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AGGREGATE
WASHING &
SCREENING
FEATURE

Global News & Information on the Quarrying,
Recycling & Bulk Materials Handling Industries

March/April 2023 | Issue 79

QUARRYING RECYCLING BULK HANDLING
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In this issue

AGGREGATE WASHING FEATURED STORY	5
NEWS	9
AGGREGATE WASHING & SCREENING FEATURE	19
RECYCLING NEWS	45
QUARRYING NEWS	59



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Welcome to issue 79

Welcome to our second edition of 2023 - issue 79.

In this issue the team at Hub-4 present you with another bumper edition reporting on the latest news from the Quarrying/Recycling & Bulk Handling Industries, including a spotlight on Aggregate Washing & Screening.

Onwards into 2023:

If you're starting to look at marketing in 2023 our new media file with feature list can be found here, either PDF download or page flip version: <https://hub-4.com/pages/advertise-with-us>

Electronic advertising is also available on the website and on the weekly e-newsletter which is distributed to our readers which is on-line here: <https://hub-4.com/pages/newsletter>

We also offer our very successful personalised e-shots direct to our database throughout the year.

Our increasingly popular social media packages are also available, our platforms continue to grow across our Twitter [10,000 followers], Facebook & LinkedIn pages all of which can be linked with electronic web and e-newsletter advertising – why not enquire about our extremely competitive packages.

Finally, our third edition of 2023 will focus on **RECYCLING - MATERIAL HANDLERS IN THE WASTE INDUSTRY. METAL RECYCLING IN THE UK & ASPHALT, BITUMEN & CONCRETE PLANT**, and I welcome any editorial contributions for this issue.

John Edwards
Editor

MAY - JUNE 23

RECYCLING - MATERIAL HANDLERS IN THE WASTE INDUSTRY. METAL RECYCLING IN THE UK.

ASPHALT PLANT, BITUMEN & CONCRETE PLANT
- mobile & static plant, asphalt storage, dryers, burners, control systems, hot oil heaters, spare parts, RAP equipment, modified bitumen, H&S, bulk storage bays, concrete plant & equipment, concrete mixers.

BULK HANDLING - Bulk Conveying Systems, Bucket Elevators, Feeders and Weighing Systems...



PLANTWORX PREVIEW

Editorial copy deadline – 12th May 2023 Advert copy deadline – 19th May 2023



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We will then review your application. The Hub magazine is available for overseas clients on a paid subscription at £115, for six issues, please email subscriptions@hub-4.com.

Published six times a year.

PowerX Equipment design and install a sixth Wash Plant for NRS

PowerX Equipment have recently delivered a Wash Plant, Water Treatment Plant and a Filter Press to NRS Waste Care at their new Meriden Park operation near Coventry, to process C&D materials.

This is the sixth plant for NRS that PowerX Equipment has supplied; designed, built and commissioned the plant has an operating criteria to operate up to 150tph and produce sharp, soft and, ultra-fine sand, along with 3 aggregates - 10mm, 20mm and +20mm.

The plant has also been configured that when processing sand and gravel the wastewater and silt will bypass the press and go straight to the lagoon system, utilising the sludge tank feed pump.

The primary recycling waste screen:

The plant is unique in that it features a primary 4.9m x 1.55m, 2-deck screen [bottom flip-flow] which provides the facility to remove the -10mm out before the wash plant.

To achieve this the primary screen has been modified so that both the side conveyors are on the same side, enabling the fines to be fed onto an adjacent reversible horizontal conveyor



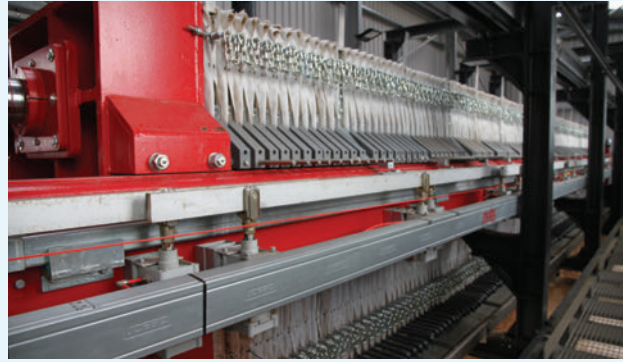
[CV1] allowing the material to go forward to the wash plant or by reversing the conveyor to stockpile the -10mm into a bay. The second side conveyor goes directly onto the wash plant feed. The +20mm can also be sized by the screen modules on the screen if required. The oversize material is stocked in a bay for later crushing where sub-base materials are made.





Plant process:

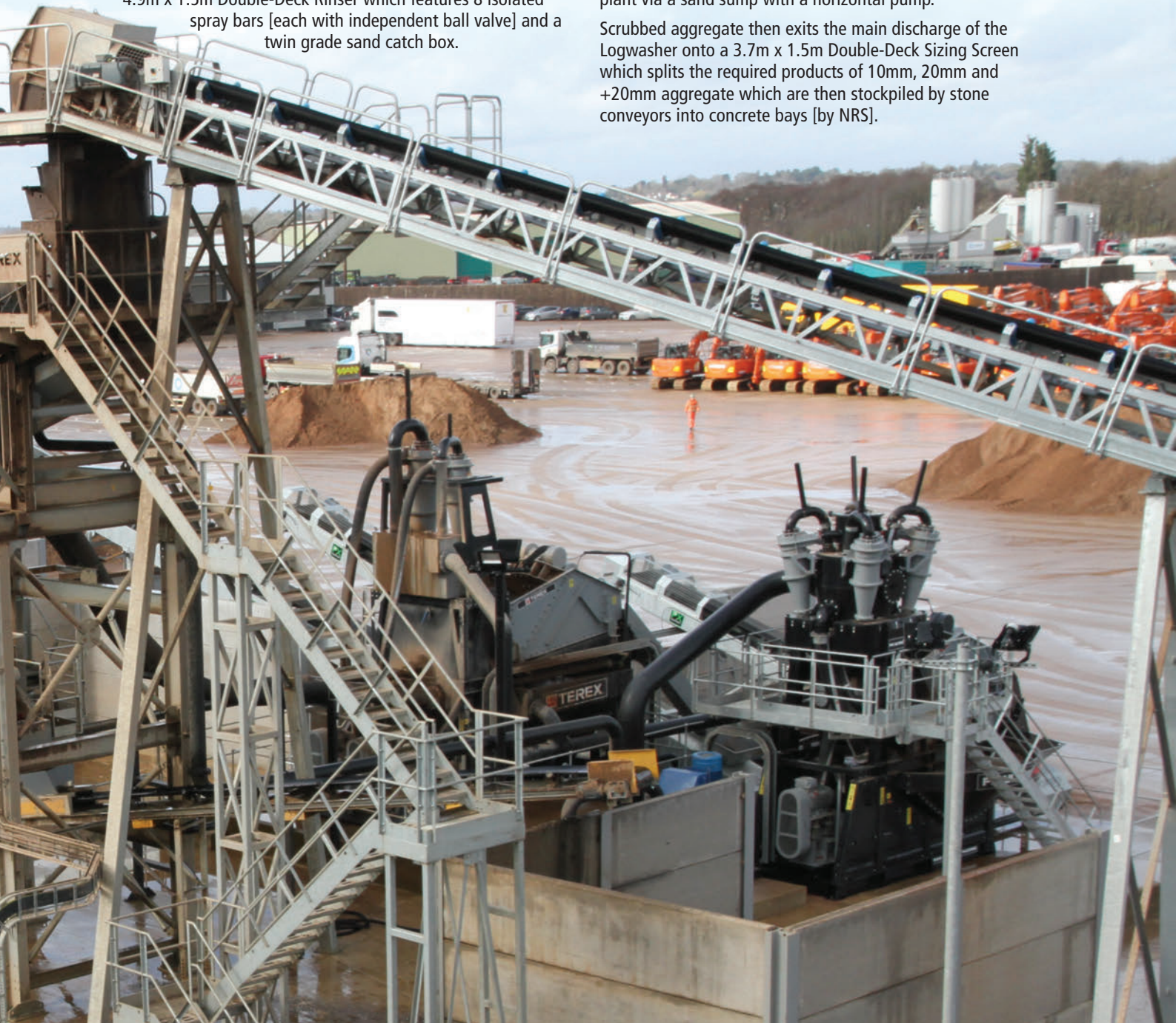
The plant is fed by excavator through the 9.m³ hopper of a mobile Flip Flow Scalping Screen which features a 16 x 5 screen box which is highly efficient while maintaining exceptional throughput productivity. This in turn feeds the primary screen where material is then fed onto the 38m long inclined plant feed conveyor [CV2] with material passing under an overband magnet. This conveyor then feeds material into a 4.9m x 1.5m Double-Deck Rinser which features 8 isolated spray bars [each with independent ball valve] and a twin grade sand catch box.



Material then passes through the Twin-Shaft Logwasher with the blades conveying the material from the feed end of the scrub to a 3.7 x 1.5m Double-Deck Part Rinsing Screen.

Any organics such as roots are floated off to be dewatered over a 1.8m x 0.6m Trash Screen. Underflow from the trash screen is received in a catch box under the screen and then gravity fed to the sump tank under the hull. Any fines off the back end of the Logwasher are sent to the twin compact sand plant via a sand sump with a horizontal pump.

Scrubbed aggregate then exits the main discharge of the Logwasher onto a 3.7m x 1.5m Double-Deck Sizing Screen which splits the required products of 10mm, 20mm and +20mm aggregate which are then stockpiled by stone conveyors into concrete bays [by NRS].





Sand recovery:

The Compact Sand Recovery Unit at Meriden is an all-electric plant and combines a Collection Tank, Centrifugal Slurry Pumps for both grades of sand, a Hydro-Cyclone for both the sharp and soft sand and a 3.7m x 1.5m Dewatering Screen on a single chassis.

It can recover 2 grades of sand from a wet feed and offers a maximum recovery of saleable material through the removal of silt, slimes and clays below 75µm (200 mesh).

Constructed in a robust easy to assemble steel construction, it features galvanized walkways and handrails to provide easy access. It provides low maintenance and simple operation with a self-regulating cyclone tank. Pumps and cyclones have replaceable rubber liners for extended wear life with a high frequency dewatering screen reduces residual water content in your final product to 10–12%.

This all-electric plant is driven from a dedicated control room through a PLC controlled panel to an NRS specification.

Ultra Fines recovery:

At the Meriden operation a sand recovery unit which supplies the ultra-fine sand is a crucial step in efficient management and recovery of ultra-fines sand from waste-water streams, produced from washing processes.

This Ultra-Fines Sand Recovery Unit can process up to 450m³/hour of slurry recovering material as low as 40µ, thus reducing the volume of solids reporting to storage ponds or water treatment plants.

Bringing together a Centrifugal Pump, a cluster of 4 Hydro-Cyclones and a high frequency 2.4 x 1.2m Dewatering Screen on one chassis. This unit also boasts a uniquely designed conical tank and anti-turbulence system, which is essential in the process of ultra-fines recovery.

Water Treatment Plant:

The fully integrated water treatment plant at Meriden, consists of a galvanised 16mØ Dynamic Thickener which stands at 3.5m high this provides a minimum of 500m³/hr flow rate and has a 700m³ volume capacity with a low flocculent consumption. The plant has the facility to dose, flocculants, coagulants and anti-foaming polymers, to facilitate the processing of more contaminated materials.

A 14m – 3m high Clarified Water Tank provides a 460m³ capacity with a technical room housing the Flocculant Dosing Unit and a Filter Press.

Rainwater is collected in a 1000m³ galvanised tank with high and low sensors and two pump points.

This process allows up to 95% of the water used in the washing process to be re-used. The dirty water is collected in a sump before being treated and allowed to settle in the Thickener. The thickened sludge is then sent to a 100m³ buffer tank to control the density of the sludge prior to being compressed within the 2000mm x 2000mm x 165 plates filter Press enabling the last remaining water to be sent back into the system. NRS are then able to use the 30mm filter cakes that are expelled from the filter press.

The complete C&D processing solution:

Mark Ketcher – CEO of NRS Aggregates, “This is our sixth plant that has been delivered by PowerX Equipment and again they have delivered a processing plant that is exactly what we required. The new wash plant means there is virtually no waste in our C&D processing and the water treatment and filter press enable us to maintain low water usage and turn waste sludge into a usable product. The PowerX engineering teams are first class and their commitment to H&S is above and beyond industry standards.”

MD of PowerX - Luke Talbot, commented, “Our philosophy at PowerX Equipment is that we are committed to supporting NRS long after their plant installation. We understand that the key to their success is having reliable, fully operational equipment to keep productivity flowing and downtime to an absolute minimum. This is why we have invested in our Spares and Service Division to ensure we not only have a wide range of parts, but also an expert team of fully qualified and experienced engineers available to help our customers with advice, maintenance, and fitting in a timely manner.”





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Axon Power & Control appoint Tom Webb to head up the newly established Axon GB team



For almost four decades Axon Power & Control have been at the forefront of electrical system design and installation for the materials handling industry in the UK and Ireland.

Headquartered in Dungannon, Northern Ireland the company have a strong history built on servicing the varying needs of the industry since their formation in 1984.

The company has recently expanded its service offering through the appointment of Tom Webb to head up the newly established Axon GB team. Tom brings with him many years of industry experience having previously served as National Electrical Engineering Manager for Tarmac amongst other senior roles within the industry.

Tom says "I feel hugely fortunate to be afforded such an opportunity to work with an already successful company to help expand and service their clients throughout Great Britain. Axon has such a rich heritage in the material handling and heavy industry sector, and I'm really looking forward to using my experience within the industry to build a robust innovative team and create relationships with new and existing clients for all their electrical requirements, having previously worked alongside Axon on numerous projects I know the prospect of taking this business into a bright new future is something that fills me with excitement".

The newly formed division will offer installation projects, plant health check service, maintenance cover, inspection & testing services alongside the range of solutions that Axon currently offer to the industry.

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Will you pay too much, or too little, for your business rates?

1 April 2023 is a key date for business rates liabilities with new rates due based on the 2023 Rating List. For businesses in the minerals and waste management sector, the upcoming revaluation of business rates is likely to have a significant impact on the bottom line. Simon Atherton, Head of Minerals and Waste at Gerald Eve, urges businesses to understand the factors affecting their rateable values (RV) and review their business rates liabilities, as not all will be accurate.

Average Rateable Value across sector has increased by 40%

The 2023 RV is based on an unusual economic period. Increases in rental and construction costs since the 2017 revaluation valuation date (1 April 2015) have impacted liabilities on the 2023 Rating List, while the valuation dates for Revaluation 2023 reflect new factors, raising questions about assessment accuracy. As a result, rate assessments across minerals and waste management have increased by an average of 40%, with some individual property assessments increasing by more than 150%.

The basis upon which most minerals and waste properties are assessed is inherently more complex than other sector types. Due to a lack of comparable evidence, these properties are assessed on an item-by-item basis. Because of the expansive and detailed breakdown of assessments, and the specificity of reliefs and schemes available, it can be easy for errors to go unnoticed. Valuing these properties is a nuanced and intricate process, often confusing the uninitiated.

The minerals and waste sector as a whole is suffering from increased operational costs, stalling demand, and now it is being laboured with significant rises in business rates liabilities. The following 12 months will be challenging for most operators, so it is imperative that operational expenses are reduced where possible.

