

Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2009 TOYOTA Highlander OEM Service and Repair Workshop Manual

[Go to manual page](#)

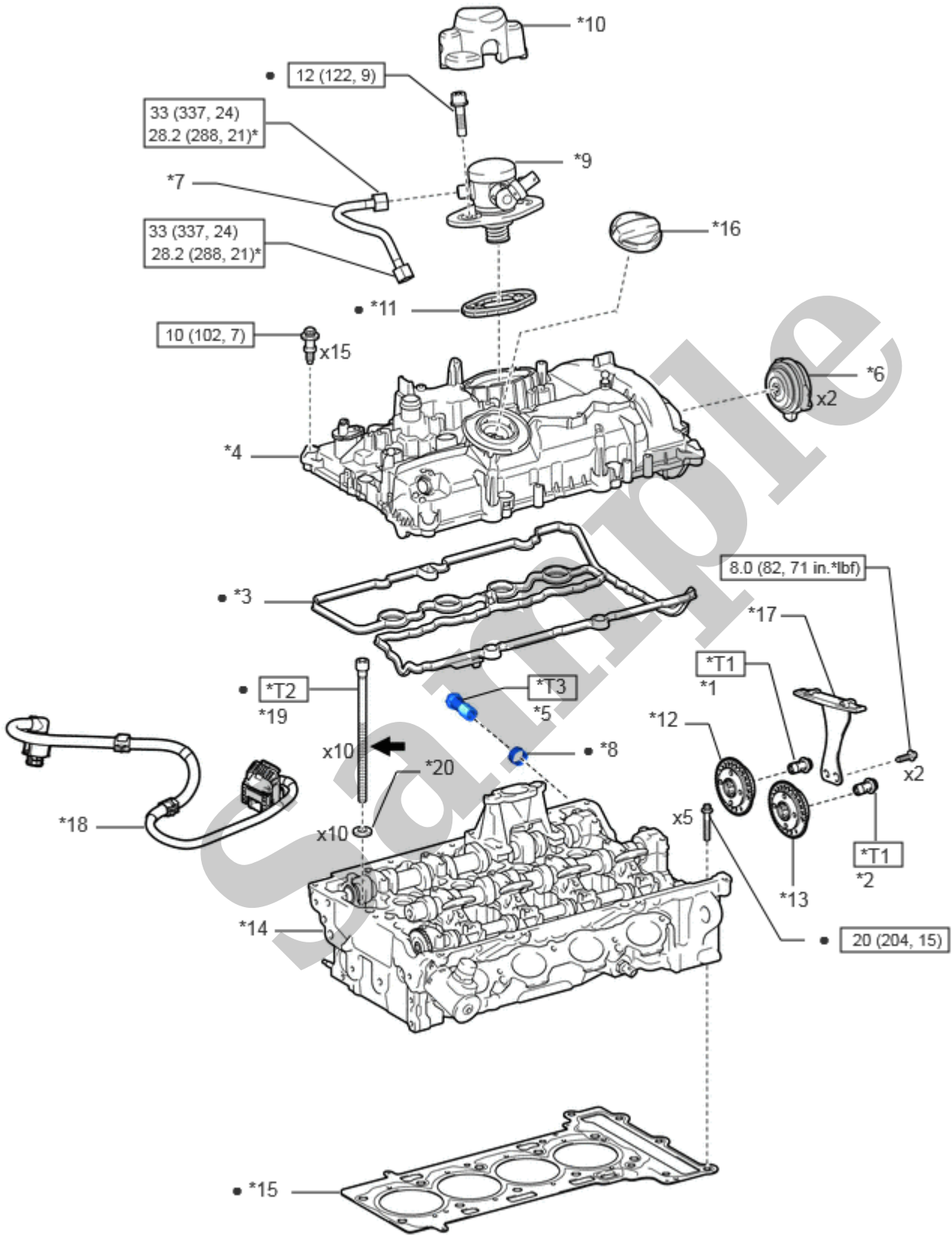
*T1

1st: 5.0 (51, 44 in.*lbf)
2nd: Turn 90°

-

-

ILLUSTRATION

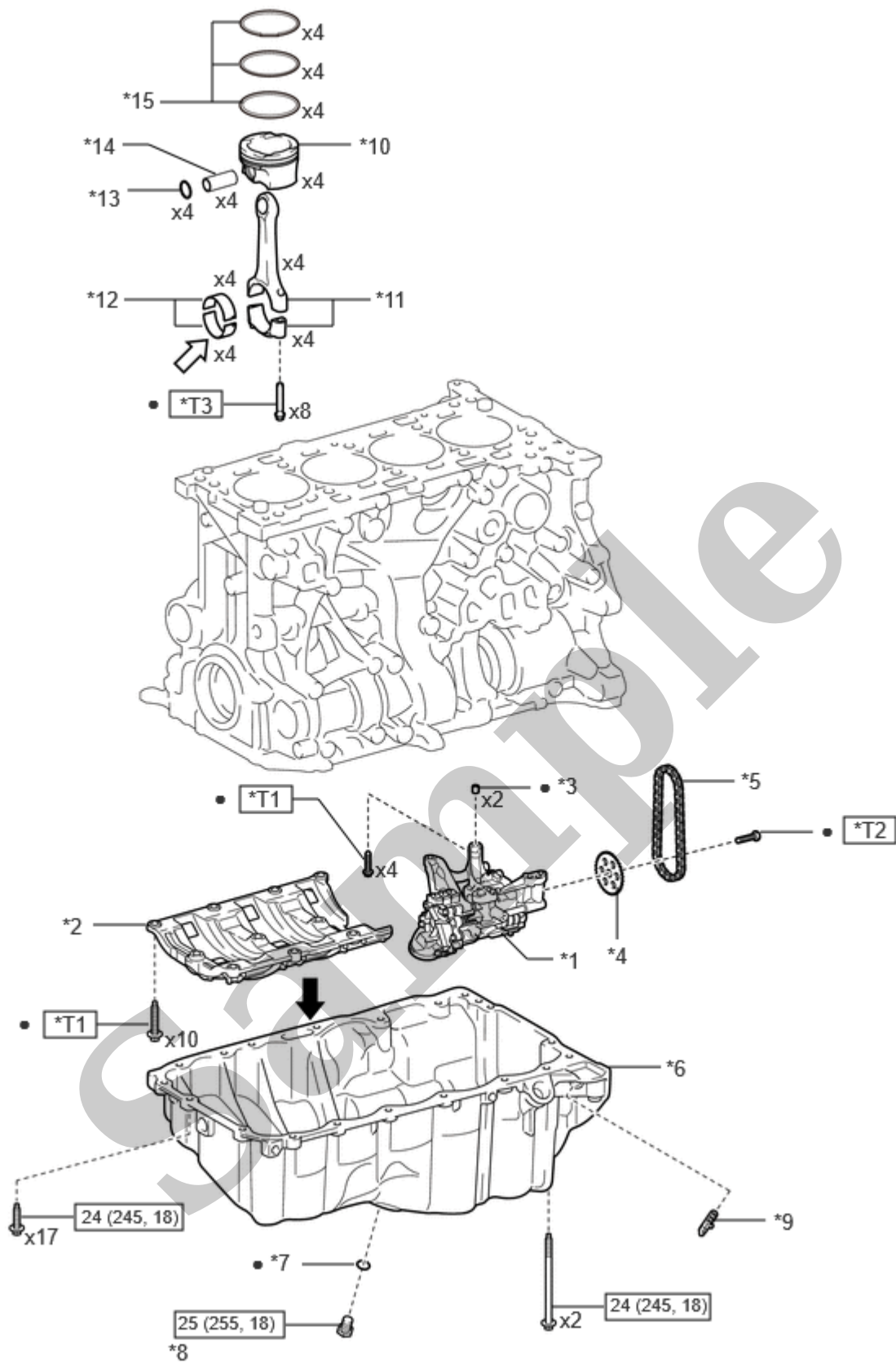


*1 EXHAUST CAMSHAFT TIMING GEAR BOLT ASSEMBLY

*2 INTAKE CAMSHAFT TIMING GEAR BOLT ASSEMBLY

*3 CYLINDER HEAD COVER GASKET

*4 CYLINDER HEAD COVER SUB-ASSEMBLY



d

*1	OIL PUMP ASSEMBLY	*2	NO. 1 OIL PAN BAFFLE PLATE
*3	OIL PUMP SET PIN	*4	CAMSHAFT SPROCKET
*5	OIL PUMP DRIVE CHAIN SUB-ASSEMBLY	*6	OIL PAN SUB-ASSEMBLY
*7	OIL PAN DRAIN PLUG GASKET	*8	OIL PAN DRAIN PLUG
*9	SEALING CAP	*10	PISTON SUB-ASSEMBLY W/PIN
*11	CONNECTING ROD SUB-ASSEMBLY	*12	CONNECTING ROD BEARING
*13	PISTON PIN HOLE SNAP RING	*14	PISTON PIN

Last Modified: 07-26-2024	6.11:8.1.0	Doc ID: RM100000001R4Q1
Model Year Start: 2021	Model: Supra	Prod Date Range: [07/2020 -]
Title: B48 (ENGINE MECHANICAL): PISTON: REMOVAL; 2021 - 2025 MY Supra [07/2020 -]		

REMOVAL

PROCEDURE

1. REMOVE ENGINE ASSEMBLY

Click here [INFO](#)

2. REMOVE SPARK PLUG

Click here [INFO](#)

3. REMOVE OIL FILTER CAP ASSEMBLY

Click here [INFO](#)

4. REMOVE OIL PAN DRAIN PLUG

Click here [INFO](#)

