

**Rules for the MX5 Cup Series and SM5 Club Classes**  
**Car: 2006-2011 Mazda MX5s**  
**These are the specifications for MX5 Cup, NASA and SCCA**

**1:** The purpose of the **SM5** is to provide an opportunity to compete in similarly prepared low cost cars with limited modifications. It is an opportunity to build an exact club racing vehicle that can also be raced in the MX-5 Cup series or vice versa. This specific set of rules has been written in a manner that allows a higher level of scrutiny resulting in closer competition.

**2:** Unless a particular modification, or part, is approved in either the sanctioning body's rule book, or a Technical Bulletin, the vehicle and all of its relevant parts and assemblies shall be stock for the US version of the **2006-2011** Mazda MX-5 Miata with the sport package and suspension kit.

**3:** All SM5 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. Call (800) 435-2508, send a fax to (949) 222-2650, or e-mail Mazda at [compart@mazdausa.com](mailto:compart@mazdausa.com) to request an application and further details.

#### **4: PARTS CLAIMING**

The following parts may be claimed: Engine (see Article 5), Transmission, Differential, Front Dampers, Rear Dampers, Intake Manifold, Throttle Body, Exhaust Header, Exhaust System, Emission Harness. Any car classified as a finisher may claim a part from another car. Drivers or Entrants must post the claim in writing no later than 30-minutes after the end of the race, along with cash, or a check, for the Claiming Fee to be given to the car having their parts claimed. The CS will determine when the claimed parts will be removed from the claimants' car. Claiming fee for a part shall be 110% of the current Racer Net price from MAZDASPEED on the date the part is claimed. Claimed parts will be inspected by the Chief of Tech. If the parts are found to be in compliance they will be delivered to the team that claimed them. Those parts may then be used again in the series.

#### **5: ENGINE CLAIMING**

A claimed engine will be removed by the driver entrant having their engine claimed, who will then turn the engine over to the CS. The engine will be shipped to and dynoed by Comptech. Comptech will evaluate it; if the engine is found to be over-performing it will be disassembled and thoroughly inspected. If any of the engines components have been found to be non-compliant the claiming fee will be returned to the claimer. Comptech will report to the CHIEF STEWARD the technical infraction. The CHIEF STEWARD will take appropriate action with possible fines, loss of points, or suspension of driver's License. The entrant and car owner may be subject to similar disciplinary actions. If the engine has been disassembled and found to be non-compliant the non-compliant part or parts will be retained by the sanctioning body. If the engine is found to be compliant, the claiming fee will be forfeited to the party from which it was claimed. The claimed engine will be resealed and returned to the claimer, if the engine is found to be under-performing the claimer will be notified and given the choice of rebuilding the engine or having it returned to the claimer unsealed. If the engine is found to be compliant, the claimant will have a new sealed engine from MAZDASPEED shipped to them. The forfeited claiming fee will be used to cover the cost of the new engine sent to the claimant, dyno testing of the claimed engine, processing, shipping, and handling.

## **6: TIRE USE**

**6.1:** Dry Tire Use – open but limited to DOT 225/45/17

**6.2:** Rain Tire Use – open but limited to DOT 225/45/17

## **ARTICLE 7: VEHICLE ELIGIBILITY**

**7.1:** Only the 2006-2011 Mazda MX-5 is eligible to compete in the SM5.

**7.2:** It is intended that the cars competing in the SM5 be very similar in appearance and performance. Therefore, if an alternate part or modification is specified, it shall be used by all cars unless the OEM part is specifically allowed in lieu of the alternate part in the appropriate section.

**7.3:** No other modifications, or alterations from the original “as delivered” vehicle configuration will be permitted, except the REQUIRED SAFETY SPECIFICATIONS and AUTHORIZED MODIFICATIONS specifically listed in the SM5 Section of the official rule book for each sanctioning body.

**7.4:** No permitted component/modification shall additionally perform a non-permitted, therefore prohibited function. Replacement parts required to meet stock OEM specifications may be purchased from alternate standard outlets such as parts stores provided they are the exact equivalent of the stock OEM part.

## **ARTICLE 8: SAFETY**

Vehicles must pass a technical inspection as specified in the sanctioning body's rule book.

### **8.1: CHASSIS**

**8.1.1:** The roll cage shall be installed per the sanctioning body's rules and shall adhere to all regulations.

**8.1.2:** The roll cage shall be welded together. The outer edges of the dashboard, outside of the dash vents, may be trimmed the minimum amount required to install the A-pillar down tubes.

