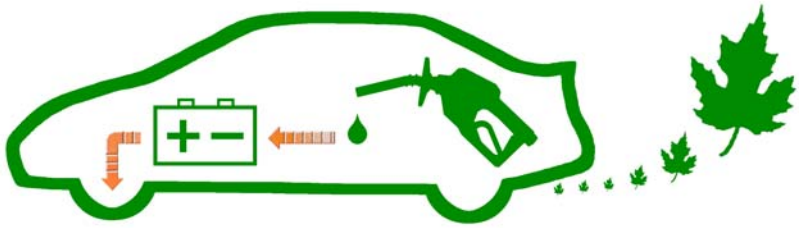
Toyota Prius User-Guide

Third Edition, First Revision for the HSD model (2004 & 2005)



DRIVING

Just Drive It !

Vital Info

Ignore all the advanced technology!

It's too easy to get preoccupied with everything Prius automatically does for you, especially with the Multi-Display providing constant performance information. The hybrid system was designed so you could to drive it like a traditional car. That way, you can enjoy the remarkably smooth & quiet ride. Let the computer worry about how to save gas and reduce emissions.

Startup

Step On the Brake

New owners sometimes fall victim to this, not being able to figure out why the car won't start.

For safety, stepping on the brake before starting has always been highly recommended in all types of vehicles anyway. But in Prius, it is required. Because if you don't, you'll find that only the accessories will power-up. The hybrid system itself won't until you push the power button while also stepping on the brake at the same time.

Engine Warm-Up

Reducing Emissions is the highest priority for Prius. It strives to remain a **AT-PZEV** (Advanced Technology - Partial Zero Emission Vehicle) at all times, which means the catalytic-converter must be kept warm even if it requires consuming some gas to accomplish that. Fortunately, you still get better than average mileage, even if the engine doesn't shut off right away.

Winter Heat

Creating heat for the emissions system and heat to keep you warm is fastest and most efficient if you simply drive gently immediately after starting the Prius in the winter. Allowing the engine to run while the Prius is parked takes longer and is less efficient. "Just Drive It!"

Once the heater warms up, resist the temptation to turn up the fan-speed on too high. That will actually decrease the potential heat. Air blasting over the fins of the core too quickly prevents the opportunity to absorb as much heat as possible. Slower air doesn't. In other words, don't exceed the medium speed setting.

12-Volt Jumping

If the 12-volt auxiliary battery is ever drained completely, you can jump it similar to a traditional vehicle. With the Prius OFF (hybrid system & lights), connect the positive-cable to the jump-start terminal (within the black plastic fuse-box, under the Prius hood) then to the positive-terminal on the 12-volt battery of the supplying vehicle (as it is running). Next, connect the negative-cable to the negative-terminal on the 12-volt battery of the supplying vehicle. Then the other end of the negative-cable can be connected to an unpainted metal component under the hood; a very good place for this is the support attaching the engine & motor to the body of the vehicle in the front driver's side corner under the Prius hood. At this point, start the hybrid system. When "READY" appears on the Prius speedometer cluster, you should then disconnect the cables following the opposite order they were connected.

For safety information, greater detail, and illustrations, please refer to your Owner's Manual.

A very simple way to confirm you have a good electrical connection before attempting to start is to just turn on the ceiling light. If it illuminates brightly, you know that the supply coming from the donor vehicle is sufficient to successfully jump the Prius. If the light is dim, the connection is bad and you must fix it before proceeding.

Shutdown

Off Confirm

Use the remote or push a door-button (or the one on the hatch) when leaving your Prius. That will confirm that all the doors really did get shut tightly and the power for the hybrid system is off. If you don't, the 12-volt auxiliary battery may get drained completely or the alarm might not be able to protect the car.

Whirring Sound

There is a small electric-pump that pumps 3 liters of coolant into a thermal container (to keep it hot) every time you turn the hybrid system power OFF. When the power is turned back ON, the coolant is pump back into the engine. This process reduces emissions, by achieving warm-up much faster than with an engine that would normally have to heat itself up. This process also helps to reduce wear & tear on the engine.

Cruise-Control

24 MPH minimum

Slowing down to less than 24 MPH (39 km/h) will cause the cruise-control "resume" memory to reset. So if you have to slow down or stop, you'll need to set the speed again.

MPG

Some owners have observed an increase in MPG from using the cruise-control, others have not. Results vary depending on your particular driving habits and road conditions.

Stealth

If you don't have a sensitive enough foot but would still like to enjoy stealth driving on a light traffic road, just set the cruise-control. This can be done all the way up to 42 MPH (68 km/h) on flat or declining terrain without making the engine startup.

Smoooooth

The CVT (Continuously Variable Transmission, "Planetary" type) makes the cruise-control in Prius remarkably smooth. You'll notice the "no shifting" characteristic of the drive when going up hills and accelerating aggressively. Many consider this smoothness as a luxury feature.

Neutral

No Engine

To shift into neutral and keep it there without any chance of the engine starting, do the following:

1. Insert the FOB (not necessary if you have SE/SS).
2. Without stepping on the brake pedal, press the "Power" button twice.
3. Use the lever to shift in the Neutral position.

Reverse

Beeper Disable

Some people find the reverse beeper distracting. Although there isn't a method to change the repetitive beeping to just a short warning, there is a way to disable it completely. To do that, carefully follow these steps:

1) Switch to the odometer/trip value to display “ODO” by pushing the “ODO TRIP” button shown in the lower-right corner of the photo below. If the speedometer-cluster was already showing “ODO”, make sure to cycle thru each option back to “ODO” again.

2) Power OFF (push the "Power" button).

3) Power ON (push the "Power" button again).

4) Within 6 seconds of powering back ON, push & hold the button for “ODO” for a minimum of 10 seconds.

5) While still holding the button for “ODO”, shift into "R" (Reverse), then to "P" (Park).

6) "b-on" should display on the odometer/trip-meter now. Push the “ODO TRIP” button to switch the mode to "b-oFF", as shown here:

7) Power OFF (push the "Power" button). That’s it! The beep should now be disabled.

Note #1: If the sequence above failed, it may have due to the “ODO” setting not having been visible recently. In that case, all you have to do is drive with it that way for a few miles. The next time you try to disable the beeper, the process should work.

Note #2: If you ever disconnect the 12-volt auxiliary battery from the system (or drain it dead), you may have to repeat the disable process again.

Hybrid Driving

From a Stop

The gasoline engine is most efficient when running around 70% maximum. So if you can't press lightly enough on the pedal to accelerate using only electricity, go ahead and press a little harder than usual. That brisk (but not aggressive) increase in speed will save a small amount of gas, resulting in an overall efficiency gain.

Climbing Hills

The hybrid system has 2 electric motors. When you encounter a large hill, those motors are automatically taken advantage of. The gasoline engine will rev to its most efficient high-power RPM. That provides thrust directly to the tires, generates electricity for the motor, and recharges the battery-pack all at the same time. So to the surprise of many new owners, large hills don't drain the system. You'll still have plenty of reserve power available when you reach the top.

On the Highway

Just like with traditional vehicles, efficiency drops the faster you drive on the highway. 60 MPH (96 km/h) is more efficient than 70 MPH (113 km/h). Speeding up to 75 MPH (121 km/h), you'll observe MPG drop even more. It pays to drive slower.

Without the Pack

The electric motor doesn't actually need electricity from the battery-pack. The gasoline engine creates electricity immediately while you drive. So quite frequently, on the multi-display you'll see that the motor is being fed directly from the engine and the battery-pack isn't even being used. And sometimes, while both the engine and motor are providing thrust, the engine will also recharge the battery-pack at the same time.

A/C Instead

At highway speeds, using the A/C (air-conditioner, cold setting) or vent to remain cool will likely result in slightly higher MPG than having the windows open.

Cruising

A beneficial technique for efficient cruising is to feather the accelerator pedal at particular times.

Learning to do this is simple and will quickly become second nature with very little practice. (In fact, you may already have that foot control if you in-line skate or bicycle occasionally.) To do it, just lightly reduce pressure on the accelerator-pedal whenever you encounter a section of road that's perfectly flat or has a slight decline. The MPG indicator will sometimes jump all the way to the +100 mark, even though your speed ends up dropping only 1 MPH. Then lightly push the accelerator-pedal to efficiently regain that speed afterward. Overall, MPG will climb a little bit when each time you do that.

You'll end up taking advantage of the hybrid design. Changes in the road pitch naturally cause changes in speed anyway. Using the multi-display and large digital speedometer helps you discover when gains from that are possible.

Brakes

Regenerator

When you reduce pressure on the accelerator-pedal or use the brake-pedal, excess speed turns a motor, causing regeneration of electricity to recharge the battery-pack. The regenerator takes advantage of the kinetic energy that would have otherwise been lost. The brake pads & shoes are not used as much as in a traditional vehicle. This not only makes the Prius more efficient, it also indicates the brakes will last longer.

