

### 9.1.7. SPEC MIATA CLASS

These specifications are part of the SCCA GCR and all automobiles shall conform

#### A. PURPOSE AND INTENT

The Spec Miata (SM) class is intended to provide the membership with the opportunity to compete in low cost, production-based cars with limited modifications, suitable for racing competition.

The rules are intentionally designed to be more open than the Showroom Stock class but more restricted than the Improved Touring class.

The vehicle identification number (VIN) shall correspond with the model-year automobile classified. VIN plates or stampings shall remain in place. There must be at least one VIN plates or stamping on the dashboard or chassis that corresponds with the model year automobile classified.

#### B. CLASSIFIED CARS AND WEIGHTS

Classified cars and weights are listed on the Spec Miata Specification Table.

Cars are to be weighed with the driver and required ballast. See GCR Section 9.3 Ballast.

#### C. AUTHORIZED MODIFICATIONS

The following items represent the only modifications and safety items permitted and/or required on Spec Miata automobiles other than safety items as required. Permitted components or modifications must not perform a prohibited function. Updating or backdating is not allowed for any car, model, specification, or component, except as specifically authorized in these rules.

A Mazda factory shop manual for the specific make, model, and year of automobile is required to be in the possession of each entrant. The manual may be in the form of printed material, microfiche, CDs, DVDs, and/or Internet access to manufacturer sponsored web-based databases. The manual is intended to aid scrutineers in identifying parts and the configuration of the automobile.

All engines and internal components used in rebuilding or refurbishment must have been offered for sale by Mazda in the US for the correct year and VIN of car, except as otherwise provided for in these rules. This rule prevents use of aftermarket parts or Mazda parts of incorrect specification or application.

Assembly, rebuild, and refurbishment procedures, and all associated dimensions must adhere to the published factory service procedures, except as otherwise stated in these rules. No components may be added or omitted from those specified by the published factory service procedures. All components must be standard dimensions. It is permitted to use industry standard procedures to repair damaged non-engine components (e.g., welding a transmission or differential housing).

Any water pump, timing belt, or alternator of original equipment manufacturer design, dimensions, and specification may be used.

The use of any painting, coating, plating, or impregnating substance (e.g., anti-friction, thermal barrier, oil shedding coatings, chrome, anodizing, REM, isotropic finishing, etc.) to any internal engine surface, internal transmission or differential surface, internal or external surfaces of the intake manifold, exhaust manifold or downtube is prohibited.

If the factory manual or these rules provide only a partial specification or no specification at all, the Mazda parts may not be modified beyond what is allowed in these rules. Compliance of such parts will be determined by comparison to new parts delivered by Mazda. Other approved parts with only a partial specification or no specification available in these rules may not be modified. Compliance of such parts will be determined by comparison to new parts from the supplier.

**1. Engine Modifications**

**a. General**

1. No modifications to this engine are allowed, except where specifically authorized within these rules. This includes, but is not limited to, all fuel injection and engine management components, as well as electrical, cooling, and lubrication systems. All systems are subject to test procedures and must conform to OEM specifications as stated in the Mazda factory service manual.
2. Permitted engine maintenance includes the replacement, but not modification, of external engine and engine systems parts. No balancing, blue printing, lightening, polishing, or other modification of moving parts of the engine is permitted. All parts in the engine must be stock Mazda OEM parts unless specified in this rule set. For all Mazda part numbers in these specifications, superseding part numbers are considered equivalent.

**b. Block**

1. The engine block may be decked/milled to achieve the factory specified compression ratio for the correct model year as listed. Honing of cylinders is permitted to a maximum standard diameter as shown in Table 1.

| <b>Table 1: Standard Bore Diameter</b> |   |
|--|---|
| <b>Model Year</b>                      | <b>Maximum Standard Diameter (inches)</b> |
| 90-93                                  | 3.076                                     |
| 94-05                                  | 3.273                                     |

2. Cast iron cylinder liners (sleeves) as previously permitted may be used in both Regional and National racing through 6/28/13. Regions may continue to allow sleeved blocks via supplemental regulations.
3. The cylinders may be bored .010" over to a maximum overbore diameter shown in table 2.

| <b>Table 2: Overbore Diameter</b> |   |
|-----------------------------------|---|
| <b>Model Year</b>                 | <b>Maximum Standard Diameter (inches)</b> |
| 90-93                             | 3.086                                     |

|       |       |
|-------|-------|
| 94-05 | 3.283 |
|-------|-------|

- If one or more cylinders is overbored or exceeds the maximum standard diameter specified in paragraph 1, the vehicle shall meet the “minimum weight with overbored motor” specified in the vehicle specifications.

