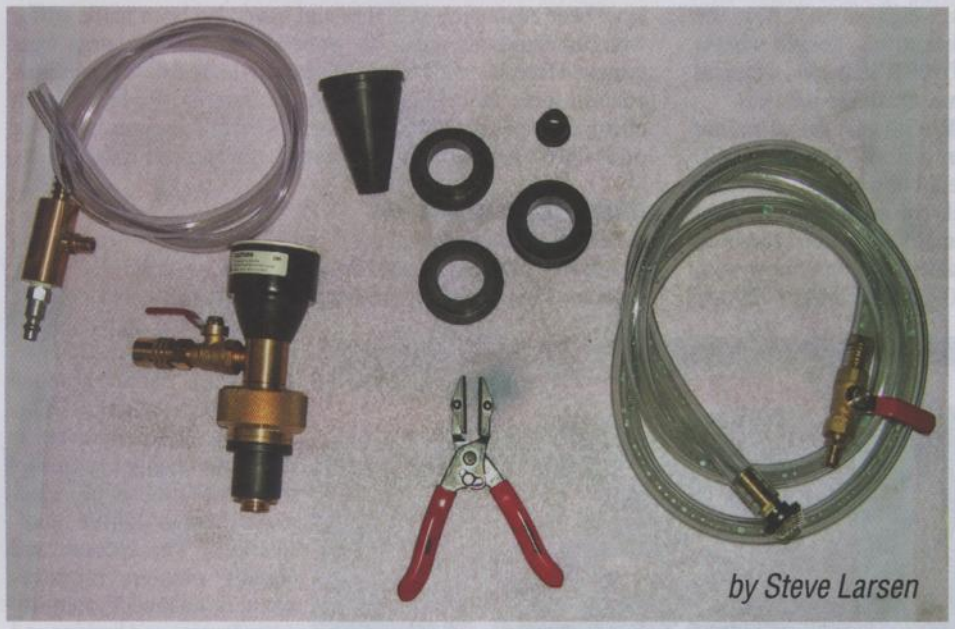
uView 550000

Airlift Cooling System Leak Checker and Airlock Purge Tool Kit



Above: The parts of the uView 550000 kit include adapters to fit all sizes of radiators and the necessary connector tubing. The clamping pliers are needed, but not included. uView now has a less expensive kit as well, the 550500 Airlift II Economy Cooling System Refiller. Advertised prices over the internet are approximately half of list ($186.43 for the kit above).

One advantage to being a Honda Gold Wing owner in the Phoenix area is the proximity to motorcycle mechanic extraordinaire Stu Oltman. The Senior Technical Editor for *Wing World Magazine*, the Gold Wing Road Riders Association's (GWRRA) monthly publication, Oltman has forgotten more about how motorcycles work than most will ever know, and on occasion he is called upon to diagnose problems that stump even the most seasoned factory wrenches.

On a recent visit to his garage, Oltman unveiled a discovery that has made me rethink the effectiveness of every coolant change I'd ever done. With 37,000 on my 2002 GL1800 and no memory of changing the coolant, I figured it couldn't hurt to see what Oltman was up to when he offered to change my coolant and show me something special. I was, indeed, in for a real surprise.

Changing coolant, if done properly, is a hassle most of us avoid. The procedure—removing old coolant, disposing of it properly, flushing the system to remove the gunk, bringing the engine up to operating temperature, allowing it to cool, draining the system again and then adding fresh coolant—is too tedious. An easier solution? Take it to the dealer.

But when Oltman tells me that most dealers are unlikely to get all the old coolant out of my GL1800, and that a suboptimal job cuts into the life of my engine, all of a sudden, I'm all ears. Before wheeling my bike into the garage, Oltman describes the old-coolant issue.

"With a typical coolant change, they empty the old coolant, fill the radiator to the brim with new and start the engine," he says. "Because some of the cooling system still contains air, the coolant level in the radiator begins to drop as the coolant circulates. They then keep adding coolant, topping the system off as they run the engine. Though not common, occasionally an air bubble in the system will make the system appear full, when in fact, it's not even close. When this happens, the fluid in the partially filled system begins boiling and spewing from the radiator neck, making the task of topping up while running impossible.

