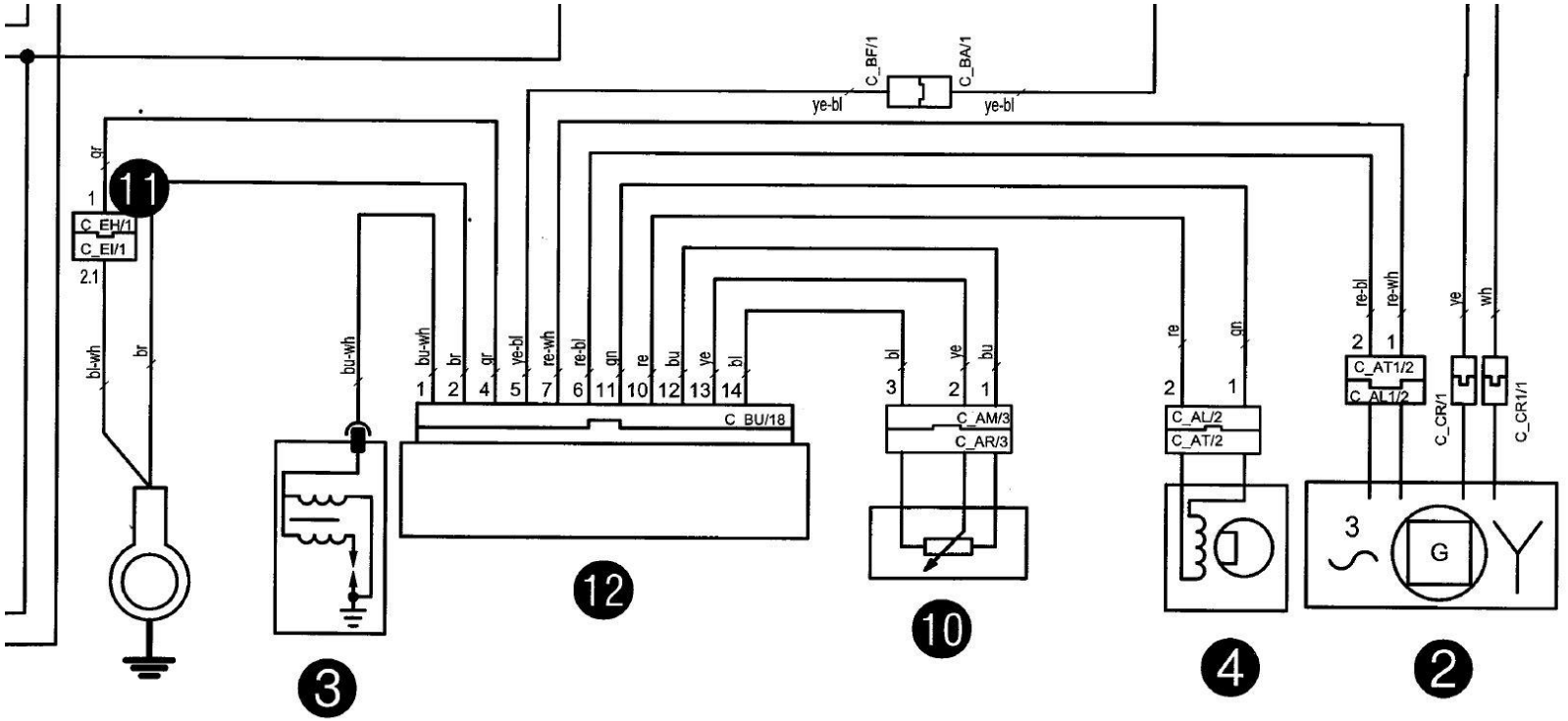
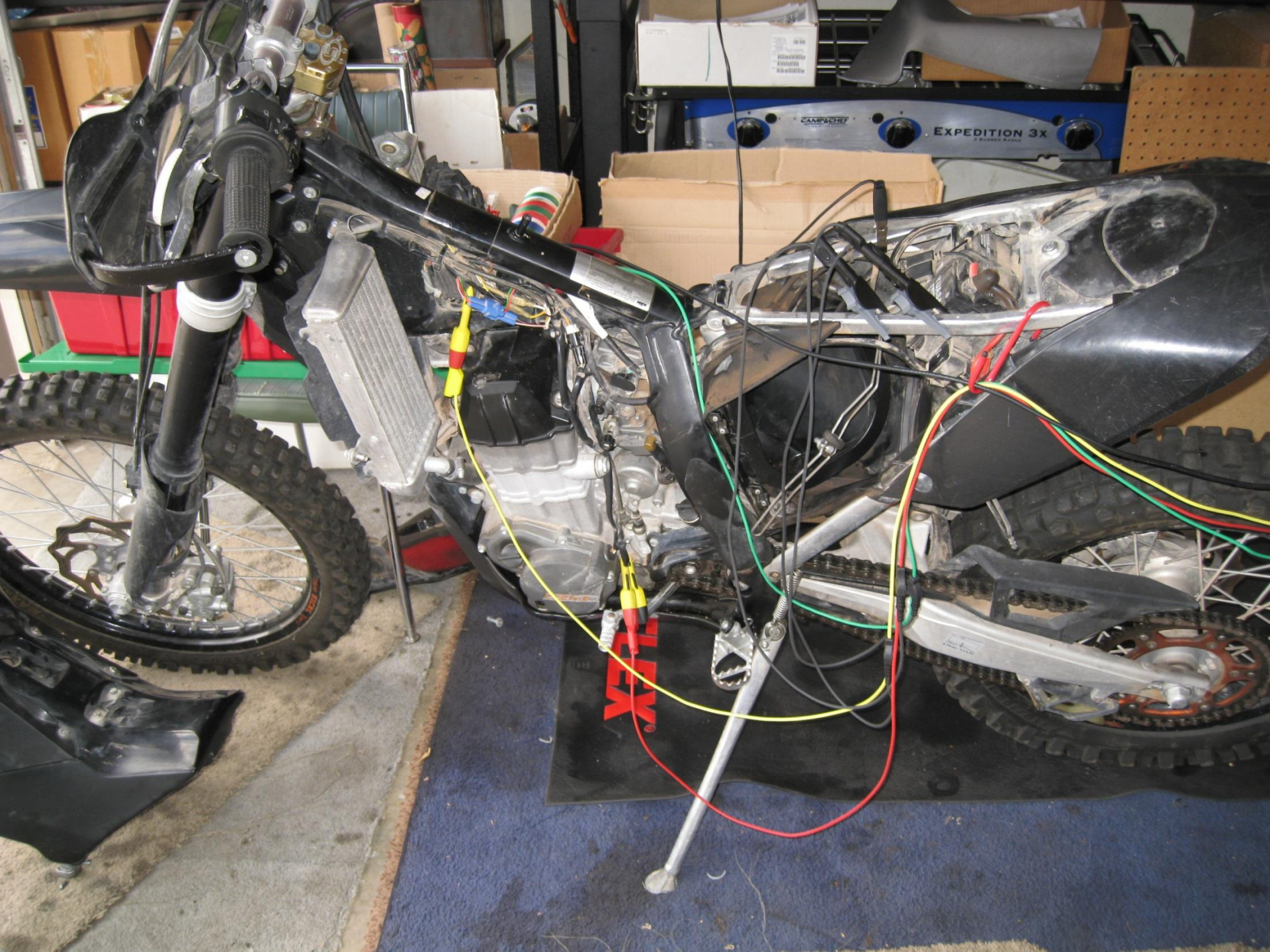
KTM 530 EXC-R 2008 NO START

