

14th AUTO EXPO 2018

COMPONENTS

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Show

Daily

10 FEBRUARY 2018 DAY THREE

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Essential reading for the Automotive Industry

Freudenberg bets big on India

German component major's four business divisions showcase latest product portfolio, eye new opportunities **Page 4**



Varroc shows concept car

Varroc Lighting Systems' advanced exterior lighting technologies for 4-wheelers **Page 9**



Brakes India innovates

Displays hydraulic-assisted disc brake system for commercial vehicles that offers improved braking and reduced weight **Page 7**

Denso to make India its global manufacturing hub by 2025

DENSO, ONE OF the world's leading automotive component suppliers, plans to make India its global manufacturing hub by 2025.

The company, which is currently represented in India as six subsidiaries and a joint venture across six locations (Greater Noida, Haridwar, Manesar, Jhajjar, Bengaluru and Pune), plans to invest about Rs 900 crore in the process of making India its global manufacturing hub.

Speaking to *Autocar Professional* on the sidelines of the ongoing Auto Expo Components Show at Pragati Maidan, Takashi Nagata, managing director, Denso International India, said: "Make in India has great relevance for our India operations. We will continue to expand on the front of powertrain products for the ICE engines. Making India our global manufacturing hub by 2025 is my dream."

Commenting on the investment plans, Sunil Soni, deputy general manager, head of department, Sales Strategy Function, Denso International India, added, "We plan to invest about Rs 900 crore in gradual phases as this will almost double up our current manufacturing capacities by 2025. As customers' volumes will increase, we will also increase our



Sunil Soni: "We plan to invest about Rs 900 crore in phases."

manufacturing capacities. That's how we would like to time it."

The company, which has been present in India for close to 34 years now, had reported (including all six subsidiaries) a total consolidated turnover of Rs 46 billion in FY2016-17.

FOCUS ON FUTURE TECH

Stressing on the relevance of the Denso International India's Technical Center, Nagata added, "We have been expanding the team at our technical center. The headcount currently stands close to 150 engineers. We will continue to expand the team as per the R&D needs."

According to Nagata, the engineers at Denso's technical center are also working on artificial intelligence (AI), mainly for projects that have India applications.

The company is set to register big benefits under the incoming BS VI regime. For example, it currently supplies fuel injection

systems for two-wheelers. Denso officials estimate that the company's production capacities have to be scaled up in line with the estimated spurt in demand in the near future.

IMMEDIATE PRIORITIES

Nagata's immediate priorities include focusing on future products under the vehicle electrification umbrella. "We need to work on the battery pack together with Suzuki and Toshiba. We should work on more products such as power control unit(s) and others for four-wheelers and two-wheelers. However, we will decide on the localisation and the timing, which is very important. It is very difficult to estimate what will happen by 2025. We are working on our mid-term plans currently."

PRODUCTS ON DISPLAY

At the Components Show, Denso is displaying future technologies that includes stereo vision sensors and millimetre wave radar sensors, driver status monitor, engine ECUs suitable for advanced stages of BS VI emission norms, ceiling fan (that it supplies to the Toyota Yaris in global markets), motor generator, power control unit, battery ECU, emission control components, lithium ion battery pack and others. Visit Denso booth at Hall 11, Stall 37. **n**

12 Volt 10Ah lithium ion battery pack.



Denso-developed ceiling fan for Toyota's Yaris.



Engine ECUs suitable for advanced BS VI stages.



MADHUS AND HUNTER PROVIDE A TOTAL SOLUTION FOR ALL CAR PULLING AND VIBRATION PROBLEMS

MADHUS GARAGE EQUIPMENT is the leading garage equipment supplier in India for over 30 years. Madhus brings the latest equipment from around the world, in line with its mission to 'Bridge the technological gap between India and the advanced countries'. Madhus is the only company importing, selling and servicing high-tech equipment in India which is on par with equipment sold in the USA, Japan and Germany.

Madhus has two full-fledged and operational training centres in Bangalore and Delhi where training is imparted on a variety of services like Wheel Alignment, Wheel Balancing, Welding, Truck Wheel Alignment, Wheel Balancing and Tyre Changing, AC gas recharging, Collision Repair Systems and so on.

Madhus will have a third training centre coming up soon in Pune.

Madhus has also partnered with many OEMs for training programmes. Companies like VW, Honda, Tata Motors, MRF, JK, Michelin, and many more have sent their delegates to Madhus for training.

A team of over 120 trained Madhus engineers, who are based in over 35 offices across India, installs Hunter equipment.

