



OVAL TRACK HIGH PERFORMANCE COMPONENTS



Don't Just Race...

RaceStrange

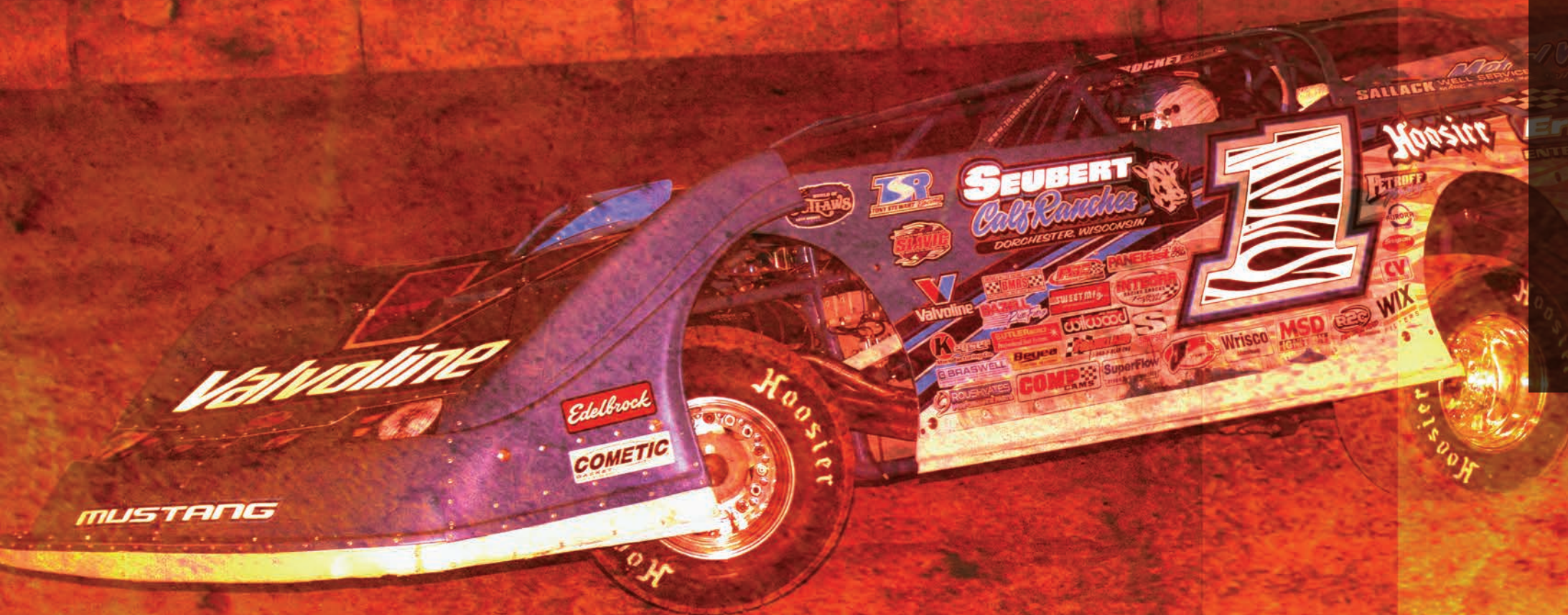




"Auto racing began 5 minutes after the second car was built." – Henry Ford

C O N T E N T S

Terms & Conditions	2
The KERA Technology	3
Built Strange	4
Determining Correct KERA Combinations	5
Modified & Late Model Axles	5
Stock Car Axles	6
Builder Axles	7
Stock Car Drive Plates	8
Modified & Late Model Drive Plates	9
9" Cases	10
Stock Car Pinion Retainers	11
Modified Torsion Bars	12
Social Media & Field Marketing	13



TERMS & CONDITIONS

Terms

Orders may be shipped Certified Check, VISA, MASTER CARD, AMERICAN EXPRESS, OR DISCOVER CARD.
Minimum order is \$10.00.

