

# 360° Perfektion

 SYNERGIES CASTINGS LIMITED



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## The turn around is here

### A window into our World !!

Greetings! We are sorry there was a pause in our newsletters the last few months... As always a lot has been happening here and you will be reading all about it in these columns.

Change is the norm, especially in the very competitive automotive markets and every small improvement goes a long way. The article 'Without wheels the car goes nowhere' talks about enhanced safety for a critical component - the wheel. It describes the latest testing methodology now called 'ZWARP' used to enhance safety on the road. In TEK TALK you will read about the different tests to ensure paint aesthetics with performance and how we integrated it into our process.

You will also read all about our SEVA initiatives in 'Reinvesting in our Community' and what our team has been doing for the two most neglected sections - the elderly and the children.

This time Vizag Beat highlights the educational facilities of Vizag.

As always we invite your comments, criticisms and suggestions to further improve this newsletter.

Thank you

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Recessions in the automotive industry usually last anywhere between 2 and 3 years; 2010 was said to be the turnaround year with a v-shaped sales downturn and recovery. However, the global car sales is expected to reach 2006 levels only in 3-5 years. Asian Countries are expected to drive the turnaround and become the major sales powerhouse by 2015 with 50% global sales coming from Asia, Eastern Europe and South America. Globally, there is a marked shift towards basic, small and lower midsize segments, which is expected to have a 50% market share - an increase of 10m cars over 2008.

Asia is also becoming increasingly important for auto parts as customer preference for niche segment vehicles has outgrown conventional designs. Consequently strong partnerships between OEM and Tier I players is the right way forward. Auto part manufacturers are merging component design and manufacture as OEM's are now frequently outsourcing the same instead of creating them in-house.

India is therefore perfectly positioned to take advantage of these changing dynamics. Demographics, engineering and manufacturing skills, and market wise, India would be a preferred location for the automotive parts industry.

We at SYNERGIES are ramping up to meet our customer's needs. We have completed a 40% expansion in our capacity and have embarked on a further 40% expansion to meet growing customer demands. We have also significantly invested in new technologies and equipment demanded by the world's most premium, demanding customers. As we always say, at SYNERGIES we don't just make a component, we make the most 'perfect' alloy wheel every single time.

"There are some people who live in a dream world, and there are some who face reality; and then there are those who turn one into the other." - Douglas H. Everett

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*Fashion Street ...*



LINEA

A time resistant style... Dynamic, fluid, chic lines... The symmetry of lines in the given space is what defines Fiat Linea. A car that understands you; an outstanding example of Italian style. Our multi-spoke 15" alloy wheels complement this show stopper!



THE NEXT-GENERATION Indigo  
**MANZA**  
INDULGE. IN STYLE.

One look at the Indigo Manza and you know you have found something truly extraordinary... Everything about the Manza is new. Escape into your private oasis of indulgence in style. Our 16" street side machined finish alloy wheels add to that style.



TAHOE

Whether it's a trip to the lake with a boat or a winter destination with snowmobiles... Tahoe is the ideal family companion; the perfect partner to go anywhere, do anything attitude... They sport beautiful 22-inch 9-Spoke aluminum alloy wheels that take maximum advantage of the vehicle to handle large-diameter wheels. The faceted forms and a lustrous chrome finish make an emphatic style statement.