Stealth Driving

Engine Off

While the gasoline engine is off and you're driving using just battery power, the mode you're in is called "stealth" (since movement is completely silent).

Invoking "stealth" is easy once the engine has warmed up (and you aren't running the A/C or Heater too heavily). While driving, just find a street section without any inclines then lift your foot from the accelerator-pedal. The engine will shut off within a few moments. Once it does, lightly place your foot back on the accelerator-pedal to continue driving with only electricity. Another way to invoke stealth is to just stop completely, that will make the engine shut off.

Up to 42 MPH

The 50 kW electric motor is designed to propel the Prius up to 42 MPH (68 km/h). It takes a steady foot though. Slower speeds, like 35 MPH (56 km/h) and 30 MPH (48 km/h), are easier. Beyond that maximum speed or in conditions when additional power is needed, the motor works in combination with the gasoline engine. Though, you will discover above 42 MPH (68 km/h) that there are times when the engine will spin (pistons in motion) without any fuel being consumed; it is a normal function of the Planetary-CVT.

Acceleration

Accelerating in "stealth" can be very slow. Also using the gasoline engine is both quicker and (surprisingly) more efficient, so don't be afraid to consume a little bit of gas. Remember that even if you use the battery and get "+100 MPG", the engine must run later to recharge it. So short-term gains may actually result in an overall loss.

A/C & Heater

Only the lowest setting for the air-conditioner & heater work in "stealth". Higher settings and airflow durations longer than a minute or two will require the gasoline engine to run.

Be Careful !

Be careful while driving in "stealth", especially in parking lots. Some people use only their ears to verify that it's safe, not their eyes! So having a car that's completely silent means you'll probably have someone step out in front of it without even realizing you're driving right at him or her.

"B" Mode

On/Off Anytime

You can engage or disengage engine-braking at anytime while driving.

Engine-Braking

Avoid using this mode unless absolutely necessary, since it will cause MPG to drop. There is no charging benefit over regular braking either.

The "B" mode works like an exhaust brake on a large truck (except, it's totally silent). The engine is used to slow down the vehicle, allowing you to reduce reliance on the regular brakes. So for steep declines, like driving down a mountain, it's a great way to avoid overheating caused by friction from the brake drums & shoes.

Winter Slowing

A special use of "B" is the ability to shift into it on-the-fly without having to take your eyes off the road. Finding yourself taking a turn on snow or ice a little bit too fast, you'll discover "B" does an absolutely fantastic job of slowing the car down enough to retain traction without any risk whatsoever of the wheels slipping from braking too hard... since you aren't using the brakes at all.

MPG Measurement

Lifetime

LIFETIME is the most useful measurement. Total miles driven, divided by total gallons consumed, informs you how efficiently the car has performed overall.

Tank

TANK is the measurement between each fill up. You press the RESET button when the tank is full. The results are informative, but not perfectly accurate. In cold weather, the bladder inside the gas tank shrinks. This reduces the overall capacity making the "full" level variable. Also, "full" can be misrepresented if the pump doesn't shut off at the proper time. These factors make calculations based on fill-up less accurate.

Trip

TRIP is mostly for fun, since a multitude of variables can affect the measurement to a single destination. Watch the 5-minute summary segments shown on the multi-display. Remember though, if you were to start a drive downhill, with a tail wind, a warm engine, a fully charged battery-pack, and a warm outside temperature, the MPG would be very *impressive* for that particular trip. But then if the return trip back was uphill, against the wind, with a cold engine, a drained battery-pack, and a cold outside temperature, the MPG would appear very *disappointing*. In summary, trip results can vary greatly. The overall average is what really matters.

Sudden Drop

Tire pressure may have dropped. For every 10 F degrees colder, pressure will automatically drop 1 PSI. Verify you still have as much air in the tires as you think they do.

Increased use of the heater or air-conditioner (which includes the defroster) will force the engine to run more often. Try a less demanding setting.

When the temperature drops below freezing, you may notice the engine has to run quite a bit longer to warm up the catalytic-converter. This is to keep the Prius emissions Super-Ultra low. Avoid driving short trips; instead, take advantage of the time after warm up is complete by running several errands at once.

Tire Break-In

Don’t forget that new tires require a break-in period. Before that the tire surface and tread edges will be rough, causing MPG to be lower than you expect. It takes about 1,000 miles (1,600 km) before enough wear (barely visible to a trained eye) occurs to allow less abrasive contact with the road. And since front tires wear more than those in the rear, expect another break-in period the first time the rear tires are rotated to the front. Fortunately, that reduced MPG will only last a few hundred miles.

Increasing MPG

Driving

Brisk Acceleration is an often misunderstood benefit. There's no need to hold back. A gasoline engine works more efficiently when running at higher RPM, about 70 percent of maximum. Take advantage of that by getting to cruising speed quickly (but not aggressively, please drive safely). And remember, while the engine running it is also generating electricity for later use.

Coast whenever you have the opportunity. Using the feather technique helps. By lifting your foot lightly from the accelerator-pedal, you can invoke an efficient computer-controlled glide without decelerating much at all (less than 1 MPH). With good road conditions and a bit of practice, you'll find yourself doing this instinctively.

Look Ahead. If you see a light turning red or a need to slow down in the distance, there's no reason to continue holding the accelerator-pedal. Remove your foot and allow the generator to decelerate the Prius. That will increase your MPG, charge the battery-pack, and prolong the life of your brakes.

Tire Care

42/40 PSI (2.9/2.8 bar) is what many Prius owners *strongly* recommend. The original tires for the Classic (2001-2003) Prius support a maximum cold pressure of 50 PSI (3.4 bar), for the HSD (2004-2005) Prius 44 PSI (3.0 bar). So that pressure increase is well within the design specifications. Many of the alternate tires available support a maximum cold pressure of 44 PSI (3.0 bar) too. Whatever you decide, just remember that low pressure results in a MPG drop and the tires wear out faster. Tires will not bulge like in decades past; manufacturers provide much better quality now which maintains a flat contact surface all the way up to the maximum pressure.

Every 5,000 (8,000 km) the tires should be rotated, for best lifetime performance. Rotation is preferred in a roll-back, roll-forward pattern.

Measuring the PSI should be done only when the tires are cold, since driving heats up the air inside the tires making the results inaccurate... giving you the impression more pressure is higher than it really is.

Check Often since temperature causing pressure to drop, 1 PSI for every 10F degrees. Air will naturally leak out from normal use too.

On the Highway

Just like with traditional vehicles, efficiency drops the faster you drive on a highway. 60 MPH (96 km/h) is more efficient than 70 MPH (113 km/h). Speeding up to 75 MPH (121 km/h), you'll observe MPG drop even more. It pays to drive slower (obey the speed-limit). Think of it this way, pedaling a bicycle rapidly takes much more energy than pedaling at a moderate rate.

A/C & Heater

Minimal use is the key. Using the Heater or the A/C (which includes the defroster) on anything but a low setting may prevent the engine from shutting off. That will reduce MPG. So, try to avoid high demand use. Fortunately, on the highway using the A/C is still more efficient than opening the windows.

87 Octane Gas

Prius was designed to run with 87 Octane gasoline (85 in high altitudes). Some owners have experimented with higher octanes, but found there wasn't any MPG improvement. Also, bear in mind that higher octane gasoline may trigger an emission sensor alert. So just save money and continue using the less expensive 87 octane gas.

Engine Warm-Up

Short Trips are horribly inefficient for all vehicles. Prius is no exception; however, it’s far more noticeable since the Multi-Display provides immediate feedback to actually show you the lower MPG. The efficiency benefits of the system are not utilized until after warm-up is complete... that's engine, emissions system, and tires. So try to run several errands at once to take advantage of an already warmed up car.

PZEV (Partial Zero Emission Vehicle) is what Prius strives to remain whenever active, even during warm-up. That means the catalytic-converter must be kept hot even if that requires using some gas to do it. Fortunately, you still get better than average mileage, even if the engine doesn't shut off right away.

External Loads

Hitch Racks & Roof Carriers cause a lot of aerodynamic drag. So, expect a MPG drop when you use one.

"B" Mode

Avoid using this mode unless absolutely necessary; it will cause MPG to drop.

5W-30 Oil

5W-30 oil is strongly recommended (real or synthetic).

If a service person puts 10W-30 in by mistake, you may complain since it will negatively impact your MPG slightly and may affect performance in below freezing temperatures. The text on the engine oil cap clearly states 5W-30 should be used.

Synthetic Oil

Owners have observed minor MPG improvements by switching to synthetic oil.

Plus, since it protects the engine better than real oil and makes extremely cold startups even easier, switching from real oil should be a simple choice.

Oil Level

Too much oil can decrease MPG. Verify the level is never above the max mark on the dipstick.

