

CNC Plus

Ace Micromatic Group Newsletter

02/2014

Damping
the shock

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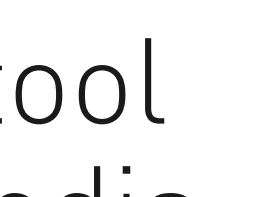
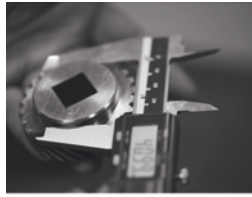
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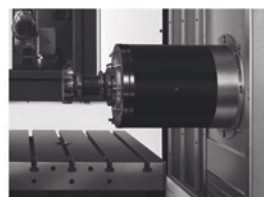
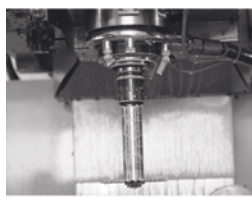
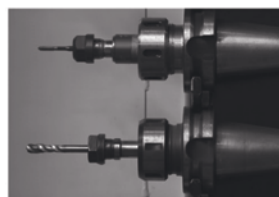
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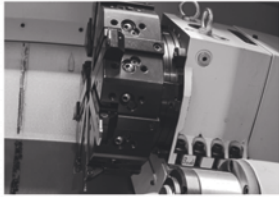
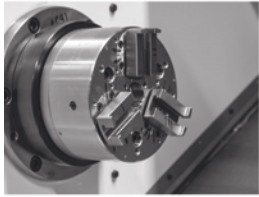
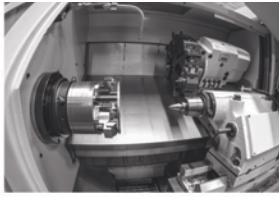
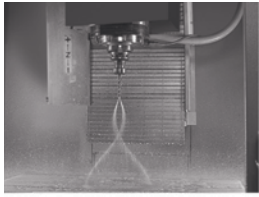
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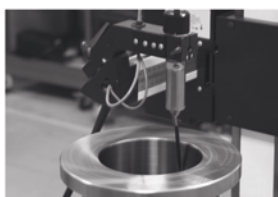
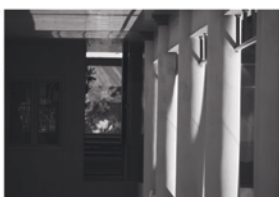
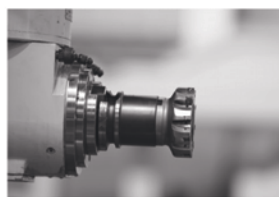
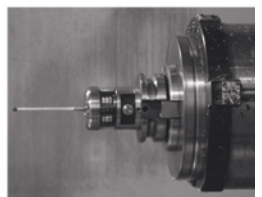
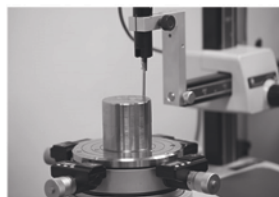
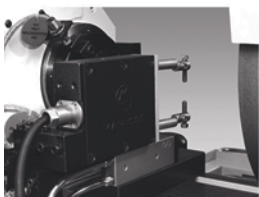
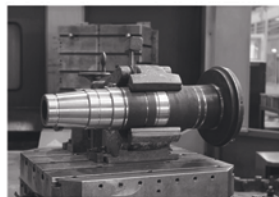
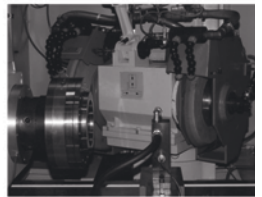
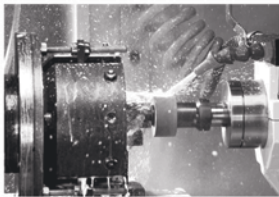
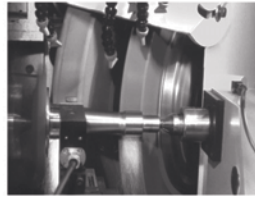


The largest machine tool group in India





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T. K. Ramesh, CEO
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It is that time, when the entire nation is in the process of electing its new government with ever growing expectations of higher growth rates, good governance, transparency etc. This issue of CNC plus comes out with its celebrity companies and people who never back down & are larger than life.

We come from different walks of life, taught and tempered by our varied experiences but with a strong belief that we will make a difference and leave behind us, foot prints on the sands of time. The growth of the MSME manufacturing sector plays a big role and contributes to the growth of the nation in no small measure.

This issue brings to you, a sampling of customer success stories and our humble efforts in holding their hands. We also speak about our customer events held across the country over the last quarter, the resources that we have added in Coimbatore and Hyderabad to serve our customers of that region. We are also sharing with you our customer training calendar, some tips and tricks that help make better use of your machines and achieve better results.

We truly believe that our business revolves around your business and it is our philosophy to hold your hand in every way we can.

We know, we care, and we perform.

Happy reading and please do give us your feedback for improvement!



COVER PAGE

The cover page shows a group of Harley Davidson bikers riding towards their destination. Read more on IST Limited, the company behind the throttle valves in these bikes and about their association with Ace Micromatic Group.

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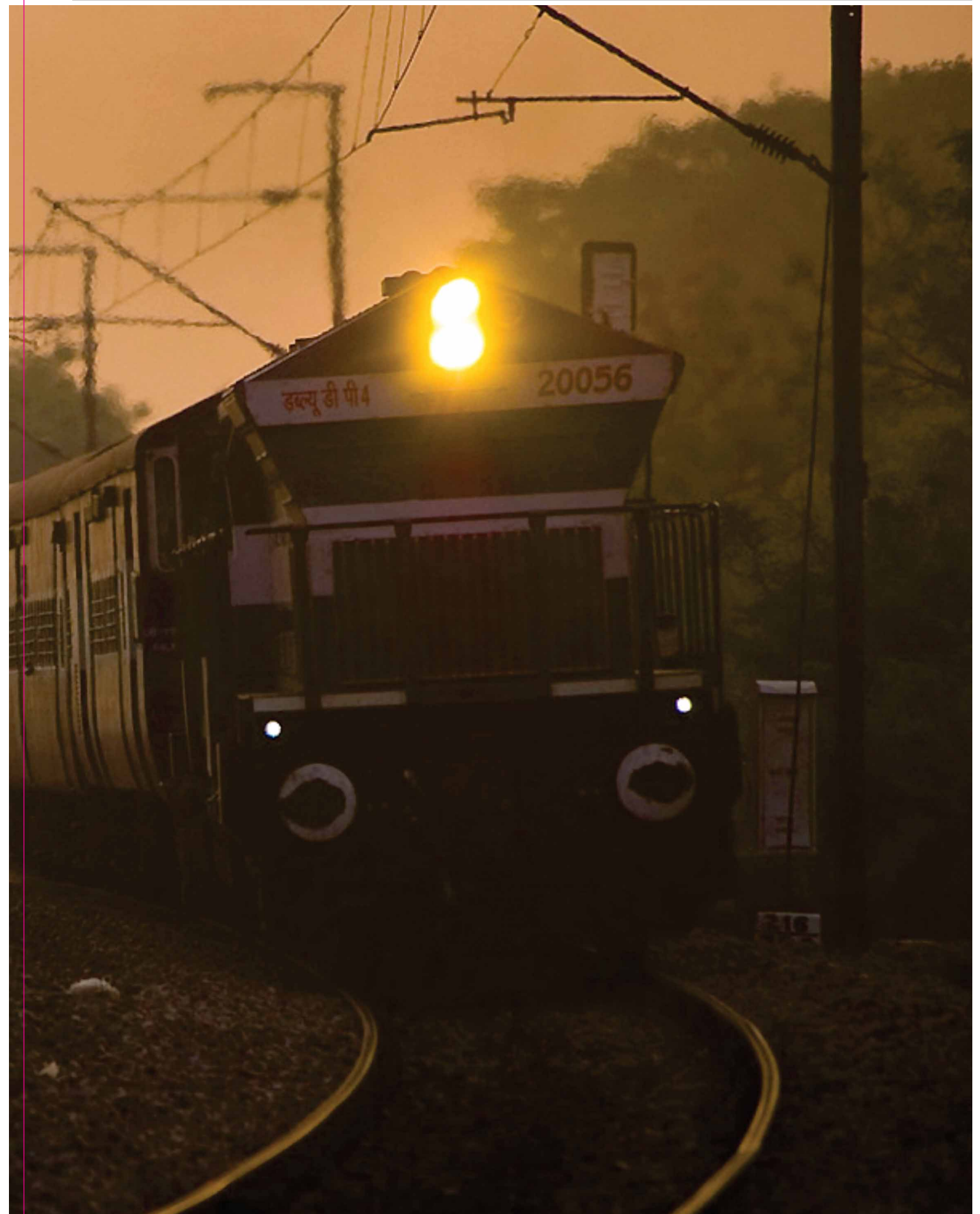
Design & layout: Harish M

