MMI
MODERN MANUFACTURING INDIA

Print • Digital • Events • Services

VOLUME 3 · NO. 3 · MAY 2015

The official magazine of Indian Machine Tool Manufacturers' Association

Partnered by:
Modern Machine Shop
MM MaschinenMarkt



TECHNOLOGY UPDATE
Machining Muscle

HANNOVER MESSE
Revolutionizing the Industry

EVENT REPORT
Moving the World: One Innovation at a Time

MEDICAL MACHINING
The Ideal Tool



PM NARENDRA MODI

"You will find an environment that is not only open, but also welcoming. We will make it easy to do business in India. We want a future in which excellence defines every sector and every industry in our country."

Making India
Business Ready!

Vogel Business Media

Meistermacher.
Made in Germany.

Jens Lehmann,
German goalkeeper legend,
SCHUNK brand ambassador since 2012
for precise gripping and safe holding.

German champion with Borussia Dortmund 2002

English champion with Arsenal London 2004

www.gb.schunk.com/stationaryworkholding

Peter Büchsler,
Master – Milling and Clamping Technology

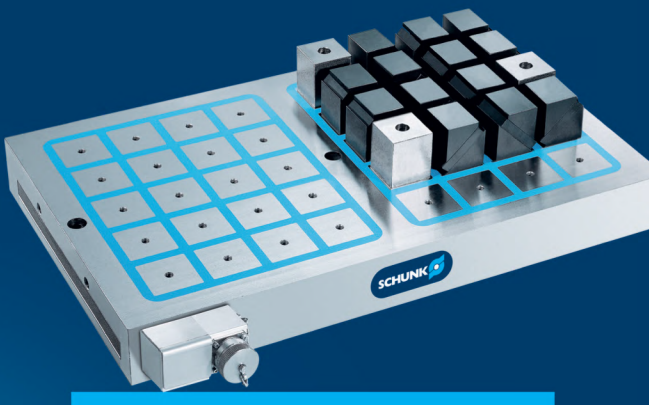
70 Years

Superior Clamping and Gripping

SCHUNK®

SCHUNK stationary Workholding
More than 5,000 Components for your Workholding

SCHUNK stationary workholding.
The modular system for combinations to create a very exact connection between the machine table and the workpiece. Set-up costs are reduced to nearly zero. For higher productivity in your machining center.



5-sided workpiece machining in one set-up
MAGNOS
Square pole technology



VERO-S
Quick-change pallet system.
90% lower set-up costs.



KONTEC
Mechanical clamping systems.
Universal talent for every application.



TANDEM
Clamping force block.
0.02 mm clamping repeat accuracy.

© 2015 SCHUNK GmbH & Co. KG

JYOTI

Since 1857
HURON
Subsidiary of JYOTI

TECHNOLOGY SOLUTIONS





TMX Series
Twin Spindle Twin Turret
Multi Tasking Turn Mill Center
TMX 200



Mu Tech Series
(5-Axis) Machining Center
MU[tech]6



MX 4
(5-Axis) Bridge Type
Vertical Machining Center
with Linear Motors



KX Five Series
(5-Axis) Bridge Type
Vertical Machining Centers
K3X 8 Five, K2X 10 Five



KX Large Series
(5-Axis) Double Column
Vertical Machining Centers
KX 50 M, KX 50 L, KX 100, KX 200, KX 300



KXG Series
(5-Axis) Gantry Type Machining
Centers with Linear Motors
KXG 45 - 14, KXG 45 - 23, KXG 60 - 23,
KXG 90 - 23

MX Series
(5-Axis) Universal Milling & Turning Machine
MX 8, MX 10, MX 12

JYOTI CNC is having the largest range of machines for all of metal cutting applications across entire Indian machine tool industry. We commit our best efforts to deliver the best application solutions through the widest machine range enhanced by our customized solution expertise.

Technology Solutions caters to complex shape applications requiring very high accuracy parameters, may it be small complex precision work of Medical Industry or large size complex shapes of Energy or Aerospace Industry requiring 5-Axis machining capability. Working at better HSM (High Speed Machining) parameters and various enabled safety features, many complex applications can be completed in single set-up part clamping by reaching intricate machining area, with better and precise degree of freedom.

- State-of-Art Structural Design
- Optimized Surface Quality
- Better Dynamics
- Complex Application Ability

MAKE IN INDIA

www.radiantmedia.co



JYOTI CNC AUTOMATION LTD.
G - 506, G.I.D.C. Lodhika, Village : Metoda, Dist : Rajkot - 360 021, Gujarat (INDIA).
Ph. : + 91-2827-306100/101, 287081/82 | Fax : + 91-2827-306161/287811

/JyotiHuron /JyotiHuron YouTube /JyotiHuron
web : www.jyoti.co.in / www.huron.fr
E-mail : info@jyoti.co.in, sales@jyoti.co.in

One Stop Solution for metal cutting

Ahmedabad : +91-79-26921309, +91-99798 62231, Aurangabad : +91-95455 10255, Bangalore : +91-80-23472544, +91-97390 01092, Belgaum : +91-97390 01091, Chennai : +91-44-26253813, +91-99625 62501, Coimbatore : +91-99625 62511, Faridabad : +91-98186 82650, Hosur : +91-99625 62783, Hyderabad / Secundrabad : +91-97032 16651, Indore : +91-99789 11214, Jaipur : +91-97833 07603, Jamshedpur : +91-75490 00992, Kanpur : +91-93368 33783, Kolhapur : +91-97644 42654, Kolkata : +91-33-24618635, +91-98361 13939, Ludhiana : +91-98728 88746, Mumbai : +91-22-26850044, +91-98204 27984, Nagpur : +91-97644 42662, Nasik : +91-97644 42660, New Delhi : +91-11-47791193, +91-99991 91193, Pune : +91-20-66305452, Sriperumbudur : +91-89398 24662, Surat : +91-99798 62235, Vadodara : +91-99798 62232

Advisory Board

Mr Jamshyd N. Godrej
Chairman and
Managing Director
Godrej & Boyce Manufacturing
Company Ltd

Mr Vikram Kirloskar
Vice Chairman
Toyota Kirloskar Auto
Parts Pvt Ltd

Mr AK Taneja
Managing Director & CEO
Shriram Pistons & Rings Ltd

Mr Vikram Sirur
Immediate Past President (IMTMA)
Chairman
Miven Mayfran Conveyors Pvt Ltd

Mr L Krishnan
President (IMTMA)
Managing Director
TaeguTec India Pvt Ltd

Mr Shailesh Sheth
Corporate Strategy Advisor

Mr Shrinivas G Shirgurkar
Managing Director
Ace Designers Ltd

Mr CP Rangachar
Managing Director
Yuken India Ltd



KNOWLEDGE FOR YOU!

SUBSCRIBE NOW!

Mail to kruti.bharadva@vogel.de

Company Directory

Companies that are mentioned editorially in this issue

A
ABB . . . 61,65
ABP . . . 65
ACE MICROMATIC . . . 22
AllweierSysteme GmbH . . . 46
Alstom . . . 24
ANDRITZ . . . 65
Anusaya Auto Press Parts Pvt Ltd . . . 50
ASK CHEMICALS . . . 65
AVURE . . . 65

B
Bharat Forge . . . 22,24

C
Capecchi Srl . . . 52,
CAPITAL . . . 65
Changzhou Hidea . . . 65
China Foundry Association . . . 64
China Iron and Steel Association . . . 64
Chinese Mechanical Engineering Society . . . 64
CII . . . 24
Costain Ltd . . . 24

D
Deutsche Messe . . . 68
DISA . . . 65
DMG Mori . . . 40,74
Drache . . . 65
Dürr Ecoclean GmbH . . . 46

E
EBNER . . . 65
EEPC India . . . 69
Eirich . . . 65
Encee Systems GmbH . . . 43
Exone . . . 65

F
FAG Bearings India Ltd . . . 70
Fanuc . . . 44,65,
FARO Business Technologies (I) Pvt Ltd . . . 50
FIAT India . . . 50
Fill . . . 65
FLOW-3D CAST . . . 65
FONDARC . . . 65
Fuji Electric . . . 65

G
German Industry Association . . . 24
German Machine Tool Builders' Association (VDW) . . . 26
Grenzebach SH . . . 65

H
Haas Automation . . . 52
Hannover Milano Fairs India . . . 60
Hannover Milano Fairs Shanghai Ltd . . . 64
HARTING Technology Group . . . 34
Hess . . . 34
Holroyd Precision . . . 24

I
I.M.F. . . . 65
IMTMA . . . 8,20
INA . . . 70,71
INDUCTOTHERM . . . 65
Industrial Furnace Institution of CMES . . . 64
INSERTEC . . . 65
International Monetary Fund . . . 33,37

K
Kao . . . 65
Kawasaki Motors . . . 58
Kirloskar Group . . . 24
KönigseeImplantate GmbH . . . 40
KUKA . . . 65
KUTTNER . . . 65

L
LG Electronics . . . 50
Liebherr . . . 34
Luk . . . 70

M
MAGMA . . . 65
Messe Frankfurt Trade Fairs India Pvt Ltd . . . 72
MetallformWächter GmbH . . . 47
Metallurgical Council of CCPIT . . . 64
Micromatic Machine Tools Pvt Ltd . . . 18
Mitsubishi Electric . . . 28
Morgan . . . 65

N
NORD Drivesystems Group . . . 34

P
Paul Wurth . . . 65
Philips India . . . 50
Pilz India Pvt Ltd . . . 34
Precision Technologies Group . . . 24
Primetals Technologies . . . 65
Putzmeister . . . 34

R
Reed Triune Exhibitions Pvt Ltd . . . 26
Rittal India Pvt Ltd . . . 33

S
Savelli . . . 65
Schaeffler AG . . . 70
Schunk Intec India Pvt Ltd . . . 77
Schwing Stetter . . . 34
Siemens . . . 44,56,61
Sinto . . . 65
SolidProfessor . . . 58
SOLIDWORKS . . . 58
State Bank of India . . . 24

T
TaeguTec India Pvt Ltd . . . 8,20,74
The World Bank . . . 33,37
Thyssenkrupp . . . 34
Tata Group . . . 24
Tata Motors . . . 50
Tata Steel . . . 24
TSO . . . 24

U
Uni-Geraete GmbH . . . 65
United Grinding Group . . . 26

V
VDMA India Services Pvt Ltd . . . 33

W
Wadhokar Group . . . 50
WFL Millturn Technologies GmbH & Co KG . . . 66
Wirtgen . . . 34

Z
Zhiheng . . . 65
ZW Soft . . . 42

BOOK YOUR SPACE NOW!


ASHOK THAKUR
General Manager
Mobile: +91 9819944543
ashok.thakur@vogel.de


DINESH MISHRA
Deputy General Manager
Mobile: +91 9742998763
dinesh.mishra@vogel.de


PREETI MISHRA
Deputy General Manager
Mobile: +91 9820488203
preeti.mishra@vogel.de



MMI MODERN MANUFACTURING INDIA

The official magazine of Indian Machine Tool Manufacturers' Association

Vogel Business Media

RELIABILITY. PRICE. REPUTATION.



Haas VF-2SS Super Speed
Vertical Machining Center

= TOTAL CUSTOMER VALUE.

WE KNOW what it's like.
We're MACHINISTS, too.
We CUT METAL every day.

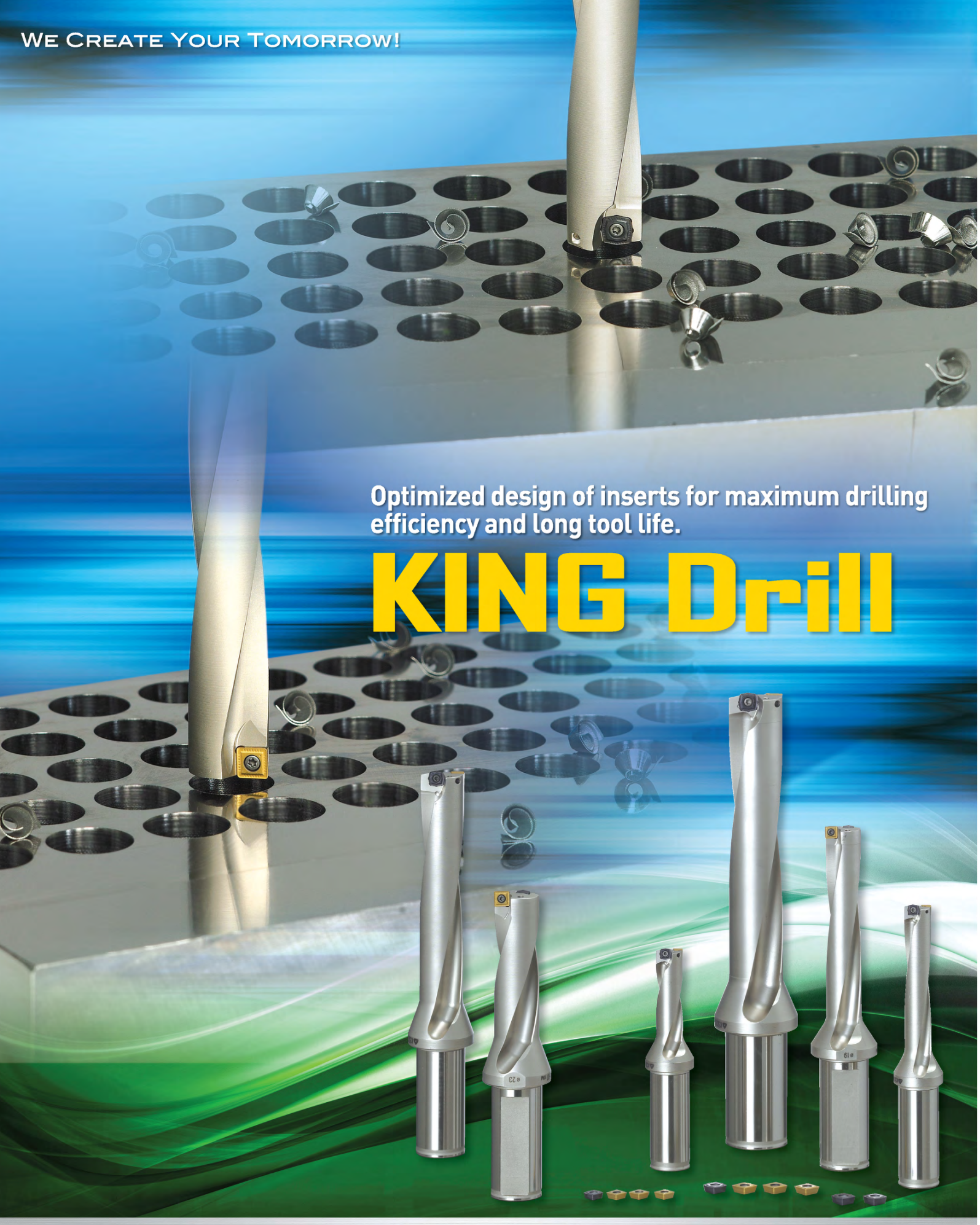
That's why we're driven to make sure that every Haas CNC machine is trustworthy, affordable, and always backed by the industry's best after-sale service.

Haas Factory Outlet | www.HaasCNC.com

Sales: Ahmedabad: 079-32405007, **Bangalore:** 080-41179452/53, **Chennai:** 044-65156052, **Coimbatore:** 0422-2413924
Delhi: 0124-4367619, **Kolhapur:** 0231-2677979, **Mumbai:** 022-39136041, **Pune:** 020-32935433

Service: North: 09312550550, **West (Guj) and Central:** 09376150150
West (Mah) and East: 09325150150, **South:** 080-41179452/53

HAAS



KORLOY INDIA TOOLING Pvt. Ltd.
Ground Floor, Property No.217, Udyog Vihar Phase IV, Gurgaon 122016, Haryana, INDIA
T: +91 124 4050030 F: +91 124 4050032
sales.kip@korloy.com / www.korloy.com

VERICUT User



Right the
first time.
Every time.

VERICUT can help you avoid:

- **Machine repairs**
- **Replacement material**
- **Re-machining time**
- **Lost production time**
- **Late delivery penalties**
- **Replacement cutting tools**

VERICUT can give you the confidence to run a part for the first time with no one at the machine. VERICUT works with all CAD/CAM/PLM systems to simulate CNC code, whether programmed manually or post-processed from your CAM system. Every day, our software is trusted by thousands of companies from all industries to simulate and optimize their machining process within a virtual machining environment.

Contact us to learn how an investment in VERICUT pays for itself.

VERICUT®

CGTECH.com



L Krishnan
President, Indian Machine Tool Manufacturers' Association (IMTMA) and
Managing Director, TaeguTec India Pvt Ltd

Building Upon a Successful and Eventful 'IMTEX'

Great success heralds greater expectations. This time-honoured adage spells the reality of our manufacturing world today. The Indian manufacturing sector and machine tool industry are brimming with positive sentiments post IMTEX 2015 that was held in January this year.

As per the latest World Machine-Tool Output & Consumption Survey by Gardner Research, India is the 14th largest producer of machine tools in the world and 10th in terms of consumption. India's machine tool industry is estimated to grow by 25 per cent during FY15.

Sentiments are rapidly changing. There was an overall increase in terms of production, imports and consumption from April to December 2014. The industry is growing and the trend is expected to continue. The outlook for 2015–16 is optimistic due to the macro-economic conditions and the overall growth in the economy. Firms have evinced interest in setting up plants in India, especially in sectors such as defense and aerospace manufacturing.

The Union Budget has brought a lot of clarity in terms of medium term direction of tax laws and tax rates. In addition, corporate taxes will be systematically reduced from 30 per cent to 25 per cent over the next four years. The long pending Goods and Services Tax (GST) is also expected to be implemented from April 2016. And the provisions of the General Anti-Avoidance Rules have been put on hold for two years which has reduced the uncertainties. to a large extent. However, going forward, a lot more needs to be done.

However, we do realize that for an economy of our size to change its direction and gain momentum on ground consumes time. All the optimism and sentiments have not yet translated into higher demand for goods and services. But, we are confident that the momentum will soon pick up as we are on the right track.

Over the years, the Indian Machine Tool Manufacturers' Association (IMTMA) has been committed to support the industry in innovative ways. IMTMA has announced IMTEX FORMING 2016 and Tooltech 2016 from January 21–26, 2016 at the Bangalore International Exhibition Centre in Bengaluru. IMTEX FORMING 2016 will be an evolutionary fair and will display various forming technologies. Apart from this, many more initiatives are on the anvil.

In this edition of MMI, you will be updated on the recent and upcoming initiatives of IMTMA that prove beneficial for connecting the industry with its customers. I am sure that the contents herein will be valuable for all the readers.

I would like to conclude by calling upon the industry to whole heartedly support our initiative and join hands with IMTMA on its road towards manufacturing excellence.

I wish you all the very best for the year ahead!

Indian Machine Tool Manufacturers' Association
AMTTF
BIEC Bangalore International Exhibition Centre
DESIGN INSTITUTE
International Seminar on Forming Technology
Finishing School in Production-Engineering
IMTEX FORMING
IMTEX
imtir
INTERNATIONAL SEMINAR ON MACHINING TECHNOLOGIES
PRODUCTIVITY BUZZ
Udaan
VISION
AHMEDABAD MACHINE TOOL EXPO 2015
DELHI MACHINE TOOL EXPO 2015

riello ups

Reliable Power for a Sustainable World

Global Leaders in Uninterruptible Power Supply Systems



Complete range of UPS solutions from 10 KVA- 6400 KVA

Riello Elettronica is today one of the four largest manufacturers of uninterruptible power supplies in the world; with a complete range of UPS able to satisfy any energy requirement, Riello UPS manufactures effective and efficient solutions that ensure power quality and business continuity, guaranteeing power supply and the correct operation of systems even in the event of critical situations.

Riello has been instrumental in offering most advanced UPS solutions specifically to Automotive industry where loads are of varied nature compare to general purpose loads. Riello UPS are powering various kind of loads and applications like- various type of CNC machining (VMC, HMC, 3 Axis, 5 Axis), Grinding machines, robotic welding, engineered plastics, injection moulding, induction hardening, CNC laser cutting, CNC bending, EDM wire cut, Carbide cutting tool making, electroplating, paint shops, assembly line, etc.

Today Riello UPS is the most successful product in Automotive component and tools industry having more than 300 satisfied installations across India with this specific segment.

Some main features of Riello UPS

- Fully DSP controlled, IGBT base
- High efficiency up to 98.5%
- Inbuilt galvanic isolation transformer
- Wide input voltage and frequency range
- Advanced battery management system
- Solution for regenerative loads
- Remote monitoring & communication
- Input phase sequence correction & protection

Riello UPS Powering the Automotive Components/ Tools/ Automobile Manufacturing Industries







Riello UPS has been conferred with prestigious industry awards, 3 years in a row...

Riello UPS win *Company of The Year* 2012 — FROST & SULLIVAN

Riello UPS win *Product Leadership Award* 2013 — FROST & SULLIVAN

Riello UPS win *Best Practices Award* 2014 — FROST & SULLIVAN

Riello PCI India Pvt. Ltd.
(A joint venture between RPS S.p.A., Itlay and PCI Ltd., India)

Prime Tower, Plot No: 287-288, Udyog Vihar, Phase-II, Gurgaon-122015, Haryana (India) Tel: +91-124-6656999 / +91-7838552211 Fax: +91-124-4871698 Email: ups@riello-pci.com Website: www.riello-ups.in
CIN: U40102DL2010PTC205402

: www.acedesigners.com

ACE DESIGNERS



Ace offers wide range of products & solutions,
Which caters to different industry segments.

India's Largest CNC lathe Manufacturer

Ace Designers Ltd.

Plot No.7&8,II Phase, Peenya Industrial Area, Bangalore-560058, India, :+91-80-40370400, :+91-80-22186723, : info@acedesigners.co.in

TUV NORD ISO 9001 TUV NORD ISO 14001

Follow us on: /acemicromaticgroup

Ace Micromatic Group Company

XKNC® XI'AN KITAMURA PRECISION MACHINE WORKS CO.,LTD





Founded in April 2000 and located in Xi' an Hi-tech Development Zone, Xi' an Kitamura Precision Machine Works Co., Ltd, branded XKNC, is the first domestic precision CNC machine tool manufacturer to bring in advanced foreign technology and manufacturing experience; it is also a Sino-Japan joint venture with national innovative and high technology accreditation.

The products are namely gang tool type, turret type, automatic drilling and milling machine, automatic cutting machine, NAGASHIMA Ultra precision Grinding machine, KIRA small VMC, OBOT robot & auto-loading project. Eight plus class a total of 60 specifications of products are extensively applied in communication, refrigeration, optical instrument, household appliances, medicine, automobile, motorbike, electronics, special electrical machine, and timepiece industry.

With the high quality service, solid technical strength, XKNC enjoys a high popularity in Chinese markets and regional International markets. Your satisfaction is our constant pursuit, hope our efforts can bring you continuous benefits!

6th recommendation—Model:

XKNC-100GS (Auto-loading/Bar feeder/Two-Spindle/FANUC 0i mate TD)



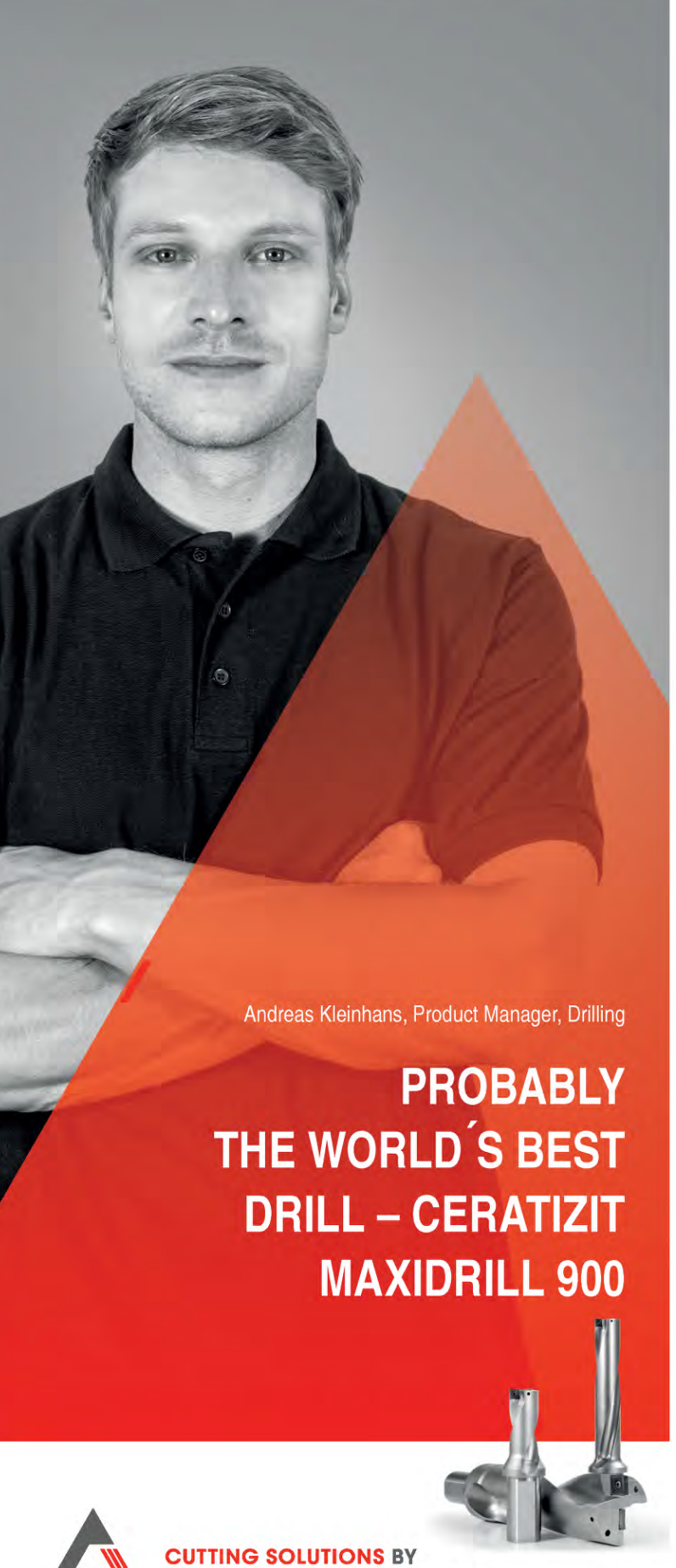





1.Dovetail sliding guide rail
2.Continuous working with auto-loading(24 hours a day 7 days a week)
3.Double-V-Shape sliding guide rail
4.Variours auto-loading designs.
5.Bar feeder
6.High precision
7.Easy maintainence and labour cost saving.

The Agent of XKNC at South India:
Arrow Machine Tools
Add: New No. 18, Old No. 1, Balaji Nagar, Ambattur, Chennai - 600053, Tamil Nadu, India
Contact: Mr. R. Vaidyanathan
Phone: +91-98-40236534 +91-44-26582694
Email: vaidy70@gmail.com

Xi'an Kitamura Precision Machine Works Co.,Ltd
Contact:Mr.Kenny Tel:+86 029 88452325-8041 Phone:+86 187 1050 3635
Fax:+86 029 8845 2319 QQ:657052834
Skype:XKNC-kenny We-Chat:Kenny1573
Email:Kenny@xknc.net/kenny.xknc@aliyun.com
Web: http://www.xknc.com/eng
Alibaba: http://xknc.en.alibaba.com/





Soumi Mitra
Editor-in-Chief
Vogel Business Media India
soumi.mitra@vogel.de

Bonds that Matter

Close relations play a vital role in our life. Recently, while travelling I received a call that a family member was ill and needed urgent medical attention. It was here that my friends came to the rescue. They took care of everything from admitting my family member to the hospital to keeping me informed and when I finally reached, stuck around for moral support.

These bonds secure us and keep us anchored in this journey of life. Such alliances are required in all aspects of our lives. It is important to build bridges for mutual growth.

We have, in recent times, seen Prime Minister Narendra Modi doing the exact same thing—jet-setting around the world to bring not only investments into the country but also to build ties of trust for mutual benefit and growth.

The Vogel Business Media India team witnessed firsthand the Prime Minister's big plans to continue alliances with Germany during the inaugural ceremony of HANNOVER MESSE in Kuppelsaal, Hannover Congress Centrum. Emphasizing on a vibrant economic partnership between India and Germany that continues to extend beyond the last century, he rightly quoted the Nobel Laureate, India's great poet and philosopher, Rabindranath Tagore—"Germany has done more than any other country to open India to the western world."