1. Spark present
2. Sprayed starter fluid in intake
3. Engine backfired flames through carburetor

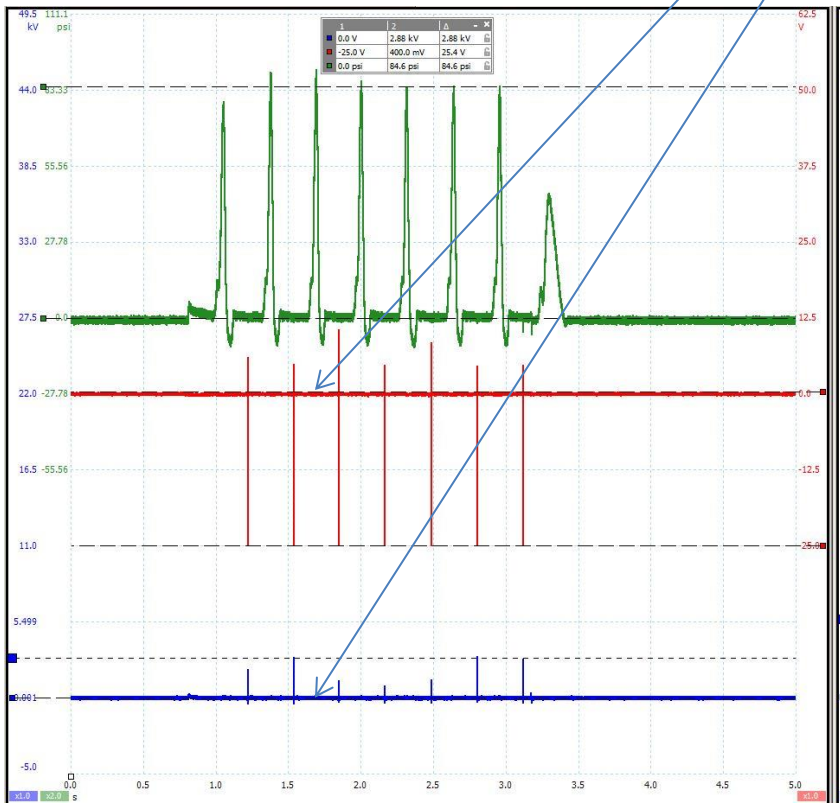
Partial Wiring Diagram

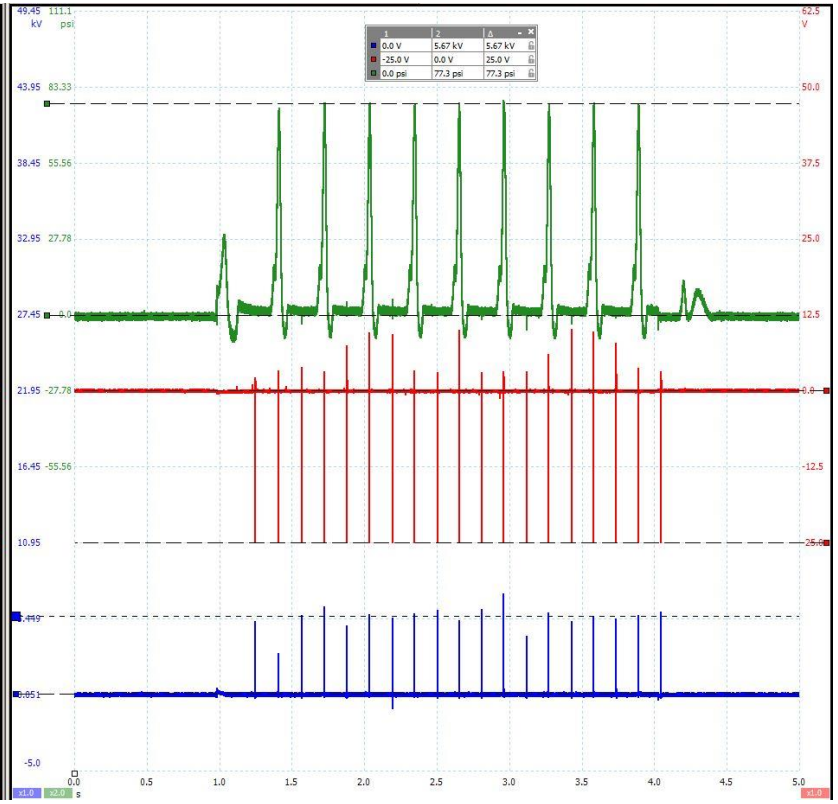


2 – Generator
3 – Ignition Coil
4 – Pulse Generator
10 – Throttle Valve Sensor (TPS)
12 – CDI Controller


CAMPINGCHEF
EXPEDITION 3X
FOX

No Spark Present at TDC on Compression Stroke





Cylinder Pressure (WPS-500)

