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# **B-Spec Regulations**

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## Foreward

The B-Spec Regulations of the Sports Car Club of America, Inc.® are intended to assist in the preparation of competition B-Segment vehicles listed in these regulations for participation in race events. They are in no way a guarantee against injury or death to participants, spectators, or others. No express or implied warranties of safety or fitness for a particular purpose are intended or shall result from publication of or compliance with these regulations or the Club Racing General Competition Rules.

Electronic editions of the B-Spec Regulations may be updated during the calendar year and will be available at [www.scca.com](http://www.scca.com). The SCCA® Club Racing General Competition Rules (GCR) will take precedence over these regulations. Express permission is granted members and others to transmit and use the electronic editions for purposes related to SCCA® activities.



# B-Spec Regulations

These specifications are presented as an adjunct to the Manufacturer's Service Information. They are not meant to supersede the information that is in the service information that legitimately applies to the make, model, and year of car with the exception of the following items: TIRE SIZES, WHEEL/RIM WIDTHS, SUSPENSION SPRINGS, ANTI-ROLL BAR(S), and PERFORMANCE EQUIPMENT. In the case of the foregoing exceptions, the B-Spec Regulations will have priority. Voids or mistakes that may occur in the SCCA® Club Racing General Competition Rules (GCR) Showroom Stock Category Specifications (SSCS) do not allow you to change your vehicle to conform to the SSCS.

These specifications reflect the best information available at the time of publication. Any error found in this edition will be updated when reliable specifications are available from the manufacturer/manufacturer distributor or other sources recognized by SCCA®, Inc.

These specifications are part of the SCCA® Club Racing General Competition Rules (GCR) and all automobiles shall conform to GCR Section 9.

## A. Definition

The B-Spec Category shall be considered primarily as a form for the membership to race street stock automobiles. Eligibility of cars may be discontinued at any time, for any reason other than competitive stature. The proof of legality or illegality shall rest upon the protester and/or protestee.

NOTE: B-Spec category cars shall be in compliance with all Federal Standards, including EPA certifications, as specified for each automobile listed on the SSCS Specification line from the GCR and as permitted by these rules. Manufacturer Service Information or its equivalent for the specific make, model, and year of automobile is required to be in the possession of each entrant. Manufacturer Service Information may come in the form of printed material, microfiche, CD, DVD, and/or internet access to manufacturer website databases. It is the responsibility of the competitor or entrant to provide the means capable of accessing the data for compliance verification. If the Manufacturer Service Information is not available, then the competitor shall have a copy of the official SCCA® Vehicle Technical Sheet (VTS) with them at every event and shall present it for reference when officially requested. The Manufacturer Service Information is intended to aid SCCA® Technical Scrutineers in identifying parts and the configuration of the automobile. Overhaul procedures that in the slightest way would increase performance are not to be utilized (e.g., milled heads/blocks, porting, etc.). Blueprinting and balancing are inconsistent with the philosophy of this class and are not permitted.

## B. Automobile Eligibility

Only those cars listed each year are eligible to compete. *Cars classified will be approved by EPA and DOT for sale in the United States. They shall be models available to the general public for purchase. Cars will be eligible for competition from the time they are classified until the end of the twelfth calendar year of competition of the latest model year listed on the specification line.* Additions and deletions of automobiles shall be at the discretion of the SCCA®. The vehicle identification number (VIN) shall correspond with the model automobile classified. At least one VIN plate or stamping shall remain in place on the dashboard or chassis that corresponds with the model automobile classified. The tenth (10th) position letter of the VIN determines the model year of the car (7 = 2007, 8 = 2008, 9 = 2009, A = 2010, B = 2011, C = 2012, etc.).

## **C. Classification**

Classifications of automobiles eligible for competition will be reviewed on an annual basis and will be effective as of January 1st.