Radial Fatigue Test



Cornering Fatigue Test





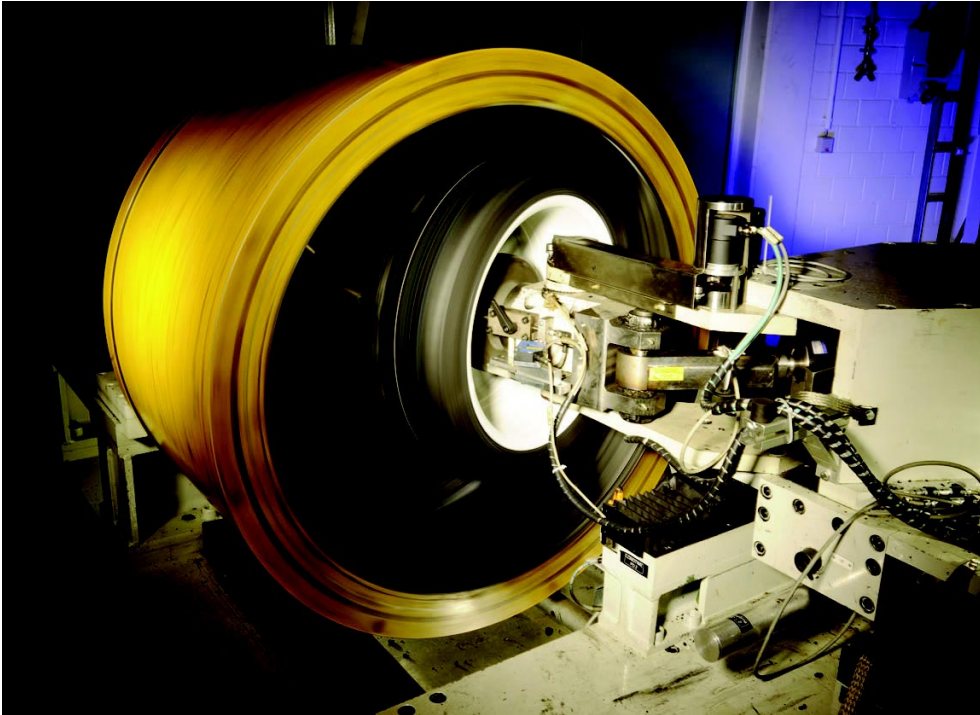
## 'Without a wheel, the car goes nowhere'

A basic technical requirement for a motor car to function is wheels... and like the title says, without a wheel, the car goes nowhere. Wheels therefore, are an integral part of the overall powerful vehicle design. Wheels not only bear the weight of

ated as a result of additional transverse movement of the test system, a reason why it is called the ZWARP or Bi-axial fatigue test.

The test conditions are extreme: as part of the test run the wheels are subject to a ground contact force of up to 10 kN over several thousand kilometres, which in real operating terms equates to the distance travelled over the entire service life of the vehicle. And by applying steering movements, the wheel is also pressed against the side lip of the rotating drum with lateral forces of up to 5 kN, thus simulating the wheel loads generated during sharp cornering.

What this means is when a vehicle is driven on the test tracks to test the wheel performance, considerable time is required... this test can be significantly and consistently replicated in a Bi-axial fatigue test thus saving considerable time on wheel development, yet fulfilling the objective of optimising the ordeal of developing a new wheel design.



the vehicle when stationary, but also endure incredible dynamic loads and stresses when the vehicle is moving.

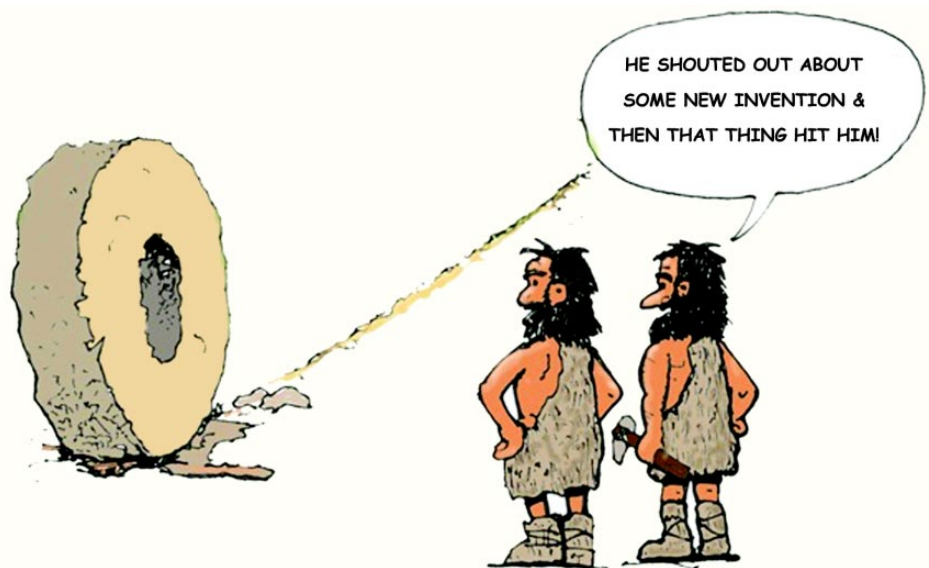
OEMs design vehicles with increasing performance requirements. These designs consider the actual load profile of light-alloy wheels in real operating conditions. Needless to say, when it comes to the development and testing requirements imposed by OEM's, alloy wheels also have to undergo several component and vehicle level performance tests. Fatigue tests are usually conducted to simulate actual road conditions to understand the behaviour of wheels.