Unfortunately, overfilling is a problem commonly overlooked. Oil change services routinely pump oil from large barrels, rather than using quart-size bottles. That makes overfilling very easy to do. Taking a moment afterward to check afterward is truly beneficial.

YMMV

"Your Mileage May Vary" That simple statement about the EPA ratings shown on the new vehicle window sticker is often overlooked, yet it makes a significant difference depending on the type of driving you do. Reading this quote provided by the EPA about Prius reveals why: "*Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 51 and 69 mpg in the city and between 43 and 59 on the highway.*"

EPA tests are generalizations (performed under *ideal* conditions) intended to make vehicle comparisons easier, not to specify what MPG you will actually get. In fact, they rarely reflect the MPG in real-world driving experiences. The following explains how those tests are performed... notice how results can be quite a bit lower if you live in the north or if you drive fast:

> The fuel economy estimates are based on results of tests required by the U.S. Environmental Protection Agency (EPA). These tests are used to certify that vehicles meet the Federal emissions and fuel economy standards. Manufacturers test pre-production prototypes of the new vehicle models and submit the test results to EPA. EPA re-tests about 10% of the tested vehicles to confirm manufacturer's results in EPA's lab. The vehicles are driven by a professional driver under controlled laboratory conditions, on an instrument similar to a treadmill. These procedures ensure that each vehicle is tested under identical conditions; therefore, the results can be compared with confidence.
>
> There are two different fuel economy estimates for each vehicle in the Fuel Economy Guide, one for city driving and one for highway driving. To generate these two estimates, separate tests are used to represent typical everyday driving in a city and in a rural setting. Two kinds of engine starts are used: the cold start, which is similar to starting a car in the morning after it has been parked all night; and the hot start, similar to restarting a vehicle after it has been warmed up, driven, and stopped for a short time.
>
> The test used to determine the city fuel economy estimate simulates an 11-mile, stop-and-go trip with an average speed of 20 miles per hour (mph). The trip takes 31 minutes and has 23 stops. About 18 percent of the time is spent idling, as in waiting at traffic lights or in rush hour traffic. The maximum speed is 56 mph. The engine is initially started after being parked overnight. Vehicles are tested at 68 F to 86 F ambient temperature.
>
> The test to determine the highway fuel economy estimate represents a mixture of "non-city" driving. Segments corresponding to different kinds of rural roads and interstate highways are included. The test simulates a 10-mile trip and averages 48 mph. The maximum speed is 60 mph. The test is run with the engine warmed up and has little idling time and no stops (except at the end of the test).
>
> **NOTE**: To make the numbers in the Fuel Economy Guide more useful for consumers, EPA adjusts these laboratory test results to account for the difference between controlled laboratory conditions and actual driving on the road. The laboratory fuel economy results are adjusted downward to arrive at the estimates in the Fuel Economy Guide and on the labels seen on new cars, light trucks, and vans. The city estimate is lowered by 10% and the highway estimate by 22% from the laboratory test results. Experience has proven that these adjustments make the mileage estimates in the Fuel Economy Guide correspond more closely to the actual fuel economy realized by the average driver.

ALSO NOTE: The EPA tests are all performed with 100% gasoline, summer-formula. Owners using E10 (that's 10% ethanol, 90% gasoline) will observe efficiency about 3.4% lower than with 100% gasoline. And during the winter months in the United States, the refining formula for gasoline is altered to help reduce emissions. As a result, winter-formula is less efficient, making MPG lower than with summer-formula.

For more information, please refer to... http://www.fueleconomy.gov/feg/info.shtml

Measurement

The multi-display averages optimistically, so it will usually read about 2 MPG too high for most owners. The "bladder effect" (caused by the bladder in the gas tank shrinking due to temperatures below freezing), which is very noticeable in the Spring & Fall, causes the readout value and manual calculations to vary greatly for individual measurements. Averaging several fill up amounts documented at the gas station will provide the actual MPG you've been getting. For an example of how to do this, refer to this webpage... http://john1701a.com/prius/prius-data.htm

Break-In

For the first **200 Miles (322 km)**:

- avoid rapid deceleration (hard stops)
- avoid high speeds (more than 70 MPH, 113 km/h)

For the first **600 Miles (966 km)**:

- avoid rapid acceleration
- avoid racing (high RPM) the engine

After roughly **10,000 Miles (16,100 km)**:

- enjoy a MPG increase, from the moving parts having loosened

Even at **30,000 Miles (48,300 km)**:

- you may continue observe minor MPG increases as the car ages

Radio

Channel Scan

Press the "**SCAN**" button by the radio tuner knob. It will begin scanning for radio channels. When it finds a station, a few seconds will play, then it will automatically scan for the next. Press the "SCAN" button again when you want the scanning to stop.

If you press then hold the "SCAN" button, only your preset radio channels will be scanned.

CD

CD Change

Holding the track-change button on the steering-wheel, rather than just quickly pressing it, will cause the CD to be changed instead.

Audio Buttons

Audio Button

Pressing the "Audio" button next to the Multi-Display will reveal the Radio Preset or CD Control screen, depending on what is playing at that moment.

Pressing the "Audio" button another time will return you to the screen you were previously viewing, "Consumption" or "Energy Monitor" or "Navigation".

Mode Button

Pressing the "Mode" button on the Steering-Wheel toggles between the AM, FM1, FM2, and CD modes of the audio system.

Holding the "Mode" button for a few seconds will toggle the power for the audio system on & off.

Filling the Gas Tank

Fill Speed

It is best to use the slowest setting (the farthest latch on the pump-handle); otherwise, the pump could shut off prematurely giving you an inaccurate indication of "full".

Topping Off

Don't! Once the pump automatically stops, don't trying squeezing any more gas into the tank. The bladder will stretch, but it may spit gas back out if you force too much.

Also, pumping too much gas into the tank will result in gas filling up the vapor-capture canister. That defeats part of the emissions system. So if you want your Prius to remove the cleanest possible, avoid ever doing this.

87 Octane Gas

Prius was designed to run with 87 Octane gasoline (85 in high altitudes). Several owners have experimented with 90 & 93 Octane; however, there wasn't any improvement to MPG. Since engine knocking is non-existent with Prius, there's no benefit in that respect either. Additionally, higher octane may trigger an emission sensor alert. Therefore, save some money by using 87 Octane.

Low-Sulfur Gas

Without the loss of performance or power, low sulfur gasoline helps to reduce emissions by preventing efficiency loss within the catalytic-converter (a pollution control device) due to sulfur build up. This also extends the life of the emission components. All gasoline sold in the United States is mandated to be low-sulfur by January 2006.

10% Ethanol

90% Gasoline mixed with 10% Ethanol, better known as E10, will not harm any part of the Prius fuel or emission system. Owners in the metro area of Minnesota, where E10 is required by law, have used this type of fuel in their Prius for many years without experiencing any problems at all. So there is no need for concern.

Empty

Don't ever run out of gas!

Not having the engine available makes driving a Prius using just electricity very risky. Without gasoline it is very easy to push the motor & battery-pack beyond the tolerances they were designed to operate. The motor is never supposed to exceed 42 MPH (68 km/h) all by itself and the battery-pack is never supposed to be fully depleted. Also, without gas there's no way to prevent certain mechanical & electrical components from overheating. Since Prius can go quite a bit further between fill-ups than most vehicles, there's really no reason you should ever run out of gas anyway. But if you do, drive very slowly and just enough to get out of harm's way.

Another Gauge

When there is less than half a tank of gas remaining, the gas gauge is less accurate due to the flexible nature of the bladder within. A helpful measurement alternative is to base refill timing on the mileage you drive. Just reset one of the three odometers (A, B, or the one on the multi-display) every time you get gas.

450 miles (725 km) in the summer and **400 miles** (644 km) in the winter is a good distance to start with. You'll quickly figure out what works well for your particular needs.

Emission Bladder

Inside the gas tank is a flexible bladder. It contracts and expands to fill the empty void that would otherwise be filled with vapor as gasoline is consumed. The reduction of vapor emissions helps to keep Prius extraordinarily clean.

Overfilling should be avoided, since adding gas after the pump automatically stops can create pressure within the bladder. This could cause gas to be expelled afterward. So just don't top off.

Capacity reduces during the winter since cold temperatures cause the bladder to contract, up to 1.5 gallons (5.7 liters) in extreme conditions (below 0F / -18C degrees). That means you'll have to fill up sooner. But when temperatures are that dangerously low, you should really fill up at the halfway point anyway.

Gas Cap & Door

Twist the cap until it clicks. If it is not tightly secured, you may trigger an alert from the emission sensor. After all, Prius wouldn't be so clean if vapor were allowed to leak out. In the event of an alert, turn off the Prius and tighten the cap. Normal status should return after you restart.

