

# AIRMATIC®

WE'LL HANDLE IT.



***martin***®

## **SAFETY FIRST™**

**Belt Conveyor Products & Solutions**

**AIRMATIC**

284 Three Tun Rd. Malvern, PA 19355

215.333.5600

[infocenter@airmatic.com](mailto:infocenter@airmatic.com)

[airmatic.com](http://airmatic.com)

## **PROBLEM**

### **HAZARDS OF CONVEYORS**

Conveyors are one of the best productivity-enhancing tools available, but conveyor injuries cost employers millions of dollars annually.

#### ***Without proper training and prevention...***

The main hazards related to belt conveyors are mechanical, including:

Moving components (eg, idlers, pulleys, belt) that can cause damage by entrapment in nip points, abrasion and burns; and pinching zones (eg, feeder, skirt-board, skirt-board seal) that can cause damage by shearing and crushing.

All of these hazards are preventable with the right training, preparation and safety precautions.

Because of the size of their material cargoes, the speed of their operation and the amount of energy they consume and contain, conveyors have shown to be a leading cause of industrial accidents, including serious injuries and fatalities.

A report from the Mine Safety and Health Administration (MSHA) in the United States examined conveyor accidents in metal/nonmetal mines recorded over the four-year period from 1996 to 2000. During this time span, there were 459 accidents of which 22 were disabling and 13 were fatal. 42% of the reported injuries (including 10 fatalities) occurred while performing maintenance, lubricating or checking the conveyor.

39% of the reported injuries (***including 3 fatalities***) occurred while cleaning or shoveling around the belt conveyors.

In South Africa, the Conveyor Belt Systems Safety in Mines Research Advisory Committee's report examined more than 3000 accidents (including 161 belt conveyor fatalities) between 1988 and 1999. In findings that echoed the MSHA report, the document noted that "people working on moving conveyors, inadequate guarding and ineffective locking out stand out as major causes of conveyor accidents." According to the report, injuries most frequently result from people working at the tail pulley, head pulley, idlers and loading chutes.

## **SOLVED!**

### **THE MARTIN SOLUTION**

On average, forty miners are injured each year by material falling from belt conveyors. Although these injuries are generally not serious, almost half result in lost work time. Over a five-year period, the average number of lost-work days per injury was 12 at metal and nonmetal mines and 23 at coal mines.

### ***With proper training and prevention...***

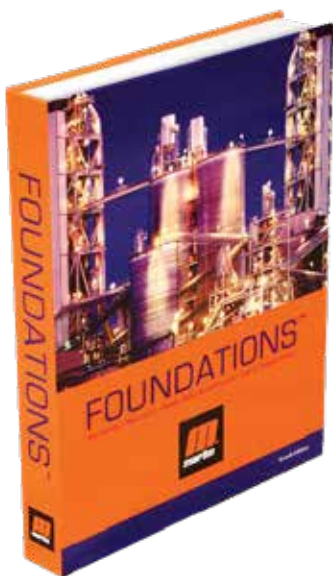
The use of skirt boards can limit the amount of material that falls from conveyors. The skirt boards should be placed at “high-risk” areas along the belt line, where these types of accidents are more likely to occur.

Realigning belts is one of the highest-risk activities involving conveyors. When alignment is attempted on a moving belt, workers can get hands, tools or clothing caught in machinery, be struck by components or be pulled into pinch points where they may lose a limb or be crushed. Utilizing track-mounted impact and support cradles and troughing idlers will simplify installation and maintenance.

Most importantly, don't take chances around conveyor belts. Don't perform work that will expose you to pinch points, like clearing material from a roller, while the belt is moving. Only work on a conveyor that is properly locked and tagged out.

Install guards or devices to prevent inadvertent contact with pinch points.

Provide training for workers who work near conveyor systems.



In the last 10 years, employee safety has come to the forefront. We agree this is a good idea. Governing bodies are expanding regulatory pressures and requirements and enforcing large fines for violators. That's why safety has been designed into our products and solutions since 1944.



### EVO® IMPACT CRADLE

Rugged cradle cushions high levels of loading impact. Individual, short-length bars are ergonomic and absorb impact while minimizing belt friction. Track-mounted to simplify installation and maintenance.



### EVO SLIDER CRADLE

Stabilizes belt line to eliminate spillage and prevent entrapment. Low-friction bars provide double-sided wear life. Track-mounted to simplify installation and maintenance.



### EVO TROUGHING IDLER IMPACT

Absorbs impact and helps control and train the belt. Requires minimal space for installation and service. Track-mounted to simplify installation and maintenance.

