



## Aztec Speedway Quarter Midget Rules

APPENDIX I 2009 Quarter Midget Division Technical Specifications This Appendix Pertains to Quarter Midgets (May be referred to in this section as QM where needed) 701 Design and Construction All phases of design and construction are subject to the approval of the Technical Director. The Chief Steward and the Technical Director may exclude any car, design or construction, which they deem unsafe or not meeting the specifications, the spirit and/or the intentions of the rules contained herein. 702 Inspections (Yearly) All cars will be inspected for mechanical and safety deficiencies and compliance with these rules at least once a year. USAC inspection decal is mandatory for a car to compete.

### 703 Dimensions and Weight

1. The QM weight must be at least 160 lbs. .
2. Tires The front tire diameter must be no more than 11" diameter. The rear tire diameter must be no more than 12.5" diameter
3. Ballast/Weights Any ballast, excluding bellypan itself, must be securely bolted within the confines of the frame tubes.
4. Weights must not be fastened to the inside or outside of any nerf bars, front or rear bumpers or shoulder bars, or to the roll cage.
5. All lead weights must be covered in a manner to keep from coming in contact with driver, i.e. Plastic Coat, Tape.
6. It is recommended that the lead be painted white or a fluorescent color.
7. All weights must have car # loss of weight will result in dq I. Class Weights CLASS DIVISION DRIVER DRIVER COMB. CAR \_\_\_\_\_ AGE WEIGHT(min) WEIGHT(min) WEIGHT(min) Novice  
245 lbs 5 to 7 years old  
Light 255 lbs 6 to 10 years old  
Heavy 265 lbs 8 to 15 years old.  
Combined Weights Equipment and shoes will be included in total weight (car and driver combined). At the end of a race, driver and car will still have to meet total weight. For combined weight drivers should be sitting or standing in cockpit. No weights will be carried loose in cars/or on the driver.

### 704 Car Construction

1. All cars shall be rear direct drive only. No clutches allowed. If only one rear wheel drive it must be the right rear.
2. All Body panels must be readily removable. Body panels rigidly attached to the frame, to prevent chassis flex, will not be permitted. .
3. All cars must have a body that completely covers the driver's legs, a tail section, and a housing that covers



the engine. The tail section can be the engine housing.

4. The body and tail section must not have any sharp edges. There must not be sharp corners – such as square corners. Make all corners and edges rounded in shape to avoid cutting in an accident.
5. The bottom of the tail cone must not be higher than the top of the bumper when normally installed. Holes are allowed in the tail cone for access.
6. Belly pan or body must enclose the front end or it must be enclosed by using metal sheeting at least .048" thick. Open holes larger than 1/2" must be filled.
7. Due to today's smaller tail section, the carburetor may have to be covered with a bubble or scoop, securely attached to the tail section
8. Any radical changes in body, tail section, or side panels must be submitted for approval
9. All cars must have side panels on both sides of the cockpit and engine compartment.
10. Maximum height of body is 28 inches as measured from the bottom frame rail.
11. Side cockpit panels must be at least 6", and no more than 22" high, as measured from the bottom frame tube.
12. All cars must have a bellypan, utilizing aluminum at least .040" Thick, or steel at least .025" thick. The bellypan must extend from the front axle to the firewall. Bellypan should not have open holes larger than 1/2" in diameter. The bellypan must be flat from side to side without any aerodynamic aids. Excessive holes in bellypan will be considered lightening and not legal. Bellypan is subject to the approval of Tech and/or Safety Director.
13. Airfoils, wings, spoilers or other aerodynamic appendages will not be permitted. The Chief Steward or Technical Director may have any panel or part removed which in their opinion is not within the spirit or intent of this rule.
14. Rear view mirrors are not permitted.
15. Windshields are not permitted.
16. Decorative or distractive lights are prohibited on any race car.
17. Must be able to access the engine flywheel nut through the body panel via a minimum 2" diameter hole. 705 Roll Cage and Frame ALL cars constructed after 1/1/2009 will be made from 4130 Steel Tubing (Chrome Moly)
18. All cars must have a roll cage that is integral with the frame. The roll cage must be adequately braced fore and aft, and side to side, to secure it in an upright position in case of rollover. Front and rear uprights must completely enclose driver's shoulders and head when sitting upright in cockpit. The roll cage should extend one inch above the driver's helmet when sitting upright in cockpit, measured from the bottom portion of the tubing. Any manufacturer wishing to produce a design that is a departure from standard .25 and 1/2 Midget car construction must submit a finite analysis report for the roll cage structure proving their design is equal in strength.
19. Roll Cage Construction – Must be 4130 steel tubing if manufactured after 1995
20. Main uprights forming the roll cage that is LESS than 34" from the top of the bottom frame rail to the top of the roll cage must be minimum O.D. 3/4; Minimum wall thickness .058 2. Main uprights forming a roll cage that is MORE than 34" from the top of 7/8, minimum wall thickness .058 and must have two rear support bars that attach to the roll cage no more than four inches from the top of the roll cage, and extend downward towards the rear of the car, and attached to the rear part of the frame. Support bars must be minimum O.D. 5/8"; minimum wall thickness .049". Support bars are bolted or welded to the roll cage and frame. Holes cannot be drilled in the roll cage to bolt the support bars to the roll cage.



