



AIR CANNONS

POWERFUL, SAFE & EFFICIENT POWER
TO PUT MATERIALS IN MOTION

L3748





**CONSEQUENCES OF POOR
MATERIAL FLOW**

CHOKED PRODUCTION

REDUCED OUTPUT

STRANGLING EFFICIENCY

MISSING MATERIAL

INCREASED MAINTENANCE

MISSED OPPORTUNITIES

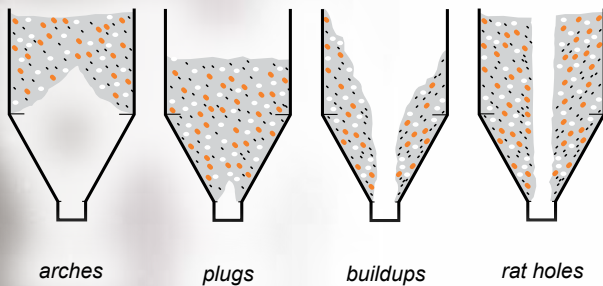
LOST PROFITS



SOLVING PROBLEMS IN MATERIAL FLOW



Hammering on the bin or chute wall leads to damage to the wall surface, often called "hammer rash."



Problems in material flow can bring an operation's efficiency and productivity to a halt. Hang-ups in storage systems and accumulations in process vessels choke material flow while bottlenecks create costly reductions in equipment and process performance. Poor material flow raises maintenance expenses and drags profits down.

Martin® Air Cannons supply a quiet but powerful release of compressed air that dislodges buildups and enhances the flow of bulk materials, to improve efficiency and maintain profitability.

Since 1974, Martin® Air Cannons have been used around the world to prevent buildups and improve material flow. Martin Engineering remains the leader in the application of air cannon technology to overcome bottlenecks and boost the movement of material through high-capacity vessels.

Problem Solved™
GUARANTEED!

UNDERSTANDING VALVE DESIGN

Martin Engineering offers a full line of air cannon technologies; representing both established traditional designs and the latest leading-edge innovations in valve design, as well as hybrid and multiple-valve technologies.

This matrix provides an overview of the range of valve designs and air cannons available from Martin Engineering.



POSITIVE-PRESSURE FIRING
Requires pulse of air to trigger discharge, eliminating unintentional firings due to drops in pressure.

CENTRAL VALVE DESIGN

Compact, powerful, and efficient, the complete valve assembly is centrally housed within the tank.

MARTIN® HURRICANE

Most direct air path, maximum force output, minimal air consumption, smallest footprint, simplest installation, and one-step maintenance.

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NEGATIVE-PRESSURE FIRING

Minimal plumbing requires only one line of air to fill tank and trigger valve.



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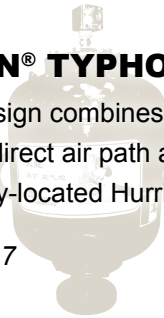
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MARTIN® TYPHOON

Hybrid design combines minimal plumbing with the most direct air path and maximum force output of centrally-located Hurricane valve technology.

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MARTIN® HURRICANE

MARTIN® HURRICANE AIR CANNON

Positive-acting, centrally-located valve design represents state-of-the-art engineering, with most direct air path, maximum force output, minimal air consumption, smallest footprint, and simplest installation.

- **Positive Action, High Output:** Maximum discharge strength from high velocity output with half the air volume, for highly effective discharge and reduced operating costs.
- **Improved Safety:** Discharge requires positive signal from solenoid, eliminating the risk of accidental firing.
- **Allows Longer Air Lines:** Positive-acting valve allows control solenoid to be positioned as far as 200 feet (60 m) from the tank, keeping solenoids away from harsh conditions and difficult service.



ONE-STEP MAINTENANCE

The design of the Martin® Hurricane Air Cannon allows for simple maintenance. The complete valve assembly can be removed in one easy step, working from one side of the tank.

It can be replaced within minutes to keep your process running. There is no need to ever remove the tank from the vessel for service.





