

Fearless Wrenchers! The reality of all this "adventure travel" is that mechanical things break. Uh-oh. Worse, my best/newest bike, KTM-300XCW, has failed. Zero compression. Here's the bike...



...to which I had added a 5-gal tank (not shown). Up at Chads shop...

## **CBR Chad Banta Repairs 760-920-3860**

...located in Bishop, CA. we set to work. Chad had bailed us out when this bike lost power during the *Bishop 3-Day*. Read all about it (& meet Chad)...

<http://www.pencikowski.com/articles/Bishop3day.pdf>

...and so Chad was the logical choice to do a tear-down. Bad weather...



...made "wrenching" a rather fun thing to do. Note (above) the \*huge\* mountains normally visible are obscured. Desert rain!

When I got to the shop, the usual "colorful projects" were on display...



...and here's my bike, prepped for re-build...



...close-up...



...really close-up...



As you can see, the modern liquid-cooled 2-stroke engine is a simple device. But... No compression... What went wrong? Chad pointed out that my air-filter had not done the job, note the "fine grit" at the entrance to the carb...



...uh-oh. Never good. Did the grit \*bypass\* the filter, or come \*through\* the filter? Through the filter; note the grit on the inside of the filter frame... No grit was on the underside. What happened?



Chad examined my filter, "too dry" he said. I had not "oiled" the filter sufficiently. Me bad ☹ ☹ ☹ ☹ .

First step... Pull the starter-cover...



...then the starter uh-oh... The teeth a bit chewed-up, we'll grease later...



Below, the cylinder front hold-down nuts are inside the L+R powervalue covers... Note this left-side bolt (bottom of pic) can be loosened, but not removed (more on this later)...



Moving to the right side power valve access... This is potentially dangerous...



The ball-end actuator (shown disconnected from the ball) comes out of the lower crankcase, and is held in place via a clip which is **easy to drop into the crankcase hole**; if this happens you must completely dis-assemble the entire engine **disaster**.

After both front cylinder hold-down nuts loosened (and the rear-bolts removed) the cylinder must be tapped (rubber hammer) and lifted...



...at which time the nuts can be removed. Below, the cylinder head, actually very clean. The black build-up is on the "squish band" on the exhaust side of the head (this is normal)...



When removing the cylinder head, pay close attention to the locator-pins which are easily-removable and can fall into the engine uh-oh...



Next, the cylinder was pulled off, and the piston removed... Uh-oh... Both piston-rings broken (hence "zero compression")...



Below, the old piston (excellent condition)...



...which Chad deemed "serviceable" **but** the piston "needs work" such as taking the time to perfectly clean the grooves, and "dress" all the tiny nicks that are on edges of the grooves and piston itself.

Note: To take the piston out of the engine, the below clip must be removed, "tricky" because a "clip removal tool" cannot be used.



Below: The cylinder must be honed "lightly", and the inner o-ring (shown here installed) must be removed so it doesn't get "dinged"...



