



DRY CARGO

international

ISSUE NO.182 JULY 2015



FEATURES

■ Bauxite & Alumina

■ Inland Rail & Barge

■ Grain Handling Directory

■ Crane Controls

■ North American West Coast

The world's leading and only monthly magazine for the dry bulk industry

VERSTEGEN



GRAB
MORE
GRAB



Verstegen Grippers B.V. • P.O. Box 1014 • 3430 BA Nieuwegein • The Netherlands
tel: +31-30-6062222 • fax: +31-30-6060657
email: info@verstegen.net • website: www.verstegen.net

*PIRS: dry bulk storage
A view of Riga Fertilizer
Terminal (RFT), the most
advanced and safe
terminal in northern Europe. Six domes
enable the short-term storage of 180,000
tonnes of mineral fertilizers.
Loading and unloading capacity
2,200–2,400tph. One year after its
completion, RFT reached 2 million tonnes
shipped.
PIRS Dome storage
281 avenue de l'Europe
83300 Draguignan France
T: +33 4 98 10 67 67
E: info@domepirs.com
W: www.domepirs.com*



PUBLISHERS

Jason Chinnock
jason@dc-int.com
Andrew Hucker-Brown
andrew@dc-int.com

EDITORIAL

Louise Dodds-Ely Editor
louise@dc-int.com
Jay Venter Deputy Editor
editorial@dc-int.com
Samantha Smith Directories
directories@dc-int.com
Stephanie Hodgkins Office Manager
accounts@dc-int.com

SALES

Lourens van Emmenis Sales Director
sales@dc-int.com
Matthew Currin Senior Sales Executive
sales2@dc-int.com

CORRESPONDENTS

Brazil **Patrick Knight**
Canada **Ray Dykes**
India **Kunal Bose**
Asia **David Hayes**
Europe **Barry Cross**
Malaysia **Wira Sulaiman**
Philippines **Fred Pundol**
South Africa **Iain McIntosh**
UK **Maria Cappuccio**
UK **Michael King**
UK **Richard Scott**
USA **Colby Haines**
USA **Walter Mitchell**

ADMINISTRATIVE OFFICE

Business Publishing International
Corporate House, 11 Sinembe Crescent
La Lucia Ridge, South Africa, 4051
Tel: +27 31 583 4360
Fax: +27 31 566 4502
Email: info@dc-int.com

HEAD OFFICE

Trade Publishing International Limited
Clover House, 24 Drury Road,
Colchester, Essex CO2 7UX, UK
Tel: +44 (0)1206 562560
Fax: +44 (0)1206 562566
Email: info@dc-int.com
Website: www.dc-int.com
ISSN 1466-3643

Trade Publishing International Ltd does not guarantee the information contained in Dry Cargo International, nor does it accept responsibility for errors or omissions or their consequences. Opinions expressed herein are not necessarily those of Trade Publishing International Ltd

© Trade Publishing Int'l Ltd 2015

JULY 2015 issue

featuring...



TRADE & COMMODITIES

Slackening grain trade impetus 2
BLEAK TIMES FOR ALUMINIUM? 4

SHIPPING & TRANSPORT

Barloworld Logistics and LBH Africa to deliver excellence in bulk 11
Logmarin reaches agreement with Emirates classification society 13
VIKING Saatsea gets flag state approval 13
RAIL & BARGE TRANSPORTATION 19

PORTS, TERMINALS & LOGISTICS

Port of Kiel expands forest products handling 25
TPA undertakes direct discharge of sodium sulphate 27
New cellulose terminal in Santos 29
PORT OF DUNKIRK: BULK VOLUMES RISE TO 50% OF THROUGHPUT 31
MAJOR NORTH AMERICAN WEST COAST PORTS 35

ENGINEERING & EQUIPMENT

Chief grain bin to be manufactured in Europe 45
RIGHT SIDE OF THE TRACKS? BULK BY RAIL AND BARGE 61
ENGINEERING CONSULTANTS 95
DSH SYSTEMS: DUST SUPPRESSION HOPPERS 105
ALL UNDER CONTROL: CRANE CONTROLS AND COMPONENTS 109
AMECO IN FOCUS: EQUIPMENT MANUFACTURER 114

GRAIN HANDLING DIRECTORY

129

SUBSCRIPTION RATES

	1 year	2 years	3 years
UK	£170.00	£280.00	£365.00
Europe	£210.00	£355.00	£460.00
USA & ROW	£260.00	£445.00	£580.00

If you do not subscribe, this copy of Dry Cargo International could be your last. Please complete the order form on the Advertisers' Index page to guarantee delivery of your regular monthly copy.

Slackening grain trade impetus

Rising commodity imports into many countries are still assisting global seaborne dry bulk trade to continue enlarging. But restraining factors have become more visible as well, especially affecting China's import demand. Consequently a further deceleration in overall trade seems to be evolving this year.

A limited boost is likely to be derived from a gradually improving world economy. An updated OECD forecast published recently pointed to GDP growth in the OECD area (mainly Europe, USA, Japan and Korea) edging upwards from 1.8% last year, to 1.9% in 2015. However, in the emerging economies group including China, a slowing from 4.7%, to 4.2% this year is expected.

GRAIN

After growing slowly in the past twelve months, grain trade could see a slight decline in the current year. According to International Grains Council estimates summarized in table 1, global trade in wheat plus corn and other coarse grains is likely to be about 2% lower in crop year 2015/16 starting this month. From 317mt (million tonnes) in the period just ended, the total is estimated to fall to 310mt.

Reduced imports into the Middle East area and North Africa may be partly offset by increased volumes into Europe. The predictions will remain highly tentative until the completion of summer domestic harvests in these northern hemisphere importing countries. Currently, domestic crops in several Middle East and North Africa countries are expected to be larger, while in Europe reduced crops are envisaged. If unexpected weather conditions alter this outlook, import estimates will change.

IRON ORE

Forecasts of global seaborne iron ore trade still point to substantial further growth during 2015. Although a number of importers could contribute additional volumes, an expected sizeable increase in China's purchases is the principal positive element. Elsewhere, among other key importers such as Japan, Korea and Europe, growth prospects are limited.

Among iron ore exporters, Australia and Brazil are likely to

be the main beneficiaries of higher world movements this year. Australian mining companies' strategy of boosting production and exports, to reduce higher-cost competition, could result in exports greatly exceeding the 2014 total of 752mt. Brazil's volume could exceed last year's 344mt.

COAL

Prospects for a sustained upwards trend in world coal trade have been greatly diminished by weakening import demand in China. Figures for China's coal imports in the first five months of 2015 reportedly show a huge 52mt or 38% fall (including low-grade lignite), from 135mt in the same period of last year, to 83mt. A pick-up later this year, if it occurs, may not be sufficient to prevent another large annual reduction.

Several influences are affecting coal purchases from foreign suppliers by Chinese buyers. The slowing economy and slacker activity in industries using coal is a key general influence. More specifically, hydro-electricity generation in China apparently was 12% higher in this year's first five months, reducing steam coal consumption in power stations, while steel production decreased by 2%, affecting coking coal requirements. Restrictions on the quality of imported coal have been tightened.

MINOR BULKS

A sizeable element of the minor bulks trade sector is comprised of fertilizer raw materials and semi-processed fertilizer products. Seaborne trade volumes — mainly phosphate rock and processed phosphates, potash, sulphur and urea — totalled around 145mt in 2014, according to estimates. Some signs point to further growth of around 2-3% this year.

BULK CARRIER FLEET

Following a marginal 1% rise last year, the deadweight capacity of the Handysize (10-39,999dwt) bulk carrier fleet may increase by about 2% in 2015, as shown by table 2. Newbuilding deliveries seem set to rise, but scrapping also is likely to be higher. This fleet has grown only slowly in recent years, contrasting with much faster expansion in the larger size groups.

TABLE 1: GLOBAL WHEAT & COARSE GRAINS IMPORTS (MILLION TONNES)

	2010/11	2011/12	2012/13	2013/14	2014/15*	2015/16*
Asia (excluding Japan)	55.5	58.4	58.6	73.4	81.7	81.1
Japan	24.7	23.0	24.3	23.4	22.8	23.3
Middle East	34.9	46.0	48.4	54.0	59.4	54.2
Africa	53.3	59.0	56.3	65.2	66.1	65.4
Others	74.3	84.6	83.1	93.9	86.8	85.7
World total	242.7	271.0	270.7	309.9	316.8	309.7

source: International Grains Council, 25 June 2015 *forecast July/June crop years

TABLE 2: HANDYSIZE 10-39,999 DWT BULK CARRIER FLEET (MILLION DEADWEIGHT TONNES)

	2010	2011	2012	2013	2014	2015*
Newbuilding deliveries	8.7	10.3	10.4	6.2	5.3	6.5
Scrapping (sales)	2.7	5.3	8.3	6.7	4.2	4.5
Losses	0.0	0.2	0.1	0.1	0.0	0.0
Plus/minus adjustments		-1.0	-0.7	-0.1	0.0	0.0
World fleet at end of year	83.2	87.0	88.3	87.6	88.7	90.7
% change from previous year-end	+8.1	+4.4	+1.5	-0.8	+1.2	+2.3

source: Clarksons (historical data) & Bulk Shipping Analysis 2015 forecast *forecast

by Richard Scott, Bulk Shipping Analysis, Tel: +44 (0)12 7722 5784; Fax: +44 (0)12 7722 5784; e-mail: bulkshipan@aol.com

Steel production restrains raw materials trade

Weakening influences affecting steel production in the main countries importing raw materials — principally iron ore and coking coal — were prominent during the first half of this year. In some countries signs point to a pickup emerging during the second half but, currently, there are only limited indications of revival and there is great uncertainty about the trend.

Most attention focuses on China's iron ore purchases, which form by far the largest single element. The Chinese ore imports trend recently has slackened, although several forecasters still predict a substantial annual rise in 2015 as a whole. Elsewhere, raw materials imports into Japan, the European Union, and South Korea, also contributing large volumes, are experiencing a mixed pattern of influences.

CHANGING STEEL PRODUCTION

A largely negative pattern of steel output changes evolving in various countries is shown by figures covering the first five months of 2015. The changes reflect economic activity, progress in manufacturing industries using steel, and the pace of construction work. Other, more specific factors also determine the relationship between steel demand and output, such as inventory variations.

During January–May 2015, notable crude steel production changes were seen in Japan and South Korea. Sizeable percentage reductions (compared with last year's same period) occurred. In Japan a decline exceeding 4% reduced the total to 44.1mt (million tonnes) while, in South Korea, a 5% decline resulted in a fall to 28.7mt. By contrast, Taiwan achieved over 5% growth to 9.7mt, based on provisional data, and in India growth of 6% to 37.7m was achieved.

The European Union's steel production was flat at 73.2m in this period, although individual EU members' experiences varied. Germany, the biggest producer, saw a 3% decrease to 18.4mt, and Italy's output was 10% lower at 9.8mt. But Spain's volume was up by 5% at 6.6mt, and the UK saw a minimal increase of under 1% to 5.2mt. Steel production in China, on a gigantic scale far greater than in any other country, was apparently down by about 2% during January–May 2015, at 340.2mt. However, Chinese data is often revised upwards when more complete information is available. That tendency implies a marginal reduction, or possibly no reduction.

What will happen over the remainder of this year? Annual crude steel output changes last year preserved a broadly positive pattern, at varying rates among the main countries shown in the table below. Currently a similar positive overall outcome is not assured. It seems more likely that in some areas decreases will be seen.

CHINA'S EVOLUTION

Iron ore imports into China in the early months of 2015 were consistent with a pattern of weakening, or at least flattening, steel production. Compared with the same period a year earlier, the

ore imports total in the first five months was marginally (1%) lower, at 378mt.

But China's iron ore imports are still fairly widely forecast to increase by a substantial amount in 2015 as a whole. This expectation is based on the view that further quantities of high-cost, lower quality ore, produced by domestic mines in China, will be displaced by lower-cost, higher quality foreign supplies. Australia in particular, which has been ramping up iron ore production, and other suppliers including Brazil are expected to benefit.

Nevertheless, it is evident that steel demand and resulting production at Chinese mills are not supporting raw materials consumption. Slowing economic activity is a prominent feature, reflected in slackening usage of steel in manufacturing industries and in infrastructure projects and housing construction. These trends probably will continue, amid government policy attempting to rebalance the economy towards consumer spending, and away from over-dependence on capital investment.

Conversely, another factor may have a short-term positive influence. Iron ore stocks at China's ports recently fell to relatively low levels, implying a potential temporary boost when the inventory cycle turns. This influence may assist in raising the 2015 iron ore imports total (mostly sea movements, comprising over two-thirds of global seaborne iron ore trade), well above last year's 933mt. Coking coal imports are smaller but significant, totalling 62mt last year, and a decline looks likely in the current period.

OTHER IMPORTERS' TRENDS

Among other raw materials buyers, Japan seems unlikely to experience much growth in iron ore and coking coal imports in 2015, after activity at steel mills weakened in the first half. A recent Japanese government survey revealed that steel manufacturers' plans for crude steel production, in the April–June 2015 quarter, suggested a 6% fall compared with the same months a year earlier.

However, an improving economic performance now appears to be evolving in Japan, following a setback attributed largely to the adverse effect on consumer spending of the sales tax rise introduced last spring. Assuming that the trend remains positive, additional support for steel demand could emerge.

Earlier expectations of another rise in South Korea's steel output and related raw materials imports during 2015 have faded. Growth prospects for domestic steel demand seem limited, and reports emphasize intensified competition from foreign suppliers of steel products, especially China.

In Europe, a slight acceleration in GDP growth over the current year may assist steel demand to increase modestly, with limited positive implications for steel output and raw materials usage. The latest estimates by Eurofer, the European Steel Association, put EU domestic steel demand almost 2% higher this year.

Richard Scott

CRUDE STEEL PRODUCTION (MILLION TONNES)

	Key raw materials importing countries					% change**
	2010	2011	2012	2013	2014	
China	638.7	702.0	731.0	815.4	822.7	+0.9
Japan	109.6	107.6	107.2	110.6	110.7	+0.1
EU -28 group	172.8	177.7	168.6	166.3	169.3	+1.8
South Korea	58.9	68.5	69.1	66.1	71.5	+8.2
Taiwan	19.8	20.2	20.7	22.3	23.1	+3.6
total	999.8	1,076.0	1,096.6	1,180.7	1,197.3	+1.4

source: World Steel Association ** % change 2014, compared with 2013

Bleak times for aluminium?



Aluminium is used increasingly widely in car manufacture.

oversupply stresses prices

The commodity cycle has hit the bottom, writes Kunal Bose. Prices of minerals, intermediate items like alumina derived from bauxite and metals are traded at multi-year low prices. The phenomenon has more than one explanation. The embers of 2008 financial crisis are still there. Greece's financial crisis unless resolved quickly, as some central bank chiefs, including India's Raghuram Rajan, fear could suck the world into a 'Great Depression.' Three-month aluminium with major applications in transport, construction, packaging, electrical and home appliances is trading on London Metal Exchange at below \$1,725 a tonne and premium charged on immediate cash delivery in every market has collapsed.

For example, the US Midwest premium is showing some signs of stabilizing at around 8.50 cents a pound after four months of steady fall. Market participants are, however, uncertain about the immediate future course of premium. Look back at 2015 mid-January, US Midwest premium at 19 cents a pound was nearly a quarter of the exchange traded metal price of 80 cents a pound. Broadly, premium at any given point is decided by interest rates (speculation about future rates too), supply and demand scene and warehouse charges. What certainly now is having a bearing on premium is the LME reform saying warehouses with queues longer than 50 days will be obliged to deliver more metal than they bring in.

Common knowledge is much of the metal in LME registered warehouses and outside is on account of financing deals. Financiers benefiting from zero or near zero interest rate and low rent for warehouse space will sell aluminium forward immediately on acquiring the metal for a small profit taking advantage of steep contango, meaning future prices are higher than spot prices. Near-term aluminium price outlook remains discouraging what with China, which accounts for well over half global production of aluminium, producing metal at an annualized

rate of over 30mt (million tonnes) in 2015. The rest of the world is too pushing a higher amount of metal year on year, thanks primarily to smelters in the Middle East and India. But their production growth rate here is moderate compared to China.

The problem is consumption rise is not keeping pace with supply. This is because demand growth in Europe is staying around 1% with Russian demand slipping by over 5%. Demand growth is negative in central and South America. The US is back in business with aluminium demand growing 3.70%. Like in production, consumption in Asia, thanks mainly to China continues to grow at a healthy rate though not as strongly as in the past. By policy design, China is moving away from high debt financed growth restricting annual advance of gross domestic product to just over 7%. This is leaving China with growing surpluses of aluminium like in steel which are pushed in the world market raising dumping concerns in the US, Europe and India.

Prices of intermediate chemical product alumina fed into smelter are basically derived in normal times from LME metal rates. In the further upstream bauxite selling price has a linkage to alumina refinery functioning. For both bauxite and alumina, Chinese imports remain an important determinant of prices. Before taking a look at their current and likely future prices, it will be in order to refer to the forecast of an extra global requirement of 95mt to 105mt of bauxite by 2020. This is based on the assumption that world aluminium demand will rise to 70mt in the next five years from 53mt in 2014.

Any numbers of infrastructure and construction projects across the globe have been put on the back burner because of difficult economic situation. Most of these and many new projects requiring large uses of aluminium will be launched coinciding with improvement in economic environment.

stevedoring & warehousing rotterdam

Lifting your cargoes faster

- PROJECT CARGO & HEAVY LIFTS UP TO 1800 TONS
- OPTIMIZED TRUCK EXIT FOR WINDMILL BLADES & TOWERS
- HEAVY LIFT STORAGE AREA
- 730 METRES QUAY LENGTH
- ASSISTING OFFSHORE VESSELS

ISPS CERTIFIED

AEO-F CERTIFIED



Waalhaven n.z. 4
3087 BL Rotterdam
P.O. Box 55092
3008 EB Rotterdam
Portnummer 2157

TELEPHONE
+31 (0)10 429 94 33

FAX
+31 (0)10 429 02 61

E-MAIL
office@rhb.nl

WEB
www.rhb.nl

shorecranes up to 208 tons

Aluminium makers are confident that the white metal will find increasingly large application in cars as many countries following the example of the US, European Union and Japan are enacting laws restricting emissions by all kinds of vehicles. The answer to the challenge to improve vehicle fuel efficiency is weight reduction for which the preferred metal is aluminium. The good thing is that rolled products makers like Novelis are working closely with automobile companies, which is leading to increasingly wide application of aluminium in car bodies and engines.

Assuming aluminium demand will climb to 70mt by 2020, the challenge will be to know from where the incremental bauxite will be mined and also the places where additional alumina refining capacity will be built. There are many bauxite reserves in different parts of the world, as well as resources to be confirmed as reserves good for mining. What, however, remains a major challenge in opening of mines in abundantly bauxite rich nations like Guinea is costs and infrastructure deficit like road and rail linkage to ports. Opening a bauxite mine or a refinery will also have to pass the increasingly strict environment muster linked principally to ensure red mud disposal does not pollute streams and rivers.

Recall the celebrated case of Vedanta Group's failure to open a bauxite mine in a nearly 100mt deposit in eastern India's coastal state Orissa's Niyamgiri Hills, mainly in the face of unrelenting opposition from indigenous Khonda tribe people. Fears of pollution of river water resulting from bauxite mining also had a role in derailing the project. Proper rehabilitation of people to be dispossessed from land in proposed mine areas is now a major precondition for bauxite project launches in India and elsewhere. NGOs are globally active on this front. Activists under the banner 'Foil Vedanta' held several globally eye-catching demonstrations in London first at Indian High Commission and then at the company annual general meeting during 2012/13 to stop the mining giant in its track at Niyamgiri.

China needs a great amount of alumina for its smelters which appear to be geared to make over 30mt of aluminium this year compared with 27.5mt in 2014. Two of the first steps that Xi Jinping took on assuming office of President of the Republic of China in March 2013 were to combat pollution and end graft which often is the cause for environment damaging industrial plants to stay in operation. China's ministry of environmental protection (MEP) recently came down hard on Sammenxia Yixiang Aluminium Company for its failure to pass environmental protection inspections for a 300,000-tonne alumina project. Not only has a fine been imposed on the company, MEP has made it clear that resumption of alumina refining at the plant will depend on its installing environmental protection equipment and convincing the authorities of environment friendly practices.

Over the years, China has made phenomenal progress in alumina capacity development and production of metallurgical-grade alumina. According to research and consultancy group CRU, China's alumina production advanced to 51.6mt in 2014 from 47.12mt in the previous year. In the same period, consumption was up from 48.801mt to 55.402mt. But China is required to make imports to take care of local alumina supply and demand deficit. Even while last year's deficit was 3.84mt, China considered it wise to import an extra 1.44mt. This was prompted by fear that Indonesian bauxite ore export ban from January 2014 might impact Chinese alumina production. Not an unfounded concern since Indonesia traditionally had an overwhelming share of Chinese bauxite imports. But as is Chinese wont anticipating the challenges of Indonesian ban, it

resorted to heavy imports of bauxite "stockpiling more than 60 weeks' worth of imported mineral. The stockpile will come good to bridge expected supply shortfall between 2014 and 2016," says a report. Ahead of the ban, Chinese bauxite imports, including from Indonesia soared to 72mt in 2013 from 43mt in 2012. Supplies drying up from Indonesia and massive stockpiling in the past 16 months saw Chinese imports down to 36.531mt in 2014.

A Mumbai-based trade official says "China negotiated the Indonesian export ban by showing uncommon alacrity in broadening base of import sourcing countries to nine in 2014 from four in 2011. Malaysia's ascendancy as a major exporter of bauxite has come as a big relief for refineries in China." Last year China imported 3.217mt of bauxite from Malaysia. Now analysts are foreseeing the possibility of Malaysia where mining and port handling capacity is steadily ramped up despatching over 10mt of bauxite to China. Malaysian exports to China rising to 1.5mt in March and then in April to 2.065mt from a monthly average of 675,000 tonnes in recent quarters give credence to supply taking a major leap to the world's biggest market this year. CRU says in a report, surge in Malaysian supply will be "tempering any potential growth on China CIF [cost, insurance, freight] bauxite prices." Infrastructure at Kuantan port in Malaysia allows export of about 2mt a month. The other port Kemaman is too handling bauxite cargo in growing quantities.

While China will remain a big importer of bauxite to feed its refineries, its own production is forecast to rise 11.7% to 90.3mt this year with contributions coming from both mines part of integrated bauxite-alumina operation and third party mines at Shanxi and Guizhou. At the same time for long-term raw material supply security, hawk-eyed China will remain engaged in spotting bauxite reserves anywhere in the world, including countries where infrastructure building like road, rail and port remains a precondition for mineral evacuation to ports for export. To give one example, Hongqiao Group of China is hopeful of closing a mining and port investment deal in Guinea that has potential to create a 10mt annual bauxite export.

Australasia for which China is a major market is likely to step up supply by 5.4% to 84.4mt. Asian countries excluding China will find supply rising 16.7% to 40.7mt, thanks principally to impressive Malaysian progress in opening new mines and expanding ones in operation. Whether it is iron ore or bauxite, Indian authorities do not favour export of high grades of mineral. But then India exported nearly 5.2mt of low grade ore to China in 2014. Based on export of over 2mt to China in the first quarter, supply from India in 2015 could be more than 8mt. African supply should rise 17.1% to 24.8mt this year. Improvements in supply from multiple sources will keep bauxite prices in check.

China realized early that, in the interest of profitable working of its aluminium industry, it should reduce dependence on imports of intermediate product alumina. During 2014, China produced 51.604mt of alumina while consumption by its smelters was about 55.50mt. Chinese alumina imports last year were 5.276mt.

Based on first quarter inflow of foreign origin bauxite amounting to 933,000 tonnes, China is likely to end up importing less than 4mt in 2015. CRU says alumina prices will remain under pressure on three counts: first, availability of surplus alumina in both the Pacific and the Atlantic; second, low aluminium prices working against the intermediate product; and third, "disappointing" Chinese demand.

Primary aluminium at a crossroads in Brazil, as output falls, and imports rise

With the cost of importing increasing amounts of primary aluminium now close to what exports of bauxite and alumina earn, executives say the industry is “at a crossroads”, writes *Patrick Knight*.

Having the world’s second-largest reserves of bauxite and being the third-largest manufacturer of alumina as well, it might be assumed that Brazil would also be a top producer of primary aluminium. This was the case 25 years ago.

But with the cost of electricity soaring, output has started to fall in the past few years, and Brazil is now a net importer of primary aluminium.

In the 1960s and 1970s, the military led regimes which ran the country for 20 years, encouraged the state-owned Vale mining company to build smelters both in the Amazon region, where much of the highest quality bauxite is found, and in Rio de Janeiro state.

International giants such as Alcan, Alcoa, and Billiton were also attracted to Brazil, where they built their own smelters, or were partners in projects with Vale. Brazil’s largest private company, Votorantim, then a leader in cement and other non-ferrous metals, also joined the industry. Votorantim’s mills close to Sao Paulo city were supplied with bauxite from its reserves in neighbouring Minas Gerais state.

To help the industry get established, the government also financed the building of the 4,000MWs Tucuruí power station in the Amazon region, the largest power plant solely in Brazil and close to where the bauxite is found. Specially attractive rates were made available to the aluminium smelters. But the soldiers left power 30 years ago, and since then the situation has changed entirely. After peaking a decade ago, Brazil’s output of primary aluminium remained static for several years, but it has begun to shrink in the past few years.

The now privatized Vale has sold all its assets in the aluminium complex, and virtually all the other players have closed smelters, totally, or partly. The slow down in production has occurred despite the fact that demand for aluminium, used by the motor industry, for construction and packaging purposes, as well as by the fast growing oil and transmission industries, has continued to grow at an average of 5% a year. Demand has doubled to 1.5mt (million tonnes) in the past decade alone.

There are two main reasons for the change. In Brazil itself, successive governments have come to take the view that there is no good reason why aluminium smelters should pay much less for the electricity it uses than any other industry. This happened at a time when insufficient new low-cost hydroelectricity generating capacity was being added to meet fast-growing

demand, and more expensive thermal power had to be used instead.

Demand has been spurred partly because of the increased purchasing power of up to 30 millions of consumers who have seen their incomes rise sharply in the past 20 years. Many more consumer durables of all types have been bought, notably air conditioning units which use large amounts of electricity. Periods of dry weather have also become more intense and frequent in recent years. Building large new, relatively low-cost hydro-electric power stations, which for decades generated more than 80% of the electricity used in Brazil, has not kept up with demand. The result has been that the country has been forced to depend increasingly on much higher-cost natural gas, coal, or even plants using fuel oil or diesel plants. This has pushed up the price of electricity for all consumers.

Another reason for the industry’s difficulties which has not been confined to Brazil, has been the surge in output of aluminium in China, which now makes ten times as much as Brazil. China’s huge output has helped push down the world price of aluminium to the point that numerous plants in several producing countries, notably those operated by the small number of international companies which dominate the industry, have been forced to cut supply, in the so far unsuccessful attempt to bring supply into line with demand.

Another factor in the decline in importance of aluminium in Brazil, is that the previously state-owned Vale company, was privatized 15 years ago.

Until recently, the only company to continue rowing against the tide in Brazil was the Votorantim giant, with sufficient capacity at its Sao Paulo complex of mills to make half a million tonnes of primary aluminium a year. Votorantim had continued to increase production each year, and exported about 20% of output.

But even Votorantim has now fallen into line and last year, the company was using only two thirds of its smelting capacity. To protect themselves against fluctuations in the price of electricity — which even when electricity prices were relative low, formed a third of the total cost of smelting aluminium, but more recently, has formed more than half — all the companies built some hydro-electric power stations of their own.

Several became up to 70% self sufficient. It might have been thought that this state of affairs, which partly shielded the smelters from the soaring price of electricity, would allow these companies to continue making and selling aluminium.

But with the world aluminium price continuing relatively low and with the electricity price soaring in Brazil because of the

PRODUCTION, EXPORT & CONSUMPTION OF ALUMINIUM COMPLEX

Year	primary alumin prod '000 t	domestic cons, primary '000 t	export primary tonnes	export prods tonnes	bauxite production '000 t	bauxite export '000 t	alumina prod '000 t	alumina export '000 t
2014	962	1,500	500,000	750,000	38,000	10,100	10,800	9,100
2013	1,300	1,550	530,000	750,000	33,900	8,400	9,950	7,600
2012	1,436	1,400	493,800	750,00	35,000	6,861	10,500	7,486
2011	1,440	1,440	486,927	711,390	33,700	6,887	10,200	7,276
2010	1,534	1,296	524,000	693,542	32,000	6,789	9,300	6,400
2009	1,536	1,008	649,396	447,963	25,630	3,037	8,700	5,535
2008	1,661	1,127	547,230	372,814	28,115	6,221	7,900	4,611

Sources: Association of Brazilian Aluminium Industries (Abal) & Min, of trade

One Source



High capacity unloading leading the way

DOCKSIDER™ pneumatic unloader – the most versatile and most advanced unloader in the world; designed to provide the performance you've come to expect from FLSmidth.

DOCKSIDER unloaders are custom designed to meet your specific terminal application. Exclusively developed for the ship and barge unloading industry, FLSmidth's state-of-the-art technology offers unequalled performance, reliability and durability.

Starting with a range of four basic sizes, FLSmidth can supply the right DOCKSIDER ship unloader for any terminal – whether you're unloading river barges or bulk vessels, and whether you're conveying to an adjacent belt conveyor or through a long pipeline.

Find out more at www.flsmidth.com

FLSMIDTH

chronic shortage of power, selling their electricity to the grid or end users, rather than using it themselves, has proved more attractive.

While the price of electricity remains so high in Brazil, something which seems likely to continue for many years, the aluminium companies seem unlikely to re-start their idle smelting capacity, let alone add any new capacity.

Two successive years of severe drought in Brazil's south east and also north east regions, have brought the country to within an ace of being forced to introduce electricity rationing, which was forced a decade ago. The dry weather has forced *de facto* water rationing in many towns and cities, prejudicing much of industry. The dry conditions are continuing, and some worry that they have been at least in part caused by the de-forestry activities in the Amazon region, so could persist for many years, of not for ever.

The past few years have seen demand increase by an average of about 5% a year, with *per capita* consumption increasing from less than 5kg a decade ago, to 7.5kg last year. This is still far below the average in more developed countries.

Several years of prosperity, and easier access to credit has seen the number of motor vehicles made rise by more than 50%, to exceed three millions a year. The motor industry one of whose executive is now the executive director of Abal, the aluminium industry's trade association, uses about a quarter of all the 1.5mt of aluminium used in Brazil each year. The construction industry, the second-most-important user along with packaging, has also grown steadily, as an increase in credit, coupled with rising incomes of a large proportion of Brazil's 200 million population, spurred increases in home building. Aluminium is now used to make a third of all window and door frames, as well as numerous other fittings previously made from wood or steel.

Although the world economic slowdown has fed through into a slow down in all these industries in Brazil, demand for aluminium is expected to continue to grow to the point where Brazil will be obliged to import up to 3mt of primary aluminium a year, in a few years' time.

Industry leaders says the smelting industry is at a cross roads. It will soon be too late to re-start the idle smelting capacity.

But while the government continues to turn its back on the primary smelting industry, demand for both bauxite and alumina from Brazil, continues to grow strongly. The result is that coupled with increased revenues from the sale of electricity, strong earnings from the sale of bauxite and alumina means the financial state of all companies in the industry remains extremely strong. Although the leading producer Votorantim, in common with Alcoa, is cutting output of aluminium, Votorantim is to build a large new alumina manufacturing plant in the Amazon region, which when complete will add 3mt to Brazil's current 11mt alumina-making capacity. Alumina made by Votorantim in the



*Pneumatic unloading
of alumina.*

Amazon will cost less to produce, and should also be cheaper to transport to Votorantim's mills in Sao Paulo, than that from the now elderly, and relatively high-cost mines in Minas Gerais state. Bauxite from Minas travels to Votorantim's mills by rail, with a train carrying the mineral passing through the congested centre of Sao Paulo city every afternoon. Alcoa continues to invest at its multi billion dollar Juruti bauxite mine on the main Amazon river.

The export of bauxite and alumina together now earn Brazil a hefty \$2.5 billion dollars or so each year. But with imports of primary aluminium now rising steadily, the cost of imports will soon exceed industry export earnings by a growing amount. This will present governments with a dilemma, and perhaps force officials to re-think the countries policy for primary aluminium. After running a healthy trade surplus for 15 years, the trade balance has moved into the red, and the growing import of aluminium, is one of the reasons.

A further complicating factor in the equation for aluminium, has been the fluctuations of the Brazilian currency against stronger currencies such as the US dollar in which the price of aluminium as well as bauxite and alumina, are set.

Brazil's currency was overvalued for many years. With interest rates set high to attract foreign investors, the country became a haven for 'hot' money. The strong currency resulted in imports, including of primary aluminium, cheaper than they would otherwise have been. But the strong real also made Brazil's exports, including those of bauxite and alumina, more expensive than those from competitors.

This situation has now changed, so imported goods have become more expensive, while Brazil's exports have become more competitive.

Because it could not be denied that insufficient primary aluminium was now being made in Brazil to meet demand, which meant that what was available was sold for very high prices, the users of aluminium, notably in the motor and construction industries, persuaded the government to scrap a 6% import duty on aluminium last year.

But the soaring costs of imports may encourage the government to look again at what the long term future of primary aluminium in Brazil should be.



FEDNAV

DELIVERING A HIGHER STANDARD
FOR 70 YEARS



BRIDGING THE GAP

www.fednav.com

Barloworld Logistics and LBH Africa partner to deliver excellence in bulk

Forming mutually beneficial, strategic relationships with key suppliers and business partners enables companies to focus on their core business, while leveraging the expertise and experience of industry leaders in order to fast-track innovation and enter into new markets. Barloworld Logistics and LBH Africa have formed such a partnership to offer dry bulk commodity supply chain solutions to clients into and out of southern Africa.

The Barloworld Logistics and LBH Africa team will act as a single point of contact between clients and multiple service providers across the dry bulk supply chain. By integrating processes and managing multiple suppliers, the team offers integrated multimodal management solutions that enhance visibility and improve security, service and efficiency across the supply chain whilst simplifying and reducing the administration of the movement of dry bulk commodities.

According to Steve Ford, chief executive of Barloworld Logistics, "Our partnership with LBH Africa is indicative of our strategy to leverage our supply chain expertise and grow our service offering into niche markets. The combination of our specialist skills and in depth practical knowledge enables us to customize, optimize and enhance dry bulk commodity logistical processes and in so doing, reduce operational costs, improve service and increase reliability."

Athol Emerton, managing director of LBH Africa continues, "Providing cargo owners with relevant real-time information and stock level visibility across the supply chain will enhance accurate cargo and ship planning, minimizing demurrage and potentially facilitating early funding mechanisms that enhance cash flow. With our partners we will be able to improve on issues such as truck congestion at mine and port; standardized PODs and prompt or regular contractor payments. All of these frustrate efficiencies but they can now be an issue of the past!"

The team is focusing on offering dry bulk commodity solutions for grains, chemicals and minerals. Both businesses are strategically positioned and globally connected through an established freight network on international trading routes ensuring a comprehensive understanding of local and international markets, customs and excise law requirements and to deliver the safe and cost effective movement of goods inland, through ports and across borders and oceans.

Ford continues, "Technology plays a vital role in increasing

visibility across the supply chain delivering insightful management information, enabling faster, smarter, more successful decision-making and better control across the supply chain. The combination of our supply chain capabilities and integrated technology platform with LBH's in-depth understanding of bulk commodity movements enables both parties to offer customers a more holistic, optimized and value adding supply chain solution with superior safety and governance standards."

"This is a very exciting partnership. We are delighted to provide customers with a unique 'lighthouse visibility' solution and look forward to continually innovating to create the most competitive and secure bulk solutions in the industry for our customers and to potentially rolling these out into other regions over time," concludes Emerton.

MORE ABOUT BARLOWORLD LOGISTICS AND LBH AFRICA LBH Africa

Part of the global bulk orientated LBH Group with operations on every continent and in most major bulk ports worldwide, LBH Africa is a specialist in bulk commodities shipping and logistics. LBH has been serving the bulk maritime industry for 30 years. With owned and staffed offices in all major South African, Mozambican and Namibian ports, LBH Africa is well established as the leading charterers, port agency and clearing and forwarding agent of bulk commodities in southern Africa.

Combined with a well-established network of key suppliers and partners across the global bulk commodity supply chain, LBH Africa's on the ground knowledge, highly specialized bulk commodity expertise, skills and capabilities and equipment provide customers with highly effective solutions.

Barloworld Logistics

Part of the 112 year old Barloworld Group, Barloworld Logistics designs, implements, operates and manages smart supply chain solutions that enable business success. With extensive logistics and supply chain experience in the mining, industrial and agricultural industries, Barloworld Logistics has an exemplary track record in delivering sustainable value for our clients.

Through smart partnerships with key industry players and clients, Barloworld Logistics has not only developed many in-house and world-class competencies, but is adept at setting world class standards in safety, governance and risk management.

MAJ welcomes new IMO Secretary-General

The Maritime Authority of Jamaica (MAJ) has welcomed the appointment of Mr Ki-tack Lim of the Republic of Korea as the incoming Secretary-General of the International Maritime Organisation.

Jamaica has been a Category C member of the IMO Council since 2007 and its Director General, Rear Admiral Peter Brady, chaired the IMO's Standards of Training & Watchkeeping (STW) Sub Committee for almost ten years and was Chairman of the Committee of the Whole at the Diplomatic Conference in Manila which amended the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) and STCW Code.

Congratulating Mr Lim on his election as Secretary General elect of the International Maritime Organization (IMO) Admiral Brady said: "Mr Lim Ki-tack brings great value to the position with a wealth of experience, education and training as a Master mariner, graduate of the Korean Maritime University and the World Maritime University; and as an executive manager with the Government in the Ministry of Land, Transport and Maritime Affairs. He is currently the CEO and President of the Busan Port Authority. He was Minister Counsellor at the Embassy of the Republic of Korea, UK and was also Chairman of the IMO's Flag State Implementation Sub Committee. We look forward to working with him on global maritime matters".



SWIRE CTM BULK LOGISTICS

Mission:

To provide reliable customised and cost-effective dry-bulk seaborne supply chain services aimed at bridging the gap between Supplier and Industry

Services:

- River and coastal specialized feeders
- Self-unloading vessels and barges
- Floating Cranes
- Floating Terminals
- Ship to Ship, Barge to Ship and Ship to Barge operations
- Integrated seaborne logistics "dry-bulk door to door"



Together Bridging the Gap between Supplier and Industry

Monaco: Ph. +377 9798 5900
Singapore: Ph. +65 6603 9400
www.swirectmbl.com
contacts: bulklogistics@swirectmbl.com

A Total Service Supplier



OEM Manufacturer and your service specialist for marine and offshore cranes, winches, hatch-covers, RoRo equipment and davits

1- and 5 yearly inspections | Davit certification |
Repairs and maintenance | Spare parts | Fleet service
agreements | Modification and conversion | Training
and technical support | Global service network

www.ttsgroup.com/Services



Logmarin reaches agreement with Emirates classification society

In early July, Logmarin Advisors (RINA Group) — which specializes in shipping logistics and supply chain design for dry bulk commodities such as coal, iron ore, agribulk and others — has signed an agreement with Emirates classification society Tasneef. The agreement aims to bring new ideas to the UAE marine industry and strengthen the ties between Tasneef and Italian marine companies.

Captain Waleed Al Nahdi, Commercial and Marketing Director at Tasneef said, “This agreement aims to raise the national capabilities and enables the UAE to develop its maritime resources and open doors for our national engineers to be trained to play a vital role in the development of local maritime industry.”

Eng. Suod Al Hammadi, Defense Projects Manager at Tasneef explained: “This agreement aims to train local engineers in the fields of ports and marine consultancy. The added value of this visit is to build better and more advanced local maritime resources through the technical support Logmarin will provide us

with in the field of floating terminals and to train our engineers in Italy within the recent existing enterprises. The agreement also aims at easing logistic operations related to transportation, cargo, and port management.”

Al Hammadi added: “During the visit, we met with Rina and the most prominent maritime companies and authorities in Italy to look for various means for establishing co-operation with these companies in order to develop Tasneef’s capabilities to better support the classification services we provide the Arab World with through the use of the most advanced Italian maritime technologies.”

Al Hammadi added: “We also promoted Tasneef’s services during our visit including the UAE Yacht Code; the first of its kind in the world.”

Al Hammadi concluded: “We at Tasneef highly appreciate the strong ties between the UAE Classification Society and Rina and other Italian companies as this enables us to exchange knowledge and experience in which benefit the UAE maritime sector.”

VIKING Saatsea gets flag state approval

VIKING Saatsea has become the first and only provider to achieve flag state approval for its unique STCW on-board training solution with refresher modules according to the new STCW 2010 Manila Amendments for Basic Training.

The approval of the company’s 24/7, customizable certification management training (CMT) solutions enables shipowners to keep crew certificates up to date while at sea, cutting the number of days needed for land-based training from as many as nine to just one — a major cost and logistics saving — and ensures instant, automatic certification the moment training has been completed.

Beating other training and certification providers to the punch, VIKING Saatsea received approval from the Danish Maritime Association (DMA), paving the way to other flag-state approvals over the months to come. Granting of the approval is timely, too, as shipowners look for solutions to handle the demands of STCW re-certification under new SOLAS rules for commercial vessels, which come into force on the 1 January, 2017.

CERTIFICATION GAME-CHANGER

VIKING Saatsea’s state-of-the-art onboard CMT solution is accessible both online and offline when there is no current connection, making them more practical and convenient than land-based training.

They also offer faster, real-time access to up-to-date documentation for administrators. To date, VIKING Saatsea is the only provider to offer such a solution, and DMA’s flag-state approval has again raised the bar for providers hoping to match the VIKING Saatsea solution’s advantages.

FEWER DAYS ON LAND

Specifically, VIKING Saatsea’s solution has received flag-state approval for the STCW courses Personal Survival Techniques (PST) (STCW Reg VI/1 Code A-VI/1-1), and Fire Prevention and Fire Fighting (FPFF) (STCW Reg VI/1 Code A-VI/1 Table A-VI/1-2). These two courses can take several days of onshore training to complete. Now it is possible to complete most of the training onboard.

Another unique advantage of VIKING Saatsea’s solution is that the underlying software platform can be used for company specific in-house training and certification applications.

VIKING Saatsea’s CEO, Kim Baarsøe, is confident that the recently granted approval will benefit shipowners all over the world. “In the relatively short time our product has been on the market, we have learned a great deal about the key issues and, in particular, about what it takes to build a best-practice CMT solution. And we see this first flag-state approval as a confirmation that our solution is just what shipowners have been longing for.”



Svitzer orders two more ASD 3212 tugboats for large vessel towing operations

SMOOTH MANOEUVRABILITY WITH CONTROLLABLE PITCH PROPELLERS AND SPECIAL RENDER RECOVERY WINCHES

Svitzer, a global market leader within towage and emergency response, has ordered two more Damen ASD 3212 tugs with 80 tonnes bollard pull performance for its escort and towing operations on the Thames and Felixstowe in the UK. They are being built at Damen's state-of-the-art Song Cam Shipyard in Vietnam and will be delivered to Svitzer UK in October 2015.

The 32 metre ASD tugs, designed for push-pull, escorting, towing and fire-fighting operations, feature a 12.2 metre beam and speed of 14 knots. For propulsion, they are equipped with two Caterpillar 3516C HD TA/D engines with a total power of 5,050kW at 1,800rpm.

Svitzer specializes in escorting large vessels — tankers, cruise ships, bulk containers and container ships. Damen sales manager Martijn Smit explains why these tugboats are extremely suitable for handling large vessels. "Being able to change pitch and power during operation allows smooth and superior manoeuvrability of these big vessels." These tugboats have 2,800mm controllable-pitch propellers in combination with special render recovery winches. The render recovery winches are equipped with a 200 tonne break, render 100 tonnes at 100m/min and 60 tonnes at 50m/min at second layer, while normal mode pull is 60 tonnes at 20m/min.

"Damen is happy to be able to provide Svitzer with the standardized fit-for-purpose tugboats and fast turnaround they are looking for. Over the past couple of years, Svitzer UK has increased its Damen tugboat orders. We have a long history of fruitful collaboration," adds Smit.

Svitzer UK ordered its first ASD 3212 tug in 2014; a model



Artist's impression of the two new tugs.

outfitted with a fixed-pitch propeller in combination with a forward winch. Svitzer UK's tug fleet now totals 21 Damen tugs including these three ASD 3212 vessels. The 180-year-old towage and salvage company has more than 430 vessels in over 100 locations worldwide.

DAMEN SHIPYARDS GROUP

Damen Shipyards Group operates 32 shipbuilding and repair yards, employing 9,000 people worldwide. Damen has delivered more than 5,000 vessels in more than 100 countries and delivers some 160 vessels annually to customers worldwide. Based on its unique, standardized ship-design concept Damen is able to guarantee consistent quality.

Damen's focus on standardization, modular construction and keeping vessels in stock leads to short delivery times, low 'total cost of ownership', high resale values and reliable performance. Furthermore, Damen vessels are based on thorough R&D and proven technology.

Damen offers a wide range of products, including tugs, workboats, naval and patrol vessels, high speed craft, cargo vessels, dredgers, vessels for the offshore industry, ferries, pontoons and superyachts.

For nearly all vessel types Damen offers a broad range of services, including maintenance, spare parts delivery, training and the transfer of (shipbuilding) know-how. Damen also offers a variety of marine components, such as nozzles, rudders, anchors, anchor chains and steel works.

In addition to ship design and shipbuilding, Damen Shiprepair & Conversion has a worldwide network of 15 repair and conversion yards with dry docks ranging up to 420 x 80 metres. Conversion projects range from adapting vessels to today's requirements and regulations to the complete conversion of large offshore structures. DSC completes around 1,500 repair and maintenance jobs annually.



Celebrating the signing of the contract.



Cutting EDGE

EDGE equipment chosen to move fragile cargo



Reducing cycle times and increasing production with the EDGE RTU220

Founded in 1974, Fullen Docks & Warehouse Incorporated is a full-service intermodal river terminal and warehousing facility located on the lower Mississippi River, immediately north of Downtown Memphis. Its clients include barge brokers, freight forwarders, and manufacturers requiring barge loading, offloading, harbour and tug services, transshipment, trucking and storage within the Mid-South and to other continental US regions. Fullen Stone Stores, a subsidiary of Fullen Docks sells and transports a wide variety of aggregate products to the regional construction trade.

After successfully tendering to provide expanded clay, shale, and slate to a light weight concrete block manufacturer, Fullen Docks had to come up with a solution for moving and storing this fragile, lightweight material. Expanded clay, shale, and slate are produced by crushing the raw materials and heating them to 2000°F (1093°C). At this temperature the material bloats, or puffs up, because of the rapid generation of gases caused by the combustion of small quantities of organic material trapped inside. The problem with such a material is that it cannot be stockpiled via wheeled loaders as the material is very fragile and breaks down under the weight of the shovel. Uniformed aggregate is vital in the production of light weight concrete so

cross-contamination caused by wheel loaders was another major concern. To overcome this challenge Fullen Docks decided to invest in two EDGE products; an RTS80 radial track stockpiler and an RTU220 radial truck unloader.

Prior to purchasing the Radial Truck Unloader (RTU), Fullen Docks off-loaded barges using an excavator. From there it was transported to the storage area and stockpiled using wheeled loaders. By enabling Fullen Docks operators to continuously load directly from trucks into the RTU220's large 23m³ (30 cubic yards) hopper and into train wagons or barges, the RTU removed the need to double handle the material and drastically improved cycle times and overall productivity.

The RTU220 is an independent track mounted unit that provides flexibility and reliability. Powered by a Cat4.4 96KW (129BHP) diesel engine, the RTU220 offers huge torque whilst only consuming 12–15 litres per hour (3-4USG). A further cost-saving option of a dual power source is available to customers allowing the RTU to be tracked into position and then connected to an on-site three-phase electrical supply to power conveyors for a higher level of efficiency.

The machine has a range of applications but is specifically designed to receive material from lorries and dump trucks. The



RTU can accept a full 20m³ (26 yrd³) load at one given time. Its high torque drive system allows the speed of the conveyor belt to be adjusted meaning the output of the machine can be regulated. Further suitable applications include material stockpiling, and loading of ships, containers and railway carriages.

For Fullen Docks to maintain a high quality product as

specified by its customer, no cross contamination from Fullen Docks' other aggregate products could occur. To prevent this, a second smaller holding yard was employed for holding the lightweight aggregate. The issue facing Fullen Docks was the limited space provided by this yard to stockpile the vast amount of material required to fulfil its customer's requirements. To overcome this shortcoming, Fullen Docks invested in an RTS80

If you're reading this....

...then so, very probably, are your customers!

To find out how you can benefit from advertising in the world's only monthly dry bulk publication contact Jason Chinnock or Andrew Hucker-Brown on Tel: +44 (0)1206 562560 Fax: +44 (0)1206 562566 Email: info@dc-int.com



radial track stockpiler to stockpile material directly from the RTU220. The RTS80 purchased by Fullen docks is a unique concept in that it is essentially a radial wheeled stockpiler and a track stockpiler all in one. It provides all the benefits found in two model types — the manoeuvrability found with a track stacker over rough terrain and the 360° radial stockpiling ability of a radial mobile stacker. The radial track stockpiler supplied to Fullen Docks was installed with EDGE's automatic stockpiling programme option. By combining automatic radial drive functions and self-angle adjustment, the RTS80 has the ability to create huge radial stockpiles with minimal supervision. Trucks at Fullen Docks were now able to offload directly in the RTU220 which in turn transferred the material into the RTS80 which has the ability to create radial stockpiles with a volume of up to 13,328.8m³ (17,433 yards³).

With access from three sides and with the added feature of hydraulic flared sides, the RTU220 hopper can also be fed directly by wheel loaders, excavators and grab cranes. The high torque capacity of the RTU220 coupled with its adjustable belt speed allows the machine to be used to regulate the flow of material. These added features allow the RTU220 to lend itself to a whole host of different applications. This flexibility is highlighted by Fullen Docks' future plans of deploying the RTU220 and its 140° 50FT Radial Conveyor to load directly into barges with materials from the Fullen Stone Department. The RTU220 has dramatically expanded Fullen Docks' material handling options and has eliminated the need to double handle material, reduced dependency on wheeled loaders and vastly reduced cycle times from the barge to the storage facility. Ultimately in the case of Fullen Docks, EDGE has been able to reduce their cost-per-tonne handled.

All EDGE products are designed, manufactured and built in a new state-of-the-art manufacturing plant based in Ireland, with a strong focus on quality assurance. As a result of decades of experience, EDGE Innovate is leading the way in the materials handling and recycling equipment sectors. Its material handling portfolio boasts a wide range of mobile conveying systems that includes; the MS-Series (mobile stockpilers), the TS-Series (track conveyors), the RTS series (Radial Track Stockpilers), the FS-Series (Mobile/Track Feeder Stockpilers) and its new LTS-Series (low-level track stockpiler) launched in 2013 along with the added option of its 360° Unlimited range. This growing range of equipment caters for the various needs of a rapidly growing customer base with a wide range of applications including rail loading/unloading, construction and demolition waste (C+D), sand and gravel, compost, topsoil, wood waste, mulch, scrap metal, aggregates and coal.

EDGE Innovate is exhibiting its wares at a number of upcoming exhibitions including:

- ❖ **Matexpo — Belgium:** 2–6 September;
- ❖ **Expobiomasa — Valladolid, Spain:** 22–24 September;
- ❖ **Dry Cargo Conference and Exhibition — Rotterdam, Netherlands:** 30 September to 1 October;
- ❖ **Philconstruct — Pasay City, Philippines:** 8–11 October;
- ❖ **CONEXPO Latin America — Santiago, Chile:** 21–24 October; and
- ❖ **Waste Management and Recycling Summit — Doha, Qatar:** 4–5 November.

Readers are urged to stop by EDGE's stand at any of the exhibitions listed above to speak to a member of the company's team about the latest offerings, including the EDGE RTU220 radial truck unloader.

DC:

Welcome to our Comfort Zone...



EDGE
Innovation at Work

DRY CARGO 2015
Conference & Exhibition
Ahoy Rotterdam • 30 / 09 & 01 / 10 / 2015
Come visit us at Stand 6-56



With our ethos of "Innovation at Work" EDGE persist in pushing the boundaries of design and manufacturing to produce hard working, quality machinery to fit any materials handling requirement from mining and quarry industries to port terminals.

EDGE RTU220 - KEY FEATURES

- ▶ Unload directly from articulated road lorries
- ▶ Feed into train wagons, barges, ships and hoppers
- ▶ Eliminate the need to double-handle materials
- ▶ Improve cycle times and on-site production



Edge Innovate N.I LTD. 30 Farlough Road Dungannon BT71 4DT
T: +44 (0)28 87 740525 E: info@edgeinnovate.com W: www.edgeinnovate.com

"Equipment built to work as hard as you do"



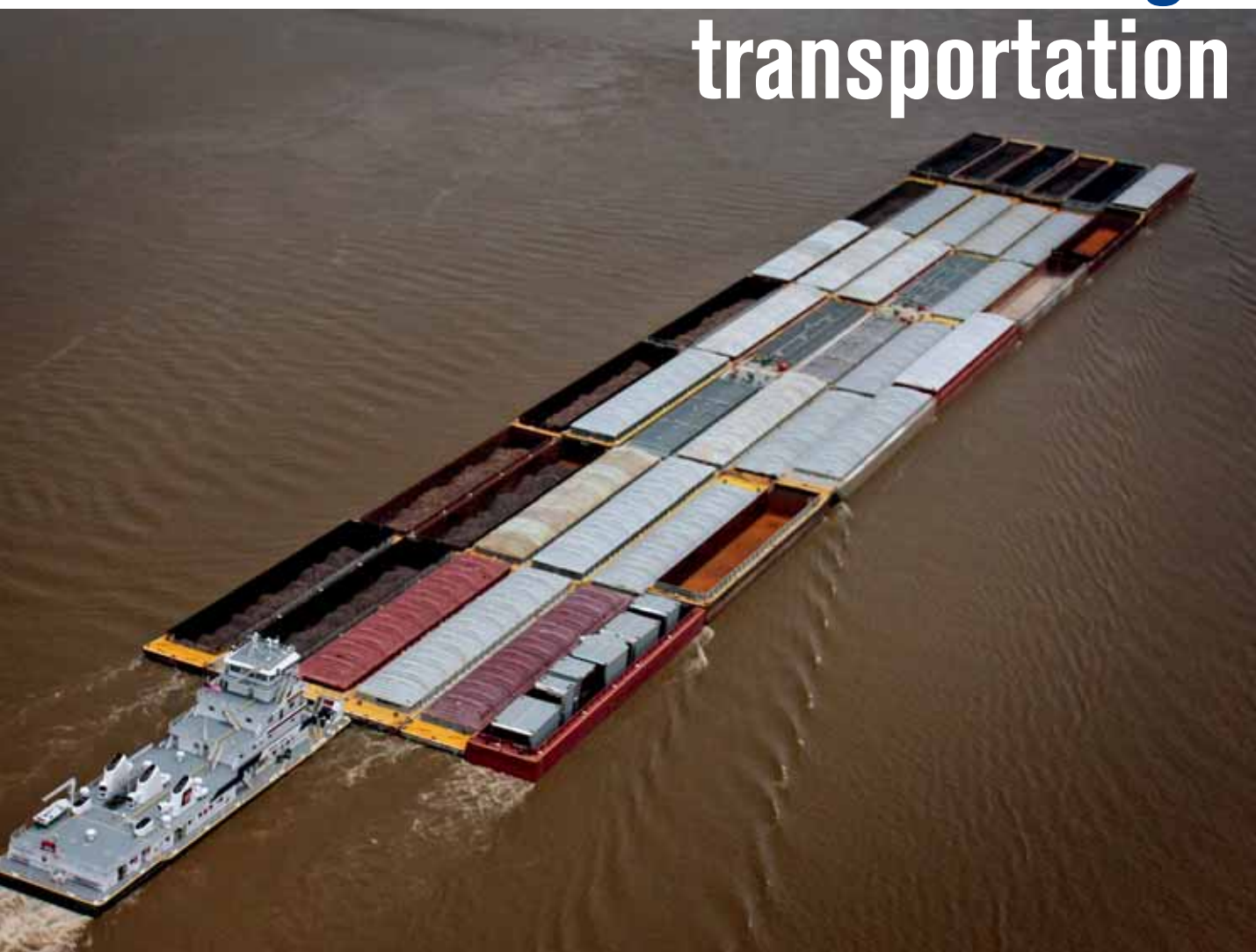
READY WHEN YOU ARE

MAXIMUM TRANSSHIPMENT, MINIMUM DOWNTIME.
BARGES THAT YOU CAN RELY ON.

*We take pride in delivering you the best solution
Kommer Damen*



Rail & barge transportation



Ingram Barge Company: setting the standard for America's Inland River Industry

Ingram Barge Company (Ingram) has been a quality marine transporter since 1946, starting out as a small, family-owned business and growing into what they are today: the leading carrier on America's inland waterways. Ingram owns nearly 5,000 barges; those barges are powered by the industry's best towboat fleet, which includes approximately 150 towboats that are maintained at the highest level of standards and are equipped with state-of-the-art navigation and communication technology. They transport a high volume of dry bulk commodities, including coal, aggregates, grain, fertilizer, ores, alloys, and steel products, as well as liquid bulk cargoes, on over 4,500 miles of America's inland waterways system.

With the recent growth of shipments of grain, soybeans, corn and salt through the Panama Canal, and with the expansion of the canal nearing completion, Ingram is currently focused on cargo versatility. They have poised themselves to take on increased demand and continue to showcase the vitality of the US inland waterways and their ability to remain competitive in the global marketplace.

As part of their cargo versatility mission, Ingram is also leading the charge in finding new, efficient ways to move cargo on the US waterways. In March 2015, Ingram partnered with the Paducah-McCracken County Riverport Authority (Kentucky) to conduct a trial run of a hopper barge loaded with 54 containers from Paducah, Kentucky, to St. Louis, Missouri, and back. Long a mainstay on waterways around the world, container-on-barge shipment on America's inland waterways is not nearly as common — this trial was conducted to demonstrate the viability of intermodal river transportation, and by all accounts was a great success. This method has the potential to support new growth across many industries, including import and export businesses, and greatly benefit the nation's economy.

Currently, American highways and railways are operating at near full capacity, and Ingram understands there is substantial room to grow in transporting goods on the nation's rivers, with minimal investment. Besides having room for expansion, the inland waterways network is the safest and most environmentally friendly mode of transporting cargo in the US.

