TAGMA TIMES
NEWSLETTER

(Technical Info. on Die, Moulds & Toolroom)

Volume: XXVI / No. 02 (Private Circulation for Members Only) October 2019

White Goods:

Sunrise Sector for Indian Tooling Industry

TAGMA INDIA TOOL AND GAUGE MANUFACTURERS ASSOCIATION OF INDIA

tagma.mumbai@tagmaindia.org www.tagmaindia.org

PUROHIT STEEL
GLOBAL STEEL SOLUTIONS

NLMK Verona

Are you Looking Tool Steel for Toy making

CATEGORIES

- Plastic Mould Steels
- Hot Work Tool Steels
- Cold Work Tool Steels
- High Speed Steels
- PM Grade Steels
- En Series Steels
- Machined & Ground Plates

FEW PRODUCT RANGE

- DIN 1.2311 AISI P20 ~ Prehardened (28-32 HRC)
- DIN 1.2738 Prehardened (28-32 HRC)
- VR 300 - 1.2738 Mod Prehardened (28-32 HRC)
- VR 400 - 1.2738 hh~ Prehardened (38-40 HRC)
- VR 400 ESR
- DIN 1.2085* Prehardened (28-32 HRC)
- DIN 1.2316* Prehardened (28-32 HRC)
- VR16HH*
- DIN 1.2083 ESR* Prehardened (28-32 HRC)

*** Marked steels are Non - Corrosive

DON'T WORRY, WE HAVE GOT YOU COVERED.

Choose from a range of high-end VR tool steel for your Toy making mould needs

For More Information :

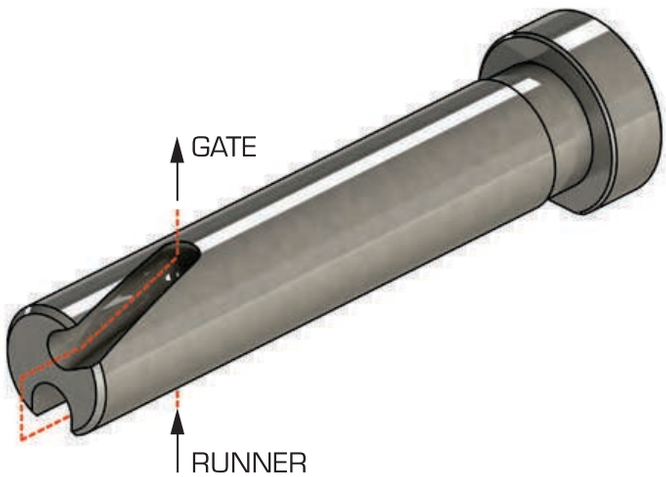
7798815678 / 25678 / 35678

info@purohitsteels.com

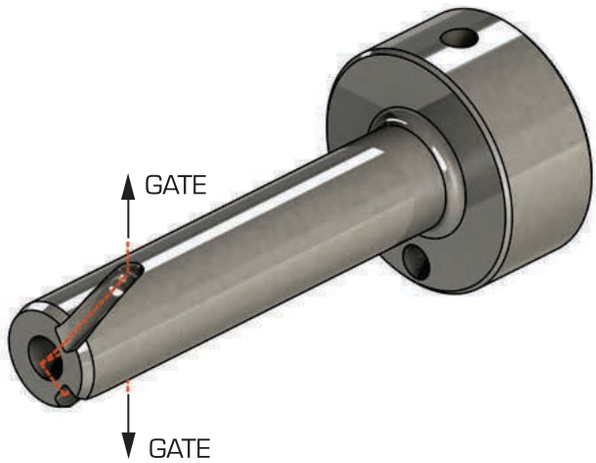
BÖHLER DEUTSCHE EDELSTAHLWERKE
Providing special steel solutions

www.purohitsteels.com

AUTOMATIC IN-MOULD EDGE-GATE CUTTING



CUTTING PINS



CUTTING SPRUE BUSHES

Advantages of **ALMO**, UK, Cutting Pins & Cutting Sprue Bushes

- Simple, reliable & efficient technology with interchangeability of parts.
- Clean and automatic degating of cold runners.
- Clean ejection of runner from mold enhancing the reliability of operation
- Large gates enable reduction in injection pressure & improved packing resulting in higher part quality.
- Applicable for single & multi cavity molds.
- Can be successfully employed for a wide range of polymers from PP to GF engineering plastics.
- Very cost effective.

SPRUE PULLER + RUNNER SLOTS

MADHU®

Madhu Machines & Systems Pvt. Ltd.

Registered Office:
Vadodara.
91-265-2353886
info@madhu-group.com

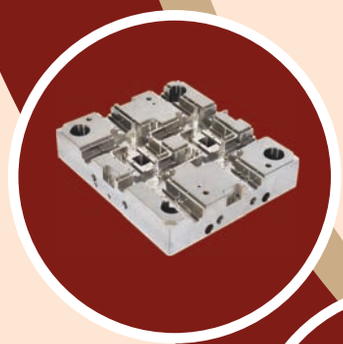
Factory:
Bengaluru.
91-80-28360131
mms@madhu-group.com

SERVING THE PLASTICS INDUSTRY 35 Years

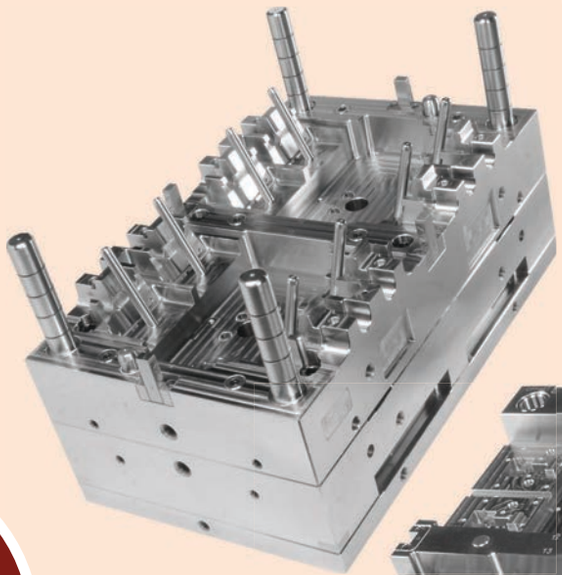
www.madhu-group.com

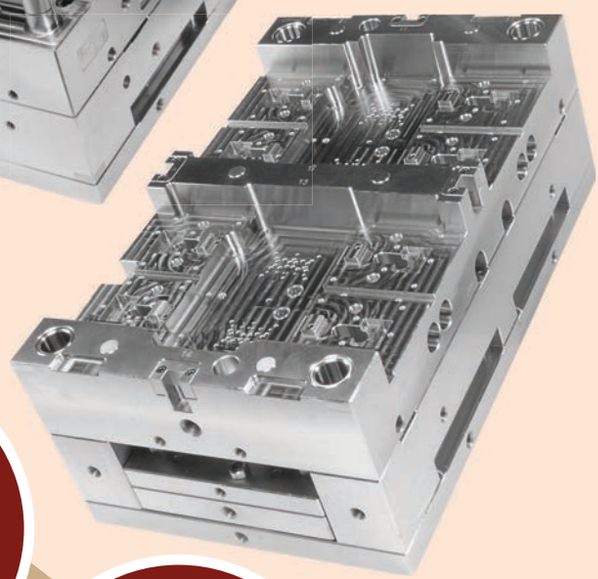
Innovative Solutions

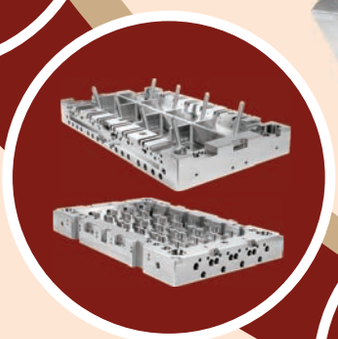
WORLD CLASS PRECISION MOULD BASES

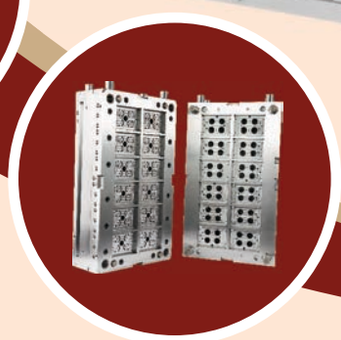


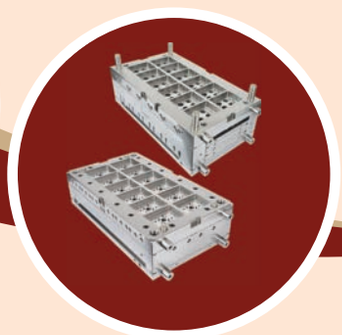
Are you looking for
Precision engineering...
Machining competency...
Timely delivery..











PMT™

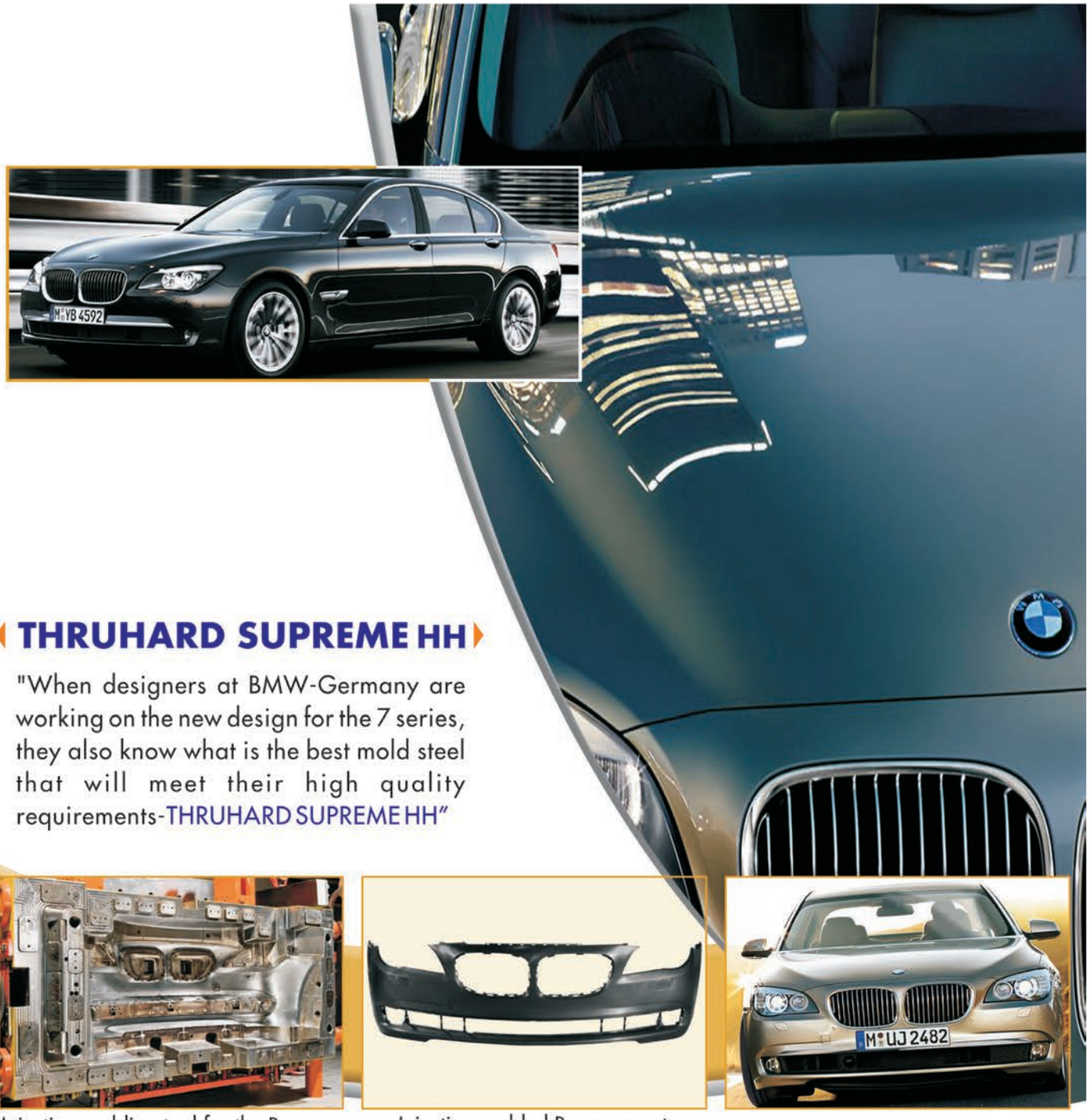
PRECISION MOULD TECH

Your Success Partners

No. 159, 3rd Main Road, Industrial Town, Rajajinagar, Bengaluru - 560 044
Phone : +91-080-23405544, +91-080-23503142 Fax : +91-080-23402760
E-mail : info@precisionmouldtech.com Website : www.precisionmouldtech.com

PCK-Buderus | Special Steels

Buderus | Edelstahl



THRUHARD SUPREME HH

"When designers at BMW-Germany are working on the new design for the 7 series, they also know what is the best mold steel that will meet their high quality requirements-THRUHARD SUPREME HH"

Injection molding tool for the Bumper

Injection molded Bumper part

PCK Buderus (India) Special Steels Pvt. Ltd.

Corporate Office
PCK HOUSE,
New No. 84, Old No.13,
South West Boag Road,
T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638
Fax : + 91 44 2434 1181
Email : info@pck-buderus.com

Pune Stock Holding Center
Machining Division
New Gat 754, Pune Nagar Road
Wagholi, Pune - 412 207
Tel : + 91 20 2705 1958, 3254 6767
Fax : + 91 20 2705 0700
Email : punewh@pck-buderus.com

Ludhiana Stock Holding Center
C-I, Industrial Area C, Jaspal Main Road,
Kanganwal, Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

Kolkatta Office
Flat No. 403, Vishal Apartments,
4th Floor, No. 18,
Prince Anwar Shah Road,
Kolkatta - 700 033
Tel : + 91 33 2417 1078
Email : info@pck-buderus.com

www.pck-buderus.com

CONTENTS

In Focus

White Goods:
Sunrise Sector for Indian Tooling Industry 20

Leaders Speak

25

Isao Sugiyama
Dy General Manager – Sales,
NT Tool Corporation, Japan

32

David M Wolfe
Vice President – Sales &
Marketing, Vargus Ltd

32

Ashok Makhija
Managing Director, Vargus-India

34

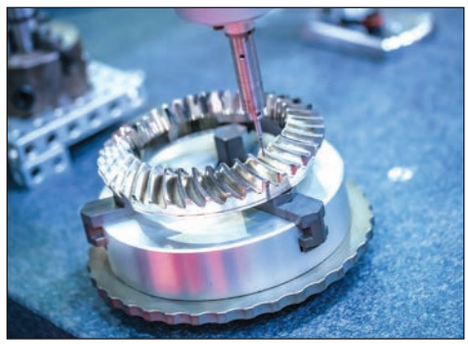
Jiten Shah
Managing Director,
Ashna Enterprise

Case Study

DORNIER GmbH obtains higher productivity and flexible production using TopSolid'Cam 38

HARTING Improves Tool Quality, Reduces Scrap, and Delivers Moulds Faster with Cimatron 42

Techno Focus



45

Chatter in Milling

Tech Talk

Is It Time To Replace My CNC Machine? 48

Editorial 08
Industry Update 10
Event 52
Ad Index 54

Editorial & Design Team

Nishant Kashyap
Editor

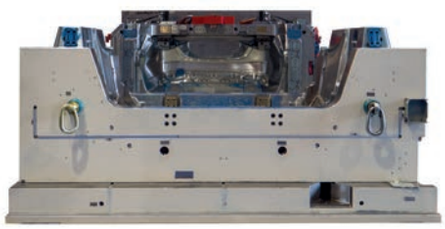
Debarati Das
Dy. Editor

Amol Padhye
Design & Operations

Abhijeet Bhowmik
Sr Technical Writer

THE BEST SOLUTION TO VALIDATE YOUR MOULDS AND DIES

MILLUTENSIL spotting **presses provide the most advanced** technology for testing and proving the quality of your moulds and dies



Italian Technology Center India

Italian Technology Center
(Raretech Projects Pvt. Ltd.)
MILLUTENSIL - Marketing Office
Office No. 003 - Lunkad Sky Station,
Near HDFC Bank, Datta Mandir Chowk,
Viman Nagar, Pune - 411 014
Telephone: +91-20-41226111
Skype: itc.pune
marketing@itc-india.in - www.itc-india.in

MILLUTENSIL®
SINCE1955

Plant Via delle Industrie, 10
26010 Izano (CR) - Italia
info@millutensil.com
millutensil.com

Office Corso Buenos Aires, 92
20124 Milano - Italia
Tel. +39 02 29404390
Fax +39 02 2046677

TAGMA Executive Council

PRIVATE CIRCULATION FOR MEMBERS ONLY

EXECUTIVE COUNCIL 2017-2020

PRESIDENT

Mr. D. K. Sharma
Godrej & Boyce Mfg. Co. Ltd. (Tooling Divn.) Mumbai - 400 079
Email: president@tagmaindia.org

VICE PRESIDENT

Mr. D. Shanmugasundaram
S & T Engineers (P) Ltd. Coimbatore - 641 005.
Email : shan@stengineers.co.in

MEMBERS

Mr. D. M. Sheregar
Devu Tools Pvt. Ltd. Mumbai - 400 072.
Email: sheregar@devutools.com

Mr. Gopalakrishnan T.S.
Multiple Special Steel Pvt. Ltd. Bangalore - 560 099.
Email: gopalakrishnants@gmail.com

Mr. Mayank Varma
JBM Group, Gurgaon - 122 002.
Email: mayank.varma@jbmgroup.com

Mr. Parveen Satija
Stitch Overseas Pvt. Ltd. Gurgaon - 122 004.
Email: parveen@stitchtools.com

Mr. Paresh Panchal
Cam Tools Mumbai -400 072.
Email: paresh@digitaltoolroom.com

Mr. Sree Prakash R.
Mastercraft Engineers Pvt. Ltd. Bangalore - 560 099.
Email: prakash@mcraft.net

CO-OPTED MEMBER

Mr. D. Ravi
Classic Moulds & Dies, Chennai - 600058
Email: ravi@classicmoulds.com

SECRETARIAT

Mr. Bhaskar Kanchan - Director
Mrs. Deepali Pandav- Deputy Director

FOUNDER MEMBERS

Anil C Kilachand
A R A Shaikh
J N Godrej
P N Rao
N Reguraj
S C Kalyanpur
S Samu
Vijay N Kulkarni

REGISTERED OFFICE

C/o. NTTF
23/24, Peenya Industrial Area, II Phase,
Bangalore - 560 058.
Tel.: 080-28397196 • Fax : 080-64509966
Email : tagma.bangalore@tagmaindia.org
Contact: Mr. Ashok Shetty - Secretary
Cell.: +91 98453 97780

CENTRAL OFFICE

A-33, NandJyot Indl. Estate, Safed Pool,
Mumbai - 400 072.
Tel.: 022-28526876 / 28508976
Cell.: +91 96534 27396 / 97694 07809
Email : tagma.mumbai@tagmaindia.org

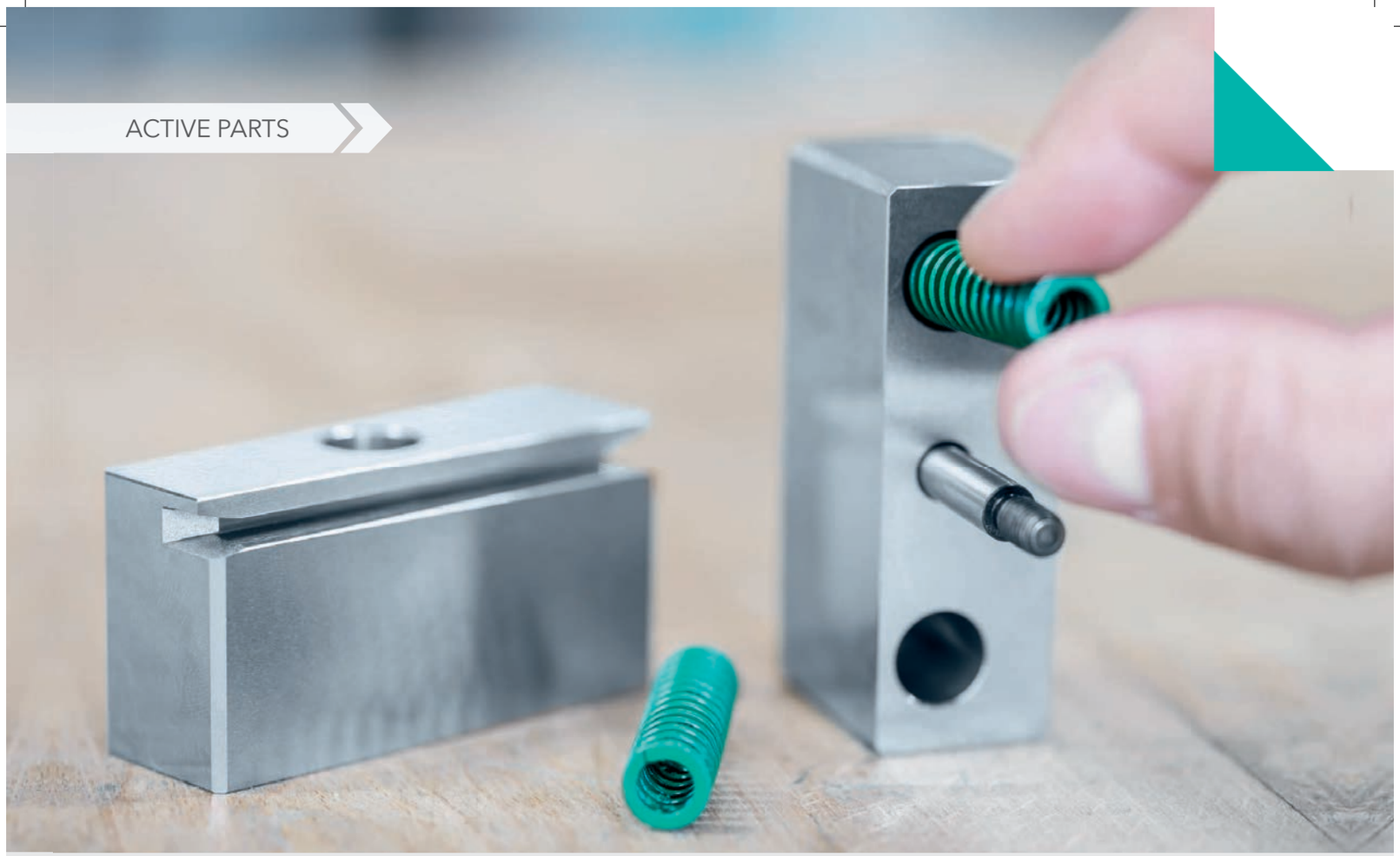
PUNE OFFICE

Plot A-22/2, Chakan Industrial Area,
Phase II, M.I.D.C, Village Khalumbre 410501
Tal. Khed, Dist. Pune
Cell.: +91-95276 89700
Email : tagma.pune@tagmaindia.org

