

BMW Car Club  
of America  
Genesee Valley Chapter



## GVC Ultimate Driver's School

# Pre-Event Technical Inspection Form

This form is for mechanical inspection of vehicles being used in GVC high-performance driving events. The form must be completed, signed, and presented at event check-in. ***Tech inspection should be performed within one month of the date of the event.***

The participant assumes full responsibility for the safety of this participating vehicle and for knowing the condition of each item listed below. ***Inspection by a professional mechanic familiar with high-performance driving schools is MANDATORY FOR ALL NOVICE DRIVERS, and VERY STRONGLY ADVISED FOR ALL OTHERS. Vehicles not professionally inspected, particularly those self-inspected by the owner, will undergo particularly close scrutiny by GVC tech staff at check-in.***

Date of Inspection: \_\_\_\_\_ Event: \_\_\_\_\_ Event Date: \_\_\_\_\_

Driver: \_\_\_\_\_ Licensed? Y/N State/Prov: \_\_\_\_\_

Emer. Contact: \_\_\_\_\_ Phone \_\_\_\_\_ At event? (Y/N) \_\_\_\_\_

Co-Driver: \_\_\_\_\_ Licensed? Y/N State/Prov: \_\_\_\_\_

Emer. Contact: \_\_\_\_\_ Phone \_\_\_\_\_ At event? (Y/N) \_\_\_\_\_

Make: \_\_\_\_\_ Model: \_\_\_\_\_ Year: \_\_\_\_\_

**NO CONVERTIBLES PERMITTED** (soft or hard-top; see footnote<sup>1</sup>)

Street Car: Plate # \_\_\_\_\_ State/Province \_\_\_\_\_; Race Car: Comp. Number \_\_\_\_\_

***Tech Inspectors: Please write "Y" or "N", "P" or "F", to indicate pass/fail. Please add comments as necessary.***

Tires	P = Pass F = Fail			
	LF	RF	LR	RR
Brand, Model, UTQG rating				
Speed Rating: H or higher				
Size				

<sup>1</sup> Open-top vehicles permitted are those with fixed, built-in rollover protection (e.g., Lotus Elise/Exige, Ferrari Spyder, Porsche Targa, T-top 'Vettes and pony cars). Folding hard-tops with factory or aftermarket rollover bars *not* permitted.

Tread: > 3/32"; evenly worn				
Condition (P/F): NO Patches, plugs, exposed cord, cuts, dry-rot, etc.				

<b>Wheels and Bearings</b>	<i>P</i>	<i>F</i>	Comments
<i>Wheels: proper offset, not cracked, bent, out of balance; bolts/nuts ok, torqued to spec.</i>			
<i>Bearings: not loose, binding, whining, leaking.</i>			
<b>Brakes</b> Note: <u>Must be mounted on vehicle at track check-in</u>	<i>P</i>	<i>F</i>	Comments
<b>Pads:</b> minimum thickness >75% <u>required</u> (all types)			
<b>Rotors/drums:</b> no deep scoring, pitting, cracks. Exceed min. thickness			
<b>Brake lines:</b> no cracks, kinks, leaks, swelling			
<b>Fluid:</b> DOT per mfr. specs. Fresh within 6 mo. of event			Date of last flush/refill:
<b>Suspension</b>	<i>P</i>	<i>F</i>	Comments
<b>Shocks/struts:</b> straight, no leaks, in good condition			
<b>Springs:</b> not sagging, cracked			
<b>Bushings/bearings:</b> in good condition			
<b>Steering and Driveline</b>	<i>P</i>	<i>F</i>	Comments
<b>Steering:</b> no excessive play, binding, vibration, shimmy			
<b>Tie rod ends:</b> no play, good condition			
<b>Power steering lines:</b> good overall condition, no leaks			<b>E36 &amp; E46 BMW 3-series:</b> Please see tech note regarding power steering line failures
<b>CV joints</b> in good condition, no cracked/leaking boots			
<b>Driveshaft:</b> balanced, no excessive play			
<b>Fluids</b>	<i>P</i>	<i>F</i>	Comments
No coolant, fuel, oil, brake fluid, or PS leaks			<b>Porsche GT3 and BMW E36/E46 series:</b> Please see tech note regarding cooling system failures and remedies
Topped-up, good condition			

