



# Department of Public Safety

## Winter Driving Safety



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# Car basics for winter driving (Drivetrains)

## Drivetrain types:

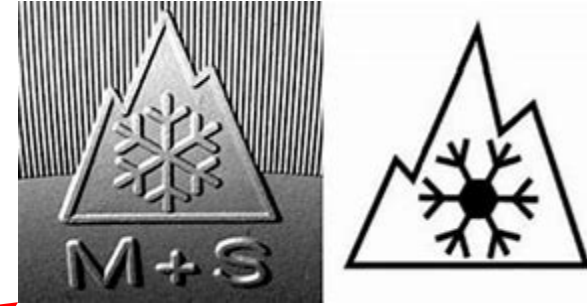
- **AWD** - Full time power to all 4 tires via a center differential with higher gearing. Designed for good traction on roads in all conditions at all speeds.
- **4WD** - Part time power to all 4 tires (on demand with manual shiftover) via a transfer case. Normally have locking differentials w/ lower gearing designed for off-road use and extreme traction. Generally have two 4WD gear settings (4-Hi & 4-Lo). 4WD usage limited to non-highway speeds (4-Hi) and crawling speeds for maximum traction (4-Lo).
- **Front wheel drive** - Power to front tires only. Engine weight combined with power to the steering tires provides good traction & control in winter conditions.
- **Rear wheel drive** - Power to rear wheels only. Lack of weight over rear, non-steering tires provides poor traction & control in winter conditions.  
(**\*\*\*Add weight over the rear axle to increase traction\*\*\***)



# Car basics for winter driving (Tires)

## Tire types for snow:

- **All-Terrain / Mud-Terrain** - Designed for 4WD vehicles and good for road, off-road, snow and mud. Generally have a larger & deeper tread pattern.
- **Snow tires** – Tires are made with a tackier rubber that stays flexible in cold weather and provides better traction. Generally have a larger & deeper tread pattern. They wear out faster in normal driving conditions.
- **Studded tires** - Metal spikes embedded in the tire tread (normally on snow tires) that provide better traction in icy conditions. **Limited by law to winter months (15 Nov -1 Apr) because they damage the roads by creating ruts.**
- **Siping** - Lateral cuts added to the tread of a tire that provides better traction in the snow and rain. They may reduce the life of the tire.
- **Snow “socks”** - Cloth coverings for tires designed for single emergency use that perform similar to snow tires. They are difficult to install and relatively expensive.
- **Snow chains** - Traction chains that are strapped over the tires for traction in deeper snow. Chains go over the tires that provide power. (i.e. front tires for a Front wheel drive car). Speed limited to 25-30 MPH.



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# Winter driving conditions

## Types of winter driving conditions:

- **Black ice / Freezing rain** - Usually invisible to the naked eye (look for crystalline reflection in headlights). Most dangerous condition as it is very easy to lose traction on all 4 tires. Studded tires work best.
- **Light snow (1-3")** - All Terrain and Snow tires work best.
- **Heavy snow (>3")** - Use chains. 4WD vehicles with All-Terrain or Mud Terrain tires can still do well in these conditions without chains.
- **City driving following a storm** - "Cleared" roads will still have patches of black ice & ice/snow buildup. 4WD vehicles should be kept in the 4-Hi gear setting. Rear wheel drive vehicles should have weight added over the rear axle. Round-a-bouts, slopes and turns are the most dangerous areas; drive very slowly in these areas.



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# Winter driving tips

1. **SLOW DOWN!** - 25-30 mph max while in a storm. Below the speed limit in post storm conditions depending on conditions. Keep both hands on the wheel.
2. **Double following & stopping distances** - Especially when approaching intersections or stopping on a downhill slope. Look out for other drivers who may have lost control.
3. **Gradually apply brakes and gas** - Slow and steadily increasing brake pressure for stopping. Don't "pump" the brakes. Slow and steadily increasing gas for starting.

## \*\*\*If you start sliding or lose traction:

1. **TAKE YOUR FOOT OFF ALL PEDALS!** (Yes....both gas & brake)
2. Calmly steer in the direction you want to go. Don't oversteer.
3. Gradually apply brake or gas once traction is re-established.

\*\*\*Deschutes County offers skid car training to learn winter driving skills (4hrs / \$90) \*\*\*

<https://www.deschutes.org/administration/page/skidcar-training>

### DESCHUTES COUNTY SKIDCAR TRAINING

100% VEHICLE CONTROL  
100% OF THE TIME

The Deschutes County Skidcar Training Program is an all-weather driver enhancement program, taught with the aid of the Skidcar Training Platform: a wheeled frame and hydraulic dolly system that attaches to the frame of a regular passenger car with the ability to reduce or increase the amount of traction the vehicle has.



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# Questions?

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