COIMBATORE CHAPTER

C/o. S & T Engineers (P) Ltd.
22, Vasanth Nagar, Trichy Road, Singanallur,
Coimbatore - 641 005.
Tel.: 0422-2590810 • Fax : 0422-2573629
Email : tagma.coimbatore@tagmaindia.org

EDITED & PUBLISHED BY : D. K. SHARMA FOR TAGMA INDIA at A/33, Nand Jyot Indl. Estate, Safed Pool, Mumbai - 400 072.
Tel.: 2852 6876 • 2850 8976 / Cell.: 96534 27396, 97694 07809



COMPACT STRIP GUIDE

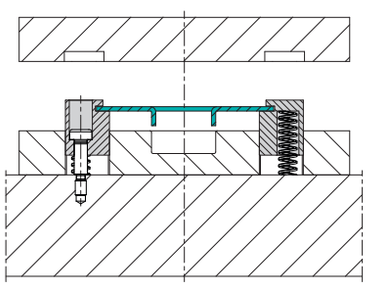
HOW YOU BENEFIT:

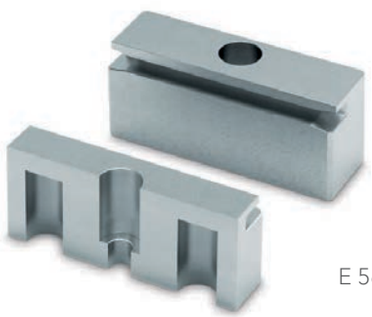
» **Easy installation** and removal from the working plane

» **Dimensions optimally coordinated** to our springs and plate thicknesses

» **Symmetrical design** makes installation on both sides possible

AVAILABLE EXCLUSIVELY AT MEUSBURGER





E 5634

meusburger
SETTING STANDARDS

Meusburger India Pvt Ltd.
T +91 80 283655-29
sales@meusburger.in

EDITORIAL

GOOD Times Ahead

Hope you had a wonderful Diwali celebration!

Diwali, one of the most loved and celebrated festivals in India always rings in several exciting offers, especially in the white goods segment. Almost all the leading companies come up with attractive offers during this time of the year. With the growing disposable income of the millennials, the demand for white goods and consumer durables are on a fast growth lane. This has led India to become one of the biggest markets for white goods in the world.

While sales of these products skyrocketed this Diwali, have you wondered how many parts were used to manufacture these electronic items.

More than Diwali offers, we must delve deeper and understand the business opportunities that the industry brings to manufacturers. Today, India is one of the most lucrative destinations in the world for white goods manufacturing and most of the white goods manufacturers are expanding their operations in India to have a fair share in the market. Adding to this the fact that Indian appliance and consumer electronics market is expected to reach US$ 48.37 billion by 2022. This is also an excellent opportunity for the Indian mould makers.

How?

A refrigerator requires about 350 sets of mould; a fully automatic washing machine requires about 200 sets of mould; an air conditioner requires almost 20 sets of plastic mould; a single colour TV requires a total of 140 sets of mould.

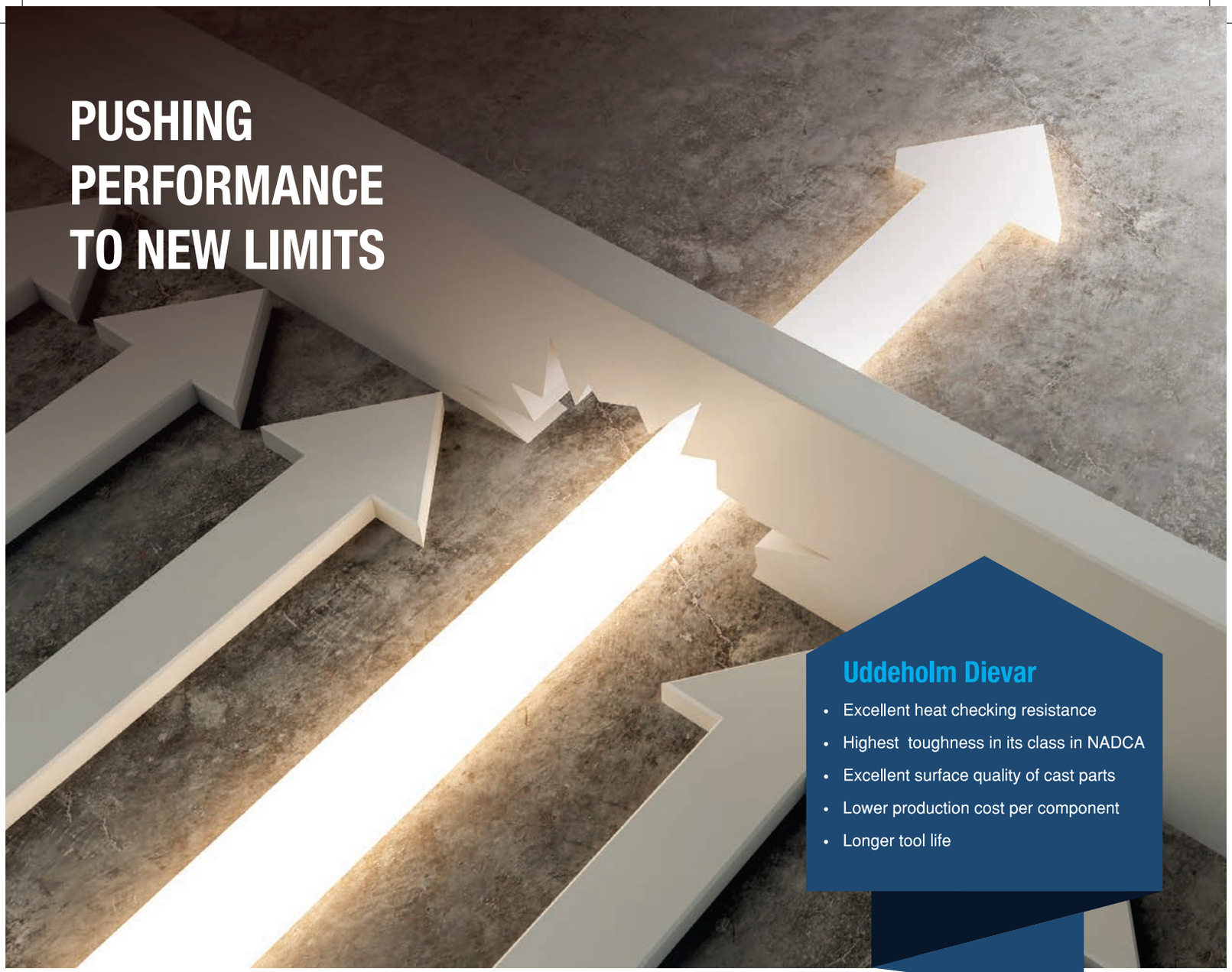
This clearly indicates that white goods are an industry that mould makers should focus on. With uncertainties revolving around the automotive industry, white goods could be one of the best alternatives to diversify their businesses.

Our October edition provides you with some insights into the white goods industry and much more.

Are there any other industries with an equally promising future? Think about it and share with us. It might be the key focus of our next issue.

Best Wishes,

Nishant Kashyap
Editor
nishant@antechmedia.in

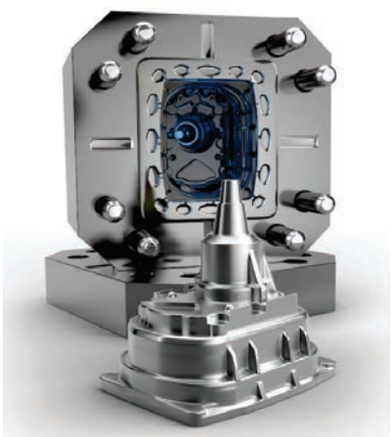


NEW LEVEL OF TOUGHNESS

Developed for large dies and inserts

It is human nature to stick to what we know and be couscous, as the saying goes "if it's not broken why fix it" but if we never pushed the boundaries of what we could achieve we would never make progress. At Uddeholm we believe in this process of constant improvement and development which is how we are now able to manufacture tool steel which has been pushed to new levels of toughness and performance never seen before, **Uddeholm Dievar 25 Joules!**

This new tool steel development from Uddeholm gives you the perfect balance between toughness and heat checking solutions for HPDC (High-pressure die casting) and other applications.



Uddeholm India | T - +91 22 27577441

info@uddeholm.in | www.uddeholm.in

UDDEHOLM
a voestalpine company

Since 1668 we have been providing a wide range of innovative tools steel solutions for our customers in demanding segments. Our dedicated employees work in almost ninety countires and together we deliver improved competitiveness to clients worldwide. Welcome to uddeholm, #1 in high performance tool steel.

MeitY to push for more sops to lure electronic makers

THE Ministry of Electronics and IT (MeitY) will push the finance ministry to approve additional incentives to attract electronics manufacturers into the country, according to two government officials.

The sops include interest subsidy on loans, credit guarantees for plant and machinery and renewal of the Electronic Manufacturing Cluster (EMC) scheme after the earlier one ended last year, they said. The incentives will help India wean manufacturers away from countries such as China, officials said, especially after the government said that new manufacturing units would be taxed at15%. "We have a window of 6-12 months to attract companies which are relocating to India, so we need to move fast," a senior government official said, referring to the ongoing Sino-US trade conflict that is pushing some companies to move from China.

MeitY is following up with the finance ministry regarding its proposals, which were sent earlier in the year, the second official said. MeitY had proposed three new schemes after the Modified Special Incentive Package Scheme (MSIPS), EMC and the Electronic Development Fund, designed to aid India's manufacturing push in electronics, ended last year. MeitY and the industry say that more incentives are needed for India to compete with established manufacturing powerhouses China, Vietnam and Thailand.

Source: Economic Times

iPhone may soon make India its manufacturing hub

APPLE aims to make India one of its key global production hubs. This will include assembly of the latest flagship iPhones in sync with worldwide release schedules and help as a de-risking strategy against the bulk of its production being located in China, currently in a trade spat with the US, said people with knowledge of the matter.

The company has just started commercial production of the iPhone XR locally at the Foxconn facility near Chennai after undertaking trials for several week, reflecting a move up the manufacturing value chain in India. Following this, Apple plans to start making the latest iPhone 11 series. Making the iPhone XR involves a higher level of technical skill, the executives said. Apple will export the devices to other markets after having tested the waters with the export of iPhone 6s and 7 models to Europe in the past few months.

The US and China are said to be entering into a trade deal under which Washington is to suspend a proposed tariff escalation on Chinese imports that would have hit Apple, which assembles most its iPhones in that country. The ramp-up of India manufacturing will allow Apple to have an alternative base and derisk its production strategy, said the executives cited above. The Foxconn plant is Apple's biggest manufacturing bet in India since it will have the capability to manufacture the top iPhone models that sell for more than Rs 1lakh each. Earlier this year, Foxconn Technology Group founder Terry Gou had said the iPhone will go into mass production in India this year and will include newer models.

The government is said to have been pushing Apple to manufacture its entire line-up of smartphones in India, especially the newer ones, since this would help the Make in India initiative win over more investors. Apple is also preparing to set up company-owned retail stores and start direct online sales in India after the government relaxed FDI norms for single-brand retail in August.

Source : Economic Times

Purohit Steel inaugurates new plant in Vasai

ESTABLISHED in the year 1964, Purohit Steel India Pvt Ltd, a leading company that deals with plastic mould steel, cold work / hot work tool steel, special steels and services, etc recently inaugurated a new hi-tech facility in Vasai on October 14th, 2019. With over 5 decades of experience, the company has grown, as one of the trusted organisations capable of providing the widest range of tool steel with proper technical support to match the right requirements to all sizes of customers.

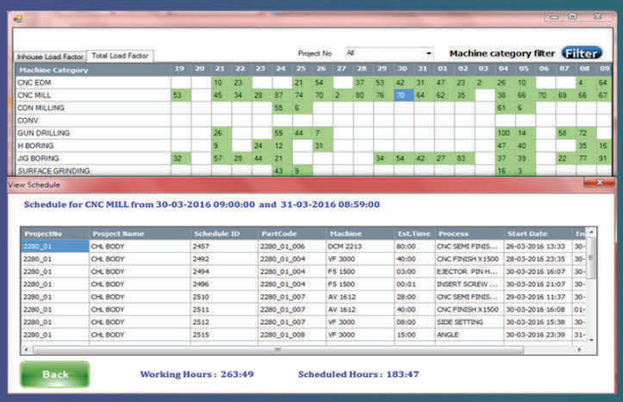
"Since inception, our aim has always been to bring best-in-class cost-effective tool steel from the world to India and provide quality & reliability to tool makers. We have been successful in doing that and now with our new facility we will be able to improve our delivery, post-sales support and increase varities," says Pramod Purohit, Managing Director, Purohit Steels India Pvt Ltd.

The new facility is equipped with 30+ bandsaw machines, 12 EOT cranes (max wt 30tons), machining facility, test & quality inspection facility and warehouse to stock a large quantity of tool steel. "With this new Facility in full swing., we aim to double our production, shorten the delivery time and increase value added services as per customer needs," added Purohit.

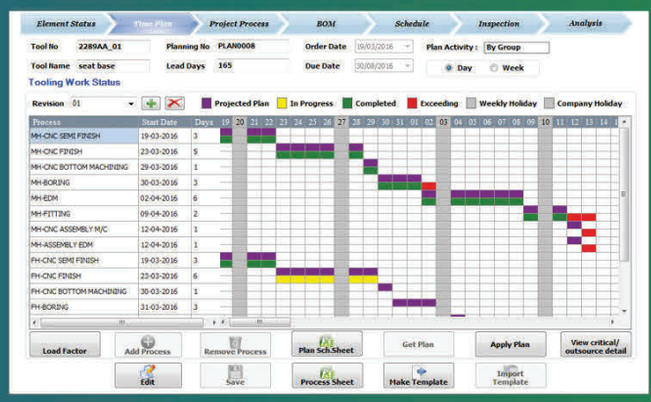
"With the help of bigger sawing machines, we can now supply any size of blocks for large size mould such as the bumper, IP, wheel- arch etc. Thus supporting Indian Tool Makers and support the Government of India's Make in India initiative", concludes Purohit.

SHOP PLAN

The turn key solution to the Mother Industry



As an Integrated Platform, Shop Plan effectively explores the concurrent load of the machines in the floor to take decision whether to go for In-house utility or to move outsourcing as and when required.



The core module of any Project Management (PM) will be based on its capacity planning. In shop plan too, the user can do forward planning and backward planning to manage the capacity towards the end delivery.

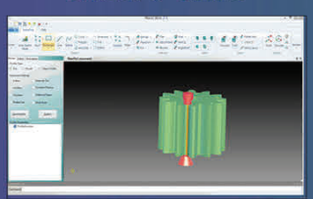
ADVANTAGES

- User friendly GUI
- Ease of use
- Macro CAD viewer
- CRM
- Customer & Supplier portal
- Tool tracking
- Fast analysis of workload
- Cost estimation
- Expand knowledge of key business data
- Resource Planning Management
- Machine efficiency analysis
- Task Entries
- Procurement planning.
- Out-source tracking
- Inventory management.
- Job work & Spare processes
- Schedule based machining
- Rework management
- Alert & event system
- Early decision making
- Project cost analysis
- Work history recording system
- Notes & CAD files management
- Calendar Task Pinning

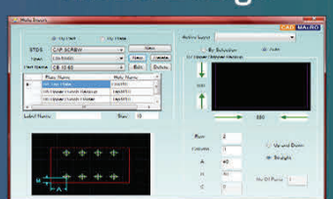
The Return on Investment

Our other prodcuts:

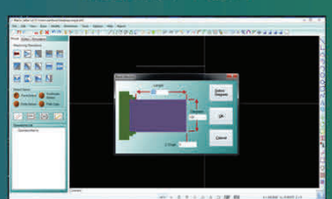
Macro Wire



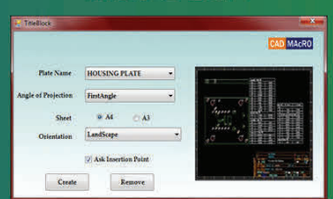
Macro Design



Macro Turn



Macro Dim



Contact us

CAD MAcRO

CAD Macro Design & Solutions Pvt Ltd

33, CREW Building, Sapthagiri Colony, KR Layout, Jafferkhanpet, Chennai – 600 083

Phone – 96000 13015-18, +91 44 43589050 E-mail – info@cadmacro.com

www.cadmacro.com

India to Emerge as EV Two and Three-Wheeler Hub in 6 yrs: Amitabh Kant

NITI Aayog CEO, Amitabh Kant said that India is expected to be a hub for electric two and three-wheeler in the coming six years.

"We were late in making India a hub for mobiles, ICE four-wheelers, but we have to make sure the country becomes the manufacturing hub for two-wheeler and three-wheeler," Kant said at the unveiling of Bajaj Chetak EV.

He further stressed that the lithium battery packs which are now at $176 per kilowatt-hour are expected to come down to $73 per kilowatt-hour in the next three years giving an impetus to lower the cost of electric vehicles. Cost is also expected to be competitive with an increase in sales.

Underlining the future of Indian automobile market which is electric, shared and connected, Nitin Gadkari also resonating with Kant's view of making India.

"We should not miss this bus. Along with Make in India, we should see that India becomes the manufacturing hub for electric automobile manufacturing. This is difficult, but not impossible," Gadkari said.

According to him, the electrification adoption and implementation are swift and the latest policies by government are formulated with keeping in mind the capital cost reduction along with production and power. This will boost manufacturing within the country.

Source: ET Auto

Hyundai develops world's first machine learning-based smart cruise control tech

HYUNDAI Motor Group has announced the development of the world's first machine learning-based Smart Cruise Control (SCC-ML), a technology that incorporates the driver's patterns into its self-driving behaviour, creating a custom experience for the driver.

The technology, an industry first, incorporates artificial intelligence (AI) within the Advanced Driver Assistance System (ADAS) feature. The system is planned for implementation in future Hyundai Motor Group vehicles.

"The new SCC-ML improves upon the intelligence of the previous ADAS technology to dramatically improve the practicality of semi-autonomous features," said Woongjun Jang, VP at Hyundai Motor Group. "Hyundai Motor Group will continue the development efforts on innovative AI technologies to lead the industry in the field of autonomous driving."

Smart Cruise Control (SCC) enables an essential self-driving feature and core technology for ADAS: maintaining distance from the vehicle ahead while traveling at the speed selected by the driver. SCC-ML combines AI and SCC into a system that learns the driver's patterns and habits on its own. Through machine learning, Smart Cruise Control autonomously drives in an identical pattern as that of the driver.

Source: Autocarpro

Daimler India starts BS-VI powertrain production

THE first BS-VI heavy-duty powertrain from Daimler India Commercial Vehicles has been rolled out from the Oragadam plant, two-and-half years after the introduction of BS-IV. DICV's start of production comes not only before the government's April 2020 BS-VI transition deadline, but also ahead of their own internal schedule. In 2017, DICV joined a global partnership with Daimler entities in Brazil, Germany and the US with the goal of upgrading key components to BS-VI standards by January 2020.

Satyakam Arya, MD & CEO, said, "Daimler Trucks already has eight years of experience delivering over 14 lakhs BS VI-equivalent vehicles to customers. It is, therefore, no surprise we are again leading the industry in the transition to cleaner-emission commercial vehicles."

