LEVEL UP
2026 - 2027

NYS SkillsUSA



PURPOSE

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of collision repair technology.

ELIGIBILITY

Open to active NYS SkillsUSA members enrolled in programs with collision repair technology as the occupational objective.

CLOTHING REQUIREMENTS

NYS SkillsUSA – Mechanic

- White crew neck short- sleeved T-shirt
- Work pants or jeans,
- Leather or steel toed work shoes.
- Long hair must be restrained.
- Safety glasses with side shields or goggles, (Prescription glasses can be used only if they are equipped with side shields and are approved by OSHA Z-87). If not, they must be covered with goggles.

Note: Contestants must wear their official contest clothing to the contest orientation meeting. Also bring #2 pencil, resume, and safety assurance form

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:

   a. Materials for metalworking phase:

   1. Fenders to be repaired

   2. Plastic filler

   3. Various grits of sandpaper for hand sanding, block sanding

   4. Plastic body filler

   b. Materials for plastic repair phase:

   1. Cleaning solvent

   2. Plastic repair material

   3. Abrasive discs and sheets

   4. Plastic car parts

   c. Materials for estimating phase:

   1. Vehicle owner's name and address

   2. Scratch pads

   3. Estimate sheets

   4. Estimate books

   5. Parts price list for Estimate

2. Supplied by the competitor:
   a. Bullseye pick, if desired.
   b. HEPA filtered respirator
   c. Body files
   d. Mixing boards and spreaders
   e. dollies
   f. Various metal finishing hammers f. D i.e., g
   g. Die grinder with rolo disc attachment
   h. Cartridge-type respirator HEPA (charcoal filtered)
   i. Welding goggles
   j. Welding gloves
   k. Welding jacket
   l. Skull cap (no "doo rags")
   m. Welding respirator
   n. Welding helmet
   o. Welding jacket
   p. Vice grip type clamps to secure weld
   q. Face shield
   r. 9/16" and 5/8" wrenches
   s. Sanding pads
   t. Sanding blocks
   u. Quick coupler that fit your tools
   v. Calculator, clipboard and # pencils
   w. All competitors must create a one-page resume using a word processor. See "Resume Requirement" below for guidelines. Additionally, and as part of the competition, competitors will submit two hard copies of their resumes at orientation.

Note: No power hand tools required

RESUME REQUIREMENT

Competitors must create a one-page resume to submit at orientation.

DEVICES

Cell phones or other electronic devices not approved by the NYS Chairperson will be collected by the contest chair during the competition. Chairpersons will announce their acceptance by listing it on their standard or at the orientation meeting. In case of emergencies advisors should allow the competitors to take their phones to the contest areas.

If the competitor uses their device in a manner which compromises the integrity of the competition, the competitor's score may be penalized.

SCOPE OF THE COMPETITION

The competition will be consistent with the Collision Repair knowledge and skills requirements, as outlined in the guidelines published by the National Institute for Automotive Service Excellence (ASE), the I-CAR Knowledge and Skills Protocol and the ASE Education Foundation Competitors will demonstrate their ability to perform jobs of skills selected from the standards mentioned above as determined by the SkillsUSA Championships technical committee.

Committee membership includes:

3M Co., American Iron and Steel Institute (AISI), Car-Part.com, Chief Automotive Technology, Collision Hub, Chippewa Valley Technical College, Farmers Insurance, General Motors Corp., I-CAR, Keiths Consulting, Miller Electric Mfg. Co. Inc., National Institute for Automotive Service Excellence (ASE), ASE Education Foundation, Polyvance, Saint-Gobain, Snap-on Inc., State Farm Insurance Companies, Toyota Motor Sales USA Inc., Keco Tabs, and the Women's Industry Network.

KNOWLEDGE PERFORMANCE

All competitors are required to take the SkillsUSA professional development test at orientation.