MARTIN® TYPHOON

TECHNOLOGICAL HYBRID

The hybrid design of the Martin® Typhoon Air Cannon offers an improvement on negative-pressure firing systems by combining the simple one-line plumbing of traditional valve design with the power, efficiency, and ease of maintenance of advanced internal valve design.

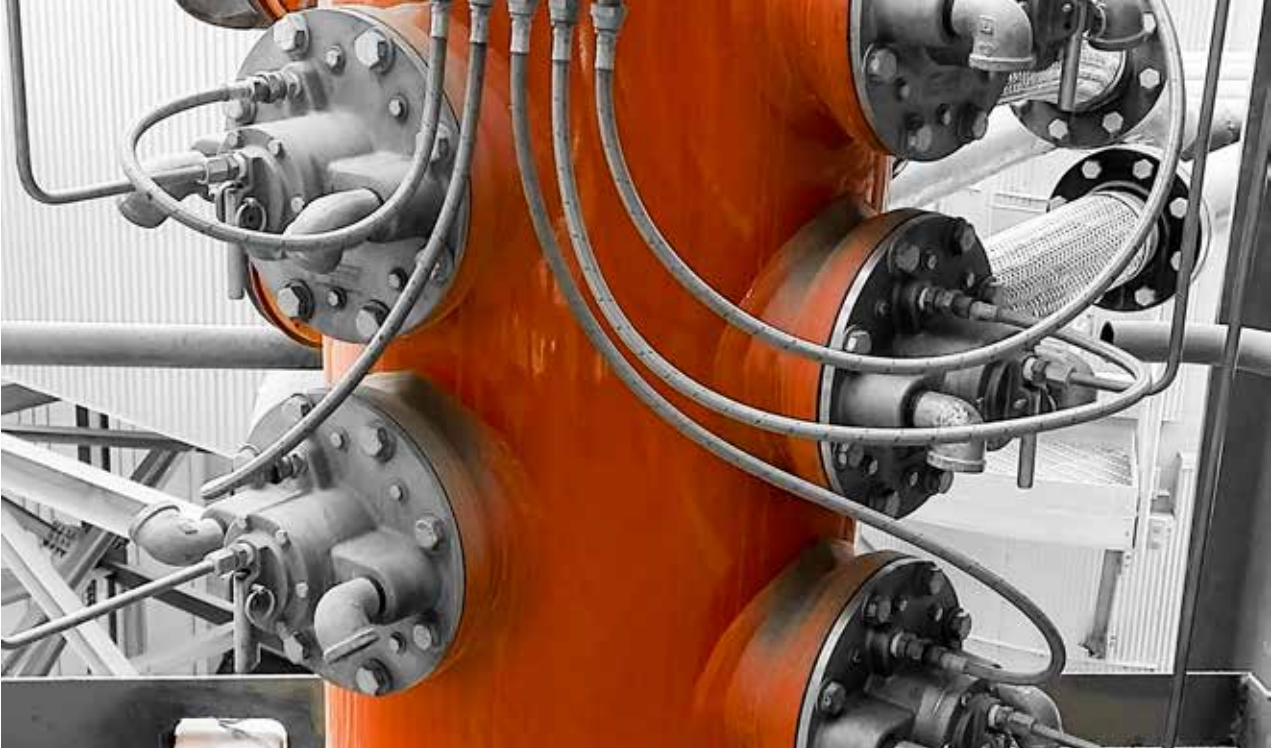


MARTIN® TYPHOON AIR CANNON

Hybrid design combines minimal one-line plumbing with compact, powerful, and efficient centrally-located valve.

- **Minimal Plumbing:** Requires only one air line to fill tank and trigger valve.
- **Outstanding Performance, Modest Price:** Negative-pressure firing and the most direct air path provides effective performance in challenging applications with limited budgets.
- **One-Step Maintenance:** The complete valve assembly can be removed in one easy step, working from one side of the tank, and replaced within minutes to keep your process running. There is no need to ever remove the tank from the vessel for service.