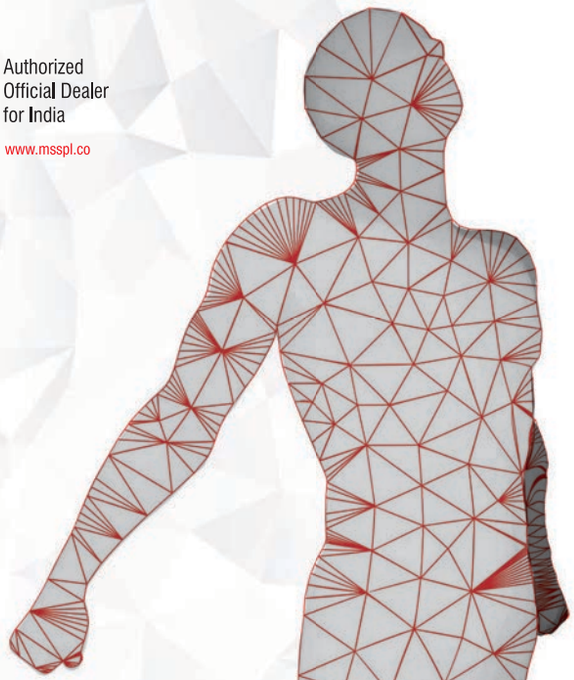
Three months ahead of schedule, DICV is now beginning series production of its BS-VI compliant OM 926 engines and MD 2 Box After Treatment Systems in India. The engine will be offered with two power options (230 HP and 280HP), allowing customers to benefit from the outstanding combination of robustness, parts localisation and fuel efficiency provided by the six-cylinder classic series engines used in the BS-VI range.

SSPL
MULTIPLE SPECIAL STEEL PVT LTD.

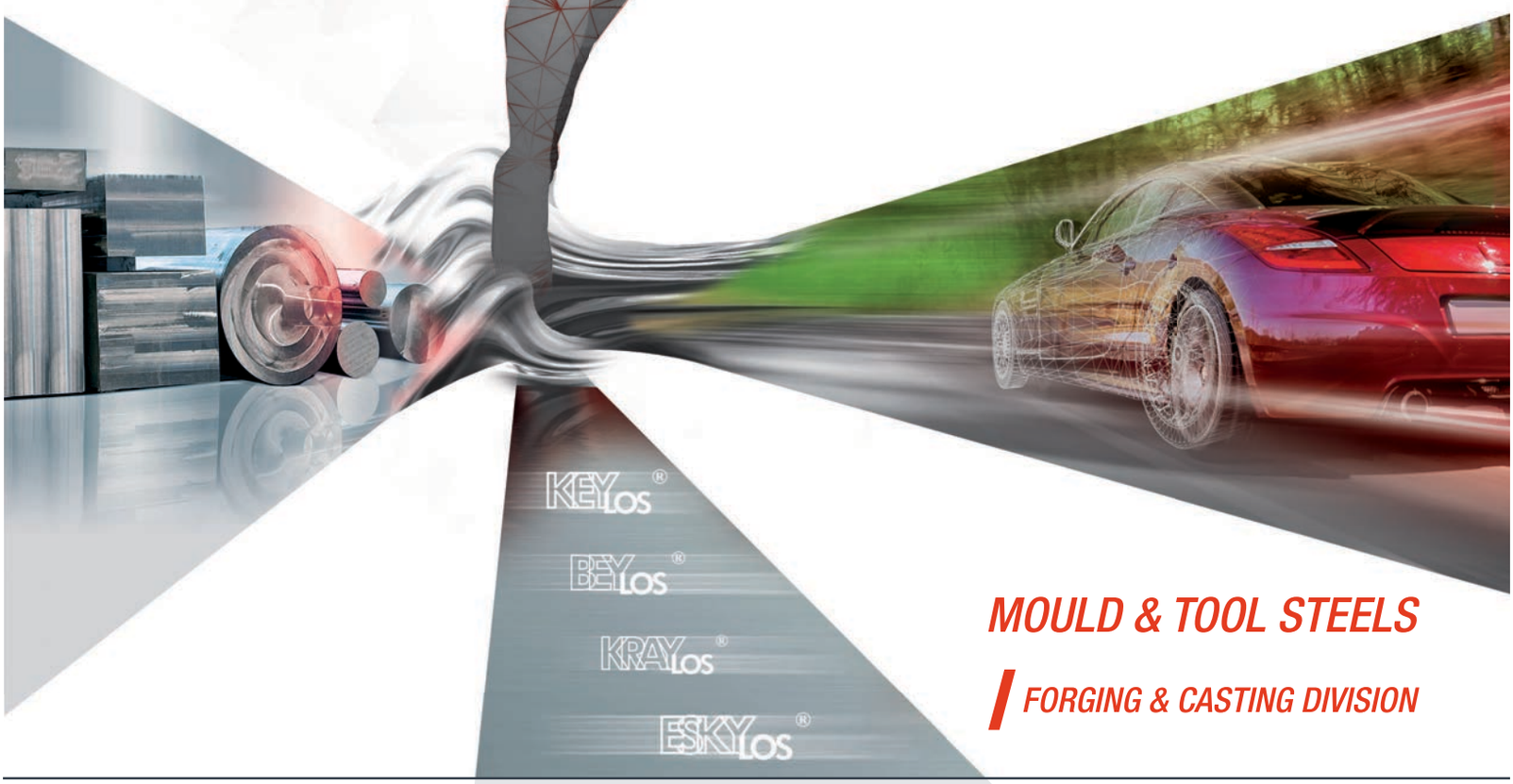
Authorized
Official Dealer
for India

www.msspl.co

GROUP
LUCCHINI RS



INNOVATING FOR INNOVATORS



MOULD & TOOL STEELS

FORGING & CASTING DIVISION

LOOK BEYOND

TAGMA DIEMOULD INDIA-2020

DIE & MOULD INDIA 2020
Visit us at Booth C-03 - Hall No.1

www.LucchiniRS.com

E-Trio Received India's First EV Retrofitting Certification for Sedans and LCVs

E-TRIO has become the first company in India to receive certifications from apex bodies such as ARAI and ICAT to convert the Maruti Suzuki Dzire and Tata ace to electric vehicles. Aside from these two, the company also has a certification for the Maruti Suzuki Alto.

The company has formed a core team of battery experts with patent applications in battery cooling technologies. E-Trio also has plans to supply batteries to other companies and start-ups to nurture growth in the entire EV ecosystem in India.

The company has appointed BharatMobi as its B2C channel partner to address the growing demands of B2C EV conversions. The Maruti Suzuki Dzire and Tata Ace are on the of most popular models in ETS and logistics segments. E-Trio has completed logistics pilots with leading companies and begun production operations. The company also has plans to lease retrofitted cars and LCVs for employee transport and logistics solutions. The company is now working towards getting certification for 15 more vehicle categories.

Continental, 3M To Co-Develop Intelligent Infrastructure Technology

CONTINENTAL has announced that it has entered into a collaborative evaluation partnership with 3M to assess the infrastructure-to-vehicle (I2V) interface between infrastructure-related objects and technologies, and vehicle-related technologies. The infrastructure-related objects and technologies include pavement markings, conspicuity film, signs and other landmarks on or near the roadway environment, which assist in enhancing safety on roadways.

Current infrastructure lacks certain aspects of consistency, uniformity, performance specifications, and maintenance standards that are important for the industry to optimise the perception and localisation capabilities of automated vehicles, the company noted. Continental said that while it is clear that infrastructure optimised solutions are not possible in the short term, its long-term goal is to find a more balanced solution.

This partnership will enable both companies to leverage on their strengths to improve the current transportation infrastructure and work toward the goal of a more balanced and intelligent infrastructure-optimised future solution. The short-term goal is to help increase road safety, while continuing to work toward automated driving solutions, the company observed.

Ralph Lauxmann, Head of Systems and Technology, Chassis and Safety Division, Continental, said a major focus of the company is to ensure its vehicle technology is able to accurately, efficiently and effectively communicate with cities and road infrastructure. Continental is excited to partner with 3M to collaborate on improving overall road infrastructure technology to help increase safety and awareness of the environments and obstacles we drive through daily, he added.

Auto sales slump continues in India

THE slump in auto sales continues in India. As per the latest data released by Society of Indian Automobile Manufacturers (SIAM), the automotive industry in the country produced a total of 14,427,724 vehicles including Passenger Vehicles, Commercial Vehicles, Three Wheelers, Two Wheelers and Quadricycle in April-September 2019 as against 16,645,330 in April-September 2018, a de-growth of 13.32 percent. The sale of Passenger Vehicles declined by 23.56 percent in H1 FY20 over the same period last year. Within the Passenger Vehicles, the sales for Passenger Cars, Utility Vehicle & Vans declined by 30.30 percent, 3.78 percent and 35.46 percent respectively in April- September 2019 over the same period last year.

Commercial Vehicles sales dipped 22.95 percent in the first six months of 2019-20 as compared to the same period last year. Medium & Heavy Commercial Vehicles (M&HCVs) declined by 35.79 percent and Light Commercial Vehicles declined by 14.69 percent in April-September 2019 over the same period last year.

In the same period, three Wheelers sales declined by 6.66 percent when compared to last year. Within the Three Wheelers, Passenger Carrier sales registered a de-growth of 6.37 percent and Goods Carrier declined by 7.98 percent in April-September 2019 over a year ago period.

Two Wheelers sales registered a de-growth of 16.18 percent in April-September 2019 over April- September 2018. Within the Two Wheelers segment, Scooters, Motorcycles and Mopeds declined by 16.94 percent, 15.24 percent and 25.33 percent respectively in April-September 2019 over April-September 2018.

Exports

During April-September 2019, overall automobile exports grew by 1.29 percent. Passenger Vehicles and Two Wheelers exports grew by 4.38 percent and 4.10 percent respectively. But, Commercial Vehicles and Three Wheelers registered a de-growth of 41.58 percent and 11.59 percent respectively in April-September 2019 over the same period last year.

EXSAP MSX TYPE

For High Efficient Machining

Shoulder Roughing to Semi-Finishing

Contact our Authorized distributors for special offer

Achieved high efficient machining in roughing due to combinations of 3D chip breaker with low cutting force and negative relief

YOUR SEARCH FOR WORLD CLASS TOOLS ENDS HERE !!!

DIJET
www.dijet.co.jp

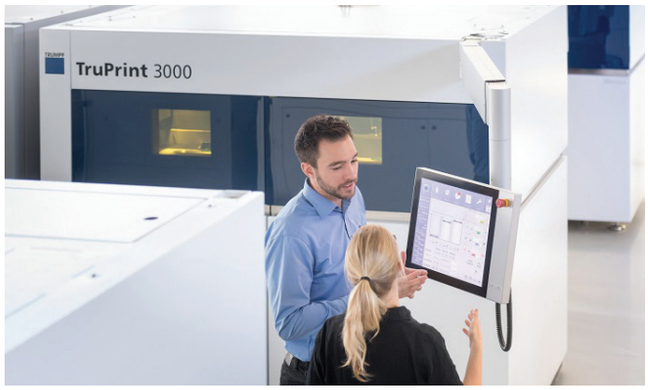
For Further Information Contact:

DIJET INDUSTRIAL CO. LTD.
322, Arcadia, Hiranandani Estate, Patlipada, G.B. Road, Thane (W) 400 607
Tel: 91-22- 4012 1231 / Telefax: 91-22-4100 5361
E-mail: india_office@dijet.co.jp
Website: www.dijet.co.jp

Head Office: Dijet Industrial Co., Ltd.
2-1-18, Kamihigashi, Hirano-ku, Osaka 547 002, Japan
Tel. No. +81 (06) 6794 6437, & 6794 0167,
Fax No. +81 (06) 6793 3930

Trumpf's 3D printers offer sustainable production process for heat-resistant materials

TRUMPF demonstrated how 3D printing is improving manufacturing processes for heat-resistant materials. These materials often consist of the nickel-based alloy Inconel®, which can withstand temperatures of up to 1,000 degrees Celsius without deforming. Inconel® is used in applications such as gas turbines, combustion engines and heating systems, but it is difficult to machine using conventional methods. Milling tools often get stuck, snap off or lose their edge. TRUMPF demonstrated how Inconel® parts can be produced faster, cheaper and at higher levels of quality using 3D printing.



3D printing saves time, materials and tools

Unlike material removal methods such as milling and turning, a 3D printer does not waste material, because it only uses the amount of powder that actually needs to be melted to create the part. Virtually no manual post-processing is required, which significantly reduces tool costs. What's more, 3D printing achieves higher levels of quality by making it easier to create complex geometries. For example, it greatly simplifies the process of fabricating internal cooling channels that increase a component's performance and service life. "Heat-resistant materials play a key role in many industries, including aerospace and the power generation sector. We're hoping that the applications we showcased at EMO will encourage companies from those sectors and job shops to start using this technology," says Volkan Düğmeci, a member of the industry sector management team for aerospace at TRUMPF Additive Manufacturing.

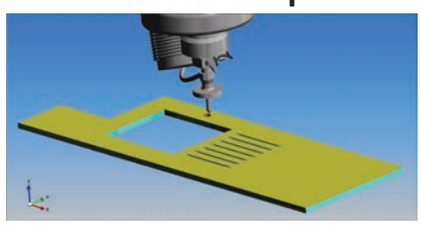
The TruPrint 3000 3D printer that TRUMPF presented at EMO is the perfect choice for traditional applications that involve Inconel®. Featuring a cylinder-shaped build chamber measuring 40 centimeters by 30 centimeters, the TruPrint 3000 can fabricate multiple parts at the same time. The system also offers solutions for automated quality assurance such as powder bed monitoring and melt pool monitoring. "This is an important value-adding factor in industries with high product reliability standards, such as the aerospace sector," says Düğmeci. -Machining Inconel® using conventional techniques is difficult and costly. Tool costs are high because cutting tools wear out quickly when milling Inconel®. In some cases, this has a knock-on effect on quality, because the milling machine may not detect a worn cutting tool. Part manufacturers also waste considerable quantities of material. Components made from Inconel® – such as turbine blades and gas compressor impellers – tend to be complex. Milling machine operators often have to remove up to 80 percent of the raw material to create the required shape. With Inconel® retailing at around 100 euros per kilogram, this incurs significant costs.

Hexagon Introduces Smarter Production with Alphacam

AS part of Hexagon's philosophy of supporting data-driven smart factories, the latest release of ALPHACAM CAD/CAM software speeds up how jobs that require several processes are managed.

A new job type has been introduced in ALPHACAM 2020.1. The new "Multiple Process Jobs" functionality makes it simpler to create jobs and orders in the ALPHACAM Automation Manager for jobs that need to be output to more than one machine, or that require secondary processing at the same machine.

"In the past, users had to create multiple jobs to process complex operations in Automation Manager," said Product Manager Chip Martin. "Now, a single job can be created, containing all the different machines and manufacturing processes that the part goes through."



He highlights an example of machining the top and back of a part. In the latest version of the software, those two processes can easily be worked as a single job. "NC code will simply be created for both of them automatically, which is also the case for additional machines and other processes."

This improvement streamlines how complex manufacturing processes are handled in the ALPHACAM Automation Manager. "Once the process is defined, and the 'Multiple Process Job' is created, the operator can easily repeat the same complex job many times for different parts. Also, the user interface will help show exactly which processes and machines the part will go through."

India's First Tool Room with Gold GreenCo Certification

Die Casting Dies
400 to 2500 Tons

High Pressure Die Casting Dies
(for 2 Wheeler, 3 Wheeler, 4 Wheeler & Other applications

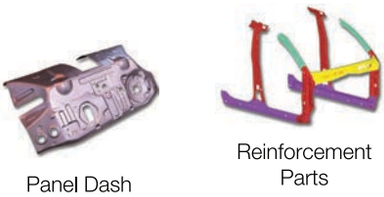
Gravity Die Casting Dies
Gear Box housing, Flywheel housing, Cylinder heads. Rear arm.

Low Pressure Die Casting Dies
Cylinder head (multicavity) Alloy Wheels etc.

Press Tools
Max size - 4.5m x 2.5m x 1.2m

Tandem, Transfer & Progressive Dies
- Skin Panels for 2 Wheeler & commercial vehicles.
- Fuel tanks for 2 wheelers & 4 Wheelers.
- Hood, Bumpers, Dash, High tensile parts, cross members, Door inner, A, B & C pillars, Floors, Chassis, Reinforcement parts etc.

Industrial Machines
- Specialized in customized metal cutting machines & Packaging machines.
- Jigs and Fixtures for Railways, Metro coach and Automobile Industry
- Material Handling and Automation
- Turnkey projects


Reinforcement Parts

Panel Dash


Fuel Tank


Oil Pan


Transmission Case


Clutch Housing


Gear Box Housing


Motorcycle Engine Components


2W Fuel Tank

Gold GreenCo award

Godrej | TOOLING

Godrej & Boyce Mfg Co Ltd, Godrej Tooling (Plant 7), Pirojshahnagar, Vikhroli, Mumbai 400079, India
Tel: +91 22 67962751- 61 I Email: trmktg@godrej.com I Website: www.godrejtoolings.com

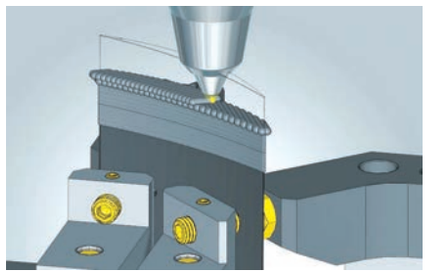
OPEN MIND Offers CAM Solution for 3D Printing

OPEN MIND recently presented its addition to the hyperMILL® CAD/CAM suite. As a universal software solution, hyperMILL® – together with this option will provide efficient hybrid processing with simultaneous additive and subtractive processing on one single machine.

hyperMILL® ADDITIVE Manufacturing opens up an array of flexible options for Directed Energy Deposition processes (DED) and Wire Arc Additive Manufacturing (WAAM) in terms of highly complex 5-axis simultaneous processing. Both laser-based powder nozzle machining heads and wire arc additive manufacturing can be controlled using the software from OPEN MIND for selective material deposition, as well as conveniently programmed and automatically simulated for collision avoidance.

Reworking and hybrid manufacturing in one process

hyperMILL® now allows the potential of additive manufacturing to be truly exploited using Powder Bed Fusion (PBF). If 3D-printed parts do not offer the



desired precision, or support structures have to be removed, the parts can be machined afterwards by means of 5-axis cutting processes. Even hard-to-reach areas can be machined in a secure manner using *hyperMILL®*. As an integral part of the process chain, the CAD/CAM system from OPEN MIND supports reworking of this nature:

The printed components are analysed, milled to size and examined. As the industry leading CAM specialist, OPEN MIND is indeed driving forward implementation of integrated process chains. Additive and subtractive manufacturing are combined in one single machine tool for hybrid manufacturing. *hyperMILL®* now enables users to perfectly program the cladding and the milling together. True-to-detail application and removal simulation as well as stock tracking between the individual machining steps guarantee the greatest possible process reliability.

Efficiency and process reliability

"Our early work on industrial additive manufacturing processes is now bearing fruit. *hyperMILL®* ADDITIVE Manufacturing allows us to boost the efficiency, precision and process reliability of additive and hybrid manufacturing. We want to integrate these new procedures in established process chains, thereby increasing their efficiency and opening up potential applications," says Volker Nesenhöner, CEO at OPEN MIND Technologies AG. "We are able to contribute to many innovative solutions and significantly expand the range of applications for these new procedures."

Important applications will include repairing damaged components, such as in mold-making and tool-making, or repairing turbine blades in the aerospace industry. This also opens up totally new options for combining different materials, such as when high-quality material layers have to be applied to carrier materials.

NUM Launches Active Vibration Control System For CNC Machine Tools

NUM has launched an innovative accelerometer-based active vibration control system for CNC machine tools. Primarily designed to improve machining by virtually eliminating tool head vibration, the system further helps increase productivity by maximising material removal rate (MRR) and can also provide valuable real-time feedback for predictive maintenance purposes.

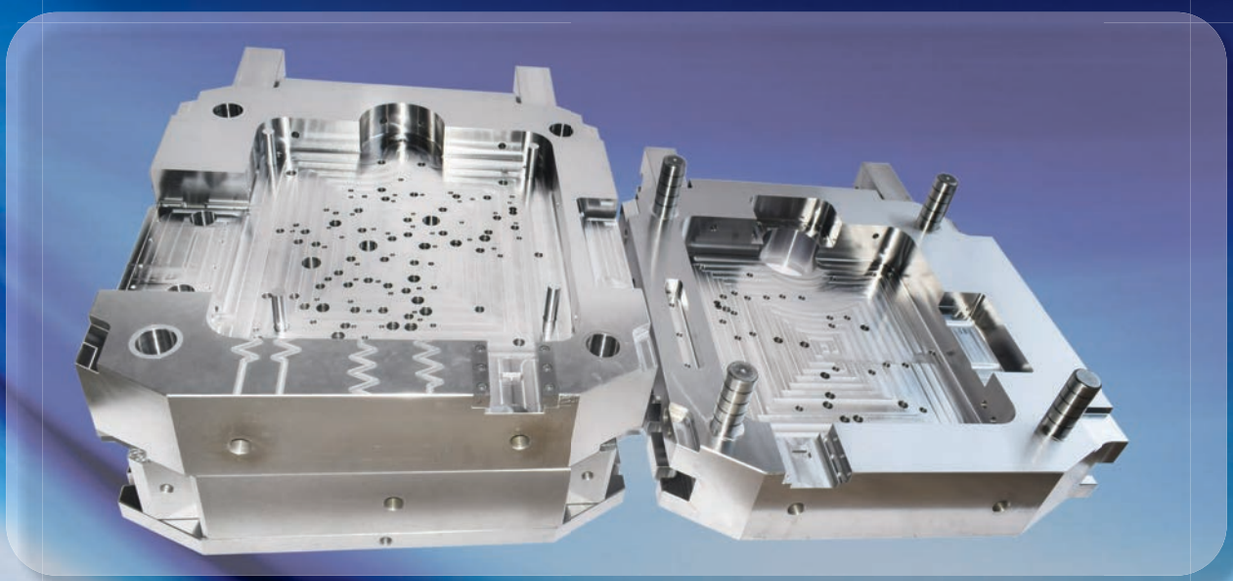
NUM's active vibration control system is a very cost-effective solution that provides unprecedented dynamic damping capabilities. Most competitive accelerometers on the market are only capable of low frequency sampling rates and require additional signal conditioning electronics before they can be connected – usually via Fieldbus – to the CNC or PLC system. Typically, acceleration data can only be retrieved once every 20 milliseconds, which is inadequate for vibration damping purposes on machine tools. The accelerometer in NUM's new system is sampled every 100 microseconds, which means that it can be used for closed loop control at bandwidths approaching several hundreds of Hertz.