Printed at: Repromen, Bangalore



DAMPING THE SHOCK

India Auto Industries, established in 1998, has been supplying shock absorbers and dampers to the Indian Railways since 2000. Read the full story to find out how the company took a leap step from using conventional machines to CNC and how they benefitted in their association with the Ace Micromatic Group.



There is something about train journeys. Not only do they bring about a sense of nostalgia; there is something symbolic about the way people from diverse backgrounds come together in small compartments, as they move towards a common destination. A few stations down, strangers turn to friends, mile long lunch boxes are opened and shared, over light banter along with tea, served in earthenware cups. Whether it is the food, the chance encounters or simply the joy of looking out at an ever changing landscape; the one thing that adds to the wonderful train experience, is the gentle lull, the soft motion accompanied by the sedate sound of chuk-chuk.





Imagine a long train journey with fifteen bogies trailing behind a lone engine. Metallic wheels, on a twisting and turning metal track. The bogies are latched together with couplers that allow flexibility of movement. Should we not be jangling with every move?...Should we not be coming out rattled and tired rather than feeling relaxed and having had a wonderful night's sleep as the train gently lulled us to sleep. Is it not a miracle, the 'kullad chai' did not splash in our faces? What is that which makes our association with trains so wonderfully pleasant?

The answer to this question lies in a mid-sized, neatly kept building on the 63rd Milestone on the NH8 highway. The plant spread over 15,000 sq. meters, houses India Auto Industries Private Limited, one of the select few suppliers of Railway Shockers and Railway Safety Equipment to the Indian Railways.

From the civil work going inside a part of the building to the constant whizzing and whirring coming from the floor; it is evident that company is progressing in far more ways than one.

Established in 1998, India Auto Industries went on to win the second prize in 8th International Technology Fare.

In the year 2000, India Auto made a foray into

manufacturing railway components, when its samples of Double Acting Hydraulic Shock Absorbers of 600 Kg Capacity were submitted for field trial. In the same year, the samples were fitted on one of the most premium trains of the Indian Railways "Rajdhani Express". It was observed that the fitted samples could cover a distance of 5,85,210 km in a span of more than two years and the performance of the company's product was found to be exceptional. In the year 2002, India Auto got the ISO 9001:2008 Company certification and has since been duly approved by RDSO as Part-I Vendor for manufacture of Railway Shock Absorber and Dampers of different capacities for Indian Railways.

"Only a few, select, companies in India have the Part-I Vendor status. Indian Railways assesses us on a multitude of criteria for an elongated period of time, before granting us that status," explains Mr. R. D. Sharma, Manager Admin. He is a simple self-effacing man, like all others in this company, a man whose sole pride is the job he does. Pride reflects in his voice when he says, "Our motto is to manufacture all the components under one roof. We feel all processes like, machining, plating and vulcanizing, everything should be in-house and we have developed that capability fully."



We are not like some others, who are merely assembling units. We are manufacturers in the truest sense of the word.”

An established ISO 9001:2008 certified company, India Auto constantly upgrades its technology. The company’s plant is modern, in keeping with the guidelines, as is the workforce made to undergo constant training. The employees are encouraged to innovate, management strategies and latest techniques are applied and new manufacturing processes inducted to maintain the company’s position as the market leader.

Earlier almost all the manufacturing in India Auto was done on conventional machines. However two years ago, they went for their first CNC machine which was the Ace Micromatic Super Jobber. The switch from an all conventional manufacturing to one that relied upon the new technology, comparatively expensive CNC wasn’t easy. It almost took one year of decision making to come to the final resolution.

“We were initially thinking of smaller machines, but we made a comprehensive internal assessment and also exhibited all our components to the Ace Micromatic Group. There was a lot of going back and forth, during which the Ace Micromatic Group not only showed immense patience but competently addressed all our concerns. It was the management team of India Auto, headed by the Director, Mr. Jain who said, if we have to go for a machine, might as well go for the Super Jobber, and we are very happy with the decision”, recalls Mr. Sharma.

The association between Indian Auto Industries and Ace Micromatic Group has been a truly fruitful one. “We appreciate Ace Micromatic for being there all the way, we had some challenges, and we connected to the Bangalore office and were offered excellent solutions. They were responsive, they responded every time we had a query or a resolution was needed.” comments Mr. Sharma.





Ace Micromatic Group's solution ended approach and the integrity to live up-to whatever promises were made in the pre-sales process, have integrated seamlessly with the no nonsense and integrity oriented work culture of India Auto. "We are very happy with the company, whenever we have needed them, even post sales; they have been there." It is not only the service that has made India Auto progress from one Super jobber and add on another Super jobber followed by a Vantage 800. Two more Super jobbers are on the way.

The company claims that it has had no problems with the Ace machines. There has been no accidents, no breakdowns and it has lived up to the purpose for which we commissioned these machines, 'Accuracy'. When asked to comment on the accuracy of the Super jobber, Mr. Bhardwaj the company's engineer very confidently said, "100% accuracy. We have a margin of ± 10 microns that the Indian Railways allows us and the Super jobber complies, a 100%."

India Auto is not a quantity oriented company Mr. Sharma explains, it is a company where quantity is governed by tenders. It is of no use for them to stock components, so the company's main focus is on accuracy and quality.

These shall lead to bigger shares and bigger contracts and in turn larger quantities for the company; which is already happening.

While, most of the pre-machining is happening on conventional machines; Ace Micromatic CNCs are being used for the complete finishing needs of the company. There is a perceptible difference with the commissioning of Ace CNCs, while production has increased by 60%; there is an appreciable decrease in rejections.

"The set up on these machines is changed every, two to three days, depending upon the prevalent demand. The procedure is fairly easy and allows for immense flexibility in the production cycle", comments Mr. Sharma.