As the largest carrier on the inland waterway system, Ingram feels responsibility to lead in environmental sustainability. Ingram is a company that bases its livelihood directly on natural resources. It's always been in their best interest to engage in sustainable practices and to focus on the education of future generations about the importance of protecting and preserving our nation's waterways, from the smallest stream to the

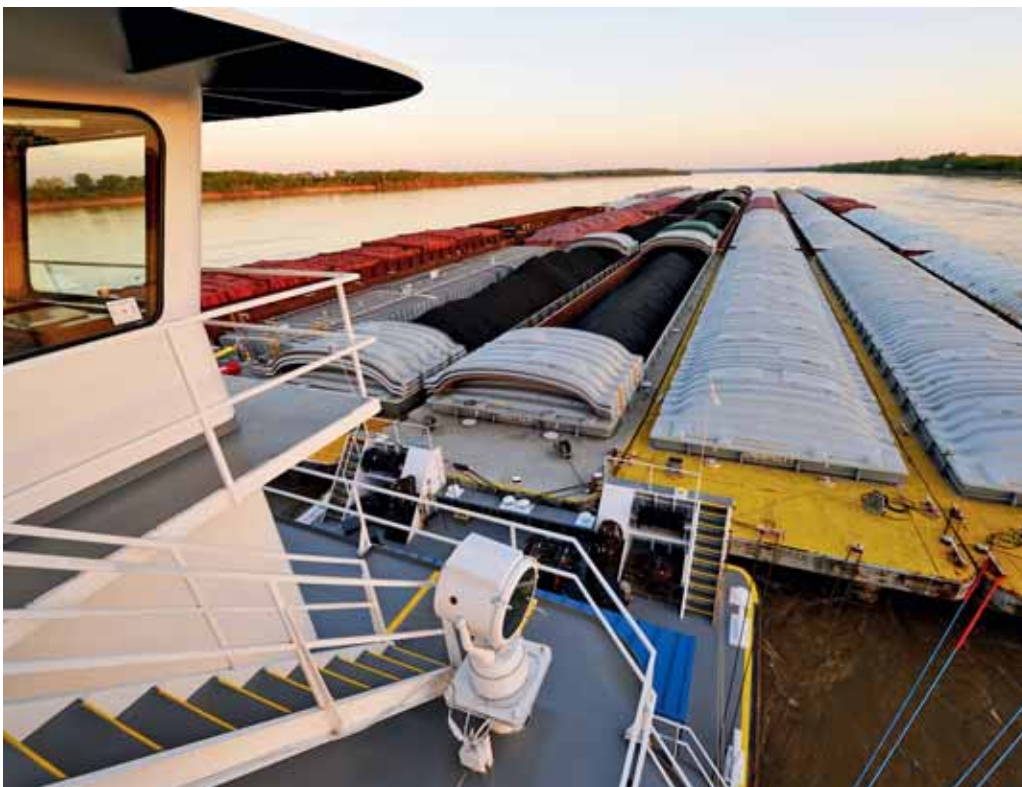


largest river. The US river system is an incredible resource that brings stability and prosperity to the global economy. Barge transportation not only supports the communities along the waterways; its economic impacts reach far beyond the river banks.

Remaining an industry leader in environmental stewardship is a commitment Ingram takes seriously. For its customers, this means moving more cargo over greater distances, using less energy and water, and creating less waste. For its associates and the community, it means doing so in the safest manner as well.

Ingram's sustainable efforts have been recognized by the U.S. Environmental Protection Agency (EPA) and the US Coast Guard (USCG). In 2010, Ingram was named the first marine transportation partner in the EPA SmartWay programme. In 2011, Ingram received the EPA's Southeast Diesel Collaborative Award for emissions reduction innovation. In 2012, Ingram was awarded the USCG's William M. Benkert Marine Environment Protection Gold award. This biennial award recognizes outstanding marine environmental achievements that go beyond mere compliance of industry and regulatory standards.

Ingram has partnered with diverse stakeholders committed to environment improvements, such as America's Great Watershed Initiative, Great Rivers Partnership, The Nature Conservancy, Living Lands and Waters, and the Cumberland River Compact. Engaging stakeholders to provide awareness and understanding of Ingram's leadership and commitment to responsible navigation, communities and the environment is helping to build a better tomorrow. Ingram has innovatively bridged the chasm between goals and principles of sustainability through action and commitment, now and in the future.



Brazil depends heavily on inland waterways to solve logistical problems

Hardly a week goes by without news of a new project aimed at getting more of the grains grown in the centre and north east of Brazil to ports, along Brazil's extensive network of inland waterways, writes *Patrick Knight*.

Between them the trading companies active in Brazil, ADM, Bunge, Cargill, Dreyfus, Noble, Maggi, Caramaru and several others have ordered several hundred barges and dozens of the vessels which will push barge trains carrying up to 50,000 tonnes each, along rivers to seagoing ports.

Transport by road, the dominant method until now, is becoming steadily more expensive, while spending on rail has not kept pace with the growth in output, expected to increase by 50% in the next decade.

At the moment, 80% of the 50mt (million tonnes) of soya and 40mt of maize grown each year in the north of the country, which is half the country's total, with most to be exported, leaves from three ports in the south east and south of the country, Santos, Paranagua and Rio Grande. It travels up to 2,000km along congested roads, most of them in poor condition, in trucks which carry a maximum of 60 tonnes each.

With the cost of road transport rising steadily as output increases year after year, farmers and trading companies are looking for a cheaper alternative.

If all goes according to plan, more than half of the grains grown in the north west and north east, will soon be shipped from ports near the mouth of the Amazon river, or ports on the Atlantic coast such as Itaqui, from where the 200mt of iron ore produced at the Carajas mines now leaves. It takes several days less for cargoes shipped from these ports to reach destinations than that leaving from ports in the south.

Brazil has an enviable 65,000km of navigable inland waterway, but for the time being, only a fraction of that is utilized. Three quarters of the total is either the Amazon river itself, or its numerous tributaries, far from where the country's economic activity is concentrated.

With the important exception of the Madeira river, which forms Brazil's border with Bolivia along much of its length and

for the Tiete-Parana system in the south east, which was affected by a serious drought in recent months, very little is used commercially at the moment. This is because numerous high waterfalls on most rivers flowing south to north, prevent the passage of vessels between the huge plateau where most of the grains are grown and the main rivers. About 200mt of grains are now grown in Brazil, almost 100mt of it soya, of which about 60mt is now exported each year. Eighty million tonnes of maize are also now grown and about 20mt of maize has been exported in each of the past four years. This has been made possible by an explosion in the amount grown as a winter crop in the centre west.

World grain stocks have been growing steadily in recent years, after several years when supply exceeded demand. Demand in several key markets where most of the grains are fed to cattle, pigs and poultry, as well as to dairy cattle, such as China and also the EU, has slowed from its earlier highs. The combination of weaker growth in demand and a steady increase in supply, has caused grain prices to fall and they seem unlikely to rise again for some time. This has become a great worry to farmers, who made high profits in the boom years.

Farmers in Brazil have fortunately been shielded from the full impact of world price falls by the fact that Brazil's currency has lost about 25% of its value in the past year or so, after having been overvalued for several years. For the time being at least, farmers are getting about the same amount in local currency in which most of their costs are incurred, as they did in the past few years.

Despite some relief from the fact that the price of diesel fuel has fallen in the past few months, the cost of road transport has risen sharply in recent years in Brazil. Increased congestion means trucks often wait as long in queues at ports, as they take to travel the 2,000km distance from fields to the coast. New regulations restricting the number of hours drivers can remain at the wheel, is also adding to costs.

The world population continues to grow steadily, while huge contingents still migrate each year from the countryside to





towns and cities, where they eat more and better, particularly of meats and dairy produce. This means many million tonnes more grains will be needed each year from now on. Brazil is one of the few countries in the world which still has large areas of uncultivated land, and the country expects to be called on to grow 50% more than it now does, an extra 100mt, to help meet the extra demand.

Brazil's leading grains producing state, Mato Grosso, now contains Brazil's largest herd of beef cattle and totals about 50 million head. But over the years, farmers have done little or nothing to ensure that the quality of pastures has been maintained, so yields have fallen.

Beef farmers claim they do not make sufficient profit to make the needed investments in fertilizer to push up yields once more. Most farmers prefer to move their cattle on somewhere else, than to invest. But if enough fertilizer is spread, however, the land soon becomes productive again and millions of hectares are becoming available for planting grains. Brazil's centre west has the potential to produce virtually all the extra which will be needed to meet the extra demand. If it can be got to ports cheaply enough.

The privately owned Maggi company, founded by a farmer who like hundreds of thousands of others, migrated to the Amazon region from the state of Rio Grande do Sul, where soya was first planted in Brazil in the 1950s, was the first to see the potential of the waterways in the Amazon region.

More than 20 years ago, Maggi built a terminal at Porto Velho, capital of Rondonia state, which is on the Madeira river. Maggi also built transshipment facilities at Itacoatiara, at the point where the Madeira joins the main Amazon river. The Amazon is still to 70,000 tonnes Capesize vessels at this point, about six days sailing from the open sea.

Mainly because of draught restrictions on the Madeira, however, only about 2.5mt of soya, some of it destined to be

crushed at a plant at Itacoatiara, have used this route each year since then. With supply and demand growing, however, Maggi is now investing about \$250 million in installing a new floating transfer facility at Itacoatiara. This new system will unload soya beans from barges and swing them directly into sea going vessels moored alongside. Maggi has also built a new loading terminal downstream from Porto Velho city, where the existing facilities have become congested, as the city has grown in size.

Maggi says a floating terminal, a novelty in the Amazon, can be built faster and at lower cost than a fixed terminal. The new facilities will allow the amount to be shipped down the Madeira to rise to 5mt a year. Some other companies take soya beans in barges from Porto Velo past Itacoatiara and on to the terminal at Santarem, a city close to the mouth of the Tapajos river.

The Tapajos and its numerous tributaries stretch north into an area where huge amounts of soya is planted. It is along this river system, that virtually all the large trading companies which arrange the shipment of most of Brazil's grains, have set about building new terminals, now becoming accessible by a paved road. Bunge, ADM, Dreyfus, Cargill and Noble, as well as smaller Brazilian owned companies such as Caramaru, have each ordered dozens, in some cases more than a hundred brand new barges which will carry the grains downstream, as well as the 'pusher' vessels which will push trains of barges to ports near the mouth of the Amazon. Such ports are all two or three days less sailing time to ports in Europe, north America or Asia, than are the traditional southerly ports of Santos and Paranagua.

Bunge was the first to develop this route and the company plans to ship up to 4mt of soya from the terminal it has built at Miritituba, some 400km upstream from Santarem, to the Port of Barcarena, also known as Vila do Conde, just 20km from the largest city in Amazonia, Belem, capital of Para state this year.

There is sufficient land at Miritituba, which lies close to the BR 163 road, which links the capital of Mato Grosso state,

Cuiaba, with Santarem, and which is in the process of being paved, for numerous new terminals. Up to 7mt of grains will soon be using this route.

To cope with the heavy traffic, it is planned to build a second carriageway on the BR 163 road, as well as to double the thickness of its asphalt. The poor quality of much of the 60,000km of paved roads in Brazil hinders the use of modern seven or eight axle trucks, by slowing their speed and increasing the cost of maintenance, particularly of tyres and suspensions.

Despite the fact that a far higher proportion of the soya and maize grown in Brazil will leave from ports in the north and north east from now on, the ports in the south, notably Santos and Paranagua, do not anticipate much less will be shipped from there.

Seventy per cent of the 7.6 mt of soya beans, and the 5.1mt of meal now shipped annually from Paranagua, for example, is grown in the nearby state of Parana, and only 18% of that shipped arrives by truck from Mato Grosso. Paranagua is also home to numerous fertilizer blending plants, and with no likelihood of significantly more of the 30mt of fertilizer now used in Brazil being produced in the country, taking this fertilizer north to where it is needed, means there is a return cargo for the trucks delivering soya at the port.

Ambitious plans are periodically published with great fanfare for the building and expansion of Brazil's rail network.

These include the completion of the notorious 2,500km-long 'North-South' line construction of which began 30 years ago, to run from close to the Carajas mines, south to Sao Paulo state, but which is still only operational for half its length.

Poor management and weak supervision, means that although much of the track bed has been laid, embankments have collapsed, rails have been stolen, and poor-quality sleepers have rotted.

This sad story is now being repeated on two equally ambitious 2,000km lines which will eventually link ports on Brazil's atlantic seaboard with the centre of the country. Running directly west, the lines will eventually allow grains, iron ore from new mines, oil products and fertilizer to be carried to ports or taken inland. A start was made almost ten years ago on the two lines, but work has now ground to a halt because of lack of funds or planning restrictions, notably that key wayleaves have not been negotiated.

Proposals have also been made more recently by politicians to build other new lines in the soya producing area, often to run parallel with roads which have themselves not yet been finished. This confusion just serves to draw attention to the failure of successive Brazilian administrations to complete projects which had been started, and favour new ones instead.

Until 25 years ago, the rails needed for Brazil's 30,000km network were made at local steel mills, most by the National Steel Company, the CSN. But due to the lack of demand, CSN ceased making rails, which have been replaced by imports, most from China.

Despite frequent requests from the government, the CSN has refused to start making rails again. The company does not feel that demand will be strong enough to allow it to get a return from such an investment. In theory, large quantities of rails will be needed to keep the existing 30,000km of track up to standard, and to equip the 5,000km or so of new track which the government wants to see built. The reluctance clearly indicates that one interested party at least, has little faith in the plans for rail coming to fruition in the near future.

Virtually all the large trading companies which operate in

Brazil have facilities able to crush the millions of tones of soya grown in this area in Rondonopolis, which is linked to ports by the 'Feronorte' system. The trading companies also handle or store the increasing amount of maize, now planted in Brazil's centre west region as a winter crop.

Paradoxically the fact that more grains are now carried along the Feronorte and other much older lines which cross Parana and Sao Paulo state, to ports, as well as Brazil's mainly coastal cities, has resulted in rather than journey times falling, as had been promised, speeds have fallen. Although companies have invested in a new generation of rolling stock, the permanent way has not been improved sufficiently to allow trains to run faster, or to negotiate junctions more easily.

The lack of investment in upgrading track, has neutralized most of the advantages which it had been hoped would have been brought by the purchase of thousands of the latest generation of wagons which can be loaded and unloaded far faster than the previous ones, as well as the purchase of a new generation of larger, and more powerful locomotives. Rather than speeding along, as was planned, trains now spend 40% of their time waiting at junctions, or at crossover points. As a result, the average speed of a train continues to be about 30kph, exactly what it was before privatization.

Maize can be grown in Brazil's far west more cheaply than nearer the coast, but the high cost of transport, by both road or rail, means that this grain is not always competitive in export markets, and may have to be subsidized to become attractive. To get round this, many oilseed crushers have built plants which make biodiesel fuel out of maize in the past few years.

Seven per cent of biodiesel now has to be added to all the mineral diesel used in Brazil, and because of its huge fleet of agricultural machines, and also because so many trucks collect, or deliver goods in Mato Grosso state, the state is also one of Brazil's leading consumers of diesel. As more soya is planted in Mato Grosso in the summer, more winter maize will be planted there as well.

Many readers will be aware of the fact that Brazil's state owned oil company, Petrobras, has become engulfed in a massive corruption scandal, involving payments to suppliers, as well as politicians in the past couple of years. All of Brazil's large construction companies, which have won the lions share of contracts for building roads, railways, and ports, as well as oil installations, have been caught up in the scandal. As a result, most construction companies are finding it extremely difficult to obtain credit, so have had to reduce their participation in infrastructure works. It will probably be some time before all aspects of this have worked through, so delays can be expected.

If the fall in the price of grains is encouraging the trading companies to increase their investments in waterways, the collapse of the iron ore price is forcing the Vale mining company to reduce its investments and seek to cut costs. So far, Vale has not slowed investments at its new mines at the Carajas project which includes opening a brand new set of workings and mineral processing facilities. The 800km railway which links the mine to the port of Itaquí is being duplicated. Vale is buying about 10,000 new rail wagons, and several hundred new locomotives, which will allow output to start at a mine where the cost of extracting ore will be far lower than that of most mines in the Minas Gerais state. Mines in Minas Gerais, now responsible for about 50% of Vale's total production, will fall by about 50mt.

It will not be possible to transfer rolling stock from Vale's railway in Minas Gerais, to the Carajas system, because the gauges of the two railways are different.

New £100m Port of Liverpool biomass facility to support EU's



A new £100m biomass terminal planned for the Port of Liverpool will see it handle up to 3mt (million tonnes) of wood pellets a year as part of the decarbonization of Drax power station.

The wood pellets — to be shipped to Liverpool from North America — are a by-product of the commercial forestry and saw-milling industry and will provide the Selby-based power station with a new, sustainable low carbon fuel source.

In transitioning from coal to sustainable biomass Drax will reduce its CO₂ footprint by some 12mt per annum, the equivalent to removing 10% of the cars on the UK roads. All of the wood pellets will be sent to Drax by rail from Liverpool to Selby ensuring there is no impact on the local road network.

The new biomass terminal, which includes a new rail loading facility and storage capacity for 100,000 tonnes, will be built by GRAHAM.

The new terminal is set to create an additional 47 permanent jobs at the Port of Liverpool, while construction of the facility and the supply chain will create up to a further 300 jobs.

The terminal is being built as part of Peel Ports' ambitious growth plans for the Port of Liverpool, with the company already investing £300m to create the UK's most centrally located deep water container terminal, known as Liverpool2.

Liverpool2 will enable the port to handle the largest container ships in the global fleet while at the same time doubling the port's container capacity by 1M TEU.

The investments at the Port of Liverpool will drive jobs and deliver international trade to the very centre of the UK — representing a huge opportunity to fuel the concept of a Northern Powerhouse and help to rebalance the UK economy.

The UK Government's Northern Powerhouse document 'Transport for the North' describes the north of England as the

'freight and logistics capital' of the UK, and Liverpool is centrally placed to play a vital role in supporting this.

Mark Whitworth, CEO of Peel Ports, said: "As a business Peel Ports is investing £300m to create the UK's most centrally located deep-water container terminal at the Port of Liverpool.

"Creating a deep-water container terminal in the north of England is a vitally important component of the Northern Powerhouse and will help to re-balance the economy. Currently more than 90% of deep sea containers enter the UK through Southern ports but more than 60% are delivered to or originate in the northern half of the UK.

"In addition we are also investing a further £100m to create a new biomass terminal at the Port of Liverpool, which will fuel the Northern Powerhouse by providing the wood pellets for Drax power station as part of the largest decarbonization project in the EU.

"Our new relationship with Drax illustrates the importance of east/west connectivity in driving growth and creating jobs in the north of England.

"In addition it shows how globally important assets such as the Port of Liverpool can be used to unlock the potential of the Northern Powerhouse by helping businesses like Drax ensure the security of their supply by putting in place well thought-out global supply chains."

Andy Koss, CEO, Drax Power Limited, said: "The biomass terminal at the Port of Liverpool, will enable us to further our ambitious decarbonization plans and ensure DRAX continues to lead the charge when it comes to creating sustainable, affordable renewable power.

"It is important to us that we measure the carbon footprint of every step in our supply chain from harvesting to transportation. By shipping to Liverpool and transporting our

largest decarbonization project at Drax power station

biomass via rail, Peel Ports have provided us with a logistics solution which minimizes carbon emissions and helps us maintain our low-carbon manifesto.”

Leo Martin, Executive Director at GRAHAM Construction, said, “This project builds on the experience we have gained from building similar facilities on the east coast of England. We will be designing and building a state of the art plant which will employ industry-leading technologies to ensure that the facility can be safely operated and maintained.

“Securing this project is very important to us as it cements our position as one of the leading contractors in the biomass handling industry in the UK”.

The new terminal is set to open October 2015 and will become fully operational in July 2016.

The new terminal, to be owned and operated by Ligna Biomass Limited (a company owned by the shareholders of Peel Ports Group Limited), is set to open in October 2015 and will only become fully operational in July 2016 when it will be able to facilitate up to ten train loads of pellets to be sent Drax per day.

When fully operational, the pellets transported from Liverpool will account for up to 40% of the total wood pellets consumed

by Drax each year.

Although Drax’s generating units were originally built to burn coal, in 2012, the company made a pioneering commitment to transform the business by converting three of its six generators to burn renewable sustainable biomass. At the time no other generator in the world had ever made such a move.

By the time the third unit is converted in 2016, Drax’s carbon emissions will have been reduced by around 12mt a year — the equivalent of taking more than three million cars off the road or making Luxembourg a zero carbon country.

At 3mt a year, the wood pellets will increase the cargo tonnage handled by Peel Ports by almost 5%. During the 2013/14 financial year Peel Ports handled 65.6mt.

A 2015 report from the US Department of Agriculture’s Foreign Agricultural Service recently said that “with responsible and sustainable forestry management practices ... wood pellets can deliver very significant greenhouse gas savings, compared to fossil fuels.” The same report also stated “an additional market for a relatively low cost product such as wood pellets will ensure a vibrant forestry sector that will create enough resources for all end-users.”

Port of Kiel expands forest products handling

KIEL BECOMES PART OF THE LOGISTICS NETWORK OF SCA AND IGGESUND PAPERBOARD.

Swedish concerns SCA (Svenska Cellulosa Aktiebolaget) and Iggesund Paperboard AB (Holmen Group) are including Kiel in their logistics network. In future Kiel’s Ostuferhafen will join those ports handling and distributing the forest products of the two companies. The enterprises announced on 24 June in Stockholm that long-term contracts had been signed with the German port of Kiel. From summer 2016 ships of the companies will call regularly at the Ostuferhafen and handle up to one million tonnes of forest products, general cargoes and raw materials annually. From Kiel the forest products will be delivered to points in Germany as well as to central and east European markets. Dr Dirk Claus, Managing Director of the PORT OF KIEL (SEEHAFEN KIEL GmbH & Co.KG) said: “This project is a big achievement for Kiel. It represents an enormous growth spurt for our port. Our thanks go to SCA and Iggesund Paperboard for the trust they are placing in us.”

Forest products have been among the most important trading commodities in the Baltic region for many years and Kiel has a long tradition of handling and storing such products. “The demands of these customers suit Kiel very well”, said Dirk Claus. “What clinched it for us was our location right at the exit of the Kiel Canal as well as the good all-round package we were able to offer.” Kiel can make use of existing infrastructure in many parts of the Ostuferhafen. Berth I, which has been selected, is 400m long and has an



alongside water depth of 10m. The facility is equipped with two port cranes and a heavy duty RoRo ramp which was installed as recently as 2013. Directly connected to the berth in addition are two large paper storage halls which are also suitable for cellulose and paperboard products. Further warehouse capacity will be available from the coming summer.

Although the SEEHAFEN KIEL GmbH & Co.KG will provide the port facilities and storage areas, the handling of the cargo will be carried out by SEEHAFEN KIEL Stevedoring GmbH. With the new business in mind, the handling company will bring in additional equipment and hire a further 50 employees. The new project will complement existing traffic business in the Ostuferhafen and cruise ships will continue to call at Berth I in the same way as they have in the past.



European Bulk Services Rotterdam



European Bulk Services (E.B.S.)B.V.

Elbeweg 117 ▶ Europoort Rotterdam ▶ Port no. 5820 ▶ P.O. Box 1204 ▶ 3180 AE ▶ Rozenburg ▶ The Netherlands
T +31(0)181-258121 ▶ F +31(0)181-258154 ▶ E sales@ebsbulk.nl ▶ W www.ebsbulk.nl

Venice invests in waste and scrap

Venice dry bulk operator Terminal Rinfuse Venezia, which is part of the Euroports group, has invested more than €600,000 in the construction of a new storage area dedicated to scrap and waste. The aim is to make the facility a reference point in the North Adriatic Sea for both these commodities.

It will be able to receive vessels from America, Northern Europe and Russia loaded with up to 30,000 tonnes of scrap. Not only will it serve the Veneto and Lombardy regions, but also central Europe by rail.

The project involved an area of 4,200m², which now has a stockpile capacity of 30,000 tonnes adjacent to the quay. This is rail connected, while the quay has draught of up to 12 metres alongside. In addition to being able to purify wastewater, a mobile dust suppression system is also in place.

Barry Cross

Euroports asks for Tarragona warehouse concession

Euroports Ibérica TPS has requested a concession to build a dry bulk warehouse in the Spanish Mediterranean port of Tarragona. The warehouse will be approximately 7,000m².

BC

Environmental inspection for Antofagasta

In Chile, the Environmental Agency (SMA) has undertaken an inspection of Antofagasta Terminal Internacional (ATI) to see whether it is complying with regulations for the loading and discharge of mineral concentrates. ATI has introduced a series of measures to suppress dust during these operations, particularly one which involves spraying a mist of water over the vessel hold to prevent contamination entering the atmosphere. The operator has also extended the telescopic chute further out over the vessel to reduce the gap between the conveyor and the hold during loading operations.

ATI has been asked to introduce a series of measures by the SMA to ensure that pollution is kept to an absolute minimum and its success is being monitored by the agency.

BC

Traffic chaos continues at Rosario

Trucks arriving at ports in Argentina's city of Rosario are causing traffic chaos, with around 5,400 vehicles a day discharging consignments of grain at the ports of San Lorenzo, Timbués and General San Martín, whose gate operations are insufficient to handle them fluidly. This congestion is common during the harvest season, with main arteries into Rosario often being blocked, despite control points being set up on major inbound highways.

The main commodity being exported is soya.

BC

TPA undertakes direct discharge of sodium sulphate

In Chile, Terminal Puerto Arica (TPA) has recently undertaken the discharge of 3,000 tonnes of sodium sulphate en route for Bolivia on behalf of Unilever Bolivia. The importer unloaded a consignment direct from the vessel into waiting trucks, without using any of the port's storage facilities. This proved to be faster, more efficient and cheaper.

A fleet of 120 trucks based in Cochabamba and belonging to three road haulage companies was deployed. The whole operation took place over seven work shifts.

Previously, other consignments imported by Unilever Bolivia were held in the port of Arica for eight to twelve weeks prior to onward movement. The new, direct discharge method is the first time Arica has successfully undertaken this.

BC

Record profit for EBHI

The European Bulk Handling Installation (EBHI) at the Spanish port of Gijón reported a net turnover in 2014 of €33.8 million, up 10% over the previous year. Operational costs reached €28.4 million, which was a 1% drop on 2013. As a result, profits went up from €627,000 in 2013 to €3 million in 2014. This was the best profit ever produced by EBHI, which saw traffic amounting to 12.3 million tonnes, absorbing 68% of the facility's total capacity.

BC



YOUR GATEWAY TO THE EUROPEAN HINTERLAND

Fully equipped to meet your expectations

La Coruña targets Vigo's granite trade

The Spanish North Western port of La Coruña is trying to tempt the granite industry, which currently uses the neighbouring port of Vigo, to switch exports to its facilities.

In 2014, Vigo handled 434,566 tonnes of granite, equivalent to 15% of total traffic volumes. Overall, granite tonnage was down 19% compared to 2013, although refined granite was up by 15% and this has seven times more commercial value, being worth in the region of €130 million.

The autonomous region of Galicia currently produces around 80% of all Spain's granite, with Vigo being the most important export port.

To date, the industry has received coolly La Coruña's overtures, especially given the extra transport cost of moving output from production areas at Porriño, given the close proximity of Vigo. *BC*

Steel foundry for Khalifa

Abu Dhabi Ports has signed an agreement with Advanced Manufacturing Solutions, which is a subsidiary of the FourWinds Group, to build a steel foundry at the port of Khalifa. This will produce automotive parts for the global automotive industry. The plant will be located in the industrial zone at Khalifa port.

Development will take place in three phases, although the aim is to create an eventual capacity of 300,000 tonnes. Products produced by the steel foundry will be used in both the local and global market. *BC*

Residents say no to dusty cargo at Vizag

Protests have broken out in the Indian city of Visakhapatnam against dust being generated by dry bulk consignments of commodities such as coal. Port chairman MT Krishna Babu said that \$31 million will be spent in the next two to three years on improving pollution control at the port, which was accused of being "utterly indifferent and even callous to the issues of public health".

Residents want Vizag port to follow the lead taken by the city of Chennai, where dusty commodities have been banned.

The port chairman stressed that the mechanization of iron ore handling and construction of new berths will reduce pollution levels. "We will make every effort to make Vizag a green port in the next five years," he insisted. *BC*

Mumbai to have cement terminal

The Port of Mumbai is to lease 2.5 ha of land at Petroleum Godown to Ultratech Cement for a period of 30 years. Here, a fully automated cement handling terminal will be built, incorporating a 100% dust suppression system. The facility, which will be equipped with portable unloaders, is due to become operational within 18 months. The \$15.5 million cost will result in storage capacity of 30,000 tonnes being created, along with a bagging plant and other ancillary facilities.

Mumbai generates annual demand of 1.25 million tonnes of cement, which currently has to be moved by either road or rail from neighbouring states, given the lack of a dedicated facility within the city itself. This, in turn, generates daily traffic of 350 trucks, adding to the city's congestion. *BC*

New cellulose terminal in Santos

A new cellulose terminal under construction in the port of Santos belonging to Eldorado Brasil Celulose is due to open by the end of May. According to company president, José Carlos Grubisich, this will be a significant step forward for the company in terms of its competitiveness.

The export facility has been built at Paquetá on the former Warehouse XIII site, some 300 metres from the berths that it will use.

It will store cellulose produced at a production facility the company has at Três Lagoas, arriving at the port by rail.

EBC is one of the main world producers of cellulose based on eucalyptus. Its first-quarter revenue this year was up 53% over last year. *BC*

THE FRENCH PORT FOR DRY BULK



Port of Dunkirk

bulk volumes rise to 50% of throughput



Dunkirk is historically an industrial port, and is notably the location of one of ARCELOR's strategic sites. Because of this, bulk traffic has always been significant in the port, and now accounts for half the total volume.

2014: INCREASED TRAFFIC VOLUMES FOR THE PORT OF DUNKIRK

The total volume handled by the Port of Dunkirk in 2014 was 47.10mt (million tonnes). This was an excellent result for France's third-largest port, an increase of 8% compared with the previous year. At 23.6mt, generated essentially by the steel industry (ArcelorMittal), dry bulk was up by 9%. It was a particularly good year for ore (13.5mt, a rise of 13%). Coal made some recovery but was still down 7% (5.1mt). On the other hand, grain reached a new annual record with 2.3mt, 48% higher than in 2013. The tonnage has not been close to this total since 1991 (2.2mt). 'Small' solid bulks were stable at 2.6mt.

PORT OF DUNKIRK: GEOGRAPHIC LOCATION AND HUB STATUS

Occupying 17km of coastline and a total area of 7,000 hectares, the Port of Dunkirk can offer solutions adapted to all types of bulk traffic. And its strategic location, with direct access to the sea, means it can berth ships with draughts of up to 14.20m via the eastern entrance to the port and up to 18.50m via the western entrance.

Located on the North Sea, just 90 minutes' sailing time from the world's busiest seaway (600 ships every day) and with excellent accessibility for shipping, the Port of Dunkirk wants to be a Gateway Port, a redistribution platform for bulk cargoes

and short-sea shipping. The port has demonstrated its know-how in the handling of solid bulks, and this position must be reinforced and exploited by accommodating the world's largest bulk carriers and developing transshipment activities.

This type of activity offers real added value compared with the other ports of the North Sea range due to Dunkirk's privileged geographic location, its capacity to berth large-size bulk carriers and its expertise in the handling of heavy bulk.

Dunkirk's Western Bulk Terminal (QPO) has a draught of 18.50m and the idea would be to make this terminal into an ore hub not only for ARCELOR but for other clients too.

LAND RESERVES: IDEAL LOCATION FOR BUSINESSES INSTALLED IN THE PORT OF DUNKIRK

Dunkirk is one of the only ports that has large land reserves: 3,000 hectares out of the total occupied area of 7,000. This means it can easily satisfy businesses seeking a strategically-positioned site, very close to the sea and with road and rail links. What is more, the Port of Dunkirk, as France's foremost rail freight hub, is covered by a 250km network of railway lines. This proactive policy is fully in line with the national ports strategy for the development of logistics and consolidated overland transport for large volumes. With all this, any company that decides to set up here is assured of excellent maritime links and an easily accessible hinterland.

SOLID BULK OPERATORS AT DUNKIRK

Besides these set-up possibilities, the Port of Dunkirk is home to a number of operators capable of handling and storage:

Innovation. Dedication. Experience.



STEVEDORING ♦ BARGE ♦ TRUCK ♦ RAIL ♦ OCEAN ♦ LOGISTICS



Over a century of dry bulk and breakbulk transport and handling.
Innovative Transfer Technologies. Seamless Logistics Packages.
Dedicated Customer Service.



COOPER/CONSOLIDATED

Telephone +1 985 871-4403

www.cooperconsolidated.com • sales@cooper-consolidated.com



the COOPER GROUP of companies

www.coopertsmith.com

CTLC

CONSOLIDATED TERMINALS AND LOGISTICS CO.

A Division of  Enterprises, Inc.

www.ctlconline.com

DMT (Dunkerque Multibulk Terminal) — situated in Dunkirk's Eastern Harbour

With its covered storage areas, some of them wharfside, DMT offers a complete solution of discharging and reloading ships and barges or trains for all types of small bulk cargoes. In particular, the terminal is specialized in the handling of powdered goods and has specific equipment for this.

The quay and storage yard extension was commissioned at the beginning of 2013. The maritime quay and the waterway berth provide access for ships and barges and allow high throughputs at loading and discharge. A further 15,000m² of wharfside storage yards means DMT can offer new, competitive logistics solutions.

With private railway sidings, weighbridges and a train intake pit, DMT offers a reception and shipment rate of 300 tonnes per hour for agricultural products. The facilities also include truck loading and unloading stations and road weighbridges.

Another of DMT's strengths is its 65,000m² of total available storage capacity, 55,000m² of which is designed for the storage of fertilizer and other ores (magnolite, clinker, gypsum, etc). DMT can offer customized solutions such as bagging services.

SEABULK (subsidiary of the SEA-INVEST Group)

Present in dozens of terminals in France, Belgium, the Netherlands, Poland and Ivory Coast, SEABULK is one of the leading operators on the dry bulk handling market.

At Dunkirk, SEABULK not only handles small dry bulk traffic but is also one of the main operators in industrial heavy bulks.

Installed in the eastern, central and western parts of the port, SEABULK has multimodal terminals and efficient equipment for the handling of small dry bulks. With its facilities on terminals dedicated to the handling and storage of bulk goods, SEABULK is able (depending on the area of the port) to accommodate ships with draughts of up to 14.20m.

Specializing in almost all types of dry bulk, SEABULK is particularly active in the sector of fertilizer, agricultural bulks, bauxite, lime, scrap metal, etc, and also offers its clients large

areas of open storage and possibilities of covered storage.

SEABULK is also a major operator of the port of Dunkirk in the field of industrial heavy bulks. Having its facilities in the western part of the port (with direct access to the sea), the terminal boasts 200,000m² of storage space and can accommodate ships with draughts of up to 18.50m. Its 650 metres of quayside allow two Capesize ships to berth simultaneously.

EFD – Entrepôts Fluviaux de Dunkerque

Based at Loon Plage, EFD is situated within the inland port and is able to handle all types of product, regardless of packaging method.

With railway and canal branch lines, the EFD platform can carry out direct transshipment or transfer to storage yard, and offer its clients open or covered storage facilities.

NORD CEREALES

Supported by the ambitious investment policy of Nord Céréales, the port of Dunkirk has beaten record after record in grain exports. This development coincides with the return of the rail mode on this market. Nord Céréales declares that it has shipped more than a million tonnes in just three months, setting a new quarterly record. Per grain type, 980,000 tonnes of wheat was exported to the Middle East, North Africa and Asia, and 110,000 tonnes of barley to Asia.

These excellent results are due to the drive of the operator who has improved productivity through significant investments, making it possible to berth and load very large-size ships (14.20m draught) with high throughputs.

The growth of grain export volumes is also boosted by a reorganization of land-based logistics. Alongside waterway transport, which accounts for 52% of supply, the rail mode is again being used after a gap of ten years, enlarging Dunkirk's hinterland towards eastern France.

Nord Céréales offers vertical and horizontal storage capacities of 330,000 tonnes in the Port of Dunkirk.

DCi





Do one thing well.

We move cargo. That's it. Our fleet of fourteen Gottwald cranes is one of the largest in the world. We have twenty one deep draft berths on the Mississippi River located from Mile Marker 56 to Mile Marker 158. We offer a scope of services that simply can't be matched for the import and export of commodities on the Mississippi River. Our most important asset is our team who are experts on providing logistical solutions for our customers.

We move cargo safely and efficiently. That is our focus and we do it well.

www.associatedterminals.com



ASSOCIATED TERMINALS

Major North American West Coast ports

The Port of Vancouver, USA.



learning to work together

Ray Dykes

Collaboration, co-operation, alliance — these are all words and actions major North American West Coast ports would have shuddered to even think about a few years ago.

Today, they are the stark reality for survival in the highly competitive life of a port on the West Coast, especially the major ones. Several have formed alliances or co-operative agreements and even a merger as a new world of maritime trade unfolds.

“What a lot of folks had said would never happen now is happening,” was how Port of Seattle Commissioner, Bill Bryant described it at a joint Tacoma–Seattle port commission meeting in June where the two former rival Washington State ports formed a Northwest Seaport Alliance to link their operations and better compete with ports in Canada, Mexico, the East Coast of the United States, and Southern California.

For the first time, the operations statistics of the two neighbouring ports are now being reported as one.

Some have seen the light because the reputation of West Coast ports took a black eye over spiralling turnaround times for container vessels over trucking and other waterfront labour disputes. Those recent cargo delays at 29 West Coast ports as negotiations for a new five-year labour contract now in effect has put many ports in a hurry up mode as they scramble to reduce wait times.

So far, Los Angeles and Long Beach, and Seattle and Tacoma have decided it makes sense to work together more than ever before.

Los Angeles and Long Beach are collaborating in plans to reduce congestion around the waterfront and are planning to “facilitate at the highest level improvements to the supply chain,” according to the Port of Long Beach’s new senior executive for supply chain management, Michael Christensen.

The collaboration was approved by the Federal Maritime Commission earlier this year after strikes and other transportation troubles caused serious delays at both ports, which champion container movements. Together the ports are spending US\$3.7 billion to boost capacity and untangle the backups that keep ships waiting in the San Pedro Bay and trucks idling on land. Remote-controlled cranes and driverless trucks are also being introduced at various terminals.

Port Metro Vancouver in Canada saw the light in 2008 when it combined the port activities of two Fraser River port authorities in with the Port of Vancouver, a move which has helped the port to back-to-back record throughput levels in recent years as the busiest on the West Coast.

Here’s *Dry Cargo International’s* annual review of how West Coast North American ports fared in 2014 and in 2015 year to date.

It's in our character



The port is our life. Hands-on mentality, hard work and accessible people, that's our character. Anyone who gets to know Zeeland Seaports becomes acquainted with professionals who are proud of their ports. We understand that your interests are also our interests. Clients come first. Always. We know what's important to your company. That's all in our character, and one of our many strengths:

- location on open sea
- draft of 16.5 metres
- congestion-free connections with the hinterland
- no nine-to-five mentality
- accessible ports and people
- dedicated terminals for a broad range of cargo
- you can reach us 24/7 at +31 115 647400



ports of vlissingen and terneuzen
www.zeelandseaports.com

driven by dedication



LOS ANGELES CA

The competition for cargo is intense today, even before the opening of the expanded Panama Canal and all competitors from Mexico to Canada are taken seriously, says Director of Media Relations, Phillip Sanfield.

The Port of Los Angeles — “the premier North American trade gateway” — is working hard through infrastructure investments to keep that title, and by optimizing the San Pedro Bay complex supply chain with collaboration from the Port of Long Beach and “direct interactions with our customers.”

As years go, 2014 was more of the same for the Port of Los Angeles with total throughput of 50.8mt (million tonnes), in a port that relies heavily on container movements. Some 43mt came from container traffic, which was up 1.3%, while bulk movements totalled almost 8mt.

Both San Pedro Bay ports have been battling congestion, growing wait times and labour troubles, but with a new waterfront contract, things are hopefully going to get better.

There are plenty of improvements underway. TraPac is expanding its wharves to 4,600 linear feet in a five-year \$510 million project that will also deepen water depth, install new cranes, upgrade 50 acres of backlands, make road and truck gate improvements, and build a new on-dock rail facility.

Transportation access is also being upgraded to port facilities in a \$83 million programme that attempts to keep port traffic off major roadways. Yusen Terminals has been given approval to deepen and improve its facilities in a \$49 million project expected to begin this summer.

As for the environment, the port has set records with its diesel particulate matter down 80%, nitrogen oxides down 57% and sulphur oxides down 90% so far after eight years of ‘aggressive air measures’.

LONG BEACH CA

With a year when 82.3mt of freight was handled, the Port of Long Beach can be proud of a tough but rewarding 2014, given it moved 64.1mt in 2013. Containers continued to lead the way, accounting for 42mt of the total, followed by petroleum at 31mt, dry bulk at 8.7mt and breakbulk at 1.5mt.

Year to date figures through the end of April 2015 show the port running at an annualized rate of about of near 80mt with most sectors showing steady progress.

Shipping alliances by the major container movers have made it more difficult than ever to sort and distribute cargo at port terminals around the world, but like others, the Port of Long Beach is beginning to adjust,” says Assistant Director of Communications, Art Wong. The move by Long Beach to join the Port of Los Angeles investing in new technologies and operating practices “to further improve velocity” should also help in the future.

Long Beach is in the middle of a decade-long US\$4 billion capital improvement programme which will see about \$600 million spent over the next 12 months. Key projects include the \$1.3 billion Gerald Desmond Bridge replacement now at the columns stage; and the first phase of the Middle Harbour project — the most technologically advanced container terminal in North America — due to be operational early next year with its remotely-controlled cranes and driverless trucks designed to lift capacity to 1.7 million TEUs a year.

Mitsubishi has received approval to expand its import cement handling facility from 4.21 to 5.92 acres, providing it can meet environmental measures and upgrades.

Long Beach is also celebrating the 10th anniversary of its

2014 TOP WEST COAST PORTS

by total tonnes

Rank	Port	Million tonnes
1	Port Metro Vancouver	140.0
2	Long Beach	82.3
3	Los Angeles	50.8
4	Seattle-Tacoma	35.0
5	Prince Rupert	20.7
6	Oakland	14.6
7	Portland	11.7
8	Port Vancouver USA	6.6

Green Port Policy, which has so far reduced diesel emissions by a much-higher-than-expected 82%, and has pledged to continue to explore new technologies to achieve zero emissions.

OAKLAND CA

They’re not losing any sleep in the Californian Port of Oakland over the impending opening of the expanded Panama Canal next April. Director of Maritime, John Driscoll, has fielded the question before and has four main reasons for claiming most cargo from Asia will continue to choose US West Coast ports as their gateway:

- ❖ **cost:** it’s cheaper to ship through West Coast ports over East Coast Ports (via the Panama Canal) thanks to lower inventory holding costs and lower ocean rates;
- ❖ **transit times:** it takes ten days longer to reach the US via the canal from Asia;
- ❖ **supporting infrastructure:** significant on-dock rail, warehousing and transload facilities are already in place on the West Coast; and
- ❖ **big ship capabilities:** East Coast ports are not all equipped or experienced in handling the new generation of megaships. The Port of Oakland shipped 14.6mt in 2014, but seems to be limping somewhat this year through five months at 4.7mt or an annualized rate of 11.25mt. Things will change as the port is amid a US\$1 billion capital upgrade to boost logistic capabilities near the dock. These projects include a rail transload for grain; two cold storage and transload facilities; a phased 73-hectare development of further industrial facilities to speed cargo through the port; 13 new intermodal yards or various types; and other infrastructure improvements.

There’s even a plan by the State of Utah to invest \$53 million in a new Oakland coal export terminal on the former Oakland Army Base lands. Terminal Logistics expects to start building a 35-acre \$250 million Oakland Bulk and Oversized Terminal at the Oakland Global Trade & Logistics Centre outside the Port of Oakland later this year for completion in 2017.

On the environmental front, the Port of Oakland has reduced seaport-related diesel emissions by over 70% to date and aims to have an 85% reduction by 2020 with measures such as the retirement of older trucks and by offering shore power.

PORTLAND OR

There’s no concern in the Port of Portland over the impending opening of the expanded Panama Canal, largely because like most West Coast ports it has the advantage of being closer to China and other Asian markets.

In 2014, Portland moved 11.7mt of freight, led by grain from the Pacific Northwest, and mineral bulks such as potash from

across the border in Saskatchewan and soda ash from Wyoming. The news is more sombre year-to-date to the end of April largely through a softening in the grain market for US exports, and the final withdrawal of Hanjin Shipping from the port as of early March, which total throughput down by over 25%.

Significant private investment is being made at a variety of marine facilities on the Columbia and Willamette Rivers and has totalled over US\$500 million in recent years.

The port is working on three initiatives with its stakeholders as interim solutions to get their goods to and from global markets efficiently until a new container service is found for the vacated Terminal 6. The port and the Terminal 6 operator ICTSI are scouring the globe for a new container service to Asia, Europe and Latin America, a ‘complex challenge’ that will likely require the collaboration of the port, the terminal operator, shipper and longshore labour.

Canpotex Limited is meanwhile spending up to \$140 million in new equipment such as a shiploader and conveyors plus other infrastructure at the port’s Terminal 5, which has helped make Portland the largest gateway on the US West Coast for bulk mineral exports such as potash.

PORT VANCOUVER USA WA

No matter what happens with the Panama Canal in future years, Port Vancouver USA — across the Columbia River from the Port of Portland — already feels it has a significant freight advantage.

No wonder the Washington State river port had the biggest throughput year in its 103-year history in 2014 at 6.6mt and that was up 47% over 2013. Big increases in grain exports, especially corn and soybeans but also wheat; and steel and wind energy imports boosted the total. Subaru of America had its best year ever importing over 81,000 vehicles from Japan. The combined port-wide surge saw a 35% increase in vessels to total 452 last year.

With over 600 acres of ready-to-build lands available for development, Port Vancouver isn’t saddled with the lack of industrial land that is hounding others on the West Coast. One land block called Columbia Gateway offers 530 acres with deep-water marine access.

One of the most significant investments in recent years has been the West Vancouver Freight Access Project, which will be completed next year. Some US\$275 million has been spent over a decade to improve rail movement through the port, tripling the rail capacity in the process.

SEATTLE-TACOMA WA

The proposed Northwest Seaport Alliance awaits approval from the Federal Maritime Commission, but both Seattle and Tacoma



Potash at the Port of Portland.

see it as the competitive answer to battling competition anywhere and everywhere in the future.

If the alliance goes through as expected it will bring a phased introduction this summer and connect the two ports operations making them into the third-largest US container port and hopefully help arrest a decline in container traffic over recent years.

The pair shipped a combined 35.1mt in 2014 including containers, bulk, autos, grain, gypsum, logs, petroleum, and molasses and was slightly behind that pace through May 2015 at 12.9mt.

Capital works in Tacoma include upgrades to the Husky Terminal; and strengthening Pier 3 and realigning Pier 4 to create continuous 3,000ft berth that can handle two megaships at the same time. In Seattle, Terminal 5 is being improved to allow it to also handle two megaships at once.

These two Pacific Northwest ports in Washington continue to feel the pain from Canadian competition, noting Canada is pouring billions of dollars into a national freight strategy, “and they are winning,” says Tara Mattina, Communications Director at the Port of Tacoma. The Alliance also claims the US needs a similar approach to attracting more cargo and blames the national Harbour Maintenance Tax for putting the two Washington ports at a disadvantage through extra TEU costs that “don’t hit cargo going through Canada.”

PORT METRO VANCOUVER BC

Easily the biggest mover of freight of all kinds on the North American West Coast at almost 140mt in 2014, Port Metro Vancouver’s growing throughput was led once again by shipments of coal, then forest products, grain, fertilizers, and chemicals and minerals. Containers reached 2.9 million TEUs and that was up 3%.

There’s no sign of any slackening off after two back-to-back record years and at the end of April the pace was unrelenting at just under 46mt.

Port Metro Vancouver President & CEO, Robin Silvester, noted three major challenges when speaking at the recent Annual General Meeting of the port — a shortage of industrial land in the Greater Vancouver area; the port’s relationship with



CLOSER

5,000 MILES FROM ASIA

FASTER

FIRST OPERATING PORT ON THE COLUMBIA RIVER

SMARTER

EXPERIENCED WORKFORCE AND MANAGEMENT TEAM

BETTER

NEW EQUIPMENT AND FACILITIES TO SERVE YOUR NEEDS

its 16 surrounding municipalities where Canada's trade interests "don't always jive with the way each municipality sees itself evolving"; and concerns over the prevention and protection against oil spills and after a recent minor spill in the harbour he says "you can rest assured we are taking a firm stance on the need for improvements."

Vancouver serves the Canada Pacific Gateway and much of its container business is destined for eastern Canada — mainly the Toronto-Montreal market. The port has a Container Capacity Improvement Program to help meet an expected doubling of box traffic over the next 10–15 years — an estimate "supported by growth in retail trade and consumer confidence in North America."

Recently, Port Metro pushed on with its Roberts Bank

Terminal 2 container terminal project, submitting a comprehensive environmental impact statement which was four years in the making. It will now be given federal environmental assessment.

If it goes ahead in the Outer Harbour at Roberts Bank, the new three-berth container terminal will add another 2.4 million TEUs of container capacity. Subject to regulatory approvals and permits, market conditions and a final investment decision, construction could begin in 2018 with completion in about 2023.

Other major projects include a massive new grain terminal proposed to replace the existing Lynnterm West Gate break bulk facility in North Vancouver, which is now in its feasibility stage. Lynnterm owners Western Stevedoring are partnering with Manitoba-based G3 Global Holdings for what will be the largest grain terminal built in Vancouver since the 1960s and capable of handling about 6mt of grains a year.

On the Fraser River in Port Metro, a liquefied natural gas facility has been granted an export licence by the National Energy Board of Canada, which would keep up to 120 LNG tankers busy a year with exports of about 4.76 billion cubic metres. Westpac Midstream, based in California, says the \$400 million liquefaction plant is being built by FortisBC on land it owns. A docking facility is undergoing a BC environmental assessment.



Coal handling at the Port of Prince Rupert.

Just up river, Fraser Surrey Docks has amended a plan to barge US coal down river to Texada Island in the Strait of Georgia and is now seeking permission to bring Panamax vessels to the dock instead for annual shipments of about 4mt. The facility is seeking Port Metro approval.

PRINCE RUPERT BC
Speed and reliability make up the winning package from this BC port. As the shortest trade route with Asia from North America, Prince Rupert isn't worried by the Panama Canal growth or much else. The canal isn't a viable option to what the port can offer and the shipping alliances, which bring efficiencies and greater market power sharing services they could not support independently on

their own, will create even more opportunities for a port like Prince Rupert, says Michael Gurney, Manager of Communications.

Overall tonnage dropped in 2014 from 23mt to 20.7mt for the port yet it had large pockets of growth particularly in container movements. Tough times for the coal industry and the port's major bulk outlet — Ridley Terminals — saw low volumes again in the first five months of 2015, yet the port's Fairview Container Terminal jumped its box movements almost 43% to 325,963 TEUs. Barley and canola shipments also increased by 50% YTD and the new Westview Wood Pellet Terminal, which completed its first year in 2014, has shipped over 252,000 tonnes already in the first five months of 2015.

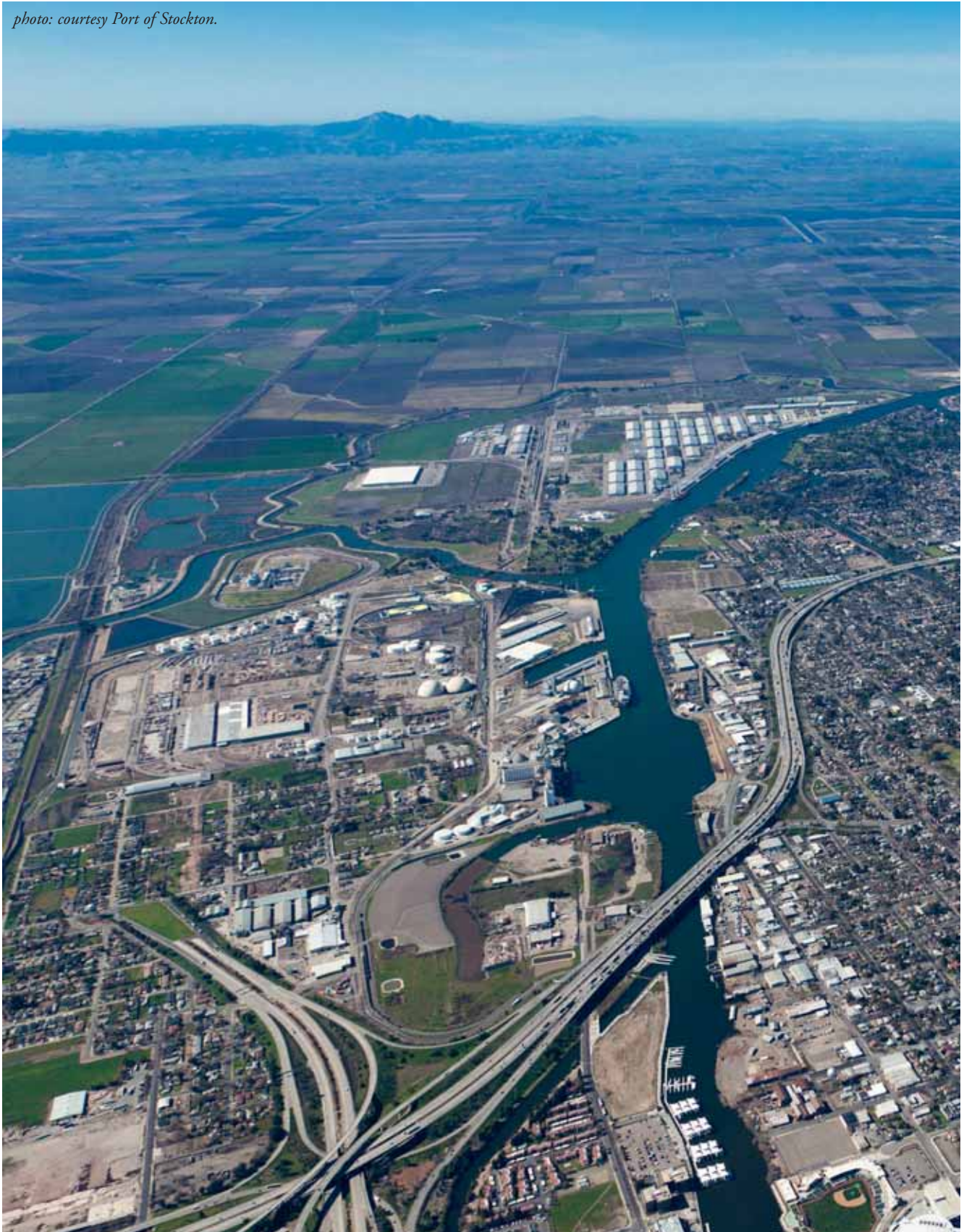
Fairview has begun its Phase 2 expansion, which will lift terminal capacity by 500,000 TEUs with the addition of a second deep-sea berth, four new gantry cranes, and an expanded container yard. The project is due for completion in mid-2017.

And the completion of a \$90 million road and rail utility corridor last May — a two-lane roadway and five rail tracks along a port-owned power distribution system along an eight kilometre corridor — is expected to attract new port shippers of potash, LNG and other Canadian products.

Now if only coal shipments picked up again overall throughput would truly start to rise year over year.

Port of Stockton benefits from construction growth with record-breaking 2014

photo: courtesy Port of Stockton.



Located in the fertile San Joaquin Valley, the Port of Stockton boasts first class warehouse storage and handling facilities for both dry and liquid bulk materials, facilities and equipment to handle breakbulk and containerized cargoes by land or sea.

Situated in the hub of four major freeways, two transcontinental railroads, an international waterway and a regional airport, the Port of Stockton is centrally located to

provide the optimum service for shipment and storage of product and cargo.

All of these components place the port in an ideal position for domestic and international distribution. The Port of Stockton's main customers are primarily bulk fertilizer and steel importers, as well as sulphur and coal exporters.

The port's growing list of assets includes: its strategic

Our Experience – Your Advantage



Mälaren



Grenaa Havn



Norske Skog



Port of Kokkola

Your Partner in Scandinavia

PORT-TRADE
cargo handling systems

Also for used equipment

www.port-trade.com Tel.: +45 7628 0102



Transmarine Navigation Corporation
Dry Cargo Specialists



Port Agents since 1938, with professionally staffed offices covering US West Coast, US Gulf, and Hawaii ports.

Proudly employee owned



Corporate Headquarters
301 East Ocean Boulevard, Suite 590
Long Beach, CA 90802, USA
Telephone: (562) 432-6941
E: drycargo@transmarine.com
W: www.transmarine.com

location, the port's ability to build facilities on its 4,000 acres, the availability of seven million square feet of covered storage, as well as the deepwater channel which provides easy access for the big ships and the goods they carry to the port.

"We have several miles of railroad track, and many different projects and increased ship numbers have come to the port over the last four to five years," said Port Director Richard Aschieris.

The design draught of the Stockton Ship Channel is 10.60 metres at MLW. The port is able to handle vessels of up to Panamax size, partially loaded. With over 7 million square feet of covered storage on site, the storage capacity at the Port of Stockton is virtually unlimited.

Surrounded by, and adjacent to, four major highways, the Port of Stockton provides excellent over-the-road connectivity. Also, the port's 70+ miles of industry track is serviced by both the Union Pacific and BNSF railroads.

PORT OF STOCKTON SETS RECORD FOR SHIPPING IN 2014

Port officials reported handling 230 ships for the full year, a surprising increase of more than 25% from the previous record 182 ships set in 2012. It is also up from the 181 ship visits tallied in 2013.

While shipping activity increased in most cargo categories, Aschieris said that steel imports made the biggest difference.

"We are seeing a lot more steel activity in the past year, which is probably a reflection of more construction work in the public works sector or the private sector," he said.

Another measure of 2014 shipping activity at the inland port, cargo totals measured in metric tonnes — a metric tonne is slightly heavier than 2,200 pounds — showed a strong gain to 4.1mt (million metric tonnes), up from 3mt in 2013.

While not a record, it was the largest cargo tonnage recorded at the port since 2005, when shippers moved 6.5mt across the Stockton docks.

"That year the port received more than 2.1mt in bulk cement," Aschieris said.

The volume of cement fell to near zero in ensuing years due to the collapse of the US construction industry and Great Recession.

Unlike the nation's largest ports, which primarily handle cargo packed into the ubiquitous steel shipping containers, the Port of Stockton specializes in so-called bulk cargo, dry and liquid materials such as grain, sulphur pellets, coal, molasses, vegetable oil, bagged rice, finished steel and oversized equipment.

"The port handled commodities worth an estimated \$1.5 billion in

2014," Aschieris told business leaders in January. "Ninety percent of the fertilizer used in San Joaquin County comes through the port, and the number of ship arrivals reached an all-time high of 230 in addition to the 52 barges docking at the port, the highest number since 1978 when the tracking of arrivals began."

Aschieris looks for shipping activity to continue to increase this year as the economy continues to improve and the port receives additional shipments of a new cargo, extra-long steel for Union Pacific Railroad Co.'s new rail welding facility in Stockton.

