

STORAGE VESSEL CLEANING SERVICE AND PRODUCTS





### MARTIN® SILO CLEANING

Remove buildups, reclaim lost material, restore flow rates and recover design capacity with Martin® Silo Cleaning from Martin Engineering.

#### **PROBLEM**

Hazardous techniques used to improve storage flow and capacity–like explosives, water and air lances or putting personnel inside the vessel.

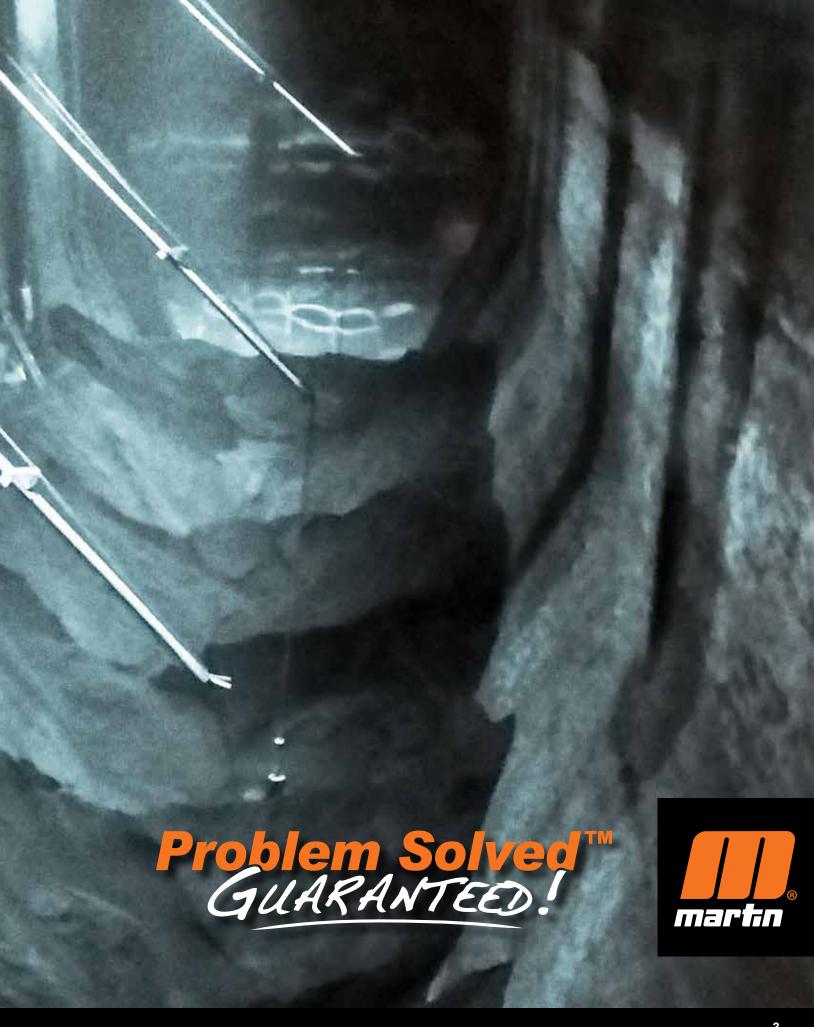
#### SOLUTION

Martin® Silo Cleaning eliminates the need for confined space entry and enables material to be recaptured and used in most cases.

Martin® technicians use remote control equipment from the top of the vessel to safely restore flow. These specialists are highly trained and safety-certified to current OSHA/MSHA standards.

Only Martin—with more than 70 years of experience in solving material flow problems—offers a full range of systems to improve your plant's storage efficiency.





# **MARTIN® SILO CLEANING**



Most cleaning projects are performed with the Martin® Heavy Duty Whip. The Martin® Heavy Duty Whip has pneumatic controls which allow precise positioning of the cleaning head to remove materials without risk to the vessel. The hose reel easily separates from the boom assembly for ease of transportation and set-up in tight spaces.

The modular boom extends to 28 ft (8.5 m) and can clean vessels up to 60 ft (18 m) in diameter from a single central opening of 18 in. (450 mm). The double wire braided hose supplies strength for control and the air motor provides powerful whip action to remove buildup from walls. The cleaning flails come in urethane coated rope whips with knuckles or brass or steel chains to match your stored materials.





### **PROBLEM**



Rat-holed, clinging or built-up material interferes with product quality and restricts material flow.

#### **SOLUTION**

Martin® Heavy Duty Whip safely and quickly removes hardened, non-flowing material from silo walls and feeders.

Cleaning attachments are changed to match material characteristics.

Silo cleaning projects are difficult to estimate due to variables in material compaction, discharge rate and accessibility to the vessel. Therefore, the cost of Martin® Silo Cleaning is based on "time and material."





#### **PROBLEM**

Lumps of material block the discharge.



#### **SOLUTION**

Martin® Buster safely and effectively dislodges blockages using the powerful force of expanding CO2 gas.

Martin® Buster uses non-explosive generators to cause rapid expansion of CO2 gas to fracture lumps, chunks and compacted material, opening the discharge and restoring flow.



#### **PROBLEM**

Bridged or arched material creates a "no flow" condition.





#### **SOLUTION**

Martin® Drill opens a flow channel through tough clogs.

Powerful hydraulic action of the Martin® Drill bores through blockages, clearing a path at depths up to 150 ft (45 m).

## **MARTIN® SILO CLEANING**

#### PREVENT HAZARDOUS CONFINED SPACE ENTRY

Keep your personnel out of the vessel. Martin<sup>®</sup> Silo Cleaning crews are OSHA and MSHA certified for Confined Space Entry.

#### **RISK-FREE FOR YOUR VESSEL**

Effective system and experienced specialists clean without damage to walls, bottoms or linings.

#### **IMPROVED CLEANING TECHNOLOGY**

High-performance cleaning system removes more material per hour and reduces time on your job.

#### **NO OUTAGE REQUIRED**

Many facilities stay in operation during vessel cleaning. Or we can work when your plant is shut down—even Sundays and holidays.

#### **TURNKEY SERVICE**

Your staff can get on to other duties; our fully equipped rigs bring all the personnel and equipment required.

#### **ECONOMICAL ANSWER**

After set-up, single operator provides efficient cleaning. No hidden charges or compressors or fuel.

#### **MODEST MOBILIZATION CHARGES**

Save even more with multiple vessels, multiple plants, national agreements or flexible scheduling.

#### SATISFACTION GUARANTEED

If not satisfied after one full shift, our crew will return to headquarters and you will not be charged.









#### **GLOBAL LOCATIONS**



### MARTIN ENGINEERING USA

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