

DISCHARGE AIDS FOR HOPPERS, BINS & SILOS

Start with what the powder is doing.

Poor material flow affects everything up and downstream in the process, ruining efficiency and wasting money. Flow promotion is about matching the failure mode — the arch, the rathole, the buildup — to the material causing it and the equipment it interacts with. GQI covers the full toolbox, from Artech ultrasonics to delumpers, so the recommendation follows the problem directly.

Every stalled discharge has a signature — an arch bridging the outlet, a rathole draining the core and leaving the walls full, caking on the wall, lumps jamming the spout, fine powder flushing through, or a heel that never empties. Naming the failure mode is the first step; the material and the vessel geometry decide the fix.



Silos and hoppers — where flow problems start

Name the failure mode

Arching / bridging

Ratholing / piping

Wall buildup & caking

Lumps & agglomerates

Erratic discharge

Flushing / flooding

Residual heel

The technology toolbox

Vibration, mechanical action, and aeration each earn their place. Our in-house specialties are ultrasonics and lump breaking — we source the rest for you, so the recommendation stays honest.

Ultrasonics — Artech Flowsonic

High-frequency energy applied at the wall keeps powder moving without hammering the vessel — GQI's in-house specialty.

Vibration · high frequency, low amplitude

Vibrators & Impact Hammers

External vibrators shake the cone or bin wall to collapse arches; impact hammers deliver discrete, heavy blows to knock down buildup on rugged vessels.

Vibration · medium to high amplitude

Lump Breakers / Delumpers

Break agglomerates and compacted lumps in-line so downstream equipment sees consistent product — GQI's other in-house specialty.

Mechanical

Bin Activators

A vibrated, flexible-mounted cone bottom that activates the whole outlet zone of a bin or silo.

Mechanical

Agitators & Rotary Dischargers

Internally-fixed agitators stir the contents to prevent bridging; rotary dischargers sweep product to the outlet for controlled, continuous discharge.

Mechanical

Air Pads & Live-Bottom Cones

Aeration pads fluidize the boundary layer so cohesive powder releases; live-bottom cones keep the discharge zone fluidized.

Aeration / fluidization

Match the fix to the failure mode.

Innovative Solutions. Reliable Support. Always a Step Ahead.

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ULTRASONIC FLOW PROMOTION — ARTECH FLOWSONIC

Prevent the arch instead of breaking it.

Instead of waiting for an arch to form and then breaking it, the Flowsonic applies high-frequency, low-amplitude ultrasonic vibration at the vessel wall — keeping the powder in motion so flow problems like bridging are avoided before they start. A compact transducer clamps to the cone, feeder, or dosing tube; no hammering, no structural fatigue on the vessel.

Where It Fits

Suits hoppers, feeders, weighing hoppers, and dosing pipes. Field applications include titanium dioxide, cocoa powder, calcium carbonate, zeolite, vitamin mixes, and chemical powders — from weighing hoppers to twin-screw feeders.

Proactive · gentle on the vessel

Process Context Counts

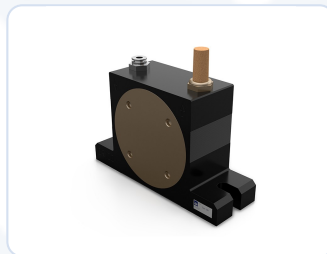
GQI knows flow promotion — you know your process. A vibrator that compacted the powder, an air cannon that never reached the rathole: each failed attempt points at what will actually work, so tell us what has been tried.



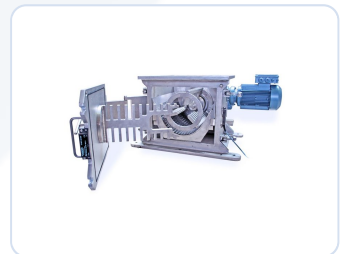
Ultrasonic transducer



Aeration pads



Pneumatic vibrator



In-line delumper

How GQI specs a flow aid

Free-flowing

Cohesive / sticky

Hygroscopic

Cakes / hardens

Abrasive

Heat-sensitive

Fibrous

Electrostatic

Hazardous / toxic

Powered by Artech. Artech Ultrasonic Systems AG builds the ultrasonic technology behind the Flowsonic — and behind the ultrasonic screen-cleaning systems on GQI's screening equipment. GQI is the North American reseller and application partner: we evaluate the fit, spec the system, and support it after installation.

From symptom to solution

1 Describe the problem

What happens at discharge, what the material is, and what has already been tried.

2 GQI engineers validate

Failure mode, material & vessel matched to the right technology — honestly.

3 Installed & supported

Specified, delivered, and supported after installation.



Email us
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