



# Marathon

Kolkata News



From Executive  
Director's Desk

Dear Customer,

The big bang news in July, 2013 was the exit of two major global steel makers abandoning their projects of building up steel plants in India. These were highly publicised projects promising large investments from abroad. The first was the exit of POSCO from their Karnataka Project and the immediate next was the scrapping of Arcelor Mittal's Odisha Project. These may not impact the Indian Steel Market in the immediate future since Steel Authority of India has already started a Rs.72,000 Crore modernisation project to enhance the capacity. Also, Tata Steel is fast tracking a 6 mtpa Greenfield steel plant in Odisha. At the same time, some other Indian Steel manufacturers are also adding capacity in bits & pieces. However, these pullouts will definitely affect the morale for foreign manufacturing companies to invest in India. Also, Indian equipment manufacturers will lose the opportunity of a huge business in short to medium terms.

Indian Rupee has gone down further in July'13, to an all time low of 61.21 to a US Dollar on the 8<sup>th</sup> of this month. It is to be seen whether it declines further to the dismay of the Indian Industry. The weakening Rupee and the erosion of international gold prices have led to the depletion of India's foreign exchange reserves. In the April - June quarter of financial year 2013-14, the reserves fell by close to 5%. Also, in its bid to contain the fall of Rupee, the Reserve Bank is continually tightening the liquidity in the market leading to further resource crunch for the industries. The rating Company Crisil has indicated that fund pressure will increase further in power, constructions, engineering and steel sectors. It has also forecast a GDP growth rate of only 5% in the next financial year. As such the industrial output indicator, IIP has shown a contribution of 1.6% in the month of May, 2013. The biggest concern for the manufacturing industry is the negative growth of 2% of manufacturing activities in the same month. Hard times seem to be continuing for Indian Economy and still there are no signs of recovery visible.

However, the good news is that the monsoon is almost normal so far in most parts of the country and still it is raining. As we all know that a large portion of Indian economy depends on the adequacy of rainfall. Also there are signs of more investments in Coal mining activities to reduce dependence on imported coal. NTPC has already declared that they will invest almost Rs.9000 Crores to develop its own mines in an effort to be more self-sufficient. Coal India is also trying to enhance its output. These will lead to business opportunities for mining equipment manufacturers in the near future.

July, 2013 is also marked by the passing away of one of the World's most famous acoustic expert, Amar Gopal Bose, who was well-known all over the globe for Bose Sound Systems, rated the best in the World. Besides his entrepreneurship, he was also a renowned Professor at the MIT, USA for the last 45 years. Infosys's Narayanmurthy's comment - "He is the only person of Indian origin to have established a global brand" is a great tribute to him.

Wishing you all the best in your personal as well as professional lives,

Best regards,

P. K. Bose  
Executive Director

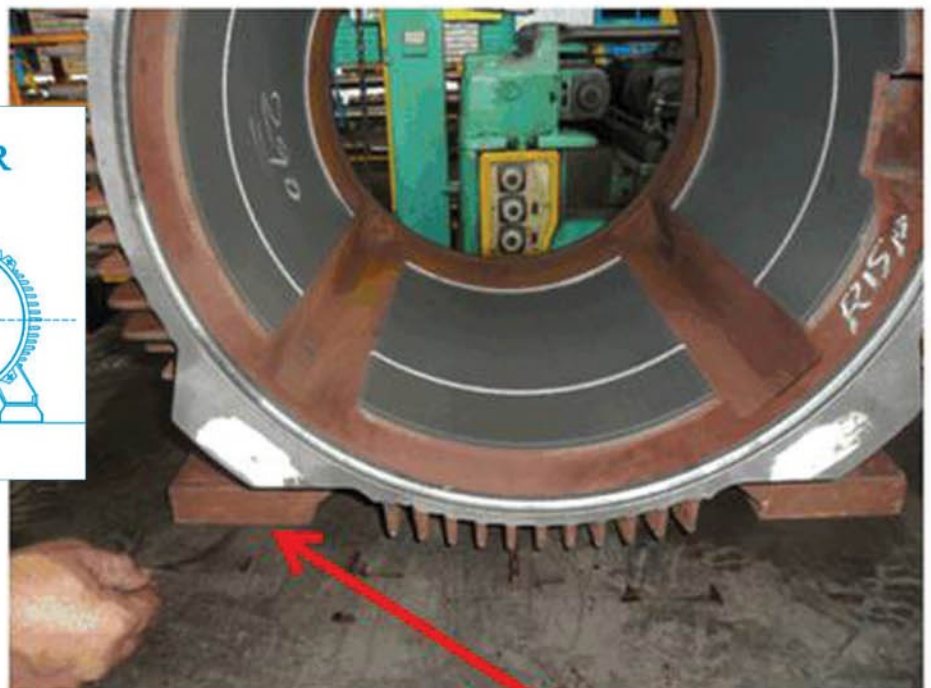
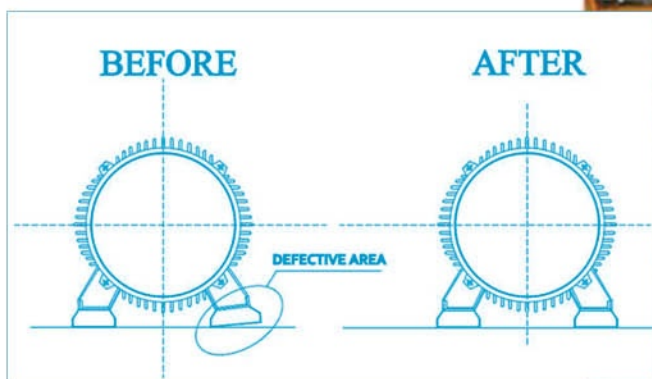