Ace Micromatic Group's solution ended approach and the integrity to live up-to whatever promises were made in the pre-sales process, have integrated seamlessly with the no nonsense and integrity oriented work culture of India Auto.

The Ace machines stand among these men, facilitating the process. They are lined proudly in a separate compartment so that visitors can see them. While three machines have been allotted their place of pride; a proud yet empty space conspicuously awaits the other two, which are shortly awaited.



Seeing the success of the jobs on the Super Jobber, India Auto acquired the Vantage 800 for manufacturing bigger components. It can process even the larger components that India Auto makes. "It is a heavier and costlier machine, so we use it for our bigger and preferred components. You may say we can now manufacture all our components on Ace machines."

Machines do not replace people but upgrade them-India Auto has selected key operators who had basic academic qualifications and could understand English, to operate these CNC machines. Their positions on conventional machines were filled in by their helpers. "These CNCs are so easy to operate, that it requires minimal amount of training to run", adds Mr. Bhardwaj.

As we do a round of the factory we see simple laborers working hard at their machines. It is here

where we realize that these men are the salt of the earth. These scooter or even cycle riding men's love for creating these amazing parts out of core metal, their commitment to precision ensures that you and I enjoy our toy train journeys with pride. While we do rounds of the Palace on Wheels or the Maharaja Express, they take the annual journey back to their homes in crowded sleeper compartments. Even that connection for them and millions like them, is possible because they eat the salt of their labors – literally. They do their jobs happily, proudly and their sweat mixes with those shiny components to enable millions of connections of Indian Railways. It is they who have ensured that Indian railways are now an ethos, an integral part of the national fiber.

It gives us great pride to see Ace machines stand among these men, facilitating the process. They are lined proudly in a separate compartment so that



visitors can see them. While three machines have been allotted their place of pride; a proud yet empty space conspicuously awaits the other two, which are shortly awaited.

While the company, does not see itself diversifying; it definitely has expansion on its cards. While it is looking at increasing the number of applications; it is also looking at new technology shockers that go into LHB coaches which are the special coaches that are a part of the superfast Rajdhani and Shatabdi categories. The current shockers are imported, and India Auto is aiming at providing an Indian alternative to one of India's largest industries.

So while these dedicated men go about ensuring that Indian Railways retains its position as one of the pillars of the nation we are in-turn humbled, yet proud, to be a progressively bigger part of the process. We stand on the flanks and cheer on, as they

move forward at a sure and steady rate, gaining thousands of track miles, in turn enabling Ace Micromatic Group to touch thousands of lives, by association. **CNC+Plus**

As told to our correspondent Ms. Gurpreet Kaur.

India Auto Industries Pvt. Ltd

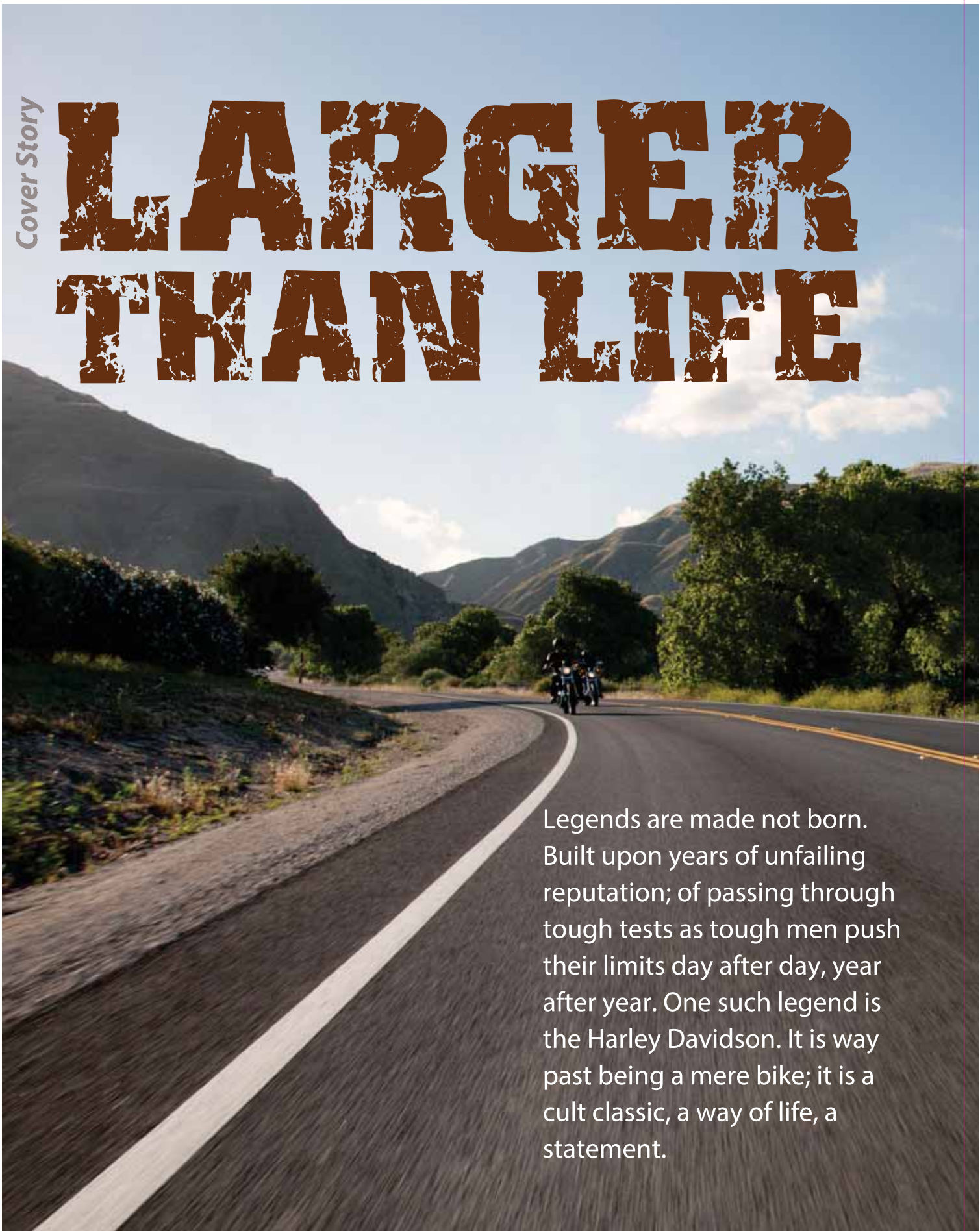
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Cover Story

LARGER THAN LIFE



Legends are made not born. Built upon years of unfailing reputation; of passing through tough tests as tough men push their limits day after day, year after year. One such legend is the Harley Davidson. It is way past being a mere bike; it is a cult classic, a way of life, a statement.



photo courtesy: Harley Davidson

Every man who truly loves bikes is a Harley Davidson man at heart. There is no feeling, like riding this giant machine; over 700cc of pure power. It is the every man's big toy fantasy, the ultimate aspiration in "Big Boy Machines."



There are only two types of men, ones who own a Harley Davidson and ones who— admit it or not— aspire to own one. Every man who truly loves bikes is a Harley Davidson man at heart. There is no feeling, like riding this giant machine; over 700cc of pure power. It is the every man's big toy fantasy, the ultimate aspiration in "Big Boy Machines."

