

RAM **SPREADERS**



WHAT IS CONTAINERISED BULK HANDLING

Traditional Bulk Handling – **Material Loss**

MATERIAL LOSS IN THE SUPPLY CHAIN

Traditional bulk handling systems risk material loss during transfers, transportation, storage, and ship loading.

TRANSFER POINTS



OPEN WAGONS



STOCKPILES



SHIP LOADING

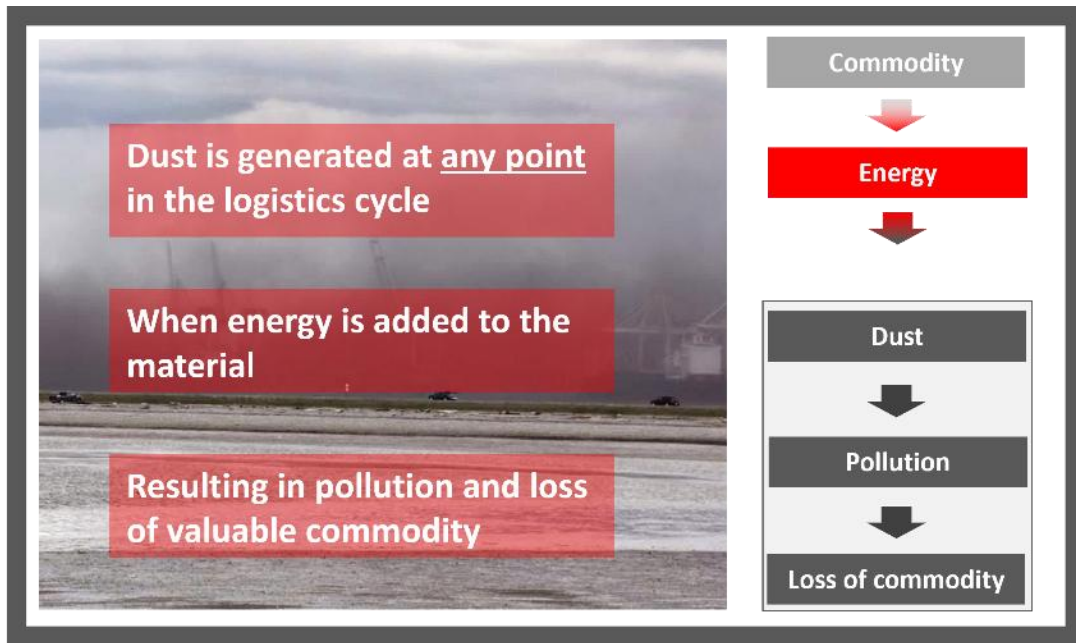
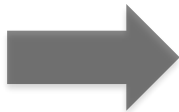


**This is not only damaging to the environment,
but also, money blowing in the wind.**

Traditional Bulk Handling – Pollutants

HARMFUL AIR POLLUTANTS

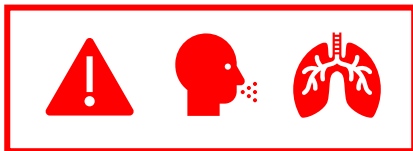
During the handling process, dust is generated when energy is added to the material, causing harmful air pollution!



Traditional Bulk Handling – Health Risks

DANGERS OF REGULAR EXPOSURE

Workers handling bulk materials face regular exposure to harmful airborne pollutants.

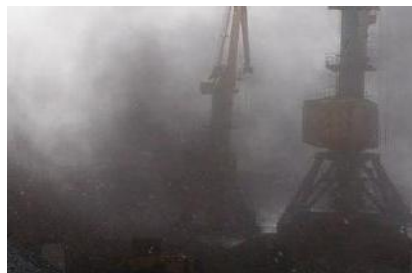


Over time this can lead to serious respiratory problems

Silo-Filler's disease



Black Lung disease



Farmer's Lung disease



Manganese Dust Neurotoxin



Traditional Bulk Handling – Health Risks

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IS THERE A SOLUTION?