The competition includes a written knowledge test given by ASE covering three of the Collision Repair areas that are identified in the ASE Education Foundation Collision Repair/Refinishing Program Standards and the ASE Official Study Guide: Collision Repair/Refinish, and a structural test. The tests for the high school and college competitions will consist of diagnosis and repair content from these skill areas: Non-structural Analysis and Damage Repair, Structural Analysis and Damage Repair, Mechanical and Electrical Components.

1. **Nonstructural Analysis —** 22 questions in Nonstructural Analysis and Damage Repair (B3) ASE Certification Test in the content areas of: preparation, outer body panel repairs, replacements and adjustments, metal finishing and body filling, glass and hardware, welding, cutting and removal and plastic repair
2. **Structural Analysis —** 14 questions in Structural Analysis and Damage Repair (B4) ASE Certification Test in the content areas of: frame inspection and repair, unibody inspection, measurement and repair, stationary glass and metal welding and cutting
3. **Mechanical and Electrical Components —** 14 questions in Mechanical and Electrical Components (B5) ASE Certification Test in the content areas of: suspension and steering, electrical, brakes, heating and air conditioning, engine cooling systems, drivetrain, fuel intake and exhaust systems and restraint systems

SKILL PERFORMANCE

Competitors will demonstrate their ability to perform jobs and skills based on the task list outlined by I-CAR, ASE and the ASE Education Foundation. The competition includes a series of workstations to assess skills in the following areas: metal straightening, attachment methods, plastic repair, and structural analysis. There will be a written test on structural analysis, and an ASE exam. The competitors will also participate in an interview. The overall appearance of the finished product, ability to follow published procedures, and proper safety practices will be judged.

STANDARDSANDCOMPETENCIES

CRT1.0—Repair depressed area(s) on a steel panel with hammer and dolly techniques and bodyfiller.

1.1. Model proper safety procedures.
1.2. Clean contaminants from a damaged panel.
1.3. Locate surface irregularities on a damaged panel.
1.4. Remove finish from the damaged area(s) as necessary.

1.5. Apply hammer and dolly techniques to repair damage.
    1.5.1. Straighten and rough out contours of damaged panels to a suitable condition for body filling using hand tools.
1.6. Mix and apply body filler on a steel panel.
    1.6.1. Determine the relative proportion of the desired versus the undesired ingredients or elements of a mixture and determine if that proportion is within the manufacturer's specifications.
1.7. Sand cured body filler to contour.
1.8 Finish sand.

CRT2.0—Repair depressed area of an aluminum panel

2.1. Model proper safety procedures.
2.2. Clean contaminants from a damaged panel.
2.3. Locate surface irregularities on a damaged panel
2.4. Remove finish from the damaged area(s) as necessary
2.5. Demonstrate the straightening process, with heat application as necessary

CRT3.0—Repair depressed areas using metal finishing techniques on a steel panel

3.1. Model proper safety procedures.
3.2. Clean contaminants from a damaged panel.
3.3. Locate surface irregularities on a damaged panel.
3.4. Remove finish from the damaged area(s) as necessary.
3.5. Demonstrate various uses of the metal finishing tools.

CRT4.0—Repair depressed area(s)on a steel panel with glue pulling equipment and techniques.

4.1. Model proper safety procedures.
4.2. Clean contaminants from a damaged panel.
4.3. Locate surface irregularities on a damaged panel.
4.4. Remove finish from the damaged area(s), as necessary.
4.5. Remove damage using glue pulling techniques.

CRT5.0—Prepare steel panel for primer

5.1. Model proper safety procedures.
5.2. Clean contaminants from a damaged panel.
5.3. Featheredge paint/E-coat, as necessary.
5.4. Sand/Scuff bare metal, as necessary.

CRT 6 .0 — Demonstrate the understanding and skills necessary for attachment methods needed for collision repair of steel and aluminum panels

6.1. Model proper safety procedures.
6.2. Make a plug weld using steel coupons in the vertical and overhead positions using a GMA (MIG) welder.
6.3. Make a butt joint with backing weld using steel coupons in the vertical and overhead positions using a GMA (MIG) welder.
6.4. Make a fillet weld on lap using steel coupons in the vertical and overhead positions using a GMA (MIG) welder.

