

Columbia FEED DRAWER

Columbia Machine's Informational Publication

2017

COLUMBIA/OKURA
Celebrates 20
year milestone
p. 19

TABICEL

pg. 11

ESI

pg. 15

**AGGREGATE
INDUSTRIES**

pg. 17

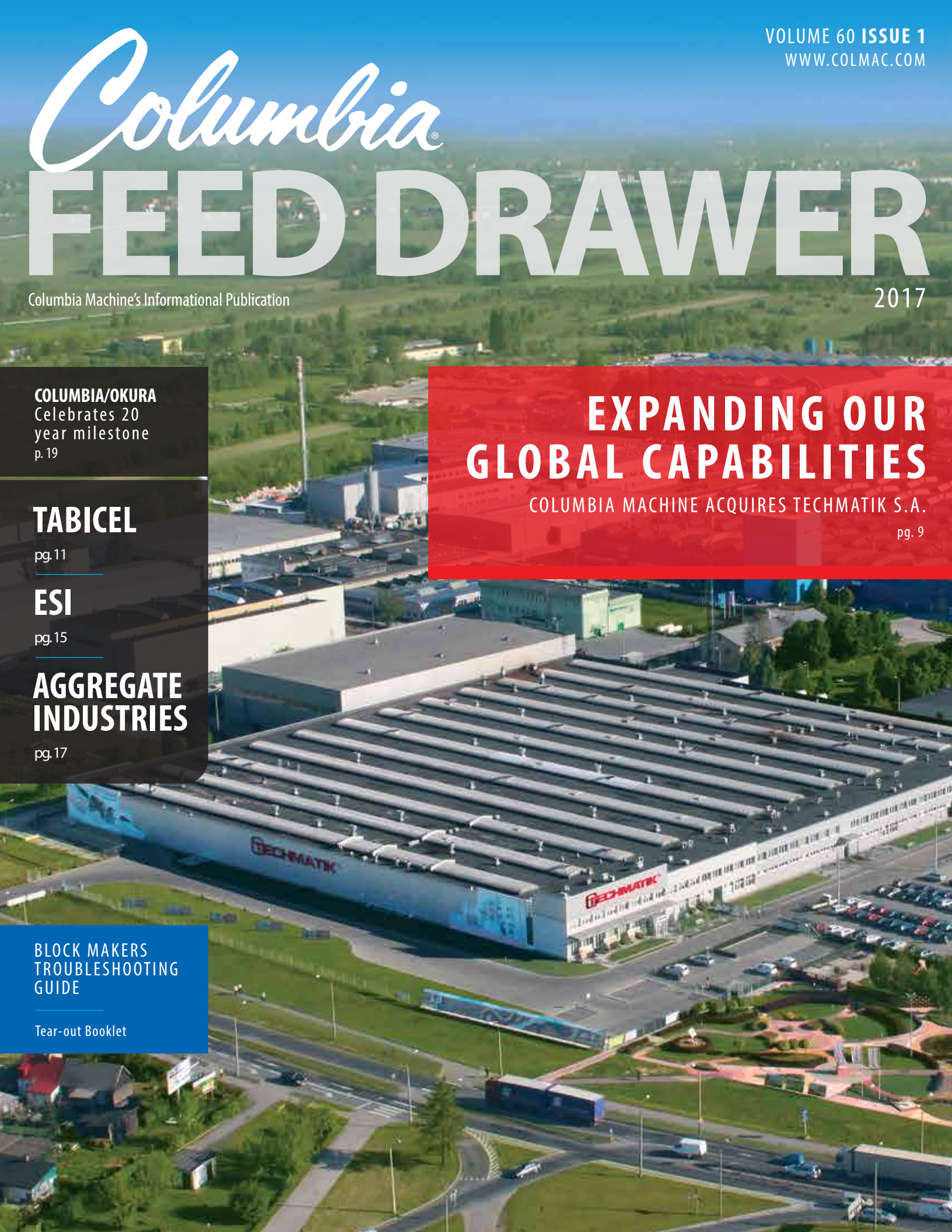
EXPANDING OUR GLOBAL CAPABILITIES

COLUMBIA MACHINE ACQUIRES TECHMATIK S.A.

pg. 9

**BLOCK MAKERS
TROUBLESHOOTING
GUIDE**

Tear-out Booklet



VISION

We will be the preferred supplier of engineered product solutions in the targeted markets we serve. We will provide exceptional customer value through strategic marketing, innovative product development and unparalleled customer service.

MISSION

We are committed to recognized leadership in serving targeted segments of the Concrete Products, Material Handling and Manufacturing Services Industries.

We will “always” see our business through “the eyes of our customers,” and provide them with superior solutions through innovation, quality, reliability and continuous improvement.

We will leverage the expertise, product knowledge and technology of our business units to better serve our current and future customers.

Our core competencies will be Marketing, Product Development, Manufacturing Technology and Customer Service.

We value safety, integrity, trust, fairness, professionalism and teamwork in relationships with our customers, employees, business partners, suppliers and shareholders.

We respect our legacy and reputation within our communities and global markets.

We strongly encourage personal growth and the involvement of all employees in achieving Company goals.

We will secure our future through strategic investments and profitable growth.

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EVERYTHING
WE DO
ALWAYS
FROM THE EYES
OF OUR
CUSTOMERS

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Some of the equipment pictured in this publication may have guarding removed for demonstration purposes.

Columbia Machine, Inc. recommends that equipment never be operated without all guarding in place and in good working order.

ON THE COVER:
Columbia Machine
Acquires Techmatik S.A.

Let's Talk

A MESSAGE FROM THE PRESIDENT

In 1937, Fred Neth Sr. founded Columbia Machine, Inc. He had a vision of being a leader in our industry by taking care of customers, taking care of employees, supplying innovative equipment and having a worldwide presence. As we enter our 80th anniversary year, we remain committed to his strategic vision.

Taking care of customers and employees first starts with safety. We continue to improve our own practices within our shop and on the job sites we visit. We worked with a number of customers this year to upgrade their machines to current safety standards. Our machines our safer and we work with our customers to ensure they stay that way.

Taking care of customers means we continually broaden our Service Department with strong new members. All of them have block operation experience in the industry coupled with strong technical skills. We continue to run service people in a customer care mode for visits and quick tune-ups with service people located around the US, Mexico, Eastern Europe, the UK, Australia, New Zealand, Poland and India. Our depots are running strong in Orlando, FL, Ontario, CA, Mississauga, Canada, Brisbane, Australia and Mount Manganui, New Zealand.

Supplying innovative machines means understanding customers and knowing what features provide value. We stress to all our employees that our first job is to listen. We want to make sure we know what you need to be profitable. We used this insight to make remarkable advances in our product line. Our flagship CPM+ block machine has proven to be a winner in the industry. The CPM+ switches from one product to the next in under 10 minutes. That includes running the last pallet out, mold change out, height adjustment and ready to run the next pallet. As more of our customers are running longer hours closer to their capacity, a 10 minute product to product mold change out has a real world payback. Not only does it provide extra operating hours each day, the impact on inventory of producing small runs to order has changed their business.

