



DRY CARGO

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

manufacture equipment. Meanwhile, the customer has already started preparatory and general construction works, namely the vertical layout of the conveyor route and earthworks. The installation of foundations will soon begin. It is planned to complete the construction of the facility in 2021. The total cost of the project is tentatively estimated at 7.8 billion rubles.

The project is supported by federal and regional authorities and is being implemented in the freeport of Vladivostok. "The main coal conveyor in the Ulegorsky district will become one of the most modern not only in Russia, but also in the world. The launch of the facility will significantly reduce the load on the district's roads and have a positive impact on the environment, since the conveyor will be covered throughout its entire length. The project will create additional high-tech jobs and significantly increase tax deductions to the regional and municipal budgets," said Oleg Misevra, Chairman of the Board of Directors of EMCO.

Misevra added, "Implementing this project, we put the economy and the environment at the forefront. Road transport of coal is really quite expensive. We pay \$4–5 per tonne transported. The conveyor will reduce the cost below \$1 per

tonne. It turns out that we win \$3–4 per tonne. Based on the volume of traffic even at 10mt per year, the conveyor will save at least \$30 million per year."

The conveyor is a complex and very responsible engineering structure. It consists of three segments, two of which have numerous horizontal and vertical radii. The longest segment is about 13km long. The conveyor route crosses numerous roads, water barriers, and power lines. All intersections are co-ordinated with local supervisory authorities and must meet not only international, but also Russian-specific, norms and standards. Thus, about 10km are raised above the ground and pass by trestles, bridges or conveyor gallery with special load-bearing trusses. The longest spans are 82m (crossing the road) and 64m (crossing the river), respectively.

It should be noted that Sakhalin Island is a zone with a seismicity of up to 9 points (MSK-64 scale). Construction in such areas requires special calculations and strengthening of all structures taking into account seismic loads.

In addition, the climatic conditions at the construction site of the conveyor are quite severe: in winter, intense precipitation and snowstorms are typical, and the equipment

is designed to operate at temperatures from -40° to $+40^{\circ}$ Celsius. The maximum wind speed can reach up to 40m/sec. During the year, 1,100–1,700mm of precipitation falls. A third of precipitation falls during the cold period, sometimes in the form of heavy snowfalls and sleet. Characterized by frequent and long-lasting snowstorm with strong drifts. Due to the difficult climatic conditions, it was decided to cover not only the belt, but also transfer towers and the rooms of the drive groups.

Before a construction permit is obtained, the project must pass a state examination and receive a positive conclusion. The equipment shall be certified and subject to declaration of compliance with the regulations on safety of machinery and equipment of the customs Union of the member States of the Eurasian economic Union (EEU).

In total, it is expected to ship more than 1,000 40ft sea containers with equipment from Europe and China in 2020–2021.

For RBL-REI, the project is a priority. Its implementation involves the most experienced employees of its own design office and all technical services in France, its own metalwork plant in China, as well as the company's own office in Russia (Moscow).

Coal handling: improving efficiency, production and safety

Standard Industrie International brings its expertise in the resolution of plant issues in the material handling arena. Rich in this field of expertise, the company has designed and improved different types of equipment, usually used in all parts of the coal handling process:

AIR CANNONS TO AVOID PRODUCTION STOPPAGES DUE TO ACCUMULATIONS OF COAL

The AIRCHOC® air cannon acts directly on the material, thus avoiding any damage to the structure:

- ❖ a volume of compressed air of between 4 and 400 litres is released instantly through an adapted outlet port (from 25 to 300mm) to achieve a deflagration.
- ❖ 93% of clogging or build-up in silos and hoppers cause a complete stoppage of production. AIRCHOC® prevents 100% of manual intervention accidents on clogging problems in storage units.

Since the patent for STANDARD INDUSTRIE's air cannon system was filed in 1978, more than 50,000 AIRCHOC® have been sold in 90 countries.



SAFE CLEANING

The development of wireless air cannons and silo cleaning solutions that can be used without manual intervention at the location where issues occur, has improved safety as well as reduced operational costs.

Moreover, preventative action with such tools enables efficient material flow throughout the plant, thereby reducing or eliminating costly shutdowns of key equipment and improving plant productivity.