Tuck the tether holding the cap to the car into the interior. Simply allowing it to be pushed by the door may cause a tangle making the door hard to open later.

Lubricate the hinge. After extended exposure to dust, sand, and salt, the spring may struggle to open the door due to the hinge being dry.

Adjust the latch. It’s possible to accidentally bend it. Too much can make the door difficult to open. You may need to straighten it.

Multi-Display Care

Cleaning

The best way to remove fingerprints from the touch-screen is actually simpler that some owners realize. You don't need a special solvent or material. Just a plain old soft cotton fabric, like an old clean t-shirt or handkerchief, and some purified drinking water is all you need.

Also, make sure to only clean when the Multi-Display is off (or even better, the Prius itself is off). This will make the fingerprints easy to see and will prevent the "Reset" button from accidentally being pushed.

Long-Term Storage

Less than 3 Weeks

Nothing is needed, at room temperature. The engine should startup just fine. Be aware that this duration can be shortened by the age of the auxiliary-battery and the extreme cold.

More than 3 Weeks

If you have SS/SE, press the button underneath the steering-wheel to disable it. The proximity detector actually only causes a continuous draw from that 12-volt auxiliary battery for the first 10 days of storage, then it automatically disables itself. But it is better to just do it yourself immediately.

If you have an alarm system, it is best to manually disconnect the 12-volt auxiliary battery passenger side in the hatch area. With it disconnected, that continuous drain will be eliminated. (Make note of the radio buttons you have programmed, since you'll need to manually restore them after reconnecting the 12-volt auxiliary battery.)

Draining the 201.6-volt battery-pack while in long-term storage is never a concern. When you shut off the Prius, an electric-relay automatically deactivates to cut the connection to the hybrid system. So it isn’t even connected to the rest of the system until you turn the key again.

Polishing

Owner Tests

"Nu Finish" has worked well. The great polished look lasts for about 6 months, enough to get through an entire winter. But when you wipe the dried residue off, it actually leaves lightly faded streaks at first. Don't let that deter you. It disappears, leaving a protective layer after a few days.

Tire Care

To prevent accelerated wear and maximize miles before replacement, follow these suggestions:

Monthly Checking

At the very least, check your tires monthly. Every two weeks is better. Pressure loss is normal and especially rapid when temperatures drop. Uneven wear is an indication that either you've been driving with tires below the minimum PSI or balancing/alignment is required. Also, don't forget about checking the spare tire in the trunk too.

Front Bias

Prius is a little heavier in front. To properly support that weight load, you must make sure the front tires have 2 PSI more in them than the ones in the rear.

Turning

Never turn the wheels unless they're rolling. That causes unnecessary wear, just as with other vehicles. The electric-steering is so powerful, you can't feel the friction caused by turning. But your tires can. So, make sure the wheels are moving before you turn them.

Rotation

Every 5,000 to 7,500 miles (8,000 to 12,000 km) the tires should be rotated, for best lifetime performance. Rotation should be in a "roll-back, cross-forward" pattern. (That's front tires to the rear without switching sides, and rear tires to front switching sides.)

Lug Nuts

When initially tightening the lug nuts after having put a wheel back on and when you retorque them after having driven around 100 miles, make certain the pressure you use is 76 ft-lb (103Nm).

Alignment

0.05 DEGREES of Toe IN each side, for a total of 0.10 DEGREES.

If steering feels like it wanders at high speeds, it's probably because the alignment isn't adjusted correctly. Remember, "within factory-specified tolerance" is an answer you *don't* have to accept from a service provider; you can *insist* that alignment be adjusted to this "exact" setting.

PSI minimum

35/33 PSI (2.4/2.3 bar) is the PSI for the Prius tires (noted on the driver's door-jam of the car itself).

42/40 PSI (2.9/2.8 bar) is what many Prius owners recommend for optimum performance. For maximum performance, use a pressure of 44 PSI (3.0 bar). Whatever you decide, just remember that low pressure results in lower MPG drop and a shorter tire life.

Note 1: Measuring PSI should always be done when the tires are cold, since driving heats up tires making the results inaccurate due to the air inside expanding (which creates a false impression of higher pressure).

Note 2: For every 10 F degrees colder, pressure will automatically drop 1 PSI. The reverse is true too. So in the Spring, carefully monitor pressure to ensure it doesn't exceed the maximum as the temperature increases.

PSI convenience

Tire pressure needs to be routinely checked (for all vehicles, not just Prius). Temperature drops cause PSI to decrease. Heat caused by driving increases PSI, making measurements inaccurate until cool. MPG & Safety are directly dependent on properly maintained PSI. Prius owners have found a way to make this simple: use a cordless inflator.

Cordless inflators cost about $40 (as shown below). They are small & powerful, allowing you to increase PSI in the convenience & comfort of your own garage when the tires are still cool. As an added bonus, the battery in the cordless inflator can be used as a portable12-volt power-supply to plug your automotive accessories into. Some even offer additional features, like a built-in light and even the ability to jump-start a vehicle.

Make sure to purchase a high-quality tire-gauge. For about $30 (as show above), you'll find that it is both easier to hold and easier to read than a less expensive one. That price will also deliver a 0.5 PSI accuracy that you can depend on for many years and a tough case to protect it.

Upgrade Tires

HSD Prius comes with standard, run-of-the-mill tires. In other words, they are fairly typical. So some owners are pleased with them and others choose to upgrade.

DISCLAIMER: *The ideas, suggestions, and opinions offered here have not been endorsed by the manufacturer of those specific components or Toyota Motor Corporation. Any harm or damage that may result from the application of or the following of any ideas, suggestions, or opinions contained in this document is the sole responsibility of the individual that applied or followed said ideas, suggestions or opinions. The authors of this document hereby declare that they cannot and will not be held liable, in any fashion, for the content or the use of this information.*

PSI

HSD Prius is average weight, exactly what you'd expect a vehicle that size to weigh. It does not need special tires, since there is nothing extra to support. (In other words, XL rated tires are not required.)

Like with many vehicles, a minimum of 35 PSI (2.4 bar) is required for tire-pressure. Less than that will cause premature wear.

42/40 PSI (2.9/2.8 bar) is what many Prius owners recommend, since it increases the handling abilities and allows the tread to last its longest. (That's 42 front & 40 back, since a 2 PSI bias is required for the front tires.) The standard tires, as well as many other tires, support a maximum cold pressure of 44 PSI (3.0 bar). So using 42/40 is no big deal. In fact, some owners even use 44/42 PSI (3.0/2.9 bar).

LRR

HSD Prius comes with standard tires. There are not LRR (Low Rolling Resistance), as many people believe. If you desire, you may switch to LRR tires. That will maximize MPG, offering a minor improvement over most standard tires.

Treadwear

460 is the treadwear rating for the standard HSD Prius tires. That's what many typical family vehicle tires come with. **800** is what you'll find on the ultra-long-life tires. So there is an obvious upgrade opportunity, if you want a set tires to last as long as possible.

The rating number represents the wear resistance of the tire. It does not correlate directly with the amount of mileage you'll be able to drive. Don't rely exclusively on this value when selecting a tire. Check the warranty, it will usually state an approximate distance expectation.

Revs

Revs (Revolutions per Mile) indicate the precise "rolling" size of the tire. This measurement is needed since not all tires with the same specification are actually the same.

855 is the Revs value for the standard HSD Prius tires. When selecting an alternate, a number very close to that is required to insure the speedometer and odometer remain accurate. (Being off by a small amount is acceptable since that value will change as tread wears down anyway.)

Size

185 / 65 R15 is the standard size tire for HSD Prius. You'll find a wide variety of choices available for this size.

Wider sizes may also be used. But keep in mind that larger widths will reduce your traction on snow. A normal tire is better for digging through down to the road itself.

Original Tire

Goodyear Integrity

HSD Prius comes with these tires standard. They are sometimes referred to as OEM (Original Equipment Manufacturer) tires.

185 / 65 R15
44 PSI (3.0 bar) maximum
1168 lbs. (530 kg) load maximum
Standard Rolling Resistance
855 Revs per mile
10/32 inch Tread-Depth
86S Speed & Load Rating
"**A**" Traction
"**B**" Temperature
460 Treadwear
50,000 (80,467 km) Mile Warranty

Upgrade Tire

Michelin HydroEdge

These are premium-grade, high-traction tires that can be used on a HSD Prius.

185 / 65 R15
44 PSI (3.0 bar) maximum
1168 lbs. (530 kg) load maximum
Standard Rolling Resistance
856 Revs per mile
11/32 inch Tread-Depth
86T Speed & Load Rating
"**A**" Traction
"**B**" Temperature
800 Treadwear
90,000 (144,841km) Mile Warranty

Personal experiences with these tires are documented here... http://john1701a.com/prius/prius-maintain03.htm#Tires

Upgrade Tire

Goodyear TripleTred

These are premium-grade, high-traction tires that can be used on a HSD Prius. (Unfortunately, they are not available in the standard size. So you have to use an alternate instead.)

