

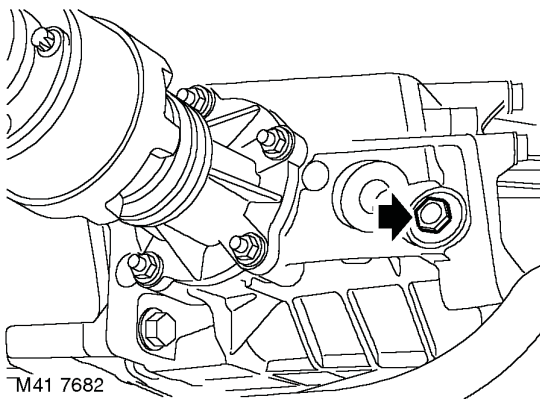


**Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS**

🔑 41.25.06

**Drain**

1. Remove underbelly panel.  
 🖱️ **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**
2. Place container beneath IRD unit.  
**WARNING: Observe due care when draining gearbox fluid as the fluid can be very hot.**



3. Clean area around filler/level and drain plugs.
4. Remove filler/drain plugs and discard sealing washers. Allow fluid to drain.  
*NOTE: The fluid should be drained with the transmission at normal operating temperature.*

5. Fit new sealing washer and tighten drain plug to 35 Nm (26 lbf.ft).

**Refill**

1. Fill with correct fluid until it just runs from filler/level hole. Allow sufficient time for fluid to flow and reach a common level in unit.  
 🖱️ **CAPACITIES, FLUIDS, LUBRICANTS AND SEALANTS, Lubrication.**
2. Fit new sealing washer and tighten filler/level plug to 35 Nm (26 lbf.ft).
3. Fit underbelly panel.  
 🖱️ **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**

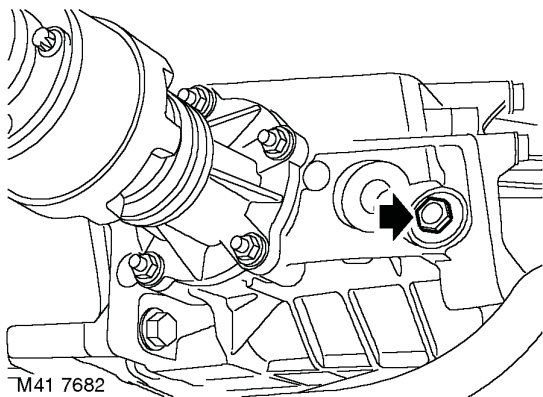
# INTERMEDIATE REDUCTION DRIVE

## Intermediate reduction drive (IRD) lubrication system - drain & refill - NAS

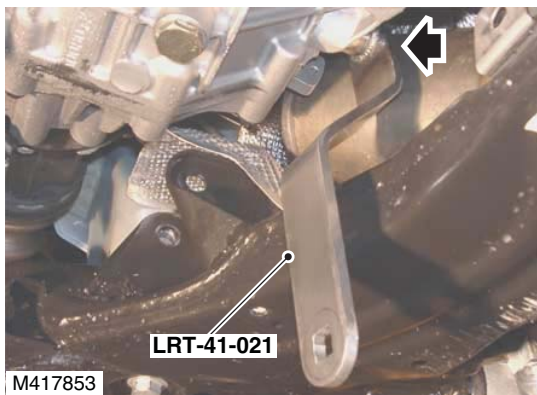
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### Drain

1. Remove underbelly panel  
👉 **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**
2. Place container beneath IRD unit.  
**WARNING: Observe due care when draining gearbox fluid as the fluid can be very hot.**



3. Clean area around filler/level and drain plugs.



4. Using **LRT-41-021** remove filler plug and discard sealing washer.



5. Remove drain plug, discard sealing washer and allow oil to drain.  
**NOTE: The fluid should be drained with the transmission at normal operating temperature.**
6. Fit new sealing washer and tighten drain plug to 35 Nm (26 lbf.ft).

### Refill

1. Fill with fluid until it just runs from filler/level hole. Allow sufficient time for fluid to flow and reach a common level in unit.  
👉 **CAPACITIES, FLUIDS, LUBRICANTS AND SEALANTS, Lubrication.**
2. Fit new sealing washer and tighten filler/level plug to 35 Nm (26 lbf.ft).
3. Fit underbelly panel  
👉 **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**



**Intermediate reduction drive (IRD) unit - Td4**

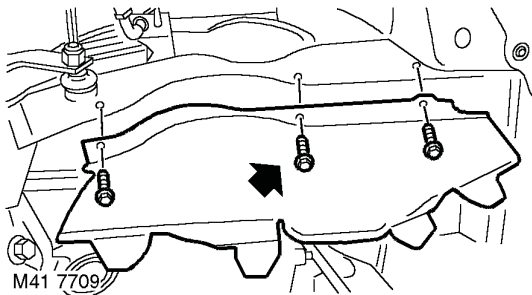
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**Remove**

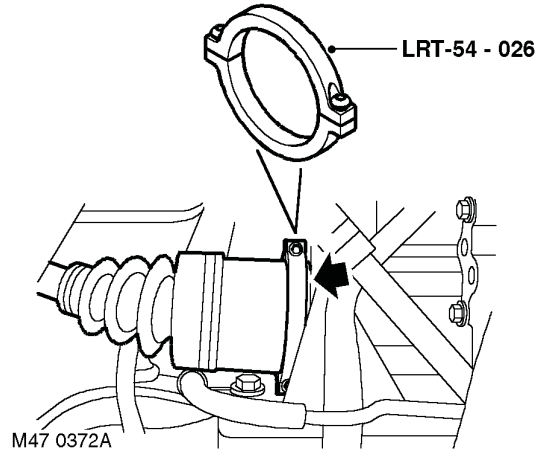
1. Disconnect battery earth lead.
2. Raise front of vehicle.

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

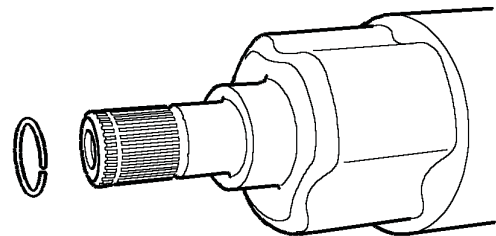
3. Remove rear beam.  
**FRONT SUSPENSION, REPAIRS, Rear beam.**
4. Remove exhaust front pipe.  
**MANIFOLDS & EXHAUST SYSTEMS - Td4, REPAIRS, Exhaust pipe - front.**
5. Drain fluid from IRD.  
**INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
6. Drain gearbox fluid.  
**MANUAL GEARBOX - GETRAG, ADJUSTMENTS, Gearbox oil - drain and refill.**  
**AUTOMATIC GEARBOX - JATCO, ADJUSTMENTS, Gearbox fluid - drain & refill.**



7. Remove 3 bolts securing RH splash shield to body and remove shield.

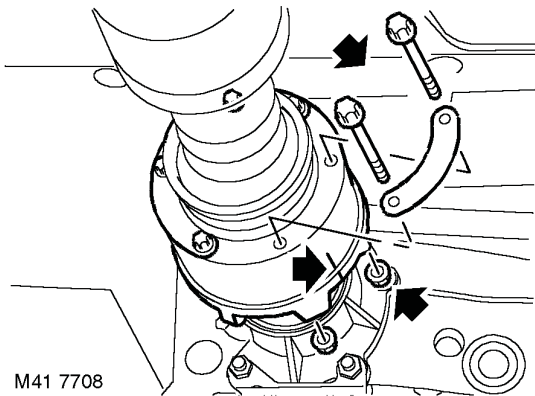


8. Secure **LRT-54-026** to drive shaft inboard joint. Using a suitable lever, release drive shaft from IRD.
9. With assistance, pull hub outwards and release drive shaft from IRD.



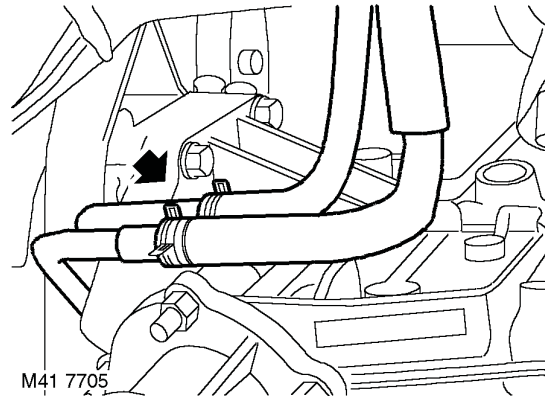
10. Remove and discard drive shaft circlip.
11. Reference mark front propeller shaft for reassembly.
12. Raise one rear wheel for rotation of propeller shaft to access bolts.

## INTERMEDIATE REDUCTION DRIVE

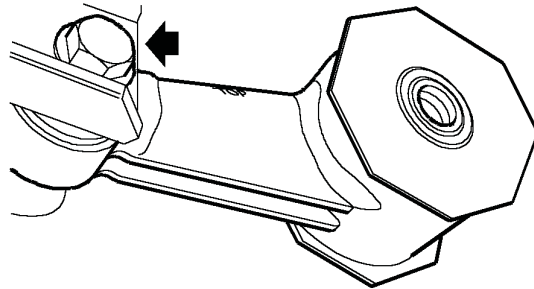


13. Remove 6 nuts and bolts securing propeller shaft to IRD drive flange.
14. Release propeller shaft from IRD drive flange and tie shaft aside.

