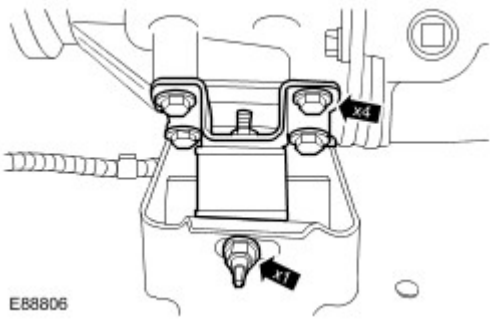


25 . **NOTE:**

Raise the transmission jack.

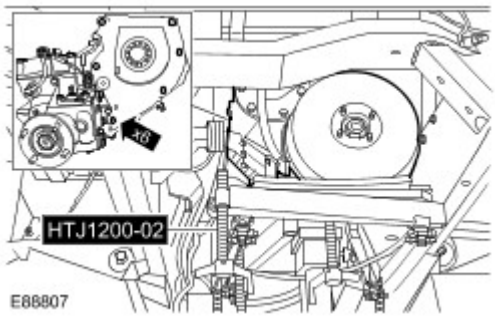
Remove the right-hand transfer case mount.

- Remove the 4 bolts.
- Remove the nut.



26 . Remove the transfer case.

- Remove the 4 bolts.
- Remove the 2 nuts.



Published: Feb 12, 2007

Transfer Case (41.20.25)

Special Service Tools

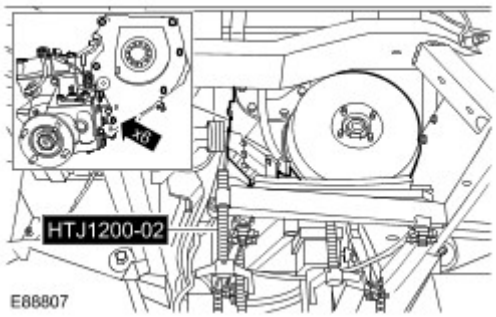
Powertrain Assembly Jack
HTJ1200-02

Transfer Case Support
100-045

Installation

1 . Install the transfer case.

- Apply sealant to the bolt threads.
- Tighten the bolts to 45 Nm (33 lb.ft).
- Tighten the nuts to 45 Nm (33 lb.ft).

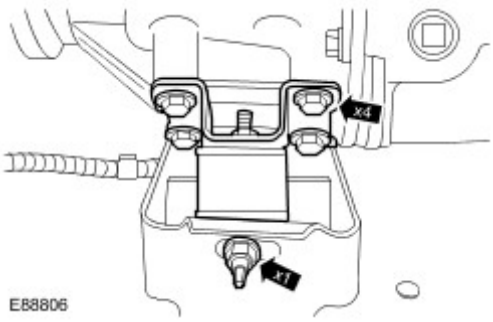


2 . **NOTE:**

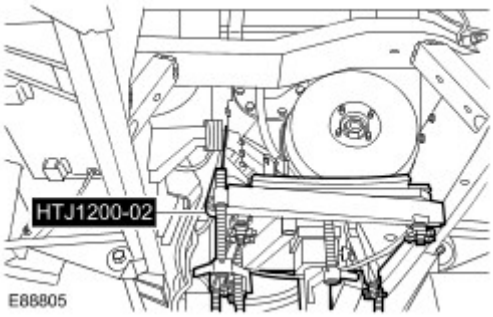
Lower the transmission jack.

Install the right-hand transfer case mount.

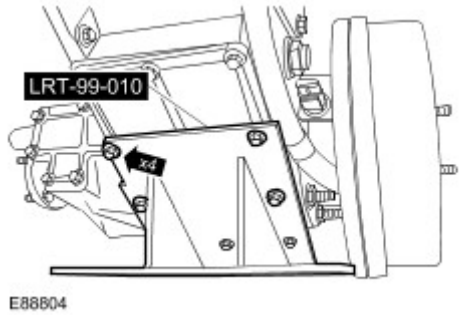
- Tighten the bolts to 85 Nm (63 lb.ft).
- Tighten the nut 48 Nm (35 lb.ft).



3 . Remove the special tool.

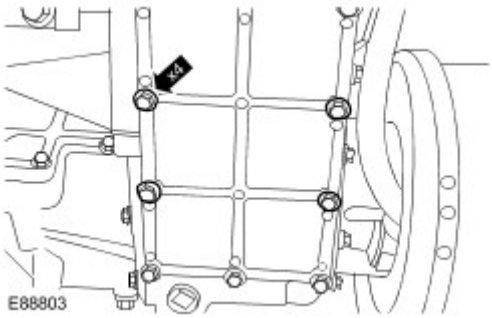


4 . Remove the special tool.