One of the most effective test methods for assessing a new light-alloy wheel is "ZWARP", from the German "ZWei-Axiale Räder-Prüfstand" or the Bi-axial wheel test bench.

Unlike a conventional radial fatigue or rim rolling test in which the wheels run straight on an external roller with a specific ground contact force, the ZWARP uses an oversized roller to subject the wheels to both ground contact and lateral forces, gener-

We at SYNERGIES, coordinate the wheel development programmes accordingly and as a result, light-alloy wheels made for your cars are among the safest, best performing and most durable products in the entire automotive market.

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## Re-investing In our Community

At SYNERGIES, we take pride in contributing to the community development and enrichment, especially in and around our locality. A dedicated SYNERGIES SEVA team was brought together with the sole purpose of enriching the educational, economical and medical needs of our communities, including care for the elderly and sick, education, disaster relief and youth development.

**Care for the elderly** - It is said, the best classroom in the world is at the feet of an elderly person... but many a time we are so caught up in our affairs that we ignore and leave them to fend for themselves. Our SYNERGIES SEVA team visited one such home



for the aged and spent quality time with these elders, had a meal and gifted them with clothes, bed sheets and daily use items. Needless to say, these elders were thrilled



to have our members spend time with them

**Shaping the future** - A child, they say, is the father of man. The proper upbringing of children is every parent's desire. Hence it's rightly said "Education is the panacea of all maladies". We, in our true SYNERGIES spirit did just that... About 150 children from the 'Child Foundation of India' - a social service and charitable



organization spent a day at SYNERGIES. These little children have no parents to fulfill their dreams, but are eager to learn and seek humane ties and relationships... The SYNERGIES members encour-



aged these little children to sing and dance, express themselves, have a day of fun and frolic with sumptuous meals and a gift hamper of stationery



items and sets of uniforms to take away. In the children's words, they had the time of their lives and a day that they would always remember.

The interaction and bonding between the members of SYNERGIES and the children was truly worth watching.



## Visitors Gallery



BMW - IPO



HETPAN OVERSEAS



Volkswagen & Audi



HONDA - Japan



## The Finishing Edge

Automotive breakthroughs are an almost daily event... but real automotive break-throughs, the ones that transform the industry are rare. Alloy wheels were offered sporadically since 1924, but became popular only in the late 60's and early 70's. Probably the first factory-fitted all-alloy wheel was a cast aluminum 12-spoke, 5 x 13" version offered as optional equipment on the original first-series VW Golf, Scirocco, Passat and Audi 80 beginning in 1974.

Today, alloy wheels are all but ubiquitous and are used by automobile manufacturers as a key styling feature, often used to differentiate vehicle segmentation look and feel. They started becoming popular with the general public in the 1980's. SYNERGIES introduced alloy wheels in India in 1999 and are today the leaders of this product. A key element of alloy wheels is its finish. The finish can change the aesthetics, the car feel and the positioning of the vehicle. Alloy wheels have also been evolving over the years and today come in different finishes to suit each customer's need. What started as a simple painted wheel now comes in - Painted, Polished, Machined / Brushed Aluminum, Two Toned and Chrome finishes.

- ⌘ Painted Aluminum Wheels are finished with 3 coats - powder, liquid and clear and come in Silver, Blue, Black, or pretty much any colour that you desire. The most common colour is of course Silver. Another painted finish is Hyper Silver, which is Silver, but with a shine to it.
- ⌘ The polished finish has no paint, but is evenly buffed to give it a natural shine of aluminium. The polished finish is not as bright as the chrome. Clear coat is provided on top of the polished finish to protect the surface and also give a glossy appearance.
- ⌘ Machined finish also has no paint and is obtained by using the machine to diamond cut the street face of the wheel to give it a shiny, mirror cut like finish. For this finish too, a clear coat is provided on top. This is the typical finish seen in most cars.
- ⌘ Premium Paints are paints with a higher metallic content and are used to give a better sheen or glossy appearance with a metallic look. The paint process needs to be optimized to the precise micron to ensure the desired shade. Curbing high rate of rejections is challenging and repainting a premium paint wheel is not possible. Therefore, using premium paints is always a challenge as costs escalate and rejections are high. Chrome shadow is also a premium paint.
- ⌘ Chrome finish is the ultimate... it has an eye catching appeal and an unrivaled lustrous shine. The wheels go through a fully automated tri-cu-ni-cr plating process to give the wheels a finish that makes your car look both sleek and classy. So far, chrome wheels have been used mainly in limited edition cars, but are fast catching on.
- ⌘ Two Toned wheels have a chrome and a painted accent. They add "flair" to the wheel. The painted portion of the wheel can come in any color. When you see these wheels, you'll notice that the edge of the rim & some of the spokes are chromed while the other spokes are painted.
- ⌘ And the latest from the SYNERGIES stable is the chrome shadow finish and color toned plastic supplements termed as 'cleats' that can be swapped for a colourful display.