## **D. Technical and Safety Items**

The following represents the only safety items and modifications permitted and required on automobiles involved in B-Spec competition. Cars must comply with the GCR and the SSCS. The addition of safety items not specifically listed is not permitted. No permitted component/modification shall additionally perform a prohibited function.

1. Roll cages shall be contained entirely within the driver/passenger compartment and must comply with GCR Section 9.4, Roll Cages for GT and Production Based Cars.
2. Installation of a fire extinguisher or fire system as specified in GCR Section 9.3, Fire System.
3. Installation of a safety harness system as specified in GCR Section 9.3, Driver's Restraint System.
4. Cars with sunroofs must be retained on the vehicle and securely bolted in place unless operating rails adequately secure the panel.
5. All cars shall run with both front door windows fully open (down) and shall have a driver's side window safety net per GCR Section 9.3, Window Safety Nets. Any cars where a window safety net cannot be installed, arm restraints shall be used. Arm restraints are not an acceptable substitute for window nets in other cars. Window safety nets shall be mounted in such a manner to provide protection in the event the driver's door opens. Rear windows shall be run in the closed (up) position.
6. Passive restraint systems shall be deactivated.\*
7. Air bag systems shall be disarmed and may be removed.\* If so equipped, the rolling door lock mechanism may be deactivated by unplugging the components.
8. The driver's seat (only) shall be replaced with a one-piece, bucket-type race seat. Standard seat tracks/brackets may be modified, reinforced, and/or removed to facilitate replacement mountings provided they perform no other function.
9. Steering lock mechanisms may be removed or disabled.
10. An electrical master switch may be installed.

\* If car is used on public roads, these items should be replaced, reactivated, rearmed, etc. when not in competition.

## **E. Vehicle Preparation**

The following represents the only items authorized in the preparation of a vehicle for B-Spec competition other than safety items as required in Section 9.1.7.D, Technical and Safety Items. Modifications shall not be made unless specifically authorized herein. No permitted component/modification shall additionally perform a prohibited function.

1. Appearance shall be neat and clean. Automobiles that are dirty either externally or in the engine or passenger compartments, or that show body-

work damage or that are partially or totally in primer, or that do not bear the prescribed identification marks shall not be approved for competition. Vehicles may be painted any color(s).

2. Towing eyes per GCR Section 9.3, Towing Eyes, shall be fitted.
3. Hubcaps, wheel trim rings, jack, and tools shall be removed.
4. All mud flaps shall be removed.
5. Spare wheels and tires may be removed. Spare tire covers and trunk mats and/or trunk carpeting shall be removed if they present a hazard as a loose flying or flapping object.
6. All adjustments shall be at the manufacturer's specification and/or within the manufacturer's specified tolerances.
7. Tires: Maximum tire size shall be 205/50-15. Tires must conform to GCR Section 9.3.45, Tires. All tires shall be offered for sale over the counter through the tire manufacturer's dealer network. The brand of tire and tire pressures are unrestricted.
8. Wheels: Required minimum wheel/rim diameter is fifteen inches (15"). Maximum wheel/rim width is seven inches (7"). Minimum wheel/rim weight shall be 13 lbs. All wheels shall be of one-piece metal castings. All four wheels must be the same dimensional offset. Aftermarket wheel studs and/or wheel bolts are allowed; wheel bolts may be replaced with studs and nuts. Wheel spacers are not allowed.

Wheels are permitted any offset provided the tire tread (that portion of the tire that contacts the ground) does not protrude beyond the fender opening when viewed from the top perpendicular to the ground.

9. Radio/stereo audio equipment and air conditioning refrigerant systems are the only options permitted and may be non-manufacturer, standard equipment or as shown for each car in the SSCS. Two-way radios may be used.
10. Fuel, coolant, oil fluid hoses and clamps, oil filters, fuel filters, and belts (fan, alternator, etc.) may be substituted with others of equivalent manufacturer's specifications.
11. Brake fluid may be substituted with other equivalent manufacturer's specification.
12. Lubricants may be substituted with any lubricant. Additives are unrestricted.
13. Spark plugs listed in spark plug manufacturer's application charts, owner's manual, manufacturer's shop/service manual, or equivalent justified by one cross reference chart. Use of resistor or non-resistor spark plug allowed.
14. "Special performance" specifications from the manufacturer that go beyond those listed on a specification line for a car will not be considered valid.

