

Columbia

FEED DRAWER

Volume 59 Issue 1

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Columbia Machine's Informational Publication

2016

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PAVER

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TIPS



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INTRODUCING

CPM+

NEXT GENERATION
Concrete Products Machine

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AUTOMATIC MOLD CHANGE SYSTEM

▲ Safely change molds in under four minutes with the new CPM+



Everything we do, always from the eyes of our customers.

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, businesspartners, 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.

Columbia

FEED DRAWER

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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:

The CPM+ Concrete Products Production Machine.

A Message from the President

As always, we appreciate our close relationship with our customers. We discuss what we can do to make you more competitive. You tell us where the economy continues to expand after the deep recession and where the economy has stalled. Many of you are seeing positive growth these past few years and Columbia Machine has grown as well. The good news is that 2016 looks to continue this forward and positive momentum.

Columbia's mission continues to focus on providing our industry with leading technology and service while continuing our support of the associations that propel us as an industry. Based on the market demands you face, we tailor our product development to provide you with the tools to be successful. Many of your markets are looking for an ever increasing number of different products. More products mean more mold changes per week, shorter runs of products, and for many of you, the addition of sophisticated color control.

To provide our customers the ability to thrive in this environment, Columbia reworked our flagship block machine with a new CPM+. The CPM+ allows for ten minute mold changes while keeping the industry leading Columbia Vibration Technology. Quick mold changes mean more production time per week and the ability to handle shorter product runs, decreasing your slow moving inventory. The hands off mold change means safer conditions for your operators. Columbia is also working with many of you on your batching system with innovative ways of incorporating multiple color control within the confines of your existing plant.

As part of the trend toward increasing diversification, many of our customers are looking to enter the bag market or improving their existing bagging lines. Columbia provides industry leading bagging system solutions with newly designed packers and robotic bag placing. The robot is an option that provides safer, hands-off bag placing. By providing the equipment and controls, including Columbia/Okura robotic bag palletizers, Columbia is able to provide end to end system responsibility for bag plants.

As always, safety continues to be a top concern. We continue to improve the processes within our own shop, the processes for our technicians, as well as design safer machines and provide safety upgrades to all Columbia equipment already in the field.

Internationally, Columbia maintains a worldwide presence for support, parts, molds and service. Regional depots for parts, molds and service technicians are located in Orlando, FL; Ontario, CA; Mississauga, Canada; Vadodara, India; Sydney, Australia and Auckland, New Zealand. In addition, we keep service technicians located around the United States, Mexico, Eastern Europe and the UK. These localized services will continue to increase in efficiency and availability over the next several years.

Columbia Machine increased our contributions this year to the ICPI Paver Society as well as maintained our contributions to NCMA to support these two valuable national associations. Columbia also provides support for dozens of regional associations. Columbia continues to be active in many of these societies in a number of committee assignments. In Latin America, Columbia runs a biennial conference of the largest producers to compare notes and find ways to improve.

What can you expect in 2016? We'll introduce additional new products in 2016 to add to the array of innovations that we introduced in 2015. We'll continue to increase our service support with additional technicians, focus on safer machines, and also expand our support to the industry as a whole. We have more exciting news coming up in 2016, and we look forward to hearing from you all about how we can best support you in the years to come. Thank you for your business and your continued feedback to Columbia.



Richard Armstrong
President, Concrete Products Division

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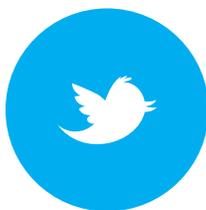
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Be sure to keep an eye on all of our social media outlets for regular updates on company culture, division specific articles and other entries.

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Faces of Columbia





CUSTOMER PROFILE



PHOENIX PAVER

Phoenix Paver was established in 2005. Increasing demand for high quality pavers in the Phoenix Metropolitan area caught the attention of owners Jay Donkersloot and Bart Klopping.

With Jay's business acumen and Bart's industry talent, a successful partnership was born. In 2005 they purchased the property and plant from Jensen Patio Brick/Natural Stone, located just south of the Salt River in central Phoenix, Arizona.

That same year they assembled an all-star team to bring the vision to life. Rupp Consulting was hired to manage plant development. David Williams was drafted for his extensive experience in operations making pavers, and Carl Huffman Jr. was appointed to head up the sales division.

At the time, the plant had an old Flemming Eagle, a Columbia UL26 Pallet Handling System, and a Columbia Model 2 Cuber. With a desire to create innovative high-quality pavers, they purchased a new Columbia Model 16 Concrete Products Machine, Turmac Batching with a planetary mixer, Columbia Spectrumatic Color Blending System, and Columbia MBS Batching Controls. They refurbished the existing pallet handling system and the cuber, and then in 2006 set to work carving out a market niche using the small 18-1/2" x 26" pallet size to their advantage.

Despite the challenge of competing with other big board machines located in the general area, Phoenix Paver has defied expectations.

According to Operations Manager David Williams, whose experience ranges from big board machines to small pallet machines, "Our color blends are consistent on every single pallet from top to bottom. So, when a contractor is looking at a small job of 200 square feet, the resulting blends layout in a finished installation consistently. Whereas often times with products made on a big board machine, larger, unnecessary quantities must be purchased to get an even distribution of random patterns."

"The reasons we decided to go with Columbia originally was familiarity. The equipment is easy to work on, maintenance costs are low, and we loved the heated head for making a tight textured paver," Williams said. "Other advantages of the small pallet machine have been lower operating costs, good parts availability from Columbia, less downtime and better height control. In my experience running big board machines, the biggest issue was consistent height control across the production pallet. With Columbia's CVT vibration, the ability to maintain accurate height tolerance is unmatched in the industry," said Williams.

When asked about the challenge of output on a small pallet versus a large board, Williams said, "We are able to make 25% of a layer per cycle and cycle time is two for every one cycle on a big board machine. We make 50% of a layer in the same amount of time, but with all things considered it has proven to be a comparative advantage."

In the beginning, Phoenix Paver offered three sizes of pavers and two colors. Today they offer 24 sizes and 4 colors and continue to grow with the market. Integral to their success has been their signature color blends, achieved by using the Columbia Spectrumatic Color Blending System and MBS Batching Controls.

In 2014, realizing the success of his endeavor into the masonry industry, Mr. Donkersloot sought to expand again. With a solid team in place, he decided to select Columbia Machine as the equipment supplier for plant number two.

On February 9, 2015, Phoenix Paver's new paver plant thundered to life. Due to its resounding success, the decision was made to replicate Plant One, built in 2005. The purpose was multi-functional: increase production capacity, while standardizing the equipment, molds, processes, and training. On day one, chosen employees moved into a new version of their old plant and were able to transition seamlessly.

This new plant consists of an 1125 liter Planetary Mixer with 4 discharge doors, Spectrumatic Color Blending and MBS Batching Controls, which allows for the storage and creation for up to 40 product recipes. With this system, Phoenix Paver creates their beautiful signature blends such as Native, Tierra Norte, and Territorial. The quality and richness of the sharply defined colors replicate the surrounding natural landscape with reliable consistency.