In addition to the block machine, Columbia brought out a new all electric rack loader / unloader, an all-electric clamp cuber and major advancements to our PTS finger car. In bagging, we released a new series of valve packers, automatic bag placer and coupled that to give a systems offering with our sister company Columbia/Okura's industry leading palletizers. On controls, we brought out an intuitive, graphics batching controller, the Batchmatic G2. One recent customer sat at the controls for the first time and put in all his recipes without instruction or manuals.

A worldwide presence means growth. In early 2016, Columbia Machine purchased Techmatik in Radom, Poland. Techmatik is a high end provider of large board concrete products plant equipment, batching equipment and molds. The plant is 300,000 sq. ft. of world class manufacturing. Techmatik, along with the ongoing Columbia operation, CME, in Vadodara, India, gives Columbia Machine a worldwide footprint to service our customers.

In our 80th year of family ownership and singular focus on our industry, our customers, our employees and our technology, Columbia Machine is growing along with many of you. We look forward to the changes in the decades ahead.

Richard Armstrong
President, Concrete Products Division

FEED DRAWER
Volume 60 Issue 1

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GET CONNECTED WITH *Columbia*[®]

WHERE WE ARE



OUR BLOGS

Concrete Products
columbiamachine.com/blog

Palletizing
palletizing.com/blog

Columbia/Okura
columbiaokura.com/blog



INSTAGRAM

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YOUTUBE

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Columbia/Okura
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Be sure to keep an eye on all of our social media outlets for regular updates on company culture, division specific articles and other entries.

IN MEMORY OF



Stuart Sheldon

It is with deep sorrow that we announce the passing of a member of our Columbia family. On January 19th, 2017 our own Stuart Sheldon unexpectedly passed away.

Stuart worked with us at Columbia for over 27 years, and many of our customers had the chance to collaborate with him as well. For those who knew Stuart, you will remember him for his dedication to service, his calm demeanor and timely humor. He will also live on as an inspiration to us all as a devoted father, husband, and son.

Please join us in keeping his family in our thoughts and prayers.



John Romundson

October 1st, 1932 – November 28th, 2016

On Monday, November 28th, 2016, Columbia Machine and the concrete products industry lost one of its own. John Romundson passed away at the age of 84.

John served the concrete industry as a salesman for Columbia Machine for nearly 50 years. During that time, he grew to be respected in the markets and with the people he served. He will be remembered for his passionate service to others.

John is survived by his wife Ramona and his extended family of children, grandchildren and great grandchildren.

Join us in sharing our condolences and our prayers to John's family.



FACES OF COLUMBIA



COLUMBIA MACHINE, INC ACQUIRES TECHMATIK S.A.



In February 2016, Columbia Machine announced its acquisition of Techmatik S.A.. Headquartered in Radom, Poland, Techmatik is a recognized leader in the design and manufacturing of molds, big board production machines, handling equipment, cubing solutions, curing solutions and batching & mixing solutions for the production of paving stones, hardscapes and other dry cast concrete products. Columbia Machine, Inc. strives to strengthen its worldwide customer support and manufacturing capabilities. The addition of Techmatik will increase facilities to three continents with almost 1,000 team members worldwide focused on world-class engineered solutions.

Columbia Machine CEO, Rick Goode, is very pleased with the new partnership. "Techmatik has been our strategic partner for almost 10 years. Our companies have collaborated on mold and equipment solutions for a number of customers around the world," said Goode. "Techmatik's innovative product designs, best-in-class quality and customer-centric focus has aligned very well with our customers and employees."

Founder and former President of Techmatik S.A., Dariusz Kupidura, is also looking forward to joining Columbia's family of companies. "Our companies work very well together. Columbia's worldwide sales and service channels should help Techmatik continue to grow. We are also looking forward to helping Columbia support their existing customers in the European market with local parts, mold and service capabilities."

Current Techmatik S.A. President, Mariusz Gil, is enthusiastic about the merging teams. "Techmatik and Columbia have been working together for many years and the acquisition opens up new possibilities. We are stronger together, offering our customers an extended and very complex product portfolio, professional service and worldwide distribution network. The future is very exciting and challenging. We want to be the leading company in the paving stones industry, both in molds and machines. Using Columbia experiences, transferring the know-how and sharing the best practices between both companies, Techmatik is able to realize those ambitious plans. It is a pleasure to be a part of the Techmatik and Columbia family".

Both Columbia Machine and Techmatik operate with similar family-owned business values and cultures. Techmatik S.A. Director Mark Andrews stated, "It has been a pleasure working with both companies to take this partnership to the next level. Both companies' customers and employees will benefit from the combined strength in product offerings and world-wide customer support capabilities."

Following the acquisition, Columbia Machine and Techmatik spent most of 2016 integrating CP product lines, molds and parts, CME product lines, Techmatik product lines, physical locations, and channels of distribution into one seamless organization. The subsequent steps will focus on sales channel coverage for all Columbia and Techmatik product lines in order to strengthen Columbia's worldwide customer support service capabilities.



CUSTOMER PROFILE

TABICEL GROUP

“CUSTOMER SERVICE THAT STRIVES TO EXCEED EXPECTATIONS, WITH OUTSTANDING CUSTOMER CARE WHILE EXPANDING THEIR COMMERCIAL NETWORK”

With over 30 years of experience, Tabicel is a lead producer of concrete products in central Mexico and a national supplier of construction materials.

Their philosophy is, “Customer service that strives to exceed expectations, with outstanding customer care while expanding their commercial network”.

Because of their commitment to quality, Tabicel has an internal laboratory certified by the Mexican Entity of Accreditation (“Entidad Mexicana de Acreditación”) and a statistical process control, allowing for early correction of quality deviations.

With the use of leading edge technology, a commercial network, physical and human resources, Tabicel establishes itself as a company with competitive advantages capable of satisfying the market and achieving large scale projects.

Thanks to its adherence to quality standards and use of its own transportation equipment, Tabicel can provide novel alternatives in shape, color and design, always with the quality that distinguishes the company.

Tabicel provides products for housing development, private builders, industrial and commercial constructions. They are also a supplier of pavers for projects including port yards and streets, resulting in a varied clientele.

A great part of the Lázaro Cárdena port in Michoacán’s expansion was done with pavers supplied by Tabicel. Their broad range of products includes:

- Standard blocks and split blocks of different sizes
- Slump blocks
- Pavers of different shapes

In 2005, Tabicel was looking to differentiate themselves from their competition by making a wide range of different types of products and exploring the alternatives offered to them by Columbia, since they had previously worked with a 1224 Splitter and a Columbia MBS.

In 2006, the first Model 1600 Machine was installed with an AR-800 PACO pallet handling system (now part of Columbia). As time passed, they familiarized themselves with the machine; first by manufacturing blocks, then slump blocks and pavers.

In 2015, Tabicel decided to expand its installed capacity. With the joined efforts of Tabicel and Columbia, they accomplished this project which solidified the construction and installation of an efficient and functional plant. This new plant is now working to satisfy the growing demand in the states of San Luis Potosí, Querétaro and Guanajuato.

In 2016, both production lines took off, each with a Model 1600 Machine and an AutoRack Model AR804 for the handling of pallets and racks for both machines with their corresponding cubing lines.