The small flange-mounting accelerometer transducer can easily be attached to the machine's tool head and has a sensitivity of 0.02 g (1.96 m/sec/sec), with a measurement range of plus/minus 2 g (plus/minus 19.6 m/sec/sec). The transducer connects directly to the digital servo drive, obviating the need for any additional signal conditioning circuitry.

The active vibration control system utilises the drive embedded macros (DEM-X) option that is available on NUM's MDLUX high performance digital servo drives. This option enables real-time macros to be embedded within the drive in order to manipulate its regulation algorithms. The output signal from the accelerometer transducer can thus be used to directly influence the behaviour of the speed servo control loop.

KALYANI

World Class Precision Standard & Custom made Mould Bases and Inter- changeable Components for Plastic and Die Casting Moulds



KALYANI Standard or Custom Made Mould Bases are Manufactured with The Highest Precision of Accuracy, exactly to the cuctomer's requirements with perfect interchangeability at any time.

Widest range from: 160x 160x 1500x 4000 or Mould Bases as per cuctomer's design & specifications.

KALYANI MOULD BASE PVT. LTD.
Raju Industrial Est, Perkpade Street,
Near Dahisar Check Post, P.O. Mira,
Mumbai - 401 104 (India)
Phone : 2896 6637, 2828 5290, 2897 4586
Fax : 0091-22-2828 4592
E-mail : info@kalyanimouldbase.com
Website : www.kalyanimouldbase.com

White Goods: Sunrise Sector for Indian Tooling Industry

While the entire manufacturing industry is bearing the brunt of the slump in automotive industry, it is now time to shift the focus to one of the underrated yet rampantly growing industry- the Consumer Durables industry.

Debarati Das &
Nishant Kashyap

This is by far the best time for the Consumer Durable manufacturing industry in India. All the factors for growth have aligned towards the boosting manufacturing of white goods in India. The major growth factors are as follows:

In Focus

First, the ongoing Sino-US trade conflict is pushing some companies to move from China. Hence the next safe bet for manufacturers is to set up their manufacturing plants in India. Thereby, India has 6-12 months to make the most of this trade war and attract companies to relocate to India. The government expects this move to help India reduce its dependency on Chinese and other Asian manufacturers and instead boost manufacturing in India and by Indian manufacturers.

To ease this influx of manufacturers and compete with established manufacturing powerhouses like China, Vietnam and Thailand, the ministry of electronics and IT (MeitY) is increasing incentives to attract new investments from the electronics industry in the country which would include interest subsidy on loans, credit guarantees for plant and machinery and renewal of electronic manufacturing cluster (EMC) scheme.

The MeitY has also proposed three new schemes after the Modified Special Incentive Package Scheme (MSIPS), EMC and the Electronic Development Fund, designed to aid India's manufacturing push in electronics, ended last year.

According to a report, India's IT minister Ravi Shankar Prasad recently said that the government is aiming to make India a major export hub of electronics manufacturing. Today, India is the second biggest manufacturer of smartphones in the world with 282 mobile factories in the country. The government is also working on a "plan" with bodies such as NITI Aayog on ways to promote the industry.

Earlier this year, the government introduced a new National Electronics Policy with an aim to generate a turnover of $400 billion in domestic electronics manufacturing by 2025 while promoting ease of doing business for the electronic system design and manufacturing sector and encouraging industry-led research and development and innovation in new areas such as 5G. With this policy, the government will target production of 1 billion mobile handsets valued at $190 billion by 2025, including export of 600 million handsets valued at $110 billion.

Prasad further said that Apple and Samsung, together with domestic companies such as Lava, can transform India into a global powerhouse. He further added that the country has increased the production of electronics to $70 billion in 2019 in value terms.

Apple has already started manufacturing iPhones in India. The company just started the commercial production of iPhone XR locally at the Foxconn facility near Chennai after undertaking trials for several weeks. The government is said to have been pushing Apple to manufacture its entire line-up of smartphones in India, especially the newer ones, since this would help the Make in India initiative win over more investors.

Secondly, the government in September, has doubled duties on the import of 19 consumer durable items, including air-conditioners, refrigerators, washing machines and compressors. This has given a big boost to domestic manufacturing in the white goods sector and has lined up investments topping Rs 6,500 crore over the next two years in this sector.

Currently, for critical components such as heat exchange coils and compressors, the segment majorly relies on imports. Now, the move has given a boost to local manufacturing. Several foreign and domestic companies are now looking to set up manufacturing infrastructure in India and invest in backward integration. This has led to several expansion plans and investments in India.

- Shanghai Hitachi Electrical Appliance Co., a joint venture between Hitachi Japan and Shanghai Highly Group of China, is reportedly expanding its compressor unit in Gujarat.
- Chinese player, Guangdong Meizhi Compressor Co, a Midea Group company, is setting up a new ₹ 1,350-crore manufacturing facility in Maharashtra.
- China's top appliance maker Haier has finalised plans to invest ₹ 3,000 crore in its new plant in Greater Noida that will reportedly manufacture components and premium models.
- Recently, Tata group firm Voltas and Arcelik, a part of Koc Holding which is the largest industrial conglomerate in Turkey, announced a 50:50 joint venture, Voltbek Home Appliances Pvt Ltd. They are investing over ₹ 250 crore to start manufacturing in Gujarat.

All these factors attempt to make local manufacturing cheaper with free trade agreement, lower labour costs and not having to pay for high freight costs from overseas. The industry feels that a further customs duty hike could be on the cards making India's long-ailing manufacturing sector to head towards a revival.

Industry growth forecast

Apart from rife manufacturing environment for the consumer durable goods, India is also a growing consumer market for white good products.

According to IBEF, Indian appliance and consumer electronics (ACE) market reached ₹ 2.05 lakh crore (US$ 31.48 billion) in 2017 and it is expected to increase at a 9 percent CAGR to reach ₹ 3.15 lakh crore (US$ 48.37 billion) in 2022. Electronics hardware production in the country reached ₹ 38,800 crore (US$ 5.55 billion) in FY18, growing at a CAGR of 26.7 percent between FY14-18. The demand for electronics hardware in India is expected to reach US$ 400 billion by FY24.

The growth comes from the growing scope from rural markets as consumption is expected to grow in these areas making way for increased penetration of brands. The demand for durables like refrigerators as well as consumer electronic goods is likely to witness further growth in the coming years in the rural markets as the government plans to invest significantly in rural electrification.

The dynamics of white goods industry in India is highly concentrated. In washing machines and refrigerators segment, top five players hold more than 75 percent market share, while in air conditioners and fans, it is around 55-60 percent. On the other hand, kitchen appliances is a fragmented segment with top five players holding 30-35 percent market share.

Apart from rural penetration, growing awareness, easier access, higher disposable income and changing lifestyles have been the key growth drivers for the white goods market. According to latest data by market researcher, GfK, unit sales of products like smartphones, smart speakers, washing machines, refrigerators and air-conditioners have grown at a faster pace in the six months from January to June compared to same period last year. The research also indicates that consumers are buying more expensive products since the pace of growth has been higher than the price rise undertaken this year. Indian consumers now consider smartphones and appliances as necessities and are hence buying them.

Hence, over all the market dynamics of consumer durable industry both in terms of manufacturing and sale are conducive for growth. Now it is time for the Indian manufacturing industry to broaden its perspective and diverse its manufacturing capability in consumer durable segment as well.

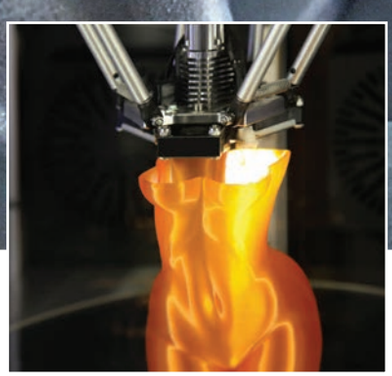
What's in store for mould makers?

Moulding is not a single part but a set of processes. Modern manufacturing not only requires high precision and long life of moulding, but also requires mould to have a clever structural design, a forming mechanism with reasonable research, good performance and efficient manufacturing performance. The requirements of modern manufacturing for moulding are not only required

www.diemouldindia.org

As per reports, By 2021, 40% of MANUFACTURING ENTERPRISES will establish 3D PRINTING centers of excellence.

BOOK NOW



If you are into Additive Manufacturing and want to capitalise the booming opportunities

'Don't miss an opportunity

Participate in Special 3D Metrology and Printing Pavilion'

TAGMA DIEMOULD INDIA-2020

22 23 24 25 APRIL 2020

Bombay Exhibition Center, Goregaon (E), Mumbai, India

Be a part of India's largest gathering for Tooling Suppliers

ORGANISED BY:

TAGMA INDIA | TOOL AND GAUGE MANUFACTURERS ASSOCIATION - INDIA

A-33, Nand Jyot Ind. Est., Safed Pool, Andheri - Kurla Road, Mumbai - 400 072
Tel.: +91 22 28526876, 28508976 | Mobile : +91 96534 27396
E-mail : tagma.mumbai@tagmaindia.org, tagma.diemould@tagmaindia.org

for a single set of mould to have a high level of manufacturing, but should also include customer requirements of speed, efficiency and quality assurance of parts. This requires mould product upgrades from extended product chain and full process control from product development to product moulding.

Moulding of household appliances relies on various types of moulds such as gold stamping mould, plastic mould, foaming mould, and adsorption mould. Therefore, home appliances are closely related to home appliance mould. Annual growth rate of mould required by home appliance industry is 10%. A refrigerator requires about 350 sets of mould; a fully automatic washing machine requires about 200 sets of mould; an air conditioner requires almost 20 sets of just plastic mould; a single colour TV requires a total of 140 sets of mould. With the fierce competition in home appliance market, case design has become an important part, new requirements have been placed on the colour, feel, precision and wall thickness of appliance housing. Insiders generally believes that large, sophisticated, well-designed (mainly for thin-walled products) injection mould will be welcomed by the market. Therefore, some experts predict that in the future mould market, proportion of plastic moulds in the mould will gradually increase, and development speed will be higher than other moulds.

As we see number of investments happening in this space, we can comfortably come to a conclusion that goods and home appliances industry will play a big role in Indian mould makers growth.

Injection moulding and white goods

Injection moulding is the most commonly used manufacturing process for the fabrication of plastic parts although a wide range of products is manufactured varying in their size, complexity, and application. The process entails melted plastic injected into the mould using the injection moulding machine which then solidifies to become a finished product. It is predominantly used for mass production for producing parts in large volume. It draws benefits for scalable manufacturing and for complex shapes with precision and efficiency. All these qualities of injection moulding make it a suitable process for white goods manufacturing.

How mould makers can tap this market?

It is not unknown that most of the mould makers are dependent on the automotive industry, which is not sustainable. With the kind of disruption happening in the automotive sector, the future looks very uncertain, however the industry will continue to be the biggest customer of moulds for few more years. In this uncertainty, tooling companies should gradually start exploring other avenues such as white goods, home appliances, consumer goods, aerospace, among others as these industries are growing at a rapid pace and holds good business opportunities for tooling suppliers. In order to create a balance, tooling companies should invest time and energy in developing businesses in sectors other then automotive and at the moment, white goods seem to be the best bet with the kind of investments happening in the country.

Going forward

Even since the Government of India increased the import duties on white goods products and its components to promote the manufacturing in India, there has been a push towards starting a manufacturing unit in India by global giants. Looking at the growing Indian population and workforce, no company wants to miss the opportunity.

Once these companies start full fledge manufacturing in India, like the automotive industry, they would want to look for local technology and component suppliers in order to keep the manufacturing cost low. This is the opportunity Indian mould makers need to grab. They must be prepared for the huge demand that may arise from the white goods, home appliances, and consumer durable sector. However, they must work on their efficiency, capacity, and skills that is needed in this sector. Looking at the growth in the white goods sector, mould makers must prepare themself to grab the opportunities in the sector.

"Mould and Die makers should look for solutions that provide high accuracy"

It was during EMO 2019 that I got an opportunity to speak with Isao Sugiyama, Dy General Manager – Sales, NT Tool Corporation, Japan. During our candid discussion, Isao spoke about the growing demand for tool holders, new developments, challenges in automotive industry and his views on the Indian market.

Nishant Kashyap

Q Please tell us about your company.

The company was established in the year 1926 as Naito Tekkosho in Nagoya, Japan to produce automotive parts and wire-making machinery. Since then, NT Tool Corporation has come a long way to become one of the leaders in tool holding, tooling systems, bush/chamfering tools, tool pre-setting devices among others. We hold the "numero uno" position in the Japanese Automotive industry when it comes to tool holding system.

Q What are the new innovations from NT Tool Corporation?

Innovation is the core of our business and we take R&D activities very seriously. We are currently focusing a lot on hydraulic chucks which provides accuracy, repeatability and user friendliness. We have a wide variety of hydraulic chucks.

If I talk specifically about the Die & Mould industry, we have some excellent hydraulic chucks and can complete all kinds of mould making processes.

Hydro Chuck OMEGA PHC•H for rough milling with much chip exhaust.

Standard Hydro Chuck PHC•A for semi finishing and finishing. NT's original design minimise vibration during milling and offer excellent surface roughness.

Slim Hydro Chuck PHC•SA for tight space finishing.

Our new BLASTER series PHC•SA•C/PHC•SA•NC for much efficient coolant feeding.

Q There are lots of changes happening in machine tool technologies. Your views on the future of machine tool industry.

These days, multi-tasking and 5-axis machining technologies are gaining popularity. To machine complex parts, there is a need for accuracy and speed and for this multi-axis machines are needed. For such requirement we have chucks that can support such high feed rate and efficiency.

Q What are the new technologies coming into the industry?

IoT and industry 4.0 is the future. Manufacturing technologies produce huge amount of data that can be effectively utilised to make smarter decisions and automate the process. For example, tool pre-setters are now connected with machine tools to communicate with each other. This way, we can control the quality and enhance the efficiency.

The standard process of using tool pre-setter includes machining, disassembling cutting tools, washing and pre-setting again for the next round of machining. So, if we can connect those devices, customer can cut the overall time taken for machining setup. This will in turn can cut the cost while making the process much more accurate.

Q What are the latest trends and demands in the industry?

Accuracy has always been in demand. Whichever industry you are working with - be it Automotive, Aerospace or Die & Mould, the demand for accuracy will always be there. The trend these days is to produce application-oriented tool holders. For instance, tool holders only for the Aerospace applications which usually has more critical applications. In Automotive industry, because the quantity is huge, it is important to make the process easy, achieve repeatability along with efficiency. NT Tool, as a company has developed so many tool holders over the years that we have solutions for every application. We try to develop application specific solutions and deliver products that suit customers demand.

Q Automotive is the prime user of machine tool technologies. What are the other emerging sectors?

Mould & Die is one of the biggest user of tooling systems and is growing rapidly. Mould & Dies are closely related to Automotive industry and we have some good products that support both Mould makers and Automotive industry. Another industry that is creating good demand is Aerospace. Aerospace industry globally is showing some positive signs unlike Automotive industry which is facing downturn lately.

Other industries that are growing are Medical, Infrastructure, Consumer Durables, among others but our focus, at the moment, is on Aerospace and Die Mould apart from Automotive.

Q How will the emergence of electric vehicle impact your business?

EV's are considered to be the game changer in the industry. As we know that once EV's become main stream, more than 8000 parts will disappear. Tool holders are used extensively for transmission and engine which is not going to be there when EV's arrive which is not a good sign for us. We need to see how we can tackle the situation. Having said that, we are aware about the developments happening in the EV's and are prepared for the same. We believe, there will still be a very large market in Automotive despite EV's becoming main stream as demand for batteries and usage of light-weight materials will increase the demand for high precision machining.

Also, we have solutions for many other industries hence we can gradually shift our focus to other industries such as Aerospace, Die & Mould, etc. to create balance.

Q Your views on the Indian market

India is a great market with huge opportunities and skilled manpower. However, on the technology front, not just in India but in many Asian countries, the adoption of high-end technologies has to increase. Even though there has been positive shift towards high end technologies in India and now many companies are considering technology over cost, there are still some grounds to cover.

India is a very fast growing economy with lots of manufacturing happening in the country. There are many global companies setting up base in India. Many Indian companies are expanding and growing. Young population and consumer demand are driving the Indian manufacturing industry. We are very optimistic about doing business in India and will continue to invest in the country.

In India, we have a very good market share in Automotive industry but when it comes to Aerospace, Heavy Engineering and Power Generation, we still need to capture the market.

Q Tell us about your plans for the Indian market.

India is a very interesting and lucrative market. We have been serving Indian customers and some Japanese customers in India for decades and have got good exposure to the Indian market. We will continue to invest in the Indian market in order to increase our market share.

Q As a supplier, what are your suggestions to the mould and die makers?

Mould & Die makers should look for solutions that provide high accuracy, reduce cycle time and suits their requirement. Tool making is an art and a good tool needs combination of skilled manpower and right technologies. Many a times, some tool makers compromise on the technologies. But one wrong technology can ruin your entire accuracy requirement. So, it is very important for tool makers to use the right solutions across all processes. For example, tool holders play a vital role in speed, accuracy and efficiency, but many tool makers invest in an excellent machine and cutting tools but compromise on tool holders. It's important to maintain the technology level across the process. Similarly, hydraulic chucks can help reduce the vibration, but many people still use the conventional ones. We are trying to spread awareness regarding the right technologies in order to uplift the productivity of Mould makers.

Q Company's future plans.

As always, innovation will be the key to our success. We have continuously come up with solutions that provide higher productivity and cost reduction. Also, I feel that all technologies in the future will be equipped with some sort of sensors and will be connected to each other. The more we produce data the more our productivity will increase. We are always working towards futuristic solutions and are very much aware about the changes happening in the industry.

PPD®

Ejector Pins, Punches & Ancillary Products for Moulds & Dies

We manufacture all our Moulds and Dies ancillary products, based on the international standard systems for the convenience of Moulds and Dies Manufacturers. Also for the easiest interchangeability & to reduce down time of Moulds and Dies.

Precision Punches & Dies

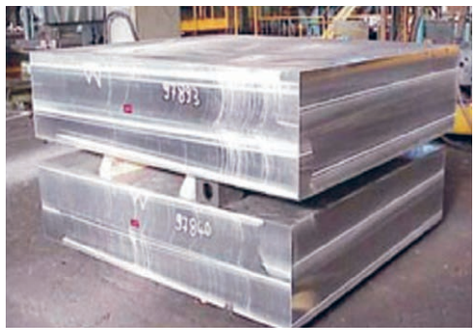
5-B, Raju Industrial Estate, Penkarpada Street,
Near Dahisar Check Post, P.O. Mira, Mumbai - 401 104 (India)
Phones : 2897 4586, 6521 5274, 6521 5275
Fax : 0091-22-2848 2115
E-mail : ejectorpin@vsnl.net, ppd.punches@gmail.com
Website : www.ppdejectorpin.com

PCK-Buderus | Special Steels Your Reliable

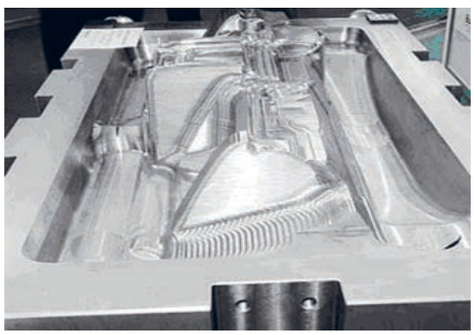
The Partner for Plastics Industry

- Comprehensive Stock Holding of Plastic Mold Steels
- Service centers at Chennai, Pune and Ludhiana
- Express delivery in cut to lengths for blocks and rounds
- Contour Sawn Blocks for Cores and Cavities
- Machining Facility to handle piece weights upto 60 tons
- Delivery of 3D pre-machined Mold halves upto Bumper dimensions
- Deep Hole Drilling
- Technical Support on Steel Selection, processing, welding, Polishing and Texturising.

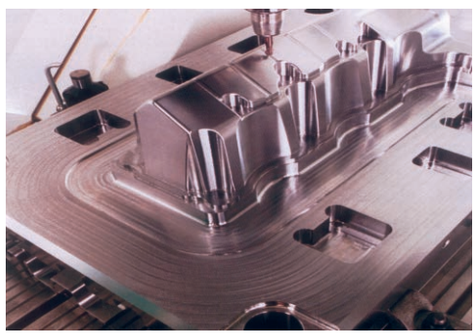
Stockholding Steels



6 Sides milled with Lifting hole



3D pre-Milled Dash board Mold



3D Machining to CAD Data

Grades in Program : • Buderus 2311 ISO-BM mod • Buderus 2738 ISO-BM • CONQUEROR SUPER CLEAN ISO-B • Buderus 2083 ISO-B

Partner in India for Buderus | Edelstahl

Partnership of 50 years with

Buderus | Edelstahl

and Indian Industry,
based on Reliability and Trust.