Paradoxically they say, devil is in the details and the humble shall inherit the Earth. So this iconic bike depends of hundreds of little parts to ensure that it is as dependable as it is strong.

The oddity comes to surface when we visualize, dozens of burly Harley riders, wearing tough leather wear, on these big machines moving in their legendary gangs. These gangs depend upon every single bike moving at a certain speed, keeping up with the others, on a break-down free ride. This is possible only because each of the thousands of little parts, that go into these machines collectively, is working in tandem with every other part.

While Harley manufactures most parts, a few are sourced from key manufacturing units, located in different parts of the world. There is only one way to get the equation right, precision, perfection and a quest for excellence.

It is the mantra that all these individual companies need to follow to make one cohesive whole and needless to say; they are handpicked after stringent scrutiny by the sourcing companies.

One such small part but critical part lies inside the carburetor—the throttle valve. This valve is crucial for the right mix of air and fuel that goes in the engine for combustion.

The company handpicked for the task is IST India Limited. Located amidst lush green gardens, in a elegant but unassuming building in the Dharuheda Industrial Complex, on the Delhi-Jaipur highway, the company has a world-wide reach.

A company whose middle name is precision; IST is the only company in India that makes the Throttle Valve for Harley Davidson motorcycles. To the naked eye, this valve is a thin metal circle with a hole in the center.

The key here is, that the circle is not a circle but has a major and a minor diameter with a shift at an angle of 15 minutes (one degree has sixty minutes).The entire working of the Throttle Valve depends upon the accuracy of this degree. While the diameter is in millimeters, the thickness is a mere 20 microns.

What is even more incredible is around 6000 of these, marvels of engineering are made on the CUB turning centers from the Ace Micromatic Group. The machine lives up to the challenges that IST poses matching it step for step, valve after valve, in both precision and accuracy. The process also brings forth a very important feature of the Ace Micromatic machines – adaptability. If you dare to stretch your limits, so does an Ace machine.



Over the years, IST Limited India, has built a formidable reputation for itself.

In 1977, IST India Limited was conceived as a manufacturing unit that made Swiss manual watches in collaboration with a prestigious Swiss company, M/s. Ronda S. A., Switzerland.

In just seven years, the company could manufacture the entire mechanical watch movement independently on its manufacturing facility which was created with the help of a Swiss collaborator. 90% of the machines were Swiss made.

IST has the unique capability of turning roadblocks into capabilities. When the quartz technology replaced manual watches, the company leveraged its Special Production Division (S.P.D.) for manufacturing fine time mechanisms and high precision parts for consumer durables. This was just the start of a long, exciting journey. IST now moved on to successfully manufacture automotive small precision parts for two wheelers. Riding on the success of this initiative...literally, in 1998, IST got a project which was to prove a milestone in its growth chart. The assignment was to manufacture precision parts for four wheelers for the North American and Hungary plants of one of the stalwarts of the North American auto industry, General Motors. This was just the start as IST went on to bag many more prestigious clients but to its credit, it has still retained General Motors.

The company today makes automotive components,

carburetor parts, fuel injection parts, high precision mechanical and electro-mechanical timers, precision components and assemblies for communication equipment & office products, consumer durables & white goods, oral care products, instruments and engineering goods. This list is extensive, but by no means exhaustive.

The company's clients are spread across the world and it exports to a number of countries across the globe, USA, Switzerland, Hong Kong and Japan being some of a longer list. While foreign clients are a sizeable chunk of the IST business; it also has a fair share in the domestic market.

IST's prestigious client list, gives a better insight into its workings. One is General Motors, Powertrain Division, NAO, Detroit, USA, which every car loving individual knows about. There is Gimelli Productions AG, one of the largest dental care manufactures in the world with a presence across Switzerland, Hong Kong and China.

In the Indian market IST caters to the biggest names in automobiles, Fiat Powertrain India Pvt. Ltd and Maruti Suzuki Power Train India Ltd, India.

Then there is the ancillary industry like UCAL Fuel Systems, Chennai, India which supplies fuel systems to almost every OEM – Maruti Udyog Ltd, Hyundai, Cummins and Bosch to name a few. Some of the other client names like Keihin Fie Pvt. Ltd., Pune, India, Beck Precision, USA, Mikuni



India (P) Ltd., Trigona AG, Switzerland, Polaris USA, Avtec Ltd. Automotive, Nissan Ashok Leyland Powertrain Ltd names may not mean much to the lay man, each one of them is associated with the world's leading brands.

One cannot progress so, without love and passion and this is reflected in the team that guides us through its products. Velvet lined jewellery trays are displayed before us; inside them are exquisite little parts, which could well be strung on a necklace. However, we soon find out that these are the perfect cogs in a much bigger wheel. The humble looking men, turn into proud artists as they take us through the finer nuances of these painstakingly crafted components. Their voice resonates with love and pride as they talk of the two kinds of Throttle Valves that go into the Volvo, the bigger is eighty five mm in diameter and two mm in thickness, the smaller is twenty six mm in diameter and one mm in thickness. "These are very complex to manufacture", says Mr. P. Ghosh, AGM Manufacturing at IST.

He then goes on to show us the sprinkler jet assembly for New Holland Tractors, where the precise angle of turning is critical. He explains the functioning of the one way Valve for Polaris the V-tech engine bike Indian, which is a contemporary of Harley Davidson. The valve is a mere .8 mm in diameter and critical to the piston cooling jet assembly.

One can feel his grip over his subject, his deep connection with,

what to some may be mere pieces of metal, as he goes on to explain how the one way Valves is an integral part of oil jet assembly in the 1.3 litre Diesel Engines of Maruti and Fiat. The company manufactures 150,000 of these, thus impacting the fuel efficiency of 37,500 LMVs every month.

Whenever he feels he has lost us, Mr. Ghosh takes to the white board to demonstrate what he means. His enthusiasm is infectious and we are drawn into the fascinating world of tiny carburetor parts.

The company depends upon the CUB turning center for all its turning requirements; needless to say the machine delivers every time. Mr. Ghosh, admits that the quality and precision that the CUB provides, is up to the stringent IST standards. That is saying a lot, as IST had a tolerance or margin of error of a mere 20 microns, which means a mere plus/minus ten microns. It is because of this culture of excellence; that the Indian Defense Forces have hand-picked IST, from dozens of other companies to manufacture high precision time mechanisms.

The CUB has stood on its own in a company that has till now, depended almost exclusively on imported machines. "We are very happy, almost no complaints; and we have full confidence in Ace Micromatic Group." says Mr. P. Ghosh.

