

**GROUND STRAP:** timing indicator and heat range  
**PLUG BASE RING:** jetting  
**PORCELAIN:** signs of pre-ignition/detonation and fine tuning fuel curve  
**THREADS:** heat range of plugs

# PUMP GAS PLUG READING

Deposits on tip of electrode indicate **Rich Idle**

Light spot on tip of ground strap (not initial or total timing marks) indicates **too much gap.**

Sharply defined porcelain 'ditch' that encircles the center electrode will also show signs of **detonation/pre-ignition and wrong heat range (too hot)** Look for 'ditch' being filled with melted porcelain with a 5 or 10x magnifying glass.

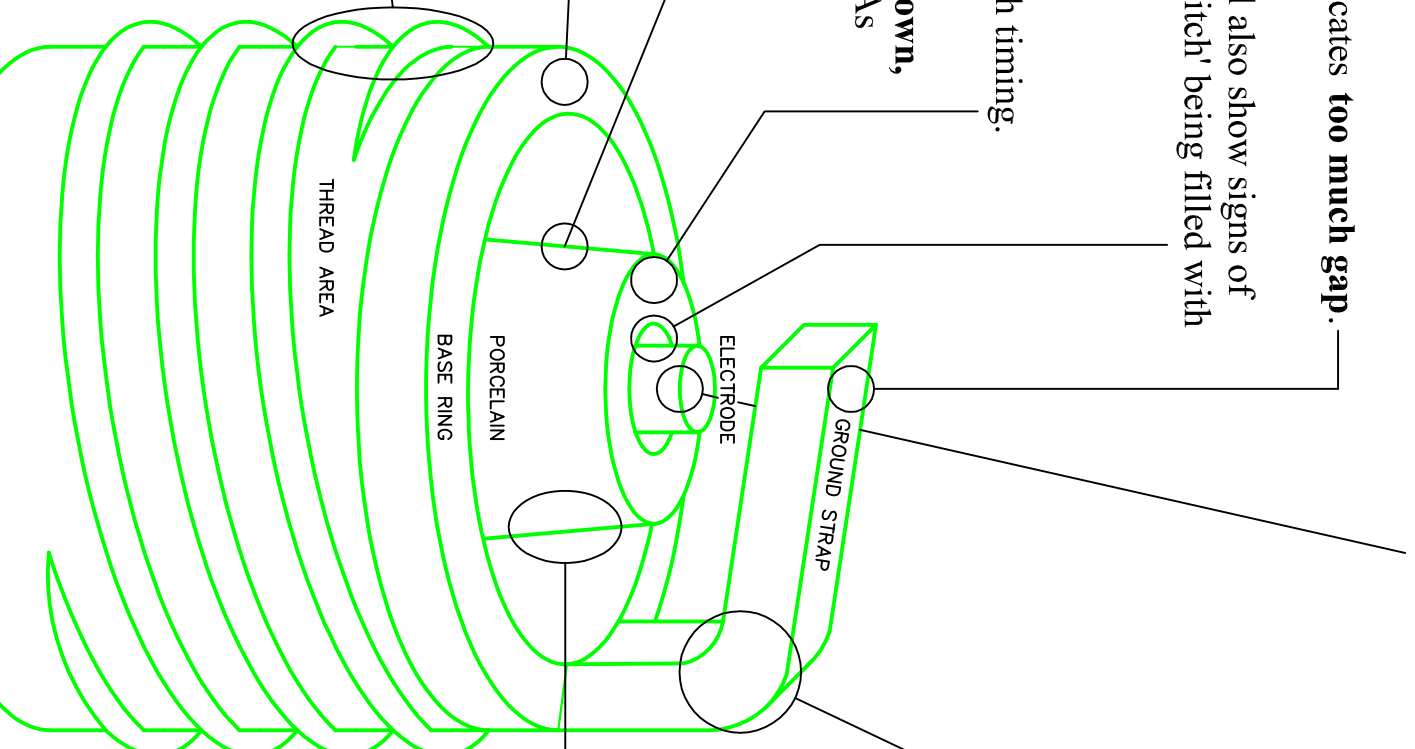
**Timing Indicator.** There should be a cardboard brown ring approx. .020" wide. Wider means not enough timing, narrower means too much timing.

**Signs of detonation/pre-ignition will be indicated by tiny black, brown, or metallic flecks on the porcelain** (usually from too hot of a plug). As detonation increases small pieces of porcelain will be broken off.  
**Metallic Flecks = Piston Melting!**

Base ring should have a full turn of light soot color.  
 If there are spots of heavy buildup of 'dry soot' on top of the color, **jetting is too rich.**

**You want about 2 threads showing color.** The rest should look shiny and new. Note: In a longer reach plug like an Autolite 3924 2.5-3 threads is ok. To increase the number of colored threads, get a hotter plug. To decrease the number of colored threads, get a colder plug.

**NOTE: Before adjusting anything- Carb, Ignition, and Plug Heat Range must be correct.**



**Color change on the strap is a timing indicator.** There may be two marks based on initial and total advance. Closer to the threads means too much timing for octane and vice-versa.

**Color change on ground strap should take place halfway down the strap** (about at the turn). Too little timing will show further toward the tip, while too much will show further toward the threads.

Note: No color mark on strap but good color on porcelain indicates **plug is too cold, go up 1 heat range.** If ground strap is showing a good line but porcelain shows no color at base during WOT, **plug is too hot, go down 1 heat range.** You may mix and match heat ranges on one bank to narrow it down.

**Porcelain:**

**Top  $\frac{1}{3}$  = idle circuit**

**Middle  $\frac{1}{3}$  = cruise/part throttle**

**Bottom where porcelain meets metal housing = midrange/WOT**

Top  $\frac{1}{3}$  should be dark grey/tan. Tune with 4 corner idle and airbleeds

Middle  $\frac{1}{3}$  should be dark grey/tan

Bottom where porcelain meets metal housing should have a very slight colored ring (hard to see with pump gas) that starts at the base of the ground strap and should make a full circle. **Any less than a full circle is too lean at WOT!** Note: when reading bottom  $\frac{1}{3}$  at WOT the other  $\frac{2}{3}$  will be burned clean (white).  
 White/No color = **LEAN**  
 Glazed or Shiny = **RICH IDLE**