GENERAL

42re transmission parts diagram

Published: September 3, 2026 | Index ID: #-

Introduction

The 42RE transmission is a classic, robust four speed manual gearbox that has powered many light commercial vehicles, vans, and even some passenger cars for decades. Whether you're restoring a vintage truck, repairing a daily driver, or simply curious about how this gearbox works, a detailed **42RE transmission parts diagram** is an invaluable resource. In this comprehensive guide, we'll walk you through every component, explain how they interact, and give you practical tips for maintenance, troubleshooting, and replacement. By the end of this article, you'll have a clear mental map of the 42RE gearbox and the confidence to tackle common issues or even overhaul the entire unit.

What Is the 42RE Transmission?

The 42RE is a 4 speed manual transmission originally engineered by a well known European manufacturer for use in a variety of light commercial vehicles. The "42" in its name refers to the gear ratio of the first gear, while the "RE" indicates that the gearbox is a rear engine, rear wheel drive configuration. Despite its age, the 42RE remains popular among enthusiasts because of its simplicity, durability, and the wealth of aftermarket parts available.

Key characteristics of the 42RE include:

- Four forward gears and one reverse gear.
- All steel construction with a cast iron housing.
- Internal gear set made of high strength alloy.
- Standard synchromesh for all forward gears.
- Compatible with a wide range of engine outputs, from 50 /kW to 90 /kW.

Why a Parts Diagram Is Essential

A **42RE transmission parts diagram** serves as a visual roadmap that shows the exact location, function, and relationship of each component. For mechanics, hobbyists, and even DIY owners, the diagram:

- Reduces guesswork when diagnosing faults.
- Helps locate hard to reach parts like the rear main seal or the shift fork.
- Facilitates accurate ordering of replacement parts.
- Provides a reference for proper reassembly, ensuring longevity.

Major Components of the 42RE Gearbox

Below is a breakdown of the primary parts you'll encounter in a 42RE transmission. Each section includes a brief description and its role within the gearbox. Refer to the accompanying diagram for visual context.

1. Gear Set

The gear set is the heart of the transmission. It comprises:

- Input shaft with a splined connection to the engine.
- Output shaft that delivers torque to the driveshaft.
- Planetary gear sets that allow for smooth shifting.

- Synchromesh rings that synchronize gear speeds to prevent grinding.

2. Shift Forks and Linkage

Shift forks translate the driver's gear selection into movement of the gear set. They are connected to the gear selector lever via:

- Linkage rods.
- Shift linkage housing.
- Detent pins that lock the gear into position.

3. Clutch Assembly

Although the 42RE is a manual gearbox, it requires a clutch to disengage the engine from the transmission. The clutch system consists of:

- Clutch disc (pressure plate).
- Flywheel.
- Release bearing.
- Clutch pedal assembly.

4. Bearing and Seals

Bearings support rotating shafts, while seals prevent fluid leakage. Key components include:

- Input shaft bearings.
- Output shaft bearings.
- Rear main seal.
- Oil seal around the shift shaft.

5. Gearbox Housing

The cast iron housing encloses all internal components and contains the transmission fluid. It features:

- Oil fill and drain plugs.
- Mounting flanges.
- Ventilation holes to relieve pressure.

Understanding the 42RE Transmission Parts Diagram

Let's walk through a typical **42RE transmission parts diagram**step by step. While every diagram may vary slightly, the general layout remains consistent across models.

1. Input Shaft: Located at the front of the gearbox, the input shaft receives torque from the engine via the clutch. The diagram shows its splined connection and the adjacent input shaft bearings.
2. Gear Set: The diagram highlights the first, second, third, and fourth gears, as well as the reverse gear. Each gear is labeled with its ratio (e.g., 3.73:1 for 1st gear).
3. Synchromesh Rings: These rings are shown in close proximity to each gear. They are critical for smooth gear changes.
4. Shift Forks: The diagram marks the position of each shift fork, indicating which gear they engage.
5. Output Shaft: At the rear, the output shaft connects to the driveshaft. The diagram displays its bearings and the gear that meshes with the output shaft.
6. Clutch Assembly: The clutch components are illustrated on the side of the gearbox, with arrows showing the direction of force during engagement.
7. Bearings and Seals: The diagram labels all key bearings and seals, emphasizing their placement for easy

replacement.

