



## **STYLE AND SAFETY**

**COMPLETE WINTER WHEELS FOR YOUR VOLVO  
2015-2016 WINTER SEASON**

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## A NOTE ON THIS GUIDE

Every effort has been made to ensure that this guide includes the most accurate information possible.

Some images depict cars with options and/ or accessories which may not be available in the Canadian market.

Please always consult your authorized Volvo retailer for the most up to date information on winter tires.

# VOLVO GENUINE WINTER WHEEL KITS

## TESTED AND APPROVED BY VOLVO

The engineers at Volvo are experts on Volvo cars. Our knowledge of every Volvo model means we can give you the best advice when it comes to wheels and tires. Consulting your Volvo retailer for winter tires means that you get tires and rims that meet Volvo's safety standards and help you get the best out of your Volvo during the winter season. You can also be sure that the rims have been specially designed to match and enhance the style of the Volvo model you're driving.

## A MATTER OF SAFETY

Volvo Cars has the ambition that by 2020, nobody shall be seriously injured or killed in a new Volvo. In order to reach that goal, many new ground-breaking technologies have

been developed to help drivers avoid collisions in the first place. For example City Safety, Pedestrian Detection with full auto brake and Collision Warning with full auto brake. There are also the traditional technologies like ABS brakes and Traction and Stability control.

These technologies have one thing in common. They depend on the car's brake and steering performance and the friction between the car's tires and the road surface. The contact area between tire and road is roughly the size of the palm of the hand. The better the friction at these four small areas, the quicker the car can come to a stop. Volvo Genuine winter wheel kits are specifically designed to address this issue. They have been designed for the ultimate in safety, comfort and handling.



# 7°C OR BELOW?

THEN IT'S TIME FOR WINTER TIRES!



**It is important to make sure that your tires are good enough to provide safe grip on the roads during different seasons. It is recommended that you change to tires specially intended for the season, since tires best suited for hot and dry conditions don't perform well in cold and wet – and vice versa.**

This is because cold weather requires a special rubber compound that stays soft for good traction. Somewhere around 7°C summer tires lose much of their flexibility, and when temperatures drop below 7°C tires designed for cold weather begin to offer significantly better performance when it comes to grip, handling and braking

distances. The tread compound of a winter tire is always specially designed to remain soft and pliable in cold temperatures better enabling the rubber to grip properly to the surface of the road.

In addition, winter tires have special tread patterns better suited to evacuate water

and slush, and they provide better grip on snow and ice. There are often special grooves to let snow, slush and water flow efficiently under the tire. These small sipes help to improve grip on wet ice.

All-season tires are always a compromise, where neither the rubber nor tread can be

optimized for excellence. Volvo recommends that you keep two sets of wheels, for good grip all year round.



## EXTENSIVE TIRE TESTS

To find the best tires, Volvo carries out very extensive tests of winter tires in connection with the development of each new car model. Extensive winter testing of tires is carried out in Lapland; a province in the North of Sweden, and an area known for snow. These tests form the basis of the recommendations that Volvo makes for your winter tires.

The tests of winter tires in Lapland have been performed by Volvo Cars every year since the 70's. In the district of Jokkmokk, located at the Arctic Circle, winter is very cold and snowy – and long. It is the ideal place to test winter tires during really harsh and demanding weather conditions.

### TESTING WINTER TIRES ON NEW VOLVOS

An ordinary test round starts out on a typical dark Arctic morning, with no daylight until a couple of hours before noon. The test patrol is made up mostly by technical staff from Volvo and a few members of the sales and marketing department. The test patrol uses several different Volvo models for their tests. During the test drives on the 12 kilometre test track, the drivers test and rate various properties of the tires – how track sensitive they are, how they handle on snow, in curves, on slippery surfaces and what they deliver in terms of comfort and low rolling noise.

There is also a handling test, which takes place on a specially prepared track on a lake's ice. This test has several different moments of handling built in – driving through corners, braking and quick side-maneuvring. The track is narrow, about a kilometre long and made up of several sharp bends. Tires are being constantly changed on the test vehicles giving the drivers a clear experience of the difference between each tire's special qualities and characteristics.

Based on all these tests, Volvo selects the best tires for your Volvo. This ensures that you have a winter tire which performs to the highest standards possible.

