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SOS! COVID19 Relief Package desperately needed

On March 24, 2020, Finance Minister Nirmala Sitharaman announced that the Government was working an economic package to mitigate the impact of novel coronavirus (Covid 19) coronavirus on the Indian economy. Meanwhile, to provide some relief to manufacturers, FM has announced a number of measures like raising threshold for insolvency under IBC from Rs 0.1 million to Rs 10 million to protect MSMEs, no interest, late fee or penalty will be charged for companies with less than Rs 50 million turnover, etc. However, industry leaders were seeking major fiscal and monetary stimulus measures to urgently combat the impact of coronavirus on the economy.

There is a fear that India's SMEs might have to struggle for survival if the government does not follow international counterparts in offering financial support to those acutely impacted by the coronavirus pandemic. India (as of March 24, 2020) is one of few nations to announce neither budgetary support nor interest rate cuts. Labour-intensive SMEs need immediate fiscal relief and credit flow to keep their work force and essential plant and machinery running.

Assocham had recommended concessional working capital loans for MSMEs equivalent to one to three month's (based upon the extent of disruption) average turnover of last year. It also suggested another concessional finance at a rate of 5 per cent for three months through SIDBI for MSMEs to ensure adequate liquidity is maintained in the business operations.

The global slowdown will become more severe if the pandemic is not contained by April-June 2020. If Covid 19 outbreak spreads rapidly in India, it will affect domestic consumption, investment, and production; thus, further hurting confidence and the financial markets.

Hence, it is imperative for policymakers to intervene urgently to keep businesses running and preserve morale. Without strong financial stimulus, domestic industries are likely to enter a slowdown cycle in the coming weeks, and this will have a clear negative impact on India's economy in the medium to long term.

As regards laying off employees and inability to pay salaries and wages different countries have different safety nets. The British government will pay up to about \$2,900 a month to workers who have lost hours but are not laid off. The government in Germany will spend more than \$40 billion to help small businesses cover basic needs to stay afloat during the crisis in addition to a program that covers lost wages for employees who are sent home, to avoid laying them off. South Korea's employee-retention program covers 70 percent of wages or more, and the government recently eased up the rules to make more businesses eligible. Can Indian government cover salaries & wages for the tax-paying SMEs for three months if employees are not laid off?

Here are some measures that the government must consider for the SME & MSME sector:

- Align GST rates to two slabs
- All employers, who do not retrench staff during March - June 2020 and have a turnover of less than Rs 250 crores (Rs 2.5 billion), to be given a tax deduction of 25% of tax payable
- Tax refunds & exporter drawbacks held up need to be released on an urgent basis
- Announce 'interest payment holiday' for borrowers bearing loans during March-June 2020 for four months
- Better still roll over EMIs for six months

To know more on the "Effect of Coronavirus on Foreign Trade and Industry", do watch my video on IPFOnline: <https://www.youtube.com/watch?v=mYtbQYIcS9c>

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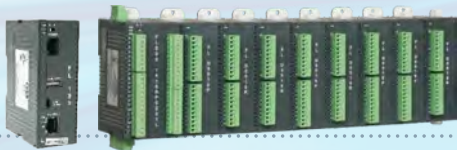
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SHAKEOUTS

Elektromag-Joest Vibration Pvt Ltd offers a wide range of shakeouts.



Features:

- The separation of castings and sand is almost always done on vibrating machines. Shakeout conveyors are used to shake off and segregate sand from castings and to crush the sand lumps without damaging the castings.
- In many cases the angle of attack is adjusted for each of the tasks. In the past, the angle of attack could only be adjusted mechanically and hence production had to be interrupted when the angle of attack needed adjustment.
- The angle of attack of Elektromag-Joest's shakeout conveyors can be adjusted during operation which does not require the stoppage of work.
- These shakeouts are of non-discharge or self-discharge type.

About the company: Elektromag-Joest Vibration Pvt Ltd, is a leading manufacture of vibrating equipments for foundry, steel, mining, quarrying, chemical, food, recycling, air separation and thermal processing.

Contact:

Elektromag-Joest Vibration Pvt Ltd, Mumbai
Tel: 022-66624444
Email: vibration@elektromag.com

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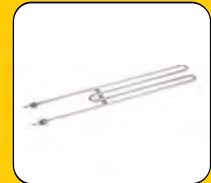
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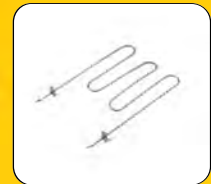
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Pune Techtrol Pvt Ltd offers a wide range of techtrol's IBR approved magnetic level gauge - MLGB.

Features:

- Techtrol is proud to announce its superior solution for safe & reliable visual indication of water/steam level in high temperature and high pressure boilers. Until recently conventional glass level gauges and float switches were used to indicate water/steam level in boilers.
- Its have come up with this trustworthy alternative to the legacy instruments deployed so far.
- Provides unambiguous level indication in bright red colored column formed by the flappers which is visible from a distance.
- It is available in SS316 material and designed for max test pressure of 50 kg/cm2 & temperature upto 300 °C.



About the company: Pune Techtrol Pvt Ltd is a provider of optimal products and solutions in level measurement and process automation systems for liquids and solids.

Contact:

Pune Techtrol Pvt Ltd, Pune
Tel: 020-66342900 Email: ho@punetechtrol.com

TENSION LOAD CELL

EPOCH Instruments & Controls Pvt Ltd offers tension load cell.

Features:

- This Epoch make tension load cell is a high precision force sensor for tension load measurement.
- Epoch provide tension load cell with build in shackle also Epoch can provide custom build tension Load with external shackle or inbuilt shackle.
- This tension load cell using for various tensile applications like tower testing, rope testing UTM machine, crane Load cell measurement.
- EPOCH has tension load cell form 5 kgs to 200 tonne.



About the company: EPOCH Instruments & Controls

Pvt Ltd was established in 1985 by a team of professionals to manufacture load cells, dynamometer, pressure transducer, process controller & various kinds of custom built industrial weighing systems to meet the various requirements of process industries, cement industries, general weighing application etc. The company has got several satisfied customers all over India.

Contact:

EPOCH Instruments & Controls Pvt Ltd, Bangalore
Tel: 080-23481364, 23283728
Mobile: 09035697225
Email sales@epochloadcell.com

CAN FORMER, CF 58

Lanico Maschinenbau Otto Niemsch offers a wide range of CAN former, CF 58.

Features:

- The new Lanico Can former CF 589 is a high-performance machine for the production of 3-piece aerosol cans.
- Achieves production speeds of 500 cans per minute and processes super thin body material down to only 0.13 mm thickness.
- In doing so, the machine enables material savings of up to 30 per cent compared with conventional machinery.
- During format changes, height adjustments can be performed in only 20 seconds without the need for additional tools.
- In accordance with Lamico's 'Lego-style' construction system, the machine uses modular tools, allowing a complete format change (diameter) in only 120 minutes.



About the company: Lanico Maschinenbau Otto Niemsch GmbH, based in Braunschweig, manufacturers equipment for the production of technical packaging.

Contact:

Lanico Maschinenbau Otto Niemsch GmbH, Braunschweig
Tel.: +49 5318090614
Email: kaufmann@lanico.de

DIESEL FUEL TRANSFER PUMP

Australian Pump Industries offers a high capacity diesel fuel transfer pump.

Features:

- The big 3"x 3" pump delivers a maximum flow of 1,500 litres per minute with a maximum head of 31 metres.
- The pump is self-priming, unlike regular centrifugal pumps, with the ability to operate even with depressions of air inside the pump.
- That ability prevents air lock; instead, the air and diesel fuel can be mixed together at the impeller.
- The air can then separate from the fuel which continues to circulate, pulling air out of the suction line until the pump is primed.



About the company: Australian Pump Industries is a provider of quality water pumps and cleaning equipment. Australian Pump products provide reliability, water efficiency, fuel efficiency and product longevity.

Contact:

Australian Pump Industries, Australia
Tel: (+61) 02 88653500
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KRITEK HIGH PRESSURE HYDRAULIC GEAR PUMPS

Veebee Hydraulics Private Limited manufactures hydraulic gear pumps.

Features:

- These pumps are competitively priced and are available as replacements to many Indian Tractor pump makes. Industrial pumps are available as replacements to many Domestic and International makes.
- Its features include: high strength extruded aluminum alloy body; graded cast iron end covers; surface densified and hardened sintered gears; nitrile rubber seals as standard ; die cast bushing blocks with PTFE/sintered bushes; fluorocarbon seals for high temp. applications.
- Its technical specifications include: Max. working pressures up to 200 bar; max. flow rates up to 40 lpm @ 1500 RPM; max. rotational speeds up to 3000 RPM.

About the company: Veebee Hydraulics Private Limited is an unlisted private company. It was incorporated on 09 August, 2016 and is located in Hyderabad, Telangana. It is classified as a private limited company. The company manufactures hydraulic gear pumps for industrial and farm machine applications.

Contact:

Veebee Hydraulics Private Limited, Hyderabad
Mobile: 07207000188, 09701853795
Email: venbham2@gmail.com, venbham@gmail.com



ROTODYNE HYDRAULIC ROTARY ACTUATORS

Rotodyne Fluid Technic offers a wide range of Rotodyne hydraulic rotary actuators.

Features:

- These Rotary Actuators are devices for converting the pressure energy in a fluid medium to useful rotary power.
- These rotodyne rotary actuators are of vane type design and standard models are available with upto 500kg.M torque at a maximum operating pressure 70bar and 250° angle of actuation.
- It is one of the most economical and compact devices in the market to generate very high torque and zero backlash allows for very precise positioning at any point within its actuation angle.
- External stops will be required to stop and hold loads at desired position and deceleration of high inertia loads shall be achieved through proper meter out circuits..

About the company: Rotodyne Fluid Technic is an ISO 9000-certified company started in 1994. They are one of the first companies in India to provide indigenous solutions for high pressure / high speed fluid transfer requirements.

Contact:

Rotodyne Fluid Technic, Bangalore
Tel: 080-65597729, 28399597 Fax: 080-28396831
Email: info@tornadofluidpower.com



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Efficiency of Old IE1 motor	92.1 %	92.7 %	93 %	93.3 %	93.5 %	93.8 %
Your Old IE1 Motor Annual Power Consumption in Unit	382193 KWH (Unit)	517799 KWH (Unit)	619355 KWH (Unit)	754555 KWH (Unit)	903529 KWH (Unit)	1091684 KWH (Unit)
Your Old IE1 Motor Annual Power Bill (Rs.10 per Unit)	Rs.3821930	Rs.5177990	Rs.6193550	Rs.7545550	Rs.9035290	Rs.10916840

New IE4 Motor - 4 Pole/1500 RPM	55 KW	75 KW	90 KW	110 KW	132 KW	160 KW
Efficiency of New IE4 motor	95.7 %	96 %	96.1 %	96.3 %	96.4 %	96.6 %
New IE4 Motor Annual Power Consumption in Unit	367816 KWH (Unit)	500000 KWH (Unit)	599376 KWH (Unit)	731049 KWH (Unit)	876349 KWH (Unit)	1060041 KWH (Unit)
Reduced Annual Power Bill with New IE4 Motor (Rs.10 per Unit)	Rs.3678160	Rs.5000000	Rs.5993760	Rs.7310490	Rs.8763490	Rs.10600410

Performance and Saving after Using New IE4 Motors

Reduced KWH Units (Annual)	14377 KWH (Unit)	17799 KWH (Unit)	19979 KWH (Unit)	23506 KWH (Unit)	27181 KWH (Unit)	31643 KWH (Unit)
New IE4 Motor Price (Rs)	Rs.192102	Rs.250684	Rs.290803	Rs.330010	Rs.388662	Rs.454685
Net Annual Savings by using New IE4 Motor instead of Old IE1 Motor	Rs.143770	Rs.177990	Rs.199790	Rs.235060	Rs.271810	Rs.316430
Payback Period (ROI) in Months For Recovering the cost of New IE4 Motor	Payback Period 16 Months	Payback Period 17 Months	Payback Period 17 Months	Payback Period 17 Months	Payback Period 17 Months	Payback Period 17 Months

New IE4 Motor Price (Rs.)	Rs.192102	Rs.250684	Rs.290803	Rs.330010	Rs.388662	Rs.454685
Deduction of Scrap Value of Old IE1 Motor (Approx.10%) (Rs.)	Less Rs.19210	Less Rs.25068	Less Rs.29080	Less Rs.33001	Less Rs.38866	Less Rs.45468
IE4 Motor Price after deduction of scrap value of IE1 Motor (Rs.)	Rs.172892	Rs.225616	Rs.261722	Rs.297009	Rs.349796	Rs.409216
Saving in Energy Bill with Rs.10/Unit	Rs.143770	Rs.177990	Rs.199790	Rs.235060	Rs.271810	Rs.316430
Payback Period (ROI) in Months for recovering the cost of IE4 Motor after deduction of scrap value of Old IE1 Motor.	Payback Period 14 Months	Payback Period 15 Months	Payback Period 16 Months	Payback Period 15 Months	Payback Period 15 Months	Payback Period 16 Months

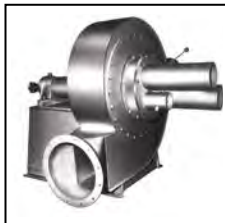
With this, along with a saving in the monthly electricity bill, there is recovery in the Capital Cost within just 14 to 17 months. Your IE4 Motor starts earning Benefits in the short as well as the long-term.



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SHREDDER CUM CONVEYING BLOWERS

Vacunair Engineering Co Pvt Ltd offers shredder cum conveying blowers. Its offer energy savings with the fans utilising variable inlet vanes.



Features:

- These blowers are specifically designed to handle material to flow across. These can handle higher GSM paper, cartons, plastic and metal foils comfortably.
- The blower impeller is fitted with a shredder blade to cut/trim the material in pieces for easy conveying and supply enough air at specific pressure to transport the trim to a longer distance.
- The shredder blades are made from hardened material and are adjustable to set the desired clearance and are replaceable type.

About the company: Vacunair Engineering Co Pvt Ltd an ISO 9001 certified company is a manufacturer of engine spare parts, engineering consultants, project consultants, engineering job work and pumps, pumping machines and spares.

Contact:

Vacunair Engineering Co Pvt Ltd, Ahmedabad
 Tel: 079-22910771/2/3
 Fax: 079-22910770
 Email: info@vacunair.com

FLUID BED DRYERS

Aero Therm Systems offers container of fluid bed dryer are made out of MS/SS304/SS316/Aluminium as per requirement.



Features:

- The perforated sheet and fine wire mesh screen will be provided at the bottom for proper air distribution; heating can be supplied with electrical, steam, thermic fluid or hot air generator.
- Electrically heated dryer will be provided with heating element of suitable rating having MS galvanised/ stainless steel construction.
- Steam/thermic fluid radiators are made out of MS/SS tubes with MS/SS/AL fins as per requirement.
- Control panel will consist of digital temp. controller, starter for blower, synchronous timer for batch time setting, indicating lamps, fuses, main isolator switch etc.

About the company: Aero Therm Systems Pvt Ltd is a manufacturer and exporter of industrial oven, process heating, combustion technology, air handling engineering, industrial drying, etc.

Contact:

Aero Therm Systems Pvt Ltd, Ahmedabad
 Tel: 079-25890158, 25895243 Fax: 079-25834987
 Email: contact@aerothermsystem.com

MICROWAVE CHEMICAL SYNTHESIS OVENS

Enerzi Microwave Systems supplies microwave chemical synthesis ovens.



Features:

- Microwaves act as high frequency electric fields and is used to heat any material containing mobile electric dipoles/charges.
- Polar solvents are heated as their component molecules are forced to rotate with the field and lose energy in collisions; semiconducting and conducting samples heat when ions or charges within them form an electric current and energy is lost due to the electrical resistance of the material.
- Microwave heating can heat the target compounds without heating the entire furnace or oil bath, which saves time and energy.
- It sufficiently heats thin objects throughout their volume (instead of through its outer surface), in theory producing more uniform heating.

About the company: Enerzi Microwave Systems Pvt Ltd is a provider of product range such as microwave power supplies, waveguides, programmable controllers, data acquisition software and digital data acquisition software.

Contact:

Enerzi Microwave Systems Pvt Ltd, Belgaum
 Mobile: 09035067289 Email: contact@enerzi.co

SLEEVE CUTTING MACHINE

Estovir Technologies is a manufacturer and exporter of a wide range of digital wire sleeve cutting machine.



Features:

- The offered products are manufactured using high-grade components and spare parts that are sourced from most authentic vendors of the market.
- Before final dispatch, the range is thoroughly inspected on certain parameters of quality in order to rule out every possibility of defect.
- Stepper motor was driven; suitable for cutting; PVC and nylon sleeves; heat – shrinkable tubing; flat ribbon cable; shielding wire.
- The machine has a cutting length from 0.1 mm to 9999.9 mm; cutting width between 0.1 mm and 120 and can operate at cutting speeds of 10800 cycles per hour.

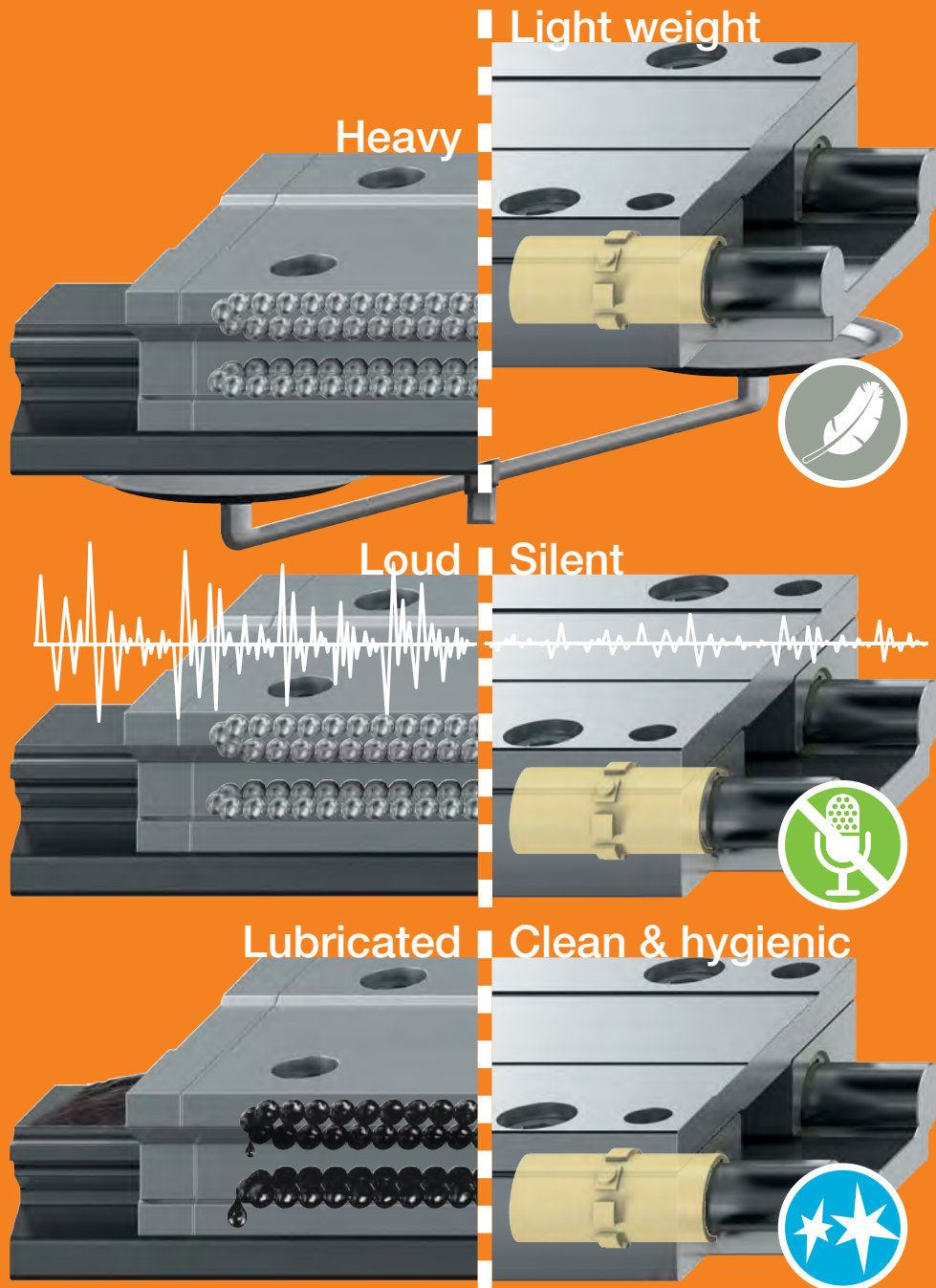
About the company: Established in 2005, Estovir Technologies, is a manufacturer and exporter of a wide range of PCB assembly machines, soldering machines, digital soldering stations, conveyor systems and ultrasonic cleaners.

Contact:

Estovir Technologies, Gurgaon
 Tel: 0124-4013575 Mobile: 09810038219
 Email: eepl@bol.net.in

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CHAIN CONVEYORS

Dynamic Industrials is offering chain conveyors.

Features:

- Chain conveyors are a mechanism where one or more moulded plastic or metallic chains run parallel to each other whereby the chains or any attachments on chains are the conveying media.
- These chain conveyors can be availed in various types. They can carry packed products or bulk materials as the requirements may be. Packed product conveyors manufactured by the company include those of plastic chain crate conveyor, parallel chain conveyors and pallet conveyors and accumulating type assembly/sorting conveyors.
- Plastic chain crate conveyors have a high usage in Indian dairy industry; bulk material handling conveyors include en-masse conveyors/drag chain conveyors and tubular drag chain conveyors.



About the company: Founded in 1997, Dynamic Industrials are a known name in the conveyors and material handling industry.

Contact:

Dynamic Industrials, Noida
 Mobile: 09311123839, 09899095305
 Email: mohitg@dynamicindustrials.com

HOT AIR GENERATORS

Energys involves in providing a wide range of hot air generators.

Features:

- Drying processes offered includes hot gas generators and matching burners for an extremely wide range of fuels.
- The company offers the right solutions for standard and special fuels, such as the extremely efficient hot gas generators.
- These generators can be designed as brick-lined combustion chambers with a double shell or for low-temperature applications in an all-steel design. This keeps increased efficiency and environmental responsibility in focus when developing firing plants.
- The hot gas generators can run on a wide range of different fuels gas.
- Light crude, diesel and heavy oils, and other liquid refinery waste; wood dust, pulverised lignite, pulverised hard coal, pulverised petroleum coke.



About the company: Energys has specialises in designing and manufacturing of process plant equipment for heating/cooling technology.

Contact:

Energys, Pune
 Tel: 020-20275281
 Mobile: 09850988573
 Email: energys@rediffmail.com

PORTABLE (PERSONAL) GAS MONITOR

Subtronics (India) Pvt Ltd innovated its latest "Three Status" gas monitor ingeniously made and manufactured and is a versatile instrument designed to detect a wide range of gases.



Features:

- This 3ST-PT detects the presence of target gas and gives an audio-visual indication if the reading increases above a pre-set level.
- The instrument is accurate, easy to use, robust and uses latest embedded technology.
- Its features include: This three status (registered) technology makes it easy for user to judge in a glance, user adjustable alarm by soft touch keys, bright liquid crystal display, latching alarm, non volatile memory, password protected critical menu settings, print readings with date & time, user selectable multiple number of prints for quality records documentation, charging indicator etc with a long battery life.
- The instrument is light weight and housed in a robust plastic enclosure to withstand harsh handling and is supplied in a KITFORM with (optional) portable printer and other accessories.

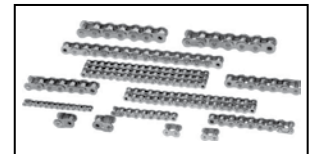
About the company: Subtronics (India) Pvt Ltd an ISO certified manufacturing company and it has been manufacturing safety devices for over 36 years with 4500 clients to its credit and has also bagged 31 awards for its contribution to the field of safety. The company is an Indian patent holder with qualified staff and prompt after sales service.

Contact:

M/s Subtronics (India) Pvt Ltd, Mumbai
 Tel: 022-24224461, 24303047
 Email: service@subtronicsindia.com

ROLLER CHAINS

Dynamic Trading Company is a supplier and trader of a wide range of roller chains.



Features:

- A well-designed chain drive transmits mechanical power from one shaft to another efficiently.
- All products conform to ISO standards and other industrial standards such as ANSI, BS, DIN and JIS.
- This is achieved by the using thicker plates, greater plate profile and the use of thicker hardened pins, providing improved service life.

About the company: Dynamic Trading Company, established in 1984, engages as a supplier and trader of high quality mechanical transmission products.

Contact:

Dynamic Trading Company, Chennai
 Tel: 044-42632293, 42632294
 Mobile: 09840257767, 09840013057
 Email: dtcche@dynamictrading.co.in

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ANNUAL MACHINE SAVINGS

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e.g. \$100/1 hour)

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Number of Machine Tools

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Weekly Machining Hours

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Estimated Increase in Cutter Life
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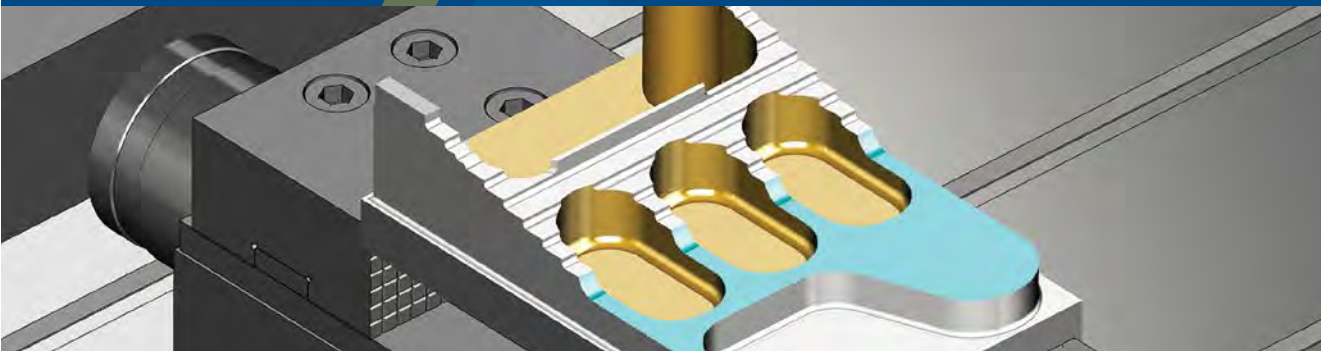
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HEAT EXCHANGER WATER SCALE REMOVAL COMPOUND, HESR-900

The model HESR-900 is a newly introduced Heat Exchanger Water Scale Removal Compound.

Features:

- Removes heavy deposits of water scale by a modern technology known as nanotechnology; removes the scale without any harm to the substrate material and without causing any pollution problem and hazards to the operating work force
- Reduces problems of higher consumption of energy, lower flow rate, cost of replacement for plant and equipment, and



- Can also be applied for removal of scale while the technology is suitable for a closed loop water circulation system; it can also be used for an open loop circuit.

About the company: Process & Technology is a manufacturer and supplier of chemical, stainless steel chemical, SS pickling chemical, soldering chemical for copper tubes on SS sheet, etc.

Contact:

Process & Technology
 Contact Person: Mr Sailesh Shah
 F/2, Kastubanagar Society, Behind Nutan Vidyalaya
 Sama Road, Sama, Vadodara, Gujarat 390 024
 Tel: 0265-2711013 Mobile: 09924441367
 Email: process_technology@yahoo.com

WELDING MACHINE, AXLE RING COVER TYPE

Primo Automation Systems provides a wide array of axle ring cover welding machines.



Features:

- The offered welding systems are designed using high quality material and sophisticated technology.
- These welding systems are highly praised for optimum quality and fine finish.
- The welding systems are tested on numerous parameters of quality for ensuring faultlessness.

About the company: Primo Automation Systems Pvt Ltd is a manufacturer, exporter and supplier of a range of industrial machinery including CNC cutting machines and strip cutting and positioners.

Contact:

Primo Automation Systems Pvt Ltd, Chennai
 Tel: 044-47112640 Mobile: 08807050300
 Email: enquiries@primoautomation.com

SURFACE AERATORS

Envirospec provides wide variety of surface aerators, designed and manufactured for application in treatment of wastewater.



Features:

- The floating surface aerators are high speed equipment, which boost of having excellent aeration efficiency and high capacity agitation.
- These simply constructed aerators consist of an axial flow impeller, which rotates at motor speed; mounted on MSFRP/FRP floats that can adjust the level automatically; wide range of hp rating available.
- It employs a unique combination of coarse and fine bubbles ensuring high level aeration; provides flexibility in checking and replacing the equipment without disturbing system operation.

About the company: Envirospec provides the most advanced and reliable treatment machinery, which is used in developing a wide range of water treatment plant, industrial water treatment solution, water treatment products, industrial water filters, wastewater treatment system, etc.

Contact:

Envirospec, Kolkata
 Tel: 033-24121573 Mobile: 09830028439, 09831071526
 Email: enspek@gmail.com

VIBRATORY FURNACE CHARGER

Elektromag-Joest Vibration Pvt Ltd offers a wide range of vibratory furnace charger.



Features:

- These vibratory furnace chargers are a cost effective method of increasing productivity and quality of melt.
- The furnace charger consists of storage hopper with vibrating feeder mounted on a mobile trolley which moves to and fro between scrap yard and the furnace.
- With constant improvement in technology, furnaces require rapid and uniform charging to keep pace with the melting power of the system for which the furnace chargers are the optimum solution.
- While using the furnace charger, controlled vibrations the metal is uniformly fed into the furnace.
- The entangled pieces of scrap metal form a layer above and if unrecognized by furnace operator, bridging can lead to super heating of bath and failure of furnace lining and run out.

About the company: Elektromag-Joest Vibration Pvt Ltd, is a leading manufacture of vibrating equipments for foundry, steel, mining, quarrying, chemical, food, recycling, air separation and thermal processing.

Contact:

Elektromag-Joest Vibration Pvt Ltd, Mumbai
 Tel: 022-66624444
 Email: vibration@elektromag.com

GENERAL SECTION PRODUCTS

ELECTRIC LIFTING PLATFORM

Jay Equipment & Systems Pvt Ltd offers a wide range of electric lifting platform.

Features:

- This ELP-20D series are offered with a dual hydraulic cylinder with capacity upto 2000 kgs & lift ht upto 12,000mm.
- These are exclusively can be used when goods are to be lifted from/to height. "JAY" electric lifting platforms can be flushed with floor level when pit installed.
- The control panel is with MCB contactors and overload relay to protect motor and the transformer to reduce the primary control voltage to 24 V A C for operators safety. The up & down push button control station is with emergency stop switch provided at respective landing, and the limit switch for selected landing levels.
- The safety door switch allows the lifting platform to operate only when the doors are fully closed. The electric lifting platform cannot be operated from inside the cage/platform, it can be operated only from outside.



About the company: Jay Equipment & Systems Pvt Ltd is an ISO 9001:2008 certified company manufacturing storage solutions for wide range industry applications. This includes various types of pallet racking systems, shelving systems, automobile, pharmaceutical, chemicals, etc.

Contact:

Jay Equipment & Systems Pvt Ltd, Vasai
Tel: 09146054222/23/24/25
Email: sales@jayequipment.com

BATTERY EARTH FAULT RELAY

JVS Electronics offers a wide range of battery earth fault relay, Type JRC 082.

Features:

- It is a software based design and equipped with instantaneous/definite time, wide range of battery voltage and solid state reliability.
- The relay monitors the battery and ensures that no leakage between battery and ground takes place in DC systems.
- The relay measures the leakage current between the battery and earth. If the current exceeds the set value, the relay trips after the time delay setting. The relay output contacts are hand reset type. Trip test facility is provided to check the relay operation.

About the company: JVS Electronics Pvt Ltd is an exporter, manufacturer and supplier of audio indicating instruments, visual indicating instruments, electrical indicating instruments, etc.

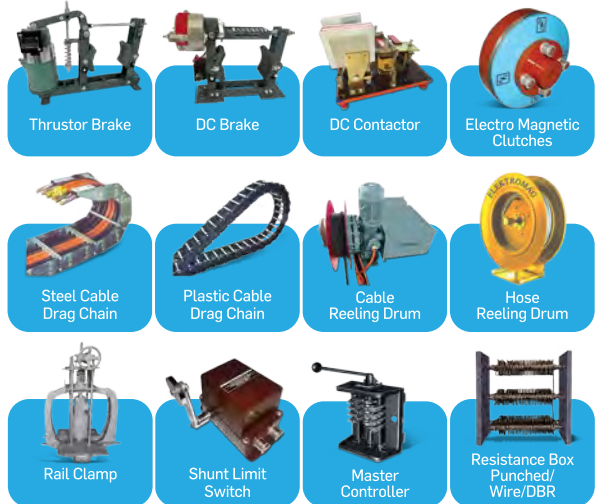
Contact:

JVS Electronics Pvt Ltd, Ramanagara
Tel: 080-27204211/12/13 Fax: 080-28361335
Email: bangalore@jvselectronics.in



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Tel: +91-22 6662 4444 | Fax: +91-22 6662 4455
vibration@elektromag.com | www.elektromag-joest.com

DIGITAL TIME DELAY RELAY

JVS Electronics offers a wide range of digital time delay relay, Type: JRT 925/JRT 945.

Features:

- These products possess features such as a wide setting range, bright 7-segment LED display, wide auxiliary supply and hand/self reset type selection.
- Digital time delay relay is used to provide delay in a circuit.
- The relay can be configured as hand reset or self reset. Self reset mode can be configured as two types – one which does not depends on timer initiator state and one which depends on time initiator state. The hand reset and self reset time is programmable.
- The mode of operation, time delay and self reset time setting is done through tactile switches provided on the front and these values will be stored in the non-volatile memory.
- If the mode of operation is selected as hand reset, time delay is initiated by closing 'Timer Initiate' terminals. When the delay time reaches zero, the output relay starts operating and until the reset key is pressed, the output contacts will not be released.
- If mode of operation is selected as self reset time which does not depends on timer initiator state, time delay is initiated by closing "Timer Initiate" terminals. When delay time reaches to zero the output relay operates which initiates self reset timer. When self reset timer reaches to zero the output relay will release.
- If mode of operation is selected as self reset time which depends on timer initiator state then time delay is initiated by closing "Timer Initiate" terminals. When delay time reaches to zero the output relay operates. Self reset timer is initiated by opening "Timer Initiate" terminals. When self reset time reaches to zero the output relay releases.
- In the setting mode, fast blinking of display indicates mode of operation, slow blinking of display indicates time delay setting and too slow blinking of display indicates self reset time setting. After the setting changes, the reset button has to be pressed to accept new values.

About the company: JVS Electronics Pvt Ltd is an exporter, manufacturer and supplier of audio indicating instruments, visual indicating instruments, electrical indicating instruments, etc.