5. INSTALL OIL PAN DRAIN PLUG

Click here [INFO](#)

6. INSTALL OIL FILTER CAP ASSEMBLY

Click here [INFO](#)

7. REMOVE NO. 1 FUEL PIPE SUB-ASSEMBLY

Click here [INFO](#)

8. REMOVE FUEL (ENGINE ROOM SIDE) PUMP ASSEMBLY

Click here [INFO](#)

9. REMOVE FUEL INJECTOR ASSEMBLY

Click here [INFO](#)

10. REMOVE CAM TIMING OIL CONTROL SOLENOID ASSEMBLY

Click here [INFO](#)

11. REMOVE NO. 1 CHECK VALVE

Click here [INFO](#)

12. REMOVE INTAKE MANIFOLD

Click here [INFO](#)

13. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY

Click here [INFO](#)

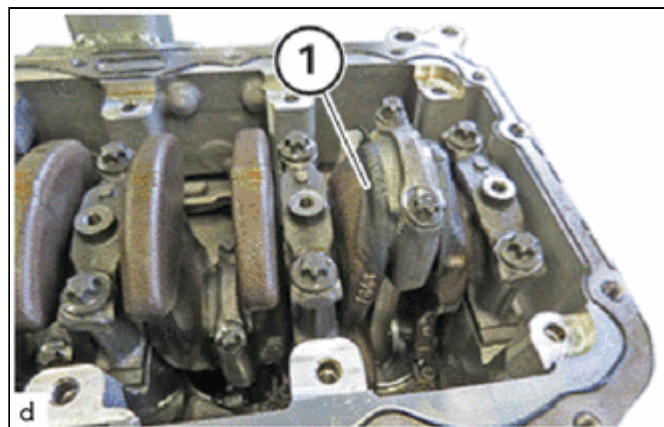
14. REMOVE TURBO OIL OUTLET PIPE

Click here [INFO](#)

HINT:

The description is for one component only. The procedure is identical for all further components.

- (a) Turn the crankshaft until the connecting rod bearing journal (1) reaches a vertical position.



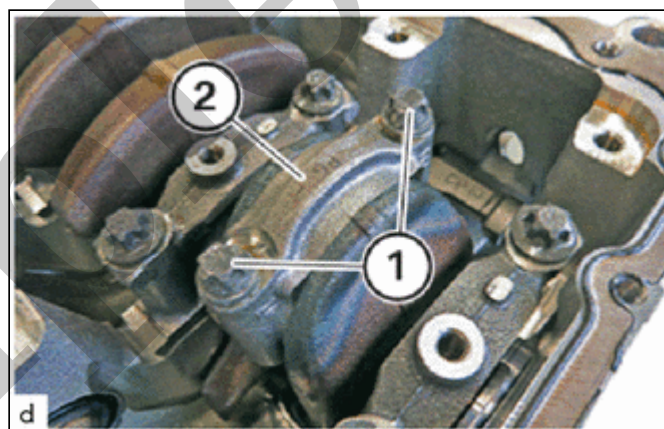
- (b) Loosen E12 bolts (1).

NOTICE:

- Engine damage caused by incorrectly installed connecting rod bearings and connecting rod bearing caps.

Engine damage may result from incorrectly installing connecting rod bearings and connecting rod bearing caps.

- Always install all bearing shells and bearing supports in the same position from which they were removed.



- (c) Remove the connecting rod bearing cap (2) and put to one side in the correct order.

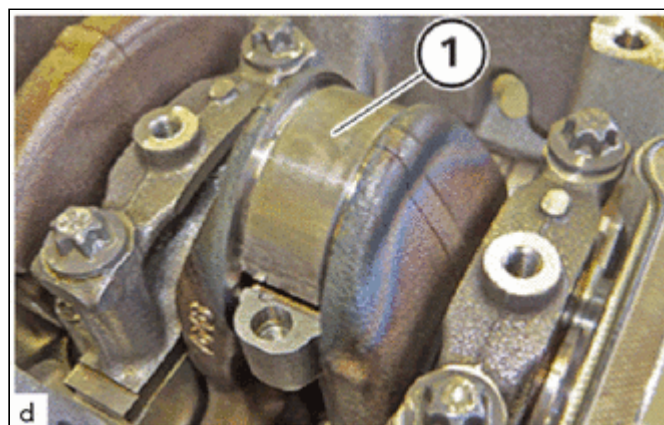
- (d) Remove connecting rod bearing (1).

NOTICE:

- Engine damage caused by incorrectly installed connecting rod bearings and connecting rod bearing caps.

Engine damage may result from incorrectly installing connecting rod bearings and connecting rod bearing caps.

- Always install all connecting rod bearings and connecting rod bearing caps in the same position from which they were removed.



- (e) Screw special tool 2 463 755 in at large connecting rod eye.

SST: 09200-WA730