

**CARS SOLODEX 2009 SERIES - COMPETITION AND RULE CHANGE SUMMARY**

**A. CLASSES:**

**There will be six (7) classes in the SoloDex 2007 series. These are as follows - GS, HS, ES, ESP, SS,EP and EPR**

<b>CLASS</b>	<b>P/W Range</b>	<b>Estimated 1/4 Mile Times (secs)</b>
GS	30+	18.6+
HS	26-29.9	18 to 18.5
ES	22-25.9	17 to 17.9
ESP	15-21.9	15.5 to 16.9
SS	11.5-14.9	14-15.4
EP	9.1-11.5	12.4 - 14
EP-R	<=9.0	under 12.4

***NOTE:***

***Modifications have been weighted using a penalty points system. The Penalty Points will be assigned by the scrutineers based on the modifications to each vehicle. A Total of 7 Penalty points will be equal to one (1) Class Bump. Refer to the penalty points attached to each of the modifications outlined below.***

**B. CLASS DETERMINATION:**

A competitor's class will be determined using one, some or all of the following:

- i. Actual measurements of weight and power using scales and HP measuring devices.
- ii. Measurement of ¼ mile times using CARS / AutoSport's timing equipment. The car must be in full SoloDex race trim including the use of race tyres, race modified ECUs, turbo boost etc.
- iii. Manufacturers' specifications of Power and Weight to determine Power/Weight ratio for the stock vehicle.
- iv. Following is a guide to the classification of vehicles for 2007 competitions:

**NOTE:**

Using Power to Weight ratios or ¼ mile times to approximate a car's power are deemed to be sufficient for classing purposes. Even though these are primarily measures of engine performance, there is a reasonable assumption that a manufacturer will match engine performance with suspension modifications.

As such, cars in a higher power trim level are expected to also have higher suspension trim levels than equivalent cars with lower power when purchased stock. Therefore, ¼ times can reflect both power and handling potential of a car

**C. ALLOWABLE MODIFICATIONS: - Applicable Classes – GS, HS, ES**

**1. TIRES**

- a) Any tire which is OE on a car eligible for Stock Category may be used.
- b) Tires up to and including a width of 225.
- c) Tires must have a minimum tread wear rating of 140.
- d) Racing Tires – R- Compound Tires (ie the Kumho Victoracer series) with a tread wear rating of **less than 140** will be classified as racing tires and as such any competitor using these tires will be automatically bumped up by one class if these items are used for competition. – **Class Bump = 7 Points**
- e) Tire must fit the allowable wheels and fender wells without modification.
- f) Any wheels up to 7.0" in width that fit over stock brakes. **Rims above a width of 7.0" will be a 2 point penalty**

**2. SHOCK ABSORBERS / SUSPENSION**

- a) The make of shock absorbers may be substituted providing that the number, type (e.g., tube, lever, etc.), system of attachment and attachment points are not altered, except as noted below. The interchange of gas and hydraulic shocks absorbers is permitted. **Upgraded suspension / Coilovers will be treated as 3 points**
- b) Suspension geometry and alignment capability including ride height may be altered by the substitution of alternate springs and/or shock absorbers (in conformance with item (a) above. **The Minimum ride height is restricted to 6" from the bottom of the rocker panel.**

- c) Pressed or bonded bushings may be removed from standard parts to facilitate the use of alternate bushings, which fit in the original location without alterations to the part. – **1 Point**
- d) Both the front and rear suspension may be adjusted through their designed range of adjustment by use of factory adjustment arrangements or by taking advantage of inherent manufacturing tolerances. This encompasses both alignment and ride height parameters, if such adjustments are provided by the stock components and specified by the factory as normal methods of adjustment. However, no suspension part may be modified for the purpose of adjustment unless such modification is specifically authorized by the factory shop manual for non-competition purposes.

### **3. BRAKES**

- a) The make and material of brake linings may be changed.
- b) Substitution of clutch and brake hydraulic lines with solid metal or braided metal is allowed on all cars.