Madhus has the largest strength of service engineers in the Indian garage equipment industry. A Centralised Service Cell, based in Delhi and Bangalore, ably supports our service engineers. The Service Cell is just a phone call away for customers to log in their complaints. The CSC executives then keep in touch with the customer and give them regular updates on the complaint via phone call and SMS.

Madhus has been importing Hunter Engineering Company's products since the year 2000. We have an enviable list of installations including most luxury car workshops.

Hunter's Wheel Alignment Systems and Wheel Balancers are approved by every single car manufacturer from Mercedes-Benz, BMW, Audi, Jaguar Land Rover, Porsche to Hyundai, Honda, Toyota, Nissan, Renault and Ford.

Hunter is at the forefront of wheel servicing technology. The Hunter HawkEye Elite and Hunter Road Force Elite are top-of-the-line equipment which complement each other well to solve all pulling



'A team of over 120 trained Madhus engineers, in over 35 offices across India, installs Hunter equipment.'

and vibration-related issues of a car.

The specialty of Hunter equipment is the ease of use, accuracy and high level of productivity.

The HawkEye Elite is the world's best and fastest Wheel Alignment System. The 4 high-definition cameras combined with the light, plastic unbreakable targets and easy to mount wheel adaptors ensure that an alignment reading can be generated in less than 2 minutes. The WinToe feature, available in every single Hunter Wheel Alignment system, ensures perfect alignment and a perfectly straight and level steering every time.

Hunter's WinAlign system also guides the technician when aligning a luxury car. It tells him what angles are adjustable and there are photos and videos to guide him. It shows exactly what bolt has to be loosened or adjusted to bring the alignment angle to specification. This is very

important as many alignment technicians need a guiding hand when aligning a rare car from a premium brand. Whether it's a Ferrari or a Lamborghini or a Porsche, the Hunter WinAlign software will guide the technician and make it very easy for him. The Hunter Road Force Elite simulates the effect of the road on the tyres and measures wheel and tyre runout, road force variation and imbalance. A normal wheel balancer can only measure the imbalance. A normal balance cannot identify problems in wheel and tyre runout and road force variation.

The Road Force Elite also has a vision-based system which uses lasers and cameras to automatically measure the wheel dimension, wheel runout, width of the rim, distance, spoke location, rim profile, weight mode and SmartWeight optimised. This further eliminates operator error.

The Road Force Elite also measures tyre-related pulling

problems. It is commonly seen in workshops and tyre shops that certain pulling problems can only be fixed by rotating the tyres. This is a trial-and-error procedure. The Hunter Road Force Elite gives exact numbers and a report and suggests the correct placement of tyres on a car.

A workshop or tyre store equipped with both of these equipment does not have to rely on any old-fashioned trial-and-error method to resolve pulling and vibration-related problems.

Hunter products are available and serviced across the country by Madhus. You can contact us at Madhus@Madhusindia.com or log on to www.madhusindia.com and send your enquiry.



3 FEBRUARY 10, 2018

SHOW DAILY

Avtec displays future-ready electric and BS VI technologies

AVTEC, PART OF the CK Birla Group and one of the largest independent manufacturers of powertrain and precision engineered products in India, is displaying future-ready technologies including electric drive units and the Euro 6-compliant petrol and diesel engines.

In a first, the company is showcasing an electric drive unit (EDU) designed and developed by its Switzerland-based subsidiary, Assag. Developed for a European pedelec e-bike customer, Avtec aims to showcase its capability to develop EDUs for two-wheeler applications. The EDU deploys face gear technology, which enables reduced noise and wear and tear of the machine. According to a company official, the EDU is designed with unique gear geometry, and the gears are made of special plastic materials and alloys.

In yet another first, Avtec also displayed a



3cyl, 1.2-litre Euro 6-compliant petrol engine.



Shaft for electric drivetrain.



Tubular camshafts.



Avtec displays an electric drive unit for the first time at the Components Show.

locally designed and developed shaft for electric vehicles. Tubular camshafts are also on display. According to the company, these are about 25 percent lighter when compared to conventional units.

Avtec is also displaying a Euro 6-compliant three-cylinder, 1.2-litre petrol engine and four-cylinder, 1.5-litre diesel engine at its pavilion at Hall 10, Stall No. 20. n



4cyl, 1.5-litre, Euro 6 diesel.