MARTIN® MULTI VALVE AIR CANNON

EFFICIENCY MULTIPLIED

The latest innovation in air cannon systems, the Martin® Multi Valve Air Cannon incorporates Martin's advanced Hurricane Valve design with multiple-port application technology. The multiple-port system incorporates one air reservoir to provide the air to improve flow at a number of points in a process vessel.

- **Service for Five:** One installation supplies up to 5 individual discharge points through flexible stainless steel hose.
- **Shelters the Moving Parts:** Centralized location removes working components from exposure to high temperatures and process dust.
- **Improved Service and Access:** All the accessibility benefits of a multiple port system for convenient installation and service.
- **Improved Reliability:** Even if one valve requires service, the multiple valve air cannon continues to function with low maintenance requirements.





MARTIN® 6 PACK PROGRAM

FACTORY REFURBISHED AIR CANNON VALVES

Buy a “6 pack” of refurbished **Hurricane** or **Typhoon** replacement valves to stock on your shelf. **Guaranteed** against defects, refurbished valves carry the **full factory warranty**.

Your 6 pack comes in a standard pallet-sized container for you to refill with worn-out valves and send back to Martin Engineering to be refilled with refurbished valves and returned to you.

- 10-minute change out
- Stock only one part in your warehouse
- Let us do the rebuilding for you
- Return the core for significant savings off new valves
- Martin® Factory-Direct New Tool Guarantee



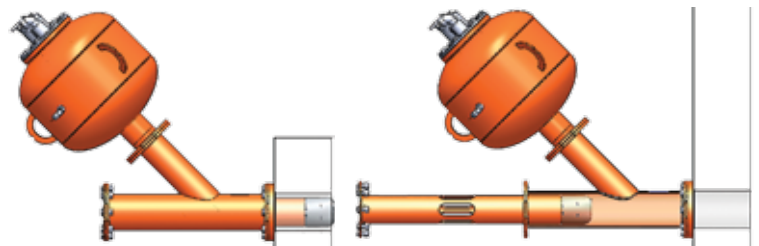


MARTIN® SMART™ SERIES JET NOZZLE

QUICK AND EASY REPLACEMENT

The Martin® SMART™ Series Jet Nozzle offers a simple yet innovative solution to the age-old problem of labor-intensive nozzle replacement. Eliminate the time and cost of cutting holes and breaking refractory to replace worn out nozzles.

- Replacement is quick and easy
- Limits or entirely eliminates damage to surrounding refractory
- No need to remove the air cannon tank
- Eliminates improper alignment
- No entry required into the tower or cooler
- Provides the wide area of influence of a standard fan nozzle
- Available in straight or “Y” pipe arrangement



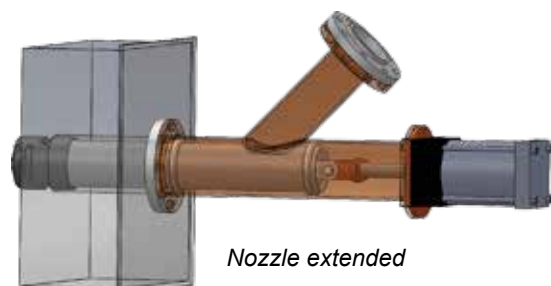
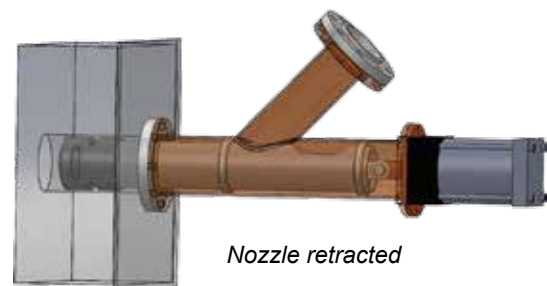


MARTIN® SMART SERIES RETRACTABLE NOZZLE 360°

360-DEGREE CLEANING

The Martin® SMART™ Series Retractable Nozzle 360° is used for hard to reach locations in cement towers and other high-temp applications. The 360-degree nozzle makes cleaning on the center of the wall possible. Serviceable from the outside of the tower/vessel, so no waiting until the next scheduled outage for nozzle assembly replacement.

