Vehicle Info:
1997 Toyota Land Cruiser
1HD-FT 24v Turbo Diesel motor
Frame/VIN #: HDJ810074027

All below information and diagrams were sourced from PartSouq explicitly by searching for the frame number of my vehicle. For further information or to validate, please visit https://partsouq.com/. Furthermore, these diagrams are corroborated through the following additional sources:
https://jp-carparts.com/toyota/partlist.php?maker=toyota&type=791140&cartype=19&fig=1702
and
https://www.nengun.com/oem/parts/ODU1ODcgLSBNQ1B3bjVxQU1EQXg4Si1hZ1UxQlJEUTFNa1R3bjVTd09UTXhPazFCUkRRMU1rVHduNUNTT1RNeDhKLVFpVTFCUkRRMU1rUSAtIE11ZmZsZXIsIEV4aGF1c3QgU3lzdGVtIFJlYXIgUGFydA==

For some higher level information about these vehicles, please see
https://en.wikipedia.org/wiki/Toyota_Land_Cruiser

My Land Cruiser is considered an “80 Series”, specifically, HDJ81. HDJ81 meaning a diesel powered Land Cruiser 80 built for the Japanese Market. The 80 series Land Cruisers were produced in Japan between January 1990, and December 1997. There were 5 motor options throughout the production run of all 80 series Land Cruisers:

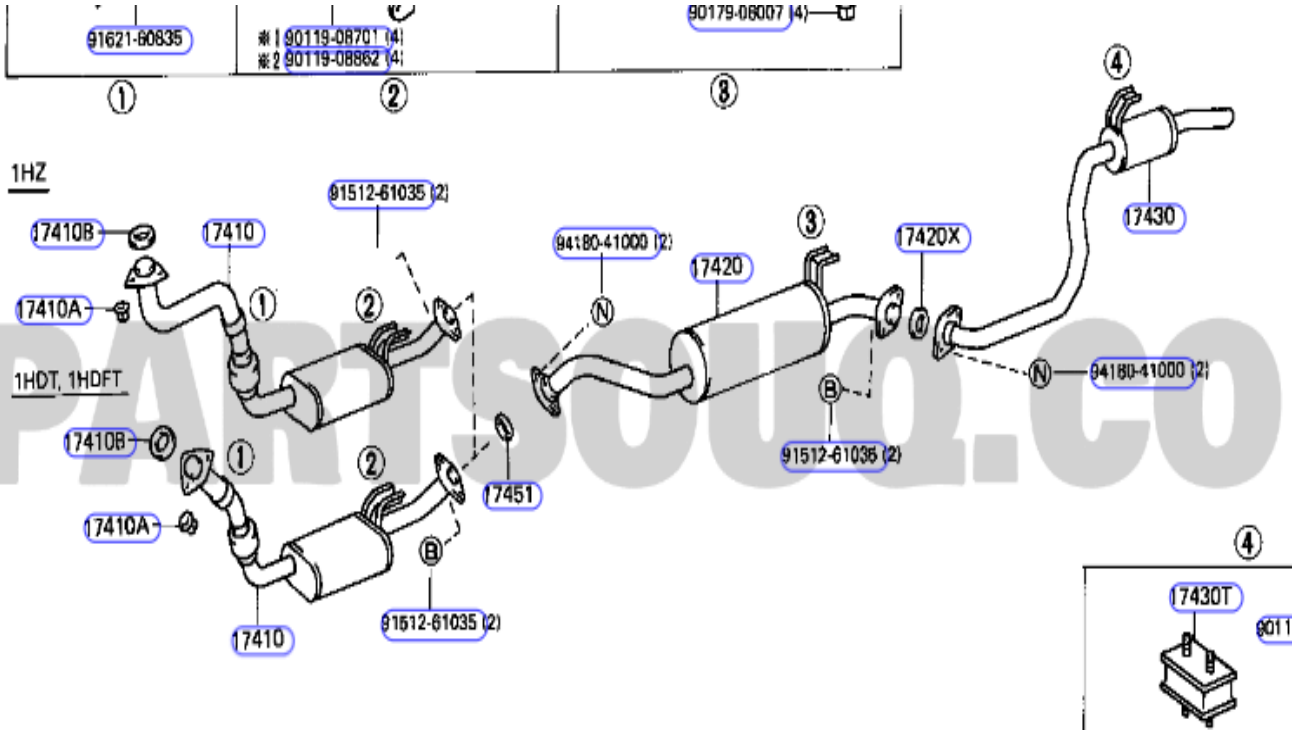
- 3F-E 4.0 I6 gas - electronic fuel injection
- 1FZ-FE I6 gas - electronic fuel injection
- 1HZ 12 valve normally aspirated diesel - mechanical fuel injection
- 1HD-T 12 valve turbo diesel - mechanical fuel injection
- 1HD-FT 24 valve turbo diesel - mechanical fuel injection

