

Load Capacity of Replacement Passenger Tires

Replacement tires must have equal or greater load carrying capacity compared to the original tires fitted to the vehicle. **Warning!** *Installers carry a significant risk of liability if they fit replacement tires with a lower load capacity than the original tires, or fail to adjust the vehicle air pressure to achieve the original tire load capacity. Even proper size replacement tires will not have enough load capacity if the inflation pressure is set incorrectly, i.e. too low.*

If undersized, and or underinflated tires are applied to any vehicle, they are subject to sudden failure due to fatigue, loss of vehicle control, and risk of injury to the vehicle occupants.

How to determine a tire's load capacity:

Most tires have the load index as part of the tire size description, example 215/35R18 **84W**. The number **84** is the load index (L.I.) which indicates the maximum load a tire can carry. In that example, 84 corresponds to 500 kilograms, or 1,100 lbs. The 'W' is the speed rating. As a basic guideline, replacement tire load index should match the original tire load index. See the load index reference chart included in this bulletin. Finally, the air pressure determines actual tire load capacity.

How do I find the correct tire size, load requirement and PSI for any vehicle?

Every vehicle has a tire information placard which shows this information. It may be found in the driver's door jam, glove box, fuel filler cap or in the owner's manual. This info is for the original (O.E.) tires.

What if we are changing wheel size and applying a "plus" tire fitment?

The load capability of the replacement tire must be equal or greater than the original factory tire. Example: 1999 Honda Prelude, factory installed size = 205/50R16 **87V**. Would size 225/35R16 **83W** be a suitable 'plus two' fitment? No. The tire load capacity is too low (refer to the load index chart in this bulletin).

Are there other ways to match the load of the original factory tires?

Every tire has the maximum load capacity molded onto the tire sidewall near the bead. For example: Max. load (1,201 LBS). @ XX PSI. Your replacement tire should have at least the same maximum load, or be capable of carrying the required load without overinflating the tire.

What if I'm not sure about the correct replacement tire size or load capacity?

You may call Toyo Technical Service Dept. for advice at the phone numbers shown in this bulletin. Also refer to the Toyo Fitment Guide, item number 0180303 for additional fitment information.

Summary:

As a very basic guideline, the replacement tire should have the same load index as the tire you are replacing. In the absence of a load index, the replacement tire should have the same maximum load (as shown on the sidewall) as the original tire.

Load Index Reference Chart

Almost all tires today include the load index as part of the size description. A load index always corresponds to a specific load carrying capacity as shown below. This standard is universally adopted by all tire manufacturers, therefore a load index of 97, for example, will reflect the same maximum tire load regardless of tire brand, pattern or size.

Using the cross reference chart below, what is the maximum load of the following tire:
P205/40R16 83W? Answer: _____ lbs.

Would the above size be a suitable 'plus fitment' for a 1999 Honda Accord EX with original tire size P205/65R15 92V? Load index 92 corresponds to what load capacity?

Answer: 92 = _____ lbs.

Load Index	Load (lbs.)
74	827
75	853
76	882
77	908
78	937
79	963
80	992
81	1019
82	1047
83	1074
84	1102
85	1135
86	1168
87	1201
88	1235
89	1279
90	1323
91	1356
92	1389
93	1433
94	1477
95	1521
96	1565
97	1609
98	1653
99	1709

Load Index	Load (lbs.)
100	1764
101	1819
102	1874
103	1929
104	1984
105	2039
106	2094
107	2149
108	2205
109	2271
110	2337
111	2403
112	2469
113	2535
114	2601
115	2679
116	2756
117	2833
118	2910
119	2998
120	3086
121	3197
122	3307
123	3417
124	3527
125	3638

What is the corresponding load index of the tire shown below?

Answer: Load Index = _____



Tire Information Placard

All automobiles and light trucks have a tire information placard (TIP) which shows the original (O.E.) tire size and required air pressure for the front and rear axles.

TIP for 1999 Honda Prelude:
(located on driver side door jam)

TIRE INFORMATION		VEHICLE CAPACITY MASS: 700 lbs		
SEATING CAPACITY	TOTAL 4	FRONT 2	REAR 2	
RECOMMENDED TIRE SIZE	COLD TIRE INFLATION PRESSURE			
205/50R16 87V	FRONT	220kpa, 32psi		
	REAR	220kpa, 32psi		
T135/80D15 85M (COMPACT SPARE TIRE)		420kpa, 60psi		
*UP TO VEHICLE CAPACITY MASS.				
*SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. S30A-A0				

The car manufacturer's pressure requirement is calculated to allow sufficient load capacity, and to achieve desirable vehicle handling qualities.

Note: Load Index 87 = 1,201 lbs. Maximum load (refer to load index chart).
Any replacement tire for this vehicle should have at least the same maximum load capability.

Tire Load Index Marking and Max. Load



W = Speed Rating

Load Index = 95 (1,521 lbs. Max load)



All tires have the maximum load shown near the bead on both sides.



Q & A for Replacement Tire Fitments

- Q: Our import car customers are demanding a certain "look" to their tires and wheels and are asking us to install incorrect sizes. How should these customer requests be handled?
- A: We are confident that most retail customers will follow the advice of a retail installer when they are informed about the adverse safety and performance consequences of a tire misapplication.
- Q: Even if the tire is slightly smaller than the original tire, won't additional air pressure support the load?
- A: Not necessarily. Using the example of a P205/40R16, load index 83, the maximum load is 1,074 lbs per tire at 41 PSI. If you refer to the load/inflation charts for this size, you will notice that no additional load capacity is gained by higher inflation pressure. In addition, the pressure shown on the tire sidewall should never be used or considered as the proper air pressure for the vehicle. Higher than necessary pressures will cause a harsh ride, subject the tire and wheel to impact damage, and may cause unacceptable or dangerous vehicle handling.
- Q: When we apply "plus fitments" to any vehicle do we still follow the tire information placard PSI recommendations for the new tires?
- A: When you change the tire size from the original tire, the tire placard information may not be correct, but certainly should be considered as the **minimum** PSI required for the new size. Check and compare the load and inflation of the original and replacement tire.
- Q: What else do I need to know in order to properly recommend "plus" replacement tires?
- A: You should have available the load/inflation tables for the tire sizes you are selling. At least you need the Tire and Rim Association tables for P-metric sizes.
- Q: Even if we set the air pressure correctly at the time of sale, the customer may change it, or neglect to monitor the inflation.
- A: You should note the air pressure recommendation on the bill of sale and provide the customer with literature that explains the importance of maintaining correct tire pressure.
- Q: What does "reinforced" refer to?
- Reinforced tires carry higher loads at higher pressures. For example, size 205/40R17 is available in the market in both load index 80 (standard load), or 84 which is the reinforced specification. Refer to the previous load index chart to see the difference in load capacity. Reinforced tire may be required for some "plus fitments" to meet the vehicle's load requirement.
- Q: If I need help to determine the correct replacement size, where can I get it?
- A: 1. Refer to the information included in Toyo's Fitment Guide, item No. 0180303.
2. Contact Toyo at toyotech@toyotires.com
3. Contact Toyo Technical Service 1-800-678-3250 (Calif.), 1-888-444-8696 (Georgia).

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