"Alliances and partnerships produce stability when they reflect realities and interests."

~Stephen Kinzer

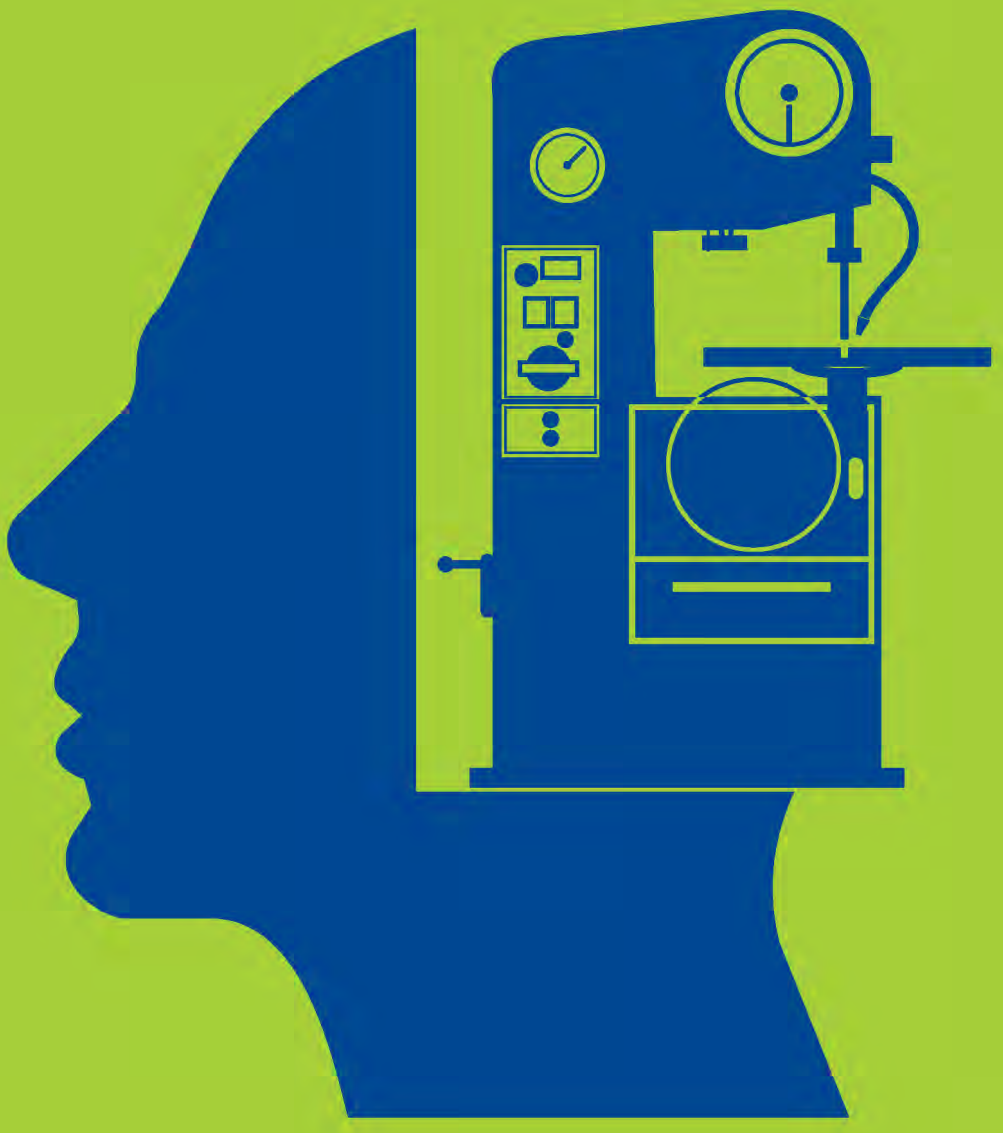
India has a long way to go, but it is evident that we are starting on the right front. This is evident from the Prime Minister's recent visit to China where he proposed business plans and agreements worth $22 billion.

With that, I wish you, our valuable readers, a journey of learning and progress blessed with a strong support system that will be with you through thick and thin.

SM

KEB

Bharat Bijlee



Automation Solutions Simplified

Our Solutions for Machine Tool:

- High speed accuracy in microns
- All communication & feedback options available
- Easy interface with third party servo motors & controllers

Bharat Bijlee provides complete automation solutions - Drives, Servo motors, Induction motors, Automation controllers and HMI - for positioning, speed control and multi-axis control.



Motors | Transformers | Drives & Automation | Elevator Systems | Projects

Powered by Trust™ | www.bharatbijlee.com



▶ **BIG EVENT:** "You will find an environment that is not only open, but also welcoming. We will make it easy to do business in India. And, we will always be eager to listen to your feedback." 36



▶ **CAD/CAM SOFTWARE:** The use of a start-to-finish software support is becoming a prerequisite for efficient CNC production. 42



▶ **MAINTENANCE:** At the Allweier facility, upon completion of the cleaning process the product passes through a cooling zone so that the cleaned parts can enter the packaging station without delay. 46

PANORAMIC PERSPECTIVE

18 **Strategies for Sustainability and Profits**
Management vision

ECO-BUZZ

24 An update on the latest happenings in the manufacturing space

ADVERTORIAL

28 **Solutions for Milling and Turning Machines**
Read about Mitsubishi Electric India's products and technologies

MAIN FEATURE

32 **Making India Business Ready!**
Industry stalwarts share key points that the government needs to incorporate for the ease of doing business in the country

BIG EVENT

36 **Heralding a New Era**
Gain insights from PM Narendra Modi on his plans to make India pro investment

MEDICAL MACHINING

40 **The Ideal Tool**
State-of-the-art products for the medical industry

CAD/CAM SOFTWARE

42 **The Machinist as a Digital Guide**
Using CAD/CAM systems to match the increased demands in milling

MAINTENANCE

46 **The Right Combination Leads to Success**
Learn how the right cleaning solution can lead to cost-effectiveness

TEST & MEASUREMENT

50 **Time Savings through 3D Measurement Devices**
Know how 3D measurement tools store measurement data digitally and helps to save time

MACHINING CENTERS

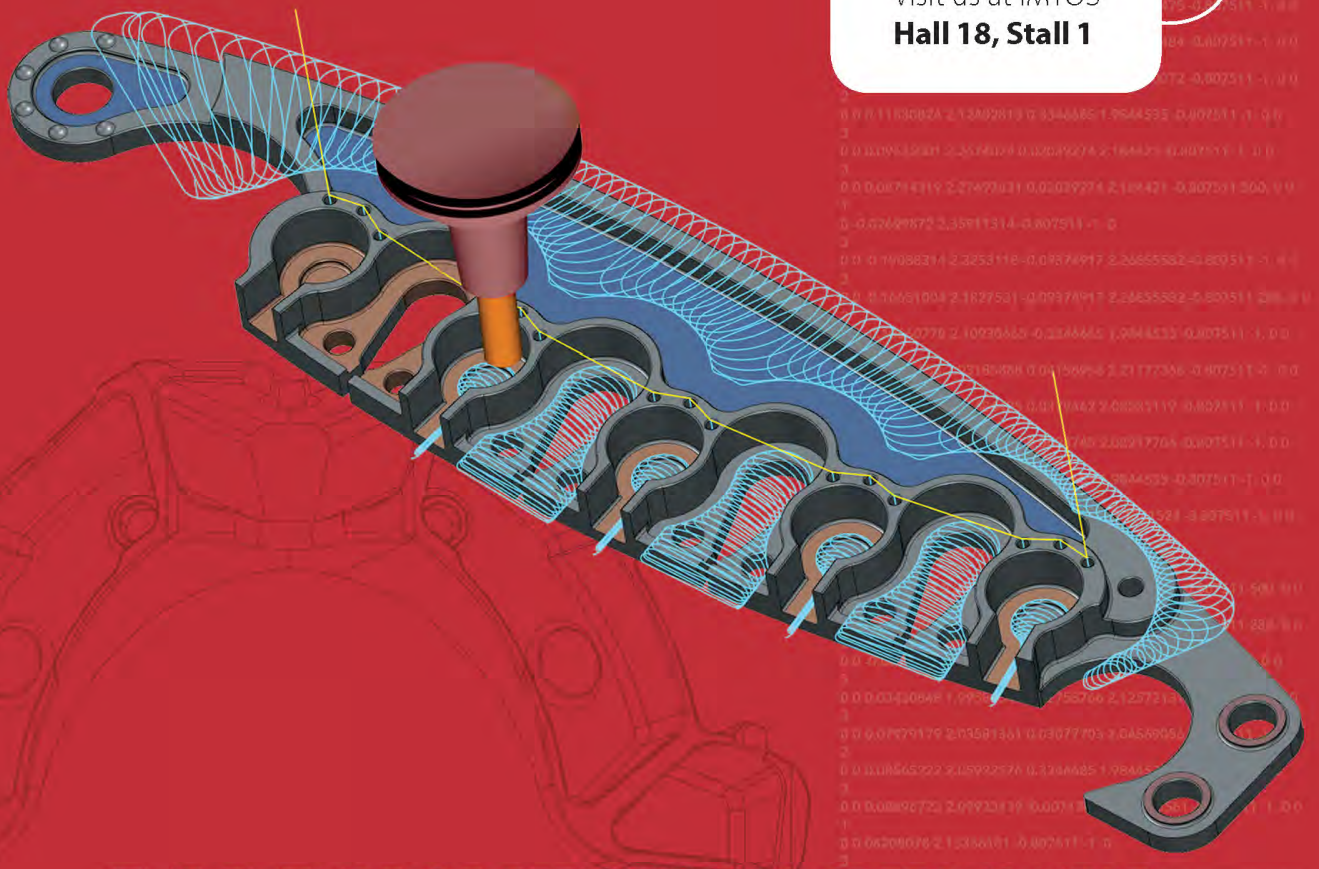
52 **Haas makes Five-Axis Machining Affordable**
A take on smaller shops including CNCs to make their operations efficient and profitable

MANUFACTURING SOFTWARE

56 **High-definition Collaboration in Manufacturing**
An article that showcases the benefits of using a collaborative platform

BE DYNAMIC!

Visit us at IMTOS
Hall 18, Stall 1



THE FUTURE OF EFFICIENCY & SPEED IS HERE – MASTERCAM'S DYNAMIC MOTION TECHNOLOGY

Since 2008, Mastercam has been building Dynamic Motion into our software. That means it has been shop-tested and proven in real-world environments. Dynamic Motion toolpaths carve out massive amounts of material quickly, reducing cycle times by up to 75% – while doubling and even tripling the tool life – immediately putting more money in your pocket. Sounds unbelievable, right? But as the market leader, we've had our Dynamic Motion toolpaths tested in most every conceivable work environment around the world. It works.

For more information, visit
www.Mastercam.com
800-228-2877

Mastercam®

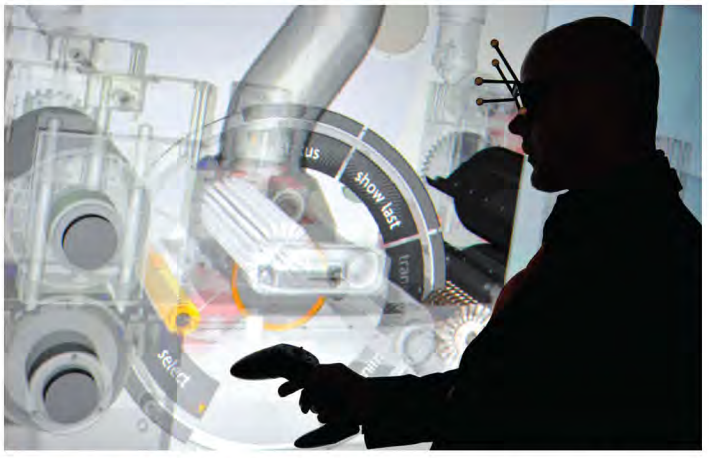
DYNAMIC MOTION™



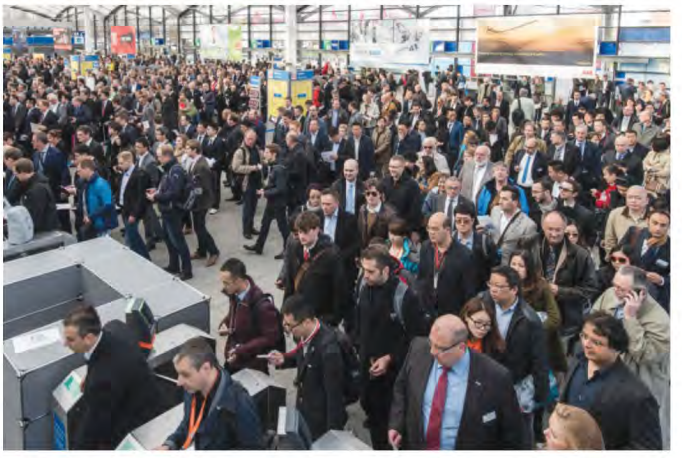
▶ **CUTTING TOOLS:** Five-axis machines such as the UMC- 750 can approach multiple faces simultaneously, in a single setup. 52



▶ **SKILL DEVELOPMENT:** The Kawasaki Teryx4 has been designed using SOLIDWORKS. 58



▶ **INDUSTRY 4.0:** The latest industrial revolution, termed Industry 4.0, is about the integration of the Internet of Things into the manufacturing industry. 60



▶ **EVENT REPORT:** HANNOVER MESSE 2015 attracted more than 220,000 trade visitors including 70,000 visitors from foreign countries. 68

REGULAR

04 COMPANY INDEX
08 FOREWORD
12 EDITORIAL
20 FROM IMTMA'S DESK
62 EVENT CALENDAR
74 INNOVATIONS & SOLUTIONS
78 IMPRINT

SKILL DEVELOPMENT

58 **On-going Learning: Key to Success!**
Continuous and flexible learning to stay updated on the design platform

INDUSTRY 4.0

60 **Industry 4.0 – From Mass Production to Mass Customization**
A look at the scope of Industry 4.0 and how it will change the face of the industry

EVENT REPORT

64 **Boosting Development and Technology**
A report on Metal + Metallurgy China 2015

66 **Machining Muscle**
A report on WFL's Technology Meet 2015 in Austria

68 **HANNOVER MESSE 2015**
A report on HANNOVER MESSE 2015 - Revolutionizing the Industry

70 **Moving the World: One Innovation at a Time**
A report on Schaeffler's latest product range at HANNOVER MESSE

EVENT PREVIEW

72 **Automotive Engineering Show 2015**
A report on three events that will be held concurrently in Chennai

ADVERTORIAL

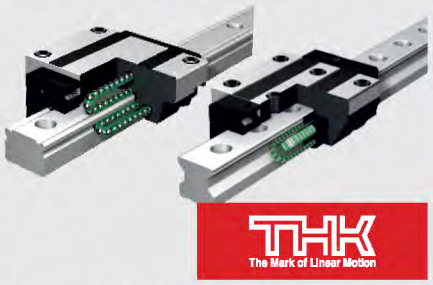
73 **Adding Value through the Parts Cleaning Process**
Dürr Ecoclean develops and markets products, systems and service solutions for technical cleaning applications.

DIGITAL VERSION

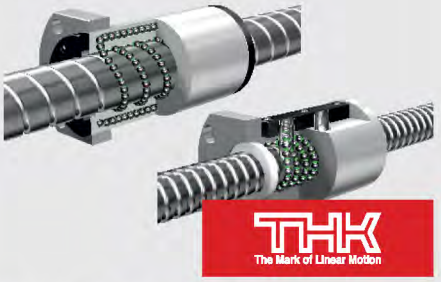
To view this issue of MMI online scan the **QR Code** OR visit our website modernmanufacturing.in

LINEAR MOTION TECHNOLOGIES

Linear Motion Guides



Precision Ball Screws



Precision Cross Roller Ring



Clamps for Linear Guides



Cross Roller Guides



Curvic Coupling



Precision Locknuts



Linear Actuators



Flexible Encoder Couplings



Mist Cleaner



Ball Transfer Units



Gears, Racks & Pinions



APEX® PRECISION

AMCATS PVT LTD
APEX PRECISION AGENCIES
APEX PRECISION MECHATRONIX PVT LTD

303-308, Krishna Bhuvan Annexe, 22-B,
Govandi Station Road, Deonar, Mumbai - 400088. INDIA
T: +91-22-6164 4444 F: +91-22-2556 4987
E: sales@apexprecision.co.in W: www.apexprecision.co.in

AMCATS

BANGALORE | NEW DELHI | CHENNAI | HYDERABAD

Strategies to Counter Lower Priced Competition





"Customers will pay extra if, in addition to providing the machine, you take responsibility for ensuring that it generates the results the customer wants."

CEO, Micromatic Machine Tools Pvt Ltd, TK Ramesh

Things change overnight ... a competitor enters your market with a similar machine priced lower than your machine. You need a strategy to battle that! So, what do you do next?

On the one hand, all you need to do is drop your prices, but this approach will land you in a price war, and there are no winners in a price war—only survivors. The good part is—it is possible to beat a lower-priced competitor without crippling your business, the tough part is you will need to make major operational changes, and communicate better with your customers.

Differentiate and stand out in the crowd

To do this successfully you need:

- A viable product: The overall quality and functionality of your product or service must be similar to your competition
- Competitive cost analysis: You need to know exactly how your supply chain, manufacturing, and distribution costs stack up.
- A task force: To undertake a major reorientation, so you will need the brains and minds of your top leaders to guide and implement the changes.
- A communication plan: To tell your differentiation story to customers creatively and re-define value.

When customers prefer the lower priced machine, it is usually because they believe the machine is better value. To compete, you need to get the customer to value your machine more than that of the competition—regardless of the price.

The challenge is to reduce your cost without destroying your own sustainability and eroding the benefits it gives to your customer.

- Build a uniquely superior machine: Customers will pay more if they're convinced that your machine can be seen to have better value than that of the competition.
- Create a hassle-free experience: Customers will pay extra if your machine is easier to buy and use than that of your competitor.
- Take ownership of the customer's results: Customers will pay extra if, in addition to providing the machine, you take responsibility for ensuring that it generates the results the customer wants.

Reposition your machine – look internally and make changes

- Lower your pricing mean's changing manufacturing and distribution. To beat low price competitors at their own game while also maintaining margins, you need to squeeze every last drop of inefficiency and cost from your manufacturing and distribution system.
- Building a uniquely better machine is changing design and engineering. Determine through market research and customer feedback what specifications or features will prompt customers to see your machine as being superior to that of the competition. Then get engineering to build it.
- Creating a hassle-free experience = Changing sales and marketing. Figure out why it is difficult to buy and use your competitor's product, and then make it easy to buy and use yours.
- Taking ownership of the customer's results = Changing customer support. Build a deep bench of experts who really understand your customers' businesses. Build application teams who think like your customers.

Communicate to customers

- If you offer lower prices, ensure that whenever a customer sees a competitor's machine, your machine is right next to it—at a lower price.
- If you build a uniquely better machine, make it known through advertising. Reach out to customer groups that are most likely to believe that your machine is superior by selecting areas that the competition neglects.
- If you are easy to do business with, generate positive word of mouth. Make it easy for your customers to sell for you.
- If you take ownership of the customer's results, create a presence as an industry insider. Get your sales team to conferences, working groups and industry–association meetings where they can work closely with decision-makers and co-develop opportunities.

Support your customers and your marketing team with case studies and references of work done with quantified results.

This will ensure sustainability and help in staying ahead of the competition. MMI

The views expressed by the author are personal and he can be contacted at rameshtkr@gmail.com

Mitutoyo

Mitutoyo Corporation
80th Anniversary
Since 1934

The largest range in dimensional metrology



New technical centre with latest technology at Udyog Vihar, Gurgaon, Haryana



- Part programming for component measurement requirements.
- Display and Demonstration of Mitutoyo complete range of measurement product.
- Large team of application specialists.
- Measurement solutions.

Mitutoyo South Asia Pvt. Ltd.

Head Office : C-122, Okhla Industrial Area, Phase-I, New Delhi-110020, India, Tel: (91) 11 26372090, 40578485/6, email : delhi@mitutoyoindia.com
Technical Centre : Plot no. 65, Udyog Vihar, Phase - IV, Gurgaon, Haryana - 122015, Tel : +91 124 2340286, email : gurgaon@mitutoyoindia.com
www.mitutoyoindia.com

POWERED BY
Indian Machine Tool Manufacturers' Association

IMTMA Initiatives to Mobilize Manufacturing Needs

IMTMA announces two regional machine tool exhibitions for the northern and western regions along with a National Productivity Summit for the coming quarters.

India's manufacturing sector has crossed several milestones in its journey. It is continuing its evolution through exploring new trends such as high-speed high-efficiency machine tools, multi-function machine tools, ultra-precision machine tools, advanced and intelligent control, additive manufacturing, and much more. The technologies being adopted have lent dynamism to the manufacturing industry. Machine tools play an important role in manufacturing. The machine tool industry has also been growing steadfastly to match the requirements of the manufacturing industry. In recent years, the industry has proved successful in spreading its wings all over India as could be evinced from the many regional clusters that have come up.

The Indian Machine Tool Manufacturers' Association (IMTMA) has been facilitating the development of the machine tool industry through its various initiatives for reduction of operating cost, lead time and inventory to sustain growth in the market. As part of its commitment to support the industry in innovative ways and noticeably move the manufacturing industry forward, IMTMA has announced two regional machine tool exhibitions for the northern and western regions along with a National Productivity Summit for the coming quarters.

Big focus on regional manufacturing

Sentiments are rapidly changing. An overall increase in production and consumption during the last year has brought an all-round positivity. The industry meets about 60 per cent of the demand through overseas imports. IMTMA has announced two new shows for focusing on the northern and western regions. The Delhi Machine Tool Expo 2015 at Pragati Maidan, New Delhi, from August 20–23, 2015, and the Ahmedabad Machine Tool Expo 2015 at Mahatma Mandir, Gandhinagar, that is scheduled to be held from September 24–27, 2015. Both these shows will primarily focus on the requirements of the regional markets.

Exhibitors at these shows will display manufacturing technologies and solutions that are required to upgrade technology and improve productivity in a typical manufacturing machine shop. The exhibitions will feature two new seminars: Seminar on Manufacturing Automation using Robots and Seminar on 3D Printing / Additive Manufacturing Technologies. Speaking about the shows, President, IMTMA & Managing Director, TaeguTec India, L Krishnan said, "The exhibitions hold the key to opening avenues for penetrating the regional markets, exchange ideas, and share new technologies for enhancing productivity."

Regarding the response received for the expos Director General, IMTMA, V Anbu said, "Companies across several verticals have already booked space for showcasing their products at the events." The

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

IMTMA Initiatives

Source: IMTMA

IMTEX FORMING: Aerial view of the last edition.

Source: IMTMA



INDUSTRY SCENARIO

India is currently the 14th largest producer and 10th largest consumer of machine tools, according to the World Machine-Tool Output & Consumption Survey by Gardner Research published in April this year. The demand for machine tools is likely to grow by 25 per cent and estimated to reach about ₹10,000 crore during FY15.

A Better Turn with BFW Turning Solutions!

Kothari Group
Imagine Inspire Deliver

FUTURE READY

Heavy Duty Turning Center



Milling head type
Vertical Turn Mill Center





Slant Bed Turning Center

BFW

Bharat Fritz Werner Ltd.

An ISO 9001:2008 and ISO 14001:2004 Machine Tool Manufacturer

www.bfwindia.com | bfwmarketing@bfw.co.in

TROOSTWIJK
INDUSTRIAL AUCTIONEERS & VALUERS SINCE 1930

IMPORTANT ONLINE AUCTION

by order of the interested, due to **BANKRUPTCY** of Mecaflex s.a.

Metal Working Machinery



2x CNC MACHINING CENTRES "Mazak" VTC-300C-II ('11); pick & place robot "Motoman" YA-VP50NB00 ('08), with conveyor belts; **2x CNC LATHES** "Victor Taichung" VTurn-A26 ('11); full automatic band saw "Everising" H-360 HA ('11); etc.

CLOSING: Tuesday **16 JUNE** from 14h00

Visiting day: Monday 15 June from 9h00 till 16h00
Rue des Waides 7 - 4890 Thimister (Belgium)
Photos / catalogue available on our website

www.TroostwijkAuctions.com

TROOSTWIJK
INDUSTRIAL AUCTIONEERS & VALUERS SINCE 1930

IMPORTANT ONLINE AUCTION

by order of the interested, due to **FACILITY CLOSURE** of De Meestere

Steel Construction Machinery



CNC PUNCHING/SHEARING/PLASMA CUTTING MACHINE "Ficep" F504 PSNA Plasma, with dust extraction "Torit" and conveyor belts; **PORTAL OXYGEN CUTTING MACHINE** "Ficep" 1261 TT; cnc punching machine "Peddinghaus" Hydraulic 1000 GA; autom. band saw "Maco" BSS 360 HE; cnc oxygen cutters "Esab" and "Messer-Griesheim"; **CNC DRILLING LINE** "Peddinghaus" TDK 1000/9F, cap. 40-100 mm, 9 drilling heads; heavy duty circular saw "Kaltenbach" HDM 1400; workshop inventory and heavy lifting equipment;

CLOSING: Tuesday **2 JUNE** from 14h00

Visiting day: Thursday 28 May from 9h00 till 16h00
Stijn Streuvelslaan 45 - 8501 Kortrijk (Belgium)
Photos / catalogue available on our website

www.TroostwijkAuctions.com

CUSTOMIZED TRAINING PROGRAM



In April this year, IMTMA conducted a customized training program on Turning, Milling and Drilling Operations in Metal Working for the employees of Bharat Forge at IMTMA Technology Centre in Pune. The training program was an opportunity for the delegates to understand the basic concepts in machining processes. The program covered the various aspects of metal cutting basics, drilling and boring, tool presetting, turning, threading, tool regrinding, hard machining, coolant management, milling and machining economics.

momentum built up during and after IMTEX was expected to pour into these shows, he added.

IMTMA is expecting a large footfall of visitors for the two shows and was expecting it to translate into trade enquiries and business generation. Analysts and exhibitors feel that the twin expos will bring together regional players under one roof. It will be the best place to judge the requirements of the regional markets. The exhibitions hold tremendous significance for all players associated with the manufacturing industry. Some even feel that the shows in Delhi and Ahmedabad are a starting point.

IMTMA - ACE MICROMATIC Productivity Championship Awards 2015 @ National Productivity Summit 2015

Manufacturing companies are always facing challenges to reduce costs through productivity improvement measures. The answer lies in adopting highly productive manufacturing solutions through superior machining processes, alternative processes, automation, efficient machines and smart manpower. IMTMA is at the forefront of championing an enhanced productivity movement in the Indian metalworking industry by organizing the National Productivity Summit. This event showcases the best productivity improvement projects in the metalworking industry through live case study presentations.

The National Productivity Summit 2015 is scheduled to take place at Gurgaon from November 19–21, 2015. At the event, the winners of the IMTMA-ACE MICROMATIC Productivity Championship Awards will also be announced and who would take away rewards of up to ₹10 lakhs.