"Even if we get the fluid level to the top of the radiator without boiling, the throttle must be repeatedly 'blipped' to jar loose the remaining air and allow it to escape at the radiator neck," Oltman continues. "Despite the best efforts, some air usually remains, and it can cause real problems. Eventually most of the air will escape to the top of the radiator during regular use where the coolant recovery system purges it and replaces it with fluid from the overflow bottle, which is why [you should] always keep the overflow bottle topped up to the full mark."

So, I'm confused. It sounds to me like the air will work itself out. What's the big deal?

"Oh, no," Oltman continues. "I say 'most' of the air, because some cooling systems have passages and cavities that can trap air in a way that won't be purged by throttle blipping or normal use. The GL1800 Gold Wing is especially susceptible."

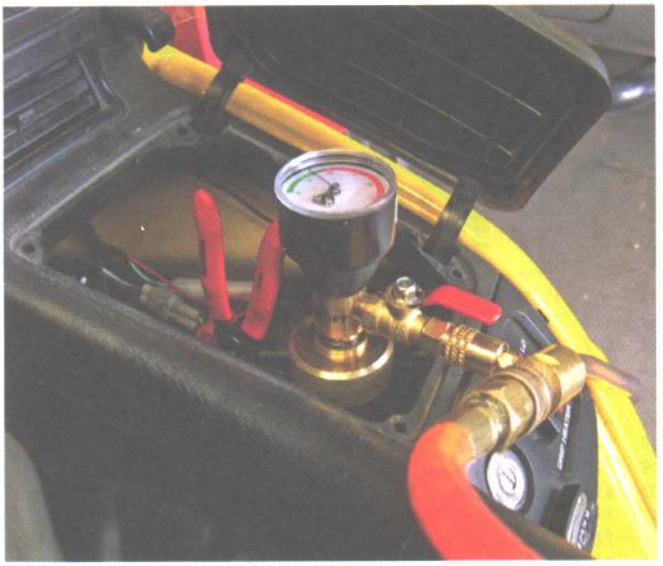
Oltman goes on to explain that these pockets of trapped air, especially if in the cylinder heads, can result in localized hot spots that can cause detonation (pinging). If an air pocket is in the vicinity of the coolant temperature sending unit, it could result in inaccurate temperature gauge readings as well. This is where the uView comes in. It's the magic device that Oltman has found to solve this problem.

The uView Airlift 550000 consists of a vacuum gauge attached to an assembly designed to seal off the radiator filler neck. A hand wheel expands a rubber plug to ensure a tight seal. Various adapters allow the device to fit virtually all filler necks. A quick-detach fitting with a ball valve is attached to the venturi hose or the refill hose at various stages in the process.

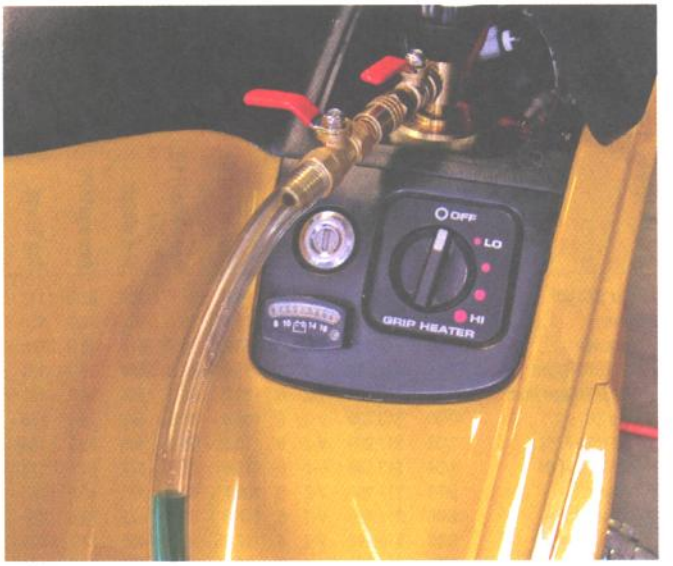
In addition to the supplied parts, you will need a small hose-pinching pliers to close off the radiator overflow hose to create a vacuum in the radiator if the vent hose outlet is below the filler neck—as was the case with my GL1800.

