

January, 2006 – Version 2006.5

NASA Spec Miata® Challenge 2

Official National Rules

1 Definition and Claim

The NASA Spec Miata Challenge 2™ (SM2) is an affordable racing series, primarily focused on road racing, and shall function as an advertising and marketing tool for the series sponsors, the independent sponsors of each team, as well as the official sanctioning body of the series. The trade name, “NASA Spec Miata Challenge,” and these rules are the property of the National Auto Sport Association, Incorporated ® located at P.O. Box 21555, Richmond, CA 94820; 510-232-NASA (6272).

The marks “Mazda,” “Mazdaspeed,” and “Miata” are recognized as registered to Mazda Motor Corporation with the United States Trademark and Patent Office.

2 Intent

The intent of these rules is to provide mandates to ensure that all vehicles are constructed and modified within clearly established limits, so as to ensure an even platform, in which a contest of driving skill may provide the most talented drivers with great rewards.

3 Purpose

The purpose of this series is to provide an avenue to promote sponsor brand awareness on a national scale. Additionally, this series should provide a stage to showcase driving talent, in hopes that the most talented drivers will advance to even higher-level professional series.

4 Format

Modifications, addition or removal of parts are not allowed, unless specified or approved in these rules. Additional modifications are not permitted. These rules are not intended as guidelines; rather they shall serve as the national set of rules, and must be strictly followed. Each NASA Region is responsible for ensuring that all competitors running in the corresponding regional championship, conform to these rules. Replacement parts not specified by these rules must be OEM or the exact equivalent.

5 Eligible Manufacturers

Mazda Motor Corporation is the only manufacturer of models that are legal for this series. However, other companies, including Mazda Competition Parts, which should be considered a separate company from Mazda Motor Corporation, may manufacture some legal and/ or required parts and components.

6 Eligible Models

1999 - 2000 Mazda Miata, 1800cc engine
2001 - 2005 Mazda Miata, 1800cc engine

7 Sanctioning Body

The NASA Spec Miata Challenge™ series is sanctioned by the National Auto Sport Association (NASA). All events are governed by these rules, applicable addendums, prima fascia rules, as well as those found in the latest version of the NASA *Club Codes and Regulations* © (CCR). All decisions made by the series administration are final, except under certain conditions, as specified by the CCR.

8 Safety

8.1 General

All safety standards not specified herein must conform to the NASA Club Codes and Regulations (CCR). Where conflicts are found between the CCR and these rules, these rules must supersede the conflicting rules found in the CCR. However, in the interest of safety, any participant that determines a conflict exists, must immediately report it to the series administration, for clarification.

8.2 Hardtops

Hardtop may be used, and if used, must be securely bolted in place. Aftermarket hard tops are allowed provided they meet the exact original equipment specifications for both design and weight.

8.3 Class Identification Markings

Mazda Logo must be displayed on both side rear quarter panels.
Mazda logo must be displayed on hood or front bumper.

9 Measurements

9.1 Specified Measurement

Whenever the manufacturer specifications or these rules do not specify a measurement, the common average measurement will be used. This common average measurement must be determined by either 1) calculating a mean average of at least three measurements from the corresponding parts found on other vehicles, or 2) the series technical administrator will make a determination based on any other reasonable method, providing that the data, system, or logic that was used be made known to the public. The second option is only permitted under circumstances where option number one becomes impractical, as determined by the series Race Director.

9.2 Tolerances

All published measurements infer a tolerance of +/- one-half (1/2) of the last specified decimal place. All rounding will be done to the nearest decimal place that is specified by the manufacture or these rules. In a case where a measurement

falls exactly on the halfway mark, it must be rounded up or down in favor of the competitor. This section does not apply whenever the manufacturer specifications, or these rules, specify a tolerance.

10 Weight

10.1 Minimum - Vehicle

All minimum weight requirements must be met immediately following all qualifying sessions and races. All vehicles must weight at least two thousand four hundred (2400) pounds including the driver.

10.2 Additional Weight - Ballast

Additional weight may be added to the vehicle providing that all of the following conditions are met:

- 10.2.1 Additional weight must serve no other purpose than to increase the weight of the vehicle. This additional weight shall be known as "ballast."
- 10.2.2 Ballast must be made of solid metal, and must be installed securely.
- 10.2.3 All pieces of ballast must be bolted within the passenger compartment, through the floor pan on the passenger side of the cockpit, no further rearward than the front holes of the seat bolts.

11 Engine

11.1 General

All engines, components, and parts must have been offered for sale in a Mazda Miata, sold by a dealer in the United States of America. All engines and their internal components must remain stock, except as provided by these rules, and within factory specified tolerances. [Ref:(9.2)]

11.2 Milling / Surfacing

The engine block and/ or cylinder head may be trued or milled as needed to return the engine to the maximum specified compression ratio. The compression ratio for 1999 and 2000 models is 9.5:1. The compression ratio for the 2001 through 2005 models is 10.0:1.

