

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.

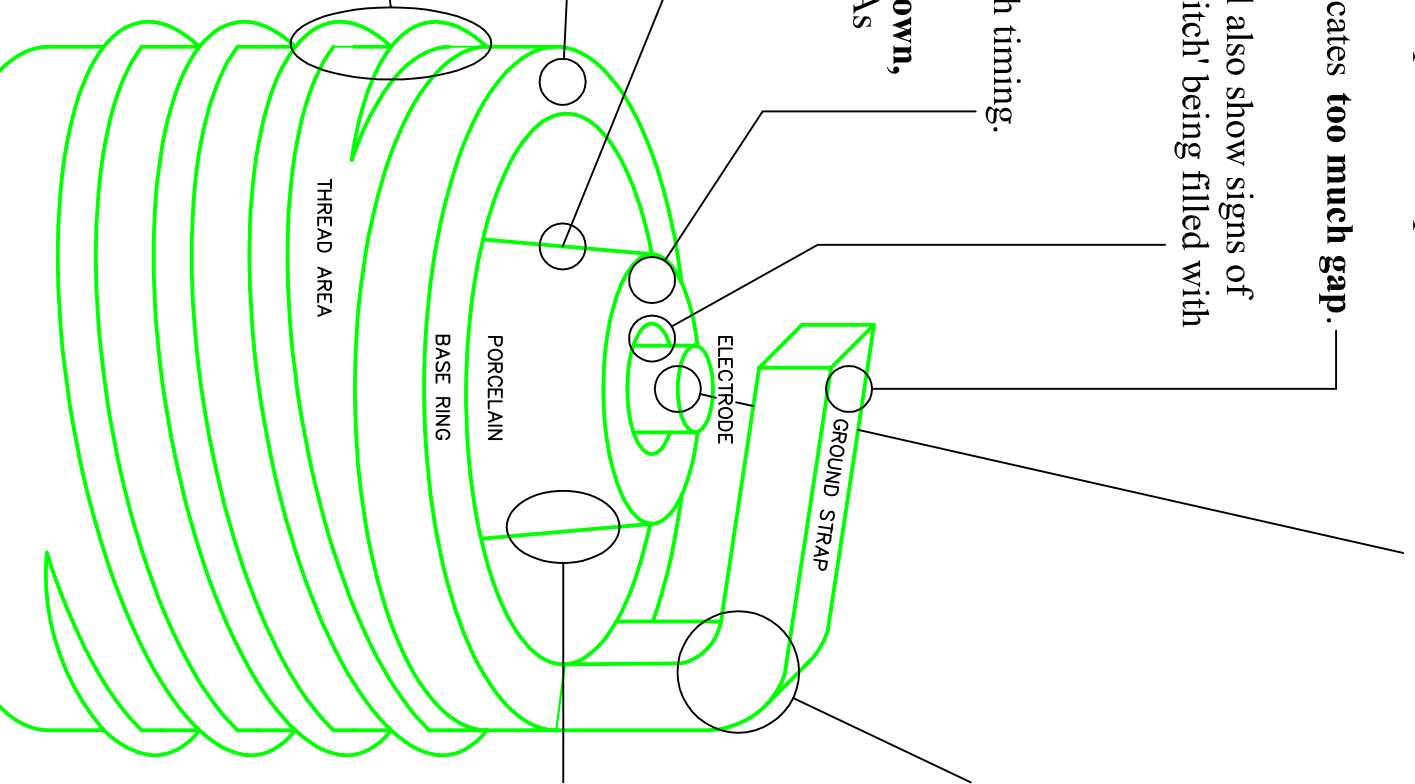
Timing Indicator. There should be a cardboard brown ring approx. .020" wide. Wider means not enough timing, narrower means too much timing.

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**