



Technicians Service Training

INSIDE THIS ISSUE:

"It Ain't Always Easy"

P. 1 - 13

Upcoming

November 26th

TBA

Andrew Fischer

***TST Big Event March
29th 2025***

***Check out our YouTube
channel [tstseminars](#)***

Like us Facebook

Editor

"G" Jerry Truglia

© 2024 ATTS INC.

"It Ain't Always Easy"

A 2008 Porsche Boxster with 18,900 miles came in with a Tire Pressure Monitoring System (TPMS) problem. It was not displaying all the tire pressure readings from its four wheels. Since the vehicle is seven years old, it's possible the TPMS sensor batteries were dead. Most of the time, replacement of TPMS sensors is a routine service that can be easily done. That was not the case on this Porsche - even when we installed an OE and then a programmable sensor.

The problem was that the TPMS sensor data would sometimes read on the dash and at other times it would not be visible at all. Michael and I tried one new Porsche sensor in the left front wheel to see if it would make a difference, but it did not. Our next step was to connect the scan tool to view what was being reported to the TPMS controller. Unfortunately, the TPMS controller was not seeing the sensors even after we programmed the sensor IDs. One problem we were confronted with was that the sensor ID numbers would sometimes be displayed and would change from wheel to wheel. As we continued our diagnosis, we decided to change the TPMS controller since the symptoms were random and not making sense.

Still Not Done

We located the TPMS controller under

(Con't on page 3)

What is TST?

TST is a group of dedicated technicians and instructors committed to the continuing education of our fellow technicians. We provide training seminars to technicians at a reasonable price. TST brings our members nationally known instructors and state of the art training.

Our Goal & Mission Statement

- ***Keep our fellow technicians up to date with the latest technology.***
- ***Provide training seminars for a reasonable price.***
- ***Deliver information that the technician can use now.***
- ***Keep technicians informed of information affecting our industry.***
- ***Increase consumer awareness of what a good technician is.***

Why join TST?

TST membership includes special pricing on weekday night seminars and the occasional full Saturday seminar. With a \$99.00 yearly individual or shop \$299.00 membership, the simulcast are only \$20.00. TST seminars are NOT sales or product seminars. The instructors that TST brings in are all “hands-on” industry experts with up to date, cutting edge knowledge that you can use in your shop the next day. That’s 99 dollars for a seminar in which you are able to learn something useful, for fixing those tough jobs that we all see on a regular basis. Our instructors are masters at making the complex understandable. Membership also includes a newsletter full of real world technical articles, diagnostic case studies, and solutions to the kinds of problems you see in your bays each week.

The following are some of TST’s regular instructors:

Bernie Thompson of ATS

John Thornton of Autotrain Inc.

Wayne Colonna of ATSG

Jorge Menchu the “Labscope Guru,” AES Wave

John Anello of Auto Tech On Wheels

Mark Warren of World Pac / Motor Magazine

Brandon Steckler of CTI & Motor Age Magazine

Peter Meier of Motor Age Magazine

Ken Zanders of Illinois Air Team

"G" Jerry Truglia of A.T.T.S. Inc.



Technicians Service Training

11 Lupi Plaza

Mahopac, NY 10541

Phone: (845) 628-6928

Fax: (845) 628-9109

Email:

Info@tstseminars.org

**TST on YouTube...type
in tstseminars**

No part of this newsletter may be reproduced, stored in a retrieval system, or transmitted, in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of the authors.

Information contained in this newsletter is intended for use by professional auto repair technicians familiar with approved vehicle repair procedures. The authors are not responsible for physical injury or property damage resulting from the incorrect application of information or procedures outlined in this volume.

Currently there are TST chapters in Connecticut, Massachusetts, New Jersey, New York and membership continues to grow. For more information you can call **TST** headquarters at:

(845) 628-6928

www.TSTseminars.org

DORMAN TECHNICIAN TRAINING



YOU KNOW US FOR THE PARTS. **NOW WE DELIVER THE SMARTS.**

We are continuing to invest in the transportation aftermarket by offering in-person training throughout North America, and online training wherever you are. As vehicles are always changing, we are always releasing new solutions, and now that means both products and knowledge.