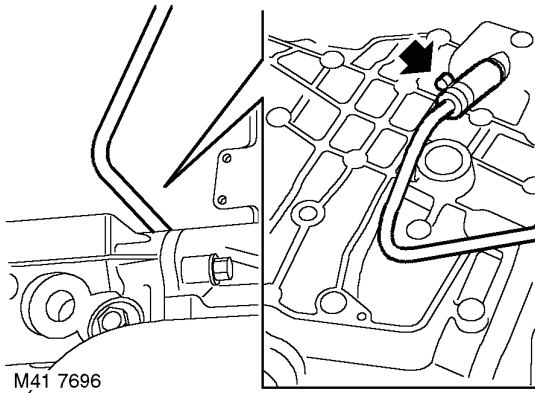
**CAUTION:** Care must be taken to support the Tripode joint when removed from the IRD unit. To avoid damage to gaiter or steel can, the joint should not be allowed to fully extend or be dropped.



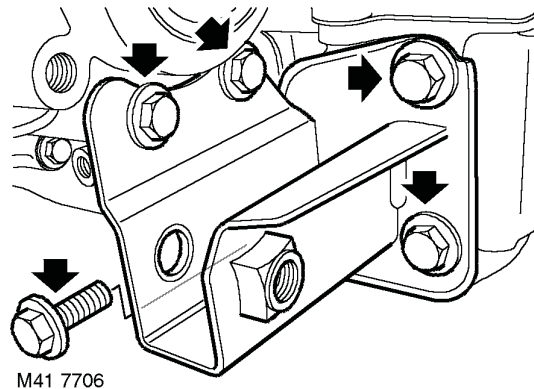
17. Release clips and disconnect coolant hoses from IRD.



18. Remove bolt securing engine lower steady to IRD support bracket.
19. Remove lower engine steady noting that 'TOP' mark on engine steady faces uppermost.



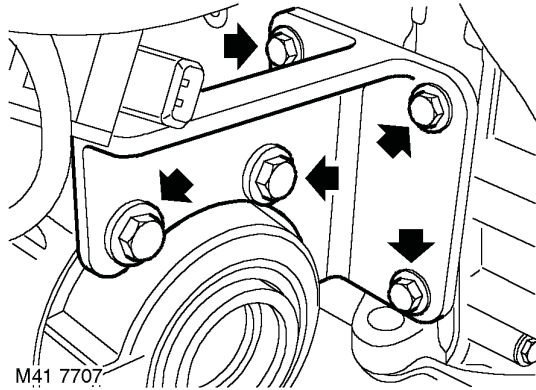
15. Disconnect breather hose from IRD housing.
16. Position container to collect coolant spillage.



20. Remove 3 bolts securing IRD support bracket to sump.

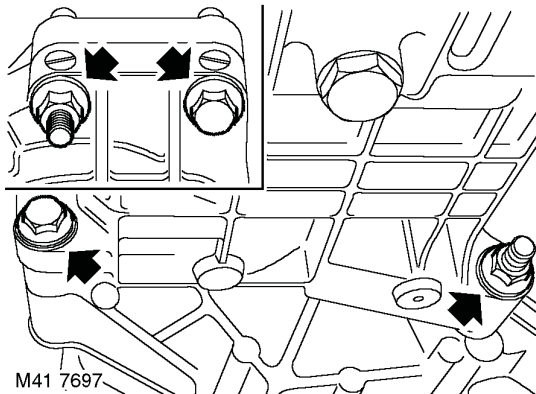


21. Remove 2 bolts securing support bracket to IRD.
22. Remove support bracket.



28. Remove and discard 'O' ring from IRD.

23. Remove 3 bolts, securing IRD upper support bracket to cylinder block.
24. Remove 2 bolts securing upper support bracket to IRD.
25. Remove IRD upper support bracket.



26. Remove 4 bolts securing IRD.
27. With assistance, release IRD from gearbox and remove.

## INTERMEDIATE REDUCTION DRIVE

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### Refit

1. Clean mating faces of IRD and gearbox.
2. Lubricate and fit new 'O' ring
3. With assistance, fit IRD.
4. Fit bolts securing IRD to gearbox and tighten sufficiently only to pull mating faces of IRD and gearbox together at this stage.
5. Fit IRD support brackets, tighten sufficiently to pull mating faces together.
6. Final tighten bolts securing IRD to gearbox to 90 Nm (66 lbf.ft).
7. Final tighten bolts securing IRD support brackets in the following sequence:
  - M8 bolts securing support brackets to IRD 37 Nm (22 lbf.ft)
  - M10 bolts securing support brackets to IRD 50 Nm (22 lbf.ft)
  - 3 bolts securing support bracket to cylinder block 25 Nm (18 lbf.ft)
  - 3 bolts securing support bracket to sump at 45 Nm (33 lbf.ft).
8. Position lower engine steady, 'TOP' mark uppermost. Fit bolt but do not tighten at this stage.
9. Connect coolant hoses and secure with clips.
10. Connect breather hose to IRD housing.
11. Clean propeller shaft flange and mating face.
12. Fit propeller shaft to IRD flange and align marks. Tighten nuts and bolts to 40 Nm (30 lbf.ft).
13. Inspect drive shaft oil seal, renew if worn or damaged.
14. Clean drive shaft and flange splines.
15. Fit new circlip to drive shaft.
16. With assistance, pull hub outwards, align drive shaft and fit to IRD taking care not to damage oil seal.
17. Fit splash shield and secure with bolts.
18. Fit exhaust front pipe.
  - 👉 **MANIFOLDS & EXHAUST SYSTEMS - Td4, REPAIRS, Exhaust pipe - front.**
19. Fit rear beam.
  - 👉 **FRONT SUSPENSION, REPAIRS, Rear beam.**
20. Final tighten bolt securing lower engine steady to IRD support bracket to 100 Nm (74 lbf.ft).
21. Remove stand(s) and lower vehicle.
22. Fill IRD to correct level with fluid.
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
23. Fill gearbox with fluid.
  - 👉 **MANUAL GEARBOX - GETRAG, ADJUSTMENTS, Gearbox oil - drain and refill.**
  - 👉 **AUTOMATIC GEARBOX - JATCO, ADJUSTMENTS, Gearbox fluid - drain & refill.**
24. Connect battery earth lead.
25. Refill cooling system.
  - 👉 **COOLING SYSTEM - Td4, ADJUSTMENTS, Coolant - drain and refill.**

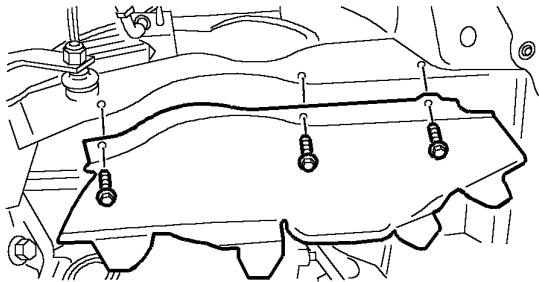


**Intermediate reduction drive (IRD) unit - K1.8**

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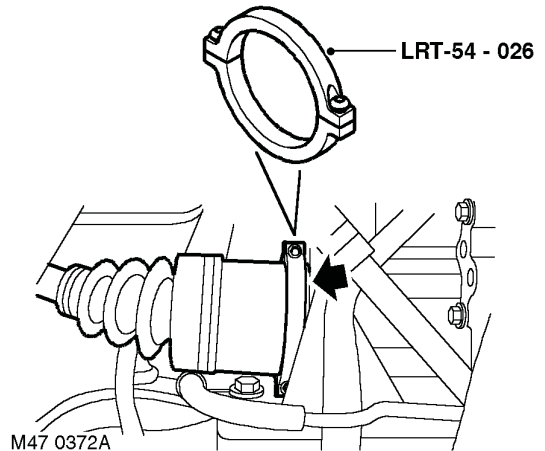
**Remove**

1. Disconnect battery earth lead.
2. Remove rear beam.
  - ➔ **FRONT SUSPENSION, REPAIRS, Rear beam.**
3. Remove exhaust front pipe.
  - ➔ **MANIFOLDS & EXHAUST SYSTEMS - K SERIES 1.8, REPAIRS, Exhaust pipe - front.**
4. Drain fluid from IRD.
  - ➔ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
5. Drain gearbox oil.
  - ➔ **MANUAL GEARBOX - PG1, ADJUSTMENTS, Gearbox oil - drain and refill.**



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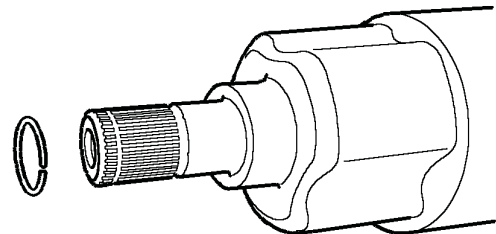
6. Remove 3 bolts securing RH splash shield to body and remove shield.



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7. Secure **LRT-54-026** to drive shaft inboard joint. Using a suitable lever, release drive shaft from IRD.
8. With assistance, pull hub outwards and release drive shaft from IRD.

**CAUTION: Care must be taken not to damage oil seal when removing drive shaft from IRD.**



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9. Remove and discard drive shaft circlip.

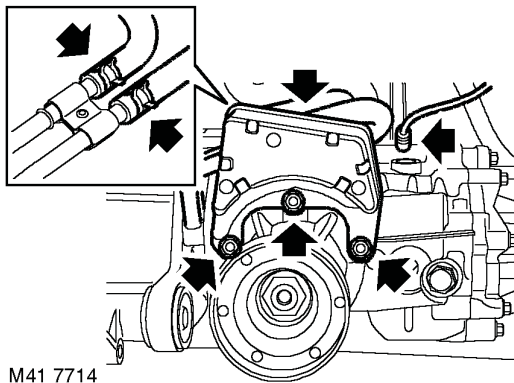


# INTERMEDIATE REDUCTION DRIVE

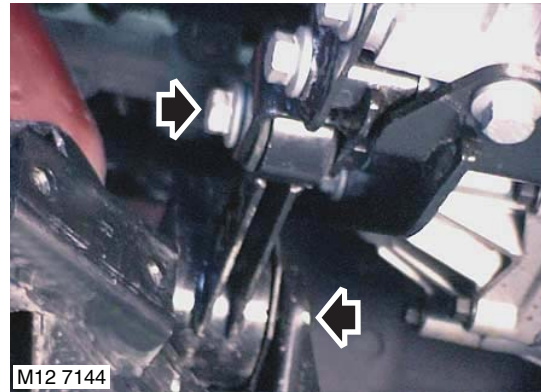


10. Reference mark front propeller shaft for reassembly.
11. Raise one rear wheel for rotation of propeller shaft to access bolts.
12. Remove 6 nuts and bolts securing propeller shaft to IRD drive flange.
13. Release propeller shaft from IRD drive flange and tie shaft aside.

