



PRECISION PERFORMANCE  
SINCE 2002

PROTECT YOUR INVESTMENT  
PREVENTATIVE MAINTENANCE GUIDE

# Protecting Your Investment

Through Preventative Maintenance



# Disclaimer

- **The recommendations contained herein are provided at your own risk.**
- **Track use, whether you are racing or not, requires that you maintain your car more frequently, like a race car.**



# Driving

**Your Porsche was meant to be driven.**

**Short drives are bad for your engine.**

**Extended storage is bad for your Porsche.**

**Drive your Porsche.**





# Severe Service

- **Daily driven cars in temperate climates on paved roads fall under normal service intervals.**
- **Cars driven in hotter climates, short distances, stored extended periods, or tracked should be considered severe service.**
- **Severe service reduces intervals by at least half.**



# Storage

- **Modern ethanol fuels start going bad within weeks – always add fuel stabilizer.**
- **Products like Storage Defender from Driven® protect fuel system and oil while your car is in storage.**



# Storage

- **Change your oil BEFORE the car goes into storage.**
- **Do not run your engine unless you plan on driving the car for an extended period to ensure engine oil gets to operating temperature.**



# Storage

- **Use a battery tender to maintain battery health.**
- **Increase tire pressure to max inflation pressure (correct before driving of course)**
- **Cargo container dessicant packs or “Damp Rid” help control moisture.**
- **Use your preferred choice of mouse control.**



# Tires

- **Although there is no exact expiration date, various sources state tires should be replaced every 6-10 years, even if the tires do not have any miles on them due to tire aging.**
- **Performance compound tires should not be exposed to temperatures below freezing.**







# Fuel

- **Only use Top Tier fuels.**
- **Use the highest octane available.**
- **Use of fuel additives like Driven Carb Defender is recommended to prevent fuel system damage or failures caused by ethanol enriched fuels.**





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# Ethanol Fuels

- **Unless labeled as non-ethanol or ethanol-free, most domestic unleaded fuel is E10**
- **E10 – maximum ethanol content is 10%.**
- **E15 – 15% ethanol            E85 – 85% ethanol**
- **Most vehicles manufactured after 2000 are compatible with E10.**
- **Do not use E15 or E85 unless factory specified.**



# Fuel Lines

- **Older vehicles need modern fuel lines - use only fuel injection hose designed for use with ethanol fuels like E85 for best performance.**
- **Do not use OR German braided fabric covered unless it explicitly states it is safe for ethanol enriched fuels.**
- **Griffiths offers ethanol compatible fuel lines.**



# Air/Fuel Filter

- **Porsche's current recommendation for fuel filters is 60,000 miles and 30,000 miles for air filters.**
- **Air filter should be replaced with Genuine or equivalent paper filter.**
- **Washable filters can allow more dirt into your engine if not properly maintained.**
- **Cold air intakes may reduce performance, sucking in hotter engine bay air rather than cooler, ducted air.**



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# Belts

- **Serpentine drive belts are rated for 60-100,000 miles.**
- **Check for cracks yearly and replace when installing a new water pump or alternator.**
- **On air-cooled engines, the alternator/fan belt should be replaced at every valve adjustment service, so around 15k miles. Always carry a spare!**
- **On 964/993 models, the distributor drive belt should be replaced every 40-60,000 miles.**





# Oil

- **Oil is cheap - engines are expensive.**
- **Street use - 6 months or 5,000 miles**
- **Track use – use a race oil and change after every track event.**
- **The factory oil fill is not necessarily the best.**



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# Oil Filters

- **Always use the highest quality filter available – Napa Gold/Wix or Napa Platinum or Genuine Porsche/OEM**
- **M96 and newer model engines have plastic oil filter housings which should be replaced every few oil changes due to weakening of internal bypass spring**



**Alternatively, these engines can be fitted with a spin on oil filter adapter allowing use of standard steel bodied oil filters to eliminate bypass.**





# Oil Level

- **More oil is not always better.**
- **Do not overfill your Porsche with oil.**
- **For vehicles that do not require the engine to run to check level, only check your oil when the car has been sitting on a flat surface overnight.**