For additional information contact

DTC@DormanProducts.com.



Get vehicle applications and technical details at dormanproducts.com
Dorman Products, Inc. | Corporate Office and Customer Service: 1-800-523-2492 | Tech Line: 1-855-933-2911
©2021 No reproduction in whole or in part without prior written approval.

Curriculum Includes:

- **Critical Thinking-
Diagnostic Strategies**
- **P0420 & P0430 “Keeping
the Light Off”**
- **Unlocking the Potential of
Your Scan Tool**
- **Understanding
and Diagnosing Air
Conditioning**
- **20+ additional topics
available**

"It Ain't Always Easy" (con't from p. 1)

the hood and installed the new dealer unit. As with many Euro controllers, it needed to be programmed before it would work properly. We connected our Autologic scan tool and programmed the controller without any problems. After the programming was completed we were able to obtain the sensor IDs on the scan tool, but there was still a problem. The four TPMS sensors we programmed with our aftermarket TPMS tool were not displaying the same IDs as what was being displayed on the scan tool. Two of the sensors had the same ID number, while the other two had different numbers other than what we programmed.

The frustrating part was that we tried all three TPMS tools that we own only to find out that one of the two could not even pick up the frequency of the sensors, while the other tool was only able to provide the frequency and one of the sensors IDs. One tool read them all, but the IDs that were displayed were not correct. This simple job was turning into a real headache with conflicting information between the tools.

We called two of the TPMS tech lines only to be told that the tool should work (even though it didn't). The vehicle had to be driven to make sure the TPMS sensors reported the proper information as the final part of the repair. Since nothing was working 100 percent after we installed the new TPMS controller, we thought the best way to proceed was to break down all the tires and program the IDs again.

We believe that because the TPMS computer was bad, it must have affected the TPMS IDs. Once we reprogrammed the 10 digits into the sensors, we installed the wheels back on the vehicle. We rechecked the TPMS IDs on the scan tool (now all reporting the same IDs we programmed) for each TPMS sensors. Next, I test drove the vehicle to make sure the dash display would be able to display the tire pressure for all four wheels. Take a look at the dash **(Figure 1)**. That, thankfully, was finally displaying the *(Con't on page 5)*

"It Ain't Always Easy" (con't from p. 4)

correct information for this or Porsche Boxster.