The batching of aggregates is handled by volume with six bins, each with its own metering conveyor supplying two mixers. The batching of the aggregates, cement and mixers dosage is controlled with an MBS.

The product curing process is done with fresh air in interconnected rooms with a single access door, a practice that has worked very well for Tabicel. No matter how the weather is outside, the product is cured without the need to consume energy.



MOLD ON THE MOVE

NEWS FROM THE COLUMBIA MOLD DEPARTMENT

BIG BOARD MOLD REPAIR SERVICES

Columbia Machine now offers complete mold repair services at Vancouver, Washington facility.

No longer do you need to truck your big board mold across the country to receive the tune-up it needs to complete your production run or to finish out the service life of your mold. Instead, Columbia Machine is nearby, open for business, and qualified to perform repairs and extend the life of all large-pallet molds.

For nearly 80 years, Columbia has been a leading manufacturer of quality molds for the concrete products industry. More recently Columbia has partnered with and acquired Techmatik, S.A. in Poland in order to supply premium big board molds to producers throughout North America. It was our satisfied customers who also demanded a qualified regional facility to provide reliable mold repair services in the western United States. Columbia Machine has the expert staff and the facilities needed to meet their demand.

At Columbia, your molds are fully evaluated for common mold wear characteristics such as pallet wear, feed drawer wear, and "elephant's feet". The entire mold is inspected for stress fractures, straightness and flatness, and the scope of repairs is communicated to you before work begins. Repairs are performed by skilled craftsmen who know the difference between critical and cosmetic mold wear and will competently perform the repairs needed to get your mold back into production.

There is no need to wait. The Columbia Machine Mold Repair Center is open for business in Vancouver, Washington; it is ideally located to serve western region producers looking for improved cost and delivery for big board mold repair.



INNOVATION IN THE FIELD

Mold Engineering has enhanced its mobility with the purchase of deep depth 3D scanning technology. This allows our mold engineers the ability to capture critical design features at customer sites anywhere in the world. Recently, our team was dispatched to a Tiger TG6 plant for a new mold that would utilize their core puller for the first time. After a quick analysis, they were able to scan the die support locations, pallet table, and feed drawer in relationship to the machine. This allowed them to precisely design, manufacture, and ship the mold and core puller components well within the customer required delivery date! This is one of several avenues we have utilized 3D scanning for fast, accurate, and efficient mold designs. Call the experts at Columbia so we can help with your next project.

CUSTOMER PROFILE



MATERIALS SYSTEMS DIVISION UPDATE // ESI

Espinoza Stone, Incorporated is a building products company based in central Texas that has recently scaled up operations by purchasing a brand new, fully automated, bag packing operation from Columbia Machine.

With humble beginnings, Jesse Espinoza went into business in 1996, purchasing his first limestone quarry, establishing Espinoza Stone. Twenty years later, ESI has eight locations with over 200 employees and a strategic supply network that reaches across Texas and surrounding areas.

After achieving great success in the limestone supply business, Espinoza wanted to grow his business into new segments of the building products industry. In 2010, under the name Capitol Products, Espinoza purchased a complete Model 1600 concrete products production line

from Columbia Machine and built a beautiful facility off Interstate 35 in Jarrell, Texas to serve Austin and surrounding markets. This enabled ESI to offer a wide variety of concrete block and brick to its existing and new customers.

As business continued to thrive, Espinoza wanted to offer customers new product lines including bagged cement products. He began his foray into bagged products as a distributor but found that demand was quickly outpacing supply, so in 2015 he started seriously looking for a supplier of bagging equipment.

After looking at several competitive bids for bagging equipment, the team at ESI kept returning to the quality product exemplified by the equipment in their block plant. During their research they discovered that Columbia Machine had recently expanded its bagging product line

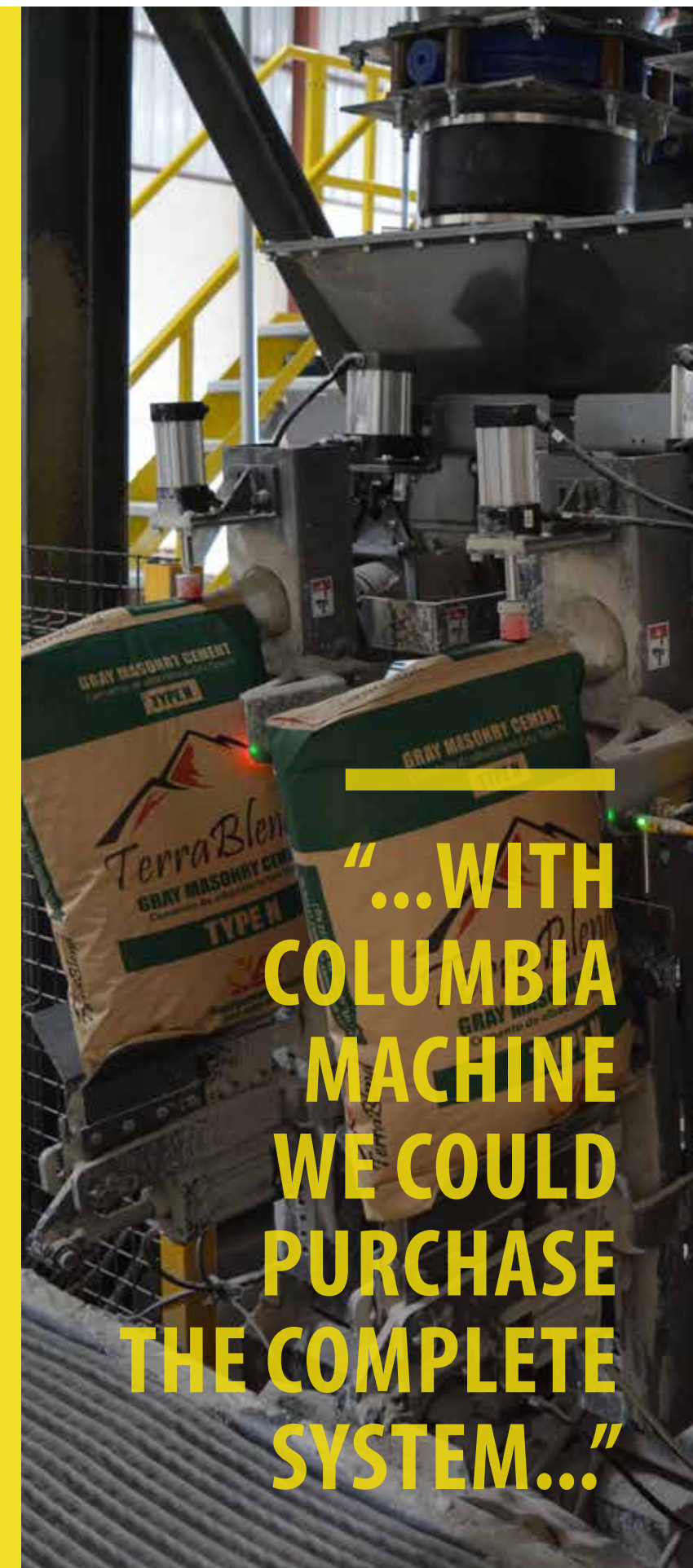
with new technologies and complete bag line solutions. The closer they looked, the more the Columbia system made sense. Columbia offered newer, safer, more advanced, and easier to operate equipment than anything else available on the market. Manager of special projects, Juan Diosdado, commented on the decision to go with Columbia, "Other equipment suppliers would only supply the bag packers and cubing, whereas with Columbia Machine we could purchase the complete system and only have to deal with one company."