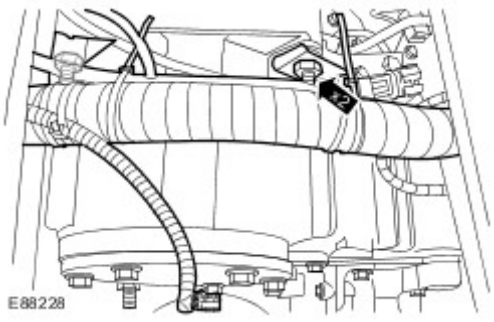
5 . Install the bolts.

- Apply sealant to the bolt threads.
- Tighten to 25 Nm (18 lb.ft).

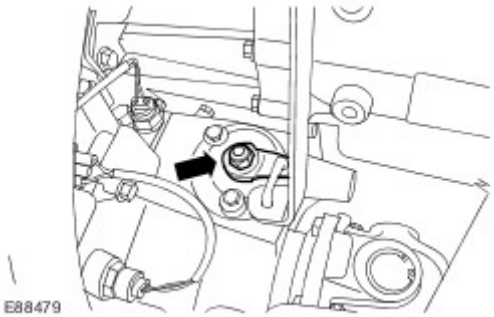


6 . Secure the transmission wiring harness.

- Tighten to 45 Nm (33 lb.ft).



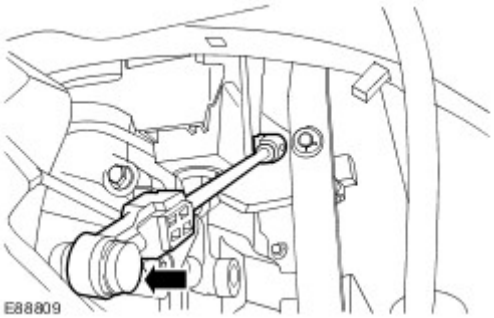
7 . Secure the differential lock control operating rod to the transfer gearbox.
Tighten the nut to 25 Nm (18 lb.ft).



8 . Install the new retaining clip at the lower end of the pivot arm.

9 . **NOTE:**
Make sure the rod is fully engaged on the ball joint.

Connect the high/low range selector rod.



10 . Connect the differential lock detection switch electrical connector.
1) Connect the electrical connector.
2) Secure the electrical connector to the bracket.

11 . Connect the differential lock warning lamp electrical connector.

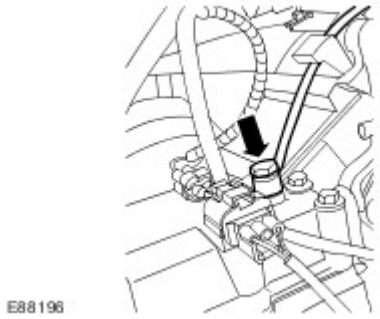
1) Connect the electrical connector.
2) Secure the electrical connector to the bracket.

12 . **NOTE:**

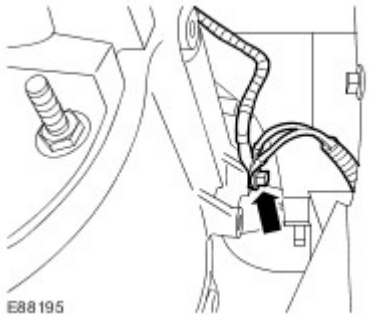
Remove and discard the blanking caps.

Install the transfer case breather pipe bolt.

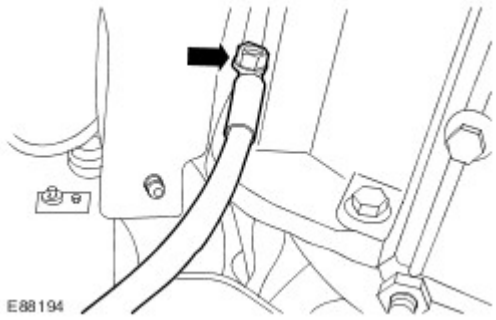
- Install new sealing washers.
- Tighten the bolt to 15 Nm (11 lb.ft).



13 . Tighten to 12 Nm (9 lb.ft).



14 . Tighten to 45 Nm (33 lb.ft).



15 . Connect the electronic speedometer electrical connector to the transfer case.

16 . **NOTE:**

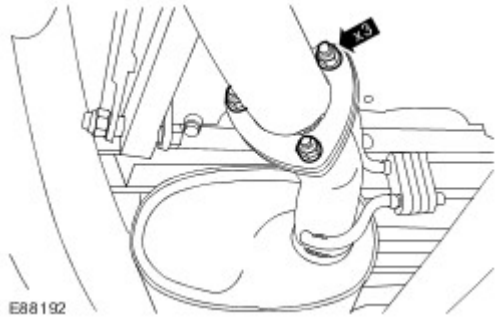
Remove and discard the tie strap.

