

## COMPETITION RULE BOOK

# 2022 NFADA RON SMITH MEMORIAL AUTOTECH COMPETITION

### **NOTE NEW DATE!**

**Saturday, May 21, 2022**

*Doors open at 8:00am, competition begins 9:00am*

SUNY Erie - Vehicle Technology Training Center

5885 Big Tree Road, Orchard Park, New York 14127



### **Emergency Contact:**

Tom Herrmann - NFADA (716) 481-1991

Melinda Londos - SUNY Erie VTTC (716) 270-2630

## The Competition

Since 1995, the Niagara Frontier Automobile Dealers Association (NFADA) in partnership with Erie Community College and many dealerships and auto related sponsors have been proud to put together a first-class skills competition. The competition is open to high school students from Career and Technical schools with an automotive program from across Western New York. The planning committee made up of automotive educators, service managers and other industry supporters who strive to make the annual event one of the best in the country.

The first-place team in addition to bragging rights will hold the trophy for one year. By entering the NFADA/Ron Smith Memorial AutoTech Competition, students have the opportunity to win scholarships, training equipment for their schools, prizes and most important, to gain employment opportunities in today's exciting high-tech automotive service Industry.

This Rule Book aims to provide the answers to many questions that may arise before the competition. If you need clarification on anything, please contact Tom Herrmann at the NFADA 716-481-1991, or by email, [tom@nfada.com](mailto:tom@nfada.com).

**QUALIFICATIONS** – *Team members must be high school seniors, 2<sup>nd</sup> year automotive student, eligible for graduation of their senior year.*

- There is NO entrance fee
- School banners are encouraged for photo opportunities
- Computer skills are a must
- In order to be successful, teams must be able to navigate the factory service information on computer to diagnose problems.
- SCAN TOOLS will be used

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### **SCHEDULE OF EVENTS\***

8:00 a.m.	Doors Open, Registration/Team Photos
8:40 a.m.	ALL competitors must report to the stage for Pre-Competition Meeting & Group Photos
9:00 a.m. – 10:30 am	Workstations
10:45 a.m. – 12:15 p.m.	On-Car Competition
12:15 p.m. – 1:00 p.m.	Lunch
1:00 p.m.	Awards Ceremony

\*This is a tentative schedule; times are subject to change.

### **This Competition is meant for the ENJOYMENT OF THE STUDENTS AND INSTRUCTORS.**

Below are some details you'll need to help make the morning run as smoothly as possible

- Enter the building at the main entrance
- **ALL** students should proceed to Classroom #1 for Registration
- **After registration**
  - **Seniors are to report to Classroom #3 for pictures then onto breakfast area**
  - **Juniors** may go on to the breakfast area
- ALL students must report to the stage at 8:40am for group photos prior to kick-off meeting

## **DRESS**

- Official competition shirts will be provided for all students and Instructors, Courtesy of Cintas
- Students and Instructors are required to wear black pants/Dockers (NO JEANS).
- Students and Instructors are required to wear the competition shirt provided.
- Safety glasses with side shields or safety rated conventional glasses.
- Protective work shoes (NO SNEAKERS or SPORT SHOES).
- **Student competitors are NOT allowed to have cell phones or any other personal electronic devices at any time during the competition**

## **COMPETITION VEHICLE:**

**2021 Ford 83GV ECOSPORT 4WD SE**

**2.0L TI-VCT GDI I-4 Engine**

**6 Speed Auto Trans W/SLCTSHFT**

Laptops will be provided on the day of the competition. Each team will try to be assigned (if needed) to a Ford Dealership as close as possible to their Automotive School for training, including familiarization with the vehicle and the required service information. Ford Motor Company will provide log in and password for each team to access Ford service information.

## **SCOPE / SCORING:**

There are two components of the competition, scores are combined to determine the winning team.

Speed is NOT a judging factor, all work including completion of the repair order must be done in the allotted time.

In order to be successful, students must be able to navigate the factory service information on the laptop to diagnose problems.

### **Workstations**

50% of the competition scoring will be comprised of students' knowledge of tools, explicit vehicle mechanisms and their workings, and measuring instruments.