**c. Crankshaft**

- The stock Mazda Miata crankshaft must be used with no modifications except for machining to allow the use of main and rod bearings as allowed in section 3 below. Shot peening to stress relieve the crankshaft after machining is permitted. Table 2 lists the permitted crankshaft for each model year and the minimum weight (not including pilot bearing or hardware).

| Model Year         | Part Number  | Minimum Weight (lbs.) |
|--------------------|--------------|-----------------------|
| 90-93 (short nose) | B617-11-300  | 26.5                  |
| 90-93 (long nose)  | B6S7-11-300A | 26.5                  |
| 94-05              | BP06-11-300D | 35.6                  |

- Main and rod bearings must not be modified in any way. OEM and non-OEM bearings must be used from within the standard ranges as allowed in the Mazda factory service manual. The crank triggers must not be altered or modified in any way. The crank pulley/balancer must not be altered or modified in any way.

**d. Connecting Rods**

- Mazda part number B6S7-11-210E must be used. Minimum connecting rod weight with cap and bolts is 537 grams.

**e. Pistons**

- Mazda OEM pistons must be used. Minimum weights less wrist pin and hardware and minimum weights of wrist pins are shown in the following table:

| Model Year   | Part Number  | Minimum Weight (w/o wrist pin and hardware (grams)) | Minimum Weight Wrist Pin (grams) |
|--------------|--------------|---|----------------------------------|
| 90-93 (STD.) | B6Z2-11-SA0C | 271.5   | 86.0                             |

### 9.1.7. Spec Miata (SM) Specifications

|                       |               |       |      |
|-----------------------|---------------|-------|------|
| 90-93<br>(.010" over) | B6Z2-11-SB0C  | TBD   | TBD  |
| 94-97<br>(STD.)       | BPY11-11-SA0A | 291.5 | 80.0 |
| 94-97<br>(.010" over) | BPY1-11-SB0A  | TBD   | TBD  |
| 99-00<br>(STD.)       | BPZ0-11-SA0   | 288.0 | 78.0 |
| 99-00<br>(.010" over) | BPZ0-11-SB0   | TBD   | TBD  |
| 01-05<br>(STD.)       | BPZ3-11-SA0   | 288.0 | 78.0 |
| 01-05<br>(.010" over) | BPZ3-11-SB0   | TBD   | TBD  |

- No modification of the piston is permitted. Modification of the piston ring end gap width is allowed.

#### f. Cylinder Head

- The gasket face of the cylinder head may be resurfaced provided the maximum compression ratio is not exceeded and the minimum height of the cylinder heads are maintained. The minimum heights of the cylinder heads as measured in the factory service manual allowed are shown in table 5.

| <b>Model Year</b> | <b>Minimum Height (inches)</b> |
|-------------------|--------------------------------|
| 90-93 (1.6L)      | <i>5.235</i>                   |
| 94-05 (1.8L)      | <i>5.235</i>                   |

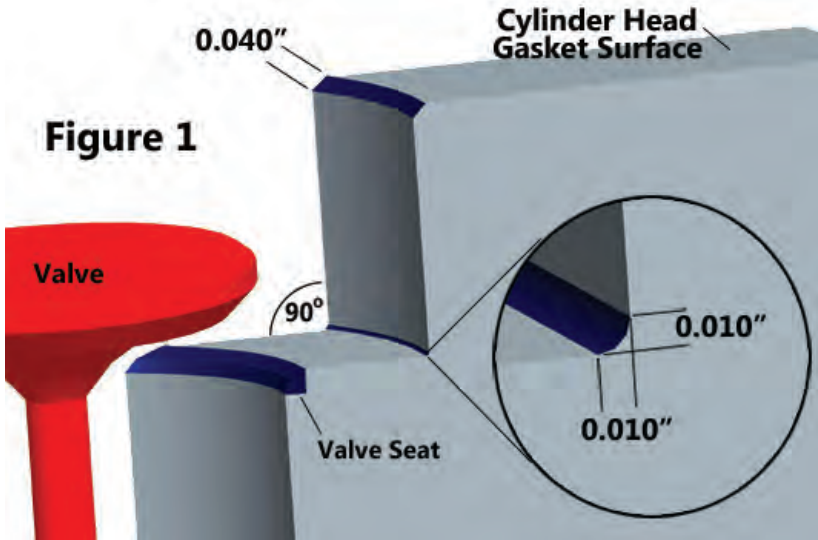
- The cylinder head must not be ported, polished, or machined. The original casting must not be modified in any way or polished unless specified below.
- The throat area of the port consists of the 90 degree angle at the very bottom of the cast steel valve seat as it transitions to the aluminum casting below. It is permitted to plunge cut the throats in order to correct for core shift that is commonly found in many cylinder heads. The cut must be cylindrical and concentric to the valve guide axial centerline, within a tolerance of .005", for the entire length of the cut. The radius tangent to the cylindrical and bottom surfaces shall not exceed 0.375". This cut cannot extend further than the specified number below from the bottom of the ferrous valve seat. There can be no tooling or machine marks in the head below this point (including OEM machine marks). The intersection of the machined surface of the plunge cut to the port casting shall not be altered, except that the area under the short turn radius may be de-burred, with the de-burring not to

exceed 1.5 mm in width. The 90 degree bend at the bottom of the valve seat and the aluminum directly below it will be measured with a gauge and must conform to the maximum diameters and depths listed in Table 6..