Primary Volts

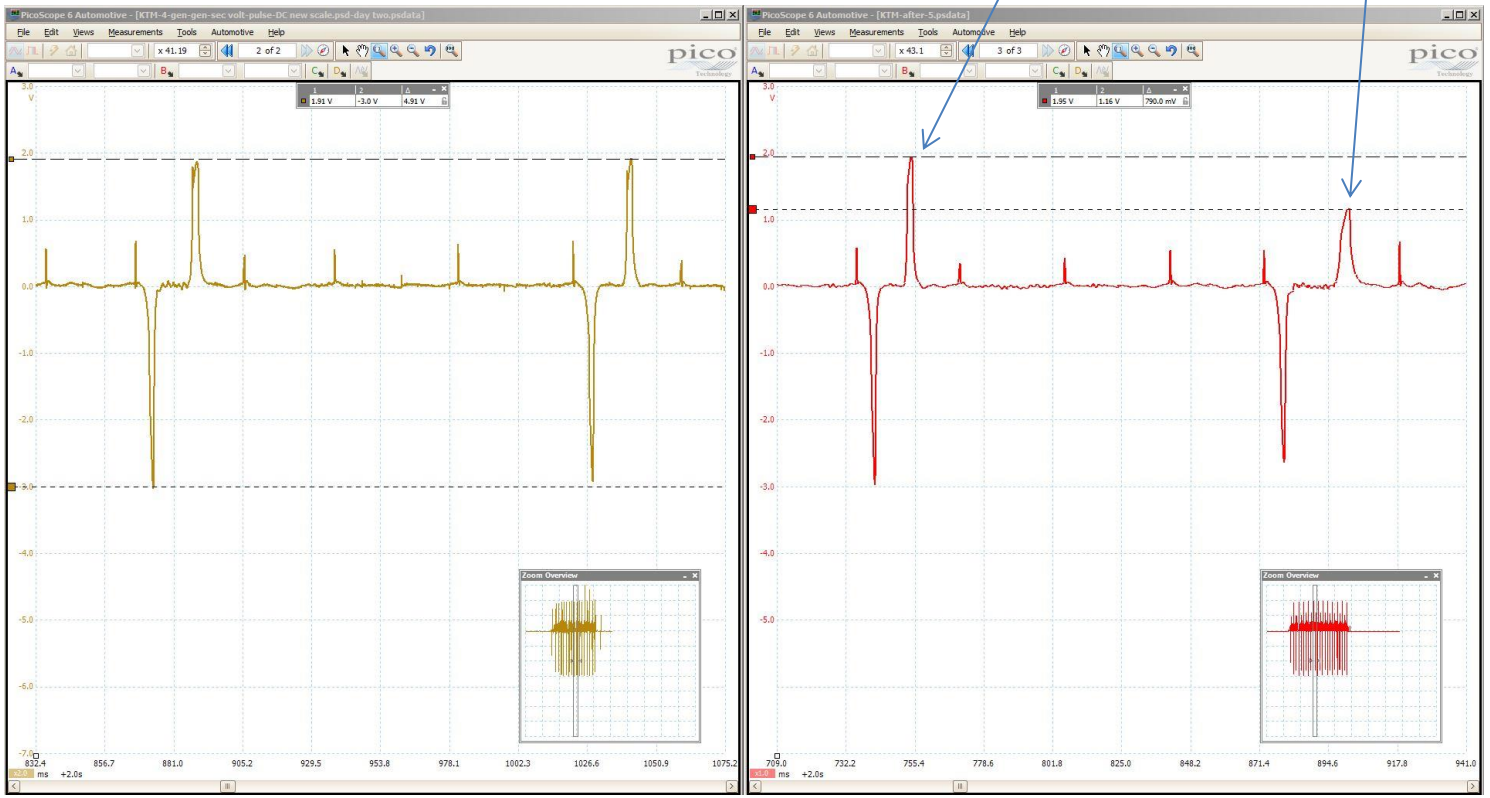
Secondary Volts

No-Start

Known Good

Pulse Signal Greatly Reduced on Compression Stroke

(Waste Spark Signal is Good)