Mark Tollini, senior deputy port director for trade and operations, said the movement of steel through the port in 2014 was twice as large as 2013. He's confident 2015 will be even better. So far in 2015, 133 vessels have called at the port, and two barges. Total ship tonnage is 2,173,863 tonnes, and barge tonnage is 11,570 tonnes, for an overall total of 2,185,433 tonnes.

"We're seeing big cargo mixes with a marked increase in steel

FIND YOUR NICHE HERE

Diversity
Productivity
Accessibility
Interconnectivity
Congestion Free



Port of Stockton
CALIFORNIA

Strategically located 75 nautical miles from San Francisco Bay, this 35-foot deep-water omni-use port accommodates diverse cargoes.

Benefit from a productive labor force, 24/7 open gates, FTZ #231 and the proximity to Interstate 5 plus highways 99 and 4. Served by BNSF and UP, the port offers direct cargo transfer to/from rails, vessels, trucks and barges. Our large warehouses, distribution centers and open spaces are available for staging, development and leasing.

The port has two 140-ton mobile harbor cranes and reinforced docks to facilitate heavy-lift and project cargoes.

We are your advantage. +1 209.946.0246 portofstockton.com

*In December last year, the Pacific Spike, unloaded a test shipment of 10,000 tonnes of the 480ft rails for the ribbon rail welding facility.
(photo: courtesy Port of Stockton)*



products which indicates that construction projects are under way in the San Joaquin Valley,” Tollini said. “Imported cements are coming back in. We expect the tonnage to continue increasing into 2016.”

One port facility that is unique when construction is completed in early March is Union Pacific Railroad’s \$18 million ribbon rail welding facility. Thirty workers have been building the facility near the West Complex, which has its own electrical supply, perfect for welding and its high peak power demand.

The facility features 17,000 feet of track, a rail storage yard, a welding and inspection building, extra milling capacity and a gantry crane for off-loading 480ft-long bundles of steel rail from Japan. The rail welding facility is fully operational with the exception of the 17,000 lineal foot railroad staging yard which will be completed by the end of summer.

Tollini said the thrice welded, 1,920 lengths of rail will be able to carry Gov. Brown’s bullet train and all regular rail traffic as well. “It’s the largest single piece of rail assembly in the world.”

In December last year, a test shipment of 10,000 tonnes of the 480ft rails arrived at the port aboard the *Pacific Spike*, a ship designed specifically to carry the long rails from Japan to Stockton. The ship is equipped with three built-in 50-tonne cranes that carefully lift the rails in bundles of five from the hold directly onto specially built railcars on the dock beside the ship. For welding, the rails are pushed into tiers of racks which hold them in place during the welding process.

“Our on-dock rail allows the ships to discharge directly onto the shuttle cars,” Tollini said. “Stockton’s the only port in the US receiving this cargo and delivering it from ship to rail in this way. This is the first time this sort of cargo has been discharged from a ship using these types of cranes.”

The rail will be used to replace Union Pacific track and for other UP projects and expansions along the west coast.

Tollini confirmed that the annual financial benefit to the port from the ribbon-rail welding facility will be about \$2 million,

“[It’s] additional revenue that we wouldn’t otherwise have had,” he said. It is expected the additional revenue will come from maritime service fees, land lease rents and port electric utility charges. The current lease is for ten years with eight options to extend the contract for five years each.

“We expect this welding operation to be here for quite some time, for the foreseeable future, certainly,” said Tollini.

He added, “We can take on more business, more rail space is

available, and we’re looking forward to what the future holds for the port of Stockton.” Mark Tollini’s 41-year career in port service will be coming to an end at the end of this calendar year, when he will embark upon a well-deserved retirement.

ENVIRONMENTAL AWARENESS

The Port of Stockton is dedicated to protecting the environment from the potentially harmful effects of shipping. It has therefore implemented a range of programmes to ensure that environmental protection remains at the forefront of its activities.

Air Quality Program

The City of Stockton is located in San Joaquin County, which has been identified by the Environmental Protection Agency (EPA) as a ‘non-attainment’ area for several air pollutants e.g. particulate matter, ozone. In general terms, this means that the air quality in San Joaquin County is poor and the air is not clean enough to meet certain air quality standards set forth by the EPA. While much of this pollution is generated by farming, agriculture and automobiles, the maritime industry can be a source of pollutants as well. An estimated one-third of vessel emissions occur while they are at berth. While docked at the Port of Stockton, vessels are required to shut off their main engines and use auxiliary diesel and steam engines to power refrigeration, lights, pumps and other functions.

As part of the Air Quality Program, the port continuously looks for ways to reduce air emissions resulting from its operations. One example of how the port reduces emissions is by replacing its dockside equipment with newer, clear-burning equipment. Through education and outreach to tenants and vessel operators, the port encourages proper maintenance, operational controls and use of alternative fuels.

Water Quality Program

Industrial and maritime activities at the Port of Stockton have the potential to produce many types of pollutants and the port goes to great lengths to prevent them from reaching the surrounding waterways. Over the past five years, the Port of Stockton has spent more than \$5 million on storm water programmes alone. The following outlines just a part of the tremendous effort the Port puts forth to protect and improve water quality.

Chief grain bin to be manufactured in Europe



Chief Industries UK Ltd has announced it will be manufacturing the tried-and-tested Chief grain storage silos at its European facility beginning in October 2015.

The silo will be manufactured at the Chief facility in France and will be produced to the latest EUROCODE criteria.

The silo will be available as standard in capacities from 80m³ to 15,000m³ from the European facility, and up to 27,000m³ on special order.

The 1,077mm wall sheet height requires significantly fewer rings, seams and stiffeners. Combined with Chief's exclusive 'W' stiffener, the bins offer unsurpassed strength, whilst reducing costly assembly time.

The 'W' stiffener is nearly twice as strong as the closest competing silo. Designed to support the vertical load, the unique 'W' staggered stiffener system provides supplemental strength and fully supports overhead catwalks and conveyors.

The 120mm x 11mm profile of the shallow form corrugated sheets minimizes the build up of residual grain on the silo wall during unloading.

The wall sheets are manufactured from high quality steel to EN 10326 and are Sendzimir galvanized to Z450 as standard and Z600 on request.

Roof panels are of Aluzinc AZ 185, which is superior to galvanized steel, and feature an interlocking 'J' rib design for outstanding strength and reduced assembly time.

All roofs have a 30° pitch with high peak load capacities and are designed to support additional loads imposed by conveyors, temperature cables, or heavier snow loads. The design meets anti-explosion criteria.



Grain. It's your business.



We know exactly how valuable grain is to you and your business. With peak capacity of up to 30,000 tons in a single silo, the total site storage can be as large as you require. For a partner with the expertise, technology and manufacturing methods to ensure that your storage plant is second-to-none in terms of quality and processes, then look no further.

- Silos Supplied To Eurocodes, Din, or Asae/astm Standards
- Cleaners • Dryers
- Sales • Service • Parts

You can trust in Chief.

CHIEF 
CHIEF INDUSTRIES UK LTD.

Tel +44 (0)1621 868944
E-mail sales@chief.co.uk
www.chief.co.uk



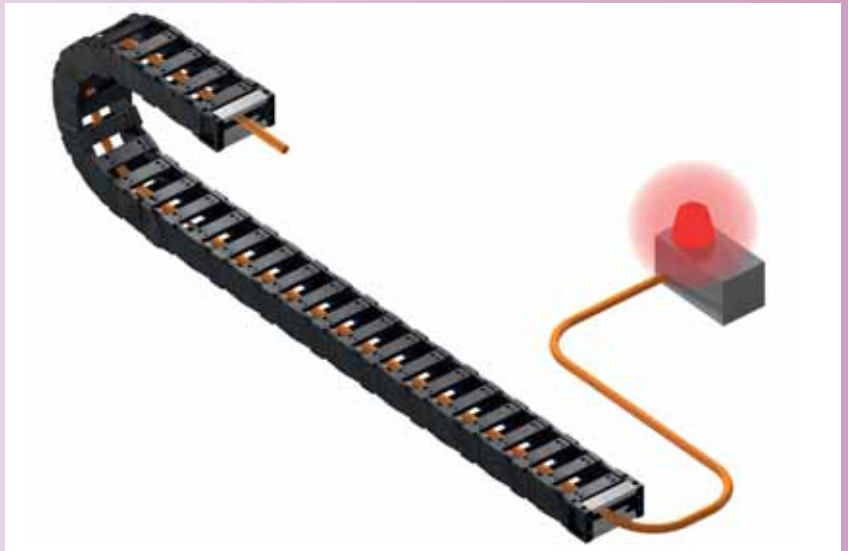
igus develops an electronic diagnostic tool for energy chains

ALERT IF A PARTIAL FAIL OF THE E-CHAIN IS GIVEN

The motion plastics specialist igus has presented a new electronic diagnostic tool for energy chains. The EMA system prevents unexpected down time in the system as well as unexpected repair work.

Energy chains used in the crane business are installed as a long life, low-maintenance solution for moving energy, data or control cables for the trolley or main crane power supply. The igus e-chain protects the cables and controls the cable movement — only when the crane is in operation the system moves.

The new igus EMA system is an easy installed polymer wire in the energy chain



providing high safety for the application and the user. Through the maintenance signal the system is observed permanently and in case of problems due to external reasons (i.e. vandalism or overload) it sends a signal for replacing the chain link at the next possible opportunity. The EMA system is easy installed through manufactured separating crossbars that route the sensor polymer wire in the energy chain and attach the detection unit on a fixed point. In combination with the igus PPDS system now igus has the complete e-chain system observation and function control.

igus GmbH is a globally leading manufacturer of energy chain systems and polymer plain bearings. The Cologne-based family business has offices in 36 countries and employs around 2,700 people around the world. In 2014, igus generated a turnover of €469 million with motion plastics, plastic components for moving applications. igus operates the largest test laboratories and factories in its sector to offer customers quick turnaround times on innovative products and solutions tailored to their needs.

The terms 'igus, e-ketten, e-kettensysteme, chainflex, readycable, easychain, e-chain, e-chainsystems, energy chain, energy chain system, flizz, readychain, robolink, pikchain, triflex, twisterchain, invis, drylin, iglidur, igubal, xiros, xirodur, plastics for longer life, CFRIP, dryspin, manus and vector' are protected by trademark laws in the Federal Republic of Germany and internationally, where applicable.



light & quick for heavy-weights

P4 rol e-chain® aluminium trough

All media in a single e-chain®. Drive and data cables, hoses, accessories. Corrosion-free and resistant to salt water in the igus® aluminium trough. Saves 30% weight compared to steel troughs. Travel of up to 800 m and speed of up to 600 m/min with 57% less drive power. Moving energy made easy.

Please visit us: Offshore Energy 2015 – Hall 11 Booth 100A
EUROPORT – Hall 2 Booth 2404

igus®-cranes.com
Request a free sample Tel. +49 2203 9649-800 Fax -222 plastics for longer life®



VAN AALST

Fulfil, innovate and think global. Always Interested.

The world around us is changing fast, so is our company. We are very proud that we have manufactured the most beautiful equipment for customers all over the world. Our goal is always to fulfil the wishes and to exceed the expectations. We are global thinkers and always innovating with respect to the planet and the people. A new age asks for a new proposition which we like to present to you. We hope you like it as we do. We are Always Interested.

Always Interested. Van Aalst Bulk Handling.



Tailor made ship unloaders in any size

Van Aalst Bulk Handling is a flexible organization directed to assist its customers with tailor made solutions for their loading, unloading and pneumatic conveying projects. Van Aalst Bulk Handling provides design and technical engineering, manufacturing and supply of equipment and installation supervision. The customer can rely on one experienced and reliable source.

Also Interested?

T +31(0)172 213 341
E info@vanaalstbulkhandling.com
I www.vanaalstbulkhandling.com

Van Aalst is the brand name of Van Aalst Bulk handling B.V. and Van Aalst Bulk Handling Corp.

Legacy Building Solutions achieves ISO 9001:2008 quality certification

Legacy Building Solutions, a leading designer, manufacturer and installer of tension fabric buildings, has achieved ISO 9001:2008 certification, the highest quality-management certification standard available in industrial manufacturing. The comprehensive system audits cover every aspect of operations.



ISO 9001:2008 is a quality management system standard that was developed by the International Organization for Standardization, which is an association of governmental and nongovernmental organizations from many countries. The ISO 9001:2008 standard is utilized to certify quality management systems that focus on continuous improvement, customer satisfaction and the active involvement of both management and employees in a process-based approach.

As part of the ongoing ISO certification process, Legacy will undergo an annual quality audit to ensure that every level of the organization — from engineering to manufacturing to customer service — is working towards continuous improvement to achieve greater customer satisfaction.

“Fulfilling the strict requirements of the ISO 9001:2008 standard highlights our focus and commitment to deliver total customer satisfaction,” said Ben Fox, president of Legacy Building Solutions. “Each individual in our operations must be wholly dedicated to the pursuit of quality. By scrutinizing our enterprise at every level, we assure that our customers are receiving superior customer service and the highest quality products.”

Legacy Building Solutions is the first manufacturer to create tension fabric buildings on structural steel I-beams. This rigid-frame engineering concept provides a higher level of design flexibility over traditional fabric structures, enabling customers to specify the exact dimensions and building accessories they require. Legacy fabric structures feature durable polyethylene or PVC fabric roofs with high translucency that allows buildings to be filled with natural light.



In addition to the new ISO 9001:2008 certification, Legacy has previously been recognized by the Canadian Standards Association (CSA) A660 certification program for steel building systems. To date, Legacy's in-house, professional installation crews have constructed more than 35 million square feet of fabric structures.

Legacy Building Solutions specializes in the innovative design, engineering and construction of custom fabric structures. Offering design-build, EPC and full construction project delivery, Legacy provides a unique customer focus for several different industries and building applications worldwide.



MYTH:

All fabric buildings are alike

In reality, there are wildly varying quality standards. Let's start with the strength and agility of fabric and a rigid steel frame. Add the ability to compress a construction schedule plus complete customization and the result maximizes your - and your client's - business investment for years to come.

Legacy Building Solutions was the first to apply fabric cladding to a rigid steel frame. We changed the game in safety, engineering and client satisfaction. Seeing is believing! To see a drone fly-through video visit www.legacybuildingsolutions.com or contact Legacy with your next project requirements.

The Legacy Advantage:

- Design-build and engineer-procure-construct (EPC) project delivery
- Optimized footprint with clear spans surpassing 300'
- Rapid installation up to 3X faster than conventional delivery
- Relocatable; construct as permanent then move if required
- Full construction, concept to completion project management



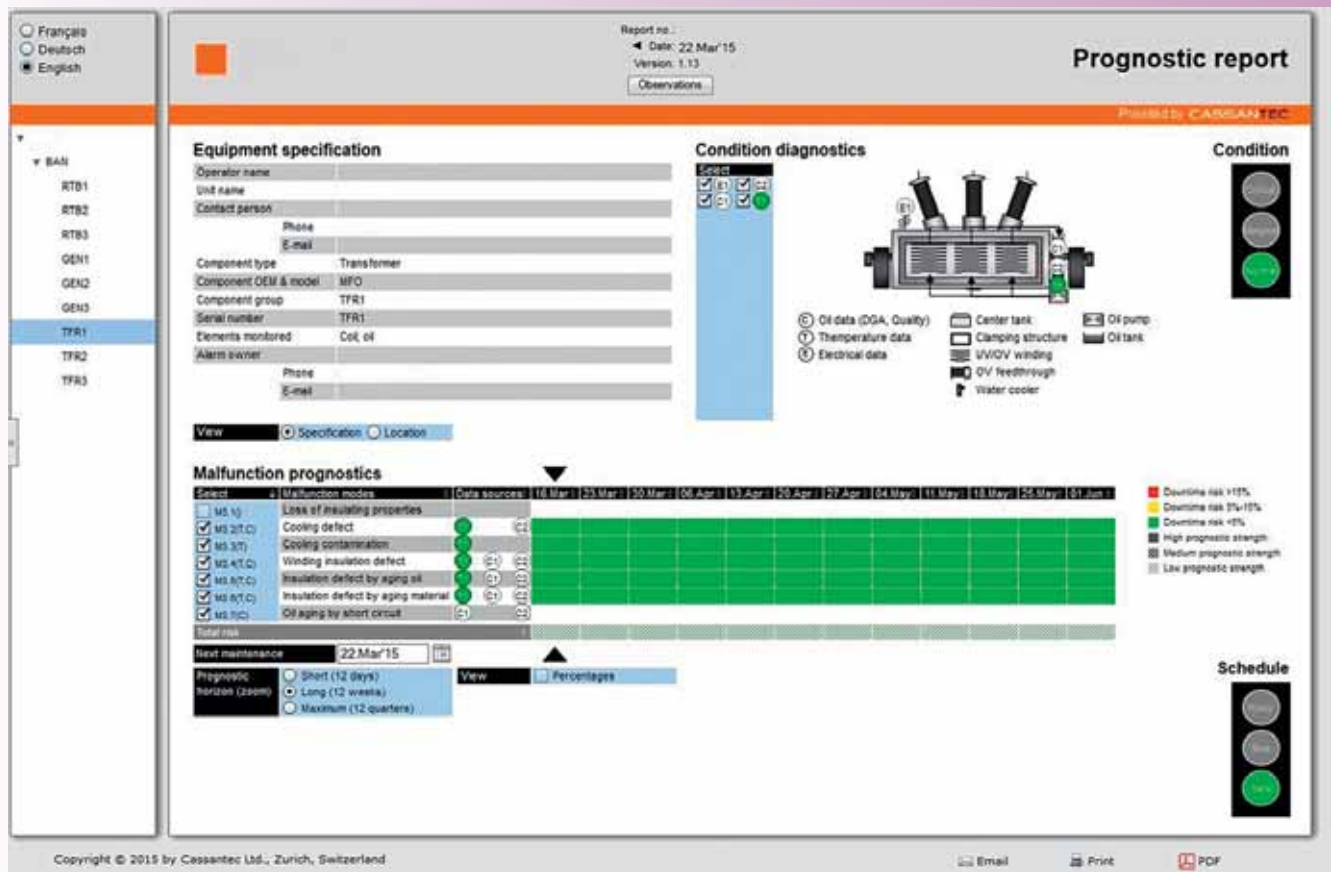
LEGACY
BUILDING SOLUTIONS

Innovation Beyond Fabric. Service Above All.

legacy@legacybuildingsolutions.com

+1 (320) 258-0500 | www.LegacyBuildingSolutions.com

Fewer breakdowns in the bulk goods/cargo industry



THE USE OF PROGNOSTICS MEANS COMPANIES CAN ADAPT MAINTENANCE OPERATIONS TO THE ACTUAL MACHINE CONDITION

Companies working with bulk goods are familiar with the problem: suddenly the conveyor belt breaks down and production grinds to a halt. No matter whether cohesionless (free-flowing) or cohesive bulk goods, continuous or discontinuous transport — the deployment and transportation of these materials can have significant impact on the entire operation. Therefore, companies try to avoid these disruptive situations. However, conveyor belts are particularly susceptible to malfunctions because they are constantly in motion. As a result, companies rely on regular servicing to avoid these situations. Unfortunately, this steady maintenance comes at a high cost. Moritz von Plate, CEO at Cassantec AG, says, “A periodical maintenance schedule is not ideally adapted to requirements of the conveying system.” In addition to condition monitoring, companies should also utilize condition-based prognoses. Based on these forecasts, maintenance schedules can be adapted to the needs of the component thereby making it possible to optimize its remaining useful life.

DATA POTENTIAL NOT YET EXHAUSTED

Nowadays, with the new technologies of industry 4.0 and Big Data, collecting condition data is the norm in most enterprises. With condition monitoring, plant operators hope to reduce the downtime of their conveyor systems. By using condition as well as process data, for example, temperature, vibration data, or oil analyses, these established approaches of condition monitoring provide important information about the critical components of the conveyor system. Generally, the consolidation and interpretation of these data is a very demanding task because

different technologies of condition monitoring and diagnostics often look at different operational aspects and address different kinds of malfunctions. Moreover, they merely describe the current condition of the component without any explicit future reference. These analyses provide the plant operator answers to many questions. He can see why the plant condition is critical or which components can be expected to experience a malfunction. This way he knows exactly where a maintenance intervention is necessary. Condition monitoring, however, cannot answer questions about time aspects. Only a warning is triggered saying that sometime in the future there will be a malfunction. When exactly this will happen, for example in an hour or in two weeks, remains unknown. Nor does the operator know when it is the best time to handle any existing problems. Whether or not the conveyor belt will have a breakdown before the next scheduled maintenance remains unknown. The question of whether other belts of similar construction will have the same problems also remains unanswered.

THE NEXT STEP FOR MAINTENANCE MANAGEMENT

“This is where our technology Cassantec Prognostics comes into play,” explains von Plate. By means of a computer-assisted mathematical model, Cassantec places a new central building block for plant operations and maintenance next to the condition monitoring and diagnostics. Under the concept Prognostics, the decision-making horizon for the plant broadens because the plant operators know when a malfunction will probably occur. Together with the customer, Cassantec determines the most frequent malfunctions of the machine without needing a complete malfunction history of the machine. Historical as well as current condition and process data are prognosticated into the future based on algorithms developed especially for this purpose. On

this basis, Prognostics can predict even those malfunctions that have never previously occurred in the plant. With the prognosis, the plant operator can setup a maintenance plan that matches precisely the needs of the conveyor belt. Now the customer has an extended planning horizon that condition monitoring alone cannot provide. Maintenance interventions are planned ahead, unexpected downtime is avoided and money saved.

A TRAFFIC LIGHTS SYSTEM FOR MAINTENANCE MANAGEMENT

The condition of the conveyor belt is presented by the software with the help of a traffic lights system. The operator can see exactly which phase — green, yellow, or red — the belt or components are in. The prognostic technology calculates a risk profile showing which malfunction should be expected when. These risk profiles are easily readable: e.g. green for <5% risk, yellow for 5–20% risk and red for >20% risk. The prognostic report shows when which phase begins and ends, in other words when the condition of the belt will become critical. The company



*Moritz von Plate,
CEO at Cassantec AG.*

can then determine when the optimal time window for maintenance work opens and closes in order to avoid unplanned downtime.

CONCLUSION

Prognostics is different from the so-called predictive diagnostics (or predictive analytics). Unlike other methods, Prognostics not only calculates whether to expect a malfunction but especially when the time window in which countermeasures can be applied closes again in the future. The prognostic tool Cassantec Prognostics extends the operator's future planning capabilities. He can assess transparently when each conveyor belt needs to be serviced. Furthermore, Cassantec substantiates the chances that companies have through new technological advances in Big Data. An ever-increasing number of production processes are being digitized. Von Plate concludes, "With our application companies can use the collected data of their plants for up till now unexpected possibilities in maintenance management."

WE CONVEY QUALITY



Flexible Loading direct from Truck to Ship

SAMSON

AUMUNDGROUP

SAMSON Materials Handling Ltd. • Cambridgeshire Business Park • 1 Bartholomew's Walk • Ely • Cambridgeshire CB7 4EA • U.K.

sales@samson-mh.com • www.samson-mh.com

Fixing conveying problems with ASGCO's 'Complete Conveyor Solutions'

In today's ever-changing world of coal handling, one thing stays the same, material like coal needs to be loaded and unloaded onto conveyor belts. You would think this process would be easy, build conveyors and chutes that carry the coal.

Many problems can occur with just transferring coal from one conveyor to another, material leaking from the loading point, belt mistracking at the tail pulley, conveyor chute leaking coal, is just a few. It is important to keep coal dust and coal spillage in the load zone area to a minimum. Many plants struggle to keep these areas clean, due to not having enough time or man power to properly adjust skirt rubber or fix holes in the chutes. When you walk around many load zone areas you usually find coal piles in between troughing idlers and on the floor. This coal spillage is expensive because there is a cost to remove the coal and if not properly fixed the coal piles will reoccur again and again. One thing is for sure, every plant that has conveyors has these problems.

That is why ASGCO® 'Complete Conveyor Solutions' has developed the first advanced containment for dust control solutions in the coal industry. The Pro-Zone™ System is a patent pending modular conveyor belt load zone system that optimizes the seal for air/coal dust tightness on the receiving conveyor belt. This fully self-contained system is comprised of ASGCO®'s Slide-N-Roll™ bed that supports the belt; this eliminates the gaps you would have in a typical load zone with standard troughing idlers. The Pro-Zone™ has an easy 'slide-out' design for quick removal of the UHMW support bars. The Pro-Zone™ allows users to choose from an impact or steel can idlers. ASGCO® can even manufacture the Pro-Zone™ to allow the customer the choice of any idler company. The new centre roll design is quick to change out, just remove the retainer clips and pop the centre roller out and install the new roller. Side guards attach to the Slide-N-Roll™ frame to create a side enclosure that allows the angled hoods to be easily mounted. Hoods can be made out of aluminium or steel which completely seals and encloses the entire system, chute inspection doors can be added to the hoods, this will make it possible to inspect the inside of the Pro-Zone™. Inside the Pro-



Zone™ are dust curtains that are anti-static and flame retardant. They are a very important component of the Pro-Zone™. Multiple curtains throughout the system allows dust to settle by slowing the air velocity down and allowing the airborne dust and particles to fall to the belt. The internal rubber seal, Dura-Seal™ (ORG) is a red sealing rubber. Its soft seal qualities allow it to self-seal to the conveyor belt eliminating any possibility of grooving the belt. This special red ORG sealing rubber system helps contain the coal dust.

Many accessories are available with every Pro-Zone™ system, Slide-lers™ can be mounted before and after the Pro-Zone™ these Slide-lers™ give you the ability to change rolls without having to remove adjacent belt idlers. This allows the Slide-ler to fit in tight or confined spaces, ensuring proper belt support and ease of change out. Just remove two bolts and simply slide the wings and the centre roll out.

Two products that usually get forgotten about under every load zone are V-Plows and belt trainers. A Hinged V-Plow is designed to effectively keep bulk material from becoming trapped within the conveyor belt and the tail pulley. This unique patented design of the 'Hinge' part of the V-Plow allows users to change the amount of angle the plow can have from 30°, 45°, or 60°.

With every Pro-Zone™ system it is recommended installing a Tru-Trainer® Return Idler, this training roller will keep the conveyor belt centred on the tail pulley which is very important in any load zone area. The



Tru-Trainer® has a stainless steel internal pivot that is perpendicular to the plane of the belt and its rubber covered shell and tapered ends help actuate the trainer immediately as the belt moves off centre. It's always reacting to keep the belt centred. It does not wait, like conventional trainers, for the conveyor belt to walk over to the 90° sensor rollers and then have the belt react. The Tru-Trainer® Return Idler reacts as the belt moves off center and will contact the tapered section of the roller on that side of the conveyor belt. The effect of this will be to force the roller to rotate on its pivot causing the belt to come back to its original centred position.

The Pro-Zone™ has been in service for about 10 months and has helped eliminate coal dust and spillage in the customers load zone areas. The customers are very happy with the performance of the Pro-Zone™ system and it has reduced their clean-up costs.



Cleveland Cascades Ltd

Providing the industry standard for loading solutions



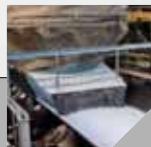
World Leader in the design & manufacture of bespoke retractable loading chutes for the handling of dry bulk materials.

- Based in the UK, Cleveland Cascades Ltd has a dedicated team of experts in the design, assembly and commissioning of loading chutes and materials handling equipment.
- With a growing range of bespoke solutions for the handling of difficult dry bulk materials, our product range includes the unique 'cascade' concept, dust-controlled conveyor transfer points and dust-controlled hoppers.
- With over 600 reference installations operating worldwide, with applications in ship, silo, road, rail & tanker loading, the company's key to success is its proven ability to provide a well-engineered solution with professional and committed support.
- Winners of prestigious Queens Awards for Environmental Achievement, Export Achievement, Enterprise in International Trades and many more.

Contact Cleveland Cascades Ltd

Unit 22, Dukesway, Teesside Industrial Estate, Thornaby, Stockton-on-Tees, Cleveland, TS17 9LT, United Kingdom Tel: +44 1642 753260 | Fax: +44 1642 753270

E-mail: enquiries@clevelandcascades.co.uk | Website: www.clevelandcascades.co.uk



Inside Negrini's electro-hydraulic orange peel grab

Major Italian grab manufacturer Negrini Srl has delivered the country's largest electro-hydraulic orange peel grab.

In June 2015, Negrini handed over the technologically advanced grab to Italian company Comap, which will use it to handle scrap metal.

Negrini's acknowledged expertise in equipment for port and shipbuilding facilities enabled it to design and manufacture the very large grab, with outstanding performance.

The design stage involved the use of highly advanced software. Negrini's engineering abilities allowed it to produce structural and electro simulations during the various work phases.

The structure of the grab was built using very high quality materials. It was shaped by Negrini's expert, and was cut, folded and assembled using modern techniques. It was then welded by highly trained welder.

Of particular note is the 'heart' of the grab; this removable electrical system is a new conception, which enables high speed and large forces.





FAM Stacker-reclaimer for coal 8000 t/h

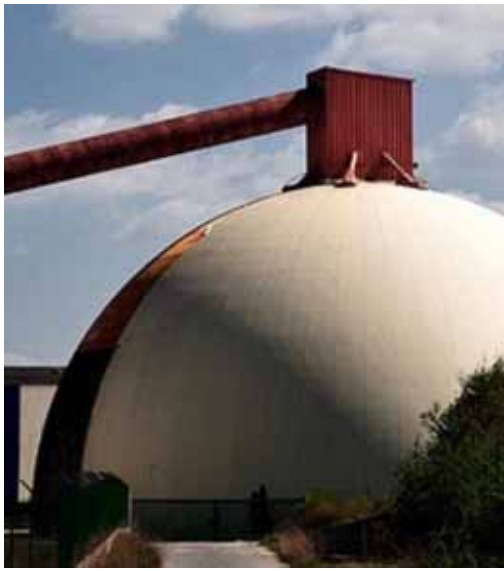
FAM – The manufacturer of material handling systems

FAM successfully designs and manufactures turnkey installations and systems for mining, conveying, loading and stockpiling of minerals, raw materials and goods. FAM offers the complete range of engineering and manufacturing services including after-sales services. For more than 20 years FAM combines serial and customized solutions and has proven to provide the highest level of technical expertise, engineering and project management competence as a global solution provider.



FAM
Förderanlagen Magdeburg
Sudenburger Wuhne 47
39112 Magdeburg - Germany

Phone +49 391 / 6380-0
Fax +49 391 / 6380-10 0 99
E-Mail sales@fam.de



Trust the reference for storage & handling **Dome solutions** for dry bulk storage



PIRS SAS, storage solutions
281, Avenue de l'Europe
83300 Draguignan FRANCE
+33 (0)4 98 10 67 67
Contact:
pirs@domepirs.com
www.domepirs.com



COMPLETE SOLUTIONS FOR STORAGE AND HANDLING

We provide our worldwide customers with solutions to best suit their needs. First inspired by their ideas, we adapt them in our studies to increase performance and capacity while reducing operating, maintenance, and infrastructure costs.

DO YOU HAVE A STORAGE PROJECT ?

Get in touch with us right now. Our engineering teams are ready to get through your project analysis and provide you with the optimal solution.

PIRS domes: more than a storage system

Domes are highly effective storage systems, as they not only protect the environment from potentially harmful products, but they also protect the stored commodities from destructive elements such as moisture and condensation.

INTRODUCTION

The environmental debates showed that environmental laws should be reinforced or created, to better protect the environment. In many countries, there is an obvious lack of rules regarding where people can store what they want and where they want. Domes help to protect the environment because they are hermetically sealed, insulated and waterproof (Figure 1). Products — such as fertilizers, cement, alumina and fly ash — can be stored easily, protecting the environment, while other materials like sugar and cereals are protected against the environment.

CONSTRUCTION PROCESS

To understand how domes can protect the environment and the stored material, it is necessary to know how they are built. The construction process can be described in eight steps (Figure 2).

1. Concrete ring foundation, reinforced with steel.
2. The airform is attached to the exterior of the ring beam. The airform is prefabricated to the dimensions of the building and delivered on site ready to inflate.
3. The airform is inflated and the pressure inside is stabilized.
4. VETHANE foam is sprayed on to the internal face of the airform. Anchors are embedded in the foam in order to receive the first steel rebars.
5. Steel rebar is fixed along the walls of the structure using the tabs.
6. Concrete is spray applied on the steel grid.
7. Openings, such as doors, ventilation and fill openings are then cut through the structure.
8. Completion — floor, painting, special wall treatment etc

ADVANTAGES

Rapidity in construction

Once the airform is inflated, all the work is carried out inside the dome. Consequently, the stored products are unaffected by exterior environmental factors such as rain, wind, and daylight.

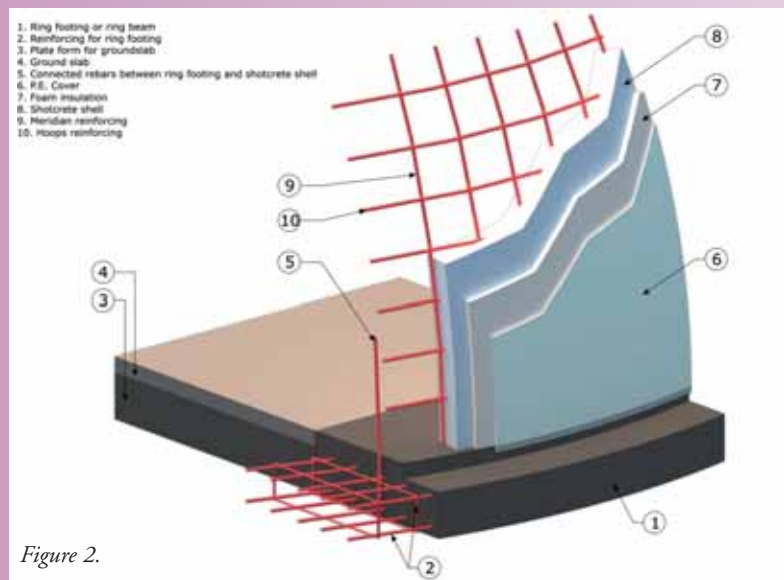


Figure 2.



Figure 1.

Optimization of the land

Domes minimize floor space while optimizing the volume. This means lower cost per ton of storage.

Reclaiming

The bulk material enters the dome through openings positioned on the roof and is then reclaimed through one or more galleries located in the floor of the dome. Automatic reclaim systems such as mechanical screws, pneumatic systems or vibrating floors are perfectly well adapted to the dome;

Insulation

Domes are the ideal solution for the storage of bulk materials that are sensitive to temperature and humidity. The application of Vethane foam on the inner surface of the airform gives the dome the quality of being equivalent to a controlled atmosphere chamber. Condensation is practically eliminated inside the dome since the insulation of the dome will conserve a stable ambient temperature. The whole of the structure itself is perfectly adapted to the techniques of prolonged conservation of perishable products.

Waterproofing

A PVC membrane forms the exterior layer of our dome and acts as the initial framework for the application of Vethane foam and shotcrete. Opposite to what is usually done in traditional construction, waterproofing is controlled at the very beginning of our process, once the airform is inflated. This membrane, added to the Vethane foam, assures that water will never leak inside the dome and spoil the product.

CONCLUSIONS

Concrete domes have proven their efficiency to protect the environment and products against temperature and humidity. The filling and reclaim system, including operation and maintenance, are usually cheaper for the domes than other solutions. There are other things that must be considered: the cost of the land, especially in a port (Figure 1) knowing that the domes will use less space than flat storage, for example. The time of execution can save financial cost and the operation can start earlier.

Domes are an innovative solution that are capable of bringing advantages in terms of product conservation, insulation, operation and maintenance costs. As a storage solution, they can help ensure maximum waterproofing and are a strong and durable solution to storage.

E-Crane celebrates 25th birthday with the launch of E-Handler

To celebrate its 25th birthday, E-Crane organized a five-day business event under the name 'Demo Days'. Clients, dealers and agents from across the globe visited the company to raise a glass with management and personnel in celebration of 25 years of passion for equilibrium cranes.

"We welcome over 1,000 visitors from 21 different countries," explains managing director Lieven Bauwens enthusiastically. "People from the neighbourhood were also welcome to come and have a look." All eyes were on the E-Handler during the Demo Days: a new crane in the E-Crane arsenal used for processing scrap metal or bulk material handling. "Visitors could become acquainted with the E-Handler EH7290 CR-D on our premises. This solid material-handler comes in three basic configurations. They all have a capacity of ten metric tonnes, and respective outreaches of 26, 29 and 32 metres," says Bauwens.

FAST DELIVERY AND ATTRACTIVE PRICE

All E-Handlers are available in a fixed pedestal version, on rail or on crawlers. The high portal is a standard feature of the crawler version. "The new machines can be delivered within three months and are very attractively priced," according to E-Crane. One thing is certain: the E-Handler EH7290 CR-D has ensured E-Crane's position as a serious player in the market of material handling. "Our new crane is an absolute 'must' for scrap businesses which are keen to improve their efficiency. In the fairly short term, we want to provide 20 E-Handlers on a yearly



basis," says a motivated Bauwens.

ENERGY EFFICIENT

The E-Handler EH7290 CR-D is powered by an engine which uses only 132kW (175hp). The model that was on display during the Demo Days was on crawlers, and its power came from a Cummins 200kVA generator set. Many people were fascinated by the

fact that during operation it was almost inaudible... pretty impressive, and proving immediately that balance using a mobile counterweight does the job. "At E-Crane, we persistently choose a sophisticated, energy-efficient concept," says Bauwens. "We don't use extra accumulators or extra cylinders for energy recuperation."

ALL COMPONENTS ARE 100 % IN STOCK

Only one cylinder was used for the movement of the main boom. This is also the case for the movement of the upper arm, and furthermore, these cylinders are identical, a good example of service-friendly engineering. Visits to the work-shop, and parts warehouse, proved that all of E-Crane's components are 100% in stock.



CRANE OPERATOR DAY

The Demo Days gave visitors a good impression of the daily activities at E-Crane. Clients, dealers and agents could visit the engineering department, the renewed warehouse and the E-Crane training centre. Besides this, there were tours of the premises and the E-Handler. In order to let crane operators become more familiar with the E-Handler, the company organized an individual Crane Operator Day. "We were visited by more than 50 crane machinists," says Bauwens. "They could try out our new product to their hearts' content." On Friday evening there was a gala dinner for clients, and the week of festivities



came to an end on Saturday evening with a big party for the personnel.

INSPIRING COMPANY FILM

The employees at E-Crane had a fabulous surprise in store for their Executive Directors, Lieven Bauwens and Geert Watteuw. They arranged a drone to take video footage around the company, which was then made into a polished film. "Our company was portrayed in a unique way, and we are very grateful to our people for organizing this. This is a fabulous present. Our team is clearly ready for the next 25 years!" concludes a satisfied Bauwens.



E-Crane International USA appoints new CEO

STEVEN M. OSBORNE NAMED CHIEF EXECUTIVE OFFICER

On 24 June, E-Crane International USA (ECI-USA), a market leader in material handling solutions for the bulk and scrap handling industry, announced that the Board of Directors had unanimously elected Steven M. Osborne as Chief Executive Officer effective 24 June. Steven Osborne succeeds his father and ECI-USA's current President and CEO Mark W. Osborne who has been successfully leading the company since it was founded in 1999. Mark Osborne will continue to serve the company as a member of the management team responsible for sales & marketing.

"The Board of Directors is delighted that Steven will lead ECI-USA in these exciting times towards an even more bright future," said Lieven Bauwens, Chairman of the Board of Directors. "Steven has a thorough understanding of the needs of our customers and a clear vision on how to grow our business in the Americas. I know he will accomplish his goals in close co-operation with both the management team and all ECI-USA employees. I have no doubt that he is the right person to take the helm at ECI-USA."

"I have always believed in him so it was no surprise that the Board of Directors confirmed his talents. I am so happy for him and for ECI-USA. I look forward to working with him in this new capacity on the years to come on behalf of the company I love. Being Steven's father it makes me proud to see that third generation of engineers in our family is doing so well." said Mark Osborne former President and CEO.

"I am honoured that the Board of Directors chose me to follow in the footsteps of my father who has led ECI-USA for



the past 16 years," said Steven Osborne. "I am also thrilled that I will have the ability to rely on my father's counsel over the coming years as he is an exceptional executive, leader, role model and friend."

Steven holds a mechanical engineering degree from The Ohio State University and is a Licensed Professional Engineer in the State of Ohio.

ECI-USA, based in Galion, Ohio, since 2007, is wholly owned subsidiary of the E-Crane Group of Companies, based in Adegem, Belgium. ECI-USA is responsible for sales and customer service of the E-Crane product line in North and South America. ECI-USA has grown to 29 employees including offices in Columbus, Ohio, for Sales and Engineering and a brand new Service Centre in Rockport, Texas, opened in August 2014.

güven[®]

grab & machine



GÜVEN KEPÇE İÇ ve DIŞ TİCARET LİMİTED ŞİRKETİ

Nazım Hikmet Caddesi, 536 Sokak, No.9 41420 Akseköyü Çayırova – Kocaeli / TURKEY

Tel.: +90 262 743 88 58 pbx Fax: +90 262 743 11 41

info@guvengrab.com

www.guvengrab.com





Right side of the tracks?

equipment for handling bulk by rail and barge



Installed on the track flanges, the boot rises to the unloading gates for clean, efficient unloading of bottom-discharge hopper cars.

Railcar connector for fast, safe unloading of bottom-discharge hopper cars

The Boot-Lift® Railcar Connector from Martin Engineering improves the speed and safety of connecting a hopper car to under-track conveying systems, preventing the loss of material to wind or contamination without workers crawling under the car. Installed on the track flanges and powered by an air-over-hydraulic design, the boot rises to the unloading gates for clean, efficient unloading of bottom-discharge hopper cars. Sponge seals fit securely to the gates for a clean transfer of material to the conveying system.

“Unloading bulk materials from railcars can be a difficult, dirty job,” observed Martin Engineering VP of Operations Robert Nogaj. “It can be a slow, labor-intensive and sometimes unsafe process. In many facilities, unloading requires workers to crawl beneath the cars to connect the outlet to the under-track system. The Boot-Lift eliminates that potential risk, and it can be easily operated from a remote control console.”

Models are available to suit virtually any bottom-discharge railcar design, including single- or double-opening, round-opening and GATX. Adaptor sheets and transition funnels are available

for interchangeability, allowing operators to use the same connector for any number of different cars. Users can convert various car models from double- to single-pocket unloading or single to double by simply removing the standard sponge seals and replacing with the appropriate funnel and adaptor sheet.

The boot automatically connects with the railcar and rises as the load empties out, maintaining an effective seal throughout the process. The units require just 1 CFM of air supply at 90 PSI (28 LPM at 6.2 bar).

Martin Engineering offers two different types of aligners to simplify car positioning. The Boot-Lift Manual Aligner delivers up to six inches (152mm) of total adjustment, three inches (76mm) in each direction along the track. The pneumatic model provides up to eight inches (203mm) of total adjustment, four inches (101.5mm) in either direction. Remote control requires just 10PSI (0.7 bar) of compressed air.

The standard boot material is black vinyl-covered cloth. Other options are available, including polyethylene-lined; white synthetic rubber-coated cloth; food-grade polyethylene-lined

THINK THIS IS NEW TECHNOLOGY? THINK AGAIN..



Australia - 2006
Titanium Ore – 50°
Mobile shiploader – 1000 t/h



Canada - 2006
Diamond ore – 50°
3 units – small footprint



Spain - 2012
Green Pet Coke – 90°
“S”- Shape



United States – 2014
Coal – 52°
High Capacity – 4000 t/h

DSI Snake Sandwich High Angle Conveyor elevating coal at a 75° angle for a steel plant in Northern Spain.

Dos Santos International is the world's foremost authority on high angle conveyor applications and design of sandwich belt high angle conveyors. With more than thirty years of materials handling and engineering experience, we offer the most advanced high tech conveying solutions. BUT THE TECHNOLOGY ISN'T NEW. DSI's high angle solutions have been proven time and time again to be the most reliable and economical solution in the industry.

The DSI Sandwich Belt High Angle Conveyor offers many advantages. It's PROVEN in over 100 installations worldwide. It's RELIABLE for rugged mining conditions, yet gentle enough for friable materials. It's ECONOMICAL, fitting into tight spaces and small footprints. Elevating millions of tons of material at various installations all around the world, users have agreed it's the most reliable, low cost and low maintenance conveyor system available. Let us prove it to you.

- THE GREATER THE LOAD •
- THE HIGHER THE LIFT •
- THE BETTER WE LOOK •

Dos Santos International
531 Roselane Street NW Suite 810
Marietta, Georgia 30060 USA
T: +1 770 423 9895
F: +1 866 473 2252
<http://www.dossantosintl.com>



Specialists in Mining & Handling

DF has a proven track record in delivering innovative turnkey projects for mineral processing and bulk material handling.

With more than 150 years' experience, a profound knowledge of market needs and a superior know-how in mining from operating its own mines and process plants, DF has the ability to translate customer needs into unique customized solutions.

Whatever your requirements, DF can safely and efficiently provide the complete turnkey solution.





The Boot-Lift® Railcar Connector improves the speed and safety of connecting a hopper car to under-track conveying systems.

polypropylene; and flame retardant coated polyester.

Martin Engineering supplies a number of related accessories, including funnel covers and rugged vinyl-covered cloth cylinder covers to help prevent damage and contamination of air cylinders from material build-up or difficult service environments. Replacement boots, sponge seals and other components are also available.

Founded in 1944, Martin Engineering is the global leader in technologies to make bulk materials handling cleaner, safer and

more productive. The company supplies conveyor products and flow aids around the world for a wide variety of bulk material applications, including coal, cement, aggregate, biomass, grain, pharmaceuticals, food and other materials. The firm is headquartered in Neponset, IL, offering manufacturing, sales and service from factory-owned business units in Brazil, China, France, Germany, India, Indonesia, Mexico, Russia, South Africa, Spain, Turkey and the UK, and under exclusive licence with ESS Australia.



The design eliminates the need to crawl under cars to connect, and it can be easily operated from a remote control console.



dk
vac-u-vator[®]

*Barge, Ship & Warehouse Unloading
at Rates from 100 - 300 MTPH*

www.christianson.com

**Flexible
solutions
for material
handling**



Christianson Systems offers flexible solutions for a wide range of material handling applications. Manufactured in the United States with state-of-the-art technology backed by over 50 years of experience assure that each

machine is built with superior quality, construction and design. Equipment recommendations are based on the customer's product, vessel size, capacity requirements, and power sources.



Christianson

Pneumatic Conveying Equipment

20421 - 15th Street SE, PO Box 138
Blomkest, Minnesota 56216 U.S.A.

Telephone: +1-320-995-6141

Email: sales@christianson.com

Kiruna Wagon – new-generation wagons for the modern mining industry

Kiruna Wagon's Bottom Dumper is a robust wagon with a mechanically controlled system for high-capacity continuous discharge.



Kiruna Wagon specializes in the custom design and manufacture of wagons for rail freight of heavy bulk materials above and below ground. Based in Kiruna, the mining capital of Sweden, the company is able to draw on more than 100 years of experience in rail-bound ore transport and steel refinement and develop this knowledge further in order to meet the mining industry's transport requirements of today.

Since the start in 2004, Kiruna Wagon has emerged as a leading European manufacturer of wagons for heavy rail transports and has established itself as a reliable supplier to modern mining companies. Among its clients are LKAB, New Boliden, Northland Resources and Rana Gruber.

HIGHER AXLE LOADS AND LIGHTER WAGONS

Kiruna Wagon believes that higher axle loads, longer trains and lighter wagons is the way forward towards higher productivity and a lower environmental impact. Through the use of advanced high-strength steels, it is possible to lower the tare weight of the wagons which means that they can carry more payload. The increased load efficiency in combination with a reduced fuel consumption and an optimized life cycle results in a more environmentally friendly transport.

As supplier to some of the world's most modern mines, Kiruna Wagon works with development, manufacture and maintenance from a lifecycle-cost (LCC) perspective. Through

Kiruna Wagon's Side Dumper is equipped with a roof and optimized for transport of hazardous or highly refined ore products in smaller volumes.



Engineered for Life



Heyl & Patterson doesn't just engineer railcar dumping systems...We become a real partner in your operations for the life of your equipment, with:

- High-speed, semi-automatic unloading
- Various designs – Single, Tandem, Rotary, Wagon Tippler, Turnover, C-Shaped
- Rotation as fast as 35 seconds per car
- Rotate drive – Rack & Pinion or Chain
- Random car or unit train applications
- Inspections, upgrades and field service

Since 1887, the bulk materials handling industry has trusted Heyl & Patterson for innovative designs and reliable equipment.



HEYL & PATTERSON INC
Trusted Since 1887

412-788-9810

info@heylpatterson.com
info.heylpatterson.com/dci

STRONG. PINTSCH BUBENZER Emergency Brakes. Made in Germany.



In the sectors of container handling, shipbuilding and offshore engineering, mining, the steel industry, utilization of wind, mechanical engineering and construction of special vehicles, PINTSCH BUBENZER is a world leader in braking system design and manufacturing, with safety built into every product.



Visit our homepage www.pintschbubenzler.de





To minimize tare weight and maximize payload, the Helix Dumper is built mainly in high-strength steels, with a yield strength of 700MPa.

the lifecycle-cost (LCC) analysis, the company's clients are able to make informed decisions and achieve the most economical process from inception to decommissioning. The goal is to deliver the world's lowest lifecycle cost per metric tonne on rail-bound transports.

MODULAR STANDARD PRODUCTS AND CUSTOMIZED SOLUTIONS

Kiruna Wagon manufactures its products based on existing drawings or design new logistics systems to suit the client's requirements. All its wagon types can be customized to fit line loads and loading gauge preconditions. The modular design of the wagons ensures high maintainability.

Since the company is located north of the Arctic Circle, its wagons are tested in a challenging subarctic climate and are constructed for a temperature interval of -40°C to $+60^{\circ}\text{C}$.

TECHNICAL ADVANCES THROUGH INDUSTRY-UNIVERSITY COLLABORATION

The rail freight industry has a tradition of being innovative and in order to maintain its strong position in the market, Kiruna Wagon is committed to continual research and development. One of its strategies to secure its innovative edge is to collaborate with Luleå University of Technology on its Sirius Projects which provide final-year engineering students with the opportunity to apply their skills and knowledge to real engineering problems. Through the collaboration, Kiruna Wagon gains access to innovative solutions developed by well-educated students who solve problems from completely new angles. The development of the second-generation Side Dumper has greatly benefited from this collaboration.

MEETING CUSTOMERS

In order to market its products and come face-to-face with key customers, Kiruna Wagon participates in trade shows and conferences organized by the mining industry. Most recently it participated in the conference Innovative Mining: Safe, Smart & Sustainable in Perth, Australia, in November 2014. As the company broadens its target market and product range, it is interested in also attending conferences organized by the coal mining industry.

PRODUCTS

Bottom Dumper for high-capacity discharge

Kiruna Wagon's Bottom Dumper is a strong feature of its product portfolio for modular standard products. Suitable for heavy transport of easily unloaded commodities, the robust Bottom Dumper has a mechanically controlled unloading system and a large bottom door for high-capacity continuous discharge of up to 20,000tph (tonnes per hour). The low-cost unloading station can unload up to 200 wagons per hour and is proven in a subarctic climate.

Thanks to its modular design, the Bottom Dumper is optimized for easy replacement of individual components – a damaged body or bottom door can be replaced by two persons within two hours.

Two Nordic mining companies, LKAB in Sweden and Rana Gruber in Norway, have chosen Kiruna Wagon's Bottom Dumper for the transport of iron ore. The NO-RG Fanoo exported to Norway is a refined version of the wagon manufactured for LKAB, in more than 1000 units.

Side dumper for sealed transports

Kiruna Wagon's Side Dumper is a four-axle bogie wagon with a carrying capacity of 73 tonnes. The wagon is equipped with a roof and optimized for sealed transports of hazardous and/or highly refined ore products in smaller volumes.

During discharge, the wagon is locked in the correct position before external lifters connect to the body and tip it to an angle of 55° . The opening of hatches is mechanically integrated in the tipping function. The roof is kept closed during the entire discharge process.

The robust Side Dumper handles sticky materials and can be loaded and unloaded from both sides. The unloading station is a simple and low-cost solution with a capacity to discharge up to 1,500tph.

The Side Dumper is used by New Boliden for the transport of copper ore from the mine in Aitik in Swedish Lapland to the smelter in Rönnskär, beside the Bay of Bothnia.

A second-generation Side Dumper is currently under development.

Bulk commodity handling, we may make it look like child's play...



...but that's because we've been delivering innovative solutions world wide for over 40 years.

Since launching the first mobile bagging system in the 1970's, Nectar have become world leaders in all forms of bulk handling, whether it's the discharging and bagging of cereals, fertilizers or other granulated products, or the loading of coal for export, or indeed the design, logistics and management of a new port or terminal.... We've been there and done it.

Since 1972 Nectar has carried out operations in 175 different locations around the globe. This year we will handle over 7 million tonnes of cargo across 20 different countries. Nectar has recently supplied a fleet of trucks in Africa, and partnered in the development and operation of the first dedicated bulk terminal in the Philippines.

Our diversification of expertise is unrivalled AND our 300 strong skilled and experienced workforce are dedicated to ensure that our bulk handling solutions are delivered efficiently, quickly, cost effectively and with confidence across the globe.

Of course we all know that handling bulk cargoes is far from child's play.... we just make it seem that way.



Global Bulk Handling Solutions

T: +44 1708 386 555 W: www.nectargroup.co.uk

Rock Dumper for big boulders and small drifts

Kiruna Wagon's Rock Dumper with effective bottom discharge is a heavy-duty concept that can handle drop-loaded boulders in sizes up to 1,000mm. The wagon, which is based on a technology that has been in use since the 1970s, is designed for rolling discharge and has a discharge capacity of approximately 10,000tph.

The Rock Dumper is dimensioned for a small drift with a width of 2,056mm and a height of 1,825mm. The rail gauge is only 891mm. These dimensions can be adjusted according to customer needs.

Kiruna Wagon's Rock Dumpers are used by Swedish mining company LKAB in its underground mine in Kiruna.

Helix Dumper for tough-flowing commodities

Kiruna Wagon's ground-breaking Helix Dumper combines optimal productivity with simplicity. The Helix Dumper is the wagon of choice for small fractions and tough-flowing commodities that are unsuitable for bottom discharge.

The Helix Dumper's innovative body-turning solution efficiently discharges even the toughest concentrate materials during rolling discharge.

The wagon is based on a chassis that is well-proven on the iron ore line in northern Sweden but its body and discharge system introduce a new concept to ore logistics. Built for continuous, rolling discharge the Helix Dumper empties its load by rotating the body 148° while the chassis remains on the rail. The rotation, along with the rounded shape of the body, creates optimal conditions for effective discharge.

The Helix Dumper's unloading station is a robust and low-cost solution which requires minimal maintenance. The system has a discharge rate of up to 18,500tph. No manual intervention or electrical power is required during unloading.

To minimize tare weight and maximize payload, the Helix Dumper is built mainly in high-strength steels, with a yield strength of 700MPa.

Loaders



Railcar dumpers



www.muhr.com

MUHR

Flexicient.

More flexible. More efficient.

Muhr bulk loading systems MVS | MBG | MBO

The flexible and world-wide largest product range. Closed, open, combined. Of course dust-free. With individual adaptation modules. More efficiency due to a reduction of operating costs by up to 50 %.

Muhr railcar dumpers L-Tec | L-high Tec

Dumps up to ten railcars at the same time without a height limit. Space-saving due to the unique Muhr compact design. More flexible and more efficient.

For more information
please call now:
+49 (0)8034 9072-0

Muhr GmbH
Grafenstraße 27
83098 Brannenburg/Germany

info@muhr.com
www.muhr.com

4E Experienced. Esprit.
Efficient. Exact.
The Muhr 4E Concept.

TRAMCO

- TRAMCO has been involved in the design, application, engineering and manufacturing of the world's most extensive line of chain conveyors, enclosed belt conveyors, specially designed conveyors and conveyor conversions since 1967.
- Our products are robust, reliable and designed to handle severe processing applications. Our variety of designs allows flexibility to specify the size of conveyor for your capacity, at the best value.
- Since 2000, we have had a design and manufacturing facility in Hull. We employ local people with a diverse range of skills, including bespoke product design, fabrication, welding, machining, assembly and painting.
- TRAMCO conveyors offer solutions for delivering product for various industries such as chemical, coal, food and grain, mining, plastic, pulp, rubber and paper, or solid waste and recycling.
- Our philosophy is to produce high quality, reliable equipment that meets specific customer needs. Our production facility offers cutting, machining equipment and robotics which allows for complete in-house production.
- When you buy from TRAMCO, you get customer dedicated design, world class expertise and a manufacturer that knows how to achieve on a global platform. With TRAMCO, you can rely on conveyor systems that deliver.



TRAMCO-EUROPE LTD

Mendham Business Park
Hull Road, Saltend, Hull, HU12 8DZ
P: +44 (0) 1482 782666
F: +44 (0) 1482 793920
E: sales@tramcoeurope.co.uk
tramcoeurope.com

EURO-TRAMCO, B.V. (SALES)

Spacelab 47 D
3824MR Amersfoort, The Netherlands
P: +31 (0) 33 4567033
F: +31 (0) 33 4558149
E: Hans@TRAMCO-europe.com
tramcoeurope.com

TRAMCO Products:

CHAIN CONVEYORS
Bulk-Flo | Model G

BELT CONVEYORS
Tramroll | Jetbelt | Aerobelt

BUCKET ELEVATORS

Renowned Texas scrap handler goes for green SENNEBOGEN material handlers

Family-owned Wilkinson Companies relies on the SENNEBOGEN material handlers. Here a SENNEBOGEN 825 is loading railcars in Texas.



The Wilkinson name is so renowned for honourable service in South Texas, USA, that each of the three separate legacy businesses uniquely and proudly lists the family name first, regardless of which grandson of scrap handling pioneer S.H. Wilkinson it belongs to. To meet the ever-demanding production needs of today's scrap metal business, the Wilkinson families have come to rely on another renowned family name — SENNEBOGEN.

“We have the capacity to load 15 rail bunkers at a time here, and we need those three SENNEBOGENs to do it,” says Scott Wilkinson, himself a 30-year industry veteran. “We’ve got a 24-hour timeframe to receive railcars and turn them around, and we need to have the ability to load 15 cars in those 24 hours.

As did its ‘cousin’ company in Brownsville, Wilkinson Gary Iron & Metal first introduced a grapple-equipped, SENNEBOGEN 835 M and later an 825 M to its Laredo fleet a few years ago. The larger machine keeps the Laredo yard's shredder full when not assisting the smaller machines in loading railcars with processed material during those intense, 15-car turnaround days. A normal weekly throughput rate is about 40 railcars, serviced full-time by the 825 M material handler.

