

NASA MX-5 Challenge Rules

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1 – DEFINITION AND CLAIM:

The NASA MX-5 Challenge 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 MX-5 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" 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 VEHICLES:

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.

Model Yr	Bore(mm)x Stroke(mm)	Displ. (cc)	Valves IN & EX(mm)	Comp Ratio	Weight (LBs)	Wheelbase (mm)
2006	87.38 x 83.06	1999	35.1 (i) 30.0 (e)	10.8	2650	2329

*Weight is with Driver and Ballast.

6 – SANCIONING BODY:

The NASA MX-5 Challenge™ series is sanctioned by the National Auto Sport Association (NASA). All events are governed by these rules, applicable addendums, prima facie 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.

7 - SAFETY:

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 supercede 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.

7.1 – ROLL CAGES:

Roll cage origin and construction is open, provided the cage attaches to the chassis at no more than eight points, per the NASA CCR. All elements of the cage must be constructed of 1.5" x .120" Mild Steel DOM tubing. Alloy steel cages are allowed, but must use the same 1.5" x .120" tubing size. Inspection holes should be drilled in accordance with the NASA CCR, and tech inspectors may request any number of additional inspection holes be drilled to verify that all cage elements adhere to the material specification. Refer to *appendix A* for a diagram of the approved cage design. Racing Cages Co. cage, which has more than eight mounting points, is permitted.

7.2 – 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 – i.e. it must have the same roof profile as the factory hardtop. Material may be removed and trimmed from the interior side of the hardtop to allow for cage clearance. No material removal or modification is allowed on the exterior surfaces of the hardtop. When no top is used, driver shall wear arm restraints, and the cage must be no less than two (2) inches above the driver's helmet. Cars competing without a hardtop shall still meet class weight requirements.

8 – SPECIFIED MEASUREMENTS:

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 – 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 - VIN NUMBERS:

Two (2) Vehicle Identification Number (VIN) plates or stampings must be in place on all vehicles, and must correspond with the model year as classified.

11 - MAZDA TEAM SUPPORT PROGRAM:

All MX-5 Challenge competitors are encouraged to join Mazda's Team Support Program. This program enables competitors to purchase stock and competition parts from Mazda at discount prices. Learn more by visiting www.mazdaspeedmotorsports.com or call 800-435-2508, fax to 949-222-2650, or e-mail Mazda at support@mazdamotorsports.com to request an application and further details.

12 - TECHNICAL SPECIFICATIONS:

12.1 - GENERAL

12.1.1 - BALLAST: Ballast is permitted and shall be mounted in such a way that tools are required to remove it. Holes may be drilled in the passenger floor in-order to secure ballast. Grade 5 bolts, or better, and load-spreading washers shall be used to mount all ballast. Ballast may not be added or removed during the race.

12.1.2 – REPLACEMENT PARTS: Only factory replacement parts are allowed. If a factory replacement part is not available a particular time, only a part with the identical material, configuration, and size may be used. Any non-factory replacement part may not serve any other purpose that that of the original part. Any non-factory replacement part must be widely and commercially available, and be accompanied by a receipt to prove such availability (i.e. from a large parts chain, not a custom machine shop.)

12.1.3 - UPDATING/BACKDATING: No updating or backdating is permitted unless specifically permitted by these rules.

12.1.4 TOW HOOKS - All cars must have permanently installed towing hooks/straps/cables that comply with the NASA CCR - to be used for flat-towing the vehicle. The apparatus shall be strong enough to pull the vehicle out of a gravel trap. If the towing apparatus is located more than 457mm(18) above the ground, it shall not be rigid enough, in the area between the structural part of the chassis and the bodywork, to cause any damage, other than superficial, to another car. Towing hooks/eyes that stick out of the bodywork shall either be hinged to create a blunt surface, or thin enough that it will bend if it comes in contact with metal bodywork of another car. The towing apparatus must be positioned in such a way that they are easily accessible should the car be stopped in a gravel bed.

12.1.5: STOCK TOWING EYES – Stock towing eyes may not be used.

12.2 - ENGINE MODIFICATIONS:

12.2.1 - INTAKE TRACT: All air entering the intake tract shall pass through the fuel injection air inlet. The cars may use Mazdaspeed cold air intake (P/N 0000-06-5203-KT).