Jamna Auto focuses on lightweight suspension systems

JAMNA AUTO, A major component manufacturer of commercial vehicle suspension systems, is focusing on lightweight solutions at Hall 12A. The company has displayed a composite spring for LCVs and hybrid spring for heavy commercial vehicles. The upcoming BS VI emission norms are going to put a lot of pressure on suppliers to reduce vehicle weight.

Given the tighter emission norms, lightweighting of trucks is gaining ground. Composite springs are already being used in a few truck platforms in Europe and USA for over a decade now. While composite springs are more expensive than conventional springs, they are highly durable.

"Keeping the stricter emissions norms in mind, we have started developing a composite spring for LCVs which is 50 percent lighter

than parabolic springs and 70 percent lighter than conventional springs. We have also developed a hybrid spring, which is a combination of steel and composite for HCVs, offering lightweight benefits and higher durability," said Sunil Laroia, vice-president, R&D, and International Business.

Over the past few years, the heavy commercial vehicle segment has been rapidly moving to higher tonnage starting from 25T to 31T, and 37T with 10T axle will move to 40T and above. To address this growing trend, the company has developed a new 10T lift axle against the current highest axle of 6T. "Given that higher-tonnage trucks are being preferred in the industry, we have developed a 10-tonne lift axle; this will push up truck payload up to 41T. We are working with



local commercial vehicle OEMs to launch this axle commercially in next 3-5 months," added Laroia.

Besides this, the company has also developed a rubber bogie suspension. Currently, all bogie suspensions in India are on leaf springs with a lot of part replacement and maintenance cost involved. Keeping this in mind, Jamna Auto has developed the rubber bogie suspension which offers 4-5 times' higher life as compared to regular mechanical suspension.

The trailer market in India is highly unorganised but with recent legislation, every trailer supplier has to be certified by ARAI. This move will help regulate the industry much better with more organised in nature. "We have launched our trailer suspension which is in parabolic spring that reduces suspension weight by about 200kg, helping the truck owner with a higher payload. We are also offering a one-lift axle feature which will help the trailer; when empty, this axle can be

lifted. The company is quite bullish on this segment as higher-tonnage trucks and the growing trailer market are likely to boost demand," said Laroia.

The currently buoyant growth in the domestic commercial vehicles market is driving Jamna Auto's growth with higher production resulting in production capacities. The company is operating at almost 90 percent of its production capacities across plants. Jamna Auto opened a new plant in Hosur last year; this unit has seen a pick-up in production. The company is also increasing its parabolic spring capacity to become the largest parabolic spring manufacturer in the world. "As of today, we are No. 2 in total parabolic spring capacities. In the next few years, we are likely to be No. 1," signed off Laroia. n

Freudenberg bets big on India, eyes new business at Auto Expo

THE FREUDENBERG GROUP, which is present at the Components Show through its four business verticals – Sigma Freudenberg NOK (sealing solutions), Corteco (components for independent automotive aftermarket), Kluber Lubrication and OKS – is presenting its latest and new mobility solutions at Hall 7ABC, Stall No. 17.4.



New mobility concepts pose major challenges to automotive manufacturers and suppliers, who need to prepare electric mobility for mass production. The Freudenberg Group, which is a global automotive supplier, says it is examining the trend closely and working to create innovative solutions.

“We want to remain a competent supplier of high-tech innovation – for all drivetrain types. The innovations will include improvements to current internal combustion engines, hybrid engines or fuel cells along with those to purely electric vehicles. Thanks to our

technological and material expertise, we will remain an important partner for many OEMs. Just look at battery technology or fuel cell products for example. Our non-wovens and filters are highly relevant to these markets. The

markets for our sealing technology products are going to change, while they remain highly relevant. Our job is to advance the technologies we have, find new ideas and move forward with our customers,” said Georg Graf, Regional Representative,

Freudenberg Regional Corporate Center India.

At the Auto Expo, the German major is showcasing its range of specialty lubricants from OKS and Kluber Lubrication, its sealing solutions from Sigma Freudenberg NOK and aftermarket solutions from Corteco.

The company’s non-woven materials, which find use in the interior rooftop of vehicles, now are used in the battery management system for EVs. According to Milind G Karkhanis, Head – Technical Non Wovens, Freudenberg Performance Materials, “In EVs, there will be requirement for lighter bio-degradable materials that will not only help in reducing weight



but also reduce emissions. The specialised material we have developed for the lithium-ion battery separator helps in minimising heat generated and also help transferring the energy efficiently.”