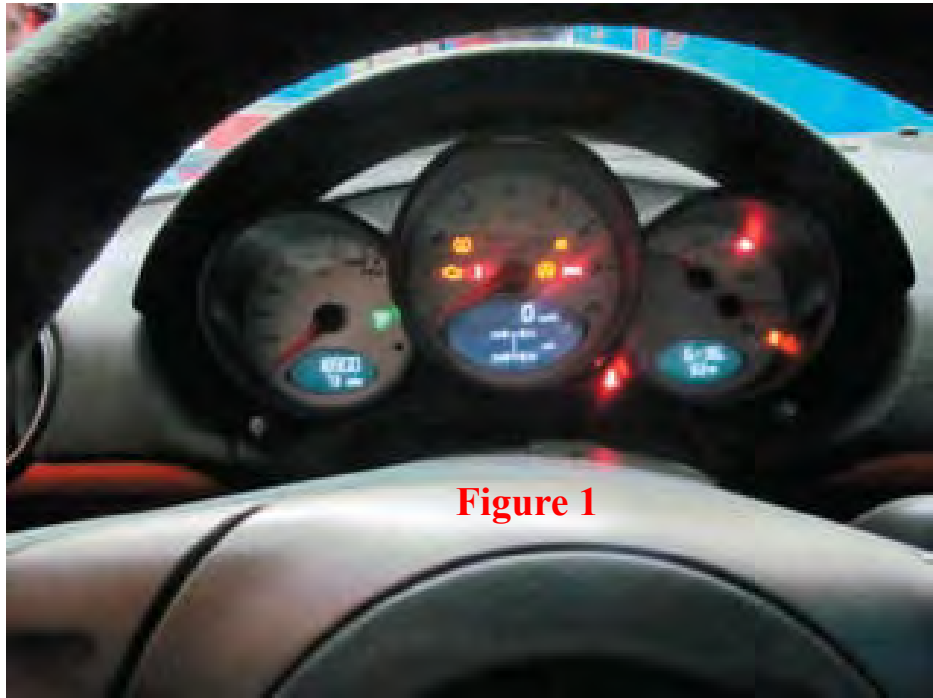


Figure 1

An 'Easy' Toyota

Our next vehicle is a 1999 Toyota Rav 4, 2.0L that came in with an illuminated check engine light with Diagnostic Trouble Codes (DTCs) P0171 (System Too Lean – Bank 1) and P1130 (Air Fuel Sensor Circuit Range and Performance) along with a driveability problem. This vehicle had already been to another repair shop that replaced many parts without resolving the problems, making the vehicle owner unhappy. The vehicle owner had lost confidence with the other shop's ability to repair the problem and was looking to get the vehicle fixed.

It's always tough to hear that another shop was not able to repair the vehicle, especially since some vehicle owners tend to not tell you the complete story. We need to stick together and make sure we don't bad mouth each other and always suggest that the customer bring the vehicle back to the other shop. Since the customer was fed up, this Toyota was now our problem and had to be diagnosed and repaired. I gave this job to Bill, who performed a thorough diagnostic routine and came up with the DTCs along

(Con't on page 6)

"It Ain't Always Easy" (con't from p. 5)

with a very high Long Term Fuel Trim (LTFT) reading.

Bill used the right approach and started diagnosing the lean DTC, looking for vacuum leaks that are common on Toyota models. Many of the high LTFT readings that I have found on Toyotas have been due to manifold gasket problems when an engine is cold. A check of the Freeze Frame data, though, showed that the engine temperature at the time the code matured was 192°F, so that ruled out the intake gasket problem. To make sure there were no vacuum leaks, Bill smoked the engine with our evaporative emissions system tester. What else would cause a lean condition? Maybe low fuel delivery, EGR leak, a faulty air fuel ratio sensor, MAP sensor and maybe something else. So rather than guessing, Bill decided to do some research and spend some time online with our service information resources. What he uncovered was that the Bank 1 downstream oxygen sensor (B1S2 O2) could control fuel trims. Before he went too deep, he needed to check the basics, including fuel pressure (in spec) and fuel volume (also in spec). With fuel and vacuum leaks out of the way, the next things to check were the sensors.

Bill verified the sensor inputs all the way to the rear oxygen sensor, which was reading zero volts. We reviewed the Freeze Frame data again to see if we missed anything while checking the cur-



rent scan data. We found the LTFT reading was the same 44 percent as the Freeze Frame data had reported, along with the rear O2 *(Con't on page 13)*

GDI

Got Deposit Issues?

You need the Run-Rite® #1077 GDI Fuel System Cleaning Kit!

Offer a solution to your customer's deposit problems!
 The Run-Rite® #1077 GDI Fuel System Cleaning Kit
 removes deposits from valves, injectors and combustion chambers.
 Use on Gasoline Direct Injection (GDI) and Port Injection Systems (PFI).
 Safe for turbos and inter-coolers.

