



WHAT MAKES KAMENGO DIFFERENT?

Kamengo Specializes In The Storage And Feed
Of Difficult Flowing Bulk Materials

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DIFFICULT
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WHAT MAKES KAMENGO DIFFERENT?

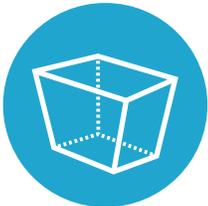


WHAT MAKES KAMENGO DIFFERENT IS THE TOOL KIT WE USE TO SOLVE COMPLEX MATERIALS HANDLING CHALLENGES:



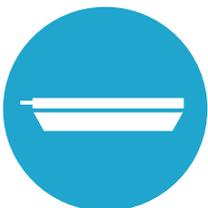
Equipment To Characterize The Flow Properties Of Fibrous And Cohesive Materials

In the 1980's Kamengo developed new testing equipment capable of characterizing the flow properties of stringy, fibrous and cohesive materials.



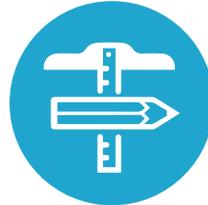
Design Protocols To Determine Correct Bin, Feeder And Chute Geometry

Kamengo has developed design protocols that use a material's flow properties to determine the bin, feeder and chute geometry required to promote reliable material flow. Correct equipment geometry will deny a stored material the conditions it needs to gain in strength and hang-up.



The Kamengo Feeder: Proven Solution For Handling Difficult Flowing Bulk Materials

The Kamengo Feeder resolves many of the shortcomings of conventional feeders. The Feeder withdraws material evenly from the full discharge opening of the hopper *and* does not compact stored material, resulting in a fully live bin. With installations running 24/7 for more than 20 years, the Kamengo Feeder has proven that it is a reliable solution for handling difficult flowing materials.



The Kamengo Feeder: A Design Advantage

The flow properties of difficult flowing materials often demand a fully live bin. A fully live bin is very difficult to achieve with a conventional feeder, but is easily achieved with a Kamengo Feeder.

