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M e m o

To:	Dirt Rider Crew	From:	Chris Real, CLS
Fax:		Pages:	
Phone:		Date:	9/6/2012
Re:	Spark Plug Tech tip	CC:	

For Review

Hi Guys,

I thought that I would submit this Tech Tip to you.

As the manager of American Honda's Amateur Motocross trackside support program and a owner / team manager of an Endurocross development team I thought I would share this tip on spark plugs.

First, we all know that the spark plug is an important part of any engine. Without it the bike just won't run. With an improper gap the bike runs poorly and with a broken electrode a big repair is often needed.

Changing a spark plug in most of the new racing motorcycles requires that the tank be removed and the new spark plugs are \$20 so many people just don't change them very often.

At the Amateur Motocross race level it is not uncommon for us to work on 100 motorcycles at an amateur motocross national. Many of the riders use racing gasoline that is OXYGENATED and it burns hot, or their bike runs lean and occasionally "pings" or detonates. This shortens the spark plug life and very often when we ask the person how long the plug has been in the bike people often say about a season or 1-2 years!

When we remove the spark plug we always just loosen it with the plug wrench and use a rubber hose to unthread it. This keeps you from side loading the spark plug's threads (and risks breaking a plug off in the head) and also prevents hurting the threads if carbon is built up on bottom threads. Some plug wrench sockets have a small rubber bushing in them, however I prefer to use a hose.

If carbon is built up or the plug is tight we use a multi-purpose lubricant such as Honda Pro or WD-40 to soften the carbon. When we get to about the end of the threads we blow the dirt out of the hole with compressed air to keep the dirt from going into the cylinder.

On installation of the new plug we use an engine assembly lube (Such as Torco cam lube) on the threads to prevent binding. This also minimizes carbon deposits that contribute to worn threads if you remove the plug very often.

We use the rubber hose to lower the new plug in as dropping the plug into the head can damage the electrode and change the gap. The rubber hose also is a lot faster and safer.

We use extreme caution when using the plug wrench when unthreading small diameter long reach spark plugs as side loading on the threads can result in a broken plug. If the plug is side loaded and gets broken you need to go fish, and you **MUST** get all of the parts of the plug out of the engine!

We have a special method of removing broken bolts and spark plugs from an engine. We use a 6-Point T bit and spray lube. Select the correct size of bit, (for bolts you need to drill a small hole) gently tap the extractor in awhile applying unthreading twisting motion and pray. We often slightly taper the end of the extraction bit and always use a new bit for this process.

Please be nice to your spark plug. He lives in a blast furnace, is under pressure and gets hit on the electrode 12,000 times a minute for many hours, and once in a while he needs a bit of care.

See you at the races!

Chris Real

Photos: The engine photos are of a Yamaha watercraft. When you drop a spark plug in a jet ski you always have a problem finding it as it goes under the engine and you need a trained mouse to get it out!



"REAL" Special spark plug tool.



Deluxe high speed long reach special tool! (Yes, it does look a lot like a washing machine hose....)



"REAL" Special tool #2...



Good end to a bad day!