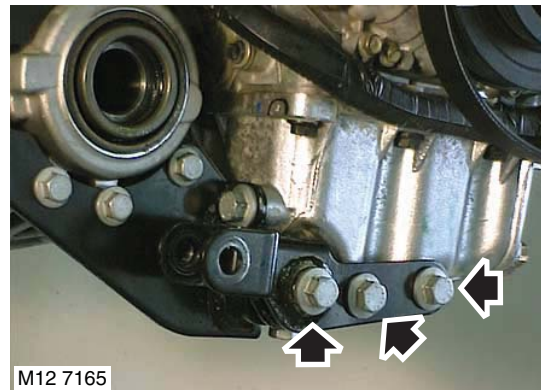
**CAUTION:** Care must be taken to support the Tripode joint when removed from the IRD unit. To avoid damage to gaiter or steel can, the joint should not be allowed to fully extend or be dropped.



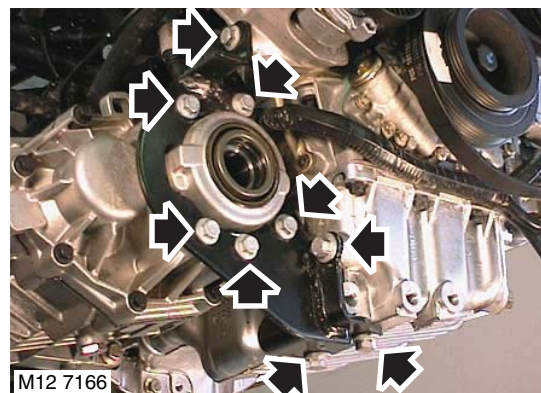
14. Remove 3 nuts securing mass damper to pinion housing.
15. Remove mass damper.
16. Disconnect breather hose from IRD housing.
17. Position container to collect coolant spillage.
18. Release clips and disconnect coolant hoses from IRD.



19. Remove bolt securing engine lower steady to bracket on sump.
20. Remove engine lower steady.



21. Remove 3 bolts securing lower engine steady bracket to sump and remove bracket.

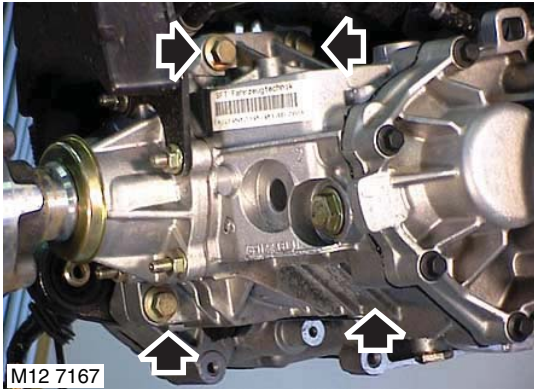


22. Remove upper bolt securing IRD support bracket to cylinder block.
23. Remove 5 bolts securing support bracket to IRD.





24. Remove 3 bolts securing IRD support bracket to sump and remove bracket.



25. Remove 4 bolts securing IRD.
26. With assistance, release IRD from gearbox and remove.



27. Remove and discard 'O' ring from IRD.

### Refit

1. Clean mating faces of IRD and gearbox.
2. Lubricate and fit new 'O' ring
3. With assistance, fit IRD.
4. Fit bolts securing IRD to gearbox and tighten sufficiently only to pull mating faces of IRD and gearbox together at this stage.
5. Fit IRD support bracket and tighten bolts sufficiently only to pull mating faces together.
6. Final tighten bolts securing IRD to gearbox to 90 Nm (66 lbf.ft).
7. Final tighten bolts securing IRD support bracket in following sequence:
  - 5 bolts securing IRD support bracket to IRD 50 Nm (37 lbf.ft)
  - 1 bolt securing support bracket to cylinder block to 45 Nm (33 lbf.ft)
  - 3 bolts securing support bracket to sump 88 Nm (65 lbf.ft).

8. Position engine lower steady bracket to sump, fit and tighten bolts to 100 Nm (74 lbf.ft).
9. Fit engine lower steady, fit bolt securing steady to gearbox bracket but do not tighten at this stage.
10. Connect coolant hoses and secure with clips.
11. Connect breather hose to IRD housing.
12. Fit mass damper to pinion housing, fit nuts and tighten to 25 Nm (18 lbf.ft).
13. Clean propeller shaft flange and mating face.
14. Fit propeller shaft to IRD flange and align marks. Tighten nuts and bolts to 40 Nm (30 lbf.ft).
15. Inspect drive shaft oil seal, renew if worn or damaged.
16. Clean drive shaft and flange splines.
17. Fit new circlip to drive shaft.
18. With assistance, pull hub outwards, align drive shaft and fit to IRD taking care not to damage oil seal.

**CAUTION: Pull the drive shaft to ensure the circlip is fully engaged and retains the shaft.**

19. Fit splash shield and secure with bolts.
20. Fit exhaust front pipe.
  - 👉 **MANIFOLDS & EXHAUST SYSTEMS - K SERIES 1.8, REPAIRS, Exhaust pipe - front.**
21. Fit rear beam.
  - 👉 **FRONT SUSPENSION, REPAIRS, Rear beam.**
22. Final tighten bolt securing lower engine steady to sump bracket to 80 Nm (59 lbf.ft).
23. Fill IRD to correct level with fluid.
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
24. Refill gearbox with oil.
  - 👉 **MANUAL GEARBOX - PG1, ADJUSTMENTS, Gearbox oil - drain and refill.**
25. Connect battery earth lead.
26. Refill cooling system.
  - 👉 **COOLING SYSTEM - K SERIES 1.8, ADJUSTMENTS, Coolant - refill system.**

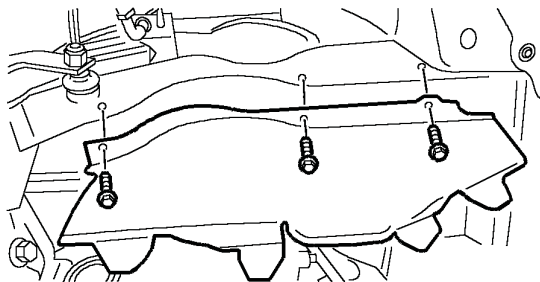
# INTERMEDIATE REDUCTION DRIVE

## Intermediate reduction drive (IRD) unit - KV6

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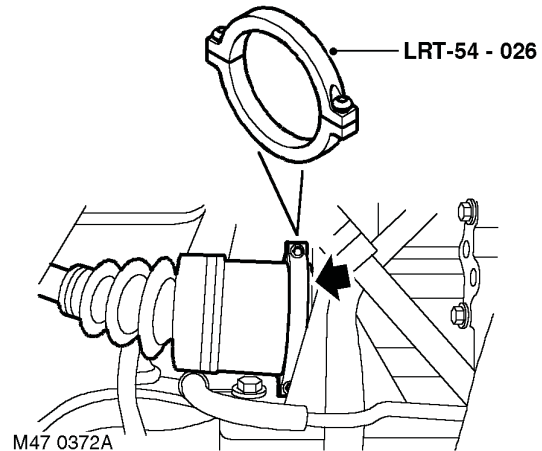
### Remove

1. Disconnect battery earth lead.
2. Remove rear beam.  
    👉 **FRONT SUSPENSION, REPAIRS, Rear beam.**
3. Remove exhaust front pipe.  
    👉 **MANIFOLDS & EXHAUST SYSTEMS - K SERIES KV6, REPAIRS, Front pipe - Non NAS.**
4. **NAS models:** Remove RH catalytic converter.  
    👉 **EMISSION CONTROL, REPAIRS, Catalytic converter - RH - KV6 - NAS.**
5. **NAS models:** Remove LH exhaust manifold gasket.  
    👉 **MANIFOLDS & EXHAUST SYSTEMS - K SERIES KV6, REPAIRS, Gasket(s) - exhaust manifold - LH - NAS.**
6. Drain fluid from IRD.  
    👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**  
    👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) lubrication system - drain & refill - NAS.**
7. Drain gearbox fluid.  
    👉 **AUTOMATIC GEARBOX - JATCO, ADJUSTMENTS, Gearbox fluid - drain & refill.**



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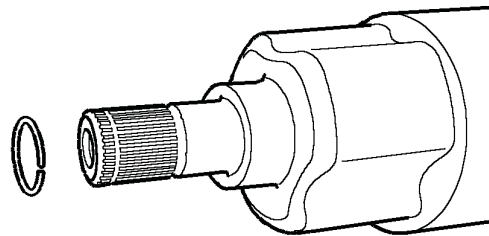
8. Remove 3 bolts securing RH splash shield to body and remove shield.



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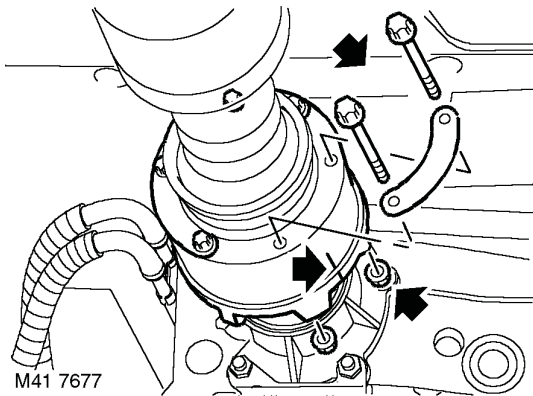
9. Secure **LRT-54-026** to drive shaft inboard joint. Using a suitable lever, release drive shaft from IRD.
10. With assistance, pull hub outwards and release drive shaft from IRD.