Tighten to 45 Nm (33 lb.ft).

- Align the position of the driveshaft in relation to the drive pinion flange.

17 . Secure the tail pipe to the intermediate pipe.

- Install a new gasket.
- Tighten the new nuts to 30 Nm (22 lb.ft).



18 . Install the catalytic converter.
For additional information, refer to Catalytic Converter (17.50.01)

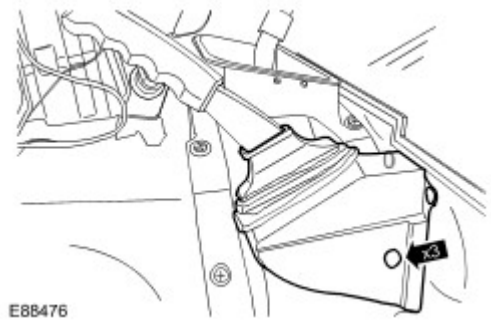
19 . Fill the transfer case.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

20 . Install the parking brake lever clevis pin.

- Install a new pin.

21 . Secure the parking brake lever gaiter.

- Install the 3 clips.



22 . Connect the battery ground cable.
For additional information, refer to Battery Connect

Published: Feb 15, 2007

Transfer Case Extension Housing

Removal

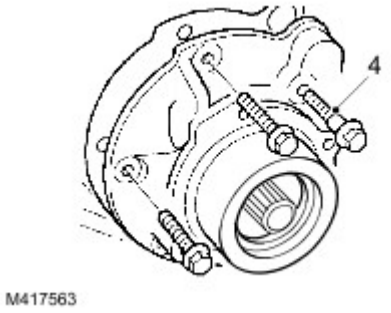
1 . Drain transfer case oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

2 . Remove transfer case rear output shaft seal.

For additional information, refer to

3 . Mark extension housing to main casing for assembly purposes.

4 . Note position of shoulder bolt, remove 6 bolts securing extension housing to main casing.



Installation

1 . Clean extension housing, mating face on main casing and sealant from bolt threads.

2 . Apply sealant, Part No. STC 4600 to mating flange on output shaft housing.

3 . Fit extension housing to main casing ensuring that splines of output shaft are engaged in differential.

4 . Apply sealant, Part No. STC 50552 to bolt threads.

5 . Fit bolts and tighten by diagonal selection to 45 Nm (33 lbf.ft).

6 . Fit transfer case rear output shaft seal.

For additional information, refer to

7 . Fill transfer case with oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

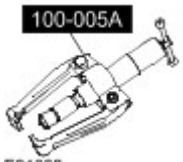
Published: Jan 29, 2007

Transfer Case Front Output Shaft Seal (41.20.51)

Special Service Tools

205053

Output Shaft Flange Holding Tool
205-053



E91088

General Purpose Puller
100-005A

E91089

Replacer, Oil Seal
307-479

Removal

1 . **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

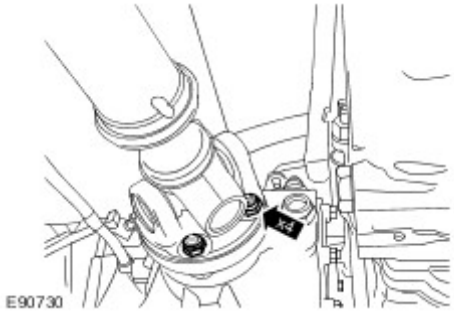
Raise and support the vehicle.

2 . Drain the transfer case.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

3 . **NOTE:**
Mark the front driveshaft to transfer case drive flange.

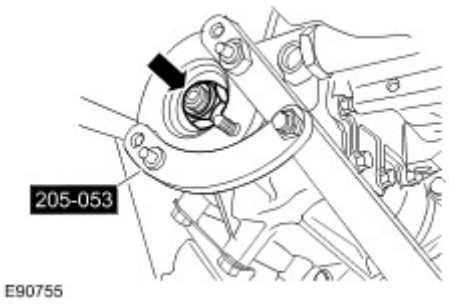
Release the driveshaft from the transfer case output drive flange.

- Remove and discard the 4 nuts.