Claims

Claims for damages in shipping, open or sealed, are to be made to freight forwarder. Claims for shortages must be made directly to Strange Engineering within 5 days of receipt.

Returns

Special order parts are non-returnable. No returns will be accepted without prior authorization. This is accomplished by calling Strange Engineering for an authorization number. Returns must be new or in new condition. Any return that has been installed or is in used condition will not receive credit. All returns are subject to a 20% handling charge (minimum \$10) and all return freight must be prepaid.

Pricing

Prices are subject to change without notice.

Strange Oval Parts & Services Warranty

Strange Oval reserves the right to make changes in design and to add to or improve on its product without incurring any obligation to install the same on products previously manufactured.

Purchasers using Strange Oval racing components and equipment, any and all inventory services, purchasers acknowledge that due to the differing conditions and circumstances under which all equipment and parts are installed and used, purchasers are not relying on Strange Oval Co. skill or judgment to select or furnish the proper part or equipment. Purchasers expressly affirm they are relying upon their own skill or judgement to select and purchase suitable goods.

Strange Oval Co. makes no warranties whatsoever, expressed or implied, oral or written, to purchasers. There is no warranty of merchantability made to purchasers. Strange Oval Co., further excludes any implied warranty of fitness with respect to racing and equipment, any and all inventory and service. Accidents and failures can occur at any time. Be aware that use of parts and services as well as participation in Motorsports activities carries a significant risk, and the Purchaser and/or 3rd Party assumes all risks.



BUILT STRANGE

Stronger, Faster, Safer

Thru-Hardened (Hy-Tuf) Axles

From Late Models to Modifides, Strange Oval has been manufacturing and selling axles to the top teams and drivers throughout the country. It works as good as it looks.

- Nickel-Chrome-Moly alloy with outstanding strength, toughness and fatigue characteristics
- Gun-drilled (& plugged) light-weight design
- CNC hobbled splines tightly control tolerances for even torque transfer and maximum spline life
- Shot peening offers further surface enhancement with the application of residual compressive stress
- Increased torsional & bending fatigue life are realized through shot peening
- Scrutinized CNC machining process offers an exceptional surface finish and minimized stress risers
- Generous transition radii is essential to reduce stress risers
- REM finishing reduces spline wear, lowers operating temperature & minimizes micro stress risers

Strange Oval offers the split "KERA" diameter axles as well as equal sized LH & RH axle diameters using the same manufacturing process and quality control in place.

Axle Length Range: 25.50" to 39.50"

Diameter Range: 1.115" to 1.220"

The Proven KERA Technology

(Kleban Equal Response Axle)

While left & right side axles are different lengths they are normally the same diameter; this inherently gives the right side axle a lower spring rate. This means the left side axle does not "wrap-up" as much as the right side and the car has a tendency to steer right on initial acceleration because the left rear tire sees the power first. By using a smaller diameter left hand axle with the "KERA concept" you can equalize this torque steer reaction both under acceleration or deceleration.

This Equal-Response-Reaction can be further used to specifically tune the chassis to turn left by reducing the left side axle diameter further from the standard KERA diameter split between the left and right side axles. In effect, the Kleban Equal Response Axles (KERA) can be used as a precise tuning device like that of tire stagger without having any effect on existing cross weight, spring rates, anti-roll bar, ride height or tire pressure. Strange Oval offers the split "KERA" diameter axles as well as equal sized axle diameters with the same manufacturing process and quality control in place.



STRANGE AXLES

Built Like No Other

Strange Oval KERA Axles have been, and continue to be utilized by many of the top teams in the NASCAR Sprint Cup, Nationwide & Truck series since 2008.

- Ultra high strength low alloy steel offers outstanding yield and tensile strengths, fatigue properties, and high toughness
- Vertical rack heat treating controls distortion
- CNC hobbled splines tightly controls tolerances for even torque transfer and consistent misalignment angle of drive flanges
- Generous transition fillet radii essential to reduction of stress risers
- Additional attention directed to non-aggressive machining to impart a minimum amount of residual tensile stress
- Shot peening provides increased torsional and bending fatigue life with the application of residual compressive stress
- Isotropic superfinishing reduces spline wear, lowers operating temperature, and minimizes micro stress risers

Gun Drilled Axles

Strange gun-drilled axles were created to reduce rotating weight. Gun-drilling is a process where the core of the axle is removed, leaving a 0.578" hole through the entire length of the shaft.

