

PCA-SDR On-Site AX, TT/DE Tech Inspection Guidelines.

(For events run under Zone-8 rules)

The following is a guide on how Porsches should be inspected using the Zone-8 tech inspection sheet.
(The following key will be used: OK, X or P for Pass, N/A-Not applicable).






Start by marking if the driver is a student or not and the type of event. **Put and "X" by student if applicable and an "X" by the event type.**

The tech sheet should be dated 2016 on the bottom right corner.

Before the mechanical inspection is started make sure the car has numbers on the doors.

All cars must have numbers legible by corner workers and track staff on both sides of the car before starting tech inspection (8" height minimum, 1" stroke width minimum for Time Trials and DE; 6" height minimum, 1" stroke width for Autocross).

Tires-Tires must be in good condition with no less than 2/32" tread depth at time of tech inspection and more than 1/32" at the point of timed runs. We suggest greater tread depth but this is a minimum. The wear bars on the tire are at 3/32" and a new tire is 9/32" on average. Racing slicks have depth holes in them (dots) to determine remaining tread depth. New tread depth on sub-50 tread wear tires and racing slicks is 4/32" or less on average. All depth holes must be visible to pass minimum standards at tech inspection. Look well under the car!! The outside can look fine while the inside edge is corded. (See picture #3 below).

| | | |
|--|--|---|
|  <p>New street tire with wear bar far below the surface of the tire.</p> |  <p>Street tire with 50% wear. Blocks are at 3/32 and there is about 2/32 of tread above the blocks.</p> |  <p>This car has too much negative camber! Stick your head under the car to get a really good look.</p> |
|  <p>Here is a full racing slick with no grooves. These depth holes are the only way to determine how much remaining rubber is between you and the road. New tread depth 4/32".</p> |  <p>This Toyo RR tire is not a slick but has only 2 grooves similar to other sub 50 tread wear tires. The depth dots are the only way to determine tread depth other than in the two grooves. New tread depth 4/32".</p> |  <p>These are the latest DOT tires from Hoosier; the R7. Depth on the outside edge is determined by the small depth dots but there are only 5 on the entire circumference of the tire! New tread depth 4/32".</p> |

Write percentage of remaining tread thickness, front and rear like this: F:80 R:60

Tires must be free from weather/age cracking and be less than 8 years old. Tires are dated by the week and then the year. This is marked on the sidewall. A tire dated 5107 was manufactured in the 51st week of 2007. ***Tires with manufacturer dates exceeding 8 years will not be allowed.***



(Tire date of manufacture as stamped into the side wall)

Brakes-Brake rotors must be in good condition, minor cracks OK but none from hole to hole or touching an edge. Pads must be at least 50% thickness. This is about 5mm of pad material. The backing plate is usually about 5mm. (Don't confuse the two) Brake fluid must be clean, fresh and topped off. If it looks dark ask the driver when it was last changed. *(Pictures below show examples of varying brake pad thicknesses on different models).*

| | | |
|------------------------------|---|---|
| | | |
| 944 Rear (9mm)-Pass. | Cayenne Front (7mm)-Pass. | Pre-1989 911 Front (5.5mm)-Pass. |
| | | |
| 996 Front (9mm)-Pass. | 911 to 986 conversion (10mm)-Pass. | Pre-1989 911 Rear (3.5mm)-fail. |

Brake pads can be difficult to see depending on wheel position and lighting as well as when brake pads have been hot and there is no color differentiation from pad to backing plate as in the 911 Boxster conversion above. If inspection is difficult, try using your cell phone camera. All the pictures above were taken with a Motorola Droid Turbo© smart phone stuck between the spokes of factory wheels with the car on the ground.

Write percentage of pad thickness, front and rear like this: F:80 R:60

Bearings-Check front and rear wheel bearings for tightness. Grab the top of the tire and shake in and out vigorously. Rear wheel bearings should be free from any play, as well as front bearings on most 1990 and later cars. Pre-90 cars should have slight play. Check front suspension at this time by vigorously shaking side to side like you did up and down. Only pre-1990 cars will ever have enough suspension play to feel.

