The IRD unit fitted to all Freelander derivatives is designed and assembled by SFT (Steya-Daimler-Puch Farzeugtechnik) of Austria. The following illustration shows the IRD unit. The unit comprises: A main casing, a primary gear shaft, a differential, an intermediate shaft, a right hand casing, a layshaft, a hypoid gear, a rear output pinion, a pinion casing and a coolant to oil heat exchanger.

IRD unit

Figure 26

In addition to the main components as listed above, the IRD houses seven taper roller bearings, a parallel roller bearing, six oil seals, two “O” rings, a snap ring, a circlip, a collapsible spacer and 18) four selectable steel shims.

The main casing, the right cover and the pinion housing of the IRD are all manufactured of cast aluminium. The primary gear shaft, intermediate shaft, differential gear gears, layshaft, hypoid gear assembly, pinion and rear drive flange are all made of forged or bar steel. The hypoid gear and the pinion gear are designed as a matched pairing. The primary gear, laygear and front differential crown wheel gear all feature a helical gear profile.

The IRD has an oil capacity of 1.1 litres and uses Texaco Geartex S5 75W-90. The IRD unit is “filled for life” and does not require routine oil changes, although the oil level must be maintained as per the published service schedule. The IRD main casing incorporates an oil drain plug and an oil filler/level plug The oil used within the IRD unit differs from that used within the PG1 transmission, and must not be allowed to mix. Therefore, the design prevents oil passing from one unit to another.