Solid Axles

A solid axle shaft is stronger than an equivalent diameter gun-drilled shaft; therefore, when weight is not an issue, a gun-drilled axle should not be considered.

Custom made axles available. Call Strange Oval at 1-800-653-1099 for details.

CORRECT KERA AXLE COMBINATIONS

Modified & Late Model

In order to establish the correct axle sizes for your race car, please refer to the simple steps listed below. Far below is some popular axle combinations that are being used on some of our most popular applications. These are "baseline" KERA axle combinations that we recommend and the steps to follow in order to determine what you'll need. If you have any questions, or if you're uncertain or simply want further clarification regarding your specific application, please give us a call.

Follow These Simple Steps In Order To Determine Your Axle Diameter Combinations

1. Subtract your RH axle length from LH axle length (you should arrive at a number between 0 and 7 inches)
2. Value **greater** than 2.5 inches = Use LH axle that is a minimum of .030 to .045 inches less in diameter than your existing RH axle. Value **less** than 2.5 inches = Here you would use a LH axle length that is .015 inches smaller in diameter than your RH axle length.
3. Optional tuner axle is achieved by reducing the LH axle by .015 inches from the above determination - OR you may also increase your RH axle diameter to achieve the same result - normally done with higher HP applications (700+ HP)

Some common baseline KERA axle dia. combinations with 2.5" or more of LH/RH axle length differences

Gun-Drilled Axle Applications	Right Side Dia.	Left Side Dia.	Left Side "Tunner" Dia.
Northeast DIRT Modified (Big Block & Small Block)	1.180" or 1.165"	1.130"	1.115"
Northeast Asphalt (Whelen Tour) Modified	1.180"	1.145"	1.130"
UMP & IMCA Type Dirt Modified	1.180" or 1.165"	1.130"	1.115"
Late Model Dirt	1.200" or 1.180"	1.145"	1.130"
Late Model Dirt (Crate Motor)	1.165"	1.130"	1.115"
Late Model Asphalt	1.200" or 1.180"	1.145"	1.130"
Late Model Asphalt (Crate Motor)	1.165"	1.130"	1.115"

Solid Axle Applications	Right Side Dia.	Left Side Dia.	Left Side "Tunner" Dia.
NASCAR K&N Stock Car (solid axles only)	1.220"	1.165"	n/a

When 2 diameters are listed – This is mainly due to the wide variations of HP and tires being used with these specific applications. Normally, when HP exceeds 700, you will use the larger dia. RH axles listed.

NOTE: Our applications are not limited to the combinations above. Give us a call if yours is not listed or you are unclear about what diameters you should be using. Visit StrangeOval.com for precise KERA calculator.

Modified/Late Model Axles

\$229.00

- Gun-drilled with 0.578" dia. holes
- Shot peened and Rem finished
- Lengths vary from 25.5" to 39.5"
- Diameters vary from 1.115" to 1.220"



AXLES

Stock Car
(Crowned Spline)