190 / 60 R 15
44 PSI (3.0 bar) maximum
1190 lbs. (540 kg) load maximum
Standard Rolling Resistance
863 Revs per mile
11/32 inch Tread-Depth
86H Speed & Load Rating
"**A**" Traction
"**B**" Temperature
740 Treadwear
80,000 (128,748 km) Mile Warranty

Upgrade Tire **Michelin Harmony**

185 / 65 R15
44 PSI (3.0 bar) maximum
1168 lbs. (530 kg) load maximum
Standard Rolling Resistance
848 Revs per mile
11/32 inch Tread-Depth
86S Speed & Load Rating
"**A**" Traction
"**B**" Temperature
740 Treadwear
80,000 (128,748 km) Mile Warranty

Upgrade Tire **Goodyear ComforTred**

185 / 65 R15
44 PSI (3.0 bar) maximum
1168 lbs. (530 kg) load maximum
Standard Rolling Resistance
855 Revs per mile
11/32 inch Tread-Depth
86T Speed & Load Rating
"**A**" Traction
"**B**" Temperature
700 Treadwear
80,000 (128,748 km) Mile Warranty

Washing

Antenna

Removing the antenna is easy; just unscrew it (counter-clockwise). Then you don't have to worry about it while going through an automatic car wash.

Valet Use

Valet Card

Providing the valet with a "Valet Card" Toyota includes with the purchase of a new Prius is highly recommended. It illustrates how to start the hybrid system in very simple steps.

Engine On

Stealth can confuse valet drivers, since they expect noise & vibration rather than dead silence. Keeping the engine running could prevent a mishap. Valets may repeatedly try to start the Prius not realizing it's already running. Or worse, they may get out while the Prius is still in "D" (Drive) because they think it’s off. To minimize this risk, set the defroster to the maximum cold or hot setting. This forces the engine to continue running.

Oil Changes

Oil

Refer to the "***Increasing MPG***" section.

5,000 Miles *or* 6 Months

5,000 miles (8,000 km) or 6 months, whichever comes first.

Having the engine shut off frequently and not using it as the sole propulsion source will allow oil to last longer than in traditional vehicles. It simply isn't exposed to the strenuous engine conditions found with. Nonetheless, it is still important to routinely change the oil & oil-filter.

Reminder Light

After 4,500 miles (7,250 km), an indicator light will flash for 12 seconds after starting, then it will turn off.

After 5,000 miles (8,000 km), an indicator light will flash for 12 seconds after starting, then it will change to a steady glow and remain on.

If you change the oil (and filter) yourself, here's how to reset the light so it will stay off until the next change is interval has expired:

1) With the power on, switch to the odometer/trip-meter to display "ODO".
2) Power OFF (push the "Power" button).
3) Power ON, while holding the button for "ODO".
4) Wait for the reminder light to stop flashing, then release.

   While the reset is taking place, you'll see the odometer value change to 5 dashes. Then each will be disappear, one at a time from the left. When finished, 7 zeroes will briefly appear, indicating the process is complete before the previous odometer mileage returns.

Illustrated Document

Oil Filter (Toyota Part: 90915 - YZZA2)

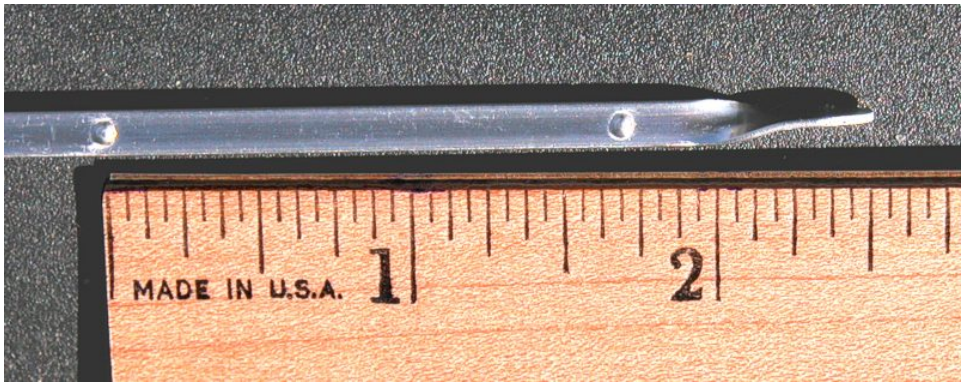
Plug Gasket (Toyota Part: 90430 - 12028)

http://john1701a.com/prius/prius_oil-change.htm

That link above is for an illustrated document, which provides details about the oil-change process for a Prius. Download a copy to see the underneath of the vehicle along with the along with the components involved and the equipment you'll need to perform an oil-change yourself.

Overfilling

This is an unfortunate reality that far too much owners have to face. Oil pumped from bulk barrels into your engine is commonly not carefully measured by dealers and quick oil-change places. So make sure to check the level yourself after the service is complete. If the oil-level is beyond "full", insist that they remove the excess.



The ideal level is 1/4” (one-quarter inch or 6 millimeters) below the "full" mark, which is between the D and the E on the photo above.

Too much oil causes MPG to be reduced. Way too much oil causes damage to the engine. So it is in your best interest to make sure the oil-level never goes above the "full" marker on the dipstick. 3.9 quarts (3.7 liters) is the maximum capacity, so there is no need to ever use that much. Never pour in more than 3.5 quarts (3.3 liters). Even less is better. It's easy to add more afterward. Removing too much is very, very difficult.

A simple way to avoid overfilling problems is to provide your own oil (which is common for those preferring synthetic anyway) instead. They'll just deduct the price difference from your bill. Only supplying the mechanic with the correct amount will guarantee they won't overfill.

Window Wipers

Front Blades

Replacing the two wiper blades (every 30,000 to 35,000 miles) in the front is surprisingly easy. You don't even have to remove the wiper assembly from the car (though you can, if you want).

Just carefully squeeze the rubber at the far left (shown above) and pull inward a little bit. It will bend just enough to allow you to slide it out of the clamp (shown below). With that unsecured, the remainder of the wiper blade can be removed entirely just by pulling on it lightly, since none of the other clamps lock it in place.

http://john1701a.com/prius/prius-wiperblades.htm ...provides details (and more photos) of the replacement process for both the front & reap wiper blades.

Front Driver Wiper (Toyota Part: 85124 - 46010)

Front Passenger Wiper (Toyota Part: 85124 - 47010)

Rear Blade

To pivot the wiper arm upward, all you have to do is remove the clamp. It is the 2.5 inch (6 cm) piece of flexible plastic at the base, where it connects to the window. Just pull both sides out and slide it toward you. With that plastic off, the access to the blade is now possible. You can lift the arm up to get at the underside of it.

This photo shows that plastic clamp removed (the black object in the lower-right corner) and the arm of the rear wiper lifted up.

Rear Hatch Wiper (Toyota Part: 85124 - 44140)

Air-Conditioning

Filter Access

There is a hepa filter for the Air-Conditioning system behind the glove-box:

Open the bottom glove-box, then remove all the contents (since they will end up falling out all over the floor otherwise).

To the right of glove-box is an attached small plastic hydraulic arm (to add a resistance feel). Pull on that arm so it separates itself from the glove-box. Then hold onto the left and right sides of the glove-box while squeezing inwards. This will allow you to pull the glove-box downward, beyond the usual stopping point. Having accomplished that, you may let go. Just let it hang there, like this:

The air-flow assembling will then be completely visible and very easy to access. You'll see the filter at the top, lying horizontal along the entire width of that white plastic air-duct. Just pull on both sides to slide it out. Then you can easily inspect it and replace it (when needed).

For details and more illustrations, refer to http://john1701a.com/prius/prius-airconditioner-filter.htm

OPTIONS

(SE) Smart-Entry

It is proximity detection system that automatically senses a wireless transmitter (called a "key-fob") in your pocket or purse, allowing you to ***unlock the doors & hatch*** without the need to use a physical key or push a button on a remote.

Touchless Unlock

Reaching into the handle area on the outside of the Driver's door, you'll trigger the sensor to unlock just that door.

Reaching into the handle area on the outside of the Passenger's door, you'll trigger the sensor to unlock all the doors.

Reaching into the handle area on the outside of the Hatch, you'll trigger the sensor to unlock the all the doors as well as the hatch.

Automatic Disable

Leaving the key-fob inserted into the dashboard-slot for more than 10 minutes after power OFF will cause the SE to be disabled. To enable it again, press the button under the steering-wheel.

Key-Fob Battery

That small key inside the key-fob can be removed and used to open the driver's door manually, when the battery wears out due to excessive age. The battery isn't necessary to start the Prius when the key-fob is inserted into the dashboard slot; though, you will want to eventually replace the battery (CR2032).