Any manufacturer determined to be supplying false specifications to competitors or to SCCA will be advised that the specifications shall be withdrawn and/or the eligibility of the car(s) involved will be terminated. The SCCA® Club Racing Board (CRB) is authorized to implement these terminations on an immediate basis without SCCA® Board of Directors (BoD) approval.

In the case of service circulars, recalls, etc., the burden of proof of validity will be upon the competitor.

15. *Ride height minimum is six (6) inches, to be measured without driver at the lowest point of the rocker panels but not to include welded seams or fasteners. A vehicle may have a minimum ride height listed in the SSCS spec line and must conform to the spec line.*
16. Batteries may be replaced with those of alternate manufacture provided they are of similar amp hour (Ah) capacity and weight.
17. Weight is with driver and required ballast as listed in the B-Spec line. If a cool suit system is utilized, the cool suit system shall be weighed with the car as it came off the track.
18. Fuel (only) specified by the owner's or manufacturer's shop/service manual may be used. Refer to GCR Section 9.3, Fuel, for permitted fuel specifications.
19. Air conditioning system may be removed. Items that serve a dual purpose, such as a combined alternator/air conditioning compressor bracket, may not be substituted.
20. Radio and speaker components may be removed.
21. A radiator screen of minimum one-fourth inch (1/4") mesh may be added in front of the radiator and contained within the bodywork.
22. Air filter elements may be substituted with other air filters of equivalent specifications and fit in the standard location with no modifications. The filter element must be substantiated by a minimum of one (1) manufacturer cross-reference for specific vehicle application.
23. Any brake pad or lining may be used.
24. Standard replacement brake rotors may be obtained from sources other than the original manufacturer provided they are the exact equivalent.
25. SCCA® Technical Services may approve the use of automatic transmissions and/or hand controls on a case-by-case basis.
26. Interior mirror(s) may be replaced with a multi-panel type mirror, but shall not extend beyond the confines of the interior.
27. Any part of the exhaust system beyond the catalytic converter(s) may be replaced provided:
  - a. The system retains the same original configuration (e.g., routing, single, dual, etc.).
  - b. The system exits from the body in the same approximate location(s) as the original. When an original equipment single exhaust system is cosmetically split into dual outlets, it is permitted to continue as a single system provided it exits in approximately the same location as one of the originals.
  - c. The system meets all appropriate event-specific sound level requirements.
28. Aftermarket steering wheels and their required mounting modifications are permitted.