12.2.2: DECKING/MILLING - The engine block and/or cylinder head may be decked/milled to achieve the factory specified compression ratio for the correct model year as listed in section 6.

12.2.4: ENGINE OVERHAUL - It is the intent of these rules to limit the cost to compete, and achieve the maximum parity between competitors. For that reason, engine overhauling is allowed, but no measurement or tolerance may be altered beyond the measurements and tolerances specified in the Mazda factory service manual. If a measurement or tolerance is not specified for a particular component, it must not be modified from it's factory delivered configuration.

12.2.5 - FLUID, HOSES, FILTERS AND DRIVE BELTS: Fluid hoses and clamps, oil filters, fuel filters, and engine drive belts may be substituted with others or equivalent OEM specifications.

12.2.6: FUEL FILLER TRAP DOOR - The unleaded fuel filler trap door and restrictor plate in the fuel tank filler neck may be removed.

12.3 - IGNITION/ELECTRICAL SYSTEM:

12.3.1 - WIRES AND PLUGS: Ignition wires and spark plugs may be substituted.

12.3.2 – BATTERIES: Batteries may be replaced with those of an alternate manufacturer, provided they are of similar amp-hour capacity, size, and weight and are fitted in the standard location. Additional battery hold-down devices may be used, and are strongly recommended.

12.4 - EXHAUST SYSTEM:

12.4.1 -MX-5 EXHAUST SYSTEM: The cars may use Mazdaspeed exhaust system (p/n0000-06-5450-KT) which consists of a header and exhaust pipe. An end piece/turn down pipe may be added to direct the exhaust to assist with meeting sound requirements.

12.4.2 - HEAT SHIELDS: Original exhaust system heat shields may be removed.

12.5 – CLUTCH:

Any clutch disc and pressure plate of stock diameter and weight may be used, provided that they are bolted directly to an unmodified stock flywheel.

Clutch Disc: Diameter – 8.5” , Weight – 3.2 lbs.

Pressure Plate: Weight – 9.4 lbs.

Flywheel: Diameter – 11.0” (overall), Weight – 16.3 lbs, Diameter – 9.375” (machined surface)

12.6 – LUBRICANTS:

Lubricants may be substituted. Oil additives are unrestricted.

12.7 - COOLING SYSTEM:

12.7.1 - RADIATOR Alternate Mazdaspeed radiator (p/n 0000-01-5550) may be used.

12.7.2 - THERMOSTAT - Thermostats may be modified, removed, or replaced.

12.7.3 - RADIATOR SCREEN - A radiator screen of one-fourth (1/4) inch minimum mesh may be added in front of the radiator and contained within the bodywork.

12.7.4 - A/C REMOVAL – Any components of the factory heating/air conditioning systems that are forward of the firewall may be removed. Items that serve a dual purpose, such as the alternator/air conditioning compressor bracket, may not be substituted.

12.7.5 - HEATER CORE: Heater core may be bypassed but may not be modified or removed. Heater water control valve(s) may be added or substituted.

12.7.6 - OIL COOLER: Mazdaspeed oil cooler (p/n 0000-01-5100-KT) may be used.

12.8 - TRANSMISSION/DRIVETRAIN:

12.8.1 - TRANSMISSION AND FINAL DRIVE RATIOS: Transmission and final drive ratios must remain stock and unmodified:

Model Year	Gear Ratios	Final Drive
2006 (MX-5)	3.82, 2.26, 1.64, 1.18, 1.00, 0.83	4.10

12.8.2 – DIFFERENTIAL: Competitors may choose to use either the original equipment open or factory limited slip differential that comes with the Sport Package. Entire differential assembly must remain stock and unmodified.

12.8.3 – TRANSMISSION: All cars must use the original equipment 6-speed gearbox that comes with the Sport Package.

12.9 - CHASSIS/SUSPENSION/STEERING:

12.9.1 - SHOCKS – Any shock absorber is allowed, provided it has no more than two external adjustments. Additionally, the following shock absorbers, available from Mazdaspeed Motorsports are allowed: They are double adjustable, 5 +/- clicks, threaded body, remote canister – bump stops included.

Front 0000-04-5250-EB

Right Rear 0000-04-5251-EB

Left Rear 0000-04-5252-EB

12.9.1 – SPRINGS: Eibach springs, Mazdaspeed P/N 0000-04-9700-08 Front 0000-04-9400-07 Rear must be used.