Fuel cap: NO leaks			
<b>Seats, Belts, Harnesses**</b> <u>Please consult tech note on page 6 prior to completing this section.</u>	P	F	It is the owner's responsibility to ensure that aftermarket installations of passenger safety equipment are installed per mfr. specifications. Installation by a knowledgeable technician is <b>very strongly advised</b> .
<b>DOT belts:</b> 3- or 4 pt.			Must be DOT approved
<b>Racing harnesses (5, 6, 7 pt.):</b> SFI or FIA approved; no damage or fading.			Brand: SFI - Expiration date: FIA - Manufacture date:
<b>Equivalent restraints</b> for driver and passenger			Restraints should be <i>same type</i> both sides, though not necessarily identical or same brand
<b>Seats:</b> secure, good condition; appropriate type for restraints			If race harnesses are fitted, seat backs should be supported to prevent collapse in a rear-end collision.
<b>Roll cage/bar or harness bar:</b>			SFI 45.1 <i>padding must be installed</i> in head area for both driver and passenger. Non SFI foam padding is <i>not</i> acceptable.
<b>Body and Interior</b>	P	F	Comments
<b>Windshield/windows:</b> no major cracks			
<b>Wipers:</b> good condition, functional			All vehicles must have operating wipers
<b>Mirrors:</b> rear-view mirror <u>mandatory</u> ; securely mounted			
<b>Pedals:</b> Free movement; firm brake pedal			
No loose trim, panels, bumpers, fenders			
Sun/moon roof closes and secures			
No sharp edges, exposed door panels, loose carpeting			
<b>Brake Lights</b>	P	F	Comments
Mandatory and functional			
<b>Motor</b>	P	F	Comments
<b>Condition:</b> Running well, no excessive smoking (oil or otherwise)			
<b>Mounts:</b> not broken, cracked, excessively soft			
<b>Belts:</b> accessory belts properly tensioned, in top condition, no cracks or fraying			
<b>Hoses:</b> in top condition, supple, properly clamped			

<b>Throttle:</b> no binding, full travel, returns freely			
<b>Exhaust/headers</b>	<i>P</i>	<i>F</i>	<i>Comments</i>
No cracks, leaks; securely mounted			
<b>Battery</b>	<i>P</i>	<i>F</i>	<i>Comments</i>
<b>Securely mounted</b> , properly vented			
Structurally sound, no leaks, excessive corrosion			
Positive terminal, all other "hot" binding posts covered			
<b>Helmet</b>	<i>P</i>	<i>F</i>	<i>Comments</i>
<b>Snell 2010 or 2015</b> (SA or M); <b>SFI 31.1, FIA 8860</b>			Snell rating (circle): 2010 2015

**INSPECTORS ARE NOT LIABLE FOR THE SAFETY OF THIS VEHICLE**

Inspector (Print) \_\_\_\_\_ Inspector (Sign) \_\_\_\_\_ Date \_\_\_\_\_

**DRIVERS/OWNERS:**

**YOUR SIGNATURE ON THIS FORM INDICATES YOUR ACCEPTANCE OF THE FOLLOWING TERMS**

I acknowledge that the technical inspection performed on my automobile is solely for the purpose of meeting the driving school minimum standards for car preparations, and that no representation is made by the inspectors, or any other person selected by me, as to the vehicle's roadworthiness for street or track. No warranties are implied or expressed in passing or failing the inspection performed. I release the inspectors from any and all liability arising from their inspection. I acknowledge that ***I remain solely responsible at all times for the safety and roadworthiness of my vehicle*** and am not relying on the solely on the inspection in deciding whether or not to drive my automobile.

*The Genesee Valley Chapter of BMW CCA reserves the right to exclude any vehicle from the event for failing this safety inspection, or for any other reason pertinent to the safety of the school and its participants.*

The Genesee Valley Chapter, BMW CCA, the event organizers, instructors, the facility and its personnel, shall not be held liable for any incident involving you or your vehicle causing damage and/or injury.

Owner (Print) \_\_\_\_\_ (Sign) \_\_\_\_\_ Date \_\_\_\_\_

***Bring this completed and signed form to event check-in***

## Tech Inspection Shops

Below is a list of suggested independent shops and new car dealers in the GVC geographic region with the experience and expertise to inspect your vehicle for a GVC Ultimate Driving School. ***All novice drivers (D students) MUST have their car inspected by a professional shop.*** All other drivers are STRONGLY encouraged to do the same. You may choose one of the shops listed below, or other shops of your choosing with similar expertise.