Fuel

Oil

Run-Rite® GDI Fuel System Cleaner
Run-Rite® GDI Oil System Treatment

Run-Rite® D.I.D.C.
 (Direct Injection Deposit Cleaner)

- Removes Valve Deposits
- Reduces Combustion Chamber Deposits
- Designed for GDI & PFI Fuel Systems
- Safe for Turbos & Inter-coolers
- Improves Fuel Economy
- Keep Precision Oil Passages Clean



Kleen-Rite® Engine Cleaning

- Reduces Deposits and Soot Buildup
- Promotes a more complete drain of oil
- Helps Neutralize Combustion Acids
- Improve Oil Changes

Run-Rite #1077 G.D.I. 3 Step Fuel System Cleaning Kit:
 8 kits per case (3 parts in each)

Kleen-Rite #3110 Ultimate ECD (Engine Cleaning Detergent)
 4 bottles per case (1 gallon each)

1.800.872.8921



www.Run-Rite.com

“THE SOURCE” FOR DIAGNOSTIC TEST PREP

Motor Age Training offers
the most complete and
extensive ASE Training
Series available anywhere

- Study guides
- Practice tests
- Detailed illustrations
- Available in your favorite format



YOU PASS OR YOU DON'T PAY!



**MOTOR AGE
TRAINING**



WE SUPPORT
PROFESSIONAL CERTIFICATION
THROUGH THE
National Institute for
**AUTOMOTIVE
SERVICE
EXCELLENCE**

www.passthease.com



X-431 Throttle III

X-431 Throttle III is Wi-Fi enabled and super advanced scan tool with upgraded all-in-one Smartlink VCI. One is Enough for most repair shops who has business in relation with ADAS calibration, Truck diagnosis, Remote diagnostic, OE-level vehicle diagnosis, IMMO fuctions and more.

WWW.LAUNCHTECHUSA.COM

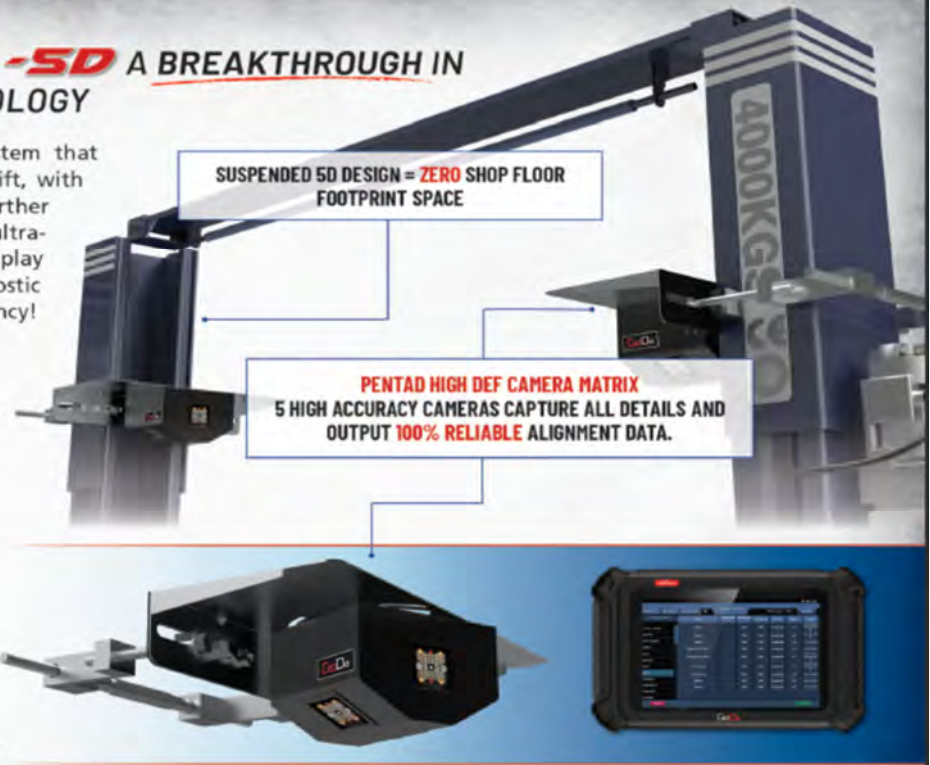
1820 S. MILLIKEN AVE • ONTARIO, CA 91761 • PH : 1-877-528-6249

INTRODUCING THE **SWA-5D** A BREAKTHROUGH IN WHEEL ALIGNMENT TECHNOLOGY

The **SWA-5D** features a 5D imaging system that self-calibrates and mounts to any 2 post lift, with the option to hang from the ceiling for further space savings! It is easy to install and ultra-accurate. Included is an Android tablet display that also has the option to have our diagnostic software, for more added value and efficiency!