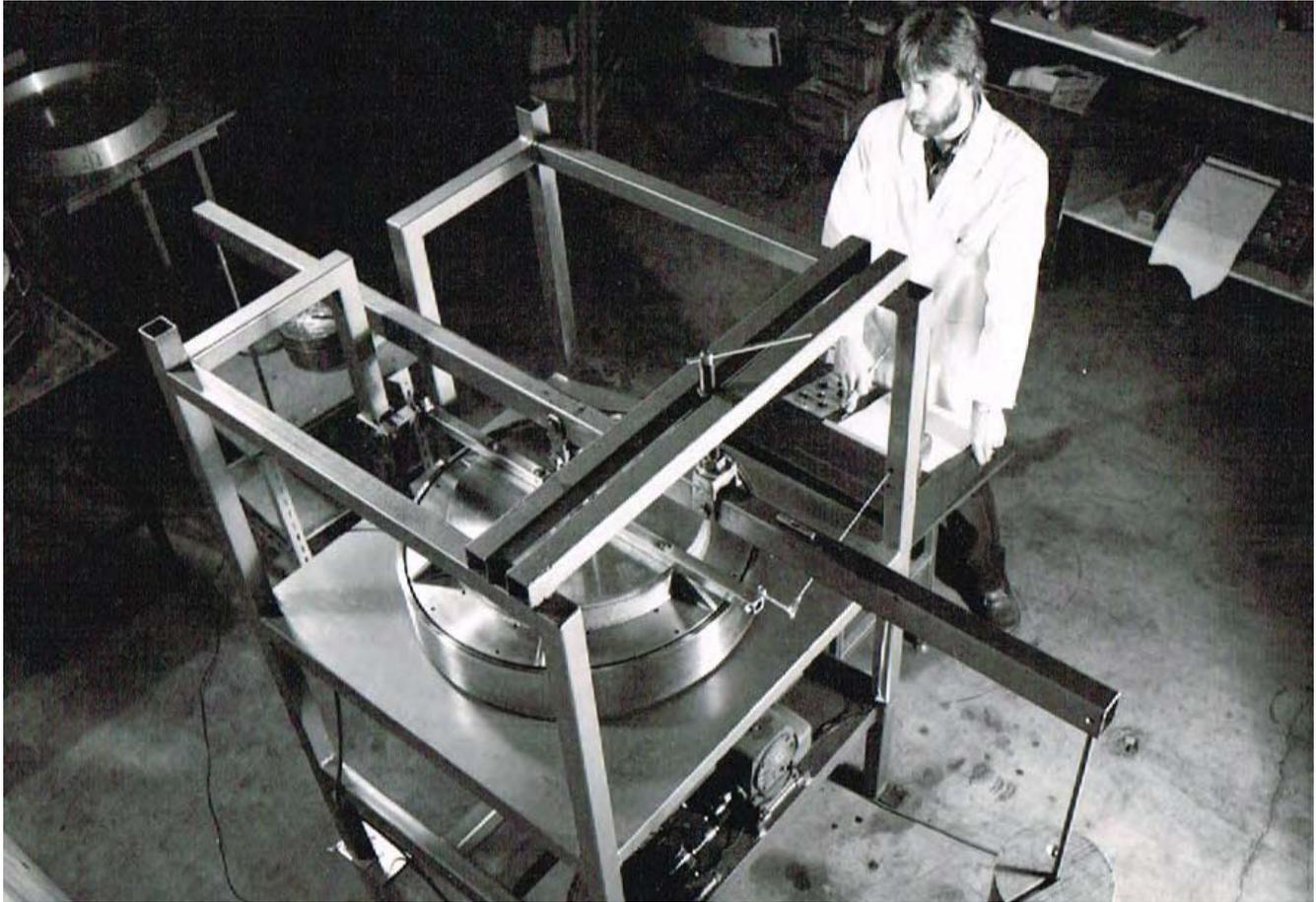


Skilled Design Practice

Over the past 25 years, Kamengo has developed a design practice capable of tackling complex projects, including retrofits of storage and feed arrangements that suffer from plugging. Kamengo has the engineering capability to deliver complete packages of materials handling equipment including storage bins, feeders, chutes, structural work, and conveyors. We have delivered solutions for biomass, ore concentrates, fly and wet bottom ash, wood chips, pellets, and FGD gypsum.

EQUIPMENT TO CHARACTERIZE THE FLOW PROPERTIES OF FIBROUS AND COHESIVE MATERIALS





Equipment To Characterize The Flow Properties Of Fibrous And Cohesive Materials

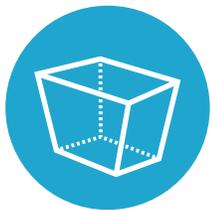
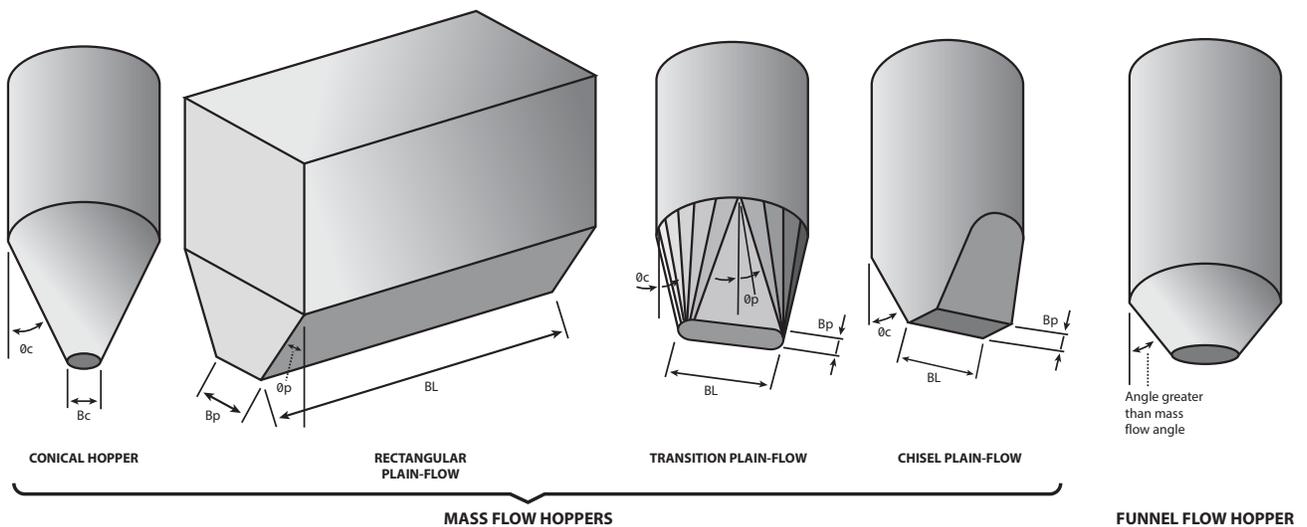
In the early 1980's, Kamengo led an R&D effort to characterize the flow properties of fibrous and cohesive materials, in particular stringy wood waste and gypsum. Building on the work of Jenike & Johanson as well as the former UK coal board, Kamengo staff developed new testing equipment capable of characterizing the flow properties of stringy, fibrous and cohesive materials.