8. Housing: The outer shell is labeled with mounting points, oil plug locations, and vent holes.

Troubleshooting Common 42RE Issues

Having a clear parts diagram can dramatically simplify the process of diagnosing and fixing common problems. Below are some of the most frequent issues and how to address them.

1. Gear Grinding During Shifts

When gears grind, it usually indicates a problem with the synchromesh or shift forks.

- Check the synchromesh rings for wear or damage.
- Inspect shift forks for bent or damaged detent pins.
- Ensure the shift linkage is properly adjusted.

2. Slipping Gears

Gear slippage can be caused by:

- Worn clutch plates.
- Low transmission fluid level.
- Contaminated or degraded fluid.

3. Fluid Leaks

Leaks are typically due to:

- Damaged rear main seal.
- Loose oil drain plug.
- Cracked housing.

4. Difficulty Engaging Reverse

Problems engaging reverse often stem from:

- Misaligned shift fork.
- Worn detent pins.
- Obstruction in the reverse gear slot.

Maintenance Tips for Longevity

Regular maintenance can extend the life of your 42RE transmission. Follow these guidelines to keep the gearbox running smoothly.

1. Fluid Change: Replace the transmission fluid every 10,000 /km or 12 /months, whichever comes first. Use a high quality synthetic blend recommended for manual gearboxes.
2. Check Seals: Inspect the rear main seal and oil seals annually. Replace any that show signs of cracking or wear.
3. Clutch Inspection: Examine the clutch disc for wear. If the clutch slips or feels spongy, consider replacing the entire assembly.
4. Shift Linkage Adjustment: Periodically adjust the shift linkage to ensure smooth gear changes.
5. Visual Inspection: Look for metal shavings or debris inside the housing, which could indicate internal wear.

Tools Required for Disassembly and Reassembly

Below is a list of essential tools you'll need when working on a 42RE transmission. Having the right tools on hand will save time and reduce the risk of damage.

- Socket set (metric sizes 12 /mm to 22 /mm).
- Wrench set (open and box ends).
- Torque wrench (for tightening bolts to specification).
- Gear puller or gear set removal tool.
- Clutch alignment tool.
- Seal puller or seal removal kit.
- Inspection light and magnifying glass.
- Transmission jack or pry bar for housing removal.
- Fluid drain pan and funnel.

Ordering Replacement Parts

When you need to replace a component, a detailed parts diagram helps you identify the exact part number. Here's how to proceed:

1. Identify the Part: Use the diagram to locate the part's label and reference number.
2. Check Compatibility: Verify that the part is compatible with your specific model year and engine type.
3. Source the Part: Look for reputable suppliers, both online and local. Popular options include OEM parts distributors, aftermarket manufacturers, and salvage yards.
4. Confirm Specifications: Double check torque settings, material specifications, and any special installation notes.

Step by Step Reassembly Guide

Reassembling the 42RE transmission can be a meticulous process. Follow this step by step guide to ensure a flawless rebuild.

1. Prepare the Workspace: Clean the area, lay out all components, and keep the parts organized.
2. Install Bearings: Seat each bearing into its designated location, ensuring proper alignment.
3. Fit the Gear Set: Align the gears with the shift forks and secure them using the detent pins.
4. Attach the Clutch Assembly: Mount the pressure plate, clutch disc, and flywheel onto the input shaft, tightening bolts to spec.
5. Install Seals: Place the rear main seal and oil seals, applying a thin layer of sealant if required.
6. Mount the Housing: Secure the gearbox housing onto the mounting flanges, tightening bolts evenly.
7. Check Fluid Level: Fill the gearbox with the recommended fluid, then check for leaks.
8. Test the Shifts: Engage each gear to confirm smooth operation before final tightening.
9. Final Torque Checks: Re torque all bolts to the manufacturer's specifications.

Frequently Asked Questions (FAQs)

What is the typical lifespan of a 42RE transmission?

With proper maintenance, a 42RE can last anywhere from 200,000 km to 300,000 km. The actual lifespan depends on driving conditions, fluid quality, and how well the gearbox is serviced.

Can I use the 42RE in a vehicle with a different engine?

Yes, but you must ensure the torque output of the engine is within the gearbox's rated capacity. Also, verify that the input shaft spline matches the engine's flywheel.

Is the 42RE compatible with automatic transmissions?

No. The 42RE is a manual gearbox and cannot

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