Write "P" or note for future service – Such as: Pass-need adjustment before next event.

Lug nut/bolts-Wheel nut or bolt must fully engage the threads on the stud or hub for a length at least equal to the outside diameter of the wheel stud or bolt. The use of open-ended steel lug nuts is required on all cars with 400 or more Performance Equipment Points where lug nuts and wheel studs are fitted. The use of open-ended steel lug nuts is additionally required on all cars using lug nuts that have non-stock wheel spacers fitted, to allow verification of compliance with this section. Wheels must be torqued to specification.

When steel lug nuts are used we like to see the stud even with the end of the nut. But the rule is we must have 9.3 turns of nut engagement on the stud. Make it 10 to be safe. Not all nuts are of the same height. (There is 1.5mm of engagement per revolution).

See the picture to the right for an example of what a nut looks like with minimum engagement of 14mm. >



Write “P” if the lug nuts/wheel bolts are fully engaged. Driver is responsible for proper wheel torque.

Battery-Check that the battery cables are tight and that the battery is firmly mounted in place (PCA does not require a metal strap over the battery as POC does-but it can't hurt). Only cars that originally came with rubber battery straps may use them. That includes 1968 and earlier cars. 914 batteries must be secured to the tray with a metal hold down bracket and the battery tray must be firmly secured to the car. (Exception being an Optima© battery with plastic Optima© butterfly shaped hold down). No bungee cords!



Check that batteries are properly vented. If the battery is in the front trunk it should have a vent kit. Under AX conditions battery acid could spill out and damage the car's trunk of sensitive electronics. This is not a cause for failing tech just a courtesy to the driver. Optima/Odyssey batteries do not require venting.

Write: Secure. Make a notation if the vent kit is missing or improperly routed.

Boxster / 996 battery with vent hose in place.

Fan Belts- Take a quick look at the belts for tightness and cracks. A cracked belt or a belt with a small fray will last a long time on the street but will fail after a session at 5-6,000 RPM.

Write: “P” or note non-critical issues.



Also check 944/951/968 for power steering belt to lower radiator hose contact. There should be at least $\frac{3}{4}$ of an inch clearance as the motor can shift forward under hard braking on rough surfaces and the belt can cut the hose. Coolant on the track is BAD!



On 944/951/968 cars write P/S OK.

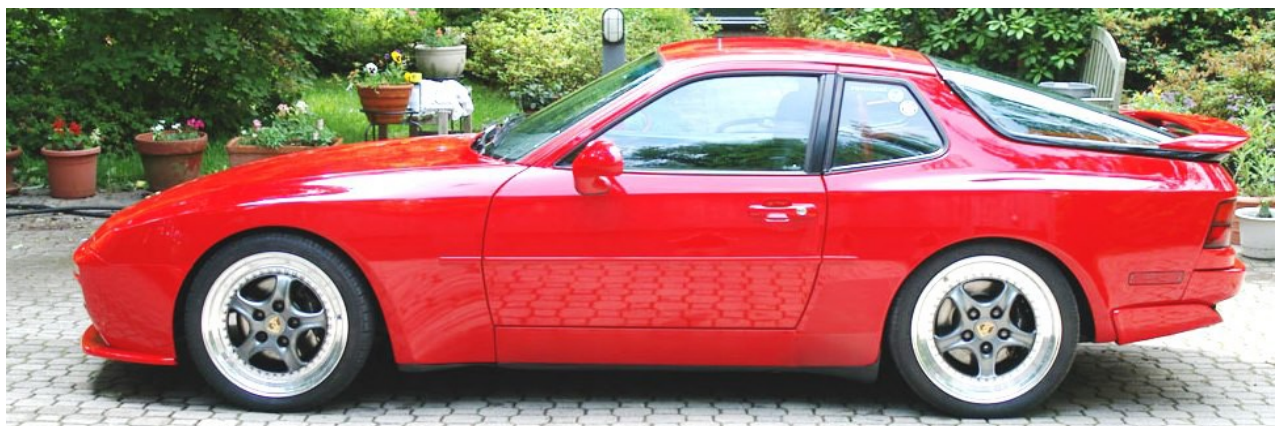
924/944/968 fender clearance-All 924/944/968 cars with aluminum A-arms should have the ball joint inspected before each track event. In addition, the dimension between the wheel center and the lowest portion of the top fender edge shall be greater than 13.0 inches. If an entrant wishes to lower the car below this, Fabcar or equivalent A arms shall be fitted.