Pulse Generator Signal

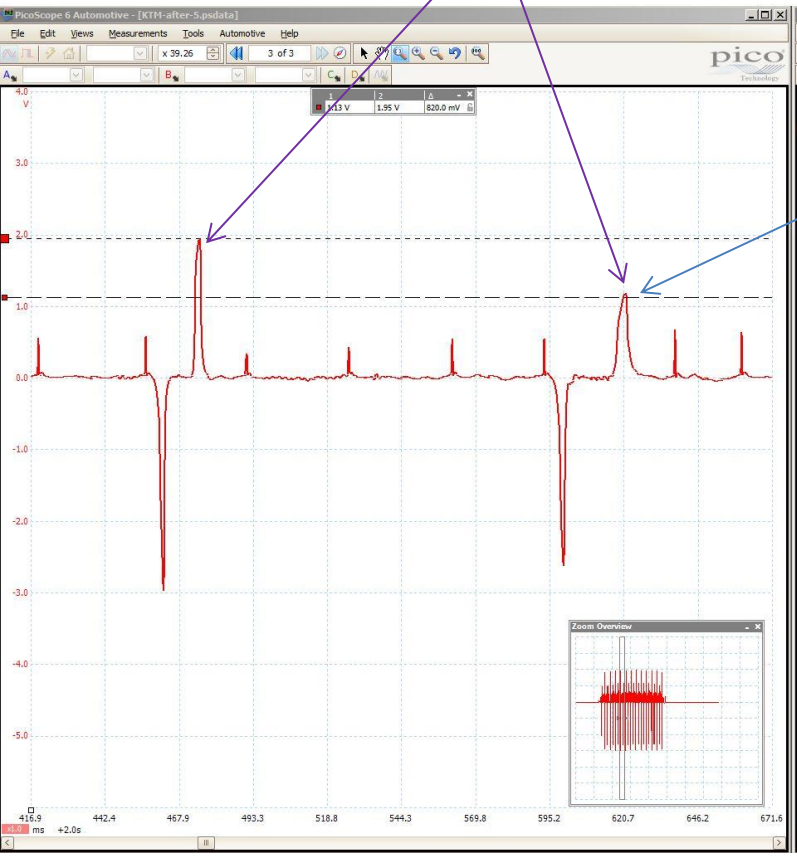
Known Good

No-Start

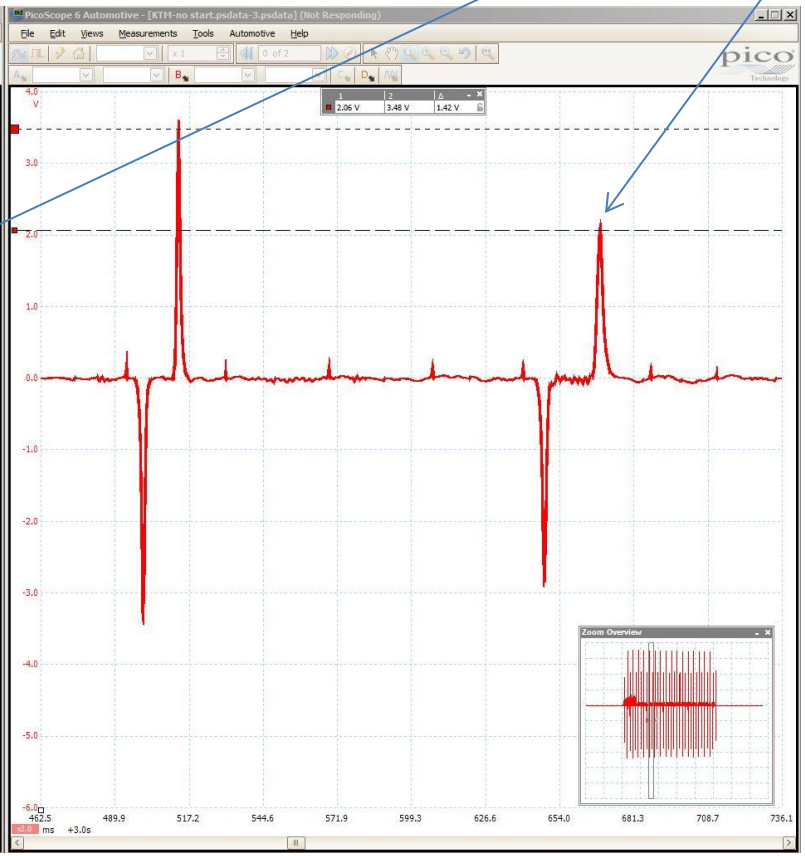
Pulse Generator Produces Same Low Pulse When Disconnected From CDI

(Overall voltage is higher when disconnected from CDI)

What is the cause of this varying pulse height?



