# TECHNICAL INFORMATION

## Front Frame Spacer Noise Correction

No: 76/13/03/NAS
Ref:
Issue: 1
Date: 05/23/03

*AFFECTED VEHICLE RANGE:*

**Discovery Series II (LT)** **ALL**

*SITUATION:*

**KNOCKING / CREAKING NOISE FROM THE FRONT OF THE VEHICLE**

The customer may complain of a knocking or creaking noise from the front of the vehicle. The noise is frequently noticeable when making a turn. Movement of an internal spacer in the front longitudinal chassis member where the Power Assisted Steering (PAS) box is located is the cause of the noise.

*RESOLUTION:*

**ANCHOR LOOSE FRAME SPACERS USING PLUG WELDS**

Where a complaint of the frame noise symptom is confirmed, locate and plug weld the spacer following the procedures in this TIB.

*PARTS INFORMATION:*

**Locally Sourced:**

- **Weld-thru coating (3M #5913, SEM#39283, or equivalent)**
- **Rustoleum "Hard Hat" coating process**
  - **Adhesive Primer #2102**
  - **Zinc Spray (Galva) #2185**
  - **Flat Black Top Coat #2178**

**Alternate coating material**

- **Satin Black "Marhyde" #3811**

*TOOLS*

**MIG Welding equipment**
**3 mm (1/8 inch) drill bit**
**8 mm (5/16 inch) drill bit**
**Automatic Center Punch**

*WARRANTY CLAIMS:*

**57.30.89/27 ..... Time 0.70 hrs.**
**Confirm location of noise and weld spacer to frame**
**FAULT CODE: K**

*Normal warranty policy and procedures apply.*
*Material allowance is included in labor operation.*

| TIB | CIRCULATE: | Service Mgr | Warranty | Workshop | Body Shop | Parts |
|---|---|---|---|---|---|---|
| 76/13/03/NAS | TO | X | X | X | X | X |

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No: 76/13/03/NAS

*REPAIR PROCEDURE*

**LOCATE FRAME SPACER TO BE REPAIRED**

1. Confirm the complaint.
2. Position the vehicle on lift and support the front axel in a wheel free position.
3. Disconnect both battery leads and the alternator.
4. Remove the LH front wheel/tire.

**CAUTION: If the Active Cornering Enhancement (ACE) bar is moved, ensure the pipes are not strained.**

5. Remove two nuts securing anti-roll bar link, remove washers and anti-roll bar link.
6. Remove Power Assisted Steering box upper and lower rear mounting bolts.

**NOTE: The dimensions shown on Figure 1 are approximate and are intended as a guide to the drilling position only.**

7. Refer to Figure 1 for measurements to help locate the spacer.
8. Mark the "59 mm" hole position (front lower position) and center punch the 59 mm position for drilling.

**NOTE: The holes can be drilled to a maximum depth of 10 mm (0.400 in.) or until internal spacer is exposed. Depth of the holes may vary.**

9. Drill a 3 mm (0.315) diameter hole at the 59 mm position.
10. If the spacer is not exposed, drill a hole next to the first hole to establish the position of the internal spacer.
11. Mark the remaining four positions, adjusting the measurement for any variation required in step 10.
12. Punch and drill 8 mm (0.315) diameter holes at all positions including the correct 3 mm pilot hole at the 59 mm position.

**WELD AND REPAIR FRAME PROTECTIVE COATINGS**

**CAUTION: Chassis components and hydraulic lines must be protected from weld spatter to prevent corrosion at a later date. Health and Safety guidelines in accordance with local requirements MUST be followed.**

1. Protect any nearby chassis fittings such as brake pipes from the welding process.
2. Grind chassis to expose bare metal around the drilled holes.
3. Apply Weld-thru coating.
4. Verify that the spacer is attached to the frame before proceeding.
5. MIG weld the edge of the internal spacer to the chassis and completely fill all holes with weld.
6. Grind excess weld material level with the chassis.
7. Etch prime bare metal, repair paint finish as required internally and externally using Rustoleum paints or Mar-hyde.
8. Install the removed steering box bolts and tighten to **90 Nm (67 lbf. ft.)**.
9. Install removed anti-roll bar link, washer and nuts and tighten to nuts to **100 Nm (74 lbf.ft.)**.
10. Install front wheel and tighten nuts to **140 Nm (105 lbf. ft.)**.
11. Lower the vehicle.
12. Connect the previously removed alternator and the battery leads.