Contact:

JVS Electronics Pvt Ltd, Ramanagara
 Tel: 080-27204211/12/13
 Fax: 080-28361335
 Email: bangalore@jvselectronics.in



INDEXING SOCKETING MACHINE MODEL

Eskay Engineers engages to offer indexing socketing machine model (110-180 and 63-180).

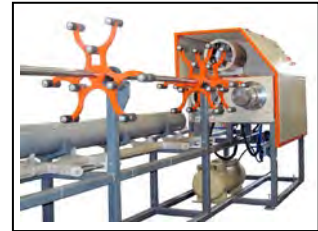
Features:

- Compact design with minimal footprint; fully automatic; economical; high production.
- Can be used inline as well as offline; saw dust removal arrangement; socketing of pipes ranging from 110-180mm and 63-180mm respectively.
- Attachment providing tilting unit's functionality; attachment for elastomeric ring fit socket; attachment for SWR socket.
- Attachment for logo embossing on belled pipes; PLC; trolley for collection of belled pipes; bottom frame enclosing covers.

About the company: Eskay Engineers is engaged in manufacturing of inline and offline socketing machine, offline semi automatic machine, pvc pipe socketing machine, online elastomeric socketing machine, etc.

Contact:

Eskay Engineers, Gandhinagar
 Tel: 02764-286386
 Mobile: 08141772515, 09879162826.
 Email: info@eskayindia.com



FINNED TUBE HEAT EXCHANGERS

Eskay Heat Transfers supplies finned tube heat exchangers.

Features:

- Employed for cooling or heating of air/other gases flowing into a duct or cooling of water and other liquids using air.
- Units can be offered with continuous flat-fin and tubes, tubes with annular drawn fins, tubes with continuous spirally wound plain/corrugated fins or tubes with washer type fins.
- Tube materials can be of copper, aluminium, stainless steel, admiralty brass, cupro-nickel or carbon steel.
- Rugged construction for use in severe applications such as air laden with abrasive particles, corrosive fluids and air heating with steam; designed for custom-built application.

About the company: Eskay Heat Transfers Pvt Ltd, established in 1977, is a supplier of heat exchangers to diverse industries such as process, petrochemical, power generation, machine tools and mining. The firm designs and manufactures a variety of heat exchangers employed in the above industries.

Contact:

Eskay Heat Transfers Pvt Ltd, Bengaluru
 Tel: 080-28362428 Mobile: 08884550591
 Email: info@eskay.in



GENERAL SECTION PRODUCTS

METHYL METHACRYLATE ADHESIVES, PARTITE

Parson Adhesives India Pvt Ltd offers methyl methacrylate adhesives, partite for structural bonding.



Features:

- In order to provide single source solutions for the need of structural adhesives in industrial assembly applications.
- Parson Adhesives has developed and offered a line of PARTITE methyl methacrylate adhesives (MMA).
- Partite MMA fills in the gap, where two part epoxy adhesives and two part polyurethane adhesives lack the performance required by the assembly industry. Partite MMAs provides 'cure on demand', excellent balance of adhesion and toughness, chemical resistance, long-term durability and they need minimal surface preparation.
- This wide range of Partite MMA adhesives to suit their needs.
- If they require fast assembly, they can pick Partite 7300 which gives almost a full cure within 10 to 15 minutes after application Or if they need to bond larger parts, they can use Partite 7390 to get a full, strong cure in 150 minutes. Unlike epoxies and polyurethanes, Partite MMAs are most suitable for bonding dissimilar substrates: metal-to-plastic, composites to plastic etc.
- As aforementioned unique properties, PARTITE methacrylate adhesives(MMA), help industrial assembly-lines save lot of time, labor, and capital cost by eliminating long fixture and surface preparation time while providing better ultimate performance to the finished products.
- It has been used widely in transportation, electronics, appliance and recreational industries.
- Also offers 'No mix', 1:1 and 10:1 PARTITE methacrylate adhesives (MMA).
- Besides carrying standard product line, Parson USA has unique ability to provide tailored solutions to individual customer's need.
- It also supplies conventional two part epoxy and polyurethane based structural adhesives.

About the company: Parson Adhesives India Pvt Ltd, is a subsidiary of Parson Adhesives, Inc. USA. Parson Adhesives is a leading manufacturer of wide range of other industrial adhesives such as anaerobic adhesives, cyanoacrylate adhesives, epoxy & polyurethane adhesives, uv curable adhesives and specialties silicone sealants, etc. These high performance adhesives are being used to a wide variety of industries such as automotive, railway, marine, electronics, sporting goods, oils and gas, sign and display, medical devices, printing and graphics, furniture, construction, plastic fabrication, metal fabrication and general assembly.

Contact:

Parson Adhesives India Pvt Ltd, Vadodara
Tel: 0265-2972191 Mobile: 09428511765, 09408354185
Email: sales@parsonadhesives.in

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transportation cost and related expenses such as packing charges are not included in the warranty. One can dispatch portable hardness tester/s properly packed/crated and they will provide a free written estimate upon thorough examination of the hardness tester/s. They also maintain complete stock of spares and accessories like impact devices, impact bodies, standard test blocks, support rings, etc. According to the company, when a complete service with spares is conveniently available why do users think of buying a new hardness tester? It is much economical to get the existing hardness tester/s repaired, reconditioned, and refurbished or rebuilt at a fraction of the cost.

Contact:

Heat Treatment Sales & Services
Contact Person: Mr Bharat Shah
L/119 GIDC Industrial Estate, Odhav
Ahmedabad 382 415
Tel: 079-22870144, 22871096
Mobile: 09879244642 Fax: 079-22876952
Email: bvshah@enmatest.com
URL: www.enmatest.com

**LAB TWIN SCREW
EXTRUDER**

Aasabi Machinery engages as a manufacturer and exporter of lab twin screw extruder with blown film attachment.



Features:

- This screw extruder are available in various types and comes with split type barrels for easy opening and cleaning; screw sizes are available 16 mm, 20 mm, 25 mm and 30 mm
- Pressure transducer to measure melt pressure and melt temperature; vent facility to escape unwanted gases, with vacuum devolatisation.
- Inject facility for injecting molten additives; for special application, temperatures up to 4500C can be given.
- It is designed to give results with minimum output to save precious and costly materials; useful for pharma, food laboratories with suitable contact materials.

About the company: Aasabi Machinery Pvt Ltd is engaged in manufacturing and exporting of single screw extruder, twin screw extruder, counter-rotating twin screw extruder, conical twin screw extruder, with attachments for blown film, sheet, tube, sections, palletising and orientation. The company also manufacturers lab anxillary units like tumbler mixer, high speed mixer, sigma mixers, ore digesters (bomb digesters), lab two roll / three roll mills.

Contact:

Aasabi Machinery Pvt Ltd, Dombivali
Tel: 0251-6501290 Mobile: 09029267655
Email: response@asabimachines.com

CARBON AND SULFUR APPARATUS

Exacta Furnaces specialises in supplying quality range of carbon and sulfur apparatus.



Features:

- Their range is known for its highly excellent quality and premium range and available at market leading prices.
- Heavy-duty polished wooden frame with best quality clamps to hold glass parts; carbon and sulfur apparatus furnace outer body CRC/MS sheet duly powder coated having temp.
- Supplied with digital temp, controller for temp control (on customer request); supplied with all glass parts absorption vessel and acid jar, combustion boat, etc; with control unit for tube furnace.

About the company: Established in 2008, Exacta Furnaces specialises in various applications of laboratory systems and instruments. The company is known for its strong distributor network, on-time delivery commitment, timely quotations and high quality products.

Contact:

Exacta Furnaces, Delhi
Mobile: 09873446669, 09810374780
Email: stunningmitesh@yahoo.co.in

WALL TRAVELLING CRANE

Excellent Handling Systems specialises to offer wall travelling crane.



Features:

- Single girder wall travelling crane is designed for operation on a lower level beneath a large travelling crane system.
- These cranes provide additional handling possibilities and ensure smooth and trouble-free material handling between different working areas.
- A wall travelling crane installed at right angles across the hall can serve several workstations; single girder wall travelling cranes are available for load capacities up to 5MT with outreach up to 10m.
- Wall travelling cranes ensure effortless handling of loads and can feed multiple workstations.

About the company: EHSPL specialises in providing total customised solutions for material handling requirements, helping to choose the perfect EOT crane for given requirement. For heavy duty applications EHSPL cranes can supply fully customised double girder EOT cranes as per requirement for different duty cycles and for a diverse range of applications.

Contact:

Excellent Handling Systems Pvt Ltd, Pune
 Mobile: 09881253557
 Email: response@excellenthandling.com

MULTI MILL GRANULATOR

Metal Craft Technologies Co engages as a manufacturer and exporter of a wide range of multi mill granulator.



Features:

- This multi mill is a sturdy, economical and maintenance free machine; the machine is designed for continuous operation.
- All contact parts can be easily and quickly dismantled and cleaned; flame proof electrical components can also be provided.
- This multi mill is without belt drive i.e. with direct drive, is also available with VFE drive; castor wheels are provided for easy mobility.
- Direction of beater can be changed by reversible switch for knife edge and vice versa; beaters/scrapper blades are hardened for specific application.

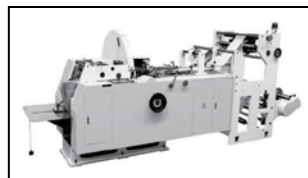
About the company: Metal Craft Technologies Co., a proprietorship firm, established in 2011, as a manufacturer and exporter of sparkler filter press, fluid bed dryer, air drying oven, granulator machines, pulveriser machine, reactor vessel, vibro sifter and many more.

Contact:

Metal Craft Technologies Co, Mumbai
 Tel: 022-62369830 Mobile: 09930812450
 Email: rajesh@metalcrafftech.com

PAPER BAG MAKING MACHINE

Mohindra Engineering Company offers paper bag making machinery.



Features:

- These paper bags are made at least partially from recycled paper or fiber
- Research from MSNBC shows that most paper bags contain at least 35 percent recycled material, but many companies use much more than that.
- Once discarded, they can also be recycled again, while plastic bags cannot be recycled or many factories don't accept them because they can clog machines and complicate the recycling process.
- Highly reliable; longer service life; hassle-free performance; high tensile strength; precise dimensions; excellent finish; easy to maintain.

About the company: Mohindra Engineering Company is a manufacturer and exporter of paper bag making machine, flexo printing machine, rotogravure printing machine, flexographic printing machine and paper cup printing machine, etc. The stainless steel and other basic materials are sourced from certified vendors.

Contact:

Mohindra Engineering Company, New Delhi
 Mobile: 09999778804, 09212658395
 Email: mohindramechanicalworks@gmail.com

AUTO LOADER FILLING UNIT

Techno Industries offers auto loader filling unit.



Features:

- It is an automatic feeding unit developed with the intention of reducing labour; it supplies bottle one by one from the large hopper in which the bottles are dumped.
- It also consist of a turning mechanism which turns the bottles if necessary; sturdy mechanical construction; all of the part surfaces that are in direct contact with the bottles are manufactured with stainless steel to avoid any damage to bottles.
- Highly flexible and capable of handling a wide range of sizes and bottles profiles; simplified bottle format change-over operation featuring robust quick-release features.

About the company: Techno Industries is engaged in manufacturing, exporting and supplying a quality assortment of printing machines. The product range includes single color screen printing machines, multicolor screen printing machines and screen printing machines.

Contact:

Techno Industries, Thane
 Tel: 0250-2454642
 Mobile: 09823086791
 Email: sales@technoprint.co.in

ONLINE SHRINK TUNNEL

Vista Technopack Machines manufactures, supplies and exports a range of online shrink tunnel with L sealers.



Features:

- This range is fabricated using optimum-grade mild steel with suitable angle and power coated making machines so that they comply with international quality standards.
- In this range, shrink sleeves can be adjusted as per the product's size. These sealers are provided with conveyor belt for quick and effortless production.
- Also, these are available with silicon sealing pads; the range is placed on special heavy-duty castor wheels for smooth mobility.
- These machines are used for pesticides bottle; pharmaceutical bottle; textile; talcum powder bottle; playing cards; mineral water; pickle bottle; soap and shampoo bottle; gift items; welding rods.

About the company: Vista Technopack Machines engages as a manufacturer, supplier and exporter of a range of wrapping, sealer and allied packaging machines.

Contact:

Vista Technopack Machines, Mumbai
Tel: 022-65555832 Mobile: 09870173532, 09987877751
Email: info@vistatechnopack.in

FEEDER CONVEYOR BELT

Royal Pack Industries provides quality array of feeder conveyor belt.



Features:

- The provided belt is manufactured using premium quality material and latest techniques.
- This belt is examined on set quality parameter in order to deliver better range. It is available in various colors, sizes and shapes.
- Moreover, different dimensions according to the specific business needs can be availed; conveyor size – 2 metre (L) x 200 mm (W) long x 2.5 feet height; conveyor dimension – 2 m; PVC belt conveyor – blue/black/green in colour; motor – PMDC motor; VFD – variable speed drive with control panel; power – 230 V single phase + neutral.

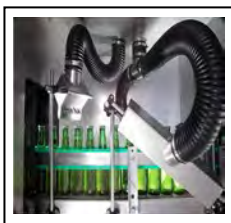
About the company: Incepted in 2005, Royal Pack Industries is active in packaging industry. It engages as manufacturer, wholesaler and trader of packaging machine. They also offer solid products packing seal machine, sealing machine, liquid filling machine, etc.

Contact:

Royal Pack Industries, Mumbai
Tel: 022-42642865 Mobile: 09833753754
Email: royalpackindustries@gmail.com

AIR KNIFE SYSTEM

Superchillers Pvt Ltd is offering high quality air knife system.



Features:

- The key product benefits are such as increase line speeds; reduces customer returns; improves the quality of ink jet coding; prevents corrosion and bacterial growth under bottle and can lids.
- It ensures adhesion of heat shrinkable and pressure sensitive labels; reduces energy usage by as much as 80 per cent.
- These systems are used for power dry system leads the industry for date coding applications.
- AT-series and XT-series paxton blowers are configured with air delivery rinser devices to blow off and dry throughout the bottling and canning process.
- Ionised air systems are used for bottle and can rinsing, eliminating the need for water rinsing or compressed air rinsing.

About the company: Superchillers Pvt Ltd is involved in manufacturing, trading and wholesaling a range of water chillers, radar cooling systems, industrial generator, industrial air blower, etc.

Contact:

Superchillers Pvt Ltd, Mumbai
Tel: 022-64579222 Mobile: 09833948744
Email: info@superchillers.com

GC GAS PURIFICATION SYSTEM

PCI Analytics is a manufacturer, supplier and exporter of a wide range of GC gas purification system.



Features:

- This system delivers ultra high pure (UHP) grade gases; compact design, wall mounted, and powder coated.
- Filters are easily detachable; suitable for 10kg/cm² inlet pressure 7 kg/cm² outlet pressure; panel for LC-MS-MS other applications is also available.
- Reduces baseline noise, drift problems, etc.; increases column life, GC detectors reduces flame problems; improves reproducibility.
- Saves costly gases through toggle valves gas distribution panel; pressure regulators – maximum inlet pressure 10 kg/cm²; optional pressure range 0-7 kg/cm² with neopren rubber diaphragm/SS diaphragm.

About the company: PCI Analytics Pvt Ltd is a manufacturer, supplier and exporter of a wide range of laboratory and scientific research equipment and instruments. These comprise of AAS accessories, HPLC column oven, digital gas flow meter, HPLC accessories and laboratory equipment.

Contact:

PCI Analytics Pvt Ltd, Mumbai
Tel: 022-40946946 Mobile: 09323700351
Email: sales@pcianalytics.in, info@pciss.com

COMPRESSED AIR PIPING SYSTEM

Luthra Pneumsys is a provider of compressed air piping system.

Features:

- The purpose of the compressed air pipe system is to deliver compressed air to the points of usage. The compressed air needs to be delivered with enough volume, appropriate quality and pressure to properly power the components that use the compressed air.
- Compressed air is costly to manufacture; a poorly designed compressed air system can increase energy costs, promote equipment failure, reduce production efficiencies and increase maintenance requirements.
- Due to its large choice of sizes in 15 mm to 160 mm and an extensive range of accessories, the transair system meets the requirements of numerous industrial and garage workshop installations.

About the company: Luthra Pneumsys provides advance energy solutions for compressed air/gases to various industries for air, vacuum, water and other applications.

Contact:

Luthra Pneumsys, Mumbai
 Tel: 022-42290856 Mobile: 08291102426
 Email: rl@luthrapneumsys.com



PANELS CIRCULAR SAW

Caple Industrial Solutions offers high-quality range of panels circular saw.

Features:

- These screws are accurately devised with several essential characteristics that make them the optimum choice of the market.
- They require the least maintenance and are well tested on several quality parameters.
- Good view of scribe line and saw blade due to the new flush and moveable viewing window; improved dust extraction due to the new shape of the extraction duct.
- Simpler operation with the double cutting depth scale (with/without guide rail); Some more benefits include splinter guard, fastfix, play adjustment without the need for tools, etc.

About the company: Caple Industrial Solutions is engaged in wholesale trading and importing in robland panel saw, altendorf panel saw, circular saw, manual edge banding optimat, portable edge bander, head multiboring drilling machine, CNC multiboring drilling machine, wood jointing machine, spindle molders, auto feeders, etc.

Contact:

Caple Industrial Solutions, Mumbai
 Tel: 022-28803586 Mobile: 09930069906
 Email: web.west@caple.in



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Just like the human body, electrical equipment require a complete examination to identify any glitches. Whether the process is of installation, maintenance or repair, Extech's testers and meters are always up for the task. To ensure smooth operation of your electrical equipment, Extech offers a wide range of test instruments that help you identify a problem before it occurs.

For more details, Please call us on: +91-11-4560 3555 or write to us at flirindia@flir.com.hk

FLIR Systems India Pvt. Ltd.
 1111, D Mall, Netaji Subhash Place, Pitampura, New Delhi - 110034
 Fax: +91-11-4721 2006 | Website: www.extech.com

SILICONE RUBBER DRUM HEATERS

Economy Engineering Corporation is a supplier of silicone rubber drum heaters.

Features:

- The economyheater – side drum heater is an easy and actual aid to the warming of steel barrels; it has got a higher efficiency than the insulated jacket, but no thermal insulating function.
- The side drum heater is available in four standard sizes (25/50/105/200 litres) and can be made to measure, too; side drum heaters are suitable to defrost frozen or other products, thus allowing to empty the barrels rapidly
- These products have applications in soaps, fats, varnishes and oily products can be melted as well, respectively reduced in their viscosity.

About the company: Economy Engineering Corporation is a manufacturer, exporter, supplier and trader of an array of electric heaters and cables. Other products range offered are silicone heating pads, electric heat tracers and heated hoses.

Contact:

Economy Engineering Corporation, Mumbai
 Tel: 022-24452607 Mobile: 09833834185
 Email: ecomyheaters2@gmail.com



FALLING FILM EVAPORATOR

Rufouz Hitek Engineers is offering a wide gamut of falling film evaporator.

Features:

- These evaporators provide constant operation, compatibility with heat sensitive materials and robust construction.
- The concentration of dilute solutions, solvent recovery from contaminated solution and distillation columns to reboiler are the uses of these products.
- These evaporators are effective; ideal for simple processing; constant operation; good for medium heat sensitive materials; can work under vacuum; and has steam economy.
- In addition to the offered products, there are oil recycling plant, distillation systems, extraction systems, industrial evaporator, inline reactor, industrial column, etc.

About the company: Established in 2011, Rufouz Hitek Engineers Pvt Ltd, is a manufacturer, exporter, importer, and trader of a diverse range of industrial plants that are precisely designed and developed as per the existing industrial guidelines.

Contact:

Rufouz Hitek Engineers Pvt Ltd, Mumbai
 Tel: 022-65350355 Mobile: 09820139905
 Email: economyheaters@gmail.com



FLUID BED DRYERS

BA Engineering engages to provide a wide range of fluid bed dryers.

Features:

- The compact design fluid bed dryer is ideal for air fluidisation for drying granules, crystalline, coarse or similar materials in pharmaceuticals, fine chemicals, dyes, food and allied industries.
- All stainless-steel cGMP models and basic models with only product contact parts and air path in stainless steel; optional single piece retarding chamber and finger bag chamber with imported inflatable seals.
- Rear chamber with heating coils and air inlet filter modules to be mounted in remote areas; stainless steel interconnecting duct lines with flanges for connecting remotely mounted heating and fan motor modules.
- Noise level are below 90 DB with specially designed silencer microprocessor based control panels with time v/s temperature controls, batch programming, batch data printout.

About the company: BA Engineering is a manufacturer, exporter, retailer and supplier of industrial processing machines.

Contact:

B.A Engineering, Mumbai
 Tel: 022-25778451 Mobile: 09619579228
 Email: info@ba-eng.net, raj.bae@gmail.com



CNC CUTTING AND WELDING MACHINE

Mehta Sanghvi & Company offers 5-axis portable CNC cutting and welding machine.

Features:

- Promotech’s portable CNC shape cutting machine performs oxy-fuel or plasma cutting with single- or double-sided bevel on pipes, tanks, various steel structures.
- It is quick and has a simple positioning inside or on top of the work piece with built in gyroscope (auto leveling); multi-surface scanning for cutting and welding.
- Fast hole positioning with laser marking; torch path teaching; easy input and configuration of cutting/ beveling and welding.
- Some of its key benefits are such as high quality, efficient and repeatable performance; real time torch correction; Wi-Fi monitoring, recording and uploading; MCM remote control on a mobile device.

About the company: Mehta Sanghvi & Company is a trader, manufacturer and supplier of industrial safety and welding equipment and accessories.

Contact:

Mehta Sanghvi & Company, Mumbai
 Tel: 022-28592847
 Mobile: 09820127614
 Email: mehtasanghvi.k@gmail.com

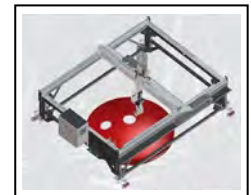
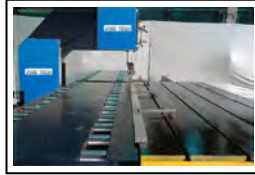


PLATE SAWING MACHINES

Indotech Industries (I) Pvt Ltd offers a wide range of plate sawing machines.



Features:

- This is a vertical plate sawing machine designed to cut plates and big blocks of materials that are difficult to machine.
- It is designed for cutting complex materials to the highest quality requirements.
- The saw head contains a robust arm to reduce vibrations and achieve high production rates and long blade life; special materials can be cut with carbide blades resulting in an optimum cutting performance and blade life.
- The saw can be equipped with an automatic gripper system to position the plate to be cut to the desired width.

About the company: Indotech Industries (I) Pvt Ltd is a manufacturer, supplier and exporter of a diverse range of band saw machines, comprising of products like automatic band saw machine, double column semi-automatic bandsaw machine and manual double column band saw machine.

Contact:

Indotech Industries (I) Pvt Ltd, Indore
 Tel: 0731-4269777 Mobile: 09826902282
 Email: sales@indotechmachines.com

RECTANGULAR FRYER WITH INBUILT HEAT EXCHANGER

Economode Food Equipment (India) is a manufacturer of rectangular fryer with inbuilt heat exchanger.



Features:

- This is a revolution in frying technology for chips, dals, vatana and other products that have high heat requirement. It is a new rectangular fryer with a combination of direct and indirect heating which gives a more than 55 per cent saving in fuel and double the production capacity.
- This product has latest oil heating technology with inbuilt heat exchanger; bucket type continuous oil filtration system; reduces 60 per cent manpower in frying; complete material of construction is SS 304 grade.
- It gives a heat-free working environment; great fuel saving as compared to traditional systems; payback period is 3-4 months.

About the company: Economode is known for developing snack food equipment, product and process consulting, product development, new product line concepts and more in the food industry.

Contact:

Economode Food Equipment (India) Pvt Ltd, Thane
 Tel: 022-65539888 Mobile: 09324068741
 Email: enquiry@economodefood.com

HARDNESS TESTING MACHINE

M M Engineers provides dynamic hardness testing machine.



Features:

- 30 hardness scales for varied probes, selectable by feather touch keys; alpha numeric display 16a characters x 2 lines LCD with improved electronics.
- Five numbers of probes D, G, SH, EX and C can be provided in various combinations; comes in a slim briefcase for carrying the machine. Rust proof; easy to use; vibration free.
- Ideal for testing hardness, this testing machine is manufactured using quality proven components and advanced technology.

About the company: Incepted in the year 2007, M M Engineers is engaged in supplying, trading and wholesaling a wide range of testing machines and equipment. The range, includes universal testing machine, pendulum impact testing machine and rockwell hardness tester. Offered range of testing machines is designed and developed by the experts holding vast knowledge of this domain.

Contact:

M M Engineers, Mumbai
 Tel: 022-21643227
 Mobile: 09892155685, 09820987961
 Email: response@hardnesstestersindia.com

UNIVERSAL TESTING MACHINE

Hitech India Equipment offers computer controlled universal testing machine.



Features:

- Methods of loading by re-circulating ball screw; AC servo motor to precise crosshead control with infinitely variable speed drive; computerised crosshead control; load measurement by load cell.
- Over travel safety by fixed and settable limit switches at both ends; overload protection for load cell by electronic control; single form windows based user friendly software; test data and reports are stored in access database.
- Tare load and reset elongation facilities available; load and elongation is continuously displayed on screen.

About the company: Hitech India Equipments Pvt Ltd is active in marketing, service and calibration of all kinds of material handling equipment, metrology equipment, metallurgy equipment, video profile projectors, profile projectors, image analyzers, metallurgical microscope, muffle furnace and hot air oven, etc.

Contact:

Hitech India Equipments Pvt Ltd, Chennai
 Tel: 044-24939583 Mobile: 09940107931
 Email: sales@hitechindiaequipments.com

LPG GAS ROASTER

Fans Bro Erectors engages as a manufacturer of roaster machine with LPG/CNG gas heating arrangements.



Features:

- It has all the advantages which an electrically operated roaster machine has, such as auto electronic operating, temperature controlling system, etc.
- The heating temperature can be achieved easily in a very short time up to 350°C.
- The LPG gas roaster machine can be used to roast various types of powders, flours, seeds, but ideal for grains, pulses, seed type products with the hard-outer shell.
- Heating starts immediately and no need to pre-heat the machine, compared to electrical roasters; increases production, as roasting is achieved in less time.

About the company: Fans Bro Erectors is a manufacturer of spice roaster, coriander roaster & chilli roaster, etc. They have gained enough reputation and confidence from their reputed organisations for whom, they had given their services since 1975 at different sites in India.

Contact:

Fans Bro Erectors, Mumbai
 Mobile: 09869205200 Email: fansbroerectors@yahoo.co.in

WEB COATING SYSTEMS

Kerone engages to offers a wide range of web coating systems.



Features:

- Web coating dies have many advantages over traditional coating methods such as roll coating. These types of machine also use less material, have better gauge control and can apply multi-layer and pattern coatings.
- Exacting tolerances of up to 75 nanometers are available to complement the application and process specifications; spot or full-flood coating capabilities.
- Pneumatic cylinder actuation with precision micrometer adjustments; harris and bruno chamber system; dual smart pump pneumatic circulation system.
- Precision ground-side frames with custom mounting to fit specific application; idler rollers for proper web routing; remote-mounted touch screen controller.

About the company: Kerone is a provider of products comprising both standard and customer specific electrical tubular heaters to meet the operational demands of industrial and domestic usage as per defined national and international standards.

Contact:

Kerone, Mumbai
 Tel: 022-28195820 Mobile: 08425861950
 Email: info@kerone.com

TWO POINT POWER PRESS-SDC SERIES

Machinery And Spares manufactures and exports two point power press-SDC series.



Features:

- This press is applicable for large and heavy tonnage die to tool with multiple precision stages in blanking, piercing, bending forming for the progressive application.
- Rigid frame design ensures less vibration and low noise, increasing tool life improves product accuracy; hydraulic overload protection; full length, high precision 8-point gib with bronze liners for accurate slide guidance.
- Automatic recirculating lubrication with the progressive block; pneumatic high torque wet clutch and brake unit with sintered multi-disc linings provides low noise, maintenance and long-life operation; long stroke drawing and blanking operations.

About the company: Machinery And Spares is a manufacturer and exporter of lathe machine, radial drilling machines and vertical milling machines.

Contact:

Machinery And Spares, Mumbai
 Tel: 022-25784515
 Mobile: 09820022094
 Email: info@machineryandspares.com

HOSE PIPE PLANT, PVC BRAIDED TYPE

Sant Engineering is offering a wide range of PVC braided hose pipe plant.



Features:

- Designed and developed using high grade raw material and modern machines in strict compliance with industry norms and standards.
- This range of hose pipe plants is with heavy plates with 18+18+6 specially designed glass, made using alloy steel through 18+18+6 spider.
- Spider consists of bobbin of the thread 18+18+6 also tension fitted with glass; tension of the range is constructed using stainless steel, preventing rust.
- They are operated with suitable drive DC motor, the offered range possesses two plates in rotating clock-anti-clockwise direction; in addition to this, one of the plates is fitted for the 6-straight thread.

About the company: Sant Engineering Industries manufactures and exports extrusion machine, PVC pipe machines, box strapping machines, automatic cable machines, plastic recycling machines, PVC compounding machines and cable machines.

Contact:

Sant Engineering Industries, New Delhi
 Tel: 011-23521090 Mobile: 09717263888, 09868107361
 Email: santenginds@indiatimes.com

SCREW PUMP

Readymix Construction Machinery Pvt Ltd is providing a wide range of screw pump.



Features:

- Screw pumps find use as positive displacement pumps and comprise of multiple screw support for moving fluids/solids along defined screw axis.
- The pump involves rotation of the single screw in the cylindrical cavity that allows movement of material along the spindle section of the screw.
- These pumps find uses including irrigation and agricultural machinery involving transportation of grains, transporting viscous fluids, for fuel-injection, for lubrication purposes and others.
- Some key advantages of the products are such as eliminating foaming possibilities, allows pumping of higher viscosity fluids, consistent flow rate and others.

About the company: Ready Mix Construction Machinery Pvt Ltd is present in silo accessories and conveyor production and manufacturing and trading of equipment for concrete batching plant.

Contact:

Readymix Construction Machinery Pvt Ltd, Pune
 Tel: 020-25289212
 Mobile: 09764448561, 09764448562
 Email: info@rcmpl.co.in

EPOXY LINK INSULATORS

Epothane Civelec Engineers offers an extensive range of epoxy link insulator.



Features:

- This is manufactured in accordance with international quality standard that meets the variegated requirements of many industrial sectors.
- The range is available at market leading price and is widely demanded in automobile, mechanical, electrical and allied industries.
- Moreover, this is an excellent source of mechanical device; precise dimension; corrosion resistance; superior quality.
- The offered products are extensively demanded in the electrical industry for their flawless performance, longer service life, seamless finish, resistance towards wear and tear, precise engineering and robust design.

About the company: Epothane Civelec Engineers Pvt Ltd, established in 1987, is a manufacturer, exporter, importer and supplier of epoxy resin cast components and insulators. The product range is inclusive of switchgear components, post insulators and circuit spouts.

Contact:

Epothane Civelec Engineers Pvt Ltd, Ghaziabad
 Tel: 0120-4731002, 4731003
 Mobile: 09810764633, 09810608673
 Email: epoxy@epothane.co.in

DRY MORTAR MATERIAL PACKING MACHINE

Sigma Instrumentation offers dry mortar material packing machine.



Features:

- The provided mortar is used to construct residential and commercial complexes.
- Under the supervision of adroit professionals, the provided mortar is processed with the aid of advanced tools and machines.
- Retention of important properties of spices like taste, flavour and colour; durable standards, rugged construction, corrosion resistance finish and efficient functioning.
- Maintains uniform quality of product; easy and economical dust free operation.

About the company: Established in the year 1996, Sigma Instrumentation is an eminent manufacturer and supplier of a range of material handling systems and packaging machines. The range of products is fabricated using supreme quality components and other material procured from some of the trusted sources.

Contact:

Sigma Instrumentation, Ahmedabad
 Tel: 079-25835943, 25895943
 Mobile: 09376142921, 09825554349
 Email: sigmainstru.2010@rediffmail.com

STANDARD CONTINUOUS INKJET PRINTER

Aztec Fluids & Machinery offers standard continuous inkjet printer.



Features:

- High-grade raw materials and modern machines, in compliance with the set industry norms and guidelines are used for manufacturing this range of standard continuous inkjet printer.
- Automatic printhead and conduit flush; minimum running cost; print status indicators; password-protected function; qwerty keypad; stainless steel enclosure.
- Simplified operator function; easy message creation; full-screen diagnostics; can print 4 lines in 5 x 5 drop matrix; single button startup and shutdown.

About the company: Established in the year 2010, Aztec Fluids & Machinery Pvt Ltd, is a manufacturer, exporter, supplier, distributor, wholesaler, trader and importer of an assortment of printer and printer spares. The product range includes continuous inkjet printer consumables, CIJ inks filters and CIJ printer. These products provide supreme quality, excellent performance, long functional life and easy operations.

Contact:

Aztec Fluids & Machinery Pvt Ltd, Ahmedabad
 Mobile: 09227237211, 09227153211
 Email: info@aztecindia.org, aztec.in@gmail.com

AUTO LASER ENGRAVING MACHINE

LIPI Marketing is a manufacturer of auto laser engraving machines.

Features:

- Fully enclosed optic system doesn't need adjustment and is maintenance free; original imported RF laser enjoys high power and good beam quality, stable power output and long lifetime.
- Three axis laser scanning system has a compact structure, rugged, dust-proof, precise, anti-interference.
- The system is designed to resolve galvanometer motor and drive plate heat issues to ensure the stability of the system.
- The use of RF laser water-cooling method and dual beam expander lens allows the machine to have stable and extended performance.
- Control card using the USB interface bus, support offline operation X, Y, Z, R four axis stepper motor (X, Y and Z linkage), support for external control start and stop of marking; support formula correction and newton interpolation correction.

About the company: LIPI Marketing Pvt Ltd is a wholesale trader, distributor, and importer of graphics and textile printers. Product range includes milling machines, welding machines, marking machine, etc.

Contact:

LIPI Marketing Pvt Ltd, Chennai
 Mobile: 09444395495 Email: sales@lipimarketing.com



PVC CONDUIT PIPE EXTRUDER

Hindustan Plastic & Machine Corporation engages as a manufacturer, supplier and exporter of PVC conduit pipe extruder (two pipes).

Features:

- They are used in processes involving electrical piping and underground ducting, among others.
- These are backed by advanced technology support and pipe extruder plants allow production of twin pipes of two different diameters simultaneously using single mould support.
- It is supported by special conical twin screw extruder for allowing high filler loading, dual pipe vacuum tank for consistent production even in cases when output is from single pipe, separate vacuum pump and water pump for two different vacuum chambers, dual pipe die head for low production costs, and special flow channel design for allowing equal distribution of PVC in moulds.