At last count, this plant was operating with four employees on single, 10-hour shifts, 5 days per week, producing between 5,100 - 5,400 cycles of product per shift. On the last two paver molds, they were able to achieve wear life of 196,000 cycles and 207,000 cycles, respectively.

When asked about the future of Phoenix Paver, David said, "We are currently at around 60% capacity and this number continues to grow every day. When we max out capacity, we plan to continue expanding." Phoenix Paver is the recipient of multiple architectural design awards, and will be the host of the 2016 NCMA Virtual Tour for Columbia Machine.

Phoenix Paver guarantees the highest level of quality products and service to its customers, which is ultimately why they chose Columbia Machine as an equipment supplier.



GRUPO INDUSTRIAL CANAL

Grupo Industrial Canal based in Panama started their block and paver business in 2008 with one 1600-UL37 complete plant. Through hard work and an excellent business direction, they are now a major player in one of the most economically active Central American countries.

As of today they operate 2 Model 1600-UL37 plants, one Model 16HF-UL26 plant, and just started up the operation of their newest investment, a Columbia CPM50-PTSII plant that will increase their market share and leadership to an even higher position. On the most recent visit to their facilities by Ricardo Birkner and Raymundo Pastrana, GIC reported excellent product quality and low production cost.

GIC is a company with very clear goals and the drive to achieve them. Their maintenance policy is aimed to obtain superb production throughput and equipment reliability every day. Plant personal training in all aspects is one of GIC main goals. For that purpose, their plant personnel have attended all of the different levels of technical schools Columbia has offered in Latin America, making them top-level producers.

It was in 2008 when Grupo Cochez, the GIC parent company, considered investing in the production of concrete masonry units for their chain of construction materials stores. Several equipment vendors were then evaluated, and after receiving details on production cost, return of investment and a thorough revision on Columbia support and equipment benefits, a decision was made. Their first Model 1600 plant soon proved that they made the right decision.

Their economic analysis in the planning stages became a reality with the achievement of the expected profits. Their next investment decision was straightforward, a second Columbia Model 1600 plant located on their large property in Panama City and a Model 16HF plant for the growing city of Chitre. Both plants were all Columbia, from the aggregate hoppers to the cuber. They worked very closely with Columbia technical and sales personnel in every step of the project investment, equipment configuration, fast plant startup, commission and plant efficiency.

Due to increased cost for plant personnel, their evaluation for the next investment confirmed that they needed a complete automated plant. Suppliers from Europe were considered for large pallet equipment, and GIC visited their customers in the US. Columbia offered the CPM50 with pallet 1400x770 mm with PTSII and provided full details on cement savings, real production capacity and superior customer support. GIC Operations Manager, Mr. Randolph Mitre, visited Unacem's Model CPM60 plant in Lima, Peru (1), and after this visit he confirmed their previous assessment that their final decision was to purchase another Columbia plant and the CPM 50 PTSII was selected.

The Supply Agreement was signed by GIC CEO Mr. Roberto Lombana, followed shortly after by a visit from Richard Armstrong to thank GIC for their business, and then the manufacturing of the equipment was started. While the equipment was being manufactured, we visited their construction site as part of our regular pre-install technical support assistance. This was to verify plant layout, equipment foundation, rail location and PTS II curing kiln construction, which resulted in a first-class installation, with only a short amount of time required. The plant started in August 2015.

We are proud to count GIC as one of our customers and certainly look forward to more collaboration opportunities in the future.

(1) Unacem article Volume 58 issue 1 Feed drawer 2015.



CUSTOMER PROFILE

JBR & RED TOP

JBR was founded in November of 1959. One of the original partners, Mr. William 'Red Top' Lowe, now owns the Company. The primary goal of JBR was to provide quality cement blocks and building materials. In 1974, we installed our first Columbia machine, a Model 12 with a manual off-bearer. In late 1984, we installed our first Columbia 3-block Model 16 and in the year 2000, we added a second Model 16 machine with a fully automated batching system.

For many years it was Mr. Lowe's dream to have a block plant in Abaco. After many road blocks, in 2013 he purchased a ready mix facility in Murphy Town, Abaco and Red Top Block and Cement was born! The property contains a port which allows for barge loads of aggregate to be delivered directly to the site. After many upgrades, we constructed a new building and installed a state-of-the-art block plant. The building was designed wholly for the plant and no expense was spared to ensure optimum functionality.

Charles Albury, JBR Building Supplies CEO, was aware of Mr. Lowe's vision. He knew that this plant had to be state-of-the-art, where quality and efficiency would be the standard. From day one, Charles was very involved in putting this project into motion, ensuring that Mr. Lowe's vision became a reality.

Our Block Master at JBR is Mr. Eugene Saunders. Mr. Saunders joined our Company 48 years ago and he is still on site daily. He ensures we make only the best block at all times. If something is wrong, those blocks never make it to market. He has always told us, "If you want to compromise quality in any way, find another manager!"

His son, Rickey Saunders, joined the Company in 1984 and trained under his father. He learned the electronic side of the newer machine and has become a master in his own right, knowing both "old school" and new technology.

We are the premier block manufacturers in The Bahamas. The strength of our block business is based on two factors: quality equipment and quality employees. Our goal is to ensure that the legacy we have built over the last 56 years will be carried on.





MANUFACTURING SERVICES DIVISION

Columbia Manufacturing Services Division is beginning its eighth 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 2015.

We are also continuing to seek new partnerships and are frequently introduced to new and exciting business opportunities from a diverse collection of industrial business segments. We are a manufacturing partner of a national overhead crane manufacturer and we are manufacturing tubular frames used in the automation and tooling industry, parts and components for customers in the metal working industry and machined weldments for a major supplier in the Oil and Gas Industry. We enjoy leveraging our manufacturing assets and areas of competency to the benefit of others in our region.

Columbia Machine has also enjoyed the diversification in our business mix, allowing us to secure work from business segments never before served. We value all of our customers and appreciate your consideration of Columbia Machine as a solution provider and as your partner in manufacturing excellence.

LCBO

Congratulations to LCBO on making 2015 a monumental year with celebrating your 30th anniversary and winning the 2015 CSCMP Supply Chain Innovation Award!

The LCBO (Liquor Control Board of Ontario) is an Ontario government enterprise and one of the world's largest buyers and retailers of alcoholic beverages, offering 24,000 products annually to consumers and licensed establishments in more than 80 countries. LCBO has five retail service centers that process over 92 million cases a year. The Durham Retail Service Center is one of their five locations, which has over 500,000 square feet of warehouse space and processes more than 50 million cases a year.

The Council of Supply Chain Management Professionals has an international award that recognizes the top players in the supply chain industry. In 2015 there were over 60 entries with top finalists that included Hewlett-Packard, Lennox Industries and the US Marine Corps (Concurrent Technologies). The LCBO's Durham Retail Service Center came out on top with their patent-pending load building system, of which Columbia's HL2000 is the center piece.