In November of 2015, Espinoza and his team made the decision to go with Columbia Machine's fully automated bagging system. Located at the Jarrell site, the fully integrated system includes: four storage silos (three for cement and one for lime), a 45 cubic foot Marion batch mixer, two 401 Impeller Packers, one robotic automatic bag placing system, MBS batching controls, weigh-check conveyor, bag flattening conveyor, bag cleaning conveyor, and a Columbia Okura A700 bag palletizing robot. With this new system, they are able to bag cement products using the safest, most consistent method available.

By deciding to go with robotics, ESI has proven it is on the leading edge of safety and innovation. They have removed employees from a dangerous, dusty environment, which has been under intense scrutiny by OSHA in recent years.

In addition, ESI's new bag plant is able to operate reliably at 700 bags per hour, bagging and palletizing 70 & 75 pound bags of cement, types N and S, and a variety of colored cements as well. The plant is currently run by three employees: one to monitor the blending and bagging, one to monitor the palletizing and a plant foreman to schedule and oversee production, quality, and maintenance.

ESI is preparing to launch their first official product run in the next couple of weeks, and it could not have come at a better time as the outlook for demand of bagged products grows stronger each day.



**"...WITH
COLUMBIA
MACHINE
WE COULD
PURCHASE
THE COMPLETE
SYSTEM..."**

AGGREGATE INDUSTRIES

AMAZING PERFORMANCE FROM THEIR 27 YEAR OLD COLUMBIA MODEL 60 MACHINE.

Aggregate Industries Ltd. is a leading player in the construction industry in the United Kingdom. They are committed to creating a better-built environment through sustainable approaches.

Their Callow Rock Quarry is located near the scenic village of Cheddar in the southwest of England, famous for the naming of the cheese and also boasts having the largest gorge in the United Kingdom. Located in the Callow Rock Quarry is one of the highest output block machines in the UK, if not the world.

Their deep pallet Model 60 machine was installed back in 1989 and was initially running 18, four inch (4") / (100mm) blocks per cycle and running 18 hours per day.

In 2004, the plant went to the three shift system, running 24 hours a day, five days a week and occasionally five and a half days a week. One of the best years of production produced over nine hundred and eighty thousand (980,000) cycles, which equates to approximately 17,640,000 four inch (4") blocks. The machine now runs a wide range of lightweight, Dense and Hollow blocks, serving the southwest of England and also the London Markets.

It has been estimated that this machine has processed over six (6,000,000) million tons of aggregate over its lifetime. This is the equivalent of approximately sixty eight years (68) years of production if ran at a normal eight hour shift.

Aggregate Industries Ltd. have no doubt that Columbia Machine, Inc. is the best machine supplier in the market and have made the decision to replace their existing machine with the latest machine technology from Columbia Machine, Inc. Their new CPM+ 60 will be installed in the first quarter of 2017.

We wish Aggregate Industries Ltd. and their team every success and we thank them for their loyalty. We look forward to working with them in the future.



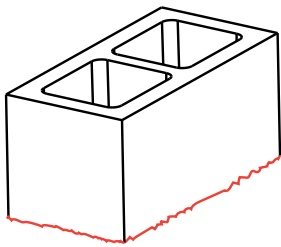
AWARD PRESENTED BY DAVID DE GARIS IN 2003 FOR BEING THE BIGGEST PRODUCER



BLOCK MAKERS TROUBLESHOOTING GUIDE

A quick reference guide to help solve some
of the most common issues in block making.

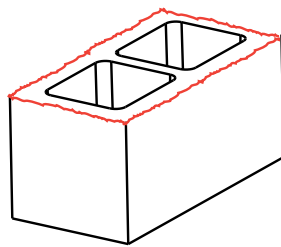
DEFECT: FEATHER EDGE ON BOTTOM



- PROBABLE CAUSE:**
- » Pallet table high pressure too low
 - » Pallet table not adjusted properly
 - » Hydraulic supply pressure too low
 - » Defective stripper check valve

- REMEDY:**
- » Increase high air pressure
 - » Set pallet table correctly
 - » Check pump output pressure and accumulator charge pressure
 - » Refer to hydraulic system troubleshooting

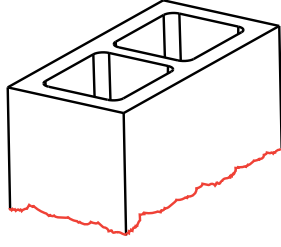
DEFECT: FEATHER EDGE ON TOP



- PROBABLE CAUSE:**
- » Mold shoes improperly aligned
 - » Scrape off plate improperly adjusted

- REMEDY:**
- » Check shoe alignment with the mold for proper clearance
 - » Adjust for proper mold clearance

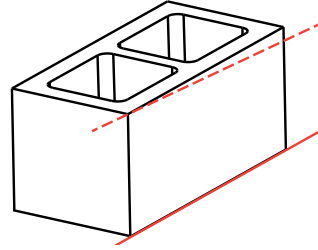
DEFECT: LOOSE, FLAKY BOTTOM



- PROBABLE CAUSE:**
- » Pallet table high pressure too low
 - » Pallet table not adjusted properly
 - » Block release time too short
 - » Block mix too dry

- REMEDY:**
- » Increase high air pressure
 - » Adjust pallet table properly
 - » Increase release time
 - » Check for proper mix composition and moisture

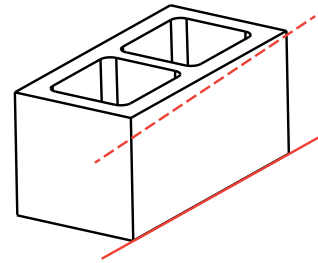
DEFECT: BLOCK LOW IN BACK



- PROBABLE CAUSE:**
- » Feed drawer dwell too short
 - » Pallet table pressure settings incorrect
 - » Pallet table not set correctly
 - » Concrete residue restricting mold movement

- REMEDY:**
- » Increase feed drawer dwell time
 - » Correct table air setting
 - » Set pallet table correctly
 - » Clean residue from around mold

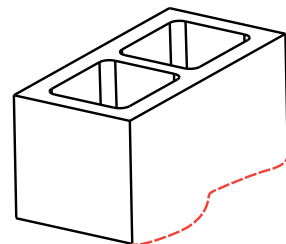
DEFECT: LOW FRONT CORNERS



- PROBABLE CAUSE:**
- » Inadequate mold fill
 - » Vibrator delay too short
 - » Agitator delay too short
 - » Residue buildup in feed drawer
 - » Residue restricting mold movement

- REMEDY:**
- » Increase feed drawer dwell
 - » Increase vibrator delay time
 - » Increase agitator delay time
 - » Clean residue from front of feed drawer
 - » Clean residue from around mold

