DSG to ZF8 Swap

This guide provides a detailed and organized overview of how I replaced the factory DL501 transmission with a ZF8HP in my 2013 or newer Audi C7 S6/S7. As of today, the car runs and drives great. The overall experience is much better, and this is now what I consider the best modification I have made to the car.

> **Editorial note:** This guide was originally written by @stolens6. The wording, organization, mobile layout and presentation were edited for C7 Wiki by Deutsche Auto Garage (@deutscheautogarage). The original technical process, coding values, pin assignments, file names, part numbers and warnings have been preserved.

Before You Start

Difficulty: Advanced

Author's Cost: Approximately $2,190

Transmission: ZF 8HP55A / AL551

Standalone TCM: Not required

Programming Required: ECU, TCU, immobilizer and VCDS coding

Mechanical Coverage: Transmission removal and installation are not covered

> **C7.5 owners cannot use the files supplied by the original author.**
>
> You must source an ECU file and TCU file that match the generation of your vehicle and transmission. The ECU powerclass must then be correctly matched to the C7.5 S6/S7.

> **Transmission terminology:** This guide refers to the longitudinal Audi ZF 8HP55A, also identified in Audi documentation as the AL551, as the **ZF8** throughout the article.

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- Tools Required
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Introduction

First off, I'll say that this swap has been quite a journey. I learned a lot about things I was previously unfamiliar with and gained a much deeper understanding of my car and how it works.

I'm glad I took on this project because it allowed me to do something different with my build while also helping others make this swap feasible.

For anyone who does it after me, it will be simple. This has been a hot topic in the community for a while, with many people saying or implying that it could not be done.

Not only did I set out to prove that it can be done, but I am also here to prove that anyone can do it without spending an arm and a leg. In fact, it is cheaper than replacing a DSG clutch and much cheaper than replacing the entire DSG.

We will not get too far into the WHY, but we will address the HOW.

I will not detail the removal or installation of the transmission itself. There are manuals and videos for that.

Instead, I'll cover the hardware, wiring, coding, immobilizer management, essential tools, where to get ODIS and how to adapt everything.

> **Author's note:** I am not a mechanic.

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Hardware Requirements

The hardware portion of this swap is fairly straightforward compared with many other transmission swaps. Essentially, you remove the S6/S7 parts and replace them with A6/A7 parts.

Everything bolts right up. No custom adapters or tunnel hammering are required. This makes it relatively simple compared with other transmission swaps.

Unlike nearly every other ZF8 swap, we do **NOT** need to use a standalone TCM such as the Turbolamik, which costs approximately $2,500.

If you see what some people go through to install ZF8 transmissions in other cars, you would agree that we have it easy.

Parts List

Transmission

Required: ZF8HP55. Any variant from the C7/C7.5 or D4/D4.5 can be used.

Match the generation of the transmission to your car to minimize coding issues.

Author's transmission: A6 transmission with NNT code.

It does not matter which code your original DSG DL501 used. It will work with any of them.

Rear Differential

Required: A6 rear differential.

Part number: `OBC500044D`

Rear Axles

Non-sport axles are required if you are switching to a non-sport differential.

Part number: `8R0501203C`

If you already have a non-sport differential, keep your existing differential and rear axles.

Shifter Cable and Assembly

`4G0713265T`

Or:

`4G1713105D` with assembly

Transmission Mount Bracket

`40399115G`

Transmission Crossmember

`40399263G`

Torque Converter

An RS7 or TDI torque converter is optional but highly recommended if you are using an A6 transmission.

This will effectively turn your A6/A7 transmission into an RS transmission.

Verify every part number before ordering.

Audi part numbers can differ by model year, drivetrain configuration, market and revision. Confirm compatibility using your VIN and the donor transmission information.

Pay special attention to characters that could be either the letter O or the number 0.

SPECIAL NOTE: TRANSMISSION COOLER

YOU WILL NEED TO GET A TRANSMISSION COOLER.

I USED AN AFTERMARKET COOLER.

YOU CANNOT USE YOUR S6/S7 TRANSMISSION COOLER. THE BRACKET WILL NOT MOUNT CORRECTLY.

YOU CAN USE AN A6/A7 TRANSMISSION COOLER AND LINES.