"We want you to come up with more products; increase your product line. There is need gap in the manufacturing industry

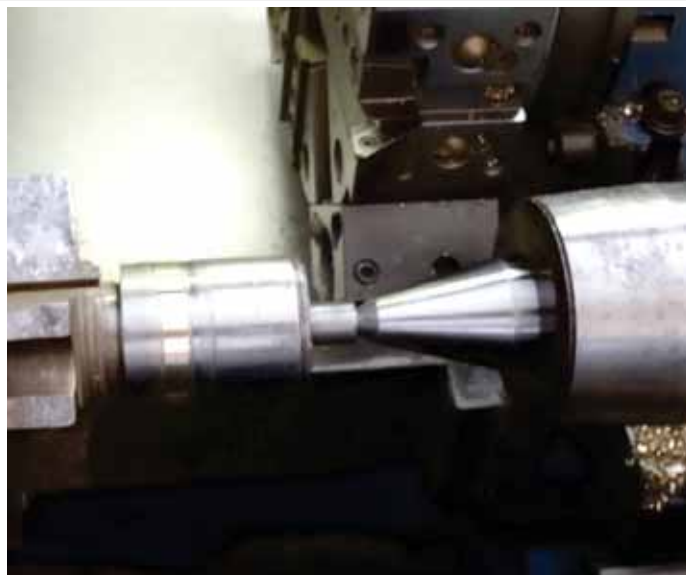
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for good domestic machines. Ace Micromatic is partially fulfilling that need but we want you to come up with more. We have the confidence that you have that capability.”

While IST gives it's vote of confidence to Ace Micromatic; Ace in turn, takes a lot of pride in being associated with a company which has made such a formidable reputation for itself through its commitment to excellence, consistency, delivery and not to forget precision. Ace Micromatic Group shares more than a client supplier relationship with IST; it also shares a vision and a commitment to excellence.

So the next time you feel the wind blow in your face on a Harley Davidson bike, embark on a night journey in the ever dependable Volvo, watch a New Holland tractor prepare acres of fields for sowing or simply go on a drive with your family in a Maruti or Fiat car; remember there is a humble but critical piece of art that was manufactured to perfection in an IST unit and that an Ace Micromatic machine played a small but vital part in the process. **CNC+Plus**

As told to our correspondent Ms. Gurpreet Kaur.



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DREAMS
ARE GOOD

Sitting in a room, waiting for clients to arrive with their share of problems is not everybody's cup of tea. Most definitely not for someone like R. Soundararajan, Chief Executive Officer, Shree Machines. Tidy, compact and well-maintained, Coimbatore-based Shree Machines is representative of ambition and dreams characteristic of small and medium scale business owners. But that's what easily meets the eye when you step inside the workspace. Only that this story is about so much more.



So, what is a man doing, tinkering around with machines after having majored in law and chartered accountancy you would ask. "Though I followed through with my law and chartered accountancy studies in Bangalore, I knew it wasn't what I really wanted to do in the long run", clarifies Soundararajan. No, meeting clients in well-furnished air conditioned rooms was not what he was looking for and probably for as good a reason. "If you are a tax consultant, people come to you with their problems. You need to advise them but do you have a direct role to play in the solution? In all probability not". This is something Soundararajan would not be able to live with all his life. So, even as he kept working to give himself a stable financial ground, his sight was on an industry he still had nothing to do with – engineering.

For ten years straight, Soundararajan worked as a tax consultant. But the money he made from that stint was still not enough to give him a firm foothold in the engineering and manufacturing field. "I needed more money to start off with my own venture. I have no inheritance as such because my parents were ordinary mill workers. Keeping that in mind, I worked on another plan", recounts Soundararajan unflickingly. This 'plan' was, in many ways, a departure from his field of study - because it revolved around real estate construction. "Real estate construction was a natural choice for me because the field does not really need chunks of investment at one go. One needs to make investments slowly but the returns are quite good", explains Soundararajan.

Shree machines



"We have always wanted to keep our quality standards high – something that has led us to patronize Indian companies."

Five whole years in the construction business helped Soundararajan gather the kind of funds he needed to make the giant leap. The year was 2007 when he finally took the call of entering the manufacturing industry. But if one recalls, this was also the year the world all over got financially squashed. Ask Soundararajan about it and he quietly narrates how it was at the time. "The global financial meltdown was a challenge that came on a platter. Right from the start, it loomed large and I had to fight it."

After a couple of initial orders, Shree Machines faced the inevitable. "Starting mid-2008 till the end of 2010, we were stuck with almost no work", recounts Soundararajan. What probably made the situation worse was the fact that he had already installed six machines. This had obviously meant a bulk investment, something the business found tough to recover at the time.

One factor that came to Soundarajan's rescue was his firm conviction in affordable quality. "We have always wanted to keep our quality standards high – something that has led us to patronize Indian companies." This is what turned around the business' fortune as the cloud of recession wore away, as more and more orders began to come their way. And this is also what cemented Shree's terms with Ace Micromatic Group. "No matter what we can compromise on, we cannot do without timely service. Unless a glitch is fixed right away, production suffers badly. We have believed in other providers because of their product quality. But when it comes to following up and service, Ace Micromatic Group wins hands down", he explains.



"We placed a call for a 5 year old VTL and in no time, another spare part, well-tested and arranged was brought in as a replacement."

In the early part of 2013, the VTL (2008 model) manufactured by Ace Micromatic Group developed a spindle problem. "We placed a call and in no time, another spindle, well-tested and arranged was brought in as a replacement." But it was the acquisition of their first machine from Ace Micromatic Group with which Shree set a bit of a landmark. "The VTL 40 was the first machine we purchased from Ace Micromatic Group. Interestingly, we were the first business in Coimbatore to have purchased this machine. After our purchase, many other businesses here started believing in this product", quips in Soundararajan, with an excited voice.

And if that's what you thought this story has to offer, think again. R. Soundararajan is a man who wears many hats. "Like engineering, another field that has continually intrigued me is pharmaceuticals. Something that led me to manufacture medicines in due course of time", says Soundararajan, to give us a background. Ask him about his plans for his machining business, and he is quick to reply, "My goal is clear. In another five years, I want to install at least another 100 machines."

However, there's something more important on Soundararajan's plate right now. It's the plan for a third unit (Shree Machines already comprises two running units) meant exclusively for automobile parts. In the slightly warm December sun, as we watch him guide a worker at the construction site of the third unit, we know one thing for sure – this man will soon have more up his sleeve. And all we can really do is wish him luck. **CNC+Plus**

As told to our correspondent Ms. Sunanda Pati.

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THE EVENTS

CNC HOUSE SHOW, COIMBATORE



▲ Mr. M. Sadasivam inaugurating the house show



▲ Mr. B Harish (right) presenting the memento to Mr. M. Sadasivam (extreme left)



▲ Lighting the lamp by Mr. Shrinivas G. Shirgurkar (holding the candle), Mr. K. Senthil Kumar (center) and Mr. C. R. Shanmugasundaram (right) ▲ The visitors at the house show

INAUGURATION OF NEW OFFICE, HYDERABAD



▶ The inauguration of the Hyderabad office



▶ The team at the new office inauguration

CUSTOMER MEET, MYSORE



▶ Lighting the lamp by Mr. T. K. Ramesh

▶ Mr. Ramesh K. R. addressing the gathering



▶ The gathering at the customer meet

Are you using proper **WATER & COOLANT** in your CNC?



Overview

Mr. Sharma from XYZ Engineering company bought his first CNC in Sep 2013.

Six months later he called up the service center of the CNC supplying company, complaining about the failure of the LM guides.

On close inspection, it was found that the failure was due to usage of improper water and coolant fluid mixture.

Further study revealed that the hard water was used in many cases which resulted in rusting of the LM guides and various parts of the CNC.

The damage was rendered to the extent that has made the CNC machine unusable.

Though the machine was under warranty, it did not cover damages done due to improper handling of the machine.