But with the SENNEBOGEN material handlers, designed and

built with a greater emphasis on durability and strength, and less on electronics, “You don't have the repair bills and breakdown issues that you normally have with other kinds of converted excavators,” Scott Wilkinson says. A SENNEBOGEN machine will operate throughout the day without overheating the engine or burning out any of the hydraulic system's components; an automatic reversible fan keeps the rads clear. “We always have the SENNEBOGENs running,” says Scott.

When a service or maintenance issue does arise, Waukesha-Pearce Industries (WPI), Inc., the local SENNEBOGEN dealer and their representative Darryl Woods are able to provide parts promptly, supported by SENNEBOGEN LLC's 100,000ft² fully-serviced parts facility in North Carolina. This, says Scott, is a substantial upgrade from a previous make of material handler used at the Laredo yard.

With their Cummins engines mounted front to back, the intelligently designed SENNEBOGEN machines are easy to work on, yet do not compromise creature comforts, says Scott. Each of his three SENNEBOGEN operators “absolutely loves” the easy-to-access, easy-to-operate, air-conditioned machines. The elevating cabs provide the operators with good visibility into trailers when unloading them, or railcars when loading them.

Thank you

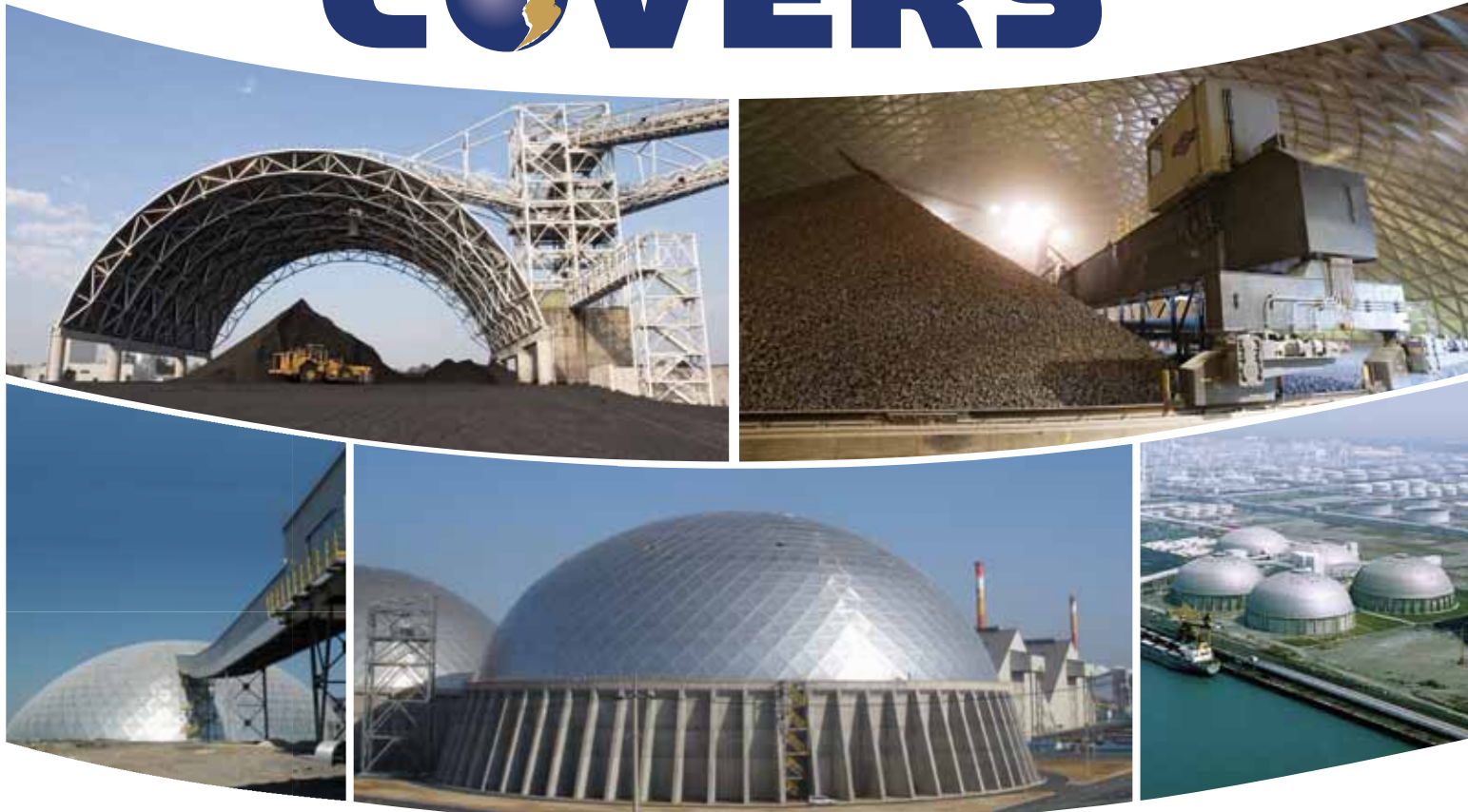
...for proving us right. Advertising really does work.



To find out how you can benefit from advertising in the world's only monthly dry bulk publication contact Jason Chinnock or Andrew Hucker-Brown on Tel: +44 (0)1206 562560 Fax: +44 (0)1206 562566

INTRODUCING THE GLOBAL LEADER IN COVER SOLUTIONS.

CST COVERS



TEMCOR

CONSERVATEK®

SINCE 1964 • OVER 16,000 INSTALLED • OVER 90 COUNTRIES

Dry Bulk Storage Solutions

- All-aluminum clear-span structures
- High strength-to-weight ratio
- Maintenance free – never rusts, rots, chips or solar degrades
- Economical installation – light weight translates to faster erection times and reduced erection costs
- Project support around the world

www.cstcovers.com

CST Covers | 498 N Loop 336 E | Conroe, TX 77301 USA | p: 936-539-1747 | f: 936-539-5355

Grabbing the market with KINSHOFER GmbH



KINSHOFER GmbH is a medium sized company specializing in the development, production and sales of hydraulically operated crane and excavator attachments. Founded in 1971 and based at the southern edge of Munich's dynamic financial region, today KINSHOFER GmbH is the centre of an international group of fifteen companies with about 470 employees worldwide.

KINSHOFER's attachments are used widely throughout the bulk industry, including loading trains and barges.

An efficient team of highly qualified employees, extremely modern manufacturing facilities and sophisticated production logistics ensure fast reaction times for meeting customer demands. Whether on a crane, excavator or fork truck, KINSHOFER attachments noticeably improve the versatility and speed of any carrier machine. The company's products are built to a very high quality — KINSHOFER is a great believer in the principle that you get what you pay for. Therefore its grabs are not cheap, but lower initial outlay on cheaper grabs can often be more expensive in the long run. Unreliable grabs, and those that require extensive maintenance, can have very high operating costs.

The strict quality of KINSHOFER's P-grabs (orange peel grapples) has placed them among the best in the world, and users have responded with delight to this quality. A similar story applies also to KINSHOFER's C-Series, which boasts the highest quality possible.

With over 43 years of experience and a continuing focus on the advancement of the attachment industry, KINSHOFER GmbH has become a 'one-stop-shop' and is now a market leader with a complete range of crane and excavator attachments, including a full line of strong reliable rotators, rotary actuators, tiltrotators, quick hitches and buckets.

Top crane and excavator manufacturers continue to choose

KINSHOFER as their OEM partner for their attachment demands.

KINSHOFER HISTORY

- 1971: KINSHOFER GmbH founded in Miesbach, Germany.
- 1984: KINSHOFER UK Ltd. founded in Stockport Cheshire, UK
- 1987: KINSHOFER France S.A.R.L. founded in Strasbourg, France.
- 1991: KINSHOFER GmbH moves to Waakirchen-Marienstein, Germany.
- 1997: KINSHOFER Austria founded in Gmünd, Austria.
- 1997: KINSHOFER CZ s.r.o. founded in Ceske Velenice, Czech Republic.
- 2000: KINSHOFER North America founded in Burlington, Canada.
- 2006: KINSHOFER acquires Demarec Demolition and Recycling Equipment BV in St. Anthonis, The Netherlands.
- 2007: KINSHOFER GmbH joins the LIFCO AB of Sweden.
- 2008: Darda KINSHOFER Construction Machinery C. Ltd. founded in Beijing, P.R. of China.
- 2009: KINSHOFER Aponox Oy founded in Hämeenlinna, Finland.
- 2011: KINSHOFER acquires RF System AB in Vinslöv, Sweden.
- 2012: KINSHOFER acquires IP and Distribution Rights of Wedgelock Equipment Ltd., Upper Hutt, New Zealand.
- 2013: KINSHOFER US Office opened in Sanborn in the state of New York, USA.
- 2015: KINSHOFER acquires Auger Torque Group with subsidiaries based in Cheltenham, UK; Brisbane, Australia; and Ningbo, P.R. of China.

RopeCon®

The Innovation in Bulk Material Handling

Wherever bulk material needs to go – across impassable terrain, rivers, highways and buildings – RopeCon® delivers without a hitch!

Long distances, capacities of up to 25,000 tonnes/hour, minimal environmental footprint, quiet operation plus low operating and maintenance costs: These are the features that convinced leading mining businesses.

www.doppelmayr-mts.com



... your success story



Our know-how ...



C40HD GRAB

The C40HD is a popular grab in the KINSHOFER line. In October last year, the model was chosen by UK company Land Recovery Ltd, for use in its aggregate handling and recycling operations.

Land Recovery Ltd, one of UK's specialist aggregate handling and recycling companies has continued expanding its modern fleet of plant with the purchase of a new Komatsu PC 360 LC fitted with a new KINSHOFER C40HD 175 re-handling clamshell. The clamshell was delivered and installed by KINSHOFER's independent dealer for the North West, MTK (Breaker Hire and Sales) Ltd. See pictures above, below and on p73.

The heavy duty clamshell bucket, which has a 2.1m³ capacity, was specified with additional bolt-on horizontal and vertical wear blades to help reduce wear caused by material abrasion, a heavy duty 360° continuous rotation system and then fitted to the dipper end of the Komatsu PC 360 before being deployed at a Network Rail Recycling site in Cambridgeshire.

Dan Beecroft, (Managing Director) was very careful in his choice of manufacturer and the support service on offer. "Both need to be reliable" said Dan, "I cannot afford for the clamshell grab to stop the excavator working or vice-versa." Beecroft had dealt with MTK in the past, so he knew the company could be relied upon to provide him with the service required.

"As a KINSHOFER – Demarec dealer, they arranged for a full assessment of the site and the application, calculating the optimum size of clamshell for the excavator I had in mind ... they then went one better by loaning me an attachment whilst mine was built to my specification."

Among the key features of the C40HD clamshell is the wide pitch PCD 'slew ring' type rotation device for increased strength and stability, the use of high strength impact resistant materials which contribute to a low overall weight of the grab and the 'flat bottom' closing curve which prevents damage to railway wagons, boats and lorries. Bolt-on reversible horizontal and vertical wear blades protect surfaces vulnerable to abrasion, but also ensure rapid down time when being turned or replaced.



One Source



© Norsk Hydro



Expertise in Alumina handling

FLSmidth is your expert in handling of fresh alumina, reacted alumina, crushed bath and aluminiumfluoride

- Large capacity storage silo including anti-segregation filling and discharge
- MÖLLER® airlift conveying
- Pressure vessel dense phase conveying either with MÖLLER Turbuflow® or standard conveying pipe
- Truck/wagon loading and unloading stations
- Dosage systems
- MÖLLER Fluidflow® pipe air slide conveying systems
- MÖLLER direct pot feeding systems
- PTM filling stations
- Modular designed systems - plug and play -

FLSmidth Hamburg GmbH

Tel: +49 4101 788-0 • hamburg@flsmidth.com

www.flsmidth.com

FLSMIDTH

The CVHD is a durable re-handling clamshell bucket, especially for loading bulk materials for excavators from 25t/55,000 lbs to 40t/88,000 lbs operating weight. It offers the following advantages:

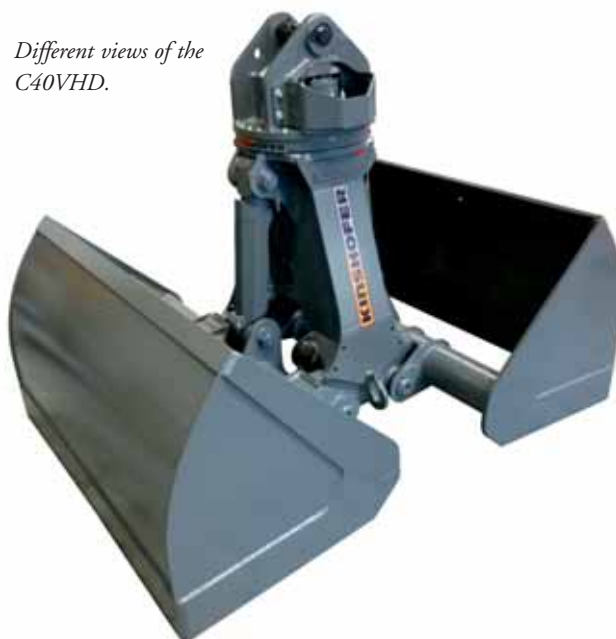
- ❖ maximum volume due to widely spaced pivots with a flat closing curve. Protection of the ground surface is guaranteed, e.g. discharge from boat and train carriages etc.;
- ❖ precise positioning with an integrated rotator;
- ❖ long life is ensured due to the use of 500HB steel in the manufacture of cutting edges. Shell back walls (standard version: 8mm/0.3 in, HB 400) also resist highly abrasive materials. Bearing points with specially coated bushings and hardened pins;
- ❖ with integrated rotation: swivel and bevel sealed. Rotary feedthrough and motor accessible directly;
- ❖ integrated non-return valve guarantees security of the load;
- ❖ excellent digging characteristics are the result of high closing forces (57kN/12,540 lbf at an operating pressure of 35MPa/5,040psi);
- ❖ here optional heavy duty (HD) version with reinforced shells.

C40VHD AND C60VHD GRABS

The C40VHD and C60VHD grabs are also extremely popular. These are durable re-handling clamshell buckets, especially for loading bulk materials for excavators from 18t/39,600 lbs to 40t/88,000 lbs (C40VHD), as well as re-handling excavators from 20t/44,000 lbs to 40t/88,000 lbs or 40t/88,000 lbs to 60t/132,000 lbs (C60VHD) operating weight.

Due to the closed shells, these grabs are ideal for very fine-grained loads (e.g. fertilizer). Their excellent digging

Different views of the C40VHD.



characteristics, the result of high closing forces due to two vertical cylinders, offer the following results: (C40VHD: A/B = 71kN/15,620 lbf/C = 65kN/14,300 lbf; C60VHD = 102kN/22,440 lbf).



The C40VHD digging sequence.



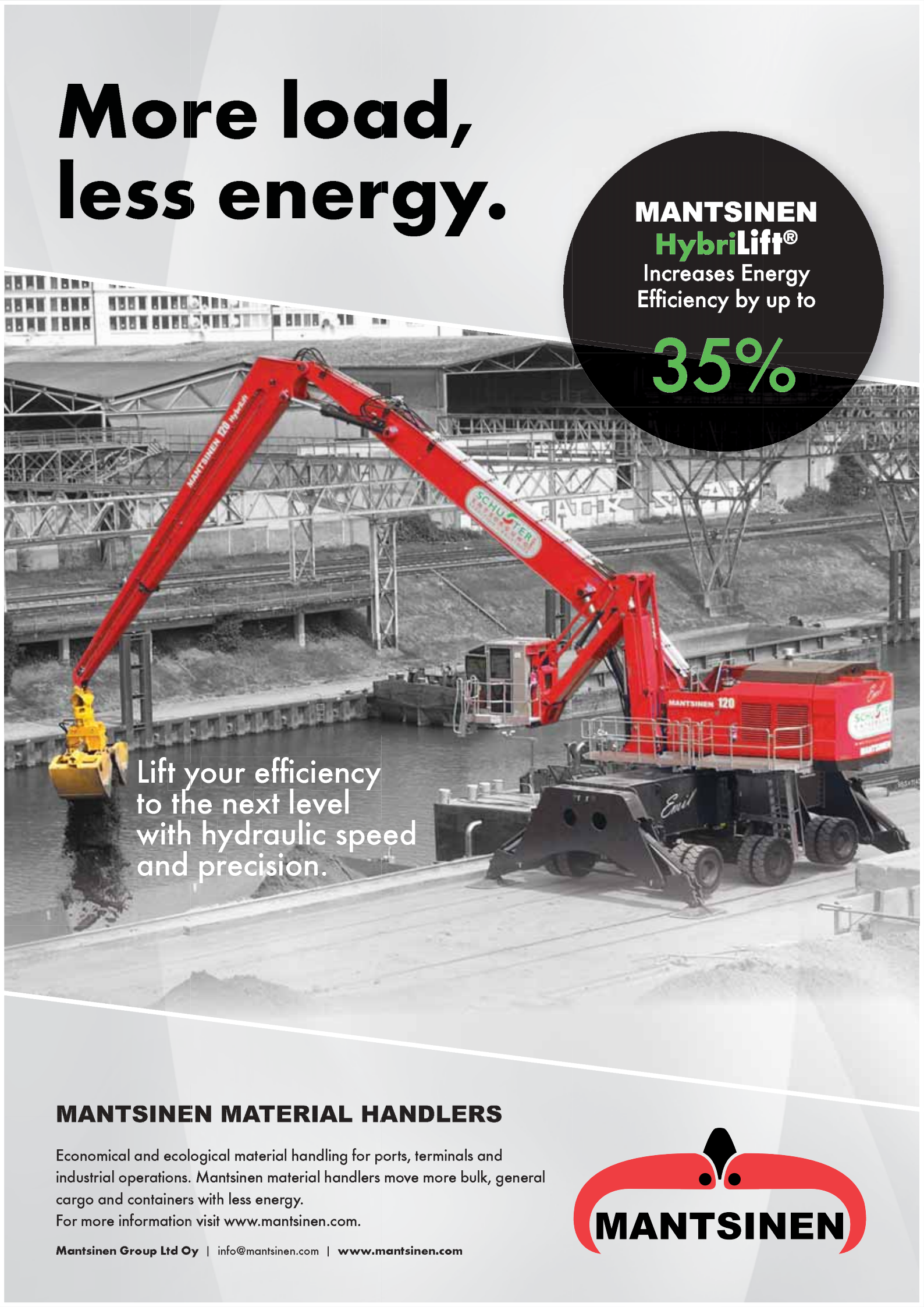
More load, less energy.

MANTSINEN

HybriLift®

Increases Energy
Efficiency by up to

35%



Lift your efficiency
to the next level
with hydraulic speed
and precision.

MANTSINEN MATERIAL HANDLERS

Economical and ecological material handling for ports, terminals and industrial operations. Mantsinen material handlers move more bulk, general cargo and containers with less energy.

For more information visit www.mantsinen.com.

Mantsinen Group Ltd Oy | info@mantsinen.com | www.mantsinen.com



Terex Port Solutions to supply two more floating cranes to the Mississippi

ARTCO EXPANDS FLEET WITH TEREX GOTTWALD CRANES 5 AND 6

American River Transportation Company (ARTCO), a subsidiary of Archer Daniels Midland Company recently selected Terex Port Solutions (TPS) to supply two diesel-electric Terex® Gottwald Model 8 floating cranes in the G HPK 8400 B four-rope-grab variant for professional bulk handling. When the two cranes are delivered in August and September of this year, they will augment ARTCO's existing fleet of four Terex Gottwald floating cranes operating at five different buoy sets in the greater New Orleans area. With a maximum lifting capacity of 100 tonnes each and impressive 63-tonne grab curves, the new cranes are to specifically transship bulk products, including but not limited to fertilizers, salt, steel products and coal, between ocean-going vessels and river barges on the Mississippi. Both cranes will be delivered with pedestals that will be welded on site to the crane barges.

"ARTCO is part of ADM's global logistics network that includes 2,500 barges, more than 27,000 railcars, 600 trucks, 1,300 trailers and more than 50 oceangoing vessels. Our customers on the Mississippi can depend on that network — and our expertise — to move their goods around the world efficiently," says Jason Porter, director of Gulf operations at ARTCO. "These two new floating cranes, with their high handling rates and excellent reliability, will help us enhance our ability to serve our customers. We are pleased to be working again with Terex, a world leader that understands and delivers on our exacting requirements."

Joe Krider, Vice President Supra Region Americas, TPS said: "This repeated ARTCO's decision to purchase additional TPS cranes is a vote of confidence in our mobile harbour crane technology on barges. The order from ARTCO also illustrates once again the success story of Terex Gottwald floating cranes on the Mississippi, whose number will soon increase to a total of 21 machines."

WEIGHING SYSTEM PROVIDES IMPROVED TRANSPARENCY

Terex Gottwald Model 8 floating cranes have a weighing system installed direct on the crane. The system is far more precise than conventional load measuring solutions on cranes. The measuring system accurately records the bulk quantity in the grab during a handling cycle; thus rendering external weighing systems and the associated additional work unnecessary. "Thanks to this innovation, we will be able to offer our customers an even higher level of specificity with regard to the freight quantities handled", says Porter.

ABOUT ADM/ARTCO IN LOUISIANA

ADM's operations in Louisiana involve agricultural processing and transportation and logistics, as the company sources crops and secures energy and transportation needs throughout the state. The company's river operations in the Gulf — managed by ADM subsidiary American River Transportation Company (ARTCO) — include 20 harbour and fleet vessels, a full-service shipyard, a barge washing and repair facility, and stevedoring, crewboat and line handling services. ADM employs more than 650 employees in the south Louisiana port system.

ABOUT ADM

For more than a century, the people of Archer Daniels Midland Company (NYSE:ADM) have transformed crops into products



that serve the vital needs of a growing world. Today, it is one of the world's largest agricultural processors and food ingredient providers, with more than 33,000 employees serving customers in more than 140 countries. With a global value chain that includes more than 460 crop procurement locations, 300 ingredient manufacturing facilities, 40 innovation centres and the world's premier crop transportation network, ADM connects the harvest to the home, making products for food, animal feed, chemical and energy uses.

ABOUT TEREX PORT SOLUTIONS

Terex Port Solutions is part of the Material Handling & Port Solutions business segment of Terex Corporation that supplies customers in ports with a unique combination of machines, software and services under the Terex and Terex Gottwald brands. Whether it is ship-to-shore cranes, reach stackers or fully automated, integrated handling systems for containers and bulk, Terex Port Solutions provides reliable solutions for rapid, safe, efficient handling of all forms of cargo with low downtimes and excellent return on investment.

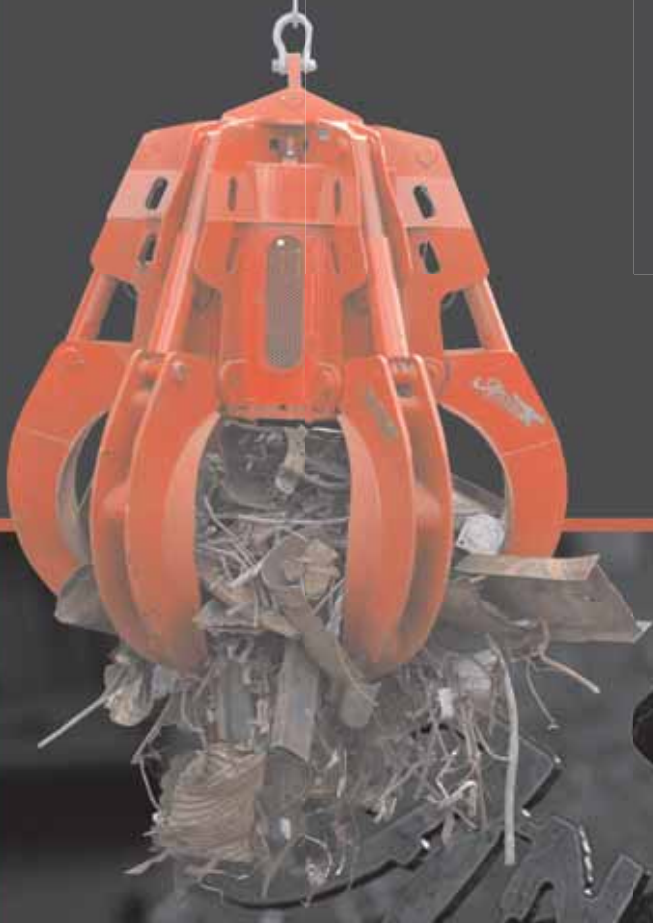
ABOUT TEREX

Terex Corporation is a lifting and material handling solutions company reporting in five business segments: Aerial Work Platforms, Construction, Cranes, Material Handling & Port Solutions and Materials Processing. Terex manufactures a broad range of equipment serving customers in various industries, including the construction, infrastructure, manufacturing, shipping, transportation, refining, energy, utility, quarrying and mining industries. Terex offers financial products and services to assist in the acquisition of Terex equipment through Terex Financial Services.



Rope Grabs

THE LEADER IN DRY CARGO GRABS



Diesel Hydraulic Grapples



Diesel Hydraulic Buckets



Radio Remote Controlled Single Line

Cutting edge rope technologies for heavy lifting applications on barges

TEUFELBERGER's high-performance steel wire ropes are developed specifically to lift extremely heavy loads and have been used successfully for this purpose for decades. High-quality raw materials, innovative technologies, and new manufacturing methods constitute the key to success. However, TEUFELBERGER also delivers fibre rope solutions that are ideally suited to moor big barges.

PROTECT ROPES – INNOVATIVE TECHNOLOGY TO COMBAT CORROSION

Salt water, wind, and climatic influences place extremely high demands on steel wire ropes that are used in and on water. The key factor in this regard is corrosion resistance. Therefore, TEUFELBERGER has focused its development efforts on this specific parameter. In fact, 2015 will see the market debut of its new 'Protect' line, a particularly corrosion-resistant series of steel wire ropes. Evolution TK16 and Evolution TK18 are the known and established non-rotating high-quality steel wire ropes from TEUFELBERGER. For the Offshore segment, these special rope models will now be the first to be launched as featuring the additional, exceptional characteristics of the new Protect technology: characteristics that will also significantly improve rope-based transport capabilities on barges.

'Protect' includes the interaction between a unique zinc/aluminium alloy coating of the individual steel wires and Pro Active Core Lubrication. The latter is special temperature-resistant grease providing significantly enhanced lubricating characteristics. Another indispensable ingredient is the plasticized Plastfill® core.

Protect Ropes offer compelling added value due to their markedly higher resistance to corrosion than conventional galvanized wires. Also, low friction considerably reduces wear within the rope. All these factors plus an excellent lubrication of the core, even in the case of active heave compensation (AHC), increase the lifetime of TEUFELBERGER's high performance steel wire ropes.

EVOLUTION TK16 AND TK18 – TEUFELBERGER'S CLASSIC ROPE MODELS LEAVE A LASTING IMPRESSION

Two technologies in particular make the non-rotating EVOLUTION TK16 and TK18 steel wire ropes so high performing. Firstly, the SUPERFILL® compaction technology, developed in cooperation with universities and independent research institutes, where every strand of the rope is compacted in a special procedure. This considerably improves the characteristics of the rope. Secondly, the plasticized PLASTFILL®

core, where the lubricated steel core is overmoulded with a compact plastic cover.

Building on the developments of our rope specialists, suitable process technology used in manufacturing plays a decisive role in ensuring the quality of high-performance steel wire ropes. In this regard, process reliability is essential and also reveals itself in the form of consistent diameters along great manufactured lengths.

FIBRE ROPES ROUND OUT TEUFELBERGER'S ROPE PORTFOLIO FOR BARGES

In the dry bulk cargo market, TEUFELBERGER ropes are used as a lighter-weight facewire to attach a towboat to a barge or tow of barges. TEUFELBERGER's comprehensive Commercial Marine product line consists of the strongest, most reliable, and durable lines in the industry. The company's ropes are easy to handle, easy to splice, and extremely strong while remaining light in weight. Specifically TEUFELBERGER's Endura 12, its 12-strand HMPE line, is internationally recognized as a safe and efficient towing, mooring, and general purpose line. Endura 12 can be used in place of wire due to its high strength, low weight, and durability.

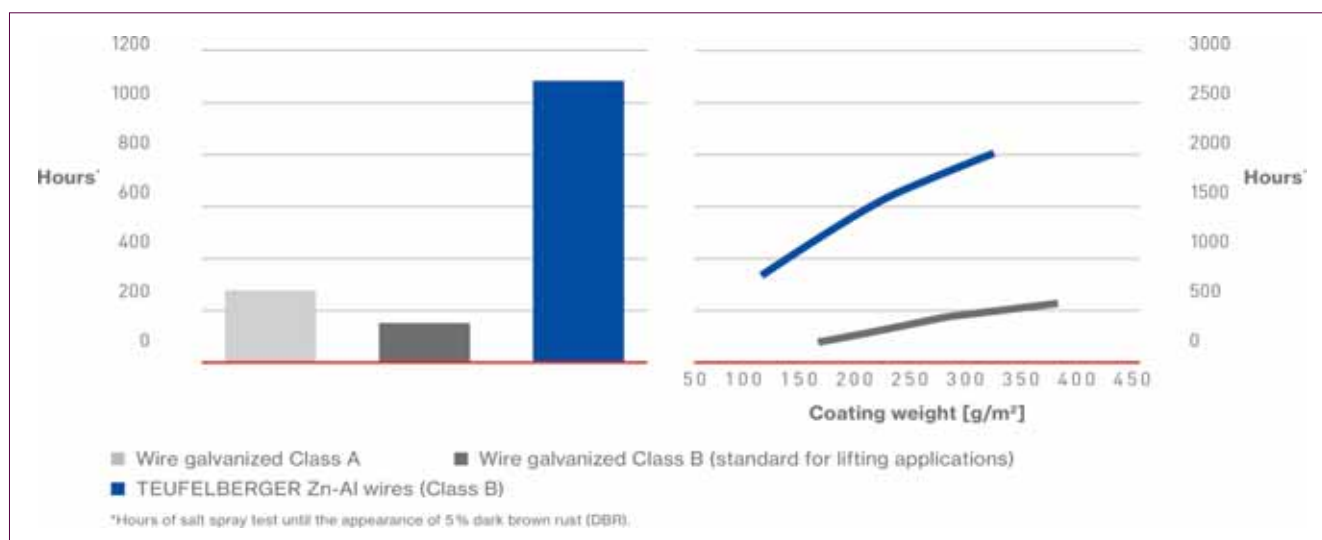
MARKET DEMANDS LARGER ROPE DIAMETERS – TEUFELBERGER EXPANDS

Like the Offshore segment, Heavy Lift applications require high-performance steel wire ropes of increasing thickness and thus weight. Consequently, a demand for additional manufacturing capacities has arisen in the rapidly growing segment of high-performance steel wire ropes, where TEUFELBERGER is one of the globally leading manufacturers. These additional capacities are scheduled to be available by the end of 2016 at a new manufacturing site in Germany.

ABOUT TEUFELBERGER

TEUFELBERGER is a globally successful enterprise specializing in the development and production of ropes. Its wide-ranging product portfolio includes steel wire ropes (e.g. for ropeways and cranes), synthetic fibre ropes (e.g. for occupational safety and marine applications), plastic strapping, and baler twines. In addition to its headquarters at Wels, Austria, TEUFELBERGER operates other manufacturing sites in Austria, the Czech Republic, Thailand, and the US. A close-knit network of distribution partners ensures TEUFELBERGER's worldwide presence. In 2014, its 950 employees generated about €182 million in total revenue, 57% in the EU, 13% in Asia, and 22% in America.

DCi



BECO | GRABS



Technology that grabs you!

- Our program of Grabs:**
- Mechanical clamshell buckets
 - Hydraulic clamshell buckets
 - Electro-hydraulic clamshell buckets
 - Orange Peel grabs
 - Specials (tailor made)



Electro hydraulic clamshell bucket



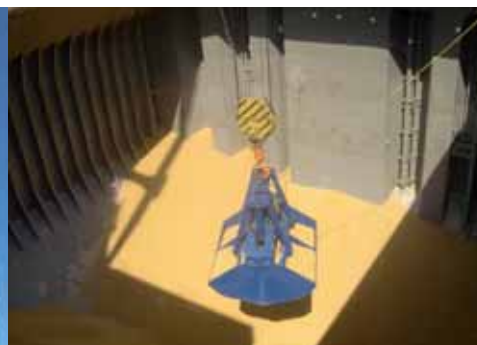
Mechanical one rope clamshell bucket with remote control



Mechanical four rope clamshell bucket



Mechanical one rope clamshell bucket



Electro hydraulic clamshell bucket



Hydraulic clamshell bucket



Hydraulic clamshell bucket with connection piece

BV Beco, De Limiet 18, 4131 NR
Vianen, Netherlands
Telephone +31 (0)347-323100
Fax. +31 (0)347-377780

E-mail: info@beco-vianen.com
Website: www.beco-vianen.com
Facebook: www.facebook.com/beco.vianen
Twitter: www.twitter.com/BecoVianen

ContiTech conveyor belts

conveying excellence



From mines to mineral processing plants: With a wealth of expertise in specialist solutions, the ContiTech Conveyor Belt Group offers a wide range of products for surface and underground mining along the entire value chain. (all pictures: ContiTech)

In mining and in many other industries, conveyor belts and systems by ContiTech offer a winning combination of quality and flexibility. Extensive expertise has made the ContiTech Conveyor Belt Group a leading development partner, manufacturer and system supplier of steel cord and fabric conveyor belts, service materials and special conveyor technology products. As well as offering worldwide installation and servicing, the company has around 8,300 employees working in development and production at 30 locations across the globe, e.g. in Australia, Brazil, Canada, Chile, China, Finland, Germany, Greece, Hungary, Morocco, Mexico, Serbia, Slovakia, South Africa, the United States and Venezuela. As part of the ContiTech division and consequently of Continental corporation, the Conveyor Belt Group benefits from expertise and potential synergies in an extremely wide range of industries.

EXPERTISE IN ALL AREAS OF APPLICATION

With a broad spectrum of conveyor belt products, ContiTech has the right solution for even the most complex of applications. Its comprehensive product portfolio is an excellent solution provider in under- and overground mining and is highly successful, thanks to intensive fundamental research and years of experience with a wide variety of conveyor belts. ContiTech's R&D centres work tirelessly to develop technologies that meet the demands of today and tomorrow.

For customers in a big number of non-mining industries, ContiTech is a single-source supplier with a comprehensive skills portfolio. From conveying and driving to filtering and guarding, its special purpose conveyor belts and solutions for machine and plant engineering perform a variety of tasks in various dimensions, often even simultaneously.





ContiTech follows through every order, from initial planning and consultation to start-up and after-sales service.

As a specialist for conveyor belt systems, ContiTech offers a full service package for original equipment manufacturers and conveyor operators worldwide. Its production and sales sites across the globe strive continuously to improve customer-oriented processes and ensure every business partner continues to receive the same high standard of original equipment, quality and service expertise.

MULTI-FACETED PRODUCT PORTFOLIO FOR FLEXIBLE SOLUTIONS

From mines to mineral processing plants, the ContiTech Conveyor Belt Group has a wealth of expertise in specialist solutions and is consequently able to offer a wide range of products along the entire value chain. Its steel-cable and fabric-reinforced belts allow maximum conveying capacities, even under extreme climatic and topographic conditions. Used above and below ground, processing plants, and in various other industries, their robust construction guarantees high breaking load and good impact resistance. They also undergo only minimal elongation, even over longer distances — all thanks to ContiTech's outstanding material expertise.

One highlight of the product portfolio is the special bulk conveyor range. ContiTech's Flexowell for example, is safe and cost-effective and guarantees efficient steep-angle transportation at up to 90°. A single belt can navigate horizontal as well as vertical routes without difficulty, and customers benefit from short installation times and low-noise, eco-friendly, energy-saving operations. Flexowell also forms the basis of Pocketlift, the vertical conveying solution. Pocketlift is capable of transporting up to 6,000 tonnes of material per hour over a maximum lift height of 700m per single conveyor. It can be modularly stacked

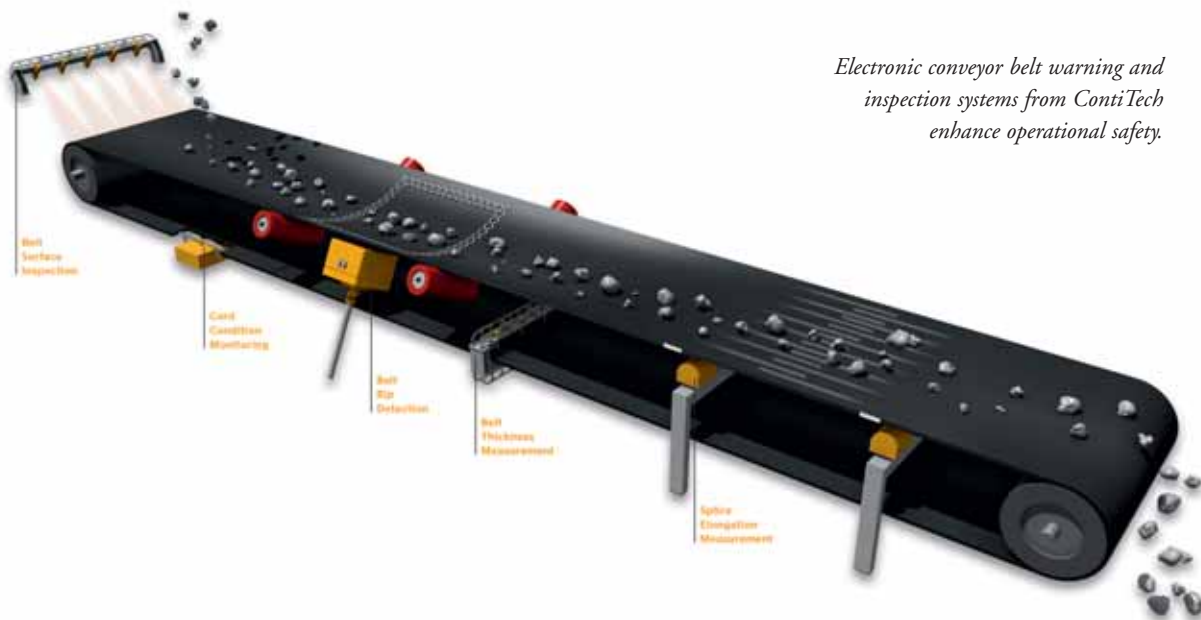
to any height.

The fabric-reinforced rubber pockets can be installed and removed individually, making Pocketlift much more compact than conventional systems, such as skip-hoists. This makes it ideal for handling materials in mining shafts. Pocketlift has been installed and tested successfully, for example at the American White County Coal (WCC) Mine in Carmi, Illinois.

For enhanced safety, ContiTech has developed a series of innovative electronic conveyor belt warning and inspection systems that detect damage early and monitor the condition of conveyor belts. As well as meeting the highest standards, these systems can handle extreme conditions while at the same time guaranteeing a high degree of system security. Conti Protect warning systems, for example, make an important contribution to greater operational safety by preventing major damage to conveyor belt systems and so reducing damage-related idle times. Meanwhile, Conti Inspect systems supply the data required to make reliable service-life prognoses and estimate the ideal point in time for replacement investments more accurately. As well as keeping operating costs down, these systems help to protect the environment.

FOCUS ON SERVICE MATERIALS

As a development and service partner, ContiTech attaches great importance to good service. From initial planning and consultation to start-up and after-sales service, the company follows every order through to completion. Already during the planning phase ContiTech acts as a problem-solver, providing extensive expertise to support the right solution for individual conveying tasks and enabling customers to benefit from tailor-made solutions.



Electronic conveyor belt warning and inspection systems from ContiTech enhance operational safety.

ContiTech offers customers more than just conveyor belts: Service materials, such as pulley laggings, wear protection, repair and splicing materials and adhesives, are also part of the service offering. Over the years, demand for them has increased, and ContiTech's broad product range provides improved, targeted service to meet customers' needs.

Thanks to the extensive range of service materials at its disposal, ContiTech can provide everything required to keep conveyor systems running. The product portfolio comprises service materials for optimum splicing, bonding, repairing and cleaning, as well as wear protection. Top quality ensures a long

and reliable service life and above-average durability.

One of the highlights in the product range is Conti Secur Premium, a single-component adhesive that's safer, simpler and immediately ready to use. Because it does not need to be mixed with an activator, dosing errors are impossible. Conti Secur Premium is suitable for a variety of uses, such as bonding rubber to rubber and rubber to metal, and cold-bonding fabric-ply belts, as with Conti Secur BFA. Another advantage is that, like every ContiTech adhesive over the last 30+ years, Conti Secur Premium contains no trichloroethylene, which will be prohibited throughout the EU from April 2016. **DC**

Mack

Manufacturing Grapples & Buckets

"Quality First"
Since 1942

www.mackmfg.com



7205 Bellingrath Road, P.O. Box 1559, Theodore, Alabama 36590, USA
Fax: +1-251-653-1365

Email: sales@mackmfg.com

Telephone: +1-251-653-9999
Website: www.MackMfg.com

Peak level of performance



The power of advanced technology has developed a new high-quality range of Hitachi construction machinery. ZW-5 wheel loaders offer a peak level of performance, reinforcing their leading reputation for reliability and durability. Designed for the most challenging material handling environments in ports and harbours, the Hitachi ZW180-5 delivers increased productivity at a lower cost of ownership.

HITACHI

Reliable solutions



Hitachi loaders make their mark



Size matters for ZW150-5 in recycling plant

A Dutch recycling company has opted to rent two new Hitachi ZW150-5s as part of a €10million investment programme. Dolphin Metal Separation's new wheel loaders are central to the specialist processing operation at its new plant at Harderwijk in the Netherlands.

Founded in 1992, the firm had the opportunity to move out of its premises and invest in an impressive new facility over the summer of 2014. This enabled it to plan and implement a more efficient way of extracting metal from incinerated household and industrial waste.

The upgraded recycling process started in September and the ZW150-5s were delivered by HCME Domestic, the domestic dealer of Hitachi Construction Machinery (Europe) NV, two months later. The machines were purchased by construction company, Vink — one of the largest contractors in the country — that already had a strong working relationship with Dolphin in place.

Bart Radema, who is responsible for buying Vink's machinery, says, "Dolphin decided to lease the ZW150-5s from Vink, so that it could have fixed equipment costs. The price/quality mix offered by Hitachi was excellent. A DPF filter is also standard on this machine and a mandatory requirement in the recycling plant. It is fuel-efficient and the hydrostatic transmission delivers precise movements, which are also important at this site."

Other aspects of the recycling plant were taken into consideration during the order process. These included a high-dump bucket for loading trucks with the end products, deeper

treads to protect the structure of the tyres, and anti-clogging radiators and a turbo 2 filter to withstand the fine dust in the confined working environment.

Dolphin's owner, Jan Hooiveld, says, "We're very happy with the addition of the two Hitachi wheel loaders. Careful consideration was given to the size of the product best suited to this facility and the ZW150-5 is the perfect fit. There is less distance for the machines to travel at the compact new plant compared to the former factory."

The burnt waste is sourced from incineration plants throughout western and northern Europe, including Germany, The Netherlands, Belgium, France, England, Denmark and Sweden. This contains approximately 2–3% of non-ferrous metals — including aluminium, and heavy metals such as copper, zinc and brass — which Dolphin extracts through a unique separation process.

The first wheel loader works in the hall with the untreated materials, where it loads them into a bunker and stockpiles the different grades from the various suppliers.

The second ZW150-5 is used for loading trucks with the end products: 0-15, 15-35 and 35-80mm of aluminium materials that are delivered into Europe; and 0-12 and 12-80mm of heavy metals that are sold into China and Thailand. The wheel loaders are operated for ten hours per day and they help to process 3,000 tonnes of non-ferrous metals per month.

Please note all modifications were made by the dealer to comply with site safety regulations.



Rugged Energy & Data Transmission Systems

Conductix-Wampfler has one critical mission: To keep your bulk material handling operations running 24 / 7 / 365. You need proven, worry-free energy solutions - and Conductix-Wampfler has them. Our systems provide reliable electric power and water to stacker/reclaimers, barge and ship loaders/unloaders, bulk conveyors, tripper systems, and gantry cranes. Conductix-Wampfler systems are rugged, low maintenance, and time-tested in tough, dusty environments. All products are backed by the largest sales and service network worldwide!

www.conductix.com



Motor Driven Reels

- Monospiral and Level-Wind configurations
- Rugged and dependable magnetic coupler for dusty environments



Cable Festoon

- Corrosion-resistant, long-life rollers; precision sealed bearings
- Systems customized for the application
- Preassembled option, for easy installation



Cable Chain

- Rugged design for demanding environments
- Long operating life
- Custom-configured



DELACHAUX GROUP

Hitachi unveils hybrid wheel loader at Intermat

Hitachi Construction Machinery Co., Ltd. (HCM) unveiled its first mass production hybrid wheel loader at the Intermat exhibition in Paris. The innovative new ZW220HYB-5 Hybrid was designed and constructed at HCM's wheel loader factory at Ryugasaki in Japan.

It has been developed as part of HCM's quest to manufacture an eco-friendly product, which will use significantly less fuel than it did in 2010. This is in response to the world's focus on protecting the environment and as a result of increasingly strict emission regulations.

The ZW220HYB-5 incorporates 100% proven Hitachi group technology from the bullet train and EH-series dump trucks, which has been specially developed for the hybrid wheel loader.

To achieve this, the ZW220HYB-5's four-cylinder engine powers a generator, which produces energy to drive two electric travel motors. When the machine is rolling or braking, it continues to store electricity in a capacitor. Under acceleration,



machine to travel downhill at a constant speed.

This environmentally friendly product is less noisy: 5dB(A) less in the cab, which makes the working environment more comfortable for the operator; and 2dB(A) less outside.

The ZW220HYB-5 is easier to operate. Using travel motors rather than the conventional transmission, there are no jolts when digging or climbing uphill. In addition, the drive and hydraulic systems are independent, which delivers a higher level of performance.

The hybrid wheel loader has been tested extensively by HCM's customers at quarrying and waste handling sites in Japan. The feedback has been extremely positive. This has helped the development team to successfully fine-tune the ZW220HYB-5 before introducing it to the Japanese market.

"HCM is constantly focused on enhanced customer satisfaction by developing the latest advanced technology," says Hitachi Construction Machinery (Europe) NV's Wheel Loader Product Specialist, Vasilis

Drougkas. "Customers demand a high level of performance, reduced fuel consumption and a low cost of ownership — this is the challenge for the future development of Hitachi wheel loaders."



it uses energy by the generator and the capacitor, and so less revs are required when it reaches normal travel speed.

The control units are the key to the electrical power process and engine operation. For example, when lifting and loading automatically the engine's RPMs increase in relation to the load — and there is no need to use the accelerator pedal.

There are four main benefits of the hybrid system: reduced fuel consumption; enhanced reliability and safety; less noise; and easy operation. The ZW220HYB-5's hybrid system will improve fuel efficiency by up to 26% compared to the previous conventional ZW220 wheel loader. This reduces the running costs — and yet delivers the same level of performance.

The lifetime cost of the hybrid wheel loader is also reduced thanks to less maintenance that is required for the generator, travel motors and service brakes. Safety has been enhanced by the auto-braking system that enables the





www.orts-grabs.de

Orts GmbH Maschinenfabrik • Schwartauer Str. 99
23611 Seretz • Germany

Tel: +49 451 398 850 • Fax: +49 451 392 374
Email: sigvard.orts-jun@orts-gmbh.de



ORTS GmbH



Hitachi excavators offer reliable support on tough Senegalese project



A diverse fleet of Hitachi excavators is being utilized by Razel-Bec on a 90.5km canalization project in Senegal, West Africa. The French company is benefitting from the reliability of the machines in a country known for its tropical climate and testing terrain.

With over 60 years of construction, civil engineering and land reclamation experience on the continent, Razel employs 1,500 people in a variety of countries, such as Cameroon, Ivory Coast and Benin. It has deployed around 500 employees to a site on the Senegal River Delta with the key task of increasing rice-growing opportunities in the area.

To achieve this, Razel is leading a project — in partnership with Sogea Satom — to excavate new canals and rehabilitate existing ones. The demanding project involves the movement of five million cubic metres of earth to ensure that a main 40km canal is capable of taking dirty water away from the delta to the Atlantic Ocean.

Due to the challenging environment, Razel chose a wide range

of standard, super long front and amphibious Hitachi excavators to complete the assignment, including three ZX240LC-3s and two ZX280LC-5s. It is also making use of a ZW310 wheel loader. These have been supplied by local Hitachi dealer DEM Senegal, part of the DEM Group.

“All of our Hitachi Zaxis excavators have extra-wide tracks, because the ground is so soft that the tracks would sink into the ground and the condition of the track chains could deteriorate as a result,” explains Kristen Petillon, Razel’s Fleet Equipment Manager. “The 800mm and 900mm tracks are an efficient solution to reduce the ground pressure and ensure that the machines don’t get stuck.”

In addition to the logistical effort required to ensure the machines are maintained and fuelled correctly, the dusty terrain has also been testing. However, this issue has been resolved by the use of high-quality grease.

“We have found the Hitachi base machines to be extremely reliable,” Kristen continues, “The standard excavators have 98%

availability and we are satisfied with the level of productivity. The main advantage of Hitachi machines is better fuel consumption, which makes a huge difference in saving costs.”

Owing to the remote location and other factors, the benefit of after-sales care has also been vital to Razel. “The main aspects (of after-sales support) are the availability of spare parts, support service and technical expertise,” adds Kristen. “We have to focus on service, especially in Africa, and we are happy that the standard Hitachi Zaxis excavators are working so reliably.” **DCi**



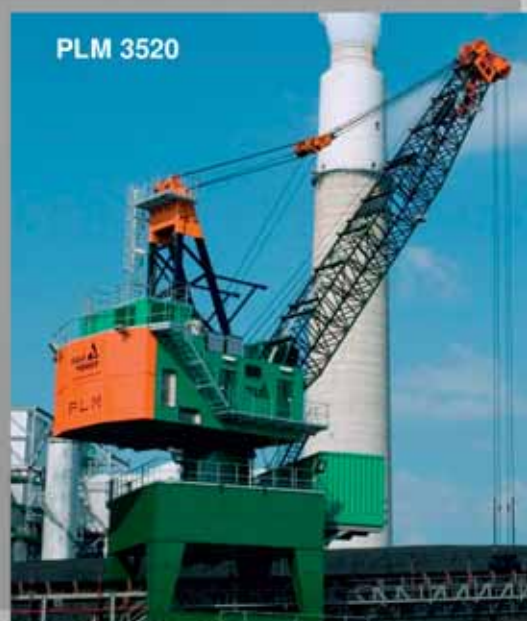


- Shipboard cranes
- Mobile cranes
- Harbour cranes
- Trolley cranes
- Bucket wheel unloaders
- Pontoons
- Dredging
- Bulk handling
- Hoisting
- Pile-driving.
- Diesel-Hydraulic
- Electric-Hydraulic
- Electric
- Capacity up to 4000 ton/hour



PLM Cranes B.V.
Sluisweg 21-25
4794 SW Heijningen
The Netherlands

T: +31 (0)167 - 528 510
F: +31 (0)167 - 524 444
E: info@plmcranes.com
W: www.plmcranes.com





Keeping it clean



CleanScrape forms a three-dimensional curve beneath the discharge area that conforms to the pulley's shape.

Martin Engineering becomes sole distributor of CleanScrape belt cleaners

A renowned belt conveyor technology specialist has become the sole distributor of the acclaimed CleanScrape Cleaner. Martin Engineering GmbH has taken exclusive responsibility for sales in all of Europe as well as in Russia, North Africa and the Middle East. The innovative belt cleaning system received the Australian Bulk Handling Award in the 'Innovative Technology' category in 2013 for its design and potential benefits, which include low belt wear, extended service life, reduced maintenance and improved safety, ultimately delivering lower cost of ownership. It has been proving itself in a wide range of applications, such as mining, coal handling, quarrying, cement, scrap and other material bulk handling operations.

Unlike conventional belt cleaners that are mounted at a 90° angle to the belt, the CleanScrape cleaner is installed diagonally across the discharge pulley, forming a three-dimensional curve beneath the discharge area that conforms to the pulley's shape. The unique design incorporates a matrix of tungsten carbide scrapers and is tensioned lightly against the belt to prevent damage to the belt or splices. Despite extremely low contact pressure between belt and cleaner, it has been shown to remove as much as 95% of potential carryback material. The novel approach has been so effective that in many operations,

previously crucial secondary belt cleaners have become unnecessary, saving further on belt cleaning costs and maintenance time.

The CleanScrape Cleaner protects the belt with its specific application of low force and is ideally suited for both slow and fast conveyor belts, including those with mechanical splices. With its compact size, the design is an excellent solution for areas with restricted space. It can be located either inside or outside of the transfer chute, and the straightforward installation typically requires less than two hours.

CleanScrape cleaners are generally sold in three sizes: S, M, and L, which cover drum diameters from 270mm to 1,250mm (10.6" to 49.2") and belt widths from 300mm to 2,800mm (11.8" to 110.2"). Each size is available in four different carbide metal grades to suit specific materials and belt structures, one of which is a carbide formulation developed for use on mechanically spliced belts. The supporting components of the assembly can be specified in regular steel or in stainless for specialized applications.

All of the CleanScrape cleaner designs are certified by ATEX and can be used in underground mining. In addition to the pre-assembled belt cleaners that are ready for installation, the units

can also be supplied in coiled lengths of 12.4 metres (40.68 feet), allowing users to cut to length as needed. Necessary equipment and accessories, such as chains or steel cables, can also be obtained from Martin Engineering by the metre.

“Both companies saw the value in collaboration, partly because of the technology, but also because of the similar company cultures,” said Michael Hengl, managing director for Martin Engineering Europe. “Our business models are based on comparable values, innovative solutions and quick internal decision-making. The CleanScrape Cleaner represents an entirely new dimension in belt cleaning, and we’re so confident in its performance that we provide a money-back satisfaction guarantee.”

CleanScrape GmbH was founded in 2014 to supply and further develop conveyor belt cleaning technology. The business emerged from the company IBS Industriemaschinen-Bergbau-Service GmbH, which has been active for more than 30 years in mining, tunnel construction and conveyor technology. IBS and CleanScrape are a part of Schmittgruppe, a fourth-generation, family-run business with headquarters in the northern Bavarian town of Bischofsheim an der Rhön.

The group operates as a supplier for the automotive, aviation and power generation industries, mining and tunnel construction, the bulk materials industry and other sectors. With around 220 employees, the business group has a branch in Poland, as well as



Unlike conventional cleaners mounted perpendicular to belt travel, the unique CleanScrape design addresses the belt diagonally.

partnerships with distribution companies and service firms worldwide. The company is certified according to DIN EN ISO 9001:2008.

Martin Engineering was founded in 1944, and has grown to become renowned worldwide for its expertise in making bulk materials handling cleaner, safer and more productive. The company supplies conveyor products and material flow aids around the world for a wide variety of bulk material applications, including mining and coal handling, quarrying, cement, rock/aggregate, biomass, grain and other materials. The firm is headquartered in Neponset, IL (USA), offering manufacturing, sales and service from factory-owned business units in Brazil, China, France, Germany, Indonesia, Mexico, South Africa, Turkey, India and the UK, and under exclusive licence with ESS Australia. The European Headquarters was founded in 1987 as Martin Engineering GmbH and is based in Walluf, Germany, near Wiesbaden.

DC

Stevenel Pro-Loading

Enhance Your Port operations with fully/semi-automated attachments!

Stevenel for

- pulp units
- sawn timber, plywood, chipboard
- paper reels, big bags
- steel bars
- dry bulk, etc....

Head Office:

Stevenel Oy, Juhlatalonkatu 6 C 45
FIN-33100 Tampere, Finland
Tel. +358 40 5037 616
Fax +358 3 2225 339
stevenel@stevenel.com

www.stevenel.com



Engineering consultants



Port material handling and storage facilities for 90,000 tonnes of bulk product.

Cost-effective design for bulk terminals

Ausenco has built a reputation on the delivery of innovative and cost-effective project solutions for mining clients, a philosophy that is carried through to its work in the transportation and bulk terminal market," writes Joel G. Shirriff, P.Eng., GM Optimization & BD, North America, Global Practice Lead, Terminals & Transportation. Ausenco brings value to all its clients' projects, from the concept development phase through to engineering, procurement and construction management (EPCM), commissioning and operations.

It should come as no surprise that the demand for new bulk shipping terminal capacity is closely tied to the development of new mining and mineral projects. Challenging commodity markets are not only driving a need to reduce costs at the mine sites, but also for the outbound logistics and terminal infrastructure required for these projects. Whether the project requires a new greenfield terminal or the upgrading of an existing facility to take on another product stream, customers expect results with minimal capital outlay to help maintain project feasibility, while sustaining high levels of operational efficiency, environmental sensitivity and safety.

A recent example of Ausenco's value-add philosophy in action is its delivery of the rail and port solution for TiZir's Grande Côte Mineral Sands Project in Dakar, Senegal. On 30 June this year, this project won the 'Premier Transport Project of The Year' category at the 8th African Transport Awards. Ausenco's project scope included two main components: rehabilitation of the railway from the mine to Dakar: rebuilding 100km of existing railway and construction of 25km of new railway; and construction of a new storage and shiploading facility in the Port of Dakar. Ausenco collaborated with Tizir to fully understand its

needs in the development of terminal concepts, and worked with a number of equipment vendors to incorporate their specialized products into a customized solution that would not only work in the tough African environment, but offer a cost-effective means of moving their product to market efficiently and safely.

The port component of the work presented two main challenges: making use of an existing brownfield site with limited access for train receiving and storage, and loading bulk carriers with product at an existing wharf shared with other general cargo users. Because Ausenco offered its client a holistic transportation solution, it was able to optimize the train configurations in combination with how they could best be managed at the port. The customized bottom dump wagons are discharged at the port using a special 'low profile' belt feeder system to minimize excavation on site. This mineral sands cargo is both valuable and water sensitive, and needed to be stored in an enclosed building. Using its global procurement team, Ausenco sourced a very reasonably priced pre-fabricated steel building from a vendor in Egypt, which was shipped in modular sections to ease erection requirements on site. Often, covered storage systems incorporate an overhead conveyor to drop cargo to the floor, but in this case Ausenco strategically opted for dual radial stackers along the wall of the building to reduce the structural loads on the building and provide redundancy in the equipment.

Reclaim of product from the building is done with front end loaders into fixed hoppers that feed onto a common belt conveyor. As the storage site is remote from the loading berth, a pipe conveyor is employed to negotiate the multiple obstructions posed by existing infrastructure. Not only did this

concept with its combination of horizontal and vertical curves reduce the number of separate conveyors and transfers employed along the route, it provided an enclosed system to minimize the potential for spillage and dust. The need to share the berth with other port users requires a mobile shiploader to be used, and the pipe conveyor discharges to a series of portable grasshopper conveyors that, in turn, feed a self-propelled shiploader on rubber tyres that includes shuttling and luffing functions on the boom to load Handysize ships at 1,200tph (tonnes per hour). Once loading is complete, the machines are moved into a secure storage area to free up the dock.