**CAUTION: Care must be taken not to damage oil seal when removing drive shaft from IRD.**



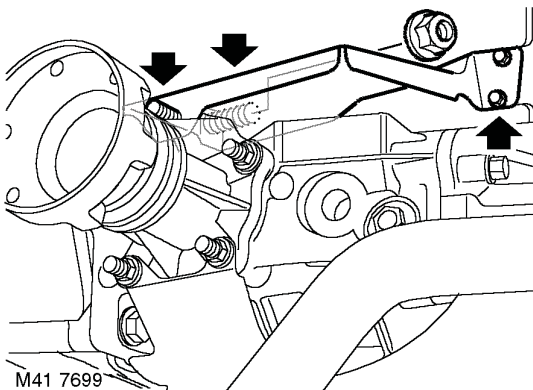
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11. Remove and discard drive shaft circlip.

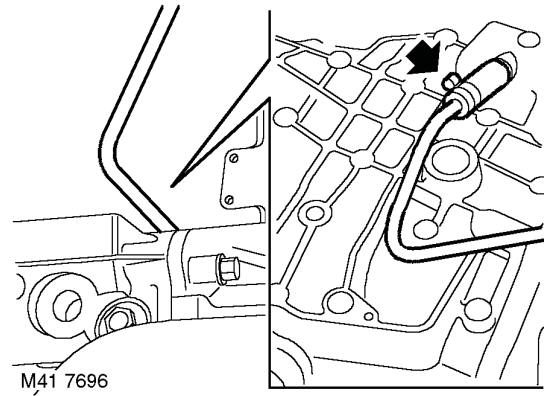


12. Reference mark front propeller shaft for reassembly.
13. Raise one rear wheel for rotation of propeller shaft to access bolts.
14. Remove 6 nuts and bolts securing propeller shaft to IRD drive flange.
15. Release propeller shaft from IRD drive flange and tie shaft aside.

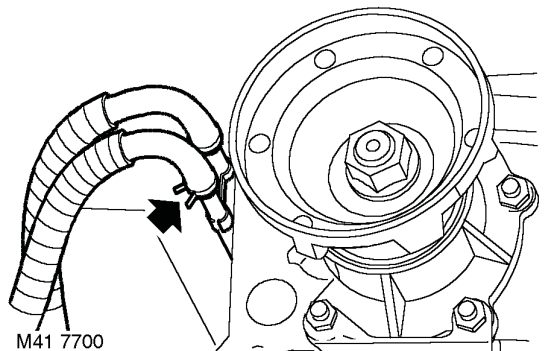
**CAUTION:** Care must be taken to support the Tripode joint when removed from the IRD unit. To avoid damage to gaiter or steel can, the joint should not be allowed to fully extend or be dropped.



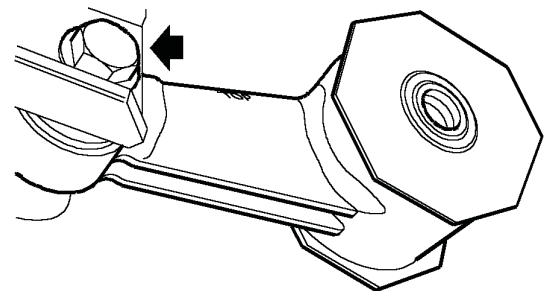
16. Remove nut securing manifold heat shield to IRD unit.
17. Remove nut securing heat shield to IRD pinion housing.
18. Remove 2 bolts securing heat shield and remove heat shield.



19. Disconnect breather hose from IRD housing.
20. Position container to collect coolant spillage.

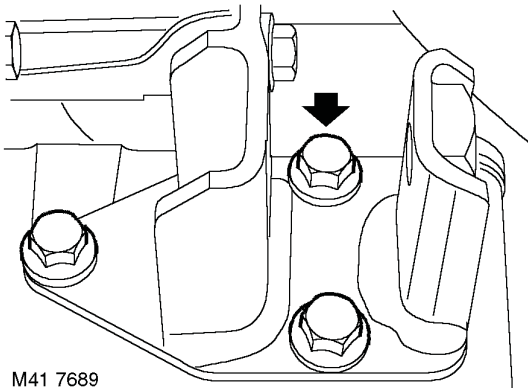


21. Release clips and disconnect coolant hoses from IRD.

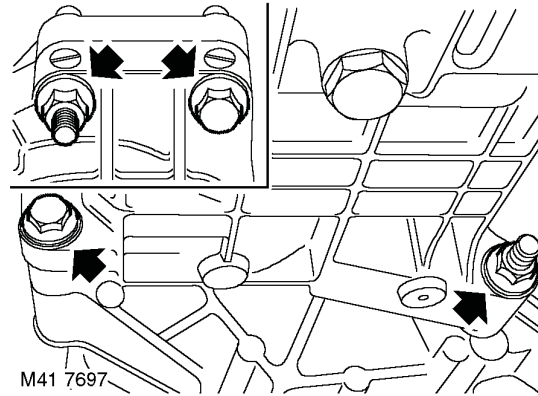


22. Remove bolt securing engine lower steady to IRD support bracket.
23. Remove lower engine steady noting that 'TOP' mark on engine steady faces uppermost.

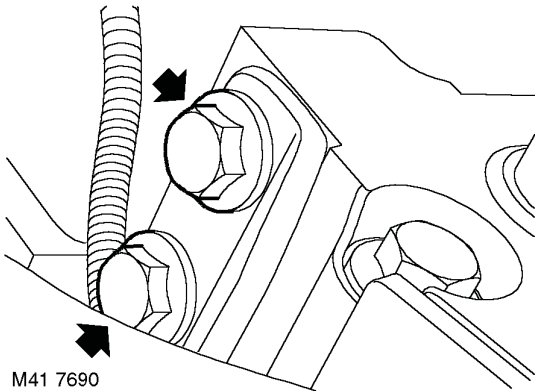
## INTERMEDIATE REDUCTION DRIVE



24. Remove 3 bolts securing IRD support bracket to sump.



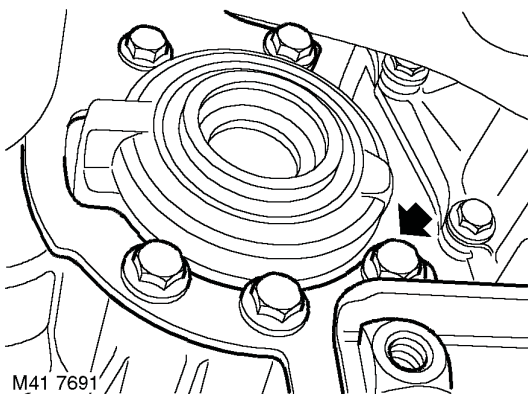
28. Remove 4 bolts securing IRD.  
29. With assistance, release IRD from gearbox and remove.



25. Remove 2 bolts securing IRD support bracket to engine front mounting plate.



30. Remove and discard 'O' ring from IRD.



26. Remove 5 bolts securing support bracket to IRD.  
27. Remove support bracket.



## Refit

1. Clean mating faces of IRD and gearbox.
2. Lubricate and fit new 'O' ring
3. With assistance, fit IRD.
4. Fit bolts securing IRD to gearbox and tighten sufficiently only to pull mating faces of IRD and gearbox together at this stage.
5. Fit IRD support bracket and tighten bolts sufficiently only to pull mating faces together.
6. Final tighten bolts securing IRD to gearbox to 90 Nm (66 lbf.ft).
7. Final tighten bolts securing IRD support bracket in following sequence:
  - 5 bolts securing support bracket to IRD 50 Nm (37 lbf.ft)
  - 2 bolts securing support bracket to engine front mounting bracket 50 Nm (37 lbf.ft)
  - 3 bolts securing support bracket to sump 88 Nm (65 lbf.ft).
8. Position lower engine steady, 'TOP' mark uppermost. Fit bolt but do not tighten at this stage.
9. Connect coolant hoses and secure with clips.
10. Connect breather hose to IRD housing.
11. Fit manifold heat shield and fit nut securing heat shield to pinion housing finger tight.
12. Fit bolts securing manifold heat shield to IRD support bracket and tighten to 9 Nm (7 lbf.ft).
13. Fit nut securing heat shield to IRD and tighten to 45 Nm (33 lbf.ft).
14. Final tighten nut securing manifold heat shield to IRD pinion housing to 25 Nm (18 lbf.ft).
15. Clean propeller shaft flange and mating face.
16. Fit propeller shaft to IRD flange and align marks. Tighten nuts and bolts to 40 Nm (30 lbf.ft).
17. Inspect drive shaft oil seal, renew if worn or damaged.
18. Clean drive shaft and flange splines.
19. Fit new circlip to drive shaft.
20. With assistance, pull hub outwards, align drive shaft and fit to IRD taking care not to damage oil seal.
21. Fit splash shield and secure with bolts.
22. Fit exhaust front pipe.
  - 👉 **MANIFOLDS & EXHAUST SYSTEMS - K SERIES KV6, REPAIRS, Front pipe - Non NAS.**
23. Fit rear beam.
  - 👉 **FRONT SUSPENSION, REPAIRS, Rear beam.**
24. Final tighten bolt securing lower engine steady to IRD support bracket to 100 Nm (74 lbf.ft).
25. Fill IRD to correct level with fluid.
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) lubrication system - drain & refill - NAS.**
26. **NAS models:** Fit RH catalytic converter.
  - 👉 **EMISSION CONTROL, REPAIRS, Catalytic converter - RH - KV6 - NAS.**
27. **NAS models:** Fit LH exhaust manifold gasket.
  - 👉 **MANIFOLDS & EXHAUST SYSTEMS - K SERIES KV6, REPAIRS, Gasket(s) - exhaust manifold - LH - NAS.**
28. Fill gearbox with fluid.
  - 👉 **AUTOMATIC GEARBOX - JATCO, ADJUSTMENTS, Gearbox fluid - drain & refill.**
29. Connect battery earth lead.
30. Refill cooling system.
  - 👉 **COOLING SYSTEM - K SERIES KV6, ADJUSTMENTS, Coolant - drain and refill.**