### **Hands On**

50% of the team scores will be comprised of the student's ability to "debug" the competition vehicle, as well as properly documenting their work on the Repair Order.

**Any team that is late for the start of the competition will be penalized 5 points.**

**WORKSTATIONS:** The workstations allow the student competitors to demonstrate skills and knowledge which cannot be measured during the hands-on-vehicle portion of the competition.

Each workstation judge administers and monitors their own test(s) and collects answers on separate answer sheets (not part of the RO). At each workstation, where applicable, teams must read and interpret a written set of instructions, perform the indicated tasks and record their results. Each team will have approximately 15 minutes at each of the 5 workstations.

**Precision Measurement**

Students will be required to use basic measuring equipment to determine size or clearances using various brake components, engine components and clearance simulators.

**Electrical Measurement**

Students are expected to understand basic usage of a DVOM and must be able to use tools to diagnose a failed circuit. A Fluke 87 and/or Snap-On 525 will be provided.

**Wire Harness Repair**

Students will demonstrate the necessary skills involving wire and harness repair techniques including soldering with and without a connector, crimping with insulated and non-insulated connectors, connector terminal removal/replacement, insulating with heat shrink tubing.

**Front End Alignment**

Students will demonstrate a basic understanding of fundamental wheel alignment angles, vehicle geometry and alignment diagnostics.

*The Front-End alignment vehicle will be a Subaru Legacy.*

**Wheel Service / NVH Workstation**

Students will demonstrate their understanding of basic NVH (Noise, Vibration and Harshness) fundamentals as it relates to wheel/tire balance and road force diagnostics. Students will perform specified tasks of wheel balance and road force measurement on a Hunter GSP9700, Gen-IV balancer.

**ALL WORKSTATIONS WILL BE BASED ON A SIMILAR FORMAT AS USED IN PAST COMPETITIONS WITH AN EQUAL AMOUNT OF TIME ALLOTTED FOR EACH STATION.**

**HANDS ON:**

The hands-on portion of the competition is designed to challenge the students by measuring:

Their ability to read and record Concern, Cause, and Correction (3-Cs) of a mechanical failure and record it properly on a written Repair Order (RO).

Problem solving and deductive reasoning capabilities

Their ability to understand wiring diagrams

Use of resources such as repair manuals and computers to access service information

Use of measuring tools, meters and other electronic devices

Reading comprehension

Attention to detail and professional work habits

Safety disciplines

**Work Order:** A work order will be provided to each team. Students are required to write all information on the work order (team information, parts description, 3C's, and service manual references) within the time allotted for the hands-on test. Teams will be judged according to the quality of the repairs made.

**TOOLS / PARTS - (SENIOR TECHNOLOGY COMPETITION ONLY)****MOST**

**Tools will be provided for your use by  
SUNY Erie Vehicle Technology Training Center**

A scan tool will be provided to each team by the manufacturer.  
Replacement parts will be available at the parts counter in the competition area.  
Students must request replacement parts in writing on the Repair Order.

## **Tire Changing Rodeo Competition**

Sponsored by Exxpress Tire Delivery

**QUALIFICATIONS** – *Team members must be high school Juniors, 1<sup>st</sup> year automotive students.*

### **Overview**

- **The tire machine will be a Hunter TC-37, (not the 3700)**
- The competition is open to high school juniors from CTE high schools
- Each team will consist of two students. If a school is approved to bring an additional team, each competing team **MUST** have a separate instructor.
- The students will be competing against a stopwatch in an Olympic style format. Each student will have two separate runs on different machines. The student's individual best time (of the two runs) will be listed as their "official time". The combined "official time" for both students of each team will be their schools "official time". Each student **MUST** also take a written test.
- Student pairing and rotation will be based on a random drawing prior to the competition day.
- While the primary measurement will be time-based, there will be safety and procedural factors that may cause a time add-on assessment. All safety and procedural factors will be covered in a mandatory meeting the morning of the competition.
- Each student will take a written test based on information found at [www.tiresafety.com](http://www.tiresafety.com). All the information needed to study for the test will be found in the first five (5) tabs along the top of the home page.
- The test will consist of 20 questions; each **incorrect answer** will result in a **3 second penalty** added to the time for the tire dismount/mount portion of the competition.
- The task sequence will be:
  - From a specific spot on the floor, lift a tire and wheel assembly and safely place it on the tire changer
  - Deflate and Dismount tire from the wheel
  - R&I valve core from the valve stem
  - From a specific spot on the floor, mount replacement tire
  - Inflate tire to within a specific psi range
  - Remove tire and wheel assembly from the tire changer and place it within a specific spot on the floor, in a controlled manner (safely)