The company has also started working

on identifying its new greenfield manufacturing or tie-ups. Ashok Pandey, head – Automotive, Freudenberg Filtration Technologies India, revealed that the company sees a huge opportunity in automobile interior filtration systems. He

added that while most Indian OEMs may not be focusing on the need to reduce particulate matter in car cabins, but with pollution levels increasing as well as consumer awareness, there will be a need for the product. The company says its HEPA (high efficiency penetrating articulate) filters are capable of filtering particulate matter upto .5 level in a vehicle. He said the company saw a 10-15 percent increase in new business after Auto Expo 2016 and expects the 2018 event to deliver on similar lines.

Sanjib Das, CEO and director, Sigma Freudenberg NOK, said the company is displaying its range of new products. He said, “This platform helps in showcasing new products and solutions to a wide variety of audience. It also helps in learning what our competitors are doing, what the market is demanding, new trends and others.”

INTERVIEW



HANS-JOACHIM KUPPEL
BOARD MEMBER, CHIEF SALES OFFICER, SEG AUTOMOTIVE GERMANY

What is SEG Automotive's focus in India?

We have been present in India since the last 25 years, supplying our products and technologies to key OEMs. We want to further accelerate our growth in India with our existing products, which are starter motors and generators. With our innovation in this product, we already contribute to the CO₂ reduction. We would have special focus on stop-start solutions which contribute to real-life conditions with 6-8 percent fuel economy, and are an easy to install system with impressive impact.

What is the market scenario in the starter motor and generator segment?

Our strength is in our global presence and India is an export hub, but we also cater to our Indian customers with local manufacturing. Therefore, we are a global supplier offering access to global OEMs. This is not only in production but in engineering, which is one of our core strengths and making a difference compared to some of our competitors.

You clearly want to grow faster in India. Which are the areas where you foresee this growth to come from?

Today, we are present in one of every four cars produced in India but we see there is further upside potential to grow. India is a fast-growing, global market in terms of vehicle production and we want to contribute to this growth. Lastly, increasing value in the start-stop system is more complex than the conventional starter; so we also want to contribute to this growth.

What is the contribution of the Indian business to SEG Automotive globally?

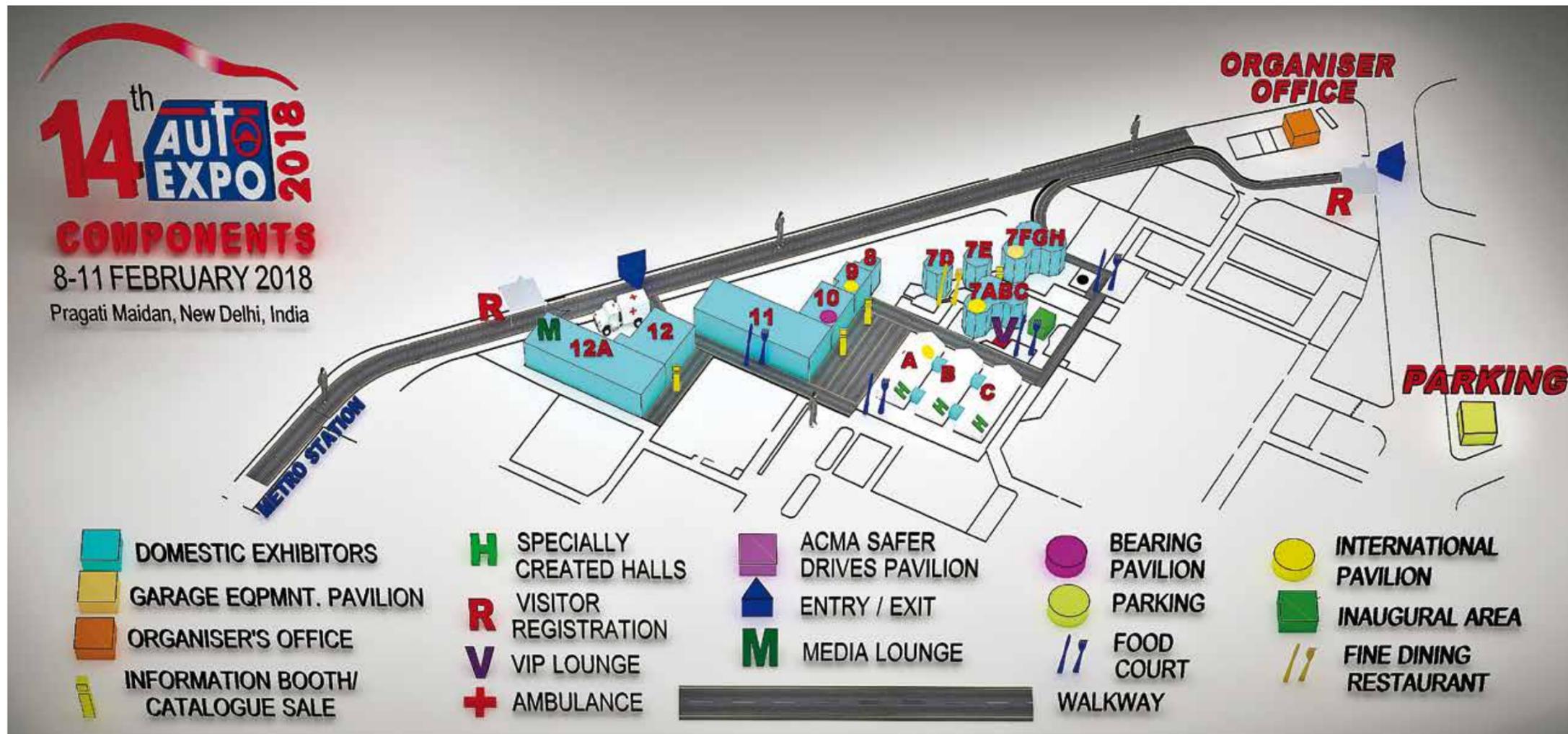
At present, India contributes 10 percent of our global turnover which was \$1.7 billion in 2017; we expect this share can increase rapidly. We are pushing for growth and targets to grow faster than the market. India is growing faster than Europe and North America. Our India team is very ambitious to increase the share of India within the global network.