Additional Hardware Notes

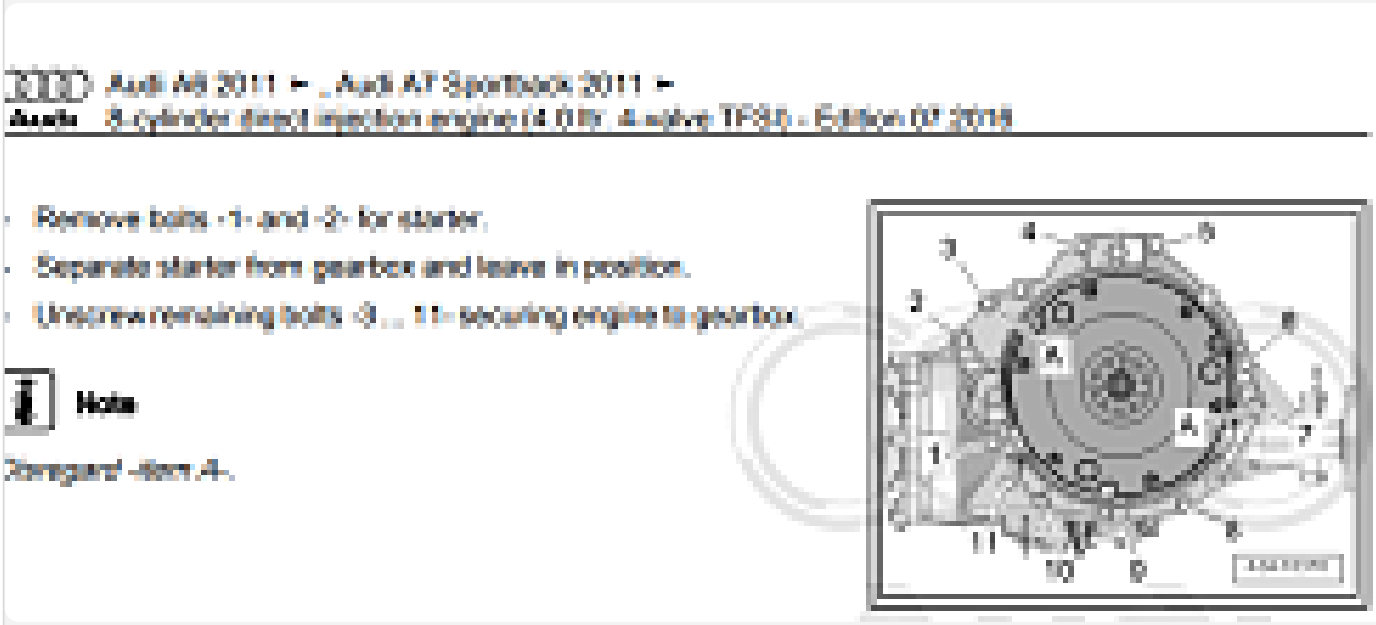
You must replace or add a few bellhousing bolts:

- 1 × M10 100 mm bolt on the bottom where there is an additional mounting hole.
- 2 × M10 60 mm bolts to replace the original bolts that are too short.

Bellhousing Bolt Locations

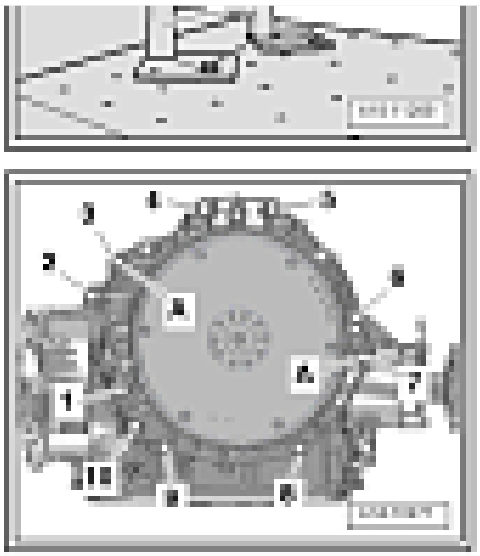
Review these pictures of the DSG and ZF8 bellhousing bolt locations for reference.

ZF8



ZF8HP55A bellhousing bolt locations

DSG



- Remove bolts -1- and -2- for starter.
- Separate starter from gearbox and leave in position.
- Unscrew remaining bolts -3 ... 10- securing engine to gearbox.

Note

- Counterhold nut at bolt -7-.
- Disregard item A.

DL501 DSG bellhousing bolt locations

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Tools Required

- A strong battery charger or maintainer. Always keep it connected while reading or flashing modules.
- ODIS Engineering, or ODIS-E.
- ODIS Service, or ODIS-S, with a GEKO account or access through a dealership or qualified shop.
- VCDS, also known as VAG-COM, for user-friendly coding and diagnostics.
- An ODIS-compatible flash cable, such as:
  - VNCI 6154A
  - Mongoose JLR Pro/Clone
- A VAG-style wire depinning tool. These can be found on Amazon.
- DS1. The swap can be completed without DS1, but doing so is more complicated.

> **Cable warning:** A Tactrix Openport cable will not work.

Wiring Adjustments

You must repin the DL501 transmission connector to match the ZF8HP layout. Correct pin assignment ensures that the TCU can communicate properly with the transmission.

Pinout for a 2013 Audi S6 Using an A6/A7 Transmission With Code NNT

Pin	Wire Color
1	Blue Black
2	Blue/Grey
5	Orange/Black
6	Orange/Grey
8	Green/Purple
9	Black/Purple
11	Grey/White
13	Red/Grey
14	Brown
15	Green/Yellow

Unused Wires

- Brown/Grey
- Red
- Green

> **Verify before repinning:** Wire colors may vary by model year or region. Double-check your wiring diagram or verify continuity to confirm where each wire goes. Comment below if you need help.

Helpful Resource

YouTube Video: Transmission Connector Repinning Process

This video explains the transmission connector repinning process in detail.

> **Wiring checkpoint:** Before continuing, verify that every required wire is in the correct ZF8 connector position, the unused wires are safely isolated and the connector is fully seated.