Pulse Generator Connected to CDI



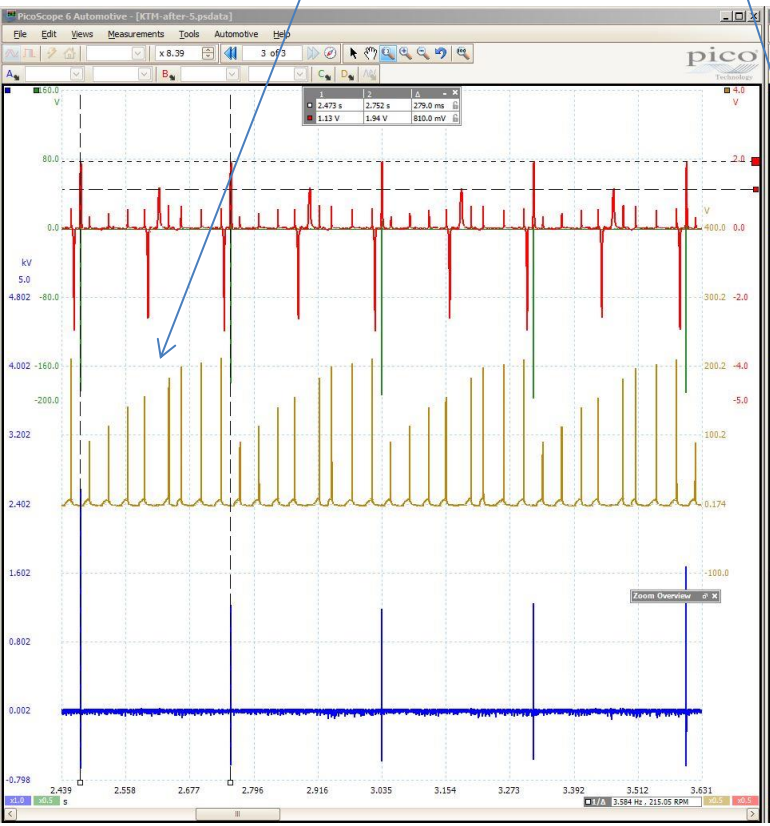
Pulse Generator Disconnected from CDI

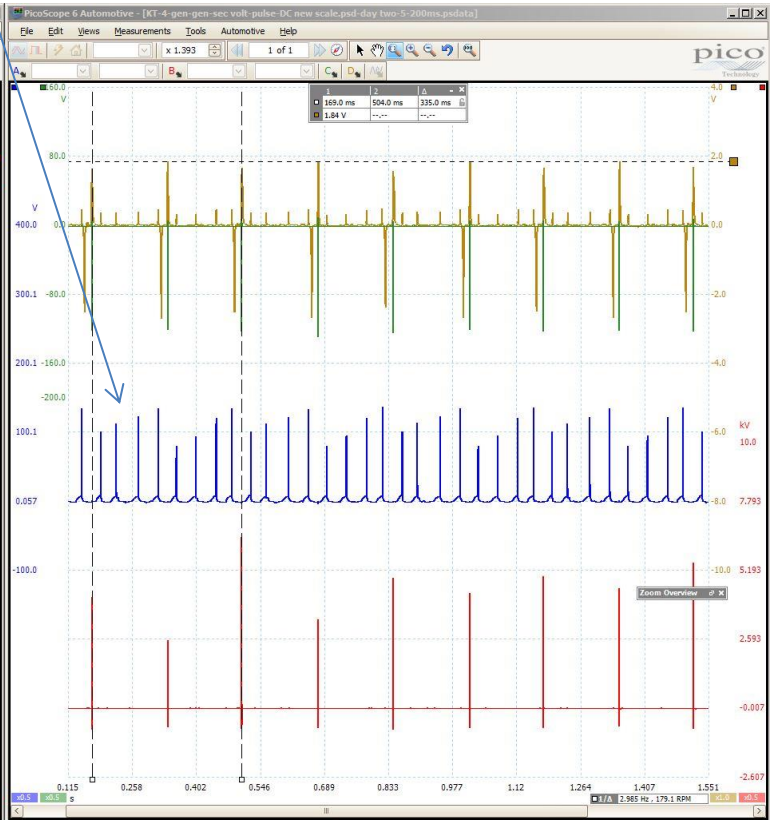
Pulse Generator Signal

Pulse Generator Signal Not Sufficient to Fire CDI on Compression Stroke

(8 pulses charge CDI before pulse generator signal on exhaust stroke-no start)

(4 pulses per discharge on known good)





Pulse Generator Signal

Primary Volts (green)

