CHAIN REACTION!


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When rubber isn't enough protection If you want to drive through heavy snow, your rubber tyres won't cut it

Wearing chain mail Putting snow chains on properly isn't rocket science but needs to be done correctly

Hope to drive in snow? Better pay attention then

So you finally pulled the trigger on the SUV you'd been salivating over for some time and are desperate to try its capabilities. The weatherman told you that Manali got some snow and more is on the way. An ideal situation presents itself to put the beast to the test

Words **Nishat Mohi**

Arriving at Manali and following a good night's rest, you wake up with a certain smugness while taking in the brisk mountain air. A Doppio down the hatch and you feel invincible. Man, are you going to have a great time. Heading higher and pushing further north the snow intensifies. AC/DC on the radio at full volume, 4H engaged in your SUV, you are grinning from ear to ear, congratulating yourself for buying the right set of wheels to get the job done. Fast-forward a few kilometres and this trail off the highway is far too tempting to resist. Fresh virgin powder nobody has yet trudged upon. It was definitely a smart move on your part to swap the stock highway rubber for the all terrains. The trail beckons, promising loads of adventure. It looked easy in all those YouTube channels you've subscribed to. Imagine you could have that new banner picture for your Facebook page, getting you some serious bragging rights at the same time.

Himmel! You could not be more wrong... Initially, you make steady progress with the drive engaged in 4L, the vehicle cutting through the snow like a hot knife through butter. Further up, the incline is getting steeper bidding more throttle. Like an apparition a sharp switchback arrives from nowhere. Adrenaline rushes through your veins as you try to negotiate it deftly. No success here, the vehicle goes into a tailspin. Gravity takes over bringing the machine 50 metres over the precipice with you in it. You are jolted from your sleep somewhat befuddled. The upside is that it was a nightmare, else you wouldn't be looking at this written word.

"Initially, you make steady progress with the drive engaged in 4L, the vehicle cutting through the snow like a hot knife through butter. Further up the incline is getting steeper"

Get the measure of things Snow chains come in not just different sizes but also in different patterns and of different materials

So, why did everything go sideways, literally, considering you had the right weapon to tackle snow? Easy answer is, other factors notwithstanding, your tyres ought to have been shod with snow chains. American inventor Harry D Weed invented them as early as 1904. So no reason one should be bereft of this handsome piece of hardware a century and some later. Snow chains come in a variety of sizes, and each size will usually fit a range of different tyre dimensions.

Role of material

These chains come in a variety of materials. Sturdier ones are made either of steel or of different steel alloys. The strong steel links are constructed to traverse and break through ice and are hardwearing enough for the sake of longevity. Besides the ubiquitous steel these chains come in other materials. For instance, cable tyre chains are made with a combination of rubber cords covered in individual cylindrical steel bits. Traction and durability are reduced vis-à-vis steel chains but a better ride quality is achieved with fewer vibrations and rattles owing to their low-profile design.

Role of pattern

Traction varies dependent on the way that chains lay over your tyre's tread. Although these are manufactured in several patterns, for brevity's sake we will list the two most common patterns here:

- **Ladder:** This is the original and most basic pattern and generally the most affordable. These chains cross over the tyre's tread horizontally and are manually adjusted, requiring minimal steps to install. Once carefully laid on the ground they resemble a ladder and the vehicle can be driven onto them. Next these need to be hooked up onto the tyre. Ideal for the punter who hits the mountains occasionally.
- **Diamond:** These cross over the tyre's tread both diagonally and longitudinally, the varied angles of chain meeting the driven surface provides better traction, steering and braking. These come equipped with in-built aids, which could either be cams or integrated pulls. Fitting and securing these is fairly straightforward.

What's in a pattern? That dictates how much of braking, traction and steering you're about to get on the white top

Dug in deep You'd be a fool to think that 4L would be enough to get out of this jam

"So, why did everything go sideways, literally, considering you had the right weapon to tackle snow? Easy answer is, other factors notwithstanding, your tyres ought to have been shod with snow chain"

Role of individual link design

Besides affecting strength and flexibility, the profile of the separate chain link also impacts the extent of traction that the chains will deliver. While some are best suited for deep snow and ice, others work well in light-duty applications in areas that receive less snow.

- **Square links –** Maximum traction with increased bite but a rougher ride.
- **D-shaped links –** Fantastic traction in snow and ice, with a comparatively smooth ride.
- **Twist links –** Great traction in snow. Acceptable grip on ice. Smoother ride.
- **Cylindrical rollers –** Decent traction in lighter snow. The low profile of the 'Links' built with steel pieces wrapped around cables making for a smooth ride.

Common chain failures

As with any piece of hardware or machinery caution is advised when using chains on the vehicle. Most owners' manuals will advise that speeds should not exceed beyond 30 - 50kmph when chains are installed. Should the chains not be secured tightly failure may occur. Vehicles should not be operated for extended periods on dry and paved/unpaved surfaces whilst chains are in place. Should a chain fail, it could slap around the wheel well and possibly even wrap itself around the axle. In certain instances extensive damage has been known to occur leading to severed brake lines.

As the vehicle is driven forward certain self-tensioning chains will automatically tighten and align themselves, making them a breeze to use. Nevertheless, one ought to still stop and check to ensure that the chains are properly centred and tightened. These automatic adjustment chains come at a premium. In case of the assisted adjustment and manual adjustment chains, it is recommended to adjust torque a second time after driving a short distance. Occasionally, the torque on these chains needs to be examined.

The circumference of the tyres is where the vast majority of tyre chains are wrapped around. These are held in place either with an adjustable tensioner or a chain, cable or elastic, referred to as a Rim chain.

Most modern SUVs/softroaders have limited clearance in the wheel wells to accommodate chains. Refer to the owner's manual to establish whether the vehicle is compatible with chains. Snow chains are typically sold in pairs and should be installed in one or both axles of the vehicle, depending on conditions. Be advised that driving with chains will lead to reduced fuel efficiency, but the increase in traction will be more than substantial.

Few things declare winter preparedness, more than a Fourby equipped with a set of snow chains, a bottle of Havana Club up close and thermal underwear. 4x4