For parking lot courses, vehicles may be evaluated on a case-by-case basis.

Write and "X" for non-924/944/968 cars. Write wheel center to fender opening distance in inches for applicable cars like this: 13.5 in

| | | |
|---|--|---|
|  |  |  |
| Early 944 steel arm with reinforcements. | Late 944 aluminum arm with rebuilt ball joint. | Tubular racing arms (Fabcar or equivalent). |

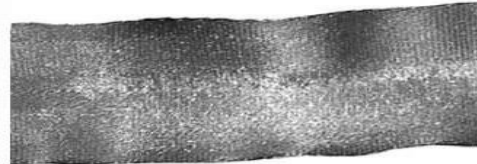
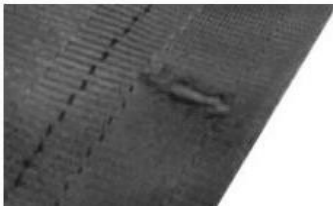
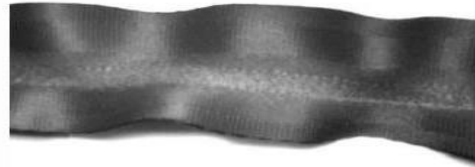
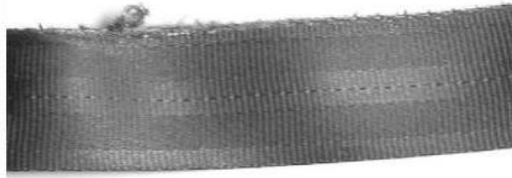
| | | | |
|---|--|--|---|
|  | 14+ inch wheel measurement of a stock 16-inch wheel and stock suspension set up. | 13.2 inch wheel measurement of a car with lowering springs and 17 inch wheels. |  |
|---|--|--|---|



13-inch measurement is made from the center of the front wheel to bottom of the front fender wheel opening. This car is at the minimum height requirement.

Seat Belts, Harnesses and restraints- Cars must at least have fully functional OEM (Original Equipment Manufacturer) style 3 point seatbelts. Belts that are visibly frayed, damaged or dysfunctional must be replaced with new belts. (See defective belts on the following page) Three point factory harnesses is all that is required for Autocross for cars produced model year 1969 and later. Two point harnesses are allowed for 1968 and earlier cars but are not recommended.

- **Webbing should not show any signs of unusual wear.**



If five or six point harnesses are installed in the car, it must have compliant racing seats designed for racing harnesses. (There must be shoulder and sub strap through holes and lap through holes where high sides are present. Lap belt must pass through the seat low enough to pull driver into the seat at the pelvis. Post production seat through holes are not allowed (No homemade harness slot holes). Racing harnesses must not be more than 5 years old.

Four point harnesses are allowed with these restrictions:

Schroth 4-point harnesses WITH ASM® TECHNOLOGY will be allowed to be used at Autocrosses and at DE/TT's on cars with less than 200 Performance Equipment points, provided they follow the above 5/6 point seat guidelines as well as technical inspection according to the applicable parts of Section XIII, Subsection B. For 4-point harnesses, the lap belt may use the factory belt mounting points. 4-point harnesses with the ASM® system may be used with a HANS® device. However, The ASM® system in Schroth racing harnesses should never be used with other types of head and neck devices e.g. SFI 38.1 approved.