29. Lap timing and data acquisition devices that perform no function other than to relay lap times to the driver (e.g., Longacre Hot Lap, Intercomp Lap Timer, etc.) are permitted, along with the required mounting hardware and connections. Stand-alone data acquisition systems (GPS or accelerometer-based) are allowed. One (1) connection from the OBD2 port to the stand-alone data acquisition system is permitted. No additional sensors may be added and the data acquisition system must not tie into the vehicle electronics in any other manner beyond this allowance. SCCA® officials may install a stand-alone data box in a competitor's car at anytime. Refusal of the installation of the data box will result in disqualification.
30. Sunroofs, Targa tops, and T-tops are only permitted if installed by the manufacturer of the vehicle. If installed they must be retained in the closed position and securely bolted in place unless the operating rails adequately secure the panel. Glass panels are permitted.
31. Hatchback "privacy covers" must be completely removed.
32. Cosmetic plastic engine covers may be removed.
33. Original brake hoses may be replaced by braided stainless steel brake lines.
34. Interiors may be removed including seats, seat brackets, carpet, carpet padding, OEM seat belts, interior trim, and headliners. Original radio/stereo audio equipment and air conditioning refrigerant systems may be removed. Heater cores, hoses, and all duct work must remain except duct work under seats.
35. Maximum 2.5 degrees negative chamber is allowed on front and rear suspensions. Strut suspensions may decamber wheels by the use of eccentric bushings at control arm pivot points, by the use of eccentric bushings at the strut-to-spindle, and/or by use of slotted adjusters at the top of the strut mounting plate. If upper strut slotted plates are used, they shall be located on existing chassis structure, utilizing the manufacturer's original bolt holes and may not serve as reinforcement for that structure. On other forms of suspension, camber adjustment may be achieved by the use of shims and/or eccentric bushings.
36. Suspension: Vehicles must use the OEM suspension or the published manufacturer's suspension kit in its entirety. Vehicles must use the OEM bump stops or the bump stops provided in the manufacturer's kit. If a manufacturer does not have a kit, then a kit may be requested and meet the following criteria: any non-adjustable shock absorber intended for the specific make, model, and year car is allowed. The shock absorber/strut must be installed in the original mounting location. Remote reservoir shocks/struts are not permitted. Any springs up to a maximum spring rate of 500 pounds may be used. The spring must be installed in the original location. Threaded shock/strut bodies or adjusters may be used.
37. ECU (PCM): OEM ECU (PCM) is required. Manufacturers may provide an approved ECU (PCM) re-flash for off-road use. Manufacturers may provide a stability control override procedure or module.
38. Front and rear toe settings are not restricted. Rear toe adjustments may be achieved by the use of shims.

## **F. Competition Adjustments**



If ballast is required as a competition adjustment or to compensate for a driver's weight, ballast may be added.

1. All additional ballast shall be securely mounted in the passenger side of the vehicle, aft of the firewall (including any footwell angle), and forward of the rear seat(s) unless otherwise allowed on the B-Spec line. Passenger side weight box is recommended. Weight box shall be fastened to the passenger-side seat mounting points.
2. It shall be in segments no lighter than ten (10) pounds and no heavier than fifty (50) pounds. Each segment shall be capable of being weighed apart from the vehicle.
3. Each segment shall be fastened with a minimum of two (2) one-half inch (1/2") bolts and positive lock nuts of SAE Grade 5 or better, and shall utilize large diameter, load distributing washers.
4. If a weight box is not utilized, holes may be drilled in the passenger footwell floorpan for the purpose of mounting the ballast (only), and floorpan may be reinforced as required for the same purpose.

If sufficient competition adjustments cannot be achieved safely with ballast, intake restriction may be specified. This will be listed on the cars SCS line.

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From the SCCA® Club Racing General Competition Rules (GCR), Section 9 – Cars and Equipment, 9.3 – General Technical and Safety Specifications:

#### **9.3.54. WINDOW SAFETY NETS**

Window safety nets shall be used on the driver's side window of all closed cars. All window nets shall meet SFI Specification 27.1., and shall bear an "SFI Spec 27.1., Label" to that effect. (Note: Window nets need not be dated.) The window net shall be equipped with a quick-release device and when released it shall fall down, thus not having to be flipped up on the roof. Nets shall be attached to the roll cage; plastic buckles, cable ties, hose clamps, and elastic cords are not permitted. Holes in the roll cage to accommodate either support rod are unacceptable unless bushed and welded completely. Refer to figures 7 and 8, "Proper Window Net Installation," for additional information on mounting methods. Closed cockpit Sports Racing cars may use arm restraints in lieu of a window net.

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From the SCCA® Club Racing General Competition Rules (GCR), Section 9 – Cars and Equipment:

#### **9.4. ROLL CAGES FOR GT AND PRODUCTION BASED CARS**

All cars must utilize a roll cage compliant with the following specifications. These specifications apply to all vehicles registered (issued an SCCA logbook) after 1/1/08. Cars registered before 1/1/08 may continue to compete with their previous roll cage as specified in Appendix I. Cars registered as Production class cars prior to 1/1/08 may continue to use their existing roll cage per Appendix J.