**8.1.3:** If the horizontal bar within the main hoop does not allow the shoulder belts to achieve the proper angle as listed in Appendix G, one of the following actions shall be taken. The left-half tube of the main hoop horizontal bar may be relocated vertically to achieve the proper shoulder belt mounting angle, or an additional half-width straight horizontal bar may be added behind the driver's seat to achieve the proper shoulder belt mounting angle. Cars prepared for tall drivers needing additional leg room may replace the left-half straight horizontal bar with a bent bar to allow the seat to be moved further rearward.

**8.1.4:** The height of the knee bar may be adjusted up to offer additional leg clearance if desired. The bottom of the dashboard may be modified the minimum amount required to allow for additional vertical movement.

**8.1.5:** A tube may be added from the front left down tube to the wheel well/ foot box area to offer additional foot protection in case of an accident.

**8.1.6:** The only allowable tow device for the front and rear of the car is a flexible tow strap. The preferable way of attaching the strap is looping it through the eyelet hole and the bumper brace in a choker hitch. There shall be an arrow that contrasts strongly with the vehicle paint scheme, pointing to each tow eye/strap/cable.

## **8.2: COCKPIT**

**8.2.1:** An on-board fire extinguishing system must be installed per the sanctioning body's rule book.

**8.2.2:** A driver restraint system must be installed the sanctioning body's rule book.

**8.2.3:** Window and Right Side Nets must be installed.

**8.2.4:** A drivers seat must be installed per the sanctioning body's rule book.

**8.2.5:** The two (2) OE external mirrors for the correct vehicle make and model (left and right) are required, and must be mounted in stock location and must be positioned so that the driver can see objects along both sides of the vehicle. The OE interior rear view mirror, or an aftermarket rear view mirror, shall be used.

**8.2.6:** All cars shall have a supplemental support installed for the driver's left leg. The support and any padding shall be mounted laterally so that it is flush with the thigh support of the seat. The support shall run from the edge of the seat straight forward to just above the driver's ankle. The leg support must be mounted rigidly, especially where it meets the seat.

**8.2.7:** A bulkhead panel shall be installed in the trunk to cover the flexible portions of the fuel lines, particularly at the point where they may be rubbed by the cockpit/trunk close-out panel. The material may be metal or composite, but must be rigid.

**8.2.8:** An aluminum trim panel shall be mounted to the inside of the door bars to prevent the driver's arm from possibly getting caught in between the upper and lower door bars in case of an accident. The panel may also close-out the top gap between the inner and outer door bars.

## **8.3: BODY**

**8.3.1:** Interior and exterior door handles are required to remain operable.

**8.3.2:** Door locks must be disabled.

**8.3.3:** All three of the brake lights shall be in working order.

**8.3.4:** The headlights and tail lights shall remain in working order. The headlights and taillights/brake lights may not be taped except with clear tape.

## **8.4: SUSPENSION AND STEERING**

**8.4.1:** Steering lock mechanisms shall be removed.

## **8.5: ELECTRICAL**

**8.5.1:** All cars must use a cut-off switch meeting the requirements set forth in the sanctioning body's rule book. The cut-off switch shall be mounted in the same location on all cars. It shall be located on the right side of the horizontal rollbar tube, next to the main hoop upright. If the driver is unable to reach the cut-off switch while in the normal seated position, a 2nd cut-off switch shall be installed within the driver's reach.

## **8.6: DRIVER SAFETY EQUIPMENT**

**8.6.1:** Driver Safety Equipment is required per the sanctioning body's rule book.

## **ARTICLE 9: COMPETITION CONFIGURATION**

### **9.1: TRANSPONDERS**

Vehicles must be equipped with a transponder per the sanctioning body's rule book.

### **9.2: TIRES**

**9.2.1:** Dry tires must be any DOT P225/45ZR17.

**9.2.2:** Wet tires must be any DOT 225/45ZR17 3.8.2.3:

### **9.3: FUEL**

**9.3.1:** The official series fuel is 93 octane or 100 octane and will be available at all events and must be used during all official sessions.

**9.3.2:** The use of any gasoline other than tested track gas is strictly forbidden. Additives are not allowed. Any violation of this section may result in disqualification, loss of all points and money earned at that event, and a fine of up to \$10,000.00.