Stock Car Axles
\$189.00

PART# / DESCRIPTION	SPRINT CUP	NATIONWIDE	CAMPING WORLD TRUCKS	ARCA	K&N EAST & WEST
AGX11652775 Left - Standard KERA, 1.165" Dia. , 27.75" Lgth.	X	X			
AGX12203200 Right - Standard KERA, 1.220" Dia. , 32.00" Lgth.	X	X			
AGX12202775 Left - Equal Diameter, 1.220" Dia. , 27.75" Lgth.	X	X			
AGX12203200 Right - Equal Diameter, 1.220" Dia. , 32.00" Lgth.	X	X			
AGX13002775 Left - Equal Diameter HD Road Course Shaft, 1.300" Dia. , 27.75" Lgth.	X	X			
AGX13003200 Right - Equal Diameter HD Road Course Shaft, 1.300" Dia. , 32.00" Lgth.	X	X			
AGX11652775 27.75 Standard KERA, 1.165" Dia. , 26.75 Lgth.			X		
AGX12203150 31.50 TRUCK Lgth. , Standard KERA, 1.220" Dia. , 31.50" Lgth.			X		
AGX11652675 Left - Standard KERA, 1.165" Dia. , 26.75" Lgth.				X	X
AGX12203150 Right - Standard KERA, 1.220" Dia. , 31.50" Lgth.				X	X
AGX12203200 Right - Standard KERA, 1.220" Dia. , 32.00" Lgth.				X	X
AGX11652725 Left - Standard KERA, 1.165" Dia. , 27.25" Lgth.				X	X
AGX12203150 Right - Standard KERA, 1.220" Dia. , 31.50" Lgth.				X	X
AGX12203200 Right - Standard KERA, 1.220" Dia. , 32.00" Lgth.				X	X
AGX12202775 Left - Equal Diameter, 1.220" Dia. , 27.75" Lgth.				X	X
AGX12203150 Right - Equal Diameter, 1.220" Dia. , 31.50" Lgth.				X	X
AGX12203200 Right - Equal Diameter, 1.220" Dia. , 32.00" Lgth.				X	X

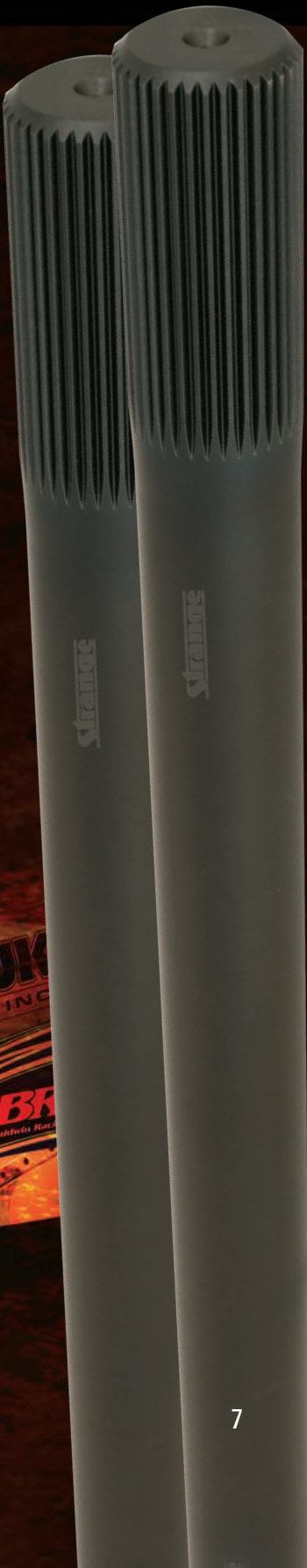
Builder Axles

Modified & Late Model



Car Builder Axles are manufactured to the builders specifications and can be made to any length and diameter. Builder axles are made using the Strange Oval proprietary manufacturing processes and are laser etched with the car builders name and logo and are exclusive to the builder. Car builders can offer a very high quality yet economical axle entirely made here in the U.S.A.

- Crowned or straight splined
- Solid or gun-drilled (pricing varies)
- Standard outer & inner spline count combinations
- Length range is from 25.50" to 39.50"
- Diameter range is from 1.115" to 1.300"
- Shot blasted mat-gray finish
- Minimum quantities are required



DRIVE PLATES

Stock Car

STOCK CAR

Sprint Cup, Nationwide, Camping World Truck, ARCA, K&N East & West

- **Nickel Chromium Molybdenum Steel**
For excellent hardenability, strength and toughness
- FEA (Finite Element Analysis) analysed lightweight scalloped and pocketed design
- **Marquenching Heat-Treat Processing**
Reduces internal stresses and stress cracks
- **Electro-Polished Surface Enhances Efficiency**
For reducing friction, wear and operating temperature on the spline flanks
- **Broached Splines**
Promote consistent fit and misalignment angle
- Drive Plate #ADC100 can accept up to 2 degrees* of camber
Drive Plate #ADC102 can accept up to 3.5 degrees* of camber