The road ahead

The regional exhibitions and the Productivity Summit are being held at a time when the machine tool industry is in a buoyant mood and is striving to find its feet to be globally competitive and adjust itself to the fast changing technologies and innovations at the global level. The new reforms initiated by India in the recent past will spur the machine tool industry to greater heights. The upcoming events are an excellent opportunity for the Indian engineering and manufacturing firms to mutually enhance their competitiveness to showcase their technology prowess to the outside world and compete equally in the global market. MMI

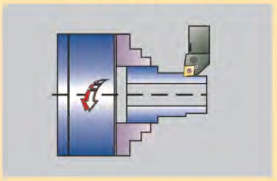
PMT Machines Limited

• Pune • Halol

CUSTOMISED SOLUTIONS

CELEBRATING 50 YEARS

CNC Turning





SC-8K
GANTRY LOADER



SC-14
BIG BORE LATHE



SC-25
CNC HEAVY DUTY LATHE

CNC Internal Grinding

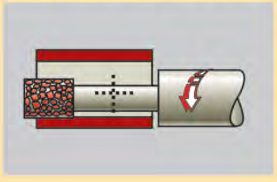




FIG-200 SPL CNC
BIG BORE GRINDER

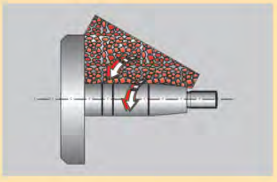


FIGT-300 CNC
FOUR STATION TURRET



FIGE-150 CNC
ID / OD GRINDER

CNC Cylindrical Grinding





AWH-1500 CNC
LONG SHAFT GRINDER

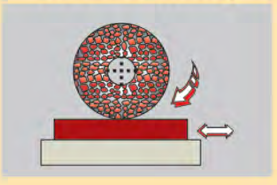


AWH-2000 CNC
HEAVY DUTY GRINDER



SWH-400 CNC
AUTO LOADING

Surface Grinding





SG-106 CNC
CREEP FEED GRINDER



SGR-60
ROTARY GRINDER



SG-63
HYDRAULIC / PLC

Automats





A15/25

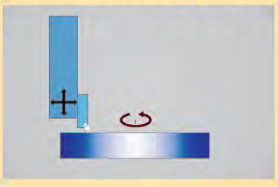


TD36
AUTOLOADING



A42/60

Vertical Turning Lathe





VIG-500 CNC
VERTICAL INTERNAL GRINDING



VC - 60C
1.5 M



VC - 75C
TURNMILL (2.5 M)

Built To Last

Pune : Tel : +91-20-27426219 to 23 ▪ Fax : +91-20-27426231/35 ▪ E-mail : rd@pmtmachines.com, marketing@pmtmachines.com

Halol : Tel : +91-2676-246786/87 ▪ Fax : +91-2676-246788 ▪ E-mail : cb@pmtmachines.com, mkt.brd@pmtmachines.com ▪ website: www.pmtmachines.com

Pune : 9960693354; **Mumbai** : 9821713400; **Delhi** : 9810401815; **Bangalore** : 9845026905; **Chennai** : 9840896822; **Coimbatore** : 9840366822; **Jamshedpur** : 9934119234; **Vadodara** : 9662503927

Strong Participation by Indian Industry at HANNOVER MESSE

Hannover, Germany – A strong 40 member CII CEO's delegation led by President, CII, Sumit Mazumder participated at HANNOVER MESSE in Germany that was held from April 13–17, 2015. About 350 Indian companies including the Tata Group, Reliance, Bharat Forge, State Bank of India and the Kirloskar Group showcased their strengths at the fair. India was the Partner Country for this year's edition of the fair which witnessed about 6,500 exhibitors from 70 different countries. CII had set up three stalls at the global event to showcase 'Brand India' and also to highlight industrial growth and business opportunities in the country. The delegation conveyed a powerful message for the global manufacturing industry—to look at India as a major investment destination and a place to do business.

Source: CII



Prime Minister Narendra Modi addressing the Indo–German Business Summit.

Indo German Business Summit

Coinciding with the fair, CII also organized the 'Indo German Business Summit' in collaboration with the German Industry Association (BDI). The Summit was attended by the CEOs of prominent German companies. Prime Minister Narendra Modi and the German Chancellor, Dr Angela Merkel addressed this session. The Summit focused on the 'Make in India' campaign, which aims to increase the share of manufacturing in India's GDP. With much of Germany's economic success being credited to its focus on the manufacturing sector and on producing high technology sophisticated goods, the session generated a strong response. The overall mood and approach towards India was positive from not only German companies but also companies from other parts of the world as well.

Hi-Tech

The Summit also focused on the opportunities to collaborate especially in the high technology manufacturing sector as well as highlighted new and emerging markets for trade and investment between India and Germany. Chief Minister, Maharashtra, Devendra Fadnavis also made a strong pitch for investors to look at Maharashtra. In addition, some iconic international brands also spoke strongly about the state's industry-friendly attitude.

Leading USA-based Screw Compressor Manufacturer Places £1.3 mn Order

Lancashire, UK – The machine, a Holroyd TG 350, will be delivered later this year and will be used to precision-grind screw rotors for use in industrial refrigeration technologies. "Although we are not allowed to name this customer for commercially sensitive reasons, we can reveal that they are part of a multi-billion-dollar global manufacturing organization and specialize in gas compression technologies," comments Sales Director, Holroyd Precision, Steven Benn. "Needless to say," he adds, "We are delighted to have secured this important order from them—especially as we faced considerable competition during the tendering stages, we were recognized for the uncompromising standards that our technologies offer." Holroyd's TG Series of multi-purpose grinding machines has long set the industry benchmark for high levels of accuracy and efficient stock removal. Equally suited to prototyping, batch and volume production, TG Series machines are designed primarily for the finish grinding of helical screw components such as worm screws and rotors after they have been milled to a rough or semi-finished state.

Source: Precision Technologies Group



Holroyd TG Series: setting the standard in helical rotor and thread grinding.

Tata Steel Selected for Key Sections of London's Major Crossrail Project

London, UK – Tata Steel has announced the signing of a prestigious contract to supply highly wear-resistant rail for the Crossrail project beneath the heart of London. The Crossrail route will serve 40 stations and travel more than 100 km from Reading and Heathrow in the west, through new twin-bore 21 km tunnels below central London to Shenfield and Abbey Wood in the east. Tata Steel has already commenced deliveries to the Crossrail project, and will ultimately supply the project with more than 57 km of its stress-free heat treated, wear-resistant rail. In total 7,000 tonne of Tata Steel rail will be used to create one of Europe's largest railway and infrastructure projects. During 2015, Crossrail's major tunnelling works will conclude and the focus will shift towards fit-out and implementing railway systems within the tunnels and stations. Alstom, TSO and Costain Limited Joint Venture have been appointed to provide the tunnel fit-out, including track and train power supply, in the central area which extends east under London from the Royal Oak tunnel portal at Paddington.



Source: Tata Steel

A total of 7,000 tonne of Tata Steel rail will be used to create one of Europe's largest railway and infrastructure projects—the Crossrail project.

WIKUS®

Precision at the cutting point

THE WORLD LEADER IN SAWING TECHNOLOGY

now enters the indian market directly.





LLOYD'S REGISTER QUALITY ASSURANCE ISO9001

UKAS QUALITY MANAGEMENT 001

WIKUS India Pvt. Ltd.,

No. A/38,
Chakan Industrial Area, PH-IV,
Nighoje, Taluka khed, District Pune,
Pin code - 410501

Made in Spangenberg, made in Germany.

www.wikus-india.in

More Efficiency, Less Waste

Bern, Switzerland – The United Grinding Group has developed the PuLs program, which optimizes all internal processes for the benefit of its customers. Waiting times, surpluses, and unnecessary movement of materials are classic examples of inefficient production. Hence, the company aims to avoid all types of waste and increase the overall efficiency by developing a mix of measures comprising diverse methods from process optimization and quality management concepts. Chief Operating Officer (COO), United Grinding Group AG, Michael Horn says, "PuLs is a customized concept, not an off-the-peg solution." With the assistance of this concept, various processes such as processes in production, development and administration are also put to the test. All employees of the company have received training in the basic principles of the PuLs program. Each individual must support the program and also critically examine their workplace. The resulting optimization measures can extend from the efficient reorganization of a complete production process to the restructuring of an individual working environment.

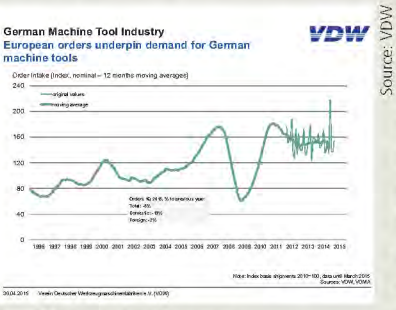


Source: United Grinding Group

View of the PuLs workstation.

Demand for Machine Tools Takes a Breather

Frankfurt am Main, Germany – During the first quarter of 2015, order bookings for the German machine tool industry were down by 8 per cent compared to the first quarter of 2014. Domestic orders fell by 19 per cent, while orders from abroad shrank by 2 per cent. "Compared to a strong first quarter in 2014, demand for machine tools is currently taking a breather," commented Executive Director, VDW (German Machine Tool Builders' Association), Dr Wilfried Schäfer. The fall in demand, he said, results primarily from the significant downturn in domestic orders, crucially reflecting the high base effect of last year's strong equivalent period. Compared to the first two months of 2015, March reveals a perceptibly better picture. "The German economy is trending upwards, as the latest IFO Business Climate Index makes clear. Due to the weak euro and the low raw material prices, we anticipate that domestic demand from our high-export-ratio customer sectors, too, will gather momentum in the months ahead," said Schäfer.



Source: VDW

Graph showcasing European orders underpinned demand for German machine tools.

AMTEX 2015

Mumbai – AMTEX 2015 will enable exhibitors to target the production and consumption hotspots of Western India—one of the largest consumption centers of machine tools in India. The event is scheduled to be held from May 29 – June 1, 2015 at Bombay Exhibition Center in Mumbai. The exhibition is organized by Reed Triune Exhibitions Pvt Ltd, a JV of Reed Exhibitions, propelled by the experience of arranging 500 exhibitions in 40 countries serving 43 industry sectors.



Source: Reed Triune Exhibitors Pvt Ltd

Minister, Micro, Small & Medium Enterprises, Govt of India, Kalraj Mishra along with other dignitaries at the ribbon cutting ceremony of AMTEX 2014.

Metal working and technology show

AMTEX is one of Asia's most important metal working and technology show. The exhibition reaches out to its exhibitors, visitors and offers a perfect platform for showcasing products and services. The event caters to the machine tool requirements of various end-user industries such as automotive, power & electrical equipment, aerospace, textile machinery and the consumer sector. The principal display categories include metal cutting & forming machines, technology, machine tools, manufacturing systems, precision tools, quality & testing instruments, industrial automation, allied technology and general engineering.

Perfect platform

AMTEX Mumbai 2015 is a professionally organized show that aims to deliver a higher return on one's investment while targeting the auto (largest machine tool consumer) sector, consumer durable and engineering hubs of Western India. The event is expected to witness over 200 exhibitors along with representatives from major manufacturers and trade houses within the country as well as abroad, with an exclusive Chinese and Taiwanese Pavilion as the principal attraction for visitors. The industry's perception of AMTEX as a unique forum for winning new customers will be reinforced again this year.

12th INTERNATIONAL MACHINE TOOLS EXHIBITION

ACMEE 2016
12th INTERNATIONAL MACHINE TOOLS EXHIBITION

An AIEMA Initiative

16 - 20 June 2016

CHENNAI TRADE CENTRE, CHENNAI, INDIA

TITLE SPONSOR

SCHUNK



BOOKING OPEN
Log on
www.acmee.in

PLATINUM SPONSORS

AMS® In Pursuit of Excellence
Ace Micromatic Group Company

MITSUBISHI MATERIALS
MMC Hardmetal India Pvt. Ltd.
A Subsidiary of MITSUBISHI MATERIALS

SIMTOS 2016 | KOREA
4.13 (Wed) ▸ 17 (Sun) KINTEX

GOLD SPONSORS

VIGNESH MACHINE TOOLS
THE RIGHT PARTNER FOR YOUR MACHINE TOOLS

SIDBI

LAPMASTER WOLTERS
Precision Surfacing Solutions

JAIBALAJI CONTROL GEARS PVT. LTD

SILVER SPONSORS

R.C. DAS ENGG.
www.rcdas.in

CONSUL
empOWERing solutions

SAKTHI LASER TECHNOLOGY

SUPER PLATERS

ELTA
ELTA TOOLS & DIES

WORK STUDY
WORKSTUDY HYDRAULICS

APPLIED ENGINEERING
APPLIED ENGINEERING & TECHNOLOGY (P) LTD

Microfine Bushings

HDFC BANK
We understand your world

Chennai Metco
Excellence Through Metallurgy

TSUGAMI

JOINTLY ORGANISED BY

AIEMA

एन एस आई सी
NSIC
ISO 9001 : 2008

ACMEE 2016
SIDCO AIEMA Tower, 1st Main Road,
Ambattur Industrial Estate, Chennai - 600 058, India.
Phone : +91-44-2625 0245 / 0489,
E-mail : booking@acmee.in , Website : www.acmee.in

POWERED BY MITSUBISHI ELECTRIC
MITSUBISHI ELECTRIC CNC

Solutions for Milling and Turning Machines

Mitsubishi CNC offers a range of advanced technologies for the manufacturing fraternity in India. These solutions offer high accuracy and hence enable better productivity. Providing prompt responses, solid technologies and user-friendly support, the company continuously improves its after-sales service quality for users across the country. Here is a look at the some products and solutions that the company offers in India.

Source: Mitsubishi CNC

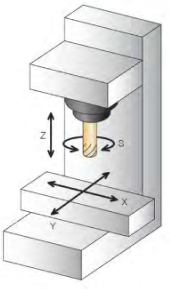


Array of solutions from Mitsubishi CNC.

SOLUTIONS FOR MILLING MACHINE

Compact Milling

- Simple & easy CNC E70
- Small sized amplifiers
- Compact and high power SJ-DJ Series

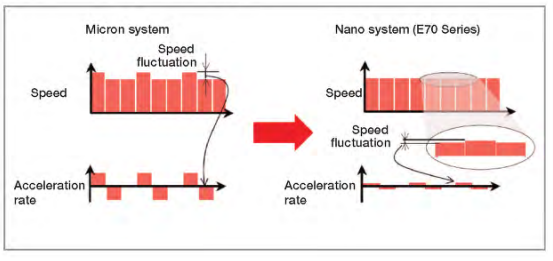




High Cost Effectiveness

- Very smooth cutting surface achieved with one-nanometer position interpolation.*
- Up to 20 sequence programs can be registered with the built-in PLC function.
- A wide array of development support tools such as NC Designer is available.
- Ultra-compact drive units with built-in power supplies contribute to reducing control panel size.

*Least command increment is 0.1µm



MITSUBISHI CNC Machine Operation Panel

- The display and keyboard are the same color, providing consistency in design.
- The key layout can be customized according to machine specifications.
- The sequence program samples have been prepared for the basic key layout.
- Wiring has been reduced by connecting the panel with the NC via a remote I/O link.

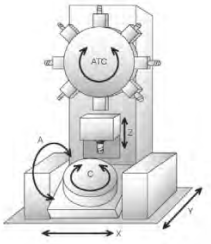
*Refer to the product brochure for details.



Example when combined

High Speed Drill Tap

- Standard CNC M70V type B
- High-speed tapping function OMR-DD
- Low inertia & high-speed spindle motor

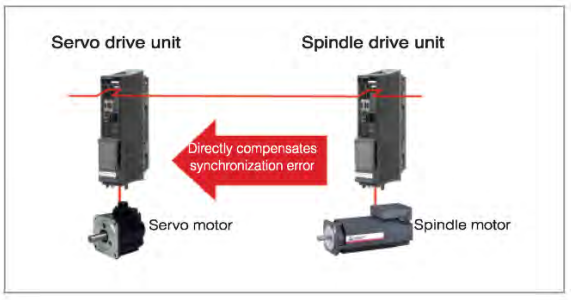




OMR-DD Control

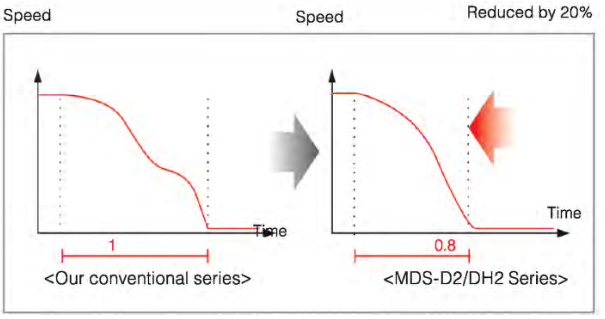
Optimum Machine Response Direct Drive

A high-speed error-compensation function is used for controlling the spindle and servo, enabling accurate tapping.



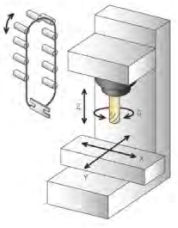
Reduced Orientation Time

Declaration is performed with the maximum torque to minimize the spindle orientation time.



High Precision Vertical Milling

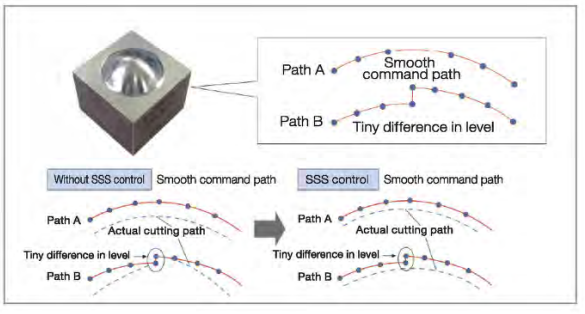
- High accuracy control with M70V Type A/M700V
- SSS control for high precision control
- Light weight spindle motor SJ-D





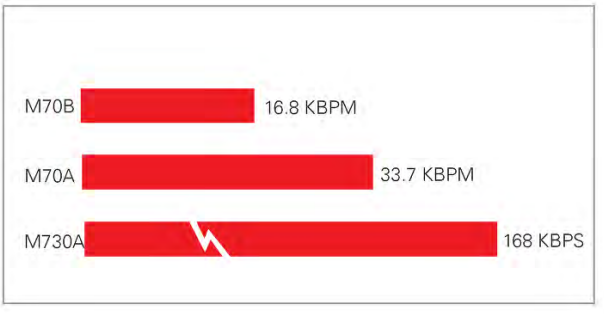
SSS Control-Super Smooth Surface (Optional)

By judging shapes in large from commanded paths, unnecessary deceleration is reduced even when fine step exists; thereby; realizing smooth and deviation free die-mold machining. Machining time can be shorter by 5 to 30% relative to our convention system, especially more effective at a higher feed rate.



High-speed Machining Mode

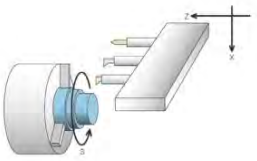
By reading ahead some blocks in a program that contains successive fine travel distances, the program can be rapidly executed at up to 33.7k blocks/minute.



SOLUTIONS FOR TURNING MACHINE

Compact Turning

- Simple & easy CNC E70
- Small-sized amplifiers
- Analog output for VFD connection





Simple Operability

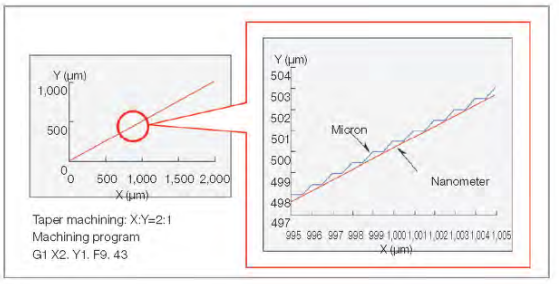
- Screen design equivalent to M700V/M70V Series, offering simple operability.
- Switching between lathe and milling systems is accomplished simply by changing a parameter.
- Multiple display languages available for global use, which can be selected by parameter setting.
- A pop-up window shows your desired information without closing the original window.



Complete Nano Control

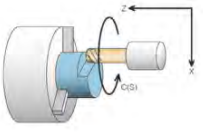
NANO Control

Even with one-micron- unit commands in the machining program, interpolation, is in nanometer units. As the calculation accuracy of a block intersection is improved, lines on the surface is finer.



Standard Turning

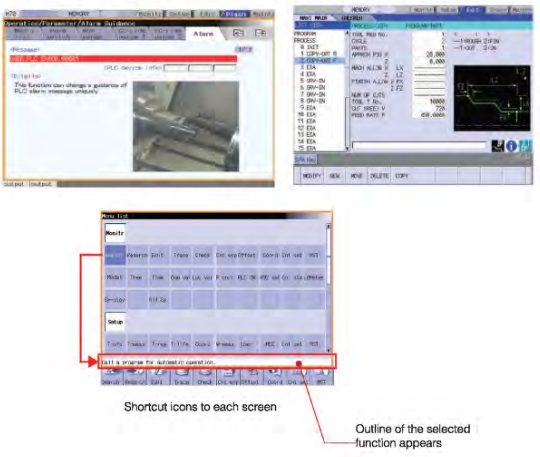
- Standard CNC M70V type B
- All in 1 regenerative drive MDS-DM2-SPV
- Compact & high-power SJ-DJ series





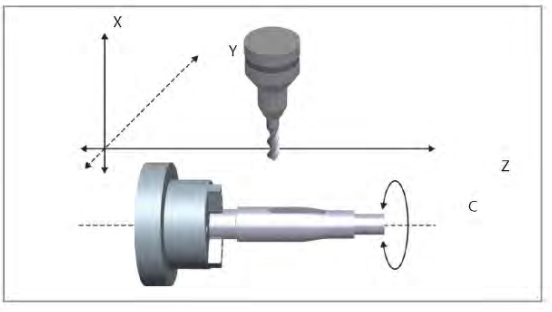
Simple Operators Screen

Simple operator screen that helps the operator to run the machine easily



Polar Coordinate Interpolation

- This function converts the commands programmed for the orthogonal coordinate axis into linear axis movements (tool movements) and rotary axis movements (workpiece rotation) to control the contours.
- It is useful for tasks such as cutting linear cutouts on the outside diameter of the workpiece and grinding camshafts.



MITSUBISHI ELECTRIC

Changes for the Better

- Advanced Technologies for the Next Generation.
- Solid Support for Day-to-Day Comfort.
- Optimum Solution for the Future.



This is the MITSUBISHI CNC business philosophy. All the staff who are committed to MITSUBISHI CNC business wish to be "the best partner for customers aiming at global and future-oriented development". We will continue our efforts with the aim that our CNCs be of great help to the customers.

MITSUBISHI ELECTRIC CNC Solution
Your best partner for success in India

Our single goal is to minimize the downtime while maximizing the productivity of every Mitsubishi Electric product. The more time you spend using our products, the better your business runs.

MITSUBISHI ELECTRIC INDIA PRIVATE LTD.

Gurgaon Head Office
2nd Floor, Tower A & B, DLF Cyber Greens, DLF Cyber City, DLF Phase - III, Gurgaon - 122002
Tel.: +91 (124) 463-0300, +91 (124) 673-9300, Fax: +91 (124) 463-0399 / 398

Pune Head Office
Emerald House, EL-3, J Block, M.I.D.C. Bhosari, Pune - 411026, Maharashtra, INDIA
Tel.: +91-20-2710 2000, Fax: +91-20-2710 2100

Banglore Office
6th Floor, Prestige Emerald, Municipal No.2, Madras Bank Road (Lavelle Road), Bangalore - 560001, Karnataka
Tel.: +91-80-4020 1600, Fax : +91-80-40201699

Vadodara Office
A-1/2, 2nd Floor, Status Plaza, Opp. Relish Resort Aksar Sqare, O.P. Road, Vadodara-390 020, India
Tel.: +91-265-231 4699 / 235 8137, Fax : +91-265-233 3307

www.MitsubishiElectric.in

MITSUBISHI CNC
THE CUTTING EDGE OF MACHINING CONTROL

Visit us at **INTEC 2015, HALL B, STALL NO. - 101, CODISSIA TRADE FAIR COMPLEX, COIMBATORE**

Making India Business Ready!

With India's GDP expected to cross the $5 trillion mark by 2020, the country is predicted to attract mega investments especially from German companies in the back drop of the 'Make in India' campaign. Read on for suggestions by industry players to the government for the ease of doing business in India.

Source: depositphotos.com



Bright Prospects: India intends to become the manufacturing hub for global businesses.

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

Making India



Source: pmindia.gov.in

"You will find an environment that is not only open, but also welcoming. We will make it easy to do business in India. We want a future in which excellence defines every sector and every industry in our country."

Prime Minister Narendra Modi

This year, India's economic growth clip is expected to perform better; thus, overtaking China to become the world's fastest growing major economy—as stated in the forecasts of the International Monetary Fund (IMF) and the World Bank. This prediction will bring across smiles to local as well as international players who have been dedicatedly investing in the country. Currently, India is being seen as a hotspot for growth, opportunities and business. And why not, Managing Director, VDMA India Services Pvt Ltd, Rajesh Nath says, "Being one of the fastest growing economies in the world, the Indian economy is at the center stage of the changing economic order in the world. Today, 'Brand India' is relevant for the growth of the global economy."

India – a manufacturing hub

Dun & Bradstreet, the business information and knowledge provider, has reported that India's Gross Domestic Product (GDP) will cross the $5 trillion mark by 2020. To achieve this hefty figure, Prime Minister Narendra Modi has undertaken a number of initiatives, one of them include the prominent 'Make in India' strategy wherein, he intends to make India a manufacturing hub for global businesses. This initiative will create numerous employment opportunities as well as fuel economic growth in the country. Managing Director, Rittal India Pvt Ltd, Ajay Bhargava opines, "India has always been looked at as a service oriented economy and also lacked basic manufacturing attributes in the past. However, now the country is confident of providing a manufacturing environment due to its technical and engineering skills, ability to absorb technologies, low labor costs, etc." Nath explains, "Manufacturing accounts for only 15 per cent of India's GDP and having witnessed a 0.7 per cent contraction in 2013–14, the Prime Minister's thrust on the sector is well founded."

Lion roars over the industrial world

It is against this background that the 'Make in India' initiative under the guidance of the Prime Minister made a strong presence felt at one of the world's largest fairs for industrial technology—HANNOVER MESSE in Germany to attract foreign investors in India. At the high profile event, Modi conveyed a promising message of providing a favorable business environment and also ease the way of doing business in India to international players and invited them to be a part of India's growth story. Consul General of the Federal Republic of Germany in Mumbai, Consulate General of the Federal Republic of Germany Mumbai, Michael Siebert opined, "HANNOVER MESSE, offered a unique opportunity for Prime Minister Modi to let the 'Make in India' lion roar all over the industrial world. His call was also directed at German manufacturers who are well equipped to heed the call. Currently, more than 1,600 German companies are already active in India and I am absolutely convinced that more German companies will follow."

Big business...coming soon!

The business sentiment is upbeat on India as an ideal investment destination and Germany is one country in which keen interest has been shown by the Prime Minister. This can be witnessed as both the governments have issued joint statements on undertaking proactive steps to focus on



FACTS & FIGURES

Facts on the current scenario of trade in India

- India is a favorite destination for Foreign Direct Investments (FDI), with investments of €15.17 billion during 2013–14.
- With €16.1 billion bilateral trade during 2013–2014, Germany is India's sixth largest trading partner engaged in the areas of automobiles, chemicals, services, nuclear reactors, construction, etc.
- Maharashtra with around 39 per cent share of German investments remains to be the most attractive destination for German investments in India.
- In the past four to five years, Pune has become the hotbed for new German investments. Karnataka and Gujarat are other important destinations.
- In 2014, the total import of machinery from Germany reached a volume of €2.5 billion (₹17,857 crore).
- Currently India ranks at the 5th position among Asian exporters to Germany.

Source: VDMA



Ahlam Rais
Senior Sub Editor
Vogel Business Media India
ahlam.rais@vogel.de



"The 100 biggest German companies already present in India have invested €2.7 billion in the last three years and plan to invest an additional €1.6 billion in the next three years."

Consul General of the Federal Republic of Germany in Mumbai, Consulate General of the Federal Republic of Germany Mumbai, Michael Siebert



"Large scale manufacturing for domestic markets will make us more competitive from both the cost and quality point of view and provide opportunities for exports to developed countries."

Managing Director, VDMA India Services Pvt Ltd, Rajesh Nath



"I am optimistic that we will gradually start gaining market shares in India, a significant country for our activities."