This project presented intriguing design challenges, as well as a range of challenges in project delivery and execution due to brownfield conditions in an existing congested African port, with a scarcity of skilled trades in the region. Maximizing modular construction and pre-assembled materials handling equipment was a critical element in both minimizing the capital costs, and simplifying the site works and the labour requirements to complete the installation. Ausenco managed a number of different local and international contractors during the project implementation, and completed the project with zero lost time accidents on more than three million man-hours of work. This impressive accomplishment was due to good planning during the early design of the project, and good management of the site activities which included the training and engagement of the workforce to take ownership of Ausenco's 'Zero Harm' philosophies.

One of the key recurring elements to Ausenco's success is client engagement, and truly understanding their needs and learning what 'keeps them up at night'. In bulk terminal development, there is no 'one size fits all' arrangement, and what

works for one operation may not necessarily work for another. Each project has its own specific drivers ranging from commodity type, geographic location, constructibility, project life, levels of automation, and maintenance expectations. Ausenco strives to not only provide a cost-effective design for its clients' initial investment, but also to minimize the total cost of ownership seen over the project life cycle. Customizing the terminal design to meet all these needs is vital to deliver the desired results.

At Ausenco, staff are proud to provide ingenious solutions for the company's global clients in the bulk terminals sector.

ABOUT AUSENCO

Ausenco is a global, diversified engineering, construction and project management company providing services in Minerals & Metals, Process Infrastructure, Environment & Sustainability, and Oil & Gas. The company delivers new and better ways to add value to clients' projects no matter how demanding and it delivers results in some of the world's most challenging environments. Listed on the ASX in 2006, Ausenco's growth strategy is focused on sector, solution and geographic expansion. The company operates from 31 offices in 19 countries.

ABOUT TiZIR

TiZir Limited is a vertically integrated zircon and titanium business which owns the Grande Côte Mineral Sands Project in Senegal and the TiZir Titanium and Iron Ilmenite Upgrading Facility in Norway. The company is jointly owned 50/50 by Mineral Deposits of Australia and Eramet of France. TiZir benefits from Eramet's broad expertise in mining, metallurgy, logistics, R&D and marketing, and from Mineral Deposits' development expertise and mineral sands mining experience.

CIMBRIA MODUFLEX

CIMBRIA.COM

DUST FREE LOADING SOLUTIONS CLEAN ENVIRONMENT AND WORKING SAFETY IN ONE PRODUCT

CIMBRIA MODUFLEX

loading chutes for loading any dry bulk material into tanker trucks, open trucks, rail wagons, ships and for stock piling. The loading chutes can be supplied both with and without integrated filter and with full ATEX-approval.

CIMBRIA BULK EQUIPMENT A/S

Industrivej Syd 1a | 7400 Herning | DENMARK
Phone: +45 72 42 24 00 | cbe@cimbria.com

It's all in the planning: BMT Consultants India



Continuing voracious demand for mined materials in China, India, and other developing nations, has led to an associated requirement for increased bulk terminal capacity for both export by suppliers and import by users. Whether developing an existing facility or building from scratch it is imperative that any scheme is planned in advance from engineering, commercial and operational perspectives in order to deliver maximum value to the customer. *Rajan Narayan, Technical Director at BMT Consultants India, a subsidiary of BMT Group, provides an overview of current themes in the market.*

Despite a dip in demand in early 2015, China remains the world's top coal consumer, accounting for almost a quarter of the global trade and importing 291.2mt (million tonnes) in 2014. Coal shipments to India, the world's third-largest importer, rose 19% to 210.6mt in 2014 driven by demand from the energy sector. Despite having access to locally mined coal or iron ore, demand for better quality materials from abroad, either to reduce emissions, improve heat rates or for use in higher specification manufacturing processes, will continue to increase the volumes of bulk materials being transported.

Considering the huge quantities involved, the consistency of demand and the pressure on price, sea-transport is the most commercially viable mode of transport. Furthermore, pressure on road and rail systems and the growing awareness of environmental factors makes sea transport ethically acceptable too. Perhaps it is not surprising that more than 90% of the country's coal imports are seaborne, according to the China National Coal Association.

Developing countries in Africa and South-East Asia with access

to coal, iron ore and other raw materials are responding to this demand by investing in bulk shipping terminals and the necessary infrastructure required to support them. Finance for these terminals is being provided by both governments and private organizations: government-financed terminals tend to be developed to support and promote the needs of local or regional business while privately backed facilities are predominantly used for the owners' sole benefit.

BMT is supporting the development of these facilities by providing professional support to clients throughout the life-cycle of a project from initial concept, through master planning, assisting the client in demonstrating the robustness of their business plan as part of securing funding, obtaining the necessary permissions to proceed and adding value as part of the peer review of detailed design. Early involvement in itself can add value for the client as it negates the risk of issues coming to light later in the process leading to a redesign.

The planning process for developing an existing facility or building from scratch will involve identifying the best compromise between whole-life cost and operational efficiency and flexibility. In order to make an informed decision it is important to fully understand all the factors that will impact on the design and specification of a bulk terminal. A prime example of this involves the possible provision of a breakwater or other sea-defences to provide protection against bad-weather during ship unloading. A larger, more expensive breakwater will provide a wider working window for loading or unloading; however a smaller breakwater might be more cost-effective over the life of the project depending on the prevailing weather conditions and historical



RTA Alesa

The market's choice

From port to pot

At RTA Alesa we deliver fully integrated materials handling solutions that will optimise your processes and performance.

www.rta-alesa.com

Switzerland

T +41 44 435 33 33
Info-RTA-Alesa-ch@riotinto.com

France

T +33 4 42 65 21 48
Info-RTA-Alesa-fr@riotinto.com

Canada

T +1 514 937 9105
Info-RTA-Alesa-ca@riotinto.com

Australia

T +61 3 97 69 26 46
sales@birrus.com.au

Rio Tinto Alcan

frequency of storms, the types of vessels using the facility and the cost of non-productive time of dockworkers and uploading plant waiting for bad weather to pass.

Another key issue that must be considered in a wider context is the size of vessel that will visit that facility. The unit cost of transporting coal or iron ore by Panamax can be as much as 50% more than by Capesize so consequently ship size must be taken into account, from both commercial and engineering perspectives. Larger vessels including Very Large Ore Carriers/Ultra Large Ore Carriers may be more cost-effective purely in terms of direct unit cost, but ancillary costs such as the potential requirement for tugs, pilotage and maintenance dredging must be taken into account.

For clients generating power, or producing products such as steel, a key requirement is ensuring a sufficient supply of raw materials to keep the plant running in any situation short of force majeure. These heavy industries require large quantities of power, fuel and raw materials and cannot easily shut-down if supply is interrupted. Consequently, suitable consideration needs to be given to providing suitably large stockyards to hold raw materials for an agreed number of days of production without resupply. Furthermore, the material handling facilities from dockside to stockyard and then stockyard to factory or power-station must be specified to deliver both suitable capacity and reliability in line with operational requirements. It's not uncommon to see up to 12,000tph (tonnes per hour) of bulk material moved in the terminal environment so material handling equipment must be fit for purpose with suitable redundancy built-in.

Additional storage space and material handling equipment with high availability will have a commercial implication so part of the planning process will inevitably involve cost benefit analyses within the operational parameters to demonstrate best value to



the client. Global demand for material handling equipment is projected to increase 5% annually by 2018 to \$142 billion providing a buoyant market that is enable manufacturers of materials handling equipment to invest in new technology. While use of automated storage and retrieval systems and automated guided vehicles is already seeing strong growth in the US and Australia, lower levels of technology are still likely to be deployed in Africa, India and China over the next few years.

In order to develop the most effective, efficient and commercially sustainable bulk terminal, initial planning must develop design parameters based on the client's budget, commercial and operational requirements as well as the physical and environmental constraints inherent in the site. By developing a homogeneous design philosophy, ideally with early involvement from the planning and design teams, it is possible to develop a facility that optimizes utilization as far as reasonably possible while minimizing the risk of demurrage, double-handling of materials and delays.



CH2M: global engineering company specialized in bulk terminals

CH2M is an international company that provides engineering services, operations, and management of large projects to public and private clients globally. It is a world leader in environmental projects, and one of the ten largest companies involved in Engineering & Management Programmes in the US. With revenues of more than US\$6,100 million in 2014, CH2M has more than 200 offices in 80 countries and currently has more than 25,000 global



employees, who have the 80% ownership of the shares of the company. CH2M is characterized by the development of highly complex projects in engineering and construction management, in areas such as transport infrastructure, water, oil & gas, mining, manufacturing and pharmaceutical, power generation and environment. It has several awards in the US as one of the leading engineering companies, one of the 50 best companies to work, and for his work in relation to environmental protection.

CH2M is at the forefront of planning, designing, and managing construction of new and existing bulk terminals to meet the ever-increasing demand and latest technological developments in bulk solids handling, processing and storage. It provides the highest technical quality services to support the rapid growth of bulk cargo worldwide. The company has successfully delivered projects around the world to handle this increased traffic, and have been responsible for the planning, engineering design and construction supervision of many of the most world's technically advanced bulk handling operations.

CH2M has the ability to offer services across over the complete programme cycle from initial concepts to construction management. It offers a full programme management service using world class suite of tools in the business. Should the client wish to undertake programme management services 'in-house' CH2M can provide additional support as required. The company's economists prepare detailed financial models to help clients with their business cases and its engineers create concept layouts, preliminary design, and detailed engineering design. CH2M also has experience in using various contract models and can package bid documents as desired by clients, be following its CSI-based typical standards and methodology or client-specific forms.

WHAT CH2M DOES

CH2M offers many services in the bulk terminals market and many of its clients engage it from the initial drawing board ideas through to full construction management and operation. Some of the stages in a typical programme consist of the following:

- ❖ feasibility and economic studies;
- ❖ environmental studies and services;

- ❖ terminal planning;
- ❖ concept and preliminary design services;
- ❖ contract strategy and selection of contract type;
- ❖ preparation of cost estimates;
- ❖ preparation of bid documents;
- ❖ assistance during bid negotiations and bid evaluation;
- ❖ detailed design services;
- ❖ construction management;
- ❖ programme management;
- ❖ construction engineering support;
- ❖ project closeout; and
- ❖ assistance during maintenance and commissioning.

Bulk terminals are unique items of infrastructure even within the realm of the ports and maritime sector. It requires special knowledge and expertise. Some of the key skills and services include:

Terminal planning and design: CH2M combines the operator's perspective with technical expertise in bulk materials handling systems planning, and design resulting in a technically superior design that is operator friendly. CH2M works with clients to minimize investment and operational costs while maximizing the throughput capacity of the system. Retrofit of existing facilities is becoming increasingly high on the agenda to allow terminals to grow in the future.

Dredging, reclamation, and breakwater: CH2M has extensive experience in specifying dredging in all types of materials from soft silts to hard rock, and have knowledge of many different types of dredger and dredging techniques. Many dredging projects undertaken in the past have also involved reclamation to form the new base for construction of ports and other structures, and CH2M has significant expertise in the design and construction of reclamation schemes. It also can design for a range of coastal schemes, including use of different structural forms/ layouts to suit different geophysical and hydrodynamic conditions, based on mathematical modelling.

Shipping studies: CH2M's engineers are adept in performing traffic simulation for single ports or for network of routes; assessment of shipping route reliability, potential for delay, and effect of other traffic; maritime safety and risk studies; hazard

assessments (threat, probability, consequence, mitigation measures); evaluation of berth utilization/throughput; and navigation restrictions.

Navigation simulation: CH2M has directed navigation manoeuvring simulations for approach channels and turning/berth basins for USA Gulf Coast and Middle East LNG terminals. The models were equipped to reflect the presentation the mariner would expect to see on the ship's radar and bridge, and the simulations were performed using up to 250,000m³-capacity LNG carriers. Ship assist tugs were included in the models.

Mathematical modelling: Numerical modelling of the coastal and maritime environment plays an important part in port design. CH2M has a longstanding international track record for success in applying advanced modelling techniques to investigate wave transformation and agitation, sediment transport, current regimes, and hydrodynamic flows.

Berth design: CH2M's staff possesses static and dynamic mooring analysis capabilities to determine passing ship effects. The company is experienced in layout and selection of fendering and mooring points to suit vessels' dimensions, and expected berthing and mooring techniques. CH2M understands and takes into consideration different structural forms to suit different duties and conditions. Its staff can assist in the design of jetty furniture and local infrastructure as well as the layout of access trestles, loading platforms, mooring and breasting dolphins, catwalks, as topsides facilities.

Bulk materials handling equipment: Operators need to handle bulk products in a flawless and reliable system in order to minimize operative issues and handling costs. CH2M's experience in study, concept design, cost estimate, sizing, detailed design, performance specification and procurement, delivery, assembly, installation, testing and commissioning support of state-of-the-art bulk handling systems including belt conveyors, belt feeders, vibratory feeders, hoppers, silos, shiploaders, ship-unloaders stackers, reclaimers, screening systems, crushing systems, railcar or trucks loading or unloading systems, dust collection or suppression systems, allows to support clients in all aspects of bulk handling equipment specification procurement and upgrade.

Bulk storage: CH2M offers large experience in the study, concept design, cost estimate, detailed design and supervision of construction for many different types of storage solutions, ranging from simple open stockyards to covered storages, vertical silos and others. This includes the logistics analysis for the definition of the required stockyard sizing, the study for the identification of the storage typology that best fits to the project requirements, optimization of available land utilization, stored

product flow analysis, technology selection for the stacking or reclaiming equipment. CH2M develops this kind of service with its own professionals and specialists or in some specific cases with world class specialized consultants.

Dock equipment: Operators need to unload and load vessels in the shortest possible time in order to minimize the ship's time in port and the associated costs. CH2M's experience in performance specification and procurement, delivery, assembly, installation, testing and commissioning support of mobile and stationary shiploaders and mobile, stationary, continuous or grab-type ship unloaders, allows to support clients in all aspects of Bulk handling equipment specification procurement and upgrade.

Logistics integration: bulk terminals are often associated to other land transportation infrastructures as a component of a larger logistic system. Handled products are often received or dispatched by railroad or regular trucks. CH2M can provide an integrated engineering package including railroads, railcars handling and storage infrastructure, railcars loading or unloading systems, roads, truck parking yards, trucks loading or unloading facilities and others.

Support structures and facilities: CH2M can deliver a complete multidisciplinary terminal engineering package covering all required support structures and facilities design, including earthworks, dredging, marine structures, roads and railroads design, foundations engineering, conveyor galleries and transfer towers structural engineering, architectural design, landscaping, electrical power distribution, fire protection, CCTV, access control, instrumentation and control systems, utilities generation and distribution, drainage collection and treatment and others.

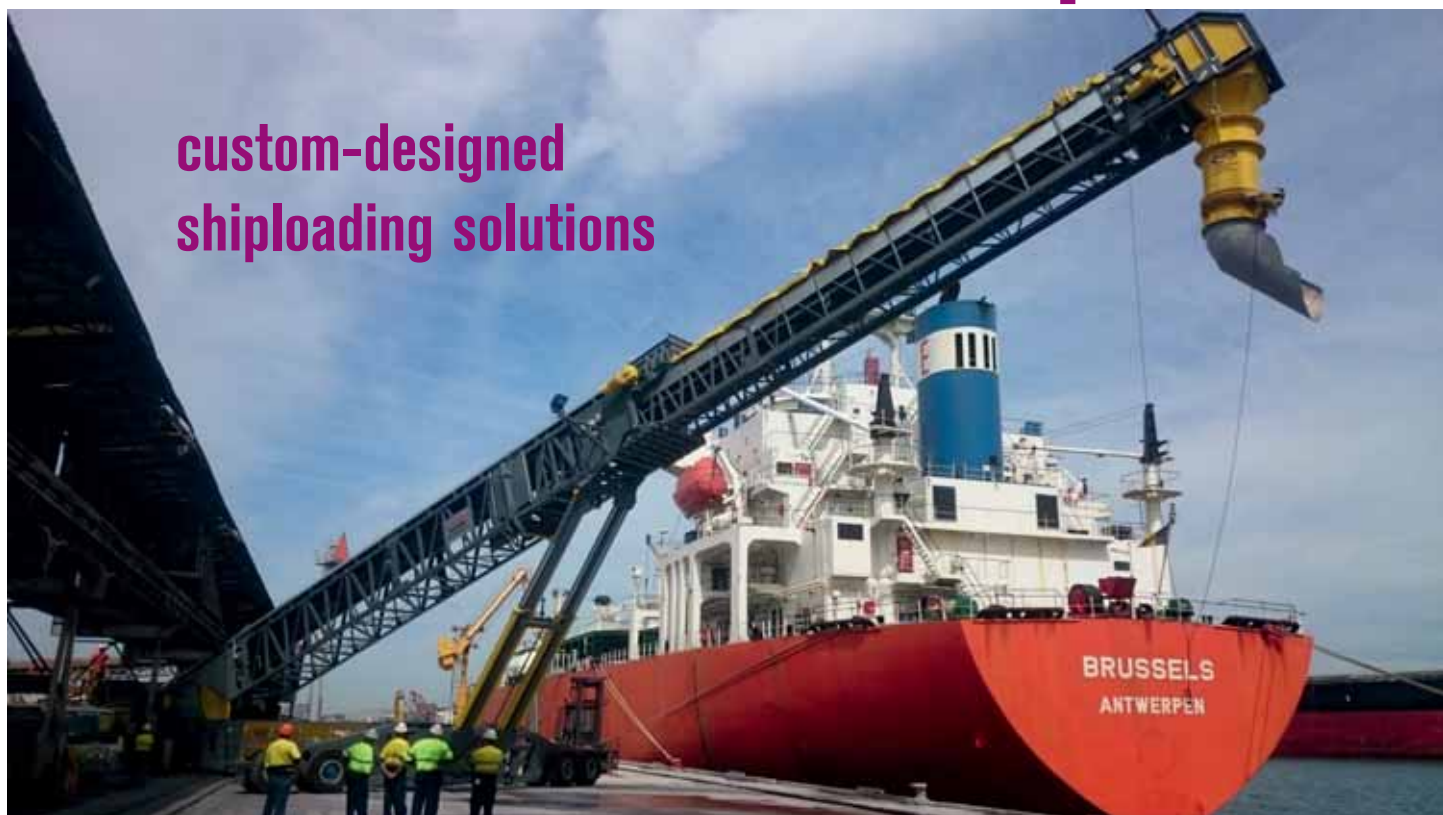
REFERENCE PROJECTS

- ❖ **KSPC/PCT Potash Handling Facilities** – FEL and EPCM brownfield project for a 2.2mtpa (million tonnes per annum) capacity potash export system integrated with PCT's existing sulphur, glycol and canola handling infrastructure located in Port Moody, BC, Canada.
- ❖ **gowest project – voestalpine** – EPCM greenfield for a 2mtpa capacity hot briquetted iron production facility located in La Quinta, TX, USA.
- ❖ **confidential project and client** – owner's engineering service for a coal fired power plant unloading berth, storage and handling system located in Thailand.
- ❖ **Potasio Río Colorado – Vale** – conceptual, basic and detailed engineering for the development of a 4.3mtpa potash export sea port and compaction plant operation located in Bahía Blanca, Argentina.
- ❖ **confidential project and client** – feasibility study for a granular urea handling and shiploading trough for an existing sulphur handling system located in the United Arab Emirates.
- ❖ **Renova Soybean oilseeds crushing plant** – conceptual and basic engineering and EPCM for a complete soybean oilseed crushing plant of 6mtpa located in Timbues, Argentina.
- ❖ **Corumbá – Vale** – Conceptual engineering for the development of tree river ports and a railroad loading facility located in Brazil and a sea port located on Uruguay. These four installations compose different technical alternatives for the 20mtpa iron ore export logistic chain from the Corumbá mine located in Brazil.





Telestack shiploader for Australian operator



custom-designed
shiploading solutions

With a 150-year heritage, Australia-based Qube Ports and Bulk knows a thing or two about shiploading! Working in partnership with Tricon, the Telestack distributor in Eastern Australia, Qube Ports and Bulk has recently taken possession of a TS 850 Low Tail Shiploader at the Port of Newcastle, Australia on Kooragang Island. The 125-tonne mobile shiploader is being used to load up to Panamax size vessels with a variety of material including grain, coal, mineral sands and woodchips with bulk densities ranging from 0.56t/m³ to 2.3t/m³. With a loading rate of up to 1,000tph (tonnes per hour), this shiploader is being fed by an overhead gantry tripper conveyor and is already proving its worth!

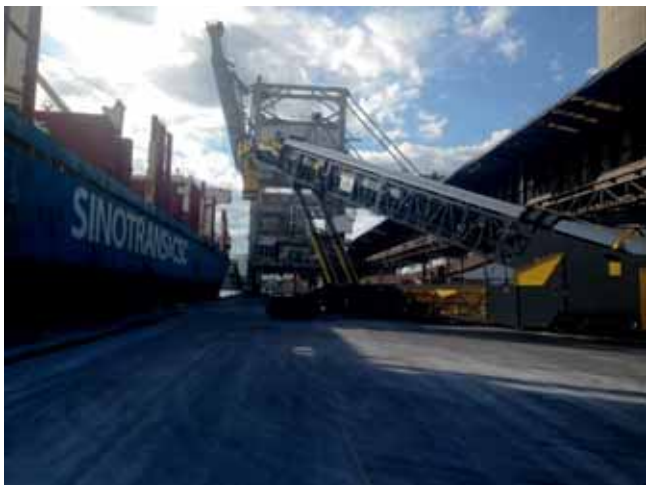
The shiploading industry is an established sector for Telestack and the company utilized its experience around the globe to help address the specific shiploading needs of Qube. Prior to the installation, an ageing rail-mounted gantry was used and Qube looked to Telestack's experience to introduce the latest in technology which had the versatility to handle the variety of materials at this multi-cargo berth as well as address the several challenges that the project posed.

As with all Telestack projects, the sales and design teams listened to the specific needs of the client, and they worked closely together to design a unique and innovative solution to the challenges faced. The challenges posed by this particular site were varied as it presented several limitations both with regard to jetty loadings and the current jetty infrastructure. The jetty had limitations of 45t/m² loading and there was also an existing overhead gantry structure which meant that the shiploader had to pass under 4.6 metre structure to enter onto the jetty. To pass under this structure, the Telestack design engineers had to

accommodate a minimal transport angle inclination of 2°. The luffing range of the shiploader was also restricted as it had to be between 2–20° to accommodate Panamax vessels. In addition, it was imperative that the shiploader complied with all relevant local Australian standards with regard to structural integrity (AS4324.1), guarding (AS1755) and electrics (AS3000). All grease points had to be externally accessible to ensure operator safety. This commitment to safety was of paramount importance to Qube and its ongoing campaign in achieving 'zero harm'.

To the best of Telestack's knowledge, this shiploader is unique in that it incorporates a jet slinger and a 12-metre telescopic freefall chute mounted on a mobile machine. The jet slinger itself weighs approximately four tonnes and with the chute block load condition this equates to 14 tonnes on the end of the boom. In order to comply with the AS4324.1 structural standards, the Telestack design engineers had to custom-design a very robust boom to accommodate this blocked chute condition. The jet slinger enables Qube to trim out the holds on the vessel when handling grain or woodchips and all electrical componentry had to comply with the relevant ATEX standards. The client also has the option to swop out the jet slinger with a 360° rotating duckbill trimming chute when handling coal or mineral sands.

The unit operates in a port with very stringent environmental control measures. The Telestack design engineers incorporated dust covers on the outer conveyor, telescopic dust covers on the inner conveyor and fully covered transfer points. The shiploader was also supplied with dust extraction units at two points on the boom. These can be fitted or removed quickly

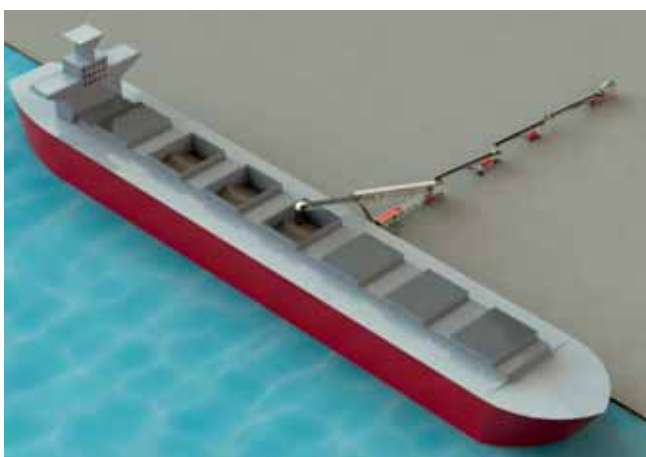


depending on the material being handled. As woodchip and grain are explosive in confined spaces, all extraction motors had to comply with ATEX standards. The shiploader was also fitted with air compression for dry cleaning with regular valve outlets throughout the boom as well as fitted with piping to facilitate cleaning down with water.

The shiploader was painted to Telestack P3 paint code which incorporates a high build zinc primer and two-part epoxy top coats to ensure an average dry film thickness of 250 micron. Painted in Qube corporate colours, the TS 850 Low Tail Shiploader is the first mobile shiploader in the corporate company's fleet. The unit has in-line and radial modes of operation, has three-metre crawler tracks at the rear end and hydraulically folding front wheels which are foam-filled to take the full weight of the machine when in operation.

Taking into consideration that the shiploader had to be designed to load the versatile range of materials, the unit was fitted with a variable speed drive on the outer and inner conveyors to enable the belt speeds to be altered. It was also equipped with 4 x 400 w metal flood lights to allow for night-time loading as well as a full function remote control to allow the operator to trim the vessel out whilst standing in the vessel.

As with most equipment supplied into Australia, Telestack supplied motors to IP65 rating and IE2 efficiency. The electrics were supplied to AS 3000 standards and included a dual start



siren to notify the operator when the unit was started.

Commenting on the installation, Michael Tripolone from Tricon Equipment, stated "this was a great marker for Telestack in Australia. To be selected as a supplier to Qube Ports and Bulk is an indication of the impressive reputation of Telestack. The company has extensive global experience in a range of applications and their team are highly skilled and professional. The process was quick and without fuss and the project was entirely supported from concept to installation. Telestack's input pre-sales in terms of engineering, expertise, data and drawings were above and beyond typical industry norms."

Telestack has always been renowned throughout the industry for the quality of its machines and has recently been awarded UKAS accreditation covering the following recognized global standards; ISO 14001 (Environmental Management), OHSAS 18001 (Health & Safety Management). This is in addition to its existing accreditation to ISO 9001 (Quality Management). The Telestack Integrated Management System (IMS) ensures that anything which has an effect on overall business performance is monitored, actioned and improved as a natural part of the company's business culture.

Telestack's steadfast commitment to quality is one of the reasons for its high level of repeat customers. Scott Mosley,



Project & Maintenance Engineer, Qube Ports and Bulk, continues "we are delighted with the performance of our TS 850 Low Tail Shiploader. We have many suppliers to choose from but the difference was that Telestack were knowledgeable and had proven reference sites across the globe. They were solution-focused and had demonstrated great attention to detail which set them apart from other suppliers. The Newcastle project was extremely difficult with all the requirements on the machine and quite simply this is good quality engineering design backed up with good quality build. So much so, we have already committed to a four-plant shiploading project in Tasmania with Telestack which has been built in a very short time frame."

Due to the modular design, the unit was transported in 8 x 40ft high cube containers, which not only minimized the transport costs but also meant that, with the help of the Telestack and Tricon's Engineers, it was possible to assemble sections quickly and easily and be fully operational in a relatively short period. The unit passed an extensive quality procedure before it left the factory so any issues were resolved before it went to site.

Telestack's range of equipment is working in a variety of



applications including coal, iron ore, aggregates, fertilizers and grain. The company has numerous reference sites in Australia and across the globe in mines, ports, quarries, power plants, steel mills and cement plants and a team of specialists to support all projects.

Telestack specializes in the complete design, manufacture, installation and commissioning of mobile, bulk material handling systems. It has a global proven record in a range of applications including the coal, mining and quarry industries, stockyard management, ports & inland terminals, power stations, rail yards, steel mills, cement kilns and many other bulk material handling industries.

Telestack's mobile solutions offer significant operating cost



savings compared to some traditional methods of material handling (wheel loaders, haul trucks, static conveyors), as well as providing environmental, health and safety and other benefits. Other significant benefits include not requiring planning permission due to product mobility and flexibility to move Telestack products to work on other projects.

DCi





DSH Systems

dust suppression hoppers reduce airborne respirable dust during bulk loading

Before and after installation of the DSH System.



Two DSH Systems case studies

BACKGROUND

Whilst large amounts of anecdotal evidence exists regarding varying dust reduction methods, these have in the most part never been fully quantified. In 20014/15, a joint testing protocol was prepared between a major US sand company and NIOSH, part of the US Health and Safety Authority. They based their initial investigation on the industry standard handbook with IMA-NA, Chapter 7 – Bulk Loading.

A New Zealand company (DSH Systems Ltd) was identified in a literature search as potential dust control solution. There was limited data already collected from Australia and there were US companies with units installed which could be tested to prove effectiveness.

DUST SUPPRESSION HOPPER

The DSH Dust Suppression Hopper is designed to load product in a solid column, thereby reducing air in product and minimizing entrainment of dust.

The system eliminates the need to raise/lower the loading spout and it is equipped with a plug that prevents discharge until



predefined quantity has accumulated.

Specialized springs or PLC system is used to control the discharge aperture to match hopper feed rate.

Two case studies were carried out.

Case study # 1

This plant loads open-bed truck on an intermittent basis

In 2013 – baseline conditions were sampled and the installation of a DSH system followed. In 2014 – the installation was sampled twice to obtain test data.

Only fully loaded trucks were included in analysis

SAMPLING METHODOLOGY

Scientifically approved testing parameters were used and these included:



Sampling procedure.



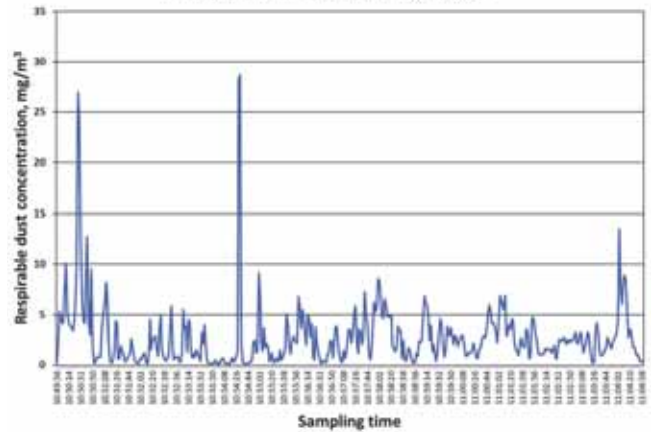
The



DSH installation and operation.

- ❖ Quantify respirable dust generation; not exposures
- ❖ Sampling packages located at four inside corners of bed
- ❖ Gravimetric and instantaneous, light-scattering samplers
- ❖ Samplers started just prior to loading and removed/stopped after each truck was loaded
- ❖ Four locations were combined to get average truck concentration
- ❖ Short-term sampling was used – 4 to 16 minutes to load a truck

Dust levels measured while loading Truck #2



DSH SYSTEMS – WE CARE ABOUT YOUR AIR!

Solve the world-wide industrial material handling problem – dust fallout while transferring dry, granular goods.

At the loading point, the DSH System concentrates the discharge of dry goods as a solid column through free air into any target repository including trucks, rail wagons, storage containers, bags, ships, barges or stockpiles.

The DSH Dust Suppression System uses no utilities and has no internal moving parts.

Winner (joint) of the Inaugural Innovative Technology Award at BulkEx 2006.

Winner of the Dust Control Technology “Application or Practice” at BulkEx 2007.

The DSH System gives you:

- Cleaner, safer working environments
- Dust explosion risk mitigation
- Reduced maintenance, cleaning and dust handling
- Faster, continuous, cleaner loading of trucks and rail wagons
- Enables operation in closer proximity to urban areas
- Reduced product shrinkage.
- Reduced environmental agency concerns

Clients include companies handling fertilizers, grains, stock-foods, salt, sugar, sand, etc in Australasia, USA, Canada, South Africa, South America, and Europe (East and West).



ENQUIRIES
DSH SYSTEMS LTD
 E: info@dshsystems.com
 T: +64 9 828 8012
 W: www.dshsystems.com

tests utilized one set of gravimetric filters per sampling day

- ❖ The close proximity to loading resulted in elevated dust concentrations
- ❖ The researchers zeroed personal Data Ram (pDR) periodically

DATA ANALYSIS

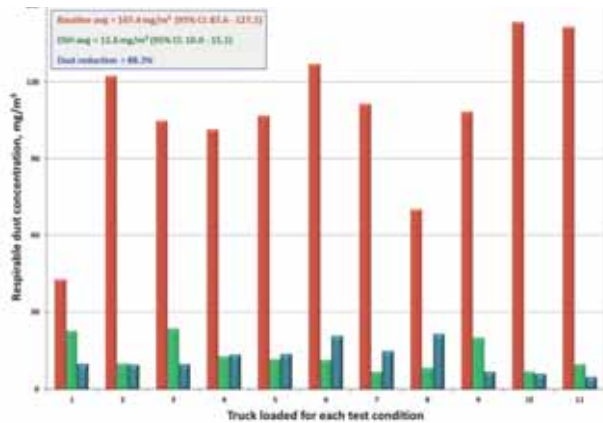
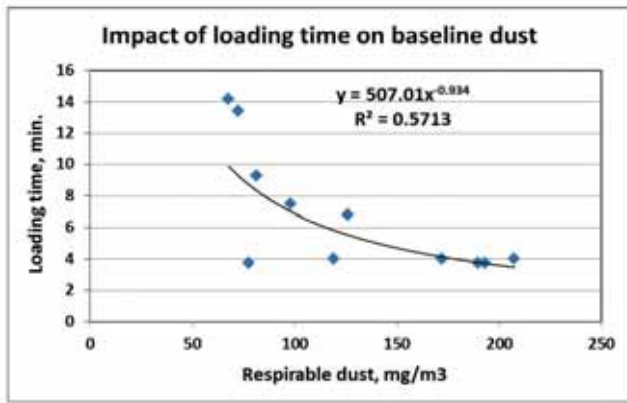
- ❖ pDR data adjusted with gravimetric/pDR ratio
 - ratio = (avg grav conc) ÷ pDR conc
 - ratio calculated for each sampling location for each day of sampling
- ❖ pDR data from 4 locations used to calculate average concentration for each truck loaded

DATA ANALYSIS - BASELINE

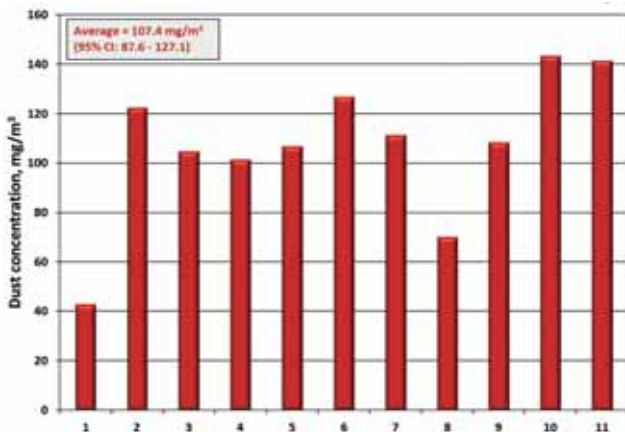
- ❖ Average loading time (alt) = 6.8 minutes
- ❖ Truck loading times (tlt) varied from 3.8 to 14.2 minutes
- ❖ The researchers were looking for any possible relationship between loading time and dust
- ❖ They then normalized the dust concentrations = (tlt/alt) x truck concentration.

DSH INSTALLATION

- ❖ Multiple product silos were used to load trucks
- ❖ The customer added a bucket elevator to feed material to DSH
- ❖ All of the silos fed into bucket elevator system



Dust levels from baseline and DSH sampling.



Normalized dust levels from baseline sampling

- ❖ There was a more consistent but slightly slower feed rate when compared to loading during baseline

DSH SAMPLING

- ❖ July survey
 - 11 trucks sampled
 - 13.5 minute average loading >me
 - 13.2mg/m³ average
- ❖ August survey
 - 11 trucks sampled
 - 13.8 minute average loading >me
 - 12.0mg/m³ average

Case study # 2

This plant loads open-top trucks intermittently loaded throughout the day

- ❖ Baseline readings were taken few days prior to installation
- ❖ DSH installation took ~1 day
- ❖ Two trucks were sampled prior to install
- ❖ Two trucks were sampled post install

SAMPLING METHODOLOGY

Scientifically approved testing parameters were used and these included:

- ❖ Quantify fugitive dust generation; not exposures
- ❖ Single direct-reading monitor (pDR) used, hung ~ 24 inches from column and ~8 inches below rim of trailer
- ❖ The sampler started just prior to loading, lowered and was removed/stopped after each truck was loaded
- ❖ Testing was in a single location
- ❖ Full data analysis was carried out after the test



Conclusions

- ❖ The DSH system reduced respirable dust liberation by
 - 88% case study #1
- ❖ The DSH system reduced Total Dust
 - 98% case study #2
- ❖ The DSH system was seen to operate without major maintenance problems



Before and after installation of the DSH System.

Costs

The installed system as tested:

- ◆ ~\$20K for DSH

The value of dust control that this technology potentially brings for the minerals industry speaks for itself.

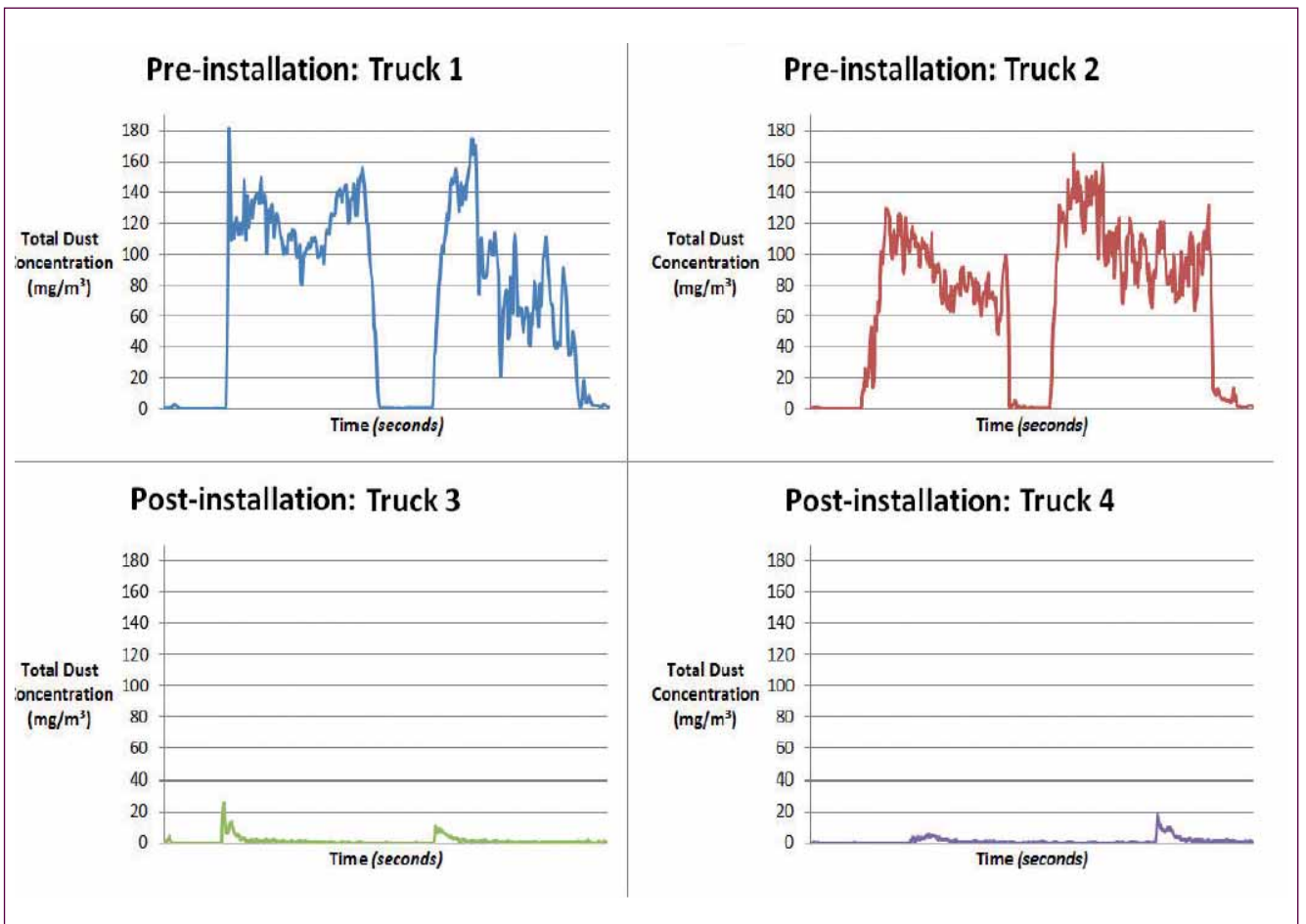
Whilst these tests were of truck loading applications, the DSH system has the same level of results whether loading trucks, trains, barges, ships or stockpiles.

They are available of a variety of sizes to suit all applications.

Future Test

The customer and Authority hope to continue to evaluate the efficiency of the DSH systems with various field- installations.

Authors: Jay Colinet, Andy Cecala and Jim Noll, NIOSH, Pittsburgh, USA & Jamie Robinson, Unimin Corporation, Winchester, USA. DCi



Independently graphed data measuring Total Dust generated during open top truck loading before and after the installation of a DSH Hopper at the Ottawa, MN Plant using a pDR-100.



All under control

crane controls and components



Jay Venter

Extension lengths up to 50 metres on the high seas

NEW CHAIN REEL FROM IGUS SUPPLIES ENERGY, DATA AND MEDIA

At the 2015 Hannover Messe exhibition, igus presented its new 'e-spool power', an oversized chain reel, which can be used for vertical extension lengths of 50 metres and more. "The e-spool power can be used, for example, for the assembly and disassembly as well as service and maintenance in the offshore sector," explains Tim Schneebeck, shipbuilding industry manager at igus. "The initial systems of the e-spool power are already being tested by companies." In this alternative to the cable reel, which is supplied by igus with drive and automatic control, various media and data can be conducted simultaneously, since it does not have an abrasive ring. The rugged plastic components of the e-spool are also fully free of corrosion and withstand the harsh conditions at sea.

The company igus GmbH is a world leader in the

manufacture of energy chain systems and polymer bearings. The family-run company based in Cologne is represented in 36 countries and employs about 2,700 people worldwide. In 2014 igus generated a turnover of € 469 million with 'motion plastics', plastic components for moving applications.

The company igus operates the largest test laboratories and factories in its sector which enables it to offer the customer innovative products and solutions tailored to him in the shortest possible time.

The terms 'igus, e-ketten, e-kettensysteme, chainflex, readycable, easychain, e-chain, e-chainsystems, energy chain, energy chain system, flizz, readychain, robolink, pikchain, triflex, twisterchain, invis, drylin, iglidur, igubal, xiros, xirodur, plastics for longer life, motion plastics, CFRIP, dryspin, manus, vector' are legally protected trademarks in the Federal Republic of Germany and where applicable, in some foreign countries.

Making sense of real-time load measurement



The handling of dry bulk materials used to be a completely manual process, but it is now being increasingly automated in a drive to reduce both the costs and the risks of injury, while also increasing throughput and accuracy. We report on some of the new technologies behind these developments.

The demands of today's highly competitive commerce and modern industry are such that speed, accuracy and efficiency are required within every process. This includes the handling of dry bulk materials, such as grain, coal, aggregates, minerals and chemicals through every stage of their logistical journey from producer through processor and distributor to eventual end-user.

Not surprisingly, major handling facilities are now highly computerized, and often have a control room with a bank of computers, which would not look out of place on the *USS Enterprise*. Their job can be summed up as collecting information from many, many different sources, collating it, and then calculating the optimum procedures for every stage of the overall process.

The computers represent a well-developed technology and their data processing abilities, while hugely impressive, are based on relatively simple logic algorithms. The technology developments that are driving the advancement of bulk handling are at the sensing end of the system, where the prevailing conditions of the moment are detected and converted into data signals for the computer to use.

"Sensors are the eyes and ears of the computerized system," says Mark Ingham of Sensor Technology Ltd. "They constantly monitor what is going on and feed real-time data to the computer."

One of the company's latest products is a load sensor with a difference. Called LoadSense, it is wireless, so is ultra easy to deploy in situations like docks and grain banks where installing cables would be difficult — and maintaining them even harder! LoadSense is online permanently and constantly sends real-time load value signals to either the central computer or its own local computer or receiver for preliminary analysis. It can be used in all types of materials handling operations, but is particularly useful for measuring loads in augers and on conveyors, where materials are 'in flight', so the load varies constantly with time.

LoadSense can be thought of as a two-part system. First, is a strain gauge-based stainless steel tension type sensor, with a twin antenna transmitter built into it for transferring the load data the instance it is generated. The second part of LoadSense is the receiver, which can be either fixed in place or handheld. The receiver reads, displays and records the data and can pass it onto

the central control system for integration with other data streams for analysis.

The receiver includes an in-built 32MBit memory, which can hold up to 280 hours of data, thus providing both a local control station and a backup databank for the wider system. It is also notable that each receiver can collect data from several nearby load sensors simultaneously, in a range of up to 100m.

Importantly, the LoadSense transmits using the worldwide licence-free frequency of 2.4GHz, so can be installed and operated freely without disrupting other radio-based equipment. In operation, data is transmitted at up to ten times a second, so LoadSense is constantly updating and providing real-time information so that operations can be optimized for best results.

The key benefits LoadSense brings to materials handling installations include: the simplicity of wireless installation, easy reconfiguration, its long battery life (which is complemented by easy recharging), and the dual antennas which represent just one part of the overall rugged design.

TECHNOLOGY TRANSFER

In fact, Sensor Technology originally developed LoadSense for use with helicopters, as Ingham explains: "Helicopters often carry cargo in nets slung from cargo hooks on their underside, and it is important that the pilot knows its weight. A conventional load sensor in the hook could provide this data, but wiring it back to a readout in the cockpit would invalidate the craft's Certificate of Airworthiness, implying the need for expensive recertification. When we heard about this dilemma, we instantly realized that a wireless solution was the answer!"

Since its development LoadSense has been adopted by many other industries, too. For instance, in forestry tree harvesting is often best done by pulling the trees over with a large tractor — this uproots them, so that the whole tree is recovered and also the ground is left stump-free so is in better condition for re-use — a LoadSense on the pulling cable will provide the tractor driver with vital live information and also collect data on harvest volumes for commercial analysis. They have also proved popular in the fly towers of theatres, allowing scenery and backdrops to be raised and lowered quickly and safely, for materials monitoring in road laying and civil engineering, in food production and processing, etc.

Sensor Technology has also transferred another of its technologies, TorqSense into the world of dry bulk materials handling. Like LoadSense, TorqSense uses a radio frequency signal transfer technique, but its sensing head measures the rotary torque in a turning shaft.

"Consider a screw conveyor or auger, both of which are driven by a rotating motor shaft," says Ingham. "If this is rotating empty, it requires little power from its drive shaft. If it is half full, it requires rather more, and if it is completely full its needs a lot more."

"The same goes for speed — the faster, the more power consumed. Also, the denser the material being conveyed, the more power required. By constantly measuring the torque in the driveshaft, we can determine the volume and weight of material being conveyed."

Both LoadSense and TorqSense have been successfully used in dry bulk materials handling installations and have proved their worth many times over. As handling inevitably becomes more automated, the need for such technologies will become more and more crucial.

Brevini can design full solutions for materials handling systems



Fully integrated drive systems — mechanical and hydraulic — offer many benefits in terms of easier procurement, improved performance and ease of maintenance. Increasingly, plant engineers and OEMs are adopting a systems approach rather than buying individual transmission components and building their own drives, says *Dave Brown of Brevini UK*.

Imagine you had to build your own car from individual components. You would have to source every part, assemble them, test them, get an MOT, then maintain the vehicle throughout its life. Buying a complete car from a reputable dealer with guarantees and a service contract is somewhat easier.

Enthusiasts may relish the idea of a year or more worth of weekends in the garage building a kit car. But even the most devoted of them will recognize that they are creating a fun vehicle for gentle Sunday afternoon outings, not a workhorse for winter commuting, motorway pounding and family holidays.

Among machine builders, OEMs and end-users, there is an increasing awareness that they could apply their car-buying logic to their professional work and source complete drive systems rather than build their own.

“Integrated drive systems offer advantages on four levels,” explains Brown. “First up is procurement; it is so much easier to buy from one source rather than multiple. Also the need to do engineering calculations for each component is reduced to specification of the input and output.

“Next is removal of the engineering effort to assemble all the components, testing each one in turn; this can have a significant effect on project completion and time to market. The third is that the drive can be seen as sub-system and optimized within the overall machine for maximum productivity, efficiency and reliability. Finally there are the life cycle considerations such as regular servicing, replacement of wearing parts, and — longer term — refurbishments and upgrades, all of which should become easier.”

In short, an integrated drive or hydraulic system is likely to offer improved productivity, reduced maintenance and downtime, and longer operating life. This amounts to quantifiable added value over the lifetime of the plant or machine.

Brevini has been aware of this trend evolving over several

years and has been proactive in supporting it by developing its ranges of both mechanical power transmission products and hydraulic system components. It has also ensured that all of its sales’ engineers are fully conversant with all the parts and their integrations, so that they can develop optimized solutions for every project with which they are involved.

Brown again: “We have developed our product ranges partly by designing components in-house and partly by acquiring companies that already produce best in class components. In some cases the acquired product ranges have had to be slightly redesigned to fit perfectly with the rest of the Brevini ranges, but this relates to interfaces and other details rather than the fundamental design.

“Thus we have improved our customers’ buying experience by becoming an organization with a complete product offering and the technical skills to quickly develop systems that are bespoke to project requirements.”

Looking at an example of the integrated approach, Brevini combined its mechanical and hydraulic products and expertise in a project for the recycling industry. The machine, designed to process and separate waste, requires multiple drives delivering different torque and speed inputs to the drive shafts. From the machine requirements, Brevini was able to calculate and optimize an overall solution providing a cost-effective drive system without compromising the performance.

The solution was complete, including everything from the hydraulic power pack; from the proportional control valves for PLC control, through to the hydraulic motors integrated with the reduction gearboxes.

In the international rail industry, Brevini has supported a number of projects including converting road-going maintenance and service vehicles to run on rails. Typically, the heart of the drive system is hydraulic, with gearboxes used to optimize speed and power output. On such applications traction control is very important, which Brevini achieves using standardly available features within its hydraulic motor range — again, optimizing the solution for the real application needs.

“Of course, customers can still buy single products — and they still get the full support of the entire Brevini Group,” says Brown. “In many cases it is always going to be the best way to

proceed. But our integrated system work has been increasing steadily over a number of years and we expect this trend to continue as industries all over the world strive for ever-greater efficiencies in all aspects of their work.”

ABOUT BREVINI

Brevini UK headquarters are located in Warrington, Cheshire, at the heart of the motorway network. Its facilities include 900m² of offices, manufacturing and warehousing for the Brevini products in Warrington and 800m² of offices and manufacturing for the PIV Drives helical products in Scunthorpe, Lincolnshire. The company has enthusiastic staff with long experience in power transmissions and offers a 'solutions based' approach. Using advanced software, its engineers are able to select gearbox units to last the machines total design life. Brevini's UK stock of standard parts, thanks to Brevini's modular construction, allows short lead times for a larger number of variants and sizes. All of these units are supported by extensive UK technical expertise.



Flexible application: EMC-HD electromechanical heavy duty cylinder from Rexroth

Ready to install, electromechanical heavy duty cylinders from Rexroth reduce the design and installation effort.



up to 1,200mm. The electromechanical cylinders for heavy loads are driven either by ball or planetary screw assemblies, depending on the dynamic and power requirements. The high-precision, backlash-free preloaded Rexroth screw assemblies are offered in various sizes and leads economically cover a wide range of application demands. Rexroth offers the EMC-HD both as finished, purely mechanical axes as well as a complete system with precisely matched gears, servo motors and controllers from the IndraDrive product line.

For the installation of the heavy-duty cylinders, the user can choose from numerous mounting options reducing the construction and assembly work involved. The electromechanical solution does not require any additional components and

incorporates space-saving machine designs. The electric start-up is quick and easy, thanks to user-friendly software tools.

Under harsh environmental conditions, position heavy loads weighing several tons precisely to the micrometre, press powerfully, assemble or close, and vary the motion sequences. The new EMC Heavy Duty (HD) electromechanical cylinders from Rexroth make the benefits of advanced control technology available, even at high forces. The sturdy and ready-to-install units are suitable for machinery and equipment as well as for outdoor use. Users can seamlessly integrate them for intelligent energy management, thus reducing power consumption and CO₂ emissions.

Moving heavy loads often requires compromises in the controllability of the axes and results in high construction costs. Machinery manufacturers avoid both disadvantages with the EMC-HD electromechanical cylinders from Rexroth. Force, position and speed can be freely parameterized by the user and adapted at all times to new tasks via the drive system. Without an additional position sensor, the EMC-HD achieves a repeatability accuracy of up to ± 0.01 mm and they do so for any number of freely selectable positions within the travel range of

incorporates space-saving machine designs. The electric start-up is quick and easy, thanks to user-friendly software tools.

ENERGY-EFFICIENT, SIMPLE AND STURDY

Electromechanical cylinders are extremely energy efficient because they use the energy on demand and implement it with high efficiency in a linear motion. Rexroth IndraDrive servo drives offer numerous opportunities for intelligent energy management. In this way, the drives can regain and store braking energy, along with making it available for other axes of the machine or equipment. As a result, users reduce operating costs over the entire operating life while reducing their CO₂ emissions.

The EMC-HD with IP65 protection class is also suitable for outdoor use and operates reliably over a wide temperature range. The simple and sturdy construction ensures a long lifespan, even under harsh environmental conditions. The sealing system protects the cylinder from wear resulting from exterior contamination, thus ensuring long service intervals.

Richmond Engineering works teams up with Conductix-Wampfler

Festoon systems for rail car dumper positioner systems

RICHMOND ENGINEERING WORKS TEAMS UP WITH CONDUCTIX-WAMPFLER TO SUPPLY RAIL CAR DUMPER POSITIONER SYSTEM FOR AN ATLANTIC COAST TERMINAL.

Moving bulk materials — coal, wood chips, grain, aggregate, or biomass — is being done more often by gondola cars rather than hopper cars. Hopper cars sacrifice space due to the bottom chutes and have a high center of gravity. Hopper dump doors can sometimes leak materials onto the tracks.

Gondolas, however, must be picked up and dumped. An increasingly popular method of doing this is the 'rotary dumper', which secures the car and turns it completely to dump the contents.

Using a locomotive to position cars into the dumper is slow, inefficient, and inaccurate. A better option is to employ an indexing positioner to move cars into the dumper. Railcar positioners also help reduce or eliminate demurrage fees commonly associated with inefficient or slow unloading methods at export terminals, trans-load facilities, power plants and manufacturing facilities.

One of the terminals on the Atlantic seaboard recently chose a rack & pinion style railcar positioner, designed and supplied by Richmond Engineering Works (Pittsburgh, PA). Ken Hunt, engineer with REW, explained that, "the two REW Rack & Pinion Style Railcar Positioners are believed to be the largest of their kind in North America. They can handle up to 160 car trains with individual cars weighing up to 286kip (129,727 kilograms-force) for a total positioning capacity of nearly 45.8 billion pounds per train. The positioner can index the entire train as a coupled unit into the Rotary Car Dumper or it can handle smaller strings of rail cars."

Hunt added that, "the drive system for this particular project consists of eight (8) 112-kW motors and gearbox assemblies controlled by off-board variable frequency drives (VFDs). One of the many challenges of this project was connecting the motors and other on-board equipment to the off-board controls and VFD's as the positioner travels along a 400' runway. It took several consultations with Conductix-Wampfler to specify the right festoon system for the job.

Richmond Engineering worked closely with Tim James, engineered product specialist at Conductix-Wampfler in the US, to arrive at a cable festoon to carry the shielded VFD power cables as well as the control and communication information to



the control system. The entire positioner operation is controlled from a remotely located operator house with sensors providing the needed feedback to the operators. James noted that, "the massive festoon system was factory preassembled on a 16.2 metre steel shipping frame. We believe it to be the largest preassembly we have done to date." James went on to say, "the cable package consists of eight of 4/0 AWG 3 conductor VFD construction power cables one 2/0 AWG, 3 conductor power cable, one 1 AWG, 1 conductor grounding cable, one 12 AWG, 12 conductor power control cable, one 6x62.5/125 fibre optic cable, and eight 16 AWG, 3 conductor twisted and shielded pair control/signal cable. Active travel is 104 metres, with a loop depth of 3,200 metres, and cable weight per loop of 295 kilograms."

The Conductix-Wampfler festoon relies on their heavy duty 360 Series festoon trolleys each with a large two tier support saddle arrangement, 4.00" diameter steel main rollers with precision sealed bearings, 2.50" diameter side guide rollers, and 2.00" diameter anti-lift rollers. The trolleys are hot dipped galvanized with all stainless steel fasteners for corrosion protection.

James went on to say that, "VFD AC motors operate at high frequency switching speeds which leads to electro-magnetic interference (EMI). EMI can radiate out and interfere with electrical equipment. The VFD construction power cables have the proper shielding to reduce the effects of (EMI), reflected standing waves, voltage spikes and Corona issues. This type of power cable is becoming more common with today's VFD motors."

With the success of this project, Richmond Engineering Works and Conductix-Wampfler expect to team up again for future rail car positioner projects.

DBIS to deliver total software solution to biomass terminal

DBIS has been awarded the contract to supply TOS and Automation software for the new Biomass terminal at Peel Ports Liverpool, Gladstone dock.

CommTrac will be implemented to manage inventory in and out of the facility as well as interfacing to the control system to

provide real-time data on all areas of the operation including tonnage, discharge rates, running information of all equipment and cargo temperature information.

DBIS will also provide PLC and SCADA Software to control all aspects of the automation equipment on the facility. **DCi**

2,000tph shiploader for coal
installed at Store Norske
Spitsbergen Kulkompani (SNSK)
in Sveagruva, Norway

AMECO in focus

**bulk handling
equipment
manufacturer**



AMECO has more than 80 years of experience with the custom design, engineering and manufacturing of bulk material handling systems. The company was founded in 1932 in Alsace, a French region that lies in between the Vosges Mountains and the Rhine River, bordering both Germany and Switzerland. The company's headquarters is still located there today.

Initially, AMECO was part of the Alsatian potash mines. The company went from providing them with maintenance services, to supplying them with conveyors, to eventually delivering all types of equipment to fulfil their material handling needs.

Nowadays, AMECO is specialized in three main products: stackers, reclaimers and shiploaders. The company delivers this equipment to an abundance of industries worldwide.