### EVO RETURN ROLLER

Requires minimal rigging and heavy lifting. Sliding track-mounted design reduces risk of injury and allows for quick and easy replacement. Designed to allow for service from one side of the conveyor.



### EVO EXTERNAL WEAR LINER

Installs outside the skirtboard to simplify installation and service. Allows inspection and maintenance

without confined space entry. No open space between liner and seal to capture material.



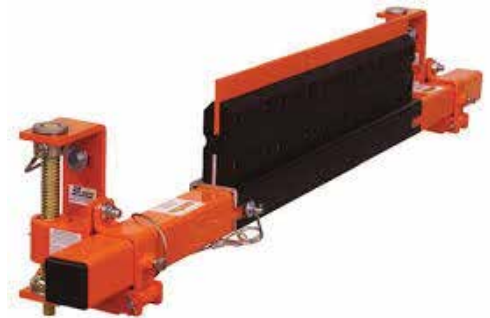
### MARTIN THERMO SAFETY SHIELD

Manual slide gate safety valve allows timely maintenance on air cannons in high-temperature processes without requiring the tank be dismantled. Shelters workers from exposure to severe heat, gases and high-temperature material.

### CARTRIDGE-MOUNT SECONDARY CLEANERS

- MARTIN SQC2S™ Cleaner
- DT2 Cleaner & DT2 Cleaner XHD
- SAF2™ Cleaner

Easy and safe cartridge removal procedure: remove pin, slide out cartridge, service and return. Compact secondary belt cleaner design allows installation in close quarters; narrow profile resists material buildup.



### MARTIN TWIST™ TENSIONER

Can be used on either pre-cleaners or secondary cleaners. Twist the housing the specified number of notches (determined by belt width) and lock in place. If blades pull through, the tensioner's coupling rolls over, releasing pressure and reducing the risk of harm.

### MARTIN CARRYBACK CAPTURE SYSTEM

Allows for the addition of secondary and tertiary cleaners outside the head chute and returns removed carryback to the cargo stream. Reduce worker risks and cleanup costs through the movement of carryback away from moving parts and confined spaces.



Martin provides a wide variety of safety products and accessories for protecting workers from hazards and risks. Backed by our **“Absolutely No Excuses” Guarantee**, every Martin product ensures you never have to apologize for performance.



### MARTIN SAFETY LABELS AND HARD HAT STICKERS

Notifies workers of dangerous areas of physical risk. CEMA-approved, reflective labels for all critical areas surrounding conveyors. Custom logo design and sizes available.



### MARTIN DUST CAPS

“Pyramids” prevent material accumulation around conveyor base. Urethane caps slide onto steel structure to eliminate buildup. Sizes and models suitable for new construction or retrofit.



### MARTIN INSPECTION DOORS

Martin Inspection Doors feature a low profile that minimizes dust accumulation on the door and frame while providing a dust-tight seal. It provides safe and secure entry to critical maintenance areas. The handle of the door stands less than 2 inches above the enclosure wall, so there's minimal “sill” area where material can accumulate.

### MARTIN IDLER ALIGNER

Handle and comb allow for course adjustment, while slots allow for finer tuning. Eliminates the need to tie idlers to surrounding structure. Features a hole for padlock placement to restrict access.



Conveyors and pulleys should be equipped with metal guarding to deny employees access to areas of the machinery including nip points and moving parts.

## MARTIN CONVEYOR GUARDS

- **Improves Safety**

Mesh guards allow for inspection while keeping workers safely away from moving parts and pinch points.

- **Simple Installation**

Wedge clamps allow panels to be removed and reinstalled quickly. Locking tags included for extra security.

- **Universal Design**

Guards are available in several sizes and can be used in a variety of combinations to fit almost any application. Systems can be easily expanded or relocated as needed. Custom guarding design is available upon request.

- **Self-Supporting**

Rugged modular design installs on supplied angle iron structure and does not need to attach to conveyor equipment.



### MARTIN RETURN ROLLER GUARD

Features quick release pins which allow access to the grease fittings within the return roller without the need to remove the guard. Has openings large enough for fines to fall through, but small enough to prohibit access to moving parts when the conveyor is running.



### MARTIN RETURN ROLLER BASKET

Designed to guard the return roller to improve plant safety and productivity. An economical way to improve safety and meet the growing demands of government regulations. Solid steel construction covers all major return roller manufacturers.