12.9.1 - ANTI-ROLL BARS: Mazdaspeed Anti-roll bar kit P/N: KIT 0000-04-5350-EB is allowed, and must be used in it's entirety. Rear bar is adjustable, front is fixed.

12.9.1 - END LINKS: Anti-roll bar end links may be replaced. The replacement end link may be adjustable. The attachment points must remain stock. The control arms and specified anti-roll bar may not be modified.

12.9.2 - SUSPENSION ALIGNMENTS: Suspension alignments (camber, caster, toe) are unrestricted within the limits of the unmodified factory adjustments.

12.9.3 - SUSPENSION RELOCATION: No relocation or reinforcement of any suspension component or mounting point is permitted.

12.9.4 – HARDWARE: Hardware items (nuts & bolts) may be replaced by similar items performing the same fastening function(s). Replacement bolts may not serve any other function (i.e. eccentric or offset bolts.)

12.9.5 - POWER STEERING: Power steering racks may be converted to manual by removing all power steering components.

12.9.6 - FRONT SHOCK TOWER: For 2006 and later cars, the 3-piece front strut tower brace (p/ns NE57-56-48X, NE57-56-48ZA or NE57-56-49X) that comes with the Sport Package may be used. Holes may be drilled in the tower brace to allow access to the upper shock adjuster.

12.9.7 - CHASSIS REPAIRS: All chassis, structural or electrical repairs shall be in concurrence with factory procedures, specifications and dimensions. Unless specifically authorized by the manufacturer for repair, or allowed by these rules, no reinforcement, i.e., seam welding, material addition, etc., is permitted.

12.10 - BRAKE SYSTEM:

Model Year Front Brakes(mm) Rear Brakes(mm)
2006 (MX-5) 290 Vented Disc 280 Solid Disc

12.10.1 - BACKING PLATES: Backing plates may be ventilated or removed.

12.10.2 - BRAKE LINES: Brake lines may be replaced with steel lines, or Teflon lined metal braided hose.

12.10.3 - PARKING BRAKES: Parking brakes, mechanisms, and actuating components may be removed.

12.10.4 - BRAKE FLUID: Brake fluid and brake pads/shoes are free.

12.10.5 - BRAKE DUCTING: Brake ducts may be added, but must only draw air from the factory driving light openings. Air from these openings may serve no other purpose.

12.10.6 – ANTI-LOCK BRAKING SYSTEM: The anti-lock braking system must be used in it's entirety, and may not be adjusted or modified in any way.

12.11 – WHEELS/TIRES:

12.11.1 - WHEELS: Any 17x7" wheel is allowed, provided it meets the minimum weight requirement of 17lb. Any offset is allowed, provided the resultant track width still meets all requirements in section 12.11. The mandatory tire size is 245/45/17.

12.11.2 – TIRE: Any DOT approved racing tire is permitted. Racing, recapped or re-grooved tires are not permitted. The only modifications allowed to the tires are having treads shaved or trued. The mandatory tire size is 245/45/17.

12.11.3 – TRACK: Track may be changed to account for larger tires, provided that there is safe tire/fender/chassis clearance under all conditions of steer, bump, and rebound. Aftermarket wheel studs, lug nuts, and wheel spacers are permitted.

12.11.4 - TIRE TREAD: Tire tread (that portion of the tire that contacts the ground under static conditions) shall not protrude beyond the fender opening when viewed from the top perpendicular to the ground. To determine compliance, the vehicle should be rolled through a powdered substance, as raced with driver, in order to indicate the tire tread contact patch under static conditions.

12.12 - BODY/STRUCTURE:

12.12.1 - FENDERS - Fenders and wheel openings shall remain unmodified. It is permitted to roll under, or flatten, any interior lip on the wheel opening for tire clearance. Non-metallic inner fender liners may be removed.

12.12.2 - BODY REPAIRS - Body repair shall be performed using every reasonable effort to maintain stock body contours, lips, etc. Any body repair modifications having as its purpose increased clearance is prohibited. Cars shall be presented for competition neat, clean and undamaged. Cars shall comply with all decal placement requirements at all times.

12.12.3 - RIDE HEIGHT - Minimum ride height is unrestricted, but no part of the car, except for the exhaust system and suspension components, shall be lower than the lowest part of the wheel rims.