6.5. Make a plug weld using aluminum coupons in the vertical and overhead positions using a GMA (MIG) welder.
6.6. Make a butt joint with backing weld using aluminum coupons in the vertical and overhead positions using a GMA (MIG) welder.
6.7. Make a fillet weld on lap using aluminum coupons in the vertical and overhead positions using a GMA (MIG) welder.
6.8. Make a squeeze-type resistance spot weld (STRSW) using steel coupons.
6.9. Make MIG brazing joints using steel coupons.
6.10. Identify, remove, and install self-piercing rivets (SPR).
6.11. Identify, remove, and install blind rivets.
6.12. Identify and install solid rivets.
6.13. Install rivet bonded panel.
6.14. Install weld bonded panel.

CRT7.0—Complete a two-sided repair on a plastic vehicle part. Mix and apply appropriate plastic repair material following the product maker's procedures.

7.1. Model proper safety procedures.
7.2. Demonstrate an understanding of the importance to clean before making any repair.
7.3. Damage preparation before adhesive work
7.4. Demonstrate an understanding of appropriate abrasive grade sequence for reinforcing plastic repair (typically 50 and 80).
7.5. Apply a light coating of adhesion promoter and allow to dry adequately.
7.6. Demonstrate the ability to open, load, and equalize the cartridge, attach the mixing nozzle, and discard the first pump of material.
7.7. Demonstrate proper spreading techniques: Apply a thin, tight coat of material, then build a thin layer of adhesive followed by reinforcing mesh and an additional layer of adhesive.

CRT8.0—Complete a front-side cosmetic surface repair on a plastic vehicle part.

8.1. Demonstrate proper safety procedures
8.2. Demonstrate an understanding of the importance of cleaning before making any repair.
8.3. Damage preparation before adhesive work
8.4. Demonstrate an understanding of appropriate abrasive grade sequence for plastic repair (Typically 50, 80, adhesive application, 80, 180, 320).
8.5. Demonstrate an understanding of the need to keep very coarse grade scratches (80 grit) inside valley of repair and not on surrounding plastic, to avoid creating “fuzzies” that will be difficult to conceal within the finished paint work.
8.6. Demonstrate understanding of the difference between “Veeing Out” a repair (incorrect) and “Dishing Out” a repair (correct) and how that relates to the finished product (no ghost lines).
8.7. Apply a light coating of adhesion promoter and allow to dry adequately.
8.8. Demonstrate the ability to load, open and equalize the cartridge, attach the mixing nozzle, and discard the first pump of material.
8.9. Demonstrate proper spreading techniques: Apply a thin, tight coat of material; build in thin layers; and avoid air entrapment as they build slightly higher than the surrounding areas.
8.10. Demonstrate test to determine readiness to sand (check with fingernail, see if it leaves a white mark in the adhesive).

CRT9.0—Complete a tab repair on a plastic vehicle part.

9.1. Model proper safety procedures.
9.2. Demonstrate an understanding of the importance of cleaning before making any repair.
9.3. Demonstrate an understanding of appropriate abrasive grade sequence for tab repair (typically 50 and 80).
9.4. Apply a light coating of adhesion promoter and allow to dry adequately.
9.5. Demonstrate the ability to load, open and equalize the cartridge; attach the mixing nozzle; and discard the first pump of material.
9.6. Demonstrate proper "molding" techniques using contour sheeting and form a new tab.
9.7. Demonstrate test to determine readiness to sand (check with fingernail, see if it leaves a white mark in the adhesive).

CRT 10.0 — Complete tab repair surface preparation.