*when used with Strange or similar crowned splined axles



ADC100 – \$189.00
NONCAMBERED

Stock Car: Sprint Cup, Nationwide, Camping World Truck, ARCA, K&N East & West



ADC102 – \$349.00
CAMBERED

Stock Car: Sprint Cup, ARCA

DRIVE PLATES

Modified & Late Model

ADW500, ADW550 & ADW800 (shown below)

- **Billet Aluminum Construction**
Aircraft quality, lightweight, high strength
- **Pressed-In Steel Spline Insert**
For increased wear resistance and long spline life
- **Flanged Steel Sleeve Mounting Hole Bushings**
Resist distortion and provide longer service life
- **Mill Scalloped**
To reduce weight



ADW500 – \$99.00
Wide 5, Non-cambered
Modified & Late Model



ADW550 – \$109.00
Smart Hub
Modified



ADW800 – \$99.00
Wide 5, 8-lug
Modified & Late Model



ADW520 – \$229.00
Wide 5, Cambered
Late Model



ADW820 – \$229.00
Wide 5, 8-lug Cambered,
Late Model

ADW520 & ADW820 (shown left)

- **Billet Steel Construction**
Lightweight & high strength
- **Steel Spline Insert**
For increased wear resistance and long spline life
- **Mill Scalloped**
To reduce weight
- **Zinc Plated**
Protects against corrosion

9" CASES

Stock Car



Original M4141H 3.250" cast iron cases available directly from Strange Oval.

N1908

3.250" (M4141H) 9" cast iron case with original chrome-moly caps and cast adjuster nuts..... *\$290.28 each

N1957M

Optional steel adjuster nut for increased strength and durability (fits N1908/M4141H case)... *\$20.70 each (2 per case)

*Quantity Discounts Available



PINION RETAINERS

Stock Car



DPC100 – \$330.00

PINION RETAINERS

With a weight savings of up to 1 ¾ lbs. as compared to the standard "Daytona" cast iron pinion retainers, Strange Oval produces 2 variations of billet steel pinion retainers. While lighter in weight, our pinion retainers maintain a lower axial and radial deflection rate improvement of 20% over the cast iron counterpart. By reducing pinion deflection, the Strange Oval pinion retainers improve gear life

- Heat treated, fully machined, billet chromoly steel construction
- Improved rigidity and lighter weight than the popular Daytona pinion retainer
- NASCAR approved
- Iron shed (ISP105) support available for enhanced gear mesh oiling



ISP105 – \$375.00

**"Once you've raced,
you never forget it...
and you never get over it"**

– Richard Childress

TORSION BARS

Modified

The process and design that we use to make our Strange Oval gun-drilled torsion bars is entirely unique to the market. The torsion bar rate (in lbs. per inch) depends on the effective length of the bar as well as the diameter of the bar (see Fig. 1). The rate of a given torsion bar will also depend on whether the bar is solid or gun-drilled.

At Strange Oval we gun-drill our torsion bars with 7/16" diameter hole. In order to achieve the same torsional rate as solid bars we increase the effective diameter which gives the bar higher mechanical strength compared to its solid bar counterpart. To further increase strength, we maximize the effective length of our bars by shortening the splined end and bushing area to a combined length of 2" on each side. Maximizing the effective length allows us to make the O.D. slightly larger, thus increasing the bar strength further.

For example using a 12" arm; while a normal bar may measure .950" diameter and have a bar rate of 266 inch lbs., the Strange Oval bar measures .961" in diameter and has the same bar rate (266 inch lbs.) but is also lighter because it's gun-drilled and more reactive. This coupled with our proprietary heat treat gives us the highest strength bars on the market.