Senior Vice President Connectivity & Networks and President/Partner, HARTING Technology Group, Philip Harting

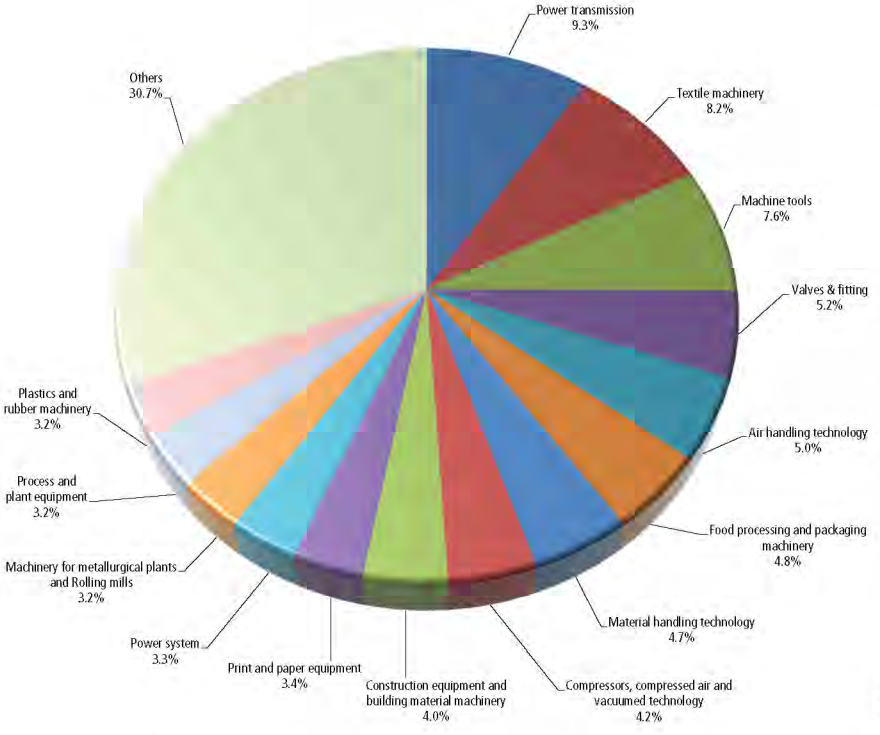
the manufacturing sector in India. Siebert mentions, "The 100 biggest German companies already present in India have invested €2.7 billion in the last three years and plan to invest an additional €1.6 billion in the next three years." Nath agrees with this fact, he says, "Many German companies and VDMA members are planning towards more investments in India. Companies such as Liebherr, Schwing Stetter, Putzmeister, Wirtgen, Hess, ZF and Thyssenkrupp, to name a few, have invested substantially in the last three to five years."

With abundant opportunities waiting to be explored, diverse companies are in the process of expanding their presence in the country. Senior Vice President Connectivity & Networks and President/Partner, HARTING Technology Group, Philip Harting comments, "HARTING wants to be part of the picture when India takes the next decisive steps in its economic development. As an emerging country, it holds tremendous potential for growth over the next years, and therefore India is gaining increasing significance for HARTING. Although our local manufacturing operations are still modest, we want to incrementally expand production activities over the next years, and create new jobs here." Supporting this, Managing Director, NORD Drivesystems Group, Jutta Humbert adds, "We are ready to invest further in India. However, it is important that the environment is investment friendly."

The German-based company, Rittal in India has set up its operations in 1994 and has been expanding its plant on a regular basis. Bhargava mentions, "Depending on the progress of the Indian economy in the coming years, we will further evaluate our growth options and then decide of either expanding our current location or establishing additional plants in the country." Elaborating on the numerous prospects in the country, Nath adds, "Large scale manufacturing for domestic markets will make us more competitive from both cost and quality point of view and provide opportunities for exports to developed countries." Adding to this list, General Manager, Pilz India Pvt Ltd, Sanjay Kulkarni says, "In India, there are various opportunities to profit from expanding sectors such as defense and aerospace, automotive, biotechnology, etc."

Siebert too agreeing with this sentiment highlights, "Capabilities and opportunities in India are immense. India has got the necessary 'ingredients' for more economic success: a huge market, the need for modern facilities

Demand for German Equipment in the Various Sectors in India



According to 2013 data.

Source: VDMA



"The government must simplify the process to set up new plants by creating a single window clearance on environmental and other compliance requirements."

Managing Director, Rittal India Pvt Ltd, Ajay Bhargava



"The tax system has to become more easy, fair and transparent as tax free industrial zones or tax holidays for investors are attractive and enhance investment."

Managing Director, NORD Drivesystems Group, Jutta Humbert



"In India, there are various opportunities to profit from expanding sectors such as defense and aerospace, automotive, biotechnology, etc."

General Manager, Pilz India Pvt Ltd, Sanjay Kulkarni

and machines to improve production capacities, a young and talented work force. What has to be improved though is the attractiveness to invest in the Indian market—ease of doing business is the key word."

Ease of doing business

The Prime Minister in his speech at the German based event stated, "We will make it easy to do business in India." This statement shows the genuineness of the Indian Government to understand the various factors involved in easing the task of doing business in India. Some of the most critical areas that have to be addressed by the government involve infrastructure, tax system and clearances. Kulkarni shares, "Infrastructure should be improved in order to connect cities, ports, airports and consequently ease national and international transport and trade." Nath adds, "A thriving and competitive manufacturing industry requires excellent infrastructure that would enable it to be competitive on cost, quality and supply chain, three important parameters that determine the success of the industry." Siebert mentions, "Business will follow if the general framework for investments and operations is considered stable and positive. It is well known that India could hugely benefit from cutting down on bureaucracy and corruption, from an improved infrastructure, from educating and skilling even more young people and from creating a simple, dependable tax regulation." Humbert also mentions, "The tax system has to become more easy, fair and transparent as tax free industrial zones or tax holidays for investors are attractive and enhance investment."

Obtaining clearances on time is another obstacle for these players. Bhargava comments, "The government must simplify the process to set up new plants by creating a single window clearance on environmental and other compliance requirements." Humbert adds, "Local decision making for building approvals and certificates has to be facilitated. And local authorities should offer services to help investors to get all the necessary approvals within a short period of time."

In addition, providing reasonable prices for land in terms of investments and land acquisitions is also a matter of concern. Nath explains, "Country-wide regulations on land acquisition have been enforced in a non-uniform fashion, causing delays. Even lenders are unwilling to support projects unless clearances are available and 100 per cent right of way has been secured. These inefficiencies add to the cost and impede the ability to supply quality products on time and form deterrents for new entrants."

Another aspect that needs focus is the awareness of the incorporation of advanced technologies by Indian companies as this will encourage international companies to come and manufacture in India and for India. Kulkarni avers, "The acceptance for new technology should also increase. This will make it easier to convince customers to replace the old technology with new and advanced technologies." Apart from these, issues such as providing loans at attractive rates, labor reforms, moving quickly on assuring coal availability to power plants, etc also need to be addressed by the government.

The way ahead...

The Indian Government has a long way to go but it is definitely headed in the right direction. This can be witnessed in the government's maiden budget that focused on the revival of growth and investment and promotion of domestic manufacturing for job creation. As Siebert rightly voices, "Modi's Government has taken the first concrete steps of raising the maximum level of Foreign Director Investment (FDI) in some branches, restructuring the coal mining concessions and initiating an Indian Goods & Service Tax (GST). Through these measures, the Indian Government has set the right agenda and tone for its business activities." Harting agrees, "The government has addressed the import topics to push India's manufacturing industry forward. We will see how many of the announced initiatives and projects the government would have implemented in practical terms in two or three years. I am optimistic that we will gradually start gaining market shares in India, a significant country for our activities."

With respect to encouraging business, Siebert suggests, "The negotiations for an Indo-European Free Trade Agreement (FTA) should be resumed at the earliest, and they should be conducted with a genuine interest to find a compromise that benefits both sides. We Germans, and all our European partners, are convinced that the successful conclusion of such an FTA would create an enormous momentum for German and European investments in India and for our trade relations."

With renewed industry confidence and a focused government at the center, the country's manufacturing prospects and economic growth is expected to receive a major boost. India is forging ahead with great vigor and this is just the beginning! MMI



Source: Deutsche Messe AG

"You will find an environment that is not only open, but also welcoming. We will make it easy to do business in India. And, we will always be eager to listen to your feedback."

Prime Minister Narendra Modi

Heralding A New Era

On the occasion of the inagural ceremony of HANNOVER MESSE 2015, Prime Minister Narendra Modi promoted the 'Make in India' ideology. While sharing various initiatives undertaken by the government to ease the task of conducting business in the nation, he encouraged investment from foreign investors in Germany. Excerpts from his address to the audience present at Kuppelsaal, Hannover Congress Centrum, Hannover, follows...

Speaking at the inauguration of HANNOVER MESSE 2015, the Prime Minister Narendra Modi voiced not only the importance of the benefits of 'Make in India' but also underlined India's goals, aims and priorities as an economy. On the occasion he said, "Our decision to be here in the first year of my government reflects our priority. We want to accelerate economic growth and create jobs for our youth. We want to build world-class industry and infrastructure. Additionally, we want to transform our cities and villages; clean up our environment; and improve the quality of life."

Focus on infrastructure

Lack of proper infrastructure is one of the major hurdles that many businessmen and entrepreneurs face in India. As a result, the government aims to create world-class infrastructure in the country. "To do so, we have made a sharp increase in public investments. Also, we have established a National Infrastructure and Investment Fund and a new institution for integrated development of this sector. Additionally, we are launching attractive new financial instruments for long term funds. We seek to fuel our growth with the cleanest and most efficient use of energy,"

Source: www.narendramodi.in

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Heralding A New Era

informed Modi.

These efforts also include the focus on increasing the power capacity. "We have set a target of 75 GW of new capacity for renewable and clean energy in the next seven years. It is a challenging goal, yes; but one that is important to pursue," he stated.

Also, realizing the fact that good governance is essential not just for the citizens of India but also for business, the government is working towards making the task of conducting business in India easier. "With transparency and speed, we have resumed long stalled projects and allocation of resources. This is adding new momentum to our economy. We are instituting a rational framework for acquisition of land without causing distress to farmers and other landowners. We are creating a predictable and transparent environment approval process that will protect our natural heritage," mentioned Modi.

Ease of doing business

These changes are not enough. It is also necessary to have the confidence that the environment is stable and the rules would not change frequently. Addressing the same issue, the Prime Minister stated, "We are creating a stable economic environment that inspires confidence at home and abroad. We are pursuing strong fiscal discipline to do that."

He also underlined that the government is taking steps to reform the policies and eliminate unnecessary regulations by simplifying procedures. Modi expressed, "We are using digital technology to abolish multiple approvals and endless wait. We will guide you and walk with you in your projects. We will nurture innovation and protect your intellectual property." He spoke of country desks being set up under the aegis of Invest India, which will network with different states so that any investor willing to do business in any part of India will find a single window to obtain guidance on procedures and norms.

Modi reassured potential investors on systems being reformed to ensure clear cut paths to investment and profits. He stated, "There were institutions in India that seemed beyond scrutiny. Now, they no longer are. We are reforming institutions in ways that has not happened in decades. We are building a tax regime that is predictable, stable and competitive. We will now address the remaining uncertainties. The Goods & Services Tax (GST) is a long needed revolution that is becoming a reality."

PERSONAL



"We want to accelerate economic growth and create jobs for our youth. We want to build world-class industry and infrastructure."

PM Narendra Modi

With this paradigm shift, India will not only be an attractive destination to do business but one that is easy to reach and work in. To further ease making investments in India, the country has opened its doors to foreign direct investments (FDI) in key areas such as insurance, construction, defense and railways. "Railways are the thread that binds India. And, now this sector is open for 100 per cent FDI," informed Modi.

Growing together

Such investments are mutually beneficial as businesses will get their returns while they create job opportunities for local youth. "To create more opportunities for the youth in the country as well as for investors, India needs investment, technology, industry and enterprise. That is why for me, 'Make in India' is not a brand, nor it is simply a slogan on a smart lion! It is a new national movement. And, it covers the whole spectrum of our government, society and business," he stated.

Though the investment journey begins in Delhi, in practicality, its success depends on state capitals and districts. Hence, it is important to maintain the same momentum down the line. Modi remarked, "For the first time, we are working as Team India—a new partnership between the central and the state governments. We speak of cooperative federalism and also of competitive federalism, where states would excel by competing with each other for investments and jobs. We are also giving them more resources, so that they can build the infrastructure that investors need. I also see them as partners in our international engagement."

This walk together is not an easy task. Elaborating on hurdles and challenges, he noted, "I am aware that it is easier to change policies and write new laws than it is to change attitudes, culture and systems. Every CEO who has tried to make a turnaround knows that. Our task is huge; it will not be completed overnight. But, I am confident that it will be done because we are moving firmly and clearly in that direction. The wind of change is there, and it is gathering speed."

When International Monetary Fund (IMF), the World Bank, credit rating agencies and experts speak in one voice of optimism about India, one knows that the wind is blowing in the right direction. And, it has made India one of the fastest growing economies in the world.

Learning from each other

Summarizing the benefits of investing in India, Modi reiterated, "You will find an environment that is not only open, but also welcoming. We will make it easy to do business in India. And, we will always be eager to listen to your feedback."

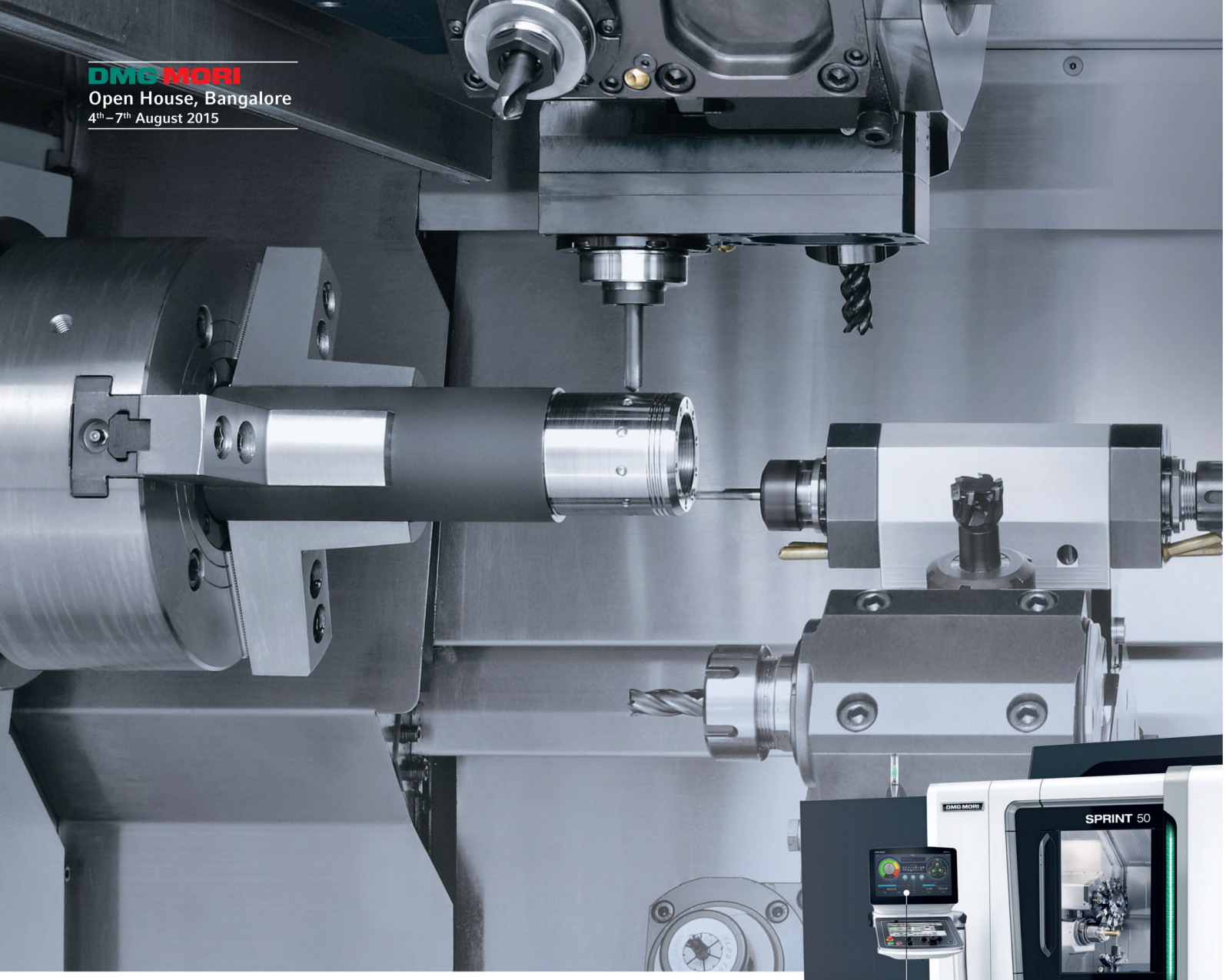
It is not just about financial flows, new technology or products. It is also about learning from each other; about seeing possibilities in new ways. "India is a nation that is blessed with so much goodwill in the world. Everywhere, I see a strong desire for India to succeed," he continued.

Larger picture

After all, business is a way to forge partnerships, learn new cultures and appreciate a new way of life. It indirectly has an effect on humanity. Emphasizing this Modi asserted, "The progress of one sixth of humanity will be of great consequence for the world and our beautiful planet. It will be a world of more hope and opportunities; a world more confident of its success. This is a time of political instability and economic challenges; and, threats of violence that are increasingly close to our homes. Humanity needs the solidarity and strength of international partnerships more than ever before." MMI

Compiled by:
Vogel Business Media India Team

DMG MORI
Open House, Bangalore
4th – 7th August 2015



SPRINT 50 | **NZX** 2000|800

PRODUCTION TURNING

CELOS®
from DMG MORI

Production turning with up to three turrets and three Y axes.

For technical information and brochures, visit: www.dmgmori.com
or contact DMG MORI India

24/7 SERVICE HOTLINE DMG MORI

1800 103 6467
Support around the clock

Production turning



CELOS®
from DMG MORI

SPRINT 50

+ **4-axis production turning** of bar materials up to 50 mm in diameter
+ Machine with **two turrets, two turrets and TWIN concept, three turrets, or three turrets and a B axis**

NZX 2000|800

+ **Series parts measuring up to ø 320 x 810 mm,** 8-inch chuck, bar machining up to 65 mm in diameter
+ **BMT® turret for milling at up to 12,000 rpm** for up to 16 driven stations

Nozzle // Hydraulics
Material: Stainless steel (AISI 303)
Dimensions: ø 48 × 62 mm
Machining time: 210 seconds



Cam // Power tools/engineering
Material: ETG100
Dimensions: ø 60.5 × 40.3 mm
Machining time: 5.2 minutes



DMG MORI

The Ideal Tool

Königsee Implantate manufactures state-of-the-art products for the medical industry with specialist competence and future-orientated CNC technology.

The foundation of Königsee Implantate GmbH by Erich Orschler in 1993 was a consistent continuation of the competence in medical technology that had long existed at the Aschau location in Thuringia, Germany. As early as the end of the First World War, the orthopedic technician Otto Bock had started producing prostheses and orthopedic aids for war-disabled veterans at this location, before having his company expropriated and moving to Lower Saxony to continue his work. Königsee Implantate looks back on 20 successful years: with the in-house development of its implants and instruments for trauma surgery.

The company has long gained the reputation of being one of the leading German suppliers of medical technology in the field of osteosynthesis. One decisive factor in the success of Königsee Implantate is its expertise in metal cutting, for which the company has been using machine tools from DMG MORI since 2013–a DMU 40 eVo and three SPRINT 20|8 linear machines equipped with a SWISSTYPEkit.

"Medical technology is still a growth market, one that we can substantially help shape with innovative products," says Head of Purchasing & Production, Königsee Implantate GmbH, Horst Lindner. The company's enormous range of such products encompasses bone pins, screws and plates, and implants for spine surgery. "We have a variety of products that are offered in different versions," Lindner adds summing up the common denominator of all products. "We only machine materials that are difficult to cut such as steel or titanium." And usually this involves single pieces or a small series which require a high level of flexibility. Furthermore, he mentions, "Our vertical integration is correspondingly high so that we can also respond on a short notice." This integration starts with the development phase and goes on to include complete production right till the after-sales service.

Metal cutting is the 'be-all' and 'end-all' of successful production at Königsee Implantate. "All that is left to do after cutting the workpiece into shape is to finish it with a galvanic surface process", explains Lindner. The company underpins the high priority given to metal cutting with efficient state-of-the-art machine tools. Since 2013, for example, it has used a universal machining center from the eVo series and three SPRINT lathes from DMG MORI. Lindner recalls the reasons for deciding on products from the leading manufacturer of machine tools, "We were really impressed not only by the wide choice of machines on offer but also by the in-depth consultation we received during our search for the ideal solution." And last but not the least, quality and technological flexibility were also decisive factors for the company. The support received after the purchase was excellent, too.

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

The Ideal Tool

Source: DMG MORI



Source: DMG MORI

The DMU 40 eVo machines 12 bone plates per job – unmanned and for several hours non-stop.

Efficient CNC technology for more productivity

The 5-axis DMU 40 eVo has provided a boost to productivity in the manufacturing of bone plates. "The use of a device for twelve plates allows us to run the machine autonomously for several hours – if necessary even right through an unmanned night shift", says Lindner about the process. "This means we can guarantee fast availability of the products." The production manager also sees great benefits in the compact size and excellent ergonomics of the versatile DMU 40 eVo, he says, "The production area is always limited, so we are more than pleased with machines that have a small footprint. Despite its size, the DMU 40 eVo still offers optimum access."

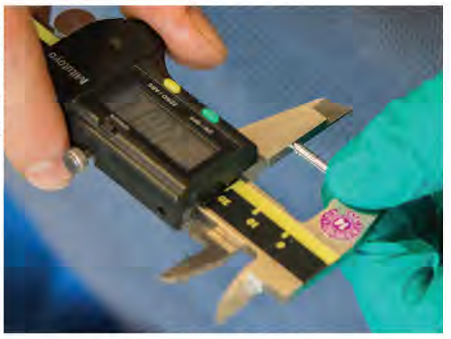
Where turning is concerned, Königsee Implantate opted for the SPRINT 20|8 linear

equipped with a SWISSTYPEkit from DMG MORI. The focus in this case is on efficient production of bone screws. The dynamic and accurate linear drive in X1 is ideal for fulfilling the requirements of medical technology. "Not only can we produce quickly but the standard of quality is also impressive", claims Lindner. Eight axes and the fact that two tools can be used simultaneously also benefits productivity. The SWISSTYPEkit of the SPRINT 20|8 linear—i.e. the option of turning both long and short workpieces—rounds off the features of the automatic lathe. Thanks to the option of short part turning, the material remnants can be used again for bone screws. This ensures a high degree of material efficiency.

Contract manufacturer for revolutionary technology

The good reputation of Königsee Implantate has extended so far afield that the company entered the arena as a contract manufacturer in 2013. Last year, Syntellix AG from Hannover presented a bone screw made of MAGNEZIX—a magnesium alloy. The special feature of this screw: the material dissolves in the body within one to two years, so there is no need for a second operation to remove the implants. Syntellix claims that this will save the need for thousands of

Source: DMG MORI



From the blank to a high-tech implant: the bone screw made of MAGNEZIX—a magnesium alloy—is produced for Syntellix AG by Königsee Implantate. The special feature of this screw: the material dissolves in the body within one to two years, so there is no need for a second operation to remove the implants.

operations in the future. The implants have only been used for smaller bones to date, but the supplier intends to extend the fields of application and make the product suitable for mass use. Even the health insurance funds are willing to pay the costs of the process.

Machining workpieces made of MAGNEZIX is twice as demanding as conventional materials: firstly the same extremely high demands on quality, complexity and productivity apply here as usual and secondly strict safety requirements apply in the machining of magnesium. Lindner points out in this respect, "Magnesium chips are easily inflammable so the machine requires special equipment that will vacuum off chips and dust and prevent electrostatic charging." DMG MORI worked together with Königsee Implantate to make the necessary modifications to one of the three SPRINT 20|8 linear automatic lathes. "As an extra precaution, the machine stands in a separate container outside the company's actual building."

Future-orientated approach

Innovations such as the implant made of MAGNEZIX plus the multitude of products developed by Königsee Implantate itself are always the driving force behind the development of the company and have an impact on virtually every field of activity – most especially on mechanical production. The CNC machines from DMG MORI that are already in operation in the company are also proof of the company's future-orientated approach. It also has a keen eye on modern manufacturing processes. Lindner concludes, "Ultrasonic processing on ultrasonic machines could help advance our development in the future." MMI



POWERED BY EUROPEAN TOOL & MOULD MAKING
ETMM
VOGEL BUSINESS MEDIA, GERMANY

The Machinist as a Digital Guide

Demands on milling are rising, and greater cost-effectiveness and shorter cycle times are required. For faster complete process development, a CAD/CAM system that matches the users requirements must be part of the process chain.

With consistent CAD/CAM integration, it is possible to keep up with technological trends such as high-speed processing, minimal lubrication or clamping technology. The dramatic slump in production and incoming orders in course of the worldwide economic and financial crises, in some cases of over 50 per cent, is almost forgotten, and the turnaround in machining production can be felt everywhere. The challenges are growing, while user demands, originating in the consumer products sector, are rising.

Source: etmm-online.com

Knowing how to operate smart phones has become a matter of course, like basic knowledge in mathematics. At the same time, consumerization has become a clear feature of the world of machining. One apparent trend is towards user-friendliness and a mode of operation familiar to machinists. With improved operator interface and many important new developments, software is also moving in this direction and is placing clear advantages for the user in the foreground.

Start-to-finish software as prerequisite for efficient production

The control of machine tools and generating NC data are becoming constantly more complex. Start-to-finish software support is the prerequisite for efficient production. In the future, CAD/CAM software with open system architectures will adapt much better to the dynamics and flexibility of modern production systems. With its ZW3D software, supplier ZW Soft said users can quickly produce NC programs and perform collision avoidance tests in advance. Production on NC machines and processing centres permit optimisation, and tool service lifetimes can be prolonged at the

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

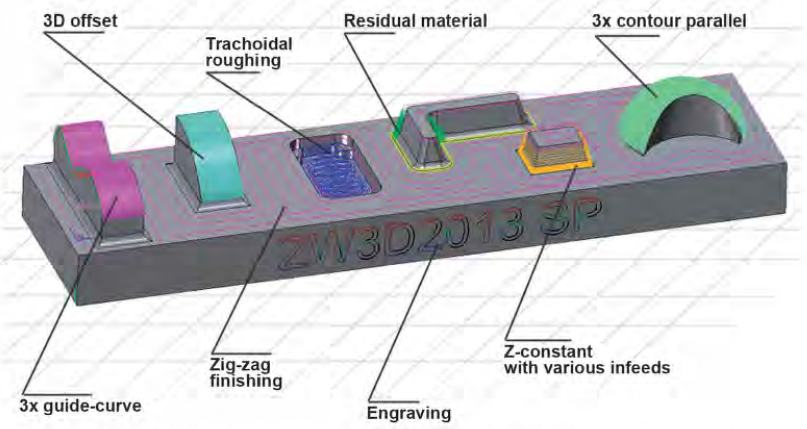
The Machinist

The use of start-to-finish software support is becoming a prerequisite for efficient CNC production.

Source: Sterno Tec/Leclaire



Source: Encee



An overview of the milling strategies: as a start-to-finish CAD/CAM system, ZW3D provides an associative connection between the surface geometries and CAM processing. The strategies for roughing and finishing have been extended substantially.

same time, the company explained.

Bastian Weimer, sales manager of ZW Soft sales partner Encee Systems GmbH, pointed out that ZW3D 2013 increases efficiency and improves user guidance. Shortcuts, the Ribbon operator interface and the command dialogues have been adapted to match the accustomed work with Microsoft Office, he said. With this Windows-matched operator surface, first steps or a change from another CAD/CAM system are said to be possible without extensive training procedures.

CAM system creates NC programs efficiently, at low cost

Just as the locomotive driver once helped people reach their goal as smoothly as possible, in the digital age this role falls to a machinist. With the 3D CAM System Machinist, metal processing has a tool that creates NC programs efficiently and at a low cost. The program integrates the model data into one's own production. With it, the configuration for the CAM program is achieved even more elegantly, the supplier said, for the CAM module is neither a third-party development nor an external module. It is an integral part of the hybrid core of the firm's software.

The hybrid functionality reportedly helps in processing surfaces and solids in the same software environment. Boolean operations and design functions can be used equally effectively and without limitations on both surfaces and solids, according to the supplier. If the design is changed, this information passes directly and completely into CAM processing without functional restrictions but with increased productivity, the company explained.

Automatic feature recognition assigns correct tool

The ZW3D Machinist works with automatic feature recognition. This function assigns to a bore the tools for drilling, thread-cutting and sinking and groups bores of the same diameter, for example, together for processing by the same tool.

Eleven direct interfaces to common 3D CAD programs and other converters are available to take a drawing and prepare it for NC programming. The component (solid) is brought into the clamping position and reduced to the important geometrical information. Changes in the component and auxiliary constructions can thus be realised quickly and simply, the company said.

