

# New Beetle Update

Issue No. 2

July, 2001

## This Issue...

I don't normally write an article about what is in the newsletter, but since we are still getting aquatinted, I thought it best to provide some more words of introduction and to summarize where we are going with this publication. This issue is heavier on Technical Bulletins and Letters than may be normal, but I wanted to get the burning issues out for your consideration before we get into more specific things like changing the brake pads or the special interest topic of installing a CD player.

The letters section may seem particularly negative and I would caution you that you can come away feeling like you made a big mistake in your purchase of a New Beetle. Keep in mind that not everyone has had the problems discussed. Each may be isolated examples of what can go wrong. Then some day when you see a similar symptom, the letter may point you to the correct diagnosis. I fear that there are some universal problems, but it is too early to tell at this point.

Since I am continuing to receive responses from my mailing, I have held off compiling the results of the questionnaires. They will be in the next issue. Unfortunately, my purchased mailing list did not result in the response that I anticipated, but there was a sufficient response to make this work. I plan to do some advertising to try to increase the number of responders and the number of subscribers, but this will take some time. Please spread the word to other owners of New Beetles using copies of the centerfold insert in the first issue.

I want to call your attention to the article on page 8 in this issue on a common problem of the "check engine" light coming on. There is also a letter about this problem on page 9.

Last but not least is a full dissertation on oil changes, oil filters, oil consumption, and brands of oil. If you have the turbo diesel, pay particular attention to the important warning at the end of page 2. **NBU**

## What - Change Your Own Oil?

*(Written for 2.0L Gas engines. TDI Diesel and 1.8L Turbo differences are noted.)*

Yes, change your own oil. I know; this is the day of the "instant" society and we have Quick Lube, Jiffy Lube, Express Lube, and every variation thereof. Sorry if I butchered the names, but I have never visited one of these establishments. I realize I am out of touch with the rest of the world; will someone tell me why they would pay big bucks for something they could do themselves in about the same amount of time that it takes to drive both ways?

OK, it's messy and you have to dispose of the oil, but it's convenient. Besides that, while you are at it, you can perform other very important visual inspections on your vehicle and top up all the other fluids.

Fortunately, changing the oil in the New Beetle is relatively easy. The filter is not that easy to get to, but I've seen worse. You do have to remove the underside engine cover, but it's not that difficult. If you are not familiar with the steps in changing the oil, be sure to read all steps prior to starting, so you can be sure you have all the tools needed.

Also, before you start, decide how you want to support the front of the vehicle. You will need to lift the front end to allow access to the oil filter and perhaps supply clearance for the catch pan when you drain the oil. One way to do this is to jack up one side at a time and place jack stands under the car. Be sure you check your owner's manual for the proper place to support the car. There are only a few places that will not cause damage to the underside. An alternative is to use car ramps. Some low car ramps would be perfect for this job. The normal car ramps that you buy at Sears will not work since the fenders will hit the ramp. However, there is a way around that problem and that is the technique that I chose for my first oil change. Of course there are other ways to accomplish this, so feel free to experiment.

*(Continued on next page)*

## What - Change Your Own Oil? (Cont.)

Listed below are the steps for changing the oil and oil filter:

1. If engine is not warm, take your New Beetle for a spin to get the oil warm and flowing.
2. Park on a relatively level area (and not over the storm drain!)

**CAUTION -- ENGAGE EMERGENCY BRAKE AND PLACE A BLOCK UNDER REAR WHEEL(S)**

3. Jack up one side of the car and place a car ramp under the front wheel. Repeat on the other side of the car. (See Figure 1.)



Figure 1. Using a floor jack to place NB on ramp.

4. Using a T-20 Torx screw driver (or socket), remove the four bolts from the lower sound absorbing panel (plastic belly pan). (*TDI has ten bolts.*)

**WARNING -- OIL MAY BE HOT**

**CAUTION -- AFTER NEXT STEP, DO NOT START ENGINE UNTIL AFTER REFILLING WITH OIL**

5. Place a catch pan under the vehicle and remove the drain plug (19 mm socket wrench), allowing oil to drain into the pan. (Take care when removing this plug as the oil will flow rapidly.)
6. While oil is draining, position a strap wrench on the oil filter (Simulated in Fig. 2) and loosen the oil filter. Reposition drain pan under the filter or place some paper under it and completely unscrew the oil filter. Some oil will spill in this step and will continue to seep from various locations, so be prepared with a few rags. (*TDI filter is accessible*

*from the top and is a cartridge.)* A wrench type end cap removal tool might work as well, but I did not have one of the proper size to try out.

7. By this time the oil should be all drained. Inspect and clean the drain plug and washer. Insert the plug and tighten securely. Note: there is a metallic seal washer under this plug. Be sure it is not lost. Better yet, replace the washer each oil change. This is recommended by VW, but is not necessary unless the old washer is severely distorted or damaged. Torque the bolt to 22 ft. lbs. Do you need a torque wrench? Not really. Using a 3/8" socket wrench and moderate pressure on the handle, it is doubtful that you would exceed this torque. You **don't** want to tighten the bolt with a long handled wrench and full pressure.