Satyajit Sur  
General Manager  
Manufacturing, Paharpur Works

# SOFT FOOT CONDITION DETECTION WITH VIBRATION ANALYSIS

Vibration analysis, condition monitoring, predictive maintenance  
Soft foot poses a challenge for plant operations and maintenance personnel.

To arrest happening of soft foot condition, the manufacturing process needs to be controlled. The pictorial view of soft foot condition which may happen due to incorrect machining of feet is shown below ( foot angle shown enlarged than actual for better understanding).



To eliminate the problem of having foot unevenness, feet milling of frame is done in Horizontal Machining Center. Frame is mounted on a rigid fixture which holds the frame tightly on the fixture so that it does not get shifted during operation. It also holds the frame with its vertical axis perpendicular to the milling cutter to ensure perpendicularity of the feet with the center axis.

After feet milling operation, feet unevenness is checked with Filler gauge on surface plate.



Rigid Holding on Two Position at HMC (CNC)

Rigid Fixture

Foot unevenness leads to high vibration of the motor during testing. It may be confusing to identify the actual reason of high vibration of the motor and start re-checking various parameters, dimensions of different components, residual unbalance value of the rotor etc leaving aside the foot unevenness factor. Normally in a motor, the vibration is measured in three axes i.e. horizontally, vertically & axially and the magnitude of vibration are contributed by various mechanical and electrical forces coming into play during operation of the motor. Different unbalanced forces developed due to inaccurate geometry and dimensions of various components of the motor lead to higher vibration. The vibration in each axis is contributed by one or more factors which

can be analyzed and determined through RCA . One of the most effective methods in solving such problem where the possible cause is to be found out from multiple factors is Fish bone diagram analysis. One of the reasons of high vibration in vertical axis is Foot unevenness. Whenever high vibration in vertical axis is noticed during testing of motor, the following points are to be checked, ---

- 1) Lift the motor. Check the feet of the motor whether anything is stuck to the bottom preventing the motor to sit properly on the test bed. Clean the feet and bottom thoroughly.
- 2) Clean the test bed thoroughly before putting the motor
- 3) Check the gap between each foot and the test bed by filler gauge.

If any gap is found between any of the feet and the test bed, it indicates that the foot is uneven which results in high vibration of the motor.

Similarly – when the motor is installed at site for actual use, proper base alignment is necessary – if possible Blue Matching should be done (maintain >80% conformance).

.... concluded

## Global PLM Vision

Supports the corporate initiatives on Customer Care, Globalization [Design Anywhere, Manufacture Anywhere, Support Anywhere], Innovation, Sustainability and Simplification

### Our Mission

Apply common and integrated business processes; Leverage/Re-Use corporate knowledge and assets; Share a singular source of product data [‘Single source of the truth’]

### Functional Scope

Engineering Change Process (Engineering Change Request Order);

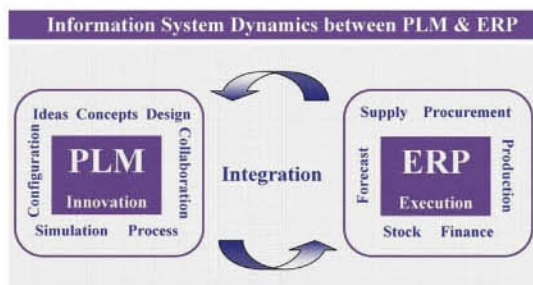
Flow Process for New Model Release;

Deviation Process [Deviation Change Request Order; temporary changes to product, assembly, component or Specifications (drawing, material, process, performance data...)];

Parts (classification, attribute definition).