We are very proud of the LCBO team. The automated palletization technology is not only productive, efficient and ergonomic, but it has never been done anywhere in the world. It is completely proprietary to the LCBO. The Durham warehouse is 30 years old but remains a best-in-class distribution facility with some of the most advanced logistics technologies, many of which originated within the LCBO itself.

› **GEORGE SOLEAS**

"Without the talent, vision and commitment of the team at the LCBO, Hytrol, NorPak, Millar Systems and Columbia Machine, there is no way this would have been possible," said George Soleas, LCBO Executive Vice President.

The automated palletization technology was conceived by LCBO staff to stack varying case sizes using a "tetris-like" algorithm technique to create stable pallets for delivery across Ontario. The system uses Columbia's HL2000 palletizers with an integrated "pass through" layer strapping component that straps each layer in order to stabilize the varying case heights in the mixed pallet load. The automated system palletizes five times as many cases as previous manual stacking process and accounts for roughly 80% of the LCBO case volume.



THE NEW

HL6200

FASTEST ROW-FORMING PALLETIZER

The HL6200 is the third machine in the trilogy of new high level, high-speed palletizers from Columbia Machine. Over the past two years, Columbia has completed the redesign for the high-level family of palletizers: the HL6200, HL7200 and HL9200. The goal of the redesign was to further enhance safety, flexibility and performance with a contemporary, completely modular and clean design palletizer line that is extremely user friendly.

Columbia is renowned for its industry-leading safety and guarding system that provides “next level protection.” On the HL6200, this standard package includes Category 3, Performance Level D safety components, which utilizes fully integrated upper and lower guarding, full height light curtains, dual slot automatic hoist pins (patent pending), ergonomic low step-height machine access, level interior roller surfaces and interlocked hoist area access doors. Fortress trapped-key access components are also available to allow for OSHA compliant Minor Servicing. This safety package keeps your employees safe while still meeting production demands by providing convenient and safe access when needed.

Unparalleled in flexibility, the HL6200 combines Columbia’s Easy to Operate Product Manager HMI, bi-parting stripper apron and modular construction into its compact footprint. Users can effortlessly create and modify layer patterns, view and export production reports, adjust drive speeds and timer settings and access manuals and schematics all through the HMI. The bi-parting stripper apron, combined with the case stops in the row forming area, allow the HL6200 to create gaps both front-to-back and/or side-to-side. The modular construction found in Columbia’s new series of high-level palletizers, increases the flexibility of the HL6200 by allowing for standard speed enhancements, such as a dual infeed or conversion to an inline configuration to meet future line speeds. These features on the HL6200 create the ultimate palletizer that is guaranteed to meet both current and future production requirements.

Maximum performance is found 24 hours a day, 7 days a week with Columbia’s HL6200 while consistently palletizing up to an amazing 120 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, fallen case detection, 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.



CONTINUED EXPANSION AT LIGNACITE NEW STATE-OF-THE-ART COLUMBIA PLANT IN LONDON, ENGLAND

Lignacite has once again endorsed Columbia as their preferred partner for high end quality product. Renowned and highly respected as the manufacturer of top-quality standard commodity and bespoke Architectural Facing Masonry (AFM) products in the United Kingdom, the family-owned Lignacite Limited attributes much of this success to the Columbia equipment used for 30 years. The company recently embarked on a completely new turn-key project to further expand their facility at the London site in Nazeing and given their well-established and successful relationship with Columbia, the obvious choice was to invest again in high-end Columbia concrete products machinery to meet the demands of a frantic London market.

Lignacite was established back in 1947 by Sir Edmond De Lotbinière. At that time, Britain was experiencing a housing boom and the business grew steadily, adding a second plant in 1952. Almost seventy years later the company is still going strong under the leadership of Sir Edmond's grandson, Giles de Lotbinière, Chairman, and Allan Eastwood, Managing Director. Lignacite's first Columbia block machine, a Model 60, was installed in 1987 at the company's HQ at Brandon, Suffolk. This was rapidly followed by a second plant at Nazeing where they installed two Columbia 1600 machines to reach the central London market with quality concrete products. Further expansion led to investment in a new twin Columbia CPM60 / Model 60 factory at Brandon HQ in 2005.

Following the deep recession of 2008 many of Lignacite's competitors were forced to close plants, opening up a significant opportunity for the company to take advantage of renewed demand following the UK's eventual economic recovery. To respond to London's call for more block, Lignacite decided to invest in a new fully automatic Columbia 1600 plant for their London site.

Allan Eastwood didn't have to think too hard about what he wanted in his new plant. A full size CPM60 was his preference, however, floor space, building height and yard restrictions dictated that he couldn't go any bigger than a 1600 machine. He knew exactly what he would get for his money based on his vast experience with his existing 1600's. A firm believer in its huge benefits, Allan wanted Columbia Vibration Technology (CVT) to achieve consistent product density and always < 1mm height difference in his 215mm high products. He then wanted full automation of his pallet handling so that he could operate his plant with minimal downtime and with just one operator per shift, a shovel driver and two yard forklift drivers. With their low headroom building in mind, Columbia recommended our highly efficient Autorack solution with crawler and platform to move racks of pallets of product to and from curing.





Product curing was one of the most critical considerations in the Nazeing project. Since the Columbia 1600 machine would make 500 pallets of product per hour, how would they keep the plant running beyond 6 hours with a space limit of only 3000 pallets in the kiln? Lignacite needed to have sufficient cure strength in their blocks for cubing after only six hours, so they would have the flexibility to operate a double shift or indeed operate around the clock on a 3 shift, 24 hour basis. A very well insulated kiln with 4 inch thick wall and ceiling insulation panels and a single atmosphere kiln controlled by CDS satisfied the need for rapid six-hour product turn-around to cubing.

Finally, to cube the cured block for yard storage, the all new, all electric Columbia clamp cuber was installed. The electric actuator design of the cubing clamp head was chosen to completely eliminate the chance of hydraulic oil leakage on freshly made, high-quality product.

Lignacite's Managing Director, Allan Eastwood commented following the smooth commissioning of his latest Columbia plant:

“We continue to invest in Columbia equipment because we firmly believe that Columbia produces the most accurate and consistent blocks in the market. This allows us to manufacture Architectural Facing Masonry to very tight tolerances, with consistent product density & highly accurate height control to < 1mm! These product advantages, in turn, keep wastage down, make building easier and have helped to keep Lignacite at the forefront of innovation and sustainable masonry in the block world throughout the years. Columbia Vibration Technology (CVT) is the key to quality products and it is essential to our reputation. We look forward to our next thirty years of partnership with Columbia!”

Columbia wishes the entire Lignacite Nazeing and Brandon teams continued growth and success and we look forward to being a valued partner for your next 30 years of operation.

IN MEMORY OF



Roberto (Bob) D'Ottavi

April 11, 1938 – August 21, 2015

It's with great sadness that we report the passing of an Australian concrete masonry pioneer.