FEATURES & BENEFITS:

- Suspended 5D Design on 2 Post Lifts
- Hardware Designed in the US for all 2 post lifts
- Zero Shop Floor Footprint
- Self-calibrating with Center Camera
- Android Tablet with optional Scan Tool Diagnostics available
- Easy Installation in under 30 minutes
- Intuitive, Easy to Use Interface
- Complete Database of Specifications
- Ultra Rugged, Maintenance-free Design
- High Value, All-Inclusive Package
- Light, Compact & Easy to Ship



www.candointl.com | 1-909-CanDo-11(226-3611)

CanDo
INTERNATIONAL, INC.

Folks love us for our Heavy Duty Truck & Off-highway Coverage. **WE'RE ABOUT TO CHANGE THAT.**

The CanDo **C-Pro** is a fully loaded, full functionality scan tool complete with bi-directional controls, special test functions and a full suite of activations and service resets.

Packaged in an 8" Android tablet that is Bluetooth wireless to the car, Wi-Fi to the internet, intuitive to use and easy to update - the **C-Pro** also includes our ASE Remote Technician function at no extra charge!

**New Rugged Tablet!
Faster Processor!
Larger Hard Drive!**



EUROPEAN, ASIAN & DOMESTIC PASSENGER CARS & LIGHT TRUCKS FULLY COVERED.



CanDo

www.candointl.com • 909-Cando-11(226-3611) INTERNATIONAL, INC.