As always, SYNERGIES is amongst the few alloy wheel manufacturers in the world offering the different finishes to give you, our customer the competitive edge!!

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**Cutting Edge Finishes !!**



## Did you know...

### Ferrari

The coveted Italian car maker Ferrari's prancing horse Cavallino Rampante was originally the emblem of Italian WWII flying ace Francesco Baracca. When Enzo Ferrari started his own car company, he continued the use of this logo having been earlier persuaded by Baracca's parents to use the symbol of their late son for his Alfa Romeo race cars. Well, the Cavallino Rampante has defiantly graced more than just Ferrari vehicles. Today, it can be found pasted on bikes, T-shirts and almost everywhere one can imagine!



### BMW

The BMW roundel is a stylised, rotating airscrew - the blue representing the sky. BMW was a major supplier of airplane engines and aeroplanes like the Red Baron to the German government during the time of World War 1.

In 1918, when the World War ended, the German government stopped taking airplanes from BMW. BMW had no option but to change its business. The company started making railway brakes before making motorized bicycles, motorcycles and cars. That's right - Bayerische Motoren Werke built military aero engines for the planes that bombed the factories that they now own. It's a funny old world.



### Amazon.com

This logo doesn't seem to hide much at first sight, but it gives you a little insight in the philosophy behind the brand. First of all, the yellow swoosh looks like a smile: Amazon.com want to have the best customer satisfaction. The swoosh also connects the letters a and z, meaning that this store has everything from a to z.



### Fedex



This is probably one of the best known logos with a hidden meaning. If you look closely, you'll see an arrow that's formed by the letters E and x. This arrow symbolizes speed and precision, two major selling points of this company.

### Interesting

#### Who sells the largest number of cameras in India?

Your guess is likely to be Sony, Canon or Nikon. Answer is none of the above. The winner is Nokia whose main line of business in India is not cameras but cell phones.

Reason being cameras bundled with cellphones are outselling stand alone cameras. Now, what prevents the cellphone from replacing the camera outright? Nothing at all. One can only hope the Sonys and Canons are taking note.

**Try this. Who is the biggest in music business in India?** You think it is HMV Sa-Re-Ga-Ma? The answer is Airtel. By selling caller tunes (that play for 30 seconds) Airtel makes more than what music companies make by selling music albums (that run for hours).

Incidentally Airtel is not in music business. It is the mobile service provider with the largest subscriber base in India. That sort of competitor is difficult to detect, even more difficult to beat (by the time you have identified him he has already gone past you). But if you imagine that Nokia and Bharti (Airtel's parent) are breathing easy you can't be farther from truth.

## Resources @ Water

Take shorter showers by two minutes and save an hour of running water per month. Replace your showerhead with an ultra low flow version. You will save 150 litres of water.



Fix all leaks immediately. Repair dripping faucets by replacing washers. Fixing a leak can save upto 1800 litres of water per month.



Turn off the tap when brushing or shaving. You will save 150 litres of water a day.



Install a toilet displacement device such as a bottle to cut down on the amount of water needed for each flush. Be sure that the installation does not interfere with the operating parts.





## TEK TALK - SYNERGIES Ensures Aesthetics with Performance

The wheels of an automobile are vehicular components that are subject to extreme conditions, temperatures and weather conditions. The ability to perfectly blend aesthetic beauty with performance to withstand extreme climatic conditions is ensured by subjecting them to simulated climatic tests. Salt Spray test - Neutral Salt Spray, Acetic Salt Spray and Copper Accelerated Acetic Acid Salt Spray and Thermal Cycle Tests are carried out to test corrosive resistance of painted and chrome plated wheels.

The wheel sample is placed in NSS chamber containing salt solution for 240 hours (10 days) and then tested for blistering, corrosion and paint peel-off. Similarly wheels are placed in the CASS chamber containing salt solution, cupric chloride and glacial acetic acid for 120 hrs (5days) and then tested for any significant changes. Only uniform micro-pore changes are acceptable. After the CASS test the sample is placed in the thermal cycle - Cryo Scientific Environmental chamber and subjected to different cycle times, atleast four cycles and tested for any deformities, crazing, blistering, splitting or loss of adhesion.