### **9.4: Weight**

**9.4.1:** Minimum weight is 2600 lbs, with driver.

**9.4.2:** Ballast is permitted to be used to achieve the minimum weight for a vehicle. Ballast may be mounted anywhere in/on the car provided that it does not perform a nonapproved function. All ballast shall be mounted in such a way that tools are required to remove it. Holes may be drilled in the chassis and the chassis may be reinforced in order to safely secure ballast provided that the reinforcement does not perform a nonapproved function. Grade 5 bolts, or better, and load-spreading washers shall be used to mount ballast when necessary.

### **9.5: Chassis**

**9.5.1:** The 3-piece front strut tower brace (p/ns: NE57-56-48X, NE57-56-48ZA, and NE57-56-49X)

that comes with the sport package shall be used. The strut brace mounts may have a hole drilled in them to allow easier access to adjusters for the front shocks.

## **9.6: Cockpit**

**9.6.1:** All interior trim components, such as the front passenger seat, carpet, sun visors, seat belts, etc., not including the dashboard, and the attaching hardware and bracketry, shall be removed. The lower portion of the door panels shall be removed. The top portion of the door panels containing the door latch release handle shall remain intact. The door window glass and window operating mechanisms shall be removed.

**9.6.2:** All non-essential electronic items, such as the radio equipment and air bags, shall be removed. The radio face may be left in place or a replacement trim piece may be used if the radio face is removed. If radio face plate is left installed it must be unplugged from the vehicle wiring harness.

**9.6.3:** Any removable equipment such as spare tires, tools, bins, etc., shall be removed along with attaching hardware, bracketry and covers.

**9.6.4:** MAZDASPEED interior trim kit (p/n: 0000-07-5500-KT) shall be used in its entirety. The trunk close-out panel must be mounted up under the edge of the body to avoid having the trunk close-out panel rub on fuel hoses in the trunk.

## **9.7: Body**

**9.7.1:** 2006-2008 SM5 cars may be fitted with 2009-2010 bodywork. Contact MAZDASPEED (800-435-2508) for required part numbers.

**9.7.2:** Convertible tops and all attaching hardware may be used for club competition so long as they are positively fastened using the stock mounting locations. The rubber weather strip and trim pieces that mate the convertible top and quarter-windows to the windshield may be removed.

## **9.8: AERODYNAMICS**

**9.8.1:** MAZDASPEED trunk lip spoiler (p/n: NF51-V4-920G-xx) shall be used.

## **9.9: ENGINE**

**9.9.1:** Only Comptech sealed engines will be eligible. Engines must be ordered through MAZDASPEED. Competitor rebuilt engines are prohibited. Sealed engines may be returned to Comptech for service and resealing. Engines returned to Comptech unsealed will be refused.

**9.9.2:** Crankshaft Position Sensor and Crankshaft pulley relationship MUST be as specified in the 2006-2011 MX-5 Factory service manual, CRANKSHAFT POSITION (CKP) SENSOR INSPECTION [LF] Pg. 01-40-34.

**9.9.3:** MAZDASPEED cold air intake system (p/n: 0000-06-5203-KT) is required.

**9.9.4:** MAZDASPEED exhaust system (p/n: 0000-06-5450-KT) is required.

**9.9.5:** An fuel test port must be installed between the rigid fuel supply line and the fuel rail per the sanctioning body's rule book.

**9.9.6:** Vehicles must produce of a reading of 94 dBA or less on a Sound Test. See the sanctioning body's rule book for Sound Test procedures.

## **10: ENGINE CONTROL UNIT (ECU)**

**10.1:** The stock/unmodified ECU shall be used. The CS at his discretion, may require selected cars to utilize a provided ECU. Tampering either electrically or mechanically with a provided ECU is strictly prohibited. Tampering with the supplied ECU may result in disqualification, loss of all points and money earned at that event, and a fine of up to \$10,000.00. All cars provide an auxiliary power source to the ECU that is not disconnected when the Master Electrical Cut-off Switch is turned off. This is to keep all recorded data stored within the ECU. Owners having questions about hooking up auxiliary power to the ECU should contact MAZDASPEED. If the recorded data is not available when requested by the sanctioning body, penalties may be issued. ECUs will generally be flashed with the correct calibration, owners may obtain the most current calibration from a Mazda service department, or from the sanctioning body's staff.