21. Radius design required. No square corners.
22. Left side shoulder bar mandatory on all cars – Constructed of either:
23. 4130 steel tubing minimum O.D. 5/8" O.D; Minimum wall thickness .049"
24. Stainless steel tubing minimum O.D. 5/8"; Minimum wall thickness .065"
25. Shoulder bar must be securely fastened to left nerf bar and rear roll cage upright using a grade 5 bolt or better. Shoulder bar can be attached by welding, mounted with split clamps or nerf style spuds. Shoulder bar must be securely fastened at nerf end between the leftmost point of the nerf bar and a point four inches inboard of that. At the Cage the shoulder bar must be at least as high as the top of tail cone E. Helmet hooks attached to the chassis are not allowed.

## **706 Fuel System**

1. Fuel tanks must be vented no more than 1" above the belly pan with no holes in the cap.
2. No pressurized tanks.
3. Fuel tanks must be mechanically mounted to the frame preventing all movement inside the tail section. Minimum of 2 hose clamps must be used if hose clamps are used. Zip Ties and Duct Tape not permitted.
4. Fuel tanks cannot be replaced during a race.
5. Aluminum fuel tanks required and must have a minimum wall thickness of .050
6. Fuel fittings must be automotive type. Lines must be attached with a positive stop clamp.
7. Fuel lines must be rated for the appropriate fuel , and must be made of flexible hose. Steel braided line is allowed. H. Cool cans and other device for cooling fuel are not allowed. Devices used to reduce the temperature or remove energy from the fuel system, are not allowed.
8. Fuel line at fuel tank must be equipped with a fuel shutoff device.
9. Fuel pumps of any type are NOT allowed
10. Maximum fuel tank size 140 ounces.

## **707 Firewall**

1. An effective firewall of aluminum (Minimum .048 inch) or steel (minimum .025 inch) thick must be installed between the engine compartment/fuel tank and the cockpit. It must be as leak proof as practical with no open holes. Any holes for seat belt or shoulder mounts must contain no sharp edges.

## **708 Revolving Parts Chains & Sprockets**

1. Chains & Sprockets driver or handler while vehicle is in motion.

## **709 Bumpers**

1. The car must be equipped with a front and rear bumper securely fastened, using at least tow grade 5 bolts or better, to the structural components of the chassis and designed without any stubs pointing downward.
2. The bumper must be strong enough to be used to lift the car. Double bumpers with at least two connecting tubes are required. Horizontal tubes must be at least two inches apart.
3. Front and rear bumper tubes must be mounted over each other with a maximum rake of 15 degrees



from vertical. They must have at least two inches of radius bend on the ends.