HANS Device-

Harnesses marked "for HANS use only" must be accompanied by a HANS device. (See labeling below)

Mark sheet with an "X" at the 3-pt. box for 3 point stock harnesses or 2-pt for autocross only for early cars. For 4/5/6-point belts check the manufacturer tag. Check to see whether they are SFI or FIA certified and circle one. SFI will have a mfg date. Circle Mfg and write the month/year date. FIA will have a year date that the harnesses expire. Circle FIA and the year that the harnesses expire. (Harnesses expire on the last day of that year).

TAG Inspections - FIA Labeling

SCHROTH®
SAFETY PRODUCTS



(Above are examples of harness labels you will find stitched usually to the shoulder harnesses)

Seat belt & harness notes:

Driver for single seat cars or driver and passenger for two seat cars:

All cars with passenger seating must have equal restraints for driver and passenger. (Equal safety; visual equality or expiration date is not mandated. Belts should be not more than five years old.)

When 5 or 6-point harnesses are installed, they are required to be any current FIA and /or SFI

16.1 harness system, mounted in the manufacturer approved configuration*. This means 5/6 point

harness systems cannot be used on seats that do not have harness pass through holes. Harness threading must be as follows: (See <http://tech.pcasdr.net/> for further mounting details)

General installation guidelines (In all cases, the manufacturer's instructions must be followed when installing harnesses).

1. Hardware should meet or exceed the DOT or SAE strength standards. Example: Forged eye bolts with 7/16" SAE threads.
2. Attachments to sheet metal portions of the car must have adequate backing plates. (1-1/2" O.D. washers minimum backing per 7/16" eyebolt.)



7/16" bolts with 1-1/2" washers



Schroth captured nut plate and 1.5x2 inch plate.

3. Lap belts should be mounted to approximately bisect the angle between the thigh and the spine as viewed from the side. Competition harnesses should be mounted so that the rearward horizontal portion leaves the shoulders at an angle approximately 90 degree to the spine as viewed from the side.
4. Anti-submarine straps must be routed through the seat bottom in a hole and routing created by the seat manufacturer.
5. Models Boxster and 914 must have separate mounting points for each shoulder belt. If the distance from the mounting point to the seat back in the driving position is greater than 18", crossing the shoulder belts is recommended.
6. Attachments must be to the car itself and not to the seat frames. (Exception GT-3 seats)
7. Shoulder harness mounting that depends on the seat back either for position or support in a crash will not be allowed.

Check seat mounting at this time. Make sure the seat bolts are secure. A quick shake of the headrest while looking at the slides or mounting points is all that is required. Loose seat bolts can shear off in a relatively low impact incident and cause severe injury or death.

HANS Device-

Cars using a HANS Device can use either 3 inch or 2/3 inch hands specific shoulder harnesses. However cars with HANS specific shoulder harnesses must use a HANS device when using these belts. (See sample labels above) Check the Hans device label and correct attachment to the helmet.

Circle Mfg and write the date of manufacture on the HANS: line.



(HANS Device with attached SFI label)

(Harness/restraint Note):

This is going to be where you will find your largest number of infractions-look carefully! Harness rules have changed extensively in the last few years and most drivers are not up to date on what was, but is no longer allowed. This takes the most amount of time to get correct. If you are not sure, ask the tech chair in charge.

