GEARBOX & CLUTCH REMOVAL Z.13. RIFF 49

Models: 250GT, 330GT, with engine mounted gearboxes.

GEARBOX REMOVAL

1. Remove both (front) seats.
2. Remove carpets and gearshift knob.
3. Unbolt transmission tunnel from fire wall and floor.
4. Lift the tunnel out, carefully clearing the shift lever.
5. Unbolt the rear drive shaft flange at the universal joint.

   Note: On some models, it may be easier to disconnect the front universal joint.
6. Remove the drive line from the transmission, about 3" separation is sufficient to clear the rearward motion of the box.
7. Unbolt the transmission mounting(s) located directly under the tail stock. Some gearboxes, and those with overdrive will have additional mounts to remove.
8. Drain the transmission fluid on gearboxes fitted with overdrive; this is optional on straight gearboxes and is intended to reduce the total weight.
9. Remove all bellhousing bolts.
10. Remove the clutch linkage and speedometer cable.
11. Disconnect any electrical connections, such as backup lamp and overdrive control wires.
12. Place the shift lever in neutral.
13. Place a small jack under the rear of the engine.

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14. Note: The gearbox is extracted through the inside of the vehicle.
15. Rock the box from side to side to be sure that all attachments have been removed.
16. Place wooden blocks under the front of the gearbox so it will not drop to the ground when disengaged from the engine.
17. With an assistant slide, the gearbox rearward away from the engine, a slight rocking motion may help free it up.
18. Carefully slide the spline pilot shaft all of the way out of the engine; the gearbox should be completely free of the vehicle.
19. Lift out of the vehicle and place on wooden supports, do not drop the gearbox on hard surfaces. This could crack the housings. To prevent damage to the splines, cover them with rags.

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CLUTCH REMOVAL:

1. With the gearbox removed, the clutch assembly is completely accessible at the rear of the engine.
2. Using a socket wrench, unbolt the six pressure plate securing bolts. Loosen each bolt a few turns at a time, so that the pressure plate pushes away from the flywheel even without binding. (A six point socket is recommended. They will prevent stripping of the bolt heads)
3. The pressure plate and disc are now free to be removed. Slip the throw out bearing off of the shaft.
4. Inspect the flywheel and pressure plate for damage or warpage. Have a qualified expert rebuild or replace all damage materials.
5. Inspect the pilot bearing in the rear of the crankshaft. Replace or re-grease as required.

CLUTCH INSTALLATION:

1. If the flywheel has been removed, remount it to the rear of the crank shaft, aligning the locating pin carefully.
2. Install all of the original flywheel bolts (do not substitute lower grade bolts) and keeper straps. Torque flywheel bolts to 35lb. ft. Recheck all bolts, and pein keeper straps over.
3. Note: If exessive material was cut from the pressure plate, the flywheel bolt heads may have to be ground down. Check with the dealer for additional information.
4. Using a clutch alignment shaft (most auto supply stores have adjustable sets) place the disc and pressure plate against the flywheel.

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5. Engage the alignment tool into the crankshaft pilot bearing and center the disc under the pressure plate.
6. Install all pressure plate screws, and slowly tighten each a few turns at a time until tight. Torque to 30 lb. ft. Recheck all torques again, and remove alignment tool.

GEARBOX INSTALLATION:

1. With the gear lever in neutral, set the box on the wooden support ready to insert onto the engine.
2. Lift the gearbox into the rear of the engine. A small amount of side motion must be applied to seat the spline in the clutch.
3. Slide the gearbox all the way up to the engine so that the studs protrude through the bellhousing.
4. Install the bellhousing nuts and lockwashers, and torque them to 20 lb. ft.
5. Connect all electrical and speedometer cables to the gearbox.
6. Connect the clutch linkage and adjust to allow correct freeplay. (1-5/8")
7. Bolt the rear transmission mounts down and apply safety wire where holes are provided.
8. Remove jack from under engine.
9. Connect the drive shaft, torque and safety wire all bolts.
10. Fill the gearbox, and overdrive if fitted, with fresh lube.
11. Replace the transmission tunnel, gearshift knob, carpets & seats
12. Check the clutch and gearbox for proper operation, re-adjust the clutch linkage if necessary.