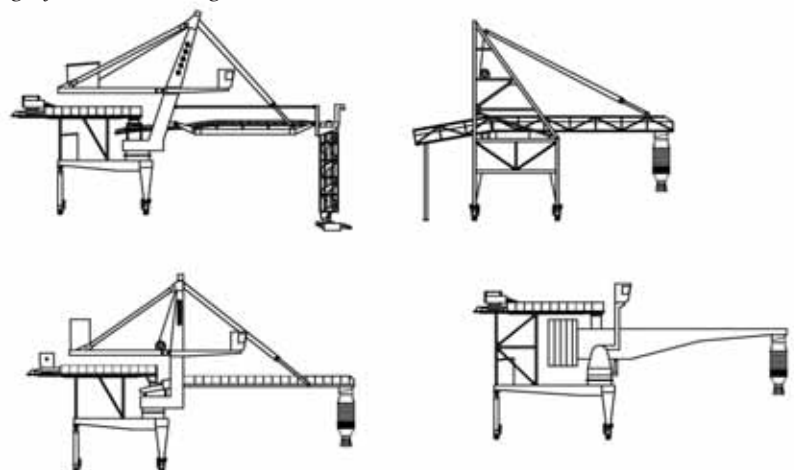
AMECO'S SHIPLoadERS

Shiploaders are an important product for AMECO. Nowadays, bulk carriers make up 15 to 17% of the world's merchant fleets. Shiploaders provide a safe and efficient way to load these carriers.

AMECO's shiploaders are designed to have the following main features:

- ❖ travelling, slewing and luffing movements ensure each point of the ship can be reached;
 - ❖ bulk loading capacity of up to 3,000m³/h;
 - ❖ bag loading capacity of up to 2,400 bags/h;
 - ❖ loading of ship sizes up to 80,000dwt;
 - ❖ descending chute types:
 - ❑ for bulk: cascade chute, telescopic pipe with rotary banana chute/belt slinger/kick-in kick-out mechanism;
 - ❑ for bags: telescopic pipe with spiral chute;
 - ❖ simple operation possible in automatic mode, with remote control;
 - ❖ low dust and noise emissions; and
 - ❖ easy access and maintenance friendly design.
- Additionally, AMECO offers erection and commissioning supervision services.

AMECO's travelling, slewing and/or luffing shiploader designs for bulk and/or bags.



AMECO'S REFERENCES

AMECO is a supplier with a proven track record: worldwide it has more than 380 pieces of equipment in operation. The company has experience working with the world's top contractors on large-scale projects across the globe.

Given its history, it is not surprising AMECO has delivered its shiploading equipment to many notable clients in the fertilizer industry. Some examples are:

END USER	COUNTRY	MATERIAL
Gulf Petrochemical Industries Co. (GPIC)	Bahrain	Urea (bulk & bags)
Karnaphuli Fertilizer Co. (KAFCO)	Bangladesh	Urea (bulk & bags)
Qatar Fertiliser Co. (QAFCO)	Qatar	Urea

Other industries AMECO has recently supplied shiploaders to are:

Industry	Example of project		
	End user	Country	Material
Cement	Nuh Çimento	Turkey	Cement, clinker
Ports & terminals	Klaipeda Stevedoring Co. (KLASCO)	Lithuania	Grain
Mining Spitsbergen Kulkompani (SNSK)	Store Norske	Norway	Coal

A project AMECO is particularly proud of is the delivery of a shiploader to load coal into sea vessels at a capacity of 2,000tph (tonnes per hour) to Store Norske Spitsbergen Kulkompani

(SNSK). This Norwegian company operates the world's northernmost mine in Svea, Svalbard. Due to the polar weather conditions, AMECO had to respect very strict delivery dates, completely rethink its design and ship the machine fully assembled. AMECO took all these challenges in its stride and completed the work to the client's satisfaction.

AMECO'S COMPETITIVE ADVANTAGE

AMECO's customers expect reliable and easy-to-operate machines at sharp prices. To meet and sometimes even exceed these expectations, AMECO invests heavily in innovating its designs. The company has, for instance, introduced state-of-the-art dust suppression systems that help to protect the environment from undesirable dust emissions. Furthermore, AMECO is currently conducting research to increase the boom length of its shiploaders. The goal? Ready AMECO's customers for the post-Panamax future.

As well as this, AMECO has acquired a workshop in Eastern Europe. This allows the company to sell its equipment at competitive prices, while ensuring that its products are in compliance with the most stringent quality norms. Furthermore, AMECO's machines can be fully customized to its clients' requirements. In agreement with the customer, however, the company can re-use basic designs to reduce engineering costs.

Finally, AMECO offers extensive after-sales services. These include, for example, yearly mechanical inspections that are free or charge. With these inspections, AMECO helps clients identify worn out parts. It is also at this time that the company shares technological advancements (e.g. software updates; energy saving and therefore operating cost reducing methods) with its customers and gains invaluable feedback from them. This feedback is used for the continuous improvement of its machine designs.

DCi



Bulk handling shiploader, Klaipeda.

INDEX OF ADVERTISERS

Company	Page	Company	Page
Alex Stewart International	119	Igus GmbH	46
Anvil Attachments	80	Laidig Systems Inc	128
Associated Terminals LLC	34	Legacy Building Solutions, Inc.	49
Bühler AG, Grain Handling Directory Cover		Mack Manufacturing Inc	85
Grain Logistics (Back)		Mantsinen Group Ltd Oy	78
BV Beco	82	Maschinen und Mühlenbau Erhard Muhr GmbH	69
Chief Industries UK Ltd.	45, 123	Nectar Group Ltd	68
Christianson Systems Inc.	64	Negrini Srl	130
Cimbria Bulk Equipment	96	Neuero Industrietechnik GmbH	Back Cover
Cleveland Cascades Ltd	53	ORTS GmbH Maschinenfabrik	90
Coaltrans Conferences Ltd	120	Pasha Stevedoring & Terminals	Inside Back Cover
Conductix-Wampfler	88	PINTSCH BUBENZER GmbH	66
Cooper/Consolidated	32	Pirs SAS	Front Cover, 56
CST Covers	72	PLM Cranes B.V.	92
Damen Shipyards Gorinchem	18	Port of Dunkerque	30
Doppelmayr Transport Technology GmbH	74	Port of Longview	39
Dos Santos International, LLC	62	Port of Stockton	43
DSH Systems Ltd.	106	Portpack UK Limited	132
DURO FELGUERA, S.A.	62	Port-Trade AS	42
easyFairs Netherlands BV	118, 144	RHB Stevedoring & Warehousing	5
EDGE Innovate	17	RTA ALESA Ltd.	98
European Bulk Services (EBS) BV	26	SAMSON Materials Handling Ltd	51
Europees-Massagoed Overslagbedrijf (EMO) BV	28	Stevenel OY	94
FAM Foerderanlagen Magdeburg	55	Swire CTM	12
Fednav Ltd	10	Tramco, Inc	70
FLSmidth Inc.	8	Transmarine Navigation Corp	42
FLSmidth Hamburg GmbH	76	TTS Marine AS	12
Guven Grab and Machine Ltd. Co	60	Van Aalst Bulk Handling BV	47
Heyl & Patterson Inc	66	Verstegen Grijpers BV	Inside Front Cover
Hitachi Construction Machinery (Europe) NV	86	VIGAN	Grain Handling Directory Cover, 137
		Zeeland Seaports	36



SUBSCRIPTION FORM

PLEASE COMPLETE AND FAX TO: +44 (0)1206 562566

Dry Cargo International, Clover House, 24 Drury Road, Colchester, Essex CO2 7UX, UK
Tel: +44 (0)1206 562560 Fax: +44 (0)1206 562566 Email: info@dc-int.com

www.dc-int.com

Name

Position

Company Name

Address

.....

City

Postcode/Zip Code.....

Country.....

Tel

Fax

Email

SUBSCRIPTION RATES

	1 year <input type="checkbox"/>	2 years <input type="checkbox"/>	3 years <input type="checkbox"/>
UK	£170.00	£280.00	£365.00
Europe	£210.00	£355.00	£460.00
USA & ROW	£260.00	£445.00	£580.00

No. copies required: _____

Please charge my credit card:

Cardholder's name: _____ Expiry date: ____/____

Signature: _____ Date: _____

I enclose a cheque for: _____ Payable to **Trade Publishing Int'l Ltd**

Please invoice me

Make sure you don't miss the next issue...



- ❖ Ship & Barge Loaders
- ❖ Pneumatic Ship & Barge Unloaders
- ❖ Mechanical Ship & Barge Unloaders
- ❖ Conveyors
- ❖ FIBCs, Bags & Bag Loaders
- ❖ Hoppers
- ❖ Grabs
- ❖ Dust Suppression
- ❖ Sampling & Inspection
- ❖ Weighing & Measuring
- ❖ Grading & Sifting
- ❖ Truck Loaders & Unloaders
- ❖ Railcar Loaders & Unloaders
- ❖ Storage Systems
- ❖ Engineering Consultants

Strong partner in Grain Management.

One of the big challenges of our age is to supply all the people worldwide with food. Every year, millions of tons of grain are collected, stored, and handled around the globe – and the upward trend is unbroken. Only the most up-to-date plant and equipment can guarantee rapidity and quality while minimizing raw material losses. In order to meet the increasingly stringent challenges, Bühler Grain Logistics provides with its capabilities the best possible solution – for conveying, cleaning, drying, storing, dedusting or loading and unloading the most important commodity on earth. www.buhlergroup.com



Innovations for a better world.

BUHLER

One of the two VIGAN pneumatic ship unloaders delivered in 2013 and 2014 to Africa For Silos & Warehousing in the Port of Alexandria – Egypt. The machine is mounted on a self-propelled gantry on tyres, and is equipped with a 28m suction boom, reaching a handling rate of 600mtph.

VIGAN Engineering S.A.
Rue de l'Industrie, 16
BE – 1400 Nivelles
Belgium
T : + 32 67 89 50 41
F : + 32 67 89 50 60
E : info@vigan.com
W : www.vigan.com



4B BRAIME ELEVATOR COMPONENTS

Hunslet Road
Leeds
West Yorkshire
LS10 1JZ
UK
Contact: Mrs Simone Block
Job Title: Marketing Manager
T: + 44 113 246 1800
F: + 44 113 243 5021
E: 4b-uk@go4b.com
W: www.go4b.com
Other equipment: Hazard monitoring equipment, level indicators. 4B is the world's leading manufacturer of Bulk Handling Components, for the agricultural and industrial sectors. Our range includes Mechanical Components (Plastic and Metallic Elevator Buckets, Bolts, Belts & Splices), Forged Conveyor Chains, and Electronic Monitoring Equipment for Elevators and Conveyors.

A/S CIMBRIA



Faartoftvej 22
Thisted
7700
Denmark
Contact: Mr Lars Norgaard
Job Title: Sales Director
T: + 45 9617 9000
F: + 45 9617 9299
E: holding@cimbria.com
W: www.cimbria.com
Cimbria was established in 1947 and is today an international organisation with 800 employees in 20 companies throughout the world. Cimbria offers equipment and solutions for processing and storage of grain and seed, and conveying equipment for bulk handling.

AG GROWTH INTERNATIONAL (AGI)

198 Commerce Drive
Winnipeg
MB
R3P 0Z6
Canada
Contact: Ms Melanie Davidson
Job Title: Marketing Manager,
Commercial Brands
T: + 1 204 594 2420
E: melanie.davidson@aggrowth.com
W: www.aggrowth.com
Ag Growth International (AGI) is a leading manufacturer of portable and stationary grain handling, storage and conditioning equipment, including augers, belt conveyors, grain storage bins, grain handling accessories, grain aeration equipment and grain drying systems.

AGRICOS SALES, INC.

14900 Intracoastal Drive
New Orleans
Louisiana
70129
USA
Contact: Mr Bob Rieck
Job Title: Vice President - Sales
T: + 1 504 436 9400
E: brieck@agricosales.com
W: www.agricosales.com
Design and build turnkey projects for handling a wide range of bulk commodities. Specializes in the manufacture of shiploaders, conveyor systems and storage facilities.

AGROMATIC AG

Goldingenstrasse 30
Laupen
CH-8637
Switzerland
Contact: Mr Tobias Diener
T: + 41 55 256 21 00
F: + 41 55 256 21 11
E: info@agromatic.com
W: www.agromatic.com
A leading manufacturer of measuring and control systems for mills, feed mills and silos. Dampening systems are

produced with capacities from 3tph up to 200tph. Produces all types of full and empty level indicators. For continuous measuring of silo levels units are offered for bin heights up to 60m (ultrasonic version). Produces a wide range of combined units and fully automatically controlled cooling machines.

ALEX STEWART AGRICULTURE LTD



21 Sefton Business Park
Netherton
Liverpool
Merseyside
L30 1RD
UK
Contact: Mr Glenn Forbes
Job Title: Agriculture Manager
T: + 44 151 525 1488
F: + 44 151 530 1563
E: glenn.forbes@alexstewartagriculture.com
W: www.alexstewartagriculture.com
Alex Stewart Agriculture provides world class FOSFA and GAFTA approved independent inspection and agriculture laboratory services. We are supported by the A. Norman Tate and Huson and Hardwick Laboratories range of agricultural analytical services for oilseeds, raw & refined sugar, oils & fats, bio energy, grains, fertilizers and other food products.

ALEX STEWART INTERNATIONAL



2b Sefton Business Park
Netherton
Liverpool
Merseyside, L30 1RD
UK
Contact: Mr Graham Stewart
Job Title: Director
T: + 44 151 525 2132
E: graham.stewart@alexstewartinternational.com
W: www.alexstewartinternational.com
Alex Stewart certifies quantity and quality of all commodity imports/exports, including inspection and analysis. The Alex Stewart International network of regional companies provides inspection and analysis of agricultural products and foodstuffs, fuels, metals and minerals, steel and steel scrap, and also geochemical and environmental services.

ANTAR@PRESSVSS

Stallings House
Stallings Lane
Kingswinford
West Midlands DY6 7LG
UK
Contact: Mr Roger Bannister
Job Title: CEO
T: + 44 1384 400 088
F: + 44 1384 296 268
E: roger.bannister@antar-equipment.com
W: www.pressvss.co.uk
Design and manufacture a large range of handling equipment for storing, batching, conveying and weighing dry bulk materials. Storage capacities from 10-15 tonnes are catered for. Batching/weighing up to 100tph. Automated control systems

ensure accurate dosing/weighing. Design/CAD facilities. Fully equipped and extensive workshop facilities. Over 100 years experience of material handling equipment.

ANVIL ATTACHMENTS



PO Box 216
261 Highway 19
Slaughter
Louisiana
70777
USA
Contact: Mr Shane Toncrey
Job Title: Marketing Director
T: + 1 225 654 8223
F: + 1 225 654 3125
E: Sales@AnvilAttachments.com
W: www.AnvilAttachments.com
Manufacturer of grabs, grapples and clamshell buckets for cable, hydraulic and electro-hydraulic operation. Models for ships-gantry, excavators, crawler cranes and hydraulic equilibrium cranes. Brands include Anvil, Hawco, Pro-line, Owen, Yaun, Williams & Drott. New, used, rentals, rebuilds, repairs, parts and service, since 1969.

ARLONA ENGINEERING

PO Box 41125
Rossburgh
Durban KZN 4072
South Africa
Contact: Mr Steve Christy
Job Title: Managing Director
T: + 27 31 205 95 90
F: + 27 31 205 98 35
E: steve@arlona.co.za
W: www.arlona.co.za
Design and manufacture of grabs from 3m3 touch down to 12m3 radio remote opening and mobile hopper / conveyor combinations suitable for ship or shore based operations. Customised solutions designed and built by the largest manufacturer of stevedoring equipment in Africa.

Conference & Exhibition

DRY CARGO

The Netherlands

Ahoy Rotterdam

30 / 09 - 01 / 10 / 2015

2015

REGISTER
NOW
and save up
to € 95,-



@DryCargoNL / #DryCargoNL

www.easyfairs.com/drycargo-nl



Organised by

EASYFAIRS

Visit the future

ATLAS MANUFACTURING Co. Inc

PO Box 1969
Monticello
MS 39654
USA
Contact: Mr Ashley Watson
Job Title: Sales Manager
T: + 1 601 587 4511
F: + 1 601 587 5393
E: ashley@atlasmanufacturing.net
W: www.atlasmanufacturing.net
Builds new and custom designed single, two, three and four rope cable grabs as well as hydraulic grabs and continuous unloader buckets. All Atlas grabs are constructed using high quality alloy steels with heat treated pins and bushings.

AURECON

Level 10
55 Grenfell Street
Adelaide
South Australia
5000
Australia
Contact:
T: + 61 8 8237 9905
F: + 61 8 8237 9778
E: adelaide@arecongroup.com
W: www.aurecongroup.com

AURECON HATCH

L4, 152 Wharf Street
Spring Hill
Brisbane
Queensland
4000
Australia
Contact: Mr Peter Thomson
T: + 61 7 3166 7777

F: + 61 7 3173 8001
E: brisbane@arecongroup.com
W: www.aureconhatch.com
Aurecon Hatch is a joint venture between leading management and engineering consultancy companies Aurecon and Hatch. Aurecon Hatch provides project management services and site infrastructure design to organisations working in coal, cement, agriculture, seaboard bulk materials handling and heavy haul rail.

AUSENCO ENGINEERING CANADA INC.

855 Homer Street
Vancouver
British Columbia
V6B 2W2
Canada
Contact: Mr Joel A Cawker
Job Title: VP Special Projects, Process Infrastructure
T: + 1 604 638 4740 (direct)
F: + 1 604 688 5913
E: joel.cawker@ausenco.com
W: www.ausenco.com
A leading engineering design & EPCM services company operating worldwide in the bulk products materials handling, simulation, heavy haul rail, marine terminals, ports, coastal, mining infrastructure, energy and industrial sectors.

BAYARDS ALUMINIUM CONSTRUCTIONS

PO Box 9
Nieuw-Lekkerland
ZH

2957 ZG
The Netherlands
Contact: Mr Dick de Kluijver
Job Title: Commercial Director
T: + 31 184 683000
F: + 31 184 684345
E: dick.dekluijver@bayards.nl
W: www.bayards.nl
Bulk containers.

BEDESCHI SPA

Via Praimbole
38 Limena
Padova
35010
Italy
Contact: Mr Pietro De Michieli
Job Title: Sales & Project Director
T: + 39 049 766 3100
F: + 39 049 884 8006
E: sales@bedeschi.it
elena.marcato@bedeschi.it
W: www.bedeschi.it

BEHN + BATES MASCHINENFABRIK GmbH & Co. KG

Robert-Bosch-Strasse 6
Munster D-48153
Germany
Contact: Ms Gabriele Buss
T: + 49 251 9796 0
F: + 49 251 9796 260
E: sales@behn Bates.com
W: www.behn Bates.com
Manual, semi-automatic and fully automatic filling systems for the filling of all kind of food and animal feed products into valve and open-mouth bags with filled weights from 1.5 up to 50 kg and big bags of up to 1,800 kg.

BERGU INTERNATIONAL AB

Nygata 30
Box 5006
Helsingborg
S-250 05
Sweden
Contact: Mr Conny Simonsson
T: + 46 42 12 7970
F: + 46 42 12 8002
E: bergu@telia.com
W: www.bergu.com
Design and manufacture bag emptying equipment as well as pneumatic conveyors, silos and silo discharge systems, diverter valves, etc.

BEST SERVICE GROUP (B.S.G.) BVBA

Bogaardstraat 168M
Maldegem
Oost-Vlaanderen
B-9990
Belgium
Contact: Mrs Kathleen Breusegem
Job Title: Managing Director
T: + 32 50 711801
F: + 32 50 710402
E: info@sobemai.com
W: www.sobemai.com

BGS HOLLAND

Hoogeveeneweg 5
Nieuwerkerk ad IJssel
2913 LV
The Netherlands
Contact: Ms Martina Hermans
T: + 31 180 317838
F: + 31 180 315538
E: info@bgsholland.nl

W: www.bgsholland.nl
Specialise in tailor made design/manufacturing of loading spout for dry granular and powdery products prone to dust problems. Produce the unique Choke Feed Scavenger.

BIRRUS INTERNATIONAL PTY LTD

10 Dandenang Street
Dandenong
Victoria
3175
Australia
Contact: Mr Paul Shultz
Job Title: Managing Director
T: + 613 9769 2646
F: + 613 9769 2535
E: sales@birrus.com.au
W: www.birrus.com.au

BLUG CREDEBLUG S.L.

Juan XXIII - 9
Azpeitia
Guipuzcoa
20730
Spain
Contact: Mr JR Zubeldia
Job Title: Commercial Manager
T: + 34 943 810 150
F: + 34 943 815 665
E: comercial@blug.es
W: www.blug.es
BLUG is strongly related to bulk terminal handling operations for more than 44 years, with different grabs performing successfully in the 5 continents. BLUG's presence in maritime terminals is mainly focused in European, American and African ports as a quality product reference.

We inspect

Our inspectors oversee loading and discharge to ensure that your cargo meets your contractual obligations

We sample

Our ISO certified sampling methods guarantee homogenous, representative samples every time

We analyse

Our qualified chemists utilise state-of-the-art equipment to deliver the most precise and prompt results

Clients around the world trust Alex Stewart International to deliver fast, flexible and precise inspection and analytical services. Our comprehensive portfolio covers metals and minerals, crude oil and petroleum products, and agricultural commodities. Dependable and value-added solutions are guaranteed.

Our Global Network spans 45 Offices and 17 Laboratories. To find out more visit:
www.alexstewartinternational.com

Alex Stewart (International) Corporation
Official ASIC Partner

21 Sefton Business Park, Liverpool, Merseyside L30 1RD United Kingdom T: +44 (0) 151 525 1488 E: analysis@alexstewartinternational.com

The 35th World Coal Conference
World Coal Leaders Network™

Barcelona 18 – 20 October 2015



All. Together.
Better.

The World Coal Leaders Network is your chance to be part of a better way of networking, to gain invaluable industry insight and to take your business forward.

Register by 7 August for just

€1799

coaltrans.com/wcc

BOSCH REXROTH B.V.

Kruisbroeksstraat 1
Boxtel
Noord-Brabant
5281 RV
The Netherlands
Contact: Mr Edwin Doedee
Job Title: Sales Manager,
Materials Handling & Mining
T: + 31 411 65 19 51
F: + 31 411 65 14 83
E: rickinders@boschrexroth.nl
W: www.boschrexroth.nl
Has a worldwide responsibility for
turnkey projects and the
development and production of
Hydraulic Cylinders. Core
competence is the development of
engineered-to-order products,
mostly one-off solutions for
specific applications.

BOYNE AREA MANUFACTURING (BAM)

1 Altair Drive
Boyerne City
MI
49712
USA
Contact: Mr John Laursen
Job Title: Director of Sales &
Marketing
T: + 1 231 459 4242
F: + 1 231 459 4243
E: jlaursen@boynearea-mfg.com
W: www.boynearea-mfg.com
Bulk Material Handling Specialist.
Design, Engineer and Build,
Spouts, Positioners, Gates &
Valves, Diverters, Air Flow
Conveyors, Hoppers, Bin Vents, &
Dust Collectors. We are a new
(4yrs.) & growing company with
over 100 years of combined
experience. Our designs and
equipment have been sold and
installed throughout the world.
Other services - on-site inspection
& equipment recommendations.

BROCK GRAIN SYSTEMS

A Division of CTB, Inc
611 N. Higbee Street
PO Box 2000
Milford
Indiana
46542-2000
USA
Contact:
Job Title: Managing Director
T: + 1 574 658 4191
F: + 1 574 658 4133
E: brock@brockgrain.com
W: www.brockgrain.com
Brock Grain Systems
manufactures and supplies
reliable commercial grain storage
silos and hopper-bottom holding
silos, grain dryers and controls,
sweeps, bucket elevators, drag
and screw conveyors, and
catwalks and structural support
towers.

BRUKS ROCKWOOD INCORPORATION

5975 Shiloh Road
Suite 109
Alpharetta
GA
30005
USA
Contact: Mr Ken Upchurch
Job Title: Vice President of Sales
& Marketing
T: + 1 770 849 0100 x109
E: kuh@bruks.com
W: www.bruks.com

BUCKET MART INC.

PO Box 1240
Marion
Illinois
62959
USA
Contact: Mr Jack Johnson
Job Title: President/CEO
T: + 1 813 390 8626
F: + 1 813 908 9474
E: salesbucketmart@aol.com
W: www.bucketmart.net
We have all Sizes/Types of
New/Used
Clamshells/Grapples/Misc./
buckets, Grapple buckets,
Dragline buckets, Grabs,
Concrete buckets, misc. for
sale/rent/lease.
Buckets/Grapples/Clamshells/ for
Handling Scrap, Cement, Logs,
Ore, Coal, Grain, Waste, Gravel,
Rock, Stone, Demolition, Misc.
Supplying Customers
Worldwide/Around the Clock/24-7!

BÜHLER AG, GRAIN LOGISTICS



Gupfenstrasse 5
Uzwil
CH-9240
Switzerland
Contact: Mr Marcel Sherrer
T: + 41 71 955 3950
E: marcel.scherrer@
buhlergroup.com
W: www.buhlergroup.com
Customized solutions for grain
handling. Bühler Grain Logistics
Terminals is the ideal partner
when it comes to reliable
solutions in the area of grain
handling and storage. The
company's wide range of
offerings includes ship loading
and unloading solutions,
conveying systems and silos as
well as storage equipment.

BULK LIFT INTERNATIONAL

1013 Tamarac Drive
Carpentersville
IL
60110
USA
Contact: Mr Brian Kelly
Job Title: National Sales Manager
T: + 1 847 428 6059 x 215
F: + 1 847 428 7180
E: briank@bulklift.com
W: www.bulklift.com
Manufactures a wide array of
flexible intermediate bulk
containers (FIBCs), or bulk bags.
With manufacturing facilities
worldwide and stocking available
in the United States the company
can offer just in time deliveries of
all bulk bag requirements.

BUTTIMER GROUP

Carrigeen Industrial Estate
Cahir
Co. Tipperary
Republic of Ireland
Contact: Mr Fergal Buttimer
Job Title: Director
T: + 353 52 744 1377
F: + 353 52 744 1087
E: info@buttimerbulk.com
W: www.buttimerbulk.com
Buttimer Group specialises in the
mechanical handling of dry bulk
products such as grains, ores,
coal, biomass. Over 30 years'
experience delivering design,
installation and management of

turnkey bulk terminals,
mechanical handling systems and
bespoke equipment
internationally.

BV BECO



De Limiet 18
Vianen
Utrecht
4131 - NR
The Netherlands
Contact: Mr Henk van Vuren
Job Title: Managing Director
T: + 31 347 323 100
F: + 31 347 377 780
E: h.vanvuren@beco-vianen.nl or
d.vanhattem@beco-vianen.com
W: www.becograbs.com
One of the world's leading
specialists in grabs for the bulk
market. For more than 20 years
Beco Grabs have been providing
high-end, ready-to-run
technological solutions. We have
a big scale of products: Grabs -
Wheelloader, excavator and
demolition equipment - Tipping
Trailers - Hooklift carriers -
Harbour- and industrial trailers.

C SPENCER LTD

One Humber Quays
Wellington Street West
Hull
HU1 2BN
UK
Contact: Mr Joe Booth
Job Title: Business Developer
T: + 44 113 815 0015
E: engineering@spencerltd.co.uk
W: thespencergroup.co.uk

CACHAPUZ BILANCIAL GROUP

Parque Industrial de Sobreposta
Apartado 2012
Braga
Braga
4701-952
Portugal
Contact: Mr Nuno Matos
Job Title: International Business
Developer
T: + 351 253 603 480
F: + 351 253 603 485
E: info@cachapuz.com
W: www.cachapuz.com
Cachapuz is a reference in the
implementation of innovative
solutions to automate the
logistics, dispatching, reception
and weighing processes in
industrial plants. With a modular
platform and extensive know-how,
Cachapuz is able to meet the
needs of several sectors
worldwide.

CALIM GRAB INDUSTRY

Piri Reis Cad
Çınar San.
Sitesi No:46 Maltepe
Istanbul
81540
Turkey
Contact: Mr Murat Calim
T: + 90 533 226 4923
F: + 90 216 399 79 71
E: info@calimkepcce.com
W: www.calimgrabs.com or
www.calimkepcce.com
Calim Grabs is a manufacturer of
mechanical, electro-hydraulic and
remote controlled grabs.

CAMAR MILL SYSTEMS LTD

P.O. Box 419
1600 King St N
St. Jacobs
Ontario
N0B 2N0
Canada
Contact: Mr Rick Weber
Job Title: President
T: + 1 519 664 3709
F: + 1 519 664 3700
E: rick@camar.ca
W: www.camar.ca

CAMBELT INTERNATIONAL CORP

2820 West. 1100 South
Salt Lake City
Utah
84104
USA
Contact: Mr Dave Hansen
Job Title: Vice President
T: + 1 801 972 5511 ext.205
F: + 1 801 972 5522
E: info@cambelt.com
W: www.cambelt.com
Suppliers of fully moulded
sidewall belting, high incline
conveyor systems, dome storage
reclaim systems and conveyor
components.

CATERPILLAR BELGIUM

Ave des Etats Unis
Charleroi
B6041
Belgium
Contact: Mr Philippe Michaux
Job Title: Marketing
F: + 32 71 25 29 56
E: michaux_philippe@cat.com

CATERPILLAR INC

100 NE Adams Street
Peoria
IL
616-6335
USA
Contact: Mrs Sharon Holling
Job Title: PR
T: + 1 309 675 8995
F: + 1 309 675 4757
E: Holling_Sharon_L@Cat.com
W: www.cat.com
Wide range of front end loaders,
bulldozers, wheel loaders etc,
used for all types of bulk products
and different industry applications.

CAVOTEC DEUTSCHLAND GMBH

Ludwig-Erhard Strasse 1a
Eschborn
D-65760
Germany
Contact: Dipl.-Ing. Thomas Dreyer
T: + 49 6196 50950 20
F: + 49 6196 50950 22
E: thomas.dreyer@cavotec.com
W: www.cavotec.com
Cable management systems with
electrical cable reels, hose reels,
cables/hoses with up to 25kV.
Spring reels; Plugs and
sockets/connectors up to 600A up
to 25kV medium voltage
collectors, remote controls with
Atex.

CAVOTEC SA

Via S. Balestra 27
Lugano
CH-6900
Switzerland
Contact: Mr Michael Scheepers
Job Title: Director, Investor
Relations & PR
T: + 41 91 911 4010

F: + 41 91 922 54 00
E: michael.scheepers@cavotec.com
W: www.cavotec.com
Cavotec Group is a global leader
in connecting mobile equipment.
Products from the Cavotec Group
manufacturing units include: Eex
radio remote controls, electrical
connectors up to 15kV, flexible
cables, cable reels, and slipping
units. Distribution is supported by
22 Cavotec sales and service
companies around the world.

CDM SYSTEMS, INC

6002 East N Avenue
Kalamazoo
MN
49048
USA
Contact: Mr Andrew Parker
T: + 1 763 428 9700
F: + 1 763 428 9701
E: steve@cdmsys.com
W: www.cdmsys.com
CDM Systems offers a
comprehensive array of Bulk
Conveying Systems, Components
and Engineering/Design Services.
With over 30 years of experience,
we can provide you with
conveying and bulk handling
solutions for Materials from Ash
through Zinc, including marine
applications as well as those in
hostile, severe or high-
temperature environments.

CESUR PACKAGING CORPORATION

Yakacak Yanyol
Senem Sokak No:11
Kartal
Istanbul
34876
Turkey
Contact: Mr Cihan Cesur
Job Title: Sales & Marketing
Director
T: + 90 216 377 28 55
F: + 90 216 377 11 90
E: info@cesur.com
W: www.cesur.com
Cesur Packaging is a
manufacturer of all types of FIBC
's (Type A , B , C , D for various
industries - UN, Food Grade,
Hygiene big bags), PP woven
bags and international dunnage
bags with 82 years of experience
in the industry and international
markets.

CFS HANDLING SRL.

Head Office
Via Sigalina a Mattina, 12/14
Montichiaro
BS
25018
Italy
Contact: Mr Italo Civettini
Job Title: CEO
T: + 39 0309 64199
F: + 39 0302 072026
E: civettini@cfshandling.it
W: www.cfshandling.it

CHIEF INDUSTRIES UK LTD.



Beckingham Business Park
Tolleshunt Major
Maldon
Essex
CM9 8LZ
UK
Contact: Mr Geoff Freed
T: + 44 1621 868944
F: + 44 1621 868955
E: info@chief.co.uk
W: www.chief.co.uk
International supplier of galvanized grain storage silos and ancillary equipment. Undertake complete projects or component supply to main contractors. Manufacturing companies in USA, UK and France, providing flexibility for international design standards. Experienced in countries throughout the world.

CHIEF INDUSTRIES, INC.

Chief Agri/Industrial Division
P.O. Box 848
Kearney
NE
68848
USA
Contact: Mr Steve Ginter
T: + 1 308 237 3186
F: + 1 308 389 6703
E: agri@chiefind.com
W: www.agri.chiefind.com

CHINA SONANGOL INTERNATIONAL (S) PTE LTD

9 Temasek Boulevard #42-01
Suntec Tower 2
Singapore
038989
Singapore
Contact: Mr Eugene Tan
T: + 65 6808 1880
F: + 65 6808 1881
E: sg@chinasonangol.com
W: www.chinasonangol.com

CHRISTIANSON SYSTEMS INC.



20421 15th Street Southeast
Blomkest
Minnesota
56216
USA
Contact: Mr Mike Schow
Job Title: Sales Manager
T: + 1 320 995 6141
F: + 1 320 995 6145
E: sales@christianson.com
W: www.christianson.com
Manufactures ship unloaders and conveyor systems under brand names of Handlair, VacBoss, Vac-U-Vator, SeedVac, ChemVac, Push-Pac, SuperTower and SuperPortable. Equipment for the transfer of dry flowable products including grain, feed, seed, rocks and sand.

CIMBRIA BULK EQUIPMENT



Industrivej 1a
Herning
DK- 7400
Denmark
Contact: Mr Lars Noergaard
Job Title: Managing Director
T: + 45 72 42 24 00 / +45 96179000
F: + 45 72 42 24 99
E: cbe@cimbria.com
W: www.cimbria.com
Markets a large line of products within dustfree loading systems. Loading solutions can be delivered for all types of material using ship loading, stock piling, road and rail. Close to 30 years experience. Product programme covers all branches where bulk products are handled from agriculture to industry.

CLARIANT CORPORATION

101 Christine Drive
Belén
NM 87002
USA
Contact: Mr Justin Mueller
Job Title: Head of Business Group CDP Americas
T: + 1 505 975 1676
E: desiccants@clariant.com
W: www.desiccants.clariant.com
Clariant Cargo and Device Protection offers moisture solutions such as Container Dri® II container desiccants for a broad range of transport applications: from goods traveling in conventional cargo containers to shipment and storage of sensitive electronic and semiconductor devices.

CLAUDIUS PETERS TECHNOLOGIES S.A.S

34 Avenue de Suisse
BP 269
Illzach
Cedex F-68316
France
Contact: Mr Jean Christophe Fassel
Job Title: Sales Manager
T: + 33 389 313 301
F: + 33 389 619 525
E: technologiessa@claudiuspeters.com
W: www.claudiuspeters.com
Worldwide suppliers of stacking and reclaiming equipment for linear or circular storage systems for a wide range of bulk commodities within process or dispatch terminals.

CLEVELAND CASCADES LTD



Unit 22 Dukeway
Teesside Industrial Estate
Thornaby

Stockton on Tees
TS17 9LT
UK
Contact: Mr Ian Barnard
Job Title: Managing Director
T: + 44 1642 753260
F: + 44 1642 753270
E: enquiries@clevelandcascades.co.uk
W: www.clevelandcascades.co.uk
Designs, manufactures, markets and installs bulk loading chutes for ship loading, silo filling, truck loading, conveyor transfer point; minimising dust emissions and product degradation, as well as segregation.

COBRA EUROPE SA

12 rue Henry Guy
BP 40081
Luxeuil les Bains Cedex
70300
France
Contact: Mr Edgar Mansour
Job Title: President
T: + 33 671 58 72 56
F: + 33 384 40 44 92
E: emphone@cobra-cs.com
W: www.cobra-cs.com
The COBRA group is specialized in the manufacturing and distribution of conveyor components for the material handling industry. COBRA group combines five businesses: Conveyor belts (Depreux, Transco, Indi), Components for conveyor (Go Smart) and Vulcanising presses (Mossier). Regional contacts: COBRA EURASIA; Tel: + 73 84 25 85 598, Email: cobraeurasia@bk.ru COBRA AMERICA; Tel: + 1 423 968 9700, Email: bambi@cobraamerica.com COBRA SOUTH PACIFIC; Tel: + 61 2 4722 5633, Email: terry@cobrasp.com.au

CONDEPOLS S.A.

Avda. Iberoamérica, 35
Alcalá La Real
Jaén
23680
Spain
Contact: Mr Ignacio Baillo
Job Title: Commercial Director
T: + 34 91 337 7048 / +34 953 59 81 00
E: ignacio.i.baillo@derprosa.com
W: www.condepols.es
Manufactures and commercialises big bags made of polypropylene to store or transport merchandise ranging from 500 to 2000kg, with one or four lifting points. Also manufacture liners in polyethylene or polypropylene 'Dbulk' for maritime containers to store or transport merchandise in bulk. All the products manufactured are food approved.

CONDUCTIX-WAMPFLER



Rheinstrasse 27 + 33
Weil am Rhein
79576
Germany
Contact:
T: + 49 7621 662 0
F: + 49 7621 662 144
E: info.de@conductix.com
W: www.conductix.com
Conductix-Wampfler's core competency is in the development, production, consulting, and installation of

tailor made, engineered solutions like festoon systems, conductor rails, cable chains, slip ring assemblies or spring and motorized cable reels that provide energy supply and data transmission for moving machinery. Other equipment/services: Energy & Data Transmission Systems.

CONDUCTIX-WAMPFLER AMERICAS

10102 F Street
Omaha
Nebraska
NE 68127
USA
Contact: Mr Mark Zuroske
Job Title: Market Development Manager, Americas
T: + 1 402 952 9300 ext 225
F: + 1 402 339 9627
E: mark.zuroske@conductix.com
W: www.conductix.us
Mobile Electrification systems: Motorized reels, cable festoon systems, cable chains, slip ring assemblies (including hazardous duty), and pendant or radio remote controls. Conductix Wampfler is a global leader in the electrification of rail mounted equipment and bulk handling equipment involved in the storage and handling of all types agricultural products.

CONSERVATEK INDUSTRIES, INC.

498 North Loop 336 East
Conroe
Texas
77301
USA
Contact: Ms Nita Bailey
T: + 1 936 539 1747
F: + 1 936 539 5355
E: nbailey@conservatek.com
W: www.conservatek.com
Designs, fabricates and installs aluminium domes and aluminium roof structures for use on tanks of various shapes and sizes. Typical applications include bulk storage enclosures.

CONTINENTAL CONSTRUCTION (MEMPHIS)

5646 Shelby Oaks Drive
Memphis
Tennessee
38134
USA
Contact: Mr Brian Morphis
Job Title: Marketing
T: + 1 901 382 4070
F: + 1 901 388 2534
E: mail@continentalconst.com
W: www.continentalconst.com
Heavy Industrial Contractor for Foundations, Silos, Conveying, and Unloading. Call (901)382-4070 or go to www.continentalconst.com for more information.

CONTINENTAL CONVEYOR & EQUIPMENT CO INC

PO Box 400
438 Industrial Drive
Winfield
Alabama
35594
USA
Contact: Lou Boltik
Job Title: Director Marketing & Communications
T: + 1 205 487 6492

F: + 1 205 487 4233
E: info@continentalconveyor.com
W: www.continentalconveyor.com
The HAC® has proven itself to be a versatile and money saving alternative for elevating and lowering materials at any angle, up to and including 90° (vertical). The HAC® can be located on a ship or in a loading area.

CONTITECH TRANSPORTBANDSYSTEM E GMBH

Breslauer Strasse 14
Nörtheim
D-37154
Germany
Contact: Mr Andrew Soine
Job Title: International Sales Manager MAXOFLEX
T: + 45 512 99056
F: + 45 864 68841
E: andrew.soine@cbg.contitech.de
W: www.contitech.de/conveyorbelts
With over 30 years experience in design, manufacturing and supply, MAXOFLEX has become one of the leading solution providers in the field of steep angle conveying. Quality, reliability and service is what our customers have come to expect. We pride ourselves on delivering and no challenge is too small.

CPS PROJECTS (PTY) LTD

PO Box 47261
Greyville
Durban
KZN
4023
South Africa
Contact: Mr Banzi Majola
Job Title: Managing Director
T: + 27 31 466 4396
F: + 27 31 466 4399
E: banzi@cpsprojects.co.za
Affiliated with CPS Projects Pty and Salzgitter SA Pty in South Africa, Portquip Pty provides mechanical shiploaders, grabs and truck loaders and unloaders.

GST COVERS



498 N Loop 336 E
Conroe
Texas
77301
USA
Contact: Mrs Kimberly Mathis
Job Title: Global Marketing Director
T: + 1 936 539 1747
F: + 1 936 539 5355
E: kmathis@cstindustries.com
W: www.cstcovers.com
Designs, manufactures and installs large (30m to over 145m diameter) clear span aluminium domes for covering storage systems of all types. Conveyor penetrations and support can be all part of the roof design. Each dome is custom designed to the site and customer specific requirements worldwide. Cost competitive and virtually maintenance free as aluminium does not rust, rot or solar degrade.



Grain. It's your business.



We know exactly how valuable grain is to you and your business. With peak capacity of up to 30,000 tons in a single silo, the total site storage can be as large as you require. For a partner with the expertise, technology and manufacturing methods to ensure that your storage plant is second-to-none in terms of quality and processes, then look no further.

- **Silos** Supplied to Eurocodes, DIN, or ASAE/ASTM standards
- **Cleaners** • **Dryers**
- **Sales** • **Service** • **Parts**



You can trust in Chief.

CHIEF 
CHIEF INDUSTRIES **UK** LTD.

Tel +44 (0)1621 868944
E-mail sales@chief.co.uk
www.chief.co.uk

GST STORAGE

9701 Renner Blvd, Suite 150
Lenexa
KS
66110-2907
USA

Contact: Mr David Wheat
Job Title: Director
T: + 1 913 621 3700
F: + 1 913 621 2145

E: sales@gst-storage.com
W: www.gstindustries.com
Columbian TecTank is the leading manufacturer of bolted steel, and factory welded storage tanks for the dry bulk market. Columbian TecTank is proud to introduce a new coating - Trico-Bond EP™, a high-performance, factory-applied, thermally-cured, highly-engineered modified epoxy powder coating.

GWA ENGINEERS

#380 - 2925 Virtual Way
Vancouver
BC

V5M 4X5
Canada

Contact: Mr Steven Yee
Job Title: Vice President
T: + 1 604 637 2275
F: + 1 604 637 2276

E: syee@gwaengineers.com
W: www.gwaengineers.com

DBIS (SOFTWARE AND AUTOMATION) LTD

4 Railway Court
Ten Pound Walk
Doncaster
South Yorkshire
DN4 5FB
UK

Contact: Mr David Trueman
Job Title: Sales Director
T: + 44 1302 330 837
F: + 44 1302 724 731
E: david.trueman@dbis.biz
W: www.dbis.biz

Specialize in Industrial IT Solutions. The CommTrac system is a total Facility Management solution for grain and animal feed stores, combining optimized operations and stock control with traceability and HACCP food safety procedures in compliance with legislation and assurance scheme requirements.

DCL, INCORPORATED

PO Box 125
Charlevoix
MI
49720
USA

Contact: Mr Kyle Smith
T: + 1 231 547 5600 Ext 3124
F: + 1 231 547 3343
E: sales@dclinc.com
W: www.dclinc.com

DCL provides loading systems as well as components to the bulk material handling industry. Our product line includes Loading Spouts, Loading Spout Positioners, Aeration Equipment, Shut-Off Valves, Diverter Valves, Dust Collection Equipment, Bag and Drum Filling, System Design, and Plant Automation.

DE REGT CONVEYOR SYSTEMS

Ijzendijkseweg 5
Biervliet
Zeeland
4521 GX
The Netherlands

Contact: Mr Peter De Regt
Job Title: Director
T: + 31 115 481238
F: + 31 115 481234
E: peter@deregt.com
W: www.deregt.com

De Regt is a company specialized in developing, building and installing conveyor systems and structures needed to achieve a partial or total project.

DEARBORN MIDWEST CONVEYOR CO.

8245 Nieman Road
Lenexa
Kansas
66214
USA

Contact: Mr Sudy L Vohra
Job Title: Executive Vice President

T: + 1 913 261 2406
F: + 1 913 261 2470
E: sudyv@dmwcc.com
W: www.mwconveyor.com

MWC furnishes the design, supply and erection of Grain Handling Conveyor Systems, fertilizer storage, unloading and loading systems at terminals. Some of the systems include grain storage facilities in Egypt and China. The Products include Belt Conveyors, Pipe Conveyors

DEMAG CRANES & COMPONENTS GMBH

Benefit recipient: Gottwald Port Technology
Forststrasse 16
Düsseldorf
D-40597
Germany

Contact: Mr Christoph Kreuzenbeck
T: + 49 211 71 02 3907
F: + 49 211 71 02 53907
E: christoph.kreuzenbeck@terex.com

W: www.demagcranes-ag.com
Demag Cranes & Components GmbH - a subsidiary of Demag Cranes AG - is a supplier of industrial cranes and crane components for material flow, logistics and industrial drive applications. It also offers spare parts, maintenance and refurbishment services.

Represented globally by approx. 5,000 employees in 22 foreign subsidiaries and agencies in 46 countries. With more than 650,000 Demag brand cranes and hoists for industrial applications in operation, the company has the largest installed base worldwide.

DEMARCO INDUSTRIAL VACUUM CORPORATION

PO Box 1138
Crystal Lake
IL
60039-1138
USA

Contact: Mr Thomas DeMarco
Job Title: President
T: + 1 815 344 2222
F: + 1 815 344 2223

E: Sales@DeMarcoVacuums.com
W: www.DeMarcoVacuums.com
Manufacturer of Patented DEMARCO Industrial Vacuum Systems and vacuum loaders for portable, stationary and central manifold systems. 10 to 300 HP

DINNISSEN BV

Horsterweg 66
Sevenum
NL-5975 NB
The Netherlands

Contact:
T: + 31 77 467 35 55
F: + 31 77 467 37 85
E: powtech@dinnissen.nl
W: www.dinnissen.nl

Dinnissen is an international company for bulk materials technology, machine development, processing, control, automation and engineering. Intake of raw materials, conveying, storage, mixing, drying, sieving, big-bag filling. Machines and systems for powders and granules for the chemical / pharmaceutical / food / petfood / feed / aquafeed industry.

DMN-WESTINGHOUSE

Gieterij 3
PO Box 6
Noordwijkerhout
Zuid-Holland
NL-2210 AA
The Netherlands

Contact: Mrs Tonneke Krempel
Job Title: Manager Marketing Services and PR

T: + 31 252 361 800
F: + 31 252 375 934
E: dmn@dmn-nwh.nl

W: www.dmnwestinghouse.com
Offering tailor-made solutions in the design and manufacture of rotary valves, diverter valves and other components for the bulk solids handling industry for more than 40 years. The company's products are distributed and supported worldwide.

DOME CORP OF NORTH AMERICA

5450 East Street
Saginaw
Michigan
48601
USA

Contact: Mr Ross Lake
Job Title: President
T: + 1 989 777 2050
F: + 1 517 777 3477
E: sales@dome-corp-na.com
W: www.dome-corp-na.com

DOME TECHNOLOGY, LLC

3007 East 49th Street North
Idaho Falls
Idaho
83401
USA

Contact: Mr Ashley Sterland
Job Title: Chief Marketing Officer
T: + 1 208 529 0833
F: + 1 208 529 0854
E: ashley.sterland@dometechnology.com
W: www.dometechnology.com

Dome Technology Inc., (Inventors of the thin shell concrete dome) - activities include the design and construction of modern, insulated reinforced concrete domes for both industrial and commercial applications. Dome Technology builds domes for all bulk storage products throughout the world. Products commonly stored include fertilizer, cement, clinker, gypsum, fly ash, coal, alumina, grains and mining ores. Established in 1976.

DOMTEC INTERNATIONAL LLC

4355 N Haroldsen Drive
Idaho Falls
Idaho
83401
USA

Contact: Mr Mike Hunter
Job Title: General Manager
T: + 1 208 522 5520
F: + 1 208 522 5344

E: domtec@domtec.com
W: www.domtec.com
Serving the bulk storage industry for many years, constructing concrete domes to store a multitude of products. The company designs and constructs high quality concrete domes, delivering projects on time and within budget. They have broad experience with a variety of reclaim systems, both mechanical and pneumatic, pending on clients' needs.

DONALDSON FILTRATION DEUTSCHLAND GMBH

Industriestraße 11
Dülmen
48249
Germany

Contact: Mrs Susanne Fulko
Job Title: Marketing Manager
T: + 49 2594 781 0
F: + 49 2594 781 21

E: IAF-de@donaldson.com
W: www.DonaldsonToritDCE.com
Donaldson offers innovative dust collection systems. The products are engineered to improve efficiency, save energy and extend filter lifetime. The R&D engineers invented new filtration technologies for customers and their specific applications.

DOOSAN BENELUX SA

Drève Richelle 167
Waterloo
B-1410
Belgium

Contact: Mr George Schmalzried
Job Title: Public Relations Manager
T: + 32 2 371 6811
F: + 32 2 371 6900

E: george.schmalzried@doosan.com
W: www.bobcat.eu;
www.doosanequipment.eu
Range of compact skid-steer and tracked loaders for ship-trimming and cargo hold unloading (together with grab) with operating capacities from 318-1542 kg; telescopic handlers with lift capacities from 2.2-4.0 tonnes and max lift heights from 5.2-16.7 metres.

DOS SANTOS INTERNATIONAL, LLC



531 Roselane Street
Suite 810
Marietta
Georgia
30060
USA

Contact: Mrs Amy D. Duncan
Job Title: Marketing Manager
T: + 1 770 423 9895
F: + 1 866 473 2252
E: info@dossantosintl.com
W: www.dossantosintl.com
Specialists in belt conveying

technology for bulk materials. The world's foremost authorities on high angle conveyor applications and design of sandwich belt type high-angled conveyors. Additionally, discipline-oriented engineering services in mechanical and structural engineering are offered as well as our ExConTec, a conveyor software design program.

DRY-BAG A/S

Dalagarde 1
Århus C
DK 8000
Denmark

Contact: Mr Soren
Job Title: Marketing
T: + 45 86 19 0500
F: + 45 86 19 0577
W: www.desiccant.com

DSH SYSTEMS LTD.



PO Box 48052
Blockhouse Bay
Auckland
Auckland
0644

New Zealand
Contact: Mr Ian Walton
Job Title: CEO
T: + 64 275 999 592
F: + 64 9828 8012

E: ian@dshsystems.com
W: www.dshsystems.com
DSH Systems award winning dust suppression loading spouts contain the dust from free-running, dry, granular products in a tight free-falling column. No electricity required, has no internal moving parts, mitigate dust explosion risk, achieve health, safety, environmental and business benefits.

DUST CONTROL TECHNOLOGY

1607 W. Chanute Rd.
Peoria
IL
61615
USA

Contact: Mrs Laura Stiverson
Job Title: General Manager
T: + 1 309 693 8600
F: + 1 309 693 8605
E: info@dustboss.com
W: www.dustboss.com
DustBoss® suppression systems deliver field-proven solutions for open-area dust issues, including source-point particle management and a family of mobile units. Proprietary technology delivers superior results and reliability, able to blanket up to 280,000 square feet with a single oscillating machine.

DUST SOLUTIONS INC.

130 Bay Pines Road
Beaufort
South Carolina
29906
USA

Contact: Mr Richard Posner
Job Title: President
T: + 1 843 846 3700
F: + 1 843 846 3701
E: sales@nodust.com
W: www.nodust.com
Manufacturers of Dry Fog Dust Suppression Systems for conveyors, truck & rail dumps, hoppers, feeders, crushers, ship loaders/unloader. Modular

systems produce fog droplets that attach to like size airborne dust particles. Functions in below freezing temperatures. DustTamer Windfences for hoppers & stockpiles.

E-CRANE WORLD WIDE

Koekoeklaan 53
Adegem B-9991
Belgium
Contact: Mr Bas Tolhuizen
Job Title: International Sales Manager
T: + 31 165 320100
F: + 31 165 320759
E: bas.tolhuizen@e-crane.com
W: www.e-crane.com

Provides engineering, sales management and technical product support for the E-Crane fleet. The 'E' stands for equilibrium. A revolutionary hydraulic bulk material handler, the E-Crane uses the balance principle and is perfectly suited for loading and unloading ships and inland river barges, all while consuming up to 50% less energy.

E-CRANE WORLD WIDE/E-CRANE INTERNATIONAL USA

5 E Long St., Suite 1201
Columbus
Ohio
43215
USA

Contact: Mr Mark W Osborne
Job Title: President
T: + 1 419 468 0090
F: + 1 419 468 0074
E: mark.osborne@e-crane.com
W: www.ecrane-usa.com
Equilibrium Cranes from 6 to 40 tons capacity, reach from 64 to 147 feet with project specific lowers such as fixed, gantry, rail or crawler for bulk material handling.

ECS EUROARGO SERVICES AS

Tongavej 19
Århus C
DK-8000
Denmark
Contact: Mr Peterson
T: + 45 86 20 82 20
E: ecs@eurocargoservices.dk
W: www.eurocargoservices.dk
Custom clearance Evaluation of damages

EDGE INNOVATE



30 Farlough Road
Newmills
Dungannon
Tyrone
BT71 4DT
Northern Ireland
Contact: Mr Lee Williamson
Job Title: Sales Manager
T: + 44 2887 740525
F: + 44 2887 747244
E: lee@edgeinnovate.com
W: www.edgeinnovate.com
Edge Innovate are a blue sky thinking, imaginative and creative equipment manufacturing company. With our ethos of "Innovation at Work" EDGE persist in pushing the boundaries of design and manufacturing to produce hard working, quality

machinery to fit any materials handling requirement from recycling, material handling to quarrying.

ELGIN ENGINEERING AND CONSTRUCTION

2001 Butterfield Road
Downers Grove
Chicago
Illinois 60515
USA
Contact: Mr Bob Williams
Job Title: Marketing Director
T: + 1 630 434 7200
F: + 1 630 434 7272
E: soros@elginindustries.com
W: www.elginindustries.com
An international consulting and engineering firm specialised in conceptual development, planning, feasibility studies, design engineering, project management, construction supervision, etc.

EMS-TECH INC

699 Dundas Street West
Belleville
Ontario K8N 4Z2
Canada
Contact: Ms Gail Carl
Job Title: Executive Assistant, Sales & Marketing
T: + 1 613 966 6611
F: + 1 613 966 6710
E: sales@ems-tech.net
W: www.ems-tech.net
A multi-task, multi-discipline company specialising in design and supply of dry bulk material handling equipment, including custom designed conveyors, shiploaders, stackers and reclaimers, self-unloading ships, bulk elevators, receiving hoppers, storage/loadout systems, environmental controls.

ENCLOSED BULK SYSTEMS BV

Wijkerveer Weg 72
Beverwijk 1948 NX
The Netherlands
Contact: Mr Van der Zee
T: +31 85 877 4026
E: info@enclosedbulk.nl
W: www.enclosedbulk.com
EBS is specialized in the supply of environmental friendly enclosed conveyor belts.

ENCO ENGINEERING INC

4410 13th Street
Wyandotte
MI 48192
USA
Contact: Ms Bobbi Lang
T: + 1 734 407 2400 x 202
F: + 1 734 676 3436
E: enco@encoeng.com
W: www.encoeng.com
Enco Engineering provides a broad spectrum of services ranging from conceptual studies through detailed engineering and supply of ship loaders and related bulk handling equipment.

ENDRESS + HAUSER INC

2350 Endress Place
Greenwood
IN
46143
USA
Contact: Mr Victor Wolowec
T: + 1 317 535 1410
F: + 1 317 353 1481
E: info@us.endress.com
W: www.us.endress.com

Processes control devices and measurement systems, which include level flow, pressure tank gauging, temperature and liquid analysis systems.

ENGICON NV

Broelstraat 20
Harelbeke
B-8530
Belgium
Contact: Mr Pieter Van Acker
Job Title: Sales & Marketing Director
T: + 32 56 73 21 21
F: + 32 56 73 40 40
E: sales@geldof.be
W: www.geldof.be
Specialised in the engineering, construction and erection of storage and handling installations for bulk goods. Fully equipped mechanical shiploaders; Silos; Tanks; Dust reducing hoppers and stackers; Belt, chain and bucket elevators, conveyors and screws. Large turnkey installations combining storage and handling; Environmental projects - flue gas cleaning, waste incineration plants, recycling plants.

EQUIPO LLC

Salahudeen Road
Dubai
64624
UAE
Contact: Mr Mohamad Yasar
Aboobackar
Job Title: Operations & Sales Manager
T: + 971 506 408 626
F: + 971 426 822 17
E: yasar@equipollc.com
W: http://www.equipollc.com/

ESI EUROSILLO BV

Newtonstraat 26-28
Purmerend
1446 VR
The Netherlands
Contact: Mr Jaap P J Ruijgrok
Job Title: Managing Director
T: + 31 299 630 730
F: + 31 229 630 737
E: esi@eurosilo.com
W: www.eurosilo.com
Large scale flat bottom storage silos with a Eurosilo stacking and reclaim system inside.
Max. storage volume 100,000 m3 per unit.

EUROMECC SRL

Via Visano 78/80
Isorella
25010
Italy
Contact: Mr Ricardo Segala
Job Title: Sales and Marketing
T: + 39 030 9958 151
F: + 39 030 995 2223
E: sales@euromecsr.info
W: www.euromecsr.com
EUROMECC, born from the merger of companies Eurohydromec and Isomec, has years of experience in the material handling field and the production of products such as lifting equipment, electrohydraulic and mechanical grabs and buckets.

EURO-TECH CORPORATION

195 23rd. Street
Pittsburgh
PA
15215
USA
Contact: Mr Richard W. Theobald

T: + 1 412 782 0600
F: + 1 412 782 6200
E: sales@eurotechcorporation.com
W: www.eurotechcorporation.com
Eurotech Corporation is a distributor of crane & excavator attachments. We service North and Central America. Our product range includes attachments of all types and in all size ranges including hydraulic, electro hydraulic, diesel hydraulic and mechanical grabs for bulk material handling.

EURO-TRAMCO BV

Spacelab 47 D
Amersfoort
3824MR
The Netherlands
Contact: Mr Hans Plekkenpol
T: + 31 33 4567033
F: + 31 33 4558149
E: hans@tramco-europe.com
W: www.tramcoinc.com
Manufactures chain, screw and bucket conveyors and 'Aerobelt' air-supported belt conveyor systems.