## **Procedure for Competition**

- Students **MUST** attend safety and procedural meeting that will be held immediately following kick off meeting in the morning of the competition. No jewelry is to be worn at all.
  - All competitors **MUST** wear work attire, including work boots AND safety glasses. No canvas shoes/open toed shoes or sneakers. No jewelry or items hanging from your belt are allowed. Failure to wear proper footwear and/or safety glasses will result in disqualification from the competition.
  - Competitors must place all tools in the tool caddy on the machine prior to starting. One hand must be placed anywhere on the tire machine until the start is indicated by a 3-2-1 GO. Timekeepers start timing.
  - Mounting procedure will be conducted simulating a TPMS valve stem. Please see attached sheet for proper procedure for tire changing wheels with TPMS. NOTE: Failure to follow the steps as outlined on the next page will result in a 10 second penalty.
  - Wheel is secured to the tire changer in a safe and controlled manner. Unsafe securing of the wheel assembly will result in a 5 second penalty.
  - Valve core from valve stem must be removed, controlled, and re-installed with the new tire. Unsafe or uncontrolled valve core removal will be assessed a 5 second penalty.
  - Inner and outer beads are loosened. Uncontrolled, unsafe, or premature bead loosening (popping noise) will be assessed a 10 second penalty.
  - Inner and outer beads **MUST** be completely lubricated 360 degrees prior to removal from the wheel. Failure to properly lubricate, or simulate lubrication, of the beads will result in a 10 second penalty.
  - Dismount tire from wheel. Double bead mounts will result in disqualification.
  - Removed tire is placed into the "Dismounted Tire" square on the floor. Placement of the tire on the line or out of the box will result in a 5 second penalty.
  - New tire from designated area is to be lubricated, or simulated lubrication must be demonstrated, on both beads 360 degrees. Failure to properly and adequately lube the beads will result in a 10 second penalty.
  - Install tire on the wheel.
  - Valve core may be installed before or after the tire is remounted. Incomplete installed valve core will result in 5 second penalty.
  - Air hose is attached, and tire is inflated to a pressure of 18-22 psi. A one second penalty will be assessed for each 1-psi variance, either under or over specified pressure.
  - Valve core and valve cap **MUST** be installed. A five second penalty assessed if left off or loose.
  - Tire / wheel assembly is removed from the tire changer in a controlled manner and placed into the proper square on the floor as "FINISHED". Uncontrolled/unsafe or on the line or out of the box receives a 5 second penalty.
  - Time stops when the competitor removes his / her hands from the finished tire / wheel assembly. Once released, it may **NOT** be repositioned.
  - Each tool dropped on the floor during the timed event will result in a 5 second penalty.
  - Two judges will time each contestant simultaneously. The lowest individual elapsed time of the two judges will be used.
  - The decision of the event officials is final.
- NOTE:** Tire must be placed inside the "box" – Any part of the tire "touching" the line will result in a 5 second penalty.

Tire Changing Procedure for  
Wheels with TPMS (Tire Pressure Monitoring System)

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- Bead Loosening

When loosening the bead of the tire make sure to keep side shovel away from valve stem, so as not to break sensor off with shovel.

- Upper Bead Removal

When inserting tire bar to remove upper bead place valve stem just BEFORE the mount/demount head. It is now safe to remove upper bead.

- Lower Bead Removal

When inserting tire bar to remove lower bead place valve stem again, just BEFORE the mount/demount head. It is now safe to remove lower bead.