***Pre-event inspections are free at some, but not all shops.*** Repairs are charged at the normal shop rate.

DRIVERS/OWNERS ARE SOLELY RESPONSIBLE FOR ENSURING THAT THE PRE-EVENT TECHNICAL INSPECTION IS PERFORMED ADEQUATELY, THAT ALL PROBLEMS IDENTIFIED DURING INSPECTION HAVE BEEN CORRECTED, AND THAT THE VEHICLE IS SAFELY PREPARED FOR A HIGH-PERFORMANCE DRIVING EVENT

**Eksten Autoworks**

78 Bennington Dr.  
Rochester, NY 14616  
585-621-8200  
[www.ekstentautoworks.com](http://www.ekstentautoworks.com)

**The Little Speed Shop**

500 Lee Rd.  
Rochester, NY 14606  
585-647-0339  
[www.thelittlespeedshop.com](http://www.thelittlespeedshop.com)

**Berg Racing**

1660 Boulter Industrial Pkwy.  
Webster, NY 14580  
585-545-4265  
[berggracing@gmail.com](mailto:berggracing@gmail.com)  
[www.berg-racing.com](http://www.berg-racing.com)

**Mr. Best Wrench**

2401 Bedell Rd.  
Grand Island, NY 14072  
716-773-2989  
[www.mrbestwrench.com](http://www.mrbestwrench.com)

**Towne BMW/MINI**

8215 Main St.  
Williamsville, NY 14221  
716-505-2100  
[www.townebmw.com](http://www.townebmw.com)  
[www.townemini.com](http://www.townemini.com)

**BMW of Rochester**

4250 W. Henrietta Rd. (NY Rt 15)  
Rochester, NY 14623  
585-359-7373  
[www.bmwrochester.com](http://www.bmwrochester.com)

**MINI of Rochester**

3875 W. Henrietta Rd.  
Rochester, NY 14623  
585-334-6464  
[www.miniofrochester.com](http://www.miniofrochester.com)

**Gault Auto Sport BMW**

2507 North St.  
Endicott, NY 13760  
607-785-5028  
[www.gaultautosportbmw.com](http://www.gaultautosportbmw.com)

**Burdick BMW**

5947 E. Circle Drive  
Cicero, NY 13039  
315-459-6050  
[www.burdickbmw.com](http://www.burdickbmw.com)

**Cantech Automotive**

6267 E. Taft Rd.  
North Syracuse, NY 13212  
315- 452-1168  
<http://www.cantechautomotive.com>

## Technical Note: RACING HARNESES, SEATS, AND ROLL-BAR/ROLL CAGE INSTALLATIONS

### HARNESSES/SEATS

1. We reserve the right to fail tech for cars with OEM or competition restraints in poor condition due to material failure, excessive age, or improper installation.
2. All aftermarket **restraints must be installed following the manufacturer's specifications** for safe installation.
3. **Seats must be compatible with the installed harnesses:** It is strongly recommended that seat backs be supported to prevent collapse in rear-end collisions. Seats must provide routing slots to prevent shoulder belts from slipping off the shoulders in an accident. The bottom edge of slots should allow belts to ride directly on shoulder or HANS device. Seat bottoms must have routing slots that allow installation of anti-submarine belts according to manufacturer specifications when using 5-, 6-, or 7-point harnesses.



- It is ***strongly recommended*** that cars equipped with 5-, 6-, or 7 point harnesses have seats *designed for their use*. We DO NOT permit the use of such harnesses with seats that have sloping seat backs lacking openings for shoulder belts, such as the OEM seats found in many Porsches (shown on the left) and older Corvettes. Unsupported shoulder harnesses will fall off the shoulders in an accident, rendering the entire restraint useless. Three-point DOT harnesses as installed by the manufacturer are the only belts approved for use with such seats.
4. **All non-DOT approved racing harnesses must carry an SFI or FIA rating.** Belts past expiration date are okay IF judged to be in good condition.
  5. **Belts worn in accidents involving significant impacts are assumed to be damaged and MUST be replaced**, whether or not that damage is visible.
  6. **Equal Restraint Rule:** *Harnesses and seats must be functionally equivalent (but not necessarily identical) for both driver and passenger.* If the driver uses a racing harness, a harness must also be available for the passenger. If the passenger only has 3-point belts, the driver must also use 3-point belts.