| <b>Engine</b> | <b>Maximum Intake Throat Diameter (inches)</b> | <b>Maximum Exhaust Throat Diameter (inches)</b> | <b>Maximum Throat Depth (from bottom of ferrous valve seat (millimeters))</b> |
|---------------|--|---|---|
| 1.6L          | 1.095  | 0.948   | 12  |
| 1.8L          | 1.178  | 1.020   | 12  |

4. No aluminum in the bowl area (other than that specified for the plunge cut) or the ports may be removed, added, or manipulated for any reason. It is understood that heads may look slightly different from bowl to bowl due to casting irregularities. No material may be removed or added from the short turn radius in the port.
5. *Unshrouding of valves is explicitly limited as follows: The wall of allowed relief cut must be a single cut parallel and concentric with the valve guide for the full depth of the cut. The cut must be cylindrical with no taper. The bottom of the cut must form a 90 degree angle with an allowance for a bevel or curve whose radius is not to exceed .010". There must be a sharp, non-modified and non-deburred edge where the valve relief cut first meets the chamber. No part of this cut (except where it intersects the head gasket surface, which may be deburred up to .040") is to be blended by hand, machined, or chemically processed to create a smooth transition. See figure 1 below. The maximum dimensions, measuring guide center line to chamber edge can be found in Table 7.*

| <b>Engine</b> | <b>Maximum Intake Valve Relief Cut radius (inches)</b> | <b>Maximum Exhaust Valve Relief Cut radius (inches)</b> |
|---------------|--|---|
| 1.6L          | 0.687 Radial   | 0.600 Radial  |
| 1.8L          | 0.760 Radial   | 0.675 Radial  |



**g. Camshaft**

1. Camshafts must comply with the official camshaft specifications as supplied by the SCCA Club Racing Tech Department. The camshaft and crankshaft sprockets must be as supplied by Mazda. Cam timing must not be altered; the belt must be installed as specified in the Mazda factory service manual.

**h. Valves**

1. OEM valves must be as supplied by Mazda. Valve location or angle must not be moved. Reshaping of the valves is strictly prohibited. Valve guides may be replaced provided the position of the valve is not changed and the replacement guides are Mazda OEM parts. Valve stem installed height must be per the Mazda factory service manual: Valve stem seals must be Mazda OEM or equivalent. Valve seats may be cut provided the valve seat angles are stock Mazda three angle cut, as defined below.
2. A valve job will consist of only three flat angles; radius cuts are not allowed. A 45 degree seat angle must be used, which may vary in width from .030 inch to .050 inch. To narrow or correctly position the face angle, a bottom angle of 70 degrees must be used. To narrow or correctly position the face angle, a top cut of 30 degrees may be used. All angles must stay on the cast steel block portion of the seat. The angles must not extend off the seat into the aluminum casting at the top or bottom of the seat.

**i. Valve Springs**

1. Valve springs are Mazda OEM as specified in the Mazda factory service manual. Valve spring shims are not permitted except the one standard shim that is used under every valve spring. Only the Mazda shim may be used and the OEM dimensions must be maintained.

## j. Intake Manifold

1. The intake manifold must be stock Mazda parts, without any material added or removed. No coating is permitted on the exterior or interior of the manifold. Injectors must be stock Mazda OEM parts, correct for the model year of the car. All air entering the intake tract shall pass through the fuel injection air inlet.
  - a. 1.6L (1990-1993) cars may replace the stock air box with a cone style air filter assembly. The air filter element is unrestricted. No ducting or baffling of air to the air filter is permitted., *however, the forward-facing driver's side turn signal indicator may be removed. The stock plastic air tubes between the AFM and the throttle body may be covered or wrapped.*
  - b. 1.6L cars may open and adjust, but not modify, the OEM airflow meter. For 1.6L cars, the position of the air flow meter may be moved provided it remains attached to the unmodified factory intake tube. cars must use the stock air box, but the air filter element is unrestricted. Mass air flow sensors may not be modified, adjusted or opened.
  - d. 1.8L cars must use an air restrictor plate. The restrictor plate must be placed between the throttle body and plenum. All intake air must pass through the restrictor plate. Restrictor plates must be the proper size as listed in the specification table, must be from Mazdaspeed Motorsports Development or from SCCA Enterprises, and must not be modified. An OE (or equivalent) gasket shall be used on both sides of the restrictor plate.
  - e. 2001-2005 cars may replace air intake tube (p/n BP6D-13-331) with the 1999 air intake tube (p/n BP4W-13-331B).