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# Oil Analysis

- **Have your oil tested every oil change to detect problems before they become catastrophic.**
- **LN Engineering works with Speed Diagnostix to provide fast, accurate testing with Porsche specific analysis to help you interpret the results.**



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# Gearbox

- **Replace all transmission fluids/filters every 2 years or 24,000 miles – manual, tiptronic, pdk, etc.**
- **Track use will shorten fluid these intervals.**



# Suspension

- **Check for excessive play in suspension components including ball joints and tie/toe rods.**
- **All seals should be intact.**
- **Check for proper plunge on half shaft (axle) as well as for cracks or tears in the boots.**
- **There should be no looseness in hub and wheel bearing should operate smoothly.**
- **This is just a partial list - have your suspension professionally inspected yearly.**



# Cooling System - Watercooled

- **Water pump, low temperature thermostat, and coolant should be replaced at every 4 years or 50,000 miles**
- **Install new Genuine coolant reservoir cap**
- **Replace expansion tank every 8 years or 100,000 miles**
- **Only use Genuine Porsche water pumps**
- **Track cars – use distilled, not tap water**
- **Add Driven CSP for added protection**



# Cooling System

- **GT3, Turbo, GT2 - Upgrade cooling system hoses and pin water pipes to prevent hose sleeve retention failure.**
- **Cayenne S/Turbo - Upgrade cooling pipe hoses on all models 2004-2012 with metal.**



# Cooling System - Aircooled

- **Check tops of heads and cylinders for mice nests after car comes out of storage.**
- **If the fan belt breaks, stop driving your car!**
- **If your oil temperatures are over 240F, it's too hot! Time to add extra oil cooling.**



# Brakes

- **Older cars should have new brake lines installed - stainless must be DOT rated.**
- **Although there is no exact rule for brake lines, brake lines typically deteriorate from the inside out, so a visual inspection may not indicate replacement is necessary, so changing them at least every 6-10 years (like tires) as a safety precaution is recommended.**



# Brakes

- **New fluid every 2 years or 24,000 miles.**
- **Track use – flush before every event.**
- **Consider alternatives such as Motul RBF600/660 or Castrol SRF for better performance.**