While I am adding pictures, here’s my truck off road

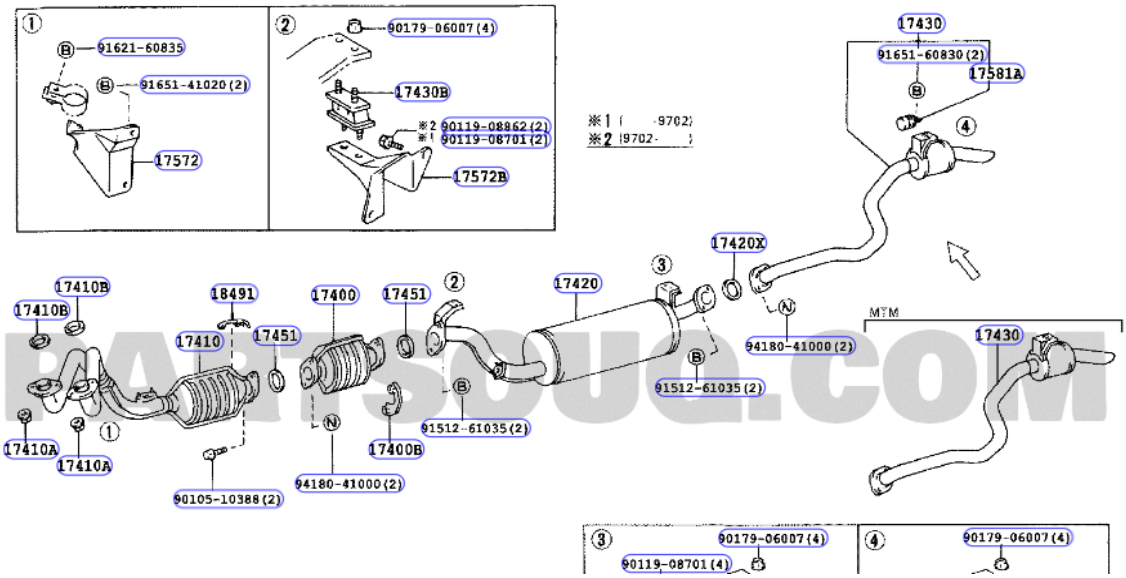
The 80 series Land Cruiser was superseded by the 100 Series Land Cruiser in January 1998. The 100 Series carried over the Normally Aspirated 1HZ, and 12 Valve 1HD-T diesel from the 80 series, but did not include the 1HD-FT which my vehicle contains. Instead, the 100 Series introduced the 1HD-FTE 24 valve diesel. At it's core, the 1HD-FTE shares much with the 1HD-FT, however, it included a noteworthy addition of electronic fuel injection and was the first electronically fuel injected diesel available in any Toyota Land Cruiser. Despite this significant improvement to the powertrain, the 100 Series is most well known for being the first full size Land Cruiser to feature an Independent Front Suspension, a significant departure from all previous full size vehicles featuring front and real solid axles. Australian 4WD Monthly magazine stated "We will never forgive Toyota for going independent at the front with the mighty 4.2 turbo-diesel"

With that unsolicited history class on the Toyota Land Cruiser out of the way, below I have described some of the differences in the exhaust system between gasoline powered Land Cruisers, diesel powered, Land Cruisers, as well as the difference in emissions equipment between the 80 and 100 series. Bottom line up front: no diesel 80 series Land Cruiser featured an exhaust catalyst. The 100 series Land Cruiser was the first Turbo Diesel Land Cruiser to feature a catalytic converter, beginning in 1998. The 80 series Land Cruiser only equipped catalytic converters for gasoline powered vehicles.