- 360-degree effective cleaning area
- Nozzle extends to fire then retracts to protect exposed tip from extreme heat
- Works with standard air cannons (150L Martin® Hurricane is recommended)
- Nozzle weldment is serviceable from the outside of the riser duct
- Controlled by one solenoid (110 volt / 220 volt / 24 volt)
- Less aggressive than blasting, eliminating damage to refractory from improper use of compressed CO₂



VALVES



MARTIN® HURRICANE RETROFIT VALVE

Martin® Hurricane Air Cannon improves the flow of bulk materials and prevent outages due to discharge blockages, buildups and ratholes. The Hurricane features a new valve concept that provides more force, uses less air and simplifies installation and maintenance.

- **Twice the force for half the air consumption** when compared to our standard XHV 20-30 Air Cannon.
- **Simple one-step maintenance program** with all moving parts contained within a single assembly.
- **Increased safety** with a positive firing system; ensures the cannon fires only when you want it to.



MARTIN® TYPHOON RETROFIT VALVE

The Martin® Typhoon Air Cannon features a hybrid valve concept that provides more force, uses less air and simplifies maintenance in challenging applications with limited budgets.

- **60% more blast force and half the air consumption** when compared to our standard XHV 20-30 Air Cannon.
- **Single air line system.**
- **Simple one-step maintenance program** with all moving parts contained within a single assembly.



ACCESSORIES



MARTIN® THERMO SAFETY SHIELD

Slide gate safety valve allows timely maintenance on air cannons in high temperature processes without requiring the tank to be dismantled.

- **Improve Employee Safety:** Shelters workers from exposure to severe heat, gases, and high temperature material.
- **Simple to Install:** Sliding shield bolts between air cannon valve and mounting flange.
- **Secure, yet Simple to Operate:** Sliding shield operates under tough conditions, yet can be locked out to prevent intrusion.



MARTIN® AIR CANNON CONTROLLER

Energizes the solenoid valves to control the discharge for a system of up to ten Martin® Air Cannons.

- **Precision Flow Management:** Provides automatic sequencing of the discharge of up to ten cannons.
- **Easy to Program:** Integral keypad and LCD make it simple to set or adjust firing schedule.
- **Indoor or Outdoor Installation:** NEMA-4X Enclosure is water-tight/dust-tight/corrosion-resistant.



