

## **LUBE-06, Oil Pan Gasket Replacement**

### **Introduction**

Without question replacing the oil pan gasket on a 944 is one of those jobs that ranks high on my "I don't want to do that job again" scale. On the surface, replacing the oil pan gasket seems like such a simple job. However, it requires dropping the front suspension cross-member which requires the engine to be supported from above. In addition, on turbocharged cars, the cross-over pipe must be removed which requires removing the intake manifold.

When you replace the oil pan gasket, it's also a great time to replace the rod bearings. You can figure on about 8-10 hours to replace the gasket on a normally-aspirated 944 and 12-14 hours for a turbocharged car.

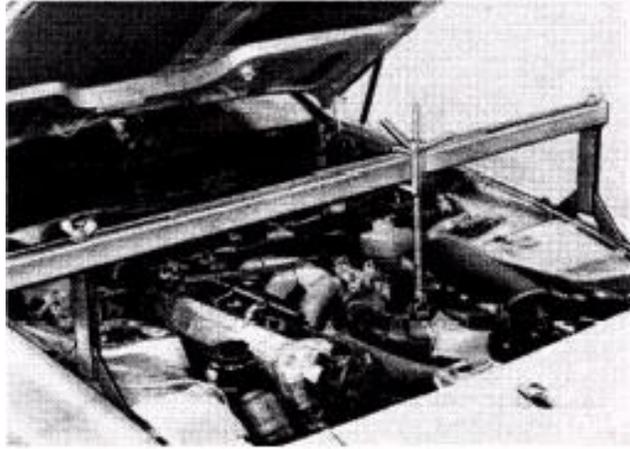
Porsche recommends in a Technical Bulletin (# 9005), that Silastic RTV 730 sealant be applied to the inside and outside corners of the oil pan gasket. Silastic 730 is good for high temperature applications and does not break down in an oil environment. However, it is also brutally expensive. A tube typically runs over \$100 USD. So, I typically use some other type of sealant in place of the Silastic 730. I normally use Permatex Ultra Grey sealant which is an oil and fuel resistant sealant. A Porsche mechanic friend of mine has never applied any type of sealant to the pan gasket and has never had one come back early with an oil pan gasket leak. The point here is, use the correct sealant or don't use anything at all.

### **Tools**

- Metric wrench set
- Metric socket set
- Silastic 730 RTV (000 043 019 00) or suitable replacement
- Floor Jack
- Jack Stands
- Engine Hoist, Factory Engine Support (VW 10-220 or VW 10-220A), or suitable replacement
- Tie Rod Separator
- Catch rags
- Catch pan
- Torque Wrench

### **NOTE**

If you do not have access to an engine hoist and don't want to spend the money on the factory engine support tool, it is possible to fabricate your own tool to support the engine from above. The picture below shows the factory engine support tool as an example.



## Parts

| Oil Pan Gasket |                |                                  |      |
|----------------|----------------|----------------------------------|------|
| Part Number    | Description    | Model                            | Year |
| 944 101 205 02 | Oil Pan Gasket | 944 / 944S / 944 S2 / 944T / 968 | All  |

## Other Procedures Needed

- [FUEL-02](#), Fuel Injector and Fuel Rail Removal and Installation (Turbo Only)
- [FUEL-09](#), Intake Manifold Removal and Installation (Turbo Only)
- [EXH-01](#), Exhaust System Removal and Installation

## Procedure

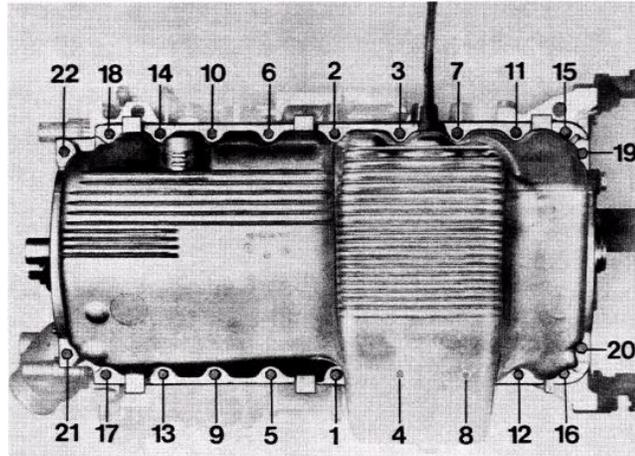
1. Disconnect the battery positive lead.
2. Place the vehicle on jack stands.
3. Drain the oil from the pan.
4. On turbocharged cars perform the following:
  - a. Using [FUEL-02](#), remove the fuel rail and injectors.
  - b. Using [FUEL-09](#), remove the intake manifold.
  - c. Using the applicable section of [EXH-01](#), remove the turbo cross-over pipe.
5. Remove the front stabilizer bar assembly-to-chassis (drop link) bolts and control arm bolts and remove the stabilizer from the vehicle.
6. Disconnect the steering tie rod ends. Personally, I prefer a "gear puller" type separator as opposed to the "fork/splitter type" separator. It is much easier to disconnect the tie rod ends without damaging the boots using the gear puller type separator.
7. Place alignment marks on the splined input shaft on the steering rack and the universal joint on the steering shaft so they can be assembled in the same orientation on installation. ( A punch and hammer or brightly colored finger nail polish will work fine.)