**10.2:** Instrument clusters shall be unmodified OE parts.

## **11: DRIVETRAIN**

**11.1:** The stock 2006-2011 6-speed gearbox, internal parts and ratios shall be used by all cars. MAZDASPEED 3-4 shift fork (P/N 0000-02-5701) is allowed. Gear Ratios: 1st - 3.82; 2nd - 2.26; 3rd - 1.64; 4th - 1.18; 5th - 1.00; 6th - 0.83

**11.2:** The OE open differential or OE limited slip differential may be used. Final Drive Ratio: 4.10:1

**11.3:** No treating, polishing or coating transmission, differential or axle components is permitted.

**11.4:** Owners shall pre-drill the bottom left bolt at the rear of the gearbox and the rear of the differential housing with a 1/16"-1/8" size drill bit. Owners shall also pre-drill the central external fin next to each of the drilled bolts to allow a wire seal to be installed.

## **12: SUSPENSION AND STEERING**

**12.1:** All cars **MUST** use the MAZDASPEED SM5 coil over kit. Kits must be used in their entirety, with no parts substituted or omitted. The following is a breakdown of components supplied in the kit:  
SM5 Kit Part Location Part Number Notes Shocks Front XYZ-123 Bilstein Sealed Shock Rear ABC-789 Springs Front Eibach Rear Eibach Anti-Roll Bars KIT 0000-04-5350-EB Rear bar is adjustable ARB end links Front 0000-04-5499 Link is adjustable, two needed Rear 0000-04-5498 Helper Spring and Adapter Spring Perch Front and Rear 0000-04-HLPR-EB.

**12.2:** Bumpstops may not be modified as supplied in the kit

**12.3:** Only stock, unmodified 2006-2011 front uprights are allowed.

### **13: BRAKES**

**13.1:** Stock Brake Rotor Specification Location Diameter Thickness Notes Front 290mm (11.4") 23mm (0.9") Vented Rear 280mm (11.0") 11mm (0.4") Solid

### **14: WHEELS**

**14.1:** All wheels shall be one of the three OE Mazda MX-5 17"x7" wheels. Style 1: (p/n: 9965-38-7070) Style 2: (p/n: 9965-36-7070) Style 3: (p/n: 9965-45-7070)

## **ARTICLE 15: AUTHORIZED MODIFICATIONS**

### **15.1: CHASSIS**

**15.1.2:** The driver's side inner door structural panel may be removed to fit the cage, but the stock side impact beam, and the outside door latch/lock operating mechanism shall not be removed, or modified.

**15.1.3:** Air jacks are permitted but no air source may be carried on board.

### **15.2: COCKPIT**

**15.2.1:** Any steering wheel except wood rimmed types may be used. Any shift knob may be used.

**15.2.2:** A dead pedal/foot rest and heel stop may be added. Foot pedals may be modified to improve driver comfort.

**15.2.3:** The heater system and air conditioning equipment located in the engine compartment may be removed, but the equipment located in the cockpit shall remain intact.

### **15.3: BODY**

**15.3.1:** Windshield clips are permitted and recommended. The MAZDASPEED lexan windshield (P/N 0000-07-5101-LX) may be used in place of the stock windshield. The front quarter-windows on the doors may be removed.

**15.3.2:** Inner hood insulation liner may be removed.

**15.3.3:** Hood pins are permitted. If hood pins are fitted, the OE latch may be removed.

**15.3.4:** Auxiliary screen material may be used behind the OE grille piece.

**15.3.5:** Left and right inner fender liners must remain intact. Inner fender liners may be riveted in place and a small portion of the liners may be trimmed away where the tire makes contact with the inner fender liners. A template will be made available by MAZDASPEED. Left and right front fender liners may be removed only if the large excess holes are closed off using .040" - .060" aluminum and securely fastened into place using rivets.

**15.3.6:** Front and Rear fender lips may be rolled to prevent tire damage.

**15.3.7:** The OE driving lights may be removed. The resultant openings may be used to direct air to the front brakes.

**15.3.8:** Side marker lenses may be substituted with a more durable material as long as they retain their original shape and color.

#### **15.4: ENGINE**

**15.4.1:** A turn at the end of the exhaust pipe may be used to help disperse/direct noise in order to meet specified decibel limit in all conditions.

**15.4.2:** OEM exhaust system heat shields may be removed. Exhaust headers and exhaust systems may be wrapped, coated or both.

**15.4.3:** The oxygen sensor may be reinstalled in the competition exhaust system. The sensor shall be placed in the exhaust system within reach of the OE electrical connection for the oxygen sensor. The bung needed to reinstall the oxygen sensor may be purchased from MAZDASPEED.