Knowledge of a material's flow characteristics is central to determining the bin, feeder, and chute geometry required to promote reliable material flow.

To learn more about material testing, bin geometry and the principles of good feeder, bin and chute design, we invite you to visit KamengoU at www.kamengo.com.

DESIGN PROTOCOLS TO DETERMINE CORRECT BIN, FEEDER AND CHUTE GEOMETRY





Design Protocols To Determine Correct Bin, Feeder And Chute Geometry

Kamengo uses a material's flow characteristics to determine minimum hopper openings, feeder length and widths, hopper angles, and chute angles. Typical industry practice is to rely on a material's angle of repose or rules-of-thumb to size a bin and feeder. These methods are highly unreliable for difficult flowing materials and often result in poorly designed bins and feeders that suffer from chronic plugging.

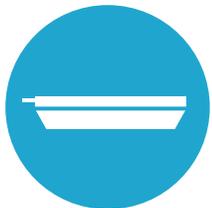
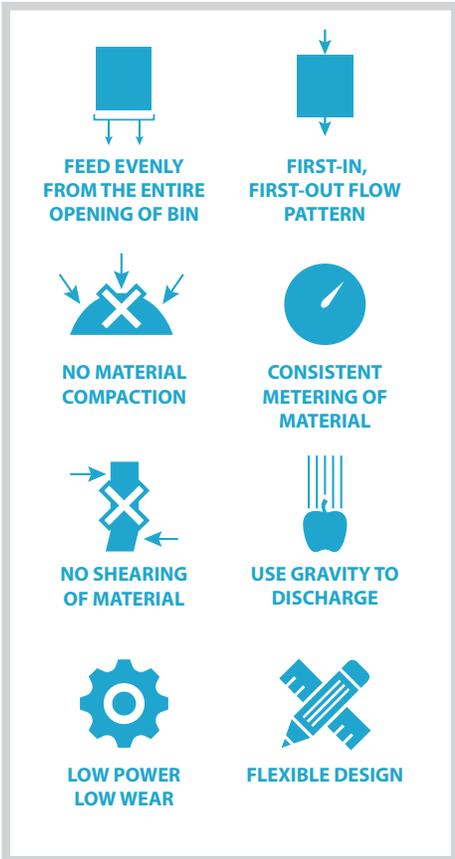
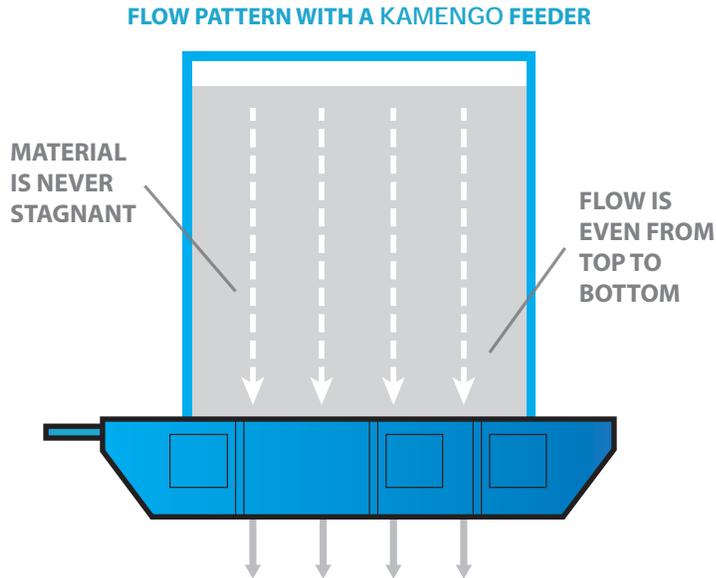
In contrast, Kamengo follows strict design protocols that apply material wall friction and measures of a material's internal strength to determine the bin, feeder and chute geometry required to promote reliable flow. Correct bin and feeder geometry will deny a stored material the conditions it needs to gain in strength and form a stable arch or rat-hole, and cause a plug-up.

