

# BUCKET ELEVATORS

*Martin*

**SPROCKET & GEAR, INC.**

[www.martinsprocket.com](http://www.martinsprocket.com) • 817-258-3000

*"The ONE You Rely On!"*





# Martin Bucket Elevators

*Martin* offers a complete line of material handling solutions available to the marketplace. Our conveyor products are designed to efficiently handle most varieties of dry, free-flowing bulk materials. Exacting design standards, ISO 9001:2000 manufacturing standards, and service second to none, all supported by our web of operations strategically located throughout North America, assure many years of economical, trouble-free service.

*Martin* offers a variety of configurations to efficiently handle most any material handling need.

**Continuous Bucket Elevators** are designed to handle fragile materials to minimize product damage. They will lift all types of free flowing, sluggish or abrasive materials. The material is loaded into the buckets from a "feeder." It is lifted in the buckets and is discharged over the

face of the preceding bucket after passing around the head sprocket or pulley. The close spacing of the buckets allows material to flow over the backside of the proceeding bucket whose extended sides form a chute to guide the material into the discharge spout.

This style conveyor generally operates at lower speeds to minimize breakage of friable materials.

**Centrifugal Bucket Elevators** operate at high speeds to throw material by centrifugal force out of the buckets into the discharge spout as the buckets pass over the head sprocket or pulley. These buckets are spaced at wider intervals to assure maximum fill of the buckets at the boot while moving at higher speeds.

Both types of bucket elevators are available with either a chain drive or a belt carrier line.

FEATURE	FUNCTION	BENEFIT
Modified Radius Hood	Minimize wear	Improve discharge flow
Machined, UHMW Shaft Seals	Longer lasting sealing surface	Reduction in product loss
Heavy Duty Roller Bearings	Higher load ratings	Reduces downtime and maintenance costs
Hinged Service Doors	Easy access for routine maintenance	
Clean Out Door	Easy access	
Screw or Internal Takeup	For belt or chain tensioners	
Split hood	Easily removable for Pulley/Sprocket access	
Laser Cut	Assures straightness of elevator	Superior operation, easier installation, and better alignment
Fixture welded, structural angle iron flanges are continuously welded on the outside and stitch welded on the inside	Superior strength and durability	Easier installation and longer life
Weather tight design	Eliminates moisture problems	Reduces product loss and contamination.
Fully adjustable throat plate	Helps material discharge properly	Keeps material from falling back down into the boot
Multiple drive configurations available	Allows for standardization with other equipment	Less spares to stock



## CONFIGURATIONS / OPTIONS



Type of Steel	<ul style="list-style-type: none"> <li>Carbon</li> <li>High Brinell Carbon — AR Steel</li> <li>Stainless</li> <li>Hot Dip Galvanized</li> </ul>
Capacity	<ul style="list-style-type: none"> <li>Up to 22,440 CFH</li> </ul>
Belts	<ul style="list-style-type: none"> <li>Rubber Covered</li> <li>PVC Belting Various Ply and PIW</li> <li>Food Grade Belting</li> </ul>
Chains	<ul style="list-style-type: none"> <li>Cast Block Links and Steel Connecting Side Bars</li> <li>All Steel (Fabricated)</li> </ul>
Buckets	<ul style="list-style-type: none"> <li>Style AA -Ductile Iron Buckets, Plastic</li> <li>Style C - Fabricated Buckets</li> <li>Continuous - Medium Front - Non-Overlapping Fabricated Steel Buckets</li> <li>AC Welded Steel or Ductile Iron</li> <li>SC Welded Steel</li> <li>AR or Hardfaced Reinforced Lip Available</li> </ul>
Sprockets	<ul style="list-style-type: none"> <li>Segmental Rim</li> <li>Segmental Rim Induction Hardened Traction Wheels</li> <li>Split</li> </ul>
Options	<ul style="list-style-type: none"> <li>Machinery Platforms and Service Platforms</li> <li>Ladders and Safety Cage</li> <li>Intermediate Rest Platforms</li> <li>Hoisting Davits — Hoist Beam</li> <li>Inlet &amp; Discharge Liners</li> <li>Air/Grease Purgable Seals</li> <li>Head Takeup Available</li> <li>AR &amp; Ceramic Liners for Boot &amp; Head Available</li> </ul>

## AVAILABLE CONFIGURATIONS

**Series 100 Centrifugal Discharge** - Handle a variety of relatively free-flowing dry materials with small to medium lump sizes that are mildly to moderately abrasive. Configured with "AA", "A", "AA-RB", and Salem style buckets. Style "C" may also be specified for wet or sticky materials.