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Immobilizer Management

These cars use Immo V/BCM2, so you must ensure that the new transmission TCU is properly aligned with the ECU and instrument cluster.

If the powerclass does not match, or if you have physically changed a control module such as the transmission TCU, you will need to adapt or disable the immobilizer.

1. Adaptation With ODIS Service

- Use ODIS-S with a valid GEKO account to adapt the TCU, immobilizer and instrument cluster if necessary.

2. Alternative Solutions

- An emulator, such as one from Abrites or a physical VAG-TCU Immobilizer Emulator, can bypass the immobilizer.
- Some tuners or services can perform Immo-Off or an IMMO TRANSFER using the EEPROM data from your DL501 on the AL551, although those services appear to be less common.
- ODIS adaptation is generally the easiest option for the average person to obtain.

Why Powerclass Matters

Powerclass is part of the immobilizer handshake.

If the ECU powerclass does not match the powerclass expected by the immobilizer, the ECU immobilizer will be triggered.

For example, flashing RS7 software onto an S6 ECU sets the powerclass to RS7. Unless you manually change it to match the S6 BCM, you will have an immobilizer conflict.

If you are using my modified file, the powerclass is already matched to the C7 CEUC engine, which is what the immobilizer handshake expects.

Swap Process

Phase 1: Mechanical Installation

Remove the original DL501 transmission and install the required ZF8 hardware.

> **Mechanical scope:** This guide does not include step-by-step transmission removal or installation instructions. Use the applicable factory repair manual or a trusted mechanical installation guide.

Phase 2: Wiring and Repinning

1. Repin the transmission connector using the pinout in the **Wiring Adjustments** section.
2. Plug the connector into the transmission.

> **Checkpoint:** Confirm the connector is pinned correctly and fully seated before connecting the battery or attempting communication with the TCU.

Phase 3: ECU and TCU Flashing

ECU Flash

1. Contact DS1 and provide your DS1 serial number.
2. Explain that you are not changing your ECU hardware but need an RS7 bin file.
3. DS1 will supply a stock RS7 file, such as `4G0906560B__0008` for a C7 RS7.
4. Perform a full flash using the stock RS7 file.
5. Cal-flash the modified RS7 bin file from the attached folder.
6. This modified file already has the powerclass and IMMO settings adjusted but is otherwise stock.
7. Before driving, copy any required tables from your previous S6/S7 tune using TunerPro:
   - MAP SENSORS
   - SOI
   - FUEL
   - IGNITION TABLES
8. Open two instances of TunerPro because the XDF files differ between the two calibrations.
9. Refer to the other sections, including the VCDS section, to confirm the coding and clear any fault codes.

TCU Flash

1. Flash the TCU with an RS6/RS7 `.frf` file.
2. If you have an RS transmission from an RS6 or RS7, skip this step.
3. For details on obtaining ODIS-E, see the **Where to Get ODIS** section.

How to Flash the Transmission With ODIS-E

Refer to the associated video for the complete ODIS-E transmission flashing process.

> **Flashing checkpoint:** Confirm that the ECU and TCU can both be identified by the diagnostic software and that the flash completed without interruption before moving to immobilizer adaptation.

Phase 4: Immobilizer Adaptation

1. See **Immobilizer Management** for details on matching the TCU and ECU with the instrument cluster and BCM2.
2. If you do not have access to a local shop or dealership, refer to **Where to Get ODIS** for information on purchasing ODIS-S and a server login.
3. Complete the online GEKO procedures to link the new TCU and ensure that no immobilizer conflicts remain.
4. Make sure you have all of the vehicle's programmed keys with you during the immobilizer adaptation process.

> **If you are using an RS transmission:**
>
> You only need to flash the ECU and adapt the immobilizer.
>
> Then proceed to the VCDS section.

How to Locate Immobilizer Adaptation and SVM in ODIS Service

Refer to the associated video for instructions on locating Immobilizer Adaptation and SVM in ODIS Service.

> **Immobilizer checkpoint:** Confirm that the vehicle starts, all programmed keys remain functional and no blocking immobilizer or component-protection faults remain.

Phase 5: Coding and Fault Resolution

1. After flashing and adapting the required components, perform an Auto-Scan.
2. Review and address any faults.
3. Paste the correct long coding if a module appears to be uninitialized.
4. An uninitialized module will show all zeros in the coding field.
5. When prompted, click **Yes** to use the default values.
6. Clear the remaining fault codes.
7. Confirm that everything is coded properly.

Phase 6: First Start, Fluid Level and Adaptations

1. After the major faults have been cleared, start the car.

2. Allow the car to reach operating temperature.
3. Check and correct the transmission fluid level.
4. Refer to the applicable hardware documentation or a standard ZF8 service guide for the correct fluid procedure.
5. Perform the transmission adaptations through VCDS or ODIS for the best shifting results.

> **First-start checkpoint:** Confirm the transmission engages correctly, the fluid level is correct, no major faults return and the adaptation procedure completes successfully before hard driving.

Phase 7: TCU Tune

After confirming that the car drives properly, choose a TCU tuner and flash a TCU calibration that supports your modified vehicle’s power level.