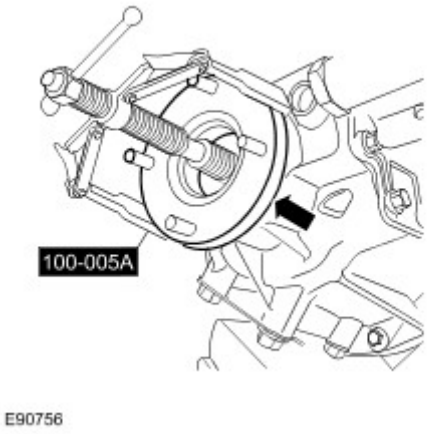
4 . Using the special tool, restrain the transfer case front output flange.

- Remove and discard the nut and felt washer.

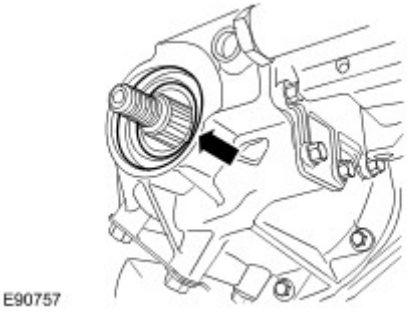


5 . Remove the transfer case front output flange.

- If necessary use the special tool to remove the transfer case front output flange.



6 . Using a suitable tool, remove and discard the transfer case front output shaft seal.



Installation

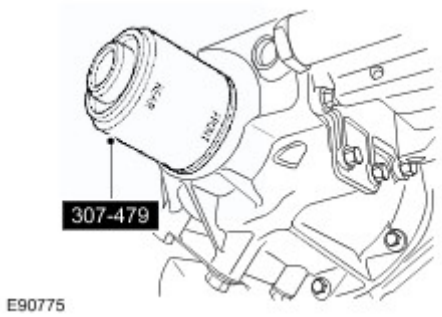
1 . **NOTE:**

Clean the component mating faces.

NOTE:

Use end of tool marked 'FRONT' to fit seal.

Using the special tool, install a new transfer case front output shaft seal.

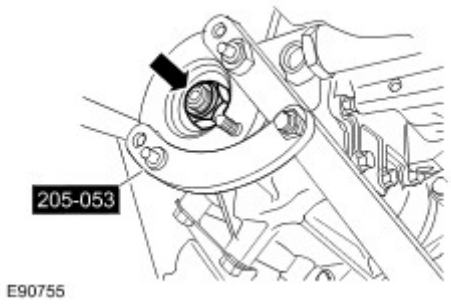


2 . **NOTE:**

Install a new felt washer.

Install the transfer case front output flange.

- Install the washer.
- Install a new nut and tighten to 162 Nm (120 lb.ft).

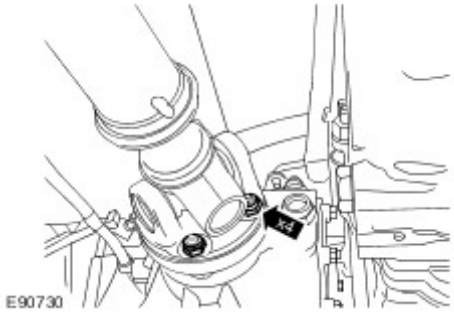


3 . **NOTE:**

Install new nuts.

Tighten to 45 Nm (33 lb.ft).

- Align the position of the driveshaft in relation to the drive pinion flange.



4 . Fill the transfer case.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

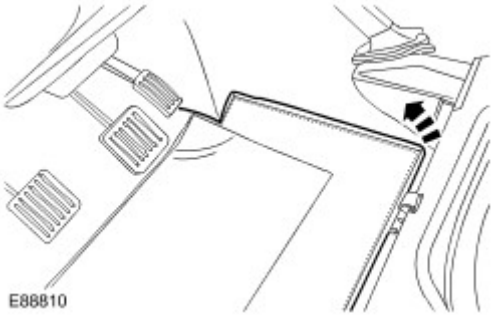
Published: Feb 12, 2007

Transfer Case High/Low Range Linkage

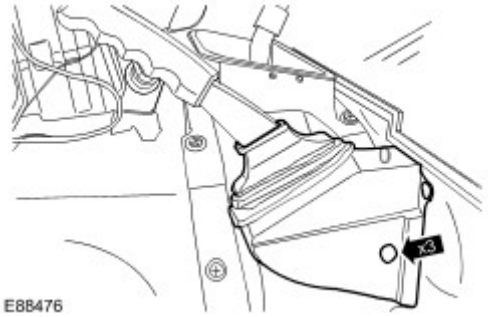
Removal

1 . Remove the floor console.
For additional information, refer to Floor Console (76.25.01)

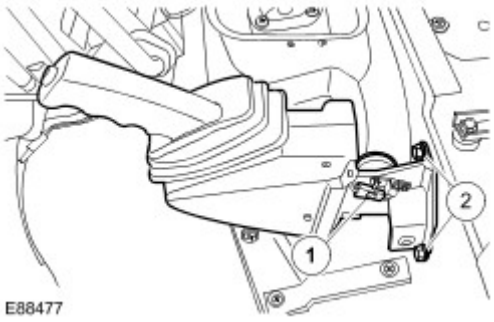
2 . Reposition the LH carpet.