Silo-Filler's disease

Black Lung disease

Farmer's Lung disease

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Traditional Bulk Handling – **The Solution**

CONTAINERISED BULK HANDLING



Containerised Bulk Handling (CBH)

WHAT IS CBH?

- SAFE, SECURE AND AN ECONOMICAL WAY TO TRANSPORT, STORE AND UNLOAD DRY BULK.
- OPEN-TOP SEALED CONTAINERS USED PROTECTING COMMODITY AND ENVIRONMENT.
- ROTATING OR TIPPING SPREADERS USED TO UNLOAD COMMODITY.



CBH – Types of Container Handlers

SLING AND CHAIN HANDLER

Entry-level sling and strap system, both time-consuming & requires high-levels of manual handling.

TILTING FRAME

Fixed frame structure, unloads containers onto conveyors by hydraulic tilting frame.

TILTING SPREADER

For handling rear-door/hatch containers. Locks onto corner castings of container by traditional twistlocks and tilts container up to 45 degrees operated with hydraulics.



1. Sling and Chain



2. Tilting Frame



3. Tilting Spreader

CBH – Types of Container Handlers

ROTATING SPREADERS

Specially designed spreader rotating an open-top container through its longitudinal axis.

Structure & Functions

- Consists of an inner and outer frame
- Inner frame connecting to container with twistlocks and performs rotation.
- A “*Lid-Lifter*” system automatically removes & replaces lid during unloading.

FOR ALL TYPES OF CRANE AND COMMODITY

Some manufacturers, including RAM Spreaders provide rotating spreader for all types of crane.

This makes it an ideal solution for ports, terminals and handling facilities.



CBH – Equipment

Container

For all types of commodity available.



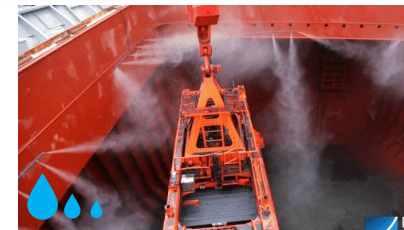
Transport

Road / Rail
or both (*bi-modal*).



Unloader

Rotating spreader.
Misting system (*optional*).



CBH – Handling Process

EASY HANDLING PROCESS

The 4 stage process of CBH:

1. FILL



2. TRANSPORT



3. STORE



4. UNLOAD



CBH – Protecting Commodity & Environment

LID & MISTING SYSTEMS

Lid Lifter

Auto 'lid lifter' removes lid immediately prior to decantation.



Misting System

Prevents dust plume adding further protection to both commodity & environment.



The misting system adds further protection to both commodity & environment.

CBH – Users

EXPORTERS TAKING ADVANTAGE

CBH is used for long distance export routes.

Specialist cargo owners who need to reduce pollution and have valuable and/or special handling materials use CBH.



CBH – Container Types

FROM GRAINS TO PRECIOUS METALS

All dry bulk commodities can be handled from various types of CBH containers:

High Cube Containers

Grains, sulphur, urea and many other materials.

Mineral Concentrate Containers

Copper, iron ore, zinc, gold, nickel and lithium concentrates.

High-Cycle Containers

Used for very high payloads and high cycle operations.

Rear Tipping Containers

Removable lid and rear hatch, allowing it to be used with both a rotating and tilting spreader.