About the company: Hindustan Plastic & Machine Corporation is a manufacturer, exporter and supplier of screw extrusion plants like high speed mixers, bimetallic screws, cater pullers, conical screw extruder, conical twin screw extruder, twin screw extrusion line and a wide gamut of machinery for compounding, screw and barrel.

Contact:

Hindustan Plastic And Machine Corporation, New Delhi
 Tel: 011-25471114 Mobile: 09891061200
 Email: enquiry@hindustanplastics.com



SEALING MACHINE, SEMI AUTOMATIC L-TYPE

Joy Pack India is a leading manufacturer of semi-automatic L-type sealing machine.

Features:

- The machine's features include maximum versatility and easy operation, making it ideal for wide applications.
- The "L" type sealing machine is designed for shrinking and packing, operations for various products.
- Its cutting and sealing system consists of nickel chrome wire; conveyor belt height is adjustable.
- This machine's applications include: timer control sealing motion; packaging products feed into shrinking tunnel automatically.

About the company: Joy Pack India Pvt Ltd is a leading manufacturer and exporter of packaging machines. These machines have robust structure, are easy to install and require zero maintenance.

Contact:

Joy Pack India Pvt Ltd, New Delhi
 Mobile: 09810023485, 09312235318
 Fax: 011-27474382
 Email: info@joypackindia.com, joypackipl@gmail.com



SLAT CHAIN CONVEYOR

Ram Tech offers a wide range of slat chain conveyor.

Features:

- This product is manufactured with quality-tested raw materials in tune with industry standards.
- Slat chain conveyor is demanded in industries like petrochemicals, food processing, brewery and more.
- The range is checked by quality inspectors at different stages; this product has a huge capacity to transport various heavy materials.
- Features include: sturdy construction; precision functioning; low operational cost.

About the company: Ram Tech is an ISO 9001:2008 certified manufacturer and supplier of an array of industrial process equipment and fabrication services. The product range includes process reactors, heat exchangers, industrial conveyors, pressure vessel, storage tanks, blender blades, chemical filter, centrifugal fans, and industrial coolers.

Contact:

Ram Tech, Chennai
 Mobile: 09841187346, 09551695172
 Email: info@ramtech.org



GENERAL SECTION PRODUCTS

DOUBLE FACER MACHINES

B R D Manufacturing Company is a leading manufacturer of double facer machines.



Features:

- The heating plate is surface ground and chrome-plated; dense weight rollers are used in the heating section, 3 stage adjustable pressure for weight rollers are controlled by the pneumatic system according to the thickness of paperboard.
- Drive section adopt gearbox, driven by electromagnetic speed control motor or frequency conversion motor.
- Drive rollers endure abrasion rubber and cutting 'V' from teeth, with drum and put out paperboard stable.

About the company: B R D Manufacturing Company is engaged in manufacturing, wholesaling and exporting a wide range of corrugated board machines, corrugation machines, carton box making machines, slotter machines, printing machines and corrugated box packaging machines.

Contact:

B R D Manufacturing Company, Kolkata
Tel: 033-23504052, 23500251
Mobile: 09830571585, 09830074667
Email: brdcal@rediffmail.com

SONI
OFFICE MATE

PAINT MARKER

Wide Range of Paint Markers

- 1 Slim Paint Marker with Plastic Nib :-**
This can be used for marking on small parts with fine line width (1mm)
- 2 Slim Paint Marker Gold & Silver with Metal covered Plastic Nib :-**
For writing on small parts & Wedding Cards.
- 3 Paint Marker for high temp. marking :-**
Marking with silver paint marker can withstand 1100°C temp.
- 4 Paint Marker with Chisel Tip :-**
This can be used for marking with broad line width (5mm)
- 5 Jumbo Paint Marker :-**
This marker can be used for marking with 3 line width (2mm, 10mm, 15mm)

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SONI POLYMERS PVT. LTD.

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e-mail - schemp_ngp@bsnl.in website : www.soniofficemate.com



HEAT SHRINK TUBING

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HEAT SHRINK TUBING DUAL WALL

Soft, flame retardant, and excellent water-proof, moisture-proof performance. This Thermo-plastic adhesive lined tubing is great for sealing and meets meet UL 224 standards and through VW-1 flammability rating.



COLD SHRINK TUBING

Widely used for insulation of the power cable or telecommunication cable. Special tubing designed for protection that requires no external product for shrinkage.



BUS BAR TUBING UPTO 33KV

Has excellent weatherability, aging resistance and flame retardant, in line with ROHS environmental protection requirements. This is usually used as indoor and outdoor power cable insulation tube with 33KV voltage grade.

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HYDRAULIC MANIFOLD BLOCK

Om Shakthi Hydraulics offers a wide range of hydraulic manifold blocks.

Features:

- Manufactured using optimum quality aluminum and stainless steel, these blocks are available in customised pressure options at market leading prices and according to promised specifications.
- Offered with dimensional accuracy so that they can be fitted in other industrial parts.
- Corrosion resistant; durable; assured sturdiness; rugged design; rust proof surface finish; longer operational life; easy to use.

About the company: Om Shakthi Hydraulics Pvt Ltd is a manufacturer, supplier, trader and retailer of hydraulic cylinders and power packs. Used for heavy-duty applications, these cylinders have been designed with precision and accuracy and are available in a wide assortment of hydraulic cylinder, pneumatic cylinder, hydraulic press and more.

Contact:

Om Shakthi Hydraulics Pvt Ltd, Bengaluru
Tel: 080-28375442, 41171117
Mobile: 09448379210, 09448371800
Email: info@oshpl.in, marketing@oshpl.in



THINNER RECOVERY EQUIPMENT

Innovative Flexotech offers a wide assortment of thinner recovery equipment.

Features:

- This equipment can be used for recycling solvents according to the distillation principle.
- Wide application in industries that use an organic solvent as cleaning agent such as dirty solvent from cleaning the spray gun, trichloroethylene from cleaning electronic products, toluene, anhydrous alcohol, and IPA used as cleaning the optical lens.
- Eco-friendly and does not contaminate the environment.
- These products' features include: high quality recycled solvent; clean and pure supply to the production line; durable and stable performance.

About the company: Innovative Flexotech Pvt Ltd is an ISO 9001:2008 certified company and approved outsourcing company with customers from countries such as the USA, the UK, Australia, Germany, France, Switzerland and many more.

Contact:

Innovative Flexotech Pvt Ltd, Ahmedabad
Mobile: 08347003307, 09824096180
Email: info@flexo.co.in, alpeshtthakar123@gmail.com



SERVO AUGER MACHINE, COLLAR TYPE

All India Packing Machines offers collar type servo auger machine.

Features:

- This quality collar type servo auger machine is used to fill powder and semi powder; all powders such as milk powder, spice powder, food powder and soap powder can be filled into packets using this machine.
- These volumes can be varied and controlled by servo motor; it minimizes manual work extent.
- The robust and sturdy machine helps the products to be durable and attain long operational life.
- Quality array of pouches is received from this machine; it is flexible and very easy to maintain.
- The easy functionality of this machine creates high demand for it in the market; its widespread applications have aided in the increase its demand.

About the company: All India Packing Machines Pvt Ltd caters for pouch packaging machines, air compressors, etc with strict quality control along industry guidelines.

Contact:

All India Packing Machines Pvt Ltd, Faridabad
Tel: 0129-6528513 Mobile: 09650798513, 09810978513
Email: info@allindiapackingmachines.com
llpackindustries@gmail.com



SEWAGE TREATMENT PLANT

Enhance Envirotech provides sewage treatment plant with biological treatment for municipal, commercial and industrial wastewater treatment and water reuse applications to meet the requirements of wastewater treatment.

Features:

- The result is consistent, high-quality effluent suitable for any discharge or reuse applications.
- These sewage treatment plants are used for recycling sewage for horticulture application.
- Secondary treatment plants, which is referred as biological treatment and may be aerobic or anaerobic in nature can also be availed.
- All these plants are manufactured under the supervision of experienced professionals, in compliance with the established norms and guidelines
- Its features include: High functionality; easy operation; robust design.

About the company: Enhance Envirotech Pvt Ltd is active in the field of manufacturing, trading, and exporting, service providing of sewage treatment plant, effluent treatment plant, air pollution control equipment and much more.

Contact:

Enhance Envirotech Pvt Ltd, New Delhi
Tel: 011-45130320, 45140320
Mobile: 09811065735, 09811065635
Email: enhanceenvirotech@gmail.com



GENERAL SECTION PRODUCTS

HYDRAULIC SCRAP BALING PRESS

Fluid Power Machines offers hydraulic scrap baling press.

Features:

- The topical process technologies related to hydraulics and are designed for production flexibility to meet varied customer needs.
- It uses latest technology with constant upgrading to industry standards.
- Its features include: high-low circuit to save power consumption; available in both electrical and manual operated; three types of compression are available.
- Trouble free performance; replaceable wear-resistance plates; top lid to shear the excess; heat exchanger; shearing blades on the edges of the chamber.

About the company: Fluid Power Machines Pvt Ltd is engaged in manufacturing, exporting, importing, supplying, trading and distributing hydraulic cylinders and power packs, intensifiers, scissors lifts, valve body test rigs, hydraulic presses, areca leaf plate making machines, hydraulic power packs, hydraulic jacks, plate making machines and hydraulic machines.

Contact:

Fluid Power Machines Pvt Ltd, Coimbatore
Tel: 0422-2567999 Mobile: 09842231391, 09384576700
Email: fluidpowereng@vsnl.net



ZERO LEVEL LIFT

Techvos India offers a wide range of zero level lifts.

Features:

- The Techvos scissor lift ground level can help to get the job done with ease and reliability.
- It features heavy duty solid construction, a hand controlled power pack, and a raised level of 2000mm.
- It is a material handling solution and part of the professional line of titan hydraulic scissor lifts.
- Its delivers quality performance with rugged construction.
- Features include: lifetime dry slide bushings; velocity fused cylinders; heavy duty hydraulic cylinders; rugged heavy duty welded frame; standard power pack c/w hand control.

About the company: Techvos India is engaged in manufacturing and exporting equipment like hydraulic scissor lift, car lift, dock leveller, etc with excellent after sales services. It believes in keeping up with the latest developments, adopting advanced technology and innovative manufacturing process.

Contact:

Techvos India, New Delhi
Tel: 011-65059989
Mobile: 09891252224, 09810614422
Email: techvosindia@hotmail.com



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BULLET MAGNES

Vibromag Industries offers a wide range of bullet magnets.

Features:

- Aerodynamically shaped design finish and solid stainless steel nose cone design makes it highly suitable for providing protection to machinery from damage by tramp metal.
- The cone shaped magnet assembly also helps in maintaining balanced flow through the housing and achieving a uniform velocity in a flow line.
- Leak-resistant seal support with stripper sleeve for additional cleaning purposes.
- Mounted on a hinged door for allowing the removal of ferrous material from the product flow line; durable stainless steel construction for allowing longer and noncorrosive service life.



About the company: Vibromag Industries is a manufacturer and supplier of magnetic vibrating equipment and carrier vibrating equipment like magnetics, permanent magnet, and permanent magnetic equipment. Perfect for removing magnetic impurities and other purposes.

Contact:

Vibromag Industries, Chennai
 Tel: 044-32451920 Mobile: 08056170750, 09443664610
 Email: vibromagind@yahoo.co.in

THIN BLADE SLITTER SCORER

Mano Industrial Machine Tools offers thin blade slitter scorer.

Features:

- This is a controlled automatic or manual knife sharpener with trim board edge that improves production efficiency; imported synchronous drive unit; semi-precision; long life; low noise operation.
- Technical specification include: mechanical speed – 200m/min, 250m/min, effective width – 1400mm - 2200mm; using a sharp thin tungsten steel alloy blade, long life of more than 8 million metres.
- It stores 999 orders for a single non-stop automatically or manually; 3-8 seconds for fast changing order, two machines can be achieved with no slowdown immediately for a single.
- Automatic tracking production line speeds ensure their synchronisation, connectivity and production management system, and compatibility.



About the company: Mano Industrial Machine Tools provides machinery and ancillaries for the corrugated packaging industry, in partnership with global players, to meet the technology requirements of the packaging industry.

Contact:

Mano Industrial Machine Tools, Chennai
 Tel: 044-22445610 Mobile: 09444020352, 09444050352
 Email: manomachine1977@gmail.com

STEAM HEAT MACHINE

Weilai Machinery LLP is a leading manufacturer and exporter of steam heat machine.



Features:

- The offered machine uses self-invented essential patents in technology; one steam heat furnace; high temperature steam fixation machine; high temperature hot air dryer, etc.
- To complete a continuous complete leaf fixation and dehydration process as a whole, under normal pressure, steam heat generator can produce 120 - 180°C steam and 130 - 160°C hot air.
- After fixing, the moisture content is about 58 per cent, in line with rolled up, with high quality and efficiency, leaf integrity, maintains the color, energy saving, easy to control, etc to remove the bitter taste of summer tea.
- These machines are applied for tea fixing and dehydration and for leafy agricultural processing.

About the company: Weilai Machinery is a specialist and technology partnership firm for plant and equipment and related services for processing basic foods and manufacturing advanced material including a wide range of packaging machine, flour mill machine and many more. It also provides repairing service, installation service and others as per clients' requirements.

Contact:

Weilai Machinery, LLP, Kolkata
 Mobile: 09674594085 Email: sales@weilaimachinery.com
 vikramjit.das@gmail.com

ADHESIVE LABELING MACHINE

Heli Engineers offers automatic vertical sticker labeling machine.



Features:

- The machine is used for full/partial wrap around labeling on different size of round container; it is capable of labeling up to 100 containers per minute depending on products and label size; it is equipped with roller spacing device.
- The round containers positioned accurate spacing between two containers by the roller spacing device for wrap-around operation at the operation at the labeling point, an electronic product sensor senses container release a label from self adhesive label roll.
- If machine is equipped with batch printing device in that case batch printing device prints the batch number other matter on label during label is stationary means time between sensing of two label.

About the company: Heli Engineers is a manufacturer, exporter and supplier of a broad assemblage of packing machinery.

Contact:

Heli Engineers, Ahmedabad
 Mobile: 09978960673, 07227888104
 Email: info@heliengineers.com, chetanmevada@ymail.com

GENERAL SECTION PRODUCTS

DISC PACK COUPLING

Hasmukhlal & Brothers is offering a vast array of disc pack coupling.

Features:

- Both angular and axial misalignments are accommodated by the flexible disc packs couplings for medium duty applications which requiring moderate shaft separations that consist of three main parts.
- In addition to this, these are acknowledged for their sturdy construction, high tensile strength, easy installation, anti-corrosive and enhanced durability.
- Excellent performance; crack resistant; lightweight; fine finished.



About the company: Established in the year 1985, Hasmukhlal & Brothers, an ISO 9001:2000 certified organisation is engaged in manufacturing, supplying and exporting power transmission equipment, oil seals, threads and various industrial components. Manufactured using quality-tested material, these products have earned respect and endorsement from major original equipment manufacturers (OEMs).

Contact:

Hasmukhlal & Brothers, Rajkot
Tel: 0281-2360761
Mobile: 09825340600
Email: bonnaflex@gmail.com

CRIMPED WIRE BRUSHES

A M Associates offers crimped wire brushes.

Features:

- The crimping of crimped brush wires allows the bristles to better support each other than straight bristles.
- Crimped wire brushes are less aggressive than knot type, and best for light to medium cleaning and material removal; two main factors create performance variations between crimped wire brushes: brush width and steel hardness.
- As discussed above, increased face width will produce more aggression; for wire brushes, steel hardness is usually measured on the Rockwell scale, which measures the 'indentation resistance' of materials.
- Rockwell hardness measurements are abbreviated 'Rc', followed by a hardness number. Most crimped wire brushes are manufactured with steel between Rc 30 and Rc 60; the higher the Rc measurement, the harder the steel.



About the company: A M Associates is a manufacturer and wholesaler of industrial fittings, accessories and associated products.

Contact:

A M Associates, Chennai
Tel: 044-42165253 Mobile: 09789881464
Email: aic.loyal@gmail.com

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ISO 9001 - 2015 CERTIFIED COMPANY

HSS CUTTERS

Fein Power Tools India offers HSS cutters.

Features:

- Fein HSS dura core bits are used where working conditions are permanently adverse or where coolant cannot be used.
- Made from high-quality high-speed steel with a cobalt content of 5 per cent, the surface is covered by a titanium aluminium nitrate coating.
- Best glide properties, increased heat resistance and outstanding service life in steel, stainless steel and cast iron; HSS core bits are available from 12mm to 80mm diameter.
- Narrow cutting width of 5.1 mm for low torque and reduced energy consumption; HSS cutters have wide flutes to evacuate chips easily while less contact between the cutter and hole surface facilitates lower torque and power consumption.



About the company: The first electrical power tool of the world is an invention of the C & E Fein Company founded by Wilhelm Emil Fein in 1867. The company has 600 employees in Germany.

Contact:

Fein Power Tools India Pvt Ltd, Chennai
Tel: 044-43578684
Mobile: 09500056121, 08446650501
Email: m.ameer@fein.in

HIGH FREQUENCY SCREENS

Masyc Projects Pvt Ltd offers a wide range of high frequency screens.

Features:

- These "Masyc" high frequency screens are of true balanced mass and rugged design.
- It has linear oscillation, positive conveying, and no sliding and has long screen cloth life and has much less power consumption.
- There is no vibration during start and stop and the acceleration / de-acceleration is very smooth. With respect to other screens, for the same capacity high frequency screens are smaller in size, lower angle of inclination which results in economical structural design.
- The high frequency screens are single deck structure with a substantial rigid design.
- The screen body consists of the two side plates with bolted transverse supports & screen mats.
- The frequency of the screen is mainly controlled by an unbalanced motor which is mounted above the screening surface and directly connected.
- The "Masyc" high frequency vibrating screens achieves a high efficiency of separation and differ from flip flow screens as it breaks down the surface tension between particles.
- Since the screen vibrates vertically, the coarser particles are lifted higher and finer particles stay closer to the screen and this increases the probability of separation.
- These screens find usage in various application of fine screening of various minerals, lumps such as sand, minerals, ores, sinter, coal, coke, pet coke, lignite, limestone, dolomite, chemical products, fertilizer, compost, refuse and refuse slags etc.

About the company: Masyc an ISO 9001-2008 certified company specialize in the field of bulk material handling system, conveyor equipment, crushers and screens etc. Their major customers include Ultratech Cement, Bhushan Power & Steel Ltd, Binani Cement, Nirma Cement, Amrit Cement, Jindal Saw, Nova Iron & steel and orient cement etc. Their product range of various conveying systems and equipments suit and match all the requirements in different processing industries like cement, steel, coal, pulp & paper, glass, fertilizers, mining, power etc. " Masyc " and its top management strongly believes in good professional ethics and ensures promised quality. They provide complete satisfaction to the customers and we believe that as the list of our satisfied customers grows so will the " Masyc " and its employees.

Contact:

Masyc Projects Pvt Ltd, New Delhi
 Tel: 011-28115745, 28113383
 Email: masyc@masycproject.com



PLAIN AND ADJUSTABLE SNAP GAUGES

Jayesh Enterprises is a manufactures high quality TIECO brand adjustable snap gauges.

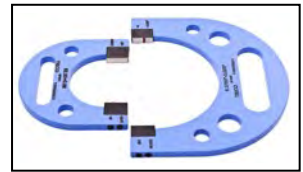
Features:

- These snap gauges are used for checking the thickness, width, OD and the groove diameter. snap gauges are of two types, single ended and double ended. They are manufactured from 2.5 mm onwards per I.S. and J.S. standards.
- These gauges are calibrated in their ISO/IEC19025:2005 certified by NABL laboratory at 20°C using the latest TRIMOS length measuring instruments and QMSOft© software.
- Other products include thread gauges, plug gauges, ring gauges, taper gauges and special gauges.

About the company: Jayesh Enterprises specialise in the manufacture of jaws as per customer drawings / requirements – in special as well as standard.

Contact:

Jayesh Enterprises, Pune
 Tel: 020-26877842/43
 Fax: 020-26877846
 Email: jaws@jawsindia.com



BUILT-IN CYLINDER POWER COLLET CHUCKS

The Jaws Mfg Co introduces its latest product – air/hydro rotary power chucks with built-in cylinder.

Features:

- The power chuck is specially designed to help users to set up a power workholding system in a low cost way. With a built-in cylinder, it allows users to easily and quickly set up a power work-holding system.
- The system saves the cost of cylinder mounting flanges, draw bar/tube and connector. This power chuck also has quick-change jaw/collet design, helping you to cope with parts of various dimensions.
- The power chuck comes with both air and hydraulic models that range from small sizes to large ones, giving users more options to choose from.
- It can be applied to convert manual lathes to semi-auto ones with power workholding system, or can be applied to build all kinds of special purpose machines.

About the company: The Jaws Mfg Co specialise in the manufacture of jaws as per customer drawings / requirements – in special as well as standard.

Contact:

The Jaws Mfg Co, Pune
 Tel: 020-26877842/43
 Fax: 020-26877846
 Email: jaws@jawsindia.com



GENERAL SECTION PRODUCTS

LINEAR INDEXING CONVEYOR

Converge Transprint Systems is offering linear indexing conveyor.



Features:

- The offered conveyor is manufactured using utmost quality components and modern technology under the supervision of highly skilled professionals.
- The conveyor has longer functional life, sturdy construction, resistance against rust and abrasion and dimensional accuracy.
- Consisting of 36 to 44 stations or as required; suitable for 2-3-4 colour printing; accurate registration of colour; printing station locking facility to ensure perfect registration.
- Suitable for high volume printing; high output; length of conveyor ensures space for add on equipment like pre and post treatment.

About the company: Established in the year 2004, Converge Transprint Systems Pvt Ltd, is manufacturing and exporting a wide range of printing ink and machines. The product list includes printing machines, indexing tables and printing inks.

Contact:

Converge Transprint Systems Pvt Ltd, Mumbai
Tel: 022-25660252 Mobile: 09320823985
Email: transprint@vsnl.net

MOTOR MOUNTED SMSR GEAR BOXES

Micro Precision Works offers motor mounted SMSR gear boxes with additional feature of motor mounting system that provides mounting of motor on the top of gearbox so that it eliminates the extra foundation for motor.



Features:

- These products are the easiest method of decreasing speed by direct mounting on the driven shaft of the machine.
- Specially designed to meet any position requirements, in addition to this, the direct mounting attributes of our products help in eliminating the foundations, use of couplings and layout troubles.
- These also give perfect and permanent alignment of gearbox and permit convenient location of the motor; quick easy installation and adjustment of gearbox and motor.

About the company: Micro Precision Works is engaged in manufacturing, supplying and exporting a comprehensive collection of all types of gearboxes and conveyor accessories.

Contact:

Micro Precision Works, Ahmedabad
Tel: 079-25893824 Mobile: 09924304636
Email: microgearbox@gmail.com

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SCRAP BALING MACHINE

Mask Hydraulic Machineries provide triple action scrap baling machines.



Features:

- Option for hand lever operated as well as PLC controlled scrap balers; high speed and fully automatic balers; equipped with all the safety features; CE marking on the balers can also be arranged at extra cost.
- Valves are easily interchangeable; lower cost per ton than any other baler; ease of operation; each baler is rigorously tested prior to the dispatch; spare parts are easily available across the globe.
- Heavy duty construction of the balers; can be customised as per the specifications of clients; single compact unit mounted over I-beam (girders); hydraulic accessories are provided to avoid accident.

About the company: Mask Hydraulic Machineries is a manufacturer, wholesaler and exporter of hydraulic press machines. It is an ISO 9001:2008 certified company offering baling machine, hydraulic straightening press, and coco peat block making machine.

Contact:

Mask Hydraulic Machineries, Ahmedabad
Tel: 079-40025585
Mobile: 09825360680, 09724063797
Email: maskhydraulics@yahoo.in,
info@maskhydraulics.com

COIL WRAPPER BELT

A G Belting offers a range of coil wrapper belt that has excellent tracking and running properties.

Features:

- Suitable for highly loaded steel coil wrapper, this wrapper belt is manufactured by making use of high quality thermoplastic polyurethane and leading techniques keeping in mind the set norms of industry.
- Made from thermoplastic polyurethane (TPU) these belts have extremely wear resistant top cover suitable for working in difficult condition; 100% truly endless solid woven fabric provides excellent force elongation suitable for highly loaded steel coil wrapper.
- 100% PU coating, resistant to oil, grease, weak acid and weak base as well as salt resistant; felt belts with TPU coating on both sides provide high flexibility, accuracy of dimensions and uniform thickness.

About the company: A G Belting Pvt Ltd, is a manufacturer, supplier, distributor, exporter and importer of conveyor belt and components.

Contact:

A G Belting Pvt Ltd, Ghaziabad
 Tel: 0120-4159660 Mobile: 09810979977
 Email: info@agengineers.net; mkt@agengineers.net



INDUSTRIAL WINCHES

Powertek Equipment Company offers industrial winches.

Features:

- With each winch specifically designed for intended application, these can be made available in single line capacities from 1/2 to over 100 tons.
- Further, the cable drums are sized for meeting rope storage requirements as well as come with customised fleet angle restrictions as well as space limitations for each application.
- Modular sealed gear sets that are sized for intended service factor; can be developed for any required line speeds.
- Free-spooling drum clutches, drum grooving patterns, powered level winds and others can be easily integrated with winches for maximising rope handling as well as spooling efficiency.

About the company: Powertek Equipment Company is a manufacturer and exporter of a wide range of electric geared motors, and variable speed drives.

Contact:

Powertek Equipment Company, Mumbai
 Tel: 022-25905324 Mobile: 09820193114, 09320193114
 Fax: 022-25905324
 Email: info@powertekindia.com



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 President, Association of Indian Forging Industry

ISSUE HIGHLIGHTS

- Sustainable practices in the supply chain adopted by auto industry
- Engine technology's transition towards low-emission pathway
- ICE vs EVs: The short and long story
- Exploring other low-emission engine technology beyond EVs
- Contribution of automation for auto industry's move towards sustainability
- Role of suppliers such as paints, adhesives, plastic components, lubricants, etc in making auto industry green

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Future of Forging: Diversifying into non-automotive segments

Forging industry over the years have attained a position for its products on a global platform and are competing with manufacturers across the globe but are unable to stand global competition as exports do not report a positive industry trend recently. With industry battling and combating through many challenges, changes and finding its way crossing path of uncertainties, we can see a promising future for forging industry in the coming years. In this article, Pushkar Oak delves into latest trends, challenges and future of the forging industry.

According to Association of Indian Forging Industry (AIFI) analysis, the annual output of the Indian forging industry, comprising about 400 units across India, was 30 lakh metric tonne in FY2019, with a total output valuation of up to Rs 50,000 crore.

Earlier, the capacity utilisation was about 70 per cent. This is now reduced to 50 per cent as the average production has declined 25- 30 per cent year-on-year on the total output of the forging industry from November 2018 to July 2019.

About 83 per cent of the domestic forging industry, representing the lowest level in the automotive product development value chain, comprises small and medium enterprises (SMEs). The other medium, large and very large companies constitute the remaining 17 per cent of the industry. Bharat Forge, one of the leading automotive component manufacturers, falls in the very large category.

The forging industry provides direct employment to about 300,000 people and temporary jobs to about 60,000-75,000 workers. Adding to the impact of the ongoing economic slowdown on job losses in this space, an AIFI official statement points out, "While the temporary workforce faces threat of immediate job loss, the direct workforce remains underemployed due to the necessary block closures to align manufacturing with the market demand."

"So, both these factors impact the employed workforce within the



forging industry currently. 20 per cent headcount is under threat of losing their jobs and another 15 per cent of the total workforce faces the impact of underemployment," noted AIFI.

AIFI has held that most forging units are currently operating for only four days a week following irregular plant shutdowns by automakers. AIFI officials have suggested that the downturn has resulted in 50 per cent cut in the total man-hours at the forging units as the inventory pileup has breached alarming levels.

Challenges and concerns

Despite the industry witnessing growth in the recent past, there are few concerns which seems to hamper

the overall growth in the long run like the rising steel prices and demand supply gap, high electricity tariff rates in Maharashtra region, rising fuel prices, government's thrust on electric vehicles and technology upgradation & modernisation.

Steel Prices and demand supply gap: The forging industry in India is showing a decline of 25 to 30 per cent demand. However, there seems to be a huge demand supply gap which exists which is not being met by the steel manufacturers in India. Some of the reasons that can be attributed to the demand supply gap are: - major players reeling under high debts, lower coal production by Coal India Ltd. as compared to the

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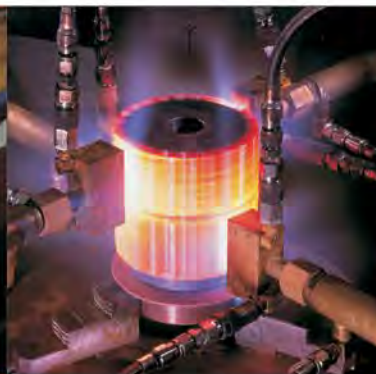
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demand and gap in the quality standards to meet the higher level of demand in the automobile and significant rise in prices of graphite electrodes, an immensely vital raw material for steel manufacturers.

Skilled manpower: One of the major concern or challenge the industry is currently facing is dearth of skilled man power. One of the key reasons behind this stems from a lack of awareness about the forging industry and the opportunities that it offers. To tackle this issue, The associations are addressing the same at the grass root level i.e. through the engagement with colleges and institutes. MoUs have been signed with renowned engineering institutes to develop a curriculum specific to the forging industry and start various courses such as graduation with forging as elective subject, certificate course in forging technology, post-graduation in forging technology, etc. The underlying objective has been to spread awareness about the sector in terms of growth, scope of career opportunities and the diversity of the kind of roles and learnings it has to offer. Apart from this, associations with colleges through their educational and technology fests and engagements with students through fun interactive activities will pave way for better future of the industry

“Industry is encouraging the high educational institutes to associate and explore initiatives like hands-on



“ Industry is encouraging the high educational institutes to associate and explore initiatives like hands-on knowledge building through plant visits, internships with various forging companies, undertaking research projects, organising seminars/conferences and other initiatives where people from the industry can interact with the students.”

Asheet Pasricha, Core Committee Member, AIFI

knowledge building through plant visits, internships with various forging companies, undertaking research projects, organising seminars/conferences and other initiatives where people from the industry can interact with the students,” Asheet Pasricha, Core Committee Member, AIFI.

“I firmly believe that collaborations between academia and industry will help develop new communication streams and address various issues relevant to the industry,” he adds.

Forging industry is also concerned over the continuous rise of steel prices in India and living under constant fear that if this trend keeps on going like this, then the ‘Make in India’ project will suffer and China will get a competitive edge in the world steel market, which as of now is the biggest steel exporter. The steel prices have inflated by around 25.5 per cent in the last one year. The

price of steel has gone up to Rs 52,740 per tonne. The price for the same was Rs 38,000 per tonne in November 2017. Even though the global steel prices also witnessed immense the quantum influences were not this high.

Diversification

Electric vehicles (EVs), pushed by government as the new form of mobility across the nation, the experts in the industry have raised concerns over the viability of the forged parts as the number of the parts will come down in an EV. This is the time to upgrade and move to the non-automotive industry in a big way. Even today 60 per cent of the industry business is dependent on the automotive industry. There are various requirements in the other industries as well which will be catalyst to shift towards non-automotive industry. The areas like

In order to de-risk and reduce dependence on the automotive industry, the Indian forging industry is consciously making efforts towards upgrading technologies and diversifying product range to expand its customer base to emerging industries such as aerospace, energy, oil & gas, heavy engine parts, defence, construction equipment, power generation, transmission and distribution.

At the same time, the industry is increasingly tapping opportunities arising out of the growing trend among global automotive OEMs to outsource components from manufacturers in low-cost countries. As a result, the Indian forging industry has been



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making significant contributions to the country's growing exports.

In a nutshell, the Indian forging industry aims to become customer focused, efficient and cost-effective supplier of high-quality forged products. With falling domestic demand and exports halted by nations across the globe over Coronavirus threat, the tough time for the forging industry in India have begun. The forging demand will fall for more two months but BS VI series of new vehicles are expected to pick up at a very slow rate.

IPF

COMMUNICATION FEATURE

Solutions from Elektromag-Joest Vibration on effective production in foundries

Significance of right fit and suitable solutions is a must in foundries today. Elektromag-Joest Vibration Pvt. Ltd., a joint venture between Elektromag Devices Private Limited & Joest Verwaltungs GmbH, offers such suitable solutions for various processes in the foundries.

How does Elektromag-Joest Vibration Pvt. Ltd serves the industry?

All of its products match up for good casts. Whether Green sand foundry or nobake foundry EJVPL supplies a suitable product line for each process which enables the foundry to produce good castings in the most effective way.

The company offers shakeout conveyors, casting coolers, casting conveyors, vibrating fluid bed sand coolers and used sand conveyors. (Single machines and turnkey line arrangements) for the green sand foundry applications. Meanwhile for the nobake sand foundry applications, the joint venture provides product line covering the shakeouts, sand lump attrition units, non-vibrating fluid bed sand coolers and sand feeders. The company supplies charging machines for induction furnaces for the melting shop.

Vibrating machines to foundries

The joint venture can deliver complete vibrating machines to foundries.

After the Synchronized Belt Conveyor (SBC), the molds dump on a reversible conveyor and pass on a shakeout with adjustable frequency and adjustable vibrating angle directly. This soft handling track is for fragile parts which cannot be processed in a rotating drum.

The main track directly connects end of molding line SBC, shotblast machine, grinding area and melting shop in a straight way. After the SBC, the molds dump on a reversible conveyor and pass to an inclined linear sand/casting conveyor and a 90° curve which follows this conveyor. Conveying parts on such a long distance together with the sand allows heat dissipation from the castings to the surrounding sand mass flow.

This conveyor arrangement is followed by a rotating drum without any grids and a shakeout with adjustable frequency and adjustable vibrating angle in order to clean the casting surface from sand, reducing sand lump size, and finally draining the dissolved sand through the grids.

After the shakeout, the castings pass on a primary sorting conveyor

for removing the downsprue, runner and riser before they enter the shotblast machine.

The shotblast machine is followed by a secondary sorting conveyor. Castings are separated from return scrap; the castings are conveyed to the grinding area and the return scrap is processed in a hydraulic V-jaw breaker in order to reduce the size. After this machine, the return scrap is conveyed directly back to the charging plant.

All unbalance motor machines are supported on two mass isolation frames; all resonance conveyors are mass compensated in order minimize the transmission of dynamic forces in the foundry floor. All shakeouts are equipped with variable vibrating frequency and vibrating angle in order to allow best processing parameters corresponding to each individual casting.

IPF

(For more details contact: Elektromag-Joest Vibration Pvt. Ltd., Mumbai on Phone: 022 66624444; email: vibration@elektromag.com or visit: www.elektromag-joest.com)

(Communication provided by the management of the company)

“Coronavirus outbreak will add fuel to the fire”

Indian Forging Industry depends on 60 per cent of its revenues from the domestic automotive industry. Automotive industry was hopeful for recovery with post introduction of BS VI from the slowdown but Coronavirus (Covid-19) has impacted on the recovery of the domestic market. **Muralishankar Sambasivam**, President, Association of Indian Forging Industry (AIFI), discusses with Pushkar Oak about current situation in the forging industry and the way ahead considering the virus outbreak.