MARTIN® ROLL GEN™ SYSTEM

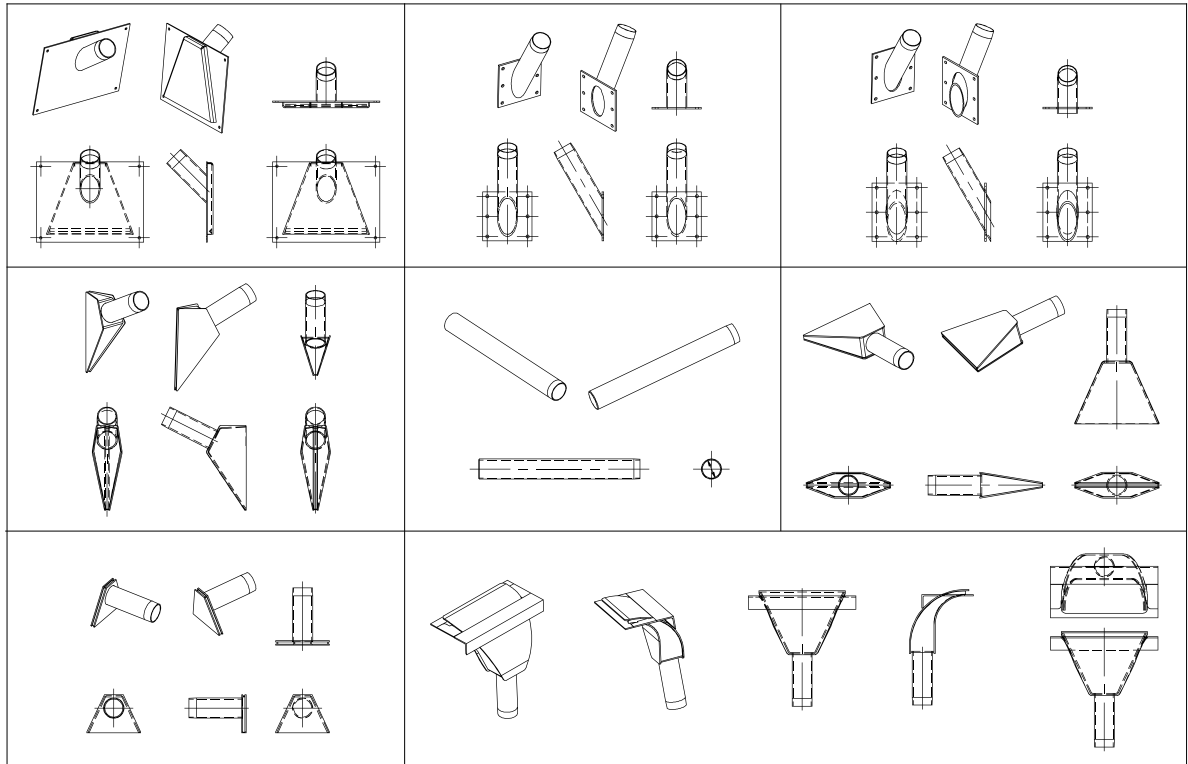
Self-contained, mini 24-Volt DC power station that generates enough power to run a wide variety of electronic systems. Can be used to power a PLC or timer to operate air cannons mounted inside of a transfer chute.

Martin® Roll Gen™ System consists of:

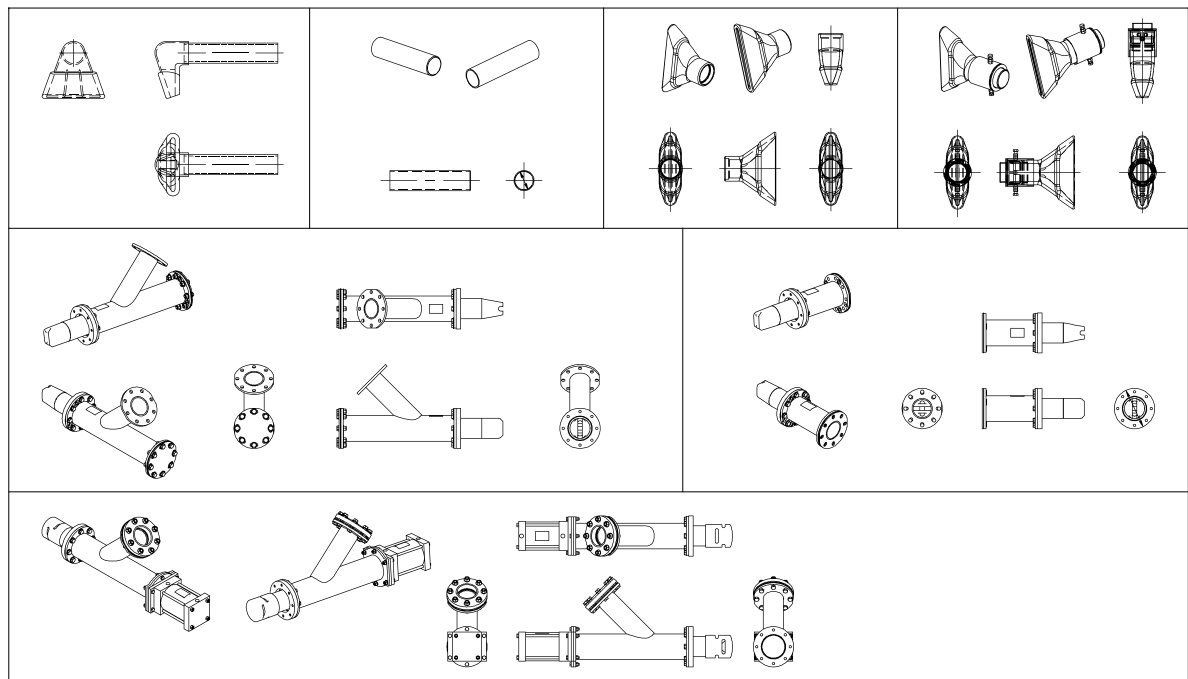
- **Martin® Roll Generator**
coupled with either:
 - **Martin® Roll Gen™ Power Supply**
 - **Martin® Roll Gen™ Continuous Power Supply**