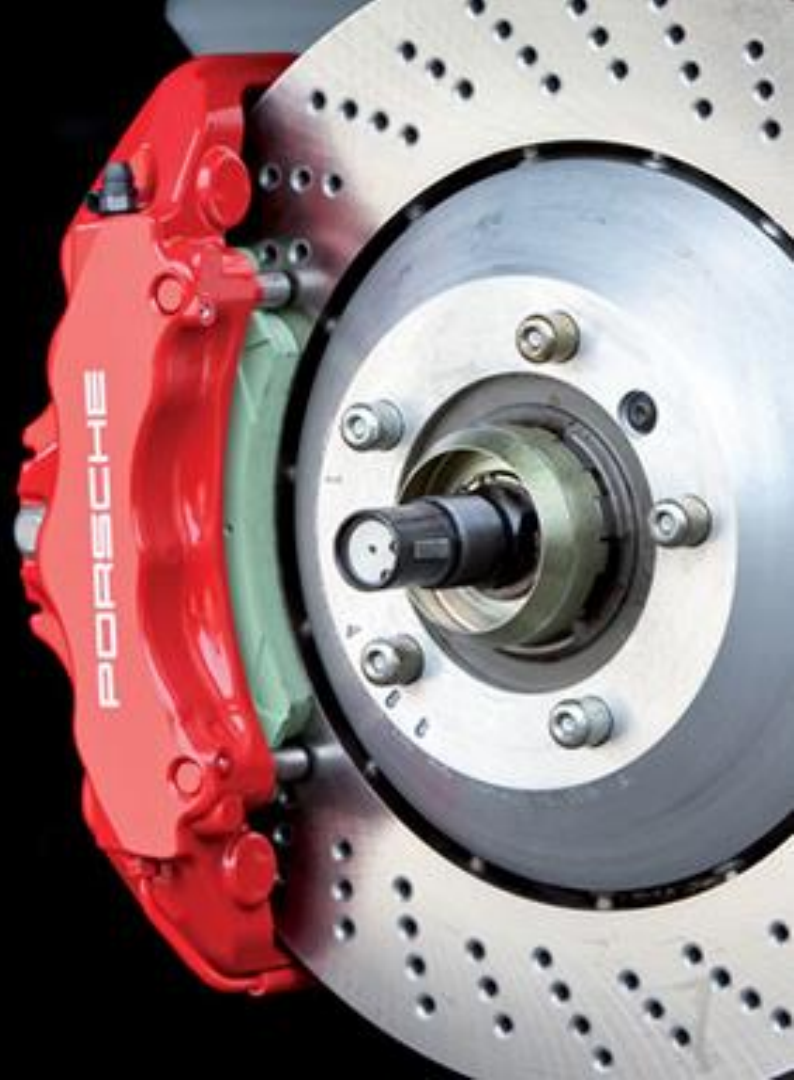




# Brakes

**If using cross-drilled rotors, inspect for cracks that link between drilled holes in the rotors, through the cooling vanes, or into the rotor hat.**

**Slotted rotors or cryo-treated rotors are suitable for performance applications.**





# Engine - Aircooled

- **Valve adjustments and spark plugs every 15k miles**
- **Visually inspect spark plug cables, cap, and rotor and replace if there are signs of carbon tracking.**



# Engine - Watercooled - M96/M97

- **New spark plugs every 4 years or 50,000 miles.**
- **Inspect coils for carbon tracking or cracks.**
- **Do not use engine tunes that raise the rev limit, lock out adaptation, or disable monitors.**
- **Air oil separators can be tested with a manometer and if weak or timed out every 4 years or 50,000 and should be replaced with Genuine Porsche only.**



# Engine - Watercooled - M96/M97

- **Oil fill tube and AOS hoses get brittle and crack, causing vacuum leaks, and should be replaced when doing an AOS.**
- **Fuel trim values must be checked to ensure engine is not running rich due to bad injectors or vacuum leaks.**
- **Mass Air Flow and Oxygen Sensors should also be considered maintenance items to be replaced for optimal engine performance.**



# Engine - Watercooled - M96/M97

- **Variable cam timing actuator wear pads on 5-chain engines (Boxster to 2002, 911 to 2001) are service items.**
- **If cam timing deviation exceeds 4 degrees, replace wear pads and timing chains.**
- **Dropping the oil pan at time of oil service will allow you to identify wear debris from chain guides, IMS, or other critical engine components.**



# Engine - Watercooled - M96/M97

- **Replacement of the IMS bearing is considered a maintenance item.**
- **1997-1999 models have a dual row ball bearing with 6 year or 75k interval.**
- **2000 and 2001 models can have either a dual row or single row ball bearing**
- **2002-2005 models have a single row ball bearing with 4 year or 50k interval.**
- **2006-2008 model years are non-serviceable (grease seal can be removed to extend life)**
- **2009 and later 9A1-equipped models have no intermediate shaft.**



# Check engine light (CEL)

- **Newer OBD1 and OBD2-equipped cars will indicate engine malfunction with a CEL.**
- **A Durametric tool is inexpensive and allows DIY diagnostics for your newer Porsche vehicle.**
- **The source of CEL must be determined as engine damage can occur if problem is serious.**



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# Track

**Know your and your vehicle limitations.**

**Retain N-Spec Porsche rated tires on unmodified vehicles.**

**If you take your street car to the track, remember, you must maintain it like a race car.**







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# Track

- Supplemental engine and transmission cooling is recommended for track use for all models.
- Specifically on M96/M97 engines a deep sump is required to protect from oil starvation on track: Bilt Racing 2 QT w/X51 baffle
- Power steering cooler recommended on 1997-2012 models.





# Track

- **Track use will shorten component life in all vehicles and will require accelerated parts replacement based on time, not mileage.**
- **Consult a race shop for information about tracking your Porsche and recommended maintenance.**



# Review

- **This document covers many of the items on your car that may need servicing as part of normal maintenance and ownership.**
- **Please refer to manufacturer recommendations or your technician that services your vehicle for their recommendations on these and any other items that may have been omitted from this document.**



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# Thank you!

If you would like a copy of this presentation or  
have questions, email  
[support@Inengineering.com](mailto:support@Inengineering.com)