4. Front and rear bumper must not extend more than three inches out past the main frame rail.
5. The bumpers must be constructed of metal tubing having a minimum wall thickness of .049 inch. No ballast is allowed in the bumper tubing. Titanium and composite materials are not allowed.
6. Bumpers must be mounted with minimum 6-32 to max 10-32 grade 5 or better bolts. Minimum of two bolts per bumper. 710 Nerf Bars
7. All cars must be equipped with nerf bars (Side bumpers) starting at the rear, just forward of the rear tire. The nerf bars must extend outward to at least the center of the rear tires. The nerf bars cannot extend beyond the outside of the rear tires.
8. Nerf bars must be constructed from steel. Wall thickness is limited to a minimum of .049 inch. A maximum of three horizontal and/or three vertical tubes are allowed in the construction of nerf bars. No ballast is allowed in the nerf bar tubing. Titanium and composite materials are not allowed. Panels on the nerf bar will not be allowed.
9. Nerf bars must be mounted with a minimum 6-32 to maximum 10-32 grade 5 or better bolts. Minimum of two bolts per nerf bar.

### **711 Steering and Suspension**

1. Tie rod or rack and pinion steering only. No cable systems allowed.
2. Steering system must not allow the driver's legs to impair right or left steering
3. Steering may not go past center in either direction to keep steering from locking
4. Steering wheel hub must be padded, and must be at least 1 inch thick, and must be at least two inches outside diameter. The use of carbon fiber, titanium or other composite material as a steering shaft, radius rod, tie rod or suspension component is not allowed.
5. Radius Rods, Steering Rods, & Track locating rods must be constructed of aluminum. Rod ends may be constructed of ferrous materials, however the maximum length of adapter is 1 1/2"
6. Bird Cages, torsion bars and sway bars may not be constructed of titanium and/or composite materials.
7. Remote reservoirs and Cockpit Adjustable Shocks will not be permitted.
8. Titanium or Composite Steering Wheels not allowed.
9. No data acquisition devices allowed on steering wheel.

### **712 Axles**

1. Independent rear suspension is not permitted.
2. No portion of the axle, hubs or nuts can extend beyond the outer edge of the wheel rim.
3. All front axles must be constructed of steel. All rear axles must be constructed of steel, aluminum.

### **713 Wheels**

1. The number of allowable wheels is restricted to two (2) front wheels and two (2) rear wheels on each car.
2. The rim diameter must be at least 5 inches and no more than 6 inches
3. The use of full-face brake scoops and/or wheel covers on the inside of wheels is not allowed.
4. All wheels must be constructed of steel or aluminum.

## **714 Tires**

5. Any device(s) used for warming the tires prior to competition is prohibited.
6. The use of any device(s) to alter the air pressure of the tires while the car is in motion is prohibited.

## **715 Throttle**

7. Two (2) return springs required be connected to the throttle.
- 716 Brakes A. Cars must be equipped with an effective braking system. A minimum of one wheel brake is required, located on the rear axle. The brake must be able to lock the drive wheel(s)
8. Master cylinders not fixed to the frame must have flexible lines. Copper tubing is not acceptable anywhere in the system.
9. Brake discs are limited to being manufactured of steel, ferrous, aluminum alloy or Titanium. Carbon or carbon composite brake discs or components are not allowed. Brake pad material is open. .