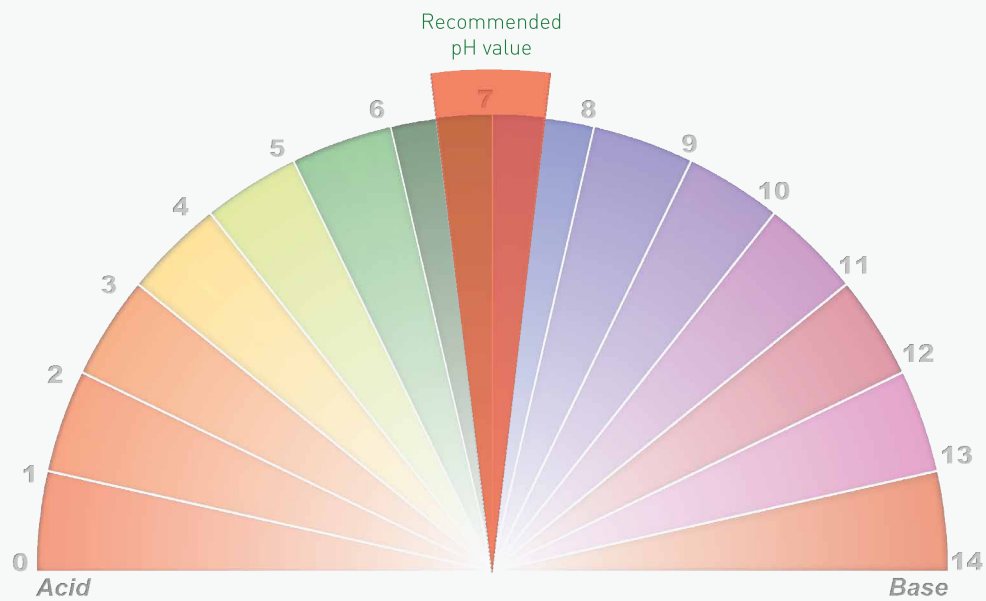
The entire CNC has to be replaced and the cost was to be borne by Mr. Sharma.

Proper water and coolant is very essential for efficiency of the CNC machine. Hard water and pH imbalance can damage the CNC machine.



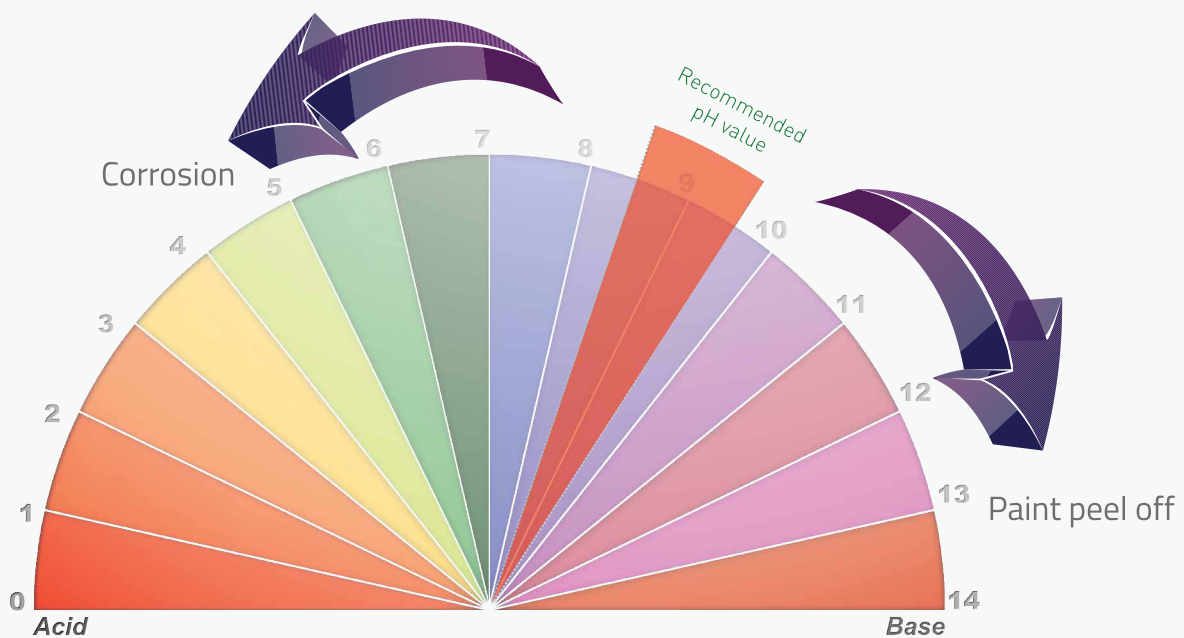
	Case 1	Case 2	Case 3
Observation		Failure of LM rails	
Samples collected	Coolant sample pH is only 7.97 which will only accelerate corrosion. High amount of total solids at 14,500 ppm. Water sample pH is 7.7 and is high. Total solids are high at 676mg/l.	Coolant sample High amount of total solids at 17,230 ppm. The iron content is high at 50.6 mg/l.	Coolant sample High amount of total solids at 10582 ppm. The iron content is high at 35.6 mg/l.
Reason	Poor filtration	Contamination Lots of deposits / residue in the sump	Poor filtration Low concentration Poor quality of input water
Corrective measures	Increase frequency of tank cleaning	Tank cleaning correct water should be used	Tank cleaning correct water to be used Reduce the chloride level

Water



Parameter	Water	Coolant
pH	6.5 to 7.5	8.5 to 9.5
Hardness	<200ppm	550 to 600ppm
Chloride	<25ppm	<50ppm
Concentration		7 to 9%

Coolant





Factors affecting the Sump Life

- Good starting conditions in terms of proper cleaning of the machine tank from the entire mug, bactericides & the impurities.
- Mixing procedure (proper mixing in terms of homogenous mixture & the right drop let size shall ensure the longer sump life)
- Proper quality of input water in terms of proper pH, hardness & the chloride.
- Maintaining the right concentration at all times in the machine.
- Good filtration in the machine ensures a good sump life.
- Minimum or No mixing of the tramp oil in the coolant tank.
- Timely cleaning of the tramp oil.
- Frequent cleaning (filtration) of the coolant oil.

Note: If good working conditions are provided the sump life in the stand alone machines can be as high as 2 yrs.