What are the localisation levels in India for your products?

Our products in India – not only assembly but also sub-components – are highly localised. We have deep production depth and our customers in India also want local products. This is helping in reducing logistics cost and import but we also balance overall global capacities. Definitely, India is clearly one of our export locations.

Technologically, how you see starter motors for passenger cars and commercial vehicles evolving?

In both the segments, the requirements are different; for the CV market, we have quite specific and tough environmental requirements. Therefore, the innovation and R&D focus is to meet the requirements in terms of robustness and quality. More focus is on reducing CO₂ emissions for passenger cars for start-stop systems. We expect the start-stop system also to come to commercial vehicles, especially for last-mile delivery, because long-distance trucks are not suitable for this technology.



ACE MICROMATIC GROUP

Trusted by SSIs & SMEs – Preferred by OEMs & MNCs

THIS IS THE largest machine tool group of India comprising of trusted brands like ACE, AMS, Micromatic Grinding, Pragati and AmiT with a global presence in several countries. The Group has created trust among small and medium entrepreneurs across India by providing local substitute for imported machines since the pre-liberalisation era – Make in India for India. Over four decades of service to the Indian manufacturing fraternity by providing their customers end-to-end solutions for all machining needs. The Group specializes in the manufacturing of CNC Turning, CNC Milling and Grinding machines along with subsystems like tool turrets, automatic tool changers, productivity monitoring, IoT & Industry 4.0 solutions.

The Group offers products and solutions for automotive and auto components, general engineering, aerospace and defence, energy, railways, construction equipment and off-road vehicles, die and mould, pipe turning, medical and orthopaedic

implants. Over 60% of the sales are to the automotive component manufacturers, right from OEMs and Large Manufacturers to Tier 1, Tier 2 suppliers and the Small & Medium Industries.

The Group offers its customers a wide and comprehensive range of machines to suit a broad spectrum of applications. It also offers turnkey solutions, tool-up options, innovative work holding, Cp/Cpk evaluation, TPM-friendly machines and more. By making machines that make machines, the Ace Micromatic Group is truly powering the growth of the nation through its strong workforce of over 3,000 committed employees across India and more than 200,000 sq mts of built-up facility.

Ace Micromatic Group companies are uniquely positioned to provide end-to-end solutions to a large number of industry sectors. Starting from process optimization, fixture and work holding solutions, tooling selection, automation and complete

prove out, the machines are built to suit customers' precise requirements. In addition, they have also built expertise in integrating automation solutions through robotics and gantry system, providing an error-free and highly productive solution. Supported by a skilled and competent group of application engineers, the Ace Micromatic Group has provided solutions to significantly improve productivity, reduce overall cost per component and deliver consistent performance over the life of the machines.