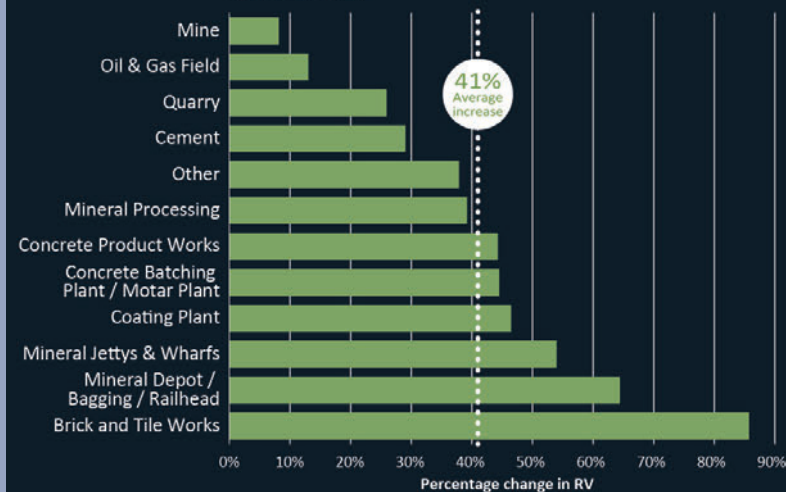
Why check your rates liability

Understanding how your bills are calculated ensures that you are assessed fairly and receive the maximum benefit from potential relief schemes. Here are the key factors that affect your liability:

- Your 2023 RV is derived from an exceptional economic period.
- Valuation Officers and Scottish Assessors have been unable to access all crucial information which may have resulted in general assumptions about your property.
- Specific reliefs, schemes and grants could be applied to your property for the 2017 and 2023 Rating List but could be missed.

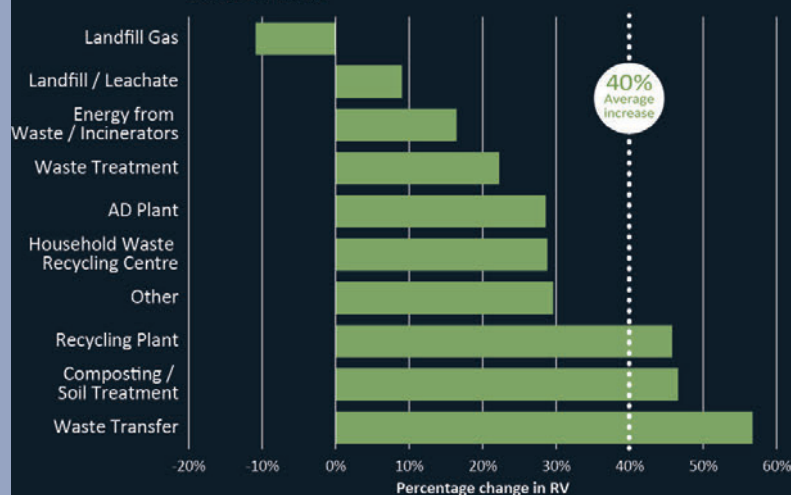
Percentage change of RVs for minerals properties between 2017 list and 2023 List

Source: Gerald Eve



Percentage change of RVs for waste properties between 2017 list and 2023 List

Source: Gerald Eve



- England, Wales and Scotland now have different multipliers, reliefs, schemes, appeals systems, and timeframes.
- Underassessed values from the 2017 or 2023 rating lists might be corrected by the Valuation Office and Scottish Assessors, presenting you with an unforeseen bill not budgeted for.

Prepare now.

For properties in England and Wales, you can review your business rates through the 'Check Challenge Appeal' process from 1 April 2023 or try to pre-agree them before then. For properties in Scotland, ratepayers only have until 31 July 2023 to submit a challenge for their 2023 RV values.

Terex charts vessel to ship 30 machines from UK to Australia

Terex—a global manufacturer of materials processing machinery and aerial work platforms—in cooperation with DHL Global Forwarding's Industrial Projects division has successfully chartered a vessel to convey a consignment of 30 Powerscreen®, Finlay® and Terex Ecotec machines from Southampton, UK to Brisbane, Australia. In what has been a mammoth, first-of-its-kind practice for Terex, the successful charter was to ensure customers get their machines in these times of logistical and supply chain delays.



Claire Hamilton, Category Director - Metal Fabrications & Logistics, Terex Supply Management and Transport, said, "Towards the end of last year, our RORO (roll-on/roll-off) capacity to Australia was suspended due to port congestion, backlog due to COVID, and increased global demand. Vessels were overbooked and backlog was not reducing. While we were provided with an allocation of slots, this did not meet the demand for our products.

We decided to research alternative options for getting our equipment to our Australian customers, which was a huge undertaking. Our equipment varies in size and weight and not only is lifting them on, and off vessels difficult, safety of doing so is always our top priority. After exploring various options, we found a solution that enabled our machines to be tracked and secured onto a platform, which would be lifted by cranes and lowered into the hull of the ship."



Prior to loading, the Terex Sourcing and Supply team worked with various stakeholders—including safety, engineering, logistics, operations teams within Terex, as well as external transport and shipping providers—with biweekly meetings to plan every detail. Specific engineering information was provided for each machine, and dates agreed among all parties for getting machines to port. In total, 30 Terex machines weighing 1,092mtons / 5,012cbm were delivered to the Port of Southampton.

Even when at the port, support was provided to transfer the machines from storage to dockside, providing solutions as problems occurred, with Terex service engineers checking machines prior to loading and supporting stevedores at the dockside and on the vessel. Loading to the vessel was performed by tandem lift operation of the ship's cranes and lifting platform. Embarkation and disembarkation to and from the ramp was undertaken using ramps on the quayside and in the ship's hold. In total, it took eight days for all 30 machines to be safely loaded to the vessel.

Claire summarises, "From the planning stages right through to the enormous operation of loading our equipment onto the vessel, all stakeholders worked proactively to ensure that our 30 machines were loaded safely to the vessel with no incidents or accidents. It was a huge undertaking—constant collaboration between internal and external parties, working as a team, was a key contributor to success."

The machines are currently enroute and expected to arrive in Australia in early March.



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Weir Minerals releases the 6th edition of the Warman® Slurry Pumping Handbook, the definitive resource for slurry pumps



The Warman Slurry Pumping Handbook is the definitive guide for most slurry pumping applications.

Weir Minerals, manufacturer of the industry-leading Warman® slurry pump, has released the latest edition of their coveted Warman® Slurry Pumping Handbook. The 6th edition, compiled by the most trusted name in slurry pumps, features detailed engineering data required for most slurry pumping applications.

Drawing on decades of Weir Minerals' inhouse expertise in innovative engineering and slurry pumping technology, the new handbook has updated reference material based on new learnings, improved understanding and technological developments within the mining industry.

With customers always in mind, the handbook aims to empower engineers to achieve optimal performance from their Warman® slurry pumps. An increased global focus on the environment, energy consumption and water conservation will influence slurry pump design and considerations – making this latest handbook an essential tool for all current and future pump engineers.

"Pumping slurry has many challenges and I'm excited to publish our latest handbook, packed with fundamental theory, application advice, standard practices and latest Warman learnings from the field; all aimed to help our customers, present and future, deliver with excellence." Marcus Lane, Director, Slurry Pumping Technology Group

Weir Minerals are continually striving to shape the next generation of smart, efficient and sustainable solutions with cutting-edge science and innovation. The comprehensive handbook includes over 140 pages of detailed information, including performance charts, impeller design, part configuration, assembly and slurry considerations – fully supported by accurate technical renders and specifications.

"The high quality of the reference material in this essential resource reflects the leading status of the Warman slurry pumps. As the industry leader, we have a responsibility to develop our future engineers; we will make the latest version of the Warman Slurry Pumping Handbook available not only to our customers, but also to the leading schools worldwide, so they can learn from the best in the industry." John McNulty, Vice President Global Engineering & Technology.

As part of Weir Minerals' commitment to investing in STEM education and developing the next generation of engineers, copies of this essential resource will be gifted to the leading mining and engineering educational facilities around the world, including the winner of the 2022 Warman Design & Build competition, Deakin University in Australia.

Learn more about Warman® slurry pumps at:
<https://www.global.weir/brands/warman/>

10,000th ADT leaves the production line in Norway

After 50 years of production, the Elnesvåg plant outside Molde in Norway, where the Doosan range of Articulated Dump Trucks (ADTs) is produced, is this month celebrating the completion of the 10,000th machine to be built at the plant. According to Plant Manager, Jan Roger Lindset, the Doosan ADT with production number 851951 is to be delivered to Rental Group in Norway.

Production began at the plant in 1972 when the business was called Glamox. Since then, the brand has had a number of names such as Moxy, Moxy Industrial, Brown Engineering, Moxy Trucks, Moxy Engineering and in 2008, the name changed to Doosan when the South Korean manufacturer bought the factory and the product. In 2021, Hyundai Heavy Industries bought the Doosan construction equipment range including the ADT line, and the name of the business was changed to Hyundai Doosan Infracore (HDI).

There are currently 150 employees at the Elnesvåg plant, but with both Doosan and Hyundai ADTs now being produced at the factory, the workforce is expected to expand to meet an expected 40% growth in production.

The Doosan ADT Range - Best-in-Class Performance

The Doosan ADT range comprises two 6x6 models - the DA30-7 and DA45-7 Stage V compliant machines - the DA30-7 has a payload of 28 tonne, while that of the DA45-7 is 41 tonne. The range was extended at Bauma 2022 with the launch of a new 4x4 version of the DA45-7 ADT, intended to compete with rigid dump trucks (RDTs) in the 40-tonne class.

Like all Doosan ADTs, the DA30-7 and DA45-7 models feature an articulation hinge positioned behind the turning ring to provide equal weight distribution to the front axle even during maximum steer articulation. This combined with a free-swinging rear tandem bogie ensures equal distribution of weight to each wheel and guarantees permanent 6-wheel

contact and drive for equal power distribution and excellent performance particularly on difficult terrains such as soft ground, uneven surfaces, very steep slopes, tight turns or a combination of all of these difficult conditions.



Collectively, the forward turning point, the unique tandem bogie and the sloping rear frame results in 'best in class' rough and soft terrain capabilities. The unique body shape and sloping frame ensure equal load distribution on all the wheels making these machines the best haulers for soft terrain work. The design of the articulation also provides equal load distribution on the wheels on both the left and right hand side when turning, which is very important for the traction and stability of the machines. All of these outstanding features are available on the Doosan Stage V DA30-7 and DA45-7 ADT models.

In the new 4x4 ADT, the front truck and cab unit is the same as in the original 6x6 model, with modifications being made on the rear dumper unit only. Featuring a ZF EP8-420 transmission, the 4x4 DA45-7 is a two-axle ADT with twin wheels at the rear, and with a dumper section similar to that on RDTs in the 40-tonne class.

Superior performance in difficult conditions, compared to RDTs

"With superior operation on poorer roads, smoother surfaces and steeper terrain, the aim of our new 4x4 machine is to challenge RDTs in the 40-tonne class, by providing a dumper product that delivers much more than RDTs," says Beka Nemstsveridze, ADT Product Manager at Doosan.

As well as performing better in conditions that are tough for RDTs, the new 4x4 DA45-7 ADT has a width of less than 4 m to avoid the need for special transportation and offers a better turning radius than a comparable RDT. The shorter turning radius and the design of the rear dumper unit, which is more suited to carrying flat and heavy rocks, provide particular advantages in the mining and tunnelling industries.

The latter are growing markets for ADTs, and include pioneering, short-term mining projects, quarrying and contract mining industries, especially those in southern Africa, the UK and Australia. Construction and bulk earthmoving contractors involved in roads, dams, airports, landfills and development projects are also large users of ADTs. Together these areas make the ADT market a wide and varied one, thereby ensuring a large customer base.

DXB Pump & Power achieve ISO9000/14000/45000 certification of its process systems underwriting its focus on environmentally designed pumps for quarries



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ISO 9001
Quality
Management
Systems
CERTIFIED

ISO 14001
Environmental
Management
CERTIFIED

DXB Pump & Power the UK's leading environmental pump manufacturer has recently been approved and certified by the British Standards Institute to ISO9000, 14000 and 45000.

The company, which is the only wholly British owned pump manufacturing company has, since its founding in 2017, developed a range of market leading Stage 5 and electric pumpsets for the quarry and mining markets in the UK and Europe that has seen it save its customers substantially on fuel costs CO2 and NOx emissions.

Speaking from their new 13000sqft factory in Suffolk, Matt Flack-Director of Operations, said "Starting as a brand new facility in 2017 enabled us to use best practice methods in designing and manufacturing the cleanest pumpsets for our quarry customers easily, but now having certified these processes with our ISO certifications, ensures that we continually produce high quality, environmental equipment for our most important market."

Sue Alsop who joined the company in 2022 as Director of QHSE, has worked hard to design and install their process systems to ensure that the company would not only achieve its ISO approvals but also more importantly, allow the business to design and develop the most advanced pumpsets on the global market consistently to the highest quality and environmental standards.



Celebrating 50 years of UK Manufacturing

Clifton Rubber are delighted to be celebrating their 50th Birthday this year...

Much has changed since Managing Director Brian Burton started the company in 1973 at the age of 23. It's still in the same location - St Ives in Cambridgeshire, and is very much still a family owned and managed business with son Ben Burton joining the company in 2011 as Operations Director.

Today the company has over 50 employees, a global customer base and operates out of a production plant over 50,000 square feet in size. Continually investing in state-of-the-art plant and equipment, the company has developed an extensive knowledge of rubber and polyurethane materials and the processes required to manufacture high quality components, putting them at the forefront of the industry.

Recycling Products



Managing Director Brian Burton said, "It's a fantastic achievement to have successfully completed five decades in business. In that time, we've achieved a lot and are proud to be seen as one of the UK's leading Rubber and Polyurethane Moulding Experts. We're going from strength to strength and have lots more to come in the future, with exciting times ahead to look forward to."

Clifton Rubber's core business is the processing of rubber and polyurethane materials to produce customer bespoke products, such as mouldings, rubber and polyurethane covered rollers, extrusions, fabrications, sheet cut gaskets and linings.

Clifton Rubber's range of rubber and polyurethane components are available for use in many aspects of the recycling industry. They are your one stop shop for rubber & polyurethane recycling components – stars, discs, trommel wheels, conveyor rollers, idler discs & polyurethane screens. The requirement for product quality, efficiency and value for money is why leading OEMs use Clifton Rubber components in their equipment.

In addition, they have developed a range of own brand components that can be found in use in various applications around the world including the recycling, offshore and transport industries.

Learn more by calling our friendly customer support team:

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Dan Flack, Sales Director, RK6, Euan Fairweather, MD, Empire Exports, Darren Paterson, Sales Manager, Empire Exports, Paul Donnelly, MD, RK6

Red Knight 6 Ltd and Empire Exports agree Strategic Partnership

UK equipment sellers Red Knight 6 Ltd (RK6) and Empire Exports have agreed a strategic partnership that will see Empire Exports offer RK6 partner machines exclusively to the Scottish market.

RK6 currently work with a variety of partners to provide a range of crushing, screening, shredding and material handling solutions throughout the UK. The business was recently awarded the entire UK dealership rights for Rubble Master, world leaders in impact crushing and screening. RK6 also work with EDGE Innovate, MDS and Komplet, ensuring a complete offering of machines, no matter the customers' requirements.

Empire Exports are a family run business, based in Falkirk, Scotland, predominantly specialising in used machinery, but also with a view to satisfying customers' needs for new machinery to the industry. The management team at Empire Exports have worked in the industry for over 40 years with the company operating in the last 5 in the Scottish market.

"As part of our recent expansion we have been evaluating a number of options to bring our range of products to Scotland.

We identified that partnering with a well-established business would be the best way forward. When we met with Empire Exports it was clear their focus and values were aligned to our own," said Paul Donnelly, Managing Director of RK6. "The market remains challenging, finance is expensive, there is continued uncertainty but by partnering with Empire Exports we can give our customers real flexibility and options on what they trade in against new machines. This will be beneficial in delivering success for all parties," continued Paul.