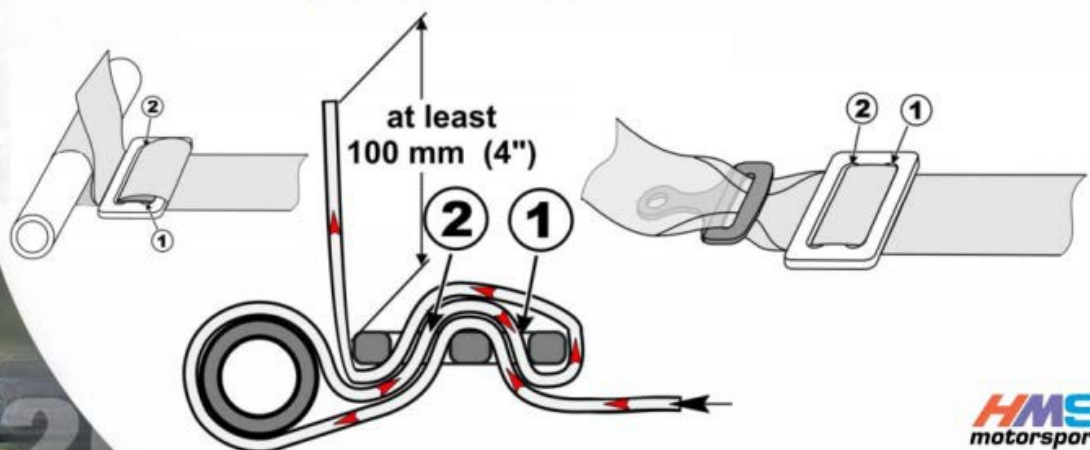
F.A.Q.- and answers that you might be asked in tech line.(Also see <http://tech.pcasdr.net/> and click on Zone-8 rules clarifications for more detailed F.A.Q's)

- Can a 4-point harness be used? Only Schroth ASM ® units.
- Can I run a 4-point harness or an outdated 5/6-point harness if I use my legal 3 point harness as well? No.
- Can I use leave my non legal harnesses in the car if I promise to just use my stock 3-point belts during the event? No, non-compliant harnesses must be removed from the car to pass tech inspection.
- Can racing harnesses be mounted to the factory seat belt thread inserts? - Yes, as long as those points are attached to the chassis and not the movable part of the seat.
- Can a factory 914 seat be used with 4/5/6-point harnesses- No, not ever.
- Can a seat halo be used on a seat with lap and sub strap holes but no shoulder harness through holes – No a seat halo can't be used in any configuration. (Note: A seat belt halo is a belt that wraps around the top of the seat to secure shoulder harness on seats without belt slots).
- Can shoulder harnesses be attached to a single mounting point on the car?- No, each harness must have its own individual mounting point.
- Can a CG-Lock® seat belt lock be used with stock 3 point harnesses? Yes- CG-Lock® devices lock the lap belt into position, while allowing the inertia reel to still operate normally at the shoulder position. This keeps the driver tightly secured into the seat and is a great addition to a car with stock seat belts and non-racing seats.



Here is a CG-Lock device as it looks installed.

- Wrap w/3-bar adjuster
- As tight as possible to harnessbar or buckle
- Complete the final return wrap



(See proper harness threading above)

Helmet-Inspect helmet Snell rating sticker inside the helmet. The helmets may be full or open face. Normally all helmets must be of the current available Snell rating or the one previous. For purposes of defining it in the rules, expiring helmets are good until the end of the year of the new standard. It is recommended that you replace expiring helmets immediately upon release of the new standard. They must be SA-2010 or SA-2015, M-2010 or M-2015, or FIA 8860-2004, SFI 31.1A, SFI 31.2A, or BS6658-85 type A/FR. SDR helmets will have a sticker on left side. All helmets will need this sticker to enter the track. Snell 2015 rated helmet will be available in January of 2015. Snell 2005 helmets will be given a grace period that will end on June 30th 2016.

Put an "X" on the tech sheet box for a helmet with a certification sticker on the left side, then circle the exact Snell rating that applies.

See the event Tech Inspection Chair or member manning the pre-registration table for helmet sticker if the inspected helmet does not have one. The sticker goes on the left lower side of the helmet so the starter can check helmets before a car is released onto the track.

Loose items-Car must be free of all loose items. Check under seats in open door pockets and in trunk. If there are loose items, correct this before continuing inspection. If the car is filled with loose items send the driver out of line to correct the issue. A car can't correctly be inspected if the inspector can't see clearly inside the car.