### TESTING OF GISLAVED TIRES

In previous years, Volvo has promoted the use of Gislaved winter tires as a recommended winter tire brand. In Canada, Gislaved tires have been extremely well received by customers and Volvo for their longevity, grip and overall high performance.

At this time, Gislaved winter tires are not included in the tests by Volvo Car Corporation, but will continue to be offered by Volvo retailers to our Canadian customers because of their high performance in our real-world tests.





## VOLVO GENUINE MUDFLAPS

Protecting the lower portion of the car is an important consideration in the winter. Volvo genuine mudflaps deflect sand, mud, snow, and ice away from the body. They assist in keeping the wheels free of debris which can harm the longevity of the finish and cause imbalances which lead to vibrations. Perfectly molded to the shape of the body, Volvo mudflaps add protection and style.



## THE BEST ALUMINIUM ALLOY RIMS FOR YOUR VOLVO

The tire and the rim form a unit: the wheel. Having the right rim is just as important as having the right tire, in terms of optimising the car's driving properties. Volvo Genuine rims are designed and tested by Volvo just as thoroughly as all other Volvo Genuine Parts. This ensures the right design, quality, function and finish. Volvo's range of rims has also been tested against potential snow packing in the rims, in order to avoid imbalance or negative effects on the brake system. Here are some of the requirements that are set:

**CORRECT MIXTURE OF MATERIALS**  
The material in Volvo's aluminium wheel rims consists of a mixture of several different metals that provide the right properties. An incorrect material selection

makes the wheel rim brittle and it can then easily crack on contact with a curb or pothole.

### VENTILATION AND HEAT CONDUCTION

Each individual wheel rim must have good ventilation and good heat conduction properties. Otherwise important safety functions are jeopardised, in particular the cooling of the brakes.

### ADVANCED CORROSION PROTECTION

Several wheel rims from competitors have poor corrosion protection, which means they quickly become unattractive. Volvo uses a 3-coat paint process with clear coat as the surface layer. In addition, all wheel rims are pretreated as a foundation for increased corrosion protection.

### HUB CENTERING FOR OPTIMUM BALANCE

Wheel rims from competitors often have to suit several car brands, so they are usually centered using an adapter or the wheel bolts. Volvo's wheel rims center directly against the hub with high precision. In combination with small tolerances on run-out and roundness this results in unsurpassed wheel balance.

### WHY CHOOSE ALLOY VS. STEEL?

Aluminium alloy wheels offer significant advantages over steel wheels of the same dimensions. They are lighter and have better heat dissipation properties. This lighter weight allows the suspension to be able to work more effectively which provides better grip on the road. They also offer a better look and feel for your Volvo.

# WINTER WHEELS

For information and details about available combinations of wheels and tires per car model, please see your Volvo retailer.



## Volvo S60 / V60

Pandora 17" |

Michelin X-Ice Xi3  
Nokian Hakkapeliitta R2  
Gislaved Nord Frost 100\*



Steel 16" |  
with cover

Michelin X-Ice Xi3



Not for R-Design

Polestar 19" |

Pirelli Winter 270 Sottozero II



Polestar Edition only

## Volvo XC60

Segin 17" |

Michelin Latitude X-Ice 2  
Nokian Hakkapeliitta R2 SUV  
Gislaved Nord Frost 100\*



Pan 18" |

Michelin Latitude X-Ice 2



## Volvo S80

Pandora 17" |

Michelin X-Ice Xi3  
Nokian Hakkapeliitta R2



# WINTER WHEELS

For information and details about available combinations of wheels and tires per car model, please see your Volvo retailer.



## Volvo V60CC / S60CC / XC70

Valder 17" |

Michelin X-Ice Xi3  
Nokian Hakkapeliitta R2  
Gislaved Nord Frost 100\*



Steel 16" |  
with cover

Michelin X-Ice Xi3  
Gislaved Nord Frost 100\*



## Volvo XC90 T6, 2016-

5 Spoke 223 18" |

Michelin Latitude X-Ice 2



10 Spoke Turbine 172 19" | Nokian Hakkapeliitta R2 SUV



## Volvo XC90 T6 Inscription, Volvo XC90 T8, 2016-

10-spoke 20" |

Dunlop Grandtrek WTM3



# GENERAL TIRE INFORMATION

## WHY ARE TIRES SO IMPORTANT?

Simply put, the tires are the contact points between the car and the road. This means that all the car's driving qualities, the customer's driving habits and the road surface all interact in the four contact areas each with the size of the palm of your hand. Since the tires are the ultimate link between the car and the road, the car's safety systems can be compromised if the tires don't do their job.