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VCDS Section

You will use VCDS, also known as VAG-COM, throughout the swap to verify functions, read and clear fault codes and confirm the final coding.

Basic VCDS Process

1. Perform an Auto-Scan to detect the installed modules and fault codes.
2. Click **Auto-Scan**.
3. Open the **Gateway Installation List** to confirm which modules are present.
4. Double-click any red or problematic modules to open and review them.

Uninitialized Module Message

If VCDS indicates that a module is uninitialized after flashing the ECU or TCU, and the coding field contains all zeros, you must reinsert or paste the correct coding.

- For ECU, TCU and ABS coding, you can try using my provided long coding if you have a C7 with air suspension and the sport differential removed.
- Adjust the coding if necessary.
- For modules other than the ECU, TCU and ABS, use the original coding from a previous Auto-Scan.

Long Coding

The following coding worked for my C7 Audi S6 with air suspension and no sport differential.

> **Vehicle-specific coding:** If you see an error such as **Module Incorrectly Coded**, you may need to adjust these values. Comment below for help.

Module	Coding
Engine	`1A2A003265460A0E1000`
Auto Transmission	`000001`
ABS	`65A64F01A665F2805B00`

ABS Security Access

1. Click **Security Access**.
2. Wait for the information bubble to appear.
3. Enter the alternative coding password.
4. The password that worked for my car was:

```
S11820
```

5. Open **Coding**.
6. Paste the coding value.
7. The module should accept it.

Known Engine Module Fault

My engine module currently shows the following code, which does not affect operation:

```
4715 - No Communication with Instrument Cluster
U0155 00 [00100111] - -
[Lost Communication With Instrument Panel Cluster (IPC) Control Module]
Not Confirmed - Tested Since Memory Clear
```

I plan to resolve this by using SVM in ODIS-S on the Instrument and Engine modules.

If that does not work, the code can be masked or disabled in the tune. It has not caused any problems or affected how the car drives. The instrument cluster also communicates and operates correctly.

> **Let me clarify:**

> If you follow this swap process correctly, you will have **NO swap-related error codes on the dashboard**.
>
> If you see any codes other than the one mentioned above, comment below for help.
>
> This will be a clean, properly completed swap.

Deleting the Sport Differential

If your original car was equipped with the sport differential but you have installed a non-sport rear differential, you will need to remove the sport differential from the vehicle configuration in VCDS.

Sport Differential Delete

1. With no errors present, go to:
   - Instruments module
   - Coding
   - Uncheck **Sport Differential Installed**

   This may sometimes work while errors are present, depending on your version of VCDS.
2. Turn the car off.
3. Turn the car back on and verify that there are no dashboard errors.
4. If there are no errors, continue.
5. Go to:
   - CAN Bus module
   - Gateway Installation List
   - Remove AWD
6. Restart the car.
7. If there are no dashboard errors, continue.
8. Go to the rear of the car and remove the fuse for **ONLY** the sport differential.
9. Fuse locations may vary between vehicles, so check the applicable fuse diagram.
10. Verify that there are no dashboard errors.
11. If there are no errors, you can remove the sport differential wiring and/or differential.

> **DO NOT REMOVE OR UNPLUG THE AWD MODULE.**

Additional Information

For more information, see this TGK Motorsports video discussing the sport differential deletion process:

Sport Differential Delete Video

Enabling Paddle Shifters and Tiptronic

1. Enable Shift by Wire

1. Open **Select Control Module**.
2. Open **ACC/Auth**.
3. Open **Coding**.
4. Open **Long Coding Helper**.
5. Find **Shift by Wire**.
6. Enable it.
7. Close Long Coding Helper.
8. Click **Do It** to confirm the change.

2. Activate Steering Wheel Tiptronic

1. Open **Transmission**.
2. Open **Adaptation**.
3. Find the channel named **Steering Wheel Tiptronic**.
4. Set it to **Active**.
5. Repeat this process for any other features, such as the gear display, that you want to activate.

> **Gear-selector connectors:** Make sure that all three connectors on the gear-selector assembly are plugged in.
>
> If only two connectors are attached, one is missing.

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Where to Get ODIS

ODIS-E

ODIS-E, or ODIS Engineering, is used for flashing.

- ODIS-E can be purchased inexpensively from websites such as OBDII365.

ODIS-S

ODIS-S, or ODIS Service, is used for SVM and immobilizer adaptation.

Options include:

- Ask a local Volkswagen or Audi dealership to perform the required adaptations.
- Ask a specialized VAG shop that has access to a GEKO account.
- Purchase the software and a one-time login from a seller on AliExpress.
- Some sellers charge approximately $40 for ODIS-S installation and another $40 to $60 for a one-time server login.
- Another commonly used website is VW-GEKO.

Before paying for a login or scheduling an adaptation, confirm that Audi access is active for immobilizer and component-protection services.

You can check the service status through the following page or through the provider's WhatsApp account:

VW-GEKO Status

> **Use these services at your own risk.**
>
> In SOME cases, a seller will remotely access your computer to complete the login.
>
> If you purchase through AliExpress, you may have the option to dispute the transaction if there is a problem.
>
> Confirm that immobilizer adaptation is active and available before purchasing anything.