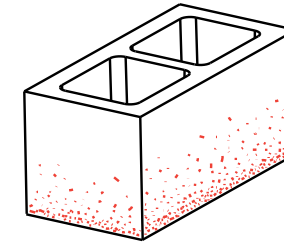
DEFECT: BLOCK BULGING



- PROBABLE CAUSE:**
- » Compression beam air too high
 - » Feed drawer dwell too long
 - » Scrape off plate too high
 - » Blocks stripped too early

- REMEDY:**
- » Decrease compression beam air setting
 - » Decrease feed drawer dwell time
 - » Lower strike-off plate
 - » Increase release time

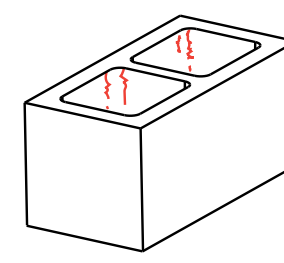
DEFECT: UNEVEN TEXTURES



- PROBABLE CAUSE:**
- » Compression beam air too high
 - » Feed drawer dwell too short
 - » Pallet table adjustment
 - » Material segregate in hopper
 - » Strike-off plate mis-adjusted

- REMEDY:**
- » Decrease head air pressure
 - » Adjust dwell time
 - » Adjust pallet table and air pressure
 - » Refer to hydraulic system troubleshooting
 - » Adjust strike-off plate

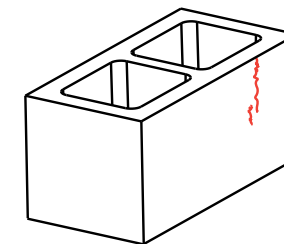
DEFECT: WEB CRACKS



- PROBABLE CAUSE:**
- » Pallet table air low / air too high
 - » Worn mold liners/ core cans
 - » Loose core cans
 - » Compression beam air too high
 - » Feed drawer dwell too short
 - » Pallet table not adjusted correctly

- REMEDY:**
- » Adjust setting as required
 - » Change out worn mold parts
 - » Tighten bolts
 - » Lower compression beam regulated air
 - » Increase feed drawer dwell time
 - » Adjust table correctly

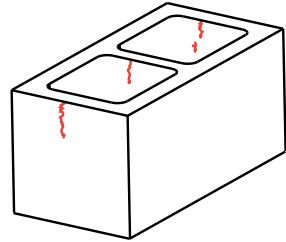
DEFECT: WALL CRACKS



- PROBABLE CAUSE:**
- » Pallet feeder start-stop too abrupt
 - » Take-away conveyor improperly aligned with pallet table
 - » Feed drawer dwell too short
 - » Weak or dry block mix
 - » Loose core cans

- REMEDY:**
- » Adjust rotary valve cam
 - » Align de-elevator with pallet table
 - » Increase feed drawer dwell time
 - » Check mix design and moisture
 - » Tighten bolts

DEFECT: CORE BAR CRACKS



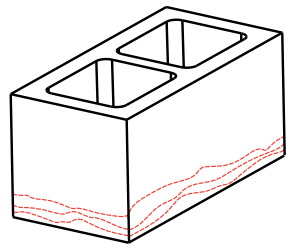
PROBABLE CAUSE:

- » Incorrect filling of mold
- » Weak material mix
- » Pallet table not adjusted
- » Mold core bars are loose
- » Material build up under core bars

REMEDY:

- » Check feed drawer dwell
- » Check for proper mix design check proper moisture
- » Reset pallet table
- » Check and tighten core bars
- » Clean mold and agitator

DEFECT: LOOSELY FILLED BOTTOM



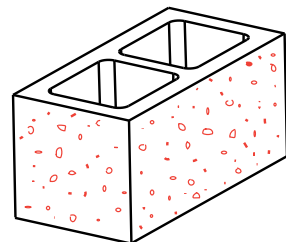
PROBABLE CAUSE:

- » Pallet table not adjusted properly
- » Irregular vibration
- » Pallet table low pressure too low
- » Residue build-up around mold
- » Strike-off plate improperly adjusted

REMEDY:

- » Adjust pallet table
- » Check vibrators for defective bearings
- » Increase low table pressure
- » Clean residue around mold
- » Adjust for proper mold clearance

DEFECT: POROUS BLOCKS



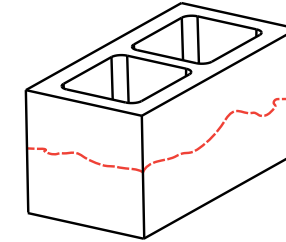
PROBABLE CAUSE:

- » Improper block mix design
- » Material segregated in hopper
- » Strike-off plate improperly adjusted
- » Loose mold, core can, vibrator or shaker shaft

REMEDY:

- » Check mix design and correct
- » Eliminate material segregation
- » Adjust strike-off for proper mold clearance
- » Tighten all bolts for items listed

DEFECT: IRREGULAR LINES



PROBABLE CAUSE:

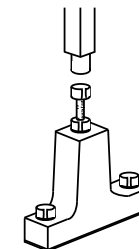
- » Loose mold or shaker shaft
- » Concrete build up restricting mold movement
- » Worn or loose mold components
- » Vibration incorrect

REMEDY:

- » Check mounting bolts for tightness
- » Clean out build up
- » Replace worn mold parts
- » Check vibrator and bearings

*Note: Be sure height stop lights are not blinking

DEFECT: BLOCK HEIGHT INCORRECT OR ERRATIC



PROBABLE CAUSE:

- » Electronic height stops incorrectly adjusted
- » Insulator(s) (3) defective
- » Release delay incorrect

REMEDY:

- » Loosen locknuts (2), adjust contact bolts (1) as required
- » Replace insulators
- » Adjust RELEASE setting

Columbia[®]

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COLUMBIA/OKURA

CELEBRATING 20 YEARS



This year Columbia/Okura LLC celebrated its 20th anniversary. Columbia/Okura is a leading North American provider of custom engineered robotic palletizing solutions.

Through years of hard work, management vision and the strategic commitment of the parent companies, Columbia/Okura began to thrive with a focus on bag palletizing during its early years. This experience and exposure provided the confidence to look beyond bag palletizing applications, ultimately allowing the company to become robotic palletizing experts, regardless of packaging type.

"Being easy to do business with and taking care of our customers have been key attributes to the company's success and longevity" said Brian Hutton, President of Columbia/Okura. "Columbia/Okura's customer service has been recognized for excellence with its 24 hour technical support hotline, factory certified field service technicians, state of the art personnel training center, and our ongoing commitment to keeping our customer's lines running."

"While the past 20 years have been a tremendous experience, I'm expecting bigger challenges and more significant growth opportunities for the next 20 years! Columbia/Okura will continue its commitment to its core values of Safety, Flexibility, and Performance.

Columbia/Okura has succeeded, in large part, based on the dedication and loyalty of its employees, suppliers and customers, who together have made this company what it is today. A formal ceremony honoring our partners, employees, and city representatives was held on the company's campus on June 24th.

