

Function hopper feeding bridge

Article Overview

A bridge-breaking hopper ensures continuous material flow by preventing bridging or arching of bulk solids, enabling reliable feeding into processing equipment.

Purpose and Function

A bridge-breaking hopper is an auxiliary discharge device used in industries like injection molding, extrusion, and automated dosing systems. Its primary function is to prevent material bridging, which occurs when large, lightweight, or cohesive materials form stable arches inside the hopper, blocking discharge and interrupting production. Bridging can result from particle cohesion, electrostatic charges, or consolidation pressure, especially in powders or crystalline materials.

How It Works

Bridge-breaking hoppers employ several mechanisms to maintain material flow:

- **Mechanical agitation or internal structures:** Some hoppers have a rotating shaft or spoked wheels inside, which create a shearing effect to break arches and move material toward the outlet.
- **Vibratory feeders:** Electromagnetic or mechanical vibrators can disrupt cohesive arches, with carefully tuned amplitude and acceleration profiles to avoid compaction while maximizing particle mobility.
- **Steep hopper angles and smooth surfaces:** Mass flow hoppers with cone angles greater than 60–70° and polished or coated surfaces reduce wall friction and help prevent arch formation

Article Content

Nov 18, 2025

Hopper systems | Basic components

Hopper feeding systems, BZS, are closed noise-protected compact devices for storing, feeding and sorting

Jan 20, 2026

Lock Hopper

Lock hoppers It should be pointed out that Fig. 5.2 is drawn for stand-alone feeding devices. The pressure capability of many of the

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Solve Powder Bridging and Arching Problems in Silo and Hoppers

Looking to Resolve Powder Bridging? If you're having issues with powder flow in your manufacturing process, complete the form

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Bulk material feeder types and applications

This article discusses the types of bulk material feeders available and their application in bulk solids handling and processing industries.

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It occurs when thick and dry dewatered sludge cakes together and bridges between the side walls above the auger of the pump. This

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Hopper Bridging: Why One Hopper Always Bridges First

When one hopper always bridges first, it acts as a sensitive probe of your system. It tells

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Designing Small-Scale Farming with Efficient Hopper Systems

Hopper systems also facilitate efficient feed management in animal husbandry: Feeding units fitted with hoppers

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Hopper Pump with Feeding Screw and Bridge Breaking

How does the feeding screw and bridge breaking paddle improve pump performance?
The feeding screw

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Bridging in Silos and Hoppers

Bridging is the name given to the self- created arch that develops just above the outlet of a bulk material silo or

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Bridging in the Feed Throat

The hopper or magnet box sits directly on the feed throat. As would be expected, this area

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Troubleshooting bridging.

Empty the hopper and vacuum out the feed throat. Please do not use an air hose to blast the pellets out of the hopper

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What are some common feed flow issues?

Bridging occurs when feed forms a bridge or arch over the feed auger or discharge point in a hopper. It can be an interlocking arch,

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Supply Hopper

Lock hoppers provide a means of both allowing operation of many feeding devices that have only a low-pressure capability, to

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Solutions for Ratholing and Bridging in Bulk Material

Bridging is a common material flow issue where an arch forms across the outlet of a hopper, bin, or silo.

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Injection Molding: Understand the Link Between Feed Throat Temperature ...

As one of the most important temperature zones in an injection molding process, the feed throat deserves more of

Oct 26, 2025

WO2021046272A1

The inventive anti-bridge mechanisms described herein are configured to ensure that particulate material held in a bin with a

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What is the function of powder hopper feeder

The main functions of the powder hopper feeder include quantitative feeding, continuous and stable

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The Bridge Breaker® Material Flow Aid

Having trouble with material bridging? Thayer Scale can help evaluate your material, hopper design, and feeding process to

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Feeding system hopper

Find your feeding system hopper easily amongst the 25 products from the leading brands (KMT, TABANLI MAKINA, DEPRAG, ...)

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Bridging in Silos and Hoppers

Bridging in Silos and Hoppers Last Verified August 16, 2024 Bridging is the name given to the self- created arch that

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Microsoft Word

SYNOPSIS It is now four and a half decades since Andrew Jenike introduced the first integrated method for characterising powders

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Hopper Discharge Systems

The bulk materials" behavior during storage and discharge generally depends on the particle size, the degree of homogeneity and the

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Overview of Hopper Conveyor: Definition, Structure,

Hopper conveyors are widely used in various industrial fields, such as food production,

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Hopper Feeder

Hopper Feeder: Essential for Efficient Material HandlingIn various industrial and

Mar 08, 2026

Hoppers | PPT

This document discusses auxiliary equipment used in extrusion processes, including various feeding systems, potential problems

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Industrial Hoppers: Types, Applications & Benefits

Learn about different types, applications, and benefits of hoppers for efficient material handling across industries.

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Designing a Hopper

For hoppers and feeders that handle non-free-flowing material, contact your equipment supplier for advice about the design

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What Causes Material Bridging in Hoppers

Bridging is the material block that forms above the discharge outlet of a hopper, silo, or any bulk material handling

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To Resolve Bridging - KUBOTA GRAVIMETRIC FEEDER

In feeding powder material, some trouble could happen as we featured "Feeding Trouble Caused by

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Calculation method to Design Hoppers and Silos

How to design a hopper and silo using Jenike's method. Calculate critical outlet diameters to prevent

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Hoppers | Bulk Material Handling Equipment

Hoppers are designed to store and discharge powders, granules, pellets, aggregates, grains, chemicals, minerals, fertilizers, food

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Hopper Pump with Feeding Screw and Bridge Breaking Paddle

Hopper pump with feeding screw and bridge breaking paddle is equipped with an integrated bridge crusher or agitator on the suction

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Working with Hoppers

Feeder Hopper Transitions Material characteristics such as size distribution, shear properties and cohesiveness generally dictate the

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How To Understand Hopper Purposes and Functions | Rulmeca Corp

This video explains the purposes and functions of hoppers and serves as an introduction to the company's two-part tutorial on how to

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Feed Hoppers and Materials Scalping Solutions | CDE

We offer a range of feed hoppers designed to cope with a variety of capacity requirements for the sand &

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Ten Steps to an Effective Bin Design

Before choosing a bin and hopper for your bulk solids application, the flow properties and characteristics of the

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Hopper Flow Problems and Their Solutions Explained

Learn about Hopper Flow Problems and how mass flow feeding can eliminate issues like

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

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