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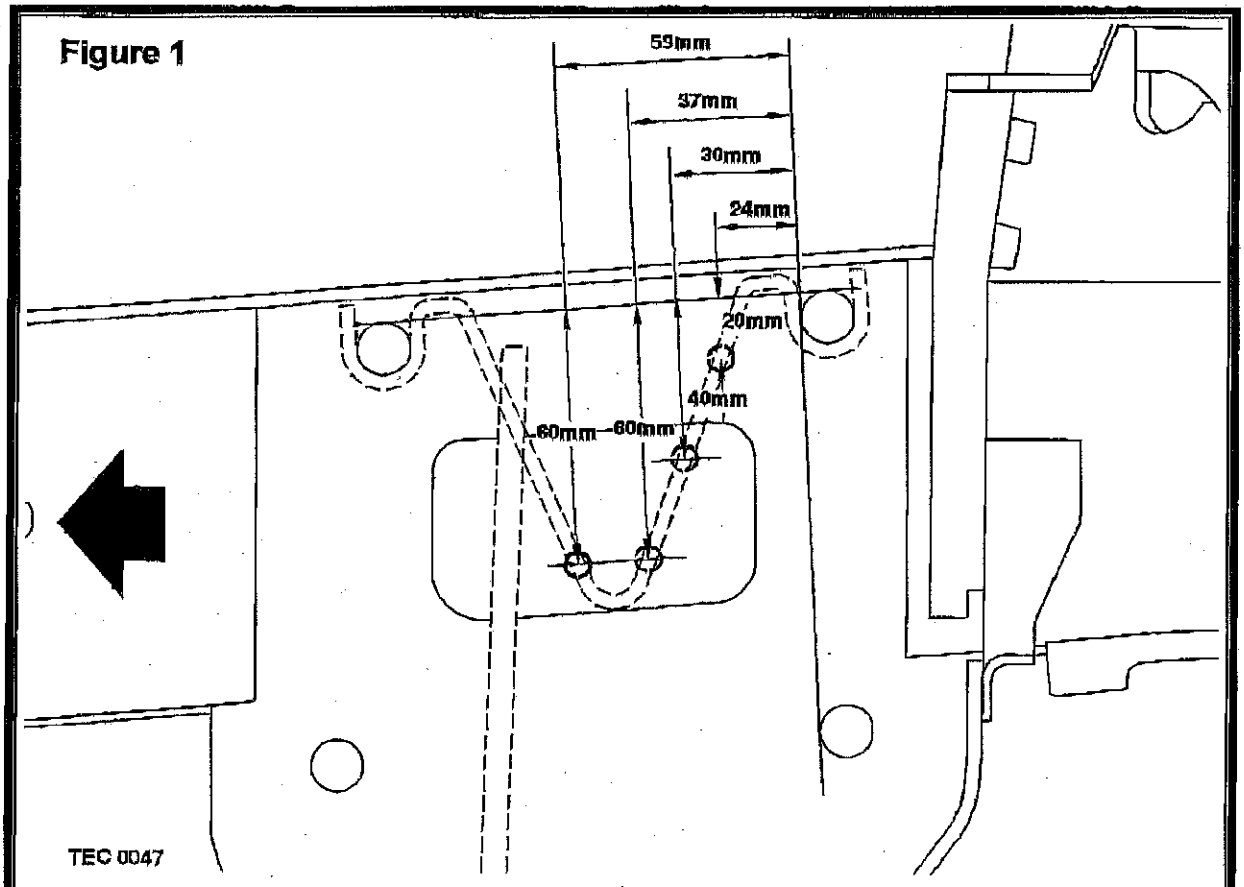
No: 76/13/03/NAS

**Figure 1**




**Left hand drive vehicle (Arrow points towards front of vehicle)**