Write "None", or send the car back to the pits to correct the situation.

Throttle return-Check that all necessary throttle return springs are in place and that all linkage is in good working order. Make sure carpets are not interfering with throttle pedal and the travel is smooth. Carpets should be removed where applicable. If the throttle linkage cannot be accessed, (Boxster, Cayman, 993-991) just mark the sheet with N/A.

Other cars write 'P', or note suggestions or non-critical corrections.

Fluids/Leaks-Check oil and coolant cap for tightness. Drivers may get distracted and leave a cap loose after checking or topping off levels. A loose cap will ruin the track and cause severe loss of track time due to clean up. A loose oil cap can result in an engine fire. Check master cylinder reservoir and visible brake lines for leaks. If a car has wetness that is usually OK, if it is shiny wet and leaving a drip in tech line it is not. Note inspection of brake fluid level from previous brake inspection section.

Write "P" or note minor leaks, such as: OK-Minor trans leak

Membership Verification-Look at the drivers Membership card and write PCA membership expiration date on the line like this: **09/17**. Autocross at SDR events is a member only event and the driver must show proof of membership. This applies to driver and co-driver. If the driver does not have proof of membership they must go to the registration table to be looked up on the national data base.

Write the membership expiration date like this: 09/17

Driver's License expiration date-PCA now requires all drivers to have a valid state driver's license to participate in high speed driving events. This is an insurance requirement and is never given an exemption. Write the expiration date if the drivers license.

Cars being inspected for TT/DE or non-SDR events are not necessarily required to show proof of membership.

STOP!

The box on the right side of the section you just filled out is for continuous lap events and does not necessarily apply to autocross unless the car has been modified to DE/TT spec. Only the inspector's initials and their car number should be listed as well as the inspection date.

Like this:

Inspected by: SG-97

Date: 5-10-15

(This must be legible so I know who to see if there is a tech issue later in the event)

If teching for autocross only, you are done!

The following checks are for continuous lap events: (DE/TT)

Car Numbers – Numbers must be 8" height minimum, 1" stroke width minimum for Time Trials and DE on doors and front hood. Rear number must be 4" height minimum. All numbers must be high contrast so corner workers can identify cars at a distance.

Brake lights- For Time Trial and DE, all vehicles will have functioning brake lights. This means all brakes lights installed on the vehicle must work properly and be of equal brightness.

Write an "X" in the box indicating inspection and write the number of brake lights on the vehicle within the parenthesis.

Fire Extinguisher- Fire extinguishers are not required for autocross; but recommended for early or highly modified cars.

For Time Trials and DE, all cars with 200 or more Performance Equipment Points are required to have a 2.5 Halotron, 2-lb. Halon or 10-BC rated dry chemical fire extinguisher (or larger) capable of extinguishing B/C type fires, securely metal-to-metal mounted in the cockpit in a safe location convenient to the driver while seated and restrained. Any built-in or on-board system that meets these minimums is also acceptable. This may include Aqueous Film Forming Foam (AFFF) systems. Visually inspect the pressure gauge; it must be in the green. A fire bottle/extinguisher below minimum levels must not be in the car.

Write "X" in the box before fire extinguisher/fire system.

Arm Restraints- For time trials and DE, sunroofs, convertible tops, or removable tops (Targa tops, removable sunroofs for 924, 944, 968 vehicles) must be in place, fully fastened and closed. If the sunroof, convertible or removable top is not present, or cannot close over the roll bar or roll cage, the use of **SFI or FIA approved arm restraints** shall be mandatory in lieu of closing the top, in vehicles that require safety harnesses. Sunroofs that cannot close must be removed. For all such cars, all occupants helmets must clear a straightedge placed over the opening, as in Section XIII Part F.

