

TECHNICAL TIPS – “Wench With a Wrench”

By Gail Wagner – Midstate Miata Club of NY

Hello Miata Folks,

While this month’s column isn’t devoted to our Miatas as they are probably all peacefully sleeping in storage until their spring re-awakening, I was thinking about winter driving and maintenance of my OTM (Other Than Miata) which happens to be an all-wheel drive Mazda CX-3 SUV.

I have gleaned some general tips that I hope you will find interesting and useful. As I researched this topic, I learned a few good things myself. ☺

DRIVING & MAINTENANCE TIPS FOR YOUR “OTM” (OTHER THAN MIATA)

Buying a car, whether new or used, is likely to be the most expensive transaction you will make besides buying a house or condo. With car average prices hitting in the \$30K range and prices for most used cars remaining high due to demand, not to mention those of us on fixed-incomes, these factors lead up to one thing: we are holding onto vehicles longer than ever.

I have enumerated some tips to get the longest possible life out of a vehicle, whether it’s your Miata or your DD (daily driver), in winter (or summer, actually).

Think about starting your engine. Especially in cold weather, starting produces the most wear on your engine’s internals. It is claimed that 95% of an engine’s wear is caused by the first 10 seconds of starting after a cold start – i.e., it produces the wear equivalent of 500 miles of travel with a warm engine! (Sikorsky, *Drive It Forever*).

To understand why, during a cold start, there is no wear-reducing film of oil between the engines’ bearing surfaces. So microscopic particles of metal are deposited into the oil. This wear diminishes as oil reaches internal engine components but the film of oil on engine bearing surfaces can be displaced in as little as 6 second after shutting off the engine. So “cold” doesn’t actually mean “cold to the touch”.

So...to minimize wear, reduce the times you start a cold engine unless necessary and never start an engine just to hear it run, to “circulate the oil”, or warm it up. Start it and drive off immediately. Your vehicle manual will state this fact if you don’t believe me.

If you possibly can, avoid short trips in cold weather. To function at peak efficiency, your engine needs to be at its peak operating temperature. The amount of time necessary to reach this operating temp varies by driving style and outside temperature but the bare minimum under warm conditions is between 5 and 10 miles.

Driving shorter distances in cold weather can cause condensation inside an engine leading to potential internal corrosion and formation of engine oil sludge (yuck) as contaminants that would normally be burned off at normal operating temp are trapped in the oil, ultimately settling to the bottom of the oil pan as deposits and sludge.

A winter tip: I know this will be hard but try not to turn on the cabin heat until the coolant has reached its normal operating temp because doing so will prolong the time it takes for the engine to reach peak operating temp.

You probably know this but NEVER ignore a warning light. Our cars are wonders of design and engineering for the amount of info potential displayed. *Generally speaking*, a yellow light means something is wrong and needs to be looked at by a mechanic ASAP while red lights mean pull over and stop as soon as it's safe to do so. It can be a very expensive lesson to learn that warning lights, especially red ones, are there for a really good reason (ask me about my red alternator light on the Thruway in a snowstorm in the middle of nowhere between here and Buffalo!).

Oil Changes: Here's a goodie: Don't rely solely on mileage or judge oil change intervals. Motor oil traps all kinds of nasty bits that's bad for a car's engine (sludge, varnish, sulfuric acid, hydrochloric hydrobromic acid, etc. etc.) none of which will benefit your engine if left too long. That said, most manufacturers have now recommended oil change intervals based on *time as well as mileage* but generally as a good rule of thumb, don't go any longer than 12 months between oil changes no matter what type of oil you use (conventional or synthetic).

Here's another one that is universally ignored: brake fluid changes. As I mentioned if you read my "Storing Your Miata for Winter" articles, brake fluid is hygroscopic, meaning it attracts water. The more H₂O brake fluid absorbs, inevitable over time, the lower the brake fluid's boiling point becomes and the more the risk of corrosion of internal braking components. Always follow brake fluid replacement guidelines in your manufacturer's owner's manual *but as a general rule*, change brake fluid every three years even if you aren't replacing worn pad, rotors, etc. Black brake fluid is a bad, bad thing.

Beware of mechanics using impact guns. As I understand it, most modern cars have factory torque values for lug nuts on your wheels or bolts in the 85-95 pound-feet range. A ½"-drive impact gun can spin these on with a force of over 500 pound-feet of torque, potentially causing damage to wheels, break wheel studs, and damage lugs, hubs, brake rotors and drums. And chances the average owner can be able to remove over-tightened lug nuts with a wrench by the side of the road is between slim and none! AAA to the rescue! It is recommended that when taking your car in for service for tires/wheels, always ask if their power impact wrench has a "torque limiter" socket adapter attachment that limits the amount of torque applied by power to tightening (not loosening) your lug nuts, etc. The limiters come in different torque sizes that will match your factory-torque tightening specifications. Ask to see it!

Winter floor mats are a good thing. (I love *WeatherTec* brand mats. Expensive but good looking, come in colors and last forever. They make SUV cargo-area mats too.) Rubber-channeled floor mats are a great way to keep carpets dry (or replace carpet mats), keep road salt

from shoes and boots from leaching through carpeting and eating sheet metal or electrical components (control modules and electrical connectors) underneath or causing rust holes on the floor pan eventually over time.

Keep your daily driver clean in winter as well as summer. Weekly car washing is a good thing to minimize buildup of dirt, mud and road salt. Be sure to remove bug guts and bird dropping as they can etch and permanently damage paint. Brake dust is corrosive and can etch your expensive alloy wheels so don't let it accumulate either.

Of course, as I hound you with your Miata, be sure to keep up with manufacturer's maintenance schedule religiously: transmission fluid, air cleaners, differential fluid and coolant checks all changed at varying recommended intervals. Shock absorbers and suspension parts can wear out over time. And as a bonus, adhering to a manufacturer's maintenance schedule with retained receipts will make your vehicle easier to sell if the time comes. Certainly impresses prospective buyers! ☺

And finally, as winter sets in, carefully examine your snow tires. (I'm not a fan of all-season radials for winter driving. Period.) Make sure they are in good condition just like your summer tires, not over 7 years old and ready to be mounted on your car for safe snowy driving.

I hope this has been helpful and food for some thought. As I always say about our beloved Miatas at the end of each of my columns, "Take care of your car and it will take care of you" AND will last longer without major repairs.

Have a Safe Winter Driving Season North OR South!

Gail

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