Bob began his life with concrete masonry stacking bricks/blocks while he was completing his Engineering degree. His first block machine experience was with a Columbia Model 12 plant, and he came to know this equipment and the industry like the back of his hand.

Over the years, Bob rose through various roles within the industry to achieve the position of General Manager for Boral Hollostone, part of the Boral group, one of the largest masonry manufacturers in Australia at that time.

As Boral's business grew under Bob's management, Boral was looking to increase production capacity. Bob was convinced that a Columbia Model 60 Plant was the way to go, and as he wished, a new Model 60 plant was installed in 1986. This plant is still in use today.

In 1993 Bob needed a change, and he started his own masonry business, Best Masonry Bricks and Pavers Pty Ltd. He initially set up his business with a Columbia Model 12 plant, making blocks/bricks/pavers. As the business grew, they expanded into the large format paver market after the purchase of an Italian made west cast paver plant in 1998, which was followed by a second one in 2003. The Model 12 plant was also subsequently upgraded to a Columbia Model 16 machine in 2011.

Bob was passionate about the industry, so it's no surprise the company continued to flourish under his leadership. Best expanded into Australian Granite products and Italian stone including Travertine, Basalt, and Serena Sandstone. This was in addition to their already extensive range of Pavers/Bricks/Blocks/Retaining Wall products.

For details on Best Masonry Bricks and Pavers, please visit:
www.bestgroup.com.au



Walter Scott

July 15, 1924 – October 19, 2015

On October 19, 2015 the concrete industry lost one of its respected members, Walter Scott of Scott Brickworks in Townsville passed away in his 92nd year.

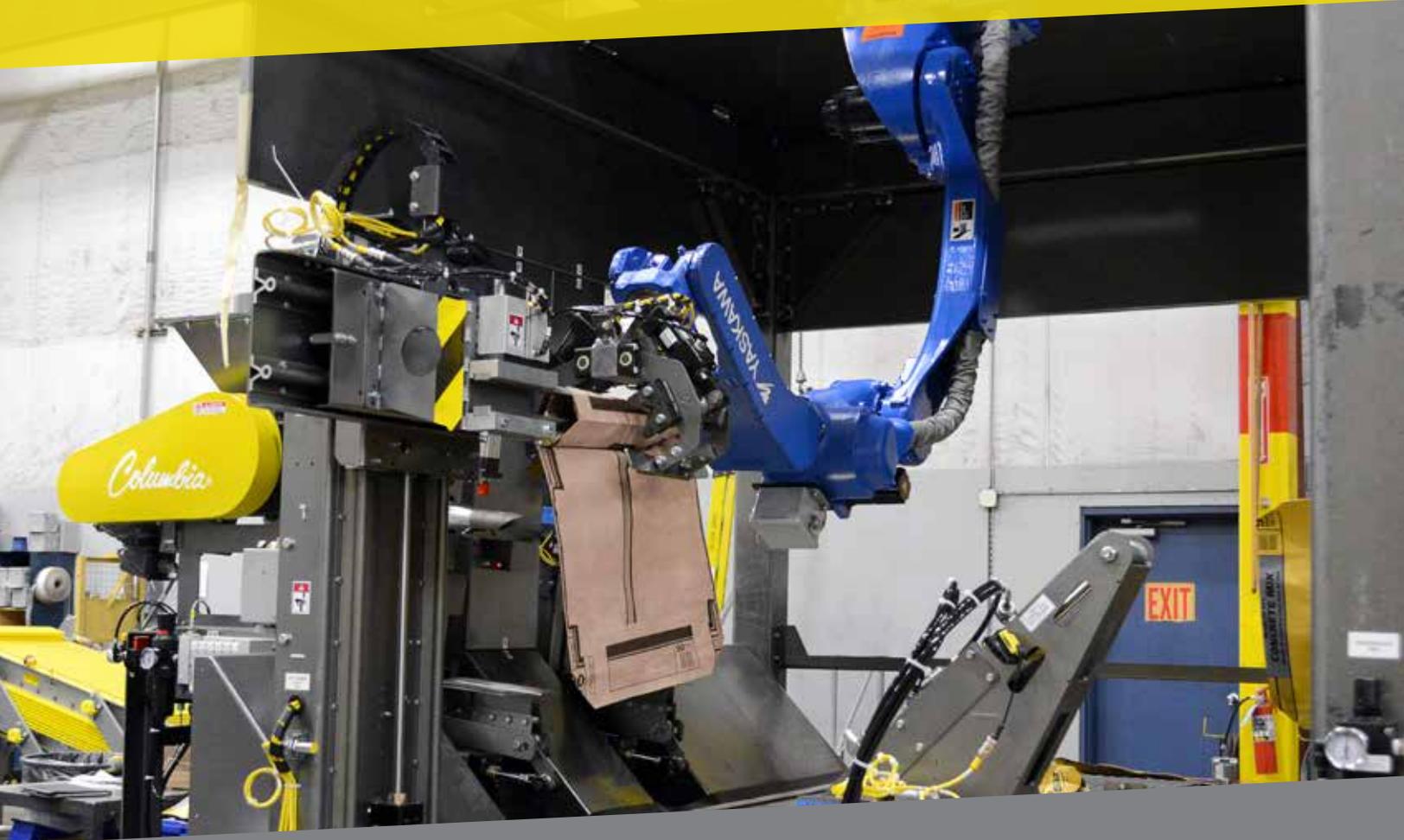
Walter Scott was born on July 15, 1923 at Ballyronan in Ireland. He always wanted to be a pilot and as soon as he turned 18 in 1941, he enlisted in the Royal Air Force. He trained in Eastbourne and then Scotland as a navigator where he ended up in bomber command.

On qualifying as a navigator, he was posted to 101 Squadron at Ludford Magna on 10th September 1943. At the age of 20, he was awarded the Distinguished Flying Cross (third highest honor) in recognition of the extreme bravery he showed during the many dangerous missions he undertook while in Germany. After safely navigating his badly damaged plane that had lost navigational aids he made it home – using the stars! He left the Air Force in 1947, returned to Ballyronan and with his brother started a sand, gravel and concrete products business.

In 1967 Walter decided to emigrate to Australia with his wife, Jean, and their six children. They first went to Toowoomba and then Townsville in 1972, where he set-up Scott Brickworks, a sand / lime brick plant. He moved into producing concrete blocks in early 1980's. To supplement production, he bought a secondhand Columbia 12ACH 3-block machine in the late 80's to produce concrete blocks, the main material for home construction in North Queensland.

While block accounted for only 20 – 30 % of production in the early years, it now accounts for all of the production since the mid 2000's. Despite being over 50 years old, the Columbia 12ACH still produces quality blocks.

Walter is survived by his wife of 67 years, Jean, and his "extended family" of 54 children, grandchildren and great grandchildren.