Figure 2. Oil Filter w/ wrench

8. Install the new filter following the instructions on the filter to coat the gasket with a thin coat of oil. Tighten the filter by hand as tight as you can get it. Then use the strap wrench to give it 1/4 turn more. If it does not seem tight at this point, I keep turning with the wrench until it feels snug. (This is contrary to most manuals, but in practice, hand tightening only will result in leaks.) Don't over tighten the oil filter or the gasket will become distorted.
9. While under the vehicle, inspect the drive shaft boots and other rubber parts associated with the steering and suspension.

**CAUTION -- DOUBLE CHECK THAT THE PLUG AND OIL FILTER ARE INSTALLED.**

10. Add 3.5 quarts of oil through the oil cap under the hood. (*3.2 qt for 1.8L T; 4.25 qt for TDI*)

**WARNING FOR TDIs:** Do not rev the engine in the next step. Run the engine at idle until the oil pressure light goes out. Revving the engine could cause damage to the Turbocharger. Oil pressure is not adequate until the warning light goes out. (*I wonder how many quick lube places know that!*)

(Continued on next page)

## What - Change Your Own Oil? (Cont.)

11. Start the engine and run until the red oil light goes out, indicating oil pressure. (Remember that you are still up on ramps or jacks, so keep it in neutral.) If the red oil light does not go out in a few seconds, shut off the engine quickly and look for a puddle of oil under the car. This happens when the oil filter is not snug with the filter housing.
12. Shut off engine and inspect for leaks under the oil filter. You may still have drips from the old oil filter, so repeat steps 11 and 12 after wiping all drips away. Also, feel for oil on the filter itself. If there is a leak, tighten the filter again and repeat steps 11 and 12.
13. Reinstall the engine belly pan with the four (or ten) torx screws.
14. Remove the car ramps on each side by jacking up one side at a time.
15. Add remaining oil in small amounts and check the dip stick periodically. Refer to the table of oil capacities below for a target number, but to avoid overfilling your engine, check the dip stick. When full, the oil level should be at the top of the hatched marking on the dip stick. (It should be at least three minutes from when engine was shut off.)

The oil capacity depends on the engine as follows:

Engine	Oil Capacity*
All 2.0L (AEG)	4.2 qt
'98/'99 1.8 T (AEB)	3.7 qt
'00 1.8 T (APH)	4.2 qt
All TDI (ALH)	4.75 qt

\* Oil Capacity data is based on information contained in Official VW Technical Bulletins for Group 00 under the numbers: 99-09 and 00-03.

16. While under the hood, top up other fluids and perform a visual inspection.
17. Drain the oil filter into the oil pan. Most localities allow disposal of drained oil filters in the regular trash. Collect your waste oil in a 5-gallon container and periodically take it to a store that will accept used oil. Some areas require stores that sell oil to take back used oil at no charge. Many service stations will take used oil as well. DO NOT pour oil down the drain. DO NOT put oil in containers in the garbage.

**NBU**

## Which Oil Filter?

For many, this is not a question. They will use the factory filter without question. Of course, this is the conservative approach. Where is your savings if you end up with engine damage? But, what if a certain brand of filter is better than the official VW filter? Apparently we all have opinions on which filter and this article will not help you decide which filter, but it will tell you what is available on the market. You make the call.

A reader of the EuroVan publication wrote, "I have been told by VW service people that the filter made by VW has a check valve incorporated into it. This eliminates oil from draining from the oil galleys in the engine when the ignition is turned off. Upon restarting, the critical areas in the engine have oil immediately, and do not have to wait until the oil pump supply is up to standard."

Frankly, this sounded like the mechanic's equivalent of an "old wives tale." I was curious enough that I decided to dissect a VW oil filter by scribing around the top with a sawzall. Out came a simple cylindrical pleated filter that looked like a miniature version of a round air filter. There is a rubber diaphragm at the top (check valve?) and a metal spacer in the bottom. Not very high tech. I checked every filter on my shelf (FRAM, Purolator, and Bosch); they all had a rubber diaphragm that is visible through the small holes that surround the center hole. So, the reader was not fed a line of balony, but apparently many other makers use the same technology.

Personally, I have used only FRAM filters in my other VW's ever since I read an article in *Consumer Reports* many years ago. A test was conducted on all the common brands of oil filters and FRAM was better than all the rest. An industrial equipment representative reports that he has cutaways of various filters on display and that FRAM is the poorest in quality on the inside. These days there is even more

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Published by: Winborn D. Gregory, Editor  
HP products  
6330 Waid Circle  
Paducah, KY 42001

**e-mail:** gregoryw@paducah.com **Phone:** (270) 441-7205

**web page:** www.paducah.com/~gregoryw