Outside Locking

On both front door handles and the hatch in back, there are small black buttons. Pushing one of them will trigger a beep and flash the lights to inform you the SE/SS system has just locked the Prius. This ability prevents the need for you to *ever* touch the SE/SS device in your pocket or purse… unless you need to use the "panic" button on the back (which honks the horn and flashes the lights).

(SS) Smart-Start

It is proximity detection system that automatically senses a wireless transmitter (called a "key-fob") in your pocket or purse, allowing you to ***start the hybrid system*** without the need to use a physical key or push a button on a remote.

Key-Fob Battery

When the key-fob battery wears out due to excessive age, you can still start the hybrid system without replacing the battery (CR2032). Just insert the key-fob into the dashboard-slot manually. It will get sensed that way, even though the remote ability is not available.

Homelink

It is a set of buttons on the rear-view mirror available for custom programming, to supplement your other remotes.

Garage Door

To program a Homelink button on your mirror to open & close your garage-door, do the following:

1) If the mirror is off, turn it on. (The indicator light will be a steady green.)

2) Press the desired programmable-button (the left most three) on the mirror and continue holding it depressed throughout the entire programming process.

3) With the garage-door remote held close to the mirror, press the button on it repeatedly.

4) When the indicator light on the mirror changes to a rapid blinking red, stop pressing both the buttons on the mirror and the opener. Programming is complete.

5) Test the newly programmed Homelink button. Pressing it for 1 second will change the indicator light from a steady green to a steady red, which will instruct your garage door to open or close just like your garage-door remote.

* Note: this programming is only available for remotes with non-rolling security codes.

Bluetooth

Phone Type

Here's a sampling of the original Bluetooth-enabled cell-phones stated to work with Prius...

Motorola: V505, V551, V600, V710, RAZR

Nokia: N-Gage, 3600, 3620, 3650, 3660, 6230, 6310i, 6600, 6620, 6820, 7610

Siemens: S56, S66

Sony Ericsson: T68i, T608, T610, T616, T637, Z600, SX1, S55, S56

Since the introduction of the HSD, many other cell-phones have been added to the Bluetooth list. Check with your local provider for compatibility information. You may also find helpful facts on this webpage... http://toyota.letstalk.com/bluetooth/bt_userguides.htm

Adding a Phone

Here's abbreviated instructions for setting up the T610:

1) On the Multi-Display, select "Telephone", "Settings", "Add Phone"

2) On the phone, select Turn On Bluetooth", "Connectivity", "Bluetooth", "My Devices", "New Device", "Unknown"

3) Enter the password/passkey "1212" when prompted.

4) On the phone, select "OK", "Unknown", "Connect"

More Info

Refer to http://john1701a.com/prius/prius-bluetooth.htm

Currently, detailed illustrated instructions for the T610 connection setup are available.

Navigation

Adaptive Volume

Increases the volume of the Navigation System's guidance information when going over 50 MPH (80 km/h).

Mark Button

When you get to a common destination or one that was particularly difficult to find, take advantage of the "Mark" button on the Multi-Display (only visible when you have the extended menu shown). That will add it to the "Memory Points" menu. Up to 106 locations can be stored, so take advantage of this to make future navigation destination selection easier.

Voice-Recognition

No Training

There is no training process for all the commands. The voice-recognition is remarkably adept the way it comes installed, so you can use it immediately.

Electrochromic Mirror

Making it Darker

Some owners have discovered that the automatic dimming mirror doesn't get dark enough for them at night. The solution to this high-tech problem is a surprisingly low-tech modification. All you have to do is trick the mirror into thinking it is darker outside by just covering the optical-sensor on the back with a piece of transparent plastic. That way, less light is detected. The response is a deeper shade of green, which makes the headlights behind you appear less intense.

This photo shows how the optical-sensor has been covered by a piece of blue transparent plastic, attached to the mirror using a piece of clear adhesive tape.

VOICE-RECOGNITION

Help

Command Help
Command List
Help

Navigation - Commands

I'm Hungry

POI Off

Route Overview

Compass Mode

Heading Up
North Up

Louder
Softer

Repeat
Repeat Voice

Cancel
No
Yes

Short

Mark
Mark This Point

Zoom In
Zoom Out

Lexus Dealer
Lexus Dealership
Toyota Dealer
Toyota Dealership

Previous Start Point
Previous Starting Point

Right Map Direction
Right Map Heading Up
Right Map North Up
Right Map Zoom In
Right Map Zoom Out

Add to Destination
Cancel All Destinations
Cancel Final Destination
Cancel Next Destination
Delete All Destinations
Delete Final Destination
Delete Next Destination
Enter Destination
Previous Destination
Replace Destination

Arrow Guidance
Arrow Guide
Freeway Guidance
Freeway Guide
Guidance Screen on Freeway
Intersection Guidance
Intersection Guide
Lane Guidance
Repeat Guidance
Resume Guidance
Start Guidance
Stop Guidance
Suspend Guidance
Turn List Guidance
Turn List Guide

Dual Map
Entire Route
Entire Route Map
Fifth Destination Map
Final Destination Map
First Destination Map
Fourth Destination Map
Map
Map Direction
Next Destination Map
Second Destination Map
Single Map
Third Destination Map

Change to Arrow Guidance
Change to Arrow Guide
Change to Compass Mode
Change to Dual Map
Change to Freeway Guidance
Change to Freeway Guide
Change to Heading Up
Change to Intersection Guidance
Change to Intersection Guide
Change to Lane Guidance
Change to Map Direction
Change to North Up
Change to Single Map
Change to Turn List Guidance
Change to Turn List Guide

Go to Previous Destination
Go to Quick Access 1
Go to Quick Access 2
Go to Quick Access 3
Go to Quick Access 4
Go to Quick Access 5
Go to Quick Access Number 1
Go to Quick Access Number 2
Go to Quick Access Number 3
Go to Quick Access Number 4
Go to Quick Access Number 5
Go to Start Point
Go to Starting Point

Quick
Quick 1
Quick 2
Quick Access 1
Quick Access 2
Quick Access 3
Quick Access 4
Quick Access 5
Quick Access Number 1
Quick Access Number 2
Quick Access Number 3
Quick Access Number 4
Quick Access Number 5

Navigation - Locations

Airport
American Food
American Restaurant
Amusement Park
ATM
Auto Club
Auto Service
Auto Service and Maintenance
Automobile Club
Bank
Barber Shops
Beauty and Barber Shops
Botanical Garden
Bus Station
Business Facility
Campground
Car Wash
Casino
Chinese Food
Chinese Restaurant
Cinema
City Center
City Hall
Civic Center
Coffee House
College
Community Center
Commuter Rail Station
Continental Food
Continental Restaurant
Convenience Store
Convention Center
Court House
Current Location
Current Position
Department Store
Detour
Detour Entire Route
Dry Cleaning
Exhibition Center
Fast Food
Ferry Terminal
Fitness Club
French Food
French Restaurant
Gas
Gas Station
Go Home
Golf
Golf Course
Government Offices
Grocery Store
Health and Fitness Club
Higher Education
Historical Monument
Home
Home and Garden
Horse Racing
Hospital
Hotel
Ice Cream Parlor
Italian Food
Italian Restaurant
Japanese Food
Japanese Restaurant
Library
Marina
Mexican Food
Mexican Restaurant
Museum
National and State Parks
National Parks
Other Automotive
Other Automotive Stores
Other Business
Other Business Facilities
Other Financial
Other Financial Services
Other Food
Other Restaurant
Other Retail
Other Retail Stores
Park
Park and Recreation
Parking
Parking Garage
Parking Lot
Performing Arts
Pharmacy
Police Station
Post Office
Rental Car
Rental Car Agency
Rest Area
Rest Stop
Restaurant
School
Seafood
Seafood Restaurant
Service and Maintenance
Shopping
Shopping Mall
Ski Resort
Skiing
Specialty Food
Specialty Food Store
Speedway
Sports Complex
Stadium
Thai
Theater
Tourist Attraction
Tourist Information
Train Station
Triple A
University
Video Rental
Winery
Zoo
Zoological Garden

Audio

Audio
Audio On
Audio Off

Radio
AM
AM Radio
FM
FM Radio
FM1
FM2
Program
Seek Down
Seek Up

CD
CD Changer
Disc Down
Disc Up
Next Disc
Next Track
Previous Disc
Previous Track
Skip Backward
Track Down
Track Up

SAT
SAT1
SAT2
SAT3
Satellite Radio
Satellite Radio 1
Satellite Radio 2
Satellite Radio 3
Type Down
Type Up

Cassette
Tape
Fast Forward
Play
Reverse
Rewind

Climate

Automatic Air-Conditioning
Automatic Air-Conditioning Off
Automatic Air-Conditioning On