"RK6 have a great product portfolio, meeting a variety of needs that customers have. We are delighted to partner with them to bring these new machines to the Scottish market. We are really looking forward to getting out and talking to all our valued customers about this expanded offering we can now bring," said Euan Fairweather, Managing Director of Empire Exports. "As well as a strong machine portfolio, RK6 are also committed to a dedicated spares holding and service team on the road, which means our customers benefit from an end to end solution," continued Euan.

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Wash Recycling - from Feeder to Filter Press

When a Swiss customer needed an end-to-end excavation wash recycling system, Terex Washing Systems and their Dealer, Avesco, answered the call.

With thousands of tonnes of Construction and Demolition (C&D) and excavation waste being stockpiled each year, a system that can recycle this waste into a saleable product, has environmental as well as financial benefits to aggregates producers is exactly the solution Albin Borer AG, a Swiss Group in Construction, infrastructure and material treatment had been seeking when they began to investigate a way to recycle the waste they were sending to landfill.

Terex Washing Systems were tasked with finding a solution to this problem for this customer, which resulted in the design, manufacture and installation of a complete end to end excavation wash recycling system. Everything from the feeder to the filterpress was included in this installation, which manages to achieve throughputs of 250 tonnes per hour of C&D and excavation waste and producing 9 saleable products. The close working relationship between Albin Borer AG, our Dealer, Avesco and Terex Washing Systems, along with a high level of aftersales support has resulted in this unique project being commissioned successfully.



Family Business

Albin Borer AG is an independent family-owned company, that has been in business since 1932. They are a strong, future-oriented business that provide high quality products for infrastructure, roads and they concentrate their strengths on a wide range of services in the construction industry. From their locations in Erschwil, Laufen, Bolligen and Basel, they operate in the cantons of Solothurn, Aargau, Bern, Jura and Basel. Many members of the family are still very active in the company and are very much part of the innovative advancements they have made over the decades.

Albin Borer AG wanted to start to process their own waste material, that was accumulating from infrastructure work that was happening in the region. Ultimately, they wanted to generate a saleable product and open up a new revenue stream for the business. One major part of the overall plant design was based around high capacity on a small footprint, due to site space restrictions. In addition there was also not a lot of water available on the site, coupled with environmental legislation around water use, which demanded additional design expertise on Terex Washing Systems for the final solution. This state-of-the-art washing solution was achieved by the innovation team of applications and engineers at Terex Washing Systems in partnership with our dealer, Avesco, who designed this bespoke solution suited to their specific needs. This is a full 'Feeder to Filterpress' solution also incorporating crushing capability from our Terex Group Company, Terex MPS, as well as Terex Washing Systems AquaClear, full water treatment solution, incorporating a Terex designed and manufactured Filterpress, with the capability of processing 250tph of feed material, with the ability of processing 25 tons of sludge/final waste per hour.

From Feeder to Filterpress - The DORO site, in Dittingen, Switzerland, an installation of the Albin Borer AG

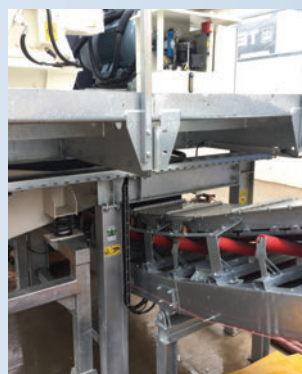
This installation is testament to the expertise within the team at Terex Washing Systems in conjunction with our Dealer in Switzerland, Avesco, have installed many wash plants in Switzerland. Right from the start of the process Terex Washing System worked extremely closely with Avesco and the customer Albin Borer AG to acquire their specific solution. The in-house applications team worked with the customer and dealer to carry out extensive laboratory testing to determine the material to be processed. From here the dedicated bespoke project engineering team designed a full the plant and solution to their needs, which was completely project managed by Terex Washing Systems and Avesco for the complete delivery install and commissioning of the plant.

And it doesn't stop there, as Terex Washing Systems and Avesco continue to provide 24/7 aftercare support as and when it may be required.

C&D and Excavation Waste

The Terex Washing Systems plant features all Terex designed and manufactured equipment for the key stages in the Wash Recycling process. The plant combines the process of Material Feeding, Rinsing, Crushing, Aggregate Scrubbing & Sizing and Sand Production all coupled with a full Terex Washing Systems AquaClear water treatment offering, ensuring that 95% of the water is recycled and reused within the wash plant. All of this is achieved on a relatively compact footprint, due to limited site space, made possible with unique and innovative design choices.

The feed material is made up of excavation from Albin Borer AG other businesses. An AggreScalp 125 receives feed material from



the loading shovel and removes oversized stones (larger than 150mm) from the material, which is achieved by the 150mm gaps in the finger bars installed. These oversized stones are stockpiled for later use. Medium size 150/80 mm are sent via a side chute into a feed hopper, feeding the Terex MPS crusher, a Horizontal Shaft Impactor, HIS 3434. Since occasional pieces of metal were present within the feed material, an over-band magnet has been installed after each of the feed hoppers.

Out of the Terex MPS HSI impact crusher, the crushed stones are either passed to a dedicated stockpile, a dry 0-40 mm, or onto the main conveyor sending the raw material to the washing plant.

Screening, Scrubbing and Classifying

After oversized stone and any metals are removed from the feed material, it makes its way up the main conveyor and enters into a Terex 20 x 6 (6m x 1.80m) 3 Deck Rinsing Screen. This 20 x 6 "Pre-screen" Rinser gives the material an initial wash before the various fractions is split with different apertures on the screen mats. The sand (0-4mm) and water from the rinsing screen passes to the "Prewash" tank. The Terex Washing Pre Wash has a unique design features which allows the operator to process difficult or dirty material and ensures production of sand products that confirm to strict specifications.

The 4 aggregate fractions passes (4-80 mm) into the new Terex patented "HydroScrub" logwasher.

This HydroScrub is a unique design logwasher for aggregate scrubbing, patented by Terex which allows operators to hydraulically adjust the hull angle from 9° to 16°, depending

on the raw material to be treated. This gives the operator the ability to process a wider range of feed materials and is ideally suited for recycling applications.

Whether the raw material is containing a lot of "light density" contaminants like wood, roots, plastics etc, then the angle is set up "high", and floating elements are easily removed. Likewise, if the raw material is containing more clay conglomerates, then the angle is set "low", which results in a better 'stone on stone' scrubbing giving better throughputs and a cleaner aggregate product and eliminates the need for secondary scrubbing on high clay bound or dirty material.

The post-screen of the HydroScrub classifies the material into two different sizes - 4-40 mm and 40-80 mm. The 40 - 80 mm can be sent back to the crusher, or it can be sent to the dry classifying screen. The 4-40 mm is also conveyed to the set of dry screens (see below).



7 fractions are created, falling into underground bays fitted with automatic weighing scales and individual conveyors: a main conveyor is gathering each delivery according to client's request for their recipes, automatically loaded in the clients trucks.

Fine Sand Cleaning

The water that has washed the aggregates up until this point in the process along with the sand, is collected in the Terex Washing Systems PreWash tank. This unique solution is receiving all of the process water from the upstream process, with the sand, and the extra fines, clay, and contaminants, and light density particles:



The Terex Washing Systems PreWash tank allows the ability to produce sand products into specification from materials with a high silt content and is a must for recycling applications and plant operators. The principal of it is to pump less volume out than is entering the tank. It is designed to “overflow”, gently separating out extra fines, and the light density contaminants, keeping only the sand 0-4 mm, that will be sent by a centrifugal pump to the sand washing Hydro-cyclones module.

The Terex Washing Systems FM200 Sand Plant is part of the wider solution and it is fitted with separators, high performance cyclones, which are also specially design for recycling applications. The use of separators means the plant can handle the variability of material that is often the case with Construction, Demolition and Excavation material, and results in a reduction in losses of valuable sand product, and the production of an in-specification material.

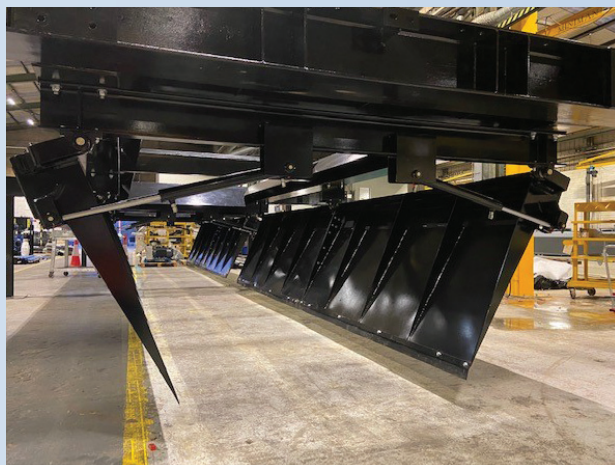
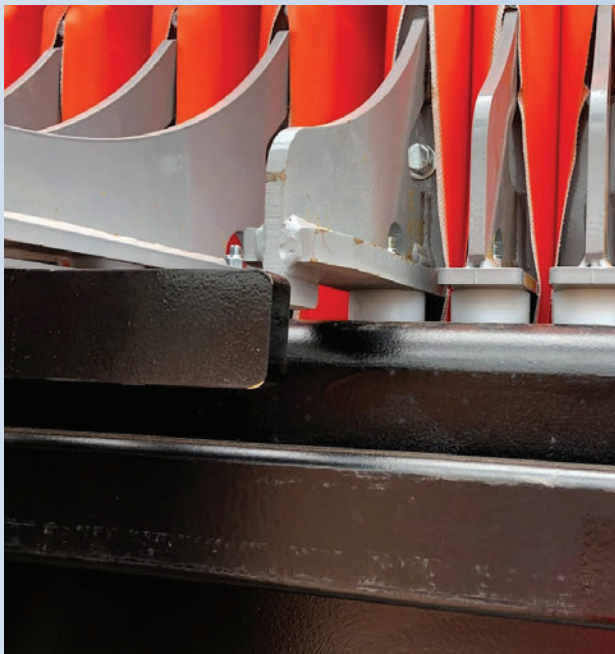
The FM200 also features a double wash process. The Terex washing systems double wash process to maximum recovery of sand through the removal of silt, slimes and clays below 63µm. The sand slurry (0-4mm and water) is pumped to the primary separator for an initial wash. The underflow discharges onto the dewatering screen where it receives a further rinse. Any fine sand which passes through the screen is collected in the sump and pumped to the secondary separator for a final wash. It was necessary to double wash the material at the Albin Borer AG site due the high percentage passing 63-micron in the feed, which was identified in the initial laboratory testing.

After this double wash process, the two in specification grades of sand are dewatered onto the high frequency dewatering screen, which reduces residual water content in the final product to 10-15%. The water from both separators containing the minus 63-micron material is collected in a ground sump and pumped into the thickener tank—where the water management process begins.

Aquaclear Water Management

The waste water is pumped into a low level thickener with flocculent added, from the central control room housing unit. Within the low level thickener, the waste particles of silt (minus 63-micron) and clay combine with the “co-polymer”, or flocculent, to create a larger heavier particle that sinks towards the base of the cone. The flocculent dramatically speeds this process up and allows the clean water to weir over the top weir of the thickener into a collection tank, where it is recycled back into the wash plant.





The sludge that has been collected at the bottom of the deep cone thickener is pumped into a buffer tank, where it is stored until enough volume is gathered. At this point it is transferred into a filterpress. The Filterpress on this Albin Borer site is the Terex Washing Systems 165 plate press, with a plate size of 2m x 2 m. The function of the press is to recover the last remaining water within the thickened sludge.

The Filterpress has a working pressure of 16 bar (232 psi). Each plate is covered in a nylon filter cloth, which when filled with sludge under pressure, forces the remaining water to be removed from the sludge. This water is then recycled back into the wash plant to be used for washing aggregates and sand once again.

After the water has been removed from the sludge, bomb doors below the filterpress open and the hydraulic ram begins to decompress. The slurry cakes are then rapidly discharged into the bay below the filterpress. Particularly sticky cakes are removed with a pneumatic plate shaker that ensures all the plates are ready for the next cycle. The cakes below can then be re-used for several applications, such as lining for ponds.

Albin Borer AG opted for an automatic cloth wash system on their Filterpress, so that the lifespan of the filter cloths could be extended while optimum performance is ensured. This system cleans each cloth individually using a high-pressure water jet.

Johnston Patterson, Product & Applications Manager at Terex Washing Systems explained that, "This water management system recycles 95% of the water used for this application. Albin Borer AG only needs a small tank of water to top up the system every so often. This has a hugely positive impact on the environment and has financial benefits."

The result for Albin Borer is the sustainable production of usable and saleable sand and aggregate product from C&D and excavation waste. This also has the environmental benefit of being diverted from landfill. Additionally, the water management products recycles the dirty water from the process and returns a clean water back to the process again for use.

Johnston Patterson explained that, "the customer is very pleased to have a solution in place to recycle their C&D and excavation waste. The working relationship between Terex Washing Systems, Avesco and Albin Borer AG has played a huge part in achieving a high level of performance for this plant."

To learn more about Terex Washing Systems or how they can assist you in your wash recycling needs, please contact tw.sales@terex.com or visit www.terex.com/washing



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TEMA ISENMANN's TeePee® and Upright Dewatering Modules offers major increase in water drainage capacity

Modern quarrying conditions are demanding more volume from existing equipment than ever before. Dewatering and rinsing applications are no exception, with many screens often unable to handle the additional demands placed up on them.

By offering increased capacity, reliability and efficiency TEMA ISENMANN's TeePee® and Upright Dewatering modules provide the solution, meeting the market's need for additional performance from screening machines installed with modular systems.



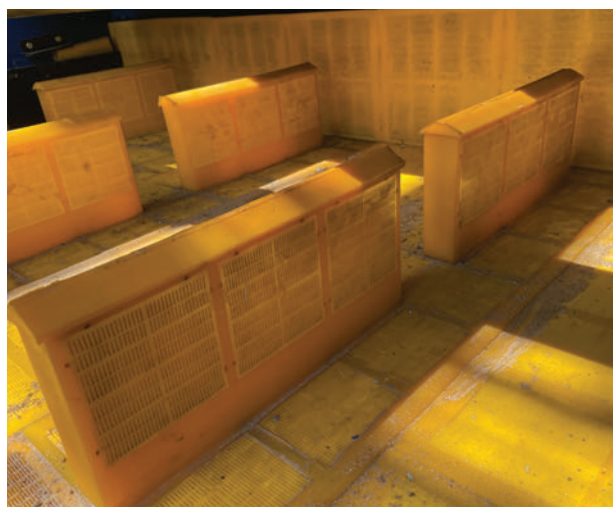
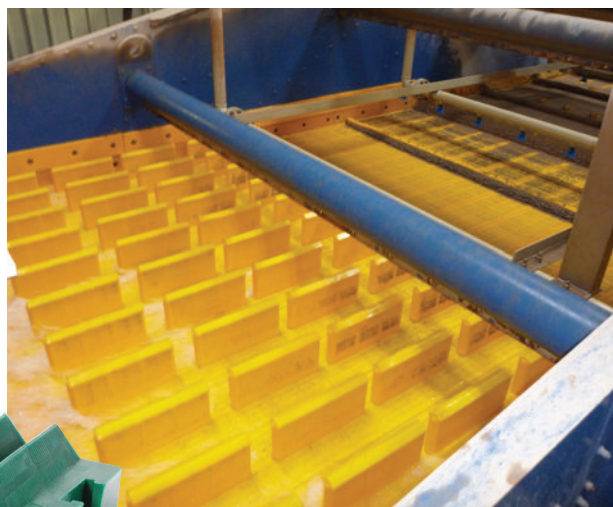
Key features include:

- Increase of typically 60% effective screening area on a 300 x 1000mm module.
- Enhanced surface water drainage capacity.
- Compatible with most popular modular screening systems.
- Wide selection of aperture range and web construction.
- Standard sizes normally from stock.