**CAUTION:** Pull the drive shaft to ensure the circlip is fully engaged and retains the shaft.

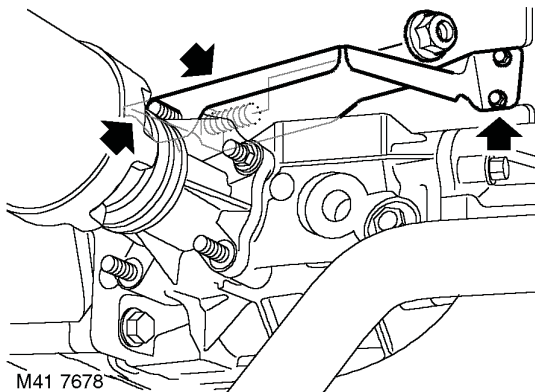
# INTERMEDIATE REDUCTION DRIVE

## Gasket - end cover - IRD housing - Td4

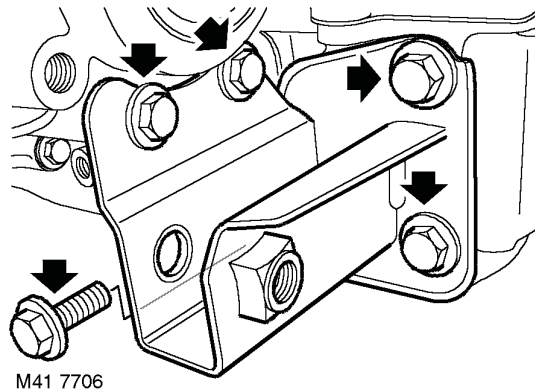
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### Remove

1. Drain fluid from IRD.  
INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.
2. Remove drive shaft RH seal.  
INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.

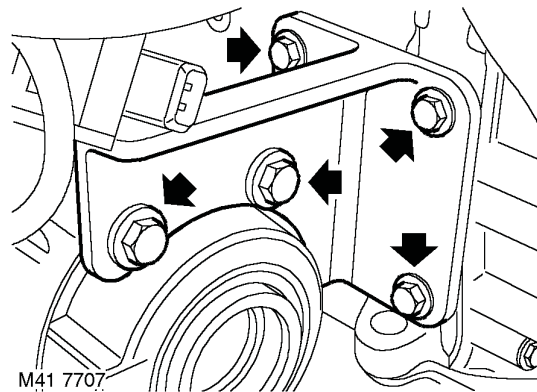


3. Remove nut securing manifold heat shield to IRD unit.
4. Remove nut securing heat shield to IRD pinion housing.
5. Remove 2 bolts securing heat shield and remove heat shield.
6. Remove lower engine steady.  
ENGINE - Td4, REPAIRS, Engine steady - lower.

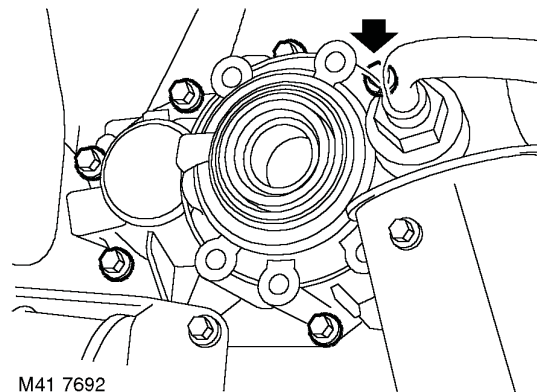


7. Remove 3 bolts securing IRD support bracket to sump.

8. Remove 2 bolts securing support bracket to IRD and remove bracket.



9. Remove 3 bolts, securing IRD upper support bracket to cylinder block.
10. Remove 2 bolts securing upper support bracket to IRD and remove bracket.



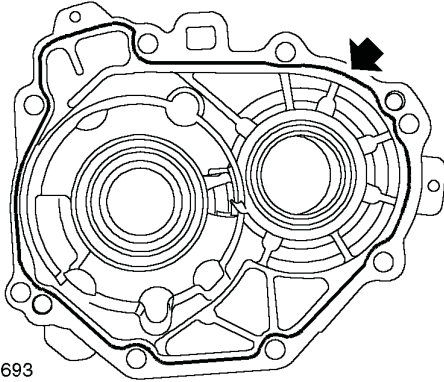
11. Remove 8 bolts securing end cover to main case of IRD.
12. Remove end cover.





**Refit**

1. Clean remains of old sealant from mating faces of end cover and IRD main case.



M41 7693

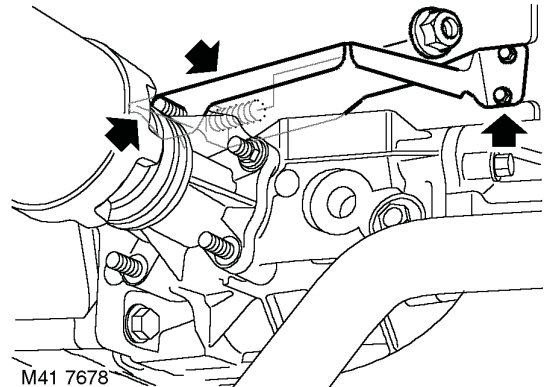
2. Apply a narrow bead of sealant, Part No. STC 4600 to mating face of end cover.
3. Fit end cover to IRD and tighten bolts progressively to 30 Nm (22 lbf.ft).
4. Fit IRD support bracket and tighten bolts sufficiently only to pull mating faces together.
5. Final tighten bolts securing IRD support brackets in the following sequence:
  - M10 bolts securing support brackets to IRD 50 Nm (37 lbf.ft)
  - 3 bolts securing support bracket to cylinder block 25 Nm (18 lbf.ft)
  - 3 bolts securing support bracket to sump at 45 Nm (33 lbf.ft).
6. Fit lower engine steady.
  - ☞ **ENGINE - Td4, REPAIRS, Engine steady - lower.**
7. Fit heat shield.
8. Fit nut securing heat shield to IRD and tighten to 45 Nm (33 lbf.ft).
9. Fit bolts securing manifold heat shield to IRD support bracket and tighten to 9 Nm (7 lbf.ft).
10. Fit nut securing heat shield to IRD pinion housing and tighten to 30 Nm (22 lbf.ft).
11. Fit drive shaft RH seal.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.**
12. Fill IRD to correct level with fluid.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**

**Gasket - end cover - IRD housing - KV6**

☞ 41.27.05

**Remove**

1. Drain fluid from IRD.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
  - ☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) lubrication system - drain & refill - NAS.**
2. **NAS models:** Remove RH catalytic converter.
  - ☞ **EMISSION CONTROL, REPAIRS, Catalytic converter - RH - KV6 - NAS.**
3. Remove drive shaft RH seal.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.**

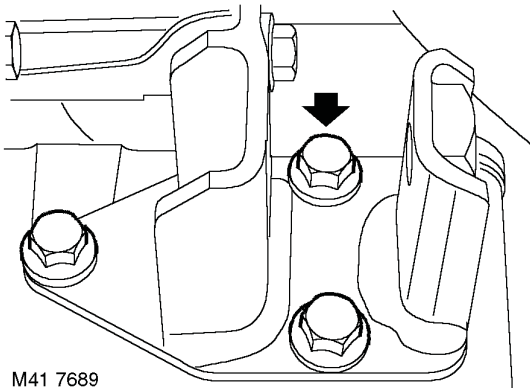


M41 7678

4. **Non NAS models:** Remove nut securing manifold heat shield to IRD unit.
5. **Non NAS models:** Remove nut securing heat shield to IRD pinion housing.
6. **Non NAS models:** Remove 2 bolts securing heat shield and remove heat shield.
7. Remove engine lower steady.
  - ☞ **ENGINE - K SERIES KV6, REPAIRS, Engine steady - lower.**

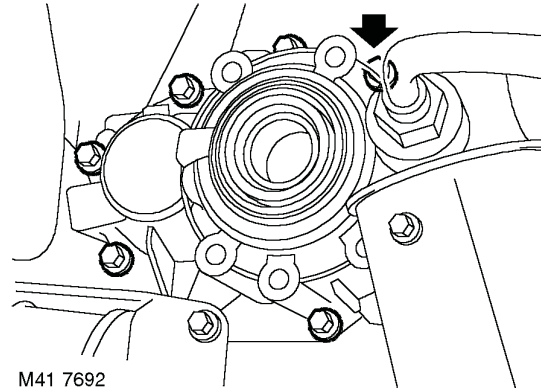
## INTERMEDIATE REDUCTION DRIVE

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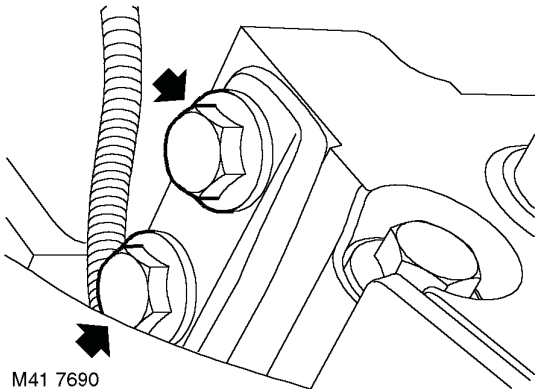
M41 7689