ALL FROM ONE SOURCE

Corporate Office
PCK HOUSE,
New No. 84, Old No.13,
South West Boag Road,
T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638
Fax : + 91 44 2434 1181
Email : info@pck-buderus.com

Pune Office :
Warehouse & Machining Division:
Gat. No. 191, 192, 193, Alandi-Markal Road,
VaduKhurd, Tal. Haveli, Pune - 412216/INDIA
Tel. : 020 66783000/66783002 to 66783023
Fax : 020 6678 3001
E-mail : punewh@pck-buderus.com
pckpune@vsnl.net

Ludhiana Stock Holding Center
C-I, Industrial Area C, Jaspal Main Road,
Kanganwal, Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

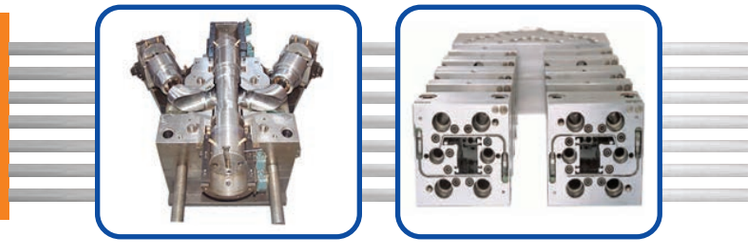
Kolkatta Office
Flat No. 403, Vishal Apartments,
4th FloorNo. 18,
Prince Anwar Shah Road,
Kolkatta - 700 033
Tel : + 91 33 2417 1078
Email : info@pck-buderus.com

www.pck-buderus.com

• THRUHARD SUPREME HH/HG • Buderus 2711 ISO-B • Buderus 2344 ISO-B
• Buderus 2316 ISO-B mod • Buderus 2767 ISO-B • Buderus 2379 IOSO-B

NITRO-B®

New Generation Corrosion resistant Pre-hardened Mold Steel



Nitro-B® is Nitrogen alloyed Corrosion resistant Plastic Mould Steel developed further on our reliable Buderus 2316 ISO-B Mod. The special analysis also allows the user to further heat treat the tools to 53 HRC.

SALIENT FEATURES

- Excellent microstructure
- Excellent machinability
- Higher wear-resistance
- Higher Hardness: 320-370 BHN (34-40HRc)
- Excellent Corrosion resistance event at Higher Hardness
- Can be heat-treated up to 53HRc

PCK Buderus (India) Special Steels Pvt. Ltd.

Corporate Office : PCK HOUSE, New No. 84, Old No.13, South West Boag Road, T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638 Fax : + 91 44 2434 1181 Email : info@pck-buderus.com

Chennai Stock Holding Center
Machining Division
No. 1/512, Ponni Amman Koil Street,
Gandhi Nagar, Vengaivasal,
Chennai - 600 073.
Tel : + 91 44 2278 1107
Fax : + 91 44 2278 1869
Email : info@pck-buderus.com

Pune Stock Holding Center
Machining Division
Gat N o 191-192-193,
Alandi-markal Road,Vadu Khurd,
Tal-Haveli, Pune - 412216.
Tel : + 91 20 6678 3000
Fax : + 91 20 6678 3001
Email : punewh@pck-buderus.com

Ludhiana Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road, Kanganwal,
Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

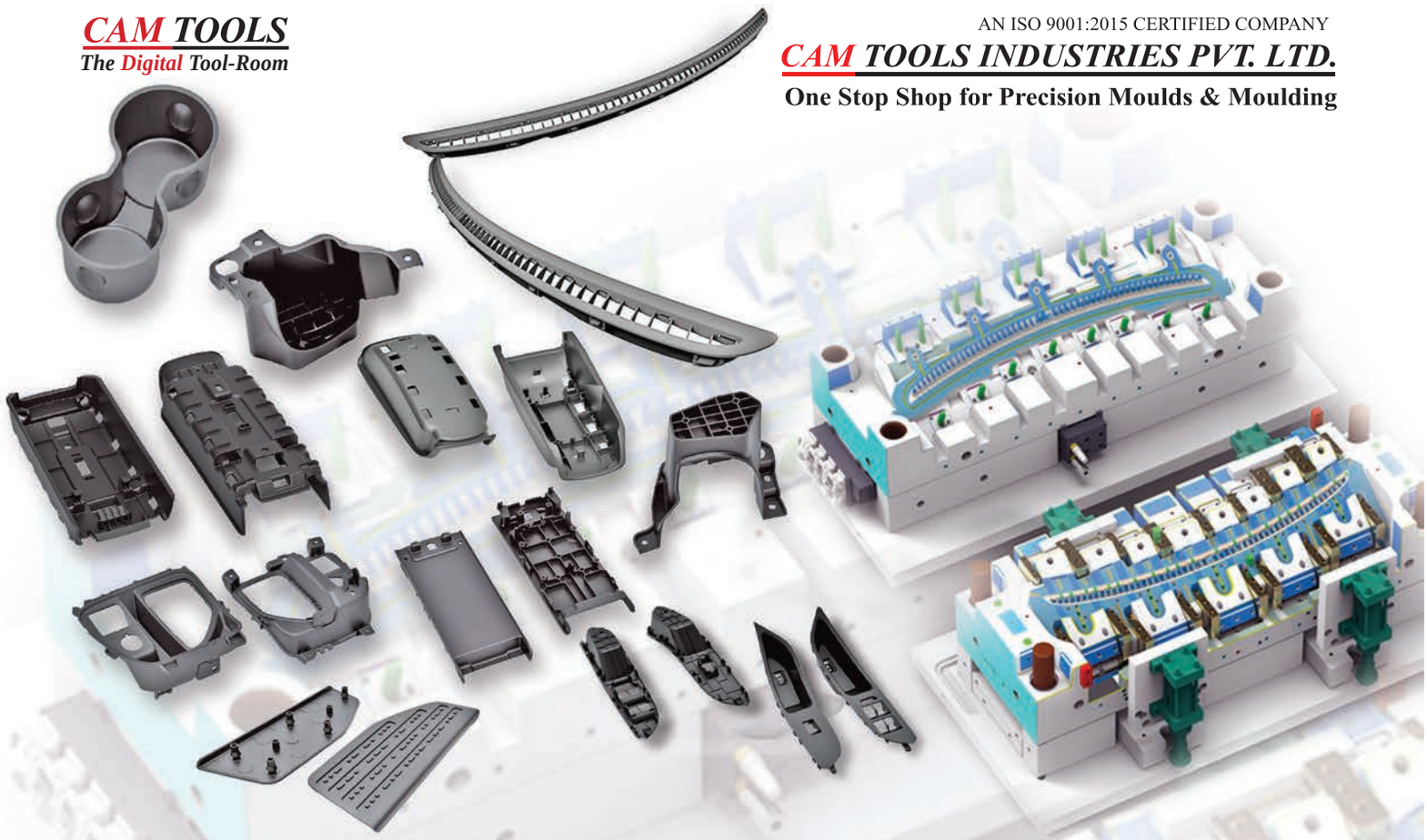
www.pck-buderus.com

CAM TOOLS
The Digital Tool-Room

AN ISO 9001:2015 CERTIFIED COMPANY

CAM TOOLS INDUSTRIES PVT. LTD.

One Stop Shop for Precision Moulds & Moulding



Need Precision Automotive Mould and Moulding?

One Stop Shop We have got it all

for Precision Mould and Moulding

Key Features

- "Full-Service" supplier of Precision Moulds and Mouldings
- Professional support for Mold Flow, Mould Design and Construction of Precision Moulds at "Best Cost" and in "Short Lead time"
- Integrated capabilities in Project Management, Mould Design, Mould Manufacturing and Mould Trials, Injection Moulding supply and part assembly
- Exporter of Precision Moulds to Europe/USA

Services Offered

- Precision Mould Manufacturing
- Injection Moulding & assembly of Parts
- Rapid Prototyping and Proto Moulds

Technologies

- High-end CAD/CAM Software
- High Speed Machining with 5 Axis capabilities
- In-house Injection Moulding for Mould Trials

Contact Us

CAM TOOLS INDUSTRIES PVT LTD

M-3, Mehara Industrial Estate, Unit No 2,
Opp. Telephone Exchange, Sakinaka, Andheri East,
Mumbai-400072. India
Email: paresh@digitaltoolroom.com
Contact: +91 22 2852 1358 / 2851 1647 • +91 9821081981

faurecia · BAJAJ · TATA AUTOCAMP SYSTEMS LTD · LUMAX DK JAIN GROUP · LEAR CORPORATION · PREMIER · DURA Automotive Systems · IAC International Automotive Components · TATA · Jeep · ISUZU · MARUTI SUZUKI Way of Life! · Ford · HONDA · HONDA · RENAULT NISSAN · TOYOTA · Hero · GM · CHEVROLET · ASHOK LEYLAND

"Indian manufacturing industry holds huge business opportunities"

David M Wolfe, Vice President – Sales & Marketing, Vargus Ltd and **Ashok Makhija**, Managing Director, Vargus-India share at length about the current market conditions and the need to keep businesses diversified. They also spoke about the opportunities that India holds in the future.

Q New technologies showcased at EMO.

DW - VARGUS is a leading developer, manufacturer and supplier of high-quality, precision threading, grooving, turning and hand deburring tools. We have been participating in EMO for a long time now and EMO has always been a great platform for us to meet our partners and engage with potential customers and understand the market trends and demands. Also, it's the best stage to launch our new innovations, and this year was no exception. We showcased our main innovative products for the VARDEX product line for threading solutions.

We introduced our new platform called HPC, which is the platform of tool holders for high-pressure coolants. It delivers coolant precisely to the cutting edge both at the top and bottom of the insert and delivers higher precision and productivity. The high-pressure coolant, which is at around 80 bar, can evacuate the chip more effectively and cool down the insert faster. With this solution, one can increase the tool life by up to 3 times.

In addition, we are very excited about the thread milling solid multi-flute platform. These are specially designed solid carbide threading mills with up to 7 flutes which provide efficiency, speed, and productivity.

In our GROOVEX line, our product line for grooving, parting off and turning, we have introduced tool holders with high-pressure coolant, along with many other new products. We began manufacturing inserts in this segment with 3mm and 4mm four years ago. Since then, we have added both 2mm and 5mm inserts. Additionally, we recently introduced a very small diameter of 1.5mm which is unique to the industry as not many companies have developed it.

Q What are the new developments in cutting tool technologies?

DW - There have been continuous developments in the cutting tool technology. The technology is changing fast with rising demand for speed, reliability and repeatability. There has been continuous development in the metallurgy of cutting tools, geometry of the tool and the industry 4.0 that everyone is talking about.

However, one of the things that we believe in is that information should be available to everyone. Making information available to the end-user and customer is very important. We are early adopters of the philosophy of freeware, which means making information easily accessible to our customers.

Back in 1988, we introduced a revolutionary tool selector and CNC program generator called the TM (Thread Milling) Gen. We distributed the program on floppy disks for free in those days. Today, of course, the VARGUS GENius(software program for both TM and TT) is available online, on your desktop and on mobile as an app.

Q Automotive is the biggest consumer of cutting tools. But, with the emergence of EV, there will be reduction in auto parts. How will it impact cutting tool manufacturers?

DW - It's a very interesting point but thankfully as far as Vargus is a concerned, we provide tooling solutions for several industrial segments, not just the automotive industry. Hence, although we understand that automotive is an important sector; aerospace, medical, general engineering and oil & gas too are very significant markets for us. We have kept our business very diversified and have always focused on at least 4-5 industries. Regarding automotive, we are keeping a very close tab on it and are experimenting with machining of new materials, trying to develop new grades for titanium alloys for fast machining, etc. We will be staying close to the customers to understand their requirements and bring in solutions that those sectors need.

So, in our opinion, EVs have both opportunities and challenges. Whenever there is a new development or disruption, people feel that the use of existing technology will be in trouble. But when you look at the EV, it will bring in opportunities to machine new materials, alloys, and exotic materials. We believe, there are enough opportunities to grow further. However, we cannot deny the fact that when EVs will emerge as leading mode of transport, there will be some business loss for machine tool and mould makers. But the shift will be gradual, giving enough time for companies to explore other markets and establish themselves.

Q How will the emergence of 3D printing impact the future of manufacturing?

DW - Again, this is an area which we are tracking very closely. We recently had some very extensive consultations within our company, and we know that we need to be updated with this technology and act accordingly. Of course, we also know that limitations of additive manufacturing is cost, speed and that the final product still needs some surface finishing. It's a big challenge, but nevertheless something we are very much excited about. We do use additive manufacturing for prototypes in our company and we are looking at more specific type of applications that we will be able to turn into regular standard in the future.

Q Tell us something about your R&D activities.

DW - We have a very serious commitment to research and development and innovation. We have many engineers who spend their days finding ways to improve an application and bring in unique solutions to address customers need and demand. R&D is the core of our business and a very significant part of our marketing budget.

Q How you see the Indian die mould market?

AM - Die mould industry is a very interesting industry. It's technically driven industry that requires special skills, high-end machines and right cutting tools. We have some good solutions to serve the die mould industry and have been very successful. The Indian die mould industry is on a growth trajectory as there is a huge demand now coming from industries like aerospace, oil & gas, consumer durables, packaging, etc along with the biggest customer, automotive. Also, the Indian mould makers are now becoming very technology conscious as they are building complex and large moulds. This is a good sign for companies like ours.

Q Do you see enough Indian SMEs and tooling companies adopting high-end technologies?

AM - I see a great enthusiasm among SMEs regarding high-end technologies. In the last 2-3 years, we saw that many of our new SME customers have 2-5 CNC machines. We are very much optimistic about the SMEs.

Q What are your views on the current slow down?

AM - Of course, most of the machine tool companies are dependent on automotive and if they are down, it will impact us too. But as we said, we have some great products for other industries as well which is balancing the business for us. Also, we cannot just depend on just one sector. In India, we believe that the situation will get better from April 2020 onwards.

Q Tell us about your Indian operation and expansion plans?

AM - We have grown our footprint in India by 10 folds in just the last 5 years in terms of the number of employees and channel partners, which is enough to understand that the manufacturing industry in India holds huge business opportunities. India represents tremendous business today and a great opportunity for the future. We have made major efforts to improve our business in India. When we started in 2012, we stocked less than 300 varieties. Today we stock more than 3000 varieties of tools, as we have invested heavily in our warehouse. This means our commitment to the Indian market is very high. We are even thinking of manufacturing in India and if everything goes well, we will definitely have a manufacturing plant in India in the near future.

"Standardisation in design and mould base is very important"

Jiten Shah, MD, Ashna Enterprise talks on the opportunities in the mould making industry and ways in which government can help MSMEs to grow and help the overall economy.

Q Tell us about your company.

It was during 2000 when I started Ashna Enterprise along with my Partner Chetan Shah. Since inception, we have always been focused on providing high-end solutions to our customers, which is the result that Ashna Enterprise has emerged as a renowned name for Standard Mould Base and Customised Mould Base, Die Set, Ground Plates and Accessories.

Although we marked a moderate beginning in 1986 as a trading company with the name Jitech Brothers, today Ashna Enterprise is backed by a team of 60+ expert and skilled professionals, and it has a manufacturing unit that spreads over 25000 sq.ft. area.

Our in-depth industry insights are well blended with state-of-the-art infrastructure encompassing – RAW MATERIAL STOCK, VMC, SURFACE GRINDER & INSPECTION FACILITIES. We are committed to delivering the best quality; hence, all our products undergo stringent quality checks, right from production to delivery of the final product.

Q In your opinion, how is the die mould industry performing?

The industry is growing rapidly. Keeping the current slowdown aside, I feel the Indian manufacturing industry holds good future which is good for all the component providers, mould makers and machine tool builders. Previously, people would hardly buy ground and mould bases, but instead try to it instead would try to do it in house. However, the scenario has changed and as the industry has matured, majority mould makers are now buying machined plates, mould base from specialists like us.

Q What are the challenges you face in your business?

There is no standardisation in the country. In fact, standardisation in design are not set, so every time we produce as per different designs given by customer, the cost escalates due to lack of set standard. Also, there are some level of standard already in place, but people do not follow it. In my opinion, we will have to set some standard and everyone has to adhere to the same. Standardisation in design and mould base is very important.

Secondly, the infrastructure needs drastic improvement. We need to have industry clusters to carry out our operations. Mould making is capital & labour intensive business, but we lack financial institutes that can give mould makers a simple and low interest finance.

Skilled manpower is another challenge. In India, we have good & experienced engineers. However, it is tough to get good freshers. Graduates coming out of colleges lack of practical knowledge.

Q What are the opportunities you see in this business?

There are lot of opportunities as this is a sunrise industry. Mould base industry is very much dependent on mould maker. When we started, they were only a couple of manufacturers but today it is increasing rapidly. International mould maker quote with the brand of mould base they will use & that has already started in India.

Q What are the government policies needed to help MSME companies like yours?

There are two areas where government can help us – skill development and availability of adequate finance.

Talking about skill development, there are various training institutes available, but students still lack the practical knowledge and industry exposure making it difficult for SMEs to invest in manpower development. There should be more training institutes for core manufacturing technologies such as die mould, machine tools, forging, etc. Also, more thrust should be given to industry internships for practical knowledge.

Another challenge we face is that of unavailability of good finance available in the country. In order to promote the Indian manufacturing industry and uplift the SMEs, government must help us with easy finance.

There are other areas also where government can help us- such as reducing the high import duty on some of the critical machines and parts which are not available in India. The government can reduce the taxes to help us save some cost.

Q How are associations like TAGMA helping you to grow?

I believe, associations like TAGMA is very much needed to be our voice so that government and customers listen to us and understand our challenges. I must say TAGMA has been doing excellent work by helping us with exhibitions and seminars which is necessary to promote our capabilities. The new managing committee since last 2-3 years is doing great job and is very active in helping its members.

Q How do you plan to increase your market share in India and expand globally?

Since our inception, we have always focused on providing good quality products and services. Also, learning from the market demands, we have always diversified and altered our offerings. We started as a trading company and now we are providing many solutions related to tooling industry. We are now a well known company in India with good number of customer base. We have done some projects for overseas clients as well. However, at the moment we are focussing on the Indian market as the market is big and we still have to cover lots of ground.

As for expansion plans, we have already bought a bigger land for our new factory and plan to start shortly.

THRUHARD SUPREME HG

For Glossy or Chrome plated parts

Front grille

Panoramic Sun roof

THRUHARD SUPREME High Gloss is stocked extensively at:

PCK Buderus (India) Special Steels Pvt. Ltd.

Corporate Office : PCK HOUSE, New No. 84, Old No.13, South West Boag Road, T. Nagar, Chennai - 600 017
Tel : + 91 44 2434 6503 / 1904 / 8638 Fax : + 91 44 2434 1181 Email : info@pck-buderus.com

Chennai Stock Holding Center
Machining Division
No. 1/512, Ponni Amman Koil Street,
Gandhi Nagar,
Vengaivasal, Chennai - 600 073.
Tel : + 91 44 2278 1107
Fax : + 91 44 2278 1869
Email : info@pck-buderus.com

Pune Stock Holding Center
Machining Division
Gat no 191-192-193,
Alandi-markal Road,Vadu Khurd,
Tal-Haveli, Pune - 412216.
Tel : + 91 20 6678 3000
Fax : + 91 20 6678 3001
Email : punewh@pck-buderus.com

Ludhiana Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road,
Kanganwal, Ludhiana - 141 120.
Punjab.
Tel : + 91 161 6532016 / 2017 / 2510073
Fax : +91 161 2510072
Email : ludwh@pck-buderus.com

www.pck-buderus.com

PCK-Buderus | Special Steels

Buderus 2738 ISO-BM

PREMIUM QUALITY PRE-HARDENED MOULD STEEL

Shopping Trolley Mould

Corporate Office :
PCK HOUSE
New No. 84, Old No.13,
South West Boag Road,
Chennai - 600 017
Tel : + 91 44 2434 6503, 2434 1904
Fax : + 91 44 2434 118
Email : info@pck-buderus.com

Pune Office :
Warehouse & Machining Division:
Gat. No. 191, 192, 193, Alandi-Markal Road,
VaduKhurd, Tal. Haveli, Pune - 412216/INDIA
Tel. : 020 66783000/66783002 to 66783023
Fax : 020 6678 3001
E-mail : punewh@pck-buderus.com
pckpune@vsnl.net

Ludhiana Office,
Stock Holding Center
C-I, Industrial Area C,
Jaspal Main Road, Kanganwal,
Ludhiana - 141 120. Punjab.
Tel : + 91 161 6532016, 6532017
Fax : + 91 161 2510072
Email : ludwh@pck-buderus.com

www.pck-buderus.com

PCK-Buderus | Your reliable Partner in India for Buderus | Edelstahl

DORNIER GmbH obtains higher productivity and flexible production using TopSolid'Cam

Left to Right: Markus Maier, Project manager Moldtech GmbH; Daniel Bayer, CAM Programmer, Lindauer DORNIER GmbH; Karl-Heinz Kragl, NC Programming Team Leader, Lindauer DORNIER GmbH.

To this day the Dornier name is associated with the spirit of invention and reliability. Such a constant history of success can only, however, be achieved by dint of high adaptability and the courage to make changes. With Moldtech as partner and supported by its powerful 3D software solution, TopSolid'Cam, the weaving machine manufacturer from the Bodensee has opened up new lines of business, which should ensure its continuing success into the future.