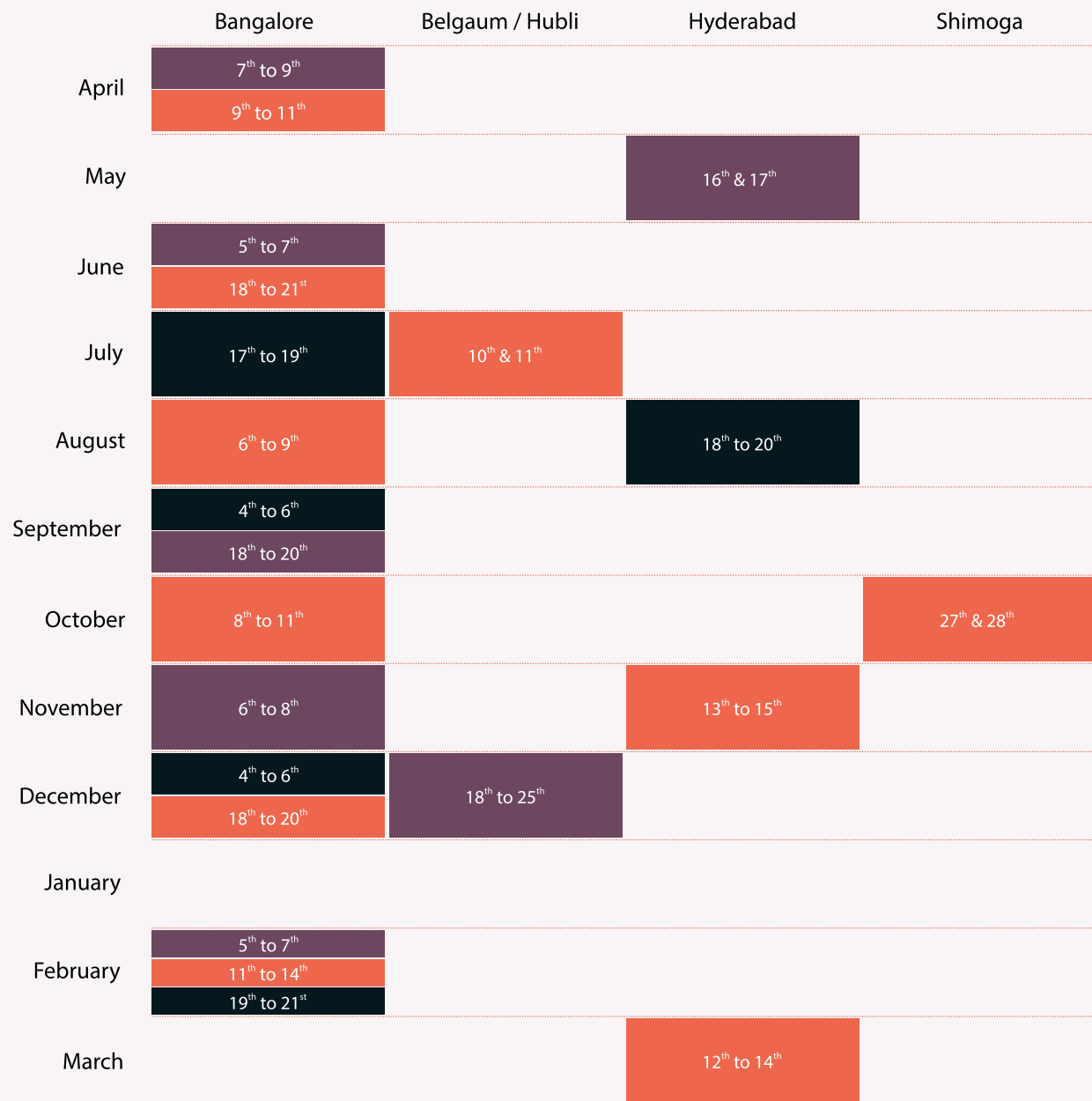
Water hardness

- Hardness or the salts comes in the system in the major form along with the input water. Hence it's very important to have the proper input water in place.
- Further the hardness increase over a period of time because of the heat generation in the machining setup & also because of the climatic conditions.
- In a system water is close to 92-95 % hence it is further more important to use the correct quality of water.
- In a case where the input water hardness is high then within no time the hardness in the system will cross the danger limits & might corrode the machine parts. The impact will be realized only over a period of months. By the time it is realized, the damages are done and we need pay the heavy price of replacing the costly machine parts.
- It also depends upon the strength of the cutting oil to withstand the abuses in the form of hardness / chloride. A good cutting oil shall have very high critical limits.

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CNC Training Calendar 2014 - 15

South



All trainings are on Fanuc controller, unless specifically mentioned
* Training on Siemens controller

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- CNC Lathe Maintenance
- CNC Lathe Programming & Operation
- CNC VMC Programming & Operation

CNC Training Calendar 2014 - 15

South

	Chennai	Coimbatore	Pondicherry	Ranipet
April	24 th to 26 th	16 th to 18 th		
		29 th & 30 th		
May	8 th & 9 th	21 st to 23 rd		
	15 th & 17 th *			
	23 rd & 24 th			
June	19 th to 21 st	4 th & 5 th		
	26 th to 28 th	24 th to 26 th		
July	17 th to 19 th	23 th to 25 th		10 th & 11 th
	25 th & 26 th			
August	21 st to 23 rd	6 th & 7 th		12 th & 13 th
		20 th to 22 nd		
September	19 th & 20 th	23 th to 25 th		
	25 th & 27 th			
October	9 th to 11 th	8 th & 10 th		
	16 th to 18 th	29 th & 30 th		
November	6 th to 8 th	19 th to 21 st	13 th & 14 th	
December	18 th to 20 th	9 th & 10 th	11 th & 12 th	
	25 th to 27 th	17 th to 19 th		
January		21 st to 23 rd		
February	19 th to 21 st	5 th & 6 th		
	26 th to 28 th	17 th to 19 th		
March	19 th to 21 st	25 th to 27 th		
	27 th & 28 th			

All trainings are on Fanuc controller, unless specifically mentioned

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- CNC Lathe Maintenance
- CNC Lathe Programming & Operation
- CNC VMC Programming & Operation

CNC Training Calendar 2014 - 15

North

	Bhiwadi	Chandigarh	Delhi	Faridabad
April				
May				20 th to 22 nd
June		17 th to 19 th		
July				
August			19 th to 21 st	12 th to 14 th
September				
October				14 th to 16 th
November				18 th & 19 th
December	9 th to 11 th			
January				
February				
March				