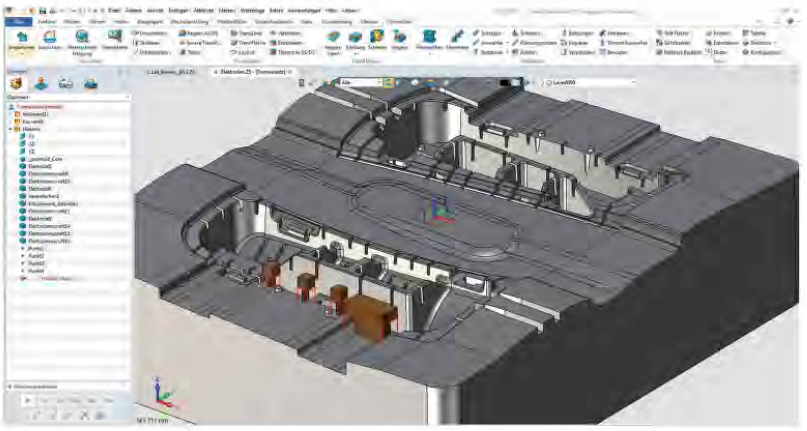
The CAM system is available, depending on the processing required, in two configurations: milling of regular geometries with 2.5 axes, drilling, thread-cutting and turning are part of the basic version. Milling with three moving axes and two set axes are included in the extended configuration. The top class, 5-axis simultaneous milling, is available as an add-on.

Simulating process sequences with tools and auxiliary equipment

In both areas, process sequences with tools and auxiliary equipment can be simulated to prevent errors later during machining. The relevant automatic collision control also



Source: Encee



In the manufacture of electrodes, it is possible to work with ZW3D even if other CAD programs are otherwise in use.

covers the whole interior of the machine. The supplier said, with this function, the process sequence can be optimised regarding speed, surface quality and tool use. In addition, the firm explained that users can choose from numerous roughing and finishing strategies. A tool library includes technology values, material data and processing parameters. The ready-to-use NC programs output DIN code or Klartext. Also delivered as part of the package are 20 generalised post-processors, with which programs for CNCs from a broad range of manufacturers can be translated.

Complete design and processing bundle is included

With the five available product packets, the users also receive a complete design and processing bundle, the company noted. The configuration includes extended modelling, healing, rendering, standard CAD interfaces and all CAM modules. The CAM modules have functions for drilling, two-axis milling and turning, 3-axis HSS and HSM strategies, and 5-axis simultaneous operations. In the 3-axis strategies, users can select between the usual processing strategies and HSC operations for high-speed processing.

Post-processors for the leading CNCs on the market are included, the supplier said. This way, a large portion of all turning machines in use are covered as standard. Complementary post-processors for further control systems are being developed.

Manufacturers and component suppliers are said to solve their processing tasks with this tool for external programming. Users without their own 3D CAD system benefit from the possibilities for geometry manipulation, the supplier explained. With the modelling functions, interfering contours can be removed, form and positional tolerances can be influenced and many changes can be made to the imported data. At the same time, the system is undemanding regarding the quality of the data delivered. Burdensome post-production work, where solids are not completely closed, surface transitions not cleanly defined or the accuracy parameters of the systems do not agree, is eliminated, the company said.

The module for 2-axis turning has expanded the CAM functionality of the 3D CAD/CAM system, the supplier noted. Beside the milling and drilling operations, the software includes all common process methods for turning external and internal contours. Integrated post-processors for Siemens and Fanuc CNCs, fundamental CAD functions and native import and export interfaces complete the packet for small and medium-sized firms.

For low investment costs, the integrated 3D CAD/CAM system offers medium-sized firms a range of processing possibilities for complex geometries, the firm noted. A tool library and re-usable templates simplify the definition of the machining paths. Integrated functions for testing and simulating the NC programs reduce the danger of collisions and damage to machines or workpieces. Faster material removal results from the constant feed rate, the company claimed.

New version accelerates CAD design cycle significantly

ZW3D is said to speed up the work of development engineers with a reported 30 per cent reduction of the CAD design cycle. This is due to improved visual effects and the optimized performance in tool construction, the company explained. Besides the easier production of 2D drawings, the simplified workflow has allowed the CAD module to be used more efficiently. The rapid management of operations has resulted in increase in speed, up to 10 times faster.

There have also been simplifications in the machining area, the supplier explained. The intelligent CAM module makes machining easier and safer. The workflow has been improved. The danger of errors during the design phase and the subsequent re-engineering is reduced ahead of the start of production, the company noted. The error-recognition measures include minimum tool lengths, output of processing times, output folder, residual material and collision detection.

In addition, individual adaptations during the CAD design phase are said to facilitate the developers' work. Frequently used components or objects in tool construction, such as slide-gates, gates and standard component groups, are said to be integrated. Weimer explained that the aim is to make the use and application of the software as easy as possible so that more time is left for creative ideas.

With correct tool management, NC programming can receive fresh impetus. Additional and improved functions in tool management can mean big advances in productivity. The integrated 3D CAD/CAM system has become more user-friendly and contains a live-update of the tools. Thanks to this optical support, users know immediately what selected tools look like. Programming times with ZW3D are said to be reduced by up to 40 per cent because the number of mouse-clicks has been cut down and adjusted. The view of the current tools is augmented by a preview of the tool holder, so the latter can be taken into account in calculating the tool paths.

Intelligent tool management saves time and nerves

By taking the tool holder into account, the collision control offers additional safety. Libraries of noted manufacturers can be supplemented by a user's own configurations. The tools used can be output into a list, which helps operators receive a quick overview of which tools are currently in use. Effective help is provided by the associative rotational-speed feed-rate table, which makes it possible to work with archived values.

The use of reference values in drilling makes faster programming possible, since the appropriate standard drill, for example, is assigned during thread definition. As a result, three operations are carried out fully automatically, and tools can now be assigned directly. For manufacturers in tool and mould construction, who often use special tools, this help is particularly advantageous. These tools can also be assigned at a later stage or changed manually using parameter tables. MMI

DOOSAN

Optimal Solutions for the Future

Compact & Powerful, NC Boring Machine

DBC 130S/130SL

Compact CNC Milling and Boring Machine
With Even More Milling Performance

Compact
This ergonomically designed compact machine enables the processing of small and medium-sized work pieces.

Power&Speed
Rigidity and machining performance are optimised by using a 2 speed gearbox and extended W axis boring spindle.

Accuracy
The machine's traveling column design with low center of gravity minimizes vibration and improves machining accuracy.

Compact

Power&Speed

Accuracy



Doosan Machine Tools
www.doosaninfracore.com/machinetools

Doosan Infracore India Pvt., Ltd.
106/10-11-12, Amruthalli Byatarayanapura
Bellary Road, Bangalore - 560092, India
Tel : +91 (0)80 4266 0122, 121, 101

The Right Combination Leads to Success

When handling a portfolio of around 1,000 different parts it is no easy task to fulfill growing demands on technical surface cleanliness reliably. In order to meet this challenge, the precision part supplier, Allweier Systeme GmbH not only invested in two new custom-equipped cleaning systems but also acquired a set of versatile cleaning tanks built to match the needs of the cleaning process. Thanks to this combination, the machining contractor meets all cleanliness specifications in a forward-looking and tangibly more cost-effective manner.

In the field of transmission engineering, Allweier Systeme GmbH has been a major player for close to 10 years. The company was established more than four decades ago as a vendor and system/development partner for machining solutions. The core competencies of this family-owned enterprise headquartered at Überlingen, Germany, lie in CNC turning, milling and grinding services as well as in module and component assembly. It owns an extensive pool of highly advanced equipment for machining aluminum parts (including castings) in addition to steels, cast iron, cast steel, titanium, and special materials. Its portfolio currently comprises around 1,000 different items for diverse applications in mechanical engineering, plant construction, automotive manufacturing, conveyor technology and robotics, marine and offshore systems, optical and medical equipment, railways and other sectors. In all, Allweier processes around 20 million parts each year.

"Cleaning the machined parts poses quite a challenge: on the one hand, because of the



Doris Schulz
Journalist (DJV)
SCHULZ. PRESSE. TEXT.
ds@pressetextschulz.de

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

The Right Combination

At the Allweier facility, upon completion of the cleaning process the product passes through a cooling zone so that the cleaned parts can enter the packaging station without delay.



Source: Dürr Ecoclean GmbH

sheer diversity of materials, part geometries and dimensions and on the other hand, demands on the technical cleanliness of surfaces have grown significantly over the last few years. Requirements such as 'zero particles larger than 600 µm' are common today, and steel parts need to be perfectly protected against corrosion as well," expounds Technology Planner, Rotary Machining Processes, Allweier Präzisionsteile GmbH, Thomas Schmidt. In order to reach the specified levels of cleanliness with due process reliability while boosting the efficiency of the cleaning step in the manufacturing chain, the company invested in two Universal 81W cleaning systems from Dürr Ecoclean GmbH plus a set of custom-designed cleaning tanks designed and manufactured by Metallform Wächter GmbH.



Source: Dürr Ecoclean GmbH

The machines are provided with vacuum-tight work chambers in which the cleaning, rinsing and drying processes take place. The system for aluminum parts features three flood tanks, the one for steel parts has two tanks.

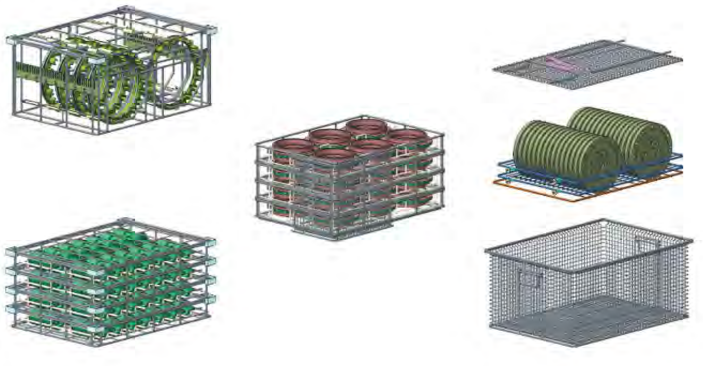
Tailor-made equipment

"We talked to four equipment manufacturers and conducted cleaning trials. Dürr Ecoclean not merely gave us excellent advice but also offered the equipment solution best suited to our task," Schmidt reports. The Universal 81W has a vacuum-tight working chamber in which its cleaning, rinsing and drying operations take place. Both systems ordered are designed for a basket size of 670 x 480 x 300 mm (LxWxH) and a maximum charge weight of 150 kg. In order to ensure a reliable removal of adhering particles and chips as well as of machining fluid residue, the work chamber is equipped with a high-performance injection flood washing function plus an ultrasonic cleaning system with a power rating of 10 W per liter of bath volume. The parts are dried by combined hot-air and vacuum treatment. "We also have parts with cavities which were still moist upon leaving our old continuous cleaning line. Thanks to vacuum drying, these products now come out 100 per cent dry as well," adds Schmidt.

The different requirements on cleaning aluminum and steel parts are addressed by tailor-made configuration of the new cleaning systems. Thus, the system for steel parts and steel castings has four flood tanks. This makes it possible to adapt the fluid used in the cleaning step to the given part (i.e., steel or casting). The third and fourth flood tanks hold the rinsing and preservation fluids, respectively. The Universal 81W on the aluminum cleaning line is equipped with three flood tanks. It comprises an additional treatment system for the demineralized rinsing water. The quality of this water is monitored continuously. "With aluminum parts, it is very important to rinse with demineralized water and to ensure quick and complete drying. This ensures that the parts will remain free of stains and discolorations," explains Schmidt.

Around 80 per cent of all parts are cleaned in a defined position. Parts are supplied by an automatic feeding system comprising buffer sections at the entry and exit. Appropriate cleaning programs are stored in the system controllers. The part-specific program for each load is selected either by a basket identification system using sensors, or manually by the operator. After the cleaning process, the parts pass through a cooling zone from which they emerge ready for immediate packaging.

The fluids from all flood tanks are subjected to full-flow filtration in the supply and return lines alike. While the cleaning fluids are run through bag filters, cartridge filters are used for the rinsing and anti-corrosion fluids. This system yields a highly effective removal of particulate contaminants. Film-type contaminants such as emulsions are removed first by the oil separator and then, for additional cleanliness, by the Aquaclean system. The latter evaporates the fluid from the flood tanks and returns the condensed liquid into the process circuit while collecting the dirt residue in the Aquaclean tank. This fluid treatment method increases bath life while also reducing the equipment outage times necessitated by bath changes.



Source: Dürr Ecoclean GmbH

The load can be made up of one or more 'standalone' part carriers designed for a specific component or family of components. In addition, part-specific inserts or a fully flexible system for disc-shaped parts are used.

Source: Dürr Ecoclean GmbH



Disc-shaped parts are secured in the MEFO box with the aid of two different inserts of which one defines the number of shelf rows while the other defines the shelf depths. With six different inserts, Allweier covers a broad range of disc-shaped components.

Source: Dürr Ecoclean GmbH



Teflon tube sheaths are used to protect the parts. These can be flexibly affixed to the part carriers.

Versatile cleaning process

In order to realize the full potential of their new systems, Allweier invested in a set of new cleaning tanks at the same time. These allow all parts to be variously arranged inside for maximum cleaning and drying performance. The requirement spelled out by the company to its four candidate suppliers was that all parts had to be protected as effectively as possible in the tank, apart from being arranged and secured so as to withstand rotation. After all, the baskets are swung and turned up to 360 degrees in the cleaning cycle. Moreover, each tank needed to hold a maximum number of parts without restricting fluid or ultrasound access to the product and hence, impairing the system's cleaning action. Ease of handling was likewise high on the priority list. "In the first phase we were looking at tanks for ten different parts. With that objective in mind, all companies received the same documentation from us. Metallform stood out among the other vendors as early as in this bidding phase. For instance, they supplied 3D design drawings of the tanks with product arranged inside, so I was able to imagine at once how the part would be placed and fixed in the basket. Their consulting service, too, was and continues to be excellent. All this is backed by plenty of competence and in-depth analysis," Schmidt clarifies his company's decision in favor of Metallform Wächter GmbH.

In addition to a range of rigid, part-specific product carriers for fast-selling parts, a variety of different semi-flexible and fully flexible solutions were implemented. These are designed to be used for different components or component families at the same time and to be quickly and easily adaptable to another part by the operator while production continues. "Metallform is showing us optimum support in reducing the necessary number of part carriers by providing flexible technology. We derive benefit from this not merely by saving investment cost but also through reduced space demand on the shop floor," mentions Schmidt. For instance, the range comprises a part carrier for aluminum annular housings measuring between 240 and 320 mm in diameter and between 20 and 100 mm in length. Relocatable prism-type rake supports inserted into the basic carrier allow different parts to be reliably accommodated and secured. At the same time, the part fixtures can be arranged such as to be in contact with the parts at uncritical points only. For disc-shaped parts of diverse diameters, Metallform developed a fully variable system. It consists of two different inserts of which one defines the number of shelf rows while the other defines their depth. It is thus possible to create a part-holding structure in no time, whether in a MEFO box or in the basic rack. Locking is by means of spring-loaded snap engagement bolts.

All part carriers and cleaning baskets are made of round stainless steel wires with an electropolished surface finish. The round wire provides good all-round fluid and ultrasound access to the parts. In addition, optimum draining properties are ensured while dirt and fluid carryover is minimized. Moreover, the round wire provides a reduced contact surface area. Local sheathing in clip-on Teflon tube sections for additional part protection is an option.

Superior quality and higher cost-efficiency

This combination of new cleaning systems and tanks enables Allweier to not only reach but in fact outperform technical cleanliness standards for all parts in a reliable manner. "We carry out periodic laboratory analyses, and these have shown that we are achieving a much better cleaning result. Unlike our previous continuous cleaning line, the system requires no compressed air for drying. Moreover, the cleaning process is so effective now that the parts made in three shifts can be cleaned in just around two. So it goes without saying that we are working more efficiently as well," concludes Schmidt. MMI



MMI MODERN MANUFACTURING INDIA

The official magazine of Indian Machine Tool Manufacturers' Association

www.modernmanufacturing.in



The alternative to turning

High-speed plunge-cut grinding

Machining complex contours using grinding instead of turning technology offers two decisive benefits: The grinding concept is up to three times faster, and the long service life of profile grinding wheels ensures optimum availability.

JUNKER GRINDSTAR

Whether pistons or nozzle pins - the GRINDSTAR offers an economic alternative to automatic lathes or sliding headstock machines. It is capable of grinding the complete contour directly from the bar stock in record time, leaving no long continuous chips, chip impressions or cut-off burrs.



www.junker.in

JUNKER premium-service
- Guaranteed servicing
- Fast and competent
- 24 hours a day, 7 days a week
- Worldwide service network

Erwin Junker Maschinenfabrik GmbH
India Branch Office
Office No. 104, City Square
29-2, K.M. Gandhi Path, Bhamburda
Shivaji Nagar, Pune 411 005

JUNKER partner for precision

JUNKER Maschinen

JUNKER Grinding Technology

LTA Industrial Air Cleaning

Zema A member of JUNKER Group

Time Savings through 3D Measurement Devices

Compared to 3D tools, 2D versions are more time-consuming to operate, less capable of measuring large objects, and typically do not have the means to capture and store measurement data digitally. In recent decades, as awareness for 3D measurement systems has increased, more and more companies are beginning to adopt advanced metrology devices as they recognize the tremendous benefits of utilizing such tools over traditional 2D types.

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Time Savings

A long-time user of 2D tools, Anusaya Auto Press Parts Pvt Ltd (Anusaya) had been tackling measurement challenges since it started business in 1996. A subsidiary of the Wadhokar Group, Anusaya was first founded in Maharashtra as a major supplier to TATA Motors. Since then, Anusaya's portfolio has expanded to include notable organizations, including FIAT India, LG Electronics India, and Philips India.

Anusaya's main competence lies in the forming of sheet metals, but the company also has expertise in handling sub-assemblies and automotive frames. As the company grew, its operational focus became increasingly divided between supplying for the auto-ancillary as a major industry and the consumer durables industries – both of which require fast and precise measurement results.

Speaking from experience, Plant Head, Anusaya, Umesh C Ahuja shared, "We had been using 2D measurement tools since the beginning, and it was challenging at times when product order deliveries never seemed to end. Project completions took a longer time because the tools slowed us down, and sometimes we even had to manually move objects before we were able to measure them. We believe that a catalyst was needed to encourage any change from taking place."

The external push

The catalyst that pushed the company to adopt more advanced measurement equipment came in the most unlikely of forms. "One of our major customers was actually the motivating factor behind this change," Ahuja explained. "As experienced users of 3D measurement systems, they had so many positive things to say about the equipment that they suggested we invest in a portable 3D measurement device as well.



Source: FARO Business Technologies (I) Pvt Ltd

Slim and compact, the FaroArm Fusion packs a powerful punch.

Source: FARO Business Technologies (I) Pvt Ltd

> "From previously using 2D tools, Anusaya has achieved countless benefits with FARO, such as time savings, reduction in using manual labor, ability to measure different component parts, capturing and storing digital data, and even using CAD data to replace 2D drawings. All these benefits have raised our competiveness and we are satisfied with our investment, and not to mention FARO's excellent customer and after-sales service support."
>
> Plant Head, Anusaya,
> Umesh C Ahuja



Source: FARO Business Technologies (I) Pvt Ltd

Suitable for a wide range of applications, the FaroArm Fusion is an all-in-one portable tool.

The team was intrigued and we knew that we needed to enhance our productivity."

Widely known to increase measurement accuracy levels, 3D measurement devices also have a good reputation in increasing efficiency, reducing the amount of time needed for taking measurements, and capturing measurement digital data easily.

"When the word got out in the market that we were looking to purchase 3D metrology equipment, we were instantly presented with an array of options from several 3D measurement providers," confided Ahuja. "To see such capabilities that come in equipment of different sizes—big, medium, and small—was fascinating for us as we never had direct contact with 3D equipment before."

FaroArm – Fusion

When presented with the new business opportunity, the FARO team got in touch with Anusaya right away. Regional Sales Manager (North India), FARO, Sushil Arya recalls, "Once we were notified that Anusaya was on the lookout for 3D measuring equipment, FARO wanted to get involved as we were confident that our 3D coordinate measuring machine (CMM) could help them with their measurement challenges. After assessing their needs, we brought in the FaroArm Fusion for a demonstration, and right away there was immediate acceptance of the device."

Combining high-precision, durability, cutting-edge technology, and cost-effectiveness, the Fusion is commonly hailed in the industry as the all-in-one portable tool for performing inspections, tool certification, and reverse engineering. Popular across the automotive, metal fabrication, molding, and aerospace industries, Fusion was able to meet the company's measurement needs for alignment, calibration, inspection, dimensional calculations, quality control, and free-form component inspection.

Pleased with what they witnessed during the demonstration, Anusaya made their first portable CMM purchase. "FARO was one of the providers that provided us a demonstration of what the Fusion can do, and we were blown away by its capabilities," affirmed Ahuja. "The FARO demonstration was the highlight during our search for suitable equipment. Fusion was able to carry out a multitude of tasks, and it convinced all of us that this was just what we needed to accelerate our measurement processes. The biggest surprise was that Fusion was not just limited to application during assemblies, but that it was also capable of measuring any manufactured component."

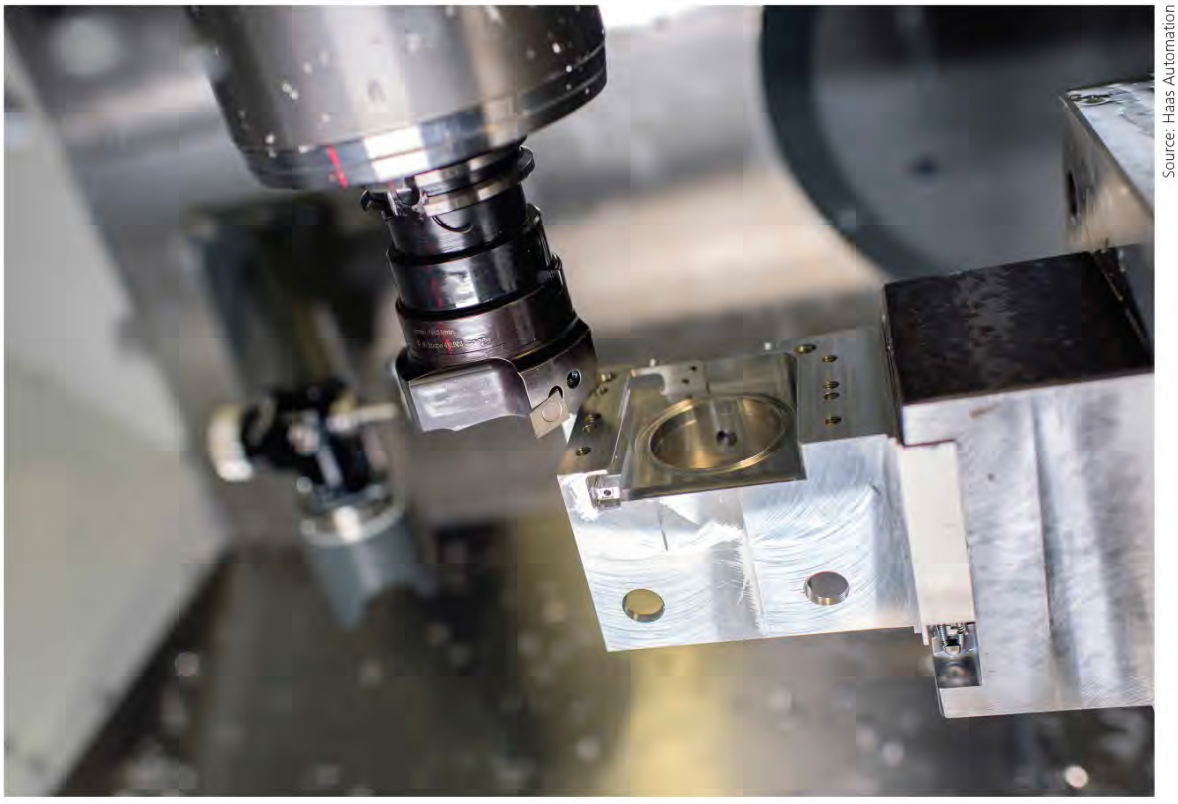
A fusion of benefits

Capable of a wide measurement range, the 12-feet Fusion features an extended-use battery and an infinite rotation for non-stop measuring. A challenge before the introduction of the 6-axis device, taking precise measurements of large objects is now a breeze for the company, thanks to the portability of the Fusion. Operators no longer need to transport objects to a measurement device, they simply did the reverse instead. With the Fusion, productivity at the company has increased owing to the time savings achieved.

"The integration of the Fusion made a world of difference to our measurement process," marveled Ahuja. "Although we witnessed its ability to achieve time savings during the demonstration, we were still pleasantly surprised when we carried out our first task with the device during first article inspection. In all our years of using 2D tools, we never imagined that we could save up to 85 per cent in total measurement time. A significant presence within our operations, Fusion is fully utilized every day from the first article inspection all the way to post production."

Perhaps out of the many derived benefits, computer aided design (CAD) and digital data are the most valued by Anusaya. Fusion is able to utilize CAD data from the initial design to the finishing stages. 2D drawings can now be replaced by simply taking measurement points from any 3D component instead. Additionally, the device is also able to capture and store digital data—a handy feature that Anusaya utilized immediately in order to submit measurement data to customers.

"In the past, we were unable to share data at such precision with our customers, and preparing this data manually was also time consuming for us," concludes Ahuja. "With Fusion, we can now meet our customers' requirement for measurement data quickly, and confidently assure them that Anusaya is a provider of quality parts. To achieve all these benefits from just one portable CMM, we are glad that we chose to work with FARO." MMI



Source: Haas Automation

Five-axis machines such as the UMC-750 can approach multiple faces simultaneously, in a single setup.

Haas makes Five-Axis Machining Affordable

Capecchi Srl of Italy showcases how even smaller firms can now access affordable multi-axis CNC machine tools, such as the Haas UMC-750 Universal Machining Centre.

The Capecchi Srl machine shop is located alongside the Tuscan hills, just outside Florence, Italy. Apparently, the shop once made components for optical instruments, such as theodolites. Later, it designed and built its own range of optical instruments and gauges—solid looking devices with powder-coated cast-iron bases and polished machined components—that look as purposeful and well-designed now as they did half a century ago. Most European companies that once made similar products are now extinct. Capecchi has survived because it has moved with the times. The most recent parts in the cabinets are seemingly random, prismatic components of relative complexity; parts made mostly in aluminium, many with features and faces that could have only been created using a five-axis CNC machine tool.

Source: Haas

Haas UMC-750

In fact, the company's latest investment is a Haas UMC-750, a machine that allows Capecchi to compete with far larger workshops by producing complex parts without the costs typically associated with multi-axis operations. Today, Massimo Capecchi and his brother Andrea co-own the company that their father founded in 1962. Under the pairs' leadership, the business has diversified, survived, and even thrived through multiple recessions and in the face of overwhelming odds.

The rail industry gauges for testing rolling stock still account for around 20 per cent of the turnover. The other 80 per cent comprises work for sectors including laser technology, industrial automation, durometry, stereocartography and topography, radar, ophthalmology, and textile and biomedical industries. The strength of the company is its ability to provide high-quality and precision components at affordable prices with on-time delivery and a comprehensive service that includes design, prototyping, machining, inspection, and assembly.

To continue to move forward, the Capecchi brothers recently found themselves faced with the daunting prospect of investing in five-axis machining. "It had been a few years since we had made any serious investments," says Massimo Capecchi. "We found ourselves looking for machines that would help to increase the productivity of the company; to

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Five-Axis Machining

Let's build the future

Machines to build the future, cutting-edge solutions that give the possibility of achieving what mankind has imagined, and technologies on which the improvement of the quality of life depends: this and much more will be EMO MILANO 2015. The spotlight will be on the wide offer of machine tools available, capable of attracting users from all the main sectors that use metal working systems.

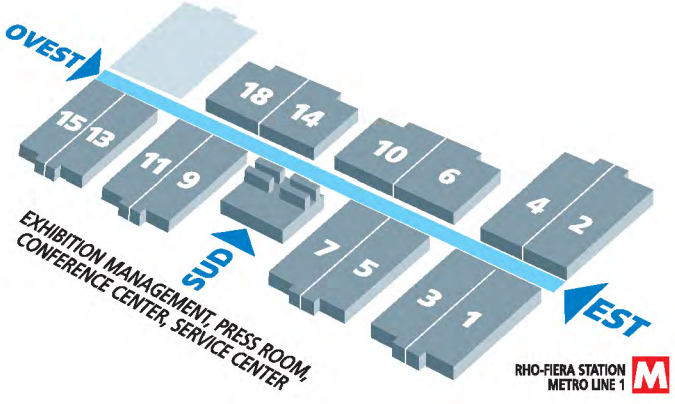
150,000 visitors are expected in Milan

are you coming too?