Generator Voltage Charging CDI

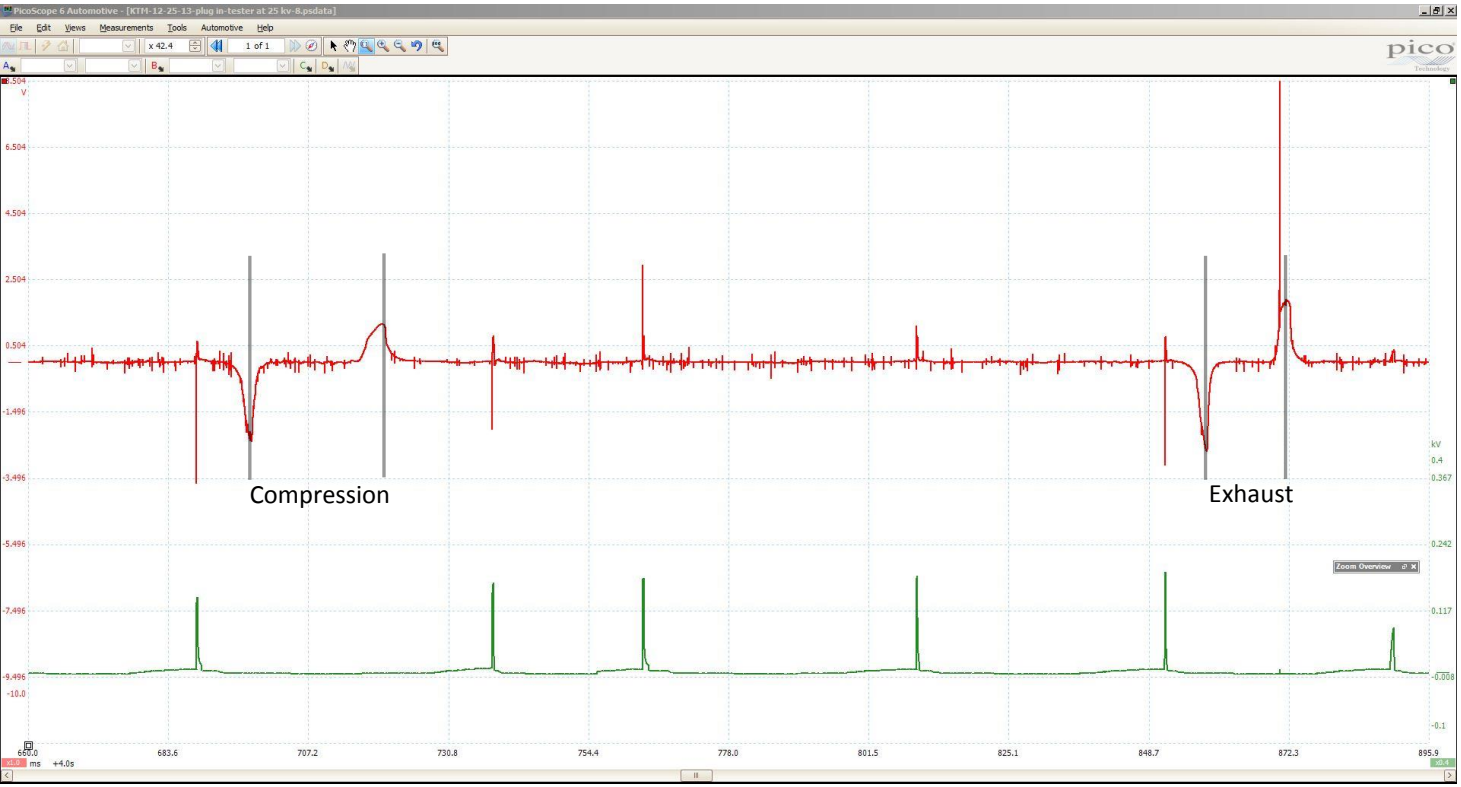
Secondary Volts

No-Start

Known Good

Time Between Pulses Yields Crankshaft Speed as a Function of Rotation Angle

Pulse Generator Signal Yields Shaft Speed at TDC on Compression and Exhaust Strokes
(length and radius of signal tab on flywheel need to be known or estimated)
Generator Voltage Signal Yields Average Crankshaft Rotation Speed for 4 Quadrants on Both Compression and on Exhaust Stroke



Pulse Generator Signal