## WHICH TYPES OF TIRES ARE AVAILABLE FOR YOUR VOLVO?

Tires vary because different vehicles have different requirements. Tires on the market are normally divided into four categories.

- Premium/Performance tires. With good handling and noise qualities
- Sport/High Performance tires. With qualities for performance driving.
- SUV tires. Tires that will meet the challenges on unpaved ground.
- Tires with low rolling resistance. Reducing friction to save fuel.

## QUALITIES DIFFER BETWEEN TYPES OF TIRES

The main differences between tires can be observed by looking at their performance during driving. To make a tire that is really good in one respect normally means compromising in another. For instance, a performance tire has better grip on smooth pavement, but very poor grip on ice, snow, and slush.

Winter tires must excel in:

- High-speed stability.
- Steering response.
- Grip on both wet and dry roads. Grip on snow, ice and cold pavement.
- Short stopping distance.
- Service life and economy.
- Comfort in terms of feel and low noise level.
- Environmental properties.
- Appearance.

## WHICH TIRE SUITES WHICH CAR & WHICH DRIVER?

The basic construction, dimensions, tread and rubber make-up are different in all tires. It's the unique combination of all of

these factors that gives the tire its special qualities in relation to other tires. Within the limits set by the car, the customer can choose to prioritise a particular characteristic, depending on their preferences. All season tires seek to find a balance between the different demands between summer and winter driving. The result is always a tire which returns only average performance.

## IMPORTANT TO HAVE THE RIGHT TIRE PRESSURE

If the pressure is too low, fuel consumption will increase and the grip offered by the tire will be compromised. The tires will also wear much faster. Make sure to keep the tires inflated at one of the higher recommended tire pressures. Tire inflation pressure should preferably be checked indoors at room temperature. If it's checked out in the cold, the pressure can be too low since the tires need more air when it's cold. If the tire pressure cannot be checked at room temperature, it should be increased by 0.1 bar (10 kPa, 1.5 PSI) for every -10°C.

## SEASONAL STORAGE

Tires not in use but mounted on rims should be stored in a dark, dry and cool place. Keep them stacked, not standing, so they keep their roundness. Many Volvo retailers offer "tire hotel services". They handle the tire change, check the tire's condition and pressure and will clean the tires for you.

## CLEANING YOUR RIMS

Clean your wheels and tires using a separate soapy sponge. If the grit is resistant, you may need to use a metal or chrome cleaning spray for your rims. A pressure washer is excellent for reaching all the nooks and corners, but you can also use a small brush or a toothbrush to work on tough spots and hard-to-reach areas.

## SNOW CHAINS

To maintain traction in the snowiest and iciest conditions, you might want to consider snow chains. Use Volvo Genuine snow chains designed for the correct car model, tire and rim dimen-

sions, to prevent damage to the wheel housing.

Volvo's snow chains are specially designed for several tire dimensions. This type of chain has the advantage of not being fitted on the inside of the tire, thus it doesn't take space required by larger wheels. Check to ensure you can legally use snow chains in your area and province.





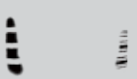
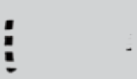
## LOCKABLE WHEEL BOLTS

A simple way of making sure that you hold on to your aluminium wheels is to get lockable wheel bolts. Your Volvo retailer offers lockable wheel bolts specially developed for Volvo Cars, which offers improved safety.

## TIRE SERVICE LIFE

Driving style and speed affects the product life of tires by roughly 30 %. Seasonal differences account for 30%, car type 20 % and the remaining 20 % depends on the type of road surface and the inherent durability of the tire. In some cases, an aggressive driving style can account for 100 % of the wear on the tire. Please note that the wear on winter tires increases if they are used when it gets warm.

## THE TIRE'S AREA OF CONTACT WITH THE ROAD SURFACE WHEN THERE'S 3 MM OF WATER ON THE ROAD

TREAD DEPTH/ SPEED	NEW TIRE 8 MM	SAFETY RECOMMENDATION TREAD 4 MM	WORN OUT TREAD WORN OUT 1.6 MM
75 KM/H	 74%	 58%	 16%
125 KM/H	 57%	 11%	 6%



**V O L V O**