Preparing the motorcycle:

1. To start, level the motorcycle – my preference is to put a spacer blocks under the kickstand on the left side of the motorcycle and under the frame on the right side of the bike just under the frame member. These blocks are made from scrap lumber. I find it is easier to set the right side block first as shown and tilt the motorcycle until the frame contacts the block, then, holding the handlebars, kick the left side block under the kickstand.
NOTE: This dimension may not be correct for 2004 models as the 2005 models have a different kickstand – the 2004 model will likely be thicker.

To be sure your blocks are the correct thickness the first time, lay a level across the luggage rack as shown. You may need to shim them slightly to hold the bike dead level.
Or, in the absence of a luggage rack, the seat will do:

2. Get the necessary tools ready:

- Oil filter wrench – I like the band type shown, but a metal strap type will work.
- 14 mm box wrench
- Small funnel
And, of course, some sort of container that will catch about 6 quarts of oil – I’d use a container to hold about 10 quarts.

I use the same drain pan for my truck. And, of course, at least 6 quarts of oil and a filter. I prefer to use KawChem 10w-40 and Kaw filters. I usually buy my oil in gallon containers, makes filling quicker.

3. **Locate the drain points:**

   There are three (3) plugs to be removed to drain the V2K engine oil. Two (2) plugs are 17mm and one (1) is 14mm (see pics that follow). All plugs are removed by turning them CCW – remember, the plugs are “upside-down” so be sure you turn them the right direction!

   Oil should be drained while it is warm; this speeds the process and puts most heavy particles in suspension in the oil so they are removed during draining.
These plugs are different in their sealing method, but this makes no difference for the oil draining process. Make sure they are put back in the same position shown! Wipe the sealing surfaces of the plugs with a rag and the oil pan surface that makes contact with the plug. These plugs are accessed easiest from the right side of the motorcycle.
Now, the third plug:

This plug drains the clutch area, not much oil comes out of this one if you drain the other two 17mm drains first. This plug is accessed from the left side of the motorcycle just behind the heal shifter. It has a small O-ring for a seal that should come off with the bolt don’t lose it or you’ll have to go get another one. Clean the sealing surface with a rag like you did for the 17mm drain plugs. Take care to just snug this bolt – over-torque can strip the threads.

I drain the 17mm plugs first, then, after the flow slows to a dribble, I position the drain pan to catch this one (advantage of a large diameter pan. Once the oil is down to occasional drips, re-insert the cleaned plugs.

4. **The oil filter:**

The filter is under and behind the radiator as shown in the pic below.
Access is easiest from the right side of the motorcycle. Use an oil filter removal wrench to remove the filter. It spins off by turning CCW. Check to be sure that the O-ring seal came off with the old filter. If it stuck to the engine, remove it. Wipe the sealing area.
that the new oil filter O-ring will contact. Some oil that came out probably spilled on the oil pressure switch cover. Just wipe it off after the flow stops.

Before putting on a new oil filter, pour about 4-6 ounces of oil in the filter and, with a clean finger, rub some fresh oil over the new filter’s O-ring seal. Install the filter carefully so as not to cross thread the filter. Tighten the oil filter as hard as you can by hand. Then, using the oil filter wrench, tighten the filter about 1/8 of a turn more. Test tightness by trying to unscrew the filter by hand. If it unscrews, the filter was not tight enough. Turn it an additional 1/8 turn from hand tight. Just tighten the filter enough so you cannot remove it by hand. Caution: over-tightening can crush the filter or, at best, make removal at the next oil change more difficult.

5. **Filling the crankcase:**

   Leaving the bike level on the blocks, pour in EXACTLY 5.5 quarts in the bike. Measure this carefully. I use an empty quart oil container that has calibration on the side. Start the engine and let it idle for 3 minutes; do not rev the motor.

   Check for leaks, particularly at the oil filter area.

   Stop the engine and let it set for 4-5 minutes. Pull the dipstick, clean it off, and re-insert the dipstick, screwing it all the way in. Take it back out, oil level should be on the stick. If under halfway in the cross-hatched area, add ¼ quart more.

   The oil level should be in the cross-hatch zone.

   Sit down and have yourself a beer and regal in the fact you saved big bucks doing it yourself!