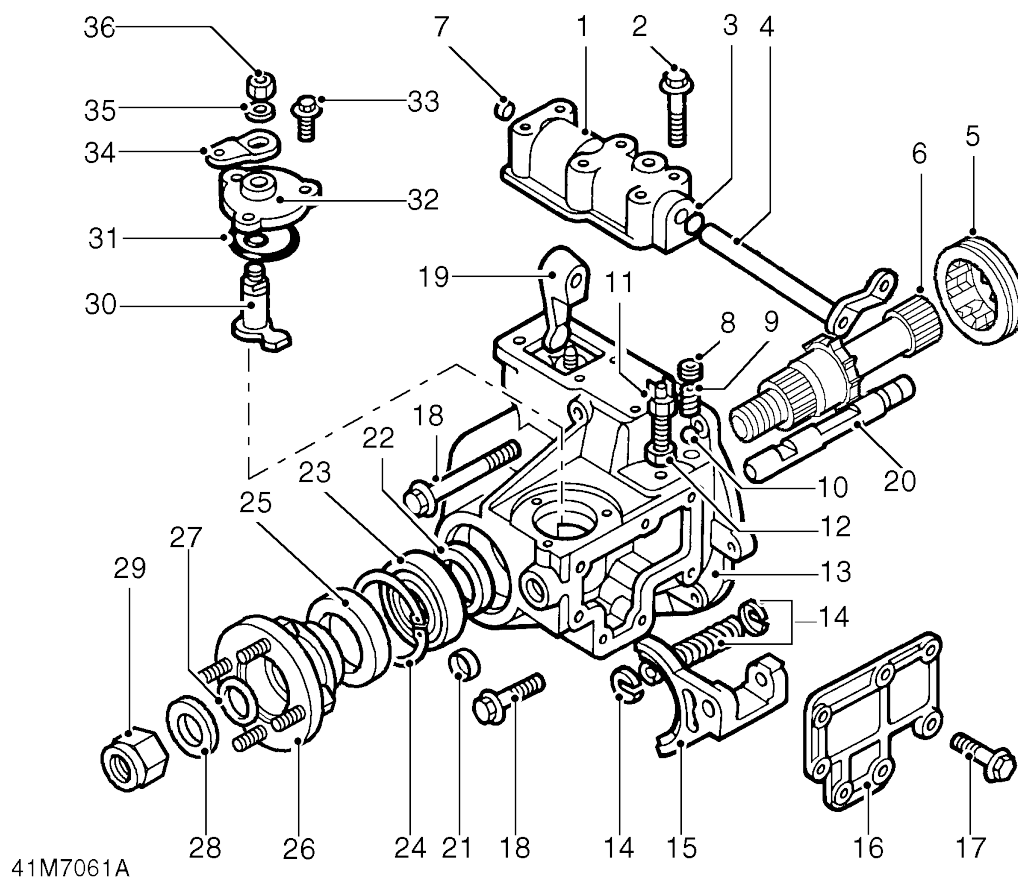


## TRANSFER BOX

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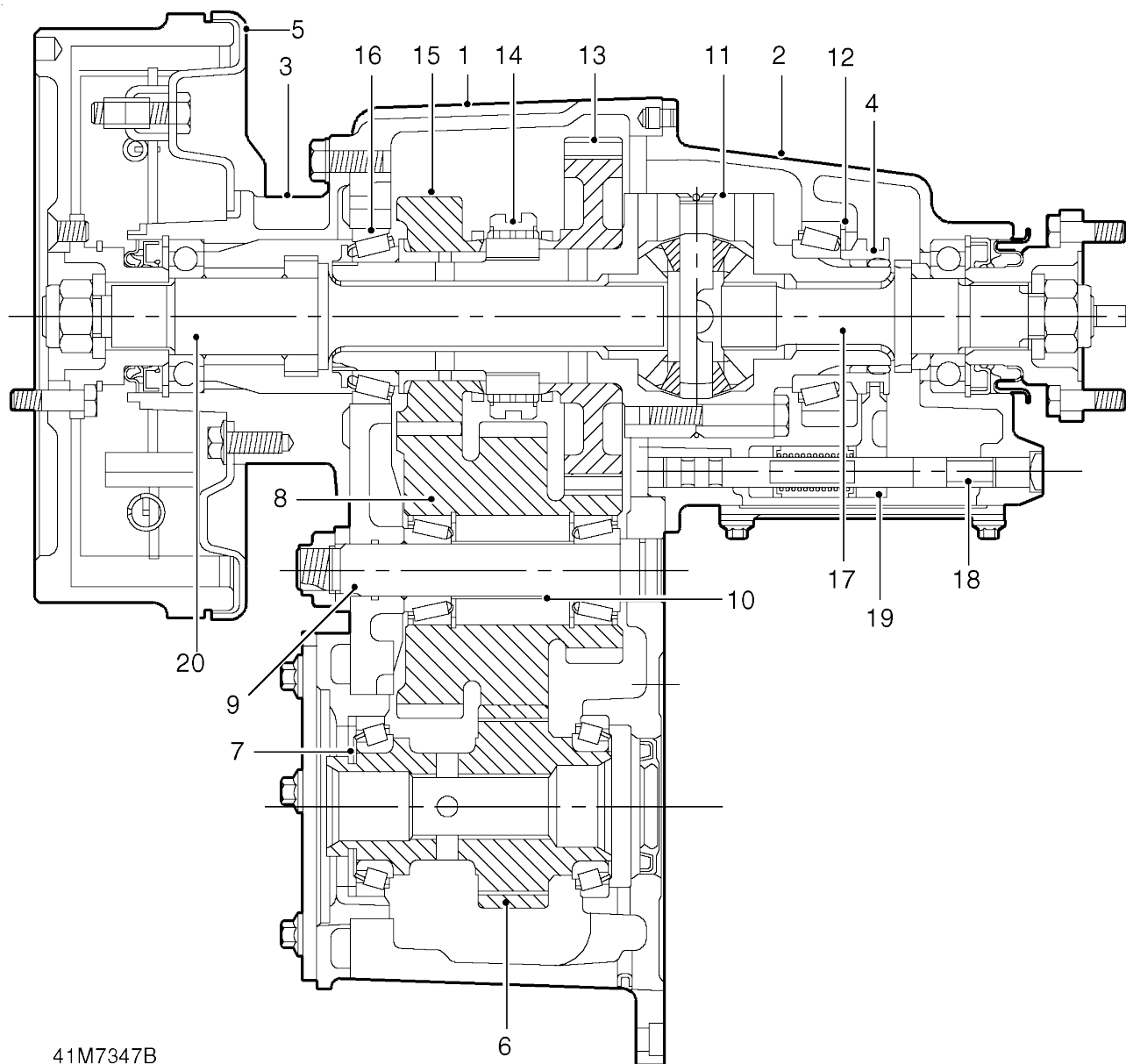
**FRONT OUTPUT HOUSING COMPONENTS**