10.1. Demonstrate proper safety.
10.2. Demonstrate the ability to use 50-grit abrasive on a high-speed grinder to rough shape the formed tab, followed by 180-grit on a DA to finely shape the tab, and lastly, a 320-grit abrasive to prepare the featheredge for the painting process.
10.3. Demonstrate the ability to use an 80-grit abrasive to "knock down" the bulk of the excess cosmetic repair material without abrading the surrounding plastic, which would leave "fuzzies."
10.4. Demonstrate the ability to use 180-grit abrasive to successfully level the repair material and feather into the surrounding area.
10.5. Finish sanding the repair and surrounding area with 320-grit abrasive to prepare for painting process.
10.6. Demonstrate the best practice of reapplying adhesion promoter after the final sanding step, to assure paint adhesion.

CRT11.0—Complete a tear repair on a plastic vehicle part using a plastic nitrogen welder.

11.1. Model proper safety procedures during the preparation and welding process.
11.2. Demonstrate proper cleaning of the surface.
11.3. Demonstrate proper backside surface preparation for plastic welding (e.g., grinding V-groove or abrading surface).
11.4. Demonstrate proper fixturing of tear with aluminum tape.
11.5. Demonstrate proper nitrogen welding technique on the backside of the plastic vehicle part. Reinforce if desired at the edge to ensure the integrity of the repair.
11.6. Demonstrate the V-grooving of the tear on the cosmetic side of the repair to the proper depth and width.
11.7. Demonstrate proper nitrogen plastic welding technique to the cosmetic side of the plastic vehicle part.
11.8. Demonstrate proper attention to cooling the welded area before finish sanding the plastic vehicle part.
11.9. Demonstrate proper finish sanding technique to prepare the repair area for application of cosmetic filler.

CRT 12.0 — Demonstrate knowledge of basic steering and suspension parts

12.1. Identify the illustrated steering and suspension components.

CRT 13.0 — Demonstrate knowledge of steering and suspension geometry

13.1. Identify steering and suspension.

13.2. Identify and analyze misaligned or damaged steering, suspension, and powertrain components that can cause vibration, steering, and wheel alignment problems.

CRT 14.0 — Perform structural damage analysis

14.1. Identify structural damage types and corrections.

CRT 15.0 — Demonstrate knowledge of vehicle structural realignment

15.1. Identify anchoring and blocking locations for structural realignment.

15.2. Identify the extent of damage, the direction of impact, and direction of correction; document the methods and sequence of repair.

CRT 16.0 — Measure and analyze structural, steering, and suspension misalignment of a body on frame vehicle using a tram gauge measuring system.

16.1. Using a tram gauge and tape measure, measure the damaged vehicle's upper body and steering and suspension control points.

16.2. Using a mechanical measuring system, determine the different types of misalignments that the vehicle's lower structure has sustained.

CRT 17.0 — Measure and analyze structural, steering, and suspension misalignment of a unitized body vehicle

17.1. Identify the different types of misalignments to the vehicle's structure, steering and suspension.

17.2. Determine the material type and the sectioning or replacement procedures.

18.0—Access OEM repair information to determine a repair plan strategy.

18.1. Identify material types.

18.2. Identify, measure, and mark sectioning locations.

18.3. Identify and execute attachment methods required for repair.

CRT 19.0 — Demonstrate knowledge and skills required for collision repair diagnostics, including Advanced Driver Assistance Systems (ADAS)

19.1. Identify vehicle electronic parts and systems.

19.2. Demonstrate proper use of a scan tool.

19.3. Identify conditions that necessitate aiming/calibration of ADAS sensors and cameras.

19.4. Perform ADAS aiming/calibration procedures.

CRT 20.0 — Complete an oral assessment/interview

20.1. Exhibit personal skills such as attendance, time management and individual responsibility.

18.1.1. Demonstrate promptness when required to meet interviewer at specific time and location.

CRT 21.0 — Maintain professional conduct and appearance

21.1. Demonstrate proper attire (SkillsUSA uniform light blue shirt, dark blue pants)

CRT 22.0 — Complete job application and resume

22.1. Properly and legibly complete a job application and resume

CRT 23.0 — Demonstrate interview skills