Some of the core strengths of the Group are the rich engineering experience of its leaders, who are considered pioneers in the development of several technologically advanced products, and a very strong shared value system. A healthy synergy among the Group companies has facilitated cross-learning and rapid growth and enabled them to be the front runners in machine tool development. Some of the key numbers for the

Group are given below.

Micromatic Machine Tools is the sales and service arm of the Ace Micromatic Group, the preferred supplier for many Indian OEM and component manufacturers. With over four decades of experience and supplying more than 45,000 machines in India and abroad, they understand the demands of manufacturing industries. They provide unmatched pre-sales and post-sales application and service support through 41-plus offices and seven technology centers spread across India, with a team of 550 trained engineers and close hand holding of the customer through the life of the machine. Micromatic has played a key role in nurturing the SSIs and SMEs to adopt CNC technology and move towards global quality levels, through providing them with affordable CNC technology and close hand holding. No wonder over 60% of their customers feel comfortable to work with them over several years and place repeat orders.

THE KEY COMPANIES OF THE GROUP ARE:

Ace Designers	: CNC Lathes, Chuckers, Vertical & TurnMill centers
	: Over 35,000 machines installations
Ace Manufacturing Systems Ltd	: Vertical & Horizontal Machining centers
	: Over 11,000 machines installations
Micromatic Grinding Technologies Ltd	: CNC & Hydraulic Grinding Machines
	: Over 4,500 machines installation
Pragati Automation	: High precision automation accessories
AceMicromatic Manufacturing Intelligence	: Industry 4.0 & IoT Solutions Technology Pvt. Ltd.(AmiT)
Micromatic Machine Tools Pvt Ltd	: Sales & Service Arm of Ace Micromatic Group
	: Over 41 offices and 7 technology centers



The Group has established its presence across major regions of the world with its own offices in China and Europe and reliable dealers as partners in all the major countries.

Managing a large organisation and driving sustainable growth

requires a strong vision which motivates the people. The twin pillar of Ethics and Values has closely knit the entire team together and paved way for the Ace Micromatic Group to aspire to be among the Top 10 players in the global machine tool fraternity.

The Group firmly believes and works consistently to maintain the ecological balance of the nature. Be it rain water harvesting, treating effluents or maintaining low carbon footprint, the Group has always played a positive role. In addition, the Group works

on giving back to the society through various training and skill development programs to the needy sections of society.

For more information on Ace Micromatic Group products and services, visit www.acemicromatic.net



Brakes India innovates with lighter and safer hydraulic brakes for LCVs

BRAKES INDIA UNVEILED an innovative hydraulic-assisted disc brake system for commercial vehicles at the Components Show. This new system helps improve braking stability and brake life, and also lowers the weight of the braking system significantly.

“Light commercial vehicles in India with over 7-ton GVW adopt pneumatic brake systems to provide adequate braking. We have found an opportunity to provide a more cost-effective and lighter option without compromising on performance. Brakes India has developed an actuation system called the UniBOOSTER to extend hydraulic brakes up to 10 tons. This, coupled with hydraulic disc brakes and hydraulic ABS, provides the end user with a very optimised solution for safety, stability and performance, while also



reducing overall vehicle weight significantly,” said Badri Vijayaraghavan, executive director, Business Development, Brakes India.

The UniBOOSTER and hydraulic disc brake system provide a very progressive, car-like brake feel and consistent brake performance under various duty cycles. While the hydraulic system provides a very cost-effective solution, the lower number of parts allow for reduced weight. The disc brake

provides greater stability even at high speeds and low or no fade coupled with a higher pad life. The fine tuning of this system also lends itself to shorter stopping distances, thereby enhancing safety.

Brakes India is the first Indian supplier to launch a product of this kind. Due to its compelling value proposition, a number of OEMs have already signed up for it. Commercial production is slated to begin in H2, 2018.

SHOWCASES FUTURE TECHNOLOGIES WITH ZF Brakes India and JV partner ZF are showcasing future technologies and products including Integrated Brake Control to meet future requirements of low vacuum or vacuum-less braking systems as electrification of the powertrain increases. The integrated brake control (IBC) is a non-vacuum, integrated electro-hydraulic brake apply control unit which

replaces the electronic stability control, vacuum booster and vacuum pump (where needed), associated cables, sensors, switches and controllers. AC1000, a fourth-gen 77GHz radar enables vehicle and pedestrian detection features and helps meet 2016+ Euro NCAP 5-star ratings. The S-Cam3 mono single lens front camera is a compact, high-performance, third-gen unit that helps meet 2016+ Euro NCAP test norms.

INTERVIEW

What are the key highlights of Brakes India at the Components Expo?