### **4. FRONT ANTI-ROLL (SWAY) BARS**

- a) For front anti-roll (sway) bars, the substitution, addition or removal of any **front anti-roll bars is permitted.**
- b) The use of any bushing material is permitted.

### **5. REAR ANTI-ROLL (SWAY) BARS**

- a) Rear anti-roll (sway) bars May not be removed, replaced, or modified in any way. – **2 Points**

### **6. ELECTRICAL SYSTEM**

- a) No changes are permitted to electronic engine management systems or their programming. – **Aftermarket ECU = 2 points**

### **7. ENGINE AND DRIVE TRAIN**

- a) The engine air filter element may be removed or replaced.
- b) Any part of the exhaust system beyond (downstream from) the header/manifold or catalytic converter, if so equipped, may be substituted. **The installation of Headers will be treated as a – 1 Point penalty**
- c) Thermostats may be added or substituted.

- d) Silicone replacement hoses are permitted as alternate components, provided they meet the requirements of Section 13.0 with regard to size, shape, location, and performance equivalence.
- e) Limited-slip differential, transmission and differential ratios, clutch mechanisms and carburetion, fuel injection or supercharger induction systems must be standard. **The installation of an aftermarket LSD will be treated as a – 2 Point penalty.**

#### **D. ALLOWABLE MODIFICATIONS: Applicable Classes – ESP, SS and EP**

##### **1. GENERAL**

The ESP, SS and EP classifications of vehicle modifications are meant to fit between the current Stock and Race Prepared categories (EP-R).

##### **2. BODYWORK**

- a) Pedal kits and other interior cosmetic accessories may be added.
- b) The driver and front passenger seats may be replaced, with the following restrictions: The seating surface must be fully upholstered and must be fitted in the stock location. Racing Harnesses are allowed provide that they are properly attached to the vehicle.

##### **3. TIRES**

- a) Tires up to and including a width of 255. **Tires above a width of 255 will be a 1 point penalty**
- b) Tires must have a minimum tread wear rating of **140**.
- c) Racing Tires – R- Compound Tires (ie the Kumho Victoracer series) with a tread wear rating of less than 140 will be classified as racing tires and as such any competitor using these tires will be automatically bumped up by one class if these items are used for competition. **Class Bump = 7 Points**
- d) Tire must fit the allowable wheels and fender wells without modification.

##### **4. WHEELS**

- f) Any wheels up to 8.0" in width that fit over stock brakes, **Rims above a width of 8.0" will be a 1 point penalty unless they are standard to the vehicle.**

## 5. SHOCK ABSORBERS

- a) Shock absorber bump stops may be altered or removed.
- b) Any shock absorbers may be used. Shock absorber mounting brackets which serve no other purpose may be altered, added, or replaced, provided that the attachment points on the body/frame/ subframe/chassis/suspension member are not altered. This installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). **The installation of upgraded suspension (shock or spring) and or adjustable coilovers will be a penalty of 3 points**
- c) The system of attachment may be changed. The number of shock absorbers shall be the same as Stock.
- d) No shock absorber may be capable of adjustment while the car is in motion, unless fitted as original equipment. MacPherson strut equipped cars may substitute struts, and/or may use any insert. This does not allow unauthorized changes in suspension geometry or changes in attachment points (e.g., affecting the position of the lower ball joint or spindle). It is intended to allow the strut length changes needed to accommodate permitted modifications which affect ride height and suspension travel

## 6. BRAKES

- a) Cross drilled and/or slotted brake rotors are permitted, same size and type as standard
- b) Brake lines may be substituted with alternate DOT approved flexible brake lines.
- c) Original equipment ABS braking systems may be electrically disabled, but may not be removed or altered in any other way.

## 7. ANTI SWAY BARS

- a) Substitution, addition, or removal of any anti-roll bar(s) is permitted. – **2 Penalty Points**
- b) Bushing material, method of attachment, and locating points are unrestricted.