Shed some light on Indian forging industry?

According to the Association of Indian Forging Industry (AIFI) study, the total capacity of the industry is 23.9 lakh metric tonne (MT). The Indian forging industry has close to 400 forging units, of which 83 per cent can broadly be categorised as small and medium enterprises (MSMEs). While 9 per cent are medium units and the rest are large manufacturing plants. The MSMEs contribute to approximately one-third of the total output in terms of production and sales. Meanwhile, the industry provides employment for over 300,000 people. Currently, the total capacity of the industry is 30 lakh MT (FY2019) with a total production valued between Rs 45,000 and Rs 50,000 crore. The industry is experiencing a sales slowdown on account of coronavirus taking a hit on 25-30 per cent sales.

Has coronavirus worsened the current situation in the automotive industry affecting the forging industry?

60-70 per cent of demand for forged auto components would decline to result in job losses and unit shutdowns. This will be a big disruptive change for the forging industry. The forging industry has to look for opportunities in non-automotive sectors.



More than 60 per cent sales of the forging industry accounts to the automotive sector. Hence the slowdown of all the segments of the auto sectors— commercial vehicle, cars, tractors and two- and three-wheelers has affected the forging industry very badly. The forging industry is down by more than 30 per cent in terms of sales. Covid-19 outbreak has extended the slowdown when industry was expecting recovery.

In India plants are operational for a limited time. A lot of companies have reduced the shifts and also the working days to reduce their fixed overhead costs.

The need of the hour is aggressive and assertive action that will help Indian manufacturers to become

competitive on the global platform and other relevant policy reforms to foster ease of doing business.

Over the last couple of years, the industry has created additional capacity expecting a good growth which was projected from various quarters. Hence, with the slowdown, the overall capacity utilisation is less than 50 per cent.

What are the new trends in the forging industry?

With stringent emission norms coming in place, there is a huge thrust towards lightweighting. Automakers are looking to replace components with high-strength aluminium and magnesium alloys. Also, a lot of design innovation is

taking place to achieve lightweighting like hollow shafts for the transmission instead of solid shafts or the use of micro-alloy steels to reduce weight by increasing the strength. Wherever possible, carbon fibre is seen replacing metallic parts.

With push on the electric vehicles (EVs), how will forging industry deal with this?

In an electric vehicle number of mechanical components are reduced. The introduction of EVs will have an adverse impact on the Indian forging industry as 60 per cent of the forging units are into manufacturing of auto components.

In the conventional combustion vehicle, the engine and also the transmission has so many forged parts like connecting rod, crankshaft, camshaft transmission gears and shafts and all these parts will vanish in an EV. internal combustion engines (ICEs) have approximately 2,000 moving parts as compared to only 20 moving parts in EV, as an EV does not have complete engine and transmission parts. It only has steering components, suspension and axles out of the forged auto components.

As a result, on an average 60-70 per cent of demand for forged auto components would decline to result in job losses and unit shutdowns. Hence, this will be a big disruptive change for the forging industry. The forging industry has to look for opportunities in aerospace, metro transportation, solar and other non-automotive sectors.

Tell us about forging industry's export contribution?

The forging industry exports around 30 per cent of the overall sales globally. EEPC has identified forging as one of the thrust areas for the export. There are huge opportunities for the sector in the global market.

Since some of the forging units in Europe and USA are closing there is a huge opportunity for the Indian forging sector. Also, some of the OEMs and Tier 1 manufacturers across the world are looking to outsource their manufacturing now

"Coronavirus outbreak has added fuel to the fire, coupled with slowdown and BS VI transition. The industry's revival will play a critical role in strengthening the forging industry while collaborative platforms are expected to address the challenges."

instead of creating additional facility or upgrading their in-house facilities.

Currently, the Chinese auto component industry with their huge domestic automobile production does not have the capacity to capitalise this due to the virus outbreak. Moreover, the trade war between USA and China has also made the Chinese suppliers non-competitive because of the additional customs duty. So, this opens huge opportunities for Indian forging and auto component industry. But the industry has to act fast in developing the new products and establish the production.

The industry is also faced with some challenges with regard to steel pricing and technology upgradation. Currently, the steel prices in India are relatively higher as compared to the global market and this is a major factor for the Indian players.

Such export opportunities exist for all the sectors of the industry -- the MSMEs and large scale. But for the MSMEs to become globally competitive and effective, they need huge technology upgradation.

AIFI is vocal about diversifying into non-automotive segment to reduce dependency. What is being done in the area?

In the current scenario the Indian forging industry is gearing up to meet the domestic slowdown in the short term and will hopefully diversify in future to take on the long-term challenge of e-mobility. MSMEs also have a huge opportunity in the export market. Hence upgrading in the times of slowdown and in such a situation will be a key to face future

with more zeal.

The upgrades from conventional oil/ gas-fired heating, they should go in for induction heating to achieve energy efficiency/ reduce emissions and also for better quality. They shall adopt the latest technology in terms of simulation for tool and process design. They shall install quality systems in line with global standards.

As this is going to involve huge investments and at this juncture, MSMEs are not in a position to undertake such investments. AIFI has been speaking with the government and requesting the following initiatives on the following:

- For technology, upgradation create the funding under TUF and also interest subvention.
- Since simulation techniques are very costly and require well-trained specialist, most of the MSMEs will not be in a position to create such facility in-house. Hence the association has been interacting with the government to set up Tech Centers. MSMEs can use such facility for the process and tool design and also failure analysis and thereby reduce their development time drastically and ensure 'First time right'.

With the above facilities, the MSME's in the forging sector can confidently develop components for the export markets and other non-automotive sectors.

What is your growth outlook for FY2020?

The entire industry is going through a very tough period now. Currently, there has been a huge inventory built up due to poor demand and in order to curb this, many forging units have been making proportionate cuts in their working hours and production. If the current scenario continues, we anticipate further cuts in production and capacity utilisation leading to job loss.

Coronavirus outbreak has added fuel to the fire which coupled with slowdown and BS VI transition. The industry's revival will play a critical role in strengthening the forging industry while collaborative platforms are expected to address the challenges faced by the industry. **IPF**

“Forging industry is moving and exploring non-automotive avenues”

India Inc. is going through Coronavirus situation and slowdown in various industry sectors, the Indian forging industry is bidding on entering non-automotive avenues which will help forging industry to grow. **Ranbir Singh**, President & CEO, GNA Axles talks with Pushkar Oak about Indian forging industry shift and help from the ‘Make In India’ initiative.

Can you brief us about the forging industry in India and where would it be in next five years?

As per the studies conducted by various market research firms, it is estimated that the number of forging units, currently around 500 of them, will increase by 5-6 per cent with a shift towards specialised forging jobs dedicated to various forging sub segments. Forging industry is expected to provide employment to around 4 to 5 lakh people in the country by 2025.

The experts in the industry have time and again said that the auto forging will drop at a steady pace with emergence of electric vehicles. But it is pertinent to note here that the allied infrastructure that Electric vehicles require opens avenues for forging industry as more and more steel, roofs, and metal will be used.

How have you seen the shift towards non-automotive avenues?

Forging industry is moving and exploring non-automotive avenues. It is expected that till 2025 there will be vehicles running on hybrid technology which will also help forging industry with a better demand from OEMs and aftermarket.

Going forward, with the revival in domestic auto market (which already show initial sign of revival) and higher export sales, the

forging component sector prospects look promising. Other growth areas for forgings in near future are in defence, aerospace and railway.

The industry is increasingly tapping opportunities arising out of the growing trend among global automotive OEMs to outsource components from manufacturers in low-cost countries. As a result, the Indian forging industry has been making significant contributions to the country’s growing exports.

With overall business sentiments improving in India, in the years to come, we expect to see improved business activity which will consequently push the demand for forging products as well as exports.

In the non-auto space, the sunrise sectors for forgings in near future are defence, aerospace and railway procurement. Indian government

emphasis on defence and aerospace equipment as part of the ‘Make in India’ campaign to encourage manufacturing and attract foreign investment has led many

companies to seek licences to make defence & aerospace equipment locally. This will open up more business opportunity for the domestic forging industry.

What positives can be drawn from the ‘Make in India’ initiative for the forging industry?

Make in India initiative is a good move in the right direction to give the necessary boost to the overall manufacturing sector. It created an all-round positive business environment and sentiment. The growth in the domestic auto industry and higher export sales, shows the forging component sector growth on a positive track and direction. But recently due to dependence over the automotive industry has led forging industry in losing huge business. In 2013, the association-government meet decided and asked forging industry to diversify business which did not happen to the extent it should have been by today.

The campaign has definitely been fruitful for certain segment of the forging industry and we are anticipating an increase in demand from the non-auto sector in the medium and long term.

Such projects will make forging industry independent and free from dependence on automotive industry.

Investments in the development of overall infrastructure being executed on priority, both in the public and private sectors, will result in pickup of demand, among other things, in commercial vehicles, construction industry and capital goods sector. All these will have a multiplier effect on the Indian forging industry.



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About the company: Innovative Moulds & Dies is engaged in providing a wide range of industrial moulds and dies for different applications. The company offers products such as injection moulds, metal dies, automobile jigs, unscrewing cap moulds, welding fixture sand, many more.

Contact:

*Innovative Moulds & Dies, Chennai
Tel: 044-42852146 Mobile: 09840914445
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About the company: K K Metals is one of the leading forging manufacturers and suppliers in India. KK Metals offers high quality stainless steel, carbon- alloy steel forgings and have developed more than 1000 different forgings like gear blanks, shafts, flanges, steering column yokes, GPDN, and king pins, etc.

Contact:

*K K Metals Private Limited, Bhiwadi
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AUTO PARTS CASTING COMPONENTS

Micro Melt Pvt Ltd offers a wide range of auto parts casting components.

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About the company: Micro Melt is manufacturer and exporter of investment casting products in India. As one of the leading manufacturers of castings India, it has a large and wide client base.

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*Micro Melt Pvt Ltd, Veraval
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DRY MOULDING MACHINERY

K U Sodalamuthu & Co Pvt Ltd offers dry moulding machinery.

Features:

- As per the process flow, waste paper and water along with required chemicals are made into pulp using pulper and stored in the tanks.
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- The process is very simple to handle and make many varieties of pulp moulded products.

About the company: Established in 1970, K U Sodalamuthu & Co is a professionally managed organisation engaged in the manufacture and supply of automatic paper conversion machinery for textile paper cones, paper tubes, cores, composite cans, fibre drums, edge protectors, pulp moulding and paper recycling.

Contact:

*K U Sodalamuthu & Co Pvt Ltd, Coimbatore
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MACHINED INVESTMENT CASTINGS

Gravity Cast offers machined investment castings.

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- Advantages include well developed turning and milling operations for achieving desired shape and form; faster and economical production operations; assuring superior finish strength of final product; option of different surface finishes that are developed based on product's end usage.



About the company: Gravity Cast Pvt Ltd is engaged in manufacturing, exporting, trading, importing and supplying investment castings. Its range encompasses variety of products like architectural castings, industrial castings, non ferrous metal castings, pump castings and valve castings, etc.

Contact:

Gravity Cast Pvt Ltd, Rajkot
Tel: 02827-253037. Mobile: 09375324868
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Fibro India Precision Products Pvt Ltd offers a wide range of die sets.

Features:

- The high quality die sets are manufactured from premium grade raw materials on high-end machines.
- A flawless range of die sets manufactured to meet diverse requirements of clients in various industries.
- It is available in customised dimensions, metal grades and other specifications.
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About the company: Established in 2008, Fibro India Precision Products Pvt Ltd is a prominent business organisation engaged in manufacturing and supply of an excellent assortment of a wide array of rotary tables and die sets. The product range comprises of die sets, lifting and clamping devices and milling guides. The entire collection provided is manufactured using best grade quality components.

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RESONANCE CONVEYORS

Elektromag-Joest Vibration Pvt Ltd offers a wide range of resonance conveyors.



Features:

- These vibratory or resonance conveyors are used to convey bulk material over relatively long distances.
- Its applications include: with fiber glass leaf springs; ideal for lighter bulk materials and lower volume applications; for direct installation onto the floor; with fiber glass leaf springs and counter frame; for lighter bulk materials and lower volume applications with a vibration isolated installation; with coil springs and counter frame; for all bulk materials and required volumes with vibration isolated installation; with coil springs and oscillation isolators to eliminate the dynamic forces; conveying even around corners is possible; installation directly on the ground.
- Resonance conveyors are driven by low maintenance crankshaft drives with a standard three-phase motor and v-belt for an easy adjustment of the stroke width.

About the company: Elektromag-Joest Vibration Pvt Ltd, is a leading manufacture of vibrating equipments for foundry, steel, mining, quarrying, chemical, food, recycling, air separation and thermal processing.

Contact:

Elektromag-Joest Vibration Pvt Ltd, Mumbai
Tel: 022-66624444
Email: vibration@elektromag.com

WIRE DRAWING DIES

Pragati Industries offers drawing dies for wires from size 0.15mm to 30.00mm.



Features:

- Mild steel casings are used for wire drawing dies.
- These casings are hardened for long life and maximum output from die; casings of EN 8 material are used for dies wherein the speed of machine is over 10m/sec.
- The profile of the die depends upon the grade of material to be drawn, speed of the machine, reduction on the die, lubrication used (powder or liquid), etc.
- Mirror polish is done for better surface quality of output wire from die; the automation used guarantees the tolerance in 0.001mm.

About the company: Pragati Industries, is a manufacturer, supplier and exporter of a comprehensive range of automatic nail making machine, nail cutter grinder, nail polishing machine, gripping die and wire nail, etc.

Contact:

Pragati Industries, Rajkot
Tel: 0281-2456683. Mobile: 09033001118
Email: pragatigati@yahoo.com

WIRE DRAWING DIES

Verma Dies Exports offers a wide range of wire drawing dies.



Features:

- These dies are used to draw wires of metallic material of required qualities and composition.
- These dies are made with utmost care using latest technology from premium raw material of high strength and superior quality.
- Special features of wire drawing dies include high tolerance; durable and long lasting; low wear and tear; high performance; and thermally well stable.
- These wire drawing dies are easily available in different sizes and dimensions.

About the company: Verma Dies Exports, founded in 1975, is engaged in manufacturing, exporting and supplying of premium quality wire drawing dies, bar drawing dies, tube drawing dies, fastening dies, shaving dies, bar drawing machineries, wire drawing machineries, etc.

Contact:

Verma Dies Exports, Ludhiana
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PLASTIC DIES

Parekh Wire Cut offers a wide range of plastic dies.



Features:

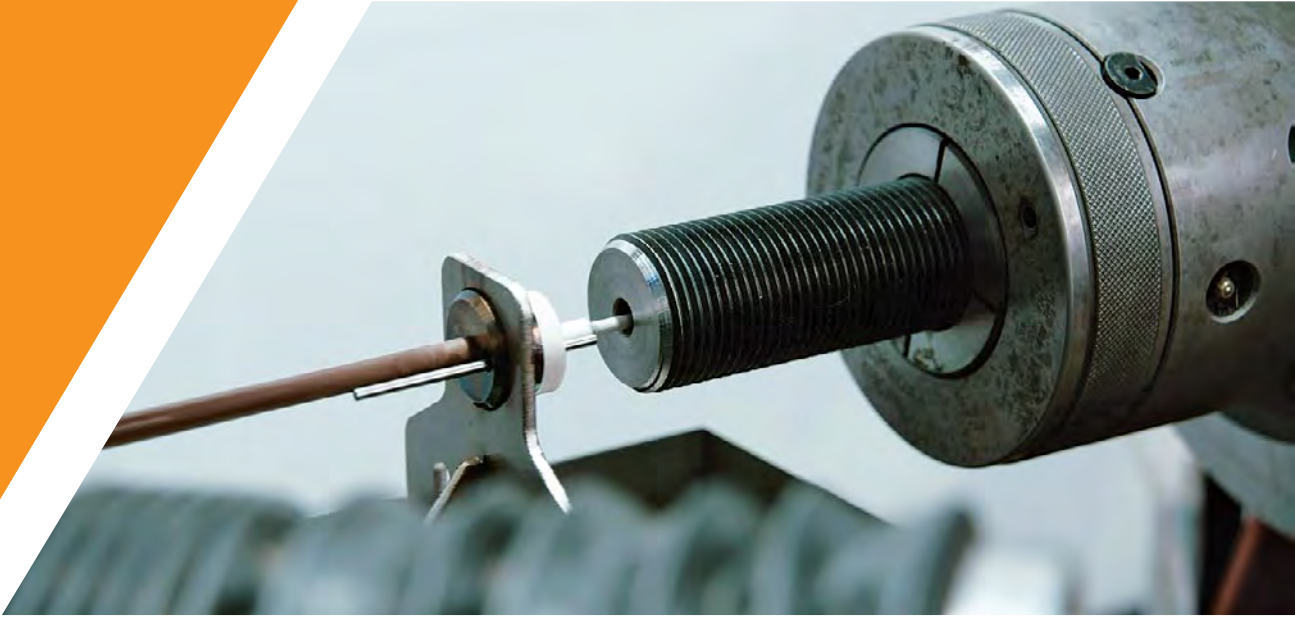
- With immense industrial expertise and market understanding, the company is actively betrothed in presenting a splendid spectrum of plastic dies.
- So as to develop this range, executives make use of quality basic material along with modern amenities to maintain its flawlessness.
- Additionally, this consignment is well tested before getting delivered at the destination of our customers.
- Its features include: accurate dimension; reliable; durability.

About the company: Parekh Wire Cut is manufacturing and exporting a qualitative array of turret punch press tooling, calibration block, etc. These products are manufactured using high-quality raw metals and cutting-edge technology as per the set industry standards. These products are well-known for their corrosion resistance, durability, high strength and hassle-free operation.

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FOCUS



Fasteners, Adhesives
& Sealants

Fasteners market to see recovery in August 2020

The Indian automotive sector is expected to be the largest consumer of industrial fasteners, accounting for a major share of the market by 2023, according to the Netscribes India study. This is due to the increase in the automotive manufacturing in the country. It is followed by the construction and the engineering sector. In this article, Pushkar Oak takes a close look at the current industry and the way ahead.

Going by the current trends in the industry, the market is expected to reach a value of Rs 460 billion by 2023, expanding at CAGR of 9.6 per cent. High-tensile fasteners are mainly used in the construction and engineering sector, whereas mild steel fasteners are used in manufacturing automobiles. Currently, there has been a shift in preference of manufacturing fasteners by using stainless steel, iron, brass, aluminium, nickel and plastics and composites.

Increasing sale of automobiles in India is significantly driving the growth of the auto ancillary market in the country, including automobile sector-specific fasteners. Growing usage of fasteners for manufacturing automotive parts such as engines, chassis, moulding, suspension system and wheels among others, is expected to drive the growth of the Indian industrial fasteners market.

Market Trends

With government's thrust in infrastructure and projects announced in the Budget 2020 will definitely help businesses to grow. The growing market in terms of manufacturing and industrial segment push will be better in terms of SMEs. Financial assistance from the government has improved the sentiment among the Indian SMEs. Though some factors are yet to be addressed, the market is hopeful for



a comeback with recovery after June 2020 in automotive and industrial segment. Associations also believe that the Indian exports will come back to normal by August 2020. Highlighting the trends in the industry, Abhijat Sanghvi, President, Fasteners Association of India, states, "Infrastructure boost will increase demand for industrial, earthmoving and construction equipment. This will intern create demand in the industrial, construction and automotive segments in the long run. The overall market is hopeful for all round growth in the sectors in India which will lead to Fasteners demand."

Sanghvi further says, "This is right time that Indian fasteners undergo quick developments as the global

market is closed for exports and the domestic demand have also been slow and sluggish. Tooling Industry is always on its rise in developing nations. Markets like SriLanka, Brazil, Africa etc are some of the examples where fasteners have export potential. While the Gulf nations also act as a magnet region for fasteners."

Meanwhile as per Society of Indian Automobile Manufacturers (SIAM) points out, "Most automobile manufacturers have already voluntarily announced plant shutdowns over the last few days. These include India's largest automakers like FCA India, Maruti Suzuki India, Mahindra & Mahindra, Hyundai India, Tata Motors, Hero Motocorp and even Eicher Motors.



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These shutdowns are effective till March 31st 2020 or till further notice. Some companies who are yet to announce similar measures include Korean carmaker Kia Motors and BMW India.”

With so much happening on the background of the Coronavirus threat fastener market seems very less hope. But experts say that during such times developing and experimenting will help utilise time better. Technologies that are revolutionising use of additive manufacturing, 3D printing promises to serve as a better manufacturing method over the in the years to come.

Boopalan Mohanasundaram, Senior Additive Manufacturing Engineer, Centre for Additive Manufacturing, EATON Research Labs, says, “There is immense potential to manufacture quality components with additive manufacturing. Additive manufacturing is an art that helps to build a component serving two functions with two different material making it operational friendly. Fastener which depending on its application can be manufactured using various materials based on the quality required.”

In such days of gloom, e



“ Additive manufacturing will be a boon for composite materials. Composite materials like plastic and metal alloys will be used for manufacturing fasteners especially for electric vehicles. Electric vehicles will see use of 3D printed fasteners in near future.”

Boopalan Mohanasundaram, Senior Additive Manufacturing Engineer, Centre for Additive Manufacturing, EATON Research Labs

commerce can save the sinking ship of the industry. E commerce has emerged as a new platform. In electronic industry many in the industry have opened online platforms which helps companies to interact with the customers directly. It is a promising way to reach last mile today in the digital era.

Future expectations

Today the fastener demand have been sluggish due to multiple factors impacting over the regular business, believes Fastener Association of India. “Considering the current situation, the industry will definitely see affects of the coronavirus epidemic and even the automotive slowdown. Manufacturing plants have been on closure for 2 weeks which will also be a bad sign for the

fastener suppliers. In the meanwhile, many are contemplating about export markets of USA and Europe. One small hindrance is that globally due to corona epidemic the import has been restricted.”

In the wake of growing industries for processed food, pharma, dairy, beverages, fruit juices, and kitchen appliances, the market size of stainless steel (SS) fasteners is growing at a rapid pace in both domestic and export markets. The SS fasteners are preferred for its benefits like corrosive resistance, easy to shape, availability of raw material and others.

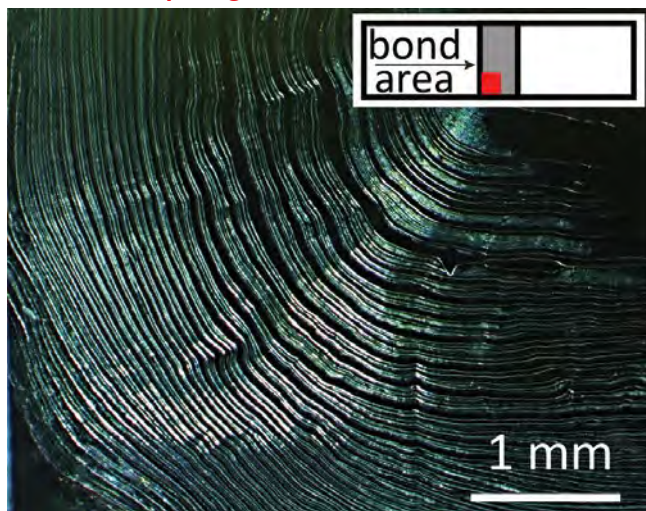
Composites opens room for features like lesser weight and thus brings efficiency in the operations. In automotive industry every component’s weight is directly proportional to the emissions and fuel efficiency. Using composites like aluminium and plastic or those of alloys will help build productive components.

“Additive manufacturing will be a boon for composite materials. Composite materials like plastic and metal alloys will be used for manufacturing fasteners especially for electric vehicles. Electric vehicles will see use of 3D printed fasteners in near future,” adds Mohanasundaram.

In a nutshell, the new materials, technologies, and policies will help to build fasteners with more durability and offering multi-functional features. No doubt that this will be driven with shift towards developing green solutions at large. Ecommerce will also be one of the platforms to look at which has been popular among consumers recently.



Plant-based particles and water forms economical super-glue



Microscopic view of the bonding process

Plant-based cellulose nanocrystals have remarkable inherent properties, and when combined with water, a powerful adhesive is formed that competes in strength with Superglue, without the need for toxic solvents. In a study published in *Advanced Materials*, researchers at Aalto University, the University of Tokyo, Sichuan University, and the University of British Columbia have demonstrated that plant-derived cellulose nanocrystals (CNCs) can form an adhesive that fully integrates the concepts of sustainability, performance, and cost which are generally extremely challenging to achieve simultaneously.

Unlike Superglue, the new eco glue develops its full strength in a preferred direction, similar to 'Peel and Stick' adhesives. When trying to separate the glued components along the principal plane of the bond, the strength is more than 70 times higher when compared to the direction perpendicular to that plane. All of this means that just a few drops (less than 2 mg per 0.0001-meter square) of the 'eco' glue has enough strength to hold up to 90 kg weight, but can still be easily removed by the touch of a finger, as needed. As Dr Blaise Tardy from the Aalto Department of Bioproducts and Biosystems puts it, "The ability to hold this amount of weight with just a few drops is huge, especially from a natural plant-based solution."

These kind of properties are useful in protecting fragile components in machines that can undergo sudden physical shock such as high-value components in microelectronics, to increase the reusability of valuable structural and decorative elements, in new solutions for packaging applications, and – in general – for the development of greener adhesive solutions.

Producing a comparable product to a market leader at low cost and with new properties

Furthermore, compared to the current approach of making high-strength glues that can involve complex and

expensive routes, the team has demonstrated that their solution is just taking biobased particles sources from plants (with a comparatively negligible cost) and just adding water. Since curing time is associated with evaporation of the water phase (~2 hours, currently), it can be controlled, for instance, with heat.

Aalto Professor Orlando Rojas, said, "Reaching a deep understanding on how the cellulose nanoparticles, mixed with water, to form such an outstanding adhesive is a result of the work between myself, Dr Tardy, Luiz Greca, Professor Hirotaka Ejima, Dr Joseph J Richardson and Professor Junling Guo and it highlights the fantastic collaboration and integration of knowledge towards the development of an extremely appealing, low-cost and safe application."

Moreover, the prospects for worldwide utilisation (in a Euro 40 billion industry) is quite attractive given the ever-increasing production of cellulose nanocrystals seen across the globe, as supported by incentives in the framework of the circular bioeconomy.

Dr Tardy added, "The truly exciting aspect of this is that although our new adhesive can be sourced directly from residual biomass, such as that from the agro-industry or recycled paper; it outperforms currently available commercial synthetic products by a great many measures."



Henkel frames new growth agenda

Henkel, one of the leading global players in adhesives, has launched a new strategic framework to deal with the recent overall performances, which have been below set ambitions and expectations. This new strategy is based on a thorough analysis of strengths and the need for change. The main elements of this framework are a winning portfolio, competitive edge in the areas of innovation, sustainability and digital as well as future-ready operating models, underpinned by a strong foundation of a collaborative culture and empowered people.

Speaking on the new strategic framework, Carsten Knobel, Chief Executive Officer of Henkel, said, "We are building on a strong foundation for the future: strong brands, innovative technologies and attractive businesses. Going forward, this framework will help us to win the 20s for Henkel. Our new strategic framework for purposeful growth will drive Henkel's successful development in the future and will evolve over time. This means creating superior customer and consumer value to outgrow our markets, reinforcing our leadership in sustainability and enabling our employees to grow, professionally and personally, through their work at Henkel."

A key element of the future direction is an active portfolio management. M&A will remain an integral part of Henkel's strategy. The key criteria for acquisitions are availability, strategic fit and financial attractiveness of

potential targets. Henkel will utilise its strong balance sheet to pursue high-impact acquisitions.

In order to further strengthen its competitive edge, Henkel will focus on accelerating impactful innovations, boosting sustainability as a differentiating factor and transforming digital into a customer and consumer value creator.

Henkel aims to accelerate impactful innovations, supported by increased investments. This will include an enhanced innovation approach, for example by expanding the use of digital tools and data for faster and better insights. Henkel will also scale its agile approaches and continue to invest in incubators and innovation centers. This shall enable the development of impactful innovations in all three business units.

Building on its strong track record and further progress towards its targets for 2020 and beyond, Henkel aims to strengthen sustainability as a competitive differentiator. Sustainability will be firmly anchored in all activities. By establishing sustainability as a central pillar in their innovation strategies, the consumer businesses Beauty Care and Laundry & Home Care will advance their product portfolios with a focus on sustainable packaging solutions and the further roll-out of brands with purpose. Adhesive Technologies will continue to leverage its potential through products and technologies that set industry standards.

Henkel's new "Digital Business" is built on two pillars: first, "Business Technology," which is a vehicle to drive efficiency across the value chain through continuously optimizing business processes and IT systems. The second pillar is "Henkel Digital," a new dedicated unit for market-oriented incubation and innovation. Under this roof, Henkel is planning to establish digital innovation hubs in Berlin, the Silicon Valley and Asia.

Henkel is reshaping its operating models across the entire company to be lean, fast and simple and to continuously improve the competitiveness of its processes and structures. The company aspires to intensify its efforts to enable new business models, to step up customer & consumer proximity with faster decision-making and continuously increase efficiency.

A strong culture, shared values and a clear framework for collaborating as one team are key for Henkel's future success. As a first step, Henkel introduced new Leadership Commitments to all employees globally in 2019. Henkel plans to accelerate this cultural journey with these commitments at the core and will foster a culture of collaboration and empowerment, upskill its employees on future capabilities and enable its people to grow and develop.

Summarising the new strategic framework Carsten Knobler said "We are convinced that today, we have laid the foundation for Henkel's future successful development. Now, we will focus on implementing these measures, driving change and further evolving our growth agenda."



Polymer adhesives market poised for a strong growth till 2025



Polymer adhesives market is anticipated to grow at a robust pace till 2025, according to a report of Advance Market Analytics. Polymer adhesives are the type of adhesives manufactured industrially for the purpose of binding different materials together, to distribute stress more efficiently across the joint, improving aesthetic design, and increased design flexibility. They are used to prevent passage of fluids and other substances through material surfaces, joints, or openings. They have wide range of properties such as high strength, flexibility, appearance, durability, solubility, and corrosion resistance. Polymer adhesives are used to close openings that are too small to be closed by other materials such as concrete, timber, and mortar.

Growth in the construction industry, and boosting demand in residential, commercial, and industrial infrastructure are major drivers of demand. Thriving electronics industry is also using polymer adhesives to attach and electrically insulate or to electrically connect components, devices, connectors, and cables.

Rising applications in sectors like automotive, medical, telecommunications, and defense is also boosting demand for polymer adhesives.

Market presence of the non-polymer adhesives may limit the market expansion for the polymer adhesives. However, there is an increased opportunity for the usage of polymer adhesives for their usage in optoelectronic (OE) assemblies, microelectromechanical systems (MEMS), light-emitting diodes (LEDs), and flat-panel displays.

Increased prospects for the usage of biodegradable adhesives as an alternative to polymer adhesives owing to the increased research and development in adhesives technology, may pose a challenge for the market expansion.

Some of the leading polymer adhesive manufacturers are Wacker Chemie (Germany), Evonik (Germany), Mallard Creek Polymers (USA), NPT Srl – New Polyurethane Technologies (Italy), Bostik Australia Pty Ltd (Australia), Henkel (Germany), Meridian Adhesives Group (USA), Sika AG (Switzerland), H.B. Fuller (Switzerland), Illinois Tool Works (USA), Huntsman Corporation (USA), 3M (USA) and Brilliant Polymers Pvt Ltd (India).

FOCUS SECTION PRODUCTS

PLASTIC SUTLI / METAL SEALS

Keval Industries is offering a wide range of plastic sutli / metal seals.

Features:

- Polyester strap is ranging in standard widths from 5 to 32 mm and thickness from 0.4 to 1.2 mm with break strength in the range of 200 to 1200 kg. and above.
- Polyester strapping is an alternative of steel strap. Currently, polyester strapping is used for its properties of expanding like a revolutionary change over iron strap. Polyester can be used at each of the side wherever iron strap is used.
- Some of its key applications are such as automobile industries; steel and other metallurgical industries; baling plants; glass and ceramic industries; paper plants; solid waste; medium and heavy engineering units; home appliances manufacturing units; shipping industries; heavy industries; construction materials industry; beverage industries.

About the company: Mumbai-based Keval Industries, involves as a packaging manufacturer since 1993. Their product range comprises BOPP tapes, box strapping, plastic sutli, stretch film & other packaging material.

Contact:

Keval Industries, Mumbai
Tel: 022-23430705 Mobile: 09322257511
Email: kevalind02@yahoo.co.in



CAPACITOR DISCHARGE WELD STUDS

Kalyani Sales Corporation provides a wide range of CD weld studs in MS copper coated as well as stainless steel (SS 304 / SS 316) materials.

Features:

- In capacitor discharge stud welding, the welding energy is obtained from banks of capacitors which have previously been charged to the voltage selected for the particular application.
- Energy is discharged through the stud itself, giving a high-density current which disintegrates the small pip/projection on the base of the stud.
- This leaves an ionised gap between stud and work piece across which the welding current continues to flow, in the form of work piece, completing the weld.

About the company: Kalyani Sales Corporation provides every kind of industrial fastener and especially fasteners for thin sheet metal fabrication. Its range of industrial fastener includes metal fasteners, nuts fasteners, blind rivets and threaded brass inserts.

Contact:

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R K Engineering Company offers cylindrical, taper and grooved pins.

Features:

- Cylindrical (dowel) pins are used for retaining parts in a fixed position or for preserving their alignment.
- Cylindrical hardened pins are manufactured as per IS: 6689, unhardened pins as per IS: 2393 and taper, pins as per IS: 6698 standards.
- These are suitable for parts that have to be taken apart frequently, in which case cylindrical pins would tend to wear the holes.
- Grooved pins have parallel equidistant longitudinal grooves impressed on their exterior surface and are manufactured to IS: 7368 standards; also manufactured are non-standard pins.

About the company: R K Engineering Co commenced its business operation in the year 1976. It is engaged as a manufacturer, exporter, supplier for grooved pin, dowel pin, taper pin, spring dowel pin, circlip, parallel keys.

Contact:

R K Engineering Company, Mumbai
Tel: 022-22671141 Fax: 022-22655255
Email: rkengcomp@gmail.com



VIBRATING FEEDERS

Elektromag-Joest Vibration Pvt Ltd offers a wide range of vibrating feeders.

Features:

- The vibrating feeders are used for conveying bulk material for control feed and are used where products are to be fed either continuously or in batches.
- These vibrating feeders are either driven by electromagnetic vibrating drives, unbalance vibrator motors or unbalance exciter drives. The electromagnetic vibrating feeders are used for precise feeding and the unbalance motors and unbalance exciter driven vibrating feeders are used for discharge of bulk material at fixed feed rates.
- These vibratory feeders are available in open trough and tubular construction as per application requirement. Some of the Industries that use these vibrating feeders are pharmaceuticals, automation, food processing, packaging, glass industry, foundry, steel, construction, recycling, paper and pulp etc.