**"BEING EASY TO
DO BUSINESS
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THE COMPANY'S
SUCCESS AND
LONGEVITY"**



THE NEW FL6200

REVOLUTIONARY TECHNOLOGY FOR HIGH SPEED, FLOOR LEVEL PALLETIZING



Columbia Machine advances floor level palletizing technology to high-speed capabilities, unavailable in any floor level designs until now. The NEW FL6200 combines high-speed technology with a contemporary, modular and clean design palletizer that is extremely user-friendly. As with all Columbia palletizers, the FL6200 is built with the highest priority on safety, flexibility and performance to ensure your palletizer maximizes production every day.

Columbia is renowned for its industry-leading safety and guarding system that provides “next level protection”. On the FL6200, the standard package includes Category 3, Performance Level D safety components and incorporates fully integrated guarding, full height light curtains, automatic hoist pins, infeed tunnel and interlocked load building area access doors. This safety package keeps employees safe while still being operationally “friendly” and meeting production demands by providing convenient and safe access when needed.

The FL6200 combines unmatched flexibility with the precision movements of a robot, the familiar simplicity of a conventional palletizer and enhanced performance through the integration of servo technology. Unparalleled in the industry, the FL6200 utilizes Columbia’s easy to operate Product Manager HMI, servo-actuated layer transfer and load building area hoists, servo actuated bi-parting apron plates and modular construction that allows for multiple layout configurations to fit your site constraints. Users can effortlessly create and modify layer patterns, view and export production reports, adjust component speeds and timer settings, and also access manuals and schematics, all through the HMI. Graphic pattern screens can be created at the HMI to aid recovery of a machine fault and provide graphic representation of diagnostics, improving OEE. The low profile row and layer pushers allow for handling challenging product types, i.e. shallow trays (wrapped or unwrapped), shrink pad, film only bundles and more.

The modular construction of the FL6200 increases flexibility by allowing features to be incorporated initially or added as a modification in the future. The addition of an integrated stretch wrapper helps when load stability or when space constraints are a challenge. A dual infeed can be added to meet increased line speeds. These features on the FL6200 create the ultimate palletizer that is guaranteed to meet both current and future production requirements.

The FL6200 utilizes servo technology to maximize performance and will consistently palletize in excess of 100 cases per minute (pattern dependent). There are many standard features that make this palletizer the easiest and most reliable palletizer to operate in the industry, including the simple yet robust overhead row and layer pusher components. The enhanced alarm indicators and system diagnostics, Smart Squeeze technology, and machine I/O status screens quickly communicate to the operator the status of the machine to aid in rapid machine recovery and ensure maximum uptime.

MANUFACTURING SERVICES DIVISION

Columbia Manufacturing Services Division (CMSD) is in its ninth year, continuing to succeed in our quest to be the supplier of choice for local and regional OEMs that are seeking additional manufacturing capability and/or capacity. We have developed strong partnerships over the years with key accounts that provide us with high volumes of repetitive parts, frequently shipped to them from our inventory, through our Vendor Managed Inventory program. The VMI program allows Columbia some flexibility in production, while providing our customers with excellent product availability support. We are on track for our highest sales and factory utilization for CMSD in 2016.

Besides growth from within the key partnerships of CMSD, we are also developing opportunities with new customers. We are frequently introduced to new and exciting opportunities from a diverse collection of industrial business segments. These efforts allow us to secure work from business segments never before served. We are a manufacturing partner of a national overhead crane manufacturer. We are manufacturing tubular frames used in the automation and tooling industry. We are manufacturing parts and components for customers in the metal working industry, and we manufacture machined weldments for a major supplier in the Oil and Gas Industry. Columbia Machine has enjoyed this additional diversification in our business mix.

We enjoy leveraging our manufacturing assets and areas of competency to the benefit of others in our region. We value all of our customers and appreciate your consideration of Columbia Machine as a solution provider, and as your partner in manufacturing excellence.



COLUMBIA MACHINE LAUNCHES NEW STEEL SERVICE CENTER

On October 3rd, Columbia launched a new Steel Service Center in a large re-purposed area in the factory, with several new, high technology pieces of equipment that will increase capacity, improve productivity, reduce lead time and part travel distance, and greatly improve team member communication. Over the last several decades Columbia has perfected core competencies around the use of oxy-fuel, high definition plasma, laser burning and forming of raw plate steel through the acquisition of technology and process experimentation. These experiments resulted in them identifying optimum process parameters across different steel types and thicknesses, the incorporation of Total Productive Maintenance (TPM) on the equipment, and the use of process control to streamline and control these critical production processes. With the introduction of the new Steel Service Center, they are now able to bring all of these technologies and hi-end technicians together in one efficient and streamlined location.

Per Bryan Goodman, VP Operations and President of Columbia's Contract Manufacturing Services Division, "We ultimately found ourselves with three different burning technologies in three different buildings and other raw material "gateway" locations throughout our factory". Streamlining and consolidating their burn technology was problematic as various manufacturing cells and departments would be impacted by a reconfiguration, but Columbia began planning to do just that over two years ago. Not only has the plant been reconfigured, but additional burning and forming assets have been acquired to create a world-class Steel Service Center. Columbia now has two lasers (a 3,000 watt and a 6,000 watt), a combination multi-head oxy-fuel and high definition plasma table for thicker steels (up to 6" thick), and their second Kinetic/CNC high definition plasma cutter and 50 taper machining center combination. Columbia has also acquired their second 350 ton hydraulic press brake. These assets have been arranged in linear fashion through one dedicated building in our factory to improve the flow of work from raw material to burned and formed shapes.

Columbia is also moving fabrication stations to the same structure. "With our high mix, low volume work flow, we really focus on the strategies deployed by world class manufacturers to improve operational methods to support a model of one piece flow where "set-up" and "hand-offs" are minimal. We do this by investing in technologically advanced machinery and equipment, cellular manufacturing, linear flow of work, and continual training and education of our workforce. We also do it by listening to the experts who are coordinating and performing the work as they see firsthand opportunities to improve productivity, quality and reduce costs.

"The vision for our new Steel Service Center is that raw material can be received, burned, sawed, formed, and welded into the wide variety of piece parts that become a part of weldments and assemblies with significant reductions in part movement/travel, reduced inventories and improved teamwork and communication centered around the new technology and process improvement", says Goodman. With the new Steel Service Center, raw material will be delivered to one area vs. four, and a majority of small and mid-size weldments will travel less than 300' to complete processing vs. the over 3000' it use to require.

TRADESHOW UPDATE

WHERE WE WERE IN 2016



ASOGRAS
COLOMBIA



BIG 5 / MEC
DUBAI



CONCRETE SHOW
BRAZIL



UK CONCRETE SHOW
ENGLAND



ICON-XCHANGE
ORLANDO



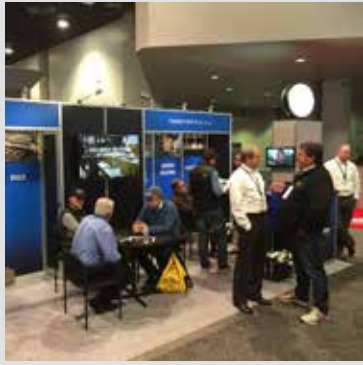
KYIVBUILD
KIEV



MIACON
MIAMI



THE PRECAST SHOW
NASHVILLE



WORLD OF CONCRETE
LAS VEGAS



BAUMA 2016 RECAP

In April, Columbia Machine exhibited at the 2016 Bauma Trade Fair located in Munich, Germany. With over 3,400 exhibitors from 58 countries and over 580,000 visitors from 200 countries, Bauma is the largest construction equipment and building materials machinery trade show in the world.