## k. Fuel system

1. The fuel pump must be a Mazda or OEM equivalent part. Any adjustable mechanical fuel regulator may be used. It may not be mounted in the cockpit. It may not be adjusted electronically or from the cockpit. Cars equipped with a factory installed manifold vacuum reference for the fuel regulator may use it, but it must not be altered in any way. Refer to GCR Section 9.3 for permitted fuel specifications and for the required fuel sample acquisition port.
2. *Fuel filler tube venting may be defeated (loop or block vent lines in trunk).*

## l. Exhaust system

1. *1.6L (1990-1993): The exhaust manifold internal factory welds may be ground from the interior of the OEM exhaust manifold up to 1" from the mounting surfaces of the cylinder head and the collector. A bead of weld or braze may be added to the outside of the exhaust manifold inlet and outlet mounting flanges for the purposes of repair only. No coatings are permitted on the exterior or interior of the manifold. Heat wraps may not be used.*

- All other years:* The exhaust manifold must be Mazda OEM, without any material added or removed. No coatings are permitted on the exterior or interior of the manifold. Heat wraps may not be used.
2. The 1999-05 Miatas with California emissions equipment may substitute the Federal OEM exhaust manifold and ECU for the OEM CA exhaust manifold and catalytic converter.
  3. The post catalytic converter oxygen sensor may be disabled, replaced, relocated, or removed; the resulting hole (if present) may be plugged. Original exhaust system heat shields may be removed.
  4. The factory exhaust system beyond the OEM front down pipe may be replaced, provided the following are true:
    - a. The replacement system retains the original configuration (i.e., single tube design) and the tubing is an absolute maximum of 2.3 inches outside diameter as measured at least 6" from downpipe flange or muffler. The maximum length of tubing used for the system beyond the OEM down pipe shall not exceed 120 inches (includes catalytic converter replacement pipe if used).
    - b. The pipe may end anywhere after the rear subframe. Forward of the rear subframe, the pipe must follow the original path of the OEM exhaust system. The exhaust system shall not create any new openings in the rear bumper.
    - c. No expansion chambers. *Up to two* muffler(s) may be added. The muffler(s) shall not exceed a maximum length (parallel to the longitudinal centerline of the car) of 34 inches. The muffler(s) shall not exceed a maximum width of 24 inches (parallel to the lateral centerline of the car). In addition, the sum of the length and width of the muffler(s) shall not exceed 40 inches.
    - d. The system meets all event specific sound requirements.
    - e. A catalytic converter may be gutted, removed, or replaced with a catalytic converter replacement pipe. The replacement pipe must not exceed 17.5 inches in length and have an outside diameter no greater than 2.375 inches.
    - f. No portion of the exhaust may be wrapped with any type of insulating tape, nor shall any portion of the exhaust, internal or external, be coated with any thermal coatings.
- m. **Lubrication System**
1. The oil pan must be as supplied by Mazda. No modifications are permitted. The windage tray must be used and must not be modified in any way.
- n. **Cooling System**
1. The water pump must be a Mazda or an OEM equivalent part. The water pump pulley must be the stock Mazda part. No modifications are permitted.
- ~~Radiator~~ *(and mounting brackets)* may be used, provided it is mounted in the original location, maintains the same plane as the original core, and requires no body



or structure modifications to install. Any openings created by fitting an alternate radiator must be blocked to prevent air from entering the engine compartment. At least one functional stock OEM cooling fan must be maintained and mounted in the stock location. *The fan shroud may be modified for installation.*

3. Thermostats may be modified, removed, or replaced.
4. All cars may install the upper radiator seal, p/n NA75-50-OK7A.

**Radiator** A screen of *.125* inch minimum mesh may be added in front of the radiator. The screen must be *a single layer and* installed behind the front bumper cover and attached to the air guide. Tape may be applied to the mesh.

6. The factory air conditioning systems may be removed. Items that serve a dual purpose, such as the alternator/air conditioning compressor bracket, may not be substituted.
7. Engine coolant fluid, coolant/heater hoses and clamps may be substituted. Upper and lower radiator hoses may be replaced only with rubber or silicone hoses. Heater core may be bypassed but may not be modified or removed. Heater water control valve(s) may be added or substituted.