About the company: Elektromag-Joest Vibration Pvt Ltd, is a leading manufacture of vibrating equipments for foundry, steel, mining, quarrying, chemical, food, recycling, air separation and thermal processing.

Contact:

Elektromag-Joest Vibration Pvt Ltd, Mumbai
Tel: 022-66624444
Email: vibration@elektromag.com



HELICOIL METRIC THREAD REPAIR KIT

Pee Vee Enterprises offers a wide range of helicoil metric thread repair kit.

Features:

- These kits are used for repairing and installing many type of machines. The tools which we offer include 1.5D length of inserts, tang breaking pin, finishing tap and a installation kit along with an instruction manual.
- Offered tools are made using premium grade stainless steel, sourced from the renowned vendors of the market.
- The helicoil metric thread repair kit is well-known in the market for their accurate dimensions and durability.

About the company: Founded in 1979, Pee Vee Enterprises is a wholesaler, trader and manufacturer and provides an extensive range of industrial fasteners. The company also provides an industry approved range of powercoil thread repair kit tools, helicoil thread repairing and thread repairing inserts. The company adheres to acute professionalism, strong technological background, timely awareness and adherence to strict quality control measures.

Contact:

Pee Vee Enterprises, Delhi
Tel: 011-23242039
Mobile: 09811150326, 09873250326
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STAINLESS STEEL BOLTS

Citizen Metals engages as a manufacturer and supplier of stainless steel bolts.

Features:

- The product range is known for its compact design and less maintenances; the range has unique attributes such as durability, high tensile strength, rust resistance and sturdy construction.
- The offered ranges of stainless-steel bolts are resistant to rust and designed as per the convenience of the user.
- They are highly appreciated among our clients for their superior performance; affordable prices, robust construction, easy to use.

About the company: Citizen Metal Depot, established in 1981, engages as manufacture, supply and export a wide range of industrial products. Their huge assortment of products includes those of stainless steel, carbon steel and alloy steel products. These products are manufactured using stainless steel, carbon steel and alloy steel, sourced from reliable vendors.

Contact:

Citizen Metals Pvt Ltd, Mumbai
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Email: exports@citizenmetals.com



FOCUS



Hand Tools

Power tools segment to increase in the years to come

In recent years, as economic globalisation accelerates, the hand tool industry became the main source in hardware tool manufacturers throughout the world. The wide application and larger demands in hand tools are beyond imagination and as a result of this, there is an increase of more than 10 per cent every year. In this article, Pushkar Oak takes a close look at the avenues for hand tools in India and trends in the industry.



Image Courtesy: Bosch

Hand tools are products with good profits and competition of hand tool products is mainly decided by the quality of raw material which in this case is steel quality, used for manufacturing and steel products are faced with the problems of surface quality and internal cracks which are problems of steel technology that cannot be ignored.

Hand tools in the world market can be distinctly divided into two types developed markets and developing areas. The point of distinction is that the former is produced not by order, are subscribing to advanced methods of production. The latter are different in these parameters, and so

enjoy a little monopoly in the international market.

The Indian hand tool market is estimated to cross US\$ 200 million which is growing at a rate of 2 per cent annually. India's advantage is low labour, low cost, and availability of raw materials. There are more than 2500 manufacturers in India only and out of which 95 per cent are in small scale sectors catering to the demand for local markets and export.

Hand tools comprise of general-purpose tools (spanners, wrenches, pipe cutters, woodworking tools, pliers) watchmaking tools, goldsmith tools, automotive tools, agriculture tools, industrial tools, garden tools, nonsparking tools and so on.

As the demand is increasing and customers getting more quality conscious, the technological improvement for manufacturing in India requires sophisticated tools and equipment. Industries like defence, railways, agriculture, automobiles, and aerospace are expecting good quality products for ease of operation due to which small manufacturers have upgraded themselves and are now competing with established organised players but the market is still open for high-quality application hand tools.

Good quality hand tools manufacturers are now entering the Indian market because of the growing demand for brands, better quality, zero error, global

reputation and recommendations from other industrial sectors from different countries.

In order to enter the Indian market, any organization should have thorough knowledge about market trends and applications in different sectors and for tapping these sectors, one needs to have the right distributor network in place, right people to understand the product with particular applications. Some organizations have started e- selling but the proportion of sales is still small.

An initiative from the government like Make in India is going to bring more foreign manufacturing hubs in India due to which demand for good quality tools is definitely going to increase more.

The Indian Hand Tools and allied products market is showing clear signs of moving from a price-sensitive bracket to a quality-conscious era and an "industry" or "application" oriented requirements. The growth in Industry sectors like Aviation, Heavy Engineering, Automobile/ Auto Service, Gardening / Horticulture, Woodworking & Furniture, Construction / Infrastructure has necessitated a growing need for quality / specialty tools.

Personnel / Workers in the Manufacturing, Operations Maintenance, Repair and Overhaul in above mentioned industry sectors are now seeking quality and high-end and special Hand Tools, Power Tools, Specialty Tools, Fasteners and allied products.

Key demand trends

Almost all industry segment and other basic day-to-day jobs requires



“ Global demand for power and hand tools will increase at a CAGR of 4.7 per cent by 2025 to US\$ 67 billion. Demand for power tools will overtake hand tools and account for nearly 69 per cent of overall revenues of the power and hand tools market by 2025. Preference for power tools is more prominent in developed regions as compared to developing regions. ”

Dr Deepa Nair, Associate Professor, Institute for Technology and Management.

hand tools, special tools and power tools. Currently, India's Aviation MRO market was worth US\$ 800 million in 2018 which is likely to touch US\$ 1.5 billion by end of the year 2020. India's aviation ministry is looking at small and medium airports to set up centres for maintenance, repair and overhaul (MRO) of aircrafts. This would benefit tool manufacturers at large.

The regular launches of high-tech and latest models of cars and commercial vehicles being manufactured in India, has necessitated the need for sophisticated tools and equipment in automobile and commercial vehicle factories, auto garages and service stations and two-wheeler, cars and commercial vehicles dealer outlets.

One of the significant observations is that the tools which are powered by electric, hydraulic or pneumatic pumps or motors which are used at manufacturing plants where precision is key - for instance in aviation where every bolt counts - has increased recently. "Global demand for power and hand tools will increase at a CAGR of 4.7 per cent by 2025 to US\$ 67 billion. Demand for power tools will overtake hand tools and

account for nearly 69 per cent of overall revenues of the power and hand tools market by 2025. Preference for power tools is more prominent in developed regions as compared to developing regions," Says Dr Deepa Nair, Associate Professor, Institute for Technology and Management.

With lot of CSR Projects tendered by government today, "The growing need for the upkeep and maintenance of botanical gardens, zoological parks, wildlife sanctuaries, city parks and gardens, gated communities, IT Parks etc has also raised the demand for both sophisticated and basic gardening or horticultural tools. The forestry department too has need for high tech garden and horticulture tools for the upkeep on the forests," Nair adds.

The building construction, infrastructure industry in India not only needs high-end construction equipment, machinery and vehicles, but also specialty hand tools, power tools & fasteners.

Furniture manufacturing, woodworking industry, both from organised and unorganised sectors, are on the lookout for quality carpentry and woodworking tools and power tools and screws and fasteners.

The heavy engineering industries like railways, ship building, oil & gas, marine etc. are in the need of quality tools for their regular production requirements and their MRO needs.

Importers, distributors and retailers of hand tools, power tools, fasteners are looking to stock these high-end and specialty tools, to cater to the needs of the Industry and their clients.

IPF



“Growth to be fueled with ergonomic handheld tools”

With industries considering new technology like automation and robotics, handheld tools are also getting smarter, carrying out multiple functions like measuring, scanning etc with its regular functions. Though experts believe that the shift towards new technology will be gradual due to India’s reliance on the manpower. Manpower availability makes the jobs cheaper. **S Kumar**, Business Line Manager, Portable Air Division, Atlas Copco India discusses about recent trends, new developments in the hand tool industry with Pushkar Oak.

What are some recent trends in the hand tool segment in India?

At Atlas Copco we believe in continuously innovating to meet ever-changing market needs. We continuously upgrade and offer the latest technology to our customers. Here are some of the recent trends in the handheld tool segment in India.

- a) electric hand tools have a major demand because they are easy to use and can be connected via available power source.
- b) Ergonomic pneumatic breakers are the emerging trend to ensure operator safety and comfort. Wherever compressed air is available pneumatic hand tools play an important role where they are mainly used in mining, workshops and assembly lines due to ease of use, high power, heavy and continuous duty jobs.
- c) Dust is a major cause of concern on sites, both from the point of view of equipment performance and operator health. Dust collectors to minimise this risk is another upcoming product technology.

How Atlas Copco serves hand tools industry with its products and expertise?

Atlas Copco started its journey and gave birth of Rock drill model RH 658 5L in the 1960s. This was one of the most popular rock drills way back in the 1900s and the same product is still available with us as we continue to serve the mining industry. Other than the rock drills range, we



introduced pneumatic chipping hammers and breakers for brick wall chipping to RCC breaking applications where the range starts with 2.5 to 42kg category pneumatic breakers.

Over a period of time, we have upgraded our tools and most of them are ergonomic (silenced and vibration free) to protect both the environment and the operators. We are leading the shift towards ergonomically designed handheld tools designed with ergonomic vibration-reduction handles, significantly reducing vibration intensity and noise, allowing operators to use the breakers comfortably for more than 8 hours. Our medium weight 25 kg breaker RTEX 25 which consumes 50 per cent less air and our heavy breaker 37kg -TEX 33PE are very powerful with four

times less vibration than the same non-ergonomic breaker. Our complete range of Hydraulic powerpack driven breakers 11 to 39 kg are ergonomic.

We are the only manufacturing company, which can also provide hydraulic power pack driven tools and light engine driven tools along with pneumatic tools.

The petrol engine driven breakers, which we offer are very advantageous where one cannot use pneumatic and electric tools on remote sites and are very popular in army rescue operations and railway applications.

Atlas Copco also offers high performance dust collectors, which are very efficient and absorb 99.9 per cent of harmful dust. This ensures less dust pollution from rock drilling and less discomfort to the operator, working in mining applications. The DCP 30 is ideal to work with three rock drills or breakers and DCP 10 is ideal to work with one rock drill or breaker.

What is the effect of new technology developments like Industry 4.0 and automation on the hand tool segment?

It is true now technology is moving towards automation and robots are deployed to do these risky jobs although this involves high cost which everyone cannot sustain and if manpower is available it is economical for customers to get the job done manually. Gradually new innovative products will replace the

old and outdated technology and there will be acceptance over time. Like the mining industry is moving towards high performance machines, more interesting technology will continue to upgrade the pneumatic hand rock drill performance.

What are your views on Indian hand tool industry? (Address this question considering Technology, new development, market stats in volume and worth, manufacturing technology etc)

The Indian handheld tools industry is somehow different from other parts of the world. We still have an abundance of manpower which is an issue with other developed countries and therefore they are moving towards new technology that involves productive and automated machines with less manual intervention.

In India, this transition may take

“Ergonomic pneumatic breakers are the emerging trend to ensure operator safety and comfort. Wherever compressed air is available pneumatic hand tools play an important role where they are mainly used in mining, workshops and assembly lines.”

time and as most of the breaking jobs on site are managed by handheld tools which employs a large volume of labour.

How well have pneumatic tools penetrated in the Indian market? How power tools contribute to increase in productivity?

At Atlas Copco, we focus on three

segments – Mining, Construction and Post construction repair and maintenance jobs.

In mining application, pneumatic tools are preferred as along with drilling air flushing is required to complete the job. For general construction and repair jobs, pneumatic tools are placed in competition with electric tools and since pneumatic tools are application specific and mainly cater to continuous duty jobs where electric ones are not recommended.

In India due to safety and labor issues customers have started using bigger machines and therefore the hand tool market definitely has a scope for higher growth.

Growth and performance is expected to be fueled with the introduction of the ergonomic handheld tools like the TE range of hydraulic, pneumatic and motor driven handheld tools.



NEWS SNIPPET

High performance along with universal use

In a bid to offer better cost effective and to add value to its offering, PFERD, a manufacturer of tools for working on surfaces, has extended its range of ALLROUND cut with added set and enables to use it for various shapes and dimensions.

This step was taken considering the positive growth in sales of the TC burr with ALLROUND cut, which was included in the product range in 2018.

Thomas Plömacher, Product Manager for Milling Tools and other products, PFERD, stated, “We obviously created a need with this cut. Because there wasn’t and hasn’t been a comparable solution since.”

“There have always been TC burrs for universal use or similar,” he says while referring to the conventional cross-cut tools which have been around on the market for many years and which – like the new ALLROUND cut – can be used on different materials.

“The crucial difference, however, is that ALLROUND belongs to our high-performance burrs, meaning, it has completely different properties.”

These high-performance burrs included material-specific cuts, such as STEEL, INOX, PLAST, CAST, TITAN or ALU as the best possible solution for the respective



material. “At this performance level, we have now developed a cut that can be used universally, and which provides the user with advantages, such as a stock removal rate on steel that is up to 30 per cent higher.”

This set the premise for extension of the ALLROUND range which offers cut in 42 different shapes and dimensions, along with a set that comprises the five most common types.



TRIMMING KNIFE BLADE

Techno Rise Industries engages as a provider of a wide range of trimming knife blade.



Features:

- It has two cutting positions for a variety of applications & has two-point reversible blade.
- These blades fit all standard Stanley knives.
- It can be supplied as five-unit on-a-card, 10 units in a dispenser or 100 units in bulk.
- It has hardened and tempered utility blade for high sharpness and long life.
- It is ideal for carpet, vinyl and any other material requiring a stiffer and stronger blade
- The original and best heavy duty, general purpose blade - 0.65mm thick.

About the company: Techno Rise Industries, founded in 1995, is a provider of a complete range of hand tools for heavy & light industries. They are into the business of manufacturing, importing & exporting. Currently their sales market covers all major cities in India.

Contact:

Techno Rise Industries, Mumbai
 Tel: 022-23424274, 30117293
 Mobile: 09820094119, 09867294119
 Email: tri_triair@yahoo.co.in

TOHNICHI TORQUE WRENCH, QL100N4

Modern Traders manufactures, imports and exports a wide range of tohnichi torque wrench, QL100N4.



Features:

- TA standard type for bolt tightening applications. A click mechanism signals whether right amount of torque is applied.
- The ratchet head has 24 teeth accurately ground to provide durability and creates movement at 15-degree intervals which allows for gear ease of tightening in confined spaces.
- It comes with easy torque setting by graduation. Resin grip provides easy operation and user comfort. E-type model come with are with an extension handle for a wide range of bolts and fasteners.
- It can be used in the EU region and complies with calibration procedures of ISO6789 Type II Class A. QL/ QLE models are available to use in Russia.

About the company: Mumbai-based Modern Traders engages in manufacturing, importing and exporting of the complete range of hand tools for heavy and light industries. Their range of products includes those of torque wrenches, torque drivers, torque multipliers, torque meters, refrigeration tools and measuring instruments.

Contact:

Modern Traders, Mumbai
 Mobile: 08048077755

NO REBOUND HAMMERS

IBK Engineers is a manufacturer of a wide range of no-rebound hammers delivering full impact about 50 per cent greater than a standard hammer.



Features:

- The housing is filled with special steel pellet that transfer momentum to the impact point. These are Ideal for assembling machine parts without damage.
- It speeds up work while reducing fatigue and allows better hammer control by absorbing the bounce. It has hickory-wood handle. It is available in five standard sizes, plus two sledgehammer sizes.
- Supercraft no-rebound hammers have replaceable nylon inserts, which are hard, grease and oil resistant. It is highly elastic and have superior strike effectiveness.

About the company: Established in 2014, IBK Engineers Pvt Ltd, is engaged in the wholesaling, supplying, distributing and trading of deep groove ball bearing, mechanical bearing, roller chain, steel rear sprocket, safety equipment, automotive components, electric equipment, etc.

Contact:

IBK Engineers Pvt Ltd, Bengaluru
 Tel: 080-26321112
 Mobile: 09880566644
 Email: rajukn@ibizkart.com

WAGON DRILL

Jupiter Rock Drills Pvt Ltd engages as a manufacturer of wagon drill, JRD-120.



Features:

- This wagon drill can be availed with top hammer bull drifter capable of drilling hole range from 48 to 89 mm diameter used in open cast mines and underground for tunnel works etc for drilling and blasting purposes.
- The drill is mounted on rugged box frame, fitted on wheels for easy shifting from hole to hole can drill holes from vertical to horizontal.
- The drill is fitted with top hammer bull drifter, 4.5 H.P. feed unit and 6 H.P. self propulsion units.
- The rig is supplied with high pressure hoses, control valves and airline lubricator.

About the company: Jupiter Rock Drills Pvt Ltd engages as a manufacturer of rock drilling equipment, is committed to provide the world drillers with drilling rig of the highest standards. It is through continuous research and development that it can bring its customers the very best that is available to complete the most difficult drilling tasks in the toughest conditions.

Contact:

Jupiter Rock Drills Pvt Ltd, Hyderabad
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FOCUS



Country Focus: Germany

India and Germany: Partner in success

India has a unique opportunity to innovatively pave its own road to smart manufacturing to be globally competitive. And Germany - known globally for its engineering technology - can be a partner in India progress to become a preferred manufacturing hub.

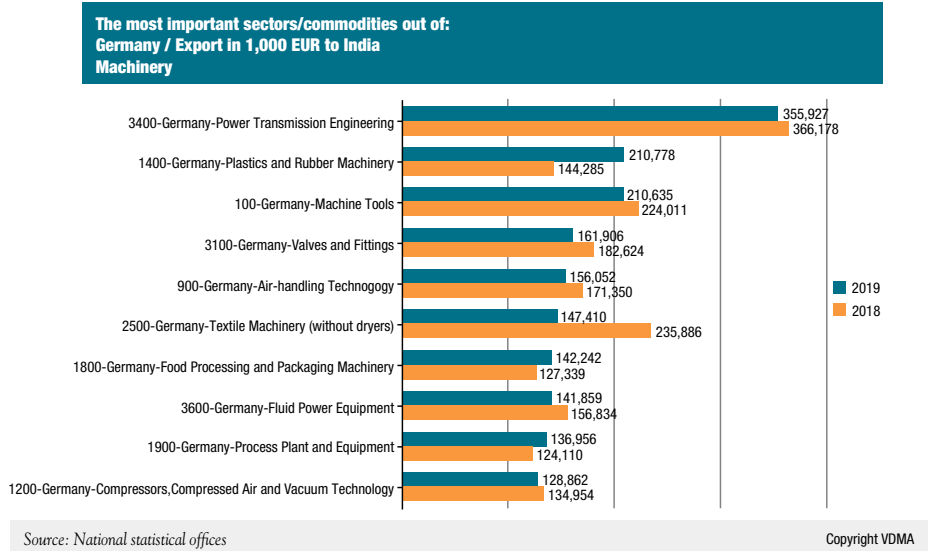
Germany is India's largest trading partner in Europe. Bilateral trade increased to \$ 21.98 billion (2017-18), a growth of 17.15 percent. In 2017-18, India's exports were worth \$ 8.68 billion to Germany and imports were worth \$ 13.29 billion.

Germany is the 7th largest foreign direct investor in India. Germany's total FDI in India from April 2000 until June 2018 amounted to \$ 10.99 billion. There are more than 1700 German companies active in India and over 600 Indo-German Joint Ventures in operation. German investments in India are mainly in the sectors of transportation, electrical equipment, metallurgical industries, services sector (particularly insurance), chemicals, construction activity, trading and automobiles.

Rajesh Nath, Managing Director, VDMA India Services Private Limited, says, "India offers great potential to German firms. With its policy changes directed towards driving growth, India seems to have reinforced its position as a relatively secure investment destination among emerging markets, even in a volatile global economic environment."

In 2018, Indian imports from Germany experienced a good growth of 17 per cent over the previous year and amounted to Euro 12.5 billion. From January to June 2019, Indian imports from Germany stood at Euro 5.8 billion, out of which machinery imports comprised 25.6 per cent and stood at Euro 1.5 billion.

India ranks 15th globally, in the list of top 50 destinations for the German Mechanical Engineering exports. In 2019, the total import of machinery from Germany reached a



volume of Euro 3.07 billion. This was a drop by 8.6 per cent compared with the same period of time in the previous year.

Among the machinery sectors, major demand of German equipment was for power transmission (11.6 per cent), plastics and rubber machinery (6.9 per cent), machine tools (6.9 per cent), valves & fittings (5.3 per cent) and air handling technology (5.1 per cent). There are other sectors like construction equipment & building material machinery, fluid power equipment, textile machinery and food processing & packaging, which are growing steadily in India.

Out of the total export of German Mechanical Engineering to Asia of Euro 41 billion, India is the second largest sales market in Asia for the German engineering industry, with a share of 7.5 per cent, after China (45.8 per cent). In 2019, India imported machinery of the value Euro 24 billion globally. Germany is the 2nd most important supplier to India globally, share of around 15 per

cent.

Maharashtra, with around 44 per cent share of German investments, remains to be the most attractive destination for German investments in India. In the last 4 to 5 years, Pune has become the hotbed for new German investments. Karnataka and Tamil Nadu are other important destinations.

Growth synergy

With the Government of India aiming to make India a \$ 1 trillion manufacturing economy, German companies and their expertise can play a big role. **Anand Srinivasan**, Managing Director, Covestro India, explains, "India is a developing economy with highly skilled workforce in engineering, science and IT, and Germany has excelled manufacturing and R&D. Such synergy can help both countries achieve complementary growth. India's trillion dollar manufacturing aspiration can be met by a deeper partnership between the two countries."

“Effect of coronavirus on supply chains is already evident”

Germany is one of India's most trusted trade partners with bilateral trade increasing continuously. Given the current volatile global environment, this partnership will be more mutually valuable. In this interview, **Rajesh Nath**, Managing Director, VDMA India Services Pvt Ltd - the Indian unit of VDMA (German Engineering Federation) - elaborates on Indo-German relationship and impact of coronavirus on the global economy.

How can Germany and VDMA help India in achieving its goal to reach \$ 1 trillion in manufacturing sector?

Germany is known globally for its engineering technology. The German manufacturers are internationally well positioned with their broad range of sectors: In 23 out of 31 comparable sectors, they are among the global top three; in 14 of which, they are in first place.

When Germany launched a project under the name 'Industrie 4.0' to digitalize manufacturing at the Hannover Messe in 2011, the government officials, industry leaders and academics who were working on the project probably had no idea that Industry 4.0 and specifically that fourth industrial revolution would become such a widely used concept.

India has a unique opportunity to innovatively pave its own road to Smart Manufacturing. By using Industrie 4.0 technologies, companies can rise to the global challenges of increasing customer requirements and volatile market developments. When products and processes are interconnected, and data is available in real time and is transparent, the foundation for decentralised production control is laid. This allows greater flexibility in production and thus increases competitiveness.

Through the interconnection of intelligent measurement technologies in production, data becomes available which together with automation solutions can be used for self-optimisation, self-configuration and self-diagnostics. In



this way, the state of machines can be continuously captured and monitored from anywhere in the world. Thus, the conditions for predictive maintenance and services are created.

As India strives to become a preferred manufacturing hub and be globally competitive, it is critical for the industries to be digitally transformed and be future-ready to manage the fast-changing business and technology landscape. The Industrial Automation Industry in India is projected to grow at a CAGR of 10-12 per cent upto 2022 and expected to touch \$3.5 billion by 2022. This is essential to achieve the ambitious target of making India a global hub for manufacturing, design and innovation, and augmenting the

share of manufacturing in the GDP from the currently 17 per cent to 25 per cent by 2025.

SMEs have been key contributor to Germany's industrial growth. Do you see SMEs in India playing similar role? How can VDMA play a supportive role in the development of SMEs in India?

India's SME sector has been one of the primary drivers of its economy. Small & Medium Enterprises (SMEs) account for 45 per cent of India's total manufacturing output and employ around 40 per cent of its workforce.

Government has undertaken many effective steps to strengthen MSME sector, which provides employment to crores of people. Recently, a scheme of sanctioning loans upto Rs 1 crore in 59 minutes has been launched. GST-registered SME units will get 2 per cent interest rebate on incremental loan of Rs 1 Crore. The requirement of sourcing from SMEs by Government enterprises has been increased to 25 per cent.

A combination of cyber-physical systems, the Internet of Things and the Internet of Systems make Industry 4.0 possible and the smart factory a reality. As a result of the support of smart machines that keep getting smarter as they get access to more data, our factories will become more efficient and productive and less wasteful. Ultimately, it's the network of these machines that are digitally connected with one another and create and share information that results in the true power of

Industry 4.0.

Since connected machines collect a tremendous volume of data that can inform maintenance, performance and other issues, as well as analyze that data to identify patterns and insights that would be impossible for a human to do in a reasonable timeframe, Industry 4.0 offers the opportunity for manufacturers to optimize their operations quickly and efficiently by knowing what needs attention. And these are features friends, how I4.0 can help and support organizations – large or SME or MSMEs.

For the Indian MSMEs, there is a cost-effective option to engage German specialists for their specific problems. SES is the leading German organization for voluntary assignments carried out by retired specialists and executives all over the world. The SES has more than 30,000 assignments in 160 countries, with over 10,000 experts in 50 sectors like technology, education and training, administration and science, just to name a few. VDMA India is happy to support and promote this service in India.

Like other countries, Indian manufacturers are gearing up to walk on Industry 4.0 path. How can Germany help them in this transition?

Industry 4.0 is expected to transform manufacturing in India by bringing operational efficiencies to manufacturing industries like automotive, electrical and electronics, aerospace. The major area of focus shall be the technological advancement across various industries. IIOT (Industrial Internet of Things), 3D printing, 3D sensors, social software, augmented reality, location awareness are considered to usher in the next era of smart production. These automation technologies collectively are moving the manufacturing industry in India towards the next phase of technological advancement, and Germany has a vital role to play in it.

The Industry 4.0 vision stretches beyond technologies and looks at the end-to-end chain, including, for

instance, warehousing, logistics, recycling, energy, workers, security and transportation. Industrie 4.0 is not only a topic for large-scale industry but must also be feasible for small and medium-sized companies as well.

Bringing together manufacturing automation and Smart Factories will bring unprecedented levels of efficiency and speed to a business. Industrie 4.0 can be a game changer for the SME and MSME sector. Applications within Industrie 4.0 like Remote Monitoring or Predictive Maintenance can really help companies to reduce costs of their own production by avoiding breakdown of machines. Also an increase in sales can be achieved through the enhanced usefulness and value of their own products.

Virus outbreak in China has hit manufacturing and exports sectors in India, particularly medicines, electronics, textiles and chemicals. This is not insignificant as China is India's biggest source of intermediate goods.

Climate change is a hot top today. How can India gain from the tie-up with Germany, a pioneer in developing sustainable technologies & processes, to achieve its sustainability goals?

CO2 is a major driver of climate change. Almost all countries in the world have committed themselves under the Paris Climate Convention in December 2015 to significantly reducing their greenhouse gas emissions until 2050. The goal is to limit the average increase in global warming below 2 degrees above pre-industrial levels. Mobility, as one of the main greenhouse gas emitters, plays a central role in this commitment.

The greenhouse gas savings must take place against the background of

a massive change in mobility behaviour and changed framework conditions. Current megatrends in mobility play an important role here. In a globalized world, the demand for individual mobility will continue to rise. In the future, more people will live in large cities. In addition, digitization and new data-based business models will be integrated in all areas of mobility.

The electric vehicles industry at a nascent stage in India. It is less than 1 per cent of the total vehicle sales however has the potential to grow to more than 5 per cent in a few years. At present there are more than 5 lac electric two-wheelers and few thousand electric cars on Indian roads. The industry volumes have been fluctuating, mostly depending on the incentives offered by the government.

The Industry is almost ready for take-off but for the incentives. It is expected that with FAME-2 the Industry may witness a quantum leap in volumes and technology. There is a great opportunity with EVs in reducing the carbon footprint, dependence on crude oil imports, creating jobs and building a new technology knowledge hub in India.

Will coronavirus impact global growth? Has coronavirus pandemic highlighted the lack of preparedness on the parts of global companies?

A range of banks and financial institutions have offered their worst-case scenarios for 2020, as the spread of the new coronavirus impacts the global economy and roils financial markets.

The global uptick in gross domestic product (GDP) could be as low as 1 per cent this year The Asian Development Bank (ADB) said the COVID-19 could reduce global gross domestic product (GDP) by 0.1-0.4 per cent, with financial losses forecast to reach between \$77 billion and \$347 billion. Economic growth in China and developing Asia, excluding China, could be trimmed by 0.3 to 1.7 per cent and 0.2 to 0.5 per cent, respectively.

The number of people infected

with the coronavirus has surpassed 114,000 worldwide. The virus that started in China late last year is having consequences for all major economies with flight cancellations, panic buying and strict quarantine measures in some cases.

As in previous health crises, the coronavirus disease 2019 (COVID-19) outbreak has raised questions about preparedness and emergency responses in many countries. In this crisis, Public and private companies must continue to produce or provide their services, but with consideration of the health context. Many companies are involved with the COVID-19 outbreak because they are established in or work with China (client or supplier), and most have already activated their business continuity planning or equivalent. During an infectious disease outbreak like COVID-19, most large companies around the world have a major part to play, especially in terms of preparedness and emergency response.

As a part of their contingency planning (to face similar supply chain disruption in the future), do you think countries like India can provide an alternative?

When it comes to the economy, today's supply chains are global and more complex than they were even a decade ago. Not only are Chinese factories affected by lockdowns and quarantines, production sites in other countries are already running low on parts because of shortages from China. For example, Apple works with suppliers in forty-three countries, all of which receive components from the company's contract manufacturers in China and as a result, is facing a considerable shortage these days.

Commercial data and analytics company Dun and Bradstreet estimate that there are around 22 million businesses (90 per cent of all active businesses in China) within the regions impacted by COVID-19. This is likely to impact at least 56,000 companies around the world with suppliers either directly or indirectly.

With regards to the Indian perspective, the outbreak of the virus in China has hit manufacturing and exports sectors, particularly medicines, electronics, textiles and chemicals. This is not insignificant as China is India's biggest source of intermediate goods, a sector worth \$ 30 billion a year. Up to 70 percent of active pharmaceutical ingredients and close to 90 percent of certain mobile phone parts come from China.

The effect of the coronavirus on supply chains is already evident and much rests upon the international scientific and healthcare response to the outbreak. Countries are not taking the issue lightly and are making concerted efforts to quarantine, provide medical access and control the spread of the disease.

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“Covestro is very optimistic about India”

Leverkusen (Germany) headquartered Covestro AG is a world-leading supplier of high-tech polymer materials - innovative, sustainable and diverse. In this interaction with Rakesh Rao, **Anand Srinivasan**, Managing Director, Covestro India, elaborates on the current industrial scenario and growth strategy of the company.

After taking over as Covestro India MD in December last year, what are your immediate priorities for India business at present? From global headquarters in Germany, how are they viewing the situation in India given the slowdown in the country?

Covestro is at an exciting phase of growth in India and I am extremely pleased to be taking over this responsibility of leading the team. I am grateful that I am taking over from a versatile leader like Ajay Durrani and I am fortunate to carry this forward. We live in a complex environment, and the combined impact of a global slowdown, Covid19 pandemic, trade wars, climate change impact, fluctuating crude prices, require organizations to reinvent themselves to stay on top of their game. Since Covestro products are used in high impact application, they are relatively low volume per product application, so our immediate priorities are to ensure uninterrupted and consistent supply to our customers.

Ground breaking inventions, trendsetting products and a wealth of experience in the development and production of high-tech polymers characterizes Covestro. In the



medium and long term, Covestro has always believed in the dual purposes of innovation & sustainability, under a common theme of ‘future-ready’. We are ensuring that focus of the organization is on developing future-ready materials that will help meet the new disruptions of the coming decade. We are investing in R&D for our personnel so that they too are ready for the future.

As they say, a crisis is an opportunity seen from the other side, and that is the way we approach the current situation. Our polymers help make Electric Vehicles lighter, more energy efficient bringing the costs of ownership and operations down. Covestro has pioneered advancements in medical technology with innovation in materials that help break new ground and Covestro is also making healthcare future-ready.

You will soon see every surface become tech enabled through functional films, and Covestro is a leading contributor in that area. If you see, each of the Covestro innovations are about a readiness for the future, and this will help us create opportunity out of challenges.

The Government aims to make India a \$ 1 trillion manufacturing economy. How can German companies, like Covestro, help India achieving this goal?

India is a developing economy with highly skilled workforce in Engineering, Science and IT, and Germany has excelled manufacturing and R&D. Such synergy can help both countries achieve complementary growth. India is already the service epicenter of the world, and aspires to become the manufacturing hub of the world through its Make in India program. German quality focus is legendary and this experience can be shared to make world-class products in India. Germany can also become India’s gateway to the EU, as it is EU’s largest economy and Europe’s largest market. Germany’s industrial sector also has a high degree of diversification and specialization, especially in automotive industry, the electronics industry, the machinery & equipment industry, the chemical and pharmaceutical sectors. India’s trillion dollar manufacturing aspiration can be met by a deeper partnership between the two countries.

Which end-user industries are driving your growth in India?

Our business is into polymers and

The Indian and global auto industry is going through a disruption and Covestro playing an important role in helping them make this transition.

serves in three segments i.e. Polyurethanes, Polycarbonates and Coatings, Adhesives and Specialties. We are into B2B business with automotive industry, FMCG, medical devices, infrastructure, plastics and many other sectors.

High-performance products from Covestro already contribute to increased light-weight, design freedom, efficiency, safety and comfort. Our products and solutions also support new mobility concepts such as electric drives and autonomous driving. In medical care, the best possible support of the healing process is particularly important. The high-tech material polycarbonate as well as polyurethane raw materials from Covestro is the perfect solution for these challenges when it comes to medical equipment.

The Indian automotive industry is moving towards low-carbon pathway (by adopting new emission norm BS VI, electrification, fuel efficiency, light weighting, etc.). How is Covestro helping Indian auto OEMs and their component suppliers in this transition?

We at Covestro have a leading range of innovative products and advanced technologies which get utilized in the manufacturing process. We customize and offer tailored-made changes for the automotive industry in terms of design freedom, light weight polymer substitutes for traditional auto materials, leading to fuel efficiency, low carbon footprint helping meet BS VI norms. The Indian and global auto industry is going

German quality focus is legendary and this experience can be shared to make world-class products in India. Germany can also become India's gateway to the EU, as it is EU's largest economy and Europe's largest market.

We live in a complex environment, and the combined impact of a global slowdown, Covid19 pandemic, trade wars, climate change impact, fluctuating crude prices, require organizations to reinvent themselves to stay on top of their game.

through a disruption and Covestro playing an important role in helping them make this transition.

What are the plans for the Indian market?