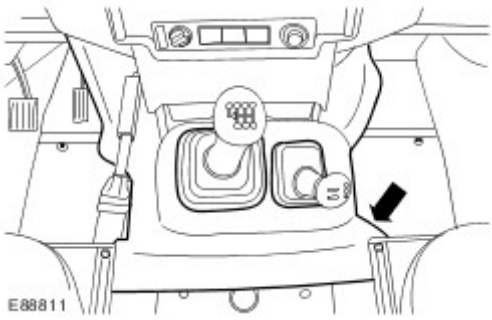
3 . Release the parking brake lever gaiter.
Remove the 3 clips.



4 . Release the parking brake lever.
1) Disconnect the electrical connector.
2) Remove the 2 bolts.



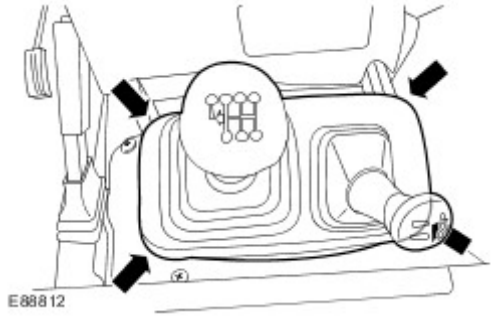
5 . Remove the transmission cover panel floor covering.



6 . **NOTE:**

Do not detach the gaiter from the selector knobs.

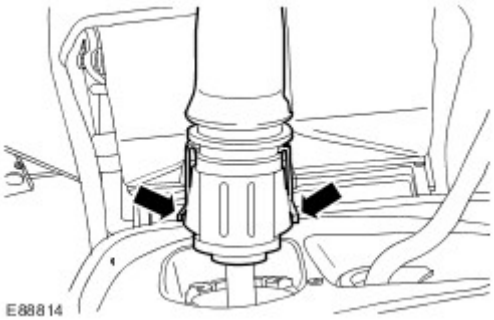
Detach the gaiter from the transmission cover panel.



7 . **WARNING: The gearshift lever knob will be released suddenly, keep face clear during removal. Failure to follow this instruction may result in personal injury.**

Release the gearshift lever knob.

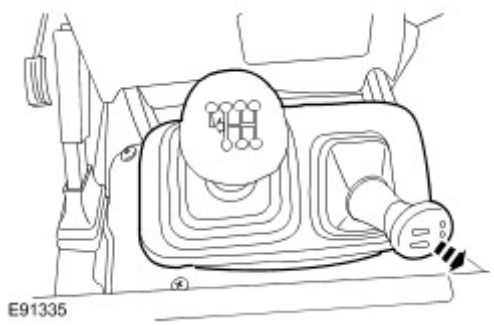
- Release the 2 clips.



8 . **WARNING: The high/low range lever knob will be released suddenly, keep face clear during removal. Failure to follow this instruction may result in personal injury.**

Remove the gaiter and selector levers.

- Detach the high/low range selector lever.



9 . Remove the transmission cover panel.

- Remove the 11 screws.

10 . **NOTE:**

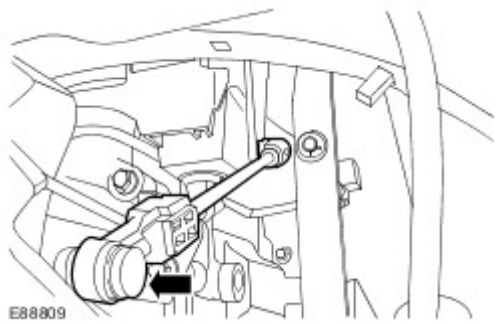
To reduce tension on the insulation, position the differential lock lever to the left.

Remove the insulation pad.

11 . Remove the insulation pad support bracket.

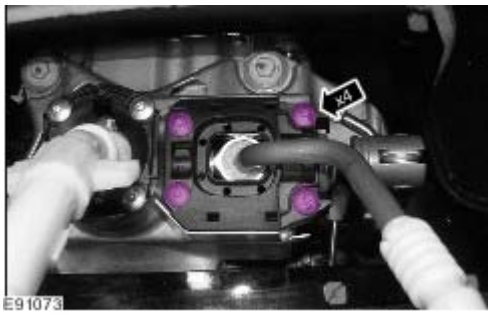
12 . Disconnect the high/low range selector rod.