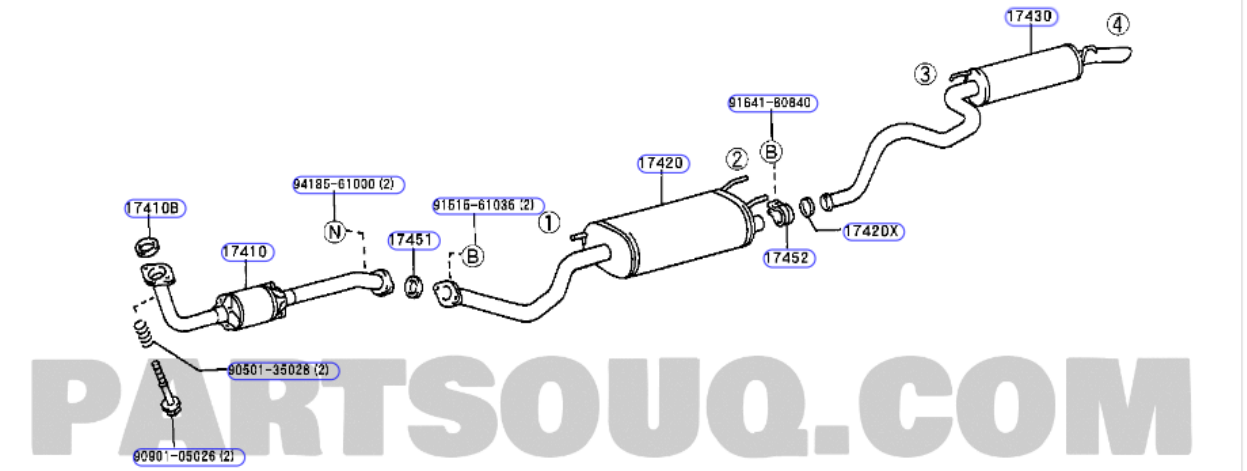
The below exhaust diagram shows the exhaust layout for a 80 series Land Cruiser in all 3 diesel motor options (1HZ, 1HD-T, 1HD-FT.). As shown below, the earlier 1HD-T 12 Valve Turbo Diesel and late model 1HD-FT 24 Valve turbo diesel share the same exhaust layout, consisting of two mufflers (17410 and 17420 as labeled below), and a resonator (17430). Please note, the muffler at 17410 would have been a catalytic converter on gasoline powered 80 series Land Cruisers. As the diesel 80 series Land Cruisers shared nearly the identical exhaust routing, a resonator stands in the place of where a catalyst would have been placed on a gasoline powered vehicle.



The below diagram highlights a gas powered 80 series Land Cruiser, which was either the 1FZ-FE, or 3FE. These were either a 4.0 or 4.5L normally aspirated straight 6 gasoline motor and did feature a catalyst for both gas motor options. Given the dimensions of the gasoline and diesel motors were nearly identical, and other parts were shared across both the gasoline and diesel vehicles (such as the transmission, axles, etc.), the exhaust is routed nearly identically in both the gasoline and diesel 80 series Land Cruisers. As mentioned above, the gasoline motors did utilize an exhaust catalyst which is shown below (17410). The exhaust then remains largely the same with a muffler between the axles, and resonator behind the rear axle just before the tailpipe.