8. Remove 3 bolts securing IRD support bracket to sump.



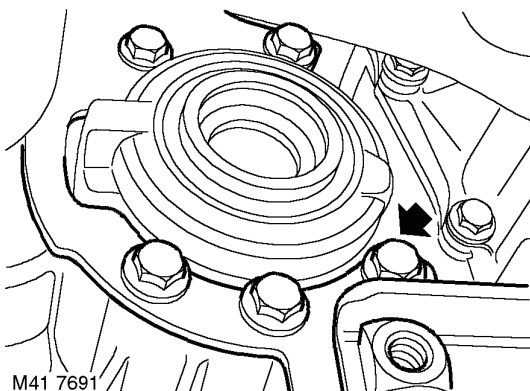
M41 7692

11. Remove 8 bolts securing end cover to main case of IRD.  
12. Remove end cover.



M41 7690

9. Remove 2 bolts securing IRD support bracket to engine front mounting plate.



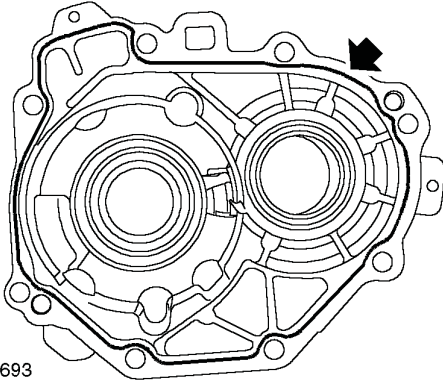
M41 7691

10. Remove 5 bolts securing support bracket to IRD and remove bracket.



## Refit

1. Clean remains of old sealant from mating faces of end cover and IRD main case.



M41 7693

2. Apply a narrow bead of sealant, Part No. STC 4600 to mating face of end cover.
3. Fit end cover to IRD and tighten bolts progressively to 30 Nm (22 lbf.ft).
4. Fit IRD support bracket and tighten bolts sufficiently only to pull mating faces together.
5. Final tighten all bolts in following sequence:
  - 5 bolts securing support bracket to IRD 50 Nm (37 lbf.ft)
  - 2 bolts securing support bracket to engine front mounting bracket 50 Nm (37 lbf.ft)
  - 3 bolts securing support bracket to sump 88 Nm (65 lbf.ft).
6. Fit engine lower steady.
  - 👉 **ENGINE - K SERIES KV6, REPAIRS, Engine steady - lower.**

7. **Non NAS models:** Fit heat shield.
8. **Non NAS models:** Fit nut securing heat shield to IRD and tighten to 45 Nm (33 lbf.ft).
9. **Non NAS models:** Fit bolts securing manifold heat shield to IRD support bracket and tighten to 9 Nm (7 lbf.ft).
10. **Non NAS models:** Fit nut securing heat shield to IRD pinion housing and tighten to 25 Nm (18 lbf.ft).
11. Fit drive shaft RH seal.
  - 👉 **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.**
12. Fill IRD to correct level with fluid.
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
  - 👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) lubrication system - drain & refill - NAS.**
13. **NAS models:** Fit RH catalytic converter.
  - 👉 **EMISSION CONTROL, REPAIRS, Catalytic converter - RH - KV6 - NAS.**

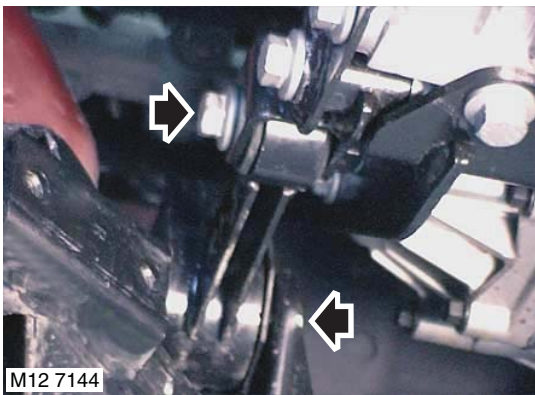
# INTERMEDIATE REDUCTION DRIVE

## Gasket - end cover - IRD housing - K1.8

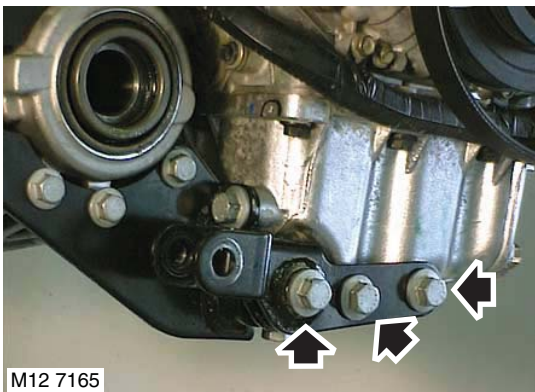
🔑 41.27.05

### Remove

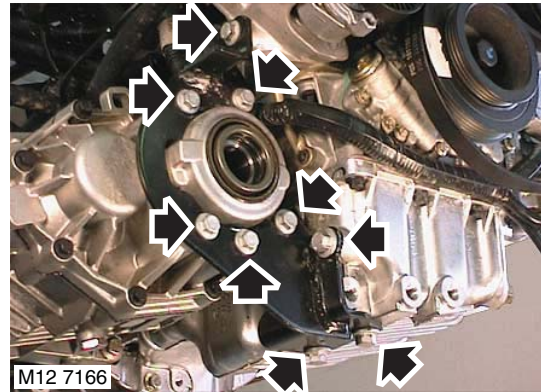
1. Drain fluid from IRD.  
👉 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
2. Remove drive shaft RH seal.  
👉 **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.**



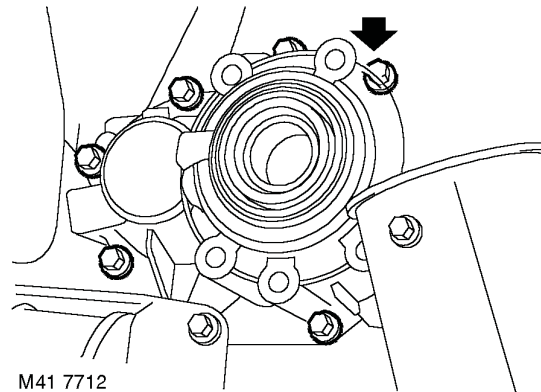
3. Remove bolt securing engine lower steady to beam.
4. Remove bolt securing engine lower steady to bracket on sump.
5. Remove engine lower steady.



6. Remove 3 bolts securing lower engine steady bracket to sump and remove bracket.



7. Remove upper bolt securing IRD support bracket to cylinder block.
8. Remove 5 bolts securing support bracket to IRD.
9. Remove 3 bolts securing IRD support bracket to sump and remove bracket.

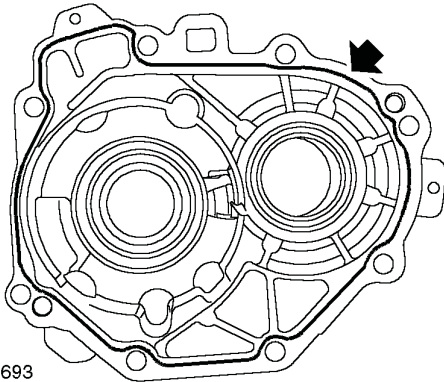


10. Remove 8 bolts securing end cover to main case of IRD.
11. Remove end cover.
12. Remove bolt securing engine lower steady to bracket on sump.



**Refit**

1. Clean remains of old sealant from mating faces of end cover and IRD main case.



M41 7693

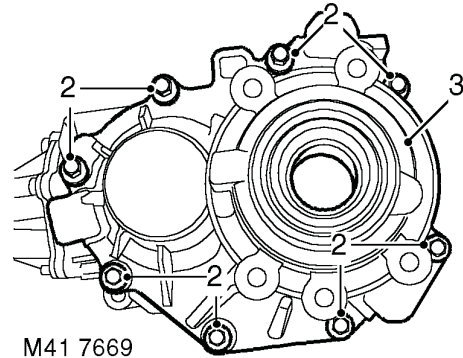
2. Apply a narrow bead of sealant, Part No. STC 4600 to mating face of end cover.
3. Fit end cover to IRD and tighten bolts progressively to 30 Nm (22 lbf.ft).
4. Fit IRD support bracket and tighten bolts sufficiently only to pull mating faces together.
5. Final tighten bolts securing IRD support bracket in following sequence:
  - 5 bolts securing IRD support bracket to IRD 50 Nm (37 lbf.ft),
  - 1 bolt securing support bracket to cylinder block 45 Nm (33 lbf.ft),
  - 3 bolts securing support bracket to sump 88 Nm (65 lbf.ft).
6. Position engine lower steady bracket to sump, fit and tighten bolts to 100 Nm (74 lbf.ft).
7. Fit engine lower steady, fit bolts and tighten to 80 Nm (59 lbf.ft).
- 8.
9. Fit drive shaft RH seal.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - driveshaft - RH.**
10. Fill IRD to correct level with fluid.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**

**Seals - primary gear shaft**

🔑 41.29.02

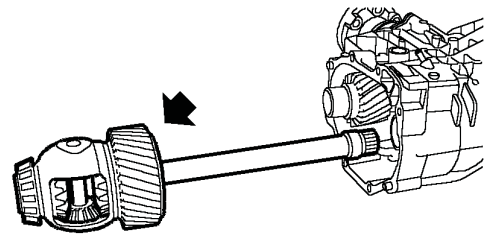
**Remove**

1. Remove IRD.
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - K1.8.**
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - Td4.**
  - ☞ **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - KV6.**



M41 7669

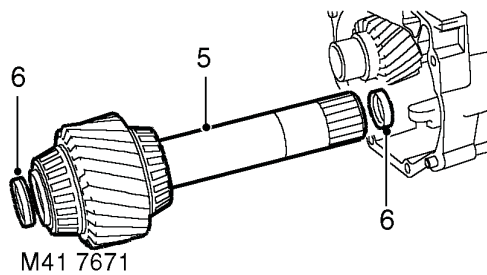
2. Remove 8 bolts securing end cover to main case of IRD.
3. Remove end cover.