Brakes India is highlighting braking in traditional commercial vehicles, passenger vehicles and tractors and how we can move forward in some technologies. Passenger vehicles will see a huge change in the next 10-15 years but it's not clear when the change will happen.

How are you engaged with emerging technologies like electric vehicles?

Globally, the whole world is shifting towards electrification technologies. ZF, being one of the leading players both in electrification and braking, is actively working on solutions with multiple customers. We have already exposed some of our Indian customers to these technologies and how they work. I think it is all about understanding the market and customer interest to bring more advanced technologies to India.



SRIRAM VIJI
DEPUTY MANAGING DIRECTOR,
BRAKES INDIA

How will the upcoming shift to BS VI impact braking technologies?

Emission and NOX regulations are clearly driven by BS VI and SCR technologies whereas the engine can drive the overall fuel economy of the vehicle. Braking systems are a slight efficiency dropper and we are working to reduce small inefficiencies in the system. Some of the

braking technologies are driven by regulation in India, the government is also on the right track to introduce them, and the policies will continue evolve over the next few years.

We are the largest supplier of drum brakes to commercial vehicles in India with an over 70 percent market share. Commercial vehicle braking systems are relatively

standard and one-size fit in most segments. We are looking at differentiating it. For example, we have an air disc brake on display here, which is in buses. It is a good value proposition for intercity buses where the stability at high speed is extremely good. In LCVs, we are showcasing the hydraulic system. Typically, what went up to 6-7T GVW, we are extending to 10T with the UniBOOSTER.

Can you provide an overview of Brakes India's current business plan?

This (past) year has seen good growth for us across the industry, light and passenger vehicles have been growing relatively steadily. CVs, after a tough first quarter, have seen a sharp recovery. Similarly, the tonnage of CVs has gone up with more axles, which means more braking is required. We have witnessed a double increase in capacities in production requirements, both with vehicle volumes going up and higher tonnages.

We are working hard to supply customers as it is a challenge when the demand increases sharply within a short time.

What is the capacity utilisation for Brakes India across plants?

At present, we are operating at peak capacity and trying to expand our volume in the existing plants. We have invested in a plant in Gujarat about six years ago, which is delivering volume extremely fast. We service quite a few OEMs from that plant. We expect the plant to run close to full capacity within two years. Our major production base is in Tamil Nadu and we are expanding our volume in those plants too.

Any update on the Brakes India-ZF joint venture?

The joint venture is going quite strongly with over 50 years of partnership. We are working with ZF on the automotive mega trends. They have been extremely supportive and work closely with our customers in India.

A

ON THE FAST TRACK WITH AUTOCAR INDIA.

If you have wondered why more auto enthusiasts and professionals follow Autocar India than any other Indian auto media, the answer is simple. Since our first issue in September 1999, we have constantly set the pace and milestones for others to follow.

Be it our cutting-edge news or our exhaustive and comprehensive road tests, Autocar India has set the gold standard. And this has earned us our growing tribe of loyal readers. And when you complement this with engaging content and stunning visuals, you have India's favourite and most influential auto media brand.



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Hi-Tech Robotic Systemz supplies ADAS/AV tech to Daimler India CV

THE HI-TECH ROBOTIC Systemz, which designs and develops technology for autonomous and driver assistive systems, is to supply its Novus Aware (technology) to Daimler India Commercial Vehicles (DICV) for the BharatBenz truck range. It will be rolled out as standard equipment in the BharatBenz brand's premium HDaT variants.

This is the first time that an Indian company is providing its proprietary ADAS/AV technology to a German OEM.

Novus Aware is the first-of-its-kind technology in the world, which is a driver behaviour sensor to ensure safe driving. This product is based on an indigenously developed patented technology. Novus Aware uses state-of-the-art artificial intelligence and computer vision technologies to build an intelligent model of



L-R: The Hi-Tech Robotic Systemz's Anuj Kapuria and Deep Kapuria; Erich Nesselhauf, MD and CEO, DICV and Pranav Kapuria, director, THRSL, at the launch of Novus Aware ADAS/AV tech.

the driver behaviour by monitoring various features including eye, face, head, gaze, and other natural cues to infer whether a driver is in safe driving condition or not. This includes driver drowsiness, inattention, and distractions like texting or other mobile phone

usage. The technology is robust to various facial variations, head gears as well as eyewear.

