

Skills Canada National Competition

SCOPE DOCUMENT	
Competition Year	2012
Competition location	Edmonton, AB
Trade Number	14
Trade Name	Sheet Metal Work
Level	Post-Secondary

1. INTRODUCTION

1.1 Purpose of the Challenge.

To enable students to demonstrate their skills working with sheet metal.

1.2 Duration of contest.

12 hours

1.3 Skills and Knowledge to be tested.

Sheet metal layout and fabrication skills.

2. CONTEST DESCRIPTION

2.1 List of documents produced and timeline for when competitors have access to the documents.

DOCUMENT	DATE OF DISTRIBUTION VIA WEBSITE
Isometric drawing	April 1, 2012

2.2 Tasks that may be performed during the contest

2.2.1 Layout Skills

- Simple triangulation from plan view (Parallel Openings)
- Simple radial line development with parallel openings
- Square, polygon or round rain caps
- 90° round on round tees
- Round elbows and offsets (Non reducing except for BE – SE)
- Any of the following rectangular fittings (All changes in size must occur on the cheeks)
 - Offsets
 - Elbows
 - Y-Branches
 - Take-offs

- Simple layout

2.2.2 Methods of Fastening and Joining

- Rivets
 - Pop
 - Solid
- Sheet metal screws
- Nuts and bolts
- Welding
 - MIG
 - Spot (Resistance)
- Grooved seams
- Single and double seams
- Lap and spot
- Hammerlock (Round or rectangular)
- BE-SE slip
- Pittsburgh (Irish) lock
- Slip and drive
- Standing “T” or C.P.R.
- Elbow seam
- Wire edge

3. EQUIPMENT, MATERIAL, CLOTHING

3.1 Equipment and material provided by Skills/Compétences Canada

- MIG welders c/w 030” wire and 25% CO₂ / 75% Argon (1 for 4 comp.)
- Welding Curtains
- Flat metal table for welding and grinding (1 for 4 comp.)
- Welding helmets (1 for 4 comp.)
- Face shields
- Scrap Metal Bin
- Brooms (2)
- Standard hand brake – 16 gauge min. (1 for all comp.)
- Box and pan brake – 16 gauge min. (1 for all comp.)
- 3’ foot shear – 16 gauge min. (1 for all comp.)
- Funnel (blowhorn) stakes (2 for all comp.)
- Hatchet (knife) stakes (2 for all comp.)
- Bevel edge square stakes (2 for all comp.)
- Double seaming stakes (2 for all comp.)

- Hollow mandrel stakes (2 for all comp.)
- Deep throat comb. rotary machine c/w wheels (1 for 4 comp.)
- Easy edger (1 for 4 comp.)
- 2" x 36" rolls (2 for all comp.)
- Hand groovers
- Pop riveters (2 for all comp.)
- ¼" and 5/16" hex screw chucks
- 3' x 6' work surface (1 per comp.)
- 110V power bar (1 per comp.)
- Bench vise (1 for 4 comp.)
- 30" bar folders (1 for all comp.)
- Stake holders (2 for all comp.)
- 4 ½" angle grinders c/w flexible pads and discs (2 for all comp.)
- Unishears or equivalent – 16 gauge CRS cap. (2 for all comp.)
- Beverly shear (1)
- Cordless drills c/w drill bits (2 for all comp.)
- Framing squares (1 per comp.)
- Circumference rule 3 foot (1 per comp.)
- 18 gauge stainless steel
- 16 - 18 gauge CRS
- 20 to 26 gauge galvanized iron
- 1 ½ lb. solid rivets
- #8 x ½" and #10 x ¾" TEK screws
- 16 oz. cooper
- Sheet brass
- copper/brass polisher (Brasso) and rags

3.2 Equipment and material provided by the competitor*

- Screwdrivers (Standard and Robertson)
- Aviation snips (left and right cutting)
- Combination snips
- Dividers (2 sets)
- Trammel points
- Marking gauge
- Tape measure
- Hand seamers (folding pliers)
- C-clamp vise grips (2 sets)
- Standard vise grips (2 sets)
- Flat file
- Half round file
- 12" rule

- Center punch
- Scratch awl
- Mallet
- Body Hammer
- Tinnens hammer
- Protractor
- Adjustable wrench
- Hacksaw
- Safety glasses
- Combination square
- Locking-grip pliers (needlenose and small C-clamp)

*These hand tools are recommended as a basic set. This list may be augmented by the competitor but certain specialized tools or other products may be subject to approval by the committee.

3.3 Required clothing (Provided by competitor)

- Proper welding attire (ie. Long sleeves and pants)

4. SAFETY REQUIREMENTS

4.1 List of required personal protective equipment(PPE) provided by competitors

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Safety Glasses | <input checked="" type="checkbox"/> CSA approved Safety shoes | <input type="checkbox"/> Latex gloves |
| <input type="checkbox"/> Safety Gloves | <input type="checkbox"/> Welding helmet | <input type="checkbox"/> Dust Mask |
| <input type="checkbox"/> Hard Hat | <input checked="" type="checkbox"/> Welding gloves | <input type="checkbox"/> Leather gloves |
| <input checked="" type="checkbox"/> Hearing protection | <input type="checkbox"/> Respiratory protection | <input type="checkbox"/> No PPE required |

4.2 List of required personal protective equipment(PPE) provided by Skills/Compétences Canada (SCC)

- | | | |
|---|--|--|
| <input type="checkbox"/> Safety Glasses | <input type="checkbox"/> CSA approved Safety shoes | <input type="checkbox"/> Latex gloves |
| <input type="checkbox"/> Safety Gloves | <input checked="" type="checkbox"/> Welding helmet | <input type="checkbox"/> Face shield |
| <input type="checkbox"/> Hard Hat | <input type="checkbox"/> Welding gloves | <input type="checkbox"/> No PPE required |
| <input type="checkbox"/> Hearing protection | <input type="checkbox"/> Respiratory protection | <input type="checkbox"/> No additional PPE will be supplied by SCC |

5. ASSESSMENT

5.1 Point breakdown

POINT BREAKDOWN		/1000
Objective	Critical Dimensions	200
	Secondary Dimensions	100
	Material Usage	100
Total		400
Subjective	MIG Welding	50
	Seams, Edges, and Fasteners	200
	Fit and forming	200
	Overall Appearance	150
Total		600

6. ADDITIONAL INFORMATION

6.1 Consecutive translation

If consecutive translation is required on site, the Skills/Compétences Canada Provincial/Territorial offices must advise Skills/Compétences Canada National Secretariat a minimum of 1 month prior to the competition or this service might not be guaranteed.

6.2 Tie (No ties are allowed)

In the event of a tie, the competitor with the fastest time will be placed higher in the ranking.

6.3 Competition rules

Please refer to the competition rules for all general SCNC information.

7. NATIONAL TECHNICAL COMMITTEE MEMBERS

Region	Name	Email address
Pacific Region	Nance Giordano	nance@northwestel.net
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