- Press the button to release the fitting before disconnecting the rod.



13 . Remove the high/low range linkage.

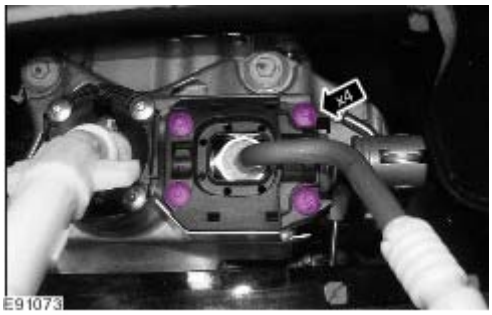
- Remove the 4 screws.



Installation

1 . Install the high/low range linkage.

- Tighten to 7 Nm (5 lb.ft).



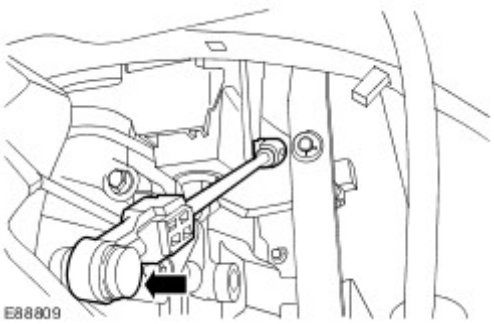
NOTE:

If adjustment of the transfer case high/low range selector linkage has changed, carry out the adjustment procedure.
For additional information, refer to Transfer Case High/Low Range Selector Rod Adjustment

2 . **NOTE:**

Make sure the rod is fully engaged on the ball joint and not on the foam washer.

Connect the high/low range selector rod.



3 . Install the insulation pad support bracket.

4 . **NOTE:**
Position the differential lock to the left, to reduce tension on the insulation.

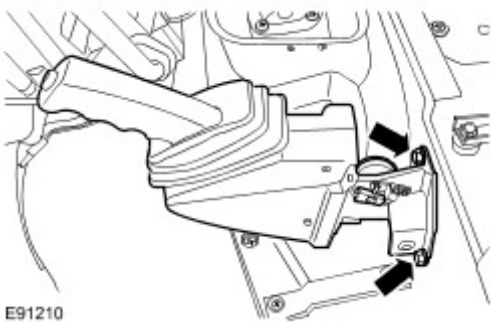
Install the insulation pad.

5 . Install the transmission cover panel.
- Install the screws.

6 . Install the gaiter with the selector levers attached.
- Install the selector levers.
- Fully seat the gaiter.

7 . Install the transmission cover panel floor covering.

8 . Install the parking brake lever.
- Tighten to 25 Nm (18 lb.ft)



9 . Install the parking brake lever gaiter.
- Install the clips.

10 . Reposition the LH carpet.

11 . Install the floor console.
For additional information, refer to Floor Console (76.25.01)

Published: Jan 29, 2007

Transfer Case Input Shaft Seal (41.20.50)

Special Service Tools

Installer, seal
308-518

Removal

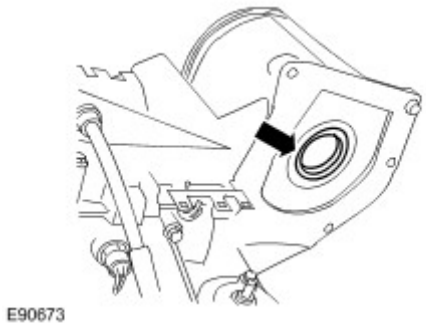
1 . Disconnect the battery ground cable.
For additional information, refer to Battery Disconnect and Connect

2 . **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

Raise and support the vehicle.

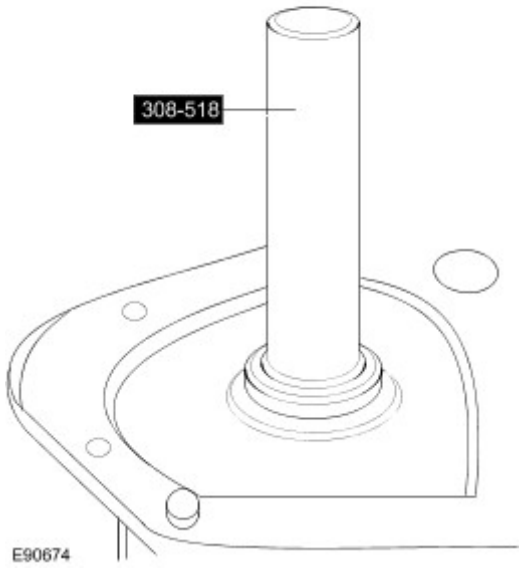
3 . Remove transfer case.
For additional information, refer to Transfer Case (41.20.25.99)

4 . Remove and discard the transfer case input shaft seal.