The fair provided Columbia Machine a great opportunity to present its CPM+ concrete products machine. The in-booth equipment demonstration showcased the machine's new capabilities including its completely hands-off / automatic mold change. The booth also promoted our extensive product solution and mold offerings, focused on customer product samples and helped announce Columbia Machine's recent acquisition of Polish company Techmatik S.A.

This year's Bauma was a huge success, and we would like to thank everyone that made it possible. Thank you to all of the visitors that stopped by our booth to say hi and check out what Columbia Machine has to offer. Thank you to all of the customers who supplied their beautiful product to help showcase our machinery capabilities, and a special thank you to all of our employees whose hard work and dedication helped to make this year's Bauma the success it was.

We are already looking forward to seeing everyone again at Bauma 2019.



The fair provided Columbia Machine a great opportunity to present its new CPM+ concrete product machine.

COMPANY
EVENTS
2 0 1 7



PICNIC



BRING YOUR CHILD
TO WORK DAY



SAFETY
BBQ



MANUFACTURING
DAY BREAKFAST



Boost Your Profit

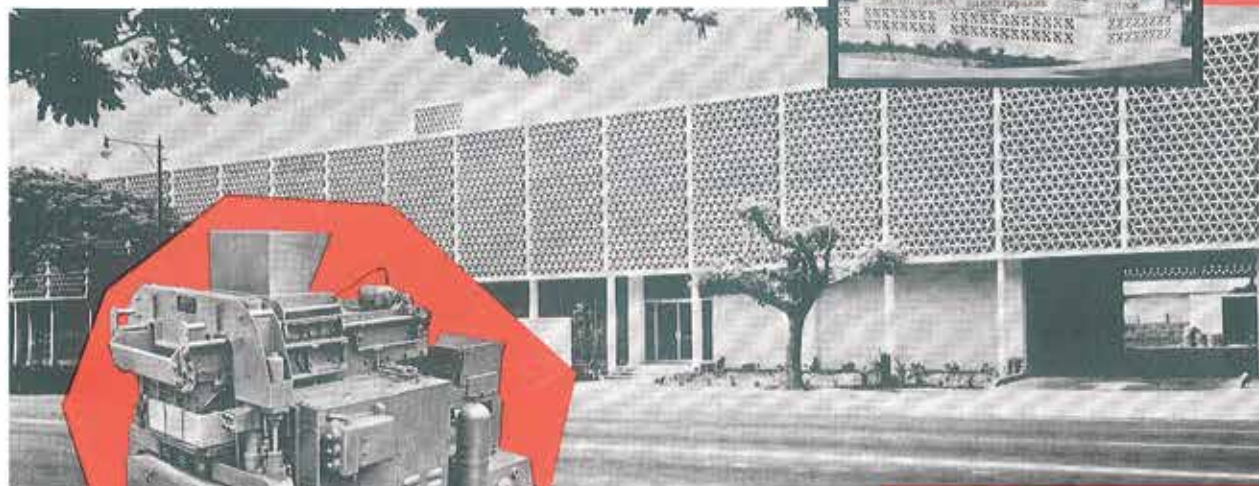
Columbia Machine advertisement, printed in the 1970's.
"Business is booming in ornamentals!"

BOOST YOUR PROFIT

WITH *Columbia*

ORNAMENTAL BLOCK


Business is booming in ornamentals! More and more architects, designers and builders are utilizing the economy . . . the tremendous versatility offered by screen block construction. There's great potential profit for you in this fast-growing field.



COLUMBIA SUPER 12

A Columbia Super 12 is ideal equipment for ornamental block production. It will make up to 12-inch high screen block. Mold changes may be made in as little as 20 minutes! Reliable hydraulic operation—remote electronic controls—rugged, maintenance-free construction—high speed production—hundreds of molds available—these are some of the plus benefits you'll get with a Columbia Super 12.

Your questions are cordially invited. Contact your Columbia Representative or phone, wire or write the home office.



Columbia MACHINE

Home Office: 107 Grand Blvd. • Vancouver, Washington
Phone: BUtler 9-8891
Branches: Mattoon, Ill. • Burbank, Cal. • Orlando, Fla.



PRESS RELEASE

COLUMBIA MACHINE ENGINEERING (I) PVT. LTD.

February 20, 2017 – Rick Goode, CEO of Columbia Machine, Inc., announced today that Columbia Machine Engineering (I) Pvt. Ltd. has appointed Ramesh Babbar as President. Mr. Babbar comes to CME with extensive manufacturing experience, most recently working as Plant Head for Kobelco Cranes Pvt. Ltd. (a Kobe Steel Company). In addition to his extensive manufacturing background, Ramesh has degrees in Mechanical Engineering and Business Management, as well as experience and training with Lean, ISO, Six SIGMA, TQM and Project Management.

"We are happy to have Ramesh join CME. He brings a strong level of experience and proven leadership," said Michelle Blancaflor, Director of CME. "Ramesh will complement our team of leaders that have made CME a market leader."

"Ramesh's experience leading world-class manufacturing facilities and his focus on Quality and Lean will fit our growth plans very well," said Goode. "I look forward to working with Ramesh and the CME Team as we expand our business in India and the region. CME is an important part of Columbia's world-wide growth strategy."

Ramesh will be based at CME's Vadodara, India Operations.

ABOUT COLUMBIA MACHINE

Established in 1937, Columbia Machine is a third generation, privately held, world-wide leader in the design, manufacturing and support of factory automation equipment for a variety of industries, with customers in over 100 countries around the world. Primary business units include: Batching and Mixing Solutions, Concrete Products Equipment Solutions, Bagging Equipment Solutions, Production Equipment Molds, Mechanical Palletizing Machines, Robotic Palletizing Solutions, Conveyor System Solutions, Pallet Load Transfer Solutions and Manufacturing Services. The Columbia Group of companies has manufacturing facilities on three continents, with almost 1,000 team members world-wide, focused on world-class engineered solutions.

ABOUT CME

Established in 2006, Columbia Machine Engineering (I) Pvt. Ltd. specializes in the manufacture and supply of Concrete Product Solutions and Palletizing Solutions to a variety of industries in India and several countries throughout Asia and Africa. CME is a wholly owned subsidiary of Columbia Machine.



Ramesh Babbar
President CME

COLUMBIA CUSTOMER CARE

Your Aftermarket Support.



PARTS | MOLDS | SERVICE

At Columbia Machine, we're not only committed to providing you with the very best concrete products machines, but also the upgrading of technology to keep your machines running for years and years.

CONVERSIONS & PARTS:

From new controls to upgrades in technology, Columbia has conversions and upgrades for all of your Columbia equipment.

- It's been your workhorse for years.
- Contact your regional representative or call us today.
- We'll show you how to keep your workhorse up to date with our latest technology.

In addition to our equipment upgrades, there is no exception to the fit and quality of genuine Columbia parts. With our large inventories and strategically located depots, Columbia parts are just a phone call away.