Preparation

For purposes of demonstration, before using the uView, we drain my radiator in



Above: In this image the shop's air hose has been attached to create a vacuum (by venturi effect) to draw out entrapped air.



Above: Fresh coolant is drawn into the system using the internal vacuum created to remove old coolant and trapped air.

the traditional way, giving it plenty of time to drain and starting the engine briefly to purge all remaining coolant. Oltman then asks me how confident I am that we've eliminated all of the old coolant. "With the possible exception of a few drops, yes, pretty confident," I answer. We empty the catch basin and put it back under the bike. Oltman then proceeds to attach the uView (as we'll describe below), and turns it on to draw vacuum once again. This collapses the bike's coolant hoses (the GL1800 has a ton of them) and forces the coolant they still contain out towards the drain valve. He then releases the vacuum and opens the coolant drain valve. I watch in wonder as additional old fluid pours from the bike. Pouring the additional fluid into an empty quart-sized container, we fill it nearly to the top. One quart of coolant is roughly 26% of the capacity of the system, excluding the overflow bottle. Proceeding to put new coolant in prior to purging the system with the uView would have meant that 26% of my "new coolant" would have been, in fact, old coolant—37,000 miles old, to be precise. Oltman then proceeds to show me how to use the uView.

Step 1

We install the Airlift into the filler neck and expand the plug using the hand wheel. The GL1800 is a perfect fit so we do not need any of the adapters. For bikes with larger filler necks, you'd use the adapter that most closely matches your opening size, press it over the rubber end of the Airlift, and expand with the hand wheel until tight. A bit of lube (coolant works fine) applied to the rubber end of the tool helps seal off the radiator.

Step 2

Next, we attach the venturi tube to the Airlift with the supplied quick disconnect fitting, making sure the ball valve lever is in the closed position. Then we attach a compressed air line to the venturi tube. We clamp the overflow hose, then open the ball valve (turning the handle parallel the to hose). The venturi immediately begins removing air from the cooling system. When the vacuum stops increasing (24–26" Hg), we close the ball valve and watch the system for a minute or so. If both the equipment and the cooling system are leak-free, the vacuum reading will hold steady. Mine holds steady.

Step 3

Then, we remove the venturi and attach the refill tube. The refill tube needs to be primed before actually filling the system to prevent the volume of air in the tube from going into the radiator. No problem. Oltman has me install the refill tube into a container of coolant—one we'd filled with enough coolant to refill the system. We slowly open the ball valve on the Airlift and gently crack open the valve on the refill tube until coolant has filled the entire tube. Then we close both valves. Oltman has me reinstall the venturi, suck down the cooling system again, then swap back to the refill tube. We then open both valves, and the cooling system sucks up the necessary coolant in less than 30 seconds, without spilling a drop. When the vacuum gauge reading stops dropping, we know that the cooling system is full.

Step 4

While an additional ounce or two of fluid might be needed to bring the level to the top of the filler neck, we are certain that all of the air pockets deep in the system are relieved of air by the vacuum drawing in coolant. We remove the equipment from the filler neck, take the pincher off from the overflow tube and install the radiator cap.

Step 5

Lastly, we flush out the overflow bottle and fill it back up with the correct level of fresh coolant.

I kept an eye on the bike for the next week or so and didn't notice any drop in the coolant level on the coolant overflow dipstick. I'm confident the bike's cooling system contains all new fluid and zero air.

Conclusions

The uView 550000 Airlift Cooling System Leak Checker and Airlock Purge Tool Kit lists for $186.43 and is available online for as low as $97. It's a terrific tool for individuals who enjoy doing their own work and, maybe more importantly, doing a better job than a local shop. The uView quickly assesses the integrity of your cooling system and makes changing coolant less messy, faster and easier. It actually takes more time to describe what we did than to actually do it. In addition, the peace of mind you get from knowing you've eliminated all old coolant and air from your system is, as they say, priceless.

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