Installation

1 . Using the special tool, install a new transfer case input shaft seal.



2 . Install the transfer case.
For additional information, refer to Transfer Case (41.20.25)

3 . Connect the battery ground cable.
For additional information, refer to Battery Connect

Published: Feb 15, 2007

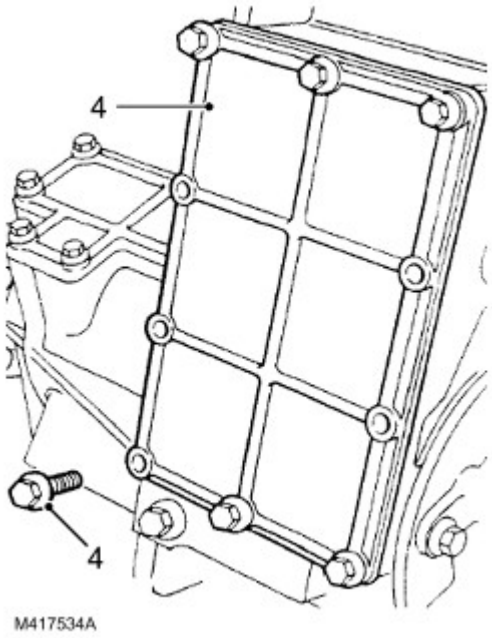
Transfer Case Lower Cover

Removal

1 . Raise vehicle on ramp.

2 . Drain transfer case oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

3 . Remove 10 bolts securing lower cover to transfer case and remove cover.



Installation

1 . Clean lower cover and mating face on transfer case.

2 . Clean bolt threads.

3 . Apply sealant, Part No. STC 50552 to bolt threads.

4 . Apply sealant, Part No. STC 4600 to lower cover sealing face.

5 . Position lower cover, fit bolts and tighten to 25 Nm (18 lbf.ft).

6 . Fill transfer case with oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

7 . Lower vehicle on ramp.

Published: Feb 15, 2007

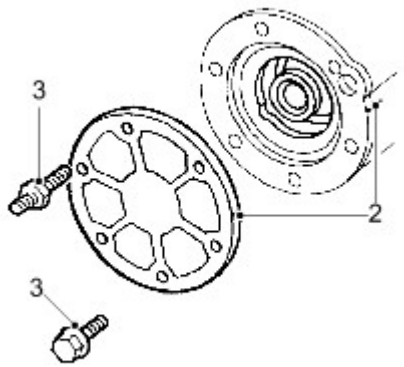
Transfer Case Rear Cover

Removal

1 . Raise vehicle on 4 post ramp.

2 . Mark rear cover to bearing housing for assembly purposes.

3 . Noting fitted position of stud bolt and harness clip bracket, remove 5 bolts and stud bolt securing rear cover.



M417547

4 . Collect harness clip bracket.

5 . Remove rear cover.

Installation

1 . Clean rear cover and mating face.

2 . Apply sealant, Part No. STC 4600 to rear cover mating face.

3 . Align reference marks, fit rear cover.

4 . Clean rear cover bolts and apply sealant, Part No. STC 50552 to threads of bolts and stud nut.

5 . Position clip bracket, fit stud nut and bolts, tighten by diagonal selection to 25 Nm (18 lbf.ft).

6 . Check/top-up transfer case oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)

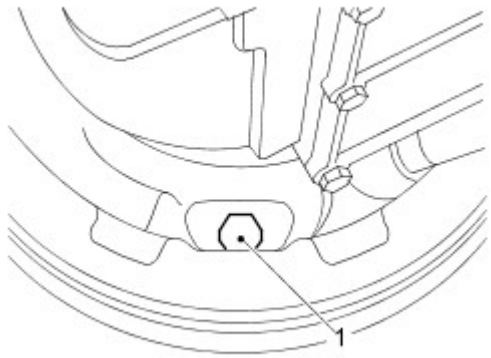
7 . Lower vehicle.

Published: Feb 15, 2007

Transfer Case Rear Output Shaft Seal (41.20.54)

Removal

1 . Loosen brake shoe adjuster bolt.