EMO MILANO 2015

fieramilano 5-10 October

Promoted by cecimo · FONDAZIONE UCIMU · EFIM · FIERA MILANO



Pre-sale from June.
Parking available upon reservation:
www.emo-milano.com

Book your stay on:
www.emo-milano.com/en/visitors/hospitality/

Organiser:
EFIM-ENTE FIERE ITALIANE MACCHINE

For information:
EMO MILANO 2015 c/o CEU-CENTRO ESPOSIZIONI UCIMU SPA
viale Fulvio Testi 128, 20092 Cinisello Balsamo MI, Italy
tel. +39 0226 255 225, fax +39 0226 255 890, promotion.adv@emo-milan.com

www.emo-milano.com

100+ Years
100+ Titles
7 Languages
6 million copies
12 Countries!

Global Quality



Print, Digital, Events, Services
National and international

For further details please contact:
E: ashok.thakur@vogel.de
M: +91 9819944543

MMI MODERN MANUFACTURING INDIA

Vogel Business Media



Source: Haas Automation

A glimpse of the Capecchi Srl shopfloor.

make a quantum leap in terms of efficiency and quality. Many of the machines on offer were too expensive and too complex. But, we discovered that the five-axis Haas UMC-750 machine offered a good relationship between quality and price. We did not have to look any further; our decision was made."

More productivity

Capecchi first saw the Haas machine at a trade fair before commencing discussions with the local Haas Factory Outlet (HFO). "We knew we had opted for a machine that was designed to work on a stand-alone basis, and would allow us to make parts that we were earlier forced to create with our three- and four-axis machines," he says. "We can now complete more work with the Haas UMC-750, because it is better suited to the complex parts we are increasingly asked to produce." If the Haas machine had not been available, the Capecchi brothers would have been stretched to fund an alternative, much more expensive solution.

Batch sizes at the firm range from 5–200-off, although 15–20 is typical. For relatively low numbers, the ease and speed of set-up on the UMC-750 is vital to meet the output and productivity targets. "The goal is to continuously improve the accuracy of what we do, and the quality of what we do," explains Capecchi, "And at the same time reducing cycle times. We are achieving this, because a five-axis machine such as the UMC-750 can approach multiple faces simultaneously, in a single setup." This is an advantage other, bigger machine shops have been able to exploit for some time. But, five-axis technology is usually too expensive for smaller businesses.

Great service

The Capecchi brothers say that they have received great support and assistance from Haas, since the UMC-750 was commissioned, in October 2014. The machine proved particularly easy to learn in comparison with other machines, recounts Massimo Capecchi, and in recent months, the company has been busy gradually moving more work onto the new machine. "For example, the workpieces currently on the machine have been just moved there," says Capecchi. "We decided to transfer these components to the UMC-750, because we can produce them quickly. However, it is not just about cycle time, as the parts are complex, it is also about accuracy. Fewer setups mean less opportunity to introduce inaccuracy in the finished part." That means less scrap and more reliable deliveries, which are essential for any machining business, especially if, Capecchi Srl, plans to be around for another 50 years. MMI

Details make a difference





WRI
World Radio
Interface

WRP
World Radio
Probe Ø45 mm



WRP
World Radio
Probe Ø60 mm

WRS
WORLD RADIO SYSTEM

MARPOSS

RADIO FREQUENCY TRANSMISSION TOUCH PROBE SYSTEM

...reliable, highly versatile and available for worldwide use

MARPOSS

Your global Metrology partner • www.marposs.com

High-definition Collaboration in Manufacturing

The best decisions are made when everyone can easily collaborate, share and engage with all the other stakeholders, with access to all the relevant data they need, in a way that makes sense to them.

In all of the processes a company goes through to produce a product, thousands of decisions must be made, from the start to finish of the product's lifecycle. The faster decisions are made, the faster the process observed. In fact, more accurate decisions taken also lead to fewer problems occurring in the downstream.

The challenge

Fast, accurate decision-making is no easy feat, given all of the information that must be considered and the number of people involved. There is also the fact that information is spread throughout the company, its supply base, its joint-venture partners and its customers.

Upto this stage, PLM has done a good job of helping people collaborate more (as long as they know who best to collaborate with), leverage information effectively (assuming they can find it), make complex product decisions (if they understand the context within the system) and make those decisions within time constraints (whether they are optimal or not).

But in an environment of increasing complexity, PLM needs to rise to the challenge and address these shortfalls. This is the objective of high definition product lifecycle management (HD-PLM). One of the core pillars of this approach is centred on the need to collaborate and the technologies and trends that are shaping this.



Jan Larsson
Senior Marketing Director EMEA
Product Engineering Software
Siemens PLM Software

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

High-definition

A new way of working

Traditionally, design and development meetings have consisted of large amounts of paper, a projector and single presenter trying to gather requirements, feedback, updates and comments from everyone else in the room. Once the meeting ended, the leader would then try to collate all this information and set about making the required alterations, and then commit those for testing before starting the process all over again.

But we live in an increasingly high-definition, touch-focused world. The ongoing evolution of smartphones and tablets has created a massive impression on a visual and interactive approach to application design.

Even modern desktop operating systems are taking a touch-based approach to their layout and design. Similarly, advancements in multi-touch are being used to create new applications for engaging and collaborating.

When it comes to product design, these developments need to be harnessed to enable more immersive and naturally collaborative platforms.

By scrapping the paper and projector approach, and opting for large-format touch-screen interfaces, creates a dynamic,

Source: Siemens PLM Software



A more productive collaborative session with boardroom style multi-touch technology allows all stakeholders easy access to the enterprise PLM information thus, helping the decision making process.

immersive environment that enables much more effective collaboration.

Simultaneous engagement and analysis

This approach also means that everyone can get hands-on with the design process. By removing the single 'gatekeeper', it becomes possible to engage in parallel collaboration, as designs can be passed from one person to another, suggestions inputted in real time and then viewed and discussed.

Taking this a step further—beyond just point, click and view—modern systems are powerful enough to render and even simulate, test and analyse suggested changes and ideas in real time.

So, in the first instance we have a laborious and manual process where one person showcases a design on a projector, collecting different types of feedback from a range of people. That person then goes back to their desk to incorporate that information into the design and tests the results before starting the cycle again.

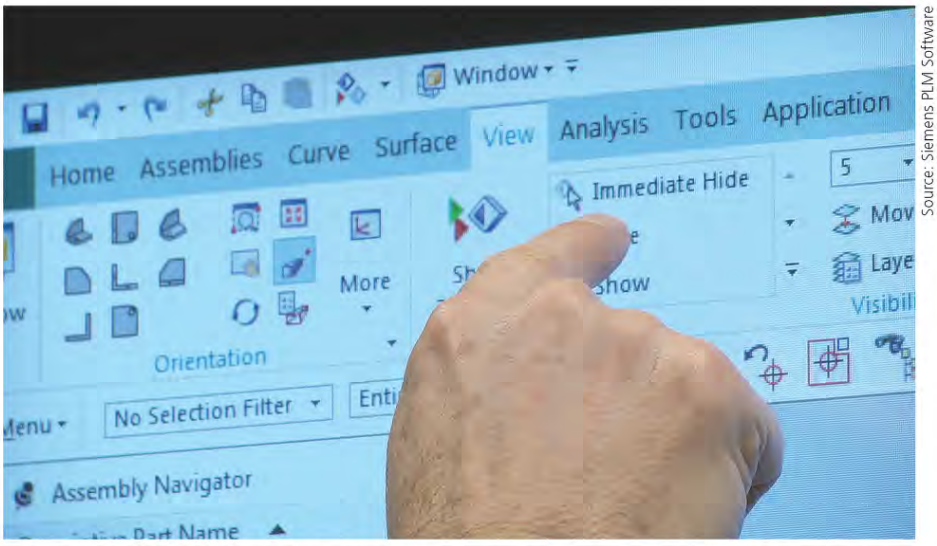
In the second case, we have the relevant people gathered around a dynamic and responsive interface, where ideas can be bandied about, evaluated and tested, all in real-time. The impact of this is magnified when every stakeholder can engage via the interface and context that makes the most sense to them.

Context and integration

Of course, different users interact with information differently. For some users, 3D product geometry is how they need to view information. Others prefer a spreadsheet view or perhaps graphs and charts. What 'intuitive' means depends on the person and the task being performed. To present information intuitively, it must be in the right format, the right context, and at the right level of granularity.

But even within the context of in-room collaboration, a large-format multi-window display means every attendee can participate in the way that makes the most sense to his or her role. Furthermore, when disparate business systems are tightly integrated as part of the platform, changes on one side can be immediately reflected in the other elements. For instance, updating one part on the CAD design can automatically feed through to the bill of materials and the ERP system.

As a result, every person involved in the decision making process can be engaged and their input immediately viewed, discussed and tested. This effectively makes it possible to capture the thought processes through which decisions are made and encapsulate them as best practice.



Source: Siemens PLM Software

Touch at its best: Full control of everything from menu picks, view manipulation and modeling capabilities allowing for a true interactive collaborative design review.

Conclusion

There are now more people who need to access PLM data and the audience for the software that creates and uses this data is expanding throughout the enterprise. These workers need to be able to search for things that are of interest to them, look at different configurations of the product, and do it all in a very intuitive user experience.

Collaboration is the key to how this modern business operates. Having the right infrastructure is required to enable people to access and share information easily and effectively.

For manufacturers, PLM is the backbone that enables this collaboration, but it is only truly effective when it taps into the changing way we engage. In today's environment, this includes making data more visual, intuitive and touch focused.

Each of these elements already exists. The presence of high definition displays, touch screens and collaboration tools, as well as the PLM framework for product design, testing and sharing is already available. It is when these are combined that the emergence of a new level of intelligence can be seen.

Once this can be integrated with other systems within the business and delivered in such a way so as to enable parallel collaboration and deeper analysis, so that the business can reap the rewards of faster and more agile product development.

Siemens PLM Software is proud of the progress that has been made with all the recent technological development. This innovation is being incorporated into the next generation of applications. MMI



Source: Siemens PLM Software

Make product changes on the fly while carrying out design reviews among the engineering team.

On-going Learning: Key to Success!

Learn how Kawasaki Motors through SolidProfessor—an online training platform—helped its design engineers learn new concepts and techniques for SOLIDWORKS and stay up-to-date through convenient training modules.

To the average person on the street, when one hears the name Kawasaki, the first think that comes to mind will probably be of motorcycles or possibly ATV's, but Kawasaki is actually much more diverse than that. "We make boats, tractors, aerospace equipment; we even help to make the mine sweepers used by the United States Armed Forces abroad. At our particular facility, however, we have two focuses: rail cars and consumer products. Our rail car division produces mass transit solutions for large cities, like New York and Washington D.C., while our consumer products division makes recreational utility vehicles like the Kawasaki Mule, a versatile work vehicle used by maintenance and parks and recreation departments, and also personal watercraft like jet skis," informs CAD Administrator, Kawasaki Motors Manufacturing Corporation, Wayne Schafer.



Nedra Pereira
Deputy Editor
Vogel Business Media India
nedra.pereira@vogel.de

About six years ago, Kawasaki's rail car division received their first seats of SOLIDWORKS. Over the next couple of years, the consumer products division began helping them produce designs. They decided that it made sense to adopt SOLIDWORKS across both teams, making it easier to communicate. Nobody in their group had any formal training in SOLIDWORKS and they needed a way to get their team and future hires to work quickly with the software.

Given the complex nature of the work done, the company realized that they needed to train their staff on a regular and convenient basis.

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

On-going Learning

The Kawasaki Teryx4 that has been designed using SOLIDWORKS.



Source: Kawasaki Motors Corp., U.S.A.

After having researched a couple of other online training options alongside SolidProfessor, Schafer realized that SolidProfessor was the right decision for his team. "He appreciated that we present topics in concise chunks, making it much easier for the teams to consume. Kawasaki hires a lot of people fresh out of the local university. We help them by providing their new users with a customized learning path that focuses on the most important skills, helping to smooth the transition into their job," avers Co-Founder, SolidProfessor, Jason Wright.

Schafer in response to why they chose this particular softeware adds, "We did not want to send everyone out to classroom training; the travel and out of office time was cost prohibitive. I ran across SolidProfessor and it was a perfect fit for our needs. The videos are not long and drawn out, which is great because engineers sometimes have short attention spans. SolidProfessor presents the topics in concise chunks, making it much easier to consume. I have also found that when someone on my team gets pulled away from SolidProfessor, it is easier for them to dive back in where they left off."

Online vs. classroom

CAD, CAM, and BIM software are changing quickly and dramatically. On-going learning is essential to stay updated on the latest technology and software capabilities. For companies, this means investing in their employees through an on-going development of skills. Wright voices, "SolidProfessor helps managers take control of their team's productivity. First, we help them perform a



"Classroom learning is not irrelevant, but it is not enough either. After you have established a foundation of software skills, on-going learning is essential to maintain proficiency."

Co-Founder, SolidProfessor, Jason Wright

Kawasaki Motors Manufacturing Corporation

Challenge

- Communication between internal design teams easier
- Use of common design software across teams
- To enable convenient training modules

Solution

Use of SolidProfessor for training needs on SOLIDWORKS—3D Design Tool

Result

- Customized learning paths
- Training available as per convenience in concise modules
- Improved design intent
- Re-orientate/relearn forgotten concepts
- Learn best practices and new design concepts and techniques



"SolidProfessor has helped our team improve design intent. With a better understanding of the tools, our team knows how to apply them more efficiently to create their designs."

CAD Administrator, Kawasaki Motors Manufacturing Corporation, Wayne Schafer

skills gap analysis to understand areas where their team needs to develop. From there, they can create custom learning paths to rapidly onboard new users. Their top performers can increase productivity by using SolidProfessor as an on-demand reference tool. Last but not the least, companies can measure progress and knowledge retention with integrated tracking."

Traditional live classroom methods are based on the idea that learning is a one-time event. Software is dynamic and quickly evolving. Within a few years, software can evolve to become almost unrecognizable. Yet, traditional learning methods are still applied to learning software through the classroom. "The 'one and done' approach to learning technology is wholly ineffective. Classroom learning is not irrelevant, but it is not enough, either. After you have established a foundation of software skills, on-going learning is essential to maintain proficiency. We need to change the way we think about learning in order to keep up with an industry that constantly changes," affirms Wright.

Effective solution

The company is extremely happy with the service from SolidProfessor, Schafer states, "SOLIDWORKS has a tremendous command and function base, it is versatile. In fact, you can do so many things with SOLIDWORKS that it is not really possible to retain everything by memory. If, for example, you have not worked with Sheet Metal for a few weeks, you find that when you need to tackle a Sheet Metal project, you are less familiar with the tools you seldom use. SolidProfessor offers our team a method to re-orientate themselves on what they have forgotten, and also allows them to pick up best practices and new design techniques along the way."

The company has since seen various benefits of incorporating the teaching tool. Schafer voices, "SolidProfessor has helped our team improve design intent. With a better understanding of the tools, they know how to apply them more efficiently to create their designs. We hire a lot of people fresh out of the local university. Most of our engineering interns, as well as our new hires that come out of the local campus, have typically been exposed to SOLIDWORKS on a limited scale. SolidProfessor allows us to provide the new users with a customized learning path that focuses on the most important skills, helping to smooth the transition into their job."

Targeted training

With SolidProfessor, it is obvious that the gains have been immense for Kawasaki Motors. Schafer expresses, "One feature I really like about SolidProfessor is that I can set up my own course of training videos built around the concepts that I think are most important to new people joining our team, instead of giving them access to the whole platform and saying 'have at it.'"

The approach is a more targeted one and the results speak for themselves. Another notable benefit that SolidProfessor provides is the update guides. This enables users to have access to content that is current so that they can stay on top of new features and get the most out of the design software. "The composer course was very helpful to me. I had seen some demos, but I had no idea how to go about getting started, to set something up for the first time. SolidProfessor was instrumental in getting me up to speed," concludes Schafer. MMI



Source: Kawasaki Motors Corp., U.S.A.

SolidProfessor has helped Kawasaki design engineers improve their design intent for various products such as the jet-ski.

Industry 4.0 – From Mass Production to Mass Customization

Though the concept of Industry 4.0 was conceived almost four years ago, it is still at a nascent stage. The manufacturing industry looks upon this concept to make the processes and factories smart. Here is a look at the scope of Industry 4.0 and how it will change the face of the industry.

Perhaps the biggest change that the internet will bring to business is yet to be witnessed. In about 10–20 years, Industry 4.0 is set to become a reality, transforming radically the way industries work and do business today. The term Industry 4.0 refers to the fourth industrial revolution, much like what the world saw first with the steam engine, then with the introduction of electricity in the manufacturing process and later by the IT revolution. The latest industrial revolution, termed Industry 4.0, is about the integration of 'Internet of Things' into the manufacturing industry.

Industry 4.0 was first conceived by the German Government, industry leaders and researchers in the hope to encourage the use of technology in traditional industries like manufacturing. The idea behind this concept is to achieve the goals of greater customization in mass production. With Industry 4.0 comes the 'smart factory' idea, intelligent manufacturing systems facilitating more flexibility and end-to-end process automation. According to industry



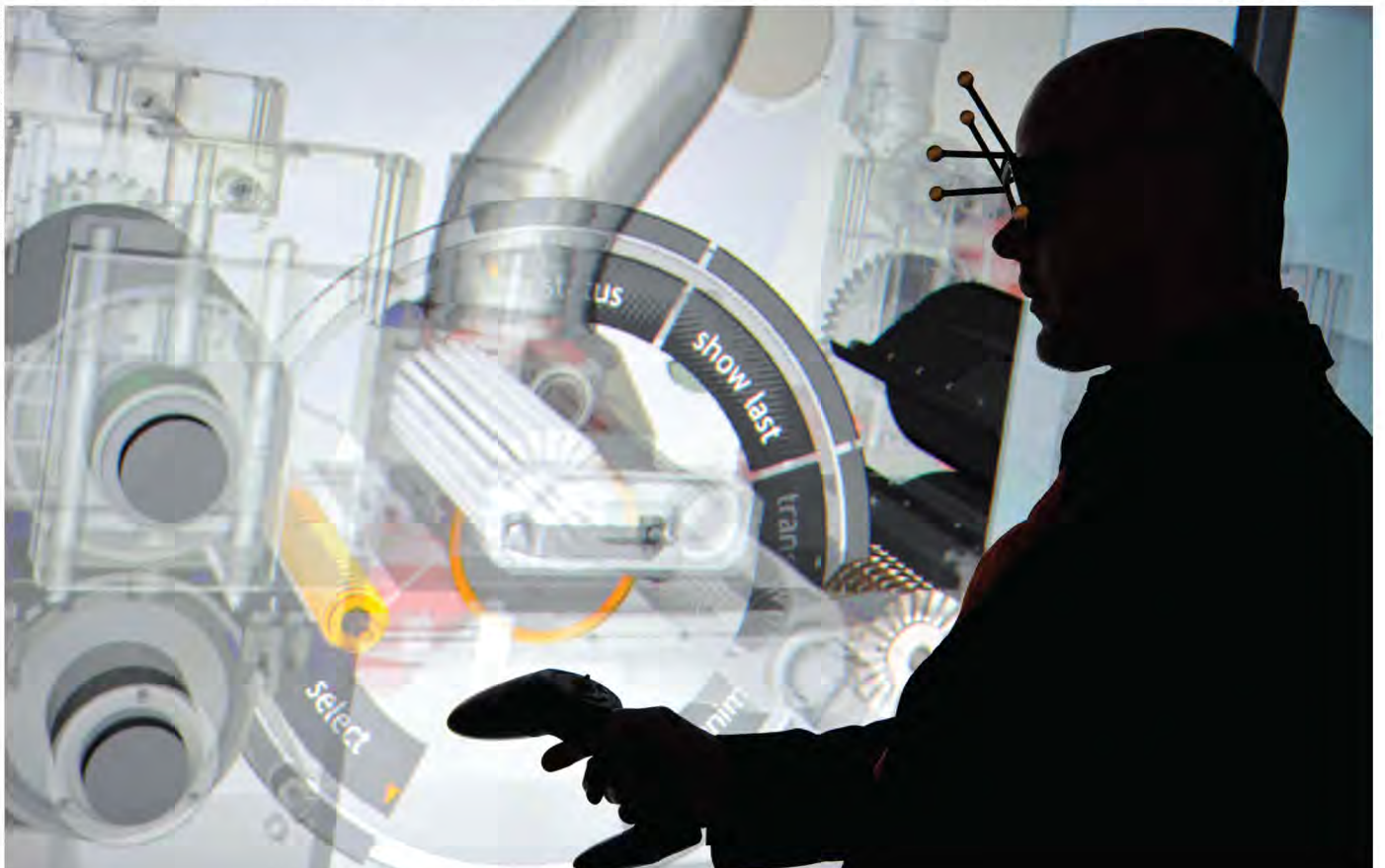
Mehul Lanvers Shah
Managing Director
Hannover Milano Fairs India
mls@hfm-india.com

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Industry 4.0

The latest industrial revolution, termed Industry 4.0, is about the integration of the Internet of Things into the manufacturing industry.



Source: Hannover Milano Fairs India

experts, though Industry 4.0 is still in its infancy, it can become the future of the manufacturing sector where factories will be connected directly to customers, retailers, and even with other factories in different geographies.

Hannover Messe, one of the world's largest and most important industrial fair, was the official launch platform for Industry 4.0 when it was presented to the public for the first time in 2011. The industry's remarkable progress made in the area was visible just two years later at Hannover Messe 2014 which witnessed the largest industrial technology players from ABB to SAP and Siemens demonstrating their integrated factory products and services. The enthusiasm was so great that Hannover Messe organized guided tours that took trade visitors through the entire range of demonstrations that included fully automated production lines where smart workpieces directed their own individual processing steps.

What will drive Industry 4.0?

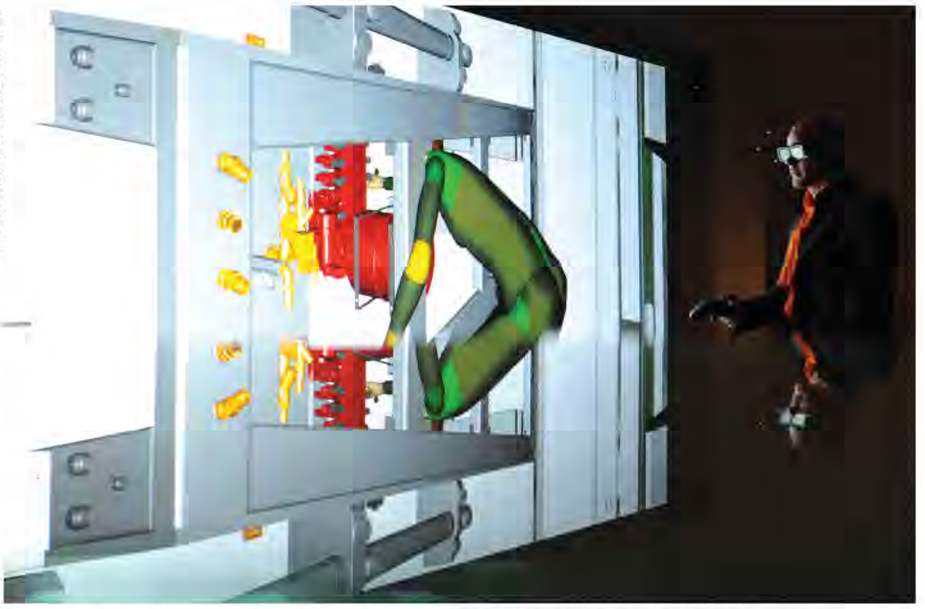
This next wave of manufacturing systems is built with the new generation of cyber physical systems (CPS). They represent the next evolutionary step from existing embedded systems. CPS will enable technologies, which bring the virtual and physical worlds together where smart objects will communicate with each other. To define it further, CPS are the 'enabling technologies' which creates several applications and services that would amalgamate the real and virtual world.

At present, CPS is progressively becoming a critical element in the formation of Industry 4.0 as it will be instrumental in automating the manufacturing industry, developing intelligent monitoring and autonomous decision making systems, which will further help the industry gain greater business agility. Smart factory will primarily focus on human-machine interaction and usage of 3D technology in every industrial application.

Challenges ahead

As machines, objects and workplaces start communicating and sharing data with each other, it will lead to a massive creation of data. Therefore, in order to make sense of these data being created, there would be a need for an IT system which will analyze the data and leverage it for business value. Industry 4.0 is yet to be matured; there are challenges that are far from being resolved:

Source: Hannover Milano Fairs India



With Industry 4.0 comes the 'smart factory' idea, intelligent manufacturing systems facilitating more flexibility and end-to-end process automation.

- **Uniformity in standardization** – The idea behind bringing this revolution is to encompass various organizations through value networks and this collaborative alliance can only be possible if uniformity across standards are maintained.

- **Environment and people safety** – While setting up a smart factory, there are few key safety points that need to be kept in mind. It is imperative to ensure that production facilities and the products are environment-friendly and do not pose a threat to people or the environment.

- **Data security** – How safe is the data that these new systems have access to and can they be compromised? At a time when the entire industry is still grappling with the newness of big data and mobility, can industries ensure the safety of their proprietary information?

- **Managing intricate systems** – In order to deal with increasing complexity in manufacturing and products systems, a proper and detailed planning of models is a must. Also, it is imperative for the organization to have updated adequate tools and equipment to develop such models, when needed.

- **Proper training for employees** – As the nature of work would change radically, it is important for the organization to implement relevant training modules for its employees. This would help them foster a lifetime learning.