Anuj Kapuria, MD and CEO of The Hi-Tech Robotic Systemz, said, "Ninety percent of accidents happen due to human error and Novus Aware will help

in significantly reducing the number of accidents. We see it as a key enabler for more safety on the roads. By providing our patented product, Novus Aware to Daimler, we are supporting their pursuit to provide the safest truck on Indian roads. We are happy to see our

product to be included as part of BharatBenz trucks.'

Erich Nesselhauf, MD and CEO, Daimler India Commercial Vehicles, said, "We are happy to partner with The Hi-Tech Robotic Systemz for our new Driver State Monitoring System. Safety is a core attribute of BharatBenz, and this innovative feature can help prevent accidents related to driver drowsiness or inattentiveness."

Deep Kapuria, chairman of the Board, The Hi-Tech Robotic Systemz, said, "It is a matter of great pride for us that DICV has decided to use Novus Aware, to enhance safe mobility on our roads and highways. This will impact not only the safety of drivers but also bring security and comfort to their families. This further strengthens the strategic partnership between our two organisations." n

Varroc displays concept car with advanced lighting tech

GLOBAL AUTO COMPONENT manufacturer Varroc Group's theme for Components Show is 'Excellence', which is reflected in its products and technologies.

The key highlights of the company's pavilion at Hall 12A include a concept car developed by Varroc Lighting Systems that showcases advanced exterior lighting technologies for four-wheelers, along with India's first adaptive bending beam head lamp and anti-glare adaptive high beam LED headlamp.

Apart from these, the pavilion is divided into four zones for scooters and mass-market motorcycles,



commercial vehicles, passenger vehicles and high-end motorcycles.

The pavilion was inaugurated by Vipul Goel, Minister of Industries and Commerce, Environment and Industrial Training, government of Haryana. Goel said, "Haryana is

the largest hub for the automobile industry in India. The state government is committed to promote the investment and employment opportunities in this field."

The Varroc Group has had a longstanding relationship with the state in the form of



its polymer manufacturing unit in Binola near Manesar.

According to Tarang Jain, managing director, Varroc Group, "We are delighted to be present at the 14th Auto Expo. It has always been our home ground for displaying what we stand for and how we are evolving,

and this year is no different. While we chose 'Excellence' as the theme for this year, it has set us apart from the competition all these years. This 'Excellence' reflects in all our global quality products on display, which have been our core strengths in our journey so far." n

CALENDAR OF EVENTS IN PRAGATI MAIDAN

DATE	TIME	PROGRAMME TITLE	CONTACT	VENUE
10 February, 2018	0930-1600 Hrs	Auto Water 2018: Driving towards a Sustainable Future for the Auto Sector	Kavita.nair@cii.in; Preeti.kathuria@cii.in; vipin.varghese@cii.in	7 ABC Outside
10 February, 2018	1500 Hrs	Weaving Synergies – Spot the Innovation Contest	madhurima.maniyara@cii.in (9764001342)	Hall 1B, Gate No.1
11 February, 2018	1000-1300 Hrs	ACMA - AIAWA Conference Current & Future Scenario	vikrantt.mohan@aiaawa.in (9848019470)	7 ABC Outside

Active Suspension, **Aerodynamic drag**,
 Anti-Squat, **Apex**, Aspect Ratio, **Balance Shaft**, Ball
 Joint, **Beam Axle**, Beltline, **Bevel Gears**, Brake Bias,
Bushing, Cam Profile, **Camber**, Compliance,
Compression Ratio, Constant-Velocity Joint,
Connecting Rod, de Dion Suspension, **Detonation**,
 Dive, **Drag Coefficient**, Driveline, **Exhaust-Gas**
Recirculation, Engine Control System, **Exhaust**
Manifold, Exhaust Port, **Feedback**, Fuel-Air-Ratio
 Control, **Final-Drive Ratio**, Fluid Coupling,
Four-Wheel Drift, Helical Gear, **Jounce...**



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SNAP SHOTS



The Components Show 2018 is a veritable one-stop business shop for all parts big & small.



Federal Mogul's range of pistons and rings for BS VI engines.



German pavilion has 10 diverse component suppliers exhibiting.



The UK wants India to be its key automotive partner and the buzz here indicates just that.



The ACMA Safer Drives booth, located between Hall 11 & Lake Hangar, is a must-visit for all.



Woco at Hall 7-ABC is displaying many polymer powertrain parts.



Among many outdoor stalls is Karcher, with its car-wash and other solutions.



The 19-company Anand Group, located at Hall 12A, has a massive presence.



8th to 11th February

HALL - 7D

BOOTH NO - 12

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