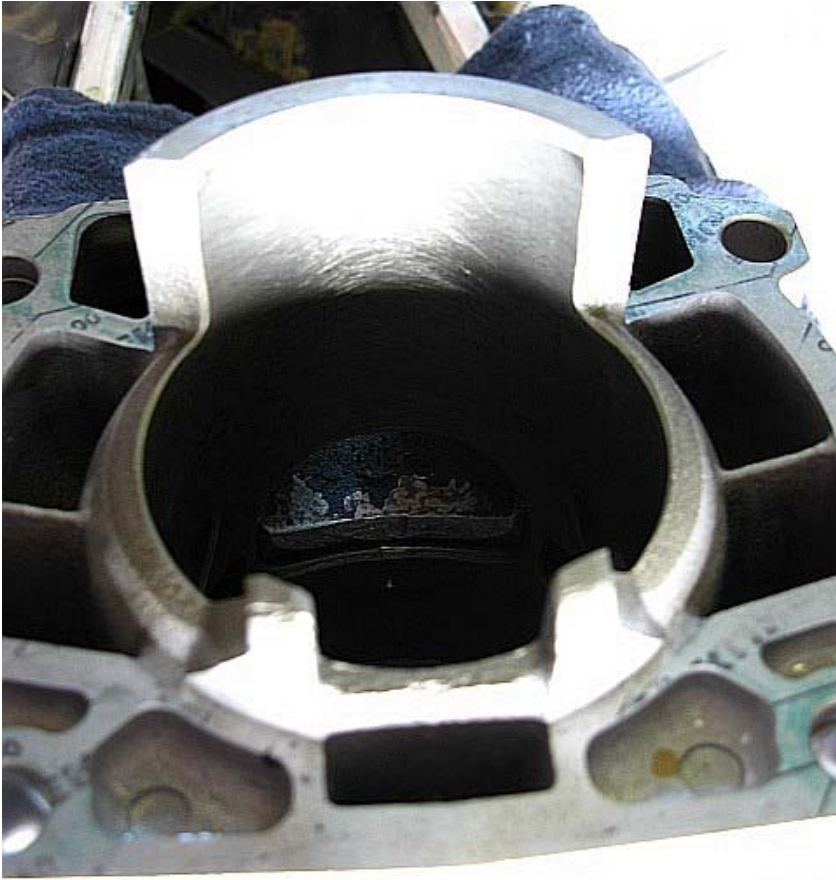
The power valve actuators (both sides) should be cleaned w/solvent...



At this time a new piston (\$140) was prepped...



...and note the rings are "pinned" which prevents them from rotating in the groove. KTM a bit unusual in that the pins are very close together (usually separated ~30 degrees). KTM makes installing the new piston/rings...



...into the bore very easy. The rings must be compressed only until the far-ridge and the two "fingers" that are shown contain the rings. Note the ridge and "fingers" are beveled to further simplify the task. Once the rings are inside the "fingers" the piston slides easily into the bore.

In practice, the piston/rings are attached to the rod, the cylinder then lowered on to the piston. Nice engineering 😊. Chad did this task himself.

Below, the cylinder hold-down nuts must be started before the cylinder "seated"...



Note the clean gasket. All of the gaskets and o-rings were in perfect shape. Chad recommended (I agreed) that all gaskets and o-rings be re-used.

Below, a torque-wrench must be used to install the head. Note there is no "head gasket" so torque is critical. The two o-rings in the head are for water (cooling) containment only...



Chad is a fan of the **NoToil** filter-oil (which is what I had used). But... Chad used approx double the amount of oil that I had used. Observe that NoToil recommends gloves be used to protect hands from the chemical...



Greasing the end of the exhaust-pipe will make re-assembly much easier...



The tank was installed, gas turned on, **the bike started on the first kick!**

Total time start/finish 2 hours, of which a half-hour was due to my chatter and picture-taking. OK-by-me! There is no doubt that the next-rebuild can be done by me. Note my bike has 1,600 miles on it, another bike just brought into the shop (below) has my problem and identical 1,600 miles.



This would seem to indicate a design flaw of some sort ☹ ☹ ☹ ☹. Time will tell. From here on out, I will be using only **Red Line** racing oil...

[http://www.redlineoil.com/products\\_motoroil.asp?categoryID=3](http://www.redlineoil.com/products_motoroil.asp?categoryID=3)

...mixed 42:1 as opposed to the 50:1 that I had been using. Note that KTM says to mix the gas/oil at a **60:1 ratio**.