##### **A. DEFINITION**

The roll cage consists of the main hoop, front hoop, side protection, and braces as specified in these rules.

## B. MAIN HOOP

1. The main hoop (behind the driver) must be the full width of the cockpit for all cars. It must be one continuous length of tubing with smooth bends and no evidence of crimping or wall failure. The main hoop must maintain a single plane.
  - a. On all closed cars, the main hoop must be as close as possible to the roof and "B" pillars.
  - b. (Not applicable.)
  - c. (Not applicable.)
2. Main Hoop Bracing
  - a. Main hoops shall incorporate a diagonal brace. The brace shall either be in the plane of the main hoop, or extend from the top of one rear brace (described in 9.4.B.2.c) to the bottom of the opposite rear brace. Automobiles with mid mounted engines can have the lower mounting point attach to the frame of the automobile within six inches of the main hoop. In the case of braces in the plane of the main hoop, the brace must span at least 50% of the width of the main hoop, and at least 75% of the height of the main hoop as shown in figure 12.
  - b. Cars must incorporate a main hoop horizontal brace at the approximate level of the driver's shoulders but not lower than the shoulder belt mounting point as described in section 9.3.19.C. If a double-diagonal "X" brace is used in the plane of the main hoop, a half-width horizontal brace may be used behind the driver's seat to mount the seat back and shoulder harness as shown in figure 13.
  - c. Cars must have 2 braces extending to the rear from the main hoop and attaching to the frame or chassis. Braces must be attached as near as possible to the top of the main hoop (not more than 6 inches below the top), and at an included angle of at least 30 degrees.
  - d. (Not applicable.)
  - e. (Not applicable.)

## C. FRONT HOOP

1. Roll cages may be of two designs, low front hoop or high front hoop. All closed top cars and cars that retain the windshield frame must have a high front hoop design. Open cars may incorporate a high or low front hoop design. High front hoop are also referred to as side hoops.
  - a. Closed cars

The front hoop (side hoop) must follow the line of the A-pillars to the top of the windshield and be connected by horizontal bars to the top of the main hoop on each side (as close to the roof as possible). Instead of a single front hoop, two side hoops (down tubes) may be used. Alternatively, a top "halo" hoop following the roof line from the main hoop to the windshield with forward down tubes following the A-pillars to the floor may be used. Regardless of which one of the two approved tubing configurations there shall be a tube connecting the two A-pillar tubes at the top of the windshield.
  - b. (Not applicable.)

### c. Front Hoop Bracing

All open cars with a high front hoop and all closed cars except those competing in the B-Spec, Improved Touring, Showroom Stock, and Spec Miata classes must incorporate a horizontal front hoop brace at the approximate level of the dashboard. It is recommended that cars competing in B-Spec, Improved Touring, Showroom Stock, and Spec Miata classes also have the front hoop brace.

2. One tube must extend, from each front down tube, forward to the firewall or through the firewall except in vehicles in B-Spec, Improved Touring, Showroom Stock, Spec Miata, and Touring. This tube, one on each side, must connect to the chassis at a point not more than 12 inches forward of the front axle centerline.
3. Cars competing in B-Spec, Improved Touring, Showroom Stock, Spec Miata, and Touring may extend one tube, from each front down tube, forward to the firewall, bulkhead or wheel well, but not penetrating any panel.

### D. SIDE PROTECTION

Two side tubes connecting the front and main hoops across both door openings are mandatory. Tubes that are welded to any part of the same mounting plate are considered to be connected to one another (see 9.4.E.3 below). NASCAR-style side protection or one bar bisecting another to form an "X" is permitted. Door side tubes may extend into the front door. In B-Spec, Improved Touring, Showroom Stock, Spec Miata, and Touring the door window glass, window operating mechanism, inner door trim panel, armrest, map pockets, *wiring harnesses for door locks, windows, power mirrors, seat wiring, etc.*, and inside door latch/lock operating mechanism may be removed and the inner door structural panel may be modified, but not removed only if the door bars extend into the door cavity. The stock side impact beam and the outside door latch/lock operating mechanism shall not be removed or modified unless specifically authorized in the category rules.