## 8. SUSPENSION

- a) Ride height may only be altered by suspension adjustments, the use of spacing blocks, leaf spring shackles, torsion bar levers, or change or modification of springs or coil spring perches. This does not allow the use of spacers that alter suspension geometry, such as those between the hub carrier and lower suspension arm. **The Minimum ride height is restricted to 6" from the bottom of the rocker panel to grade.**
- b) Springs must be of the same type as the original (coil, leaf, torsion bar, etc.) and except as noted herein, must use the original spring attachment points. This permits multiple springs, as long as they use the original mount locations.
- c) Coil spring perches originally attached to struts or shock absorber bodies may be changed or altered, and their position may be adjustable.
- d) Spacers are allowed above or below the spring.
- e) Suspension bump stops may be altered or removed.
- f) Suspension bushings may be replaced with bushings of any materials (except metal) as long as they fit in the original location. Offset bushings may be used – **1 Penalty Point.**
- g) The following allowances apply to strut-type suspensions. Adjustable camber plates may be installed at the top of the strut and the original upper mounting holes may be slotted. The drilling of holes in order to perform the installation is permitted. The center clearance hole may not be modified. Any type of bearing or bushing may be used in the adjustable camber plate attachment to the strut. The installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). Any ride height change resulting from installation of camber plates is allowed. Caster changes resulting from the use of camber plates are permitted. **Adjustable Pillow ball mounts – 1 Penalty point**
- h) Camber bolts may be installed providing these parts use the original, unmodified mounting points. Caster changes resulting from the use of camber bolts are permitted.

## 9. ELECTRICAL SYSTEM

- a) The make, model number, and size of the battery may be changed but not its voltage.

- b) Relocation of the battery or batteries is permitted but not into the passenger compartment.

## 10. ENGINE

*Engine and transmission must remain unmodified, including emissions equipment, except as noted below:*

- a) Original equipment traction control systems may be electrically disabled, but not removed or altered in any other way. **The addition of an aftermarket traction control system - 2 penalty points**
- b) The air intake system up to, but not including, the engine inlet may be modified or replaced. For naturally aspirated engines, the engine inlet is the inlet to the throttle body or carburetor. For turbocharged or supercharged engines, the engine inlet is the compressor inlet. The existing structure of the car may not be modified for the passage of ducting from the air cleaner to the engine inlet. Holes may be drilled for mounting. **The addition of an aftermarket Throttle Body system - 1 penalty point**
- c) Exhaust manifolds and headers may be replaced with alternate units. **The installation of Headers will be treated as a – 1 Point penalty**
- d) The mass airflow sensor must remain in its approximate original location. The Relocation of the MAF Sensor
- e) Any accessory pulleys and belts of the same type (e.g., V-belt, serpentine) as standard may be used. **The Installation of an Aftermarket Lightweight Flywheel – 1 Penalty Point.**
- f) Reprogrammed ECU may be used in the standard housing. Traction control parameters may not be altered. Altered engine controllers may not alter boost levels in forced induction engines. **Reprogrammed and /or Aftermarket ECUs – 3 Penalty Points. Note that the vehicle must be dynoed to get an accurate hp reading to determine power / weight ratio.**
- g) Electronic components may be installed in-line between an engine's sensors and ECU. These "Piggy-back" components may alter the signal coming from the sensor in order to affect the ECU's operation of engine management system. Example: fuel controllers that modify the signal coming from an airflow sensor. **Reprogrammed and /or Aftermarket ECUs as well as aftermarket V-TEC Controllers – 2 Penalty Points.**
- h) Fuel pressure regulators may be replaced in lieu of electronic alterations to the fuel system.

- i) Limited-slip differential, transmission and differential ratios, clutch mechanisms and carburetion, fuel injection or supercharger induction systems must be OEM standard. No limited slip differentials are permitted except for factory standard viscous coupler type units. **Aftermarket / Alternate Gear Ratios – 2 Penalty Points. Aftermarket LSD’s – 3 Penalty Points.**

**E. CLASS BUMPING**

Modifications have been weighted using a penalty points system. The Penalty Points will be assigned by the scrutineers based on the modifications to each vehicle. A Total of 7 Penalty points will be equal to one (1) Class Bump. Refer to the penalty points attached to each of the modifications outlined below.