FLO-DYNAMICS®



**THE LEADER IN FLUID
MAINTENANCE EQUIPMENT**

TRANSMISSION POWER STEERING COOLANT BRAKE AND MORE

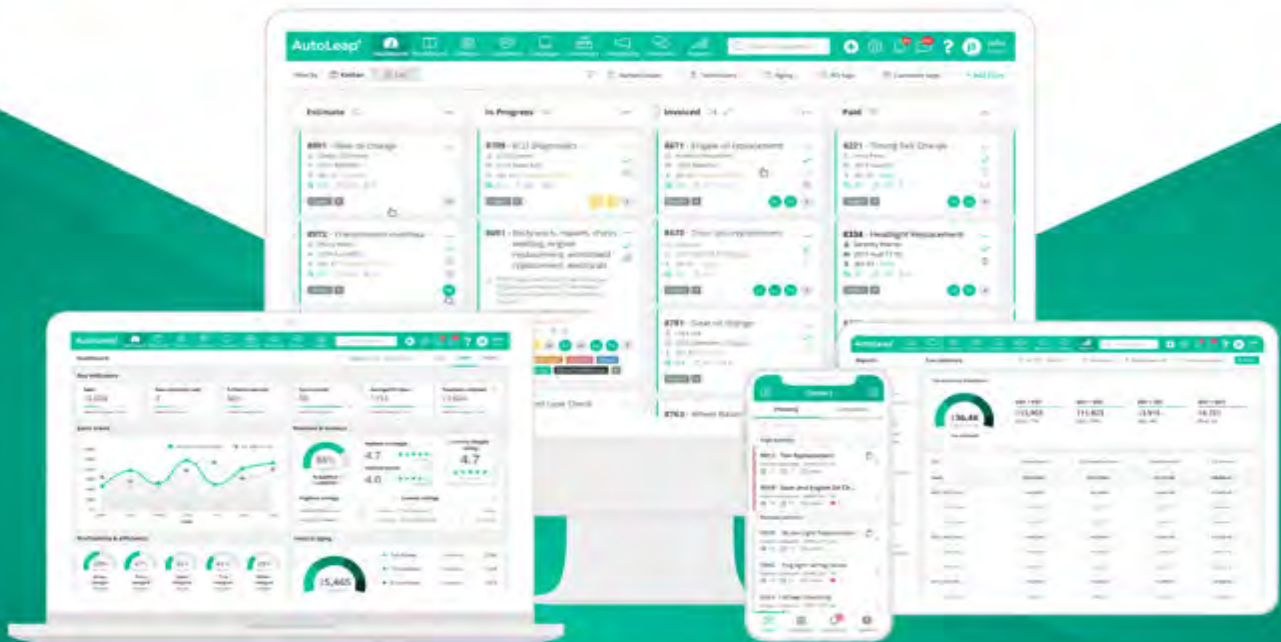
www.flodynamics.com

AutoLeap¹

#1 Ranked Auto Repair Software



Software Advice.



Move Save Time | Make More Money



Scan this QR code to get in touch with your AutoLeap rep and learn more!

Get in touch with us to see how AutoLeap can transform your auto repair shop:

Sales@autoleap.com

"It Ain't Always Easy" (con't from p. 12)

sensor's zero voltage reading.

Take a look at the EScan Fuel Trim screen shot where Short and Long Term are high at idle and at 60 percent throttle (**Figure 2**). When we checked the voltage reading of the AF sensor on the scan tool, the voltage was under the normal 3.3 volts at idle, only reading 3.15 volts. The low voltage reading on the AF indicates that the engine was running rich. The odd thing that we noticed was that the rear O2 sensor was still staying at zero volts and not changing as the rpms were changed.

"It's always tough to hear that another shop was not able to repair the vehicle, especially since some vehicle owners tend to not tell you the complete story."

Many vehicles use the rear O2 sensor as an important input signal that will play a part in adjusting fuel trim readings. So we decided to replace the rear O2 sensor followed by removing both the battery cables and installing a one ohm – 10 watt resistor to clear the capacitors to reset the adaptive fuel trims. We test drove the vehicle to see if there was any change in the 44 percent LTFT readings.

We were rewarded with a +9 percent on the LTFT and the Rav4 was no longer exhibiting any driveability problems. We test drove the vehicle one more time making sure no DTCs reset before returning it to the happy customer.

*Article By
"G" Jerry Truglia
TST Founder and President
ASE World Class Triple Master
Auto, Truck, School Bus L1, L3, F1, X1, C1, Technician*



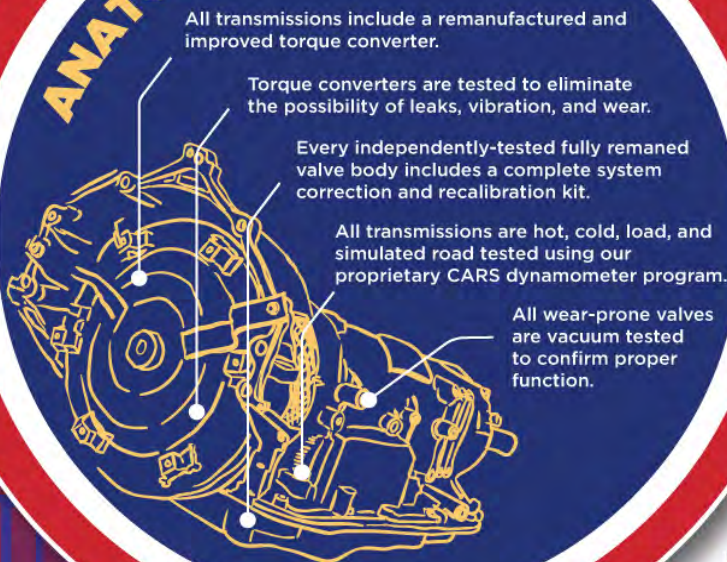
Meet your REMAN PARTNER.



Working with ETE is a breeze. We make it easy to stay in touch and get the help you need when you call, text, or buy online with BuyETE.com. Your dedicated team of Customer Support Representatives and Technical Specialists are the most knowledgeable and helpful team in the industry - and they're just a call or click away!

We also need your core, and you need it out of your way. We take care of that too.