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- |   |   |
|---|---|
| 1. High/low cross shaft housing           | 19. High/low selector finger                    |
| 2. Bolt - high/low cross shaft housing    | 20. Differential lock selector shaft            |
| 3. 'O' ring                               | 21. Plug  |
| 4. High/low cross shaft and lever         | 22. Bearing spacer                              |
| 5. Dog clutch                             | 23. Output shaft bearing                        |
| 6. Front output shaft                     | 24. Circlip                                     |
| 7. Hollow plug                            | 25. Oil seal                                    |
| 8. Detent plug - differential lock        | 26. Output shaft flange and mud shield          |
| 9. Detent spring - differential lock      | 27. Felt washer                                 |
| 10. Detent ball - differential lock       | 28. Steel washer                                |
| 11. Differential lock warning lamp switch | 29. Self-locking nut                            |
| 12. Locknut                               | 30. Differential lock selector finger and shaft |
| 13. Front output housing                  | 31. 'O' rings                                   |
| 14. Spring and clips - differential lock  | 32. Differential lock selector housing          |
| 15. Differential lock selector fork       | 33. Bolt - housing                              |
| 16. Cover plate                           | 34. Selector lever                              |
| 17. Bolt - cover plate                    | 35. Washer                                      |
| 18. Bolt - front output housing           | 36. Self-locking nut                            |

## TRANSFER BOX

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41M7347B




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## TRANSFER BOX CROSS SECTION

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|--|--|
| <ol style="list-style-type: none"> <li>1. Main casing</li> <li>2. Front output housing</li> <li>3. Rear output housing</li> <li>4. Dog clutch</li> <li>5. Transmission brake</li> <li>6. Mainshaft input gear</li> <li>7. Selective shim - input gear bearing pre-load</li> <li>8. Intermediate gear cluster</li> <li>9. Intermediate shaft</li> <li>10. Collapsible spacer</li> </ol> | <ol style="list-style-type: none"> <li>11. Differential assembly</li> <li>12. Selective shim - differential bearing pre-load</li> <li>13. Low range gear</li> <li>14. High/low selector sleeve and hub</li> <li>15. High range gear and bush</li> <li>16. Differential rear bearing</li> <li>17. Front output shaft</li> <li>18. Differential lock selector shaft</li> <li>19. Selector fork</li> <li>20. Rear output shaft</li> </ol> |
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## DESCRIPTION

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### Introduction

The LT230Q transfer box is mounted at the rear of the main gearbox and transmits drive to the front and rear axles via the propeller shafts.

The LT230Q, whilst similar to the LT230T differs mainly in the following areas:

Helix angle of gears increased to 31° together with an increase in the number of gear teeth thus giving quieter running and an increase in power transmission efficiency.

Increased length mainshaft input gears together with increased thickness bearing housing and repositioned bearing.

Redesigned intermediate gear bearings.

Redesigned high gear bush giving quieter running.

### Construction

The transfer box comprises three main assemblies, the main casing, front output housing and rear output housing.

The main casing carries the mainshaft input gear, the intermediate gears and the differential together with the high/low range gears, selector shaft and fork.

The front output housing carries the front output shaft and flange, high/low cross shaft, housing and selector and the differential lock selector shaft and fork. A dog clutch on the front output shaft is operated by the differential lock selector fork to engage/disengage the differential lock.

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.

All housings and cover plates are sealed to the main casing by sealant; mud and water ingress being prevented by mud shields and throwers located at each end of the output housings and on the output flanges.

### Mainshaft input gear

The gearbox 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. An additional power take-off gear is located at the rear of the input gear for certain applications.

### Intermediate gears

The intermediate gear cluster is supported by taper roller bearings located at each end of the cluster and running 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.

### Differential assembly

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

The 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 nut.

The differential assembly comprises front and rear half carriers with integral shafts and sun 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 sun gears whilst selective thrust washers are used to control the engagement of the sun gears and load 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.

For certain markets, a neutral warning lamp switch operated by the high/low selector shaft and an interlock solenoid are fitted in the main casing.

### Front output housing assembly

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

The 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.

The differential lock selector housing is also bolted to the top of the 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. A spring loaded detent ball fitted in the output housing locates in grooves in the shaft.

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

### Rear output housing assembly

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 driven gear located in the rear output housing.

### Lubrication

Lubrication is by splash, oil filler/level and drain plugs being located in the main casing. An oil temperature switch is fitted for certain applications.