TEMA ISENMANN's TeePee® and Upright Dewatering Modules incorporate injection moulded segments, ensuring repeatable class-leading performance. Computer controlled injection moulding machines maintain optimum conditions throughout the manufacturing process, resulting in consistent aperture sizing in a robust and hard-wearing polyurethane.

The TeePee® modules increase in exposed surface area allows the modules to operate at a higher capacity with the apertures embedded in the vee-shaped ridges over the full length of each panel. In addition to the increased open area and surface area, the raised vee-shaped ridges promote an effective dewatering of moisture. The ridges effectively "crack" the compacted bed with each stroke of the screen, while water released from the interstitial spaces is squeezed against the screening surface, promoting more effective dewatering capabilities.

The structural integrity of the durable vee-shaped peaked design of the TeePee® module has been proven on screens worldwide, with significant deck loadings in dewatering applications in sand and gravel, iron ore, coal and lead zinc.



Matec Industry introduce “Matec Green” their ESG vision for the future

ESG (Environmental, Social, and Governance) vision for industry is a framework that promotes sustainable and responsible business practices. The vision aims to integrate environmental, social, and governance factors into the decision-making processes of businesses, investors, and other stakeholders.

The ESG vision for industry is based on the belief that businesses can and should play a key role in promoting sustainable and equitable economic growth. By considering the impact of their activities on the environment, society, and governance, businesses can help to create a more resilient and sustainable global economy.

“Matec Green” is Matec Industries's ESG vision for a future where industry and environment coexist in a sustainable way. Our mission is to provide innovative solutions that help businesses reduce their environmental impact while also improving their operational efficiency and profitability.

At Matec, we believe that it is possible to achieve economic growth without compromising the environment. Our technologies and services are designed to help our customers achieve this goal. We offer a wide range of products and services that are specifically designed to help businesses reduce their carbon footprint, conserve natural resources, and improve their overall environmental performance.

In addition to our focus on environmental sustainability, we also prioritize operational efficiency and profitability. Our solutions are designed to help businesses improve their efficiency and reduce costs, while also achieving their environmental goals.

Overall, Matec Green is a comprehensive approach to sustainable business practices that can help businesses thrive in a rapidly changing world. We are committed to working with our customers to create a more sustainable and prosperous future for everyone.





Matec Industries is committed to responsible human resource management, providing its employees with the best benefits and the assurance that they are working for a healthy company. We firmly believe that the well-being of our employees is a key element in the success of the company and, consequently, of our ability to provide innovative solutions to our customers.

At Matec Industries, we provide our employees with a safe and healthy work environment that respects their rights and promotes their professional and personal growth. We are committed to providing fair and competitive wages, appropriate training and professional development, an inclusive and diverse work environment, and a comprehensive benefits package, including insurance, retirement plans, and other benefits.

In addition, we are committed to complying with labor and workers' rights laws and regulations, and to promoting ethics and integrity in all our activities. We are proud to be a company that values diversity, inclusion and equality of opportunity, and recognizes the contribution of every employee to our success.

In summary, the well-being of our employees is at the core of our business philosophy, and we are constantly striving to provide them with a healthy, safe and rewarding work environment that enables them to reach their full potential and work for a healthy and successful company.

Matec Industries is an Italian-based company that provides innovative solutions for the treatment and purification of water and the filtration of industrial fluids. Founded in 2004, Matec Industries has quickly become a leader in the environmental technology industry, with a focus on



sustainable development and responsible business practices.

The company offers a wide range of products and services, including water treatment systems, wastewater treatment systems, industrial filtration systems, and sludge dehydration systems. Matec Industries' solutions are used by a variety of industries, including mining, construction, quarrying, and

recycling, and are designed to help businesses reduce their environmental impact while improving their operational efficiency and profitability.

Matec Industries' s filter presses are highly advanced systems that are designed to deliver optimal performance and efficiency in a wide range of industrial applications. The company's filter presses are built using high-quality materials and advanced technologies, ensuring they are both durable and reliable. This makes them ideal for use in demanding environments, such as those found in mining, aggregates, and other heavy industries.

In addition to their robust construction, Matec's filter presses are also highly customizable, allowing them to be tailored to specific customer needs and requirements. This means that they can be configured to handle a wide range of materials, from fine particles to high-viscosity slurries, making them a versatile solution for a variety of industrial applications.

Circular economy is becoming increasingly important as businesses and governments seek to reduce their environmental impact and conserve natural resources. By supporting this model, Matec's filter presses are helping to drive sustainable practices across a range of industries. By separating solid and liquid materials efficiently, the filter presses enable the recovery of valuable resources that would otherwise be lost or discarded.

Soil washing is a critical process in environmental remediation, as it can help to remove harmful contaminants from soil. The process involves mixing contaminated soil with water or a chemical solution, then separating the solids from the liquid using a filter press. This leaves behind clean soil that can be reused, and contaminated slurry that can be treated or disposed of safely.

Matec's filter presses are well-suited to soil washing applications, as they can handle a wide range of materials and can achieve high levels of separation efficiency. This makes them an effective tool for environmental remediation, helping to reduce the environmental impact of contaminated sites and support sustainable practices in the process.

By enabling the efficient separation and removal of contaminants from soil, Matec Industries's filter presses support the circular economy by reducing waste and enabling the reuse of resources. This not only supports environmental remediation efforts but also helps to conserve natural resources and reduce the environmental impact of industrial processes.

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DXB Pump & Power launch new Medium Head Quarry Pumpset for Wash Plant Feed and Dewatering Applications



DXB Pump and Power, the UK's only privately owned British pump manufacturing company, has launched a brand new dewatering and washplant feed-pump for quarries and recycling plants expanding its range of pumps originally launched at Hillhead last year.

The new DE140/70 pumpset is a Stage 5 and electric motor driven pumpset designed and built in the company's DXB3 canopy that is used in both 55kW and 105kW configuration and allows the company to offer a range of quarry pumps offering flows up to 850m³/h and heads to over 120m.

This latest design for medium pressures offers a maximum flow in excess of 180m³/hr at heads of almost 80m with a BEP at 140m³/hr at 70m operating at an economical 50kW of power and 14.5 litres of fuel with only 37kg of CO₂ each hour.

The major benefits to the quarry of this pump is that where others use Ad-blue in the SCR exhaust systems to reduce their emissions, the DXB pump has only a DPF which is optimised to maintain the engine temperature and reduce the challenges faced by other larger engines in the market.

In addition to the Deutz engine with its 1000 hour service schedules, the pumpset comes complete with the revolutionary Fuel-Active™ system that reduces the chances of fuel contamination and costly callouts on site whilst maintaining uptime of the plants that often run at 150 tonnes per hour.

Simon Ruffles, Managing Director of DXB Pump and DXB Integrate, the hire company in the UK aggregates market, said "Many quarries operate their plant some distances away from the supply of their water requiring greater pressures to overcome the distance between this lagoon and the plant, but yet needs pressure for the nozzle bars and this pumpset is the smallest we manufacture for such applications"

He continued "Being able to design the pumpset without Adblue for the exhaust systems is a big deal for smaller quarries that perhaps don't have the larger equipment on site using Adblue for their units. Doing this performance with only a 55kW not only saves on servicing costs but also fuel which is critical to the smaller quarries in the UK."

DXB Pump & Power

DXB Pump & Power is an ISO9000/14000/45000 approved pump manufacturing business based in Suffolk. Its owners have operated in the UK quarry industry for over twenty years and have worked with all the major quarry companies in the market but especially the independents.

Their complete range of dewatering and process pumps include fresh water and slurry pumpsets in both engine and electric motor configuration and are capable of flows over 1000m³/hr and heads of over 240m while still passing solids over 75mm in size.



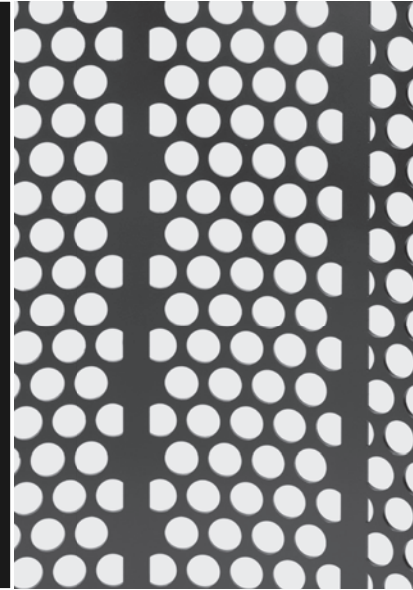
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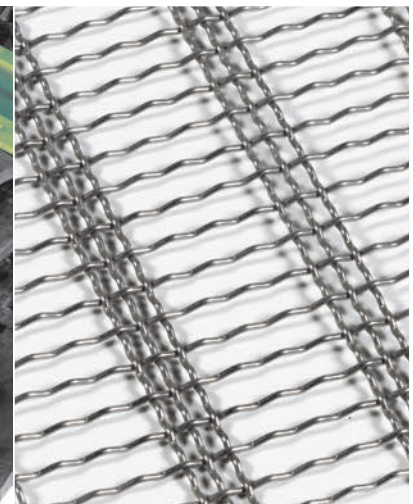
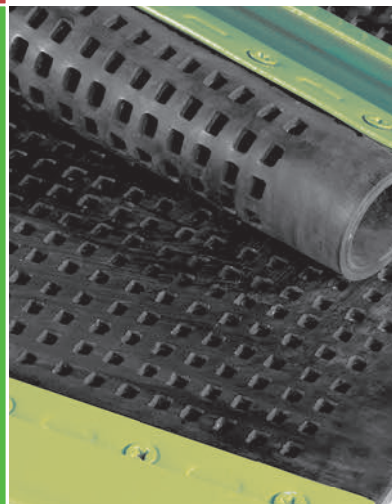
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Washing with Barrels



The Need for a Barrel.

The increasing demand to reclaim and recycle a bigger proportion of the aggregate extracted from the earth and likewise the need to clean extractions with more silt has ensured the washing barrel continues to play a major role in sand & gravel and quarry processing plants.

Furthermore concrete aggregate production requires good quality sand & aggregate in terms of being free of adhering silts.

Background:

Using a barrel to wash aggregates has been adopted since the very early days of washing plant and although the basic concept has not changed, the modern day washing barrel has become a far more efficient and user friendly machine than the older style machines. The modern machines can incorporate modern materials allowing shorter down time and easier maintenance. This coupled with the robust nature of the machine maintains the barrel as an important method of washing aggregates.

Where are Barrels Used?

Barrels are incorporated where adhering clays or fines require to be liberated from the aggregate to produce a clean product.

Types of barrels:

There are two types of barrels:

1. Washing Barrels turn at a relatively slow speed (approx. 25% of critical speed) and would normally be incorporated where material does not require intensive attrition to clean it or where the material might break up due to its fragile composition and hence create undesirable fines. For example, coal washing or Kaolin.
2. Scrubber Barrels turn at a more swift 50% of critical speed. The faster speed of the barrel creates far more attrition of material on itself allowing the fines and clays to literally be scrubbed off the aggregate.

Within the above types there also exists a variety of concepts which can allow a flexibility on the overall processing plant design depending on the material analysis.

These concepts essentially revolve around the sand content in the feed and the direction of the water flows within the barrel.

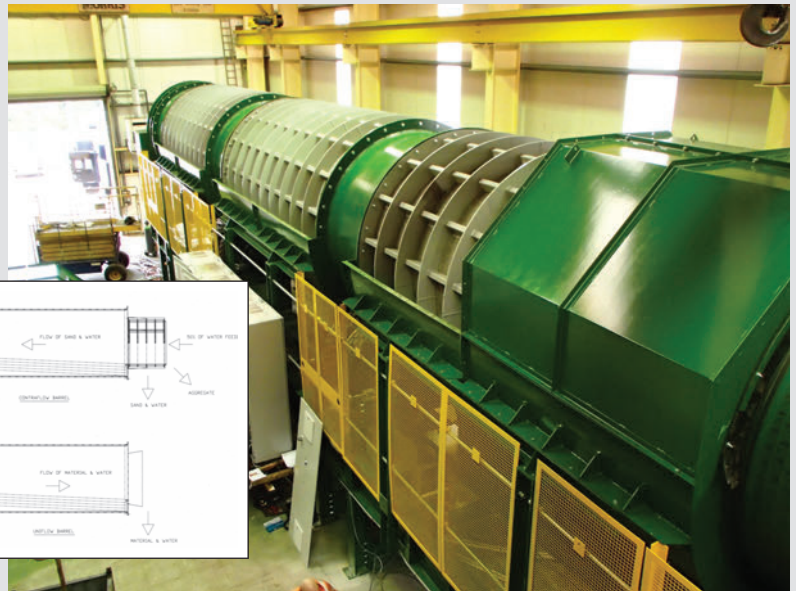
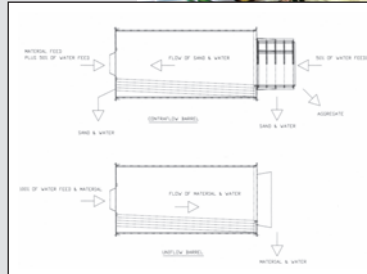
1. Uniflow. This concept as the term suggests is where all the material that is fed into the machine comes out at the discharge end. On sand & gravel plants traditionally the material feed would have been removed of most of the minus 5mm sand thus allowing only the fines adhered to the stone to be scrubbed. All of the water used in this concept would enter at the feed end of the barrel and would travel in the same direction as the material.
2. Contraflow. This concept is offered where customers wish to scrub all of the as dug feed including the sand. Usually, best results are achieved when the sand content does not exceed 50% of the feed due to the cushioning effect of the sand. Unlike the uniflow solution the water is introduced into both the feed end and the discharge end of the barrel. Perforated de-sanding meshes are incorporated into the feed end of the barrel and this design creates a flow of sand and water toward the feed end where the sand is removed for further processing. An addition to this concept is the incorporation of a perforated de-sanding discharge trommel to remove further sand and allow a certain amount of dewatering to take place before the material passes over the trommel for further processing.

Wileman Engineers Limited is a leading supplier of Scrubber Barrels to the Sand & Gravel and associated industries and has been supplying machines to the major UK aggregate companies since the 1970s. The main features of the Wileman design are as follows:

1. A barrel of robust design incorporating roller paths which are machined to produce a concentric and smooth drive.
2. The incorporation of truck tyres to support and drive the barrel again allows a smooth, quiet drive, eliminating excessive loading on the supporting structure.
3. The use of abrasive resistive rubber linings and polyurethane meshes provides a machine which can last indefinitely with regular maintenance.
4. The water used is introduced at relatively low pressures 25 to 30 psi and therefore is not reliant on high pressure expensive pumps.

The advantages of Barrels:

1. The attrition created in a high-speed scrubber barrel means a very clean product can be achieved.
2. The incorporation of a contraflow barrel in certain circumstances can provide helpful options to the overall design of the processing plant.
3. In general, a barrel can handle larger pieces in the feed material compared to a logwasher.
4. High tonnage throughputs can be achieved through a barrel.



The disadvantages of Barrels:

1. Barrels rely on the clays present to dissolve under the influence of the attrition action of the material and the water, some clay especially clays of a plastic nature which cannot dissolve are not suited to a barrel and may ball up into larger clay lumps.

Notable deliveries of Scrubber barrels

1. Wileman have 3 off 33M7 (Uniflow) Scrubber Barrels in the Buxton area processing up to and in some cases beyond 500 Tonnes per hour of limestone scalplings.
2. Wileman have recently supplied a 25M6 uniflow machine to Cemex designed to handle 250 tonnes per hour of sand & gravel.
3. Wileman have recently upgraded a 25M6 uniflow machine into a contraflow to remove fines & water at the feed end of the drum. Feed rate up to 300 TPH.