Cooler
Warmer

Lower Temperature
Raise Temperature

Temperature 65 Degrees
Temperature 66 Degrees
Temperature 67 Degrees
Temperature 68 Degrees
Temperature 69 Degrees
Temperature 70 Degrees
Temperature 71 Degrees
Temperature 72 Degrees
Temperature 73 Degrees
Temperature 74 Degrees
Temperature 75 Degrees
Temperature 76 Degrees
Temperature 77 Degrees
Temperature 78 Degrees
Temperature 79 Degrees
Temperature 80 Degrees
Temperature 81 Degrees
Temperature 82 Degrees
Temperature 83 Degrees
Temperature 84 Degrees
Temperature 85 Degrees

65 Degrees
66 Degrees
67 Degrees
68 Degrees
69 Degrees
70 Degrees
71 Degrees
72 Degrees
73 Degrees
74 Degrees
75 Degrees
76 Degrees
77 Degrees
78 Degrees
79 Degrees
80 Degrees
81 Degrees
82 Degrees
83 Degrees
84 Degrees
85 Degrees

Screen

Screen Off

OTHER

Battery-Pack

Replacement

The power management system was designed to maximize battery life. It rigorously works to always keep the charge-level at optimum, by never fully draining or fully recharging it. And you can clearly see that by watching the indicator on the Multi-Display. Lab testing has demonstrated that the battery-pack will last an equivalent of 180,000 miles of driving without any deterioration. And the preliminary real-world data now available is confirming those findings. The battery-pack is expected to last the lifetime of the vehicle. So with normal wear & tear, Prius owners should not expect to ever have to replacement it.

Recycling

Toyota has had a recycling program in place for NiMH batteries ever since the electric version of the RAV4 was introduced back in 1998. Every part of the battery, from the precious metals to the plastic, plates, steel-case and the wiring, is recycled. To ensure that batteries come back to Toyota, each battery has a phone number on it to call for recycling information and dealers are paid a $200 "bounty" for each pack collected.

Rear Hatch

Slam It!

The hatch door is designed to be slammed shut. So if you find you are not getting it to shut tight, don't feel afraid to use some muscle on it. Holding back isn't necessary. Grab the hand-hole (that cavity within the plastic, on the right as you face it)then... Slam It! Damn It!

Unlock

SE/SS won't unlock the hatch while the Prius is running. So to unlock the hatch, you need to press the unlock button on the inside either of the front doors.

Cargo Cover

The rollout "shade" that is used to cover the hatch (to conceal the contents, if any) uses plastic grips that lock into place with the body of the car. Each grip attaches to the cover using 2 screws. It is possible, after plenty of use, for a screw to come loose and eventually fall out. Don't let the inconvenience occur. Be proactive by tightening them annually. Make that part of your spring-cleaning routine.

Securing Cargo

There are 4 metal-rings, bolted to the frame of the vehicle, available for securing cargo. Each is located in a corner of the hatch area. Use them in conjunction with bungee-cords or rope to keep large or loose items from shifting while you drive. If you need addition locations when the back seats are up, simply raising a headrest to reveal metal rods that can be used. When the back seats are folded down, you may use the latch-loop that is normally used to secure the seat in place.

Cargo Nets

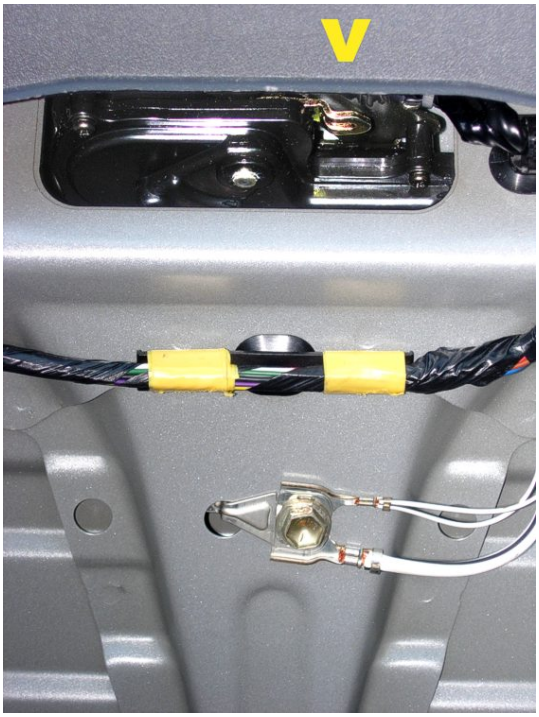
There are two types available. One lays flat (horizontal), connecting to each of the metal-rings. You just slip cargo underneath it to keep the cargo in place. The other is upright (vertical), connecting to the 2 metal-rings closest to the hatch and 2 connector-point which you add by drilling a simple hole in a location close to the window. This type works well for cargo such as grocery bags.

Hidden Release

From inside the hidden storage area underneath the floorboard, remove the tiny black panel on the side closest to the hatch, and then poke your finger through that hole into the metal casing. There's a smooth tiny metal latch there. (Toyota definitely wanted to make that inaccessible from outside.) Pulling it up pops the hatch open.

With the hidden storage area removed, the photo below shows the exact location of that metal latch, as indicated by the yellow "**V** " mark.

This close-up of the photo above makes the (brass colored) release latch easier to see.



Side Mirrors

Blind-Spot

As with most all vehicles, Prius has a blind-spot immediately to the left-rear of the driver. The solution to that is carefully aiming the mirror on the side. You can also add a blind-spot mirror to it, the very same way as with other vehicles.

The photo above shows a blind-spot mirror installed, outside the driver-side door. (There's just an adhesive sticker on the back of it. So installation only takes a moment.) The upper-right corner is the least intrusive location, since you won't normally see a vehicle positioned there anyway.

It is recommended that you purchase two (one for each side of the car) made from high-quality hard plastic. The cost is around $6 for a set of that nicer type. That makes it easier to see fine detail and more resistant to water spots. In fact, you'll find that the plastic stays cleaner in the Winter than the glass of the big mirror.

Transmission

CVT Type

"**Planetary**" is the type of CVT that Prius uses.

It has nothing in common with the other type of CVT currently available, called "**Cone & Belt**".

Design

Technically, Prius really doesn't have a transmission since nothing ever shifts. There are no gears. There are only power-carriers. All they do is rotate, and they are permanently engaged.

Operation

The physical components within the "Planetary" CVT bare a striking resemblance to those within a differential (the power-transfer mechanism found on all vehicles). In fact, they even serve the same purpose.

Lifetime

Due to the fact that the "Planetary" CVT is nearly identical to that of a differential, the expectation is that it will last just as long too. So you can confidently predict it will last the entire lifetime of the vehicle.

Information Sources

Toyota Website

Information directly from Toyota itself is available here... http://www.toyota.com/prius

Toyota Online

Repair Manual access & downloading for $10 per day at... http://techinfo.toyota.com

Toyota Manuals

Available via credit-card from 1-800-622-2033

- 2004 Prius Repair Manual, volume 1: RM1075U1
- 2004 Prius Repair Manual, volume 2: RM1075U2
- 2004 Prius Repair Manual, volume 3: RM1075U3
- 2004 Prius Electrical Wiring Diagram: WED555U
- Prius New Car Features, 2004: NCF255U

Coastal Electronic Technologies, Inc.

http://www.coastaletech.com

A source for purchasing many innovative after-market Prius accessories.

Recent News

http://news.google.com/news?hl=en&lr=&ie=ISO-8859-1&q=Prius&sa=N&tab=wn

Enthusiast Forums

Here are two very information forum where you can participate in online discussions:

http://priuschat.com

http://priusonline.com

Owner Webpages

You'll find a variety of Prius owner webpages with photos here:

http://john1701a.com/prius/owners/owner-index.htm

Yahoo Groups

There are many. These are the main groups:

http://autos.groups.yahoo.com/group/toyota-prius

http://autos.groups.yahoo.com/group/Prius-2G

http://autos.groups.yahoo.com/group/Prius_Technical_Stuff

Yahoo Searching

On http://google.com use the following search key: "*Prius site:autos.groups.yahoo.com*"
Add it in front of the term you wish to search for. For example, to search for "*synthetic oil*" enter the following text on Google's website: "***Prius site:autos.groups.yahoo.com synthetic oil***"

Graham's website

http://home.earthlink.net/~graham1/Prius/Prius.htm

An owner's website that thoroughly documents many aspects of the Prius.

john1701a's website

http://john1701a.com

This is a very large Prius owner website. As of 8/20/2005 the combined Classic & HSD Prius content available consisted of: 552 webpages, 1,275 digital photos, 940 offline-pages of blogs, 47 animations, 30 wallpapers, 13 spreadsheets with graphs, 26 documents, and 5 screen-savers, along with a few other Prius related items. There's also nature gallery with 151 photos.