**KAUSHIK DAS**  
Manager-Design



PLM	ERP
Handles intellectual capital	Handles physical and financial values
Primary focus on product development	Primary focus on logistics
Handles ‘As Designed’ information	handles ‘As Delivered’ information
Revision-oriented	Transaction-oriented
Strong document and file management	Weak document and file management
Primary users “ engineers, designers, development managers	Primary users : production and logistics planners, purchasers

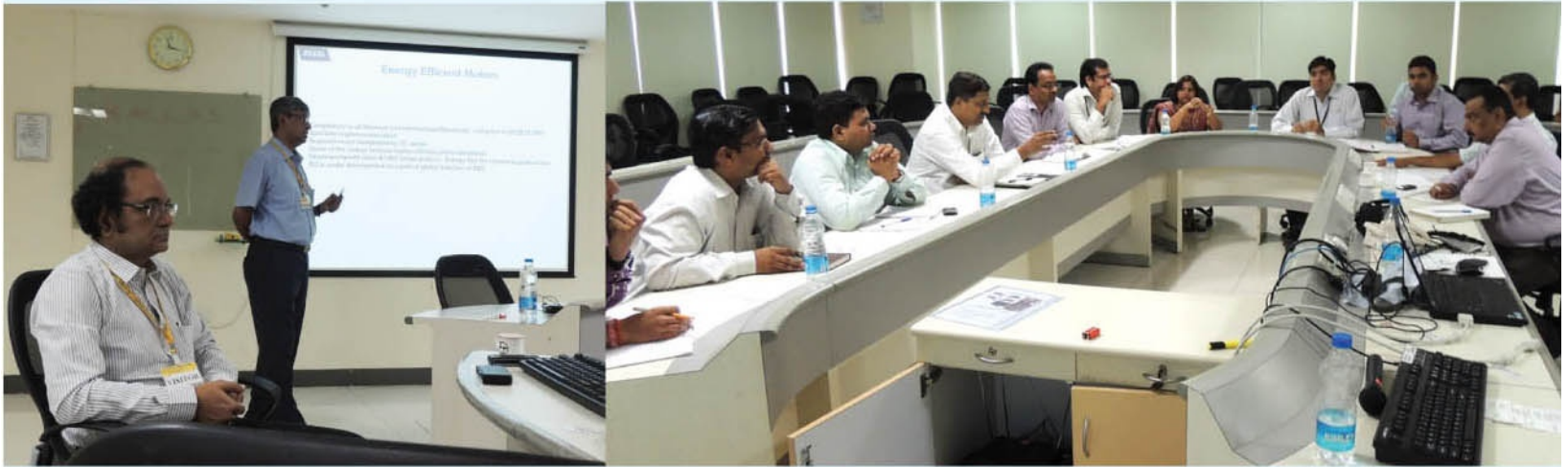
.... concluded

## Marathon Electric Organised a Seminar at L&T – S&L Vadodara on 31-07-2013

The seminar was very well attended and was highly interactive. Mr PK Bose – ED, Mr Gautam Mondal DGM Engineering, Mr Ananda Majumdar – GM Business Development \* & Technical Services, and Mr. Pinkesh Modi, Mr. Nalin Prasad from Marathon Ahmedabad represented the company.

The seminar started off with Introductory Lecture by Mr PK Bose followed by technical sessions by Mr Mondal and Mr Majumdar.

Following the seminar, a doubt clearing session was organised.



## INDUSTRY - ACADEMIA RELATIONSHIP

Marathon Electric was invited to deliver a talk at the National Conference on "Energy Engineering, Analysis, Audit & Management" 8-10 July at Narula Institute of Technology, Kolkata. Mr. Ananda Majumdar – GM Business Development & Technical Services spoke on Energy Efficiency of Electric Motors on 10<sup>th</sup> July at the said seminar which was well attended by students, Professors and Experts.



*Edited and compiled by Mr Ananda Majumdar  
Supported by Mr Debabrata Sanyal*

*We welcome your feedback.  
Please write to us at :*

*[Memi.Mktg@marathonelectric.com](mailto:Memi.Mktg@marathonelectric.com)  
[ananda.majumdar@marathonelectric.com](mailto:ananda.majumdar@marathonelectric.com)  
[debabrata.sanyal@marathonelectric.com](mailto:debabrata.sanyal@marathonelectric.com)*

*Please visit our  
Website - [www.marathonelectric.in](http://www.marathonelectric.in)*