**A. Chain** - Furnished with combination chain for light to medium service or all steel (steel knuckle) chain for medium to severe service or when a higher chain

working load is required.

**B. Belt** - 100% polyester carcass PVC belting or rubber covered ply belts specifically designed for years of elevator service. Other types are also available.

**Series 700 Continuous Discharge** - Handle a variety of free-flowing or sluggish materials which contain medium to large lumps and are mildly, moderately, or extremely abrasive.

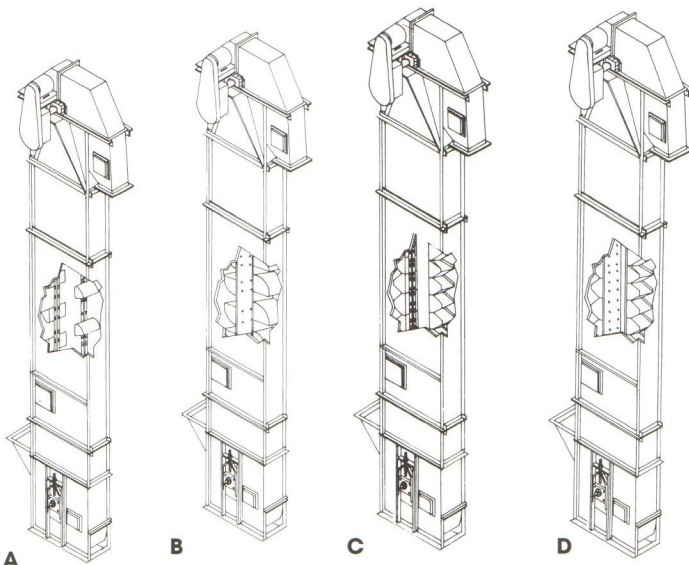
**C. Chain** - Furnished with combination chain for light to medium service, or all steel (steel knuckle) chain for medium to severe service or when a higher chain working load is required.

**D. Belt** - 100% polyester carcass PVC belting or rubber covered ply belts specifically designed for years of elevator service. Other types are also available.

**Mill Duty Centrifugal Discharge Chain and Belt** - Handle a variety of relatively free flowing dry materials with small to medium lump sizes that are mildly to moderately abrasive. Extensively used in cement industries.

**Double Row Mill Duty Centrifugal Discharge Belt** - Handle high capacities of various relatively free flowing dry materials with small to medium lump sizes that are mildly to moderately abrasive.

**Super Capacity Continuous Discharge Chain** - Handle high capacity of various free flowing dry materials ranging from fines to lumps, moderate to extremely abrasive, and those that tend to pack.





## TYPICAL APPLICATIONS

### Industrial

- Soaps / Detergent
- Ceramics
- Carbon Black
- Aggregate
- Rock / Minerals / Sand
- Catalysts
- Fiberglass
- Glass Cullet
- Lumber and Wood Byproducts
- Talc Powder
- Metal Powders

### Agriculture

- Fertilizer
- Grain
- Pellets
- Corn Gluten
- Powder
- Sugar
- Salt
- Flour
- Meal

## Martin SUCCESS STORIES

In any industry, unscheduled downtime can cost you money. Bucket Elevator downtime can impact your production and shipment of your finished products, which ultimately can affect your profits.

At *Martin* we understand how important it is to keep your equipment operating. The following examples illustrate *Martin's* problem solving abilities.

### Coal

**Application:** Power plant using Bucket Elevator to unload coal from river barges.

**Problem:** Two large 29" OD Traction Wheels failed, shutting down the Bucket Elevator and leaving no way to unload the barges. Downtime cost of over \$100K per day as boats begin to back up. OEM quotes 2 week minimum delivery.

**Solution:** *Martin* has 8-1/4" plate in stock; manufactures and ships 2 made-to-order fully split 8" LTB Traction Wheels the next day. Bucket Elevators went down on a Friday, and are back up and running Sunday afternoon.

**Documented Savings:** Customer's estimated savings \$1.2 million.

### Chemical

**Application:** Wood chemical products plant using Bucket Elevator to convey corrosive material.

**Problem:** Customer needs to increase plant output. Existing Bucket Elevator has become a choke point, inhibiting plant capacity, while the corrosive material being conveyed is causing premature wear on equipment.

**Solution:** *Martin* determines that a Continuous Discharge Series 700 Elevator will handle the job reliably and economically. UHMW liners and increased elevator housing thickness extend life in the corrosive environment. Introduction of a Split Segmental Rim Head Sprocket eliminates a safety concern and allows for major maintenance time and cost savings.



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