

Tire Pressures

Tire pressures is critical for obtaining your best lap times. Critical tenths of a second can be related back to correct tire pressure. Tire pressure has a direct correlation to the kart grip. Both, too much or too little can impact lap times. Winning kart racers want maximum performance and grip towards the end of each race and will adjust pressures and kart setup accordingly.

Tires should be equal circumference from left to right on both the front and rear. Especially having mismatched rear tires will make the kart pull to one side and reduce straightaway speed.

Before your first session on race-day, allow all four tires to reach the same temperature. I recommend keeping all of them in the shade to ensure you are always starting from a fixed reference of tire temperature. The initial tire temperature will have an impact on the final operating pressure. Tire pressures will increase from their initial values from 2 to 6 lbs after a typical run on the track. The difference between the initial and final pressure is based factors such as

- Were the tires initially in the shade or in direct sunlight
- Was Nitrogen used to inflate the tires. Using a pure nitrogen track is typically an advantage as it contains no water and will give you slower pressure increases and will allow you to start at a pressure closer to your optimal tire pressure
- Track and ambient temperature
- Chassis setup, tire and track condition
- If using an air compressor to pump tires, how much water is in the tank and how much humidity in the air. A good practice is to drain the water out of your air compressor on a regular basis.
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Karting tires are designed to reach the best performance levels when the tread band works in a temperature ranging between 80 and 95°C (176° and 203°F) degrees. The pyrometer is the most appropriate tool to measure the tires temperature. It is worth noting that the karts set-ups or adaptations in the driving style may determine and help the tires to work at a stable temperature, leading to a performance peak and avoiding untimely wear. The type, conditions of every asphalt, and the features of each circuit also directly influence the temperature reached by the tires.

The operating pressure of a tire is related to the hardness of the tire. Tire hardness is measured with a tire durometer. A tire with a durometer value in the low 40s would be a soft tire, where as a tire with a durometer value in the 60s would be a very hard tire. Some tire charts are show below including the durometer values.

Harder tires require more pressure to operate effectively to build heat.

As a high level guide, hot pressures (immediately after racing) should be

- 21 lbs for hard tires such as Dunlop SL
- 15 lbs for medium hard tires such as Bridgestone YLC, MG Red, and Mojos
- 13 lbs for medium soft tires such as Bridgestone YNB and MG Yellows
- 11.5 lbs for soft tires such as Dunlop DDS

Starting pressures should be 2 to 3 lbs less. For example MG Reds might be set at 12lbs initially to reach a final pressure of 15lbs.

In the end setting correct tire pressure is an ability only gained with experience and considerable testing to learn the right pressures for the track grip levels and weather conditions.

Durometer	Burriss	Bridgestone Firestone	Dunlop	Maxxis	Hoosier
35	D-21			WT5	D10
	K-21				
36					
37					
38				HG5 HT5	
39					
40	DXC				
	SS-11				
41					
42	K-0	YDJ YGP			D20
43					
44	K-1			DK4	
	D-25			WT4	
45	DXB	YDH			
	SS-22				
46	T-2			WT3 DK3	
47		YEX YGX			
48				AO1 XP6	D30
49		YFA	DBW		

		YGA YHA	RS9 DCW		
50		YGF YHB	KT-6 KT-8		
51				XP5	
52	K-4				
53		YGH YFF			A40
54	D-4		DAM DBS DCS		
55				HG4 HT4	A55
56	DXA SS-33	YGG YFH	R6		A50
57					
58	M-30	YHC YGC	DAH DBM DCM		
59		YBH YEY YFG	RH3 RH2 SL6		
60	M-15B M-22 SS-44		SL4	HT3 HG3	D40
61				SLD	
62		YGJ			
63				SLC	
64		YGN	DBH SL3 DCH SL5		D50
65					
66		YBN YDS	DBC DCC SL1		
67					
68					
69					
70	M-15A SS-55				

Bridgestone Tires

5" diameter Bridgestone tires

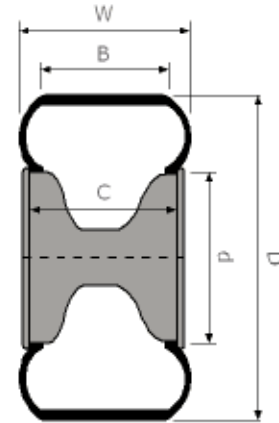
Compound	Hardness	Category	Size	Casing	Position	Wheel Width	Overall Diameter (mm)	Section Width (mm)	Tread Width (mm)
YLM	42	Soft	4.5/10.0-5	DR10	F	4.5	263	128	100
			7.1/11.0-5	DR11	R	8.0	274	210	160
YLC	48	Medium	4.5/10.0-5	DR10	F	4.5	265	129	100
			6.0/11.0-5	DR10	R	6.0	282	170	132
			7.1/11.0-5	DR10	R	8.0	273	210	156
YDS	68	Hard	4.5/10.0-5	DR5	F	4.5	260	131	100
			6.0/11.0-5	DR1	R	6.0	276	173	117
			7.1/11.0-5	DR5	R	8.0	284	208	150

5" diameter Bridgestone rain tires

Compound	Hardness	Category	Size	Casing	Position	Wheel Width	Overall Diameter (mm)	Section Width (mm)	Tread Width (mm)
YLP	44	CIK 13 Wet	4.5/10.0-5	WER	F	4.5	262	130	90
			6.0/11.0-5		R	7.0	279	182	126

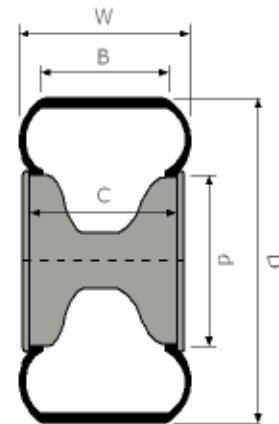
MG Tires

Model		HZ
Homologation 2011/2013		CIK
Size		11 x 7.10 - 5
Shore Hardness A +-5 (DIN53505) ⁽¹⁾		59
W (mm) +- 10		205
B (mm) +- 10		150
C (mm) +- 5		200
d (mm) +- 0-1		126.20
D (mm) +- 10.00		274
Recommended Air Pressure ⁽²⁾	PSI +- 3	14.00
Maximum Air Pressure	PSI	58.00
Maximum Speed	Mph	115



- (1) Hardness tests are performed at 73°F +-2 temperature and 55% +-5 humidity.
- (2) With hot tires.

Model		WT
Homologation 2011/2013		CIK
Size		10 x 4.20 - 5
Shore Hardness A +-5 (DIN53505) ⁽¹⁾		44
W (mm) +- 10		130
B (mm) +- 10		110
C (mm) +- 5		120
d (mm) +- 0-1		126.20
D (mm) +- 10.00		257
Recommended Air Pressure ⁽²⁾	PSI +- 3	16.00
Maximum Air Pressure	PSI	58.00
Maximum Speed	Mph	100



- (1) Hardness tests are performed at 73°F +-2 temperature and 55% +-5 humidity.
- (2) With hot tires.