

# TOYO TIRE TALK

## Subject: 4WD Vehicle Fires Caused by Tires

Today there are many 4WD vehicles around the world - not only in Sport Utility Vehicle (SUV) models, but also sedan models. Therefore many TOYO tires must be sold to this type of customer.

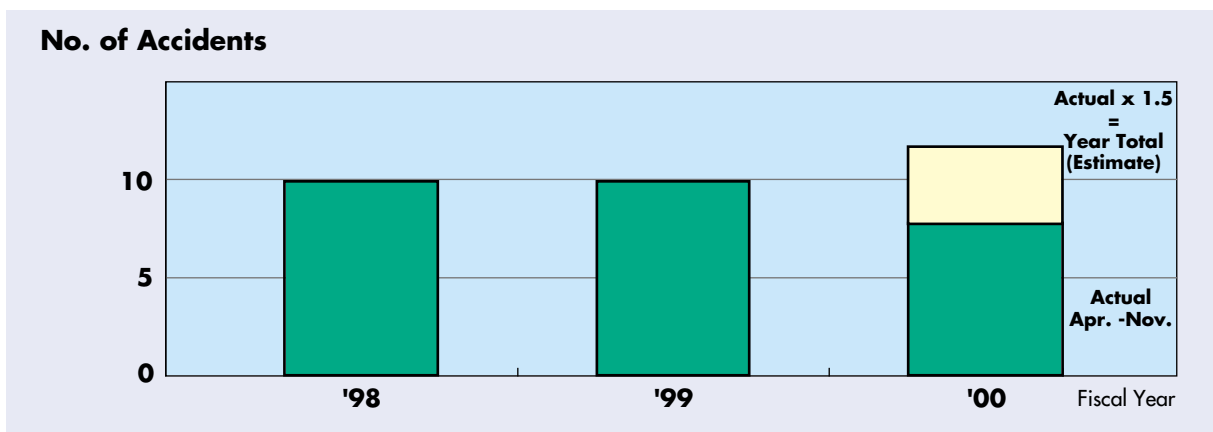
In Japan, the Ministry of Transport announced a caution late in 2000 regarding fires in 4WD Vehicles.

This type of accidental fire may happen to anyone around the world, which of course includes your customers. We believe this information will be helpful to your customers and, moreover, must help you. Please understand our aim in this Toyo Tire Talk, and make use of this information in your business.

So could you please read the following carefully.

### 1. Background

There have been some fires in 4WD vehicles over the past few years in Japan (see the following graph).



All the vehicles started burning at the differential, and all cases were the same in that the owner had not changed all 4 tires at the same time. Examples were :

- 1) Running the temporary-use spare tire over a long period.
- 2) Changing only the front 2 or the rear 2 tires which had excessive wear.

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## 2. Reasons

The drawing on the right shows the basic drive train system of late model constant 4WD vehicles.

The Center Differential distributes power from the Engine to the front and the rear axles, depending on the rotating speed of each axle.

(For Your Information)

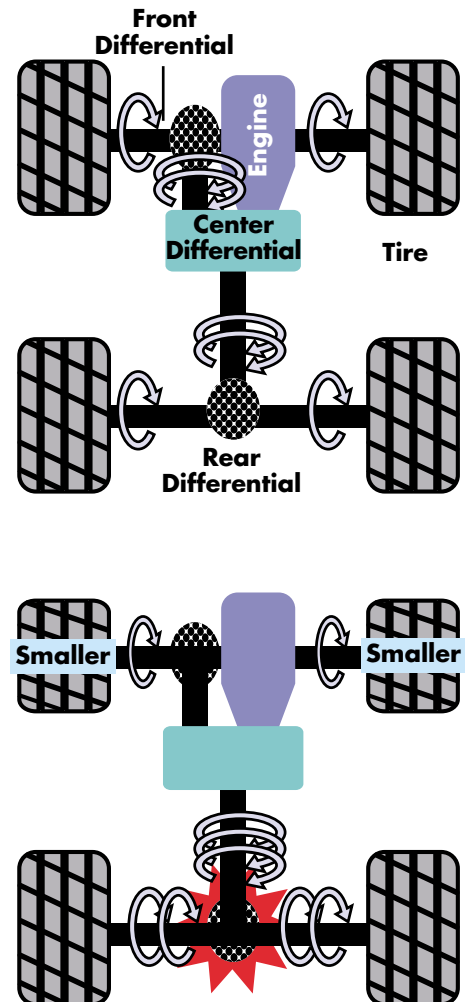
When a vehicle operates off road, there is a higher possibility of not being able to move due to the wheels spinning. To prevent this, the 4WD system has to provide proper torque to each axle. The center differential works for this purpose.

When only the front 2 or rear 2 tires are changed to brand new tires, there is some difference in the tire diameter between the front and rear axles. This will result in different rotating speeds for each axle.

Smaller diameter tire is rotating at a higher speed.

The power provided to the rear axle is increasing.

The rear differential overheats and starts burning.



## 3. What is the Essential Cause / What should you recommend to your customers.

In the case of 4WD vehicles, we should be more careful about the difference in tire diameters than with 2WD vehicles.

However, most of our customers who change to a 4WD vehicle from a 2WD would not know of this difference. Therefore there are many cases of changing only 2 tires due to excessive wear (as in the case of a 2WD).

As a conclusion, our suggestion is as follows :

Strongly recommend to your 4WD customer to purchase and change all 4 tires at the same time. This must help your customer and you (your business).