FAM FOERDERANLAGEN MAGDEBURG



Sudenburger Wuhne 47
Magdeburg
D-39112
Germany
Contact: Mr Ulrich Schneider
Job Title: Director Sales and Marketing
T: + 49 391 6380 10 1 01
F: + 49 391 6380 10 1 99
E: sales@fam.de
W: www.fam.de
An independent company with its head office in Germany whose scope of services includes: consulting, planning, projecting, design, fabrication, erection, commissioning and plant service.

FIGEE CRANE SERVICES BV

PO Box 235
Zaandam
1500 EE
The Netherlands
Contact: Mr Marc Schinkel
Job Title: Business Unit Manager
T: + 31 75 6810 410
E: m.schinkels@kenz-figee.com
W: www.kenz-figee.com
Engineering, manufacturing, commissioning and service of a wide range of harbour cranes and lifting systems such as grab cranes, including floating Lemniscate cranes, single and double boom cranes and gantry grab cranes.

FLEXCO

2525 Wisconsin Avenue
Downers Grove
IL
60515-4200
USA
Contact: Ms Kelly Clancy
Job Title: Public Relations Specialist
T: + 1 630 971 0150
F: + 1 630 971 1180
E: kclancy@flexco.com
W: www.flexco.com
Founded in 1907, this US-based company services the world's belt conveyors through subsidiaries in

Mexico, England, Germany, Australia and South Africa. Perhaps best known for heavy-duty Flexco® bolt- or rivet-attached belt fasteners, the company has expanded into providing a wide range of accessory products to enhance belt conveyor performance.

FLEXCO EUROPE GMBH

Leidringer Strasse 40-42
Rosenfeld
D-72348
Germany
Contact: Mr Joerg Schairer
Job Title: Managing Director
T: + 49 7428 94060
F: + 49 7428 9406260
E: europe@flexco.com
W: www.flexco.com
Manufacturer and distributor of mechanical belt fastening systems, installation tools, ceramic lagging, cleats and cleaners.

FLEXOVEYOR CONVEYOR

3795 Paris St., Unit D
Denver
Colorado
80239
USA
Contact: Mr Bill Friday
T: + 1 303 375 0200
F: + 1 303 373 5149
E: billfriday@conveyind.com
W: www.flexoveyor.com
A leading manufacturer of material handling equipment for bagged material to include belt conveyors, bag palletizers, empty pallet dispenser and full pallet conveyors. Systems are complete with all required electrical controls, wiring and programming. All equipment is shipped as fully assembled as possible and is tested 100% prior to shipment.

FLSMIDTH WADGASSEN GMBH



Karl-Koch-Strasse 1
Wadgassen
Saarland
66787
Germany
Contact: Mr Matthias Schmidt
Job Title: Sales Director EMENA
T: + 49 6834 470 0
F: + 49 6834 470 339
E: wadgassen@flsmidth.com
W: www.flsmidth.com
FLSmidth's bulk material handling systems are based on more than 70 years of experience in design, engineering, manufacturing and maintenance and are in use for the mining, processing, blending, storage and handling of any type of bulk material.

GANZ DANUBIUS TRADING CO LTD

PO Box 1138
Budapest
H1325
Hungary
Contact: Mr Karol Bayus
Job Title: Director
T: + 36 1 350 5570
F: + 36 1 329 8041
E: gdico@hu.inter.net
W: www.ganztrading.hu
Suppliers of mechanical shiploaders and unloaders, level luffing harbour grab cranes, floating grab cranes and other

bulk handling equipment.

GARWOOD CONSULTING LTD

Garwood Lodge
Wentworth
Ely
Cambridgeshire
CB6 3QG
UK

Contact: Mr Barry Woodbine
Job Title: CEO
T: + 44 780 102 4583
F: + 44 1353 777315

Consultancy and advice in every aspect of dry bulk materials handling for import and export plus storage and distribution including loading and discharge of ships, railcars and road trucks.

GENERAL KINEMATICS CORP.

5050 Rickert Rd.
Crystal Lake
IL
60014
USA

Contact: Mr Ron Fruit
Job Title: Regional Sales Manager
T: + 1 815 444 3561
F: + 1 815 455 2285

E: rfruit@generalkinematics.com
W: www.generalkinematics.com
General Kinematics specializes in vibratory and rotary equipment and solutions for bulk processing of material in the foundry, recycling, scrap, mining, minerals, food, chemical, and wood industries. Custom engineered to your unique application.

GEO. ROBSON & Co. (CONVEYORS) LTD.

Coleford Road
Darnall
Sheffield
S9 5PA
UK

Contact: Mr Jon Skidmore
Job Title: Marketing Manager
T: + 44 114 244 4221
F: + 44 114 243 3066
E: skidmorej@robson.co.uk
W: www.robson.co.uk

Design and Manufacture and Install Bulk Handling Systems including Belt, Screw and Chain Conveyors, Elevators, Hoppers, Vibros and Feeders. Steelwork and Supports. Individual units or Turn Key Projects.

GEOMETRICA INC

12300 Dundee Court
Suite 200
Cypress
Texas
77429
USA

Contact: Mr Cecilio Zalba
Job Title: Sales Manager
T: + 1 832 220 1200
F: + 1 832 220 1201

E: sales@geometrica.com
W: www.geometrica.com
Specializes in design, fabrication and erection of bulk storage enclosures requiring large, column-free interiors. Geometrica structures may span over 300m and may be galvanized steel or aluminium. Geometrica domes are used over circular, square, rectangular, and irregular piles.

GEROLDINGER GMBH & Co KG

Au-Strasse 9
Sigharting
A-4771
Austria

Contact: Mr Walter Geroldinger
Job Title: General Manager
T: + 43 7766 24370
F: + 43 7766 243724

E: office@geroldinger.com
W: www.geroldinger.com
Product range includes grain silos and bins, railcar loaders and unloaders, truck loaders and unloaders and hopper systems.

GOLFETTO SANGATI S.R.L.

Via F.lli Bandiera, 3
Quinto di treviso tv Italy
Quinto di Treviso
TREVISO TV
31055
Italy

Contact: Mrs Monica Giantin
T: + 39 0422 476700
F: + 39 0422 476800

E: info@golfettosangati.com
W: www.golfettosangati.com
Complete plants for bulk or bag handling, including pneumatic or mechanical shipunloaders (ranging from 50 to 1200 tons per hour), bulk or bag shiploaders, engineering of fully automated systems for grain handling.

GOODMAN CONVEYOR COMPANY

U.S. Route 178 South
PO Box 866
Belton
South Carolina
29627
USA

Contact: Mr Carter Matthews
Job Title: VP Sales & Marketing
T: + 1 864 338 7793 x 102
F: + 1 864 338 8732
E: info@goodmanconveyor.com
W: www.goodmanconveyor.com
Belt conveyor idlers, screw conveyors, bucket elevators, drag conveyors.

GOODTECH SOLUTIONS AS

Bjoernstleivene 2
Porsgrunn
N-3917
Norway

Contact: Mr Knut Halvorsen
Job Title: Commercial Group Manager
T: + 47 90 08 74 08
F: + 47 35 93 05 60

E: knut.halvorsen@goodtech.no
W: www.portabulk.com or www.goodtech.no
Part of the Norwegian Goodtech Group, Goodtech Solutions' business network provides superior materials handling technology, services and systems, under the PORTABULK® brand, to a wide variety of user segments throughout the world.

GREYSTONES CARGO SYSTEMS (PTY) LTD

PO Box 22034
Glenashley
Durban
4022
South Africa

Contact: Mr Bruce Poucher
T: + 27 31 274 2600
F: + 27 31 569 2626

E: paul@cargo.greystones.co.za
W: www.greystones.co.za
Manufactures pneumatic and mechanical shiplading and unloading systems, belt conveyor systems and other bulk handling equipment.

GULSAN A.P.

Organize Sanayi Bolgesi 2 Cad.
No: 18
Gaziantep
27180
Turkey

Contact: Ms Gulden Saka
Job Title: Marketing Manager
T: + 90 342 337 1180
F: + 90 342 337 2528
E: info@gulsan-group.com
W: www.gulsan-group.com

GUTTRIDGE LTD

Wardentree Park
Pinchbeck
Spalding
Lincolnshire
PE11 3UU
UK

Contact: Mr Bill Lewis
Job Title: Senior Engineer
T: + 44 1775 765300
F: + 44 1775 765301

E: sales@guttridge.co.uk
W: www.guttridge.co.uk
Manufactures a range of bulk conveying and elevating equipment, as well as storage facilities.

GUVEN GRAB AND MACHINE LTD. Co



Nazim Hikmet Cad 536. sk. No: 9
Aske Köyü
Cayirova
Kocaeli
41420
Turkey

Contact: Mr Engin Demir
Job Title: Sales & Export Manager
T: + 90 262 743 8858
F: + 90 262 743 1141
E: info@guvengrab.com
W: www.guvengrab.com

Established in 1984, Guven Grab & Machine (Guven Kepce Makine) has its own manufacturing facilities. Its product range includes radio remote control grabs, electro hydraulic clamshell/orange peel grabs, mechanical clamshell orange peel touch down grabs and mechanical double wired grabs. It has supplied its units to countries all over the world.

HANSON SILO COMPANY

11587 County Rd
8 SE
Lake Lillian
MN
56253
USA

Contact: Mr Mike Hanson
Job Title: Director of Business Development
T: + 1 800 843 7456
E: hscinfo@hansonlo.com
W: www.hansonlo.com
Hanson Silo is the leader in Modular Precast Concrete Storage Systems.

HASKONING INDIA PVT LTD

13th Floor, Maithili's Signet
Plot - 39/4, Sector 30A
Vashi
Navi Mumbai
400 705
India

Contact: Mr Hareld van den Brink
Job Title: Director of Business - India
T: + 91 22 4161 5004
E: hareld.van.den.brink@rhdvh.com
W: www.royalhaskoningdhv.com

HASLER INTERNATIONAL SA

Z.I. De l'Abbaye
Pont-Evêque
38780
France

Contact: Mr Michel Jamey
Job Title: President and Sales Director
T: + 33 474 161151
F: + 33 474 161155
E: sales.fr@hasler-int.com
W: www.hasler-int.com

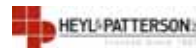
HENRY INTERNATIONAL DIPLOMATIC MARINE

27502 Vina Avenue
Santa Clarita
CA
91351
USA

Contact: Mr Jim Hill
Job Title: International Sales Manager
T: + 1 713 676 2400
F: + 1 713 673 5805
E: jhill@henry.com
W: www.henry.com

Products include: RAM-NEK - Premium heavy duty hatch cover tape. GULF-SEAL - Heavy duty hatch cover tape. MARITAPE-60 - Hatch cover tape. MARITAPE-40 - Hatch cover tape. KOAMING-AIDE - Coaming joint sealant. RAM-WRAP - Pipe repair system

HEYL & PATTERSON INC



400 Lydia Street
Carnegie
PA
PA 15106
USA

Contact: Mr Harry Edelman
Job Title: Executive Vice President
T: + 1 412 788 9810
F: + 1 412 788 9822
E: info@heylpatterson.com
W: www.heyhpatterson.com

Since 1887 the company has designed and manufactured equipment for material handling industries. The line of equipment includes continuous barge unloaders, railcar dumpers, train positioners and railcar indexers. Heyl & Patterson's 'Cub' railcar mover, designed to move short strings of cars at slower speeds, is used by the grain industry for loading and unloading grain cars.

HORIZON CONVEYOR EQUIPMENT

Unit 1, Haysech Road
Halesowen
West Midlands
B63 3PD
UK

Contact: Mr Alan Bowler

Job Title: Managing Director
T: + 44 121 550 2218
F: + 44 121 550 2243
E: info@horizonconveyors.co.uk
W: www.horizonconveyors.co.uk
Manufacturers of steel, plastic and aluminium and idler rollers, conveyor belt scrapers and conveyor components.

HUADIAN HEAVY INDUSTRIES Co., Ltd.

B0813, Huadian Plaza
East Auto-museum Road
Fengtai
Beijing
10070
China

Contact: Ms Chen Qiao
Job Title: Market Manager of Materials Handling International
T: + 86 10 6391 9524
F: + 86 10 63919548
E: chenq@hhi.com.cn
W: www.hhi.com.cn
www.chec.com.cn

HYCONTROL LIMITED

Larchwood House
Orchard Street
Redditch
B98 7DP
UK

Contact: Mr Nigel Allen
Job Title: Marketing
T: + 44 1527 406800
F: + 44 1527 406810
E: nallen@hycontrol.com
W: www.hycontrol.com
Hycontrol manufacture a wide range of level measurement instrumentation and level switches. We measure most liquid and solid materials including, slurries, pastes, powders, grains, pellets and flakes. Measuring ranges up to 80m on a wide range of silos and tanks.

IBC INTERNATIONAL HANDLING AB

Hannv. 1
Falkenberg
S-311 32
Sweden

Contact: Ms Maria Penca
Job Title: Marketing Manager
T: + 46 346 56910
F: + 46 346 56918
E: sales@ibc-international.se
W: www.ibc-international.se

IBC International Handling AB is a total supplier of services and equipment for handling dry bulk goods. We focus in particular on operational security, ergonomic thinking and environmental responsibility. Main products are FIBC filling and emptying stations with adjacent equipment.

IMASA

Palacio Valdes 1
Oviedo (Asturias)
33002
Spain

Contact: Mr Amancio Garcia
T: + 34 985 22 71 78
F: + 34 985 22 25 98
E: amancio.garcia@imasa.com
W: www.imasa.com

IMGS

Mazaya Tower AA1,
Jumeirah Lakes Towers
Suite 2906
Dubai
UAE

Contact: Mr Shahbaz Alikhan
Job Title: Director
T: + 97 144 458 335

F: + 97 144 458 337
E: shahbaz@imgcs.ca
W: www.imgcs.ca

**INSPECTORATE (SUISSE)
SA - BUREAU VERITAS
COMMODITIES DIVISION**

Route de Cossonay 28b
Prilly
CH-1008
Switzerland
Contact: Mr Ivan Ivanov
T: + 41 21 623 62 30
F: + 41 21 623 67 00
E: Agri@inspectorate.ch
W: www.inspectorate.com
Inspections and testing of various commodities worldwide.

**INSPECTORATE AMERICA
CORPORATION**

12000 Aerospace Avenue
Suite 200
Houston
Texas
77034
USA
Contact: Mr Trace Grigione
Job Title: Operations Manager
T: + 1 504 392 7660
F: + 1 504 393 5248
E: trace.grigione@inspectorate.com
W: www.inspectorate.com

INTERJUTE BV

PO Box 154
Hulst
4560 AD
The Netherlands
Contact: Mr Ed Wessels
Job Title: International Sales
Manager
T: + 31 114 311208
F: + 31 114 311512
E: ewessels@interjute.nl
W: www.interjute.com
INTERJUTE is a global supplier of woven polypropylene bags and big bags with offices in the Netherlands, Spain, Romania and Brazil. Based on its 50 years' experience supplying flexible packaging materials, the company has achieved a leading position in the international bulk packaging sector offering quality, efficiency and competitive prices. We deliver from stock throughout Europe including Black Sea and Baltic ports but also to Africa.

**INTERMODAL SOLUTIONS
PTY LTD**

The Zhen Building
210/33 Lexington Drive
Bella Vista
NSW
2153
Australia
Contact: Mr Garry Pinder
Job Title: Managing Director
T: + 61 400 035 548
F: + 61 288 835 195
E: gpinder@intermodalsolutions.com
W: http://www.pittoship.com/

INTERSYSTEMS

9575 N 109th Ave
Omaha
NE
68142
USA
Contact: Mr Ray Vrtiska
Job Title: VP Sales, Bulk Material
Handling
T: + 1 402 330 1500
F: + 1 402 330 3350
E: bulkmatl@intersystems.net
W: www.intersystems.net
Intersystems manufacturers a

complete line of enclosed belt and en-masse conveyors, bulk weighers, bucket elevators, samplers, probes, screeners, distributors, micro ingredient systems and bolted bin systems.

ITALGRU S.R.L

4 Via Briantea
Ambivere
(BG)
24030
Italy
Contact: Mr Fabrizio Bonfanti
Job Title: C.E.O.
T: + 39 0 35 49 32 411
F: + 39 35 49 32 409
E: fabrizio.bonfanti@italgru.it
W: www.italgru.com

J & B GRABS B.V.

P O Box 176
De Meern
Utrecht
3454 ZK
The Netherlands
Contact: Mr Edgar Joustra
Job Title: Director
T: + 31 3066 21616
F: + 31 3066 63765
E: info@jb-grabs.nl
W: www.jb-grabs.com
Designs, engineers and manufactures mechanical and hydraulic grabs for all kinds of bulk material.

JANSEN & HEUNING

Bulk Handling Systems
Duinkerkenstraat 11
Groningen
9723 BN
The Netherlands
Contact:
T: + 31 50 312 64 48
F: + 31 50 313 80 18
E: sales@jh.nl
W: www.jh.nl

JEM INTERNATIONAL

6873 Martindale
Shawnee
Kansas
66218
USA
Contact: Mr James Mattson
T: + 1 913 441 4788
F: + 1 913 441 1711
E: info@jemscales.com
W: www.jembaggingsscales.com
Manufactures complete range of open-mouth bag filling equipment and bag closing conveyors. Also makes self-contained bag plants comprising bag filling scales, bag closing conveyors, air compressor surge hoppers, control panels - all container installed and mounted.

**JENIKE & JOHANSON
INC.**

400 Business Park Drive
Tyngsboro
MA
01879
USA
Contact: Mr Joseph Pitkin
Job Title: Marketing Manager
T: + 1 978 649 3300 (ext 127)
E: jpitkin@jenike.com
W: www.jenike.com
Bulk solids handling engineers with nearly 50 years of field experience. Based on the scientific approach, the company will assist with handling needs, improving the reliability of clients existing equipment and helping to choose new equipment. The quick response engineering team provide on-site consulting services in; Testing, Modelling,



Functional design, Structural design, Equipment supply and Courses/seminars.

**JIM WAY ENTERPRISE
CO., LTD**

No. 17 Chang Tai Street
Lin Hai Industrial Park
Hsiao Kang Dist.
Kaohsiung
81266
Taiwan
Contact: Mr Danny Yang
Job Title: General Manager
T: + 886 7 8718126
F: + 886 7 8718128
E: jw@roller.com.tw
W: www.roller.com.tw
Since its establishment in 1982 and meet the ISO certification in 1998, Jim Way is an expert belt conveyor accessories manufacturer. We focus our know-how to produce idlers, pulley laggings, belt cleaners, skirt rubber, ceramic liners, etc.

**JOY MINING
MACHINERY**

West Quay Road
Sunderland Enterprise Park East
Sunderland
Tyne & Wear
SR5 2TD
UK
Contact: Mr Paul Bancroft
Job Title: Sales & Marketing
Director
T: + 44 191 516 5353
F: + 44 191 516 5399
E: sales@continental-conveyor.co.uk
W: www.continental-conveyor.co.uk
Previously known as Continental Conveyor Ltd.

**KARDESLER GRAB &
MACHINE**

Sultan Orhan Mah
Hasköy Sanayi Sitesi 11/B Blok
No:24
Gebze
Kocaeli
41400
Turkey
Contact: Mr Huseyin Isikoglu
Job Title: Export Manager
T: + 90 262 6445018
F: + 90 262 6445017
E: kardesler@kardeslerkepce.com
W: www.kardeslerkepce.com and

www.kardeslergrab.com
Established in Istanbul/Maltepe in 1985, KARDESLER GRAB AND MACHINE first produced grabs for sand. Now products are produced suitable for the needs of the modern age. The company considers quality service and customer satisfaction vital and happily serves clients both in Turkey and foreign countries. Today, to provide better service, clients are served out of its factory in Kocaeli/Gebze Haskoy.

KINERGY CORPORATION

7310 Grade Lane
Louisville
Kentucky
40219
USA
Contact: Mr Bill Ware
Job Title: Project Manager
T: + 1 502 366 5685
F: + 1 502 366 3701
E: bware@kinergy.com
W: www.kinergy.com
Manufacturer of vibratory machines for bulk solid material handling. Induced Vertical Flow units either discharge or densify materials placed in storage. Induced Conveying units use vibration to transport or process bulk solid materials.

**KING BAG &
MANUFACTURING CO**

1500 Spring Lawn Avenue
Cincinnati
OH
45223
USA
Contact: Mr Mike Jennings
T: + 1 513 541 5440 ext 306
F: + 1 513 541 6555
E: mike@kingbag.com
W: www.kingbag.com
Manufactures FIBCs with 100 years of experience in the speciality bag business producing custom sewn products for customers around the world.

**KIROW ARDEL
GmbH**

Heegermühler Straße 64
Eberswalde
16225
Germany
Contact: Dr Wolfgang Melzer
Job Title: Managing Director
T: + 49 3334 62 2275

F: + 49 3334 62 1275
E: wolfgang.melzer@kranunion.de
W: www.arde.lt.de
Crane manufacturer (designing, fabrication, assembling, commissioning, training, after sales service in one hand for harbour cranes, shipyard cranes, balancer cranes - refurbishment, inspection, repair service for own and third party cranes). Former member of TAKRAF group, now member of KRANUNION GmbH. (together with KOCKS KRANE GmbH and KIROW ARDEL GmbH, Leipzig/Germany)

KRANUNION GmbH

Spinnereistraße 13
Leipzig
04179
Germany
Contact: Ms Gabriela Schilk
Job Title: Marketing Department
T: + 49 341 49 53 212
F: + 49 341 49 53 125
E: gabriela.schilk@kranunion.de
W: www.kranunion.de
Kranunion is an association of three crane manufacturers specialised in lifting and transporting heavy loads. Kirow is the world market leader for railway cranes and slag pot carriers. Arde.lt is the world market leader for double jib level luffing cranes. Kocks is the world market leader for Goliath cranes and innovator for STS container cranes.

**LACHENMEIER MONSUN
A/S**

Grundtvigs Allé 176
Sønderborg
6400
Denmark
Contact: Mr Christan Petersen
Job Title: Sales Director
T: + 45 74 42 24 64
F: + 45 74 43 04 04
E: mail@lachenmeier-monsun.com
W: www.lachenmeier-monsun.com



PIONEERING SPIRIT

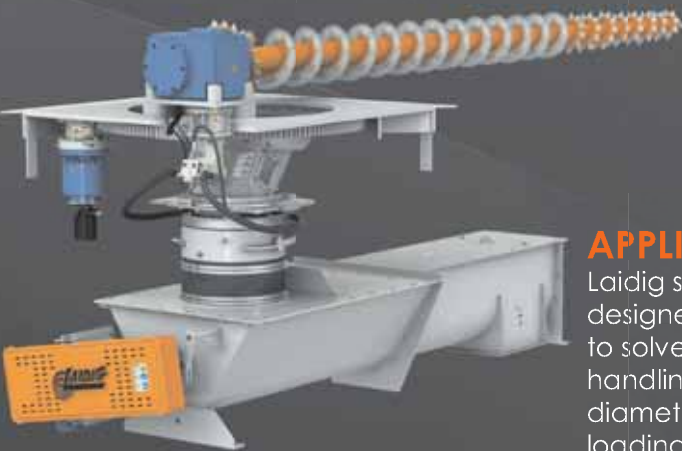
With over 50 years of pioneering innovations, Laidig is recognized world-wide as a leader in the bulk storage and material handling industry. Laidig is continually involved in cutting-edge development to offer customers the best solutions for their storage and reclaim needs.

EXPERTS IN

MATERIAL HANDLING SOLUTIONS

FULLY AUTOMATED TURNKEY SYSTEMS

Laidig's turnkey storage and reclaim systems offer superior material handling performance and dependability in the harshest environments.

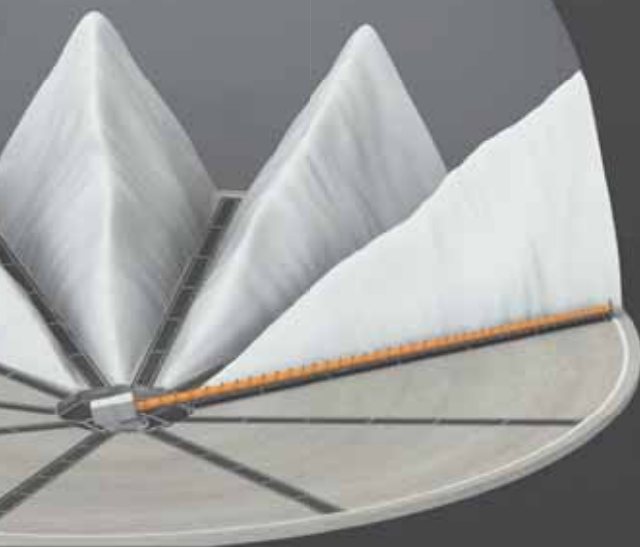


APPLICATION SPECIFIC

Laidig specializes in custom-designed and engineered systems to solve all of your material handling needs, including large diameter applications to assist in loading ships at port facilities.

EXCEPTIONAL ENGINEERING

Laidig's systems are engineered to provide **completely automated, near-total clean out**, while maintaining first-in-first-out (FIFO) material distribution.



Laidig Systems Inc



14535 Dragon Trail
Mishawaka
Indiana
IN 46544
USA
Contact: Mr Mike Schuster
Job Title: Vice President
T: + 1 574 256 0204 x 236
F: + 1 574 256 5575
E: sales@laidig.com
W: www.laidig.com
Laidig Systems Inc, provides custom-engineered bulk storage and reclaim systems as well as silos and silo reclaimers for tough, hard to handle materials and whole grains. Such materials include soybean meal, other grain meals, whole grains, wood chips, sawdust, and recycled materials.

Langston Companies Inc.

PO Box 60
Memphis
Tennessee
38101-0060
USA
Contact: Mr Bob Langston
Job Title: President
T: + 1 901 774 4440
F: + 1 901 942 5402
E: blangston@langstonbag.com
W: www.langstonbag.com

Larox Flowsys Oy

Marssitie 1
PO Box 338
Lappeenranta
FIN-53101
Finland
Contact: Ms Marjatta Kupias
Job Title: VP, Marketing
T: + 358 201 113 323
F: + 358 201 113 300
E: marjatta.kupias@larox.fi
W: www.larox.fi
Produces pinch valves and hose pumps for abrasive and aggressive conditions in various industries including mining, chemical, pulp and paper. For more information please contact the company in Finland or some of their representatives around the world.

Lawrence Industries, Inc.

10403 Arbor Trail
Fort Wayne
Indiana
46804
USA
Contact: Mr Kerry McAtee
Job Title: Sales Engineer
T: + 1 260 432 9693
F: + 1 260 432 6302
E: kmatee@lawrenceindustriesnow.com
W: www.tivar88.com
Lawrence Industries, Inc. is a supplier of industrial lining materials that improve bulk material flow in silos, bins, and bunkers. TIVAR 88 is a primary material that is used to eliminate bridging, arching and ratholing. Lawrence Industries designs and fabricates.

Legacy Building Solutions, Inc.



19500 County Road 142
South Haven
Minnesota
55382-9240
USA
Contact: Mrs Jennifer Halverson
T: + 1 320 258 0500
F: + 1 320 259 0087
W: www.legacybuildingsolutions.com
Legacy structures do everything a steel building does...except rust. Plus, there's abundant natural light inside. Custom engineered to specs, worldwide installation, built in about half the time, warranted in corrosive environments. Legacy Building Solutions for port storage.

Libran Engineering and Services

C-33, First Floor
Malviya Nagar
New Delhi
110 017
India
Contact: Mr Anil Seth
Job Title: Director
T: + 91 11 266 71658
E: libranengineering@gmail.com
W: www.libranengineering.com
Feasibility studies and development of conceptual layout including tender preparation for grain terminal.

Librawerk Maschinenfabrik GmbH

Vossenkamp 1
Braunschweig
Lower Saxony
D-38104
Germany
Contact: Mr Klein
T: + 49 531 370980
F: + 49 531 3709888
E: info@librawerk.de
W: www.librawerk.de
Fully automatic and semi-automatic bagging units for almost all kinds of bulk goods. Big bag filling machines with a weighing range of up to 2,000kg, with capacities from 5 to 60 bags/hour.

Liebherr Maritime Cranes

Dr. Hans Liebherr Str. 1
Nenzing
A-6710
Austria
Contact: Mr Leopold Berthold
Job Title: Sales Director
T: + 43 50809 41725
F: + 43 50809 41447
E: mobile.harbour.crane@liebherr.com
W: www.liebherr.com
With over 35 years of experience in mobile harbour crane business, Liebherr offers today a range of 7 models (42 - 208 tonnes capacity), providing ideal solutions for the efficient handling of containers, bulk, general cargo and heavy lifts.

Listenow GmbH & Co.

Dieselstrasse 21
Rutesheim
71277
Germany
Contact: Mr Carsten Lohr
T: + 49 7152 50900
F: + 49 7152 509050
E: c.lohr@listenow.com
W: www.listenow.com
Loading equipment from 200-2000mm and length up to 24m, loading tubes - patented - PU flex, loading tubes of many materials, filter for loading equipment, electric rope winches, bellow expansion joints, collars, hoses, folding stairways, transport racks.

LogSys NV

Land Van Waaslaan 5
Haven 1213
Kallo
B-9130
Belgium
Contact: Ms Sabine Berckmans
Job Title: Project Manager & Marketing/Sales
T: + 32 3 755 89 62
E: sberckmans@logsys.eu
W: www.logsys.eu
LGS.Stevedore is a Terminal Operating System for dry bulk, break bulk and multipurpose terminals, developed by LogSys. Next to LGS.Stevedore, Logsys also provides solutions for maintenance management, payroll management, customer portals, road transport management.

Macawber Engineering, Inc

1829 Clydesdale Street
Maryville
TN
37801-3796
USA
Contact: Mr John Bell
Job Title: Process Automation
T: + 1 800 433 2213
F: + 1 865 984 5286
E: macawber@macawber.com
W: www.macawberengineering.com
Specializing in low-velocity, dense-phase pneumatic conveying solutions and installations worldwide for over 30 years.

Mack Manufacturing Inc



PO Box 1559
7205 Bellingrath Road
Theodore
Alabama
36582
USA
Contact: Mr Matthew A. Davidson
Job Title: Vice President - Marketing
T: + 1 251 653 9999
F: + 1 251 653 1365
E: sales@MackMfg.com
W: www.mackmfg.com
A leader in designing and building heavy-duty high performance grapples and clamshell buckets since 1942. We are dedicated to supplying our customers with the right attachment for their application. Quality and reliability are trademarks of Mack grapples and buckets.

Mantsinen Group Ltd Oy



Valikankaantie 3
Ylänlyly
FIN-80400
Finland
Contact: Ms Mia Mantsinen
Job Title: Sales and Marketing Director
T: + 358 20 755 1230
F: + 358 13 252 5555
E: mia.mantsinen@mantsinen.com
W: www.mantsinen.com
Mantsinen Group manufactures highly efficient and precise hydraulic harbour cranes for bulk and general cargo operations. Mantsinen cranes can be tailored to best suit each application. Mantsinen Hybrilift® energy saving system and wide range of attachments makes the cranes economical, efficient and universal tools for stevedoring companies and harbour operators. Other equipment/expertise: Wood handling Log stackers, subcontracting.

Maquinas Condor SA

Av Dos Estados 1383
Porto Alegre
RS
90200-001
Brazil
Contact: Mr André Meyer da Silva
Job Title: Director
T: + 55 51 2104 3388
F: + 55 51 2104 3345
E: andre@maquinascondor.com.br
W: www.maquinascondor.com.br
Founded 1959. Engineers and manufactures complete systems for solid bulk materials handling ports and terminals. Equipment range includes pneumatic grain unloading, continuous shiploading, bulk stacking, reclaiming, belt conveyor, bucket elevator and mechanical conveyor. Operating from barges up to capesize ships, to 3000 tph. Shipunloaders and shiploaders operating successfully in ports around the world.

Martin Engineering

One Martin Place
Neponset
Illinois
61345
USA
Contact: Mr Greg Milroy
Job Title: Customer Service Manager
T: + 1 309 852 2384 ext 214
F: + 1 800 814 1553
E: rickf@martin-eng.com
W: www.martin-eng.com
Supplier of conveyor components, flow aids, safety products and training to make bulk material handling cleaner, safer and more productive.

Martin Engineering GmbH

In der Rehbach 14
Walluf
Hessen
D-65396
Germany
Contact: Mr Joachim Preiß
Job Title: Marketing Manager
Europe
T: + 49 61 23 978 221

F: + 49 61 23 75 5 33
E: joachim.preiss@martin-eng.de
W: www.martin-eng.de
Conveyor Inspection (WTB)
Safety training seminars,
Conveyor equipment, belt
cleaners, belt tracking systems,
impact cradles, sealing systems,
dust suppression systems, air
cannons and vibrators, silo
cleaning services, air supported
conveying systems, inertial flow
transfer chutes.

Martin Engineering South Africa

PO Box 12696
Leraatsfontein
1038
South Africa
Contact: Mr Hannes Kotze
Job Title: Managing Director
T: + 27 13 656 5135
F: + 27 13 656 5129
E: hannesk@martin-eng.co.za
W: www.martin-eng.co.za
Installation & Maintenance of belt
cleaners, sealing systems, impact
support, belt tracking, air-
cannons, screen vibrators, silo
cleaning, service contracts, Martin
Engineering Service Group -
MESG S Class air supported
conveyors, Inertial Flow chutes.

Maschinen und Mühlenbau Erhard Muhr GmbH



Grafenstraße 27
Brannenburg
D-83098
Germany
Contact: Mr Roland Muhr
Job Title: Managing Director
T: + 49 8034 9072 26
F: + 49 8034 9072 526
E: info@muhr.com
W: www.muhr.com
MUHR offers a wide range of high quality Bulk Loading Systems (for open and closed, dust-free loading), Loading Spout Positioners, Pneumatical Docking Devices and even Railcar Dumping Systems for economical unloading of trains with open railcars.

Merrick Industries

10 Arthur Drive
Lynn Haven
FL
32444
USA
Contact: Mr Ron Selbe
Job Title: Sales Manager
T: + 1 850 265 3611
F: + 1 850 265 9768
E: info@merrick-inc.com
W: www.merrick-inc.com
Invented dynamic weighing in 1908 and has been operating continuously ever since. Offer carbon and stainless steel belt scales, weigh belt feeders, loss-in-weight feeders, volumetric feeders, flow meters and microprocessor controls. The company is focused on the dynamic weighing of powders, granules, pellets and liquids while in motion. Products are supplied worldwide and can be used in batching, continuous weighing and continuous feedrate control applications.

METSO MINERALS INDUSTRIES, INC.

Bulk Materials Handling
4000 Town Center Boulevard
Suite 400
Canonsburg
PA
15317
USA

Contact: Mr Tom Lippencott
Job Title: VP Mining Capital
Sales, USA & Canada
T: + 1 412 269 5137
F: + 1 412 269 5212
E: Tom.Lippencott@metso.com
W: www.metso.com

Products: Railcar and Barge
Pullers, Railcar Dumpers and
Positioners, Grab & Equilibrium
Unloaders, En-Masse Conveyors,
Ship Trimmers, Throwers, Railcar
Indexers, Barge Haul Systems,
Breasting Winches, Apron
Feeders Brand Names:
Stephens-Adamson, McNally
Wellman, PECO, Nolan HCM,
MKT, Mead Morrison, McDowell
Wellman, NICO

MIDWEST INTERNATIONAL STANDARD PRODUCTS, INC.

105 Stover Road/ PO Box 438
Charlevoix

MI
49720-0438
USA

Contact: Mr Walter Pair
Job Title: Director of Operations
T: + 1 231 547 4000

F: + 1 231 547 9453
E: sales@midwestinternational.com
W: www.midwestmagic.com
Founded in 1967 the company
focuses on dust-free loading and
stockpiling of dry bulk products.
The Paragon Series and Heavy
Duty Mining Series product lines
have throughput capacities to
1400 STPH and 6000 STPH
respectively and useful vertical
travels to 45 feet and 100 feet.
Chokefeeder dust-free
shiploading systems are used by
governments and industries in
over 50 countries.

MOLE-MASTER SERVICES CORPORATION™

27815 State Route 7
Marietta
Ohio
45750
USA

Contact: Mr David Laing
Job Title: General Manager
T: + 1 740 374 6726
F: + 1 740 374 5908
E: contactus@molemaster.com
W: www.molemaster.com

Silo, bin, bunker and process
vessel cleanout & unclogging
services and equipment. Pipe
cleaning, Vacuum services, Dry
ice Blasting, Media Blasting, Silo
structural inspection services and
Equipment cleaning.

MRS GREIFER GMBH

Talweg 15-17
Helmstadt-Bargen
D-74921

Germany
Contact: Mrs Karin Greulich
Job Title: Export Manager
T: + 49 7263 912 915
F: + 49 7263 912 912
E: export@mrs-greifer.de
W: www.mrs-greifer.de
Approaching 40 years experience
in producing all types of grabs.
The company's product range
extends from mechanical grabs,
also radio-controlled, to hydraulic
and electro-hydraulic grabs with
motor drives. Besides excellent
after-sales service, MRS provide
spare parts from stock.

MÜHLEN SOHN GMBH & Co. KG

P.O. Box 1165
Blaustein
D-89130
Germany

Contact: Mrs Karin Albrecht
Job Title: Sales Director Fluitex
T: + 49 7304 801 33
F: + 49 7304 801 23
E: karin.albrecht@muehlen-sohn.de

W: www.muehlen-sohn.de
Mühlen Sohn GmbH & Co. KG is
one of the leading suppliers of
fluidising fabrics and looks back
to a success story since 1880
which means over 130 years of
weaving experience. Fluitex® air
slide fabrics for pneumatic loading
and unloading systems, airslides
for pneumatic conveying, storage
and homogenising silos,
discharging cones, fly ash
handling systems.

MULLER BELTEX BV

Ambachtsweg 28A
Pijnacker
2641 KS

The Netherlands
Contact: Mr Frits Muller
T: + 31 15369 5444
F: + 31 15369 7864

E: info@mullerbeltex.com
W: www.mullerbeltex.com
Other Equipment: Elevators.
Specialists in elevator
components, buckets belts ATEX
conform safety monitoring
equipment. Design engineering
and problem solving. Elevator
belt bolt hole punching up to 2000
mm width Specialist in abrasion
resistant polyurethane liners.

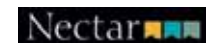
NAVCO (NATIONAL AIR VIBRATOR Co)

PO Box 40563
Houston
TX
77240-0563
USA

Contact: Mr Trey Gros
Job Title: Marketing
T: + 1 832 467 3636
F: + 1 832 467 3800
E: trey@navco.us
W: www.navco.us

Manufacturer of high quality,
industrial grade air vibrators and
vibratory equipment. NAVCO is
the leading expert in material flow
solution using industrial vibrators
and vibratory equipment.

NECTAR GROUP LTD



No 1 Ashton Gate
Ashton Road
Harold Hill
Romford
Essex
RM3 8UF
UK

Contact: Mr Guy Wilkes
Job Title: Commercial Director
T: + 44 1708 386 555
F: + 44 1708 386 665
E: nectar.uk@nectargroup.net
W: www.nectargroup.net
Nectar is involved in handling bulk
commodities such as cereals and
fertilizers in ports and/or inland
locations. Involvement ranges
from positioning of mobile
bagging machines for spot
cargoes to long term projects
including terminal management
and storage and logistics
solutions.

NEGRINI SRL



via E. Torricelli n.4
Castelfranco Emilia
Modena
41013
Italy

Contact: Mr Rossetti Alessandro
T: + 39 059 923110
F: + 39 059 920378
E: info@negrini.org
W: www.negrini.org
Negrini srl considers the
attainment of client satisfaction
our primary objective, through a



the piece you are missing!



continuous and effective process of study and collaboration with both clients and suppliers. Professionalism and versatility towards different customer demands: this is the business philosophy of Negrini srl.

NEMAG BV

Deltastraat 15
PO Box 110
Zierikzee
4300 AC
The Netherlands
Contact: Mr Riny Stoufjesdijk
Job Title: Sales Manager
T: + 31 11 418 900
F: + 31 11 416 154
E: sales@nemag.com
W: www.nemag.com
NEMAG specializes in sales and manufacture of tailor-made mechanical grabs. Also rope end fittings like the NEMAG Rope Pear Socket and NEMAG Quick Release Link. NEMAG is one of the leading grab manufacturers world wide.

NEO CORP BRASIL

Avenida Bento Munhoz da Rocha Neto, N°:1777
Jardim Samambaia
Paranaguá-PR
83212-000
Brazil
Contact: Mr Christopher Paolo
T: + 55 41 3122 5771
E: christopher@neocorpbr.com.br
W: http://www.neocorpbr.com/principal.html

NERAK GmbH

FÖRDERTECHNIK
Brigitta 5
Hambühren
D-29313
Germany
Contact: Mr Edgar Bleeker
Job Title: Marketing
T: + 49 50 84 944 0
F: + 49 50 84 944 222
E: bleeker@nerak.de
W: www.nerak.com
Conveying on combined horizontal/vertical paths is our strength. The NERAK rubber block chain is the basis for the world wide success of NERAK conveyors: reliable, nearly maintenance free, without any lubrication and very silent, operating in various industries.

NEUERO INDUSTRIETECHNIK GmbH

NEUERO

Neuerostrasse 1
Melle
D-49324
Germany
Contact: Eng Andreas Haeuser
Job Title: Sales & Project Manager
T: + 49 5422 9503 26
F: + 49 5422 9503 50
E: ha@neuero.de
W: www.neuero.com
NEUERO offers a wide range of pneumatic conveyors and unloaders from 10tph to 1,000tph. Mechanical ship unloaders up to 1,200tph and solution systems for loading ships to 3,000tph. Product varies from grain to alumina and biomass. Special unloading systems with rotating feeder for non free flowing materials like biomass or

feedstuff. Environmental friendly and operation safe.

NILFISK-CFM SpA

Via Porrettana 1991
Zocca
Modena
41059
Italy
Contact: Dr Leonardo Bianco
Job Title: Marketing Manager
T: + 39 059 973 00 31
F: + 39 059 973 00 99
E: info@nilfisk-cfm.com
W: http://www.cfm.it/
CFM SpA is world leader in the production of industrial vacuums, pneumatic conveyors, centralized vacuum systems and high power vacuums (Spirovac).

NKM NOELL SPECIAL CRANES GmbH

Kruisweg 643
Hoofdorp
2132 NC
The Netherlands
Contact: Mr Gerard de Wild
T: + 31 20 655 0030
F: + 31 20 655 0040
E: gerard.devild@nkmoell.com
W: www.nkmoell.com/
Leading manufacturer of lemniscates cranes and special equipment for the bulk industry. Turn key project capability; design, manufacturing and erection in-house. Our maintenance division provides added value service for refit, modernisation and redesign for increased performance.

NMH s.r.o.

Priemyselná 4608/10
Sereď
926 01
Slovakia
Contact: Ms Veronika Kremľ
Job Title: Marketing Manager
T: + 42 131 230 4441
E: v.kremľ@nmh-sro.com
W: www.nmh-sro.com

NORDSTRÖMS KONSTRUKTIONSBYRÅ

Storgatan 58
Umeå
SE-903 30
Sweden
Contact: Mr Peter Vedin
Job Title: Marketing
T: + 46 90 1136 4500
F: + 46 90 1330 69
E: arletun@nordstroems.se
W: www.nordstroems.se
The company, established 1981, is a supplier of turnkey plants and custom-made equipment for general dry bulk solids and aggregate material handling. The product portfolio includes belt and worm conveyors; telescopic loading chutes; weighing scales; silos, bins and hoppers; feeders and valves. Machines are parametrically adjusted to meet individual client's needs on terms of specifications and capacities.

NORDSTRONG EQUIPMENT LTD

400 Ambassador Drive
Mississauga
Ontario
L5T 2J3
Canada
Contact: Mr Bill Van Duyn
Job Title: Sales Manager
T: + 1 289 562 6402
F: + 1 289 562 6445

E: wmvanduyn@nordstrongequipment.com
W: www.nordstrongequipment.com
Provides range of material handling equipment including belt, drag, screw and pipe conveyors and bucket elevators.

ORTHO'S PROJECTS LTD.

Fernie Road
Market Harborough
Leicestershire
LE16 7PH
UK
Contact: Mr Nick Hall
Job Title: Director
T: + 44 1858 462806
F: + 44 1858 464403
E: Nick.Hall@orthosprojects.com
W: www.orthosprojects.com
Orthos Projects, specialists in bulk materials handling, have taken over the operation of E&F services. Their Dockside Mobile Loaders have gained a technological lead in eliminating spillage and controlling dusty products from Ports operations. Their range of Filters eliminate pollution.

ORTS GmbH MASCHINENFABRIK



Schwartauer Strasse 99
Seretz
D-23611
Germany
Contact: Herr Sigvard Orts
T: + 49 451 3988515
F: + 49 451 392374
E: soj@orts-gmbh.de
W: www.orts-grabs.de
Whole range of grabs for all kind of bulk materials, dredging and scrap handling; mechanical single-, 2- and 4-rope grabs, electro-hydraulic grabs, radio controlled diesel-hydraulic grabs, repair and overhauling of grabs. All "Made in Germany".

PAGE MACRAE ENGINEERING

61 Aerodrome Road
Mount Maunganui
Bay of Plenty
3116
New Zealand
Contact: Mr Bruce Ennis
Job Title: Cargo Handling Equipment Manager
T: + 64 7 575 5079 Ext 810
F: + 64 7 574 8594
E: bruce@page-macrae.co.nz
W: www.page-macrae.co.nz
With over 50 years of engineering experience behind it, Page Macrae Engineering is regarded as Australasia's leading manufacturer of ship cargo handling equipment. They have commanded a reputation for delivering high quality equipment that is robust, low maintenance and highly productive, regardless of conditions and loads.

PAM A/S

PL Brandts Allé 6
Odense SO
DK - 5220
Denmark

Contact: Mr Alfred Rasmussen
Job Title: Sales Manager
T: + 45 65 32 12 41
F: + 45 65 32 43 53
E: ar@pam.dk
W: www.pam.dk
PAM is a privately owned family company which was founded in 1935. PAM produces pneumatic conveying units. Mobile suction units 100-150 t/h or suction blowing units 100-120 t/h, with diesel engine or electric motor. Other Equipment: Rotary valves

PAUL HEDFELD GmbH

Hundeicker Strasse 20
Gevelsberg
58285
Germany
Contact: Mr Burkhard Hedfeld
T: + 49 2332 6371
F: + 49 2332 61167
E: hedfeld@hedfeld.com
W: www.hedfeld.com
The company has produced complete installations for over 60 years for the transport of bulk goods such as bucket elevators, screw- and chain conveyors. The delivery of spare parts used in these conveyors was and is the basis of the current business.

PAVAN GROUP SRL

Via Monte Grappa, 8
Galliera Veneta (PD)
35015
Italy
Contact: Ms Monica Giantin
T: + 39 049 942 3111
F: + 39 049 942 3303
E: marketing02@pavan.com
W: www.pavan.com

PEBCO®

PO Box 7506
225 North 4th Street (42001)
Paducah
KY
42002-7506
USA
Contact: Mr David Finke
Job Title: VP, Sales and Marketing
T: + 1 270 442 1996
F: + 1 270 442 5214
E: sales@pebco.com
W: www.pebco.com
PEBCO® is recognized world-wide as the leading manufacturer of powder and dry bulk solids handling equipment. Products range from truck, train, and ship loading equipment to gates, valves, diverters, mass flow feeders, Cascade® and dustless loading chutes.

PEINEMANN CRANES

Nieuwe Langeweg 40
Hoogvliet
DB 3194
The Netherlands
Contact:
T: + 31 10 295 50 00
F: + 31 10 295 50 49
E: kranen@peinemann.nl
W: www.peinemann.nl

PEINER SMAG LIFTING TECHNOLOGIES GmbH

Windmühlenbergstrasse 20-22
Salzgitter
D-38259
Germany
Contact: Mr Arnulf Köhnemann
T: + 49 5341 302 613
F: + 49 5341 302 424 or 606
E: arnulf.koehnemann@peiner-smag.com

W: www.peiner-smag.com
Manufacturer and supplier of a complete range of grabs, ie (electro-hydraulic) motor grabs, single-rope grabs, two- and four-rope grabs, hydraulic grabs as well as rotators (slewing units) and special grabs for all kinds of bulk materials for various applications and purposes.

PETERSON AGRICARE & BULK LOGISTICS BV

Boompjes 270
Rotterdam
3011 XZ
The Netherlands
Contact: Mr Arno Maehlmann
T: + 31 10 282 3333
F: + 31 10 282 3282
E: info@peterston.nl
W: www.peterston.nl
Offers a wide range of logistic, inspection, laboratory and certification services in agribulk commodities, mineral bulk commodities, chemicals, biomass and biofuels. Complete supply chain covered from origin to destination.

PFISTER WAAGEN BILANCIAL GmbH

Linker Kreuthweg 9
Affing-Mühlhausen
D-86444
Germany
Contact: Ms Susanne Geller-Dür
Job Title: Marketing and Sales Manager
T: + 49 82 07 9 58 99 28
F: + 49 82 07 9 58 99 29
E: marketing@pfisterwaagen.de
W: www.pfisterwaagen.de
Truck weighbridges, railway scales, platform scales, crane scales, weighing data management software, load cells, load cell units, weighing indicators.

PHB WESERHÜTTE, S.A.

Parque Científico y Tecnológico de Gijón
C/Luis Moya Blanco 82
Gijón
Asturias
33203
Spain
Contact: Dr Jose Ramón Prado
Job Title: Technical Commercial Director
T: + 34 985 13 41 71
F: + 34 985 13 42 22
E: joseramon.prado@pwh.es
W: http://en.grupotsk.com/
PHB Weserhütte, has over 50 years' experience and its own "know how" in the area of materials handling. The company has vast experience in the development of Turnkey Projects in the sectors of energy, cement, ports, iron and steel, fertilisers, mining and industrial plants.

PHENIX ROUSIES INDUSTRIES

Rue de Maubeuge
Rousies
59131
France
Contact: Mr Frederic Lepretre
Job Title: Export Sales Manager
T: + 33 03 27 69 42 42
F: + 33 3 27 64 95 85
E: lepretre.export@silos-phenix.com
W: www.silos-phenix.com

Produces dust control covers for belt conveyor systems and grain storage silos fitted with integrated gantry and aeration systems.

Pirs SAS



ZI St Hermentaire
309, Avenue de l'Europe
Draguignan
Var 83300

France
Contact: Mr Fikri El Mourabet
Job Title: International Sales Manager
T: + 33 4 98 10 6767
F: + 33 4 98 10 6768
E: info@domepirs.com
W: www.domepirs.com
Specialists in the construction of reinforced concrete dome storage for bulk products. Storage capacity can reach up to 100,000 tons depending on the product. The company has built more than 100 domes worldwide and provide engineering, materials, supervision construction and turnkey projects.

PLM CRANES B.V.



Sluisweg 21-25
Heijningen
4794 SW
The Netherlands

Contact: Mr Pieter Pulleman
Job Title: Managing Director
T: + 31 167 528510
F: + 31 167 524444
E: info@plmcranes.com
W: www.plmcranes.com
We build hydraulic and electric cranes from 50 to 2000 tm with a transshipment capacity up to approx. 2000 ton/hour. We are specialized in shipboard cranes, mobile cranes and harbour cranes for dredging, transshipping, hoisting and pile-driving.

PNEUMAT SYSTEMS INC

110 Mohr Dr
Mankato, MN 56001
USA
Contact: Mr Sam Cebula
Job Title: Sales | Pneumat Systems
T: + 1 507 345 4553
E: info@pneumat.com
W: http://pneumat.com/

POLYMER INDUSTRIES - ULTRAPOLY DIVISION

2404 Center Street
Tacoma
WA 98409-7638
USA
Contact: Mr Bryan Olin
T: + 1 253 272 1217
F: + 1 253 272 1457
E: bryan.olin@polymerindustries.com
W: www.polymerindustries.com
Other equipment: wear and liner components. UHMWPE and other olefins for impact, wear and flow applications.

PORTPACK UK LIMITED
PORTPACK

Unit A2/G11 Enterprise Business Park
Wigwam Lane
Hucknall
Nottinghamshire NG15 7SZ
UK
Contact: Ms Sharon Henson
Job Title: General Manager
T: + 44 1159 680130
F: + 44 1159 641926
E: portpack@portpack.biz
W: www.portpack.biz
Portpack design and manufacture containerised Mobile Bagging Systems for the direct discharge of bulk carriers in the port of arrival, with materials weighed and bagged at dockside, filled sealed bags are loaded directly onto trucks for onward distribution or delivery.

PORT-TRADE AS



Karetmagervej 9
Fredericia
DK 7000
Denmark
Contact: Mr Peter J Muller
Job Title: Managing Director
T: + 45 7628 0102
F: + 45 7628 0103
E: peter.muller@port-trade.com
W: www.port-trade.com
Sales and service in Scandinavia of harbour cranes, grabs, containerspreaders, loaders, reclaimers etc.

POWERTEX INC

1 Lincoln Boulevard
Rouses Point
New York
New York
12979
USA
Contact: Mr George Bombardier
Job Title: Vice President Sales and Marketing
T: + 1 518 297 4000
F: + 1 518 297 2634 / 2242
E: georgebombardier@powertex.com
W: www.powertex.com
Powertex is a market leader in the dry bulk container liner market, with its Sea Bulk container liner system for 20' and 40' ocean containers. Powertex assist clients through Project Management, with Logistics and with Loading and Discharge Equipment - supplying equipment specifically designed for the use of bulk container liners.

PRECIA-MOLEN NEDERLAND BV

Frans Akker 1
Breda
4824 AL
The Netherlands
Contact: Mr Frédéric Felten
Job Title: Export Manager
T: + 31 76 524 2510
F: + 31 76 522 8039
E: export@preciamolen.nl
W: www.preciamolen.nl
For almost 150 years Precia Molen is specialized in industrial weighing equipment such as weighbridges, hopperscales,

bagging scales, platform scales, truckdumpers etc.

PREMIER TECH CHRONOS B.V.

Meerheide 40
Eersel
Noord Brabant
5521 DZ
The Netherlands
Contact: Mr Ingo Jonas
Job Title: General Manager
T: + 31 497 514 988
F: + 31 497 514 953
E: info-eu@ptchronos.com
W: www.ptchronos.com
PREMIER TECH CHRONOS (PTC) is recognized worldwide for its innovative and customized packaging, material handling and bulk processing solutions. We are driven by innovation: we developed several state-of-the-art technologies which are still in the lead today. Our prime objective is to meet your packaging needs in the most creative and efficient way.

PREMIER TECH CHRONOS GMBH

Löhestrasse 18
Hennef
53773
Germany
Contact: Mr Robert Oster
Job Title: Geschäftsführer
T: + 49 2242 9335 0
F: + 49 2242 9335 186
E: info-eu@ptchronos.com
W: www.ptchronos.com
PREMIER TECH CHRONOS

PORTPACK UK LIMITED

Offer weighing and bagging solutions for direct discharge operations



Portpack design and manufacture containerised Mobile Bagging Systems for the direct discharge of bulk carriers in the port of arrival, with materials weighed and bagged at dockside, filled sealed bags are loaded directly onto trucks for onward distribution or delivery

Tel: +44(0)1159 680130 . Fax: +44(0)1159 680256 . Email: portpack@portpack.biz . Web: www.portpack.biz

(PTC) is recognized worldwide for its innovative and customized packaging, material handling and bulk processing solutions. We are driven by innovation: we developed several state-of-the-art technologies which are still in the lead today. Our prime objective is to meet your packaging needs in the most creative and efficient way.

PREMIER TECH CHRONOS LTD

Unit 1, Centurion Business Centre
Blenheim Industrial Estate
Nottingham
Notts NG6 8WN
UK
Contact: Mr Peter Orm
Job Title: General Manager
T: + 44 115 935 1351
F: + 44 115 960 6941
E: info-eu@ptchronos.com
W: www.ptchronos.com

PREMIER TECH CHRONOS
(PTC) is recognized worldwide for its innovative and customized packaging, material handling and bulk processing solutions. We are driven by innovation: we developed several state-of-the-art technologies which are still in the lead today. Our prime objective is to meet your packaging needs in the most creative and efficient way.

PREMIER TECH CHRONOS S.R.L.

Via G. Di Vittorio, 78
Lemignano Di Collecchio
PG 43044
Italy

Contact: Mr Fabrizio Ferrari
Job Title: General Manager
T: + 39 521 29 60 11
F: + 39 521 29 60 51
E: info-eu@ptchronos.com
W: www.ptchronos.com

PREMIER TECH CHRONOS
(PTC) is recognized worldwide for its innovative and customized packaging, material handling and bulk processing solutions. We are driven by innovation: we developed several state-of-the-art technologies which are still in the lead today. Our prime objective is to meet your packaging needs in the most creative and efficient way.

PRIMASONICS INTERNATIONAL LIMITED

North Lakes Business Park
Flusco
Penrith
Cumbria CA11 0JG
UK

Contact: Mr Donald Cameron
Job Title: Managing Director
T: + 44 17684 80372
F: + 44 17684 80374
E: sound@primasonics.com
W: www.primasonics.com;
www.quattrosonics.com
Primasonics designs and manufactures a range of Audiosonic Acoustic Cleaners which are used to de-bond powders allowing free flow of material. Wherever ash, dust, powders or granular material is processed, stored, generated or transported.

PROCON ENGINEERING LIMITED

Vestry Estate

Offord Road
Sevenoaks
Kent
TN14 5EL
UK

Contact: Mr Joe Naylor
Job Title: Sales Manager -
Beltweighers
T: + 44 1732 781 300
F: + 44 1732 781 311
E: joe.naylor@proconeng.com
W: www.proconeng.com
Manufactures belt weighers for process control and trade use in the grain industries. Weighing systems for grain have been produced with capacities as low as 2t/h and as high as 2,000t/h. (In other materials the company has machines as high as 12,000t/h. Many single sites trade over GBP£100 million per annum over their Procon Info trade approved belt weighing systems.

PT. BANDO INDONESIA

Wisma Hayam Wuruk, 6th floor,
Suite 600
Jln. Hayam Wuruk No. 8
Jakarta
10120
Indonesia
Contact: Mr Wahyono Wardiman
Job Title: Conveyor Belt Division
T: + 62 21 3517590
F: + 62 21 3517591
E: conveyor.div@
bandoindonesia.com
W: www.bandoindonesia.com

PT. Bando, established in 1987, is one of the leading automotive and industrial power transmission belt manufacturers in Indonesia. It has one main plant located in Tangerang and its marketing office located in Central Jakarta.

QUADRANT ENGINEERING PLASTICS PRODUCTS

2120 Fairmont Avenue
Reading
PA
19612
USA

Contact: Mr Ron Mesing
Job Title: Project Development
Manager
T: + 1 412 384 5592
F: + 1 412 384 8910
E: ron.mesing@qplas.com
W: www.systemivar.com

With more than 40 years experience, Quadrant EPP's System TIVAR® Engineering designs, fabricates and installs lining systems worldwide for use in hoppers, chutes, bins, dump bodies, railcars, ships, etc., featuring industry-leading low coefficient of friction, abrasion-resistant TIVAR® 88 family of products.

R & S S.R.L.