MATERIALS SYSTEMS DIVISION UPDATE

The Material Systems Division (MSD) of Columbia Machine had a productive 2015 and we continued to make progress in expanding our product capabilities. Many hours were spent expanding our bagging product line and bringing the addition of several new technologies that help Columbia supply complete bag line solutions. We developed a new robotic system to automatically place empty valve bags onto our packers. This system provides a safer solution to keep an operator away from dry materials as well as help improve overall production rates. To accompany the automatic bag placing system, we enhanced our pacers with a new “one-touch” option. This option allows an operator to control

all needed adjustments to the packers for an easy to operate HMI that controls the entire system. There is no longer any reason for an operator to completely shut down the system to change from one bag size or product to the next. Benefits include less down time, which will increase your daily output as well as improve safety to your employees. We also added a new efficient and durable inline bag cleaning conveyor. This new conveyor ensures that your bags are as clean as possible before they are stacked onto a pallet. This helps to improve plant cleanliness, as well as a cleaner package for the end user.

After the success of 2015, MSD is excited to continue the push to innovate in 2016. We will continue to focus on providing industry-leading solutions that are safe and make production easy for the end user. We look forward to seeing you at industry trade shows, association events and at your facilities this year. Make sure you keep on eye on the Materials Systems Division, we have a lot of exciting things happening.

INTRODUCING CPM+

Columbia Machine, Inc proudly introduces the new CPM+, the next generation of concrete products machines.

Since it was first introduced in 1995, Columbia Machine's CPM series has operated reliably in plants around the world. Known for its ruggedness and unbeatable vibration technology, the CPM consistently produces the highest quality products on the market. During the past 20 years, customers have seen changes within our industry, resulting in increased demand upon the production equipment. The introduction of the CPM+ machine is in direct response to those demands.

Working closely with our customers, Columbia Machine identified the most important factors for insuring producer success. These key areas include: finished product quality, production throughput, mold change automation and ease of operation. These four areas quickly became the primary focus for the team responsible for redesigning the proven CPM machine.

The CPM+ leverages the industry-best Columbia Vibration Technology (CVT) to produce uniform concrete product density and uniform aggregate distribution, resulting in the highest finished product quality on the market. Columbia's precision product height control ensures consistent height accuracy within 1mm, regardless of pallet thickness variation. Pairing true vertical vibration and unmatched machine precise height control, the CPM+ continues the standard set by the original CPM machine in producing the highest quality product for the customer.

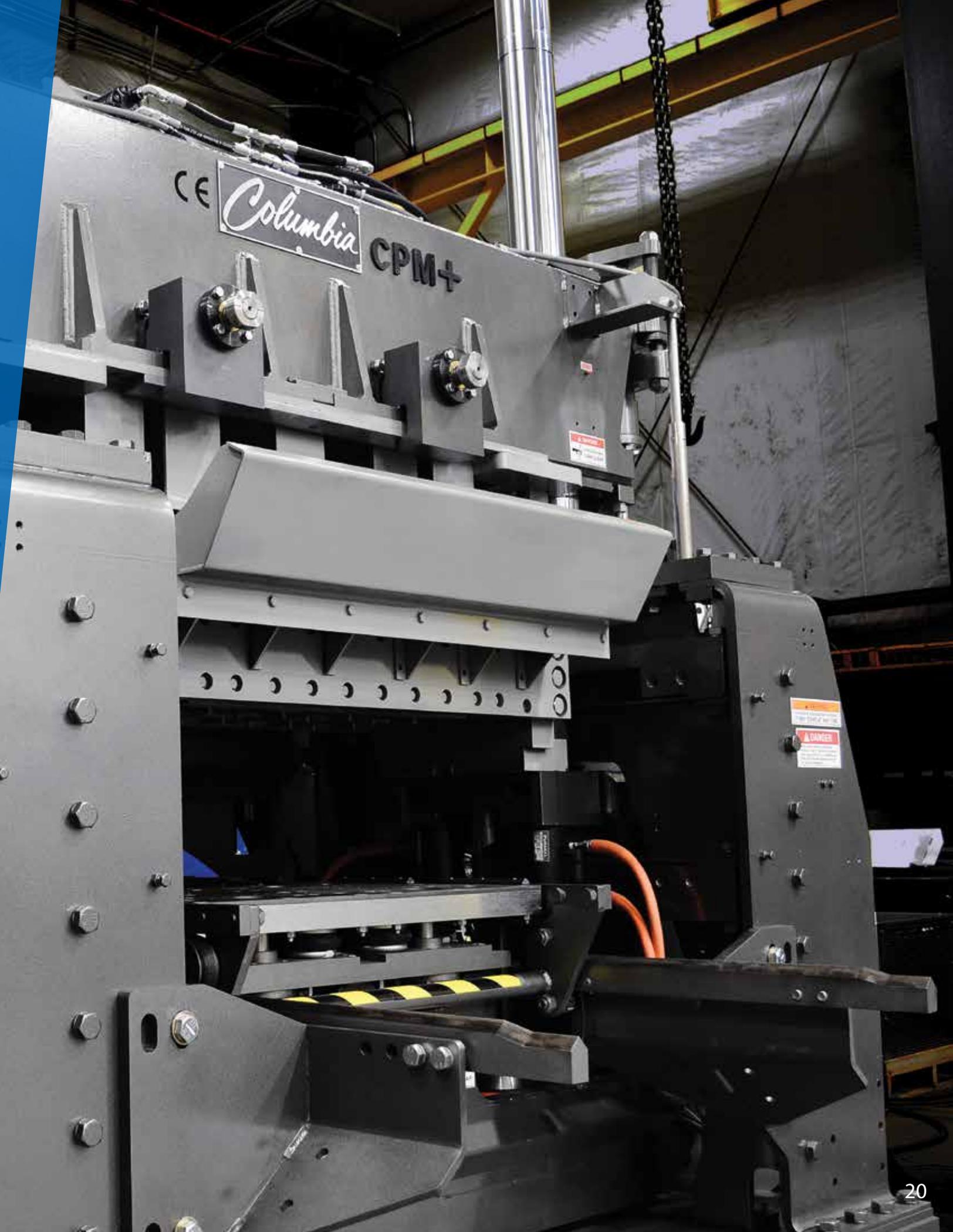
The efficiency of production throughput is vital for producer success. In order to produce the products the market demands, mold and product changeovers must be achieved quickly and easily to ensure minimal production downtime. The CPM+ is designed to achieve exactly that.

By taking advantage of the industries' only completely hands-off automatic mold change and one-button recipe driven machine adjustments, our customers can now achieve product-to-product changeovers in less than four minutes. The new machine also includes a tool-less agitator and strike-off plate change out. Combined with the full menu access at the HMI, these features eliminate all manual setting requirements and make the CPM+ one of the safest concrete products machines on the market.

With the CPM+, Columbia Machine introduces industry-leading controls which display an intuitive and simple interface for all levels of users. The easy to use HMI and Compact Logix controls use graphical touchscreen navigation allowing for quick troubleshooting recovery from fault conditions and one-touch setup for easy product changes. All machine adjustments can be made from the HMI with full menu screens for rapid machine setup.