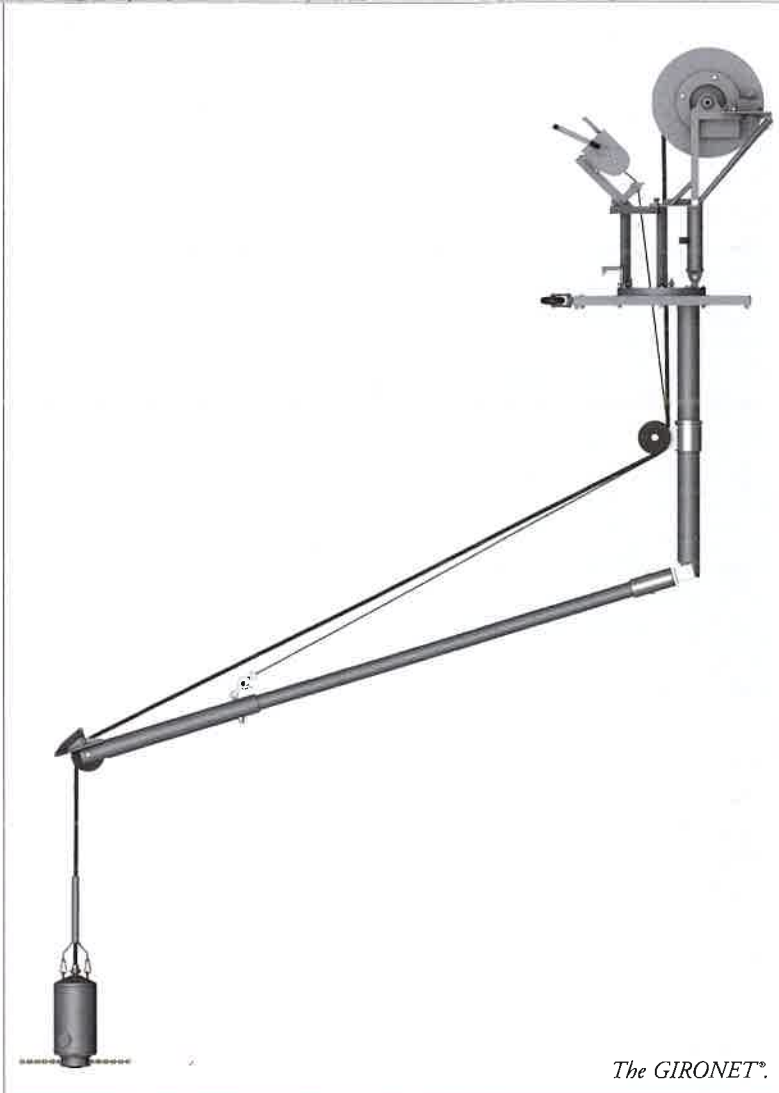


The Powernet.

The AIRCHOC[®] air cannon can be installed on crushers, feed hopper chutes, storage silos or hoppers (raw meal, flour), tunnel reclaimer, crushers, dust collector filters, preheating tower (cyclones, flour chute, smoke box, gas duct, kiln inlet, by-pass, tertiary duct), fan blades, kiln burner, cooler (clinker fall).