## **717 Clutches**

10. The use of onboard starters and a de-clutching device on a quarter midget is not allowed.
11. All Quarter Midgets will be direct drive

## **718 Engines**

1. All engines subject to technical specifications contained in the quarter midget technical manual(s) .Quarter Midget:
2. Honda GX120 motors as specified in technical manual Stock may have tier 2 timing
3. Honda 160: Honda GX 160 motors modified
4. No fuel injection or supercharging
5. Flywheels must not freewheel.
6. NO liquid cooled engines allowed in Quarter midgets

## **719 Fuel - Air**

7. Fuel is restricted to gasoline only. The addition of any unauthorized material(s) to the fuel is strictly prohibited. 1. Honda 120, Super Stock, Honda 160: Gasoline, automotive, "Pump" 89 Octane only per spec format. No White, Aviation or "Racing" fuel
8. The addition of any material(s) to the intake air or the addition of any mechanical device(s) essential to the application of this material(s) is strictly prohibited.
9. All fuel is subject to testing at any time. Any fuel that does not conform to the USAC standards, as administered at the track, will be considered illegal. The use of illegal fuel will result in disqualification &/or suspension for that event.

## **720 Shut Off, Ignition, Battery and Electronic Equipment**

1. All cars must be equipped with an on/off ignition switch or emergency shut-off located within easy reach of the driver. It must be located in the upper left portion of the drivers compartment or on the steering wheel. Switch and bracket should be located to prevent contact with drivers knee. Switch must be installed so when the handle is down, or rearward, the ignition is off.
2. Only one ignition switch may be installed, EXCEPT when car is running in rookie class, a second switch mounted on the upper rear of the roll cage is allowed so that handlers, trainers and corner workers may shut off car.

## **721 Radios**

1. The use of in-car radio transmitting devices is prohibited B. No Radio communication with the driver is allowed during a race or event.
2. There will be no signals to driver by hand while race is going on.

## **722 Oil Catch**

1. All cars are required to have a catch can if the engine is vented. All breathers, engine vents and catch cans are to be placed in the engine compartment tail section or air box.
2. The frame cannot be used as a catch can.
3. Oil breathers must be located so as not to endanger the driver. D. Oil may not be added to the engine supply during a race.

## **723 Exhaust**

1. Exhaust systems must be designed to create a minimum fire hazard and a minimum hazard to other competitors.
2. Exhaust system must extend outside of engine housing.
3. Exposed portions of exhaust system must not be higher than the rear tire.
4. Exhaust system must not extend outside of a straight edge extended from rear edge of rear tire and rear of the rear bumper.
5. Exhaust systems facing forward must not extend outside of nerf bar.
6. Exhaust system must include at least one and not more than 4 Briggs & Stratton 4 to 8 horsepower mufflers. Part #3294599 or equivalent.
7. Drilling holes in the baffles is prohibited. Inside seam of baffle must be straight, although seams may not be parallel in baffle) A nut or washer welded onto muffler flange is allowed for safety wiring.
8. Honda 120, Honda 160 classes must use a tailpipe and muffler combination conforming to technical manual specifications. Muffler must retain the threaded flange on Honda exhausts
9. Clamps should be positioned with screw adjustments, bolts and excess strap material facing inboard when possible.
10. Exhaust system must be intact at scales. If any part comes off during race and not replaced before the checkered flag the car will be disqualified at the scale. No repairs after checkered flag is waved.
11. All exhaust must pass through the mufflers.

## **724 Seating**

1. Cars must have a web type safety belt with quick release buckle. Safety belt must be securely fastened to the frame. Pull up lap belts are recommended.
2. Use of safety belt is required at all times, and should be worn as tight as possible.
3. Seat belts must be worn in such a manner that it passes around the pelvic area at a point below the anterior superior iliac spines. Under no condition may it be worn over the area of the intestines and abdomen. (Lap portion of safety belt must be located so that pressure is across drivers hips)
4. Metal quick release is preferred
5. Minimum of a four point safety belt is mandatory.
6. Double Shoulder straps are mandatory. They must be worn securely across the right and left shoulders, and should be worn as tight as possible.
7. No restraining device may be used to keep the drivers head or body outside of the roll cage.
8. Five or six point (crotch) belts connected to the main belt quick release mechanism and securely attached to the chassis are recommended.
9. Both the fastening design and condition of the straps are subject to the inspection of the Technical Committee.
10. Shoulder straps must be attached directly to a strong structural member of the chassis close behind the driver's head and neck.
11. Life of the belts in use shall not exceed four (4) years and must be date stamped by the manufacturer.
12. Aluminum seats may be used. The seating system should provide a lateral support on both the left and right sides. It is recommended that the seat provide left and right lateral support for both the shoulders and head.
13. Driver positioning to be addressed at USAC Safety Summit.