Via del Cmapo Sportiuo 40
Mezzana
48123
Italy

Contact: Ms Sara Mandarini
Job Title: Head of Advertising
T: + 39 0535 61 81 11
F: + 39 0544411 099
E: sara.mandarini@wamgroup.com
W: www.roncuzzi.com
Design and build wide range of equipment for bulk handling material. Pneumatic ship unloaders, mechanical ship loaders (bulk and bags), grab loading hoppers (dust free) conveyor belt, bucket elevators

and chain conveyors. Rotary valves, Screw conveyors, diverters, telescopic bellows.

RAPAT ASIA

Clark, Philippines
Angeles
Pampapaga
061
Philippines
Contact: Mr Craig Stall
Job Title: General Manager
T: + 1 2182514261
F: + 1 2184833344
E: cstall@rapat.com
W: www.rapat.com

RAPAT CORPORATION

919 O'Donnell Street
Hawley
MN
56549-4310
USA
Contact: Mr Ron Werner
Job Title: General Manager
T: + 1 218 483 3344
F: + 1 218 483 3535
E: info@rapat.com
W: http://www.rapat.com/

RAPIDPACK CORPORATION

Suite 207
Mazaya Tower AA1
Jameirah Lakes Towers
Dubai
UAE

Contact: Mr Peter Ascot
Job Title: Sales Manager
T: + 9714 445 8336
F: + 9714 445 8337
E: peter@rapidpack.ca
W: www.rapidpack.ca
Rapidpack designs, engineers and manufactures state of the art bulk cargo handling machinery for ports, trading houses and shipping companies around the world.

RBL-REI FRANCE

11 Boulevard Brune
Paris
Cedex 14
75682
France

Contact: Mr Sébastien Bouhours
Job Title: Technical Sales
Representative
T: + 33 2 41 21 3670
F: + 33 2 41 21 19 59
E: s.bouhours@rblrei-france.com
W: www.rblrei-france.com
Designs, builds and supplies continuous bulk handling belt conveyor systems and associated equipment, stackers up to 10,000 t/h, reclaimers up to 15,000 t/h and shiploaders up to 3,000 t/h.

RDS TECHNOLOGY

Cirencester Road
Minchinhampton
Stroud
Gloucestershire
GL6 9BH
UK

Contact: Mr Mark Evans
Job Title: Business Development
Manager
T: + 44 1453 733300
F: + 44 1453 733311
E: info@rdstec.com
W: www.rdstec.com
RDS specialises in the design and manufacture of electronic instrumentation including on-board weighing systems for loaders operating in grain and animal feed applications enhancing operational efficiency. The range includes the Weighlog

a10, Weighlog 200 and Loadmaster iX series.

REDLER® (SCHENCK PROCESS GROUP)

Carolina Court
Lakeside
Doncaster
South Yorkshire
DN4 5RA
UK
Contact: Mr Andrew Workman
Job Title: Director - Bulk Materials
Handling
T: + 44 1302 321 313
F: + 44 1302 554 400
E: enquiries@schenckprocess.co.uk
W: www.schenckprocess.co.uk
Schenck Process Group provides innovative solutions for the handling and storage of bulk materials using pneumatic and mechanical conveying technologies together with weighing, feeding and air filtration equipment to give a comprehensive package of products and services.

REMA TIP TOP GmbH

Business Unit Industrie
Gruber St. 63

Poing
Bavaria
D-85586
Germany
Contact:
T: + 49 8121 707 245
F: + 49 8121 707 222
E: info@tiptop.de
W: www.rema-tiptop.com
World leader in high-quality conveyor maintenance, wear protection and corrosion prevention. Provides products, accessories, technical consultancy and customized problem solving solutions in over 170 countries. Equipment range – rubber linings for wear protection; rubber repair material for conveyor belts; pulley laggings; corrosion protection linings; coating and bonding systems.

REPRESENTACIONES ALFREDO BRAND Y CIA. LTD.

Casilla 16871
Santiago
Región Metropolitana
7510147
Chile
Contact: Mr Alfredo Brand
T: + 56 222 38968
F: + 56 234 40817
E: abrandp.gm@gmail.com
W: www.abrandp.com

RHC DEUTSCHLAND GmbH

Am Taennele 6
Senden-Aufheim
Bayern
D-89250
Germany
Contact: Mr Rolf Hofmann
Job Title: CEO
T: + 49 731 940 9100 / + 49 174 2050 164
F: + 49 7307 253 39
E: ahoemann@
rhcheavymachinery.com
W: http://rhcheavymachinery.com/
RHC is a German company with engineering and manufacturing facilities in Europe and Asia.

RIVER CONSULTING

3510 N. Causeway Blvd
Ste 515
Metairie
LA
70002
USA
Contact: Mr Kevin Fry
Job Title: Vice President
T: + 1 504 293 3900
E: kfry@riverconsulting.com
W: www.riverconsulting.com
River Consulting delivers EPCM material handling experience, including project management, design/supply of conveying systems and engineering. With 30 years of experience, we provide proven solutions including blending, conveying, silo and stacking tubes, automation and controls, and marine structures.

RONIN GMS

No 1 Nobel Avenue
Modderfontein
Johannesburg
Gauteng
1645
South Africa
Contact: Mr Ferdinand Meyer
Job Title: Sales and Marketing
Executive, Ronin Group
T: + 27 11 608 3666
F: + 27 11 608 4679
E: ferdi@roningms.com
W: www.roningms.com
Ronin GMS supplies Bulk Inventory management solutions, analytical grading equipment and services to the Southern African Grain Handling Industry. We provide Cargo Monitoring, Bulk Audits, Portside and Marine services on hard Commodities. We promote our laser Inventory Systems Worldwide.

ROYAL HASKONING DHV

George Hintzenweg 85
Rotterdam
3068 AX
The Netherlands
Contact: Ms Berte Simons
Job Title: Director Advisory Group
T: + 31 10 2865 398
F: + 31 10 443 3688
E: info@
rotterdam.royalhaskoning.com
W: www.royalhaskoning.com
With knowledge and experience in the development of modern ports and (un)loading, transport and storage systems, high quality advice and comprehensive project management is provided in the field of grain and other dry bulk handling. Clients' objectives vary from increasing capacity, operational efficiency and handling speed to shifting from road to rail or inland water transport. From pre-investment studies and conceptual design to construction management, practical, sustainable and cost-effective engineering solutions are offered.

RTA ALESA LTD

RTA Alesa

150 Rockland Rd
Town of Mount Royal
Quebec
H3P 2V9
Canada
Contact: Mr Jean-Pierre
Desmoullins
Job Title: General Manager
T: + 1 514 937 9105 ext. 2231

F: + 1 514 937 0473
 E: jean-pierre.desmoulin@riotinto.com
 W: www.ra-alesa.com
Alesa Engineering Ltd is specialised in tailor made solutions for the pneumatic handling of bulk materials. Travelling ship unloaders are typically designed for capacities above 600 t/h. Dense Phase conveyors is another speciality of which various capacities and conveying distances have been contracted.

RTA ALESA Ltd.

Max Hogger-Strasse 6
 Zurich
 CH - 8048
 Switzerland
 Contact: Mr Marcel Polidori
 T: + 41 44 435 3357
 F: + 41 432 0666
 E: marcel.polidori@riotinto.com
 W: www.ra-alesa.com
Specialised in dry bulk materials handling system for port terminals and plant, travelling pneumatic ship unloaders >600 t/h, storage systems, truck/railcar loading unloading systems, all kind of pneumatic conveying system (incl. dense phase, dilute phase, airlifts, airslides, suction systems), belt and tube conveyors, bath plant & carbon recycling plant, which includes for crushers, electrolysis pot control system, engineering services for all project activities above including civil and structural.

RUBB BUILDINGS Ltd

Dukesway
 Team Valley Trading Estate
 Gateshead
 Tyne & Wear NE11 0QE
 UK
 Contact: Ms Clare Wilson
 Job Title: Marketing Director
 T: + 44 191 482 2211
 F: + 44 191 482 2516
 E: info@rubb.co.uk
 W: www.rubb.co.uk
Designs, manufactures and installs bulk storage and general storage buildings from 3m span to 100m span. Supply structures for storage of all types of cargo, from coal and grain to salt. The structures are totally prefabricated and relocatable, are maintenance free and the fabric has a life expectancy of up to 25 years depending on usage.

RULMECA HOLDING S.P.A.

Via A Toscanini 1
 Almé
 Bergamo
 24011
 Italy
 Contact: Mr Carsten Spanggaard
 Job Title: Group Sales Director
 T: + 39 035 430 0111
 F: + 39 035 545 700
 E: rulmeca@rulmeca.it
 W: www.rulmeca.com
The RULMECA Group specializes in the production of rollers, motorized pulleys and other components (such as stations, suspended garland sets and covers) for bulk material handling applications. It is composed of 10 manufacturing units, 7 sales companies and 2 representative offices and employs more than 1100 people + temporary workers.

SAMSON MATERIALS HANDLING Ltd


Gemini House
 Cambridgeshire Business Park
 1 Bartholomew's Walk
 Ely
 Cambridgeshire
 CB7 4EA
 UK
 Contact: Mr Andy Blythe
 Job Title: Managing Director
 T: + 44 1353 665001
 F: + 44 1353 666734
 E: sales@samson-mh.com
 W: www.samson-mh.com
Ship Loading and Unloading Intake and Storage of cereals and derivatives using the B&W mobile Shiploader, Eco-Hopper, Samson™ Surface Feeder and Stormajor™ Radial Boom Stacker Concepts; offering a unique combination of high performance and flexibility.

SARTORIUS MECHATRONICS T&H GmbH

Meiendorfer Strasse 205
 Hamburg
 D-22145
 Germany
 Contact: Mr Matthias Hasselmann
 Job Title: Marketing
 Communication
 T: + 49 40 67960303
 F: + 49 40 67960383
 E: industrialweighing@sartorius-intec.com
 W: www.sartorius-intec.com
The core competencies lie in weighing sensors (load cells), display units (indicators) and complex process control (system controllers) for industrial use. Its customers primarily operate in the chemicals, pharmaceuticals, construction materials, food and other industries.

SCHOUTEN COMMODITIES BV

Burgstraat 12 4283 GG Giessen
 Giessen
 4284 GG
 The Netherlands
 Contact: Mr Marius van Doorn
 Job Title: Commercial Manager
 T: +31 183-446451
 E: info@schoutenproducts.com
 W: www.schoutenproducts.com

SCORPIO ENGINEERING PVT. LTD

Scorpio House
 132 Wheeler Road
 Cox Town
 Bangalore
 560 005
 India
 Contact: Mr Jacob P.
 Job Title: VP - Marketing & Application
 T: + 91 99801 625 39
 F: + 91 80 2548119
 E: jacob@scorpioengg.com
 W: www.scorpioengg.com
The company engineers and manufactures a complete range of grain handling equipment with turnkey engineering capability. Capacities of equipment range from a few tonnes per hour to about 500mt per hour. Key strengths are the ability to engineer, manufacture, install and

commission complete grain terminals for ports and grain storage and handling systems for large grain processors.

SEABULK Inc

Suite 150
 10271 Shellbridge Way
 Richmond
 British Columbia
 V6X 2W8
 Canada
 Contact: Mr Sidney Sridhar
 Job Title: President
 T: + 1 604 273 1378
 F: + 1 604 273 1358
 E: sbs@seabulk.com
 W: www.seabulk.com
Design and build contractors involved with ports, self-unloaders and transshippers for bulk cargo. The firm provides turn-key logistics solutions for the transportation, storage and handling of bulk materials, prototype new developments including material handling systems for ship and open-sea transshipment.

S-E-G INSTRUMENT AB

Box 111 43
 Bromma
 S-161 11
 Sweden
 Contact: Ms Eva Söderholm
 Job Title: Assistant
 T: + 46 8 764 74 00
 F: + 46 8 764 75 00
 E: inform@s-e-g.com
 W: www.s-e-g.com
S-E-G is one of few companies in the world specializing in industrial weighing. For over 50 years we have acquired a unique knowledge in our special fields such as Belt Scales, Mass Flow Meters, Batching Systems, and Level Measuring.

SEMPERTRANS FRANCE BELTING TECHNOLOGY SAS

Sempertrans Marketing
 10 rue des charretiers
 Argenteuil Cedex
 95104
 France
 Contact: Ms Catherine Flichy
 T: + 33 1 30 25 72 00
 F: + 33 2 39 80 46 16
 E: contact@sempertrans-france.com
 W: www.sempertans.com
SEMPERTRANS has been developing, manufacturing and installing conveyor belts for more than 50 years. Its knowhow, its experience and the quality of its products make SEMPERTRANS one of the world's leading companies in its field.

SENNEBOGEN MASCHINENFABRIK GmbH

Hebbelstrasse 30
 Straubing
 D-94315
 Germany
 Contact: Mr Alfred Endl
 T: + 49 9421 540148
 F: + 49 9421 43882
 E: marketing@sennbogen.de
 W: www.sennbogen.com
SENNBOGEN offers a wide range of all kinds of materials handling machines, HD rope excavators/cranes, crawler

cranes, telescopic cranes and base carriers. SENNEBOGEN has a specific strength in realizing solutions based on individual customer specifications.

SERVO BERKEL PRIOR

Jan Evertsenlaan 4
 Katwijk
 2224 SV
 The Netherlands
 Contact: Mr Erwin van Diest
 Job Title: Managing Director
 T: + 31 71 4030101
 F: + 31 71 4032317
 E: info@servoberkelprior.eu
 W: www.servoberkelprio.eu
Servo Berkel Prior B.V. is the biggest manufacturer and supplier of weighing equipment in the Netherlands.

SESCOTRANS (SAE)

1 c EL Shahid sayed Zakarya st.
 Cairo
 11361
 Egypt
 Contact: Mr Ahmed Hassan
 Job Title: VP & CEO
 T: + 2 222679115
 F: + 2 222679449
 E: ahmed@sescotrans.net
 W: www.sescotrans.com
Other Equipment: Mobile Harbour Cranes - CMA, SMA. SESCOTRANS has 50 years experience of integrated logistics solutions for your business, serving main Egyptian ports including transportation, customs clearance, warehousing, loading and discharging of different cargo and vessel sizes, supported with full setup of facilities and fully-employed resources.

SEW-EURODRIVE GmbH & Co KG

P O Box 3023
 Bruchsal
 D-76652
 Germany
 Contact: Mr Manfred Müller
 T: + 49 7251 75 0
 F: + 49 7251 75 1970
 E: sew@sew-eurodrive.de
 W: www.sew-eurodrive.com
Complete drive packages: Helical gear units, Bevel-helical gear units, motors, couplings, swing bases, brakes, geared motors. Planetary gear units, frequency inverters Torque range: 100 ... 1 Mio Nm

SGH EQUIPMENT LIMITED

Unit 32
 King Street Trading Estate
 Middlewich
 Cheshire
 CW10 9LF
 UK
 Contact: Mr Stuart Henderson
 Job Title: Director
 T: + 44 1606 536955
 F: + 44 1606 536956
 E: sales@sghequipment.co.uk
 W: www.sghequipment.co.uk
SGH Equipment provide process & materials handling engineering solutions, specialising in bulk powder & granular materials Equipment: Storage Silos & Vessels, Conveying, Weighing, Mixing & Blending, FIBC Fill/Discharge, Dust Collection, Filtration, & Suppression, Bagging Services: Design, Manufacturing, Fabrication, Installation, Commissioning

SGS

Suite 210B
 1919 S. Highland Ave
 Lombard
 Illinois
 60148
 USA
 Contact: Ms MaryLynn Dobush
 T: + 1 630 953 9300
 F: + 1 630 953 9306
 E: info@sgs.com
 W: www.sgs.com

SGS (NEDERLAND) BV

Malledijk 18
 Spijkenisse
 AE
 3200
 The Netherlands
 Contact: Mr Rolf Wiltling
 T: + 31 181 69 3260
 F: + 31 181 69 3581
 E: rolf.wiltling@sgs.com
 W: www.sgs.nl

SGS AUSTRALIA PTY LTD

Unit 16
 33 Maddox Street
 Alexandria
 NSW
 2015
 Australia
 Contact: Mr Stephen Hemsworth
 Job Title: National Business
 Manager
 T: + 61 2 8594 0400
 F: + 61 2 8594 0419
 E: stephen.hemsworth@sgs.com
 W: www.au.sgs.com
SGS is the world's leading inspection, verification, testing and certification company. SGS also designs and supplies mechanical sampling systems for a wide range of bulk materials. SGS has more than 30 years experience in this field with equipment in operation throughout the world.

SGS AUSTRIA CONTROLL-Co GmbH

Diefenbachgasse 35
 Vienna
 A 1150
 Austria
 Contact: Ms Susann Fernau
 T: + 43 1 512 25 67152 137
 F: + 43 1 512 25 679
 E: sgs_austria@sgs.com
 W: www.at.sgs.com

SGS MINERALS SERVICES

1 Place Des Alps
 PO Box 2152
 Geneva
 CH 1211
 Switzerland
 Contact: Mr Richard Lihou
 T: + 41 22 739 9111
 F: + 41 22 739 9815
 E: richard.lihou@sgs.com
 W: www.sgs.com
The SGS Group is the global leader and innovator in verification, inspection, testing and certification services. Founded in 1878, SGS is recognised as the global benchmark for the highest standards of expertise and integrity. With over 30,000 employees, the Company operates a network of offices and laboratories in over 140 countries around the world.

SHANGHAI GLOBAL MACHINERY CO., LTD (SGMC)

No.1449 Baishi Road
Qingpu District
Shanghai
201711
China
Contact: Mr Luo Tao
T: + 86 21 398 21129
F: + 86 21 398 21130
E: luo@sgmc.com.cn
W: www.sgmcgrab.com
We are a Chinese grab manufacturer, specializing in the shore and ship crane grabs for handling bulk cargo, such as radio remote control grabs and motor-hydraulic grabs.
www.sgmcgrab.com

SHANGHAI JANUS GRAB CO., LTD.

Room 518-519
VMO 37#
2049 Pujin Road
Shanghai
Shanghai
201114
China
Contact: Mr Pracy Jia
Job Title: Marketing Manager
T: + 86 21 6885 5558
F: + 86 21 6885 5559
E: janus@janusgrab.com
W: http://www.janusgrab.com/

SHANGHAI QIFAN CO., LTD.

25F, Baoding Mansion
Xujiahui Road
Shanghai
200025
China
Contact: Mr Eric Liu
T: + 86 21 51029257
F: + 86 21 51062358
E: ericsphy@163.com
W: http://www.qifanco.com/
Develops high-tech grabs, such as motor hydraulic bulk grab, motor hydraulic orange peel grab, wireless remote control bulk grab and contractible single rope bulk grab. Also manufactures a variety of handling tools, loading and unloading equipment, steel structure frame and other mechanical products.

SHANGHAI ZHENHUA PORT MACHINERY CO (ZPMC) LTD

3470 Pudong Nan Lu
Shanghai
PR
200125
China
Contact: Mr Chen Kai
Job Title: General Manager
T: + 86 21 5839 6666
F: + 86 21 5839 9555
E: mail@zpmc.com
W: www.zpmc.com
A world-famous manufacturer of bulk materials handling equipment. Its main products include ship loaders and unloaders, bucket wheel stackers and reclaimers. With proven design, manufacturing and fully-erect shipment capabilities to ensure on time delivery.

SHANTHI INTERNATIONAL

21, Center Point
Indira Gandhi Road
Jannagar

Gujarat
361008
India
Contact: Mr Sanjay Masuria
Job Title: Director - Marketing - International
T: + 91 288 255 6671 / +91 288 2555 867
F: + 91 288 255 4254
E: sanjay@servoday.in
W: www.servodaygrabs.com
Manufacturer & Exporter of Radio Remote Control Grabs, capacity from 6 CBM to 55 CBM, with the unique features of Grabs operation counting, with Weight calculation, online Grab monitoring systems etc.

SIWERTELL (PART OF CARGOTEC CORPORATION)

PO Box 566
Gunnarstorp
Bjuv
SE-267 25
Sweden
Contact: Ms Emily Cueva
Job Title: Communications Manager
T: + 46 42 858 00
F: + 46 42 858 99
E: blksales@cargotec.com
W: www.siwertell.com
Siwertell dry bulk handling systems are based on a unique screw technology and provide the most environment-friendly, efficient and versatile operation on the market today. All systems can be tailor-made to fit each port or terminal.

SMB INTERNATIONAL GMBH

Friedrich List Str 3-7
Quickborn
25451
Germany
Contact: Mr Andreas Heckel
Job Title: Managing Director
T: + 49 41 06 12388 0
F: + 49 41 06 12388 19
E: heckel@smb-group.de
W: www.smb-shiploading.com
SMB meets the demanding material-related requirements of conveying bulk and bagged goods. The company designs and manufactures high-performance conveying solutions designed for trouble-free long-term operation. Projects all over the world convince fertilizer producers, port operators and industrial specialists of the quality of German engineering.

SMILEY MONROE LTD

23 Ferguson Drive
Knockmore Hill Industrial Park
Lisburn
Northern Ireland
BT28 2EX
UK
Contact: Mr Tim Monroe
Job Title: Senior Marketing Manager
T: + 44 28 9267 3777
F: + 44 28 9266 3666
E: sales@smileymonroe.com
W: www.smileymonroe.com

SOLIMAR PNEUMATICS

8001 Ranchers Road NE
Minneapolis
Minnesota
MN 55432-3103
USA
Contact: Mr Jeff Lucke
Job Title: Director of Sales

T: + 1 763 574 1820
F: + 1 763 574 1822
E: jeff@solimarpne.com
W: www.solimarpneumatics.com
Discharge aids for storage silos.

SOTECMA INC PROCESS ENGINEERS

245, boul. Yvon - L'Heureux Nord
Beloeil
Quebec
J3G 5R8
Canada
Contact: Mr Denis C Boulais
Job Title: President
T: + 1 450 464 4426
F: + 1 450 464 4534
E: cgemain@sotecma.com
W: www.sotecma.com
Canadian company offering turnkey engineering and construction services in bulk handling and flat storage solutions at low cost. The type of structure used is a highly versatile alternative to conventional constructions. The storage shed can be dismantled and be relocated. For more details visit www.sotecma.com.

STAG AG

Industriestrasse 11
Maiefeld
7304
Switzerland
Contact: Mr Thomas Zanettin
Job Title: Sales/Marketing
T: + 41 81 3035800 / 53
F: + 41 81 3035899
E: office@stag.net
W: www.stag.net
STAG bulk material technology for mechanical and pneumatic conveying technology as well as ensilage technology. We are also the ideal partner as a general company for complex assignments for nearly all bulk materials in plant construction.

STAS BV

Kathedweg 4
Hoom
1627 LK
The Netherlands
Contact: Mr Rob ver Doren
Job Title: Managing Director
T: + 31 229 282 940
F: + 31 229 233 177
E: info@stasgroup.eu
W: www.stas-nl.com
Stas is a manufacturer (production) of transport rollers, drive and tension drums and import bearings and bearing blocks.

STEWART INSPECTION AND ANALYSIS (PTY) LTD

PO Box 267
Brakpan
1541
South Africa
Contact: Mrs Carol Le Cordeur
T: + 27 11 740 0621
F: + 27 11 740 0626
E: carol.lecordeur@alsgroup.com
W: www.stewartgroupglobal.com

STRUDES INC

1440 Sainte Catherine St
Suite 905
Montreal
Quebec
Canada
Contact: Mr Henry Nowodworski
Job Title: President
T: + 1 514 731 6951 x 123
F: + 1 514 737 4146

E: h.nowodworski@strudes.com
W: www.strudes.com
Strudes Inc. is an Engineering Consulting Company, specializing in design for heavy industry in general and Cement Industry in particular. For markets and more information: www.strudes.com.

SUB CON LTD

20 Shamrock Road
Erin
Ontario
NOB ITO
Canada
Contact: Mr Don Johnstone
T: + 1 519 833 0054
F: + 1 519 833 9344
E: don@bulk-store.ca

SUOMEN VIJAJA OY

Kielotie 5 B
Vantaa
01300
Finland
Contact: Mr Hannu Korttesmaa
Job Title: Marketing Manager
T: + 358 10 3464 204
F: + 358 01 3464 200
E: hannu.korttesmaa@suomenvijaja.fi
W: www.suomenvijaja.fi
Suomen Vijaja Ltd is Finland's biggest grain handling and storage company. We have stores at 21 locations in south and middle Finland. The total storage capacity is 1,4 million tonnes. Our services comply with ISO 9001 and GTP standards.

SUPERCARGO, LDA

Rua Alfredo Cunha, 107
Monte de Caparica
2825-056 Caparica
Portugal
Contact: Mr Artur Rocha
Job Title: Director
T: + 351 212 946 220
F: + 351 212 946 228
E: mail@supercargo.pt
W: www.supercargo.pt
Supercargo is a GAFTA and FOSFA accredited members Superintendent and applies a Quality Management System for Supervision, Inspection and Surveys in International Trade according NP EN ISO 9001:2008

SUPERIOR INDUSTRIES, INC.

315 East State Highway 28
PO Box 684
Morris
Minnesota
56267
USA
Contact: Mr Corey Poppe
Job Title: Marketing Manager
T: + 1 320 589 2406
F: + 1 320 585 5644
E: info@superior-ind.com
W: www.superior-ind.com

SVENDBORG BRAKES APS

Jembanevej 9
Vejstrup
5882
Denmark
Contact: Ms Yvonne Küttemann
Job Title: Marketing Manager
T: + 45 63 255 255
F: + 45 62 281 058
E: sb@svendborg-brakes.com
W: www.svendborg-brakes.com
Worldwide system supplier of hydraulic braking solutions of material handling.

SWIRE CTM BULK LOGISTICS



C Transport Maritime SAM
Gildo Pastor Centre
7 Rue du Gabilan
Monaco
MC 98000
Monaco
Contact: Captain Giorgio Vallega
Job Title: Operation/Commercial Manager
T: + 377 9798 5981
F: + 377 9798 2306
E: gvallega@ctnmmc.com
W: www.swirectmbl.com
Sums up the experience, know-how and networks of its parent companies in the dry bulk and logistics field, providing a full range of integrated services from the supplier to the end users, including specialised barge services, transshipment, river, coastal and ocean transportation by means of conventional bulkcarriers or self-unloading vessels and barge.

TAIM WESER, S.A.

Carretera de Castellón, km 6,3
Poligono Industrial La Cartuja
Zaragoza
50013
Spain
Contact: Mr Simon Whalley
Job Title: Sales Director
T: + 34 976 500 006
F: + 34 976 500 028
E: info@taimweser.com
W: www.taimweser.com
TAIM WESER is a solid industrial organization, present in 59 countries and able to guarantee, with over 100 years of experience, the development and execution of any project related to its lines of manufacture: bulk handling, lifting, waste treatment and renewable energies.

TBMA EUROPE BV

Delfweg 18
Noordwijkerhout
NL-2211 VM
The Netherlands
Contact: Mr E A J Houben
Job Title: Managing Director
T: + 31 252 37 50 68
F: + 31 252 37 54 36
E: info@tbma.com
W: www.tbma.com/engels/
Systems and Components for dry Solids Handling. Pneumatic and mechanical conveying, rotary valves, diverter valves, sampling equipment, bellow feeders, Big-Bag filling and discharging equipment, dosing feeders, silo discharge equipment etc.

TBS SHIPPING SERVICES

612 Grassy Sprain
Yonkers
New York
10710
USA
Contact: Mr Gregg McNeil
T: + 1 914 961 1000
F: + 1 914 961 2286
W: www.tbsship.com/

TEBODIN CONSULTANTS & ENGINEERS

Postbus 433
Deventer
7400 AK
The Netherlands
Contact: Mr Bert Frowijn
Job Title: Branch Director
T: + 31 570 63 8900
F: + 31 570 63 6350
E: b.frowijn@tebodincce.nl
W: www.tebodincce.nl
Tebodin CCE is a successful team of technical consultants and engineers with international reputation in the field of design, engineering, tendering, and implementation of industrial as well as utility projects. A structured and decisive project approach results in high efficiency.

TECHNAERO APS

Blaabaervej 3
Haslev
DK-4690
Denmark
Contact: Mr Anders Larsen
Job Title: CEO
T: + 45 56314925
F: + 45 56314555
E: sales@technaero.dk
W: www.technaero.dk
Other Expertise: Pneumatic transport systems. Supply of complete, high quality, low cost, professional dust removal systems according to ATEX. Efficient round filters. Spoffilters to removal from transferpoints. Pit-intake filters for discharge from trucks, railcars and around crane hoppers. Complete projects for Pneumatic Transport.

TELESTACK LIMITED

Bankmore Way East
Omagh
County Tyrone
BT79 0NZ
Northern Ireland
Contact: Mrs Samantha
Thompson
Job Title: Marketing Co-Ordinator
T: + 44 28 82 25 11 00
F: + 44 28 82 25 22 11
E: salesenquiries@telestack.com
W: www.telestack.com
Telestack Limited specialize in the design, manufacture, installation and commissioning of MOBILE bulk material handling solutions for the Ports & Inland Terminals, including a range of ship-loaders / Ship Un-loaders, mobile truck un-loaders, link conveyors and hopper feeders.

TEREX MHPS GMBH

Terex Port Solutions
Forststrasse 16
Düsseldorf D-40597
Germany
Contact: Mr Giuseppe Di Lisa
Job Title: Vice President Sales & Service
T: + 49 211 7102 3771
F: + 49 211 7102 3651
E: tps.info@terex.com
W: www.terexportsolutions.com
Offers a wide range of mobile harbour cranes including professional four-rope grab cranes with lifting capacities ranging to 120 tonnes and radii up to 56m. Comprehensive customer support services including spare parts stocks, field service, full service contracts and a 24-hour call-out.

TETA MÜHENDISLIK A.Ş.

Çankırı Yolu 7.km Aselsan Karşısı
Akyurt
Ankara
06950
Turkey
Contact: Mr Talat Isik
Job Title: General Manager
T: + 90 312 8475361
F: + 90 312 8475399
E: teta@tetamuh.com.tr
W: www.tetamuh.com.tr
Provides engineering, representation, manufacturing and erection of industrial equipment and plants for storage, handling and weighing, as well as bagging and loading of wide ranging bulk products.

THE GRAB SPECIALIST B.V.

Draailbrugweg 1
Almere
1332AA
The Netherlands
Contact: Mr Emiel Bleyenbergh
Job Title: Director
T: + 31 365 32 88 22
F: + 31 365 49 99 22
E: info@tgs-grabs.nl
W: www.tgs-grabs.nl
The Grab Specialist B.V. design, develop and manufacture grabs for the dry bulk cargo-, dredging- and recycling industry. A service-oriented company, complying with the highest standards of after-sales and spare part supply service to secure productivity in your operations.

THERMO FISHER SCIENTIFIC

501 - 90th Avenue NW
Minneapolis
MN
55433
USA
Contact: Ms Paula Frisk
Job Title: Product
Manager/Marketing
T: + 1 800 445 3503
F: + 1 763 783 2525
E: Sales.bulk.us@thermofisher.com
W: www.thermoscientific.com/
bulkweighing
Thermo Scientific's Bulk Weighing & Monitoring product line includes conveyor belt scales, weighbelt feeders, impact weighers, sampling systems, numerous level indication devices, flow/no flow indicators, speed switches and conveyor/personnel protection switches.

THYSSENKRUPP CANADA

1177-11th Avenue SW
Suite 500
Calgary
Alberta
2TR 1K9
Canada
Contact: Mr Steve Harrington
Job Title: Vice President
Marketing
T: + 1 403 209 4431
F: + 1 403 245 5625
E: infocanada@thyssenkrupp.com
W: www.krupp.ca
Involved in the design and supply of turnkey mining and bulk materials handling projects. The product line of equipment encompasses shiploaders/ship unloaders, conveying systems, crushing systems, stackers, storage and reclamation systems.

THYSSENKRUPP INDUSTRIAL SOLUTIONS AG

Bus. Unit Resource Tech./Mining-
Materials Handling
Ernst-Heckel-Strasse 1
St Ingbert-Rohrbach
Saarland
D-66386
Germany
Contact: Dr W Ye
Job Title: Vice President Sales
T: + 49 6894 599 0
F: + 49 6894 599 468
E: info-nh@thyssenkrupp.com
W: www.thyssenkrupp-industrial-
solutions.com
Besides individual items of machinery as listed above, ThyssenKrupp Resource Technologies design and supply complete material handling plants turn-key to the fertilizer industry (for handling of urea and phosphates etc.), the cement and mining industry, coal handling systems for power stations as well as complete port handling solutions.

THYSSENKRUPP ROBINS, INC.

7730 E. Bellevue Ave
Suite #404
Greenwood Village
Colorado
80111-5820
USA
Contact: Mr Bill Halley
Job Title: Mechanical Engineer
T: + 1 303 770 0808
F: + 1 303 770 4522
E: bill.halley@thyssenkrupp.com
W: www.krupprobins.com
Located in Denver, Colorado the company has been involved for many years in the design and supply of turnkey, environmentally sensitive mining and material handling projects. The product line of equipment includes: conveying systems; crushing systems; stackers; shiploaders and ship unloaders; storage and reclamation design and supply.

TIDEWORKS TECHNOLOGY - EUROPE

Maaswijkweg 7
Spijkenisse
3203 LG
The Netherlands
Contact: Mr Rik Verspeek
Job Title: Business Manager
T: + 31 181 668668
F: + 31 181 668660
E: info@tideworks.com
W: www.tideworks.com

TIMARS SVETS & SMIDE AB

Industrivagen 12
Falkenberg
S-311 33
Sweden
Contact: Mr Peter Stenbeck
T: + 46 346 82100
F: + 46 346 82800
E: info@timars.se
W: www.timars.se
Sweden based company specialising in bag handling equipment. The company builds filling as well as discharge machines for big sacks and also design complete production lines with equipment and education.

TMSA TECNOLOGIA EM MOVIMENTAÇÃO S/A

Avenida Bernardino Silveira
Pastoriza, 710
Bairro Sarandi
Porto Alegre
RS
91160-310
Brazil
Contact: Mr Pedro Belintani
Job Title: Marketing
T: + 55 51 2131 3333
F: + 55 51 2131 3330
E: marketing@tmsa.ind.br
W: www.tmsa.ind.br
TMSA: one of the main suppliers in South American market for bulk solids material handling, especially in port terminals and industrial applications. Offers unique heavy duty, high capacity cleaning/screening machine, ship-loaders and dust control systems. Manufacturing with large highly integrated engineering under ISO 9001:2000 Certification.

TRAMCO EUROPE LIMITED

TRAMCO
Mendham Business Park
Hull Road
Saltend
Hull
HU12 8DZ
UK
Contact: Mr Dave Fanthorpe
Job Title: General Manager
T: + 44 1482 782 666/ + 44 7813 800251
F: + 44 1482 793 920
E: David@tramcoeuropa.co.uk
W: www.tramcoeuropa.com
A global leader in bulk material handling, TRAMCO EUROPE LTD produce a complete line of high quality, robust, fully ATEX certified enclosed conveyors including TramrollTM, JetBeltTM, Bulk-FloTM, the Model G, Model RB, and Bucket Elevators.

TRAMCO, INC

1020 East 19th Street
Wichita
KS
67214
USA
Contact: Mr Todd Warner
Job Title: Director of Sales & Marketing
T: + 1 316 264 4604
F: + 1 316 264 7965
E: sales@tramcoinc.com
W: www.tramcoinc.com
TRAMCO has been involved in the design, application, engineering and manufacture of the worlds most complete line of chain conveyors, enclosed belt conveyors, specially designed conveyors and conveyor conversions since 1967. TRAMCO's philosophy is to produce high quality, reliable equipment that meets specific customer needs.

TRANSPLIT PORT EQUIPMENT SERVICES INC

Building 3
SRF Area
Subic Bay
Zambales
Freeport Zone 2222
Philippines
Contact: Mr John Wellington
Job Title: Managing Director

T: + 63 47 252 6332/4/5
F: + 63 47 252 6336
E: translift@transliftsubic.com

TRIODETIC

10 Didak Drive
Amprior
Ontario
K7S 0C3
Canada
Contact: Mr Tim Staniszewski
Job Title: Sales & Marketing
Manager
T: + 1 613 623 3434 ext 2234
F: + 1 613 622 4003
E: info@triodectic.com
W: www.triodectic.com
Designs, manufactures and installs unique enclosed storage systems for all kinds of bulk materials, including the high capacity Space Frame domes and barrel vaults.

TRIPLE POINT TECHNOLOGY

22 Frith Street
Mayfield West
NSW
2304
Australia
Contact: Mr Steve Maxwell
Job Title: GVice President,
Mining, APAC Sales
T: + 61 2 4908 2222
F: + 61 2 4968 2043
E: info@tpt.com
W: www.tpt.com

TSUBAKIMOTO BULK SYSTEMS CORPORATION

4-1
Terauchi 2-Chome
Toyonaka
Osaka
561-0872
Japan
Contact: Mr Y Horii
Job Title: Manager, Overseas
Operations
T: + 81 6 6862 2329
F: + 81 6 6862 8516
E: sales@tsubaki-bulk.com
W: http://tsubakimoto.com/tbs/
Produces bulk handling systems equipment, bucket, flow and pan conveyors.

TTS HUAHAI SHIPS EQUIPMENT

18th Floor
3255 Zhou Jia Zui Road
Shanghai
200093
China
Contact: Mr Lian Zhou Yang
Job Title: Business Development
Manager
T: + 86 21 6539 8257
F: + 86 21 6539 7400
E: info@tts-huahai.com

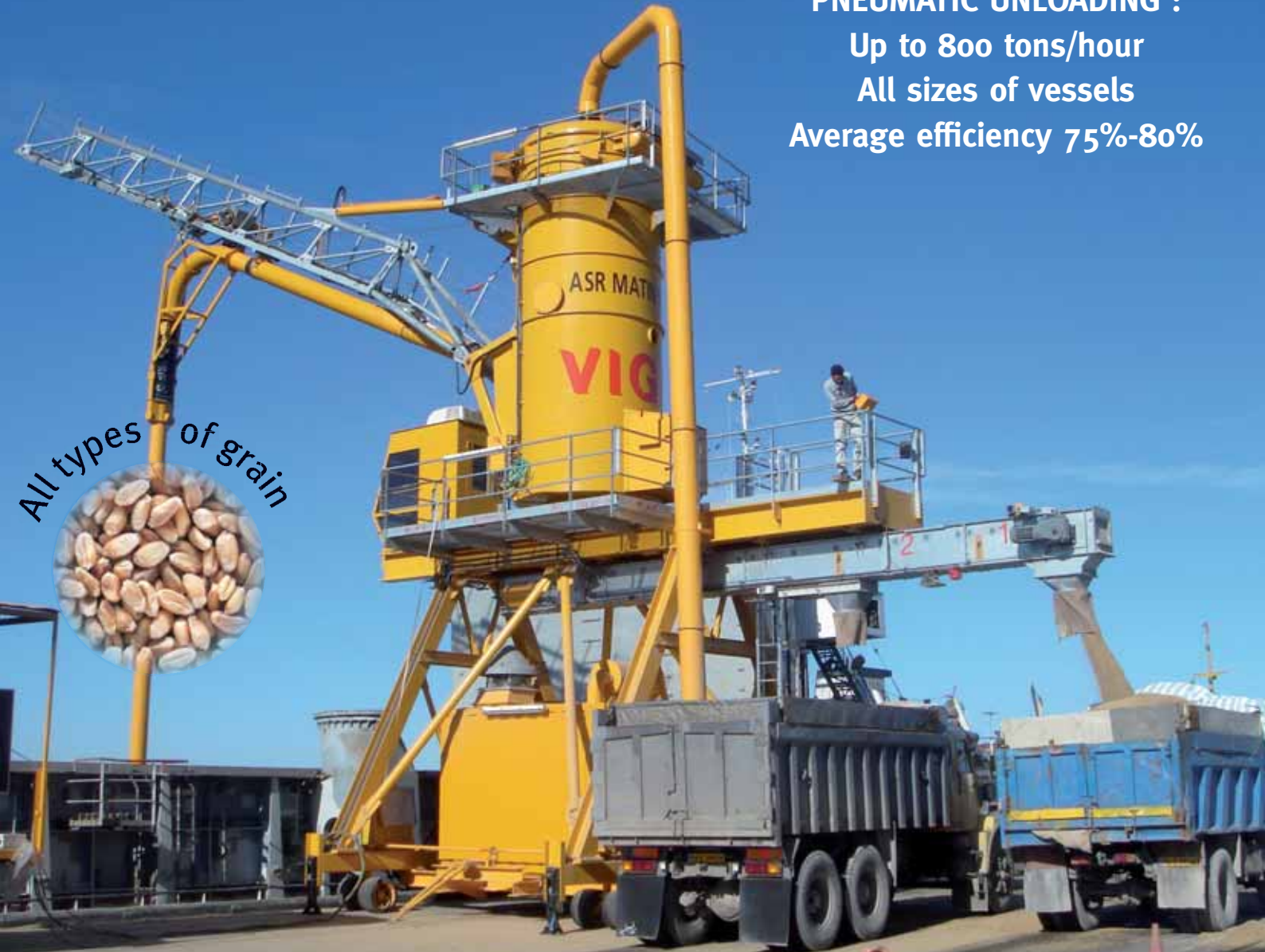
ULRICH BREHME GMBH

Otto-Hahn-Str. 1
Hattorf am Harz
37197
Germany
Contact: Mr Bodo Altgeld-
Wichmann
Job Title: Marketing Manager
T: + 49 5584 94210 0
F: + 49 5584 94210 99
E: info@brehme-ubo.com
W: www.brehme-ubo.com



Pneumatic or Mechanical Ship Loaders & Unloaders Port Equipment - Turnkey Projects

PNEUMATIC UNLOADING :
Up to 800 tons/hour
All sizes of vessels
Average efficiency 75%-80%



All types of grain

MOBILE up to 270 t/h

NIV up to 800 t/h

LOADER up to 1500 t/h

SIMPORTER up to 1500 t/h



*A win-win solution between customer operational
experience and VIGAN engineering expertise*



V D D B (Pty) Ltd

PO Box 16985
Lytelton
Gauteng
0140
South Africa
Contact: Mr Leonard van der Dussen
T: + 27 12 664 2300
F: + 27 12 644 2902
E: admin@vddb.co.za
W: www.vddb.co.za

Services are delivered to a variety of projects for mining and industrial clients and range from performing a particular task such as providing a bill of quantities to taking charge of a comprehensive cost structuring, capital estimating and project cost management service through to final accounts and close-out.

VEENSTRA MACHINEFABRIEK B.V.

De Holwert 10
KC Coevorden
7741
The Netherlands
Contact: Mr Paul Kuiper
T: + 31 524 599 333
F: + 31 524 599 330
E: mach@veenstra-coevorden.nl
W: www.veenstra-coevorden.nl

VERACHTERT NEDERLAND B.V.

De Bloemendaal 8
Hertogenbosch
North Brabant
5221EC
The Netherlands
Contact: Mr Robbert Boersma
Job Title: Sales Manager
T: + 31 73 640 41 11
F: + 31 73 641 97 40
E: info@veraned.nl

W: www.veraned.nl/en
In 60 years Verachttert has developed into the market leader of Work Tools for all types of diggers and wheel loaders, and offers solutions for the specific wishes of the customer. Verachttert products represent quality and productivity.

VERSTEGEN GRIJPERS BV



PO Box 1014
Nieuwegein
3430 BA
The Netherlands
Contact: Mr Eric Visser
Job Title: Managing Director
T: + 31 3060 62222
F: + 31 3060 60657
E: info@verstegen.net
W: www.verstegen.net
Manufactures and supplies wide range of grabs for all bulk commodities.

VIBRAFLOOR

Za 27 Rue de la Tuilerie
Dracy-le-Fort
71640
France
Contact: Mr Jean-Claude Poncet
Job Title: President
T: + 33 3 85 44 06 78
F: + 33 3 85 44 06 79
E: jc.poncet@vibrafloor.com
W: www.vibrafloor.com
VIBRAFLOOR, the modular vibrating floor, is used in various bulk industries, inside silos, ships and railway cars as a versatile reclaiming using powered gravity.

VIGAN



Rue de L'Industrie 16
Nivelles
B-1400
Belgium
Contact: Mr Nicolas Dechamps
Job Title: Managing Director
T: + 32 67 89 50 41
F: + 32 67 89 50 60
E: info@vigan.com
W: www.vigan.com
VIGAN equipment are suited for most of materials in bulk such as cereals, oilseeds, alumina, chemicals and wood pellets. As a solution provider, VIGAN can manage your bulk handling projects from initial design up to full erection under "turnkey" conditions.

WEATHERSOLVE STRUCTURES

3127 248th St
Langley
British Columbia
V4W 1X7
Canada
Contact: Mrs Barbara Robinson
Job Title: Marketing Manager
T: + 1 604 607 7781
F: + 1 604 909 1914
E: Barbara@WeatherSolve.com
W: www.weathersolve.com
WeatherSolve Structures dust control professionals that build customized suspended fabric systems for many situations from dust / wind fencing, hopper, truck dumps, conveyor and many more situations requiring dust control. Give a call today and we will come up with a solution for you.

1.604.607.7781 or
www.weathersolve.com

WEBSTER GRIFFIN LTD

Brooklands Park
Farningham Road
Crowborough
East Sussex
TN6 2JD
UK
Contact: Mr Mark Wilson
Job Title: Managing Director
T: + 44 1892 664250
F: + 44 1892 664340
E: info@webstergriffin.com
W: www.webstergriffin.com
Manufactures all types of bag and sack filling systems (including mobile systems), big bag/bulk bag filling systems, robot palletising systems for all types of grain, granular or powdered products.

WIELAND LUFTECHNIK GMBH

Wetterkreuz 12
Erlangen
91058
Germany
Contact: Mr Gerhard Borrmann
Job Title: Export Manager
T: + 49 9131 60 67 0
F: + 49 9131 60 67 97
E: info@wieland-luft.de
W: www.wieland-luft.de
Wieland Lufttechnik GmbH & Co.KG has manufactured industrial vacuum cleaning equipment for more than 50 years. Specialized in portable, stationary and truck- or trailer-mounted vacuum cleaning systems. See www.wieland-luft.com.

WINDMÖLLER & HÖLSCHER KG

Münsterstr. 50
Lengerich D-49525
Germany
Contact: Mrs Elisabeth Braumann
Job Title: Public Relations
T: + 49 5481 14 2929
F: + 49 5481 14 3355
E: elisabeth.braumann@wuh-group.de
W: www.wuh-group.com/
Windmüller & Hölscher - one of the leading machine manufacturers in the world for the flexible packaging industry and the global leader in bag making and bagging equipment.

WORLEY PARSONS CANADA (WESTMAR)

400-233 West First Street
North Vancouver
BC V7M 1B3
Canada
Contact: Mr Richard Malinek
T: + 1 604 985 6488 ext 5218
F: + 1 604 985 2581
E: info@westmar.com
W: www.westmar.com
Provides consulting engineering services to clients worldwide. The diverse experience gained over thousands of projects, combined with a commitment to research results in maximum value for clients. The team of project management and design specialists work with clients to develop projects from concept to completion, providing services ranging from initial planning and economic evaluation studies through to detailed design, procurement, construction and commissioning.

	Ship & Barge Loaders	Pneumatic Ship & Barge Unloaders	Mechanical Ship & Barge Unloaders	Conveyors	FIBCs, Bags & Bag Handling	Hoppers	Grabs	Dust Suppression	Sampling & Inspection	Weighing & Measuring	Grading & Sifting	Truck Loaders & Unloaders	Railcar Loaders & Unloaders	Storage Systems	Engineering Consultants	Other
4B BRAIME Elevator Components																
A/S Cimbra	✓															
Ag Growth International (AGI)																
Agrico Sales, Inc.	✓															
Agromatic AG																
Alex Stewart Agriculture Ltd										✓	✓					
Alex Stewart International										✓	✓					
Antar@Pressvess				✓											✓	
Anvil Attachments	✓															
Arlona Engineering				✓						✓						
Atlas Manufacturing Co. Inc																✓
Aurecon	✓															
Aurecon Hatch	✓															
Ausenco Engineering Canada Inc.	✓															
Bayards Aluminium Constructions				✓												✓
Bedeschi SpA	✓															
BEHN + BATES Maschinenfabrik GmbH & Co.KG																
Bergu International AB																
Best Service Group (B.S.G.) bvba	✓															
BGS Holland	✓															
Birrus International Pty Ltd																
BLUG-Credelbug S.L.																
Bosch Rexroth B.V.	✓	✓														
Boyne Area Manufacturing (BAM)	✓	✓														
Brook Grain Systems	✓	✓														
BRUKS Rockwood Incorporation																
Bucket Mart Inc.	✓	✓														
Bühler AG, Grain Logistics	✓	✓														
Bulk Lift International	✓	✓			✓											
Burttner Group	✓	✓														
BV Beco																
C Spencer Ltd																
Cachapuz Biancali Group																
Calim Grab Industry	✓															
Camar Mill Systems Ltd																
Cambelt International Corp																✓
Caterpillar Belgium																
Caterpillar- Inc																✓
Cavotec Deutschland GmbH	✓															
Cavotec SA																✓
CDM Systems, Inc				✓												

Company Name	Ship & Barge Loaders	Pneumatic Ship & Barge Unloaders	Mechanical Ship & Barge Unloaders	Conveyors	FIBCs, Bags & Bag Handling	Hoppers	Grabs	Dust Suppression	Sampling & Inspection	Weighing & Measuring	Grading & Sifting	Truck Loaders & Unloaders	Railcar Loaders & Unloaders	Storage Systems	Engineering Consultants	Other
E-Crane World Wide	✓															
E-Crane World Wide / E-Crane International USA	✓															
ECS Eurocargo Services AS			✓													
Edge Innovate																
Elgin Engineering and Construction																
EMS-TECH Inc	✓			✓												
Enclosed Bulk Systems BV				✓												
Enco Engineering Inc				✓												
Endress + Hauser Inc										✓						
Engicon nv																
EQUIPO LLC	✓															
ESI Eurosilio BV																
Euromec Srl																
Euro-tech Corporation																
Euro-Tramco BV																
FAM Foerderanlagen Magdeburg	✓			✓												
Figee Crane Services BV	✓			✓												
Flexco																
Flexco Europe GmbH																
Flexveyor Conveyor																
FLSmidth Wadgassen GmbH	✓			✓												
Ganz Danubius Trading Co Ltd	✓			✓												
Garwood Consulting Ltd																
General Kinematics Corp.	✓			✓												
Geo. Robson & Co. (Conveyors) Ltd.																
Geometrica Inc																
Geroldinger GmbH & Co KG																
Golfetto Sangati S.r.l.	✓			✓												
Goodman Conveyor Company																
Goodtech Solutions AS																
Greystones Cargo Systems (Pty) Ltd	✓			✓												
Gulsan A.P.																
Guttridge Ltd																
Guyen Grab and Machine Ltd. Co																
Hanson Silo Company																
Haskoning India Pvt Ltd																
Hasler International SA																
Henry International Diplomatic Marine																
Heyl & Paterson Inc																
Horizon Conveyor Equipment																
Huadian Heavy Industries Co., Ltd.																

**“A man who stops
advertising to save
money is like a man who
stops a clock to save
time”**

- Henry Ford

To find out how you can benefit from advertising in the world's only monthly dry
bulk publication contact Jason Chinnock or Andrew Hucker-Brown on:
Tel: +44 (0)1206 562560 Fax: +44 (0)1206 562566 Email: info@dc-int.com



Company	Ship & Barge Loaders	Pneumatic Ship & Barge Unloaders	Mechanical Ship & Barge Unloaders	Conveyors	FIBCs, Bags & Bag Handling	Hoppers	Grabs	Dust Suppression	Sampling & Inspection	Weighing & Measuring	Grading & Sifting	Truck Loaders & Unloaders	Railcar Loaders & Unloaders	Storage Systems	Engineering Consultants	Other
Hycontrol Limited				✓	✓	✓			✓	✓					✓	
IBC International Handling AB																
IMASA																
IMGs																
Inspectorate (Suisse) SA -																
Bureau Veritas Commodities Division									✓	✓						
Inspectorate America Corporation																
Interjute BV																
Intermodal Solutions Pty Ltd																
Intersystems				✓												✓
Italgru S.r.l.																
J & B Grabs b.v.							✓									
Jansen & Heuning																
Jem International				✓	✓	✓										
Jenike & Johanson Inc.				✓	✓	✓		✓							✓	
Jim Way Enterprise Co., Ltd				✓	✓	✓										
Joy Mining Machinery				✓	✓	✓										
Kardesler Grab & Machine																
Kinergy Corporation				✓	✓	✓										
King Bag & Manufacturing Co					✓	✓										
KIROW ARDEL GmbH				✓	✓	✓										
KRANUNION GmbH																
Lachenmeier Monsun A/S																
Laidig Systems Inc				✓	✓	✓										
Langston Companies Inc.					✓	✓										
Larox Flowsys Oy																
Lawrence Industries, Inc.								✓	✓							
Legacy Building Solutions, Inc.																
Libran Engineering and Services				✓	✓	✓										
Librawerk Maschinenfabrik GmbH				✓	✓	✓										
Liebherr Maritime Cranes				✓	✓	✓										
Listenow GmbH & Co.				✓	✓	✓										
LogSys NV																
Macawber Engineering, Inc				✓	✓	✓										
Mack Manufacturing Inc																
Manssien Group Ltd Oy				✓	✓	✓										
Maquinas Condor SA				✓	✓	✓										
Martin Engineering				✓	✓	✓										
Martin Engineering GmbH				✓	✓	✓										
Martin Engineering South Africa				✓	✓	✓										

Conference & Exhibition

DRY CARGO

The Netherlands

Ahoy Rotterdam

30 / 09 - 01 / 10 / 2015

2015

REGISTER
NOW
and save up
to € 95,-



@DryCargoNL / #DryCargoNL

www.easyfairs.com/drycargo-nl



Organised by

EASYFAIRS

Visit the future

Company	Ship & Barge Loaders	Pneumatic Ship & Barge Unloaders	Mechanical Ship & Barge Unloaders	Conveyors	FIBCs, Bags & Bag Handling	Hoppers	Grabs	Dust Suppression	Sampling & Inspection	Weighing & Measuring	Grating & Sifting	Truck Loaders & Unloaders	Railcar Loaders & Unloaders	Storage Systems	Engineering Consultants	Other
Maschinen und Mühlenbau Erhard Muhr GmbH	✓															
Merrick Industries																
Metsco Minerals Industries, Inc.	✓	✓		✓			✓									
Midwest International Standard Products, Inc.				✓												
Mole•Master Services Corporation™				✓												
MRS Greifer GmbH																
Mühlen Sohn GmbH & Co. KG				✓												
Müller Beltex BV				✓												
NAVCO (National Air Vibrator Co)																
Nectar Group Ltd				✓												
Negrini Srl				✓												
Nemag BV																
NEO CORP BRASIL				✓												
NERAK GmbH Fördertechnik				✓												
Neuero Industrietechnik GmbH	✓	✓		✓												
Nilfisk-CFM SpA				✓												
NKM Noell Special Cranes GmbH	✓			✓												
NMH s.r.o																
Nordströms Konstruktionsbyrå	✓			✓												
Nordströng Equipment Ltd				✓												
Orthos Projects Ltd.																
ORTS GmbH Maschinenfabrik				✓												
PAGE MACRAE ENGINEERING				✓												
PAM AS				✓												
Paul Hedfeld GmbH	✓			✓												
Pavan Group Srl				✓												
PEBCO®	✓															
Peinemann Cranes																
PEINER SMAG Lifting Technologies GmbH																
Peterson Agricare & Bulk Logistics BV																
Pfister Waagen Bilanzai GmbH																
PHB Weserhütte, S.A.	✓			✓												
Phenix Rousies Industries				✓												
Pirs SAS																
PLM Cranes B.V.																
Pneumat Systems Inc																
Polymer Industries - Ultrapoly Division																
Portpack UK Limited																
Port-Trade AS	✓															
Powerrex Inc																
Precia-Molen Nederland BV	✓															

	Ship & Barge Loaders	Pneumatic Ship & Barge Unloaders	Mechanical Ship & Barge Unloaders	Conveyors	FIBCs, Bags & Bag Handling	Hoppers	Grabs	Dust Suppression	Sampling & Inspection	Weighing & Measuring	Grating & Sifting	Truck Loaders & Unloaders	Railcar Loaders & Unloaders	Storage Systems	Engineering Consultants	Other
SGS Minerals Services																
Shanghai Global Machinery Co., Ltd (SGMC)																
Shanghai Janus Grab Co., Ltd.																
Shanghai Qifan Co., Ltd.																
Shanghai Zhenhua Port Machinery Co (ZPMC) Ltd	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shandhi International																
Siwertell (part of Cargotec Corporation)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SMB International GmbH																
Smiley Monroe Ltd																
Sollmar Pneumatics																
Sotecnma Inc Process Engineers																
STAG AG																
Stas BV																
Stewart Inspection and Analysis (Pty) Ltd																
Strudes Inc	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sub Con Ltd																
Suomen Viljava Oy																
Supercargo, Lda																
Superior Industries, Inc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Svendborg Brakes Aps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Swire CTTM Bulk Logistics																
TAIN WESER, S.A.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TBMA Europe BV																
TBS Shipping Services																
Tebodin Consultants & Engineers																
technaero aps																
Telectack Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terex MHPS GmbH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Teta Mühendislik A. .																
The Grab Specialist b.v.																
Thermo Fisher Scientific																
ThyssenKrupp Canada	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ThyssenKrupp Industrial Solutions AG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ThyssenKrupp Robins, Inc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tideworks Technology - Europe																
Tirars Svets & Smide AB																
TMSA Tecnologia em Movimentação S/A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tranco Europe Limited	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tranco, Inc																
Translift Port Equipment Services Inc		✓		✓		✓										
Triodetic																



Pasha Stevedoring & Terminals Handles All Cargo All The Time

Pasha Stevedoring & Terminals excels in handling steel, breakbulk, agricultural products, containers, and heavy-lift/project cargo, with supporting Omni-terminal operations and expert diversification in international vessel loading.

Delivering personalized solutions for faster, safer shipments.



PORT OF LOS ANGELES • PORT OF SAN DIEGO • PORT OF GRAYS HARBOR

(310) 835-9869 / www.psterminals.com



DHSAS
18001:2007
www.neuero.com
ID: 5705027183



NEUERO

Industrietechnik

Since 1914
100 YEARS NEUERO

KIKO SHIPLoader

KIKO (kick in kick out) MODELS

STATIONARY

Single or Multiple tower

ON RAILS

Complete solution with jetty conveyor and tripper car or fixed docking points.

ADVANTAGES

- Increased working range
- Dust suppression head
- Low grain breakage
- Low wear in loading pipes



**AGRI
TECHNICA**
The World's No. 1

Hannover
8. - 14. November 2015
Exklusivtage 8./9. November

NEUERO Industrietechnik für Förderanlagen GmbH ☒ Neuerostr. 1 ● 49324 Melle ● Germany
T: +49 5422 9503 0 ● F: +49 5422 9503 50 ● E: neuero@neuero.de ● H: www.neuero.de