A car’s performance potential will be re-assessed as in (2) above if CARS receives an official protest from a competitor within the same class. If a car is found to be outside of its class at any time during the competition year, that car would be retroactively re-classed unless the competitor can prove when such modification became effective.

Championship points earned will be recalculated based on the reclassification, and any trophies won by the competitor(s) during the year must be surrendered for redistribution to the competitor(s) who would have won the classes at the various events.

Modifications have been weighted using a penalty points system. The scrutineers based on the modifications to each vehicle will assign the Penalty Points. A Total of 7 Penalty points will be equal to one (1) Class Bump. Refer to the penalty points attached to each of the modifications outlined in the table below.

**ALLOWABLE MODIFICATIONS: - Applicable Classes – GS, HS, ES**

Tires	Tires above a width of 225	1 point penalty
Racing Tires	R- Compound Tires	Class Bump
Rims	above a width of 7.0”	1 point penalty
Upgraded suspension	Shock / spring / coilover	3 point penalty
Poly Bushings	Bushings	1 point penalty
Sway Bars	Rear anti-roll (sway) bars	2 point penalty
Engine management	Aftermarket System	2 point penalty
Headers	Aftermarket	1 point penalty
Catalytic converter,	Aftermarket	1 point penalty
LSD	Aftermarket	2 point penalty

**ALLOWABLE MODIFICATIONS: Applicable Classes – ESP, SS and EP**

Tires	Tires above a width of 255	1 point penalty
Racing Tires	R- Compound Tires	Class Bump = 7 Points
Rims	above a width of 8.0"	1 point penalty
upgraded suspension	Shocks / springs	3 points penalty
Poly Bushings	Bushings	1 point penalty
Sway Bars	Rear anti-roll (sway) bars	2 points penalty
Pillow ball mounts	Aftermarket	1 point penalty
Engine management	Aftermarket System	3 points penalty
Headers	Aftermarket	1 point penalty
Catalytic converter,	Aftermarket	1/2 point penalty
LSD	Aftermarket	2 points penalty
Traction control System	Aftermarket	2 point penalty
Throttle Body system	Aftermarket	1 point penalty
Lightweight Flywheel	Aftermarket	1 point penalty
Reprogrammed / Aftermarket ECUs / V-TEC Controllers		2 point penalty
Alternate Gear Ratios		2 point penalty
Aftermarket LSD's		3 point penalty
upgraded brakes	Calipers and rotors	2 point penalty

**1. CHAMPIONSHIP POINTS:**

<i>Category</i>	<i>Points</i>	<i>Selection</i>	<i>Maximum</i>
Winning a class in SoloDex competition	100	4 out of 6	400
Working at SoloDex events	Avg	best 3	applicable

## **2. WORKING AT EVENTS:**

Each competitor who pays to enter a competition and signs up for work on the day of the event will earn an average of all their championship points for the best three (3) events during the competition year.

The Competitor will be assigned to one of the following positions by the Chief Marshal for the event:

- i. Course marshals (M1- M4)
- ii. End marshal
- iii. Start/Grid marshal
- iv. Scrutinizer
- v. Announcer
- vi. Course setup and pull down

## **3. OVERALL CHAMPIONSHIP SHOWDOWN**

The Championship showdown event will have a maximum of 11 competitors consisting of the top two competitors in each of the five (5) classes GS, HS, ES, ESP, SS, EP and EP-R, including the overall champion from the previous year.

**There will be no more that twelve (12) competitors in the championship event.**

## **4. NUMBER OF CHAMPIONSHIP EVENTS**

The CARS 2009 Solodex competition will consist of six (6) events. There will be six Solodex championship events, of which competitors would be allowed to drop two events. Therefore, a total of 4 out of 6 events will count towards the Solodex 2009 championship competition.