- Mounting Lower Bead

When locking lower bead against the rim to mount tire to wheel keep valve stem just ahead of the traction point (this is where the tire is locking against wheel, this will typically be 180deg opposite of the mount/demount head) It is now safe to install lower bead.

- Mounting the Upper Bead

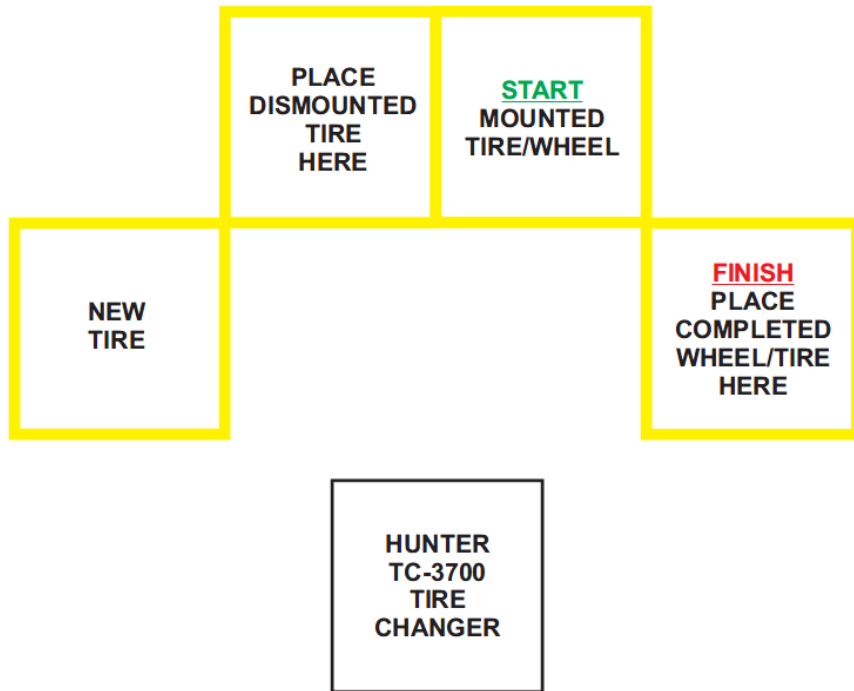
When locking the upper bead against the rim to mount the tire to wheel keep valve stem just ahead of the traction point (this is where the tire is locking against wheel, this will typically be 180deg opposite of the mount/demount head) It is now safe to install upper bead.

**Proper placement of valve stem location during the tire changing process will allow tires to be removed and installed without damage to TPMS sensor assemblies.**

**Any questions regarding procedure, please contact**

Ken Fronckowiak – 716-580-7184 ([ken@nfada.com](mailto:ken@nfada.com))  
Bob Chavanne – 716 903-3067 ([rjchavanne@towneauto.com](mailto:rjchavanne@towneauto.com))

### Tire Rodeo Competition Area Layout



Commented [TH1]:

**NOTE: Tire machine will be a Hunter TC-37**  
(Not the TC-3700)

To insure the best possible score for your team, study this web page...

 [https://www.tiresafety.com/en\\_us/index](https://www.tiresafety.com/en_us/index)



Using the navigation tabs at the top of the page, please review the following sub-sections...

CHOOSING TIRES	MAINTAINING TIRES	TIRES 101
Replacement Guidance	Tire Inflation	Tire Types
Determining Tire Size	Tire Rotation	Tire Construction
Sedans & CUV's	Tire Inspection	Tire Functions
Light Truck & SUV's	Tire Repair	Tire Terminology
<a href="#">Tire Replacement Manual</a>		

*\*Studying the manual is very helpful, but not required. Knowing how to find it is great reference for future use.*

## BIG HINT...

100% of the twenty test questions were written using the information on the **tiresafety.com** website.

*Each incorrect answer equals a 3 second penalty!*

The fastest, safest and most controlled performance on the tire machine has NEVER produced a winning team if the competitors test scores were below 50% !!!

## STUDY AND WIN!