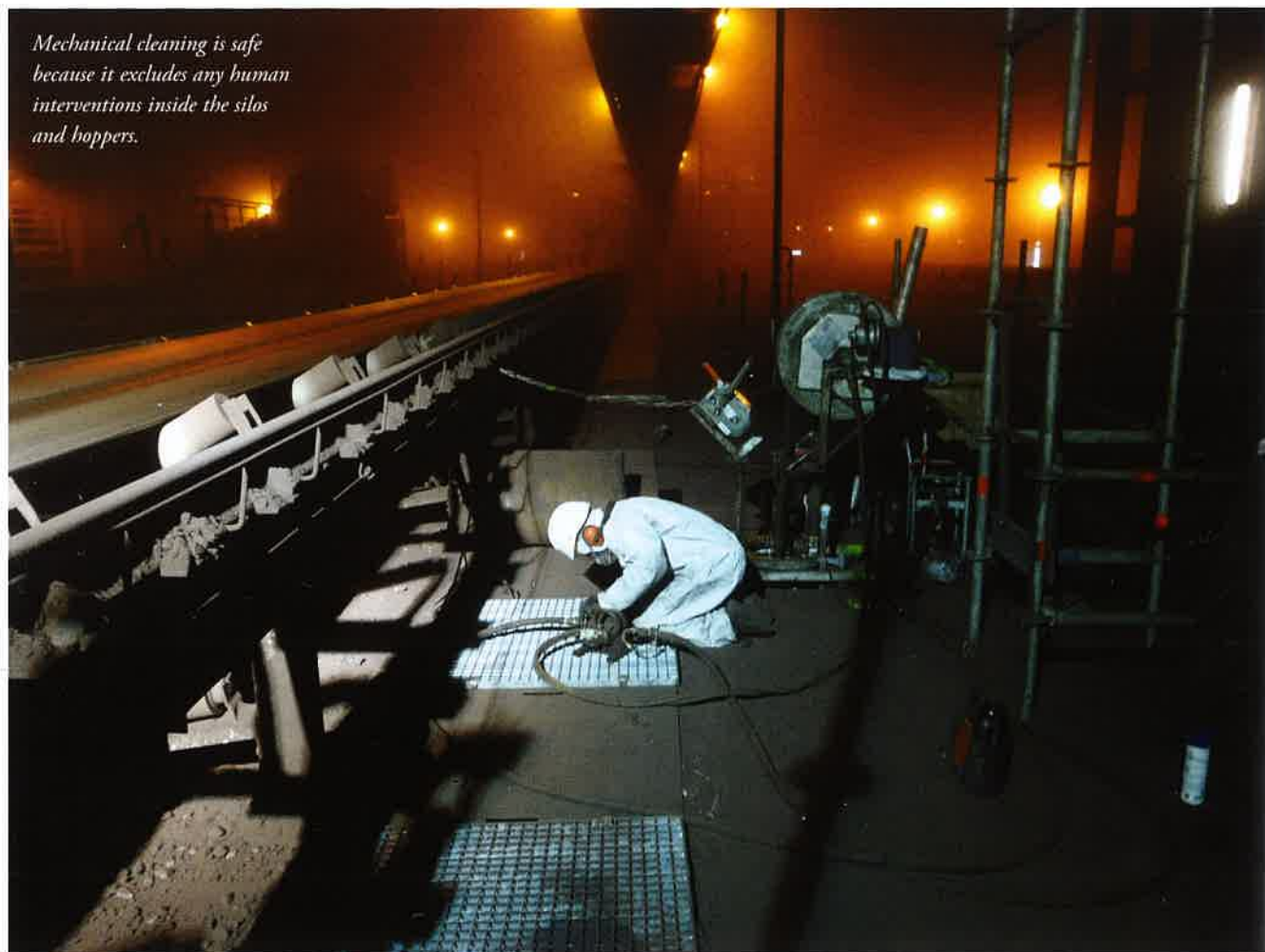
EXAMPLE:

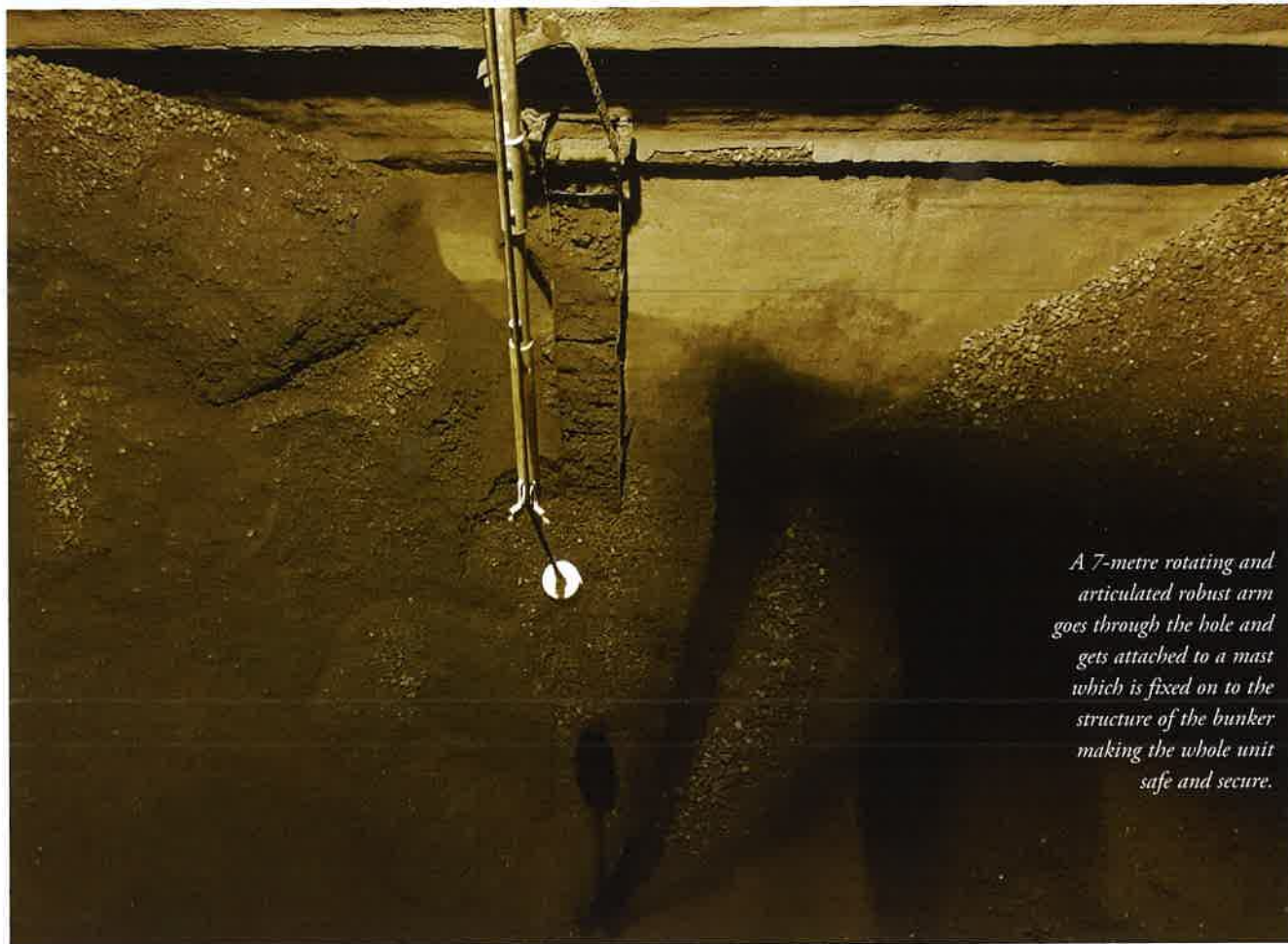
A power station in France encountered problems with clogging inside the coal mill feeding hoppers. The customer therefore installed two AIRCHOC air cannons on each of its 12 hoppers to optimize productivity. These AIRCHOC cannons have been programmed with a regular shots rate of two per hour.