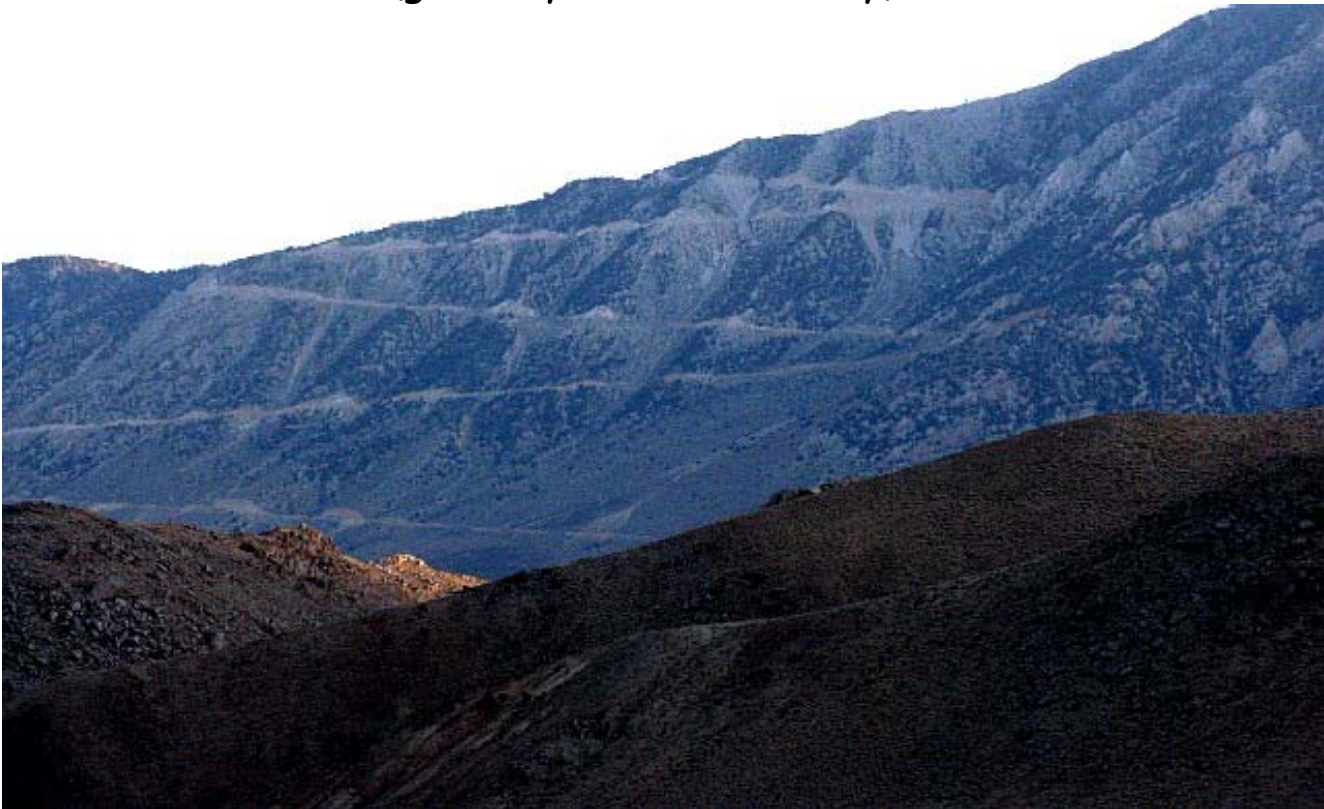
Heading home, I passed a new gas-station and **casino** operated by the Fort Independence (Paiute) Indians...

<http://www.fortindependence.com/>

...and gas here is 20-cents under the competition...



South of Lone Pine (gateway to Mt. Whitney) I took the below shot...



...where is this? Can I climb this road? **Stay tuned!**

Life here in Inyokern is good... While doing this story, I was (honest) cooking (using my crock-pot)...



...which is pretty simple: Dump in everything, wait 4 hours (on "hi") or 8 hours (on "low"). Above is the meat, potatoes, carrots (on the bottom) and pears (seemed like a good idea at the time, and I had a can handy, and the recipe said "add liquid" so what-the-heck).

Now 7pm, the wind has been howling all day (supports writing/cooking).

Tomorrow? Who knows...

Thanks for reading along...

*Paul P.*

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