Transmission Tuning

- I chose to tune my transmission using HP Tuners, which provides a user-friendly solution for ZF8 transmissions.
- This is only recommended if you know WTF you are doing or know someone who does.
- You could also choose one of the well-known ZF8 TCU tuners, such as:
  - JHM
  - ETSpec
- If your car is highly modified, you will ultimately need a TCU tune.
- The stock TCU expects specific RPM and torque limits. Exceeding those limits can trigger transmission fault codes or a **Transmission Malfunction** warning.
- This does not damage anything by itself, but it will make you shit bricks if you do not know what caused it. The warning generally means that you need:
  - A TCU tune that supports the higher RPM and torque limits.
  - Or an ECU tune adjusted to remain within the limits expected by the stock TCU.

- If you are running below stock RS6/RS7 power levels and retaining the stock rev limit, you technically do not need a transmission tune yet.

C7.5 Warning

> **IF YOU HAVE A C7.5, YOU CANNOT USE MY FILES.**
>
> YOU WILL NEED TO SOURCE A TCU FILE THAT MATCHES THE GENERATION OF YOUR TRANSMISSION AND A C7.5 RS7 ECU FILE.
>
> YOU MUST MODIFY THE POWERCLASS TO MATCH THE C7.5 S6/S7 ACCORDINGLY.

Files and Compatibility

ECU File

```
MED17_1_1_ C7 RS7 STOCK 0008 IMMOFFPC41.bin
```

Flash target: ECU
Use when: Following the original author's C7 ECU process.
Flashing method: Cal-flash with DS1.
Do not use when: The vehicle is a C7.5.

TCU File

```
FL_4G0927158BD_1007.frf
```

Flash target: TCU
Use when: Using an A6/A7 transmission that needs the RS calibration.
Flashing method: ODIS-E with an ODIS-compatible cable.
Do not use when: Using an RS6/RS7 transmission or a transmission from a mismatched generation.

Plain-Text Guide

```
ZF8SWAP.TXT
```

Purpose: Plain-text copy of the original swap guide.
Warning: This is a reference document. It is not a flash file.

> **File compatibility is critical.**
>
> Do not flash a file simply because the file name appears similar. Confirm the vehicle generation, ECU software family, TCU hardware, transmission generation and intended powerclass before flashing.

Costs

The following is what I spent while trying to keep this swap budget-friendly. Your total may differ depending on parts availability, optional upgrades and whether you require professional assistance.

Item	Cost
ZF8HP55 Transmission, NNT Code	$400
Torque Converter, RS7 or TDI	$300
A6 Shift Assembly	$70
A6 Transmission Mount	$60
A6 Cross Brace	$100
A6 Rear Differential	$160
A6 Rear Axles	$100
Miscellaneous Tools and Fluids	$1,000
Total	**$2,190**

Disclaimer

The costs and methods listed here reflect my personal experience completing this swap. Your expenses and approach may vary.

This guide is provided for informational purposes only. Follow all relevant safety precautions, consult qualified professionals when necessary and verify the compatibility of every part before beginning any modification.

I am not responsible for any problems that may arise from performing this swap.

Dyno Spectrum does not endorse or support this transmission swap in any capacity. Please do not contact them for assistance with the swap.

They specialize in ECU flashing software, not transmission or engine-swap support. That said, they were extremely helpful with the ECU portion of this project.

As always, everything you do to your car is at your own risk.

Credits

This project would not have been possible without the assistance and insight provided by the following individuals and resources:

- QCrazy
- Audiquattro44
- PRJ
- Dyno Spectrum
- Christian O
- 813garage
- FE Performance
- Artemesia
- Projectlsaudia4
- Sleepertuned
- MWELL
- TGK Motorsports
- Shane Horning
- AudiNeil

Thank you to everyone who helped in any way, big or small.

With the right tools, patience and knowledge, a ZF8 swap can transform an Audi C7 S6/S7 into a much more reliable and durable animal.

Original guide: @stolens6

Edited for C7 Wiki: Deutsche Auto Garage (@deutscheautogarage)

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Original Article

The section below preserves the original article wording for reference. Select the heading to expand it.

View the Original Article as Written

ZF8 HP55A Transmission Swap Audi C7 S6/S7 – A Complete Guide

This guide provides a detailed and organized overview of how I replaced the factory DL501 transmission with a ZF8HP in my 2013+ Audi C7 S6/S7. As of today the car runs and drives great. The overall experience is much better, and this is now what I consider the best mod I have done to the car.

Introduction

First off, I'll say this swap has been quite a journey. I learned a lot about things I was previously unfamiliar with and gained a much deeper understanding of my car and how it works. I'm glad I took on this project because it allowed me to do something different with my build while also helping others make this swap feasible. For anyone that does it after me, it will be simple. This has been a hot topic in the community for a while, many people saying or implying that it could not be done. Not only did I set out to prove it can be done, I am here to prove that anyone can do it and it will not cost a leg or an arm. In fact, it is cheaper than replacing a DSG clutch and way cheaper than replacing a DSG. We will not get too into the WHY, but we will address the HOW.