The journey of setting up 'smart' factories will be a complicated and evolutionary process. Requirements and need for innovation are manifold as these will play an instrumental role in implementing Industry 4.0. The whole world of manufacturing is going to transform and become entirely networked with machines analyzing almost every aspect of the manufacturing process. With Industry 4.0 commencing, the next-gen manufacturers will look completely different from what we see today and we can envisage a smart world with a smart industry by helping nations to gain global competitiveness. **MMI**



CHMER



Q4025L
High Precision Gantry Type Linear Drive Wire Cut EDM

Focus on Innovation



EQ530L
Gantry Type Linear Drive Wire Cut EDM



A6040L
High Speed 3 Axis Linear Drive Die Sinker EDM



HM6050L
Gantry Type Linear Motor Drive 5 Axis Milling Machine



AW9SL
AMS High Quality Linear Drive Wire Cut EDM



AD5L
AMS High Speed Small Hole Drilling EDM



Taiwan Mittelstand Award | Industrial Sustainable Excellence Award | The National Brand Yushan Award | Golden Pin Design Award | Taiwan Excellence Award

CHING HUNG MACHINERY & ELECTRIC INDUSTRIAL CO., LTD.
No.3, Jing-Ke 1st Road, Nantun District, Taichung City 408, Taiwan
TEL: +886-4-23509188 / FAX: +886-4-23500977 / Email: overseas@mail.chmer.com
www.chmer.com

EVENT CALENDAR

Event Name	Contact	Date & Venue
AMTEX 2015	T: +91 (080) 43307474 E: info@reedtriuneexhibitions.com www.amtex2015.com	May 29–June 1, 2015 Bombay Exhibition Centre, Mumbai, India
INTEC 2015	T: +91 (422) 2222396 E: intec@codissia.com www.intec.codissia.com	June 5–9, 2015 Codissia Trade Fair Complex, Coimbatore, India
IMTOS 2015	Kamlesh Gohil T: +91(0) 9328899503 www.kdclglobal.com	July 4–7, 2015 Pragati Maidan, New Delhi, India
Automotive Engineering Show (AES)	Sameer Khedkar T: +91 (22) 61445900 E: sameer.khedkar@india.messefrankfurt.com www.aes-show.com	July 7–9, 2015 Chennai Trade Centre, Chennai, India
Machine Tool Expo 2015 – Delhi	Mahesh T: +9886680466 E: mahesh@imtma.in www.mtx.co.in	August 20–23, 2015 Pragati Maidan, New Delhi, India
Cambodia International Machinery Industrial Fair	T: +855 (023) 5553219 E: service@chanchao.com.tw www.camboexpo.com	August 21–24, 2015 Diamond Island Convention and Exhibition Centre, Cambodia
Euromold	DEMAT GmbH T: +49 (0) 069274003 – 0 E: info@demat.com	September 22–25, 2015 Düsseldorf, Germany
Machine Tool Expo 2015 – Ahmedabad	Mahesh T: +9886680466 E: mahesh@imtma.in www.mtx.co.in	September 24–27, 2015 Mahatma Mandir, Gandhinagar, India
EMO Milano 2015	T: +39 (02) 26255860 E: info@emo-milan.com www.emo-milano.com	October 5–10, 2015 Milan, Italy
sps ipc drives	T: +49 (0) 71161946-0 www.mesago.de/en/SPS	November 24–26, 2015 Nuremberg, Germany
IMTEX Forming 2016	Balasubramanian Pillai bala@imtma.in www.imtex.in	January 21–26, 2015 BIEC, Bengaluru, India

To suggest an event, please send details to swati.deshpande@vogel.de

Innovation is not an option but an ATTITUDE

Can be mounted on horizontal table for VMC's and on Vertical tomb stones for HMC's

Guide ways hardened to 64HRc, provides better accuracy for longer period

Replaceable jaws for easy customization

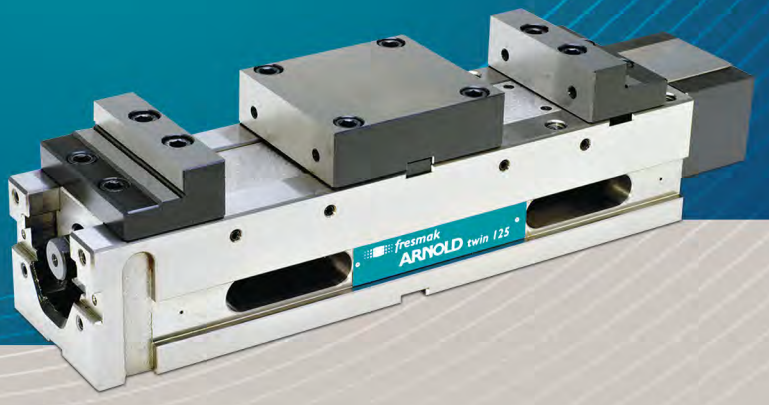


Chip cleaning slots for easy cleaning

Inbuilt hydraulic pressure booster provides incredible 4000kgf (40KN) variable clamping pressure

Input pressure can be :
- 6Bar Pneumatic pressure or
- 500 Bar single acting hydraulic pressure

Two directional tennon slots for accurate mounting on base plates or tomb stones



ARNOLD TWIN AUTOMATIC VICE

For High Volume Production

Fresmak ARNOLD Precision Engineering Pvt. Ltd.
Milennia Towers, Level 1, Tower B,
No. 1 & 2, Murphy Road, Ulsoor, Bangalore - 560 008, India.
Phone No. : +91 (80) 6765 4250 | Fax No. : +91 (80) 6765 4033
Email: info.india@fresmak.com | www.fresmak.com

fresmak
ARNOLD
Subsidiary of Fresmak, Spain

Source: Hannover Milano Fairs Shanghai Ltd



An aerial glimpse of Metal + Metallurgy China 2015 showcases the caliber and prowess of the best in the business.

Boosting Development and Technology

Metal + Metallurgy China 2015 was held from March 31 to April 3, 2015 at the newly built China Expo Complex in Hongqiao CBD, Shanghai. This year's edition boasted of overseas exhibitors, live demonstrations and an increased footfall. Read on for highlights of the event.

As Asia's largest and the world's second largest exhibition in metal and metallurgical industry, Metal + Metallurgy China 2015 (a collective name for the 13th China International Foundry Expo, the 15th China International Metallurgical Industry Expo, the 13th China International Industrial Furnaces Exhibition and the 11th China International Refractories and Industrial Ceramics Exhibition) came to a successful end on April 3, 2015, at the newly built China Expo Complex in Shanghai Hongqiao CBD.

The event was jointly organized by China Iron and Steel Association, China Foundry Association, Chinese Mechanical Engineering Society, Metallurgical Council of CCPIT, Industrial Furnace Institution of CMES and Hannover Milano Fairs Shanghai Ltd.

An overview

The four-day exhibition attracted 1,026 exhibitors from 20 countries and regions with a total display area of 67,000 m² and the total visitors exceeded 61,349.

The data showed that, following the last exhibition that was held in Beijing, Metal + Metallurgy China 2015 was a huge success, inspite having only one year to make the appropriate arrangements. These included having a cluster of overseas exhibitors, grand and magnificent domestic enterprise exhibition area, eye-catching newly-added exhibition sections, and high praise from all exhibitors. As pointed out by one of the organizers of the exhibition,

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

Boosting Development



Nedra Pereira
Deputy Editor
Vogel Business Media India
nedra.pereira@vogel.de

Source: Hannover Milano Fairs Shanghai Ltd







At a glance: Metal + Metallurgy China is a platform for showcasing technology and networking with industry stalwarts.

General Manager, Hannover Milano Fairs China Ltd, James Fu, "Metal + Metallurgy China has a strong appeal and exerts great industry influence. Enterprises at home and abroad highly recognize this trade platform in its effective value. We are inspired to continue to provide professional, innovative and quality services and develop the exhibition into a world-class metallurgy event with wide industry coverage and high brand value."

Special decorum

To make it different from its previous editions, the organizers restructured the layout of this exhibition. The international exhibition area was highlighted, aiming at creating an atmosphere of competition between Chinese and foreign enterprises, and pushing Chinese enterprises to catch up with international exhibitors. Well-known enterprises, including I.M.F., DISA, Savelli, Sinto, FONDARC, Morgan, Eirich, ABP, INDUCTOTHERM, CAPITAL, INSERTEC, Primetals, ANDRITZ, Fill, Exone, ASK, EBNER, Kao, Fuji Electric, Paul Wurth, Grenzebach SH, Changzhou Hidea, Zhiheng and MAGMA, all debuted new products and flagship products. Meanwhile, the German pavilion consisted of Uni-Geraete GmbH, ASK CHEMICALS, KUTTNER and Drache. These companies showcased a wide range of casting and metallurgical products.

In addition, the Domestic Pavilion also attracted numerous top Chinese companies from Beijing, Shanghai, Tianjin, Nanjing, Wuxi, Changzhou, Xuzhou, Ningbo, Qingdao, Wuhan, Fujian, Dalian, Jinan, Zhengzhou and Changsha to showcase their star products.

Additional sections

With the increasing market demand of industrial robots and the growing industry scale, this year's show also added to its plethora of sections, the 'robots and automation section' to introduce the market to the various types of popular robotic products used in the casting and metallurgy field. World-famous companies, including ABB, Fanuc and KUKA, brought to the exhibition various fast, flexible and precise robotic arm products, and staged a technical automation contest at the event, which attracted many professional visitors.

Forums, summits and seminars

To effectively promote the exchange and trade in the industry, a range of industry summits, forums and technical seminars were held during the exhibition, including the China International Steel Summit, the 7th Chinese Foundry Summit, China International Thermal Processing Technology Forum, the 3rd China International Refractory Production and Application Conference, the 13th International Steel Market and Trade Conference, etc.

Industry stalwarts, leaders and merchants gathered together to discuss the various ways in promoting in-depth integration of informatization and industrialization, and how to maintain an orderly and healthy development under the complex macroeconomic environment, so as to absorb the industry development trends in the country.

International exhibitors such as AVURE, Paul Wurth, Primetals Technologies and FLOW-3D CAST also held presentations during the exhibition to increase their brand exposure. The exhibition also attracted buyer groups from India, Indonesia, Malaysia, Saudi Arabia and Iran.

Committed to creating industrial glory and promoting industrial innovation, the efforts of the organizers could be well seen throughout the event. This year's edition was proof that the market of everything related to metals and metallurgy is thriving and will continue to expand. If you missed this year's edition, make sure to attend the next one. See you there! MMI

Machining Muscle

The WFL Technology Meet 2015 showcased diverse new innovations and technologies that attracted more than 900 visitors from across the globe.

I witnessed a stunning display of mega machines and insightful networking at the WFL Technology Meeting 2015 that was held from March 16–19, 2015, in Linz, Austria. Aptly called the 'Technology Meeting', the show displayed the latest machine models along with some stunning innovations in the areas of software and technology for the aerospace, automotive, print, energy, hydraulic & pneumatics, plastic, oil and gas, crankshaft as well as the general engineering industry.

Held every two years, this year, the Technology Meet witnessed the presence of more than 900 visitors from 30 different countries.

Experiencing MILLTURNs live!

At the recently expanded headquarter in Linz, WFL Millturn Technologies exhibited live demonstrations of its entire spectrum of machinery, ranging from the M35 MILLTURN to the M150 MILLTURN. Nine different machine models were presented with different high-tech technologies such as ID-machining, gear cutting, additive manufacturing by means of a high-performance laser, laser-hardening, and surface treatment by machine hammer peening. Here is a brief on the technologies that I witnessed at the meet.



Ahlam Rais
Senior Sub Editor
Vogel Business Media India
ahlam.rais@vogel.de

▶ M35 MILLTURN / 2000 mm

Machine hammer peening, which is a new technology, was demonstrated on this multi-tasking machine. This technology is used for applications such as landing gears in the aerospace industry that require critical workpieces. It can also be used for surface improvement after machining operations such as milling or turning, etc. Main advantages of this technology is the improvement of surface roughness, creation of inherent compressive stress and increase in surface hardness.

▶ M35-G MILLTURN / 1800 mm

The WFL cycle utronix was presented on the M35-G MILLTURN machine. With the assistance of this cycle, one can produce interior and exterior turning contours in any angular position. Also, it becomes possible to machine turning contours in any direction by making use of the B1- and C1-axis. Hence, a rigid, single-edge cutting tool is directly mounted at the standard tool accommodation.

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Machining Muscle

▶ M40 MILLTURN / 3000 mm

The highlight of the M40 MILLTURN machine is its various gear cutting technologies. Right from OD gearing to helical gearing and herring bone gearing, every kind of gearing solution was displayed on the machine. The gears reach from small modules, beginning from 0.5–8 to bigger modules, starting from 3–100.

▶ M50 MILLTURN / 3000 mm

On this machine, WFL presented a special programming tool for making screws. This can prove beneficial for injection molding in the plastic industry. The machine also introduced the 'WFL Ergonomic Light' concept which consists of various LED lights such as the door light, status light and the head LEDs for perfect illumination of the machining point.

▶ M65 MILLTURN / 3000 mm

This machine showcased grinding technology. Depending on the material of the workpiece, a corundum or CBN grinding wheel can also be utilized. The grinding head is fixed to the turning-boring-milling unit and can be automatically changed. The common applications for grinding include operations where one has to fulfill close tolerances to reach the highest surface requirements.

A glimpse of WFL's high-tech-product portfolio.



Source: WFL Millturn Technologies



"This year's theme of the 'Technology Meeting' is 'Technologies'. WFL is focusing on enhancing and developing new technologies in the MILLTURN turning boring milling centers."

General Manager, WFL Millturn Technologies GmbH & Co KG, Mag Norbert Jungreithmayr



"We are providing the right technology at the right time. The current Indian market situation is getting more dynamic and there are a lot of opportunities in the country. We hope that India along with the manufacturing industry continues to grow and the demand for machinery also increases."

Sales Manager, WFL Millturn Technologies GmbH & Co KG, Martin Kaukal

Customers' speak

The main benefit of complete machining for WFL customers is reduction of machining time by 70 per cent. The numerous advantages are listed below:

Reduction of floor to floor time
The number of machines involved in the machining process is drastically reduced. Queuing up in front of machines or transportation from one machine to the next is reduced to a minimum. The cost-consuming stock piling of semi-finished parts is reduced.

Increased flexibility
Set-up times for MILLTURNs are usually less than 30 minutes when changing to another clamping or part. Expensive and complicated fixtures are not necessary.

Increased utilization
Decreasing set-up times are equivalent to a significant increase in productive hours.

Increased quality
As opposed to single-process machining where workpieces have to be clamped several times, complete machining saves clamping time and costs and at the same time avoids clamping and adjustment errors.

▶ M80 MILLTURN / 4500 mm

One of the most important highlights was the laser technology that was presented on the M80 MILLTURN. WFL made use of a laser on the turning-boring-milling unit for carrying out laser welding, laser hardening and additive manufacturing. A high-performance laser with a 10 kW unit was used for performing diode lasering of the highest efficiency. Typical applications for the laser hardening include hardening of gear tooth flanks, bearing areas and contact areas.

Additive Manufacturing

The other important technology that can be carried out with the laser is additive manufacturing. Here, one can also utilize powder with the high-performance laser head on the turning boring milling unit for producing the workpiece. The laser head is automatically changeable. Important applications for this feature are building of wear-protection layers and repair of wear areas. Through this, one can reach high build-up rates and minimize distortion.

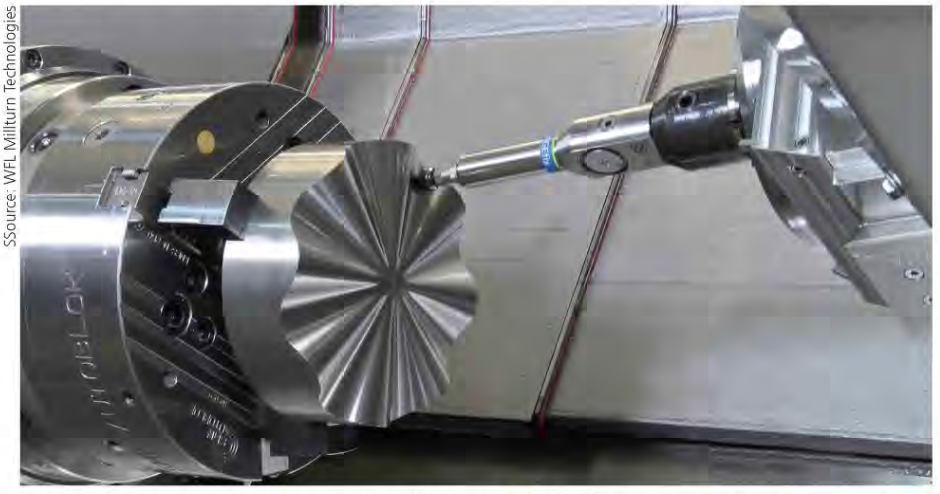
▶ T100 / 6500 mm

WFL also presented the turning lathe — T100. This machine has a main spindle drive with drive power ranging from 40 kW up to 100 kW. Workpieces with up to 15 tonne in weight can be clamped and machined inside. The big bore slide can be optionally upgraded, and also has driven tools for the tool turret.

▶ M120 MILLTURN / 6500 mm

The M120 MILLTURN is optimized, especially for titanium machining, and used for the manufacturing of aerospace landing gears. In this machine, a separate big bar slide was implemented. Furthermore, the tool can be interchanged with a big boring bar with up to 2200 mm in length and a max diameter of 176 mm for special internal machining operations. Additionally, the Ultra High Pressure Coolant (UHPC) system was also presented at the meet. This system is used for internal machining operations that have to be accurate. In this case, the coolant with a maximum pressure of 350 bar is pressed through the tool itself while carrying out the machining operation.

SSource: WFL Millturn Technologies



With machine hammer peening, WFL offers a technology for improving surface roughness and increasing surface hardness.

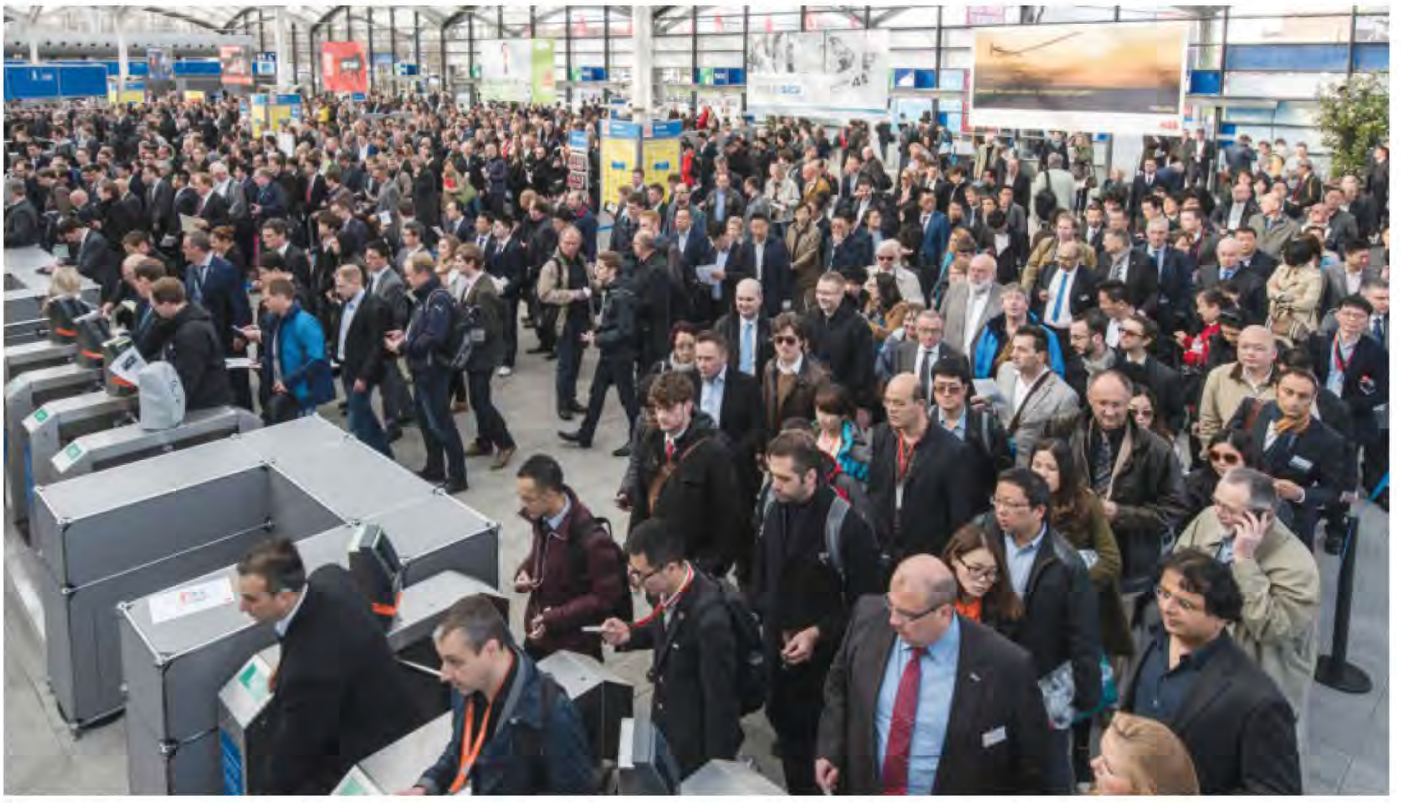
▶ M150 MILLTURN / 8000 mm

The M150 MILLTURN is the biggest machine in the WFL machine range with a 8000 mm turning length and a maximum diameter of up to 1480 mm.

Innovation— the way ahead...

With this high-tech-product portfolio, complex workpieces in nearly all sizes can be manufactured efficiently at low costs. New technologies and innovations in the field of complete machining presented at the WFL Technology Meeting offered a promising outlook into future applications. Indeed, speed and cost efficiency in innovation is the way ahead! **MMI**

Source: Deutsche Messe AG



HANNOVER MESSE 2015 attracted more than 220,000 trade visitors including 70,000 visitors from foreign countries.

HANNOVER MESSE 2015 – Revolutionizing the Industry

HANNOVER MESSE 2015 established new trends in the manufacturing industry, thus making it a 'have-to-attend' event for industry players. Here, visitors witnessed factories of the future — Intelligent Factory — taking tangible shapes and at the same time also observed various dimensions of Industry 4.0. Moreover, India made an impressive mark at the fair. Here is a brief report of the event.

HANNOVER MESSE, one of the biggest industrial trade fairs in the world, is a platform to witness the latest technologies around the world under one roof. This year's edition, which took place from April 13–17, 2015, as well was no exception to this. The participating companies emphasized on various aspects such as digitization of manufacturing, human-machine collaboration, innovative subcontracting solutions and intelligent energy systems. HANNOVER MESSE 2015 attracted more than 220,000 trade visitors including 70,000 visitors from foreign countries.

Talking about the display at the show, Member of the Managing Board, Deutsche Messe, Dr Jochen Köckler said, "HANNOVER MESSE 2015 has made it clear that Industry 4.0 has not only arrived but it has touched upon every segment of the industry. Digital integration is becoming a key aspect of modern manufacturing, and this trend is set to continue at a rapid pace."

Compiled by:
Swati Deshpande
Associate Editor
Vogel Business Media India
swati.deshpande@vogel.de

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

HANNOVER MESSE

At the event, Industry 4.0 was a popular concept that was showcased through guided tours, forums and events.

Trends

During the show, around 6,500 companies from 70 countries showcased various technologies for tomorrow's

production plants and energy systems. Robots were also displayed prominently at the fair. With their captivating demonstrations of speed, precision and power, these robots certainly turned to be eye candies for the audience. Also, in order to strengthen robot-human collaboration, many companies eliminated protective barriers and showcased robots standing alongside human co-workers as versatile team players handling monotonous and physically demanding tasks. Hence, a new trend in the field of robotics was observed at the fair.

Grand inauguration

This mega trade fair was inaugurated by the Prime Minister Narendra Modi where he stated, "We are creating a stable economic environment that inspires confidence at home and abroad."

He further emphasized on the government's new initiatives such as the ease of doing business. "We are eliminating unnecessary regulations and simplifying our procedures. Also, use of digital technology will help us eradicate multiple approvals and endless wait. We will guide you and walk with you in your projects. Furthermore, we have set up 'Invest India' and country desks in it that will be networked to the states. We will nurture innovation and protect your intellectual property," Modi added. Simultaneously, he also touched upon various other initiatives such as economic stability, creating world-class infrastructure, scope of foreign direct investment, etc.

India made a strong impression at the high profile event by promoting its 'Make in India' campaign. Visitors at HANNOVER MESSE 2015 were amazed with the country's confidence, innovation and fresh outlook towards the manufacturing industry.



Source: Deutsche Messe AG

Innovative solutions displayed at HANNOVER MESSE 2015.

Brand India

The country succeeded in positioning itself as an upcoming industrial nation, with more than 400 companies displaying their goods and services at the show. India's objective was to encourage foreign companies to invest in the country, and to encourage Indian enterprises to form even closer partnerships with their German counterparts.

Speaking about India's participation at the event, Chairman, EEPC India, Anupam Shah said, "HANNOVER MESSE 2015 has been a tremendous success for India in every aspect. As the Partner Country at one of the world's largest engineering fair and under the dynamic leadership of the Prime Minister Narendra Modi and Commerce & Industry Minister, Nirmala Sitharaman, Indian companies were able to showcase their technical skills, engineering capabilities and human resources before a global audience."

Conclusion

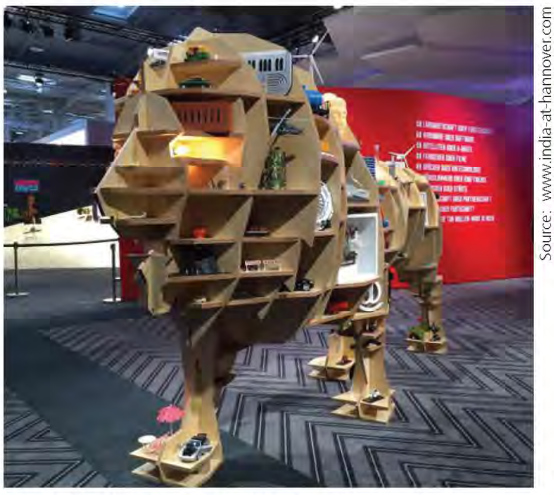
In a nut shell, the event did not only offer an opportunity for companies to display their capabilities but also served as a learning platform. This is the beauty of the show. It helped companies to make business as well as stay updated on the numerous upcoming trends of the industry.

The next edition of HANNOVER MESSE is scheduled to take place from April 25–29, 2016. **MMI**



Source: Deutsche Messe AG

Visitors keenly looking at the displayed solutions.



Source: www.india-at-hannover.com

India Pavilion at HANNOVER MESSE.

Moving the World: One Innovation at a Time

Do you remember that feeling when you were a child walking into a toy store—having your heart set on that one toy only to be tempted by all the others in the numerous aisles at the shop. Well, I had the same experience when I visited the Schaeffler booth at the HANNOVER MESSE. Read on to know more about what the company has in store for various industries through its constant innovation.

Schaeffler has had its presence in the Indian market for around 50 years and have catered to all the major industrial sectors in the country. The company which has three brands under its umbrella, viz., Luk, INA and FAG, has a strong focus on research and development (R&D). In fact, the company's Vadodara site in India was recently certified to become a Schaeffler Technology Center (STC). This is testament to the value the company sees in investing in India.

Chief Executive Officer, Schaeffler AG, Klaus Rosenfeld averred on the same, "We have a strategy of 'In the region, for the region' and hence are committed to provide solutions in India based on the need and potential need we see in the market. Hence, the STC in India is one of the many ways in which we will continue to grow in the Indian market. The availability of a high degree of technical expertise and comprehensive rolling bearing knowledge is thus ensured for the entire Indian region."

Adding to this President and CEO, Schaeffler India, Dharmesh Arora mentioned, "Schaeffler is planning to invest $1.7 million in India by 2017, towards increasing our market share in not only existing industrial sectors but also venturing into sectors that we have not yet ventured into. Year-on-year we have been growing between 15–20 per cent, and this is owing to the comprehensive knowledge we have, we will be able to bring about solutions that will cater to future needs."



Nedra Pereira
Deputy Editor
Vogel Business Media India
nedra.pereira@vogel.de

India – a site with a future

India has more than 18 million newly registered vehicles annually, and this makes it the world's second largest market for motorized two-wheelers. The company advises that out of every five Generation C ball bearings manufactured, four are installed in a scooter or motorcycle after delivery. These bearings are manufactured in Savli, India with the same high quality standards available as those in Western European Schaeffler plants.

DIGITAL VERSION

To access this article online scan the **QR Code** OR visit our website and type the article headline in the **SEARCH** box

Moving the World

Tomorrow's mobility today

As a leading global high-tech company, Schaeffler also develops market-specific concepts for fulfilling regional environmental standards and enables its customers in all regions to comply with future emission standards. For this purpose, demonstrator vehicles suited to the market were developed for each region, for example, the concept vehicle 'Efficient Future Mobility India' with electronic clutch management. The electronic clutch allows for the driver to maneuver the car efficiently by changing the gears without having to strain the clutch pedal in traffic and makes it a semiautomatic car.

The company also carries out comprehensive studies on various aspects of mobility such as customer demand and behavioral patterns and has identified developments in future mobility requirements across different regions of the globe. It has come up with four specific areas of future mobility that represent the challenges and measures to help overcome these challenges. These are an assessment of the whole energy chain, new mobility ideas for cities, resource-efficient, interurban mobility, and eco-friendly drive systems. Some of these solutions or advancements were featured at the company's booth at Hannover.

A bird's eye view of the massive Shaeffler booth at HANNOVER MESSE showcasing its latest range of products and technologies.



Source: Schaeffler AG

A glance @ Schaeffler

India centric innovations

I was given a comprehensive booth tour by Vice President Product Management, Needle

Roller Bearings Schaeffler Technologies AG & Co KG, Michael Krüger. And I was shown all the technologies that help mobility on the roads including the concept car for India, which has already been spoken about, and the concept motorcycle, which includes technologies such as wet clutch, one way clutch and low friction ball bearings, which will bring about not only ease of driving but also increase the longevity of the motorcycle.



"We have a strategy of 'In the region, for the region' and hence are committed to provide solutions in India based on the need and potential need we see in the market."

Chief Executive Officer, Schaeffler AG, Klaus Rosenfeld



"Schaeffler is planning to invest $1.7 million in India by 2017, towards increasing our market share in not only existing industrial sectors but also venturing into sectors that we have not yet ventured into."

President and CEO, Schaeffler India, Dharmesh Arora

X-life

In industrial plants and machines, moving parts are often subjected to extreme demands in terms of load carrying capacity and durability. For instance, damage done to the rolling and plain bearings could lead to total failure of technical systems. General Manager, Marketing Technical Services, FAG Bearings India Ltd, Sreepal Rajan Singh Negi informed, "This is why Schaeffler has developed high-quality rolling bearings with the X-life seal of quality, which contribute to achieve a high level of cost-effectiveness and productive use of resources."