### E. ROLL CAGE ATTACHING POINTS

1. B-Spec, Improved Touring, Showroom Stock, Spec Miata, AND Touring classes – The roll cage must attach to the vehicle structure (floor pan/ rocker boxes/ sills) within the passenger compartment in a minimum of 6 points and a maximum of 8 points as specified in these rules.
2. (Not applicable.)
3. Mounting Plates
  - a. Mounting plates welded to the structure of the car shall not be less than .080 inches thick nor more than 0.25 inches thick. The maximum area of each mounting plate in the Improved Touring, Showroom Stock, Spec Miata, and Touring classes shall be 144 square inches. Plates may be on multiple planes but shall not be greater than 15 inches on any side.
  - b. The thickness of mounting plates bolted or riveted to the structure of the car must not be less than the thickness of the roll hoop or brace that they attach to the chassis, and must be backed up with a plate of equal size and thickness on the opposite side of the chassis panel. The maximum area of each mounting plate must be 144 square inch-

es. Plates may be on multiple planes but shall not be greater than 15 inches on any side.

- c. Fasteners for bolted or riveted mounting plates must be Grade 5 or better with a minimum diameter of 5/16".

#### F. TUBING

- 1. Seamless or DOM mild steel tubing (SAE 1020 or 1025 recommended) or alloy steel tubing (SAE 4130) must be used for all roll cage structures. Alloy and mild steel tubing may not be mixed. ERW tubing is not allowed.
- 2. The following table shows the minimum allowed tubing outer diameter and wall thickness by vehicle weight:

GCR vehicle weight	Tubing size (in) (outer diameter x wall thickness)
up to 1700 lbs	1.375 x 0.080
1701 - 2699	1.500 x 0.095 1.625 x 0.080
2700 lbs and up	1.500 x 0.120 1.750 x 0.095 2.000 x 0.080

- 3. The required tubing elements must meet the material minimums set forth above. Optional tubing elements may be any size.
- 4. The minus variance of tubing wall thickness due to manufacturing tolerances is limited to .010 inch.
- 5. Either an inspection hole between 3/16 and 1/4 inch diameter must be drilled in a non-critical area of the front and rear hoops, as well as one of the supplemental braces to facilitate verification of wall thickness; or alternatively, wall thickness may be determined by non-invasive means and noted in the log book as inspected by such means.

#### G. BASIC DESIGN CONSIDERATIONS

- 1. All portions of the roll cage subject to contact by the driver must be padded with a minimum 1 inch of material. Padding that meets or exceeds SFI 45.1 or FIA 8857-2001 (curved padding), or SFI 45.2 or FIA sports car head rest material (flat padding) specification is recommended.
- 2. No portion of the roll cage may have an aerodynamic effect by creating a vertical force.
- 3. The radius of all bends in the roll cage (measured at centerline of tubing) must not be less than 3 times the diameter of the tubing.
- 4. It is recommended that all joints of the roll cage be welded. All welding must include full penetration, no cold lap, no surface porosity, no crater porosity, no cracks, no whiskers, and so forth. Welds shall be continuous around the entire tubular structure. Procedures for welding alloy steel shall be in accordance with accepted industry practice. It is recommended that a certified AWS D1.1 welder do all welding.

