

# SKILLS USA DISTRICT CONTEST

## COLLISION REPAIR

Dear High School Auto Body Instructor:

The Skills U.S.A competition will be held at TSTC Harlingen Auto Collision Department on February 17-18, 2023 High School Districts. The contest will be closely correlated to the National Competition outline. The competition will consist of four different areas including: three areas of Body repair, Steel MIG Welding, Plastic repair and Damage analysis. Refer to information below. Please prepare your students in these areas to ensure a great competition. A mandatory Orientation will be held on February 17, 2023 at 1:00pm in Auto Collision Building F Room 109. AFTER BREAK OUT we will go over the competition rules and layouts of shop. Any student who does not attend the Orientation will not be eligible to compete, **Remember Two Students per contest only.** During the Orientation contestants will be given a test on Collision Repair and Refinishing that will be used as a tiebreaker. Contestants will need to come in Official Skills Attire for the Orientation as well as for the Collision Repair Technology competition Orientation, it is a mandatory requirement. The web site to purchase the clothing is [www.skillsusa.org/shop](http://www.skillsusa.org/shop) which consist of a light blue (Skills USA) work shirt and blue work pants, proper foot wear will need to be worn (tennis shoes will not be allowed). A one-page, **typed resume** will be required for each contestant, which will be turned in at the Orientation. Saturday's competition will start at 8:00 am to 12:00 pm so have your students bring a snack to eat between breaks. Students that are caught communicating with instructors during competition will be disqualified from the entire competition. \*\*\*Shop is equipped for Milton 727 male adapters\*\*\*

### TECHNICAL TEST:

This test will be administered Friday, February 17, 2023 along with Orientation of the competition. The test will consist of questions in Auto Collision Repair and Refinishing. The test will be used as a tie breaker.

**TSTC:** Will provide Test, Scan Tron and pencils

**TIME:** 30 minutes

### BODYWORK:

- 1) Repair depressed area on a steel panel with plastic body filler. (Finish work with 180 grit sand paper)

Model proper safety procedures

Locate surface irregularities on a damaged panel

Remove finish from the damaged area(s) as necessary

Apply hammer and dolly techniques to repair damage

Differentiate between pressures in relation to the concept of force to realign a component

Mix and apply plastic body filler on a steel panel

- 2) Repair depressed areas using metal finishing techniques on a steel panel “No Filler Application”.

Model proper safety procedures

Locate surface irregularities on a damaged panel

Remove finish from the damaged area(s) as necessary

Demonstrate various uses of the metal finishing tools

- 3) Repair depressed area using shrinking techniques on a steel panel to related tasks in National Automotive Technicians Foundation (NATEF) Collision Repair Non-Structural Analysis and Damage Repair Technical Standards. “No Filler application”

Model proper safety procedures

Locate surface irregularities on a damaged panel

Remove finish from the damaged area(s) as necessary

Identify hammer and dolly techniques to repair damage

Demonstrate the understanding of the pressure in relation to the concept of force to realign as component

Perform the metal finishing process as necessary

Perform the heat shrinking process as necessary

Demonstrate an understanding of the effect that adding heat will cause in a state of matter such as changing a solid to a liquid

**TSTC:** Will provide panels, body filler, all sand paper and buckets with water

**TIME:** 50 minutes

**CONTESTANT:** Must bring safety glasses, particle mask, sanding blocks, mixing board, plastic spreaders, metal body file, hammer and dolly, grinder, cheese grater, leather gloves, working gloves and stud welders for “heat shrinking” extension cord (necessary tools to repair damage)

### **MIG WELDING:**

Demonstrate welding skills needed for collision repair of steel panels as of I-CAR (WCS 03) Steel Welding Qualification Test (Vertical). Welds must be more than one inch, less than an inch and a half

Make a plug weld using 16gauge & 22 gauge metal coupons in the vertical position using a Steel MIG Welder

Make a butt joint with backing weld using 16 gauge and 22 gauge metal coupons in the vertical position using a Steel MIG welder

Make a fillet weld “lap joint” using 16 gauge & 22gauge metal coupons in the vertical position using a Steel MIG welder

Make a butt (no backing) weld using 16 gauge & 22 gauge metal coupons in the vertical position using a Steel MIG welder

**TSTC:** Will furnish Pro Spot (SP5) Steel MIG welders with .023 wire and 18gauge metal coupons.

**TIME:** 50 minutes

**CONTESTANT:** Must bring welding hood, safety glasses, welding gloves, wire side cutters, 3 or more welding clamps, welding vest, wire brush, tape measure and welding respirator (optional).

### **PLASTIC REPAIR:**

Perform repairs with plastic car parts. (Two-sided repair)

Model proper safety procedures

Identify damage preparation before adhesive work

Perform appropriate abrasive grade sequence for plastic repair

Perform very coarse grade scratches (80 grit) inside valley of repair but not on surrounding plastic to avoid creating “fuzziness” which will be difficult to conceal in the finished paint work

Differentiate between “V” grooving out” a repair (incorrect) and “Dishing Out” a repair (correct) and how that relates to the finished product (no ghost lines)

Remove paint and feather the damage into the surrounding area with ISO grit abrasive

**TSTC:** Will provide plastic coupon, plastic repair material and sand paper.

**TIME:** 50 minutes

**CONTESTANT:** Must bring safety glasses, particle mask, angle die grinder, spreaders, mixing board, sanding block, D/A sander and surgical gloves

### **DAMAGE ANALYSIS:**

- 1) Read the gauges and measure using the damage simulator or live vehicle to related tasks in National Automotive Technicians Foundation (NATEF) Collision Repair and Refinishing Structural Analysis and Damage Repair Technical Standards

Sight the gauges and determine if there is a centerline (sideways) or height misalignment of the structure

- 2) Analyze structural, steering and suspension misalignment of a unitized body vehicle using a computerized measuring system to related tasks in National Automotive

Technicians Foundation (NATEF) Collision Repair and Refinishing Structural Analysis and Damage Repair Technical Standards

Determine the difference type of misalignment the vehicles structure, steering and suspension have sustained

Record the misalignments identified and analyze the type of amount of damage the vehicle has sustained

- 3) Students will be performing under hood measurements and wheelbase measurement using tram gauge and record in millimeters.

**TSTC:** Will provide frame simulator with self- centering gauges and Tram gauge

**TIME:** 50 minutes

**CONTESTANT:** Must bring safety glasses

Thank you!

Sincerely,

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