In 1950, Lindauer DORNIER GmbH was founded on the site of today's head office in Lindau-Rickenbach. The previously world-renowned aircraft manufacturer, Dornier, began constructing weaving

Company	The Lindau-based DORNIER GmbH is today one of the technological leaders in the construction of high-performance weaving machines, textile finishing machines and film stretching machines. The manufacturing of all machines and plants takes place on the German production sites.
Project	Accompanying the introduction to turning-milling technology through optimal programmability of the newly acquired CNC machines
Software	TopSolid'Cam
Services	Introductory support, post-processor programming, user training, integration support
Benefits	Fully profiting from machine possibilities, optimising work processes, and thereby obtaining higher productivity and flexible production

machines after the end of World War II, forced into this on account of aircraft manufacturing being prohibited in post-war Germany by the Allies. Today, Germany's only manufacturer of textile weaving machines also develops and produces film stretching machines for the thinnest of plastic films, as used in semiconductors, capacitors for hybrid vehicles and film displays for mobile phones, as well as for highly demanding fabrics such as airbags and aramid fabrics for fireproofing or ballistic applications. In the two factories, in Lindau and Esseratsweiler, the machines are manufactured with a staff of around 1000, 90% for export. With subsidiaries in the USA, China, India and Turkey, "LiDO" is also internationally represented.

With the purchase of several INDEX turning-milling centers a 3D CAM system was required in order to make the newly created business division productive as quickly and seamlessly as possible, and to tie it in optimally with the existing machine pool. The Moldtech system vendor proved to be a competent partner which, with its TopSolid'Cam, was able to demonstrate a highly efficient programming system for implementation, training and ongoing support.

TopSolid'Cam demonstrates its credentials through:

- Total collision control, even with complex clamping assemblies
- Easy setting of synchronisation marks
- Foreign data import and scaling to mid-tolerance
- Fast and secure NC block output
- Raw parts management in real time
- Easy handling

Weaving makes many things possible

After wood and stone working, weaving is one of humanity's oldest trades, with proofs of the activity stretching back 32,000 years. Woven remains of garments, for example, have been found in the burial chambers of Ancient Egypt. Today, of course, it is no longer a matter of sending a shuttle back and forth on a clattering wooden weaving loom. On highly technological weaving machines, wool, silk and linen are woven into high-value materials for clothing, furnishings and drapes. And that isn't all: "Woven materials are to be found in more products than you might imagine," says Karl-Heinz Kragl, NC programming team leader at Lindauer DORNIER GmbH. Take airbags or tires: in the millions of cars driving along our roads, and also in aircraft, tire cord is used for strengthening the rubber profile. Airbags, made of an extremely dense material which needs to inflate in seconds in the event of an accident, are also woven, predominantly on the machines of Lindauer DORNIER GmbH.

"Thanks to TopSolid'Cam we can represent virtually the growing complexity and functional diversity of today's production machinery, and obtain well-conceived, trouble-free post-processors for smooth-running program sequences on our machine tools."

Karl-Heinz Kragl,
Head of Production, Lindauer Dornier GmbH

These so-called "technical" textiles account, moreover, for more than half the company's business. For this reason, for many the name DORNIER still today is associated with the development and construction of aircraft, just as it was until the end of the Second World War. Before then, the factory in Lindau served as a supplier company in which, among other things, tail unit parts were manufactured. After the war, however, the Allied occupation forces prohibited aircraft manufacturing in Germany, and so DORNIER had to look around for a new field of activity. A nearby textile factory needed weaving looms and spare parts, following the inactivity of the weaving looms during the war. The high demands provided the momentum. Through innovation DORNIER once again, as previously in aircraft construction, achieved world-renown in this field too, from a standing start.

First to be produced were shuttle weaving machines, with their shuttles that shoot back and forth, and drying plants for the cardboard, paper and gypsum plasterboard industry. In 1967, the introduction of the rapier loom provided the platform for renewed success, and since then the Lindau-based DORNIER company has established itself as the largest German and an internationally renowned weaving machine manufacturer.

The stuff the future is made of

With its "Composite Systems" division, founded in 2015, the company is nowadays focusing on the development of special machines for the manufacturing of fiber-reinforced composites. This is a field in which the company sees a big future market. The 3D weaving machines bind together various carbon and glass fiber-based materials, with extremely versatile application possibilities, such as in turbine blades for jet aircraft.

For this new line of business, a new production hall was brought specifically into service. From planning through component manufacturing to assembly, the textile weaving machines have always been entirely constructed in-house at LiDO, and nothing is going to change in that respect with the ultra-modern composites industry machines.

So that the renowned weaving machines can function seamlessly, quality is the focus of attention right from the production of the individual machine parts. For this, the latest turning-milling centers have been installed in the new production hall. They offer flexible usability and make it possible to fully machine a wide variety of workpieces, practically right off the drawing board.

The geometrically demanding and highly precise workpieces must, furthermore, possess high surface quality. The spatial constraints, many axes and even more interfering contours in the machine room of the INDEX machines require therefore not only the decades-long know-how of the employees but also a modern CAM system, enabling programming by the user in a virtual machine. "From the start it was clear to us that you can only program such complex machining with a 3D model," Mr Kragl relates.

Convincing simulation

The excellent machine simulation in TopSolid'Cam was also a decisive factor in the systems vendor, Moldtech, being awarded the contract for linking up the new machine pool. To this end, Moldtech first generated in TopSolid'Cam the 3D models of the INDEX machine models, including the related kinematics. In TopSolid'Cam users therefore program their workpiece already in the virtual clamping situation, and can match up all components optimally with each other on the PC. This also includes representation of the available tools. Users can - and should - expand and manage the system-specific tools library based around their actual tools, including the cutting parameters. TopSolid'Cam then calculates, based on the stored cutting parameters, feed rates and time values for tool changing, the duration of the processes, and also graphically displays the process sequence. Collisions can be eliminated at an early stage and optimum tool paths can be determined, also thanks to the automatic raw parts management in TopSolid'Cam. All machine paths are generated in constant comparison between two geometric models: the raw part and the finished part. The raw part is updated after every machining run so that work always continues in line with the current geometry.

"If we continue to work so well together, we shall achieve our goal of attaining practically 100% trouble-free operation of our NC programs," declares Mr Kragl. Only when importing 3D models from design are minor adaptations required at LiDO, and these can in any case be rapidly implemented via the integrated modeling function for imported CAD data. Thanks to the surface function in TopSolid'Cam the data can be easily imported, modified as required in line with production, and even scaled to mid-tolerance.

Pulling all the strings with reliable post-processors

The program follows the post-processor sequence according to the simulation and any optimisations made. TopSolid'Cam already possesses as standard excellent post-processors, which are developed in close collaboration with the machine manufacturers. Moldtech has linked up all multi-tasking machines in the new production hall to TopSolid'Cam via high-performance post-processors. These are provided with a NC code from the CAM application. "You'll never hear Moldtech saying no can do," Mr Kragl declares: "All post-processors were up and running in no time, for us to be able to program with them. If any machining cannot be satisfactorily supported, we receive within one day an updated post-processor." This also fills the Lindau company with confidence for the latest project to be undertaken with Moldtech and TopSolid'Cam: a post-processor for a sliding headstock with 3 channels and 10 axes.

A strong team

To accompany implementation, Moldtech has produced for LiDO a progressively constructed training concept that has been adapted to the needs of the weaving machine manufacturer. With this, the employees have not only learned the basics of how to work with TopSolid'Cam but have also received special training on the topics of CAD, CAM and turning and milling tools. And if ever a LiDO employee gets stuck on an aspect of their work preparation, the software partner can always be reached by email, phone and remote maintenance. When it comes to support, LiDO has also found the right partner. Through adaptation to technological developments and ever-increasing demands in the manufacturing of components the machine pool of any company must undergo changes over time. Yet this holds no fears for such an innovative company as Lindauer DORNIER GmbH. "Thanks to the switch to the innovative TopSolid'Cam 7 we are confident that we shall be able to address any future demands that come our way," says Mr Kragl.

Courtesy: TopSolid
For more details regarding TopSolid CAM, contact www.designcell.org.

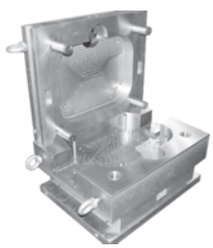
ASHNA
Toolroom Excellence

While You Focus On Your Core Competency And Growth,

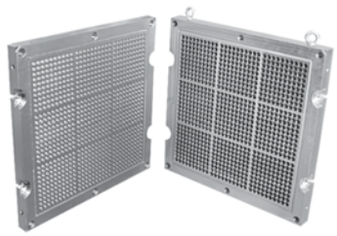
We Extend The Best Support For Mould Base Solutions

Standard Mould Base

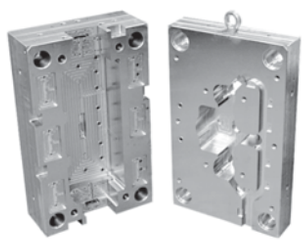
Pressure Die Casting

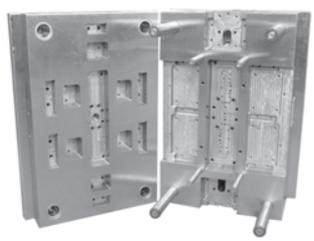


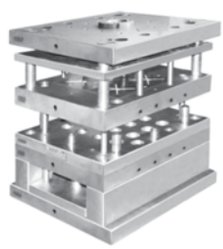
900 Cavity Rubber Mould Base



Customized Mould Base







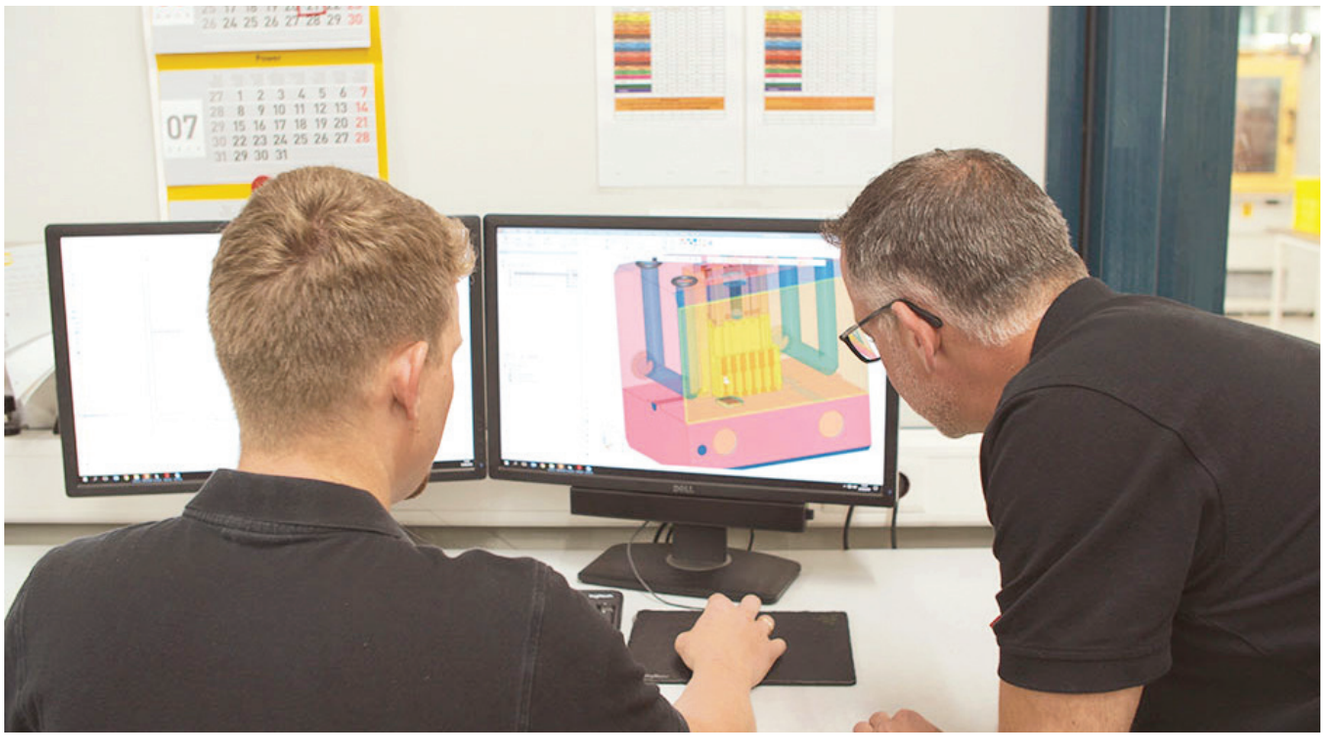
Standard & Customized Mould Base | Machined Plates | Machined and Bore Plates | Pillar Die Set

ASHNA ENTERPRISE

P: 0250 - 2450407 / 08 | **M**: +91 9322 519511 / 9028 002982

E: ashnaenter@rediffmail.com / info@ashnaent.com | **W**: www.ashnaent.com

HARTING Improves Tool Quality, Reduces Scrap, and Delivers Moulds Faster with Cimatron

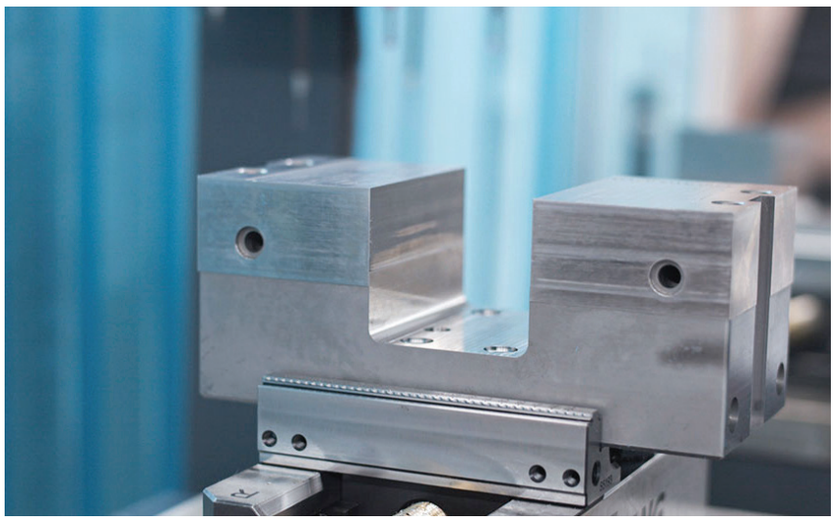


German toolmaker relies on integrated CAD/CAM software from 3D Systems to design and manufacture high-precision moulds.

HARTING Applied Technologies, an independent member of the HARTING Technology Group with headquarters in Espelkamp, Germany, is a specialist in sophisticated toolmaking. Its 49 employees develop, design, and manufacture injection moulds, aluminum and zinc die-casting moulds, stamping and bending dies, and special machines. All of its customers are members of the HARTING Group, which means the company works solely for internal customers.

HARTING employees use Cimatron to design and manufacture high-precision, single- and multi-component moulds. Cimatron enables them to achieve higher data integration in the overall production process.

Before switching to Cimatron, HARTING used other software solutions (SOLIDWORKS for CAD and I-deas for CAM) that lacked data integration. A lack of data integration between software systems generally leads to production scrap because of data transfer errors between individual production steps. At HARTING, this led to a variety of problems that negatively impacted production reliability and lead times, which are key financial factors for a company



operating as a profit center within a corporate group that must meet high quality and delivery requirements.

Optimised Mould-Making Process

Using the dedicated automation features of Cimatron for mould design, electrode design, and NC programming, HARTING optimised the entire mould-making process, which led to improved tool quality, reduced scrap, and accelerated delivery times.

Andreas Weiß, production manager at HARTING Applied Technologies, praises working with Cimatron: "Rolling out Cimatron quickly enabled us to resolve the substantial EDM problems that we had been combating for 12 years."

"With the implementation of Cimatron, we achieved data and process integration in the entire mould-making process, which is a key advantage for us."
—Andreas Weiß, Production Manager, HARTING Applied Technologies

Accelerating Lead Times

"The switch to the Cimatron QuickElectrode add-on was a major improvement from the system we used previously," recalls Weiß. "It offers several advantages such as working smoothly and reliably with the data and including all position data in the drawings."

In addition, because they are now using one system to design and manufacture electrodes, they can maintain parallel workflows by starting the programming about two weeks earlier, before the design is complete, which helps accelerate lead times.

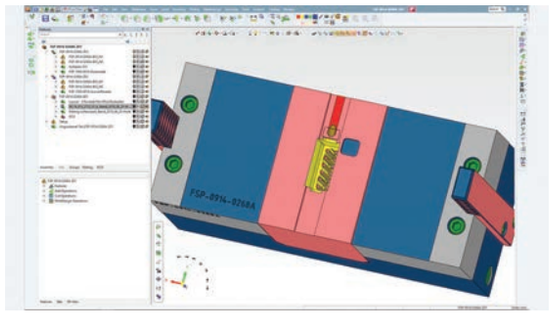
"This is where we achieved the first data continuity. Electrodes designed in Cimatron were available, the CAM software was ready to use, and the electrode milling process was already end-to-end," recalls Weiß. "In addition, all the information in the electrode data could be used directly."

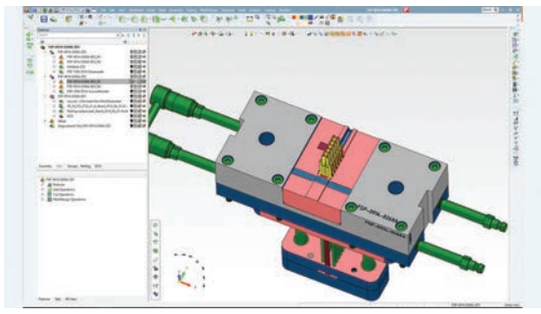
Reducing Manual Work and Errors

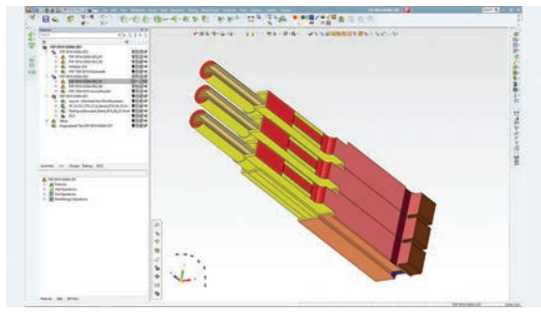
Now that everyone at HARTING is using Cimatron, the production of aluminum and zinc die-casting moulds starts with design. And, unlike other CAD/CAM software solutions, Cimatron is parameter-driven, which provides designers enhanced flexibility to modify and scale models.

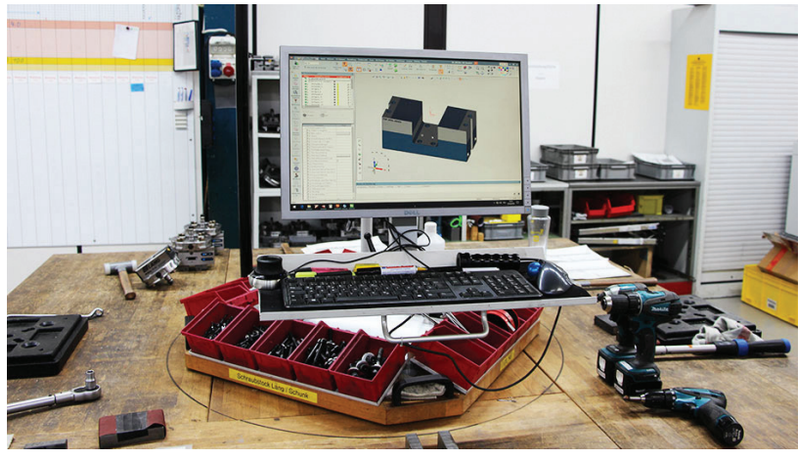
HARTING designers color in all surfaces in the Cimatron mould design (CAD) module to clearly distinguish contact surfaces, free surfaces, and mould contours. This is useful because they are able to reduce and eliminate errors.

"Thanks to data integration and a color-coded tolerance system based on surface coloring that we developed in house, we can now integrate all the necessary information for part production—









tolerances and production processes—in the data," explains Weiß.

This process, as well as using Cimatron view-only licenses on the shop floor for finishing processes like grinding and final assembly, eliminates the need for most paper printouts and provides access to much more information than would be available on a printout, making production virtually paperless and reducing manual work.

Improving NC Programming and Tool Quality

With the Cimatron NC Programming (CAM) module, HARTING is now able to program any CNC or EDM machine.

A clear benefit of switching to Cimatron is the ability to simulate collision for 5-axis machining processes, which was not possible with previous solutions.

Other advantages include improved tool quality and prolonging the life of cutting tools with reliable machining.

Phased Implementation and Outstanding Training

To avoid productivity loss, HARTING implemented Cimatron in phases: first the Cimatron NC solution for programming milling machines (CAM), followed by the QuickElectrode add-on, and then the Cimatron mould design solution (CAD).