### ROLL-OVER BARS, ROLL CAGES, HARNESS BARS

1. Roll-over bars, cages, or harness bars must be *securely and safely installed* in the vehicle.
2. **It is critical to prevent/minimize contact with the bar/cage structure in an accident.**
  - a. Roll hoops and other structural supports should be far enough from the helmeted head of both driver and passenger to prevent/minimize contact in the event of an accident.
  - b. **Roll bars must be covered with closed-cell, SFI-approved padding** in the area around the driver's and passenger's heads, and is *highly recommended* anywhere that the belted occupants might contact the bar/cage in an accident.
3. **Harnesses:**
  - a. **Racing harnesses are MANDATORY in cars with roll-bars or cages.**
  - b. Shoulder harnesses must be attached to the roll cage, harness bar, or chassis behind the driver and passenger, and ***all belts must be mounted as specified by the harness manufacturer.***
  - c. Shoulder harness attachment must be constrained to prevent belts from sliding side-to-side when wrapped around a roll or harness bar.
4. Roll bar/cage structure must support seat backs in the case of seat back failure.

**THE GENESEE VALLEY CHAPTER OF BMW CCA RESERVES THE RIGHT TO EXCLUDE FROM OUR EVENTS ANY VEHICLE THAT, IN OUR JUDGEMENT, DOES NOT MEET OUR MINIMUM SAFETY STANDARDS**



## **E36 POWER-STEERING HOSE FAILURES**

Over the past couple driving seasons, we have seen a number of on-track failures of the power-steering-return hose on E36s [92-99 3-Series, including M3]. The failures we have seen were all the same: the return hose pulled off of the power-steering cooler, right at the factory-crimped connection. This failure results in the fluid content of the power-steering system being disgorged in a few seconds, creating quite a hazard on the track surface for the afflicted car and following vehicles. Of course, steering power-assist is lost as well. Why these failures did not commence earlier in the E36 life cycle remains somewhat a mystery. Please note that we have seen new, OE hose assemblies fail on their first track session, so replacing the power-steering cooler/return-hose assembly with stock parts has been shown to be ineffective in addressing the problem.

Although there is not complete consensus within the BMW-repair community as to the cause of these failures, many feel that the primary problem is that the return hose should be longer, and that engine movement [probably most severe in the on-track environment] exacerbates the problem. Deteriorated engine and/or transmission mounts can allow increased engine movement, and some feel that high temperatures may be an extenuating factor.

In preparing your E36 for a track event, it is imperative that you carefully check your engine and transmission mounts for deterioration, separation and for excessive motion of the engine and/or transmission. This inspection is facilitated by the use of a long pry bar. If your car is prepared by someone other than yourself, ensure that he/she is advised of the problem and knows what to look for.

You should also seriously consider replacing the power-steering-return hose with a suitable piece of hose a few centimeters longer. BMW hose # 32-41-1-131-524 [12-mm ID (inside diameter), cut to length] is known to work in this application. You will also need two hose clamps # 11-15-1-727-509 [15-18-mm]. Some claim success with aftermarket high-temperature hose of ½-inch ID, but be advised that the BMW hose fits the nipple on the steering-cooler more tightly than do some nominal ½-inch ID hoses. In the photo, the ferrule is where the failure occurs.



**We have added an item to the driver-school Tech Form regarding this hose failure, and at event-day Tech we will be looking to see if you have addressed the problem.**

Replacing the return hose is a straightforward operation. After the car has been secured on jack stands or a lift and allowed to cool, begin by cutting the return hose and allowing the contents of the system to drain into a pan. Note that the return hose is the **SMALLER** of the two hoses attached to the power-steering-fluid reservoir. Then, **CAREFULLY** slit [as shown in the photo] and remove the ferrule/hose from the power-steering-cooler outlet. An abrasive wheel was used for the photo, but a cutting pliers will suffice. Ensure that the hose nipple under the ferrule is not damaged by the slitting operation. If it is damaged, you will need to procure a new cooler-return-hose assembly.



When the ferrule and hose have been removed from the cooler outlet, you should see a hose nipple like this:



Continue by removing the other end of the return hose from the power-steering-fluid reservoir, then cut the new hose to the appropriate length and install to the cooler and reservoir with two hose clamps. You may find that your removed hose contains a restriction orifice located about 10-cm from the reservoir. You can remove this orifice and push it into your new hose, securing the orifice with a third hose clamp. Refill the system with Dexron ATF or other suitable fluid and bleed the system. Check for leaks and you should be done.