- Get the most uptime and highest quality parts from Columbia

MOLDS:

Columbia Machine is a world leader in the design and manufacturing of concrete products molds for Columbia and Besser production machines. With state of the art CNC machines, in-house hardening processes, 3D CAD systems, and prototyping / scanning, we've got you covered. Columbia's experienced staff of sales and engineers are here to assist you with the continuing changes in products and demands as well as your replacement molds needs. With new mold technology from dual actuating heads to advancements in concrete paving slabs, Columbia can support all of your mold needs.

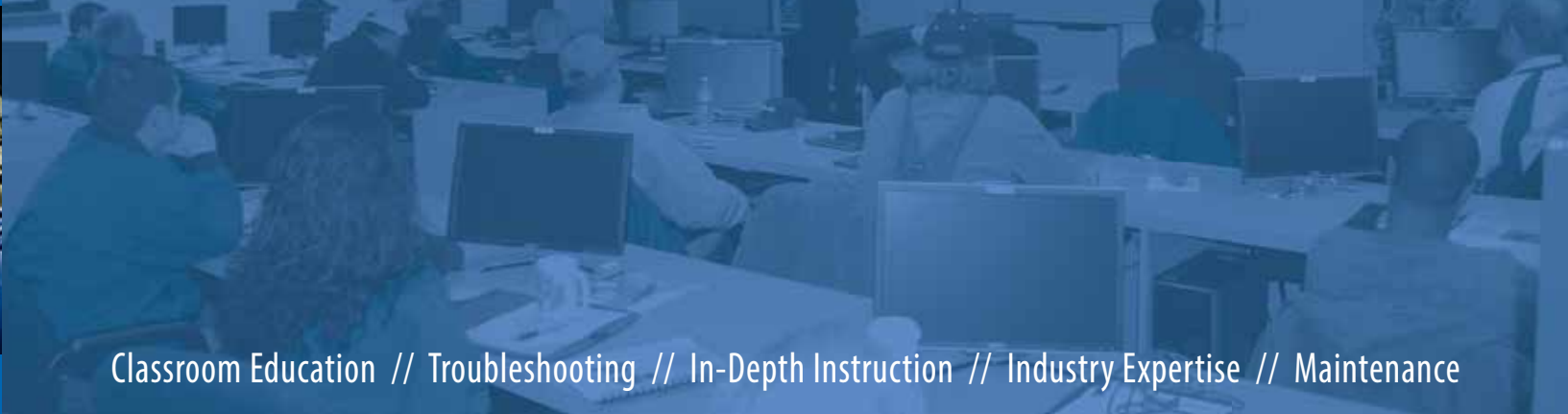
Call us today for all of your aftermarket needs.



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www.columbiemachine.com

Columbia IN-HOUSE TECHNICAL TRAINING



Classroom Education // Troubleshooting // In-Depth Instruction // Industry Expertise // Maintenance

Visit our headquarters,
meet our staff, see our operations.



2017

Classes Offered



Basic Electrical/Allen Bradley Controls

Basic Electrical/Allen Bradley Controls Class: During the five (5) day course, the first two day hands-on course will help you understand electrical symbols, read electrical schematics, be able to use a test meter properly, quickly recognize areas at fault, and help you reduce your down time. The next three day course covers I/O components, input, output, analog, remote I/O, and flex I/O modules. Work hands-on using a computer, Allen Bradley software and a PLC workstation. Learn how to connect to the PLC, load/save program and troubleshoot.

Basic Mechanical 22/16/1600

Basic Mechanical 22/16/1600 Class: This five (5) day course covers instruction on general hydraulics, pneumatics, and preventative maintenance. Students will get training on making machine adjustments, hydraulic and pneumatic settings, and more in-depth instruction on hydraulic circuitry and valve technologies. This one week class is a must for all machine operators, plant maintenance personnel, and plant production managers.

Columbia Machine, Inc.

We manufacture machines for every aspect of concrete products production. Ruggedly built, precisely engineered, adaptable to any environment, our machines work as hard as you do to create valuable, profit-driven products year after year. It's how we've set the standard for over 75 years.

Contact

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www.columbiemachine.com

REGISTER NOW FOR 2017 CLASSES

Basic Electrical & AB - \$995	Basic Mechanical 22 / 16 / 1600 - \$995
Feb. 6 – 10, 2017	Feb. 13 & 17, 2017
Oct. 9 – 13, 2017	Oct. 16 – 20, 2017

TO REGISTER, SEND COMPLETED FORM

By Mail Columbia Machine, Inc.
P.O. Box 8950
Vancouver, WA 98668-8950 Attn: Scott Hutton

By Fax +1 360 906 5728 Attn: Scott Hutton

By Email scohut@colmac.com & donmar@colmac.com

*General Registration Information

Airline tickets should specify Portland International Airport (PDX) as your destination. Airfare, hotel, and transportation (between the airport and hotel) is at the registrant’s expense and is not included in the class cost. The hotel will provide a shuttle service between the hotel and the classes at Columbia Machine headquarters each day. Shuttle departs at 7:30am from the hotel lobby each morning of the scheduled class.

*Hotel Accomodations
Contact Information

Homewood Suites by Hilton
701 SE Columbia Shores Blvd.
Vancouver, WA 98661
Phone: (360) 750-1100
Fax: (360) 750-4899

.....► Airfare, hotel, and transportation (between the airport and hotel) is at the registrant’s expense and is not included in the class cost. ◀.....

Applicant Information

Name: Job Title:

Address:

City: State/Province: Postal Code: Country:

Telephone: Fax:

Email Address:

Company Information

Company Name:

Contact Name:

Address:

City: State/Province: Postal Code: Country:

Telephone: Fax:

Company Email Address:

Payment Information

Method of Payment	Check	Visa	Mastercard	Discover
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Company Name: Contact Name:

Card Number: Expiration Date:

Name on Card: Signature:

Terms, Cancellations, Deadlines, Travel Plans:

Registration deadline is 30 days before first day of class. Any class may be cancelled if student enrollment is below minimum of six (6) students. If class is cancelled, a notification will be sent three (3) weeks prior to class start along with a full refund. If you must cancel, please contact CP Service at (360) 694-1501, a refund will only be issued through the Thursday prior to the beginning of the class. All cancellations will be subject to a \$100 administrative fee. It is advised to not purchase a non-refundable or non-transferable ticket, as classes may be cancelled or rescheduled. Columbia Machine is not responsible for any airfare charges incurred as a result of a class cancellation.

See us at the
trade show in 2017

THE UK CONCRETE SHOW
Birmingham, UK | 15 - 16 February, 2017

THE PRECAST SHOW
Cleveland, OH | 2 - 4 March, 2017

CONEXPO - CON/AGG
Las Vegas, NV | 7 - 11 March, 2017

MIAMI CONSTRUCTION SHOW
Miami, FL | 18 - 20 May, 2017

CONCRETE SHOW SOUTH AMERICA
São Paulo, Brazil | 23 - 25 August, 2017

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WWW.COLMAC.COM

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WWW.PALLETIZING.COM

WWW.COLUMBIAOKURA.COM

WWW.LOADTRANSFER.NET

WWW.COLMFG.COM

WWW.COLMAC.IN

WWW.TECHMATIK.PL



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