All trainings are on Fanuc controller, unless specifically mentioned

BHIWADI, CHANDIGAD, DELHI, FARIDABAD

Mr. Keshav C. Sharma

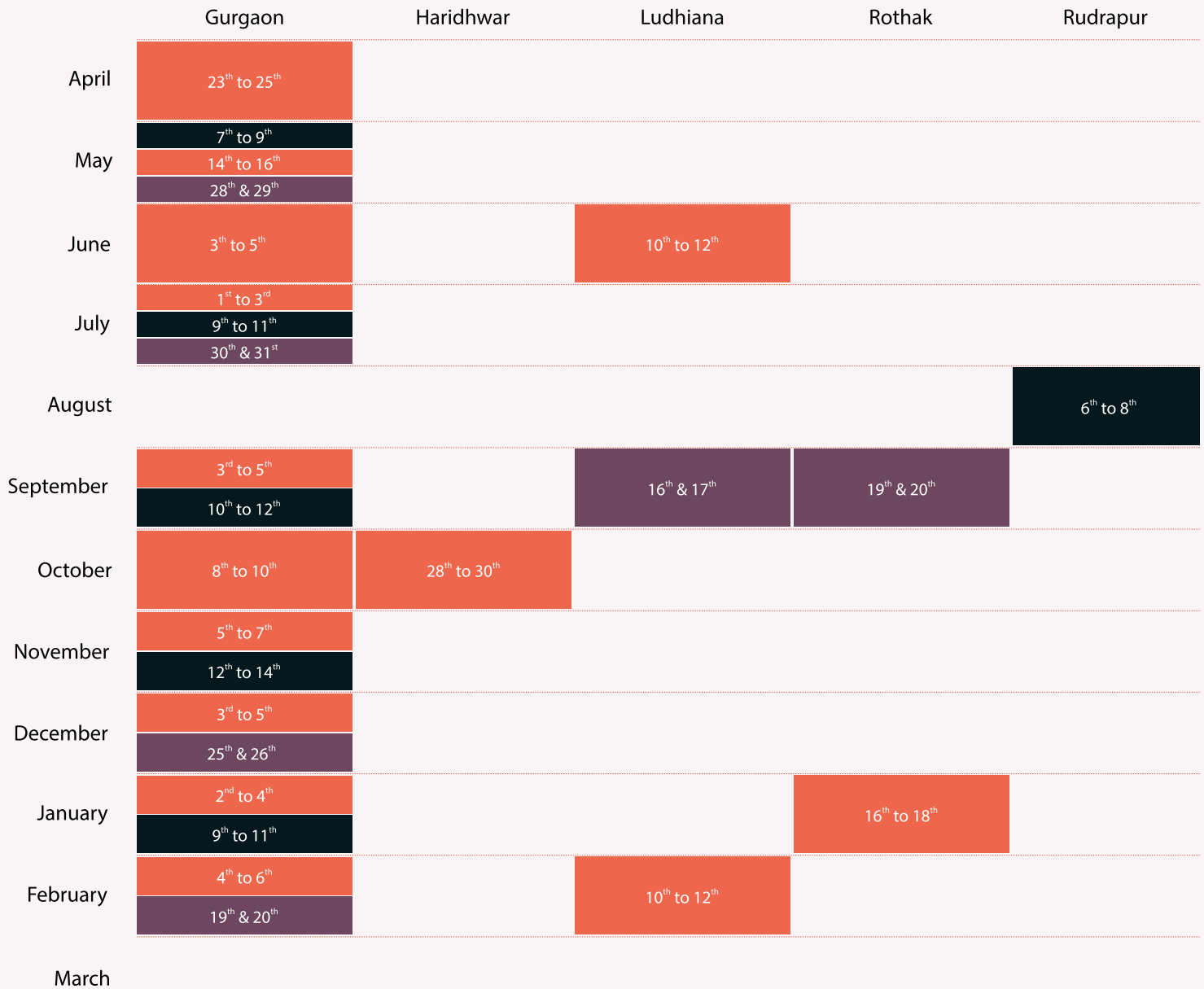
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- CNC Lathe Maintenance
- CNC Lathe Programming & Operation
- CNC VMC Programming & Operation

CNC Training Calendar 2014 - 15

North



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- CNC Lathe Maintenance
- CNC Lathe Programming & Operation
- CNC VMC Programming & Operation

CNC Training Calendar 2014 - 15

Western

	Ahmedabad	Mumbai	Nasik	Pune
April	7 th to 9 th		21 st to 23 rd	5 th to 7 th
May				5 th to 7 th 24 th to 26 th
June	16 th & 18 th	2 nd to 4 th	28 th to 30 th	
July				7 th to 9 th 20 th to 22 nd
August				9 th to 11 th
September			15 th & 16 th	8 th to 10 th 20 th to 22 nd
October				4 th to 6 th
November	17 th & 18 th	3 rd to 5 th		10 th to 12 th 16 th to 18 th
December				6 th to 8 th
January				5 th to 7 th 17 th to 19 th
February	16 th & 17 th			8 th & 10 th
March				7 th to 9 th 21 st to 23 rd

All trainings are on Fanuc controller, unless specifically mentioned

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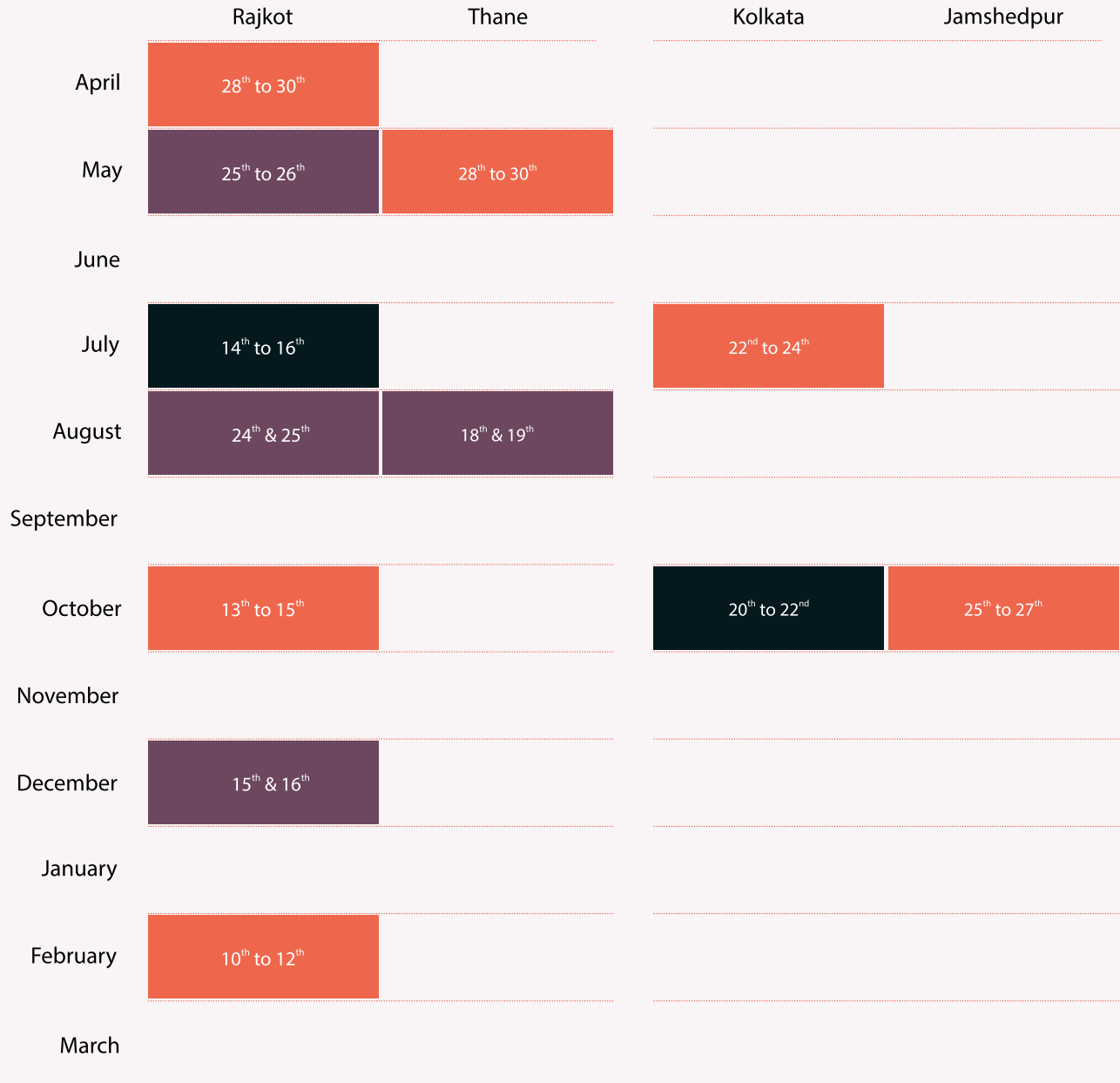
- CNC Lathe Maintenance
- CNC Lathe Programming & Operation
- CNC VMC Programming & Operation



CNC Training Calendar 2014 - 15

Western

Eastern



All trainings are on Fanuc controller, unless specifically mentioned

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