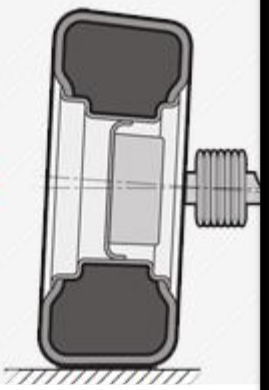
CAMBERTIRE™

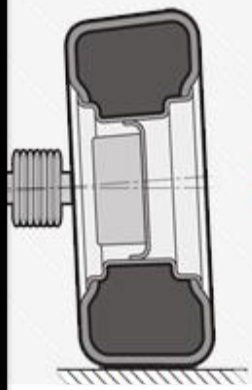
"TOP TEN EMERGING TECHNOLOGY"



CAMBER TIRE

AUTOMOBILE MAGAZINE

TECHNOLOGY ISSUE 2010



CAMBER TIRE

THE WORLD'S MOST SUSTAINABLE HIGH PERFORMANCE TIRE

CAMBERTIRE™

"DISRUPTIVE TECHNOLOGY"

THE WIKEPEDIA DEFINITION OF
"DISRUPTIVE TECHNOLOGY"

IN BUSINESS & TECHNICAL TERMS:

"AN INNOVATION THAT IMPROVES A
PRODUCT, FOREVER CHANGING A MARKET
IN WAYS THAT THE MARKET DOESN'T EXPECT"

AN EXAMPLE OF A "DISRUPTIVE TECHNOLOGY" WOULD BE
"WHAT DIGITAL PHOTOGRAPHY HAS DONE TO FILM PHOTOGRAPHY"

CAMBERTIRE™

SUSTAINABILITY

ENVIRONMENTAL STEWARDSHIP IS A CORNERSTONE OF BOTH OUR BUSINESS AND PRODUCT MODELS

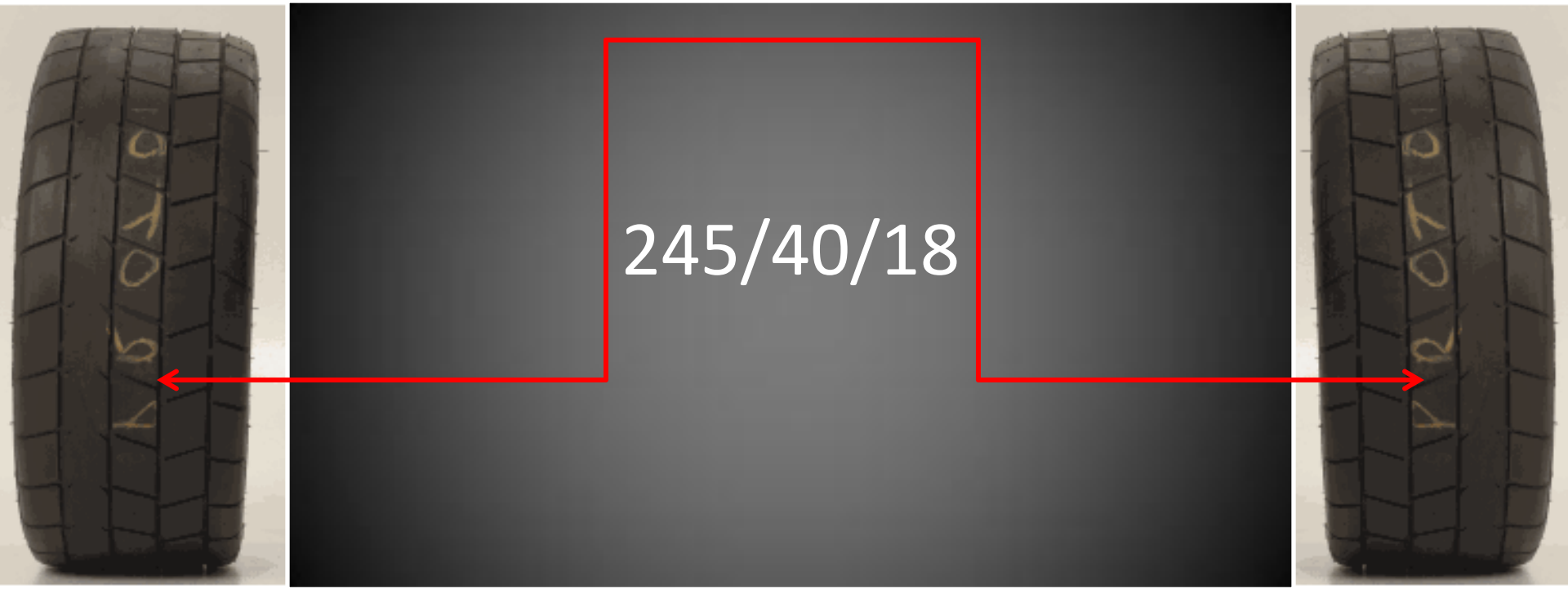
THE CAMBERTIRE IS THE TIRE INDUSTRY'S FIRST NO-SACRIFICE GREEN DESIGN TECHNOLOGY THAT CAN SIMULTANEOUSLY IMPROVE ROLLING, LATERAL, RIDE AND WEAR PERFORMANCE OF ANY EXISTING TIRE DESIGN AND MATERIAL MATRIX