(note the ratio of time for the compression and exhaust pulses i.e. the ratio of shaft speed at these two points of shaft rotation)

Generator Voltage Charging CDI

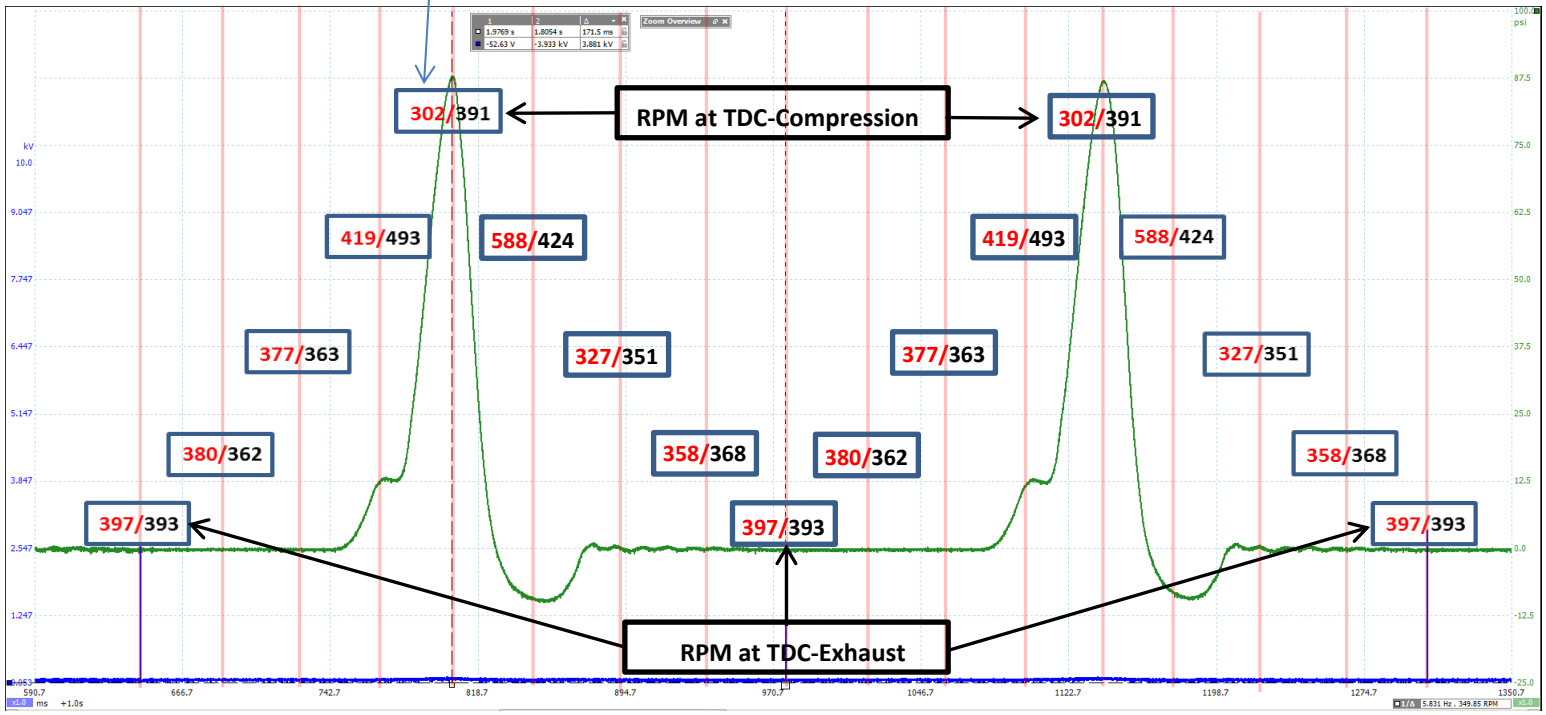
Crankshaft Speed (RPM) Very Low at TDC on Compression Stroke

(these are average numbers over the quadrant determined from “generator pulses”)

(“pulse generator signal” is more precise and shows an even lower rotation speed at TDC on compression stroke)

Low RPM results in “Pulse Generator” voltage to low to fire CDI, i.e.

