Turbocharger, V6

To remove

**Important**

The oxygen sensor cable must not be of twisted type. Twisted cables exposed to vibration can break.

The oxygen sensor is sensitive to impacts and jolting and must be handled with care.

If changing the turbo, carry out [Before changing the turbo unit](#).

1. Position the car on a lift.

2. Remove the upper engine cover.

3. Remove the turbo pressure hose together with the turbo bypass pipe and valve.

4. Plug the charge air cooler's outlet.

5. Remove the exhaust manifold's heat shield.
6. Remove the crankcase breather pipe between the turbo intake pipe (minding its sealing washers) and cylinder head and the hose from the oil trap. Bend the pipe aside.

7. Detach the turbo intake pipe. Bend the pipe aside.

8. Detach the turbo's outlet hose to the charge air cooler.

9.

Remove the radiator fan. See ➔ Radiator fan, V6.
10. Pinch the inlet and coolant return hose to the turbo. Use hose pinch-off pliers, 30_07_739 Hose pinch-off pliers.
11. Remove the turbo coolant pipe.

12. Undo and remove the dipstick tube.

13. Remove the front pipe from the turbo.

14. Unplug the oxygen sensor's connector.

15. Raise the car.

16. Snip the cable tie securing the oxygen sensor cable. Note the way the cable is run and lower the cable.

17. Separate the pipe joint between the front and rear exhaust systems.

   **Note**
   To facilitate removing the front exhaust system, sling a strap, 83 95 212 Strap, around the front pipe.

18. Detach the front pipe from the rear exhaust manifold. Lower away the front exhaust system.

19. Remove the turbo's oil return pipe.
20. Remove the turbo mounting bracket.

21. Detach the oil pipe from the oil filter adapter.

22. Lower the car to the floor.

23. Undo the nuts securing the front exhaust manifold.
24. Remove the front exhaust manifold with turbo.

To fit

**Important**

The oxygen sensor cable must not be of twisted type. Twisted cables exposed to vibration can break.

The oxygen sensor is sensitive to impacts and jolting and must be handled with care.

**Note**

Smear the studs and gaskets sparingly with Molycote 1000, part No. 30 20 971, or similar, to prevent them baking on.

**Note**

Spray the connector with Kontakt 61, part no. 30 04 520, before plugging in.

1. Fit a new gasket for the front exhaust manifold.
2. Fit the front exhaust manifold with turbo.

**Tightening torque: 20 Nm (15 lbf ft)**

**Important**

It is essential that there is oil in the turbo bearing housing when the engine is started. An extra check should be made when fitting a new turbo.

Fill the turbo oil inlet with oil from an oilcan. Rotate the compressor wheel by hand many times to ensure that oil enters the bearings.

3. Raise the car.

4. 

Fit a new gasket between the front pipe and the rear exhaust manifold.
5. Fit the front exhaust pipe to the rear exhaust manifold.

**Tightening torque: 40 Nm (28 lbf ft).**

6. Fit the pipe joint between the front and rear exhaust systems.

**Tightening torque: 22 Nm (16 lbf ft)**

7. Use a cable tie to secure the oxygen sensor cable. Carefully run the cable back to the oxygen sensor connector.

8.

Fit the oil pipe to the oil filter adapter. Fit new gaskets and sealing washers.

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**Note**

To facilitate fitting the front exhaust system, sling a strap, 83 95 212 Strap, around the front pipe.
9. Fit the turbo mounting bracket.

**Tightening torque: 20 Nm (15 lbf ft)**

10. Fit the turbo's oil return pipe.

**Tightening torques:**

**M6 bolt: 14 Nm (10 lbf ft)**

11. Lower the car to the floor.

12.

Plug in the oxygen sensor connector.
13. Bolt the front exhaust pipe to the turbo.

    **Tightening torque: 24 Nm (18 lbf ft)**

14. Fit the dipstick tube.

15. Fit the turbo coolant pipe. Use new sealing washers.

    **Tightening torques:**

    *Banjo screw, turbo:* 25 Nm (18 lbf ft)

    *Retaining screw, cylinder head:* 14 Nm (10 lbf ft)

16. Remove the hose pinch-off pliers from the inlet and coolant return hose to the turbo.

17.

Fit the radiator fan. See [Radiator fan, V6](#).
Tightening torque: 8 Nm (6 lbf ft)

Important

To reduce the risk of hoses mounted on the delivery side of the turbocharger coming loose due to low friction at high air pressure, the hoses and connecting pieces must be cleaned thoroughly before fitting. Use a rag dampened with 93 160 907 Motip Dupli cleaning agent to wipe clean inside the ends of the hoses. Clean the connecting pieces as well. If hose clips are rusty or damaged, they must be replaced so the correct clamping force is maintained.

18.

Fit the hose between the turbo and the charge air cooler.
Tightening torque: 8 Nm (6 lbf ft)

19. Fit the turbo's intake pipe.

   **Tightening torques:**
   
   **V-clamp:** 3 Nm (2 lbf ft)
   
   **U-clamp, cylinder head** 14 Nm (10.3 lbf ft)

20. Fit the crankcase breather pipe between the cylinder head and turbo intake pipe. Change the sealing washers. Connect the hose from the oil trap.

   **Tightening torques:**
   
   **Banjo screw, intake pipe:** 24 Nm (18 lbf ft)

21. Remove the plug from the charge air cooler outlet.

22. Fit the front exhaust manifold's heat shield.

   **Tightening torques:**
   
   **Locknut** 24 Nm (18 lbf ft)
   
   **Stud:** 22 Nm (16 lbf ft)

23. Fit the turbo pressure hose together with the turbo bypass pipe and valve.
Tightening torque: 8 Nm (6 lbf ft)

24. Start the engine and check for oil and coolant leakage.

25. Switch off the engine and check oil and coolant levels. Top up as necessary.

26. Fit the upper engine cover.