I will not detail the removal or installation of the transmission itself—there are manuals and videos for that. Instead, I'll cover the hardware, wiring, coding, immobilizer management, and essential tools, along with tips on where to get ODIS and how to adapt everything. I am not a mechanic.

Hardware Requirements

The hardware part of this swap is fairly straightforward compared to many other transmission swaps. Essentially, you remove S6/S7 parts and replace them with A6/A7 parts. Everything bolts right up—no custom adapters or tunnel hammering required—making it "simple" compared to other transmission swaps. Unlike nearly other ZF8 Swap, we do NOT need to use a standalone TCM such as the Turbolamik ($2500) If you see what some people go through to put ZF8 transmissions in other cars, you would agree we have it easy.

Parts List

- Transmission: ZF8HP55 (Any variant from C7/C7.5 or D4/D4.5; match your generation to minimize coding issues. My transmission A6 transmission I selected is NNT code.(It does not matter what code your DSG DL501 was, it will work on any of them)
- Rear Differential: A6 (Part Number OBC500044D)
- Rear Axles: Non-sport axles if switching to a non-sport differential (Part Number 8R0501203C) IF you already have non-sport diff you will keep your diff and rear axles.
- Shifter Cable: 4G0713265T or 4G1713105D (with assembly)
- Transmission Mount Bracket: 40399115G
- Transmission Crossmember: 40399263G
- Torque Converter: RS7 or TDI (optional but highly recommended if you're using an A6 transmission) ~ this will turn your A6/A7 transmission into an RS transmission

> **SPECIAL NOTE:** TRANSCOOLER - YOU WILL NEED TO GET A TRANSCOOLER, I USED AN AFTERMARKET COOLER. YOU CANNOT USE YOUR S6/S7 TRANSMISSION COOLER THE BRACKET WILL NOT MOUNT UP. YOU CAN GET A6/A7 TRANSMISSION COOLER AND LINES.

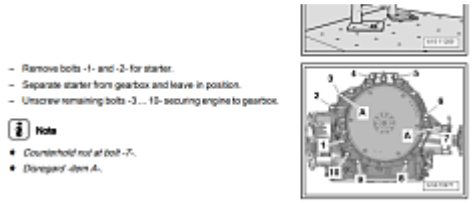
Additional Hardware Notes
- You must swap and add a few bellhousing bolts:
- 1 × M10 100 mm bolt on the bottom where there is an extra hole.
- 2 × M10 60 mm bolts to replace where your original bolts are too short.

Take a look at this picture of DSG VS ZF8 bellhousing bolt locations for reference

ZF8:



DSG:



Tools Required

- Strong Battery Charger/Maintainer (Always keep this connected while reading/flashing)
- ODIS Engineering (ODIS-E) and ODIS Service (ODIS-S), with GEKO account or dealer/shop access
- VCDS (VAG-COM) for user-friendly coding and diagnostics
- ODIS Compatible Flash Cable (for example, VNCI 6154A or Mongoose JLR Pro/Clone) (Tactrix Openport will not work)
- VAG style wire depinning tool (can be found on Amazon)
- DS1 ~ though it can be done without, it is more complicated without it

Wiring Adjustments

You must repin the DL501 transmission connector to match the ZF8HP layout. Correct pin assignment ensures the TCU can communicate properly with the transmission.

Pinout for 2013 Audi S6 Using A6/A7 Transmission Code NNT

PIN	COLOR
1	Blue Black
2	Blue/Grey
5	Orange/Black
6	Orange/Grey
8	Green/Purple
9	Black/Purple
11	Grey/White
13	Red/Grey
14	Brown
15	Green/Yellow

Unused Wires:

- Brown/Grey
- Red
- Green

Note: Wire colors may vary by model year or region. Double-check your wiring diagram or verify continuity to confirm where each wire goes. Comment below if you need help.

> YouTube Video:
>
> https://www.youtube.com/watch?v=GRNb2nNMf0M
> (This explains the transmission connector repinning process in detail.)

Immobilizer Management

These cars run on Immo V/BCM2, so you must ensure your new transmission TCU and the ECU/cluster are aligned. If your powerclass does not match, or if you have physically changed control modules (such as the transmission), you will need to adapt or disable the immobilizer:

1. Adaptation with ODIS Service
- Use ODIS-S with a valid GEKO account to adapt the TCU, immobilizer, and cluster if necessary.

2. Alternative Solutions
- An emulator, such as those from abitres or a VAG-TCU Immobilizer Emulator(physical), can bypass the immobilizer.
- Some tuners or services can do Immo-Off or IMMO TRANSFER using your DL501 EEPROM data on the AL551, although those appear less common. ODIS adaptation is generally easiest to get ahold of for the average joe.

Why Powerclass Matters
Powerclass is part of the immobilizer handshake. If the ecu powerclass and the powerclass the immo is looking for do not match, you will trip the ECU immobilizer. For example, flashing RS7 software onto an S6 ECU sets powerclass to RS7. Unless you manually match it to the S6 BCM, you will have an immobilizer conflict. If you are using my modified file, powerclass is already matched to C7 CEUC engine which is what the immo handshake is looking for.