No Spark at TDC on compression stroke for No Start



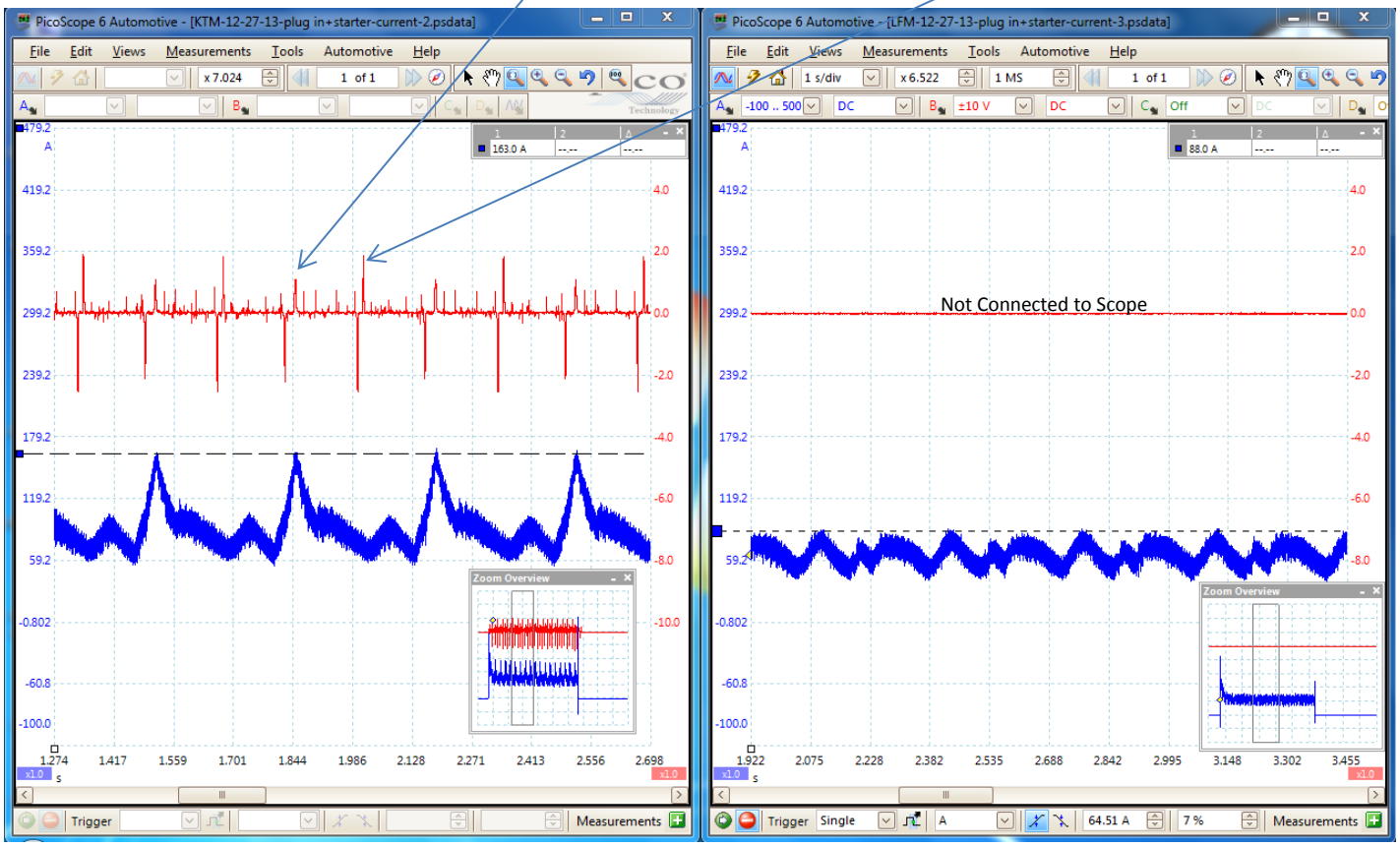
Cylinder Pressure (WPS-500)

Red Numbers are for No Start and Black Numbers are for Known Good

Starter Current Very High at TDC on Compression Stroke for No-Start

(average RMS current for no-start about 41% higher than known good)
(starter week and incapable of holding sufficient RPM during compression)
(no spark on compression stroke - waste spark on exhaust stroke)

Therefore: NO-START



Pulse Generator Signal

Starter Current

No-Start

Known Good

The Engine is Both Mechanically and Electrically Good
(Except for the Starter Motor)
Therefore

The Engine Should Start Using the Kick Starter

and

It Starts!

(When Kicked Over with the Kick Starter)

Installation of a new starter motor should correct the problem (no-start)