## **726 Safety Equipment**

1. Any participant not complying in full with all safety requirements will not be permitted to compete. Safety officials have the right to safety any or all cars in any class at any time.
2. Helmets- All participating drivers must wear a well fitted safety helmet designed specifically for auto racing (SA designation) that meet or exceeds the 2000 or better Snell Foundation or SFI Foundation 24.1 youth spec helmet specifications and are labeled as such. Helmets will be in good condition (no exterior cracks, evidence of impact or deteriorating interior lining) Helmets will be subject to inspection at each event by the Technical, Safety and/or medical representative. Hair must be under the helmet or inside the drivers suit/jacket.
3. Visors/Face shields must be in the down position when on the racing surface.
4. Clear, or amber, face shields must be worn after dark, or whenever track lights are turned on.
5. Uniforms
6. Suit - All drivers must wear a one or two piece fire resistant suit which fits snugly around the neck, wrists and ankles, exposed skin not allowed. These items must meet SFI Foundation specifications 3.2A1 or higher. Jeans are not permitted.
7. Head Sock – Use of Nomex Hood/head sock is highly recommended.
8. Nomex Underwear – Recommended
9. Gloves – All drivers must wear Nomex or equivalent gloves that must completely cover the hands and fingers. SFI Foundation specifications 3.3 or higher.

10. Shoes – Must completely cover the feet, flat bottom shoes only.
11. Neck Collar -Neck collar is mandatory, must be made of Nomex or equivalent is mandatory except as noted here, recommended rating of SFI Foundation 3.3.
12. Head & Neck Restraints - SFI approved Hans device may be used without Neck Collar, and SFI approved Hutchins device requires Neck Collar.
13. Arm Restraints - Arm restraints are mandatory and must be worn at all times during competition. Center fastening point will be fastened in conjunction with quick release safety belts.
14. Arm restraints are fastened securely to the driver's forearms, (between the wrist and the elbow), never at or above the elbow.
15. Arm restraints should be adjusted short enough to keep driver from reaching more than two or three inches above the steering wheel.
16. Roll Cage/ Frame Padding – Recommend that all chassis protrusions, frame tubes, roll cage tubes, steering shafts and roll bars, in close proximity to the driver's be padded with a securely attached high impact material.

### **728 Dental Appliances**

1. All drivers are required to remove all dental appliances before starting an event. (Example, Retainers, Removable Braces, or any other choking hazard) This also includes chewing gum, candy.

### **729 Car Numbers (Club Option)**

1. All car numbers are assigned by the club if so desired.

### **733 Fuel Testing**

### **735 Technical Inspection Procedure**

1. Tech officials have the right to tech or safety any or all cars in any class at any time.
2. All technical and safety rules are the responsibility of the handler.
3. It is the Handlers responsibility to make sure that the car and engine are weighed and properly sealed after qualifying and/or races. If in doubt check with the Tech Director before the car leaves the scale/sealing area.
4. If repairs or maintenance are needed that require breaking of seals or an engine needs to be changed approval must be obtained prior to starting any work. This work must be done under supervision of Tech Director or his designate. Engine must be resealed immediately after work is completed.
5. After racing, cars must be weighed and have the engine seals checked. Cars finishing mains in announced impound positions must be placed immediately in the designated impound area.
6. A car may be disqualified at post race tech for missing safety items.