Other applications used under the Wileman rotary barrel design:

- Steel and Slag Rumlbers have been beefed up to withstand the extra heavy-duty requirement of metal & slag in a reclamation process.
- Rotary Screens both large & small have been developed up to 20m long & 2.5m in diameter.





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Decanter Centrifuge vs Belt Press vs Filter Press: Which is the best for Tailings Management?

All aggregate and mining operations with a wet processing plant will produce a waste stream. This waste stream consists of tailings - the process water and fine solids, clay and other deleterious material removed during the washing process. Traditionally, these tailings are sent to a settling pond or lagoon to separate the solids from the liquid in the waste stream.

However, settling ponds can be time-consuming and expensive to maintain, take up valuable land space and/or cover up mineable reserves. They are not the best method for tailings management, especially when mechanical dewatering options are available.

Mechanical dewatering equipment improves tailings management by separating the solids from the liquid to produce a solids product that is suitable for mechanical handling. As an added bonus, the recovered water can be reused in the washing process, reducing freshwater requirements for sites where water is scarce or expensive.

Types of mechanical dewatering equipment for tailings include:

- Decanter Centrifuges
- Belt Presses
- Filter Presses

Decanter Centrifuges

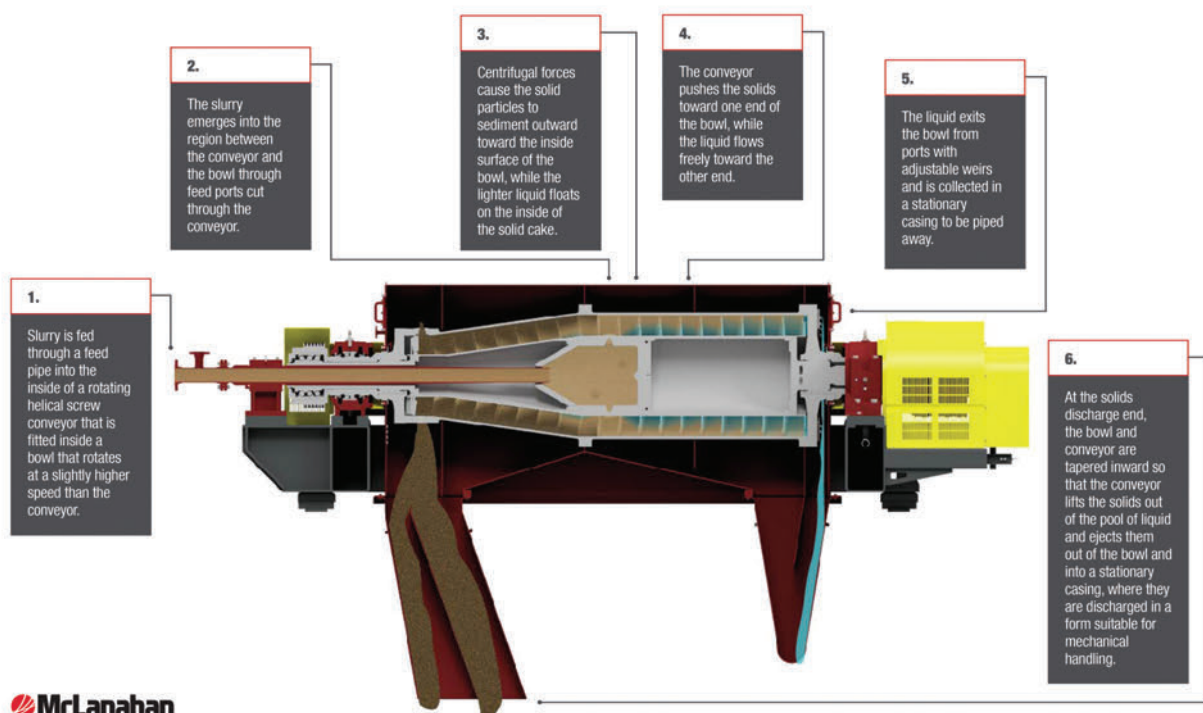
Decanter Centrifuges separate solids from liquid in a slurry by means of high centrifugal forces to induce sedimentation. The slurry enters the Decanter Centrifuge via a feed pipe into the inside of a rotating screw conveyor that is tapered at one end. The slurry is then released into a bowl surrounding the screw conveyor that is rotating at a higher speed than the conveyor.



High G-forces cause the solid particles in the slurry to be flung to the walls of the bowl, where the screw conveyor moves them toward the tapered discharge end. The tapered end of the screw allows the solids to dewater as they make their way toward the discharge. The water freely moves to the other end of the machine and discharges via ports.

Decanter Centrifuges produce a solid cake material that is suitable for mechanical handling as well as immediately reusable process water. They discharge a solid material somewhere between that of a Thickener and Filter Press. Decanter Centrifuges are fully automated and enclosed for cleaner operation.

How A Decanter Centrifuge Works





Belt Presses

Belt Presses feature rollers and belts to dewater material by passing the slurry through four main zones.

The first zone, the preconditioning zone, is where chemicals are added to draw the particles in the slurry together. The second zone, the gravity drainage zone, allows free water to drain from the slurry as it moves along an inclined belt. The third zone, the low-pressure squeezing zone, sandwiches the material between two porous belts, where liquid is squeezed out and the solids are retained between the belts. The fourth zone, the high-pressure squeezing zone, passes the belts under and over a series of rollers that decrease in diameter.

The result is a dewatered solids material that varies in consistency depending on the solids concentration of the feed.

Filter Presses

Filter Presses provide the highest level of mechanical dewatering without the use of chemicals. They consist of a number of recessed plates covered with filter cloths. When the plates are clamped together hydraulically, the recesses form chambers. Slurry is pumped into the Filter Press and fills the chambers. The liquid in the slurry passes through the cloth and out filtrate pipes at the bottom of the plates to collect in a trough at the bottom of the Filter Press. The solids are captured on the filter cloth. When no more slurry can be pumped into the Filter Press, the pump is stopped, and the plates open to release the solid cakes.

These solid cakes are drip-free, stackable and can be easily handled by loading and/or hauling equipment. Depending on the material, it can potentially be sold as a backfill or pond lining. The recovered water is then immediately available for use in the wash plant upstream.

Which is the Best for Tailings Management?

When it comes to tailings management, the best equipment for one site may be different than the best equipment for another site. Decanter Centrifuges, Belt Presses and Filter Presses are all suitable choices for pond reduction/elimination, so the best one depends on the tailings management goals of the site.

The main thing to consider is the type of material being dewatered. Decanter Centrifuges work best with material that has a larger particle size distribution and is more easily dewatered. They are also ideal for material with low clay content, and they are less sensitive to changing feeds.

Belt Presses can be used to dewater a variety of different slurries in a wide range of applications, but they don't perform

well with varying feed conditions.

Filter Presses are ideal for dewatering tailings from mineral and aggregate wash plants, mineral concentrates and most underflow slurries coming from a Thickener or clarifier. However, the feed percent solids and particle size distribution do have an effect on the overall dewatering efficiency of a Filter Press.

Some additional things to consider include maintenance and operation, as well as the costs associated with those tasks.

In terms of operational costs, Decanter Centrifuges and Filter Presses are fully automated, whereas Belt Presses require an operator.

Filter Presses do not require the addition of chemicals to aid in dewatering, while Belt Presses do. Decanter Centrifuges may benefit from the use of chemicals, but that depends on the material being dewatered.



Decanter Centrifuges have higher power requirements than Belt Presses and Filter Presses, so electrical costs will be higher with these units. Decanter Centrifuges also tend to produce more noise than a Belt Press or Filter Press.

In terms of capital cost, Belt Presses are generally less of an upfront investment when compared with Centrifuges and Filter Presses. Additionally, Filter Presses require ancillary equipment, such as a surge (or buffer) tank. Depending on the upstream equipment employed, Belt Presses and Centrifuges may not. Belt Presses and Centrifuges can operate on a continuous basis, so no surge tank is required to feed the machine. Slurry is continuously fed into these machines, and they continuously discharge solids. Filter Presses, on the other hand operate in a batch process. A pump feeds the slurry into the machine and stops when the plates are opening to discharge the solid cakes. The feed material needs somewhere to accumulate while the plates are opening, hence the need for a surge tank.

Maintenance costs are higher with Belt Presses because maintenance intervals are more frequent than Centrifuges and Filter Presses. Belt Presses require frequent belt washing, and the rollers and bearings are known for requiring frequent replacement, which means more downtime to perform maintenance.

In terms of footprint, Belt Presses and Centrifuges take up less space than Filter Presses.

When determining which solution is right for handling your tailings, make sure you consider the type of material the equipment will be processing as well as the initial investment and long-term operational and maintenance costs.

J.A. Jackson builds a sustainable future with CDE wash plant investment

The Lancashire firm has integrated a new solution to their site in a bid to meet increased demand...

J.A. Jackson, part of the Fox Group, has installed their third major project with wet processing experts CDE which will see them produce over 10,000 tonnes of washed material weekly.

Established in 1967, J.A. Jackson is a supplier of building materials, aggregates and ready-mix concrete as well as providing skip hire and haulage services.

Working out of sites in Preston, Leyland and Lancaster, J.A. Jackson supply quarried and recycled aggregates but increased demand for their products has boosted the need for more material recovery.

Long-standing partnership

The family run business has been working with CDE since 2010 when they installed their first wash plant at their 90-acre site in Fullwood which was processing between 80-120tph, and over the years was gradually upgraded to a 150tph plant.

Due to the long-standing relationship, J.A. Jackson had confidence in CDE's expertise to design a solution which would increase the amount of material they could process to meet current market demands.

Commenting on the relationship, David Scott, Health Safety and Operations Manager at J.A. Jackson said: "There were a number of reasons why we're continuing our partnership with CDE, firstly is that we've always been delivered a solution to suit business needs and received great support from the local team to ensure the smooth operation and development of our plant

"When we bought the plant in 2010, we were told to expect a 10-year life span, the plant has already outlasted that at 13 years, so we knew CDE's solution is designed to last. Some of the team commissioning our new plant had worked on the first one in 2010, and we were really reassured working with a team that we knew understood our site."

Sustainability at the heart of the solution

At the centre of J.A. Jackson's decision making is sustainability. In recent years, they have seen increased demand for recycled aggregates opposed to virgin limestone materials,

David comments: "Five to six years ago recycled aggregates were considered second rate, customers would prefer to pay the extra £2 per tonne to use virgin limestone materials. That landscape has completely changed and now we have a large demand for our recycled materials. Our single size aggregates and sand have proven to be very popular, we also produce a recycled Type 1 MOT from the clean oversize from the wash plant, giving a higher quality product when compared to dry processing. We are confident in the quality of our recycled products and trials have shown the quality to be equal to virgin materials."

As well as that, J.A. Jackson chose to continue partnering with CDE as it was more sustainable for their business as David continues: "We have been able to retain the main feed conveyor and aggregates processing section with the additional plant. CDE were able to design a plant to seamlessly integrate the elements we could keep from the original plant, which is a much more sustainable solution for us and a large part of the reason for working with CDE again."

Feed material entering R4500 primary scalping unit



David Scott,
JA Jackson



Transforming waste into value

In order to meet increased demands and also to serve the changing market landscape, CDE has designed J.A. Jackson a solution which can process over 200tph, an increase from 120tph with the existing plant, resulting in over 10,000 tonnes being washed through the plant each week.

The new 200tph solution integrates an EvoWash sand wash plant, AquaCycle™ A600 thickener, and screen, with a further addition of an R4500 primary scalping screen added once the upgraded solution was operational.

The plant is producing six final products (two sands; 0-2mm and 0-4mm, and four aggregates; 10mm, 10-20mm, 20-40mm and an oversized) as well as filter cake. With this new plant, 85% of the feed material is being repurposed in the local construction industry, limiting the amount of waste being sent to landfill.

The J.A. Jackson facility has an abundance of feed material from the local area, much of which comes from the 400 tipper wagons which form part of the Fox Groups fleet. The material is processed through the wash plant and the wagons leave with washed sand and aggregates, so as well as diverting material from landfill there are also less empty transport runs during this extremely efficient process, with waste washed and graded within 3 minutes.

J.A. Jackson is 45 minutes from the local stone quarries in Cumbria so by increasing capacity they are helping further

reduce carbon footprint of material movements by providing a source of aggregates to the local construction sector.

David Kinloch, Director of Business Development for CDE added: "It's been a pleasure working with J.A. Jackson over the years to build a solution that aligns with their sustainability goals. Plants like this are the future of the industry and a testament to J.A. Jackson's passion for diverting waste from landfill.

"We have many customers across the U.K., and with that we were able to take J.A. Jackson to visit several some of our cutting-edge plants to showcase our technologies, to make sure we found a solution that suited them. We were delighted to be working on their most recent journey, enabling them with an innovative solution to play their part in creating a circular economy. At CDE we are committed to delivering quality products, which stand the test of time. We are proud to be able to upgrade this 13-year-old plant and deliver the lowest total cost of ownership in the wet processing market."

David Scott, Health Safety and Operations Manager at J.A. Jackson said: "Now that we've increased the size of the plant, we're able to process more material which allows us to work in partnership with large construction firms which diverts more waste from landfill and ultimately is helping promote sustainability in our local economy.

"CDE has delivered on what we set out to achieve, we've developed a very positive working relationship throughout the years. From the design process through to the commissioning and after-sales support. We have a great on-going relationship with CDE and have regular visits from our local Customer Relationship Manager, who has been a great asset to ensure the smooth operation and development of our plant."

For more information about CDE and its wet processing solutions, visit cdegroup.com



JA Jackson wet processing plant site overview

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ALLU is delighted to bring to the market the new ALLU D Series Variable Drum...

The new ALLU VD Drum enables you to quickly replace fixed TS blades and there is no need to open the chain-box when blades are replaced. Enabling a variable drum setup means an individual drum or blades can be changed quicker. Saving you time and money.



ALLU's patented TS (top screen) construction and screening blades make it possible to screen materials even when they are wet or moist without fear of the structure getting clogged.

With the TS structure, it is also possible to get three different fragment sizes from the same ALLU unit by rearranging the screening combs with no additional costs.

ALLU Transformer attachments D series are versatile and reliable tools for industries enabling efficient screening and crushing of materials.

The ALLU Transformer D-series screener buckets are designed for larger processing jobs. Everything from aerating compost, primary on-site screening and processing construction material. This is a bucket which screens, crushes, pulverises, aerates, blends, mixes, separates, feeds and loads materials. And best of all, it transforms the materials you work with. It's more productive, and more profitable.

ALLU has been consistently one step ahead leading the industry for over 35 years, with truly mobile, compact screening buckets, which are the perfect attachment for compact base machines to screen and transform your materials.

There are many applications for ALLU Transformer attachments, contact us and we will help to select the right tool for your specific needs. With ALLU you are always in control and transforming your waste into profits.

*ALLU New VD Drum is currently available for DN 3-12 TS and DN 3-17 TS models.

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Stars of the Big Screen

As we all look forward to spring, it means one thing, screening season is about to kick off for many and Rubble Master's market leading range of tracked scalping and sizing screens promise to be at the heart of that season.

Since purchasing the Maximus facility in 2018 Rubble Master have invested a lot in making the improvements to the range at the RM Dungannon factory and bringing the expertise from their crushers to the range of screens. There has been close cooperation in product development between the RM headquarters in Linz and RM Dungannon to ensure quality through both ranges.

The scalping and sizing have proved very popular in the UK in recent years. By uniting the knowledge of Rubble Master in building compact, electrified crushers and the experience of the RM Dungannon in building outstanding screens there has been improved product quality and reduced machine production time. UK dealer Red Knight 6 Ltd (RK6) continues to see that investment pay off with ongoing deals across all types of customers.