M41 7670

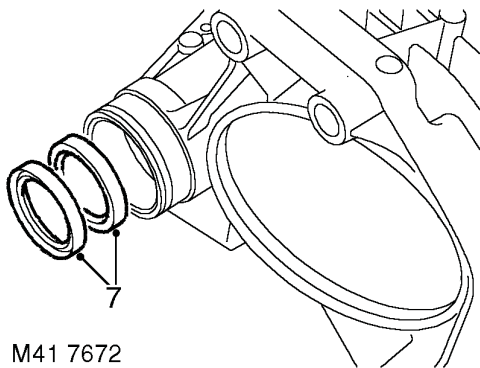
4. Remove intermediate shaft and differential from primary shaft.

## INTERMEDIATE REDUCTION DRIVE



M41 7671

5. Remove primary shaft from main case.
6. Remove 2 seals from primary shaft.

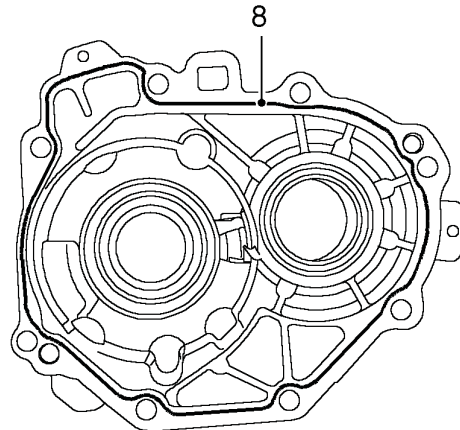


M41 7672

7. Remove 2 seals from main case.

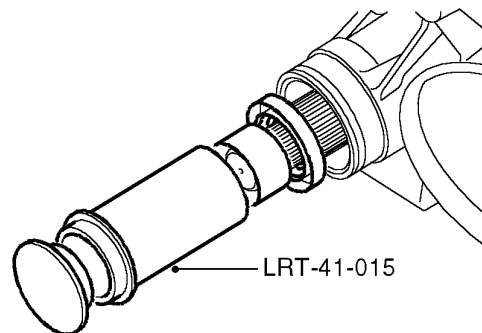
### Refit

1. Clean primary gear shaft and intermediate shaft and differential.
2. Clean seal locations.
3. Fit seal to each end of primary gear shaft with seal lips facing outwards.
4. Fit primary gear shaft to main case.
5. Fit suitable protection over splines on intermediate shaft.
6. Carefully fit intermediate shaft to primary shaft.
7. Clean remains of old sealant from mating faces of end cover and IRD main case.



M41 7673

8. Apply a narrow bead of sealant, Part No. STC 4600 to mating face of end cover.
9. Fit end cover to IRD and tighten bolts progressively to 30 Nm (22 lbf.ft).

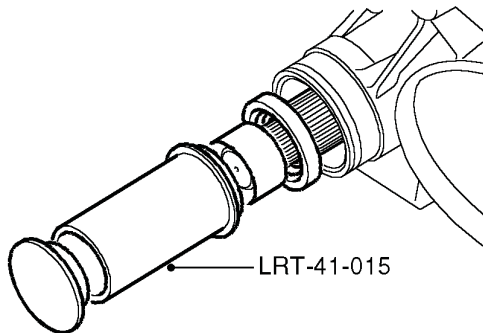


M41 7674

10. Fit seal protector, part of **LRT-41-015** to IRD splines.
11. Using plain end of **LRT-41-015**, fit inner seal into main case until it contacts shoulder.

**CAUTION: The seals are fitted with the main sealing lips facing away from each other.**





M41 7675

- Using flanged end of **LRT-41-015** fit outer seal to depth dictated by tool flange.

**CAUTION: Use end protector of LRT-41-015 to avoid damage to the working surfaces of the tool.**

- Remove oil seal protector.

- Fit IRD.

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - K1.8.**

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - Td4.**

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Intermediate reduction drive (IRD) unit - KV6.**

## Seal - pinion gear

41.29.04

### Remove

- Remove pinion housing.

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - Td4.**

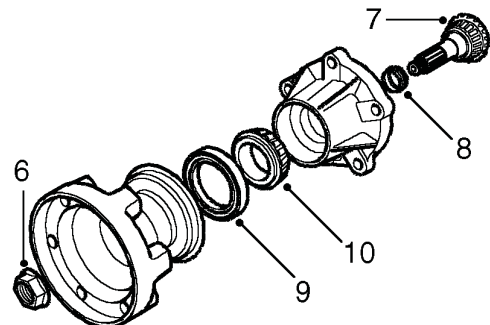
**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - K1.8.**

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - KV6 - Non NAS.**

**INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - KV6 - NAS.**

**CAUTION: Before dismantling the pinion housing, measure the turning torque on existing bearings.**

- Attach pinion housing to suitable mounting plate and secure mounting plate in vice.
- Check pinion torque to turn figure.



M41 7676

- Reference mark pinion flange and pinion shaft for assembly purposes.
  - Restrain pinion flange using **LRT-51-003**.
  - Remove and discard nut.
  - Position pinion housing onto press, fit suitable adaptor on end of pinion shaft, press pinion shaft from drive flange and housing.
  - Remove and discard collapsible spacer.
  - Using a suitable lever, remove pinion oil seal.
- CAUTION: Take care to avoid damage to oil seal recess.**
- Remove pinion bearing inner race.

## INTERMEDIATE REDUCTION DRIVE

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### Refit

1. Clean pinion shaft, drive flange and housing.
  2. Clean oil seal recess.
  3. Lubricate and fit bearing to pinion housing.
  4. Lubricate new seal.
  5. Using a suitable adapter, press seal into housing.
6. Assemble pinion to housing using new collapsible spacer.
  7. Lightly lubricate drive flange splines with Molybdenum Disulphide grease.
  8. Align pinion to drive flange reference marks and press flange onto pinion shaft until a 2 mm clearance exists in bearings.
  9. Fit pinion assembly to mounting plate and secure in vice.
  10. Fit new pinion nut, hold pinion drive flange using **LRT-51-003** and tighten pinion nut to 150 Nm (111 lbf.ft).
  11. Check pinion torque to turn figure.

*NOTE: Figure for new bearings is 180 to 200 Ncm.*

*If original bearing figure is above 20 to 30 Ncm and below new bearing figure, set to figure recorded.*

*If original bearing is below 20 Ncm set to 20 to 30 Ncm.*

12. If turning torque is too low, carefully tighten nut and recheck reading. If turning torque is too high, pinion assembly will have to be dismantled and a new collapsible spacer fitted. Reassemble using new nut and recheck turning torque.
13. Check drive flange run-out using a Dial Test Indicator (DTI).  
**CAUTION: The drive flange run-out should not exceed 0.05 mm.**
14. Remove pinion housing from vice and mounting plate.
15. Fit pinion housing.
  -  **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - Td4.**
  -  **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - K1.8.**
  -  **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - KV6 - Non NAS.**
  -  **INTERMEDIATE REDUCTION DRIVE, REPAIRS, Seal - pinion gear housing - KV6 - NAS.**



**Seal - driveshaft - LH - Td4 & KV6 models**

🔑 41.29.08

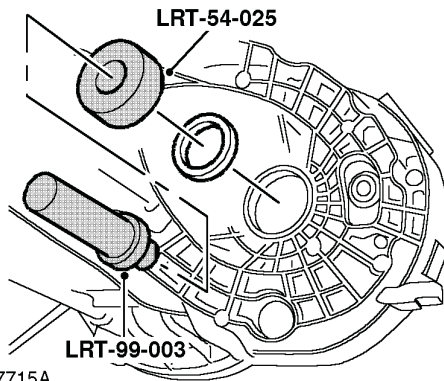
**Remove**

1. Remove LH drive shaft.  
👉 DRIVESHAFTS, REPAIRS, Shaft with both joints - LH.
2. Carefully remove and discard oil seal, take care not to damage oil seal recess.

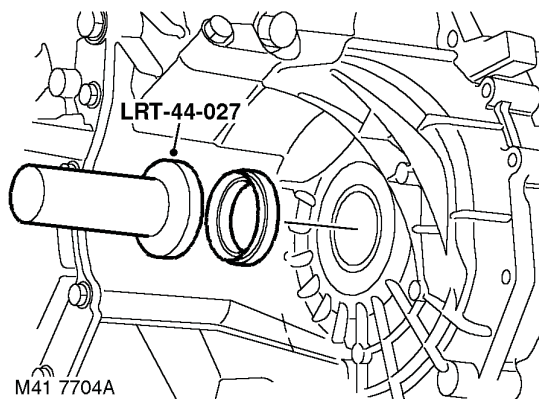
**Refit**

1. Clean oil seal recess.  
**CAUTION: Oil seal is waxed on outer diameter and must not be lubricated before fitting.**

4. Fit LH drive shaft.  
👉 DRIVESHAFTS, REPAIRS, Shaft with both joints - LH.
5. Top-up gearbox fluid level.  
👉 MAINTENANCE, MAINTENANCE, Automatic Gearbox – JATCO.



2. **Models with manual gearbox:** Using LRT-54-025 and LRT-99-003, fit new oil seal.



3. **Models with automatic gearbox:** Using LRT-44-027, fit new oil seal.

