

**Collision Repair Technology**  
**MO SkillsUSA 2023**  
**Tool List & Contest Specifications**

**Contest Coordinator:** \*Christian Record  
Email: [christian.record@statetechmo.edu](mailto:christian.record@statetechmo.edu)

**All items on each tool list to be supplied by the contestant:**

- One page, resume uploaded online
- Respirator
- Safety Glasses

**METAL REPAIR Tool List** (Other tools and equipment optional)

- DA sander (Hook it)
- Interface pad for DA (Hook it)
- Right Angle Grinder
- Hammers
- Dollies
- Sanding blocks (stick it)
- Plastic body filler spreaders
- Mixing board
- Air fittings and necessary wrenches\*\*

\*\*Milton 791 (male) and/or Milton 792 (female) [for air tools]

\*Failure to bring required tools will be the fault of the contestant and will NOT be provided by contest coordinators.

**PLASTIC REPAIR Tool List** (Other tools)

- Safety glasses
- Respirator
- Mixing board
- Spreader
- Sanding block
- Grinder or die grinder
- DA sander
- Drill (air or electric)

TDS sheets will be provided day of contest.

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**WELDING Tool List**

- Welding respirator
- Welding gloves
- Welding vest
- 12" ruler
- Permanent marker
- Welding helmet
- Vice Grips
- Personal Work light

Note: The welding portion will replicate the National SkillsUSA contest by using vertical and overhead welding.

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**FRAME ANALYSIS Tool List**

\_\_\_\_\_ Pencil with eraser

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**Contest Specifications:**

**WELDING**

- Using Millermatic 211 welders 110v, .24 wire diameter, MIG weld 18 gauge steel coupons in vertical and overhead positions
- Contestants will have 30 minutes total to complete all welds (vertical and overhead) required in addition to having practice coupons to set up welder for each position
- I-CAR specific destructive standards will be used for judging
- Vertical welding (contestants will submit one of each weld for final scoring at the end of their 30 minute time)
  - 1 butt joint with backing
  - 1 fillet (lap) weld
  - 1 plug weld
- Overhead welds (contestants will submit one of each for final scoring at the end of their 30 minute time)
  - 1 butt joint with backing weld
  - 1 fillet (lap) weld
  - 1 plug weld
- Coupons must be clamped. No screws or tack welds  
Contestants will break each weld for inspection in front of judge for scoring after 30 minute time frame expires

**METAL WORKING**

- Repair 3 dents in fender
  - Straighten dent with use of body filler
  - Metal finish dent (no body filler used)
  - Fix dent with use of stud gun (no body filler used)

**FRAME AND STRUCTURAL ANALYSIS**

- Analyze three-dimensional measurements from pre-installed Chief Velocity or Car –O-Liner Vision computerized measuring systems and determine damage or damages indicated by the system as well as understand and describe the forms of damage that can be found in a frame. Example: twist, sag, sway, and diamond
- Additional questions may be asked by judges during competition pertaining to the assigned damage being analyzed.

**PLASTIC REPAIR**

- Repair tear in automobile plastic bumper coupon using 3M 5887 adhesive and provided backing material
- Form tab on coupon using 3M 04240 repair material and pinning.  
TDS sheets will be provided day of competition or can be found via online.

**INTERVIEW AND TYPED RESUME**

- Clothing required for the Collision Repair contest will be suitable for the interview

**Pre-Contest Meeting and Contest:**

Date: Friday, March 31

Time: 8:00 a.m. – Completion

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Pre-Contest Meeting Location: Vehicle & Power Center - Room 128 (ACT shop) – State Tech (7)  
Doors open at 7:30 a.m. (contestants may drop off appropriate tools)

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