11.3 Balancing

Balancing and lightening of engine parts and engine components is not permitted.

11.4 Cooling System

Ethylene glycol-based anti-freeze is not permitted. Other additives, such as Redline Water Wetter, are permitted.

11.5 Radiator

Any radiator may be used, provided that it mounts in the stock location, without any modification of any part of the stock mounting location that is integral to the body. Any additional open areas or holes created by use of a non-OEM radiator may be blocked off, but under no circumstance shall the open areas or holes be used for supplying the air filter with additional air. A screen of ¼" steel mesh may be

installed within the body to protect the radiator, providing that it serves no other purpose.

11.6 Thermostat

Thermostats are optional and unrestricted, providing that they serve no other function than to control coolant flow from the engine to the radiator.

11.7 Seal Plate

Radiator Seal Plate PN NA75-50-0K7A approved for use on all vehicles.

11.8 Heater Core

The heater core may be bypassed, but not removed or modified in any way. The rubber hoses that supply water to the heater core may be shortened or eliminated.

12 Induction / Exhaust / Ignition / Fuel Systems

12.1 Throttle Restrictor

No restrictor plate is required; however the forty one (41) mm plate from Mazdaspeed is optional. The intent of this rule is to allow cars from other organizations to run with the option of not having to remove the required plate.

12.2 Air Filter

All vehicles must use the stock air filter housing. Any filter that fits into this box may be used, providing that is comprised of components and materials other than air cooling systems, cooling chemicals, or cooling chemical compounds. No devices such as ducting or air deflectors are permitted to direct air to the air filter.

12.3 Definition

For the purposes of Section 12.2, "cooling systems," "cooling chemicals," and "cooling chemical compounds" means any system or substance that enables a transfer of heat, by convection, conduction, or radiation that causes the air entering the engine to be cooler than ambient, and / or contain additional chemicals than normally found in 'air' as defined by the *Handbook of Physics and Chemistry (CRC)*.

12.4 Fuel Filler

The fuel filler trap door and restrictor plate in the filler neck may be removed.

12.5 Ignition System

Any spark plug and/or spark plug wires may be used. Any initial ignition timing may be used.

12.6 Exhaust System

The stock down pipe must be used. However any single exhaust pipe may be used, providing that it has a maximum outside diameter of 2.25 inches (+ 0.0625 tolerance). The stock muffler may be retained, discarded, or replaced with any other muffler, providing that it serves no other purpose than to quiet the exhaust. All exhaust must exit aft of the rear sub-frame. Stock exhaust heat shielding may be removed.

13 Transmission / Clutch / Differential

13.1 Transmission

The stock 5-speed transmission must be used and have correct ratios for the year of the car. Six speed transmissions are not permitted.

13.2 Clutch

Any clutch disc and clutch cover (pressure plate) may be used, providing they mount on an unmodified flywheel. A scatter shield may be added providing that it serves no other purpose than to protect the cockpit from intrusion of shrapnel.

13.3 Differential

Stock Torsen limited slip is required. Gear ratios must be 4.3:1.

14 Suspension Components

14.1 Mazdaspeed Spec Miata package must be used.

Part# K-SPEC-M5-SUS9. Note- The package components are detailed in this subsection.

14.1.1 Bilstein Shocks

Front (Part# 0000-04-5225-BL Qty two (2) ea.)

Rear (Part# 0000-04-5226-BL Qty two (2) ea.)

14.1.2 Eibach ERS race springs , two and one-half (2.5) inch inside diameter

Front seven hundred (700) pounds, length six (6) inches (Part# 0000-04-9700-06 Qty two (2) ea.)

Rear three hundred twenty five (325) pounds, length seven (7) inches (Part# 0000-04-9325-07 Qty two (2) ea.)

14.1.3 Coil-Over Kit. (Part# 0000-04-5402AW) This kit provides all necessary components to locate the spring in the upper perch and includes modified bump rubbers/stops. Welding a two and one-half (2.5) inch spring-locator on the upper mount and modifying the stock-length original bump-stop rubbers to the diameter of two and one-quarter (2.25) inches is permitted.

14.1.4 Eibach Sway Bar Kit. K-SPEC-M5-SUSP

Eibach kit - front / rear bars 0000-04-5302-EB

Front 24mm Adjustable

Rear 15mm Adjustable

K-SPEC-M5-SUS8

Eibach kit - front / rear bars 0000-04-5303-EB

Front 27mm non-Adjustable

Rear 15mm Adjustable

K-SPEC-M5-SUSP9

Eibach kit – front / rear bars 000-04-5304-EB

Front 26mm non-Adjustable

Rear 24mm Adjustable

Sway bar links may be replaced and may be adjustable. Attachment points must remain in the stock location.

14.2 Maximum Camber

~~Front: not more negative than two (2.0) degrees negative.~~

~~Rear: not more negative than two and one-half (2.5) degrees negative.~~

Any front and rear camber is allowed within the normal limits of adjustment. No modification to increase or decrease camber is allowed.