8. Disconnect the steering gear shaft using a punch and hammer. Be careful not to damage the splines on the steering shaft.
9. Remove the bolts that attach the suspension control arms to the chassis.
10. Disconnect the ball joints that hold the steering knuckles to the control arms.
11. Remove the bolts in the top of the motor mounts that hold the motor mount to the motor mount bracket.
12. If you have power steering, disconnect the lines for the power steering rack at the power steering pump. Have a catch pan and catch rags ready to collect any power steering fluid that drains from the pump and lines. I also recommend wearing gloves when disconnecting the lines. Power steering fluid tends to irritate the skin of some folks.
13. Support the cross member using a floor jack and a piece of wood.
14. Support the engine from above using the appropriate tool (described in tool section).
15. Remove the four cross-member to body bolts. Leave the steering rack and stabilizer bar attached to the cross-member and lower the entire assembly (including the control arms) from the vehicle. This should clear enough stuff out of the way to remove the oil pan.
16. Remove the 22 oil pan retaining bolts (10 mm).
17. Remove the oil pan from the vehicle. This may require a small pry tool to loosen the oil pan from the bottom of the crankcase.
18. If you are going to replace the rod bearings now is a good time to do that. As a minimum, you should inspect the inside of the crankcase from underneath the vehicle for obvious signs of damage. Check the oil pickup tube to make sure it is completely intact (no cracks in the tubes), that it is firmly mounted, and clean any debris from the screen at the bottom of the tube.
19. Clean and inspect the oil pan. Remove any debris from the pan and determine if the debris in the pan indicates damage to the engine / bearings (i.e. metal filings, etc.).
20. Remove the old oil pan gasket from the pan and install the new gasket onto the pan. Apply appropriate sealant to the corner areas of the oil pan gasket (refer to the discussion on sealants found in the Introduction section). I found it much easier to install the pan when I applied a small amount of adhesive in various locations around the outside edge of the gasket to hold it in place while installing the pan. I used 3M Trim Adhesive. However, **DO NOT USE** too much adhesive and only apply it to the very outside edge of the gasket or it will interfere with the gaskets sealing ability.

#### **NOTE**

In order to ensure a proper seal on the oil pan gasket, it is imperative that the torque specs and torquing sequence for the oil pan bolts be strictly adhered to. **DO NOT** overtorque the oil pan bolts.

21. Install the pan onto the crankcase using the mounting bolts but, do not fully tighten the bolts. Once all the bolts are installed tighten them using the torque specs and sequence shown below:
- Step 1 - Install bolts
  - Step 2 - 4 Nm (3 ft-lbs)
  - Step 3 - 8 Nm (6 ft-lbs)



22. Install the steering rack and cross-member assembly. As you raise the cross-member into position under the oil pan, ensure the motor mounts align with the motor mount brackets and install the motor mount bolts (M8). Also, align the steering linkage with the splines on the steering rack (using the alignment marks made during the removal) as the cross-member is being raised into position. When the cross-member is fully raised into position, install the four cross-member bolts (M12) and torque (19 mm socket) to 85 Nm (63 ft-lbs). Torque the motor mount bolts (13 mm socket) to 23 Nm (17 ft-lbs).
23. Install and tighten the bolt that holds the steering linkage to steering rack splined shaft.
24. Reattach the hoses from the power steering rack to the power steering pump.
25. Install the control arm-to-chassis bolts (M10) and torque to 46 Nm (34 ft-lbs).
26. Attach the control arm ball joints (M10) to the steering knuckles and torque the lock nuts to 50 Nm (37 ft-lbs) .
27. Install the front stabilizer bar. Torque the stabilizer linkage-to-body bolts (M8) to 23 Nm (17 ft-lbs). If you have steel control arms, torque the stabilizer-to-control arm locknuts (M8) to 23 Nm (17 ft-lbs). If you have aluminum control arms torque the stabilizer-to-control arm locknuts to 25 Nm (18 ft-lbs).

28. On turbocharged cars perform the following:
  - . Using the applicable section of [EXH-01](#), install the turbo cross-over pipe.
  - a. Using [FUEL-09](#), install the intake manifold.
  - b. Using [FUEL-02](#), install the fuel rail and injectors.
29. Install the oil drain plug and fill with engine to the appropriate oil level.
30. Connect the battery positive lead.
31. Remove the vehicle from jack stands.

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