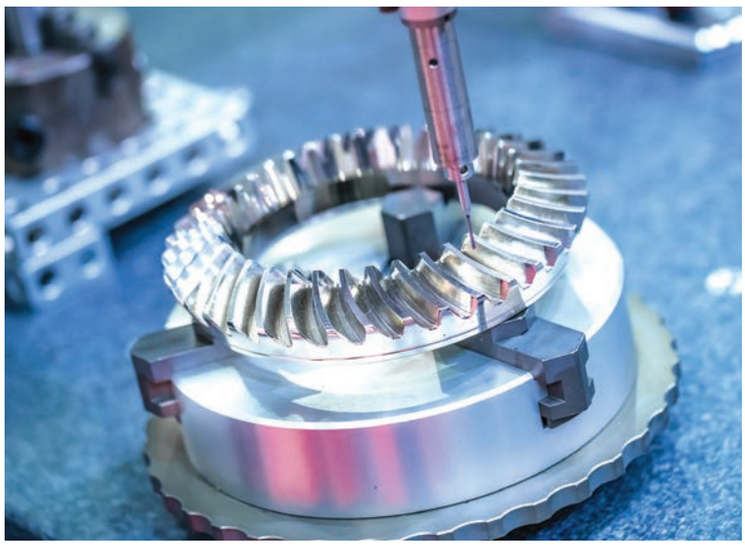
HARTING employees participated in the comprehensive Cimatron training offered by 3D Systems to get up to speed quickly and ensure a smooth implementation. Thanks to this training as well as follow-up training courses, the switch was easy, says Weiß: "We received individual training precisely tailored to the needs of HARTING Advanced Technologies."

Industry Excellence

HARTING won a category award in the Excellence in Production Tool and Die Making competition in 2014, 2016, and 2018. The 2018 jury praised their high level of automation in essential machining processes such as milling, die-sinking EDM, and wire-cut EDM—which was largely made possible by their deployment of Cimatron.

Weiß thinks Cimatron is the best CAD/CAM solution for the entire mould-making process at HARTING Applied Technologies and can't imagine switching to any other CAD/CAM software: "Competitive products would first have to achieve the data integration of Cimatron."

Chatter in Milling



You are sitting in an auditorium listening to a beautiful song from a renowned singer. You are totally immersed in the song and suddenly, the song is shattered by a loud screeching noise from the PA system. You are rudely awakened from your delightful experience. I believe all of us have experienced this scenario.

The high-pitched screech from the PA system is known as audio feedback. This happens due to the presence of a sound loop between the audio output and the audio input. The screech says that there is something undesirable about the arrangement which is not suitable to the setting.

And "chatter' says the same thing when it happens during machining, something undesirable is there.

Chatter is a resonant vibration (also called as resonant chatter), which feeds on itself. Resonant vibration can be defined as a forced vibration in which the frequency of the disturbing force is very close to the natural frequency of the system and the amplitude of vibration becomes very large. The resulting response vibration is amplified and can be huge. Chatter can be quite violent and will create a distinctive loud noise. It is very bad for the tool life, spoils the accuracy and surface finish of the component. It is also bad for the machine spindle.

Chatter can also be described as regenerative vibration; it can feed on itself. Vibration at the cutting edge leads to a wave in the workpiece and constant vibration creates series of waves. When the second pass is made over this surface, which is wavy, the forces on the cutting edge will vary according to the peaks and valleys of the waves. Chip thickness also varies. This will intensify the vibration which in turn make more waves of the same frequency on the surface. And this repeats during every pass.

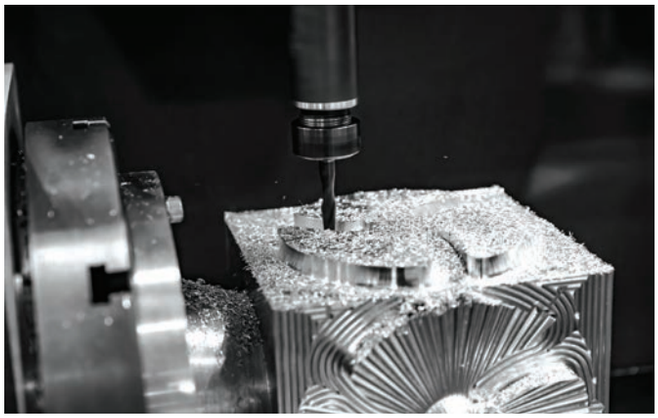
Chatter can be either related to the cutting edge or to the workpiece. In the first case the tool and machine vibrate and is transmitted to the workpiece. Whereas in the second case generally this happens while machining thin walls.

To control workpiece chattering, first and foremost is to use the sharpest cutting edge possible for the material to be machined. Uncoated cutting edges can help since the cutting edges will be very sharp, but not a very good proposition considering the cutting parameters. Tool overhang is also to be considered, use the shortest tool initially and longer tools step by step till the required depth is achieved (if possible). To increase the rigidity of the walls some easily removable filling material can be used to fill the cavity, but this is not always possible.

Apart from the above, machining strategy is the most important. Using the alternative side machining method will help to control chatter to great extent. Keep the maximum possible stock on the walls and machine the alternative sides. For example, first DOC on the first side of the wall, same DOC on the second side of the wall, second DOC on the first side then on the second side and so on.

When dealing with chatter related to the cutting edge, the matter becomes more complicated than related to workpiece. Since chatter is regenerative vibration, what can be the best way to attack? Answer is simple, prevent vibrations, which is not simple.

First, let us discuss why does the tool tend to vibrate. Imagine applying force on one of the prongs of a tuning fork. It will deflect. One you release the pressure it springs back and vibrates at its resonance frequency. Same is the case with the tool. When the cutting-edge digs into the material cutting forces acts against it and once it comes out of cut, the forces are released, it springs back and vibrates at its resonance frequency. This is called as tool deflection. Tool deflection is a natural phenomenon, but



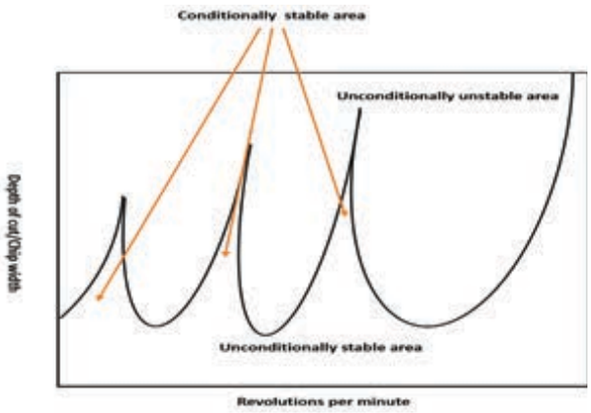
when it exceeds the limit, vibrations occur which can lead to chatter.

While addressing chatter, reduction of the cutting forces is the prime objective. Most of the precautions are as the same as in workpiece chatter. Using the most positive cutting-edge geometry is the first step. This depends on the material to be cut. For example, if you are machining hardened steel you need a strong geometry, a positive geometry intended for aluminium will be disastrous. So, select a comparatively positive geometry recommended for hardened steels. Reducing the number of cutting edges will naturally help to reduce the cutting forces and always use a differential pitch cutter. Use the maximum diameter with shortest overhang.

But, is it only the cutting edge responsible for chatter? Cutting edge is the part of the tool which is held in an adaptor. So, adaptors also play a major role in controlling chatter. Well balanced adaptors (G2.5 class) with a good runout (3 microns at L/D 3) will the best choice. Vibration dampened adaptors also helps to eliminate vibrations and thereby chatter.

One more major aspect cannot be forgotten, the machine. Since chatter is a resonant vibration which is excited by the cutting edges, sometimes a certain RPM will influence the workpiece at a frequency which will maximise chatter. These spindle speeds should be identified and avoided. Some experienced operators know that at some certain spindle speeds, there can be chatter and they avoid those speeds. They know the "sweet spots" or the "Stable Milling Speeds" of their machine by sheer experience.

If we approach chatter phenomenon scientifically it is possible to identify stable milling speeds of the machine using the "Stability Lobe Diagram" by Tobias. The diagram is plotted by a series of intersected borderlines of stability. A rough representation of the diagram is given below.



The curved lines divide the diagram into three areas: unconditionally stable, conditionally stable, and unconditionally unstable. Area below the line is unconditionally stable, which is independent of the chatter frequency of the RPM. Whereas the area above the line is unconditionally unstable, chatter will occur in this area where the chatter frequency of the RPM will influence. In the conditionally stable area, points are stable when they are below the lobes, and unstable above the lobes.

If the stability lobe diagram cannot be provided by the machine manufacture, there are two ways of doing it. Manually, by listening to chatter and plotting the points, which is a laborious process. As mentioned earlier an experienced operator will know these points and will avoid certain spindle speeds. Another way is by investing or getting the services for analytically determining the lobes. There are various providers and equipments capable of doing chatter analysis.

Chatter is a phenomenon which will give undesired results. But it is not unavoidable. Precautions mentioned in this article can be helpful to address this phenomenon.

About Author

Sashi Menon, Director of Gratias Solutions, providing consultancy services in various aspects of manufacturing. With a career spanning over 35 years, he has experience in Metal Cutting, Promotion of New Metal Cutting Techniques, Product Launches, Conducting Seminars, Educating Customers & Internal Personnel, Sales Management, and Business Development. He has worked as General Manager (Product Management & Application Support) for Seco Tools India and Head (Technical) for Hoffmann India. A highly performing executive with a proven track record of accomplishments and has led teams of highly professional technical experts.

MOST MODERN & SPECIALIZED HEAT TREATMENT SOLUTIONS

MODERN METALS INDIA

METALS INDIA Group Co.

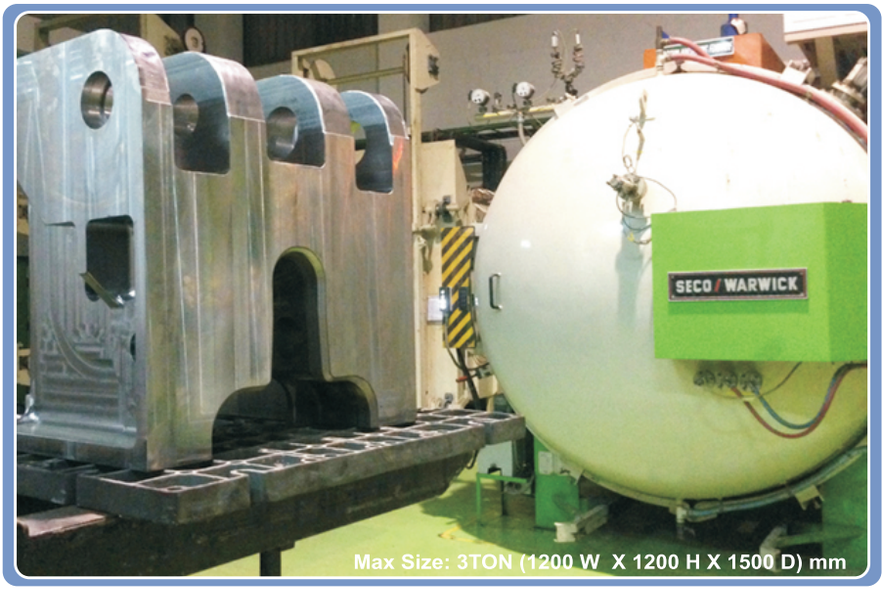
VACUUM HARDENING & NITRIDING OF DIES & MOULDS

PROCESSES

- Vacuum Hardening with Isothermal Quenching
- Vacuum Tempering
- Stress Relieving / Tempering
- High Temperature Nitriding of Stainless Steel
- Vacuum Brazing
- Vacuum Carburizing

ADVANTAGES

- HIGH SURFACE HARDNESS
- HIGH WEAR RESISTANCE
- LONGER MOULD LIFE
- NO DIMENSIONAL CHANGE

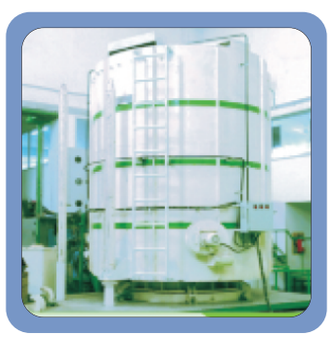


PLASMA NITRIDING PULSPLASMA® PLATEG GERMANY

PROCESSES

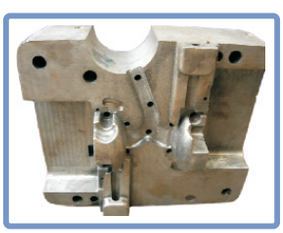
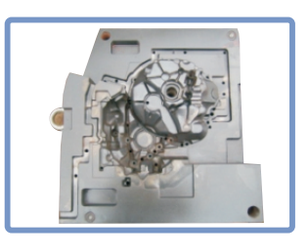
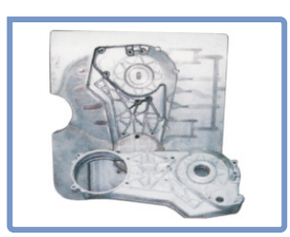
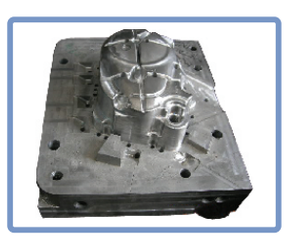
- Plasma Nitriding (PulsPlasma®)
- Plasma Nitrocarburising
- Pre & Post Oxidation
- Oxynitrocarburising
- Plasma Assisted Carbonitriding

VACUUM GAS NITRIDING STANGE GERMANY



PROCESSES

- Vacuum Nitriding
- Gas Nitriding
- Gas Nitrocarburizing
- Pre & Post Oxidation

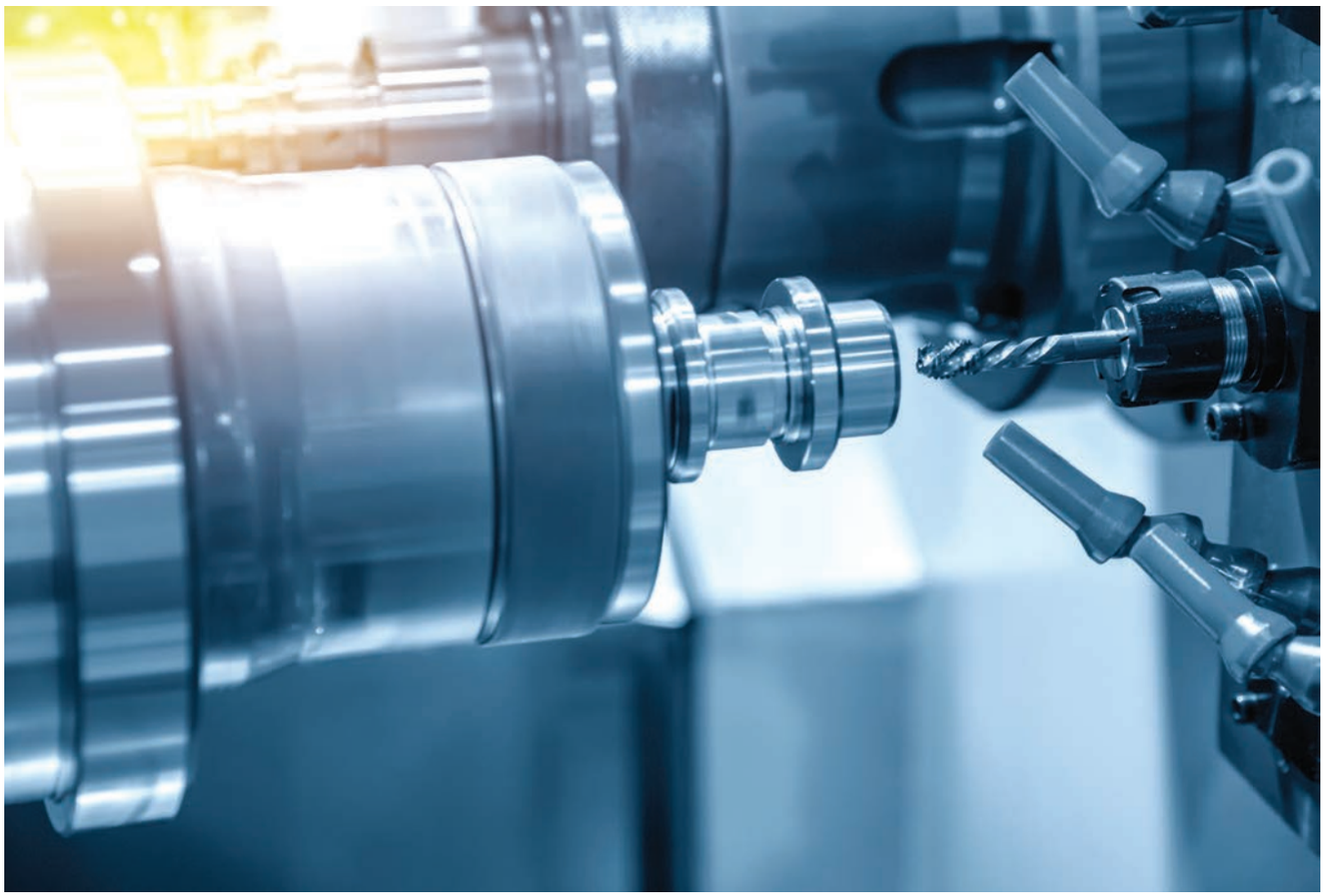
Scan the QR code to experience the revolution in heat treatment

MODERN METALS INDIA PVT. LTD.

Plot No. 131, Sector-25, Ballabgarh- 121 004, Faridabad (Haryana) INDIA, Phone: +91 9910012626
www.modernmetalsindia.com, info@modernmetalsindia.com

Is It Time To Replace My CNC Machine?

CNC Machines, like everything else in life, begin to wear down as they age. Whether your issues are performance or maintenance related, an aging piece of equipment can leave you wondering whether or not it is time to replace your CNC machine. On the surface, it may seem like a simple decision, but there are many facets that can have lasting impacts on your business' profitability. While the simple dollars and cents will weigh heavily in your decision making process, it is also important to consider several key alternatives before pulling the trigger on a machine replacement. Here are some signs that it's time to replace your CNC machine.



TAGMA Centre of Excellence and Training (TAGMA CET) Chakan Pune

Maxima Servo 500


Maxima Servo 850

Ancillary equipments & accessories

- 3 HRS controllers each of 8 zones.
- 2 Dehumidifiers
- Air Compressor
- Chiller
- 4 Water MTC of max heating capacity 120°C
- Overhead crane of lifting capacity 10 T

Special Packages available starting from Rs. 6000/-

Training Facility
Skill development & training of students & experienced manpower

State of the Art Machineries
To be available for nominal user fee which will enhance quality of products

Trial Run
Through cutting edge equipment & state-of-the-art infra

Enhance Standards of Cluster Units
CET to follow latest internationally accepted standards in manufacturing practises

Plot A – 22/2, Chakan Industrial Area, Phase II, M.I.D.C., Village Khalumbre, 410501 Tal. Khed, Dist. Pune Tel. : 9527689700 Email : tagma.pune@tagmaindia.org

A Dip in Production

One indicator that it may be time to replace your machine is that it takes longer to produce parts than it did in the past. A wide range of wear and tear could force you to break down for maintenance or adjust your speeds and feeds to yield acceptable parts (leaking fluid, timing circuits, busted belts, etc.) and these malfunctions can significantly hinder your rate of production. For machines that are running 'round the clock', it won't take long to notice these delays eating into your shop's bottom line.

Often times, these issues aren't readily apparent.. Delays can occur by the second, (as opposed to hours of down time), but when these instances are combined, we begin to see a bigger picture. This is why it is important for diligent operators to track production times and delays, so they can begin to notice trends as soon as possible.

Replacement parts are harder to find

When it comes to machine maintenance, the million-dollar question is always "should I repair the machine or replace it?" A good signal that it's time to replace your machine is that replacement parts are harder and harder to find. With skilled operators and a routine maintenance schedule, some CNC machines will outlive their maker. This is great when it comes to machine longevity, but not so much when the primary source of replacement part ceases to exist.

Secondary part providers are always an option, but as replacements stop being produced, it will become harder (and more expensive) to get your machine the components it needs to function at a high level. Taking time to search for new parts while your machine sits idle is another source of lost revenue. If you're already struggling to find replacement parts, it may be time to replace your machine.

Poor Maintenance

There is generally a clear correlation between the life of a CNC machine, and the routine/preventative maintenance it receives. Has your machine been maintained regularly? Do you have detailed maintenance logs and perform routine audits? If you have a used machine and don't know the entire maintenance history, consider the frequency that the machine needs repairs. Without a proper log, on-going maintenance issues can go unnoticed.

The Cost of Repairs

Time to do some math. Replacement parts get spendy. Service technicians even more so. Depending on the rate at which your machine needs repairs, when factoring in parts, labor, down time, etc. you can quickly get to a point where it no longer make sense to stick with a piece of aging equipment. Before long, you could be spending more than it costs to purchase a new machine, just to keep your used CNC limping along.

This, of course, depends on what sort of machines you're looking to acquire. While technology is becoming more affordable, new CNCs can vary widely in price. Some will cost hundreds of thousands of dollars or more. It may not make sense in every scenario to purchase a brand new replacement, but there are "new used" or factory refurbished options that would be significant improvements on an old piece of machinery. This is why it is so important to understand the true costs of your used machines, and how those relate to other options on the market.

Safety First!

Finally, and perhaps one of the most important factors, is whether the machine is still safe to run. It's easy to get caught up in doing the math and finding the most cost-effective solution to keep your business running, but the safety of your employees should always come first. If there's a reason to believe the machine isn't safe to operate, or could malfunction during production, it is time to replace your equipment.

As you can see, there are many factors in play. There is rarely a definitive moment when you'll know it is time to part ways with an aging CNC machine, and the question or "repair or replace" will likely be ongoing. But taking into account the variables discussed in the article will help you better understand the true cost of operation, and will better prepare you when it comes time to make this decision for your business.

About Author

Bryan Rosenberger, a lifelong Oregonian, helps run R&R Manufacturing, a family-owned machine shop that specialises in waterjet cutting and CNC machining. Outside of manufacturing, Bryan enjoys hiking in the Pacific Northwest and spending time with his wife and two young daughters.