## **Conveyor injuries typically cost businesses millions of dollars every year!**

Many of these accidental injuries are caused by material spilling off of the belt or workers getting parts of their bodies caught in pinch or nip points, as well as burns and abrasions. Fugitive dust is also a potential risk because it can be inhaled and cause severe illnesses. Under certain conditions, airborne dust can ignite and cause a devastating explosion. Martin has been manufacturing products that move bulk material safely and protect workers from potential risks for decades.

In fact, Martin literally "wrote the book" on safety when they published: Foundations™ For Conveyor Safety, a 500+ page textbook that covers global

best practices for safer bulk materials handling. In addition to focusing on how to prevent injury and illness when working with conveyors, this valuable resource also shows you how to determine ROI for safety initiatives and includes tips on how to present the information to decision makers in leadership positions.

No one would dispute that focusing on the safety of your employees is the right thing to do. However, it also makes good business sense from a bottom-line perspective.

### **IN FACT, A SAFETY-FIRST ATTITUDE PROVIDES MANY BENEFITS, INCLUDING:**

- **More productive employees**

When workplace injuries and illnesses are rare, employees don't miss work and are more productive, which improves your company's overall productivity.

- **Improved employee morale**

Employees who feel that their workplace is safe are more likely to be happy and feel positively about their jobs and their employer.

- **Compliance with OSHA requirements**

By following recommended procedures, best practices and documenting your actions, OSHA compliance is achievable.

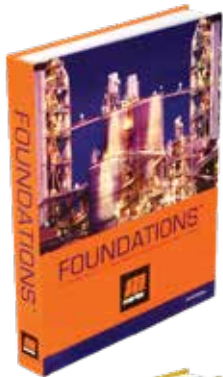
- **Lower costs**

Employees who are injured on the job or acquire a work-related illness are still paid while they recover. Plus, violations can come with substantial fines, so keeping a safe workplace is cost effective.



## **FOUNDATIONS**

As part of its mission to serve bulk material handling operations around the world, Martin Engineering has published a series of books to help plants and mines improve productivity and safety while reducing risk to personnel and equipment. The Foundations series, originally produced over 25 years ago, has been used worldwide by bulk material handlers to help incorporate Martin Engineering's cleaner, safer, and more productive philosophy. Martin has updated and expanded the Foundations series to include five publications; the fourth edition of FOUNDATIONS – The Practical Resource for Cleaner, Safer, More Productive Dust & Material Control and the most recent, Foundations for Conveyor Safety – The Global Best Practices Resource for Safer Bulk Material Handling.



### **FOUNDATIONS 4 – The Practical Resource for Cleaner, Safer, More Productive Dust & Material Control**

This 576-page reference book explains why and how to improve conveyor productivity and performance. Providing valuable information to all industries and levels of personnel, Foundations is a one-stop shop for efficient bulk material handling.



### **FOUNDATIONS FOR CONVEYOR SAFETY – The Global Best Practices Resource for Safer Bulk Material Handling**

This compilation of worldwide best practices is the first book of its kind, dedicated exclusively to conveyor system safety. ROI Conveyor Safety™ is of significant importance in the book. Learn how to justify safety investments, saving your company more money in the long run by reducing the risk of conveyor accidents.



### **FOUNDATIONS OPERATIONS AND MAINTENANCE ONLINE**

The Operations and Maintenance Workshop is also available as on-line training. The internet-based program is composed of nine modules totaling between 10 and 12 hours of content. Each module concludes with a quiz; finishing all modules earns the learner a certificate of completion.

### **FOUNDATIONS ADVANCED ENGINEERING**

Focused on the improvement of belt conveyor systems, and the justification of the investment in systems to reduce fugitive material, control dust, extend component life and improve the performance of both conveyor system and plant personnel.

**AIRMATIC** offers a comprehensive selection of in-plant services, all focused on improving the handling of bulk materials. These specialized capabilities will improve the safety and productivity of an operation straight to the bottom line.



### **AIRMATIC INSTALLATION SERVICES**

New construction or retrofit, from belt cleaners to engineered belt-to-belt transfers, **AIRMATIC** Installation Services handles the installation of material handling systems and components. Focus and experience with material handling systems makes certain project completion is on-time, on-spec and on budget.

### **AIRMATIC SPECIALIZED MAINTENANCE SERVICES**

**AIRMATIC** Specialized Maintenance Team will take ownership for the maintenance of your belt conveyors and other systems, with standard packages and customization opportunities to meet your requirements.