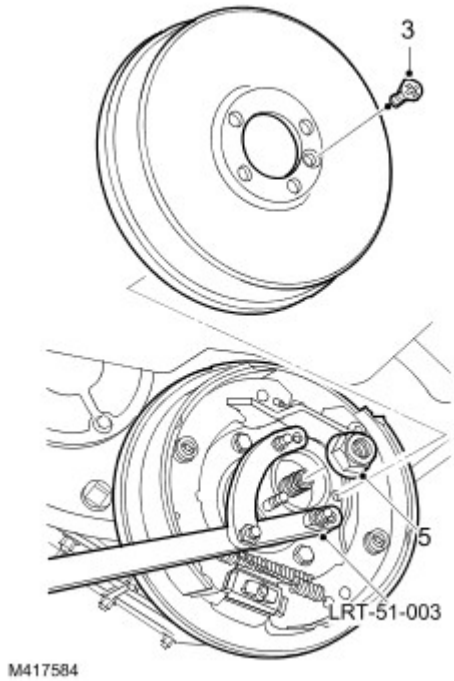
M417785

2 . Remove rear drive shaft.
For additional information, refer to Rear Driveshaft (47.15.03)

3 . Remove screw securing brake drum.

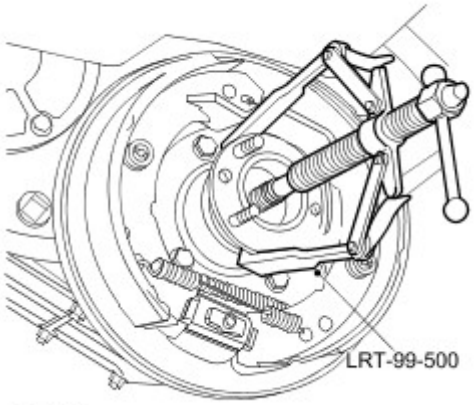
4 . Remove brake drum.

5 . Restrain transfer case drive flange using LRT-51-003, remove and discard drive flange nut, remove and discard steel and felt washers.



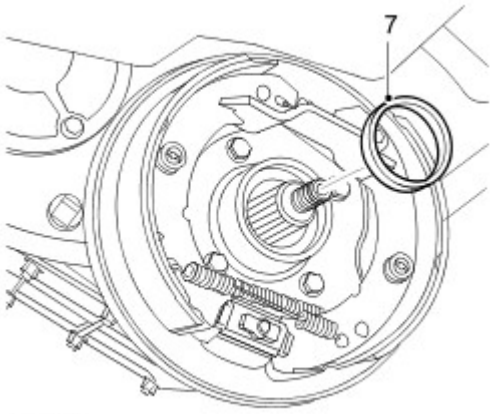
M417584

6 . Using LRT-99-500 if necessary, remove drive flange from transfer case.



M417585

7 . Remove and discard rear output shaft oil seal from transfer case.



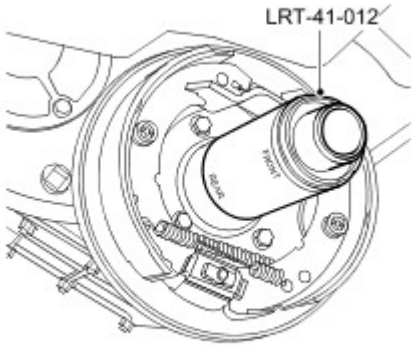
M417586

Installation

1 . Clean seal recess.

2 . **CAUTION: Oil seal must be fitted dry.**

Install new seal using LRT-41-012 .



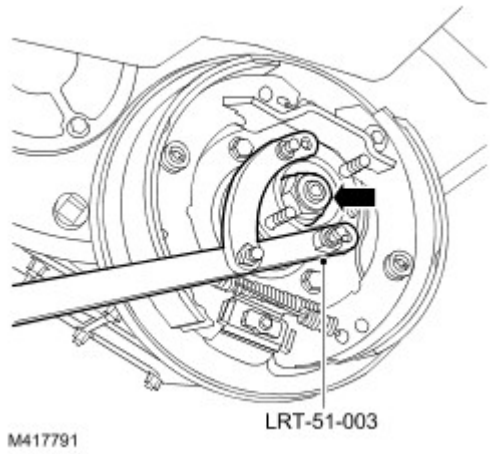
M417744

NOTE:

Use end of tool marked 'REAR' to instal seal.

3 . Position drive flange, instal new felt and steel washers.

4 . Position LRT-51-003 instal and tighten new drive flange nut to 148 Nm (109 lbf.ft).



5 . Position brake drum and tighten screw.

6 . Tighten adjuster bolt to 25 Nm (18 lbf.ft) then back off 1 ½ turns.

7 . Check that brake drum is free to rotate.

8 . Install drive shaft.
For additional information, refer to Rear Driveshaft (47.15.03)

9 . Top-up transfer case oil.
For additional information, refer to Transfer Case Draining and Filling (41.20.04)