12.12.4 - WINDSHIELD CLIPS - Windshield clips are permitted and recommended. Windshield clips shall be three 3-inches by 1-inch by 1/8-inch. Three shall be bolted or riveted to the body at the top of the windshield. Two shall be bolted or riveted to the cowl and extend over the bottom edge of the windshield. Clips shall be a minimum of 12-inches apart.

12.12.5 - CONVERTIBLE TOPS - Convertible tops and attaching hardware shall be completely removed.

12.12.6 – MOLDINGS: Body side moldings, rocker panel moldings, and wheel opening trim pieces may be removed.

12.12.7 - HOOD LINER: Hood inner insulation liner may be removed.

12.12.8 - HOOD PINS: Hood and trunk clips are permitted. Stock hood latches may be disabled, or removed.

12.12.9 – DUCTING: Ducting may be added to provide fresh air to the driver compartment.

12.12.10 - RADIO ANTENNAS: Radio antennas may be removed. Antennas for two-way radios may be added.

12.12.11 - TAPING OF LIGHTS: Glass lights shall be taped for daytime races. Rear brake lights may be taped with clear tape. Turn signals, backup lamps and side marker lights may be taped with clear or color tape.

12.12.12 - TRUNK LIP SPOILER: Mazdaspeed trunk lip spoiler (p/n NF51-V4-920G-xx) may be used.

12.12.13 – DRIVING LIGHTS: Factory driving lights may be removed, but the resultant holes may not be used to duct air except for the brake ducts allowed in section 12.10.5. The holes must either be covered with a blank panel, or used for the allowed brake ducting.

12.11 – INTERIOR:

12.11.1 - DRIVER S SEAT: An approved racing-type seat must replace the driver's seat. The seat may be a high-back, bucket-type racing seat that incorporates an integral headrest, or a low-back seat with shoulder support and a separate headrest capable of withstanding 200 lbs. of rearward force. Seat and seat padding must be made from, or covered with, a fire-resistant material. The driver s seat must be firmly mounted to the structure of the car. In cars where the seat back is upright, the back of the seat must be firmly attached to the main roll hoop or to its cross bracing so as to provide aft and lateral support. Seats homologated to, and mounted in accordance with, FIA spec 8855-1999 need not have the seat back attached.

12.11.2 - STEERING WHEEL: Any steering wheel, except wood rimmed types, and it's required mounting modifications may be used. Any shift knob may be used.

12.11.3 - STEERING LOCK: The steering lock mechanism must be removed.

12.11.4 – GUAGES: Gauges and instruments may be added, replaced, or removed. They may be installed in any 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" or panel shall remain intact.

12.11.5 – MIRRORS: Any interior and/or exterior mirrors may be used. Two external mirrors (left and right) are required to be mounted in the OEM positions, and must be positioned so that the driver can see objects along both sides of the vehicle. Interior mirror may be replaced with a multi-plane type mirror, but must not extend beyond the confines of the interior.

12.11.6 - PASSENGER SEAT: Front passenger seat must be removed.

12.11.7 – INTERIOR: Carpets, center consoles, cargo bins, seat belts, floor mat, radio system, headliners, dome lights, grab handles, sun visors and their insulating and attaching materials may be removed. Other than to provide for the installation of required safety equipment, or other authorized modifications, no other driver/passenger compartment alterations or gutting are permitted. All or part of the Mazdaspeed interior trim kit (p/n 0000-07-5500-KT) may be used.

12.11.8 - DOOR GLASS: 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 to the driver's door and shall only be made if roll cage incorporates NASCAR-style side protection extending into the door. If not removed, all cars shall run with both the driver and passenger side windows fully open (down).

12.11.9 - CARGO AREA: Spare wheels and tires, jacks and tools shall be removed from the cargo/trunk area. Spare tire covers and trunk mats and/or trunk carpeting shall be removed.

12.11.10 - FOOT PEDALS: Modifications may be made to the foot pedals to improve the comfort and accessibility of the driver. Dead pedal/foot rest and heel stop may be added.

12.11.11 – BULKHEADS: If any allowed removal of cockpit or trunk items creates an opening between the driver/passenger compartment and an exposed gas tank, or part thereof, including the filler tube, a metal bulkhead which completely fills such opening shall be installed.

12.11.12 - AIR BAG: Air bag systems shall be disarmed and may be removed.