Write and "X" in the box if the arm restraints are less than 5 years old

Driving suit-Time Trial and DE Entrants in cars with 400 or more Performance Equipment Points are required to wear approved driving suits, gloves, shoes and socks. Driving suits will be clean and free of flammables. If a driving suit is required, it must conform to one of the following specifications:

1. One-piece driving suit which meets or exceeds SFI 3.2A/5
2. One-piece driving suit which meets SFI 3.2A/1 if fire retardant long underwear is also worn.
3. One-piece driving suit which is FIA approved
4. Any other suit approved for PCA club racing.

(See <http://tech.pcasdr.net/> for the club racing rules link)

Write and "X" in the box and the rating on the line after driving Suit.



Driving Suit with SFI 3-2A/5 rating.

Roll bars-

For Time Trial and DE roll bars/cages are mandatory in all cars with 400 or more Performance Equipment Points. An inspection hole, 3/16" in diameter, must be provided in a non-critical area for verification of tube thickness. Aluminum roll bars and cages are not allowed under any circumstances. Any portion of the assembly which may come in contact with the driver's helmet must be covered with high density foam 3/4" thick held securely in place with zip ties, electrical tape or duct tape. Foam must be equivalent to SFI 45.1 or FIA 8857 standards for hardness.

Write an "X" in the box if the roll bar meets all of these criteria.

Roll bar Clearance-

When roll bars/cages are required, all occupants helmets must clear a straightedge placed between the top of the windshield frame, directly in front of the occupant's head and the top of the roll over protection directly behind the occupant's head when seated in a normal driving position and restrained by belts and harnesses. Boxsters may use a roll bar extension such as the BreyKrause unit to meet this requirement, if necessary.

Write the distance between top of the drivers' helmet and the top of the roll bar/cage. (This must be a positive number)

The following summarizes the safety equipment that is required for Porsches as they pass up through the classes due to Performance Equipment Points (not total points, do not include Base or Tire Size Points):

All classes, all events:

Helmet.

At least DOT harnesses.

Open-ended steel lug nuts for cars with non-stock wheel spacers that use lug nuts and wheel studs.

>200 Pts:

Roll bar or cage is required for open cars except Boxster and 996, 997 Cabriolets (at TT/DE).

200+ Pts:

Fire extinguisher (at TT/DE).

5 or 6 point harnesses are required (at TT/DE).

Roll bar or cage is required for Boxster, 996 & 997 Cabriolet (at TT/DE).

400+ Pts:

Roll bar or cage is required for all cars (at TT/DE).

All cars must have a tow hook, strap, or other suitable device (at TT/DE).

Driving suits, gloves, socks, and boots are required (at TT/DE).

Open-ended steel lug nuts are required for all cars that use lug nuts and wheel studs (AX and TT/DE)

The following summarizes the difference in safety equipment requirements for parking lot and track events:

All parking lot events:

944/924/968 spindle to fender clearance check is case-by-case.

Parking lot Time Trial / DE:

Roll bar or cage is not required for open cars with less than 200 Performance Equipment Points.

If a car has an issue that might exclude it from participating in an event, have the car re-inspected by the tech chair or tech advisor before proceeding to the next car.

The last step in DE/TT inspection is to put the inspector's initials and their car number on the Inspected by line. Then the inspection date.

Like this:

Inspected by: SG-97

Date: 1-2-15

(This must be legible so I know who to see if there is a tech issue later in the event)

Cars being pre-teched at a participating tech station should have the shop stamp placed below the inspection date.

Look at the sample tech sheet provided at <http://tech.pcasdr.net/> to see if your sheet looks like the sample.

If there are any non standard notes on the tech form that the entrant must correct before the next driving event the tech inspector should take a picture of the tech form with their phone and e-mail the tech advisor for reference at the following address: techadvisor@pcasdr.org

If a car has an issue that might exclude it from participating in an event, have the car re-inspected by the tech chair or tech advisor.

An entrant can be issued a Zone-8 One Time-Single Event Rule Waiver Form if cleared and signed by the Tech Inspection chair/Tech Advisor and event chair. (See <http://tech.pcasdr.net/> and select Rule Waiver Form)

Rev-1-10-16 S. Grosekemper