"We have completed numerous deals on the scalpers over the last years and the feedback remains fantastic. The hydraulics, a range of screen sizes and power unit are exactly what customers want, the scalpers consistently exceeded expectations because of the variety on offer," said Paul Donnelly, Managing Director at RK6.

Now the RK6 team are seeing increased interest in the sizing/finishing range. The MSC range is made up of the MSC8500M and MSC10500M, both available in 2 and 3 deck variants. Each of the machines benefits from a heavy-duty vibrating tipping grid with a 9.2m³ hopper and easy to change screens.

"The feedback remains consistent customers regarding the finishers, they are exceeding customers expectations and consistently provide the right size of material from a multitude of screen options," continued Paul.



Aggregate Washing & Screening



Thanks to further collaboration between the RM headquarters in Linz and the screening facility in Dungannon a fully electrified hybrid models are now available, with the MSC8500e leading the way. It is something that has long been a feature of the crushing machines, but the same technology has been incorporated into the screeners, another example of the two sites working closely together for the benefit of customers.

"Efficiency of operation is key but the ability to reduce fuel costs and have a positive environmental impact is crucial. We've seen a genuine improvement across both screening ranges and our customers are benefitting from that as well," finished Paul.

Models Compared	HS3500M	HS5000M	HS7500M	HS11000M
Screenbox surface	2743 x 1220 mm	3660 x 1430 mm	4880 x 1525 mm	6100 x 1830 mm
Hopper volume	3.84m ³	6m ³	8.7m ³	8.7m ³
Oversize belt discharge width	1050 mm	1300 mm	1600 mm	1600 mm
Basic machine weight	17000 kg	24000 kg	35000 kg	43000 kg

Models Compared	RM MSC8500-2D	RM MSC8500-3D	RM MSC8500e	RM MSC10500-2D	RM MSC105003D
Screenbox, screen surface	5485 x 1525mm	5485 x 1525mm	5485 x 1525mm	6700 x 1525mm	6700 x 1525mm
Feedhopper volume	9.2m ³	9.2m ³	9.2m ³	9.2m ³	9.2m ³
Main conveyor belt width	1050mm	1050mm	1050mm	1050mm	1050mm
Standard weight	32000kg	34500kg	32000/34500kg	33000kg	35500kg

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The Bruce WashPod is the right fit for Mayer Earthworks Ltd

Mayer Earthworks Ltd, a groundworks specialist based in Staffordshire, has expanded its material processing capabilities with the purchase of a Bruce WashPod from CRJ Services Ltd. The WashPod, developed by Bruce Engineering Ltd, is a uniquely compact wash plant that produces three grades of cleaned aggregates and a single sand product.

Bruce Engineering Ltd developed the WashPod to meet the demand of a sub-sector of the aggregate recycling industry that want to wash secondary recycled materials, to produce sized gravel and sand products, but with limited space on-site, in which to do so.

The WashPod comprises of a set of modular components situated within a space similar to that of two 40ft high cube containers, making it easier and more cost-efficient to transport and install compared to larger, traditional wash plants. The system includes a dual shaft log washer that scrubs material as it enters the Pod. The cleaned material leaves the log wash and is fed onto a washing screen that further cleans and sizes the material in preparation for stockpiling. The dirt from the log wash leaves at the rear with organic matter and trash captured via the on-board Trash Screen. The sand is collected from the washing screen into a 'sand tank' which is pumped into the hydro cyclones for further cleaning and silt removal. Finally, the sand is fed onto a dewatering screen, which removes the remaining water and produces a clean sand product, with less than of 12% moisture content.

The WashPod purchased by Mayer Earthworks is processing sub-40mm grab-away material, a by-product of its groundwork services. The raw material is screened with a deck screener, with the sub-40mm being fed into the WashPod Hopper. Following the scrubbing, trash removal, and rinsing process, clean 10mm, 20mm, 25-40mm aggregate products and a single coarse sand product are outputted, suitable for sale in the construction industry.

"In 2022 we decided to take the large step by investing in a C&D wash plant. The main reason we decided to take this approach is sustainability. By investing in clever, innovative technology, we are now capable of diverting up to 250,000 tons of waste, per year from landfill. This will also reduce strain on our natural aggregates minerals in quarries by re-selling the material into the local construction industry. We decided to close the deal with Rob from CRJ Services, after going to look at a Bruce machine in Scotland. It was clear that this was the machine for us; well built, good throughput and an enthusiastic, knowledgeable team in Bruce who have been first class during both the delivery and commissioning period.



Rob and CRJ have been very supportive and pragmatic in the whole process and I cannot thank or recommend them highly enough!" - Daniel Mayer – Director at Mayer Aggregates & Recycling (part of Mayer UK Group)

The compact design of the WashPod makes it the smallest complete wash plant on the market, providing operators, with limited space, the ability to wash material on-site. Significantly reduced install, dismantling and relocation times make the WashPod the machine of choice for operators who have a requirement to campaign wash at multiple sites or those involved in contract washing, as well as those processing on a smaller footprint. As Bruce Engineering is a certified Hardox wear parts centre, the build quality of the WashPod is robust and market-leading, ensuring longevity, with other branded components used throughout.

"We are excited to see our first WashPod installed and operating following the acquisition of the Bruce Engineering dealership. The innovative and compact design of the WashPod overcomes many of the challenges operators face regarding cost, space, and operation. We are thrilled to see this first system delivering results for Mayer Earthworks." – Rob Symons – Director at CRJ Services Ltd.



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CRJ Services Ltd appointed as the exclusive dealer for Kentek Systems Ltd

CRJ Services is delighted to announce an exclusive dealership agreement with trommel screen manufacturer, Kentek Systems. The new agreement sees CRJ Services appointed as their dealer across England and Wales.



Kentek Systems Ltd is an Irish manufacturer of recycling systems, specialising in static and semi-mobile, electric trommel screens. Kentek is renowned for combining robust build quality with energy-efficient operation. Their XD range of trommel screens, available in a range of sizes, uses only two motors, offering significant operating cost reductions compared to other electric and diesel-powered trommel screens.

"We are excited to bring another quality brand into the CRJ Sales portfolio in Kentek. Their electric trommel screen solutions align with our objective of offering our clients quality equipment solutions that cater to the ever-evolving waste management and recycling industry. The energy efficiency of their trommels will be an appealing concept for our customers as energy prices continue to rise."

Ben McQuaid - Director at CRJ Services Ltd.

"We are thrilled to bring CRJ Services onboard as our exclusive dealer for England, Scotland and Wales. Having worked with CRJ Services on previous projects, it was the obvious next step to bring them into our dealer network. Their ethos and proven



track record as quality distributors of recycling equipment makes them a fantastic asset to the Kentek brand, and we look forward to working closely with them."

Gerard McFadden - Director at MacMachinery (Kentek Systems) Ltd

Following the appointment, CRJ Services supplied and commissioned its first Kentek system at Growing Beds Recycling Services in Bedfordshire.

Following the commissioning of the plant, Mark Evans, Director at Growing Beds Recycling Services stated, "The new static trommels plant is straightforward to operate and is probably doing double the tonnage compared to our mobile trommels."

"This has been a great project to be a part of. It has been our first time supplying a Kentek trommel system, which I predict will become a popular option for our customers. With the removal of the red diesel subsidy in April, and the recent increase in white diesel costs, the electric trommel provides a lower processing cost per tonne compared with the previous diesel-driven screeners. It is great to see our first solution delivering great results for Mark and his GBRS team."

Mike Symons - Area Sales Manager at CRJ Services Ltd



Superior Screening with Terex Ecotec's New Phoenix 2100T Trommel Screen

Leading environmental equipment specialist, Terex Ecotec, has further enhanced their trommel offering with the launch of the new Phoenix 2100T. A tracked variant of the market leading Phoenix 2100 trommel, it has been intuitively designed offering operators unrivalled throughput, application flexibility and serviceability. Fully equipped with a Stage V/Tier 4 Final engine and the latest intelligent screening technology, the Phoenix 2100T delivers superior screening efficiency. Ideal for medium sized operations the Phoenix 2100T can accurately screen a variety of materials including compost, biomass, soil, green waste, C&D waste and aggregates.

Pawel Kononczuk, Sales Director commented: "The Phoenix 2100T is the latest trommel to be launched by Terex Ecotec and will complement our strong range of trommels already in the market. Whilst maintaining the key features of the existing Phoenix trommel range, it has been purposefully engineered to provide improved service and maintenance access. Manoeuvred via heavy duty crawler tracks, the Phoenix 2100T offers increased site mobility and is a great solution for difficult terrain."



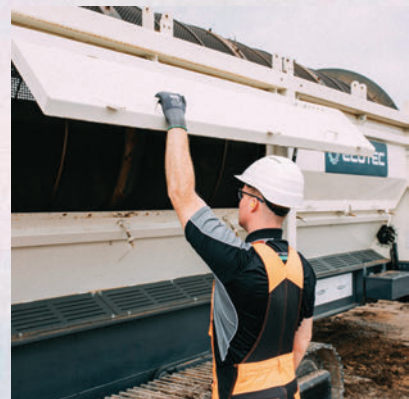
With a rapid set up time the Phoenix 2100T is ready to work in minutes with no tooling required. The user-friendly control system with push button start/stop offers simple operation and diagnostics, allowing the operator to effortlessly configure the machine to suit the required application. The fully proportional, hydrostatic feeder combined with an intelligent control system continually monitors the machine adjusting the feeder speed to optimise screening performance and throughput.

The Phoenix 2100T is fitted with a 1.94m x 6.45m screening drum with heavy duty mesh or punch plate options available ensuring that all application requirements are met. Equipped with a powerful hydrostatic four-wheel drive system the Phoenix 2100T offers unrivalled start up torque and screening efficiency. With a fully independent track subframe the drum screening angle can be adjusted from 0° - 7° whilst in operation.



Maintenance and inspection can be carried out with ease due to the side drum access.

Powered by a 102kW (137HP) CAT C4.4 Stage V/Tier 4 Final engine, the Phoenix 2100T offers the perfect blend of power and efficiency, reducing operating costs. Both noise and emission levels are reduced due to the machine running at a lower engine RPM. The swing out power unit provides unprecedented service access enabling daily checks and maintenance to be carried out from ground level. The 180° radial fines conveyor with a variable discharge height of up to 5.3m can be remote controlled whilst in operation, maximising stockpile capacity. Both the radial fines and oversize conveyors lower to ground level hydraulically for maintenance.



The Phoenix 2100T is available to purchase now via Terex Ecotec's world class dealer network that provide the sales and aftermarket service demanded for in the market. To learn more and to locate your nearest dealer visit www.terex.com/ecotec



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Skipway upgrades machines to new Hyundai A-Series loaders

One of Northern Ireland's leading waste firms, Skipway Waste Management & Recycling, has celebrated a 25-year history with Hyundai Construction Equipment Europe with the purchase of two brand-new A-series wheel loaders.

Belfast-based Skipway briefed their trusted dealer, Northern Lift Trucks, to source machines that would be durable, with a focus on good fuel economy and operator comfort. The machine that stood out as perfect for the job was the HL960A – and Skipway swiftly ordered two of them.

Matthew Heatrick, Systems Manager of Skipway, said: "We've only ever used Hyundais here at Skipway – mostly 770 models over the years – so we knew that we liked and trusted the brand, and wanted to stick with them for our next purchase. Already we're seeing the benefits of upgrading to the new A-series machines – their fuel economy is so much better, they're using half the diesel of the previous ones which obviously makes a huge difference to our finances."

The two machines have been earmarked and specified for different uses – one of the HL960As will be based at a materials recovery site in Belfast and used for the heavy-duty tasks of stockpiling waste and loading rubble and timber. This machine has been fitted with longer arms and supplied with different bucket attachments to ensure the HL960A can tackle any load, terrain and material in its path.

The second HL960A will be used for waste transportation at a second Skipway site in Newtownards, where flexible and robust machines are the key to running an efficient operation.

Matthew continued: "A typical day on one of our sites is long and complex, so we need machines that can live up to the challenge. The A-series has been above and beyond what we expected and our operators have been extremely complimentary about them. The main feedback has been about how comfortable they are – the joystick controls are really easy to use and the visibility is much better than any machine they've used before."

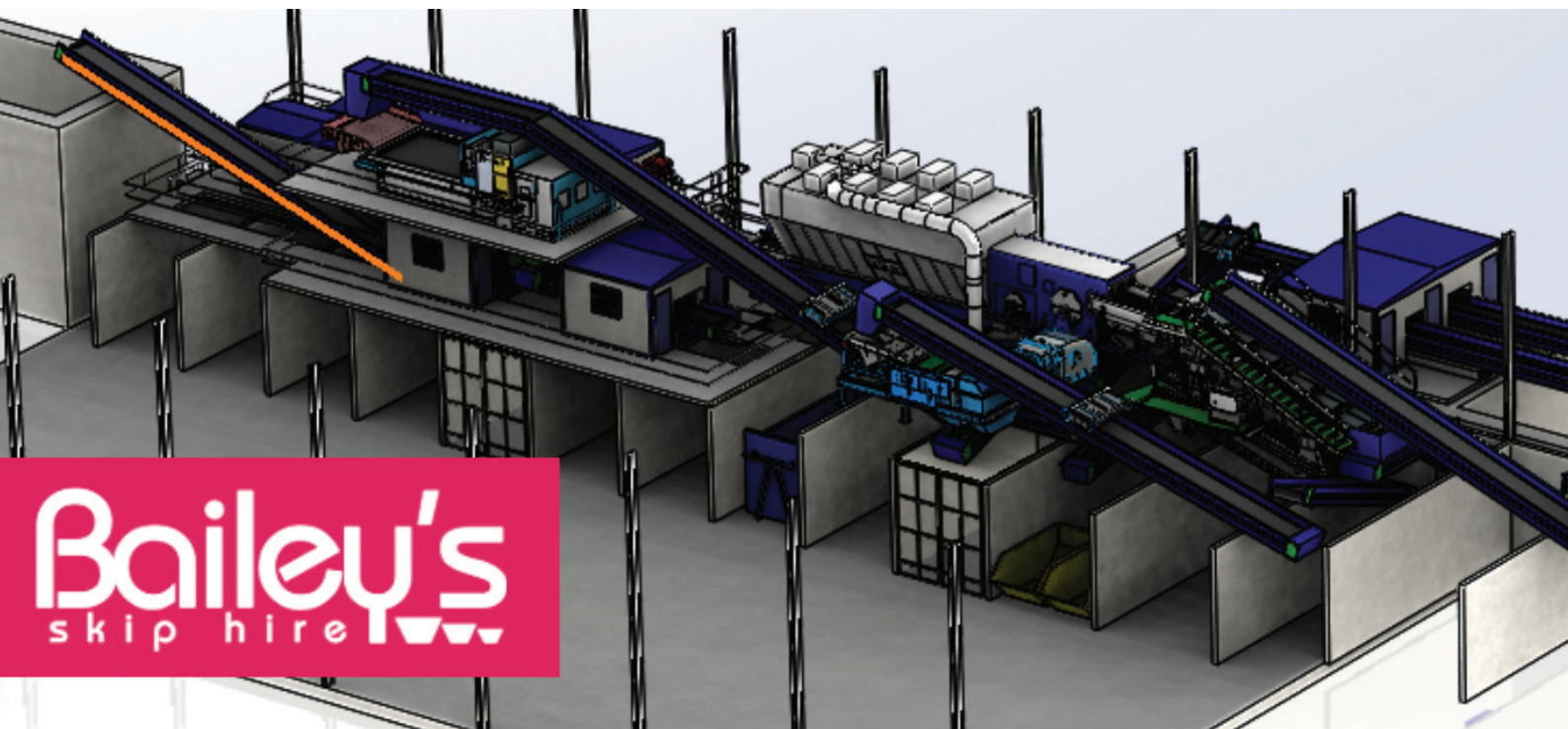
"From our side, the camera system gives us peace of mind that the machines will be operated safely and the fuel economy is obviously a big plus. We are very impressed with the new A-Series and these first machines definitely won't be our last."