The GIRONET[®].

Mechanical cleaning is safe because it excludes any human interventions inside the silos and hoppers.





A 7-metre rotating and articulated robust arm goes through the hole and gets attached to a mast which is fixed on to the structure of the bunker making the whole unit safe and secure.

STUDY THE BEST INSTALLATION FOR THE BEST EFFICIENCY

As each installation of air cannons is different, a complete range of accessories is available. These include:

- ❖ **Deflectors:** direct the air flow (straight, inclined or 90°) towards the sensitive clogging points. Steel or refractory stainless-steel version.
- ❖ **Stainless steel bevelling pistons:** increase the service life and resist aggressive atmospheres (chemistry, incineration, cement works)
- ❖ **Blowpipes:** allow air to be channelled during firing, available in steel, stainless steel, refractory stainless steel, ceramic...
- ❖ **Isolators:** secure maintenance operations: high temperature, aggressive product, risk of material return.

This regular compressed air blasting from the AIRCHOC® into the different points of the plant allows the material to remain in motion and maintain its flow in the production process.

This is a preventative solution. Standard Industrie International also proposes a curative solution, which results in the cleaning and unclogging of storage units, guaranteeing the safety of the operators.

SILO AND HOPPER CLEANING SERVICES

After a complete analysis of the clogged storage area, the breakdown teams place their equipment outside, respecting all safety standards:

THE POWERNET

This deep drilling equipment is a solution for bridging problems.

- ❖ diameter for piercing storage units from the top or bottom: 65 to 300mm;
- ❖ intervention depth: up to 45 metres;
- ❖ controlled from outside;
- ❖ cleaning without pollution of the product; and
- ❖ to be used before GIRONET®.

THE GIRONET®

This 360° rotating hinged arm is an answer for ratholing blockage and dead stocks.

- ❖ intervention depth: up to 45 metres; and
- ❖ controlled from outside.

These two products, available in pneumatic version (friable products) or in hydraulic version (hard products) and in ATEX version for the GIRONET®, are effective on any type of blockage, product or storage unit. They can be used without stopping production.

This mechanical cleaning method is safe because it excludes any human

interventions inside the silos and hoppers.

In addition, using compressed air and aluminium housing around the engine, all risk of explosion is avoided. Therefore, the customer can quickly recover its full storage capacity while ensuring optimum safety for its operators.

EXAMPLE:

In a power station in south Africa, The GIRONET serves to clean the coal that builds up all around the extraction.

A 7-metre rotating and articulated robust arm goes through the hole and gets attached to a mast which is fixed on to the structure of the bunker making the whole unit safe and secure (see above).

THE RESULTS:

No one inside the bunker = no risk of fatal accidents.

All sections of the 36 coal bunkers can be cleaned to maintain the delivery of coal to the boilers.

This solution benefits the performance of the power station globally.

Furthermore, for recovering or reclaiming material down from storage units, a vacuum cleaning operation can be carried out by the Standard Industrie International's intervention team.