The CPM+ was also designed to be the cleanest concrete production machine in the industry. By adding feed drawer baffles, a moveable strike-off plate, mold pan and seals, the new machine ensures reduced material spillage and clean up requirements.

By listening to the needs of our customers and the industry, we are proud to introduce the next generation of concrete products machines. The CPM+ offers the producer a safer, cleaner machine with fully automated mold and height changes, easy to operate controls and proven vibration technology. Columbia Machine always strives to innovate, to improve and to make production easy.



CE

Columbia CPM+

! DANGER

COLUMBIA/OKURA

A YEAR IN REVIEW



Once again, Columbia/Okura is on a favorable growth curve. After a temporary set-back in 2014, 2015 has been a year of growth in bookings, shipments and the complexity of system offerings.

System shipments have ranged from relatively simple single line, "stack on floor" robotic cells, to massive 5-robot, 20-line systems with fully automated empty and full pallet highways utilizing significant system content from both Joint Venture Members (Columbia Machine and Okura, USA). Our customers continue to span a continuum from small family businesses to Fortune 100 multinationals.

Our growth initiatives launched in mid-2014 are starting to pay off. Our Integrated Bagging Line offering, where Columbia/Okura has partnered with a number of bagging equipment manufacturers to offer complete production lines, is one of the most fruitful initiatives we have implemented. In addition to independent firms, Columbia/Okura has partnered with the MSD team of Columbia Machine to address these opportunities. The first integrated bagging line sold included Columbia Machine's valve packers, operator stations, mesh, belt and dust collection conveyors. The collaboration has been very successful and we look forward to growing opportunities.

Julio Rubio, our Latin American Sales Director, established a network of sales representatives in numerous countries. Interest in Columbia/Okura robotic palletizers has been robust, continuing to keep our Sales Team busy with proposal activity.

Customer retention and favorable word of mouth have been key drivers of new business. The Columbia/Okura team continues to receive high praise from completed installations and customer service efforts. A new tool for measuring Customer Satisfaction, the Net Promotor Score (NPS), was recently implemented at Columbia/Okura and Columbia Machine. Customer feedback from installed systems in 2015 has been very positive. Year to date, Columbia/Okura's present ranking is 100. This is the top score a company can receive within this program. The score is based off of one simple question asked of the customer, "Would you recommend Columbia/Okura to friends or family?" One particular customer that gave Columbia/Okura a top score of 10, also left this comment about our performance: "Everything from order placement to installation and all service after installation has been most enjoyable. Columbia/Okura is a model that we should follow in our business. I promise our next palletizer will be a Columbia/Okura."

Columbia/Okura is approaching two very significant milestones. We're quickly closing in on our 700th Robotic Palletizer shipment – a wildly impressive feat to be achieved in 2016. We're also looking forward to celebrating a monumental birthday in 2016 when we will celebrate our 20th anniversary! We're very proud of our accomplishments in our first 20 years and look forward to tremendous growth and opportunities in our next 20!



STEEL SERVICE CENTER



Columbia Machine is in the process of developing a Steel Service Center in the center of its main campus in Vancouver, WA. Our focus is to consolidate multiple areas of metal forming and fabrication and to streamline these operations in a line of site factory as close to downstream operations as possible. Along with the expanded fabrication space, we will be adding several state of the art pieces of capital equipment, air quality systems and high efficiency lighting in this newly laid out manufacturing area. We are nearing the completion of phase I (cranes, burning equipment and prep areas), of a three phase project. Our plan is to move right into phase II (forming and metal working equipment) and complete the project with Phase III (weld cells, in-line saws and metal storage), planned for completion in Q2.

During this project we have had an opportunity to really evaluate our product storage, flow, "hand-offs" and handling methods in an effort to streamline them in the new layout. This consolidation of operations into one area results in a significant reduction in the number of miles parts will travel in our plant just to get to the next operation. This effort will deliver a significant improvement in material flow, part quality and cycle time.

Columbia[®]

MACHINE ENGINEERING (I) PVT. LTD.

In early 2015, Columbia Machine, Inc. (USA) purchased the shares of our Indian joint venture partner, Pakona Engineers (I) Pvt. Ltd. As part of the purchase agreement, we have changed our name from Columbia-Pakona Engineering Pvt. Ltd. (CPE) to Columbia Machine Engineering (I) Pvt. Ltd. (CME). Along with changing our name, we have revised our logo and updated our website and social media accounts.

Columbia Machine Engineering has Engineering, Manufacturing, and Customer Support Facilities offering after sales parts and service at its registered office in Vadodara, India, as well as Sales and Marketing Departments at its Mumbai Office. CME has successfully manufactured and installed 200 concrete products plants as well as three palletizers.

This move is aligned with Columbia's mission to secure our future through strategic investments and profitable growth as well as to maintain our goals to see our business through "the eyes of our customers." Having operations in India strengthens our ability to support customers throughout the world.

For more information about the equipment and mold solutions provided by Columbia Machine Engineering or markets it will serve please visit www.colmac.in.



TRADE SHOW UPDATE



CONCRETE SHOW
BRAZIL



CONCRETE SHOW
MEXICO CITY

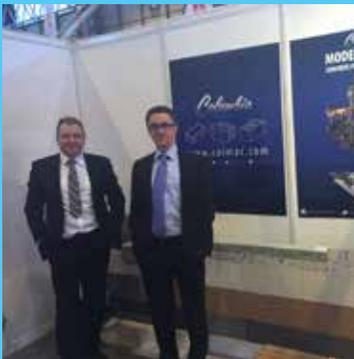


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ICON XCHANGE
SAN ANTONIO

sustainability update



Columbia Machine and several other corporations were invited to join a program sponsored by Clark Public Utilities District (PUD) and BPA's Energy Smart Industrial Team. The Clark PUD program, High Power Energy Management group (HPEM), started in the spring of 2010 and concluded in the fall of 2015 with a "report out" and celebratory luncheon hosted by the PUD.

Clark PUD's objective for the HPEM program was to educate and help identify potential opportunities for saving energy for industrial energy users. The program, with the guidance of Clark PUD and energy consultants, trained the HPEM group members on how to evaluate their operations for potential energy savings, and assisted with the development of plans/concepts that allowed the member companies to identify, assess and develop plans to save energy and meet the commitments of the program. Prior to joining HPEM, Columbia Machine had begun to track energy usage within the company and completed a few energy savings projects. When Brian McBride heard about this opportunity to join HPEM, we knew it was a great opportunity to learn and obtain assistance that would help "turbo-charge" our energy savings efforts.

Through HPEM, the collection of energy usage data, the creation of a cross-functional Columbia "Green Team" and working with our suppliers, we were able to find sources of energy waste throughout the facility. Through data collection and analysis, there were many energy saving best practices developed from how we evaluate our current systems in use for energy savings opportunities, to how we will include energy usage in our evaluation of capital equipment additions in the future. During the five-year HPEM program, we made improvements in the areas of reducing compressed air power usage, reducing electrical energy consumption during off hours by shutting down support equipment in the facility and the installation of energy efficient lighting throughout the entire facility.