5. It is recommended that gussets be used at all joints. In Improved Touring, Showroom Stock, and Spec Miata a maximum of 2 gussets per joint are allowed and must be no thicker than 0.125”.
6. Any number of additional tube elements is permitted within the boundaries of the cage structure. Such tube elements may pass through any mandatory or optional bulkhead or panel separating the driver/passenger compartment from the trunk/cargo area/fuel tank/fuel cell area provided the bulkhead is sealed around such tube elements.
7. Removable roll cage bracing is acceptable in one of the following configurations:
  - a. If one tube fits inside another tube to facilitate removal, the removable portion must fit tightly and must bottom by design, and at least 2 bolts must be used to secure each joint. The telescoping section must be at least 8 inches long. The minimum bolt diameter is 3/8 inch.
  - b. Removable bracing may incorporate connectors of the double-lug, double ear-type, tapered, or muff-type as shown in figures 14 and 15. The double-lug type must include a doubler, gusset, or capping arrangement to avoid distortion or excessive strain caused by welding. Double ear-type joints must be fully welded at all the mating surfaces.

#### 8. MANUFACTURER SUPPLIED / FIA HOMOLOGATED ROLL CAGES

Cars may compete with FIA or FIA-Approved Test Houses homologated cages provided the cage was built by the manufacturer or a manufacturer designated shop/team and approved for use. Cars must have the FIA identification plate attached to the cage along with a letter from SCCA Technical Services certifying the origins of the car, or confirmation that the cage was certified by an FIA-Approved Test House.

B-Spec	Bore x Stroke (mm) Displacement (cc)	Wheelbase (in)	Track F/R (in)	Gear Ratios (:1)	Final Drive (:1)	Brakes Front (in) Rear (in)	Weight (lbs)	Notes
Chevrolet Sonic (2012)	80.5 x 88.2 1796	99.4	59.4/59.4	3.73, 2.14, 1.41, 1.12, 0.89	3.94	10.8 9.0 drum	2800	31mm intake restrictor.
Fiat 500 (2012)	72.0 x 84.0 1368	90.6	55.4/55.0	3.91, 2.16, 1.35, 0.98, 0.77	3.73	10.1 x 0.9 9.4 x 0.4	2280	
Ford Fiesta (4-dr) (2011-12)	79.0 x 81.4 1596	98	57.7/57.7	3.86, 2.04, 1.28, 0.95, 0.74	4.07	10.2 7.9 drum	2575	34mm intake restrictor.
Honda Fit (2009-12)	73.0 x 89.55 1499	98.4	58.7/58.1	3.00, 1.68, 1.07, 0.76, 0.55	4.56	10.3 7.9 drum	2500	34mm intake restrictor.
Kia Rio 5-door (2012)	77.0 x 85.44 1591	101.2	59.9/60.0	3.76, 2.04, 1.28, 1.03, 0.89, 0.77	3.83	10.1 x 0.9 10.3 x 0.4	2600	23mm intake restrictor.
Mazda2 (2011-12)	78.0 x 83.0 1499	98	58.1/57.7	3.42, 1.84, 1.29, 0.97, 0.78	3.85	10.1 8.0 drum	2300	
MINI Cooper (2007-12)	77.0 x 85.8 1598	97.1	57.4/57.8	3.21, 1.79, 1.19, 0.91, 0.78, 0.68	4.35	11.0 10.2	2600	33mm intake restrictor.
Nissan Versa (4/5-dr) (2007-11)	80.4 x 81.1 1797	102.4	58.3/58.5	3.73, 2.11, 1.45, 1.17, 0.97, 0.81	3.93	11.02 x 0.95 9.0 drum	2750	35mm intake restrictor.
Nissan Versa (4/5-dr) (2009-11)	78.0 x 83.6 1598	102.4	58.3/58.5	3.73, 2.05, 1.39, 1.03, 0.89	4.07	10.2 x 0.87 8.0 drum	2500	
Nissan Versa (4/5-dr) (2012)	78.0 x 83.6 1598	102.4	58.3/58.5	3.73, 2.05, 1.39, 1.03, .089	4.07	10.2 x 0.87 8.0 drum	2490	
Toyota Yaris 3/5-dr (2007-12)	74.9 x 84.6 1491	96.9	58.3/57.9	3.55, 1.90, 1.31, 0.97, 0.82	3.72	10.0 7.9 drum	2420	