GLOSSARY

ABS	Anti-Lock Braking System
A/C	Air-Conditioning
Assist	Hybrid system with a small battery-pack and a single small electric-motor that provides peak power for the gasoline-engine during periods of acceleration.
AT-PZEV	Advanced Technology Partial Zero Emission Vehicle
"B" Gear	Engine Braking, (it isn't actually a gear) when you shift the transmission to this setting the engine will be used to slow down the car, it works similar to an exhaust brake used on the large semi-trucks (except the one on Prius is totally silent).
C	Celsius, a measure of temperature, (C * 1.8) + 32 = F, **-25°C** = -13°F, **-15°C** = 5°F, **-5°C** = 23°F, **0°C** = 32°F, **5°C** = 41°F, **20°C** = 68°F, **25°C** = 77°F, **30°C** = 86°F
CARB	California Air Resources Board, an agency dictating emissions requirements for cars sold in California. (These are often more strict than Federal standards.)
CAT	Catalytic Converter, a vital component in the emissions system
CC	Cruise Control
Cd	Coefficient of drag (0.29 for the Original & Classic Prius, 0.26 for the HSD Prius)
CEL	Check Engine Light
Classic	The term used to identify the 2001, 2002, 2003 model years of Prius.
CVT	Continuously Variable Transmission, in Prius is a "Planetary" design using a power-split device, other CVT vehicles use a “Cone & Belt”
Dinosaur	A very large, gas-guzzling, high-emission vehicle based on 20th century technology.
DRL	Daytime Running Lights
DVD	Digital Versatile Disc, used for the Navigational system in Prius
ECU	Electronics Control Unit, the amazing computer that monitors and controls the two motor-generators, the gas engine, the motion of the planetary gear set, the battery pack power levels etc. to provide the Prius' smooth acceleration and speed control.
Engine	The common term used to refer to the power device which runs on gasoline.
EPA	Environmental Protection Agency, the group responsible for rating the emissions and gas mileage of vehicles sold in the United States.
EV	Electric Vehicle, powered exclusively by a battery-pack charged before use
F	Fahrenheit, a measure of temperature, (F - 32) / 1.8 = C, **-15°F** = -26.11°C, **0°F** = -17.78°C, **15°F** = -9.44°C, **32°F** = 0°C, **40°F** = 4.44°C, **60°F** = 15.56°C, **70°F** = 21.11°C, **80°F** = 26.67°C
FCHV	Fuel Cell Hybrid Vehicle, a fuel-cell vehicle that takes advantage of hybrid technology including the use of a battery-pack
FUD	Fear, Uncertainty, Doubt
Full	Hybrid system with a large battery-pack, a small electric-motor, at least one large electric-motor, and a gasoline-engine that combined provide a wide variety of combustion & electric propulsion abilities.
GPS	Global Positioning System, this is the part of the Prius Navigation System that identifies your exact location on Earth.

HEV	Hybrid Electric Vehicle
HID	High Intensity Discharge, bulbs used for headlights
HSD	Hybrid Synergy Drive - Toyota's modular hybrid design, currently implemented in the 2004 & 2005 Prius with many more vehicles planned to also use it.
HOV	High Occupancy Vehicle - used to describe the restricted "diamond" lanes on highways
HP	Horsepower, indicating a unit of power, a measurement different from torque
ICE	Internal Combustion Engine
IMA	Integrated Motor Assist - Honda's hybrid technology
Key-Fob	The device (introduced in 2004) used to unlock doors and start the hybrid system. By default, it works as a wireless remote for unlocking and is inserted into a slot in the dashboard for starting. As an option, it can be upgraded to control the Smart-Entry & Smart-Start feature. And note that there is actually a traditional key within which can be used for unlocking the driver's door manually.
km	Kilometer, a measure of distance, 1 kilometer is equal to 0.6214 mile
kW	Kilowatt, an electrical measurement unit used when describing Prius power consumption & storage
LEV	Low Emission Vehicle
L/100km	Liters per 100 kilometers
LMPG	Lifetime Miles Per Gallon
LRR	Low Rolling Resistant - used to describe minimum friction tires
M	Mile, a measure of distance, 1 mile = 1.6093 kilometers
MD	Multi-Display - the touch-sensitive liquid-crystal screen on the dashboard of Prius
MG	Motor Generator, an electric motor which can either provide motive power when electrically driven or generate electricity when mechanically driven.
MG1	This three-phase AC permanent-magnet synchronous motor/generator starts the ICE, controls the CVT, and generates the electricity (by using thrust from the ICE) to charge the HEV battery.
MG2	This three-phase AC permanent-magnet synchronous motor/generator drives the wheels, and generates electricity (from the regenerative braking, by recapturing the car's energy of motion) to charge the HEV battery.
Motor	The common term used to refer to the power device which runs on electricity.
MPG	Miles Per Gallon
MSRP	Manufacturer's Suggested Retail Price
MY2001	Model Year 2001 (which became available in the United States the summer of 2000)
NAV	DVD-based GPS Navigation System, used in Prius
NiMH	Nickel-Metal Hydride, the type of modules used in the Prius battery-pack
NVH	Noise, Vibration, Harshness
OEM	Original Equipment Manufacturer
OPEC	Organization of the Petroleum Exporting Countries
Original	The term used to identify the 1998, 1999, 2000 model years of Prius (which were only available in Japan).
Priustoric	All that transpired before the Prius

PHEV	Plug-In Hybrid Electric Vehicle
PSD	Power-Split Device, the planetary gear set which divides power between the ICE and the two electric motor-generators, also functions as the continuously-variable transmission.
PZEV	Partial Zero Emission Vehicle. (A manufacturer must eliminate evaporative emissions and ensure that the vehicle will run cleanly for its entire projected life. Even if the vehicle is just sitting in the driveway, it is still polluting. The source of this pollution is hydrocarbons emitted from the gas tank as gasoline slowly evaporates. To achieve PZEV certification, all evaporative emissions must be eliminated.)
R&D	Research & Development
SE	Smart-Entry: It is proximity detection system that automatically senses a wireless transmitter (called a "key-fob") in your pocket or purse, allowing you to *unlock the doors & hatch* without the need to use a physical key or push a button on a remote.
SE/SS	Smart-Entry & Smart-Start
SOC	State Of Charge - indicating the amount of stored electricity available in the battery-pack
SS	Smart-Start: It is proximity detection system that automatically senses a wireless transmitter (called a "key-fob") in your pocket or purse, allowing you to *start the hybrid system* without the need to use a physical key or push a button on a remote.
Stealth	Electric-Only driving (up to 42 MPH for Classic & HSD Prius) without the engine running.
SRS	Supplemental Restraint System, better known as Airbags
SULEV	Super Ultra Low Emission Vehicle (only a few vehicles qualify for this clean rating category, Prius is among them)
THS	Toyota Hybrid System - Toyota's hybrid design for the Classic Prius
Torque	Measurement value indicating wheel turning force, a strength value different from horsepower
TRAC	Toyota Rent-A-Car, a program by which some have shortened the waiting time: when the demo/rental units reach a time/mileage it permits the dealer to sell them.
Turtle	Driving a Prius with the battery-pack extremely drained of electricity, in conditions too hot (typically above 105 F degrees), or conditions too cold (typically below -10 F degrees), so that an orange "turtle" icon displays near the speedometer. This warns the driver to avoid forceful acceleration.
ULEV	Ultra Low Emission Vehicle (as of the 2003 model-year there were 90 vehicle models in the United States that met the rating criteria)
V	Volt or Voltage, an electrical measurement unit used when describing attributes of Prius propulsion components.
Vaporware	A term from the computer industry used to describe claims made by a company about a product that was never delivered. It sounded great in concept, but for whatever reason was impractical in the end. In other words, don't believe it until you actually see the product available for consumers to purchase.
VSC	Vehicle Stability Control, a safety feature that automatically engages side-specific braking for you when it detects the vehicle wheels slip; stepping on the brake is not necessary for the feature to work
ZEV	Zero Emission Vehicle

Prius Generations:

	Original	*Classic*	*HSD*
Engine HP	58	70	76
Engine kW	43	52	57
Engine RPM Redline	4000	4500	5000
Motor HP	40	44	67
Motor kW	30	33	50
Motor Torque	225	258	295
0-60 MPH (seconds)	14.1	12.5	10.1
Tire Width	165	175	185
Tire Diameter	15	14	15
Battery-Pack Energy (W/kg)	600	900	1250
Battery-Pack Voltage	288	273.6	201.6
Battery-Pack Weight (lbs)	125	110	99
Battery-Pack Section Type	D-Cell	Module	Module
Battery-Pack Section Count	40	38	28
Hybrid-System Voltage	288	273.6	500

***CLASSIC**: Touch-Sensitive version of the Multi-Display was introduced.*

***HSD**: Electric A/C was introduced. Multi-Display size was increased.*