CBH – Methods of filling containers

EXISTING EQUIPMENT CAN BE USED

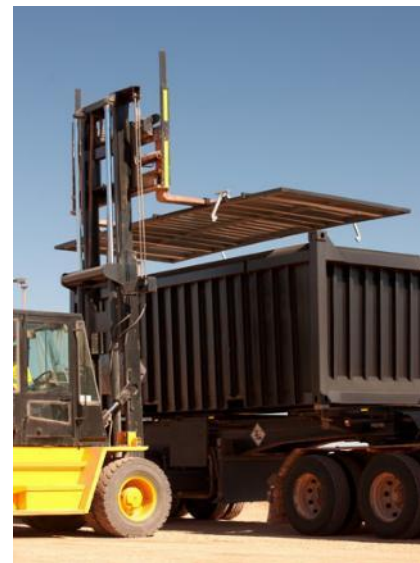
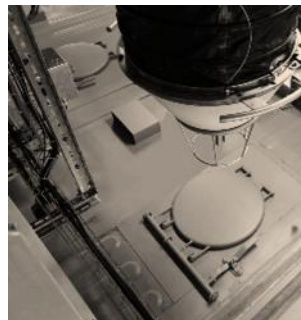
DIGGER/HOPPER/SHOOT FED

Used to fill the container.



FORKLIFT TRUCK

Handling the lid to and from the container during loading.





CBH – Track and Trace capabilities

TRACK AND TRACE

Containers can be fitted with a radio frequency identification tag (RFID) on the lid's underside (fig. 1 & 2).

Handling & Transporting

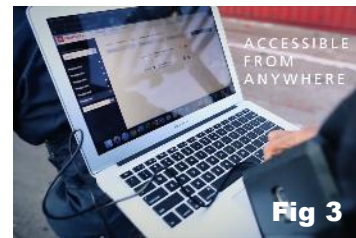
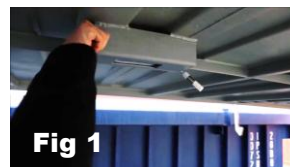
 RFID tracks and traces the commodity's journey from anywhere using a mobile device (fig. 3).

 An additional lockable keycard unit secures valuable commodities during transit (fig. 4).

Data logging

RFID tagging allows mines to store information such as the mineral grade and quantity in a database.

This data handling system makes pricing for customers more straightforward, as grade quality and quantity remain the same during the handling and transporting.



Regulations

CBH FULLY COMPLIANT

International Maritime Organization (IMO) Regulations

- Governs the safe carriage of solid bulk cargoes.
- Focusing on preventing hazards due to shifting cargoes, chemical reactions, and moisture content.

Environmental Protection Agency (EPA) Guidelines

- The Clean Air Act (CAA) and Clean Water Act (CWA) regulate emissions and discharges from bulk handling operations to prevent air and water pollution.

Local Authority and Port Regulations

- Often, specific regulations for bulk handling operations.
- Includes requirements for loading/unloading, material storage, emergency response, and environmental protection.



CBH – A Decade of Success

Over 10 years in service

The first CBH system from RAM deployed over 10 years ago is still in operation today!

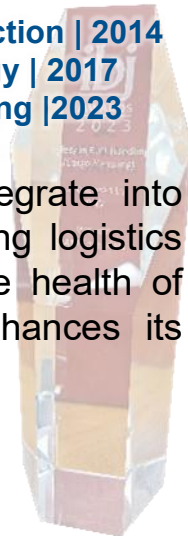


Award-Winning

CBH is a recognised bulk handling solution and has already won 3 industry awards:

Environmental Protection | 2014
Innovative Technology | 2017
Safety in Bulk Handling | 2023

Its flexibility to integrate into current bulk handling logistics while protecting the health of workers further enhances its appeal.



Global Presence

With over 30 projects globally, working on all types of cranes and handling all commodities; the RAM CBH is currently the most successful CBH system on the market.



CBH – A Popular Choice

COMMODITY SAFE

Secures commodity from source to destination.

LOW COST

No expensive fixed infrastructures, warehouses or stockpile space needed.

ENVIRONMENTAL

Dust-free handling, with zero dust generated with an added dust suppression system.

AWARD WINNING

1. Innovation Technology Award
2. Safety in bulk handling Award
3. Environmental protection Award.

NO CONTAMINATION

Store multiple types of commodities together without the risk of cross-contamination.



CBH – THE FUTURE IN BULK HANDLING