#### o. **Electrical Equipment**

1. The ECU and engine electrical harness must be as supplied by Mazda. No modifications are permitted. The ECU maps and inputs must not be modified. Chips may not be replaced. The OBDII diagnostic port must be operational in all 1996-2005 cars.
2. Ignition coils must be stock Mazda parts. No modifications are permitted.
3. All sensors related to engine operating parameters must be used and must be stock Mazda parts. These sensors and their locations and mounts, and their wiring harness leads may not be altered except as allowed in subsection 6 below. Any sensors required for analog type gauges must be in addition to the Mazda sensors. Data acquisition sensors may be added. Relocating the oil pressure sending in order to install an oil pressure gauge is permitted. On 96-05 cars a single fixed bracket may be installed to support and secure the crank position sensor (CPS) in its stock location. The bracket may only attach to the CPS, the CPS mounting bolt, and the closest oil pump threaded mounting hole and must serve no other purpose.
4. The alternator may be OEM equivalent. The alternator drive pulley must be stock. The alternator must not be disabled in any way. Spark plugs and spark plug wires may be substituted. Ignition timing is unrestricted within stock adjustment capability.
5. 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.

## 9.1.7. Spec Miata (SM) Specifications

6. For 1999-2005 model years only, it is permitted to alter the ignition timing either by elongating the mounting holes of the stock crankshaft position sensor trigger wheel or by replacing it with the Mazda adjustable trigger wheel, part number 0000-10-5100-AJ.
7. It is permitted to remove all components of the cruise control system.
8. It is permitted to remove the horn.
9. An electrical pigtail ranging from 3" to 6" in length and terminated with any 3 pin electrical connector may be soldered and potted to the OEM cam sensor for the purpose of correcting a known issue with the factory connection. The factory harness connector may be removed and replaced with the appropriate mating connector.
10. *Auxiliary control of the radiator cooling fan may be added to power the fan independent of the ECU. OEM control of the fan must remain functional.*

### p. Flywheel

1. The stock Mazda flywheel must be used. No modifications are permitted except for normal resurfacing for clutch wear. Table 8 provides minimum weights with pilot bearing:

| Model Years | Minimum Weight (lbs) |
|-------------|----------------------|
| 90-93       | 17.6                 |
| 94-05       | 17.0                 |

2. The 94 model year may use the flywheel from the 95-05 model years. If the 1994 flywheel is used, it must weigh a minimum of 18.5 lbs.

### q. Clutch

1. All cars must use either the stock OEM pressure plate or the ACT pressure plate (Mazdaspeed p/n: 0000-0205401-SS – 1.6L cars or 0000-0205404-AC – 1.8L cars). The unmodified pressure plate must be bolted directly to the stock, unmodified flywheel. Any clutch disk may be used. Alternate clutch lines are permitted, must serve no other purpose.

### r. Miscellaneous

1. The use of the following non-standard replacement parts are permitted provided the use does not result in any unauthorized modification of any other component.
  - a. Fasteners – nuts, bolts, screws, washers, studs, etc. (Head bolts, rod bolts, flywheel bolts, and crank pulley bolt must be used as provided by Mazda.)
  - b. Gaskets and seals, except those specified in the above

rules

- c. Mechanical tachometer and analog gauges
- d. Oil and lubricants

## 2. Transmission/Final Drive

- a. Transmission and final drive ratios must remain stock for the year of car. All cars shall only use the 5 speed transmission and the 4.3 differential ratio. Transmission gear ratios must be stock. All cars may use the stock 4.3 unmodified OEM open differential or one of the approved alternates listed below.
- b. 1990 to 1993 Miatas may use the stock, unmodified viscous limited slip differential or the MAZDASPEED Motorsports Development limited slip differential, part number #QN10-64-A00 (previously TOY1-27-200 & 0000-02- 5501). Alternate MAZDASPEED #0000-02-5500 limited slip differential is permitted.
- c. 1994 and newer cars may use the stock limited slip (Torsen or Tochigi Fuji) differentials from 94-05 models. 4.3 gear ratio must be retained.
- d. The 90-93 Miatas may convert to the 94-05 differential assembly and must retain the 4.3 differential gear ratio. This conversion includes the driveshaft and half-shafts. The original 90-93 model rear suspension uprights must be retained.
- e. Lubricants may be substituted with any lubricant.
- f. *Updating or backdating of transmissions (inclusive of shifters) from 90-05 is permitted; OE shifters must be retained.*

## 3. Chassis

Suspension modifications are limited to the addition of the MAZDASPEED Motorsports Development "Spec Miata kit" and those modifications detailed in this area.