Covestro is very optimistic about India as the market is full of opportunities. The policies of the Indian Government are focused towards the growth of the EV industry and India is also a signee for the 17 UN Sustainability Goals as this aligns with Covestro goals also. The infrastructure and real-estate sector will be necessarily looking at welcoming the sustainable products and our products help in energy efficiency of buildings, making this a big future market for Covestro. We have proven experience in sustainable buildings and have created an energy-positive experience center in Greater Noida. We are a certified Responsible Care company by Indian Chemical Council and are ready to capitalize on the exciting business opportunities in the Indian market.

Climate change is a hot topic today. How can Covestro help Indian companies to achieve their sustainability goals?

As a world-leading supplier of high-tech polymer materials, Covestro has been able to make a significant contribution to overcome the climate change issue. With our innovative and sustainable technologies, we believe in creating environment-friendly products which can cater to society in a positive way. At Covestro, we constantly support initiatives that are capable of providing solutions to help overcome

the challenges posed due to climate change across the world. We are also dedicated towards finding solutions for the greater challenges of our age – driven by and addressing the UN Sustainable Development Goals. For us, the major focus is towards promoting the circular economy by reducing the use of fossil resources and replacing them with raw materials made from sustainable sources such as waste, plants and CO₂. By using CO₂ as a new raw material, we have initiated this process of benefiting the environment and our customers.

Covestro believes in sharing its experience with others to help them achieve their sustainability. In India, Covestro has manufacturing units in Ankleshwar, Cuddalore, and Greater Noida and the Cuddalore unit is a zero discharge factory, whereas the eco-commercial building at Greater Noida operates majorly on clean renewable energy, consuming 70% less energy compared to conventional buildings.

Germany is one of India's most trusted trade partners. How do you see the future of Indo-German trade relation in a volatile global environment?

Germany and India have democratic values and encompasses complementary skills and resources to influence the next generation of industrial development by associating in manufacturing and infrastructure development to uplift the expansion process. CEOs and CFOs of leading German High-Tech companies believe that India offers a better investment environment as compared to other BRIC Countries. Germany is India's most important EU trade partner, and it ranks ninth among the country's global trade partners as a provider of goods.

With various government programs, India has drastically reorganized the infrastructure with streamlined processes which has paved the way for global players to invest. The synergies between Germany and India will revolutionise the manufacturing sector.

EMAG LaserTec develops a holistic solution for large truck differentials

Recently, a supplier in North America demonstrated the possibilities and benefits that a complete laser welding production system from EMAG LaserTec can provide.

When the catch phrase “lightweight design” is used for the automobile production, it typically refers to passenger cars, rarely commercial vehicles. However, there is an enormous amount of potential for weight reduction and cost savings when considering the large, heavy parts needed for the drivetrain in trucks.

Recently, a supplier in North America demonstrated the possibilities and benefits that a complete laser welding production system from EMAG LaserTec can provide. The commercial vehicle specialist currently uses an EMAG production system that welds three different parts together to manufacture a large truck differential – eliminating approximately 40 costly screwed connections. What type of processes take place in this production line?

A Shell Commercial Vehicle Study predicts that the number of commercial vehicles on the road will continue to rise, very quickly, until 2040. The study claims that the number of new registrations in Germany each year will increase from the current 290,000, all the way up to 344,000, and that the rolling stock of vehicles will reach nearly 3.5 million in 2040 (currently 2.9 million). We will also continue to see the same push for energy efficiency in an effort to achieve climate goals, as well as political pressure on manufacturers to develop vehicles that are more economical. Based on this, a system that will allow manufacturers to achieve a lightweight design in the commercial vehicle sector will be a game changer.



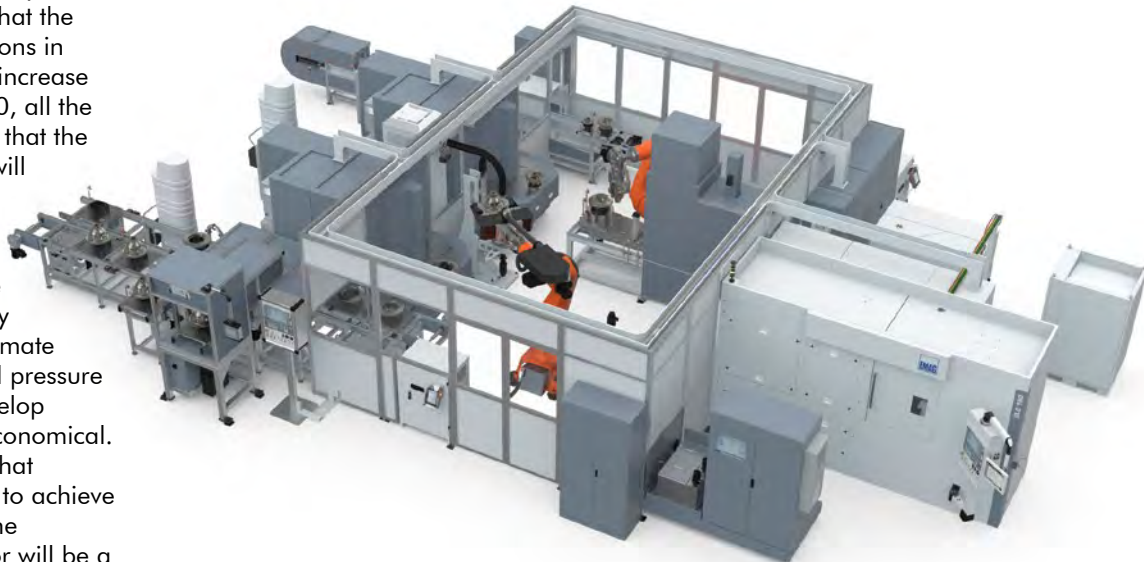
The parts weigh up to 130 kilos (287 lbs) and have a diameter of up to 600 millimeters (24 in).

Many truck manufacturers have naturally been focusing on well-established light weighting systems from the passenger vehicle sector, that have allowed for massive cost savings with enormous decreases in weight - and that’s precisely where laser welding comes into play. For years, laser welding has been essential in the development of drive train workpieces for passenger vehicles.

Welded joints now replace

screwed connections in many places. Even if a workpiece cannot be made lighter, it can be produced more cost-effectively by eliminating expensive screwed connections. For instance, some modern double-clutch transmissions have no less than 16 laser weld seams - on the various transmission wheels, the double clutch and the differential.

With that in mind, it is not surprising that a North American supplier to commercial vehicle manufacturers called EMAG LaserTec. The experts, headquartered in Heubach, Germany, specialise in the development of complete laser welding systems. “The customer knew us, since they already use a variety EMAG machines in other application areas. Their goal is to produce a considerably lighter and more cost-effective large-sized truck differential. This is an ideal task for us, even though we are implementing it for the first time in the truck sector,” explained Dr Andreas Mootz, Managing Director of EMAG LaserTec.



Developing holistic production systems based on laser welding is what makes EMAG LaserTec unique in the market.

He added, "Having a high level of expertise as a system provider was an absolutely crucial factor for the customer. We develop complete process chains revolving around laser welding, which in principle simplifies planning at the customer end and simultaneously guarantees safe and effective processes."

Cleaning, pressing, welding and checking in a single line

A perfectly timed sequence becomes apparent for truck differentials, it consists of three individual parts before production starts: two housing parts and the ring gear. These each weigh up to 130 kilos (287 lbs) and have a diameter of up to 600 millimeters (24 in).

The detailed sequence is as follows:

- ❑ After being fed by two separate loading stations, the two housing parts and the ring gear run through an EMAG laser cleaning system—a new in-house development that already looks and feels like a standard machine. The process is extremely fast and removes all residues, such as coolants or preservatives, using a focused laser beam.
- ❑ Robots then remove the parts from the laser cleaning machines. The ring gear is first preheated with induction heating and is then transported to the joining station (preheating is performed using a low-frequency generator by EMAG eldec). The two halves of the housing are directly fed into



Housing parts, such as ring gears, are cleaned on the newly developed EMAG laser cleaning machine in preparation for the machining operation.

the joining station and press-fitted together with the ring gear. The process is performed under force/path monitoring.

- ❑ The subassembly is now ready for welding—a robot loads it into the EMAG ELC 600. After axial clamping, the housing is closed, and the ring gear is joined with the housing using two welds.
- ❑ An EMAG ultrasonic testing system automatically checks the quality of the welded joint - a key step in the process that is just as important to specialists as is the machining of the workpiece.

Within 12 months, the development of this process was completed! The specialists at EMAG LaserTec had to overcome a number of process-related challenges during this time - after all, the weld seams are cast steel/case-hardened steel connections with great depth, which are welded with an 8 kW (11 hp) solid-state laser and with welding additives. Aside from that, the dimensions of the manufacturing system are impressive: The whole system consists of two laser cleaning stations, a heating station, a joining station, the ELC 600, and the ultrasonic testing station, which are interlinked with complex feeding technology and two industrial robots.

A unique position in the market

"This development project perfectly illustrates how we work," said Mootz about the holistic laser production system. "We always start out with the

workpiece and its constituents to develop the matching process with optimal timing and control. This results in customized solutions that stand for productivity and process reliability."

EMAG LaserTec excels in this respect with its tremendous experience and knowledge about transmission and drive components - it has already delivered more than 160 ELC systems in total. EMAG is the global market leader in the area of laser-welded differentials. Another deciding factor is the development based on modular EMAG engineering, which relies on a variety of proven components. Last, but not least, the empirical knowledge gained from automating machine tools provides an even greater advantage when designing and producing such systems. The experts in Heubach are convinced that the current trend in the commercial vehicle sector is converging towards this technology, since the general pressure on cost in production and the need for economical vehicles keep rising. "In any case, we consider ourselves to be well positioned," concluded Mootz.

He added, "Developing holistic production systems based on laser welding is what makes EMAG LaserTec unique in the market." **IPF**

For details, contact EMAG India Pvt Ltd (Technology Centre), Bangalore, on Tel: +91 80 5005 0163, or E-mail: sales.india@emag.com



The line guarantees a perfectly timed sequence for truck differentials.

Igus makes automated guided vehicles more fail-safe

AGVs become lighter and require less maintenance thanks to lubrication-free motion plastics of igus

In times of increasing digitalisation of factories and warehouses, automated guided vehicles (AGVs) are continuously conquering intralogistics. The reliability requirements are high in order to ensure faster processing and unimpeded material flow. AGV manufacturers are therefore equipping their systems with motion plastics components from igus, which make the autonomous vehicles less maintenance-intensive, lighter and more energy-efficient.

The use of automated guided vehicles is booming. The reasons are obvious: companies can use automated guided vehicles (AGVs) to increase the efficiency of material flow, make work easier for employees or compensate for the shortage of skilled workers. However, it is important that automation technology is reliable and economical in use. For automated guided vehicles, this means: the autonomous electric car cannot afford any failures in everyday operation. They have to work around the clock, seven days a week, 365 days a year. A challenge for AGV manufacturers, which can overcome by combining reliable and cost-efficient components.

Tribo-polymer bearings reduce maintenance costs

The reliability and energy efficiency of an AGV can be significantly increased with motion plastics from igus. "Lubrication-free and maintenance-free iglidur tribo-polymer bearings, which are used in the tilting devices, suspensions and scissor lifts of AGVs, are up to 60 per cent lighter than metal bearings. This saves vehicle weight and increases performance," said Christian Strauch, Industry Manager Material Handling



Automated guided vehicles move goods in the factory 24/7. Lubrication-free and maintenance-free motion plastics from igus ensure weight savings and increased reliability

at igus Germany. The bearings are extremely durable. "Fibres and fillers reinforce the bearings for absorbing high forces and edge loads. And integrated solid lubricants ensure a maintenance-free dry operation." In addition to tribo-polymer plain bearings, the plain bearing range from igus also includes linear, slewing ring, spherical and ball bearings.

Knapp equips AGV with igus lead screw modules

The igus AGV range also includes electrically driven lead screw modules. The users include Knapp Industry Solutions, which produces the "Open Shuttle" - a vehicle that drives autonomously through factory halls and transports boxes between roller conveyors. The shuttle is more flexible than intralogistics automation solutions of the past and can be quickly adapted to changing processes. The roller tray of the vehicle must be flexible and able to constantly adapt to different transfer heights. The movement takes place via two light and robust drylin SLW lead screw modules, which are equipped with maintenance-free polymer liners and lead screw nuts and score points with high reliability

and a long service life.

Igus e-chains and cables increase the operating times of AGVs

The installation spaces in AGVs are often very limited. Nevertheless, in order to guide cables safely, igus offers energy chains with very narrow bend radii. These include the E2 micro, which is designed for extremely tight spaces. It is light, has a small bend radius and an inner height of only five millimetres. igus also has the matching e-chain cables in its product range, with or without

plug-in connectors, including those that can be used in AGVs operating in cold storage at temperatures as low as -35 degrees Celsius.

In order for the customer to be sure that the data and energy supply of his AGV is working reliably even under these adverse conditions, igus operates a cold chamber in Cologne where the cables are tested under real conditions. The chamber is part of the 3,800 square metre igus test laboratory, where two billion test cycles are completed annually. As a result, igus is the only provider capable of offering a unique guarantee of 36 months on its cables. This gives AGV manufacturers as well as their customers additional reliability in the operation of automated guided vehicle systems.

The Cologne-based igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. In 2018, igus generated a turnover of Euro 748 million with motion plastics, plastic components for moving applications. Igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs. **IPF**

SCHUNK AGE-U makes intuitive bin-picking possible



Reliable gripping without having to first detect the exact position and location of the gripping object – what humans do every day – is now possible for robots with the universal compensating unit SCHUNK AGE-U. Its complex design combines angled, lateral and rotary compensation, and applies sensor detection once deflection takes place. For example, when bin picking,

ferromagnetic pre-machined parts can be picked up by a magnetic gripper without having to detect their exact position or orientation. Instead, all that is needed is an approximate – and therefore cost-effective – localization using equipment such as a simple 2D scanner, which decreases hardware and software costs as well as the effort needed for programming. In addition, the module is able to compensate for tolerances and position deviations in six axes during automated assembly.

Whereas the compensation units that have been available on the market up to now only offer angled, lateral or rotary compensation, the AGE-U has combined rotational and angular compensation, allowing the end effector to fully adapt to the undefined component position or to feed through insertion operations with gripped components. In the X and Y directions, the maximum possible compensation is +/- 2.7 mm. In the Z direction it is +/- 6.1 mm. Laterally, the compensation around the X and Y axis is at up to +/- 3°, rotationally, it is at up to +/- 8° around the Z axis. While the return to the basic position is achieved both via springs and actively via compressed air, the flexibility of the unit can be adjusted individually by regulating the air pressure.

At a pressure of 6 bar, the unit is switched to a completely rigid mode, eliminating uncontrolled movements during the handling system process. Both the locked status as well as the deflection of the unit from the basic position can be monitored with inductive monitoring of the locking piston. That means that when approaching an object, it is possible to precisely detect when contact is made with a component without having to know its exact position. Afterwards, for example, the SCHUNK EMH magnetic gripper that is mounted to the compensation unit can be activated to pick up the part.

The compensation module is recommended for handling weights up to 5 kg and can be connected to a wide range of industrial and lightweight robots quickly and easily using the standardized ISO-50 flange without adapter plate. The housing made of anodized aluminum and the functional components made of hardened steel ensure a long service life and reliable operation with

minimum maintenance costs. The SCHUNK AGE-U is designed for one million compensation cycles.



BLOHM presents PROFIMAT XT with tool changer



BLOHM - a member of the United Grinding Group - presents for the first time a PROFIMAT XT with tool changer. The cost-efficient solution to automatically change grinding

wheels is one-of-a-kind in this market segment. Highly productive, flexible PROFIMAT XT merges four grinding technologies in one machine: reciprocate, creep feed, CD and speed stroke grinding. Thanks to the tool changer these procedures can now be automated.

In this process, the changer offers users other benefits: it can be loaded with several tools of the same type to be able to quickly and automatically replace worn grinding wheels. The tool changer also makes unsupervised processing possible, even of complex workpieces requiring grinding wheels with different profiles. Setup times are additionally cut as the unit can be loaded while the process is on-going. The tool changer also improves general machine handling because it is easier for workers to load the changer with large grinding wheels than directly fit these in the machine themselves.

Users also benefit from significantly more efficient machining. For instance, roughing or finishing grinding wheels can be prepared in the changer to thus achieve a high abrasion performance and an accurate level of detailed surface machining as part of a single process.

Benefits include automated production, more efficient machining, automatic operation of complex work pieces, option to load sister tools, setup while process is on-going, and simplified handling.



Igus looks for smart low-cost robotics applications through ROIBOT Award

Simple automation and a quick return on investment constitute the wish of many small and medium-sized enterprises. In particular, low-cost automation solutions such as delta robots, Cartesian robots or articulated arm robots from igus are enabled here by the use of plastic. The potential offered by cost-effective automation is demonstrated by the new ROIBOT Award. It characterises exciting low-cost robotics applications.

Robots are an indispensable part of industry. They take



over dangerous as well as monotonous tasks and ensure the profitability of large players and family businesses. Above all, low-cost solutions are becoming increasingly popular

in the field of small and medium-sized enterprises. The robots can easily handle simple tasks that do not require high precision and can operate 24/7. Employees can be used for more meaningful tasks and the company can withstand the competition. The ROIBOT award from igus picks up on the trend towards low-cost robotics in the mid-sized sector. It honours very smart uses of cost-effective robotics.

This year, the competition is looking worldwide for existing low-cost robotics applications, which have led to a quick return on investment (ROI). The robolink articulated arm robots, drylin delta robots and Cartesian robots - the so-called linear robots - from igus can be used. An expert jury consisting of members from research, specialist press and manufacturers will evaluate the concepts. Courage, refinement and the idea of optimisation will lead to a high evaluation. The winner will receive prize money of €5,000, second place will receive €2,500 and third place will receive €1,000. The prize will be awarded by igus at the 2020 automatica in Munich, the leading trade show for intelligent automation and robotics. The winners will receive a personal invitation including accommodation.



Weiss GmbH opens new campus in Pune for automation solution business



Weiss Automation Solutions India Pvt Ltd, the Indian subsidiary of the Weiss GmbH (the German-based world's leading manufacturer of modern and efficient industrial rotary and linear movements in automation), has inaugurated its New Campus that will house under one roof Weiss APAC regional HQ, India Sales Office, The Engineering Knowledge Centre, Weiss Solution Factory, Global Sourcing & Global Technical Development Centre.

The New Campus was inaugurated on March 12, 2020, by Dr Juergen Morhard, Consul General of Federal

Republic of Germany, Mumbai and Rajesh Nath, Managing Director, VDMA India in presence of industry leaders, key customers & business partners.

"As a part of the growth plan & strategy for Asia Pacific & India Market, Weiss Group has been beefing up its operations & resources in the region. A first step in that direction, we are adding customer-facing & technical resources, competence & infrastructure. The New Campus in Chakan Industrial Area in Pune is a big step in this direction," said Uwe Weiss, Group CEO, Weiss GmbH.

Weiss want to be recognised as the most preferred automation solutions partner in India & as a reinforcement of Weiss Group Commitment to the customer & India Market, this new campus will be able to sustain and grow the trust, that Weiss Products & solutions has been able to get from Indian customers' instant recognition of the quality & reliability that comes with our over 50 years of German engineering knowledge and automation technology. Besides this, the solution factory will house, India Logistic Centre & Warehouse, Service Centre, Customised & value-added product assembly etc. Besides Pune, the company has recently added regional sales offices in Delhi NCR, Ahmedabad, Chennai and Bengaluru to be close to & serve the customers in the region better.

Weiss has invested over Rs 30 million in infrastructure for setting up this new campus in Chakan, Pune and additionally another Rs 50 million in putting up the Engineering Knowledge Centre equipped with the latest state of the art live demo units for customer training & engineering consultancy services.

"I sincerely feel that in coming years, our global knowledge of the automation industry and understanding of customers' needs across Automotive & General Industry applications which combines five different Weiss technology portfolios will be valued & beneficial to our customers here in India too. Indian customers are evolving rapidly, and so are their needs, and we are delighted to take this challenge of delivering exciting new products, automation solution and services in order to live up to these expectations," said Sanjeebit Choudhury, CEO – India & Vice President – Asia Pacific.

Weiss also launched its flagship CR Heavy Duty Indexing Rings in India; best suited for automotive BIW segment, that promises high performance, high precision & high flexibility. This new heavy-duty CR series comes with optimised housing for exceptional robustness & stiffness. It also comes with the smallest footprint in this category in the market that delivers excellent precision & dynamics with high degree of reusability.



SCHUNK designs clamping force blocks for robot-assisted pallet loading

High clamping force, compact design, low weight - SCHUNK TANDEM plus 140 clamping force blocks are particularly designed for the robot-assisted pallet loading



of machine tools. The modules ensure process-reliable workpiece clamping in confined spaces and open up a lot of space for handling the workpiece weight. With their compact square base area of 140 mm x 140 mm they are

particularly suitable for 6-sided machining in two set-ups on all common machine tools. The optimised external contour, a special design of the base jaws and cover strip, minimum clearance and cover plugs for fastening screws prevent dirt from accumulating or chips and dust from penetrating into the modules.

Any penetrating coolant is lead to the outside via a coolant drain hole. Here, a sinter filter prevents the chips from penetrating into the base body. Control and lubrication of every version are done laterally, as well as on the bottom side. An alignment edge facilitates positioning on the pallet or the machine table. The one-piece rigid base body, wedge-hook kinematics, and long, hardened jaw guidance provide concentrated clamping forces in confined spaces, and ensure an excellent repeat accuracy of 0.015 mm. The clamping force blocks are also suitable for milling with a high metal removal rate, high number of cycles, and minimum tolerances.

The SCHUNK TANDEM plus 140 is optionally available with pneumatic, hydraulic, or spring actuation: A centric clamping force block with a stroke of 3 mm per jaw; a long-stroke centric clamping force block with 7 mm stroke per jaw; and a module with fixed chuck jaw with a 6 mm stroke for automated zero-point loading. Depending on the model, the clamping force amounts between 15,000 N and 30,000 N. The modular system thus covers the entire range of possible applications. As the long-stroke and the standard vises have the same connection dimensions, the different variants can be easily exchanged, as required.

The TANDEM plus 140 seamlessly fits into the SCHUNK TANDEM plus clamping force block range with more than 50 standard versions. The portfolio covers sizes from 64 to 250 mm. All modules are suitable for top jaws with tongue and groove, as well as for chuck jaws with fine serration. A wide range of supporting jaws, top jaws and top jaw blanks for application-specific reworking ensures that the clamping blocks can be quickly and easily adapted to new clamping tasks.



Loesche launches first truck unloading station for cement industry in India

Loesche India Pvt Lt, a wholly owned subsidiary of LOESCHE GmbH, has launched its first truck unloading station (TUS) in India under the MHC Engineering brand.

The first TUS was delivered to Birla Corporation's greenfield integrated cement plant in Yavatmal district of Maharashtra.

Loesche India has acquired the assets of the MHC Engineering, the Cologne (Germany) based firm that is an expert in bulk material handling system, from the parent company at the start of 2020. TUS is part of diversification plans of Loesche India, which is known for supplying vertical roller grinding mill systems to the cement and non-cement industries (like steel, non-ferrous, power, etc).

"Trunk unloading station (TUS) is for any process industry which receives material for making product. While the first TUS (which has been launched) will be supplied to a cement manufacturer, TUS can be used in power, steel, non-ferrous, etc industries. This is Indian launched. The intent is to make Indian product good enough to be scalable to world market. The next step will be global launch for which we are preparing a blue print," said Vikram Sharma, Joint Managing Director, LOESCHE India.

Detlef Blümke, Managing Director, LOESCHE India, added, "As market become more difficult for everybody, we believe that by expanding our product line we can attract more customers. We have taken over MHC products towards the beginning of the year with an intention to showcase MHC products not only to Indian clients, but also for global market because we believe India can produce world-class products. By combining German design and technology knowhow and India's engineering skills we can create wonders and also help in achieving Make in India goal."



L-R Vikram Sharma (Jt MD) and Detlef Blümke (MD) of Loesche India Pvt Ltd

Besides cement plants, Loesche India expects more orders for trunk unloading station from power industry with the government focusing on environment issues. "It is estimated that 70-80 TUS are annually needed for cement industry alone. FGD (Flue-gas desulfurization), which are used for desulphurization in power plants, is another potential area of application for TUS. There is already sanction for more than 300 FGD, and every FGD plant will require at least one TUS. For next 2-3 years, we are looking at a market of 80-90 TUS annually," stated Vikram Sharma.

Going forward, LOESCHE India plans to launch more products like rotary arm extractor (BinEX Discharge System), PlanEX Discharge System, bunker discharge machine, chain conveyor, etc from MHC product portfolio. The company has already received an order to supply BinEX silo discharger for Maitree power plant in Bangladesh.



Ergonomic handling solutions from Schmalz

The awareness of ergonomics is growing in the Indian manufacturing industry. Schmalz is known globally for providing ergonomically designed vacuum handling system that help companies to improve their productivity manifold. In this interview, **Niranjan Bhangale**, Industry Manager- Cranes & Regional Sale Manager (West India), Schmalz India Pvt Ltd, explains the advantage of vacuum handling system and innovative product offerings of Schmalz.

What makes Schmalz a leading company in Indian handling system market?

Yes! We are proud to announce Schmalz as a global pioneer into world of vacuum handling system, celebrating presence globally more than 100 years. We have worldwide more than 1900 employees, with 15 foreign subsidiaries bonding a unique family.

Schmalz India is successfully serving Indian market more than 20 years with diversified industry segments. We believe our principles of being innovative, inspiring, sustainable & pioneering helps us to be a market leader in era of Indian industry.

Schmalz Vacuum Handling systems includes product portfolio varying with load capacities such as Jumbo (up to 300 kg), Vacuumaster (up to 2000kg) along with aluminium crane systems (up to 1000 kg) reaching up to the mark of client level of satisfaction.

With great team work, I thought Schmalz India always expedites leadership qualities into personnel which brings us to new ideas, along with unique levels of execution. The whole team is well inspired and lead with vision of Managing Director Philip J Mani, by whom we learn to think really "Out of Box" concepts.

Vacuum! Don't you think it's risk in handling?

Believe on vacuum, Schmalz always committed to safety first. Schmalz Handling systems are designed and proven in Germany from handling ergonomics and equipped with the double safety features in laws to CE certification.

We observed here in Schmalz



Niranjan Bhangale and Philip Mani, MD

India, with practical demonstration of power failure operation for jumbo, vacuumaster we keep this question always unbeaten. Even more Schmalz vacuum systems and crane systems are safely designed to be used in Ex Zone areas.

I am glad to mention, in many of projects, our equipment have successfully undergone the safety test.

The trend of believing vacuum as positive locking is now being welcomed for our market.

As we always say, "No Cost More than Safety".

You specified above term of ergonomic handling, does this

familiar to all in market? How do you deal with it?

We look at this from different prospective. May be all are not familiar with terminology of ergonomics but the problem and causes are linked with ergonomics itself.

Many times, we practice before starting our product presentations, we have quick brief on ergonomics in handling, with concluding title as "Ergonomics = Laws of Working", that's it.

In practical conditions, our equipment are nothing but load assist. In simpler way, we define as a system with which energy level of operator at 9 am and 6 pm remains

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"SMEs have a wide span of opportunity in India. SMEs always get many ideas, information, direction and learning from the IPFs efforts. Be it through magazine, events or any other such gathering. Initiatives like these help to impart knowledge and pass on learning and experiences across industry."

Dr Umesh Raghunath Mhatre
MD of Surface Modification Technologies



"We are happy to see that so many SMEs have become successful with IPF. We have been associated with IPF for some decades now. IPF has successfully promoted us, our products and our growth is evident after receiving an award from them."

Abhishek Bohra
Partner at Bohmen Industries



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the constant by reducing human fatigue, with better productivity and safety.

Obeying government policy & being many as foreign subsidiaries, the awareness of ergonomics is kept on high focus nowadays in Indian market.

Where do you see scope of handling systems in various industrial process? How Schmalz handling system will optimise the workflow?

We customise handling systems to meet product needs. With present scenario in India, many of our process lines are equipped with manual handling wherein human fatigue, manpower, error with repetitive operations, cycle time are the key pain points. Thus, affecting overall productivity.

Especially talking with FMCG industry, Schmalz product Jumbo are best suited for multiple applications such as carton handling, sack handling, Jerry-can handling etc reaching to operating cycles per hour up to 100.

We explored the tyre industry for bale handling applications, electronic industry for sub assembly handling & end of packing line efficiently. With customization, we served automotive industry OEM as well as Tier 1 suppliers for handling variety of exhaust components, Windshields, Bus body sub-assemblies. Safety as a lead focus Schmalz vacuummaster provide best solution of sheet metal industry for laser cutting machine loading, even with 90° and 180° of swivelling requirements. We have successfully set benchmark in Glass industry for handling glass on grinding machine applications.

Nevertheless, Schmalz has success prints in wood industry for clamping devices & wooden board handling for CNC routing and beam saw machine, familiar to your home furniture.

With all industry needs and technical expertise, Schmalz optimize the workflow with single manpower to handle our Jumbo, Vacuummaster hence optimising number of manpower. Aluminium

cranes ensure the optimise handling forces in operations. Vacuum as well as electrical based lifting mechanism reduces human fatigue and work out efficiently even with low cycle time operations.

Taking care of running costs, Schmalz SRC invention in Jumbo helps to optimise electrical consumptions.

Keeping all above points constant, safety and operator friendly controls of systems, brings schmalz vacuum handling systems even more close to operator.

As a product aluminium cranes into manual handling up to 1000kg, which key points make client to select your cranes?

Schmalz make aluminium rail systems are designed with grade of EN AW 60603 T66 having load capacity up to 1000 kg. These aluminium cranes are best suited in indoor applications and are available in bridge crane, as well as column mounted jib crane customized configurations.

Our R&D team has researched in comparison with conventional steel cranes, the Schmalz rails reduces handling efforts by 60 per cent.

With unique profile geometry & trolleys, results into smooth, precise operational movements.

Furthermore, we claim Fit & Forget assembly! As these rails do not need any kind of service activity such as periodic oil/grease.

Up to 1000 kg we handle load manually, helps zero running cost compared with the conventional electrically operated crane.

Conductor rails nowadays is key attracting feature of Schmalz cranes being asked.

And finally, clients do prefer the better workstation aesthetics wherein Schmalz aluminium cranes are most liked.

With above key benefits and quick deliveries, clients choose our rails,

for workstations such as assembly line handling, mould handling, machine loading-unloading, manipulator, tool guns etc.

Moving industry towards full automation and Industry 4.0, how Schmalz will serve industry in coming future?

We all are set. We know the demands of industry, as full automation of lines has its own technical as well as commercial limitations for each industry process flow.

However, Schmalz induces new handling product which are more favouring towards the automation, we have launched collaborative rope balancer-SRBC up to 80 kg pay load, consisting key feature of hand recognition for movement, HMI, RFID gripper detection, Inbuilt



sensor for weight measurement & display of load, vacuum. SRBC has key identity as it has motion as well as precision movement inbuilt, SRBC operates even more than chain hoists.

Looking to new developments, Schmalz vacuum blocks are now equipped with NFC control by which operator can easily fetch the operating data of vacuum, service life etc. Thus, making the life easy and friendly.

We assure to serve you with best equipment and services in near future!

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(Communication provided by the management of the company)

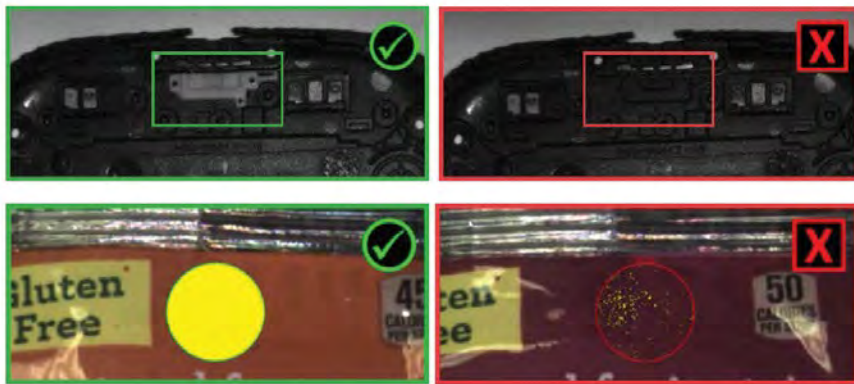


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How to select a machine vision solution

Modern manufacturing demands high quality control standards. Sensors and vision systems can inspect thousands of parts per minute, providing more consistent and reliable inspection results. This article provides tips on how to pick a right machine vision solution for a given operation in the factory.



Companies in a wide range of industries including heavy manufacturing, food and beverage, automotive, electronics, logistics, and transportation rely on vision sensors to perform simple pass/fail inspections that help ensure products and packaging are error-free and meet strict quality standards.

Of the billions of products manufactured and inspected each day, few could be made without some level of industrial automation. Modern manufacturing demands high quality control standards. Manual inspection is slow, prone to error, and impeded by product size, space constraints, lighting conditions, and fast production line speeds. Automated inspection, by contrast, maximises throughput, increases quality, and lowers manufacturing costs. Most manufacturers use automated machinery like vision sensors or vision systems because they are well-suited for repetitive inspection tasks. Sensors and vision systems are faster, more objective, and work continuously. They can inspect hundreds, or even thousands, of parts per minute, providing more consistent and reliable inspection results.

Vision systems vs sensors

Vision sensors and vision systems have many common applications in

factory automation. Selecting the right machine vision solution generally depends on the application's requirements, including development environment, capability, architecture, and cost. In some cases, vision sensors and machine vision systems may both be able to satisfy an operation's needs. Different models are designed to meet varying price and performance requirements.

Vision sensor advantages

For certain classes of vision applications, vision sensors are an ideal fit. These include simple pass/fail inspections that help ensure products and packaging are error-free and meet strict quality standards. By using vision sensors at key process points, defects can be caught earlier in the manufacturing process and equipment problems can be identified more quickly. With vision sensors, data output is typically binary, delivered as a "yes/no," "present/absent," or "pass/fail" result. Unlike other types of sensors, such as photoelectric, vision sensors



The In-Sight 2000 series offers a modular design with field changeable lights, lenses, filters, and covers. An integrated LED ring light produces even, diffuse illumination across the entire image, minimising the need for costly external lighting.

can inspect multiple elements per target, differentiate between colors, and respond well to misalignment and planned variability. But while vision sensors can provide information beyond whether a part is simply present or absent, and in some cases provide simple measurement outputs, they are not designed for precision and accuracy.

Vision sensors generally require no programming, and provide easy guided set-up through user-friendly vision software interfaces. Most are easily integrated into larger systems to provide single- and multiple-point inspections with dedicated processing. Most offer built-in Ethernet communications, which enable users to exchange data with other systems to communicate results and trigger subsequent stages of an inspection. A network of vision sensors can be easily linked to plant and enterprise networks, allowing any workstation in the factory to view results, images, and data for process

control. Depending on the specific system or application, vision software configures camera parameters, makes the pass/fail decision, communicates with the factory floor, and supports HMI development.