Energy savings through the continuous improvement program, along with the best practices developed through the HPEM program are being used today by our ME and Facilities groups during the design and build out of our new Steel Processing Center. Columbia Machine will be saving energy and money by installing newer manufacturing equipment, resulting in higher energy efficiencies throughout the facility. Some of the equipment being installed is a 6000 watt CNC laser cutting machine, a 330 ton break press, a four-head CNC torch cutting machine and a new machine center. Along with newer production equipment, energy-saving support equipment is being installed in the new Steel Processing Center including energy efficient HVAC, an air exhaust/cleaning system, electric powered air blowers for raising and lowering water levels and air boosters for machines with high demands for compressed air.

Our "Green Team" efforts to improve the facility and beyond have included the following items: Installation of 2 electric car charging stations in the north parking lot that are free for employees, having Waste Management perform a waste audit showing that with everyone's help there is a potential to reduce garbage waste by 25% by recycling more and Columbia Machine watching this reduction from monthly data given to us by Waste Connections. 2016 capital budget includes a cardboard shredding machine with the goal to eliminate the use of packing peanuts and reduce the recycled cardboard waste.

Columbia Machine is committed to continuous improvement, which includes improving work safety, the utilization of raw materials, efficient energy usage and general manufacturing efficiencies in an effort to improve performance for our employees, customers and communities we operate in.

COMPANY EVENTS

2 0 1 5



PICNIC

BRING YOUR
CHILD TO
WORK DAY



WOMEN IN THE WORKPLACE DAY

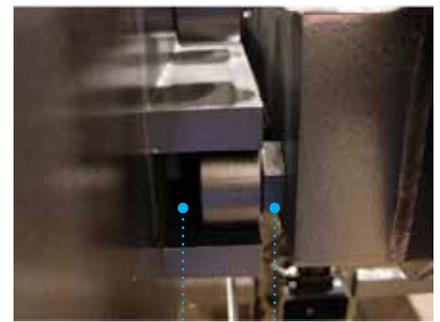


SAFETY BBQ



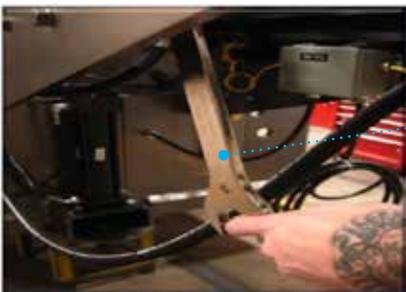
MANUFACTURING DAY BBQ

Pallet feeder cam follower adjustment for single push pallet feeders on Model 22, 16 and 1600.

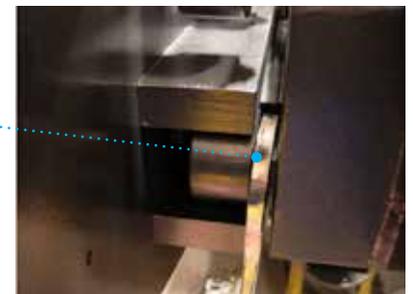


Cam follower with adjustable eccentric will adjust carriage up and down for dog engagement.

Carriage with adjustable cam followers located behind pallet feeder side plate front and back.



Wrench 484.700.28

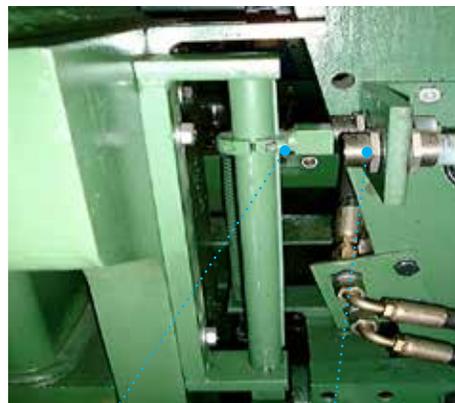
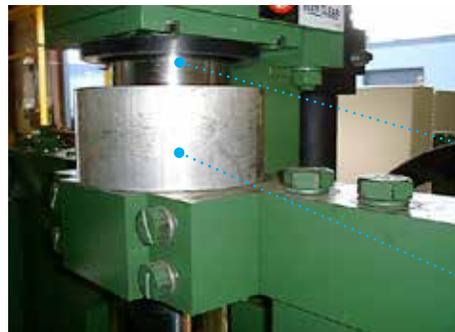


Adjust front cam followers so front pusher dogs are pushing 100 % of pallet edge. The rear cams are adjusted so rear dogs are pushing 90 % of pallet edge.

The following steps must be completed to properly adjust the compression beam down switch.

- » With the machine out of automatic, using the selector switch manually extends the compression beam to its full up position. Now, using the stripper selector switch, extend the stripper beam to its full up position. Now, lower the compression beam down on to the height stops.
- » With the correct compression beam stops installed for the mold being used, lower the stripper beam until the compression beam is approximately 1" above the column spacers as shown in the photos below.
- » With the compression beam set at 1" above the column spacer and the height stops held together, adjust the switch flag for the compression down switch. Adjust the flag so it is centered in the diameter of the 30mm proximity switch as shown. With the machine operating in automatic, this will cause the flag to actuate the switch each time the compression beam is 1" above the beam stop on its way down. This centers the compression cylinder valve.
- » Some fine adjustments of the switch flag may be required but the 1" gap is a good starting point.

1. Switch flag.
2. Compression down switch.
3. Compression beam stop.
4. 1" space.



1

2

4

3

How to set up and adjust your mixer discharge door.

Mold Installation for Model 22,16,1600

We have found in recent months that block machine operators are installing the mold improperly. This improper installation practice will cause unnecessary wear on mold hanger bracket and die supports.

1. Assemble the mold on a very flat surface, such as a machined flat steel table. Do not assemble molds on steel pallets from the machine or on wooden surfaces.
2. Inspect mold hanger brackets for flatness by using a straight edge. Replace any brackets showing signs of wear on mounting surface.



Straight edge

Mold hanger bracket

3. To make sure the mold hanger brackets are installed correctly, measure all four corners using a dial caliper, as shown, using the outer holes. Verify measurement of all four corners are the same.