- a. MAZDASPEED Motorsports Development Spec Miata kit
 

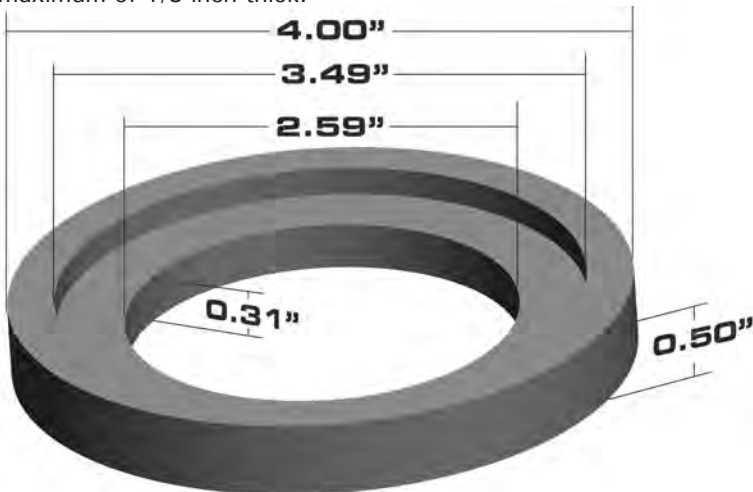
|         |          |                |
|---------|----------|----------------|
| 1990-93 | 1.6 DOHC | K-SPEC-M5-SUSP |
| 1994-97 | 1.8 DOHC | K-SPEC-M5-SUS8 |
| 1999-up | 1.8 DOHC | K-SPEC-M5-SUS9 |

The following is a breakdown of components supplied within these kits. All parts numbers are MAZDASPEED Motorsports Development parts numbers. No substitution of parts is allowed. The kits must be used in their entirety, except as specified.

- 1. Shocks
  - Front MAZDASPEED part #: 0000-04-5225-BL
  - Bilstein part # stamped on front shock:  
B46-1488 or 24-014885
  - Rear MAZDASPEED part #: 0000-04-5226-BL
  - Bilstein part # stamped on rear shock:  
B46-1489 or 24-014892
- 2. Springs
  - Front Eibach ERS 700 lbs/6" 0000-04-9700-06
  - Rear Eibach ERS 325 lbs/7" 0000-04-9325-07
- 3. Coil-Over kit
  - Front/Rear 0000-04-5402AW: The sleeves and perches may be replaced with parts of the same material and dimensions.

4. Anti-Roll Bars  
K-SPEC-M5-SUSP  
Eibach kit - front / rear bars 0000-04-5302-EB  
Front 24mm Adjustable  
Rear 15mm Adjustable  
K-SPEC-M5-SUS8 or may use adjustable 24 mm front bar  
from Eibach kit 0000-04-5302-EB.  
Eibach kit - front / rear bars 0000-04-5303-EB  
Front 27mm non-Adjustable  
Rear 15mm Adjustable  
K-SPEC-M5-SUS9  
Eibach kit - front / rear bars 000-04-5304-EB  
Front 27mm non-Adjustable  
Rear 15mm Adjustable
- b. All cars may use the Fat Cat Motorsports bump stop kit (p/n FCM-MT-KIT-SM) or the unmodified Mazdaspeed bump stop (p/n 0000-04-5993AW) 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: NC10-28-776) and the upper mount washer (p/n: NC10-28-774), and shock body spacer over the shock shaft (p/n 1234-56-789-AW). All other OEM upper mounting hardware shall be discarded. Non-OEM equivalents may be used in place of the upper mount, upper mount bushing, and upper mount washer only. No other modifications are allowed.

A metal or delrin plastic spacer as shown below may be added between the Mazdaspeed bump stop and the 1999 shock hat. The 0.31 inch measurement is +/- 0.01 in. All other measurements are non-critical and are shown for clarification purposes only. In addition, a 3/8 inch steel hardware washer may be installed between the shock shaft and the bump stop. The washer shall be a maximum of 1/8 inch thick.



**+/- 0.05" TOLERANCE**

- c. Subframe braces may be updated to stock 1997 configuration

utilizing the MAZDASPEED Motorsports Development Spec Miata kit.

- d. Anti-roll bar links may be replaced and may be adjustable, but the attachment points must remain stock. The control arms and specified anti-roll bar may not be modified. One end of the sway bar(s) may be disconnected as a suspension tuning aid. The bar must remain in place and be solidly attached to the suspension on one end. A locating ring for the rear anti-roll bar may be added; it must serve no other purpose. Metal shims of up to 1/8" total thickness may be added between each anti-roll bar mount shackle and its stock mounting point on the chassis.
- e. Suspension alignments (camber, caster, toe) are unrestricted within the limits of the unmodified factory adjustments. Minimum ride height is unrestricted.
- f. No relocation or reinforcement of any suspension component or mounting points is permitted.
- g. Hardware items (nuts & bolts) may be replaced by similar items performing the same fastening function(s).
- h. Manual or power steering racks may be used. Power steering racks may be converted to manual by removing all power steering components.
- i. Towing eyes per GCR Section 9.3 Towing Eyes are required. Stock towing eyes may be modified, replaced, or removed but may serve no other purpose.
- j. Hubcaps and wheel trim shall be removed.
- k. All chassis/structural/electrical repairs, if performed, 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.
- l. The front shock tower connector/brace is not permitted on the 1999 and newer cars.
- m. The Mazdaspeed motor mount, part NAY1-39-040 is allowed.
- n. All cars are permitted to use the "R" model tie rod ends part # NQ21-32-280A.
- o. The rubber vibration damper may be removed from the pinion flange on 1994 and newer differentials.
- p. For camber adjustment only - inner suspension bushings, on the front upper control arms, may be replaced with non-metallic offset bushings. The bushings may use metal (inner and/or outer) sleeve(s). Material and design must be the same in all four positions. The control arm may be modified to allow for pinning the bushing to prevent rotation. Spherical bearings are not allowed.
- q. To facilitate frequent lifting of the vehicle without causing damage, one piece of steel angle iron or square steel tubing may be added under the rocker panel inboard of the factory pinch weld flange on each side of the car. Angle iron and/or square steel tubing dimensions shall not exceed 12" x 1" x 1" x .125 thick. The added support shall be securely fastened to the car and serve no other purpose.