Vision sensors are similar to machine vision systems in their powerful vision algorithms, self-contained and industrial-grade hardware, and high-speed image acquisition and processing. They are both designed to perform highly-detailed tasks on high-speed production lines. And while all perform inspections, they are engineered for different tasks. While machine vision systems perform guidance and alignment, optical character recognition, code reading, and gauging and metrology, vision sensors are purpose-built to determine the presence/absence of parts and generate simple pass/fail results. Vision sensors are also distinguished by their relative ease-of-use and quick deployment. Vision sensors lack the most sophisticated vision tools available on standalone machine vision systems but can perform a great number of vision tasks in factory automation and logistics environments. Vision sensors are also more affordable than machine vision systems and require less expertise to run.

Choosing a vision sensor solution

Technology and application requirements for automated inspections are constantly evolving. Development environment, lighting, and modularity are some of the most important features to consider when selecting a vision sensor.

Standardised set-up environment: Even novice vision users should be able to easily set up,



	Vision Sensors	2D Vision Systems
Presence/Absence	✓	✓
Inspection	✓	✓
Guide/Align		✓
OCR/OCV	✓	✓
Code Reading		✓
Gauge/Measure		✓

configure, and install a vision sensor. When selecting a vision sensor, consider not only current inspection needs but also future applications that may require more powerful and flexible vision systems. Fast processing and a reliable communications link to other factory automation equipment are essential.

Integrated lighting: Factory environments and space constraints can make it difficult to achieve proper lighting conditions. This can be problematic for vision sensors, which rely on even, diffuse lighting to fixture parts and perform robust inspections with brightness, contrast, and pixel count tools. Vision sensors typically come with integrated lighting and can be connected to additional external lighting if required. Selecting a vision sensor with built-in lighting saves money on external illumination and mounting fixtures.

Flexible, modular design: It can be difficult to mount a vision sensor in the precise location to achieve optimal FOV, image resolution, and part illumination. Vision sensors with small form factors, which fit into any space and can be configured for in-line and right-angle mounting installation, help get inspections up and running quickly. Modular design simplifies optical paths and cable routing and allows users to change lights, optics, and lenses in the field for quick line changeovers or

application modifications. Models with autofocus lenses eliminate the need to manually refocus or adjust mounting height.

Flexible, modular design

It can be difficult to mount a vision sensor in the precise location to achieve optimal FOV, image resolution, and part illumination. Vision sensors with small form factors, which fit into any space and can be configured for in-line and right-angle mounting installation, help get inspections up and running quickly. Modular design simplifies optical paths and cable routing and allows users to change lights, optics, and lenses in the field for quick line changeovers or application modifications. Models with autofocus lenses eliminate the need to manually refocus or adjust mounting height. **IPF**

Article Courtesy: Cognex, the leading supplier of machine vision and industrial barcode reading solutions

About Cognex:
With over 2 million systems installed in facilities around the world and over thirty seven years of experience, Cognex is focused on industrial machine vision and image-based barcode reading technology. Deployed by the world's top manufacturers, suppliers and machine builders, Cognex products ensure that manufactured items meet the stringent quality requirements of each industry. Cognex solutions help customers improve manufacturing quality and performance by eliminating defects, verifying assembly and tracking information at every stage of the production process.

“Josab has a robust solution to solve water quality issues”

India is a water stressed country and needs to investment in water purification, wastewater treatment & recycling. Josab, headquartered in Pune, has been providing water purification solutions in India for the past 4 years. While the company earlier focused mostly into drinking water treatments, it is now expanding into sewage, industrial and waste water treatments. In this interaction with Rakesh Rao, **Dennis Abraham Thazhamon**, Managing Director, Josab India Pvt Ltd, elaborates on water treatment market in India and growth plans for his company.



Could you please brief us about Josab and its businesses in India?

Josab is an innovative company specialized in water purification systems based on the company's own patent product. Josab India Pvt Ltd is a subsidiary of Stockholm, Sweden based Josab International AB (Estd. 1999) which is a public listed firm.

Headquartered in Pune, Josab is in India for the past 4 years providing water purification solutions in various location across India. We are currently working closely with various state Governments towards design, supply, installation and maintenance of drinking water treatment projects on various scales. Having our state of the art manufacturing unit close to Pune, Josab is equipped to handle projects of any scale. We have our branch office in Trivandrum, Kerala focused on handling the operations of South India.

As a water purification solution provider, what do Josab brings to the table for its customers?

We vouch that Josab's solutions are “Ecological” and that is what is

unique about our products and solutions. We bring a varied assortment of products ranging from domestic to communities to industrial and wastewater treatments and purifications. And, the most interesting aspect is that all these treatments are done naturally using a unique natural mineral called Aqualite (Zeolite).

What are the advantages of Josab's filtration technology and filter material Aqualite?

The major advantages of Josab's filtration technology are Water is treated using a Natural Mineral; No

Chemicals are used in treatment process; Zero water wastage; Low energy consumption; and lowest annual maintenance.

The way we are able to achieve these is by treating water using our company's patented mineral Aqualite. JOSAB Ecological Systems uses a product called Aqualite, a Clinoptilolite, which is a Natural Zeolite with exceptional Adsorption, Ionization, Reduction, Catalytic and Micro-filtration properties. Aqualite is found in the company's own Rátka mine, in Northern Hungary. After mining large blocks of Aqualite, further production takes place at JOSAB's indoor processing plant in Szerencs, Hungary. Aqualite is then imported to our subsidiary units across the globe. External shell is usually manufactured indigenously in the respective countries at our manufacturing units as per our.

How is the water treatment/ purification market in India?

Indian water treatment / purification market has seen a tremendous growth in the past decade. Prior to a decade, the water business was

Indian water treatment market has seen a tremendous growth in the past decade. Prior to a decade, the water business was looked at more as a social activity. But today, with ever increasing demand for water and contamination of limited available water resources; the demand for clean water has increased.

looked at more as a social activity mere commercial proposition. But today, with ever increasing demand for water and contamination of limited available water resources; the demand for clean water has increased. This has translated into excessive demand for water treatment products. In the recent years, the market is observing yet another make shift change with the increased awareness of water quality and its nutritional value. Today, the average consumer is not looking for just treated water but healthy water i.e., mineral rich water. Today, mineral rich water is a luxury but having disruptive technologies like Josab's Aqualite, we are trying to make this luxury into an affordable and accessible commodity. In simpler terms, we have products that fit into each and every segments of our market which is ever growing.

Could please elaborate on solutions offered by Josab for the treatment of wastewater and industrial water?

Josab's main application area is ecological water treatment solutions for drinking water but thanks to the unique features of our Aqualite, as it can well be used for various other application areas such as Sewage Water Treatment, Industrial water treatment, Constructions Sites, Irrigation systems, Fishery farms and many more. In context to treatment of wastewater, Josab works in collaboration with proven and fool proof technologies. Josab works a complete solution provider and not as a mere technology provider i.e., the nature of water is dynamic and hence the technology to treat such water should be dynamic. To ensure that proper treated water quality is ascertained, Josab makes add-ons to its standard systems based on the raw water quality parameters. Thus, the treatment is target specific and ensures that most of the physical, chemical and microbial contaminants are eliminated.

Do you offer solutions for textile industry, which

Tough water stressed, India is one of the countries with low water tariffs; yet many people are reluctant to pay water tariffs. Well, investing into water purifications and recycling is the need of the hour but equally important is the fact that the infrastructure to treat water is an expensive affair.

needs wastewater treatment solutions?

Yes, Josab's natural zeolite has extensive applications in the textile industry. Textile industry utilizes strong dyes / coloring agents which need a good catalytic reagent to separate water and the dissolved chemical compounds. Aqualite having unique properties of adsorption and ionization is very efficient in removal of heavy metals, hydrogen sulphide, potassium permanganate and other dyeing agents.

While it is a known fact that India is a water stressed country, still there is not adequate investment being made in water purification, wastewater treatment & recycling. What could be the reasons for this? Are you seeing things changing on the ground?

Well, this could be attributed to the fact that water is perceived as a free resource, like a "Natures gift to Human kind". In a way it is in fact a nature's gift to us; but it is equally important that we take adequate care of such gift. India is the home for may perennial and life-giving rivers; yet, on the contrary we are a water stressed nation. The only reason for this is over exploitation and abuse of such precious resource.

Tough water stressed, India is one of the countries with low water tariffs; yet many people are reluctant to pay water tariffs. Well, investing into water purifications and recycling is the need of the hour but equally important is the fact that the

infrastructure to treat water is an expensive affair. This adds-up to the overall cost per liter of treated water and the end user has to be made aware of such repercussions due exploitation. Creating value to water ensures that it is used responsibly.

From the governments end, there is definitely a need to invest on infrastructure but the most important fact is that the investment has to be wise and right i.e., investing into age old, linear technologies just for the sake of numbers is not the way forward. Water treatments have advanced well with time and so we need to invest into such robust and fool proof technologies to ensure best outcomes.

What kind of new opportunities are you looking to tap in India?

Domestic/household market is one segment which we haven't touched base previously due to technical constraints. But, thanks to our R&D team; we have developed a one of its kind domestic water treatment unit which filter water using our unique mineral Aqualite. Unlike R.O water filters, Josab's household water purifiers ensure that there is zero water wastage, no usage of chemicals and the best part is that all essential minerals in the water are retained. We can proudly vouch that this is the first of its kind water purifier in India which delivers mineral rich water.

What are your growth plans for India?

Indian market is complex and highly competitive; but the competition is mostly centered & restricted to the cost / quantity component and not the quality component. In-fact most small, medium and few large players in the market are just traders in the industry and not true blood manufacturers / developers / innovators. I think, that is what makes us stand apart. We have a robust solution to treat pertinent water quality issues. Our previous focus was mostly into drinking water treatments but now we are swiftly expanding into sewage, industrial and waste water treatments.

Can coronavirus outbreak position India as alternative to China?

The virus outbreak in China is expected to intensify production disruptions and relocation away from China, and India could reap gains with the right set of policies, says Neha Anna Thomas.

The Coronavirus outbreak is expected to have immense global implications - GDP growth will take a hit, oil prices will drop due to weaker demand, global interest rate cuts will deepen, and so on. The economic research team at Frost & Sullivan has identified three 2020 scenarios tied to the virus outbreak: the gradual abatement scenario, the severe epidemic scenario, and the severe pandemic scenario. While the gradual abatement scenario initially carried a probability of 70 per cent, this figure now stands at 60 per cent with the spike of cases outside China in the past few days. From 2.9 per cent global GDP growth in 2019, growth is expected to slide to 1.7 per cent or less in 2020 should a severe pandemic scenario unfold.

With China being much more deeply integrated with the world economy today through channels of trade, tourism, etc., compared to the 2003 SARS outbreak, the impact of the virus outbreak is expected to be much more pronounced. Economies across the globe face unique risks and implications based on ties with China and other factors. US businesses, for example, might not see timely Chinese purchases of goods and services as part of the Phase 1 US-China trade deal, while countries such as Japan and Sri Lanka face the prospect of a sharp drop in tourists.

Some of the key implications of the virus outbreak in regards to India and the Middle East include:

- ❑ Oil price slide dampens 2020 middle east growth prospects: While oil prices were initially



forecast to rise in 2020, driven by OPEC+ production cuts, the finalization of a US-China trade deal, and improved Brexit certainty, the situation is now seeing a reversal. The slowdown in China's economy (the world's largest oil importer) coupled with the dent in demand for jet fuel (with deepening travel restrictions) will cause Brent crude oil prices to slide from \$64.3 per barrel in 2019 to \$60.4 per barrel in 2020 or lower, depending on the extent of the virus outbreak. Economic growth across the Middle East consequently stands to be restrained. India, a prominent global oil importer, on the other hand, stands to benefit from the slide in oil prices. Positive gains are expected in regards to the current account deficit and the rupee.

- ❑ Gains for India tied to production disruptions in China: US-China trade wars had already prompted production relocation from China, with Southeast Asia attracting a lot of businesses. The virus outbreak in China is expected to intensify production disruptions

and relocation away from China, and India could reap gains with the right set of policies. Factors such as recent hefty corporate tax cuts in India and the relative strength of the Indian economy place India in an advantageous position. Furthermore, in the current scenario, India faces less competition from Southeast Asia, as locations such as Singapore and South Korea are grappling with the virus outbreak. Indian manufacturers nonetheless will

have to cope with disruptions in intermediate inputs from China, necessitating near-term supply-chain diversification.

- ❑ Virus outbreak to usher in more interest rate cuts: In 2019, global central banks pursued a loose monetary policy amid the weaker economic environment. The virus outbreak will restrain central banks from issuing interest rate hikes in 2020, with a loose monetary policy expected to continue. While China already cut its benchmark loan prime rate (LPR) in February 2020, other countries are expected to follow suit. The Philippines also cut its key interest rate in February in response to the virus outbreak. Repo rate cuts in India, initially forecast for H2 2020, could potentially be pushed up to H1 2020.

IPF

About the author:

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Are Indian industries ready to face liquidity stress due to Covid 19?

Effect of coronavirus (Covid 19) on the supply chain and consumption will vary from sector to sector, thus impacting credit availability and adding liquidity pressure on the Indian industries, says CRISIL.

Credit quality pressures on India Inc, which has been rising because of economic slowdown and consumption slump, is set to intensify with the Covid 19 pandemic. Based on the depth and timing of impact, sectors are broadly classified into three - those facing significant loss of revenue and profit have been categorised as 'high risk', while others are termed 'moderate' and 'low impact'.

High risk: Impact if the pandemic prolongs

While Covid-19 may not have a direct impact, the evolving global and domestic economic slowdown will impact demand and realisation in steel, gems & jewellery, construction & engineering, and textiles sectors.

Steel: Demand slowdown in the construction and automobiles sectors have affected the steel sector significantly this fiscal. Continuing slowdown in these sectors owing to Covid-19 and other factors, besides difficulty in realisations, could add to the credit pressure on steel makers.

Textiles: Ready-made garment makers dependent on export markets are facing intense competition, which is impacting their credit profiles. With key export markets such as the US and the EU facing headwinds, there could be significant demand pressure for exporters including cotton yarn exporters. Already, the business performance of cotton yarn exporters has been impacted in the fourth quarter of fiscal 2020 because of disruption in supplies to China, which accounts for a quarter of such

business. Further social distancing measures could also weaken demand for domestic apparel retail, which, in turn, would darken the cautious credit outlook.

Moderate impact

Sectors facing limited supply disruptions of a couple of quarters, and those with strong balance sheets would see moderate impact on credit profiles.

Automobiles: Domestic automobile demand is expected to be impacted for an extended period as consumers cut discretionary spending. The sector was already seeing slack demand and higher prices because of compliance with Bharat Stage VI emission norms. However, strong balance sheets of automobile manufacturers will insulate credit profiles to some extent.

Auto-components: In fiscal 2020, the credit quality of auto component makers was impacted because of slowing demand for automobiles and sluggish exports. Those with limited diversification or recent capacity additions were hit the most. Domestic and export demand are seen subdued next fiscal. Disruptions in supply of critical components from China is expected to be limited to a few players which are not significant in the affected segment. Players with diversified profiles and strong balance sheets would weather near-term challenges better, while the rest will remain vulnerable next fiscal.


Consumer durables and electronics: India imports 45 per cent of completely built units of consumer durables from China. In addition, India also imports bulk of consumer durable components from

there. Besides, 70-80 per cent of mobile phone components/CKD kits are supplied by China. Most large consumer durables firms have very strong balance sheets and surplus liquidity. While the Covid-19 will impact business levels, strong balance sheets should provide offset and help sustain credit profiles in near term.

Low impact

Companies in sectors that are domestically reliant and not exposed to significant demand pressures may not be impacted significantly owing to Covid-19. Some of these include:

Pharmaceuticals: India is a net importer of pharma bulk drugs from China. The country accounted for 68 per cent of Indian imports by value last fiscal. Domestic drug makers had already sourced their raw material and created sufficient inventory for two-three months because of holidays in China. Chinese production facilities are coming back on stream as the impact of Covid19 abates and supplies resume. Credit quality of pharmaceutical companies is expected to remain by and large stable, especially for large pharma, who benefit from strong balance sheets.

Power (other than renewables): Given the domestic-focused nature of operations, there is no significant impact envisaged. Existing challenges in terms of fuel supply, weak financial risk profile of state distribution companies and stressed power assets would continue to play a role in the credit quality of these players. 

Article Courtesy: "The Covid-19 fallout: Quantifying first-cut impact of the pandemic" of Crisil - An S&P Global Company (March 19, 2020)

Making loading dock safety automatic

New equipment offerings make the warehouse safer and more efficient.

According to the Occupational Safety and Health Administration (OSHA), roughly 100 industry workers are fatally injured every year and about 95,000 workers are injured every year while operating industrial trucks, such as lift trucks. Accidents are more than likely to occur on the warehouse's dock.

There are various kinds of loading dock-related accidents. Some of the most common accidents that are caused by early departure, trailer creep, and lift trucks backing off of docks.

One of the ways warehouse workers can prevent dock-related accidents is to use the proper dock equipment, which can increase both safety and performance.

Loading docks are often the busiest places in a facility. The operation at a loading dock traditionally consists of a tractor trailer backing up to an elevated section of the building, so material can be loaded/unloaded from the trailer, often multiple times a day. Working conditions can also be extreme if the docks are located outdoors, with material being moved in all kinds of weather - cold, heat, rain and even snow.

Even though dock height is commonly 4-5ft, that height is enough to pose a fall risk at unprotected ledges. Factors such as weather and repetitive movement of



materials can fatigue employees working in loading dock operations, placing them a greater risk for falls from the elevated areas in the loading dock area.

Dock levelers

A dock leveler is dock equipment that connects the warehousing loading dock to the back of the trailer. Dock levelers, unlike dock boards, stay at the warehouse. Gandhi Automations, India's leading loading bay equipment company, offers something more than just an average dock leveler that also aids in environmental and safety control.

"Our goal is to create a safe, secure, energy-efficient, productive loading dock," states Director of Gandhi Automations. The dock leveler helps to increase dock performance by decreasing dock shock, the constant and potentially harmful shaking that occurs when a lift truck driver crosses over gaps on traditional dock levelers.

Dock shock can cause long term back and neck injuries, which can be costly to a company and for lift truck drivers. According to Gandhi Automations, 21 percent of lift truck drivers suffer from dock shock. Gandhi Automation's dock leveler has an extended beveled edge in order to create a smoother transition between a trailer bed and the leveler to alleviate dock shock.

There are many benefits of Gandhi Automation's dock leveler being vertically stored. While the dock leveler isn't in use, it acts as a safety barrier in between the warehouse and the dock exit, which



will prevent lift trucks and other machinery from backing off of the dock. This also provides an increase in security, which helps to prevent forced entry into the warehouse.

Dock seals

Dock seals are used around the exterior part of a warehouse dock to protect shipments from the weather. Gandhi Automation's Dock Seal is a premium dock seal that is made with PVC fabric, which is a friction resistant material. PVC fabric helps to extend the life of the dock seals by providing advanced rip strength.

Dock seals have a significant impact when transporting perishable food items since it helps maintain the freshness and the quality of perishable products in between loading and unloading.

Heat from a trailer light can start a fire on the dock seal causing incredible damage and putting workers at risk. Gandhi Automation's heat-dissipation system, Firefighter



protection, prevents burning caused by heat build-up.

Dock doors

Most dock doors are standard equipment that doesn't provide many benefits, other than theft deterrent. Sectional overhead door/dock door

provides more than just theft deterrent - it complements vertical dock levelers and enhances thermal efficiency. There has been more attention recently on the dock door's ability to seal the opening, instead of relying on insulators

The sectional overhead door is equipped with a thick foam panel that provides high quality thermal protection in order to preserve the warehouse's temperature and also keep extreme weather conditions out. This helps maintain the integrity of perishable items and shields employees from weather conditions outside.

By equipping a warehouse dock with the right equipment, a company can save money, increase the safety and efficiency of the dock, and ultimately improve working conditions for warehouse workers. Advancements in loading dock technology and planned maintenance programs are reducing risks for warehouse workers. **IPF**

TECH BYTE

WALTER launches competitively priced all-rounder Helitronic Raptor

WALTER presents the new and competitively priced all-rounder Helitronic Raptor for the production and regrinding of tools. For some time the market has been demanding that machine tools must be "more flexible", "universal" and "automated". The equally important requirements of "more specialised" and "more cost-effective" often cannot be reconciled with these demands. However, this is exactly what WALTER has achieved with the latest extension of their grinding machine portfolio, the Helitronic Raptor. WALTER offers the right machine solution for the grinding of tools for every customer application.

The Helitronic Raptor is a flexible and universal tool-grinding machine especially designed for the grinding and re-sharpening of rotationally symmetrical tools for the metal and wood industry.

"Specialised" means in this case: optimising the important equipment options so that the Helitronic Raptor is targeted at the re-sharpening sector of rotationally symmetrical tools, in which one usually does not require a large variety of automation; does not require automatic tool support systems; does not require an automatic

change of grinding wheels; but still requires a high degree of flexibility in the working area for large and diverse types of tools.

For this reason, the Helitronic Raptor - unlike other machines from WALTER - is not configured for options such as wheel changer, robot loader or hydraulic tool support systems. Tools with a maximum diameter of 320 mm and a maximum length of 280 mm including end face operation can be ground with the Helitronic Raptor. For automatic loading of up to 500 tools, an optional top loader, integrated in the working area, is available.

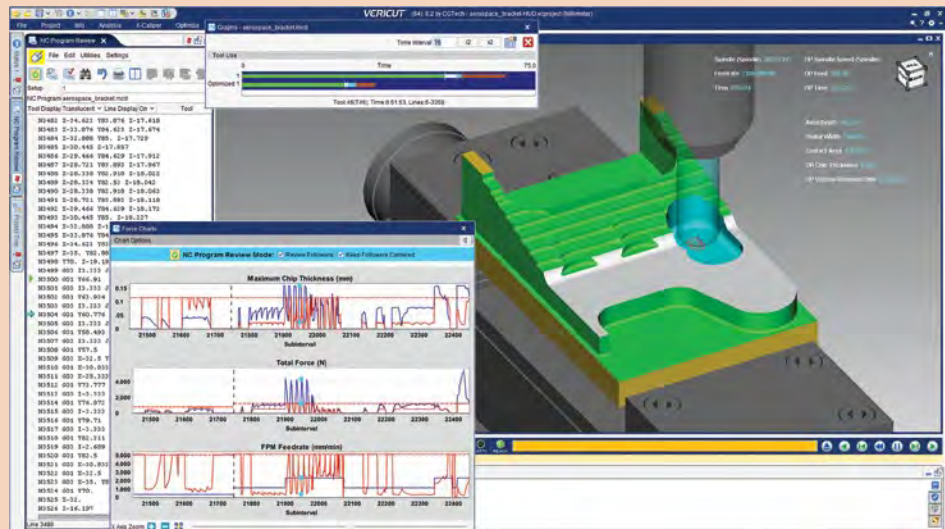
Other features of the equipment are: Low vibration, solid grey cast iron, gantry type construction; 11,5 KW spindle motor; Grinding software Helitronic Tool Studio; Top loader (option); Glass scales (option); Torque drive for the A axis (option); Probe for measuring the grinding wheels (option); Manual support steady rest (option), etc. **IPF**



Partners in force

Industry leaders CGTech, Okuma, and Sandvik Coromant collaborate on feedrate optimization technology.

Once in a while, a new technology rolls around that promises to change the face of machining. Computerized numerical control (CNC). Carbide cutting tools. Multitasking machines. Additive manufacturing. Set aside your favorite Star Wars aphorism, but the most recent of these game-changers is Force, the newest addition to Irvine, Calif.-based CGTech Inc.'s VERICUT suite of toolpath simulation, verification and optimization software products.



Forceful results

According to CGTech VERICUT product specialist Pete Haas, the Force module uses physics-based optimization methodology to reduce cycle times by 40% or more and improve tool life significantly. "It's the perfect example of data-driven manufacturing," he said. "Force helps machinists and programmers to make decisions based on facts, not guesses, past experience, or tribal knowledge. Most importantly, Force does the heavy lifting by providing the optimal cutting solution for the NC Programmer."

On milling and turning applications alike, Force optimization works by analyzing cutting conditions encountered during simulation and looking for opportunities to increase feedrates where possible, slowing down when cutting forces or spindle power demands are excessive, and breaking up motions into smaller blocks as needed to both maximize chip thickness and keep it consistent throughout the cut.

"VERICUT Force achieves what feedrate calculators can't and what manufacturers have been trying to do for many years - True constant chip thickness machining," he said. "Instead of maintaining a constant feedrate throughout the cut, with chip

thickness changing as the tool encounters varying amounts of material, VERICUT Force speeds up or slows down to keep cutting forces steady. It's very similar to how a machinist might dial the feedrate override up or down based on the sounds coming out of the machine, except that VERICUT does it proactively and more effectively, rather than reacting to cutting noise levels."

Seeing is believing

Too good to be true? Don't take CGTech's word for it. John Giraldo, aerospace engineer at Sandvik Coromant Inc., had a chance to put Force through its paces recently. The results were surprising. "To be honest, I used Force on a program that I'd already optimized with a popular CAM system, so I really wasn't expecting much improvement," he said. "But Force lopped 40% off the cycle time on the first go. It was pretty impressive to watch."

Giraldo is part of Sandvik Coromant's team of application specialists at the machining solution provider's Fair Lawn, NJ, facility. He and others around the United States work closely with customers or potential customers on ways to

improve their manufacturing operations. This might mean reprogramming a job, helping out with unfamiliar material, suggesting and then validating new cutting tools, or developing a complete machining process.

As with many of his customers, Giraldo's been using VERICUT for "around eight years or so" to simulate NC toolpaths and therefore avoid crashing an expensive machine tool. He also works with many of the industry's leading CAM systems, so is quite familiar with modern programming technology. He's no stranger to toolpath optimization, and because his customers are coming to him with their problem jobs, he's also no stranger to difficult materials and challenging workpiece geometries.

Sharing the wealth

After seeing the results, Giraldo wanted a chance to spread the good word on Force, so when a customer came to him with a tool life problem machining Haynes 282—one of the more difficult to machine nickel-based superalloys—he was ready.

"Using a trochoidal toolpath [i.e., a more efficient way to mill a slot or pocket by using circular movements with lighter radial engagement at

higher feedrates] to machine a deep pocket in a cylindrical casing, they were burning up two end mills per pocket," he said. "With Force optimization, we increased tool life to five pockets per tool—a tenfold improvement—and reduced cycle time by 25% to boot. It made a night and day difference."

Giraldo has also shared his Force experiences with other members of the Sandvik Coromant technical team. "Everyone has been both shocked and positively impressed with the results. We have machining application experts here with 15 to 25 years of experience, and they are invariably amazed by what Force can do." He laughed. "About the only downside is that we have to rethink all of our machining parameter recommendations when we know that one of our cutting tools will be used with a Force-optimized program. It's made a huge improvement on everything we've thrown at it."

Doing the math

It is important to note that CGTech has done its homework. VERICUT Force has been developed over the last few years through actual on-machine testing, first with an advanced manufacturing research center, and then using its own dynamometer force measurement system. That testing continues today at Okuma America Corp.'s facility in Charlotte, N.C., where CGTech's Haas was headed shortly after our interview.

Wade Anderson was there. The technical center and product specialist's sales manager for Okuma, he's seen firsthand the effort CGTech has put into the development of the Force material files that make Force tick. "Everything we've seen so far has been phenomenal," Anderson said. "They've set up dyno equipment on some of our CNC lathes and milling machining centers, and are taking cuts on different materials, using a range of speeds and feeds, and measuring how much force is encountered for each cut. It's a very unique approach, and I don't see any other companies



taking their products to this level. It's great to see because I know it's going to help CGTech, tool manufacturers like Sandvik and Okuma customers alike."

Use the Force

Haas said the ability to create these Force material files has recently become available to end users via a software option called "Force Calibration." This will not only allow customers to fine-tune Force optimization based on their specific cutting tools and operating parameters, but addresses the needs of those in the aerospace, nuclear, medical, and other industries using proprietary materials that cannot be shared. As for Giraldo's earlier quip about machining recommendations, Haas noted that determining the correct force settings is actually quite simple. If you're using one of Sandvik Coromant's Plura end mills, for example, all you have to do is look up the tool data and plug it into Force along with a few parameters like chip thickness, helix and rake angles, and the number of flutes. Or even easier, download the cutting tool data from CoroPlus directly into VERICUT. The software takes care of

the rest.

"Force is now a mature product with proven results in the industry, from large landing gear parts to small medical device components and everything in between," Haas said. "The payback for our Force product can be quite fast—depending on the part and quantity, most shops achieve ROI within 3 to 6 months."

"But it's not just about going faster, or making more money," he added. "Force-optimized programs are safe because the software protects the NC program from machining excesses using programmer-defined limits on feedrate, cutting forces, power consumption, and tool deflection. As a result, we've consistently seen significantly reduced cycle times, greatly improved tool life thanks to less heat and rubbing, and the cutting tool is now utilized to its full performance potential. And as with VERICUT itself, Force works with anyone's machine tool and anyone's NC program, whether it's newly-created or a legacy file from ten years ago. It's simply a great tool for any shop to have in its machining toolbox."

Guidelok increases quality and reduces maintenance of milling machines

Machine tool manufacturer Kao Ming uses an igus guidance system for long unsupported lengths in its gantries

Large machining centre gantries are the speciality of machine tool builder Kao Ming in Taiwan. The long travel lengths of up to 13 metres provide challenging requirements for the supply of energy and media. The guidelok chosen by Kao Ming and supplied by motion plastics specialist igus and chosen by Kao Ming is a system that leads to improved machining results due to the low level of vibration caused by operation of the e-chains.

Kao Ming is a pioneer in Asia in the development and manufacture of heavy-duty robotic milling machines. The KMC-G series is one of the Taiwanese company's largest gantry machining centres. The system is designed around a gantry i.e. the machining table with the workpiece remains stationary. With travel lengths of 13 metres, this design is especially useful for large-volume, heavy workpieces and is mainly used for workpiece machining in the aviation and machine tool industry. In the KMC-G series, Kao Ming uses the guidelok energy supply system for high unsupported lengths, in combination with an E4.80 energy chain.



The gantry machining centre KMC-G is designed for workpieces from the aviation and machine tool industry. The x-axis of the travels over 13 metres

Horizontal guidelok system guides upper run reliably and safely

The gantry machining centre is equipped with a changing device for the machining spindle so that milling heads can be used at different angles. Due to the large number of spindles which have to be guided from the central control cabinet through the plant to the milling unit, there are a large number of cables and hoses for energy, media and data. "For longer travels, no energy chain can be used without support. This is especially true when you consider the extra weight of the hoses and cables inside the chain," explained Kao Ming General Manager Tim Chang.

The guidelok system fulfils all these requirements. The supporting rollers guide the upper run of the E4.80. Each roller can move out of the way when the chain radius moves past it. Moreover, the design

allows the option to have two opposite chains move within the same trough system. Due to the design of the guidelok, the e-chain can move quickly and with little vibration. This has a positive effect on the machining result. At the same time, machine downtimes and maintenance intervals are reduced as swarf is unable to settle between the upper and lower run. The guidelok travel distance can even extend to 50 metres long.

Igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 35 countries and employs 4,150 people around the world. In 2018, igus generated a turnover of Euro 748 million with motion plastics, plastic components for moving applications. Igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.



The long travel length and large number of cables and hoses place tough requirements on the energy supply system. The pivoting roller holders of the guidelok system allow the e-chain to run freely while supporting the upper run.

For details, contact Kaushik Ramanujachar (Product Manager, E-ChainSystems) of igus India Pvt Ltd, Bangalore, on Tel: +91 80 4512 7828, Mob: +91 93416 35593, or email: kramanujachar@igus.net

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SWIT brings highly efficient JAKA Zu cobots in India

JAKA Zu cobots, which have all the advantages of advanced robotic automation technology, allow companies to recover their investment costs in a short period of time and achieve modern smart factory.

Bangalore-based SWIT has been appointed as an exclusive Channel Partner by Chinese firm JAKA for its JAKA Zu series 6-axis collaborative robots (Cobots) for India. JAKA, founded in 2014, stands for "Just Always Keeping Amazing".

JAKA Zu Series is available in 3 versions - JAKA Zu 3, JAKA Zu 7 and JAKA Zu 12 - and employs newly designed App on MT (mobile terminal) and wireless connecting system. The versatility and flexibility of JAKA Zu enable them have an easy access to production in various industries, and meet the needs of different production situations.

JAKA Zu cobots are in drive control integration, integrated joints, drag-and-drop play, free-drive programming, wireless connection and so on. JAKA Zu cobots have been applied to automation production in many industries, providing a strong and continuous foundation for industrial innovation.

JAKA Zu cobots have been successfully applied to automated production in multiple industrial sectors, providing innovation for industrial sectors with continuous and powerful equipment foundation.

They offer advantage of wireless connection and remote assistance:

- ❑ **Wireless linking:** JAKA Zu Cobot's most outstanding



- ❑ **No teach pendant:** JAKA APP is available on tablet PC, mobile phones, PC, by which you can use to interact with JAKA Zu Cobots.
 - ❑ **Remote assistance:** JAKA Zu Cobot is the pioneer of wireless demonstration
 - ❑ **Remote monitoring:** With JAKA Zu Cobots's unique security authentication mechanism, the user can implement remote task delivery.
- JAKA Cobots are simple, flexible and safe to operate. Thanks to the concept of integrated industrial design, JAKA Zu series robots can perform their tasks well in harsh noise and dust environments, and excel in strict environments requiring high cleanliness.

JAKA Zu Cobot is based on the Linux scripting language, has good compatibility, and provides ROS driver for secondary development of the system. Meanwhile, universal control is designed for

fast docking of upstream and downstream automation equipment. Its outstanding features guarantee that when JAKA Zu Cobots work in harsh environments like high temperature, high noise, high cleanliness, dust, etc., can still cope with operators, other robots, and working situations.

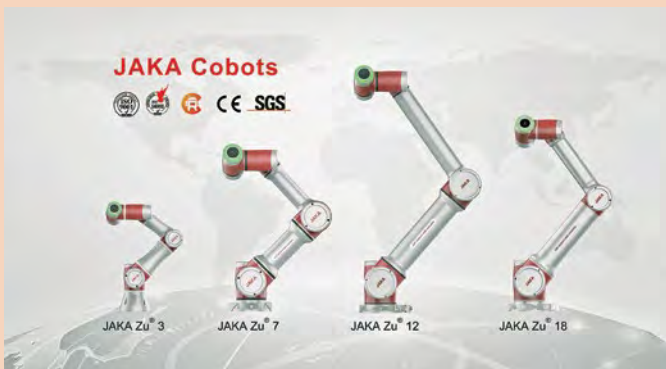
JAKA Zu cobots use modularised, integral joint techniques. JAKA Zu cobot originates from aerospace science and technology. Based on space robotic arm, it improves overall optimisation on TV, reducer, and drive control board. JAKA Zu Cobot is lightweight and compact, easy to disassemble, easy to transport, etc.