**15.4.4:** A engine to fender brace may be used if mounted in such a way that it does not foul brake lines, fuel lines, or other systems that would interfere with the safe operation of the vehicle under race conditions.

**15.4.5:** Spark plugs are unrestricted.

#### **15.4.6: Cooling System**

**15.4.6.1:** The alternate radiator (p/n: 0000-01-5550) from MAZDASPEED is permitted.

**15.4.6.2:** Thermostats may be modified, removed, or replaced.

**15.4.6.3:** Bleeder screw may be added to heater hose tube.

**15.4.6.4:** MAZDASPEED oil cooler (p/n: 0000-01-5100-KT) may be installed.

**15.4.6.5:** Permitted Cooling Fluids Glycol-based coolants are not permitted. Additionally, any other coolants that significantly reduce the friction properties of the racing surface beyond what plain water does are not permitted.

**15.4.6.6:** The gap between the top and sides of the radiator and the core support may be sealed with tape, silicon, foam, etc.

#### **15.5: DATA ACQUISITION**

**15.5.1:** Vehicles may be equipped with additional Data Acquisition Systems, consisting of a data logger, sensors and required wiring.

#### **15.6: DRIVETRAIN**



**15.6.1:** Clutch - The clutch disc and pressure plate must be bolted directly to an unmodified stock flywheel. Allowable clutch components are as follows: Part Applicable Part Numbers Clutch Disc Mazda LF04-16-460B MAZDASPEED 0000-02-5415-AC MAZDASPEED 0000-02-5416-AC Pressure Plate Mazda LF04-16-410A MAZDASPEED 0000-02-5405-AC Part Diameter (in) Min. Weight (lbs) Clutch disc: 8.5 1.7 Pressure Plate: 9.875 9.4 Flywheel: 11.0 16.0 9.375 (machined surface)

## **15.7: SUSPENSION AND STEERING**

**15.7.1:** The anti-roll bar end links shall be used as provided. However, the anti-roll bar end links may be connected, or disconnected, as the driver sees fit.

**15.7.2:** Suspension alignments (camber, caster, toe) are unrestricted within the limits of the unmodified factory adjustments.

**15.7.3:** There is NO minimum ride height.

**15.7.4:** The rear shock towers supplied with the MAZDASPEED suspension kit may be reinforced through the addition of material to, and welding of, the shock towers. Any reinforcement shall not connect the shock tower to more area of the chassis than the unreinforced shock tower contacts.

**15.7.5:** Hardware items (e.g. nuts, bolts) may be replaced by similar items performing the same fastening function(s).

**15.7.6:** The aluminum mounting ring on the OE shock tower assembly that mounts to the underside of the chassis may be cut off the OE rear shock tower assembly, have the center hole opened up to allow the remote reservoir shock to slide through, and be used on the underside of the chassis to sandwich the chassis in conjunction with the MAZDASPEED supplied shock tower.

**15.7.8:** RX8 front hubs may be substituted in place of the O.E. hubs. To complete the conversion the following parts may be purchased from MAZDASPEED: Front Hub #F151-33-04X, ABS Adapter #0000-03-5901, special installation tool# 0000-03-5902. Or F189-33-04X may be used. An "L" shaped retainer is allowed for the ABS adapter housing provided it serves no other purpose.

## **15.8: BRAKES**

**15.8.1:** Backing plates and dirt shields may be ventilated or removed.

**15.8.2:** Brake lines may be replaced with steel lines, or Teflon lined metal braided hose.

**15.8.3:** Any brake pad that fits the stock, unmodified caliper may be used. Brake pad friction material is free but must retain stock size and shape.

**15.8.4:** The parking brake may be removed in order to fit the specified interior trim kit into the car.

**15.8.5:** MAZDASPEED brake duct kit (p/n: 0000-03-5301) is permitted. The inner fender panels may be modified to fit the brake kit to the driving light openings.

## **15.9: ELECTRICAL**

**15.9.1:** 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 recommended. The positive battery terminal shall be insulated to prevent sparking.

**15.9.2:** With the exception of the wiring needed to install the safety equipment, to operate any data system, to preserve power to the PCM, or to repair accident damage, there shall be no additional non-OE wiring, connections, etc. to any wiring harness, or component of the car.

## **15.10: WHEELS**

**15.10.1:** Aftermarket wheel studs and lug nuts are permitted. Wheel spacers are not permitted.

## **15.11: FUEL TANK**

**15.11.1:** Unleaded fuel filler trap door and restrictor plate in filler neck may be removed.

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