#### 4. Brakes

- a. Backing plates and dirt shields may be ventilated or removed.
- b. Brake lines may be replaced with steel lines or Teflon lined metal braided hose.
- c. Cars with antilock braking systems must have the system disabled as specified in GCR 9.3 Brakes.
- d. Parking brake mechanisms, and actuating components may be removed.
- e. Brake pads and brake fluid are unrestricted
- f. 2001 and newer cars must use the 255mm(F) and 252mm(R) brakes. The larger brakes 269.5mm(F) and 267.9mm(R) are not permitted.

#### 5. Wheels/Tires

Any wheel/tire may be used within the following limitations:

- a. Required rim diameter is fifteen (15) inches. Maximum rim width is seven (7) inches. Minimum weight of wheel shall be 13 lbs without spacers. All four wheels must be the same dimension including offset.
- b. All wheels must be one-piece metal castings (not multi-piece wheels, bolted, riveted or welded together).
- c. Tires:  

**For spec tire info for the ARMS Spec Miata Championship Series  
See section 5.5 of the ARMS Spec Miata Championship Series  
Rules**
- d. The front track shall not exceed 1450 mm. The rear track shall not exceed 1475 mm. Aftermarket wheel studs, lug nuts, and wheel spacers are permitted. If spacers are used they shall be no greater than 13mm and equal per axle.
- e. 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.

#### 6. Body/Structure

- a. 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.
- b. Body repair shall be performed using every reasonable effort to maintain stock body contours, lips, etc. Any body repair modification having as its purpose increased clearance is prohibited.
- c. The "R" package Miata chin spoiler is allowed on 1990-1997 cars provided it is mounted in the OEM location. 1999-up cars may use the OEM chin spoiler for these cars (99-00 p/n: NC10-V4-900F or 01-05 p/n: NO67-V4-900G).  

Rear spoilers and rocker panel moldings including OEM design are prohibited.
- d. Windshield Clips/Rear Window Straps per GCR Section 9.3

Windshield Clips/Rear Window Straps, are permitted and recommended.

- e. Convertible tops and attaching hardware shall be completely removed. Cars may compete with the Mazda factory detachable hard top in place (latches shall be replaced with positive fasteners and rear pin attachment mechanisms must be used or replaced with positive fasteners), but it is not mandatory. When no top is used, driver shall wear arm restraints, and the cage will meet the helmet clearance rule. It is allowed to attach the hard top to the upper windshield bar of the roll cage.
- f. Body side moldings and wheel opening trim pieces may be removed.
- g. The plastic trim on the hood may be removed.
- h. Hood and trunk clips are permitted. Stock hood and trunk latches may be disabled or removed.
- i. Ducting may be added to provide fresh air to the driver compartment. This ducting shall be located in the driver and/or passenger vent window area by means of a transparent/alternate vent window material and duct with no modifications to the bodywork.

To improve driver exit through the window area, the driver vent window and vent window supporting frame may be removed as an assembly. If removed, ducting may be in the passenger side vent window only.

- j. Radio antennas may be removed. Antennas for two-way radios may be added.

## 7. Driver/Passenger Compartment - Trunk

- a. The driver's seat shall be replaced with a one-piece bucket-type race seat. All seat mountings shall be reinforced. Factory seat tracks/brackets may be modified, reinforced, and/or removed to facilitate replacement mountings provided they perform no other function. The passenger seat must be removed. The transmission tunnel may be modified for the purpose of installing a competition driver seat. *The driver's side floor pan may be modified to accommodate larger/taller drivers. All modifications shall be contained between the transmission tunnel, driver's side rocker, rear bulkhead and no more than 24" forward of the rear bulkhead. The modification shall not extend below the factory floor stiffener/frame rail. The steel used in the modification shall be no thinner than .058". All modifications shall be welded in place. This modification shall serve no other purpose other than seating position.*
- b. Any steering wheel, except wood rimmed types, and its required mounting modifications may be used. Any shift knob may be used.
- c. Gauges and instruments 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" or panel shall remain intact.
- d. OEM exterior mirrors shall be retained. Mirror mounting position may be changed, but must remain within 6" of the orig-