Deciphering the Strange Oval Torsion Bar Part Numbers:

Example: SEE09612900

SEE = Gun-Drilled Torsion Bar with 7/16" Hole

0961 = Diameter (.961")

2900 = 29.00" overall length (end-to-end)

Dirt Modified, 358 Modified & Sportsman Torsion Bars - (7/16" Gun-Drilled)

SEE09212900 1 1/8" Spline Bar, .921" Dia. = .900" Equiv. , 29.00" Lgth.

SEE09372900 1 1/8" Spline Bar, .937" Dia. = .925" Equiv. , 29.00" Lgth.

SEE09612900 1 1/8" Spline Bar, .961" Dia. = .950" Equiv. , 29.00" Lgth.

SEE09872900 1 1/8" Spline Bar, .987" Dia. = .975" Equiv. , 29.00" Lgth.

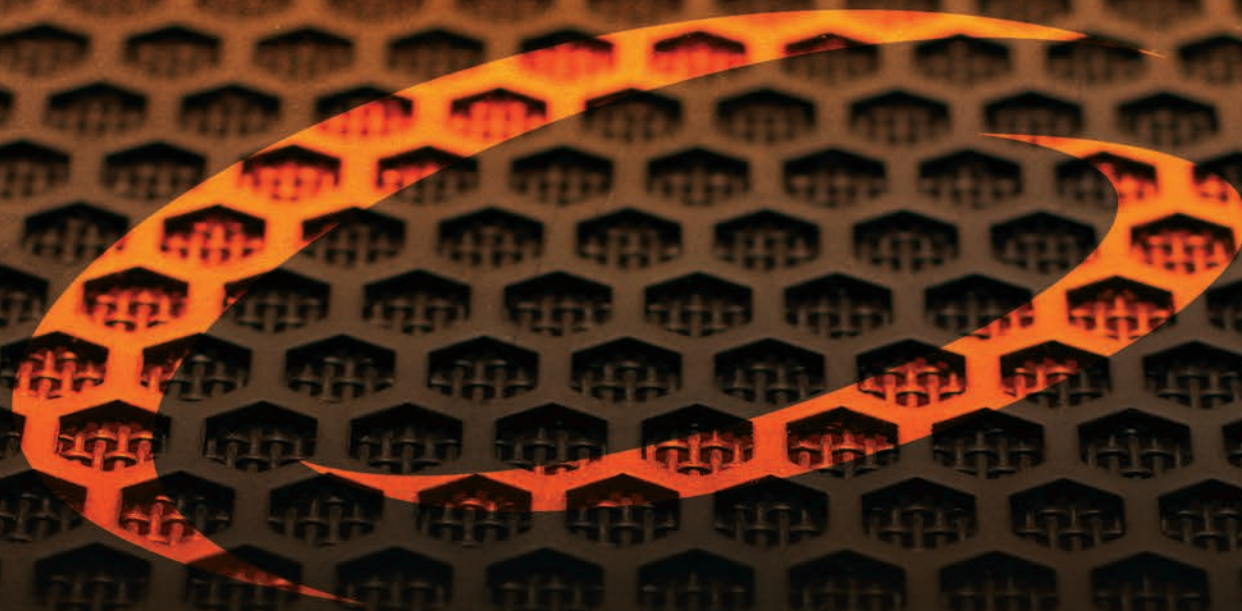


StrangeOval



The Strange Oval team introduces Social Media & Field Marketing Specialist Crystal Bailey. Look for Crystal and the rest of the Strange Oval team at races and events near you!





RaceStrange

"There are only three sports: bullfighting, motor racing, and mountain climbing; all the rest are merely games." – Barnaby Conrad



Strange Oval

8300 Austin Ave. • Morton Grove, IL 60053

racestrange.com • strangeoval.com • strangeeng.net

facebook.com/strangeoval • twitter.com/racestrange

1-800-653-1099



Quotes by Henry Ford, Barnaby Conrad, and Richard Childress are used for reference only and neither the individual nor the individual's respected companies or estates represent, endorse or sponsor Strange Oval in any way.