Help in making a factory smarter

Currently Zu series cobots are widely used in various assembly lines and work stations. They are used for applications like screw locking, welding, grinding, injection molding, machine tending, gluing, testing, palletizing, packaging, injection, etc.

Traditional industrial robot production lines are often repetitive, boring and mechanically operated, and are full of potential hazards. Today, as labour costs continue to rise, it is extremely expensive for companies to recover their investment costs.

JAKA Zu cobots have all the advantages of advanced robotic automation technology, but avoiding the extra costs of programming, start-up settings and safety protection settings necessary for traditional robots, and freeing people by work assignments. The super-high efficiency of JAKA Zu cobots allow companies to recover their investment costs in a short period of time and achieve modern smart factory.



Libratherm offers ramp soak profile control for Molybdenum Disilicide heaters

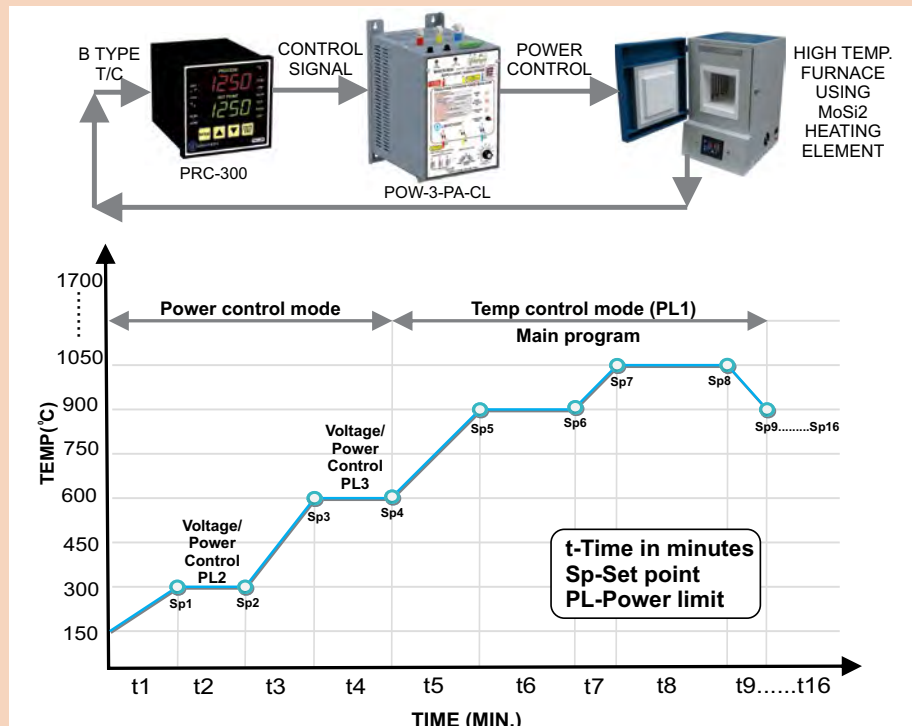
Customers can use Libratherm make Profile Programmer Model PRC-300 and 3-phase thyristor power regulator Model POW-3-PA-CL-XX to achieve precise temperature control.

Molybdenum Disilicide (MoSi₂) heaters used in high temperature furnaces exhibit typical behaviour in the cold state. During start-up heaters tend to draw very high current even at low voltage and low temperature because of low cold resistance. This leads to frequent tripping of the electrical circuit during start up and control become challenge unless operated in the manual mode to control the voltage across the heating coils.

Libratherm offers close loop control solution using Thyristor Power Regulator (POW-3-PA-CL) along with Ramp/Soak Controller (PRC-300) to control over current trip and gradually deliver power to the heaters ensuring smooth temperature rise in the Auto Control Mode.

Features of PRC-300 for MoSi₂ heater control

- ❑ The first 4 steps of the ramp/soak process are temperature independent and control the heater power based on the requirement.
- ❑ 4 step power limits are programmable to gradually deliver power to the heaters upto around 600°C.
- ❑ After 4th step the control is automatically transferred to the



Close loop control system

- regular Ramp and Soak temperature control.
- ❑ The process will continue from the current temperature onward and will follow the step from current temperature to the remaining set points.
- ❑ Based on furnace design and KW ratings, user has to figure out PL2 and PL3 values to reach temperature of around 600°C without tripping power to the furnace.
- ❑ The above logic has been implemented on actual system and satisfactory result has been achieved.



For details, contact Libratherm on Tel: +91 22 4255 5334, email: sales@libratherm.com, or visit www.libratherm.com

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Coronavirus disrupts forging and auto component industries in India



The Association of Indian Forging Industry (AIFI), the apex body of the Indian Forging Industry, has observed that the disruption caused by the Coronavirus (Covid-19) has hit the automotive industry and thus also affected the automotive component and forging industries.

China accounts for 27 per cent of India's automotive component imports and this year, vehicle demand in the country is projected to decline by 8.3 per cent.

S Muralishankar, President, AIFI said, "The Coronavirus is expected to have an impact on the Indian automotive industry and hence also on the automobile component and forging industries, who had already reduced their production rate due to the market conditions and on account of the impending change over to BS-VI emission norms from BS-IV from the 1st of April 2020."

China is one of the leading suppliers of automotive components in India, the slowing supply of components manufactured in China would cause shortage.

In a recent report, the association stated that the impact on commercial vehicle (CV), passenger vehicle (PV) and the two-wheeler (2W) segments will be more profound.

Currently, the OEMs have reduced their production plan for February and March due to the non-receipt of components.

"The problem is further aggravated by the Chinese government's suspension of shipments by sea until further notice and allowing air-only shipments that are not suitable for auto components and forging industries, therefore the Indian OEMs are unable to plan production beyond the inventory as currently available to them," he added.

Further, the international customers have asked for shipments to be delayed till further advice, as their supply lines to are facing the adverse impacts of the disruption caused due to the shutting down of manufacturing facilities temporarily in China.

Government of India has also issued a notification mandating the decontamination of containers at the port prior to release to the customs. However, the guidelines/procedures to be followed for decontamination have not

been notified, therefore it is not possible for the Indian importers to clear consignments that have already reached Indian Shores on time.



Innovista Sensors offers intuitive programming solutions of Crouzet Automation



Innovista Sensors India offers products and solutions of Crouzet Automation, a pioneer in intuitive programming. Crouzet Automation offers the easiest-to-use and most adaptable alternative automation solution for specialised and demanding needs. The company - a pioneer in the simplification of programming - has an experience technical team.

Crouzet Automation's em4 all-in-one fully connected nano-PLC enables remote management and maintenance on a PC and mobile devices. It offers accurate and performant sensor measurement.

Besides, Millenium 3 logic controller is compact and expandable. The controller is easy to program and has multiple configuration options.

For details, contact Innovista Sensors India Pvt Ltd, Bangalore, on Tel: 080 6762 4500/501, or e-mail: india@crouzet.com



First MMT Expo 2020 aims to bridge gap within machine tool industry

Machine Tools, Manufacturing and Technology (MMT) Expo 2020, a four-day exhibition from March 11 to 14, 2020 hosted by NESCO Exhibitions, discussed bridging Western India with innovations and technological developments in the machine tool industry in India.

The expo was inaugurated by Guest of Honour Shreegopal Kabra, MD & Group President, RR Global at Machine Tools, Manufacturing and Technology (MMT) Expo 2020; Yogin Chhaniara, President, Machine Tools Manufacturers Association (MTMA) Rajkot; Tejas Dudakiya, Director & Hon. Secretary, Dowel Machinery Pvt Ltd & MTMA; Suhas Belapurkar, Director- Sales & Marketing (Industrial Products) - Sanjay Tools & Adhesives; Shekhar Dongre, CEO, Divya Media Publications Pvt Ltd and Prashant Bahl, General Manager Exhibitions & Business Head, MMT Expo 2020, NESCO Ltd amidst an august industry gathering.

Yogin Chhaniara, President, Machine Tools

Manufacturers Association – Rajkot, shared, "The machine tools industry in Mumbai needed a major boost. MMT Expo 2020 has created an immense opportunity for the industrial segment of the northern, western and southern regions of our country. Rajkot has been the manufacturing hub of machine tools since decades and being the President of Machine Tools Manufacturers Association, we are supporting the event to give a better opportunity to the industries in our region. The event is poised to become the biggest exhibition in the machine tools industry in the near future."



The Expo saw a variety of engagement platforms like networking opportunities for mutually beneficial businesses, live product demonstrations and master class & training sessions to help enhance the skill sets of attendees. A seminar on 'Trends & Technologies of Additive Manufacturing' was held alongside the expo.

The show featured leading participants from various industries including metal cutting machines & cutting tools, metal forming, presses & press brakes, laser cutting & waterjet manufacturing & allied industries, metrology & measuring equipment, industrial automation, robotics & 3D printing, general engineering & many more.

The expo witnessed participation from prominent industry players such as Samkrish Group Kitamura, Nakamura, Precihole, Brabo, Angel Cad Cam, Sanjay Tools & Adhesives, Laser Technologies, DNE Laser, Mold Mender, Mehta Cad Cam, DMPL, Nimak, ROOTS, LEONI, Monotech, Singhal Presses, Gujarat Lathe, Accurate Siddhapura, Dowel Machinery, Accusharp, Flir, SLTL, Svisoft, Sterp, Glec, Bettinelli, major companies from Rajkot and many more.

The show was supported by Machine Tools Manufacturers Association (MTMA) Rajkot and are the Lead Partner of the expo, All India Association of Industries, All India Confederation of Small and Micro Industries Associations, All India Manufacturers Association, All India Manufacturers Organisation, All India MSME Association, Capital Goods Skill Council, SME Chamber of India, Gujarat State Plastic Manufacturers Association, Nashik Industries Manufacturers Association, Ambad Industries Manufacturers Association, FICO Mega Machine Tool Cluster, Packaging Industries Association of India, Rajasthan Chamber of Commerce and Industry, Talaja

Industries Association, The National Small Industries Corporation (NSIC) and others.



TDK joins the Responsible Business Alliance

TDK Corporation, a leading electronics company based in Tokyo has recently joined the Responsible Business Alliance (RBA), headquartered in Virginia, USA, the world's largest industry coalition dedicated to corporate social responsibility in global supply chains.

As an affiliate member of the RBA, TDK fully supports the vision and mission of the RBA and continuously improve its own operations in accordance with the RBA code of conduct. TDK will also support and encourage its first-tier suppliers to do the same.

The purpose of joining the RBA is to bolster efforts for the rights, health and safety of workers in the global TDK Group and its first-tier suppliers, as well as for the environment. The official communique issued by the company stated, "We aim to fulfill our social responsibility and further enhance the credibility of the TDK Group by publicly pledging to practice the RBA Code of Conduct, the global standard, and making it the clear standard for the TDK Group."

TDK will continue to put in practice its corporate motto, 'Contribute to culture and industry through creativity', and strengthen its CSR activities with its customers, suppliers and other stakeholders to advance the development of a sustainable society and champion well-being for all people through its innovative core technologies and solutions.



Gleason integrates on-board cutter reshaping unit on its power skiving unit



In a bid to limit operator involvement, Gleason vertical Power Skiving machines for the production of soft and hardened gears up to 600 mm in workpiece diameter can now be equipped with an on-board cutter reshaping unit to greatly reduce cutter changes and help ensure

consistently high quality.

A fully integrated on-board cutter resharpener unit is now available for Gleason vertical Power Skiving machines, allowing for the completely automated resharpener of cutters used in the production of both soft and hardened gears up to 600 mm in workpiece diameter.

By automating cutter resharpener operations, Gleason Power Skiving machines require minimum operator involvement, greatly reducing the time typically required for frequent tool changes and subsequent first-part inspection cycles. Additionally, the usual cost for external tool refurbishment can be avoided.

As compared to the typical cutter resharpener process, the new on-board unit is remarkably fast and simple. The machine's axes position the cutter to the grinding wheel. The integrated cutter resharpener unit then executes the necessary grinding strokes while the cutter performs the infeed and the indexing from tooth to tooth, all performed automatically and based on the cutter geometry that exists after a certain number of gears have been cut. After the initial corrections are made based on the first gear cut, a consistent gear quality is more easily maintained throughout the complete tool life. The frequency of the resharpener cycles can be chosen depending on the gear quality required.

Tool cost-per-piece is also considerably lower as compared to external reconditioning with no tool changes, first-part-inspections and machine adjustments during a cutter's lifetime, as well as no handling and logistics costs for reconditioning cycles. With a lot less cutters in circulation, tool investment is significantly reduced.



Beckhoff unveils new compact and integrated servo drives



The new AMI812x series of integrated servo drives expands the compact drive technology portfolio up to 48 V DC from Beckhoff by extremely compact devices for distributed field installation.

The integration of servomotor, output stage and fieldbus connection in a space-saving design makes the drives ideal for automation outside of control cabinets in the motion power range up to 400 W.

As an EtherCAT slave, the AMI812x integrated servo drive can be placed directly on the machine without a control cabinet and without upstream I/O level, allowing

for the implementation of highly compact machines without control cabinets. At market introduction, the AMI812x series includes three overall lengths in the F2 flange code with standstill torques from 0.5 to 1.1 Nm. The AMI812x is optionally available with a multi-turn absolute encoder without battery backup and with a backlash-free holding brake. With an additional sealing ring, the servo drive achieves high IP 65 protection rating and is suitable for all installation positions. The STO safety function can be integrated as an option via the TwinSAFE Logic.

The fast control technology, based on vector current and PI speed control, supports highly dynamic positioning tasks. Numerous monitoring options, such as over and undervoltage, overcurrent or motor utilisation via calculation of an I²T model, offer high operational reliability. The operating state is indicated by integrated status LEDs.

Electronics and motor are supplied via the M12 power interface. The M8 bus interface for EtherCAT offers a second port for simple cascading in an EtherCAT daisy chain. In addition, the introduction of a motor version with EtherCAT P connection is planned. The I/O interface (M8) enables direct connection of two sensors or actuators in the 24 V DC signal range up to 0.5 A. The connection cables are available with straight and angled outlets. Very high torques can also be achieved with the matching planetary gear unit from the AG2250 series.



Igus' chainflex M control cables guarantees 5 million cycles at a low price

With its advanced chainflex M cable series, igus now proves that quality and low price are not mutually exclusive. After four years of research, the motion cable specialist presented the new control cables CF880/CF881 and CF890/CF891 at SPS. An up to 20 per cent thinner cable structure ensures lower bend radii. This allows the user to save installation space inside the energy chain and they are cost effective. The chainflex M series has a tested service life of five million cycles and comes with a 36 month guarantee.

A good e-chain cable at a small price! That was and still is the promise that drives the chainflex M series of cables, which igus introduced for the first time in 2013. Since then a lot has happened not only in mechanical engineering but also in cable development. Due to the increasing automation in the industry, faster and faster machines are called for. Accordingly, the development of lighter and smaller cables is required to reduce high accelerated masses. That is why igus is keen on further developing its cost-effective cable series without increasing costs. The first breakthrough came in 2015: instead of one million guaranteed cycles, the manufacturer promises a service life of over five million cycles, and all at the same price. Just in time for SPS, igus presented its next development success: "Thanks to a new

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structural design, we can produce chainflex M control cables that are up to 20 per cent thinner. Our customers benefit from this because the cables have a smaller bend radius and take up less space in the energy chain. The user can save costs in this way," explained Rainer Rössel, head of chainflex cables at igus GmbH. The new chainflex M cable series is now available as control cables with PVC (CF880/CF881) or igusPUR outer jacket (CF890/CF891) with or without shield. The cables are very suitable for short travels on simple classic machines such as stone, paper or wood processing, for example.

For more than 25 years, igus has been a specialist in the development of cables intended for use in the energy chain. The company tests its products under realistic conditions in the company's own 3,800 square metre test laboratory in Cologne - and these tests go on all the way until they fail completely. Igus has been investing in the further development and long-term testing of its established chainflex M cable series for four years. The laboratory tests have shown that the cables can easily handle five million cycles.



Bosch Power Tools appoints Nishant Sinha as Regional Business Director, India & SAARC



Bosch Power Tools India, a market leader in the power tools segment that offers a complete range of power tools for construction, woodworking, and the metalworking industry, has recently appointed Nishant Sinha as the new Regional Business Director for India & SAARC.

Sinha brings his rich business experience to lead the growth of the power tools products,

accessories, measuring tools, lawn & garden tools, and after-service businesses across multiple channels at Bosch Power Tools.

Sinha aims to develop a stronger customer-connect and focus on effective channel expansion for deeper market penetration of the power tools division. With an advanced approach, Sinha along with his team will work to broaden the reach of power tools, accessories, and measuring tools through alternate

channels, while also strengthening the digital and services network of the brand.

Nishant Sinha said, "I am happy to lead the Bosch Power Tools division in India and SAARC and look forward to fostering a collaborative work culture delivering high-performance standards to provide superior value to the customers and stakeholders. Bosch Power Tools in India and SAARC have exceptional people and an innovation-oriented work culture that has ensured its past successes as a market leader. I endeavor to channelize its full potential to propel growth and a wider outreach with customer-focused quality-driven initiatives."

Nishant is an engineer from IT Banaras Hindu University and has a post-graduate degree from IIM Calcutta. His vision for the company is to curate compelling value propositions and customized solutions satisfying customers while adding value to the organization and its customers across relevant markets.



STM unveils software tool to monitor runtime variable & customise visualisation

STMicoelectronics, a global semiconductor leader, has recently launched STM32CubeMonitor, a software tool that displays runtime variables of STM32 applications in real time, enabling developers to customise the graphical visualisation in their OS environment of choice (Windows®, Linux, or MacOS®).

STM32CubeMonitor provides an extensive set of powerful features that simplify access to valuable insights. Leveraging its graphical flow editor, users simply drag and drop items and features to build custom dashboards, and quickly add widgets such as gauges, bar graphs, plots, with no need for programming. By taking advantage of the Node-RED open community, STM32CubeMonitor provides an unlimited choice of extensions able to address a wide diversity of application types.

Native support of multi-format displays helps visualise the application behaviour on host devices in various form factors such as PCs, tablets, or mobiles.

STM32CubeMonitor also supports remote data acquisition, which enables users to monitor applications across a network and test multiple devices simultaneously.

In addition, real-time watching of variables with non-intrusive real-time write capability helps fine-tune applications that cannot be stopped, such as motor-control applications.

Two functional modes let users work in a way that best meets their needs. The design mode allows users to create and edit new monitoring user interfaces for specific applications, while the operator mode supports straightforward deployment of pre-built user interfaces to enable vivid demonstrations and field testing.

Moreover, STM32CubeMonitor adopters will be able to share their custom flows at the ST community.



IESA and C-MET holds workshop on Li-ion cell fabrication



India Energy Storage Alliance (IESA), one of the leading alliances on energy storage & e-mobility along with Centre for Materials for Electronics Technology (C-MET) conducted India's first two days training workshop for li-ion cell fabrication and battery testing in Pune. The workshop was conducted on 11 and 12 March. This unique program was designed by IESA experts to help in skill development required to kickstart NITI Aayog's National Mission for Advanced Battery Manufacturing.

IESA and CMET experts assisted the industry participants in understanding and learning the fundamentals of advanced energy storage technology trends and Li-ion cell manufacturing process via a combination of classroom and hands on lab training. The program helped the participants to understand the requirements of raw material, equipment & detailed manufacturing processes essential to set up Giga factories and advanced R&D capabilities. Presentations and lectures were given by global experts on cell manufacturing, chemistries and performance characteristics and on next generation Li-ion technologies. The workshop focused on the actual process of electrode preparation and battery fabrication.

Speaking on the workshop, Dr Bharat Kale, Director, CMET, said, "CMET is glad to be part of India Energy Storage Alliance who has a vision of making India a global hub for R&D, manufacturing and adoption of advanced energy storage and e-mobility technologies. Through Centre of Excellence of rechargeable batteries created by Ministry of Electronics and Information Technology (MeitY), New Delhi, CMET has the Li-ion fabrication facility for Cathode, Anode and for Single Cell. Currently, Indian battery manufacturers are importing single cells and making batteries of different capacities required in different verticals. We're glad that at CMET we have materials for battery fabrication. It is our responsibility to support the industry so that India can pick up Li-ion manufacturing instead of depending on other countries. India's first workshop by IESA along with

CMET is a step towards it. We thank MeitY for creating such a facility and further [Li-ion fabrication] initiative in this regard at CMET Pune."

Dr Rahul Walawalkar, President, India Energy Storage Alliance (IESA) expressed, "Li-ion battery has become preferred technology in many battery storage applications due to its relatively high energy and power density as well as fast charge discharge capabilities. The battery pack manufacturers in India are currently assembling high capacity packs with the goal to target electric vehicles and stationary storage market. Assembling of Li-ion battery packs is a dynamic industry in India and is growing at a healthy pace. At IESA, we, however, believe that it is high time for Indian industry to take up R&D and advanced cell manufacturing so that we reduce our dependence on other countries. The recent pandemic related to COVID19 has highlighted the importance of domestic manufacturing considering the risk of global supply chain disruptions. Energy storage and EVs have importance for national energy security and we should learn from the recent events and accelerate our efforts for building domestic capabilities."

Dr Satyajit Phadke, Manager- R&D, Customized Energy Solutions (India), highlighted, "So far such training was mainly available in developed countries such as Germany and the US. This workshop is our effort to help bring down the costs of such training capabilities and help industry get better appreciation of the R&D facilities available within India. Our R&D initiative is industry-focused and we're helping clients to solve the challenges that they are facing while deploying storage solutions for any application be it Stationary, EV or other."

India has recently gained stature as one of the fastest growing markets for advanced energy storage technology supporting the exponential growth expected in its Electric Vehicle market over the next 5years. With IESA estimating the India market to account for over 300GWh (2019-25) considering ESS & EV opportunities, around \$5 billion investments are expected to be attracted supporting 50+GWh capacities for multiple li-ion battery GIGA factories.



Effective pneumatic clamping solutions from Elessa + Ganter

Pneumatic toggle clamps fix workpieces in place, position mechanisms and hold molds together. In this way, they not only simplify handling, they also enable fully automated processes. Elessa + Ganter offers a number of flexible solutions for this purpose.

Toggle clamps of the series GN 860 and GN 862 feature an important unique property: After passing through a dead point during closing, the retaining force is maintained even after loss of pressure at the cylinder. The low-wear design as well as the option to detect the position of the clamping element by means of magnetic sensors offer additional dependability. The retaining force

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itself is transmitted to the clamping point by a clamping arm or piston rod. A hybrid toggle clamp employs a hand lever to combine manual closing with pneumatic opening – an important feature for clamping applications requiring individual clamping but simultaneous, fast and automated releasing.

The compact power clamps of series GN 864 and higher are also designed to remain in the clamped position after a pressure loss. The sophisticated kinematics ensures that the setting action is fast while the actual clamping movement takes place slowly, making pneumatic end stop dampening unnecessary. The available types differ in terms of their clamping motions and are each sold in four sizes with astonishingly high retaining forces of up to 13,300 newtons. These clamps feature high stability, long lifespan and low compressed air consumption. The offering is rounded out by various mounting options and a large range of accessories from adjustment plates and blanks for individual jaw shapes to directly attachable proximity switches.

The swing clamps of the series GN 875 / GN 876 perform two motions: The clamping arm first rotates by 90 degrees from its resting position, then travels in a linear motion down onto the workpiece in the actual clamping stroke. Thanks to the rotary movement, either to the left or the right, the workpiece remains accessible from above, allowing it to be positioned and removed directly. The freely selectable mounting brackets as well as the various clamping arm designs allow the clamps to be adapted to the specific situation. There is even a completely customisable adapter flange. The swivel clamps are available in block design with T-groove mounts for end stop sensors or in a compact design with male thread which can be easily mounted in a height-adjustable fashion using a threaded adapter flange.



Suhner's new ROTOMax 2.0 ensures high performance and high tractive power

In a bid to offer a remedy and to address the issue of

time-consuming and tiring processes and needs to grind, roughen, mill, brush and polish which are carried with a range of different machines, SUHNER, has successfully solved this problem. With ROTOMax 2.0, the drive and tool are separated from each other. Therefore, a lot of power is available for delicate work that doesn't cause fatigue.

Suhner believes that there's always room for improvement, even in their tried-and-tested options. As specialists for abrasive surfaces, they have introduced ROTOMax 2.0. As the name implies, ROTOMax is a machine with a big output and high tractive power. The foundation for this is a high-performance 2.0 kW motor, driven by connection to an alternating current network. The ROTOMax 2.0 is a professional machine that was made for tough, prolonged work and has a long service life. The machine works surprisingly quietly. It is equipped with smooth starting, an active brake to prevent long rundown times and optional hand and foot controls.

Manual units that can be changed at the speed of light convert the ROTOMax 2.0 into an angle grinder, straight grinder, angle polisher, belt sander or tube polisher and make it suitable for grinding, cutting, roughing, rust removal, brushing, polishing and far more. There are almost no limits to what it can do. Preferred applications for this tool include heavy work in foundries, boiler construction and steelworks, mechanical workshops, and in companies that process stainless steel.



Even in the case of its many design variants, ROTOMax meets a wide variety of requirements. It is available with a base, as a space-saving suspended model or with a special trolley that offers mobility in the workshop.

SUHNER supplies a broad range of abrasives, adapted to the machines, and offers on-site user consultations as a free-of-charge service. We are happy to provide you with further information upon request.

Handpieces that can be changed in a flash make the ROTOMax 2.0 an efficient all-rounder that gets the best results at high power without putting the user under excessive stress.

The new machine also helps to toggle through speeds in intervals of 100, going from 500 rpm to 13,000 rpm, using the electronic button. This means that the right speed for every type of abrasive is always available. The electronics ensure constant speeds in any application. This means perfect results in the form of evenly clean grinding patterns.

Event	Date & Venue	Contact
SMEXPO 2020	April 17-19, 2020 Bangalore International Exhibition Centre – BIEC, Bengaluru	A & A Media, Bengaluru Tel: 080-41632554, 41632555
DIE & MOULD INDIA INTERNATIONAL EXHIBITION 2020	April 22-25, 2020 Bombay Exhibition Center – BEC, Mumbai	Tagma Tool & Gauge Manufacturers Associations, Mumbai Tel: 022-28526876/ 28508976
ROOF INIDA 2020	Apr 23-25, 2020 Bangalore International Exhibition Centre (BIEC), Bengaluru	International Trade and Exhibitions India Pvt Ltd, Chennai Tel: 044-30744444
DAHEJ INDUSTRIAL EXPO 2020	April 23-25, 2020, GIDC Bharuch	Ads Pages Pvt Ltd, Vadodara Tel: 0265-2356789/3057466
WINDERGY INDIA 2020	April 28-30, 2020, India Expo Centre and Mart Greater Noida	Indian Wind Turbine Manufacturers Association, Alwarpet, Chennai Tel: 044-24620227, 42100139, 43015773
POWERGEN INDIA 2020	May 5-7, 2020, IECC, Pragati Maidan, New Delhi	iTEN Media Pvt Ltd, New Delhi Tel: 011-43013474 Email: network@itenmedia.in
WORLD OF MANUFACTURING 2020	May 6-8, 2020 Bangalore International Exhibition Centre – BIEC, Bengaluru	PDA Trade Fairs Pvt Ltd, Bangalore Tel: 080-42505000, 25542258 Email: expo@pdatradefairs.com
SOLAR INDIA EXPO 2020	May 20-22, 2020 Pragati Maidan, New Delhi	Exhibitions India Group, New Delhi Tel: 011-42795014, 42795193, 42795000, 42795168
RIDE ASIA 2020	May 29-31, 2020, Pragati Maidan New Delhi	Udan Media & Communication Pvt Ltd, Ludhiana Mobile: 095920-48026, 09815222211
METAL WORKING EXPO 2020	June 1-4, 2020, Pragati Maidan, New Delhi	Toredo Fairs India Pvt Ltd, Bangalore Mobile: 09845363225, 09986436557 Email: info@toredefairsindia.com
PLASTASIA 2020	June 19-22, 2020 Bangalore International Exhibition Centre – BIEC, Bengaluru	Reed Triune Exhibitions Pvt Ltd, Bengaluru Tel: 080-43307474/22352770 Mobile: 09845089641 Email: info@reedtriunee Exhibitions.com
28TH CONVERGENCE INDIA 2020	July 07-09, 2020, Pragati Maidan, New Delhi	Exhibitions India Group, Delhi Tel: 011-42795014, 42795193, 42795000, 42795168
ISTFE - INDIA SURFACE TREATMENT & FINISHING EXPO 2020	August 26-28, 2020, Pragati Maidan , New Delhi	ACE Exhibitions, Delhi Tel: 011-40204421/49538601
HAND TOOLS & FASTENER EXPO 2020	August 27-29, 2020 Bombay Exhibition Center – BEC, Mumbai	International Trade and Exhibitions India Pvt Ltd, Chennai Tel: 044-30744444 Email: info@itei.in
INDEXPO HYDERABAD 2020	September 04-06, 2020, HITEX Exhibition Centre - Hitex International Convention and Exhibition Center , Hyderabad	Indore Infoline Pvt Ltd, Indore Tel: 0731-2703000, 4093000

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AUTOMATION EXPO 2020 - 15TH INTERNATIONAL EXHIBITION & CONFERENCE	Sept 9-12, 2020 Hall nos.1 & 2 Bombay Convention & Exhibition Center, Goregaon East, Mumbai.	IED Communications Ltd, Mumbai Tel: 022-22073370, 22079567 Email: arokiaswamy@iedcommunications.com, jyothi@iedcommunications.com
PMTS - PUNE MACHINE TOOLS SHOW 2020	September 10-12, 2020, Autocluster Exhibition Centre, Pune	K and D Communication Limited, Ahmedabad Tel: 079-40305602
PU TECH 2020	Septmeber 17-19, 2020 India Expo Centre, Greater Noida	Indian Polyurethane Association, New Delhi Tel: 011-41556163
GLASSPRO INDIA 2020	September 24-26, 2020 Aerocity Exhibition Ground, Mumbai	Messe Dusseldorf India Pvt Ltd, Mumbai Tel: 022-48550062, 48550057, 48550056
AUTO SERVE 2020	November 06-08, 2020, Chennai Trade Centre, Chennai	Confederation of Indian Industry, Guindy, Chennai Tel: 044-42444564, 42444555, 42444524, 42444520
INDIA ESSEN WELDING & CUTTING 2020	November 23-25, Bombay Exhibition Center – BEC, Mumbai	Messe Dusseldorf India Pvt Ltd. Mumbai, Tel: 022-48550062, 48550057, 48550056, 48550000
RAJKOT MACHINE TOOLS SHOW 2020	December 1-4, 2020 NSIC Technical Services Centre - NSIC Ground, Rajkot	K and D Communication Limited, Ahmedabad Tel: 079-40305602
INTERNATIONAL		
CERAMICS CHINA 2020	May 26-29, 2020 China Import and Export Complex - Canton Fair Complex Guangzhou, China	CCPIT Building Materials Sub-Council, Beijing Tel: +86 10 5781 1692
PRINTPACK + SIGN SINGAPORE	July 15-17, 2020, Sands Expo & Convention Centre, Singapore	BizLink Exhibition Services Pte Ltd, Singapore Tel: +65 68485938 Fax: +65 68484182 Email: oea@bizlink.com.sg
ECPAKLOG - E-COMMERCE PACKAGING & SUPPLY CHAIN EXPO 2020	July 15-17, 2020, Shanghai New International Expo Centre - SNIIEC, Shanghai	ChinaPak Exhibition Services Co., Ltd, Shanghai, China Tel: 86-21-60673756
B-EXPO - BAOAN INDUSTRY DEVELOPMENT EXPO 2020	September 23-25, 2020 Shenzhen World Exhibition & Convention Center, Shenzhen, China	Shenzhen Gravitational Waves Technology Culture Co, Shenzhen, Guangdong, China Tel: 518048 86-755-83581250, 83581259, 83581353
WIRE CHINA 2020	September 23-26, 2020 Shanghai New International Expo Center – SNIIEC, Shanghai, China	Messe Dusseldorf Shanghai Co Ltd, Shanghai, China Tel: 86-21-61698300
IMT - INTERNATIONAL MACHINE TOOLS EXHIBITION 2020	October 05-09, 2020, Brno Exhibition Centre , Brno, Czech Republic	BVV Veletrhy BrnoVA staviA tA 405/1, Brno, Jihomoravsky, Czech Republic 420-541-152818/152936
IPF - INTERNATIONAL PLASTIC FAIR 2020	October 06-10, 2020, Makuhari Messe Chiba, Japan	International Plastic Fair Association, Tokyo, Japan Tel: 104-0061 81-3-35421487

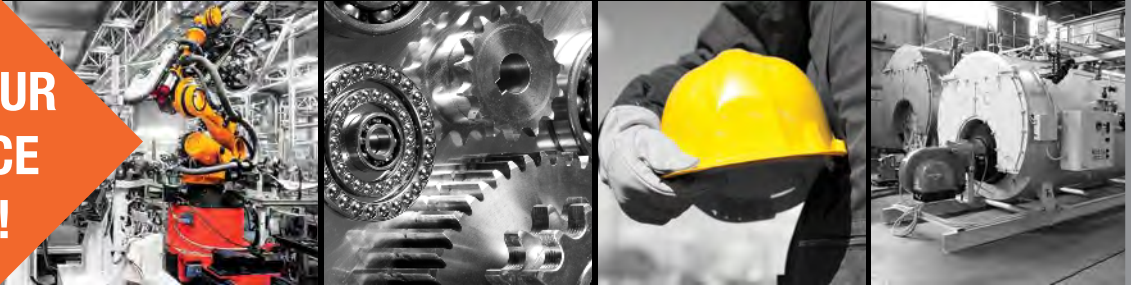
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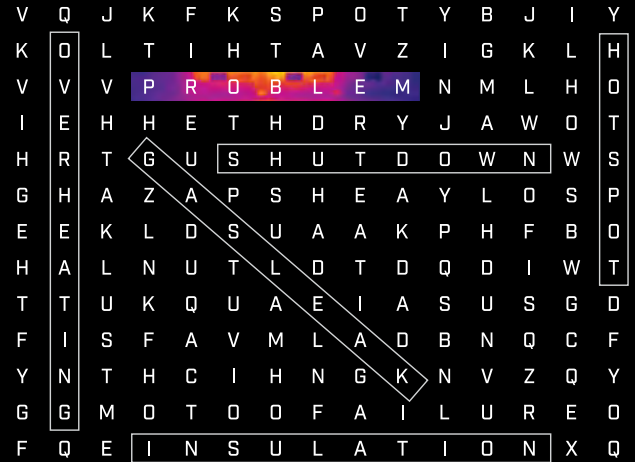
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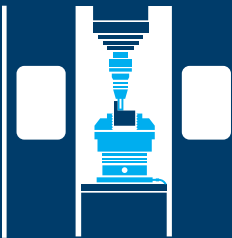
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