# INTERMEDIATE REDUCTION DRIVE

## Seal - drive shaft - LH - K1.8

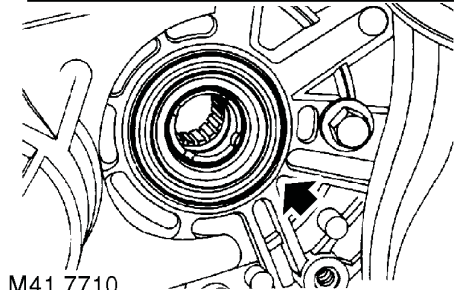
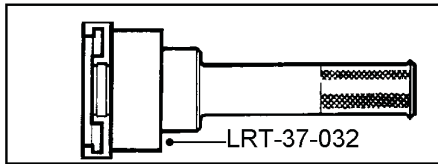
🔑 41.29.08

### Remove

1. Remove LH drive shaft.  
👉 **DRIVESHAFTS, REPAIRS, Shaft with both joints - LH.**
2. Carefully remove oil seal from differential housing, discard oil seal.

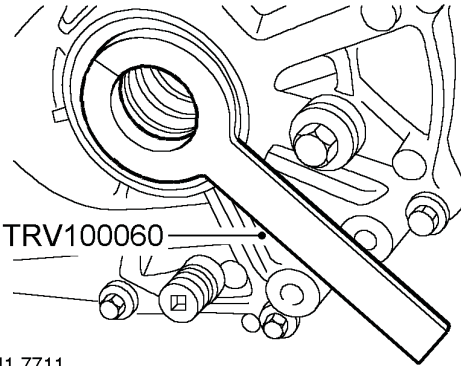
### Refit

1. Thoroughly clean oil seal recess in differential housing, splines and oil seal running surface on drive shaft.



M41 7710

2. Fit handle **LRT-37-027** into seal replacer adaptor, **LRT-37-032**.
3. Position new oil seal onto **LRT-37-032** with sealing lip facing towards differential housing.
4. Carefully drift oil seal into housing until fully seated in recess.



M41 7711

5. Fully insert oil seal protector tool, **Unipart TRV 100060**, into differential oil seal so that oil seal lip is protected and that the split end of tool is butted correctly.
6. Fit LH drive shaft.  
👉 **DRIVESHAFTS, REPAIRS, Shaft with both joints - LH.**



**Seal - driveshaft - RH**

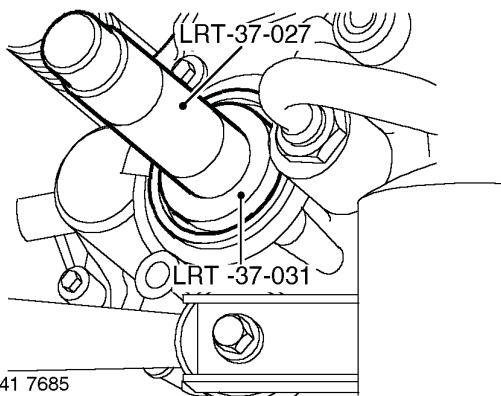
🔑 41.29.09

**Remove**

1. Remove RH drive shaft.  
 📌 **DRIVESHAFTS, REPAIRS, Shaft with both joints - RH.**
2. Carefully remove and discard oil seal, take care not to damage oil seal recess.

**Refit**

1. Clean oil seal recess.



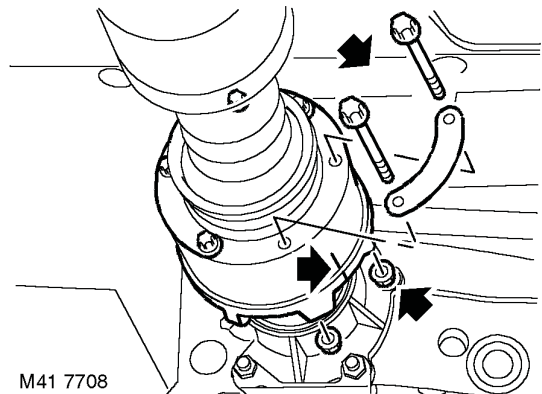
2. Locate seal on tool **LRT-37-031** and replace **LRT-37-027** with sealing lip facing towards housing.
3. Carefully drift oil seal into housing until fully seated in recess.
4. Fit RH drive shaft.  
 📌 **DRIVESHAFTS, REPAIRS, Shaft with both joints - RH.**

**Seal - pinion gear housing - Td4**

🔑 41.29.11

**Remove**

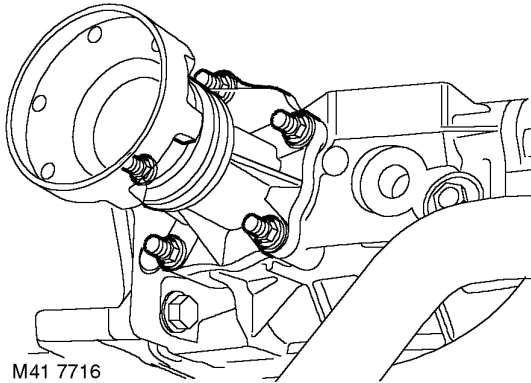
1. Raise front of vehicle.  
**WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**
2. Remove underbelly panel.  
 📌 **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**
3. Drain fluid from IRD.  
 📌 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
4. Raise one rear wheel for rotation of propeller shaft to access bolts.



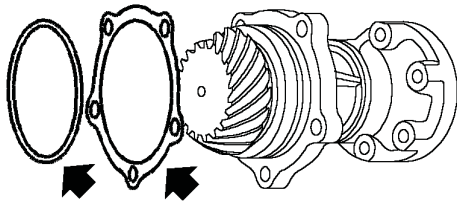
5. Reference mark front propeller shaft for reassembly.
6. Remove 6 nuts and bolts securing propeller shaft to IRD drive flange.
7. Release propeller shaft from IRD drive flange and tie shaft aside.  
**CAUTION: Care must be taken to support the Tripode joint when removed from the IRD unit. To avoid damage to gaiter or steel can, the joint should not be allowed to fully extend or be dropped.**

## INTERMEDIATE REDUCTION DRIVE

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8. Remove 5 nuts securing pinion housing.
9. Remove pinion housing.



10. Remove and discard 'O' ring.
11. Remove and retain spacing washer.

### Refit

1. Clean pinion housing and mating face on IRD casing.
2. Clean spacing washer.
3. Fit spacing washer to IRD.
4. Lubricate new 'O' ring with IRD fluid and fit to groove in pinion housing.
5. Fit pinion housing.
6. Fit nuts securing pinion housing and tighten to 25 Nm (18 lbf.ft).
7. Ensure mating face of propeller shaft and IRD drive flange are clean.
8. Fit propeller shaft to IRD flange and align marks. Tighten nuts and bolts to 40 Nm (30 lbf.ft).
9. Fill IRD to correct level with fluid.  
 **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
10. Lower axle and remove jack.
11. Fit underbelly panel.  
 **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**
12. Remove stands and lower vehicle.





## Seal - pinion gear housing - K1.8

41.29.11

### Remove

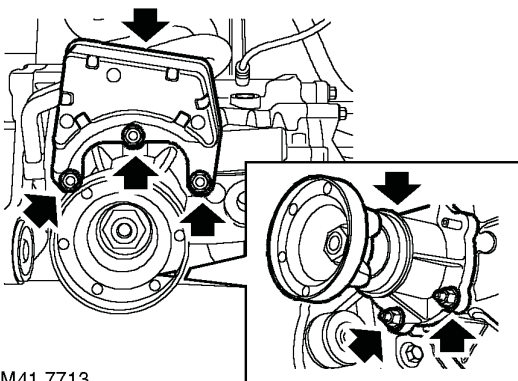
1. Remove underbelly panel.  
☞ **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**
2. Drain fluid from IRD.  
☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
3. Raise one rear wheel for rotation of propeller shaft to access bolts.



M12 7142

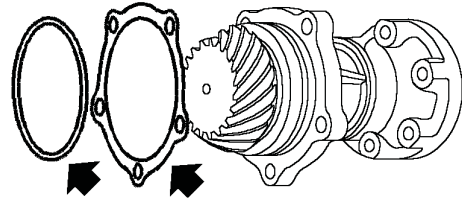
4. Reference mark front propeller shaft for reassembly.
5. Remove 6 nuts and bolts securing propeller shaft to IRD drive flange.
6. Release propeller shaft from IRD drive flange and tie shaft aside.

**CAUTION: Care must be taken to support the Tripode joint when removed from the IRD unit. To avoid damage to gaiter or steel can, the joint should not be allowed to fully extend or be dropped.**



M41 7713

7. Remove 3 nuts securing mass damper to pinion housing.
8. Remove mass damper.
9. Remove 2 remaining nuts securing pinion housing.
10. Remove pinion housing.



M41 7681

11. Remove and discard 'O' ring.
12. Remove and retain spacing washer.

### Refit

1. Clean pinion housing and mating face on IRD casing.
2. Clean spacing washer.
3. Fit spacing washer to IRD.
4. Lubricate new 'O' ring with IRD fluid and fit to groove in pinion housing.
5. Fit pinion housing.
6. Fit mass damper and fit nuts finger tight.
7. Fit remaining nuts securing pinion housing and tighten all nuts to 25 Nm (18 lbf.ft).
8. Ensure mating face of propeller shaft and IRD drive flange are clean.
9. Fit propeller shaft to IRD flange and align marks. Tighten nuts and bolts to 40 Nm (30 lbf.ft).
10. Fill IRD to correct level with fluid.  
☞ **INTERMEDIATE REDUCTION DRIVE, ADJUSTMENTS, Intermediate reduction drive (IRD) fluid - drain & refill - Non NAS.**
11. Lower axle and remove jack.
12. Fit underbelly panel.  
☞ **EXTERIOR FITTINGS, REPAIRS, Panel - underbelly.**