Talk to

The expert

On your requirement for tool, die & mould steels

State-of-the-art infrastructure

Strategically located across the country

Service support for all our global products

89-A, MTH Road, Ambattur Industrial Estate, Chennai - 58. Tamilnadu, INDIA.
Tel.:91-44-4291 4848 | Fax.:91-44-2625 4707

Branches:
• Delhi (NCR) • Mumbai • Sriperumbudur (TN)

Group Companies:
• Goel Special Steels & Engineering Pvt. Ltd. • Kind Special Steels (India) Private Limited
• Sanjay Steel Syndicate (Vacuum Heat Treatment / Gas Nitriding / Tool Room)

GOEL
STEEL COMPANY

Special Steels • Engineering Services

www.goelsteel.com | info@goelsteel.com

National:

ProPAK India

PROPAK India 2019 is an international processing and packaging trade event for India. October, 21-23, 2019; Bombay Exhibition Centre, Mumbai.

Contact Details:
UBM India Pvt. Ltd.
Times Square, Unit No.1 & 2,
B Wing 5th Floor Andheri-Kurla Road,
Marol, Andheri (E),
Mumbai 400059
Tel: +91 98196 15657
Email: sameer.mithia@ubm.com
Web: www.propakindia.com

ENGIMACH 2019

IDEAL exhibition for machine tool manufacturers, the event offer a quintessential launch pad for new ideas, products and services; Dec 1-8, 2019; The Exhibition Centre, Gandhinagar.

Contact Details:
206, 2nd Floor, Harmony Icon,
Near Baghban Party Plot,
Thaltej Hebatpur road, Thaltej,
Ahmedabad 380059,
Gujarat, INDIA
Tel: +91-9909041613
Email: info@kdclglobal.com
Web: www.kdclglobal.com

DIEMOULD India 2020

THE 12th edition of the DIEMOULD Show all set to showcase the latest in the world of tooling industry and bring together leading brands and key players from the die mould and machine tool segment on a single platform, April 22-25, 2020; Bombay Exhibition Centre, Mumbai.

Contact Details:
TAGMA, A- 33, Nand Jyot Industrial Estate, Safed Pool,
Andheri - Kurla Road, Mumbai
Tel: 22 28526876
Email: tagma.mumbai@tagmaindia.org

International:

BLECH Expo

INTERNATIONAL trade fair for sheet metal working. The only event in the world that deals with the complementary technologies of sheet metal processing and joining technology, November, 5-8, Stuttgart, Germany.

Contact Details:
P. E. Schall GmbH & Co. KG
Gustav-Werner-Straße 6
D - 72636 Frickenhausen
Tel: +49 (0) 7025 9206-0
Fax: +49 (0) 7025 9206-880
Email: info(at)schall-messen.de
Web: www.schall-messen.de/en/

Formnext 2019

FORMNEXT is the leading exhibition and conference dedicated to additive manufacturing and all of its upstream and downstream processes, November 19-22, 2019, Frankfurt, Germany.

Contact Details:
Mesago Messe Frankfurt GmbH
Rotebühlstr. 83 – 85, 70178 Stuttgart,
Germany
Tel: +49 711 61946-0
Fax: +49 711 61946-96
Email: info@mesago.com
Web: www.formnext.mesago.com

ASIAMOLD

THE premier platform for mould, additive manufacturing and forming technologies, February 26–28 2020; Guangzhou, China.

Contact details:
Guangzhou Guangya Messe
Frankfurt Co Ltd
Room A2001, Center Plaza
No. 161 Linhe Road West, Tianhe District
Guangzhou, P.R. China
Tel: +86 20 3825 1558
Fax: +86 20 3825 1400
Email: asiamold@china.messefrankfurt.com

ARE YOU READY

TO INJECT GROWTH IN INDIAN MANUFACTURING

?

Be a part of India's largest Die & Mould gathering and demonstrate your wide range of Injection Moulding Capabilities.

TAGMA DIEMOULD INDIA-2020

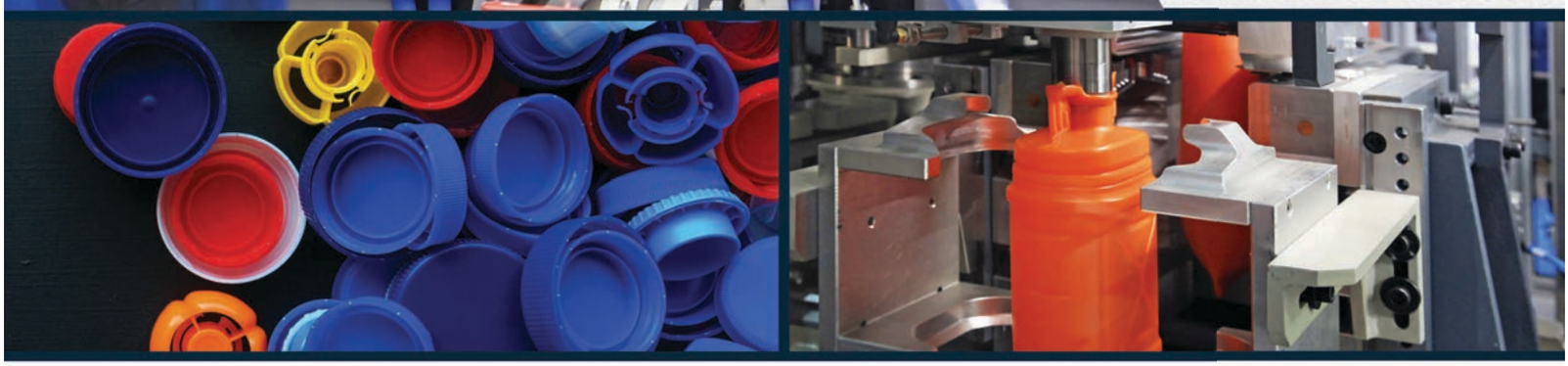
22 23 24 25 APRIL 2020

Bombay Exhibition Centre, Goregaon (E), Mumbai, India

Ideal opportunity to showcase your Injection Moulding capabilities?

Exhibit Category

- Blow Mould
- Injection Moulding Machines
- Hot Runner Systems
- Auxillary equipment
- Raw material
- Resins & compounds etc.



ORGANISED BY:

TAGMA INDIA | TOOL AND GAUGE MANUFACTURERS ASSOCIATION - INDIA

A-33, Nand Jyot Industrial Estate, Safed Pool, Andheri - Kurla Road, Mumbai - 72
Tel.: +91 22 28526876, 28508976, 28503273, +91-9653427396
E-mail : tagma.mumbai@tagmaindia.org, tagma.diemould@tagmaindia.org

Supported By : CGSC, IFCCI CCI FRANCE-INDE

Supporting Partner Associations : ADC TECH, GpmA, iPi INDIAN PLASTICS INSTITUTE

Patron Members of TAGMA

NO	Existing Patron Members	CITY
1	BHARAT TECHNOPLAST PVT LTD	Mumbai
2	BRAKES INDIA PRIVATE LIMITED	Chennai
3	CRAFTSMAN AUTOMATION PVT LTD	Coimbatore
4	DEVU TOOLS PVT LTD	Mumbai
5	ELECTRONICA HITECH MACHINE TOOLS PVT. LTD.	Pune
6	GODREJ & BOYCE MFG CO LTD - Tooling Division	Mumbai
7	JAIN IRRIGATION SYSTEMS LTD	Jalgaon
8	KINETIC TECHNOLOGIES (a divn. of Jayahind Sciaky Ltd)	Pune
9	LMT INDIA PVT LTD	Pune
10	LUCAS TVS LTD	Chennai
11	MAHINDRA UGINE STEEL CO LTD	Raigad
12	MISUMI INDIA PVT LTD	Gurgaon
13	MULTIPLE SPECIAL STEEL PVT LTD	Bengaluru
14	MUTUAL ENGINEERING PRIVATE LIMITED	Thane
15	NTTF	Bengaluru
16	SANDVIK COROMANT INDIA at SANDVIK ASIA PVT LTD	Pune
17	SCHUNK INTEC INDIA PRIVATE LIMITED	Bengaluru
18	SECO TOOLS INDIA (P) LTD.	Pune
19	SRIDEVI TOOL ENGINEERS PVT LTD	Thane
20	SUNDARAM CLAYTON LTD.	Chennai

ADVERTISERS INDEX

ADVERTISER ..... Pg. Nos.

AMPCO Metal India Pvt Ltd 55
Asna Enterprises.....41
Cad Macro Design & Solutions.....11
Cam Tools 31
Devu Tools Pvt. Ltd. .....Back Cover
Die Mould India International Exibition.....23,53
Dijet Iindustrial Co., Ltd 15
Godrej & Boyce Mfg Co Ltd (Tooling Division) 17
Goel Steel Company 51
Kalyani Mould Base Pvt Ltd 19
Lucchini RS 13
Madhu Machines & Systems.....1
Meusburger India Pvt Ltd 7
Millutensil SRL 5
Modern Metals India Pvt Ltd 47
PCK Buderus (India) Special Steels Pvt Ltd 3,28,29,30,36,37
Precision Mould Tech.....2
Precision Punches & Dies.....27
Purohit Steel India Pvt Ltd.....Front Inside Cover
TAGMA Technology Centre.....49
Vijaydeep Mould Accessories.....Back Inside Cover
Voestalpine High Performance Metals India Pvt. Ltd.....9
Yudo Hot Runner India Pvt. Ltd. 56

New Members - OCTOBER 2019

1. **CAD CAM GALAXY**
   02, MIT Industrial Estate,
   Near MSEB office, Chinchpada,Vasai East, Palghar
   Thane – 401208 Maharashtra
   Tel: 9892151657
   Email: nadeem@omcam.com
   Contact Person: Mr.NADEEM ANJUM YUSUF ANSARI
   Activities : Die moulds

2. **KAMDAR BROTHERS OVERSEAS PVT LTD**
   505, Kailash Plaza, V.B Lane, Ghatkopar East
   Mumbai – 400077 Maharashtra
   Tel: 91 22-25014286 / 87
   Email: info@kbopl.com
   Contact Person: Mr. Harsh V Kamdar / Smit V. Kamdar
   Activities: Tool Steel Traders / Stockist Manufacturer's Representatives.

3. **RAGA ENGINEERS**
   30/2, Wear well complex, Industrial area,
   NIT Faridabad, Faridabad – 121001 Haryana
   Tel: 0129-4058247
   Email: rahat@ragagroup.com
   Contact Person: Mr. Rahat A Bhatia
   Activities: Manufacturer of peripheral and consumables for Die Castings

www.ampcometal.com

AMPCO®

AMPCO METAL

AMPCOLOY®940 & AMPCOLOY®944

Beryllium-Free Copper Alloys with high conductivity & high hardness

AMPCOLOY® 940 & AMPCOLOY® 944 have been created by AMPCO METAL to optimise combination of thermal conductivity, tensile strength and hardness for the plastic industry.

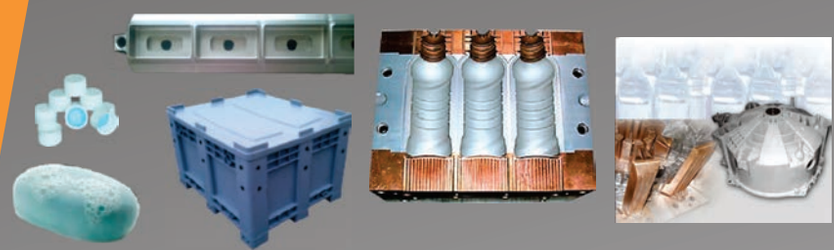
AMPCOLOY®

Mechanical and Physical Properties	Unit	Beryllium-Free Copper Alloys	
		AMPCOLOY® 940	AMPCOLOY® 944
Rockwell Hardness	HRB/HRC	95 HRB	30 HRC
Thermal Conductivity λ at 20°c	W / m -K	208	156
Electrical Conductivity	% I.A.C.S	48	30

Applications:

- Injection moulding
- Thermoforming
- Blow moulding
- Soap Moulds

With AMPCO® Aluminium bronze user gets:



Food Approval of AMPCO®, AMPCOLOY® Materials
AMPCO® 18, AMPCO® M4 , AMPCOLOY® 940 , AMPCOLOY® 944

Address

AMPCO METAL INDIA PVT. LTD.
A-8/4, At Village - Nighoje, Chakan MIDC,
Phase IV, Tal : Khed, Pune – 410501
MAHARASHTRA, INDIA
Tel: +91 2135 610 810 | Fax: +91 2135 610 811
infoindia@ampcometal.com

AMPCO METAL S.A
Route de Chesalles 48 P.O Box 45,
1723 Marly Switzerland
Toll Free Phone: 800 8080 5050
Tel.: +41 26 439 93 00
Fax.: +41 26 439 93 01

AMPCO METAL EXCELLENCE IN ENGINEERED ALLOYS

HOT SOLUTION

YUDO

HOT RUNNER SYSTEM

Get the premium efficiency of prewired hot runner system that is setting benchmarks.

Product Features

- 100% Leak proof guarantee
- 0% heater and t/c failure
- Best in segment, cylinder cooling efficiency
- Customized system to suit gates at any angle

Part Advantages

- Perfect solution for GF and LGF applications
- Quickest color change
- Intelligently controls cascade injection moulding product with variable wall thickness
- Prevents over heat effect by optimizing thermal balance based upon casted heaters technology

YUDO HOT RUNNER INDIA PVT. LTD.

A/113 & 114 , Evershine Industrial Estate, Waliv Road, Chinchpada Junction, Vasai (E) - 401208, INDIA.

Tel.: +91 766639458, +91 7666920922 | Email: sales@yudo.co.in | www.yudo.com

General Mould Accessories

VIJAYDEEP®
Standard Solutions

+91-6107 7900 (100 lines)
sales@vijaydeep.in
www.vijaydeep.in

vividhart; +91-9820036041

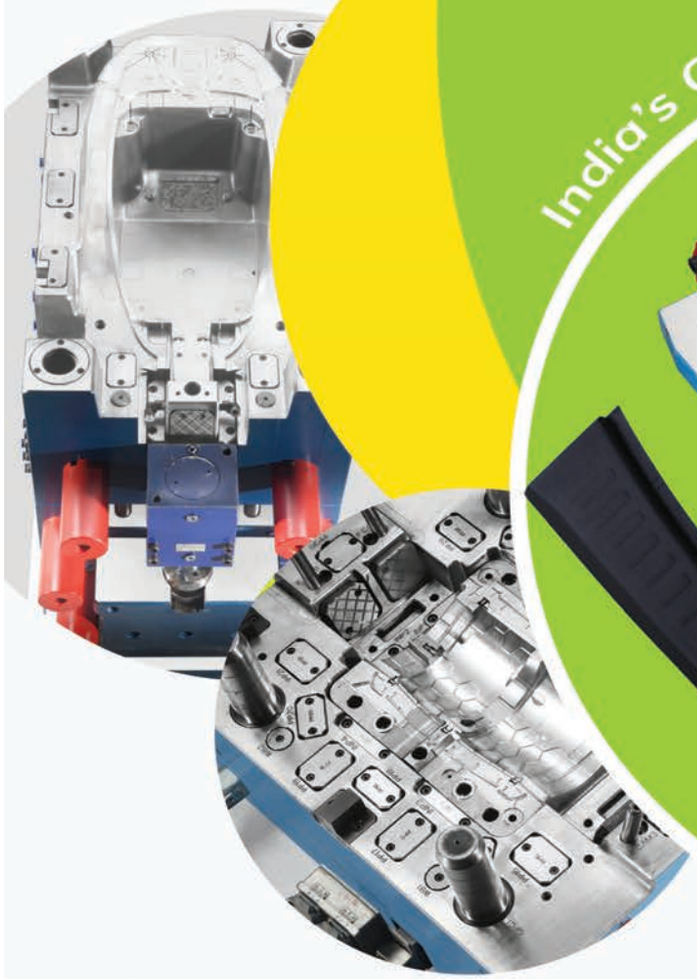
Estd.1993

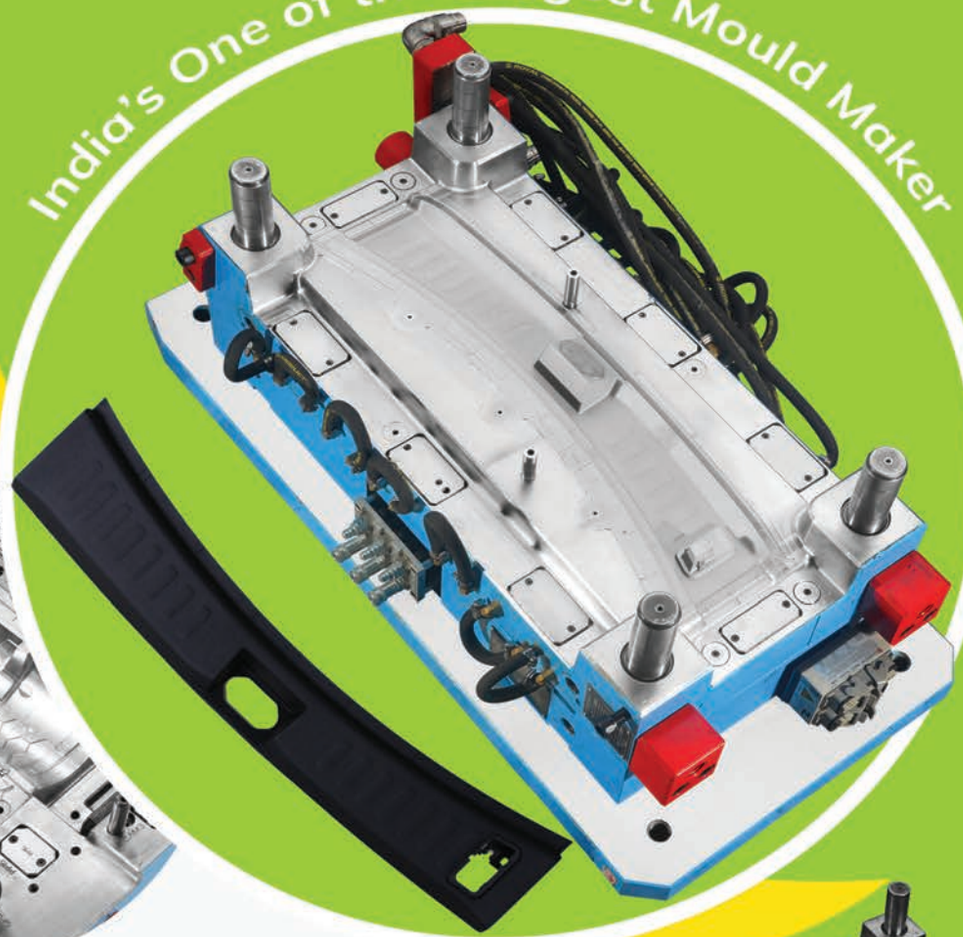
DEVU TOOLS PVT. LTD.

MOULD MAKERS
MANUFACTURER & EXPORTER

Excellence In High Precision Mould

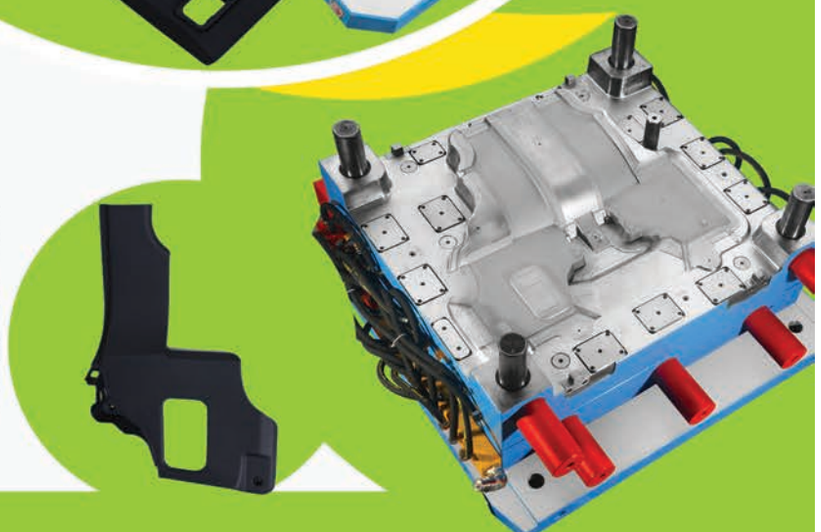
India's One of the Largest Mould Maker





Mould making is an art over the years we have mastered the 'Art'.

At Devu tools we begin with a complete understanding of your needs, problems and production requirements. An in-depth analysis from our experienced engineers, resulting in solution to meet your molding needs. With World-class facility, high-end technologies, and skilled manpower, we are well positioned to serve the growing demand for the complex mould requirements. We believe in changing with time and well equipped to face the changing market dynamics.



DEVU TOOLS PVT. LTD.
Office : A/44, 2nd Floor Nandjyot Indl. Estate, Kurla - Andheri Road, Safed Pool, Sakinaka, Andheri East, Mumbai - 400072, India
Tel : +91-22-6128 2626 (100 Lines) / 2851 2635 / 6691 4412 ***Fax :*** +91-22-2851 8690 / 2859 0285 ***Mobile :*** +91-9820030764
Email : marketing@devutools.com, sheregar@devutools.com ***Web :*** www.devutools.com
Factory : Plot Survey No. 57/7, Atgaon Indl Estate, Mumbai Nasik Highway, Post Pundhe, Atgaon, Taluka Shahapur, Dist Thane-421601, Maharashtra, India