### **AIRMATIC PROCESS IMPROVEMENT SERVICES**

From material analysis to silo cleaning, **AIRMATIC** offers advanced services that can take your operation to the next level. **AIRMATIC** Process Improvement Services looks for the opportunities that will make a critical difference in your plant's performance and profitability.

Since 1944, **AIRMATIC** has specialized in helping Customers throughout the New England and Middle Atlantic States eliminate problems with the flow of powders and bulk solids held in storage vessels. Through our Service Group, our crews not only install and maintain Air Cannons and Vibrator Flow-Aid Systems to prompt and maintain product flow, but also provide mechanical and acoustic vessel-clean-out services to remotely, and safely, clear build-up and blockage obstruction in silos, bins, bunkers, stacks, industrial chimneys, railcars, pipes, and tanks.

Our vessel cleaning services, generally referred to as Silo Cleaning, are used in manufacturing, mining, construction, and agricultural facilities on a wide range of bulk materials to: (1) Remove Product Build-Up; (2) Restore Flow Rates; (3) Recover Design Capacity; (4) Prevent Cross-Contamination; (5) Reclaim "Lost Material"; (6) Eliminate Combustion-Generating "Hot Spots"; and (7) Decommission Storage Vessels at Facility Conversions or Shut-Downs.



## CARDOX BLOCKAGE CLEARING SYSTEM

Bust Through With CO<sub>2</sub>! The Cardox Blockage Clearing System safely and effectively dislodges blockages using the powerful force of expanding CO<sub>2</sub> gas. It uses non-explosive generators to cause rapid expansion of CO<sub>2</sub> gas to fracture chunks and compacted materials to open the discharge and restore flow.



## ACOUSTIC CLEANER

The Sound Solution! Acoustic Cleaners are a compressed-air driven Sonic Horn that produces a range of fundamental frequencies with alternating sound waves to cause dry particulate deposits to resonate and become fluidized, allowing material to flow freely to the discharge.



## BIN DRILL TOOL

Drill It, Then Fill It! The MARTIN Bin Drill Tool is a hydraulic-driven, remotely-controlled drilling rig that opens a flow channel through tough clogs. The powerful hydraulic action of the Drill bores through blockages, clearing a path to depths of up to 150'. After the flow channel is open, we utilize our HD Bin Whip until the vessel is fully empty.



## BIN WHIP TOOL

Whip It Out! The MARTIN HD Bin Whip Tool allows our trained Technicians to dislodge stubborn materials from outside the vessel, preventing hazardous confined space entry and damage to the vessel's lining, walls, or bottom.





**AIRMATIC** founded in 1944, is a woman-owned Industrial Distributor, with installation and maintenance capabilities, offering equipment, machinery, and shop supplies to the Industrial, Construction, Utility, Government, and Commercial Markets. Our products and services are sold through three business units:

The **MATERIALS MANAGEMENT GROUP** provides products and services to industries that convey, store, transport, and process powders and bulk solids from aggregates, cement, and chemicals to foods, grains, metals, power generation, and waste water treatment applications;

The **SERVICE GROUP** provides fabrication, installation, and maintenance services to improve bulk materials handling efficiency; mechanical clean-out services for silos and hoppers to eliminate material flow problems; and shop repair/rebuilding and modifications services of products sold by the Company.

The **TOOL GROUP** provides power tools, personal protective equipment, materials-handling equipment, shop equipment and MRO supplies used for production, fabrication, assembly, metal removal, maintenance, and storage in manufacturing, construction, utility, and commercial applications. Our Customers tell us that by choosing **AIRMATIC** to solve their problems, they gain increased productivity, decreased costs, and a safer, cleaner work environment.

The logo for MARTIN ENGINEERING features the word "martin" in a bold, orange, italicized sans-serif font with a registered trademark symbol (®).

**MARTIN ENGINEERING** is the leading global supplier of system to make the handling of bulk materials cleaner, safer, and more productive. Since its founding in 1944, the company has grown dramatically through the development of solutions to help the solids-handling industries around the world. MARTIN ENGINEERING's success can be attributed to the development of practical, field-proven, cost-effective answers for "real life" problems. Martin® Products are designed for tough industrial conditions; they are built to allow easy maintenance; they are engineered for simplicity, cleanliness, safety, and efficiency; they are personalized to meet each customer's unique requirements.

#### **AIRMATIC**

284 Three Tun Rd. Malvern, PA 19355

215.333.5600

[infocenter@airmatic.com](mailto:infocenter@airmatic.com)

[airmatic.com](http://airmatic.com)