### 9.1.7. Spec Miata (SM) Specifications

- inal location on the exterior of the door. The OEM interior mirrors may be removed, relocated or replaced by a mirror of any design. Additional mirrors may be added, both interior and exterior.
- e. Carpets, center consoles, cargo bins, seat belts, floor mat, fire-wall insulation/blanket, sound deadener patches, undercoating, 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.
  - f. Two way radios may be used.
  - g. ~~When~~ <sup>Clearance</sup> 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. The trunk trim plate that is used to mount the factory jack handle may be removed.
  - h. Modifications may be made to the foot pedals to improve the comfort and accessibility to the driver. Dead pedal/foot rest and heel stop may be added.
  - i. If ballast is required to meet the required weight it shall be added as follows:
    - 1. All ballast shall be securely mounted on the passenger floor.
    - 2. Each segment of ballast shall be fastened with a minimum of two (2) one-half (1/2) inch bolts and positive lock nuts of SAE Grade 5/Metric 8.8 or better and shall utilize large diameter, load distributing washers. Alternatively, ballast may be secured using all 4 Mazda factory passenger seat mounting bolt holes.
    - 3. Holes may be drilled in the passenger floorpan for the purposes of mounting the ballast and the floorpan may be reinforced for that purpose only.
  - j. All cars shall run with both front door windows fully open (down).

## 8. Safety

- a. An electrical master ("kill") switch is required. See GCR Section 9.3 Master Switch.
- b. Installation of a fire extinguisher or fire system is required. See GCR 9.3 Fire System.
- c. Air bag systems shall be disarmed and may be removed.
- d. In any automobile where allowed removal of upholstery, seat belts, etc., 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. See GCR 9.3.27.



**NOTES:**

| <b>SM</b>                  | <b>Bore x Stroke(mm) / Displ. (cc)</b>                 | <b>Valves IN &amp; EX (mm)</b> | <b>Restrictor Size (mm)</b> | <b>Comp. Ratio (without carbon)</b> | <b>Wheelbase (mm)</b> | <b>Gear Ratios</b>                 | <b>Final Drive</b>      | <b>Brakes (mm)</b>                        | <b>Weight (lbs)</b>                          | <b>Notes</b>  |
|----------------------------|--|--------------------------------|-----------------------------|-------------------------------------|-----------------------|------------------------------------|-------------------------|---|--|---|
| Mazda MX-5 / Miata (90-93) | 78.0 x 83.7<br>1597<br>or<br>alternate<br>78.25 x 83.7 | 31.1 (I)<br>26.3 (E)           | N/A                         | 9.4                                 | 2266                  | 3.14, 1.89,<br>1.33, 1.00,<br>0.81 | 4.3                     | (F) 235 Vented Disc<br>(R) 232 Solid Disc | 2275<br>or<br>2290 with<br>alternate<br>bore |   |
| Mazda MX-5 / Miata (94-97) | 83.0 x 85.7<br>1839<br>or<br>alternate<br>83.25 x 85.7 | 33.1 (I)<br>28.2 (E)           | 47mm                        | 9.0                                 | 2266                  | 3.14, 1.89,<br>1.33, 1.00,<br>0.81 | 4.3<br><br>See<br>Notes | (F) 255 Vented Disc<br>(R) 252 Solid Disc | 2350<br>or<br>2365 with<br>alternate<br>bore | Must update to the 4.30:1 rear axle ratio as found in the 99+ cars. |
| Mazda MX-5 / Miata (99-00) | 83.0 x 85.7<br>1839<br>or<br>alternate<br>83.25 x 85.7 | 33.1 (I)<br>28.2 (E)           | 38mm                        | 9.5                                 | 2266                  | 3.14, 1.89,<br>1.33, 1.00,<br>0.81 | 4.3                     | (F) 255 Vented Disc<br>(R) 252 Solid Disc | 2400<br>or<br>2415 with<br>alternate<br>bore | Maximum L dimension of 1.815" is permitted.                         |
| Mazda MX-5 / Miata (01-05) | 83.0 x 85.7<br>1839<br>or<br>alternate<br>83.25 x 85.7 | 33.1 (I)<br>28.2 (E)           | 40mm                        | 10.0                                | 2266                  | 3.14, 1.89,<br>1.33, 1.00,<br>0.81 | 4.3                     | (F) 255 Vented Disc<br>(R) 252 Solid Disc | 2425<br>or<br>2440 with<br>alternate<br>bore |   |

**Notes:**