14.3 Ride Height

Any ride height, providing that no metal part of the vehicle touches the ground so as to be hazardous in the opinion of the Race Director.

14.4 Suspension bushings must be stock.

14.5 Sub-frame connectors

All cars may install subframe braces updated to stock 1997 configuration utilizing the Mazda Competition Spec Miata kit.

14.6 Adjustable sway bar links may be used.

14.7 Bump Stops

All cars must use Mazdaspeed bump stop part #0000-04-5993W in conjunction with the 1999-up stock upper mount assembly consisting of the upper mount (p/n: NC10-28-340C), the upper mount bushing (p/n: NC10-28-775) and the upper mount washer (p/n: NC10-28-774). All other OEM upper mounting hardware shall be discarded.

15 Steering

Manual or power steering may be used. Power steering rack may be converted to manual. Steering lock may be removed.

16 Wheel Assembly

16.1 Rims

Any fifteen (15) inch diameter rim, with a maximum width of seven (7) inches, and a minimum weight of thirteen (13) pounds, may be used. All four (4) rims must dimensionally match. Other than the stock fifteen (15) inch Mazda steel wheels, all wheels must be one piece. (i.e. No multi piece bolted, riveted, or welded wheels.)

16.2 Tires

Toyo Proxes 205-50-15 RA-1 must be used.

17 Brake System

- 17.1 Brake pads and fluid are unrestricted, except that 2001 and newer cars must use the 255mm (F) and 252mm(R) brakes (the larger brakes, 269.5 / 267.9 are not allowed).
- 17.2 Steel braided brake lines may be used.
- 17.3 Disc brake backing plates may be removed.
- 17.4 The emergency brake level and/or cables and associated parts may be removed.
- 17.5 All anti-lock braking systems (ABS) must be disabled.

18 Appearance

18.1 Exterior

- 18.1.1 Air dams, wings, and spoilers are not allowed, other than the OEM chin spoiler (part number NC10-V4-900F)
- 18.1.2 Fenders and wheel openings must remain unmodified, except that rolling or flattening of inner fender lip for tire clearance is permitted.
- 18.1.3 Hood and inner fender plastic trim are optional and may be removed.
- 18.1.4 Any mirrors may be used.
- 18.1.5 Any paint scheme / colors may be applied.
- 18.1.6 Body molding, antennas, license plates, license plate frames, license plate lights, and insignias and emblems, other than "Mazda" and "Miata," may be removed.
- 18.1.7 Windshield clips and rear window straps are permitted and recommended.
- 18.1.8 Hood clips are permitted. Stock hood latches may be disabled or removed.

18.2 Interior

- 18.2.1 The driver's seat must be replaced with a seat suitable for competition, including a racing-type bucket seat. Factory seat tracks may be modified, reinforced or removed to facilitate replacement mountings provided they perform no other function. All driver seats must conform to the CCR.
- 18.2.2 Gauges may be added, replaced, or removed. They may be installed in the original instrument(s) location using a mounting plate(s) or any other location using a secure method of attachment. Other than modifications made to mount instruments and provide for roll cage installation, the remainder of the dash "board" and instrument panel must remain intact.
- 18.2.3 Any steering wheel and attachments may be used except wood rimmed type steering wheels.
- 18.2.4 Any shift knob may be used.
- 18.2.5 The air conditioning system may be removed. Modification or removal of the heater core and blower fan assembly is not permitted.
- 18.2.6 The carpet, center console, cargo bins, driver's seat belt, radio system, headliner, dome lights, and grab handles may be removed. The driver's side floor mat **must** be removed.
- 18.2.7 All insulating material may be removed from the interior.
- 18.2.8 Other than to provide for the installation of required safety equipment or other authorized modifications, no other driver/passenger compartment alterations or gutting is permitted.
- 18.2.9 Removal; or substitution of driver compartment panels is not permitted.

- 18.2.10 Any removable covers used to cover spare tires, tools, bins, etc. may be removed along with attaching hardware and brackets.
- 18.2.11 Carpets, mats and their insulating or attaching materials may be removed from the floor and recesses of the cargo/spare tire area.
- 18.2.12 Ducting may be added to provide fresh air to the driver/passenger compartment, providing that no modifications of windows and body structure are made to accommodate this addition. The “wing window(s)” may be removed to accommodate the addition of legal driver cooling devices such as hoses, vent tubes, or air-inlets.
- 18.2.13 The passenger seat, mounting hardware, and seat belts may be removed.
- 18.2.14 The foot pedals (i.e. brake, clutch, gas) may be modified for driver comfort and accessibility. Additionally, modifications for strengthening are allowed provided that those modifications serve no other purpose.
- 18.2.15 The door window glass, window operating mechanism, and inside door latch/lock operating mechanism may be removed and the inner door structural panel may be modified, but not removed. The stock side impact beam and the outside door latch/lock operating mechanism shall not be removed or modified. This gutting of the door shall only be made if roll cage incorporates NASCAR-style side protection extending into the door.*