Ignition Timing 101

There's many different methods used in jr drag racing to reference ignition timing. One of the most common and most accurate methods is by referencing piston depth at an assumed firing point. This is the method used by JR Race Car on every engine we build. The only special tool needed is either a dial indicator, or (though not as accurate) a set of dial calipers.

Cheaters Note (For Titan/ ZR4 Engines only): If you want a quick/easy yet less accurate way to get timing set. With a key in the flywheel hub, and the flywheel set at zero, you can place the coil in the fifth mounting hole from the right of the coil bracket. The air gap can be set with two buisness cards. This will give you an approximate, and acceptable timing setting without any special tools.

Step 1: In a clean well lit environment, start by removing the cylinder head and head studs. Then clean the deck surface. Try to do this without letting debris fall into the cylinder.

Step 2: Record the existing timing setting before making any changes. Bring the piston to TDC (Top Dead Center). Set the dial indicator at zero, then, while watching the indicator, rotate the crankshaft backwards until the right edge of the coil's right leg lines up with the magnet's right edge. (as seen in the bottom right photo).

Step 3: The depth of the piston at this point will be your existing timing advance. The Titan engine should be set at .500" Before TDC. This setting can be changed by loosening the flywheel hub and rotating the flywheel, or repositioning the coil, to make the flywheel magnet line up at a different piston depth. For more power, you can set the timing to a deeper setting. Note: More advanced timing will increase cylinder pressures as well as stress on all internal components. For longer engine life, or slightly less power, you can set timing at a shallower depth.

Step 4: Lastly make sure you set the proper .025-.035" air gap between the flywheel and the coil. Now you're ready to race!

Feel free to call our technical support line with any other questions you may have on ignition timing.

Line up the right edge of the coil's right leg to the right edge of the magnet.
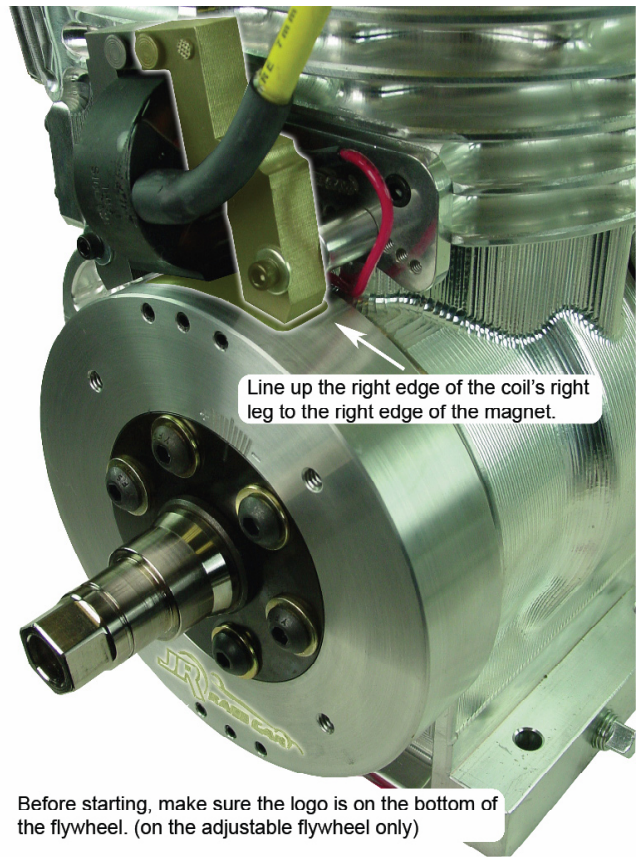
Before starting, make sure the logo is on the bottom of the flywheel. (on the adjustable flywheel only)