Swap Process

1. ECU Flash
- Contact DS1 and provide your DS1 serial number, explaining that you will not change your ECU hardware but need an RS7 bin.
- DS1 will supply a stock RS7 file (e.g., 4G0906560B__0008 for a C7 RS7).
- Full Flash the stock RS7 file, then cal flash the modified RS7 bin from the attached folder. This modified file already has powerclass and IMMO settings adjusted but is otherwise stock.

- Before driving, copy over any needed (MAP SENSORS. SOI, FUEL IGNITION TABLES) tables from your old S6/S7 tune using TunerPro. Open two instances of TunerPro since the XDFs differ between files.
- Refer to other sections (e.g., VCDS) to confirm coding and clear any codes.

2. Repin the transmission connector (see Wiring Adjustments). then plug it into the transmission
- Flash the TCU with an RS6/RS7 .frf file. If you have the RS (RS6/RS7) transmission, skip this step.
- For details on obtaining ODIS-E, see the “Where to Get ODIS” section.

How To Flash Transmission with ODIS E Video

3. Adapt the Immobilizer with ODIS-S
- See “Immobilizer Management” (above) for details on matching the TCU and ECU with your cluster/BCM2.
- If you lack a local shop or dealership, refer to “Where to Get ODIS” for info on buying ODIS-S plus a server login.
- Complete the online GEKO procedures to link the new TCU and ensure no immobilizer conflicts remain.
- IF YOU ARE USING RS TRANSMISSION YOU ONLY NEED TO DO ECU FLASH AND ADAPT THE IMMOBILIZER THEN PROCEED TO THE VCDS SECTION.
- Make sure you have all of your vehicles programmed keys with you for the Immobilizer adaptation process.

How to Locate Immobilizer Adaptation and SVM in Odis Service Video

4. Scan with VCDS and Apply Correct Long Coding
- Once you have flashed and adapted components, perform an Auto-Scan (see the upcoming VCDS Section) and address any faults.
- Paste correct long coding if a module appears uninitialized (The long coding for the module is showing all 0's). When prompted, click Yes to use default values.
- Clear remaining fault codes and confirm everything is coded properly.

5. Start and Warm Up
- After major faults are cleared, start the car and let it warm to operating temperature.
- Check and correct transmission fluid levels. Refer to hardware or standard ZF8 service guides for fluid procedures.
- Perform transmission adaptations (via VCDS or ODIS) for the best shifting results.
6. TCU Tune
- After confirming the car drives well, choose a tcu tuner and flash a tcu tune that suits your modded vehicles power levels.

VCDS Section

You will use VCDS (VAG-COM) throughout the swap to verify functions, read/clear fault codes, and confirm final coding:

- Perform an Auto-Scan to detect modules and fault codes. Click "Autoscan"
- Click the "Gateway Installation List" to confirm which modules are present.
-Double click on any red or problem modules to open and review them.

*****Uninitialized Module Message

If, after flashing the ECU or TCU, VCDS indicates a module is uninitialized (all zeros showing for coding), you must re-insert or paste the proper coding:

- For ECU/TCU/ABS coding, you can try using my provided long coding if you have a C7 with air suspension and sport diff removed. Adjust if needed.
-- For non-ECU/TCU/ABS modules, use your original coding from a previous Auto-Scan.

Long Coding

Below is what worked for my C7 Audi S6 (with air suspension and no sport diff). If you see errors like “Module Incorrectly Coded,” you may need to tweak these (comment below for help):

Engine Coding: 1A2A003265460A0E1000
Auto Transmission Coding: 000001
ABS Coding: 65A64F01A665F2805B00

For the ABS module you must click Security access then wait for the bubble to pop up and enter the alternative coding password mine was S11820 then you can go to coding and paste the coding and it should accept.

Special Note:

Currently, my engine module shows the following code, which does not affect operation:
4715 - No Communication with Instrument Cluster
U0155 00 [00100111] - -
[Lost Communication With Instrument Panel Cluster (IPC) Control Module]
Not Confirmed - Tested Since Memory Clear

I plan to resolve this using SVM in ODIS-S on the Instrument and Engine modules. If that does not work, the code can be masked or disabled in the tune. It has not caused any issues or effects on driving.The instrument cluster also communicates and operates fine.

Let me clarify : If you follow this swap process correctly you will have NO swap-related error codes on the dash at all. If you do see any codes other than this one i mentioned then comment below for help. This will be a clean, proper swap.

Deleting the Sport Diff

If your original car was equipped with the sport diff but you have now installed a non-sport rear diff, you'll need to delete the sport diff in VCDS:

Sport diff delete:

1. With no errors (sometimes errors work just depends on your VCDS) go into instruments module - coding - uncheck sport differential installed

2. Turn off car, turn back on and verify no dash errors. If so continue.

3. Go into canbus module - gateway list - remove AWD.

4. Restart car, if no dash errors continue.

5. Go into the rear of the car and remove the Fuse for ONLY the sport diff (cars might vary in fuse check diagrams). Verify no errors on dash. If so your good to remove the diff wiring/and or diff.