Every small perfection contributes to your safety and vehicle aesthetics... and SYNERGIES with its range of tests gives you 'enhanced overall road worthy' components. SYNERGIES wheels for enhanced safety with looks; yet another drive towards 360° perfection !!

with looks; yet another drive towards 360° perfection !!

**N Srinivasa Rao**  
Senior Engineer - Quality

## How Long Have You Owned a Car?

Mr. Allen Swift (Springfield, MA.) received this 1928 Rolls-Royce Piccadilly P1 Roadster from his father, brand new - as a graduation gift in 1928.

He drove it up until his death last year.....at the age of 102 !!!

He was the oldest living owner of a car from new. Just thought you'd like to see it.

He donated it to a Springfield museum after his death. It has 170,000 miles on it, still runs like a Swiss watch, dead silent at any speed and is in perfect cosmetic condition. (82 years)

That's approximately 2000 miles per year... .



## Do you know...

1. What make of cars has the nick name "Silver Star"?
2. What colour are most Ferraris?
3. What material is a Chevrolet Corvette body made of?
4. What does "GT" stand for?
5. The term "GTO" was originated by Ferrari. What does the "O" stand for?
6. What is the native country of the creator of Porsche?
7. At what angle do the rear wheels turn on a 1992-93 Honda Prelude?
8. What is the actual most expensive vehicle?
9. What was the first car to test carbon fiber break discs and then decide against them?
10. Where did the name for the McLaren "F1" come from?

### Answers

1. Mercedes-Benz  
 2. Ferrari Red  
 3. Fiberglass  
 4. Gran Turismo  
 5. Omologato  
 6. Austria  
 7. 35% of the front wheels  
 8. Rolls Royce  
 9. It was to make fun of the Ferrari F40  
 10. LeMans Chevrolet Corvette

## VIZAG - The Home of SYNERGIES. . .

## Educational Facilities

Visakhapatnam is one of the main centres of education in the state of Andhra Pradesh. It is the home of the renowned Andhra University, established in 1926. Prof S. Radhakrishnan was the Vice Chancellor of this university between 1931 and 1936 before he became the President of India. The university and its affiliated colleges provide high quality and affordable education to thousands of students not only from the northern region of Andhra Pradesh but from the entire state. Post Graduate and Graduate courses are offered in various branches like Arts, Commerce, Science & Technology, Engineering, IT, Business Management, Law and Pharmacy.



Another important landmark in the education map of Visakhapatnam is the Andhra Medical College, established 1902. The college ushered in an era of Medical Education in Visakhapatnam and continues to uphold the prestigious tradition of engendering the finest doctors from its aisles.

For primary, high school and college level education, Visakhapatnam has several good institutions, providing quality education. Apart from state run schools for the poor, there are many private institutions and missionary schools and colleges / Institutions. Some of them are more than 100 years old, whereas the St Aloysius Anglo-Indian High School was established in 1847 and is one of the oldest in the country. Mrs. AVN



College is another old premier educational institution which was established in 1878. Sir Dr. CV Raman did his schooling from AVN High School. The Georgia Institute of Technology (GA Tech) will establish its campus in Vizag, making it the first foreign university to establish a campus in India. Today, Vizag Dt. has more than 3 Universities, 45 Engineering Colleges, 2 Medical Colleges and numerous colleges in other disciplines. Visakhapatnam has now become a preferred destination for students.

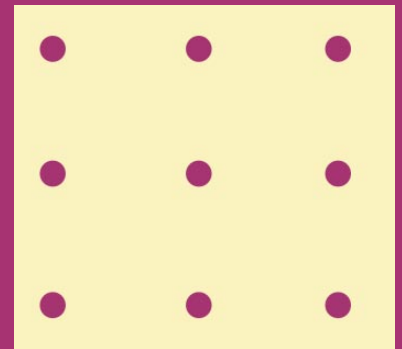


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### Nine dots

The challenge is to connect them all in four straight lines, without lifting the pen or pencil from the page. When you figure this one out you will have a new appreciation for the expression "thinking outside of the box."



### Answers to the last issue's Magic Square

1	63	3	61	12	54	10	56
16	50	14	52	5	59	7	57
17	47	19	45	28	38	26	40
32	34	30	36	21	43	23	41
53	11	55	9	64	2	62	4
60	6	58	8	49	15	51	13
37	27	39	25	48	18	46	20
44	22	42	24	33	31	35	29

### Editorial Committee

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