ANATOMY OF A REMAN



3 YEARS/ UNLIMITED MILEAGE

Your customers are covered for 3 years/unlimited miles on standard and commercial applications.



PAID PARTS & LABOR

When installed at a certified shop, we pay parts and labor. Oh and if you included fluid on your original order, we'll cover that too.



NATIONWIDE COVERAGE

Your customers are covered anywhere (and everywhere) in the continental U.S.



TRANSFERABLE WARRANTY

Our Warranty is attached to the VIN and fully transferable with the vehicle ownership - no fees or registration paperwork required.



SCAN QR CODE FOR FULL WARRANTY



www.etereman.com
(800) 934-9479

Product quality
backed by

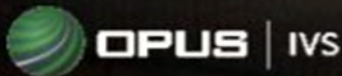


Want the best? Be the best with DrivePro™.

 **DrivePro™ Remote**
UNLIMITED

Expert assistance from
the most trusted people
in the industry. Opus IVS.

With cutting-edge diagnostics
and UNLIMITED technical support,
DrivePro gives you the confidence to
resolve the most complex repair
challenges fast. DrivePro helps your
shop minimize complexity
and maximize profitability.



Repair Reinvented. OpusIVS.com



SMART TOOLS OF THE TRADE

SMART SPLICE™ LINE SPLICE METAL LINE CONNECTORS



PRO GRADE OIL/DYE INJECTOR

EASILY READ, MEASURE, AND INJECT
PROPER OIL/DYE QUANTITY



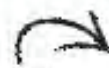
SIGHT GLASS

REAL TIME VISUAL
A/C SYSTEM DIAGNOSTICS



DUAL RECYCLE GUARD™

PROTECT YOUR A/C SERVICE EQUIPMENT
FROM CONTAMINANTS





MEMBER ONLY PRICING AND PACKS AVAILABLE NOW! CALL TST FOR MORE!



N2 NEURON RP-2P4DOUG23



LOW AMP CLAMP RP-2COR23



PREMIUM STACKABLE SILICONE TEST LEADS RP-2LVCE.MGOF.U



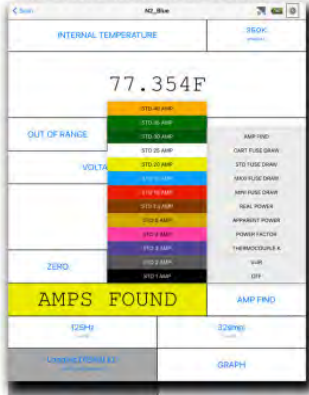
MAGNETIC BOOT RP-2P4DQV23 124 125



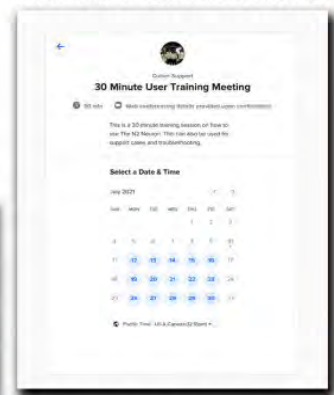
ROUND TERMINAL PIN TEST KIT RP-2ETK.VUMX23