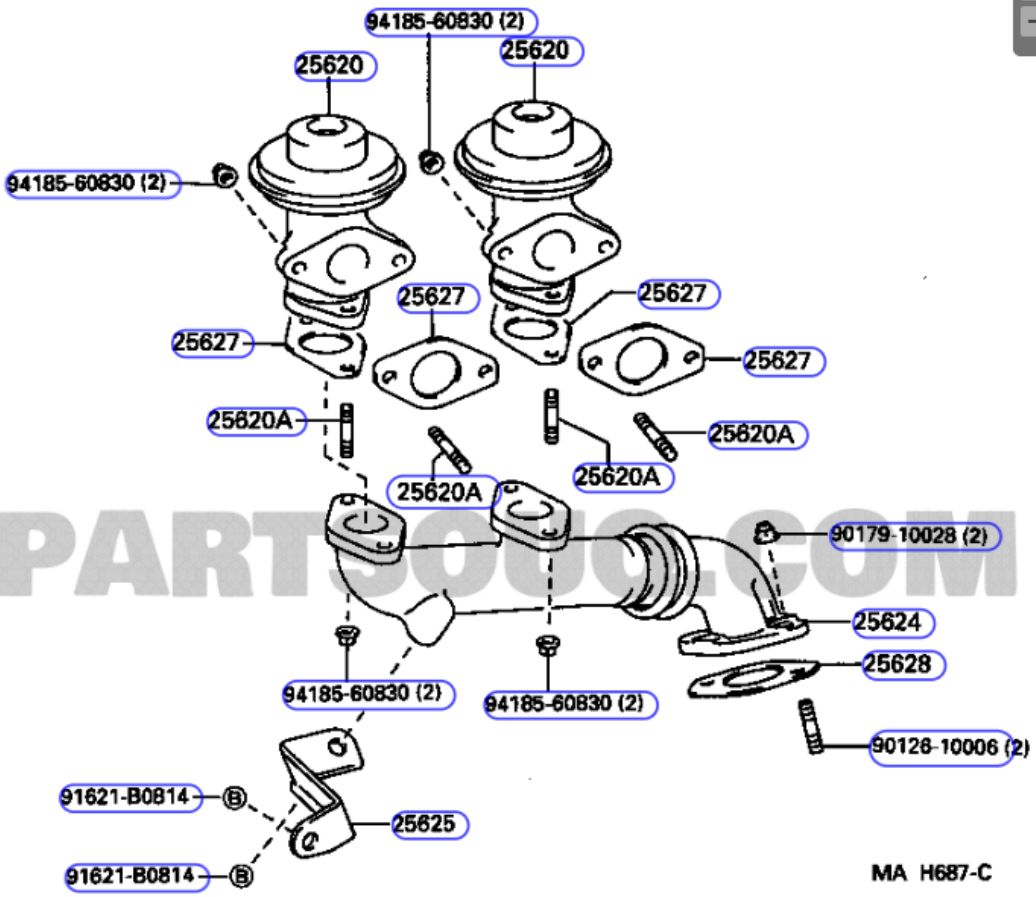


Beginning in 1998, the 100 Series Land Cruiser introduced the 1HD-FTE turbo diesel motor. The most significant differences here are that the 1HD-FTE is fully electronically controlled injection, and the exhaust system introduced a catalyst for the first time on a diesel powered Toyota Land Cruiser in any market. Shown below is an exhaust diagram for a 100 Series powered by a 1HD-FTE, it includes a resonator (17430), a muffler (17420), and a catalytic converter (17410).