6. DO NOT REMOVE THE AWD MODULE OR UNPLUG

For more information, see this TGK Motorsports YouTube video discussing the sport diff delete process:

https://www.youtube.com/watch?v=T6rFej3PY9c

Enabling Paddle Shifters / Tiptronic
1. Enable Shift by Wire
- In VCDS, go to Select Control Module, then ACC/Auth, then Coding, then Long Coding Helper.
- Find Shift by Wire and check it.
- Close the Long Coding Helper. Click Do It to confirm.

2. Activate Steering Wheel Tiptronic
- In VCDS, go to Transmission, then Adaptation.
- Look for the channel Steering Wheel Tiptronic and set it to Active.
- Repeat for any other features, such as gear display, that you want active.

Make sure all three connectors on your gear selector assembly are plugged in. If you only have two connected, you are missing one.

Where to Get ODIS

- ODIS-E (Engineering) can be purchased cheaply from sites like OBDII365 (FOR FLASHING)
- ODIS-S (Service): (FOR SVM/IMMOBILIZER ADAPTATION)
- You can ask a local VW/Audi dealership or specialized VAG shop that has a GEKO account to do the required adaptations for you

- You can also purchase the software and one-time logins from various sellers on aliexpress. Some will charge around 40 dollars for ODIS-S installation plus $40-$60 dollars for a one-time server login.

- There is also another popular website for this https://www.vw-geko.com/

- Be sure to confirm that Audi is active (for immobilizer and component protection services) before paying for any logins or scheduling adaptations. You can check the status here or on their WhatsApp https://status.vw-geko.com/

Use these services at your own risk. In SOME cases, someone will remote into your computer to do the login. If you are purchasing from AliExpress you do have the ability to dispute if there is an issue. Make sure that you inquire and confirm immobilizer adaptation is active/available before purchasing.

TRANSMISSION TUNING

- I opted to tune my transmission using HPTuners, which offers a user-friendly solution for ZF8 transmissions. (This is only if you know wtf you're doing or know someone that does)
- You could also choose from one of the well-known ZF8 TCU tuners (e.g., JHM, ETSpec) to get a TCU tune.
- Ultimately, if your car is highly modified, you will need a TCU tune. The stock TCU expects certain RPM and torque limits, so exceeding them can trigger transmission codes or a “Transmission Malfunction” warning. This doesn’t harm anything; but it will make you shit bricks if you didnt know that it just means you need a TCU tune that accommodates higher rev limits and torque levels or to adjust your ecu tune accordingly. If you happen to be running below stock RS6/RS7 power levels and using stock rev limit you technically dont need a transmission tune yet.

IF YOU HAVE A C7.5 YOU CANNOT USE MY FILES

YOU WILL NEED TO SOURCE A TCU FILE THAT MATCHES THE GENERATION OF YOUR TRANSMISSION AND AN ECU FILE THAT IS C7.5 RS7 AND MODIFY THE POWERCLASS TO C7.5 S6/S7 ACCORDINGLY.

File Overview:

Download Link

MED17_1_1_ C7 RS7 STOCK 0008 IMMOFFPC41.bin - FLASH THIS TO YOUR ECU (CAL FLASH WITH DS1)

FL_4G0927158BD_1007.frf - FLASH THIS TO YOUR TCU USING ODIS-E AND YOUR ODIS COMPATIBLE CABLE (ONLY IF YOU ARE USING A6/A7 TRANSMISSION) THIS IS A C7 RS6 STOCK FILE

ZF8SWAP.TXT - THIS GUIDE IN PLAINTEXT FORMAT READ IT IF YOU GET LOST

Costs

Below is what I spent while trying to keep this swap budget-friendly. Your total may differ based on availability, upgrades, or professional assistance:

Item Cost
ZF8HP55 Transmission (NNT Code) 400
Torque Converter (RS7 or TDI) 300
A6 Shift Assembly 70
A6 Transmission Mount 60
A6 Cross Brace 100
A6 Rear Differential 160
A6 Rear Axles 100
Miscellaneous (Tools/Fluids) 1000

Total $2190

Disclaimer

The costs and methods listed here reflect my personal experience completing this swap. Your expenses and approach may vary. This guide is for informational purposes only, and you should follow all relevant safety precautions, consult with professionals where needed, and verify the compatibility of parts before undertaking any modifications. I am not responsible for any issues that may arise from performing this swap.

Dynospectrum does not endorse or support this transmission swap in any capacity. Please do not contact them for assistance with the swap. They specialize in ECU flashing software, not transmission or engine swap support. That said, they were extremely helpful with the ECU side of this project. As always, everything you do to your car is at your own risk.

Credits

This project would not have been possible without the assistance and insights from the following individuals and resources:

- QCrazy
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- Artemesia
- Projectlsaudia4
- Sleepertuned
- MWELL

- TGK Motorsports
- Shane Horning
- AudiNeil

Thank you to every one who helped in any way big or small. With the right tools, patience, and know-how, a ZF8 swap can transform an Audi C7 S6/S7 into a much more reliable and durable animal.

IF you appreciated this swap guide follow me on instagram @stolens6

Original article: @stolens6

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