These bearings are characterized by a higher rating and operating life—the result of higher dynamic load ratings than those of current standard products. This produces better and more even surfaces and contact surfaces, which means optimized load distribution in the bearing.

FAG TORB

A new bearing design was showcased at HANNOVER MESSE—the FAG TORB toroidal roller bearing. This single-row rolling bearing in X-life quality features an angular adjustment facility and is equipped with long, slightly crowned rollers. It thus combines the angular adjustment capabilities of a spherical roller bearing with the axial displacement of a cylindrical or needle roller bearing. The axial displacement is compensated inside the toroidal roller bearing, so only small and, therefore, negligible frictional forces occur. TORB bearings allow the operational reliability and cost-effectiveness of locating/non-locating bearing supports to be significantly increased. The TORB range of toroidal roller bearings from FAG comprises eight series, and comes in two designs for varying load capacities. They are dimensionally stable up to an operating temperature of 200°C as standard.

Smart Actuators

A product that caught my eye was the planetary screw drive (PWG). The company is expanding its range of spindles through the addition of a screw drive that features a new design and functional principle and delivers both a high load carrying capacity and a high power density. The technical characteristics of the PWG mean that it can also be used as a substitute for hydraulic drives.

Automatic Bicycle

Another innovation of special mention that I had the opportunity of testing was the automatic bicycle gearshift system—FAG VELOMATIC. The specifications can also be monitored on a Smartphone that attaches to the handlebar of the bicycle. The gear system automatically senses the speed of the bicycle and changes the gear according to the inclination of the road and speed of the bicycle. It makes riding a bicycle a dream with its intelligence, precision, efficiency, and sheer flexibility. Although an excellent innovation, this product will not be seen in the Indian market any time soon.

Unfortunately, for me, pages would run out explaining each and every innovation and demonstration I witnessed at the booth. But a few to note are the ***Active magnetic bearings,*** which form a modular system, and cater to applications in gas and steam turbines, electric motors, compressors, and chillers. Different types of ***coatings*** that can be applied through different methods depending on client specifications and applications, and ***Software*** to help customers design, check and learn about the right bearings for their applications, the list is endless.

In conclusion

It was evident, from the entire tour, how vital it is for the company to come up with solutions for its customers. With such an unending need to invent, learn, unlearn ways to improve its product range, one can only image what other innovations the company will bring up in the coming years! MMI

Source: Schaeffler AG



Mechatronic modules optimized for the customer's needs.

Automotive Engineering Show 2015

Automotive Engineering Show to create a collaborative platform for technology and auto sector players in the auto hub of Chennai.

Dedicated to expanding existing capacities and developing new production units, the Indian automobile industry witnessed investments to the tune of ₹22,000 crore in 2012. Three years on, the sector continues to look at boosting investments in developing new products, diesel and hybrid engine manufacturing facilities and refining operating units to retain its edge in one of the world's most competitive markets in the segment.

Market pulse

With the automotive sector being a kingpin of the government's 'Make-in-India' vision, initiatives on ease of doing business, enhancing global competitiveness and skill development will drive in investments. The automotive manufacturing market is expected to touch ₹511,000 crore by 2016. Continuation of excise duty concessions and increased allocation of incentives along with faster adoption and manufacturing of electric vehicles will also support auto demand.

The Automotive Engineering Show

Setting up a business platform to pull in potential buyers of high-quality automotive technologies and create a meeting ground for technology and auto sector players, the Automotive Engineering Show has announced its 9th edition in the country's largest automotive and auto components manufacturing hub — Chennai. The trade fair is slated to take place from July 7–9, 2015, at the Chennai Trade Centre.

An automotive plant is a perfect example of a highly collaborative place where different sub systems work together in perfect tandem. As a credible industry platform, Automotive Engineering Show has allowed technology solution providers to display relevant solutions for automotive plants. This covers design, development, planning and manufacturing, automation systems, factory control and sensors, assembly line system integrators, wielding, material handling systems, paintshop integrators, etc.

Compiled by:
Ahlam Rais
Senior Sub Editor
Vogel Business Media India
ahlam.rais@vogel.de



Source: Messe Frankfurt Trade Fairs India Pvt Ltd

The show allows technology solution providers to display relevant solutions for automotive plants.

DIGITAL VERSION

To access this article online scan the QR Code OR visit our website and type the article headline in the SEARCH box

AES

Automated solutions

With companies now moving towards modernizing manufacturing plants, adoption of end-to-end automated solutions will gain prominence. Any application that involves high-mix, high-volume assembly requires flexible automation. With this, the use of ICT, sensors and related technologies in automotive manufacturing is set to expand. IT has also fuelled the surge in manufacturing whereas dimensional metrology being the cornerstone of modern quality assurance systems will find vast adoption and application in almost every aspect of automotive manufacturing.

Networking zone

Having established itself as the nation's leading event focusing exclusively on the automotive factory, the Automotive Engineering Show 2015 in Chennai will cover all aspects of technology in modern automotive manufacturing plants. By bringing forward high-efficiency technologies and innovations and facilitating interaction between manufacturers and OEMs, the Automotive Engineering Show will serve as an important platform in taking this sector to the next stage.

A comprehensive seminar and 'Technology Zone,' accompanying the trade fair will feature key Indian and international experts from renowned companies to address challenges and queries on specific technology lines such as RFID and machine vision in the modern manufacturing space.

With all factors for business and learning in place, Automotive Engineering Show Chennai is something no serious auto industry professional would miss. MMI

Source: Dürr Ecoclean











To learn more, visit us at MACHINE TOOL EXPO New Delhi August 20–23, 2015. Booth E107 / Hall 10

Adding Value through the Parts Cleaning Process

Dürr Ecoclean develops and markets products, systems and service solutions for technical cleaning applications. Automotive industry customers and their suppliers, as well as part and component manufacturers from the wider industrial market — from the medical and optical equipment sectors to aircraft construction — appreciate our technology and our services.

Minio 85C: the compact, low-cost industrial cleaning solution that takes up minimal space

As highly effective cleaning media non-halogenated hydrocarbons allow safe and economical use of solvents for removing oils, greases and swarf between or after manufacturing processes. Both small companies, with comparatively low production capacities, and large companies, with decentralized cleaning stations benefit from the sophisticated process technology of the Minio 85C.

Many different processing options are available with immersion, vapor degreasing and vacuum drying providing optimal conditions to meet the requirements expected of modern manufacturing processes in terms of quality and functionality. This small system, with a suitably sized basket, is generally performed with double filtration (flood tank – working chamber and working chamber – flood tank).

The system with German engineering is locally manufactured in India.

Advantages

- Sophisticated, redundant safety equipment
- Standard application non-flammable solvents, other solvents possible
- Virtually emission-free operation, enviornmentally-friendly process
- Cooling water-free operation due to air-cooled condensers
- Water cooling possible
- Vacuum distillation for optimum solvent treatment
- Double filtration during filling and emptying of the working chamber

Always close to you — cleaning trials in Pune

In order to find the right solution for your cleaning task and parts, we offer cleaning trials on a range of Dürr Ecoclean systems with different media (aqueous, hydrocarbon, polar solvents and chlorinated hydrocarbons) at our local Test Center in Pune.

Source: Dürr Ecoclean

Dürr Ecoclean India – A Division of Schenck RoTec India Ltd., 198/1 Genesis Building, Fourth Floor, Dhole Patil Road, Pune-411001.
Sales Contact: Phone: +9120 30585002-04 E-mail: info.india@ecoclean.durr.com www.durr-ecoclean.com

Hobbing Machine



EMAG offers KOEPFER K 300 Hobbing Machine, a universal solution, for gear production. This machine can be used for machining everything from pinion shafts module 1 to helical gears module 4. Also, it can handle a wide range of materials including steel alloys, aluminum, brass, bronze, plastics, etc. The construction of the K 300 machine is designed to deliver the highest component quality. The hobbing head is inclined by 45°. As a result, it offers optimal chip flow conditions, which play an important role in the quality of the component produced.

▸ **EMAG Holding GmbH**
T: +49 (0) 7162/174658, E: misgro@emag.com
www.emag.com

Vices



High pressure ARNOLD MAT vices maintain their length irrespective of the size of the part. It is ideally used in machining centers. Due to the fact that all the surfaces are grinded, the user can count with a parallelism and perpendicularity of 0.02 mm. It is possible to place the vice in different working positions, that is, support on the base, side or on the head vertically, which makes the vice suitable to work in horizontal and vertical machining centers.

▸ **Fresmak ARNOLD Precision Engineering Pvt Ltd**
T: +91 (080) 67654250, E: info.india@fresmak.com
www.fresmak.com

Measuring Machine



The Mitutoyo Contracer CV-3200 Series offers significantly increased productivity by combining fast traverse speeds, with many time saving and accuracy enhancing innovations. The machine features a precision arc-scale built into the Z1 axis (detector). This allows the arc trajectory of the stylus tip to be read directly, which helps minimize errors. Moreover, the machine is equipped with an innovative detector arm that lowers work-piece interference while expanding the range in the Z1 (detector) axis. The Z1 detector is also equipped with a collision auto-stop to assure measurement safety even during high-speed movement.

▸ **Mitutoyo South Asia Pvt Ltd**
T: +91 (011) 26372090, E: delhi@mitutoyoindia.com
www.mitutoyoindia.com

Mini Insert



Recent developments in casting and forging technologies and the huge popularity of the Mill2Rush line has driven TaeguTec to include an economical, pressed type 6-corner positive mini insert in the powerful Mill2Rush line for 90° machining. The 6NKU 04 insert is optimally suited for low depths-of-cut conditions. The cutter is designed with a rigid clamping system and a higher number of teeth to accommodate the smaller double-sided 6NKU 04 insert. Additionally, its high positive helical cutting edge offers smooth machining with low cutting forces and is available in end mill, modular and face mill types.

▸ **TaeguTec India P Ltd**
T: +91 (080) 27839111, E: sales@taegutec-india.com
www.taegutec-india.com

Heavy-duty Bushing



ContiTech has developed a heavy-duty bushing for Volvo Construction Equipment (Volvo CE) which can be used in challenging applications. Mounted on the rear axle, it ensures optimum damping in articulated haulers of the full-suspension (FS) type. Volvo CE approached ContiTech Vibration Control in order to substantially reduce maintenance work on this component. ContiTech Vibration Control acted as an engineering partner and assisted Volvo CE in developing a bushing with a much longer life.

▸ **ContiTech Antriebssysteme GmbH**
T: +49 (0) 511938-1304, E: antje.lewe@contitech.de
www.contitech.de

Tool Presetting



The new UNO series from DMG Mori combines optimum ergonomics with extensive technical equipment. In addition to a touch display, RFID chip system and post processors for all standard controls, the range of potential equipment now also includes completely new options such as the autofocus and automatic drive. The UNO autofocus automatically focuses on the cutting edge to be measured. This option proves enormously time-saving for tools with several cutting edges around the circumference.

▸ **DMG Europe Holding AG**
T: +41 (0) 58 6115434, E: info@dmgmori.com
www.dmgmori.com

SPECIAL DATES NEED NOT APPEAR JUST ONCE EVERY YEAR.





DELHI
MACHINE TOOL EXPO 2015
20 - 23 AUGUST
Pragati Maidan, New Delhi

AHMEDABAD
MACHINE TOOL EXPO 2015
24 - 27 SEPTEMBER
Mahatma Mandir, Gandhinagar

Delivered by the organizer of IMTEX

BOOK YOUR STALL TODAY!

Brought to you by IMTMA, the organizer of IMTEX, Delhi Machine Tool Expo 2015 & Ahmedabad Machine Tool Expo 2015, are the perfect platforms to exhibit the latest in machine tool technologies, products & services.

The regions' biggest machine tool expos will attract large and MSME companies from various industries in the manufacturing sector.

Participate and make the best use of this opportunity.

Organizer
Indian Machine Tool Manufacturers' Association

Bangalore - T: +91 80 6624 6600 F: +91 80 6624 6661
Gurgaon - T: +91 124 4014101 F: +91 124 4014108
Pune - T: +91 20 6410 0182 / 64100183
Email : info@mtx.co.in

www.mtx.co.in

Supported by
एन. एस. आई. सी.
NSIC
ISO 9001 : 2008

India's Platform for the Laser and Photonics Community

LASER World of PHOTONICS INDIA

SEPTEMBER 9-11, 2015, PRAGATI MAIDAN, NEW DELHI

Organised by

Messe München International

STEP ON INDIA's ONLY LASER AND PHOTONICS INDUSTRY PLATFORM

LASER World of PHOTONICS INDIA is India's Number 1 laser and photonics gathering. It revolves around innovative products as well as their industrial solutions and applications, which reflect actual developments in the industry around the world. LASER World of PHOTONICS INDIA gathers international and local market leaders from the industry, display products – from component to system solutions including all processes - addresses all important target groups and thus creates the best communication and business environment for both sides.



EXHIBITORS

LASER World of PHOTONICS INDIA's exhibitors are manufacturers and service providers in the field of laser and optics, components and applications.



- Systems for different application sectors
- Laser systems for production engineering
- Optical measurement systems
- Illumination and Energy
- Optical information and communication
- Biophotonics and medical engineering
- Imaging
- Security
- Lasers and optoelectronics
- Optics
- Sensors, test and measurement
- Manufacturing technology for optics
- Services

UNIQUE TRADE FAIR TO WITNESS

- Witness solutions for all manufacturing industries
- Experience the full spectrum of the photonics industry - including components and manufacturing equipment
- Co-located with India's # 1 Electronics Hardware Shows - electronica India and productronica India 2015

VISITORS



Target Industries

- Automotive
- Aviation / Aerospace
- Clothing / Garment
- Contract manufacturing / Job shops
- Photovoltaic
- Semiconductors
- Electrical engineering / Electronics
- Jewellery
- Precision mechanics / Optics
- Science / Research
- Telecommunications
- Toolmaking / Machine Manufacturing
- Healthcare / Medical Technologies
- Signage / Printing

For more information contact: MMI India Pvt. Ltd. | Rima Dodhia | +91 9833220450 | rima.dodhia@mmi-india.in | www.world-of-photonics-india.com

Schunk, a leading provider of clamping technology and gripping systems, has numerous innovative products in its portfolio. Here are some of its offerings:



Compact Mechatronic Module

When competing for the highest speed, flexibility, reliability, and efficiency in production automation, mechatronic modules are rapidly gaining importance. The SCHUNK ERS rotary modules were developed for rotary movements in the medium load range. One of the most compact mechatronic rotary module on the market is available in a unit size of 170 with a height of 66 mm, achieving a nominal moment of 5 Nm, and a maximum moment of up to 17 Nm. It is used for implementing flexible and compact system concepts.



Gripping Modules

The electrically driven and energy-efficient SCHUNK EGN and EZN 2-finger parallel or 3-finger centric grippers combine the range of options and robustness of their pneumatic model with the variability, intelligence and sensitivity of mechatronic gripping modules. The most unique exterior feature is the multi-tooth guidance, which minimizes wear and guide play, and ensures high stability and loading capacity of the guideways. The brushless servo motor is used as a drive, and its rotation is translated into a stroke movement through a spindle nut.



Web Tool

SCHUNK eGrip is the world's first fully automatic 3D design tool for additively manufactured gripper fingers. It needs only minimal data for automatic calculation of the optimal 3D contour, pricing, and delivery time. The license-free, browser-based web tool reduces the design and ordering time for customized gripper fingers to only 15 minutes. With the intelligent software, the user has to upload the workpiece or component as a STEP or STL file and enter additional specific information, such as the weight, installation position of the gripper and finger length.

Rotary Gripper Unit

The SCHUNK EGS electric rotary gripper unit defines a new efficiency class in the handling of small components and facilitates the switch to pneumatic-free handling solutions. It is the first unit to combine electric gripping and rotation in a single compact housing. The low-maintenance and affordable module paves the way for highly efficient pneumatic-free systems. Coupling of the gripping and rotation gear, allows continuous rotation without an electric loop feed-through. Since the module is equipped only with stationary, brushless and non-wearing 24 VDC motors and requires no moving cables, slip rings or shock absorbers, it offers increased process stability and availability in assembly systems.



Compensation Unit

In order to prevent the force build-up on the machine spindle from becoming too high when the machine tool is self-loading, SCHUNK has developed the GSW-B-AGE compensation unit. It compensates tolerances, inaccuracies in all six degrees of freedom, and simplifies automated joining processes, where the workpieces are to be fixed over bolts or pins. Moreover, the workpieces are pressed with a compensation unit against the fixed jaw of a clamping force block, until the clamping process is finished. The compensation unit is equipped with an interface to the gripper on one side, and on the other with a 20 mm shank, which can be clamped in many conventional toolholders.



POWERED BY SCHUNK®

Schunk Intec India Pvt Ltd
Tel: +91 (80) 40538999
E-mail: info@in.schunk.com
www.schunk.com

IMPRINT

MMI MODERN MANUFACTURING INDIA

INDIA

PUBLISHER
Managing Director/Publisher: **Paresh I Navani**
paresh.navani@vogel.de

EDITORIAL STAFF
Editor-in-Chief: **Soumi Mitra**
soumi.mitra@vogel.de
Associate Editor: **Swati Deshpande**
swati.deshpande@vogel.de
Deputy Editor: **Nedra Pereira**
nedra.pereira@vogel.de
Senior Sub Editor: **Ahlam Rais**
ahlam.rais@vogel.de
Manager, Creative & Production: **Shanmugam Pillai**
shanmugum.pillai@vogel.de
Web and Graphic Artist: **Snehal Pillai**
snehal.pillai@vogel.de

SALES & MARKETING
General Manager - Sales & Events: **Ashok Chand Thakur**
Tel.+91(0)22 25644469, Mob.+919819944543, ashok.thakur@vogel.de

Advertising Managers:
Preeti Mishra Mob.+91 9820488203, preeti.mishra@vogel.de
Dinesh Mishra Mob.+91 9833076669, dinesh.mishra@vogel.de
Advertising Services, Technical: **Shanmugam Pillai**
Tel. +91 (0)22 25644469, shanmugum.pillai@vogel.de

ADMINISTRATION
Office Manager: **Kruti Bharadva**
kruti.bharadva@vogel.de
Admin Officer: **Ekta Jagasia**
ekta.jagasia@vogel.de
Database Services: **Deepali Sachdeva**
deepali.sachdeva@vogel.de

PUBLISHED AND PRINTED BY PARESH ISHWAR NAVANI ON BEHALF OF VOGEL BUSINESS MEDIA INDIA PRIVATE LIMITED PRINTED AT PENTAPLUS PRINTER'S PVT. LTD. 20/1, 4TH MAIN, 5TH CROSS, INDUSTRIAL TOWN, RAJAJI NAGAR, BANGALORE-560044, KARNATAKA, AND PUBLISHED FROM 32, NEW UNIQUE INDUSTRIAL ESTATE, DR. RP ROAD, OPP JAWAHAR TALKIES, MULUND(W), MUMBAI, MAHARASHTRA-400080 EDITOR: SOUMI MITRA

Publishing frequency: 6 times per year
Manuscripts: No liability is accepted for unsolicited manuscripts.
They will be returned only if accompanied by sufficient return postage

HEADQUARTERS GERMANY

EDITORIAL STAFF
Group Publisher: **Hans-Jürgen Kuntze**
hans-juergen.kuntze@vogel.de
Editor-in-Chief: **Frank Jablonski (MM)**
frank.jablonski@vogel.de
Editor-in-Chief: **Barbara Schulz (ETMM)**
barbara.schulz@vogel.de

SALES & MARKETING
Head of Sales: **Winfried Burkard**
winfried.burkard@vogel.de
Sales Manager: **Karin Grimm**
karin.grimm@vogel.de

CO-OPERATION PARTNERS:
INDIAN MACHINE TOOL MANUFACTURERS' ASSOCIATION (IMTMA), BENGALURU
Director General: **V Anbu**
Senior Director: **Balasubramanian** bala@imtma.in
GARDNER BUSINESS MEDIA, CINCINNATI, USA
President: **Rick Kline, Sr.**
Publisher: **Travis J. Egan**
Chief Editor: **Mark Albert** malbert@mmsonline.com

PUBLISHER
Proprietorship and Personally liable partner: Vogel Business Medien Verwaltungs-GmbH, interests held: Max-Planck-Str 7/9, 97082 Wuerzburg, Germany limited partner: Vogel Medien GmbH & Co. KG, Max-Planck-Str 7/9, 97082 Wuerzburg, Germany
CEO Vogel Media Group: **Stefan Rühling**

Sources of supply: Orders can be placed directly with the publisher or with any book store. No claims for the supply of back copies or reimbursement of subscription fees can be entertained for nondelivery of the magazine for reasons beyond the publisher's control. Cancellation is possible after the minimum subscription period of one year, giving two months notice to the end of a quarter Bank Germany: HypoVereinsbank, Wuerzburg, Germany (BLZ 790 200 76), Kto.-Nr. 326 212 032, IBAN: DE 65 7902 0076 0326 2120 32, SWIFT: HYVEDEMM455. Place of fulfillment and jurisdiction: Wuerzburg, Germany. The editors assume only press law responsibility for contributions bearing the name or signature of the author.

Copyright: Vogel Business Media India Pvt. Ltd. subsidiary of Vogel Business Media GmbH & Co KG. All rights reserved. Reprints, digital processing of all kinds and reproduction only by written permission of the publisher. Photocopies of published items are permitted for in-house purposes if each copy is authorized with a revenue stamp of the applicable tariff rate available from the Verwertungsgesellschaft Wort, Abt. Wissenschaft, in D-80336 Munich, Goethestr. 49. ***Any views, comments expressed are the sole responsibility of the respective authors. Modern Manufacturing India and Vogel Business Media India and/or Germany and their co-operation partners do not undertake any responsibility, implied or otherwise. Any actions, legal or otherwise, OR causing any form of harm (physical or otherwise) made by permanent, temporary and honorary staff will be their sole responsibility! The Editor-in-Chief is responsible for this publication as per provision of the PRB Act 1867

Disclaimer: Every effort has been taken to avoid errors or omissions in this magazine. In spite of this, errors may creep in. Any mistake, error or discrepancy noted may be brought to our notice immediately. It is notified that neither the publisher, the editor or the seller will be responsible in respect of anything and the consequence of anything done or omitted to be done by any person in reliance upon the content herein. This disclaimer applies to all, whether subscriber to the magazine or not. For binding mistakes, misprints, missing pages, etc., the publisher's liability is limited to replacement within one month of purchase. © All rights are reserved. No part of this magazine may be reproduced or copied in any form or by any means without the prior written permission of the publisher. All disputes are subject to the exclusive jurisdiction of competent courts and forums in Wuerzburg, Germany only. While care is taken prior to acceptance of advertising copy, it is not possible to verify its contents. Vogel Business Media India Pvt. Ltd. cannot be held responsible for such contents, nor for any loss or damages incurred as a result of transactions with companies, associations or individuals advertising in its newspapers or publications. We therefore recommend that readers make necessary inquiries before sending any monies or entering into any agreements with advertisers or otherwise acting on an advertisement in any manner whatsoever.

Vogel Business Media

ADVERTISERS' INDEX

ACE MICROMATIC GROUP	www.acemicromatic.net	10
ACMEE	www.acmee.in	27
APEX PRECISION AGENCIES	www.apexprecision.co.in	17
BFW		21
BHARAT BIJLEE	www.bharatbijlee.com	13
CERATIZIT	www.maxidrill900.de	12
CG TECH	www.cgtech.com	7
CHING HUNG MACHINERY & ELECTRICAL INDUSTRIAL CO	www.chmer.com	62
DMG MORI	www.dmgmori.com	38-39
DOOSAN INFRACORE INDIA	www.doosaninfracore.com/machinetools	45
ELLE GREEN	www.ellegreen.in	41
EMO MILANO 2015	www.emo-milan.com	53
Fresmak ARNOLD Precision Engg	www.fresmak.com	63
HAAS AUTOMATION	www.HassCNC.com	5
HYUNDAI WIA INDIA	www.hyundai-wia.com	79
IMTMA – ISMT 2015	www.imtx.co.in	75
JUNKER	www.junker.in	49
JYOTI CNC AUTOMATION	www.jyoti.co.in	3
KENTURN NANO TEC CO LTD	www.kenturn.com	43
KORLOY	www.korloy.com	6
MARPOSS	www.marposs.com	55
MASTERCAM	www.mastercam.com/rollout	15
MITSUBISHI ELECTRIC	www.mitsubishielectric.in	31
MMI – Laser Photonics	www.world-of-photonics-india.com	76
MITUTOYO SOUTH ASIA PVT LTD	www.mitutoyoindia.com	19
PMT MACHINE LIMITED	www.pmtmachines.com	23
RIELLO PCI INDIA	www.riello-ups.in	9
SCHUNK	www.in.schunk.com	2
TAEGUTEC	www.taegutec-india.com	80
TROOSTWIJK	www.TroostwijkAuctions.com	22
WIKUS INDIA PVT LTD	www.wikus-india.in	25
XI'AN KITAMURA PRECISION	www.xknc.com/eng	11



Knowledge for YOU!

SUBSCRIBE NOW!

Successful together

Yes, I wish to subscribe to MODERN MANUFACTURING INDIA for
1 Year ₹ 500
2 Years ₹ 900

Indian machine tools goes global with a bi-monthly publication **MODERN MANUFACTURING INDIA (MMI)** brought to you in partnership with IMTMA and Gardner Business Media Inc.

Its comprehensive editorial contents cover the following topics...

Turning, Milling, Cutting Tools, Tool Holders, Measurement, EDM, Drilling, CAD/CAM Software, CNC Machine Controls, Forming Machines, Sawing, Laser Cutting, Welding, Joining, Stamping, Sheet Metal Handling, Fastening, Drilling, etc...

Personal Details

Company _____
Name _____
Department _____ Designation _____
Company Address _____
_____
_____
City & Postcode _____ Country _____
E-mail _____ Contact No. _____
Industry _____

Subscription Payment Details

Please find enclosed cheque / DD No.: _____
Drawn on (Name of bank & branch): _____
_____ Dated: _____
For Rs. _____ favouring **Vogel Business Media India Pvt. Ltd.** payable at Mumbai. (Please add ₹50 for Cheques drawn outside Mumbai)

Sources & Terms of Supply: Orders can be placed directly with the publisher. No claims for the supply of back copies or reimbursement of subscription fees can be entertained for non-delivery of the magazine for reasons beyond the publisher's control.

For any assistance on subscriptions, please contact: Kruti Bharadva - kruti.bharadva@vogel.de

HYUNDAI MOTOR GROUP

HYUNDAI WIA

Solutions For Industry

Perfect, Precision, Progressive Machine Technology

HYUNDAI WIA Machine Tools pours its whole efforts on every process of production and distribution, covering from self-reliant designing to manufacturing and after sales service.



E160 Series

- 45° slanted one-piece high rigidity bed structure
- Unbeatable rapid travel speed: **30m/min**
- The most reliable high speed servo turret is adopted: **0.1sec/step**
- Compact design, able to install within a narrow space.



F500D/600D

- High-precision P4 Angular Contact Bearing main spindle
- Dual Tables for high productivity
- Latest Servo ATC for fastest tool exchange in the class
- Latest SIEMENS 828D Controllers for various software support



HS Series

- Heavy Duty Motion Roller Guidways
- Powerful Dual Wound Spindle Motor
- Heaviest Maximum load in its Class
- Big Plus Spindle (BBT)

en.wiamachine.co.kr

Machine Tools Line-Up

- CNC Lathe (Horizontal & Vertical)
- Drill Tap Centers
- Vertical Machining Centers
- Horizontal Machining Centers
- CNC Boring Machines

HYUNDAI WIA India Office

#4/169, Rajiv Gandhi Salai, (OMR), Kandanchavadi,
Chennai - 600 096, Tamilnadu, India

T: +91 44 32901719 **M:** +91 9840999094

e-mail. sales@hyundai-wia.com, service@hyundai-wia.com

TaeguTec
Member IMC Group

Industry applications



MILL·RUSH



>>> SUPER HIGH POSITIVE INSERT WITH 3 CUTTING EDGES

- 3 Helical cutting edges for 90 degree milling
- High relief for ramp-down applications
- Unique angled screw clamping gives increased insert stability
- Internal coolant supply



TaeguTec India Pvt. Ltd.

Plot Nos.119 & 120, Bommasandra Industrial Area, Phase 4, Bengaluru 560 099, India

☎ +91-80-2783-9111 🖷 +91-80-2783-9123 ✉ sales@taegutec-india.com 🏠 www.taegutec.com

TaeguTec
Member IMC Group