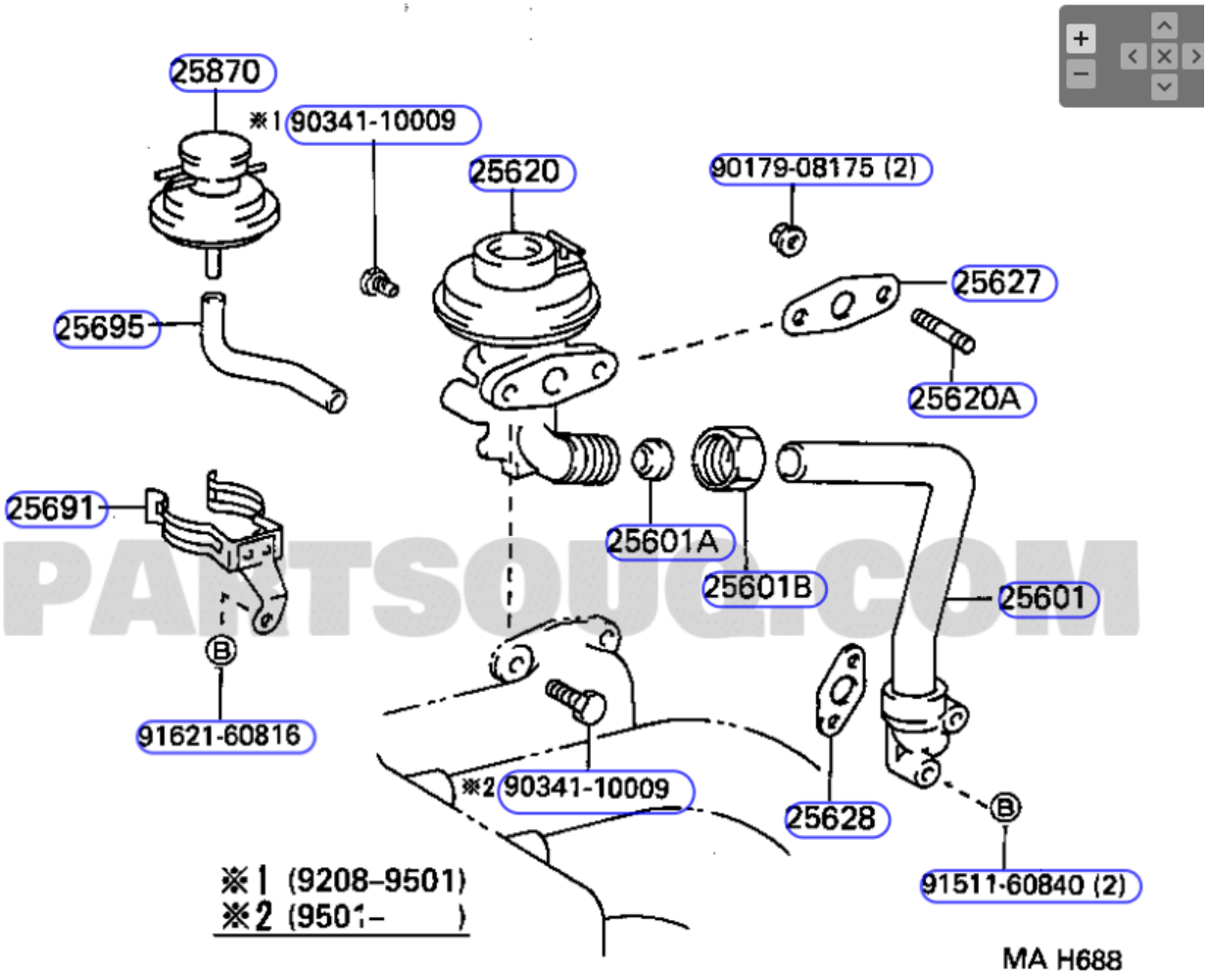


(For some side trivia, the 100 series Land Cruiser was also met with significant backlash from the offroading community as it was the first full size Land Cruiser to feature an independent front suspension. Previously, the only Land Cruisers to feature an IFS were the light/medium duty Prado submodels, comparable to a modern day crossover SUV). Today, all Land Cruisers feature an IFS suspension which is part of what makes the 1HD-FT powered 80 series Land Cruisers so desirable. The 80 series Land Cruiser ended in 1997, and with it, the solid front axle.

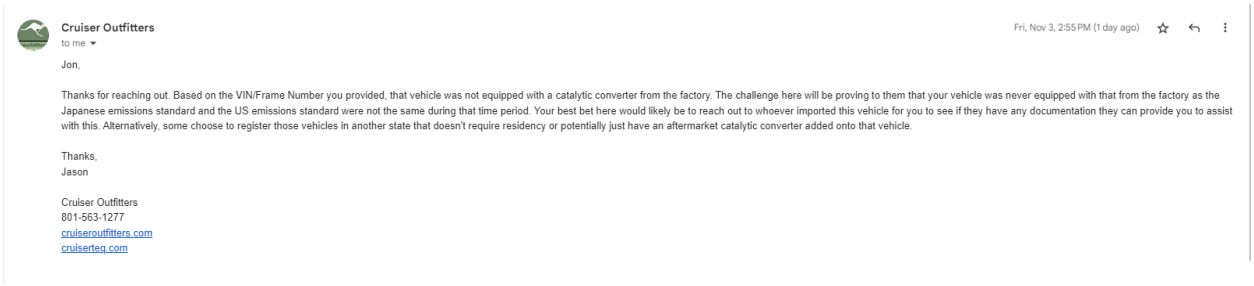
Between 1995 and 1997, the 24 Valve 1HD-FT also featured an Exhaust Gas Recirculation system (EGR) that was not present on the 12 Valve 1HD-T. However, the 1HD-FT did not feature an exhaust catalyst.



Below is a diagram of the EGR system for a gasoline powered 80 series Land Cruiser. While my vehicle does feature EGR, there are significant design differences between the EGR systems for the gasoline and diesel motors due to both the motor induction method and fuel type. The presence of EGR on a 80 Series Land Cruiser does not have bearing on whether or not a catalytic converter was also installed.



Finally, I wanted to include a copy of correspondence I had with Cruiser Outfitters, a reputable source within the Toyota Land Cruiser enthusiast market for both OEM and aftermarket parts and accessories. I asked Jason to review my chassis number in case I was missing anything, and he confirmed my vehicle was not equipped with a catalytic converter from the factory.



Cruiser Outfitters
to me

Fri, Nov 3, 2:55 PM (1 day ago)

Jon,

Thanks for reaching out. Based on the VIN/Frame Number you provided, that vehicle was not equipped with a catalytic converter from the factory. The challenge here will be proving to them that your vehicle was never equipped with that from the factory as the Japanese emissions standard and the US emissions standard were not the same during that time period. Your best bet here would likely be to reach out to whoever imported this vehicle for you to see if they have any documentation they can provide you to assist with this. Alternatively, some choose to register those vehicles in another state that doesn't require residency or potentially just have an aftermarket catalytic converter added onto that vehicle.

Thanks,
Jason

Cruiser Outfitters
801-563-1277
cruiseroutfitters.com
cruiserteq.com