IT'S SIMPLE: CAMBERTIRE IS THE WORLD'S HIGHEST PERFORMANCE AND MOST SUSTAINABLE TIRE GEOMETRY

- ✓ REDUCED FUEL CONSUMPTION AND EMISSIONS DUE TO ABILITY TO RUN ZERO TOE-IN ALIGNMENT RESULTING IN A REDUCTION IN ROLLING RESISTANCE
- ✓ LESS RAW MATERIAL USE AND WASTE DUE TO THE FACILITATION OF NARROWER TIRE PROFILES AND POTENTIAL FOR LONGER TIRE DUTY CYCLES

"Now that we have enjoyed a few miles over the road on these tires and had a chance to conduct two performance tests, we are more convinced that these tires are worthy of our acclaim." *Don Sherman, Automobile Magazine and New York Times*

TREAD VIEW OF ACTUAL TWO DEGREE CAMBERTIRE PROTOTYPE



THE PHYSICAL DIFFERENCE IS SUBTLE, THE RIDE DIFFERENCE AN EXPERIENCE

"We briefly tested a set with two degrees of camber on a Mitsubishi Evolution and came away impressed. The ride was quiet and comfortable over rutted roads, but the tires still returned the incredible steering response and corning grip we expect of an Evo."

John Wong, AutoWeek Associate Editor

PROPERLY APPLIED THE CAMBERTIRE TECHNOLOGY CAN CONVEY BENEFITS TO ALL ON-ROAD AND OFF-ROAD VEHICLES WITH INDEPENDENT SUSPENSION OR NON-DRIVE SOLID AXLES INCLUDING:

- ✓ **IMPROVED GAS MILEAGE AND EMISSIONS**
- ✓ **ENHANCED HANDLING AND PERFORMANCE**
- ✓ **IMPROVED WEAR PATTERNS AND, IN TURN, TIRE DUTY CYCLES**
- ✓ **IMPROVED SAFETY - WITH DECREASED INCIDENCE OF ROLL OVER AND INCREASED STABILITY**

"With the Optima Camber Tire you get all the advantages of camber without introducing any of the negatives. I believe that commercializing this technology not only will yield an improvement in performance capabilities for motor sports, as well as a revolution in the passenger tire business, but also merits humanitarian purpose because tires that last longer are better for the environment and tires that are safer are better for everyone." *Thomas E. Sneva, retired winning Indy race car driver*

WHAT IS REQUIRED TO EXPERIENCE THE DIFFERENCE?

A NEW SET OF CAMBERTIRES AND AN ALIGNMENT TO PROPERLY SET YOUR SUSPENSION WITH ADDITIONAL NEGATIVE CAMBER BASED UPON THE AMOUNT OF CAMBER BUILT INTO THE TIRE, THE FITMENT AND THE APPLICATION, AND ZERO THE TOE

✓ON- or OFF-ROAD
✓SUV – ATV - UTV
✓PASSENGER OR SPORTS CAR
✓ CLASSIC OR CONTEMPORARY

THE CAMBERTIRE™ ALIGNMENT SPECS & ANGLES

Camber Tires are offered in a variety of negative camber angles, so the customer and tire mounting shop personnel must know the tire's camber angle to make appropriate vehicle camber and toe adjustments to match the camber tire. For example, if the customer purchased a negative 2-degree Camber Tire, the tire shop must adjust the vehicle with an additional negative 2-degrees camber to the original factory alignment settings and zero the toe-in to maximize the Camber Tire performance benefits.

Front Axle	Camber:	Original Factory Setting + Camber Tire OCS = Adjusted Camber Setting
	Toe:	Original Factory Setting ⟹ ZERO degrees
Rear Axle	Camber:	Original Factory Setting + Camber Tire OCS = Adjusted Camber Setting
	Toe:	Original Factory Setting ⟹ ZERO degrees

No changes are required for Caster, Turning Angle or Steering Axis Inclination.

The following table shows a Camber Tire mounting example for a 2010 Toyota Camry:

VEHICLE ALIGNMENT ADJUSTMENT EXAMPLE

VEHICLE ALIGNMENT ADJUSTMENTS FOR CAMBER TIRES

2010 Toyota Camry		Original Vehicle			Adjusted Vehicle	
Camber Tire Alignment Adjustment		Factory Alignment Specs		Camber	Alignment Settings	
		Nominal	Tolerance	Tire OCS	Nominal	Tolerance
		(deg.)	(+/- deg.)	(deg.)	(deg.)	(+/- deg.)
Front Axle	Camber	-0.67	0.75	-2.00	-2.67	0.75
	Caster	2.95	0.75		2.95	0.75
	Toe	0.00	0.20		0.00	0.2
	Turning Angle	38.4/33.6	2.00		38.4/33.6	2.00
	Steering Axis Inclination	12.30	0.80		12.30	0.80
Rear Axle	Camber	-1.27	0.75	-2.00	-3.27	0.75
	Caster	Fixed	Fixed		Fixed	Fixed
	Toe	0.40	0.20		0.00	0.20