Acquired by the R. Heatrick Group in 2012, Skipway Waste Management & Recycling provides demolition, aggregate, haulage and skip hire services throughout Northern Ireland. With a focus on sustainability, Skipway's current waste recycling rate is 92% equating to over 45,000 tonnes, helping the company to deliver on its promise of building a more sustainable future for Northern Ireland.

Supplied by Hyundai Construction Equipment dealer, Northern Lift Trucks, the HL960A Wheel Loader is part of Hyundai's flagship A-series – a fresh generation of construction equipment that complies with European emission levels. This stage V machine was awarded the SaMoTer Technical Innovation Award in the 'Medium Wheel Loaders' category and is suitable for general construction applications and heavy-duty work on industrial, mining and quarrying projects.





Bailey's Skip Hire & Recycling Ltd commission CRS NI Ltd for new Waste Recycling Plant

Bailey's Skip Hire and Recycling Ltd have commissioned CRS NI Ltd to design & manufacture a large Waste Recycling Plant for their site in Corby, UK.

The new plant will process through 100 to 120 tonnes of C&D materials per hour, on a footprint of 80m x 50m, with completion in early 2023.

Bailey's initially approached CRS, requiring a Facility capable of sorting and separating C&D waste with a Zero Waste to Landfill ambition. They intend on producing a number of quality aggregates through the plant, including reclaimed wood and stone. The plant will also lift out toxic plastic and leave a clean RDF product that they will also process to supply energy for the Electric Grid. All in all, Bailey's aim is to reuse all materials and return none to landfill.

Levi Robinson, General Manager at Bailey's, commented on the new project, "To continue our partnership with CRS NI Ltd, we have instructed CRS to design and commission a new automated picking line to further increase our recycling and recovery rates.

"Our aim and moto, has always been to, recycle today to save tomorrow, and with this large investment we are making for our customers and community, this proves our commitment to the cause.

"The quality of the end product will be greatly improved, along with the increased throughput per hour we can operate.

"We are very happy with the process of the purchase so far and we are excited to have this plant fully commissioned this year."

Sean Conlon, Company Director at CRS, said "CRS NI Ltd are excited to be working with Baileys Skip Hire & Recycling Ltd, a company delivering comprehensive waste recycling services for both commercial and domestic sectors, across the Northamptonshire region."

CRS NI Ltd have been delivering Complete Recycling Equipment and C&D Waste Management Solutions around the globe, since 2009. For more information, contact sales@crsni.com or visit www.crsni.com



STADLER: the secret of accurate commissioning and timely project delivery

The pursuit of a circular economy to address the global waste issue is driving a growth of the recycling industry and an increasing complexity in its demands. Environmental services providers and waste management companies need sorting facilities capable of processing the high volumes required efficiently while producing outputs of the high quality needed for recycling. When planning the construction of a new plant or upgrade of an existing one to meet these requirements, selecting the company for designing and building it is a critical business decision.

The importance of timely commissioning

A key factor in the selection is the company's ability to work to the agreed schedule and complete commissioning on time.

"The material sorted at our facility is connected to contracts with fixed starting points," explains Tristan Merk, Project Manager at environmental services provider PreZero Recycling. "Due to this fact, it is very important that the scheduled milestones will be achieved. If the construction or the commissioning period isn't on time, we risk problems with our customer or losing the contract." David Aguado Teruel, Technical Director at GRiNO Group in Spain agrees: late delivery on the project would have "a very negative effect, because the delay has a direct impact on the viability of our business plan and commitments, and our ability to deliver our services to our customers and public administrations."



STADLER is well aware of the critical importance of timely commissioning, as Carlos Manchado Atienza, International Sales Director at STADLER explains: "The implications of a delay for our customer are serious: we are talking about losses in the thousands of Euros for non-recovered material and fixed costs already contracted – and this is without taking into consideration landfill costs." Ventura Montes, Catalonia Waste Treatment Plants Manager at PreZero Spain, adds: "For a packaging plant, we could face monthly costs of some 350,000 Euro for alternative waste treatment arrangements and around 400,000 Euro in lost opportunities. For a larger facility, such as an urban waste treatment centre, it could be some 350,000 Euro a month in fixed costs plus around 2 million Euro in lost sales."



"That's why we study the schedule of our work very seriously," says Carlos Manchado Atienza. "STADLER is recognized not only for the quality of our products and our expertise, but also for our seriousness in the start-up and punctuality in project delivery." Ventura Montes agrees: "One of STADLER's strengths is that not only do they always deliver on the agreed date, but usually they are even a few days early. Every time we contracted STADLER for the construction or upgrade of plants, commissioning has always been on time and very few adjustments were required after installation."

STADLER's secret to smooth and timely commissioning

Careful planning based on STADLER's experience is a key factor in its ability to consistently deliver on time. "First of all, we only provide delivery dates we know we can achieve," says Benjamin Eule, Director, STADLER UK and Head of Commissioning. "The final delivery is not only the timely installation, but also the commissioning of the facility to go into production. We work with realistic time schedules, and we allow sufficient time for each stage."

STADLER's in-house capabilities are also an important factor, as Benjamin Eule explains: "As we have in-house teams for mechanical installation and electrical planning, installation and Process Control Programming, we can control and manage the delivery schedules. We also have quicker internal communication and greater flexibility to adjust the work requirements across multiple projects." Carlos Manchado Atienza adds: "All the preparation work in detailed and construction engineering helps us in manufacturing and gives us an advantage when preparing the assembly."

The clear roles and effective collaboration of the local and Head Office teams are crucial, as Carlos Manchado Atienza states: "Coordination and planning between the different departments are key. The good work of the sales teams with basic engineering, followed by the Head Office's work in detailed and construction engineering give us a competitive advantage. The professionalism of everyone involved and knowing our teams well – from sales and project management to production and assembly – gives us the security to trust the deadlines we have set."

Ricardo Micó, STADLER Assembly Manager Spain, agrees: "For us, respecting the project milestones is key, as well as the effective coordination of all STADLER departments to meet our clients' needs. This gives us unmatched strength in working with our clients' full confidence."

A reputation for quality work and timely commissioning

Environmental services provider PreZero has contracted STADLER on several projects, turning to the company again and again for its reliability: "There are always challenges and unforeseen events; STADLER adapts and is flexible; if necessary, their assembly team will work weekends, holidays, nights – on occasion they have even doubled resources to deliver on the agreed day," says Ventura Montes. "If it's a large-scale project or an upgrade is expected to be difficult, we always try to work with STADLER."

STADLER recently designed and built the sorting and recycling plant in Almonacid del Marquesado, Spain, for GRIÑO Group. "The project coincided with the final stages of the coronavirus pandemic, so it was necessary to manage very well the resources and materials needed for the assembly," concludes David Aguado Teruel. "In my experience, STADLER is a company that has demonstrated in its projects its commitment to meeting deadlines and milestones. I would recommend STADLER for the construction, installation and commissioning of waste treatment plants."

Training the right way for Waste Materials Handlers



Re- Handler, Mobile Crane, Wheeled Excavator or Rubber Duck. We have heard them referred to as many things over the last 10 years. The Waste Materials Handler is the primary workhorse on many waste management, recycling and metal recovery sites. These impressive machines allow for materials to be transferred with ease, enhancing production and reducing processing times.

What training?

Initially the training courses for the materials handler were few, with many referring to them as an excavator and assuming that additional training was not required because there was no clear training standard for these machines. But working alongside EU Skills (the standard setting organisation for the waste and utilities industries), waste management employers and other training providers, Certora supported in the development of a specific training and testing standard.

Since that time Certora has trained and assessed over 3000 operatives to use these machines safely in a multitude of environments and worked with the waste management and metals recovery employers to further enhance training courses to ensure specific job training is included, identifying key operation challenges;

If operatives are compacting waste within a container, the machine should be positioned correctly, side on if possible, not too close, all stabilisers and blade correctly deployed and fitted with an appropriate attachment. It is recommended that the containers are compacted three times throughout the fill process, third full, two thirds full and final compaction and not just once the container is full.

Pressure should be applied in a steady movement moving from the front to the rear, ensuring the boom doesn't hit the container. The force used, should never cause the machine to leave the ground.



All eyes when loading.

The elevated position of the operative in these machines gives greater visibility when loading processing operations and vehicles. Training on loading is vital in any training course where an operative is required to complete this task as part of their job role.

Knowledge of material selection is key. If feeding a processing system, whether a bailer, shredder or granulator, identifying potential hazards such as gas bottles and removing them before processing is vital to prevent accidents, damage to the equipment or blockages.

The same is true for loading vehicles. Consideration to vehicle axle weights and placement of loads, spread evenly and central. The loading area should be sufficient to load vehicles safely ensuring that there is enough height for the attachment to be lifted clearly into the receiving vehicle and the load should not dropped from height especially when the vehicle is empty.

Emergency Release

These machines place operatives in a position of working at height and the company must have an emergency rescue/ release plan in place in case of a system/ power failure or the operative becoming unwell. This plan should be site and equipment specific and all operatives and supervisors involved in the task must be trained in how to carry out an emergency descent of the cab.

Conversion courses from 360 excavators wheeled or tracked are available. For further guidance, support or training speak to the team at Certora Training on 01246 386900



Compaction, it's not hard hitting.

Operatives continue to attempt to compact waste in bins by using the arm of the waste materials handler as a battering ram. This is not only dangerous because of the amount of debris it can create; it results in undue strain on the machine hydraulics and damage to the containers.



Glazewing invest in a pair of Liebherr LH 40 material handlers

Rural Norfolk has been home to Glazewing, one of the longest established names in the metal recycling industry, for over half a century.

Whilst their semi-rural location gives an air of calm, the busy operation handles over 70,000 tonnes of material not only from Norfolk and the surrounding counties but also further afield as and when its long list of Blue-Chip clients requires.

Material is delivered to the yard on an almost constant basis to be sorted and graded prior to processing. Large items are either hot-cut or sheared to size prior to being stockpiled. The large stockpile is handled by a single material handler feeding a 1000t LeFort scrap shear with the resulting chopped up material being prepared ready for dispatch to steel makers across the world.

Over their years of trading, Glazewing has used a variety of material handling machines. 'We have found different levels of service and machine build quality from each manufacturer.'



Said Director Scott Godsiff. Looking to replace its existing material handling fleet, Glazewing entered into talks with Liebherr Great Britain for a pair of 17m reach machines. 'At the time of our initial enquiry, Liebherr weren't able to supply a 17m reach handler on the size of chassis we required, however our sales manager, Craig Cherry, made an inquiry to the factory in Germany, and they confirmed that the configuration we required would be possible in the form of an LH 40 material handler.'

The company specifically needed a 17m reach machine in order to fill containers for export. Whilst many scrap metal processors still load ships with raw material, transporting material in containers costs less and allows smaller volumes to be shipped as opposed to filling the entire cargo hold of a ship. Many UK yards have invested in lifters to raise a container vertically with the doors chained open to allow the material handler to fully fill the box with scrap. 'We could have taken the easy option and





chosen a 16m machine but with a 17m machine we are able to ensure each box is fully loaded and compacted rather than relying on gravity to give minimal voids, thus giving us the best return on each box leaving the yard.' said Managing Director Jason Minns.

Whilst previous machines have been relatively standard items on the Glazewing fleet, the two new LH 40 M handlers have been customised in black paint and Glazewing signwriting. 'We were just chatting in the office one day and Jason proposed we get the machines in gloss black!' Scott exclaims. 'After mulling it over for a minute or two, we called Craig and he added this to the specification.' The resulting finish gives the two machines a totally different look which the directors are very pleased with.

Aside from the different paintwork and the longer reach, the Liebherrs are very much a standard material handler manufactured at the Kirchdorf factory in Germany's Baden-Württemberg region. Front and rear independent stabilisers on the long and wide chassis provide a stable base from which the machine can work from. The chassis has also been painted to match the upper structure and with its galvanised steps and handrails providing a contrast to the black paint work, the result is impressive. The elevating cabin provides the operators with an unobstructed view of their working area, and this is enhanced in the new arrivals with the addition of joystick steering for the first time. 'The lads took a little getting used to not having the steering wheel in front of them at first, but they soon got used to it and now like the precision and feel from the joystick controls.' Scott commented. Both operators have had nothing but positive feedback for the Liebherr cab saying its comfort and layout is far better than the other machines they have operated and that they are a very quiet workspace too. Front and top FOPS protection has been added in addition to an impact resistant windscreen and roof window. A full suite of high-capacity LED lights has also been specified for the boom, stick, cab and upper structure.

The 9.6 straight boom and 7.5m flat-angled stick carries a five-tine GM65 grab with a single motor and 0.6m³ capacity and semi-closed shells. Both machines are also fitted with Liebherr's ERC cylinder mounted in between the two main boom hoist rams. This ram effectively stores energy recovered when the boom lowers and uses it to aid in lifting the boom on the following cycle. Not only does this reduce fuel consumption, but also reduces noise pollution from a harder working engine.

Fuel efficiency is a major issue for many operators with the switch to white diesel and what seems to be ever-increasing fuel costs. The LH 40 is powered by a 7 litre D934 four-cylinder



diesel engine that delivers 211hp at just 1800rpm. The new machines are said to be better on fuel than their predecessors offering Glazewing some much needed economies on their overheads. The engine emissions are controlled by an AdBlue SCR system which brings the machine in line with the latest European Stage V regulations. Both operators say the machines are ideally suited to running in Eco-mode at all times and cope easily with the demands they place on them. Should they require finer control or a boost in power, Sensitive, Power and Power + modes are also selectable.



A typical day for the team at Glazewing sees the two Liebherr handlers processing and loading materials on a constant basis. One of the machines is situated next to the LeFort shear, steadily loading it with a variety of scrap and piling the resulting cut material up for the second Liebherr which loads the stream of containers coming into the site. The very busy operation is well managed by the small team and results in a smooth and flowing process. In between each loaded container being lowered onto the waiting truck and the next one raised skywards, the Liebherr disappears up the site to sort incoming material out before returning to its loading position. Despite the volumes of material handled at the site, the yard is impeccably clean with both machines cleaning their working area when the opportunity arrives.

Both Jason and Scott are very pleased with the arrival of the new Liebherr machines into the Glazewing fleet. 'They have not only given the brand a new lease of life, but they are giving us some operational savings in terms of fuel consumption. Dealing with Liebherr and Craig in particular, has been an easy process.'

Binn Group's strategic investment in a new Sennebogen

As one of Scotland's leading recycling and resource management companies, the Binn Group process over 200,000 tonnes of material per year from two locations in the Perth area of Scotland.

The family run business has over 20 years of expertise within the waste and recycling sector. Employing over 140 people, the company has a commitment to developing the circular economy and currently has a very respectable recycling rate in excess of 90%. As a customer focused business, Binn provides a wide range of services, including events and food-waste recycling, scrap metal, skip hire, and trade waste collection and operate predominately across the central belt of Scotland, but will also travel further afield should their clients require them to.



As the company has expanded, the increase in material being processed has put pressure on their existing fleet of excavator-based material handling solutions to the point where a decision to upgrade their frontline machine was made.

Traditionally, the company had used a selection of grabs and buckets mounted to 13-20 tonne class excavators to pick and sort through the mountain of incoming materials. This has recently changed with the addition of a new Sennebogen 818E material handler delivered by Molson Green, part of the Avonmouth based Molson Group.