4-INCH NOZZLES

AMBIENT-TEMPERATURE NOZZLES



HIGH-TEMPERATURE NOZZLES



Martin provides a wide range of nozzles to suit your specific applications.

AIR CANNONS

MARTIN® HURRICANE

35L Assembly P/N	38005-35
70L Assembly P/N	38005-70
150L Assembly P/N	38005-150
Technical Data Sheet P/N	L3800

MARTIN® TYPHOON

35L Assembly P/N	38005-35FD
70L Assembly P/N	38005-70FD
150L Assembly P/N	38005-150FD
Technical Data Sheet P/N	L3809

MARTIN® MULTI VALVE AIR CANNON

Hurricane Assembly P/N	38625
Technical Data Sheet P/N	L3821

MARTIN® TORNADO

2-inch Valve	
8x12-in. Tank Assembly P/N	37864-0812
8x20-in. Tank Assembly P/N	37864-0820
Technical Data Sheet P/N	L3723

MARTIN® 6 PACK

Martin® 6 Pack P/N	38071-6R
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REPLACEMENT VALVES

MARTIN® HURRICANE VALVE

Valve Assembly P/N	38071
Operator Manual P/N	M3737

MARTIN® TYPHOON VALVE

Valve Assembly P/N	38071-FD
Operator Manual P/N	M3813

SMART™ SERIES NOZZLES

MARTIN® SMART™ SERIES JET NOZZLE

Straight Nozzle Assembly P/N	39185S
Replacement Straight Nozzle P/N	39184S-NW
Y-Pipe Nozzle Assembly P/N	39185Y
Replacement Y-Pipe Nozzle P/N	39184Y-NW
Technical Data Sheet P/N	L3986

MARTIN® SMART SERIES RETRACTABLE NOZZLE 360°

Nozzle Assembly P/N	38984
Replacement Nozzle P/N	38983-NW
Technical Data Sheet P/N	L3935

ACCESSORIES

MARTIN® AIR CANNON CONTROLLER

Single Circuit	
Assembly P/N	38902
w/20 Amp output relay	38902-20
Technical Data Sheet P/N	L3880
Multiple Circuit	
Assembly P/N	38901
Technical Data Sheet P/N	L3873

MARTIN® THERMO SAFETY SHIELD

4-in. Threaded Assembly P/N	38189-4
4-in. Plain Assembly P/N	38189-4PE
Technical Data Sheet P/N	L3622

MARTIN® ROLL GEN™ SYSTEM

Roll Generator	RG1-010-XXPX
Roll Gen™ Power Supply	39413
Roll Gen™ Continuous Power Supply	contact for specs



GLOBAL LOCATIONS

 UNITED STATES	 INDIA	 RUSSIA
 AUSTRALIA	 INDONESIA	 SPAIN
 BRAZIL	 ITALY	 SOUTH AFRICA
 CHINA	 MEXICO	 TURKEY
 FRANCE	 PERU	 UNITED KINGDOM
 GERMANY		

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