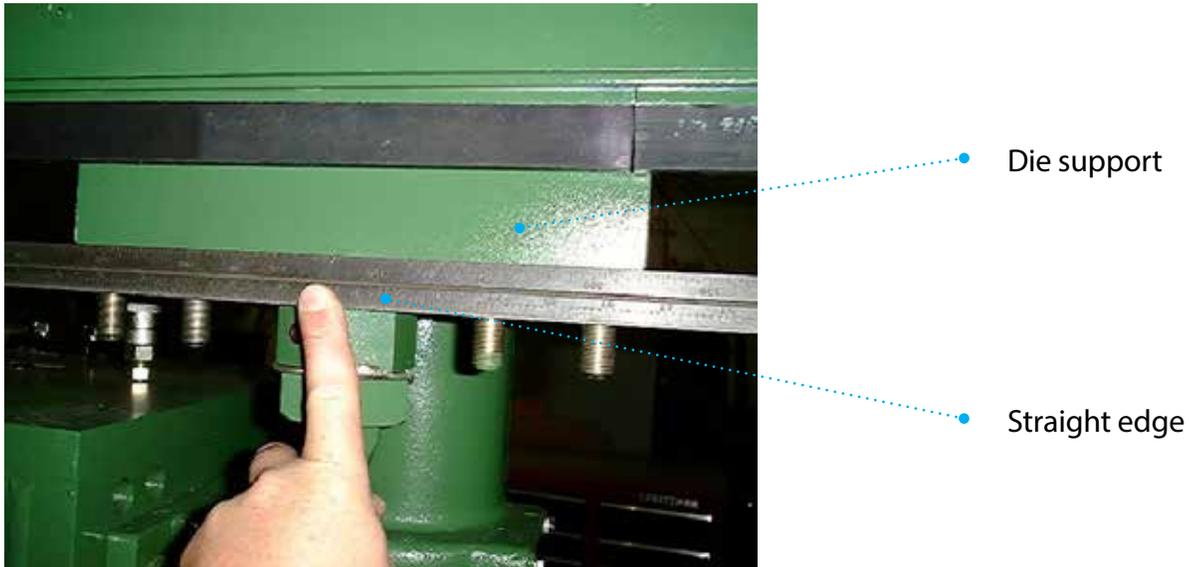
Dial caliper

Mold hanger bracket needs to be checked this way at all corner holes

Flat metal surface



4. Next, using a straight edge, inspect the die supports for flatness. Verify the mounting surfaces are flat. This allows the mold to mount flat against the die supports. If these surfaces are not flat, they can cause the mold to break bolts, or worse, cause the vibrator shaft to fail.



After inspecting the mold, replacing parts and realigning, install the mold.

1. Install the mold box by sliding it past the shaker shafts. Do this without hitting the shaker shafts. Verify the die supports and mold hanger brackets are clean.
2. Raise the mold slowly up to the die supports with the machine in slow mode.
3. Align the mold with mounting bolts and raise the mold up to the die support.
4. Install all lock-washers and nuts. Now, tighten all nuts by torquing them to factory specifications;

Torqued to: (Model 22: 1/2" bolts (grade 8 fine thread) - 90 foot-pounds),
(Model 16, 1600: 5/8" bolts (grade 8 fine thread - 187 foot-pounds),
(Nuts are: (grade 8 fine thread "high nuts")

WARNING:

Completely tighten the mold in the machine before operating the vibrator. Operating the vibrator with a loose mold causes damage to die supports and mold hanger brackets.



TECH SCHOOL GRADS

MEXICO CITY



Front Row: left to right	Back Row: left to right		
1. Neri Gramajo	1. Raymundo Pastrana	7. Marcos Tejeda	13. Francisco Esquer
2. Gustavo Almada	2. Ricardo Sanchez	8. Natanael Santamaria	
3. Lucio Quiñonez	3. Enrique Jaime	9. Rodrigo Renteria	
4. Roberto Olguin	4. Abraham Madero	10. Samuel Manriquez	
5. Manuel Mejia	5. Lester Dell	11. Ramon Tamayo	
6. Edgar Perez	6. Saul Villegas	12. Luis Quiroz	

CP MASONRY COLUMBIA TECH SCHOOL



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2. Perry Clarke	2. Scott Hutton (Instructor)	2. Dave McKee (Instructor)
	3. Joe Blundon	

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- 2. Larry Bray (Instructor)

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- 2. Ievgen Bezv
- 3. Mark Gazey
- 4. Luke Cannings
- 5. Ian Salt
- 6. Ian Lamble
- 7. Mark Hamilton
- 8. Simon Harratt

**BASIC ELECTRICAL / AB CLASS
COLUMBIA TECH SCHOOL**



Front Row

- 1. Scott Freeman

Middle Row: left to right

- 1. Daniel Moran
- 2. Nate Wane

Back Row: left to right

- 1. Scott Hutton (Instructor)
- 2. Dave McKee (Instructor)

BASIC MECHANICAL CLASS COLUMBIA TECH SCHOOL



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2. Harold Stickler

Back Row: left to right

1. Scott Hutton (Instructor)
2. James Wright (Instructor)

BASIC ELECTRICAL COLUMBIA TECH SCHOOL



Left to right

1. Brad Workman
2. Jose Alvarez
3. Kevin Erickson
4. Steven Steffey
5. Newton Steffey
6. Lavado Edgecombe
7. Tramaine Clinton
8. Joshua Johnson
9. Kent Jordan
10. Ray Stillwell

**BASIC MECHANICAL CLASS
COLUMBIA TECH SCHOOL**



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- 2. Zane Martin

Middle Row: left to right

- 1. Kyle Allen
- 2. Lavado Edgecombe
- 3. Tramaine Clinton
- 4. Kenneth Duncan

Back Row: left to right

- 1. Scott Hutton (Instructor)
- 2. James Wright (Instructor)

Interested in attending one of our tech schools?



Learn more online at columbiamachine.com/training or mail in the registration form located on page 38

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 and 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 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.

Columbia Machine, Inc.
107 Grand Blvd.
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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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107 Grand Blvd.
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+1 360 694 1501

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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

*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 registrants 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 registrants 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

Company Name: _____ Contact Name: _____

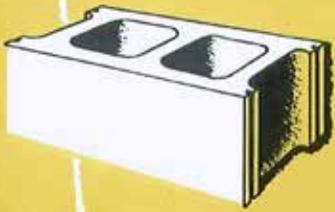
Card Number: _____ Expiration Date: _____

Name on Card: _____ Signature: _____

Terms, cancellations, deadlines, travel plans: If you must cancel, please contact Scott Hutton at (360) 694 1501 ext. 573. Refunds will only be issued through the Thursday prior to the beginning of the class. All cancellations will be subject to an administrative fee. Any class may be cancelled if student enrollment is below minimum attendance. If class is cancelled, a notification will be sent two weeks prior to class start along with a full refund. 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.

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"A handy reference book for Architects, Builders and Homeowners!"



Build Better with Block



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WE DO
ALWAYS
FROM THE EYES
OF OUR
CUSTOMERS**

Columbia

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THE UK CONCRETE SHOW

Birmingham, UK | **Dates:** 17 - 18 February, 2016 | **Stand:** #D24

THE PRECAST SHOW

Nashville, TN | **Dates:** 3 - 5 March, 2016 | **Stand:** #1083

BAUMA

Munich, Germany | **Dates:** 11 - 17 April, 2016 | Hall B1 **Stand** 314

MIAMI CONSTRUCTION SHOW

Miami, FL | **Dates:** 20 - 22 May, 2016 | **Stand:** #701-703

CONCRETE SHOW BRAZIL

São Paulo, Brazil | **Dates:** 24 - 26 August, 2016 | **Stand:** #214



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