Whilst Molson Group are based in Avonmouth, a network of strategically located depots and home-based engineers allows them to offer an unparalleled service across the UK. The closest depot for Binn Group is just 37 miles away at Stirling allowing Binn Group a local base from which to obtain service and parts at the drop of a hat.

The arrival of the first new Sennebogen has heralded a huge change in the handling of incoming materials at the Shore Road waste and metals recycling facility. Site Manager Sandy Greenhill takes up the story; "We had been looking at the overall performance of our existing fleet of equipment for some time before we made the decision to change to a dedicated material handler. We had spoken to a number of dealers about a suitable machine and it was the solid help and expertise from the team at Molson that won them the deal. While we have a number of machines undertaking the segregation and sorting operations, the new machine was going to be at the frontline for our operations at Shore Road



and therefore needed to be a reliable and productive unit. We were assured that the 818E was the ideal match for both our productivity requirements as they currently stand and would be capable of handling an increase in materials should we look at further expansion in the future."

The 818E is a 21-tonne class material handler. Fitted with a waste industry specific K9ULM boom and stick package, the 818E has a ground level reach and load over height in excess of 10m. Fitted with a Kinshofer 450litre, Sandy says the machine has made a huge difference to the quantity of material which can be processed quickly and effectively.



While the company's existing machines were of standard design, the stable base of the Sennebogen thanks to its four, independently controlled outriggers and its elevating cab allow the operators to get a better view of the material tipped in front of it and are now able to work confidently 360° degrees around the machine to pick more materials from the waste. Efficiencies in the Sennebogen design have allowed faster relocating of the machine thanks to the powerful hydrostatic transmission along with joystick steering as standard. The huge maXcab on the machine provides a well laid out and comfortable workspace and despite the addition of a sturdy FOPS guard to the top and front screen, the visibility from the seat is said to be exemplary. The sliding door arrangement makes access safe and easy whilst stopping the issue of wind blowing the door from the operator's hand in



inclement weather. The load sensing hydraulic system provides smooth operation of several functions at once allowing items to be picked and manipulated with ease, a feature the operators are very pleased about.

Access to the engine and cooling pack is simple and safe thanks to the Sennebogen's huge gull-wing style canopy on the offside of the upper structure. Ground level access for servicing and daily checks can be carried out with ease thanks to the overall excellent design of component placement.

"We are very pleased with the way the machine has been working so far, so much that we have also ordered a second. A Sennebogen 817E waste handler operating at our flagship Binn Ecopark facility," Sandy comments. "The operator acceptance has been high, and we have been seeing significant reductions in fuel use as well as an increase in our productivity. On the occasions where we have needed any issues sorting with the machine, and these have been very minimal, Molson have been out very quickly, backing up their promise to us on their service."



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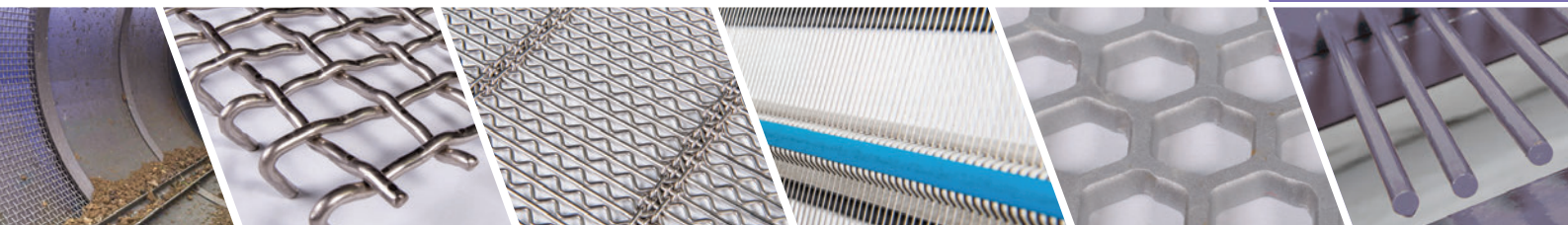
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The Rokbak roadmap: four key themes

Rokbak highlighted its four product focus areas – innovation, sustainability, connected services and efficiencies – at CONEXPO, as the articulated hauler manufacturer continues to prioritise the customer and environment to meet industry challenges head-on...

Rokbak used its presence at CONEXPO to highlight four connected product focus areas that will continue to shape the company's development journey and have been created from customer feedback, market research, technology advancements and product performance improvements. The four themes are innovation, sustainability, connected services and efficiencies – and they encompass everything from future product developments to reducing operational costs.

"We're always innovating, designing and building to keep our haulers rock solid," says Rokbak's Senior Product Manager, Scott Pollock. "Since the success of our rebrand 18 months ago, we are now moving into the next phase of the Rokbak development journey. Our four product themes will be used to develop both Rokbak's future product and product services offerings, aligned to customer needs."

Innovation

One of the future developments that Rokbak is currently working on is its next generation cab for the RA30 and RA40 articulated haulers. Key benefits of the new design include higher levels of operator comfort and improved performance, modern ergonomic layout and displays, ease of operation and future proofing functionalities for automation and connectivity.

Other areas under this theme include using technological advances, modern component specifications and fuel economy to reduce customer operating costs. These reductions have been achieved through things including extended time between scheduled maintenance, fuel efficiencies, longer life fluids and filter systems. This has led to an average cost reduction for the Stage V / Tier 4 Final RA30 of 19% per hour, and 10% for the RA40.

Sustainability

As part of the Volvo Group, Rokbak's long-term plans are aligned with the Group's sustainability values. This includes the Volvo Group target to reach net-zero greenhouse gas emissions by 2040.

Rokbak is reviewing technical solutions that will allow it to achieve its sustainability goals. All Rokbak haulers are built for low fuel consumption and global CO2 emissions compliance. Both the RA30 and RA40 are compatible with hydrotreated vegetable oil (HVO) which allows customers to significantly reduce CO2 emissions.



Connected services

Rokbak's improved Haul Track telematics system is helping machine owners to manage total cost of ownership by keeping an eye on everything from fuel consumption and machine usage, to problems that if neglected could lead to repairs or unplanned downtime. The bespoke system gives customers more visibility and control of their machines with live data viewable on desktop computers and mobile devices. This includes: locating equipment and monitoring productivity and operational costs by keeping track of everything from scheduled maintenance planning, early fault warning and performance management information.

Haul Track is now AEMP enabled, allowing for mixed fleet management via a single communication platform.

Efficiencies

Rokbak's fuel-efficient drivetrains deliver powerful performance and meet worldwide emission standards with low cost of operation and low environmental impact. The high performance drivetrain has responsive, usable power with adaptive shifting for low fuel consumption and operating costs.

Another efficiency aspect of the Rokbak design is easy service access, making the RA30 and RA40 quick and simple to maintain with ground level test points, electric-lift hoods and tilting cabs, enabling high uptime and productivity.

"Rokbak haulers deliver new benchmarks in both performance and total cost of ownership, and reinforce the company's commitment to sustainability and journey to net-zero as part of the Volvo Group," concludes Scott.

"Customer needs will continue to guide our product strategy and we will continue to invest in our Rokbak products and services."



Automation for the people.

Why mechanical automation is key to reducing injury in quarrying...

Harrowing statistics from the European Agency for Safety and Health at Work state that quarry workers are twice as likely to be killed in an accident than construction workers, and thirteen times more likely than those working in manufacturing. There's no doubt the industry can be dangerous, but how can mechanical automation support health and safety in the sector? Here David Strain, technical director at integrated automation system expert, Technidrive, explains.

Data from the Health and Safety Executive (HSE) shows that over 3,500 quarry workers have suffered an injury reportable to HSE since 2000, with 31 of those being fatal. There are several initiatives to improve safety in the sector, this includes Target Zero, a Quarries National Joint Advisory Committee

(QNJAC) scheme that has helped to reduce quarry accidents by over 80 per cent since 2000.

While this invaluable scheme — which includes training conferences and the creation of informative material — has achieved great things for the industry, the most effective way to minimise human risks in quarrying is to remove them from the most dangerous aspects. Automation is key to achieve this.

Automated equipment is already widely used to perform drilling, blasting, loading, hauling and sorting of materials. In addition to increasing speed and accuracy in these processes, automation can remove the need for operators to work intimately with dangerous equipment.

However, one area that often requires human intervention is the unblocking of jaw crushers. By nature, a jaw crusher must be incredibly strong. Rock enters the crusher from the top of



the machine and gets compressed between two surfaces — the fixed and moveable jaw. The rock will continue to be crushed until it is small enough to fall through the opening. Unfortunately, these crushers occasionally get blocked by the rocks and stones.

Naturally, prevention is better than cure. Every effort should be made by the quarry team to prevent blockages occurring, for instance: designing quarry blasts to achieve optimum rock fragmentation, reducing oversize material, and ensuring that filler buckets are appropriately sized for the capacity of the crusher. However, occasional blockages are still inevitable.

In the past, operators have succumbed to dangerous methods of removing blocked stones. Questionable tactics include using a tooth on chain to get the jaw to bite — creating the possibility for the tooth to be ejected at high velocity. Or, using brute force with a jack hammer, sledgehammer or similar to break the stones or pry them from position. If you've ever seen a sling give way in this situation, you'll think twice about this method.

Technidrive had witnessed these risks first hand and wanted to develop a system to remove human intervention in this dangerous job. The vision was an automated system that unblocks a crusher using mechanical forward and reversing

actions to shift the stones. The system would sense when the blockage had been freed and give an automated signal to notify operators that the process was complete.

Technidrive developed its innovative jaw crusher unblock system in 2015, and it has since been deployed at quarries across Europe. The team began its design by carrying out torque and speed calculations to determine what drive system was needed. In addition to the motor, we needed a variable speed drive (VSD) that could control the speed and torque.

Crucially, the system could offer startup when starting the jaw crusher from full. To achieve this, the team developed its own innovative software which ensured the VSD could be remotely activated in unblock mode and operators would be kept out of harm's way.

Since the initial development, Technidrive has created similar equipment for several other businesses in the quarrying industry. Treating each project on an individual basis, the organisation has been able to design, manufacture and deliver bespoke turnkey systems to a number of different sites.

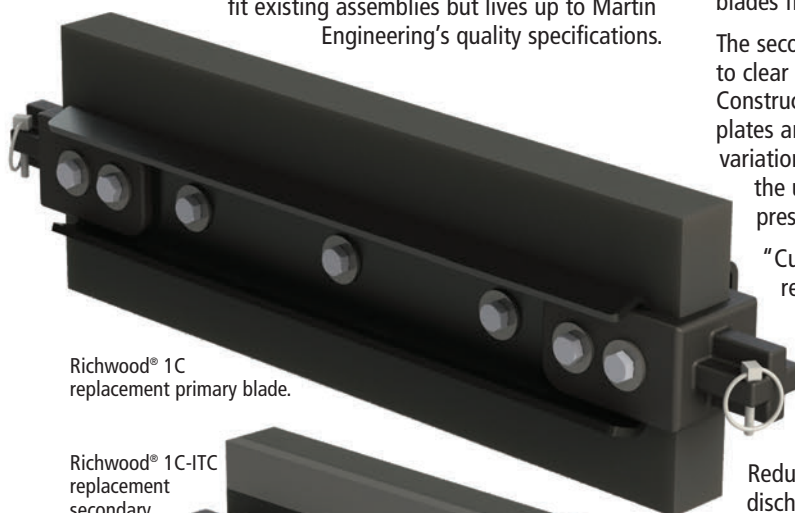
When working alongside earth-moving equipment, removing operators from the most hazardous aspects should be a no brainer. While the quarrying industry will always be among the world's most dangerous sectors, mechanical automation can play a crucial role in reducing risk and supporting the industry's efforts towards Target Zero.



Martin Engineering introduces Replacement Blades for Richwood® 1C & 1C-ITC

The global leader in conveyor belt cleaning accessories has introduced a direct retrofit replacement for the Richwood® 1C & 1C-ITC cleaners with superior construction at a lower cost. Martin Engineering is providing operators who use the 1C & 1C-ITC cleaners with a better performing product that lasts two times longer than the original. Engineered to fit existing assemblies and tensioners, operators will experience a seamless transition with a money back guarantee. Along with high-quality construction to improve performance and extend the equipment life, the replacement cleaners lower the cost of operation.

"Some operators prefer a flat tip blade and pressure tensioner configuration of the Richwood," said Dave Mueller, Conveyor Products Manager at Martin Engineering. "To accommodate this preference, we designed a replacement blade system that fit existing assemblies but lives up to Martin Engineering's quality specifications."



Richwood® 1C replacement primary blade.

Richwood® 1C-ITC replacement secondary blade

Since we formulate high-quality materials for all of our blades in-house, we adapted those materials for this blade construction. This approach improved the overall quality of the replacement blade and lowered the cost of construction, benefits that are passed on to the customer."

The flat-topped rectangular primary cleaner blade has painted steel side plates and end castings. Mounted beneath the head pulley, the pressure tensioner holds the blade firmly. This positioning offers the proper resistance to put pressure on the belt for clearing adhered material from the surface while reacting to fluctuations in the belt and gliding smoothly over splices. When the top side of the cleaner is worn unevenly or displays a degradation in performance, the blade can be flipped to extend its equipment life.



The Richwood® 1C-ITC secondary placed against a return roller for uniform pressure.

Primary blades are available in lengths of 24 inches (610 mm) to 72 inches (1829 mm) to accommodate most standard belt widths found in underground and above ground bulk handling applications. With nine dimension options to choose from, blades fit the needs of most standard conveyors.

The secondary blade is positioned behind the primary cleaner to clear adhered dust and fines that may have been missed. Constructed of a metal-tipped blade with painted steel side plates and end castings, it glides smoothly with vertical variations in the belt. The downward weight of the belt and the upward action of the tensioner provides enough pressure to clean any leftover carryback.

"Customer feedback during testing of our retrofit replacements of the Richwood® 1C & 1C-ITC blades have been positive across the board," Mueller said.


"Field tests have confirmed our claim that there is less carryback, spillage, and blade wear with a longer equipment life than similar products on the market, including the original."

Reduced carryback and improved cleaning mean greater discharged and less spillage along the return path to foul rollers and require additional labor for cleanup. The extra maintenance, equipment replacement, and labor can raise the cost of operation.







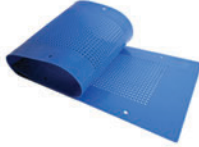


The Richwood® 1C & 1C-ITC replacement cleaners come with a moneyback guarantee to clean better and last longer. Backed by local service technicians, the cleaners are available for quick delivery and installation.

"Like our entire cleaner line, we stand by this product's superior quality and performance," Mueller concluded. "Operators now have a viable alternative to cleaner replacements and service for these Richwood® products and will see why Martin leads the industry in conveyor accessories."

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Advertisers Index

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AXON	9
BRIMONN	58
BRUCE	39
CDE	24
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CONMECH	63
ELITE	38
HARPSCREEN	30
LIEBHERR	48
MATEC	18
MCLANAHAN	33
MOLSON	28
POWERX	FRONT COVER
RK6	12
ROKBAK	8
SPRINGMASTERS	63
TEREX ECOTEC	44
TEREX WASHING	BACK COVER
TYRONE INT	INSIDE FRONT COVER
WEIR	42
WILEMAN	32

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Essential Skills and Experience:

We are looking for a motivated, flexible, and hardworking individual, with previous experience in the field and keen to transfer their knowledge and experience into a new setting. Possessing the following skills and experience are essential:

- Previous experience with the waste management/recycling/demolition sectors
- Proven track record within a sales position
- Self-motivated and target driven.
- IT literate
- Full UK driving licence.

Roles and Responsibilities:

- Selling and developing a range of waste management/recycling/demolition wear parts solutions and products
- Build exceptional customer relationships.
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