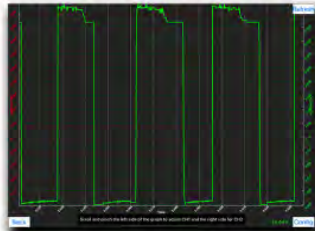
AMP FINDER & FUSE DRAW TEST



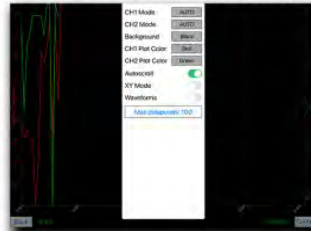
FREE 1 ON 1 TRAININGS BUILT IN



FULL WAVEFORM CAPTURE



PINCH/ZOOM FULL GRAPHING



GRAPHING

FULL 2 CH. MULTIMETER



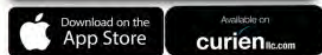
2 ZONE TEMP TESTING



30 DAY FREE PREMIUM TRAINING



FULL TRAINING VIDEO LIBRARY BUILT IN



WWW.CURIENLLC.COM





The Battery Chargers Professional Technicians TRUST



IBC6008MSK

- Safely charges ALL 12V EFB (Start-Stop), AGM, Lithium, Gel and SLA battery types
- Customize battery charging profiles with adjustable voltage and adjustable amperage by type
- Built-in refresh power supply and memory saver port with 12 ft. OBDII cord
- Patented Intellamatic® smart charger analyzer technology with battery rejuvenation
- Partial Charge mode for busy shops
- Energy efficient and OE manufacturer approved
- Legendary power and generational quality
- "Safe in any weather" operation



6006AGM/6009AGM/6012AGM

- Upgraded "tried and true" heavy duty chargers with setting for AGM batteries
- Improved energy efficiency
- Legendary power and quality

AMERICAN MADE, FAMILY OWNED

5043 Farlin Ave. | St. Louis, MO 63115 | 800-949-1472 | www.associatedequip.com

#IWANTTHEBLUEONE

Search for Technical Training Nationwide!

INDUSTRY ATTENDS

**A single place to find all of the events happening in our industry...
in one easy to use automotive training & events calendar
...and best of all - it's FREE!**



INDUSTRYATTENDS.COM



**Discover and Attend
Automotive Industry
Events**

Free Calendar

**Grow your
connections, business
and expertise
with Industry Attends.**

Search for events: FIND EVENTS Show Filters Month: ▾

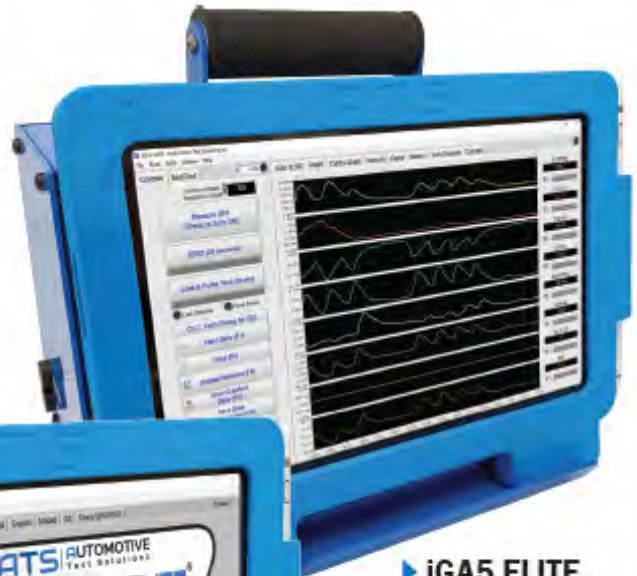
< > This Month March 2023 ▾

SUN	MON	TUE	WED	THU	FRI	SAT
25 4:00 pm - 7:00 pm TECHNICAL TRAINING & DEVELOPMENT TECHNOLOGIES - ONLINE	27 4:00 pm - 5:00 pm ET 2023 Regional & A 2.0 Day Event - Virtual	28 9:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	1 8:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	2 7:00 am - 10:00 am ET 2023 Regional & A 2.0 Day Event - Virtual	3 8:00 am - 7:00 pm NCCO (National) - USPT	4
5	8	7	8	9	10	11
12	13 8:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	14	15 8:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	16	17	18 8:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual
19	20	21	22	23	24	25 4:00 pm - 7:00 pm TECHNICAL TRAINING & DEVELOPMENT TECHNOLOGIES - ONLINE
26	27	28 9:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	29	30 8:00 am - 11:00 am 2023 Regional & A 2.0 Day Event - Virtual	31	1 8:00 am - 7:00 pm NCCO (National) - USPT

ATS | AUTOMOTIVE Test Solutions



▶ eSCOPE ELITE 8



▶ iGA5 ELITE



▶ eSCAN ELITE

www.automotivetestsolutions.com

800-572-6112