To learn more about material testing, bin geometry and the principles of good feeder, bin and chute design, we invite you to visit KamengoU at www.kamengo.com.

THE KAMENGO FEEDER: PROVEN SOLUTION FOR HANDLING DIFFICULT FLOWING BULK MATERIALS



KEY FEATURES OF THE KAMENGO FEEDER



The Kamengo Feeder: Proven Solution For Handling Difficult Flowing Bulk Materials

The Kamengo Feeder resolves many of the shortcomings of conventional feeders. These shortcomings are often the root cause of bin plug-ups and uneven feeding when handling difficult flowing materials.

Conventional feeders shear material at the hopper/feeder interface. This shearing action compacts the stored material, enabling it to gain in strength and hang up. Conventional feeders also withdraw material unevenly from the hopper discharge opening. This uneven discharge leaves pockets of stagnant material that limit the live storage volume of the hopper. When left stagnant, fibrous material will gain in strength, resulting in a hang-up.

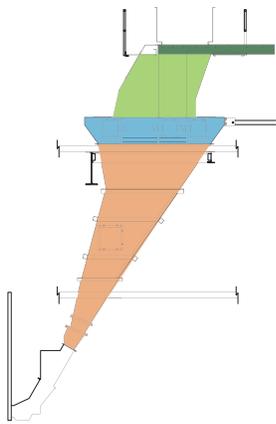
In contrast, the Kamengo Feeder does not shear the stored material. The Kamengo Feeder also withdraws material evenly from the entire hopper discharge opening. As a result, with a Kamengo Feeder, the

storage bin is fully live. This characteristic makes the Kamengo Feeder ideal for handling difficult flowing materials.

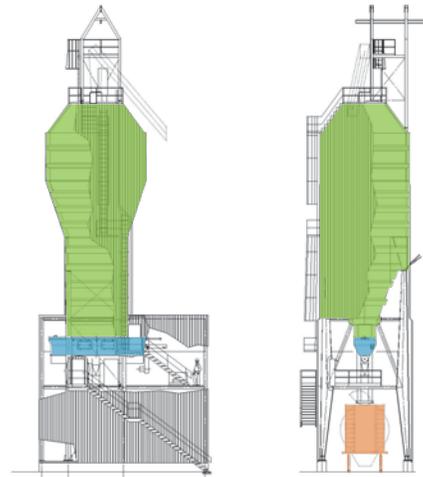
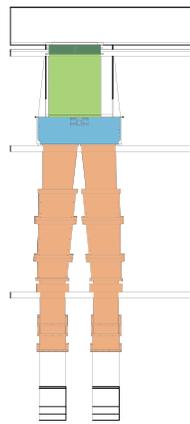
With over 100 units in operation, including installation running 24/7 for over 20 years, the Kamengo Feeder has proven that it is a reliable solution for handling difficult flowing materials.

THE KAMENGO FEEDER: A DESIGN ADVANTAGE

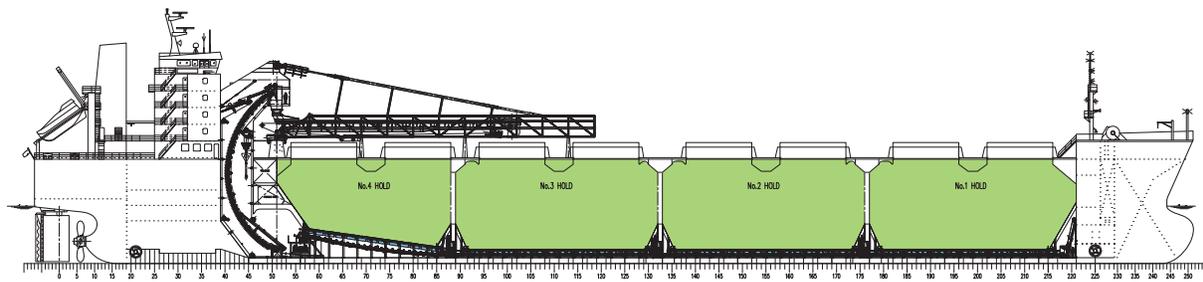




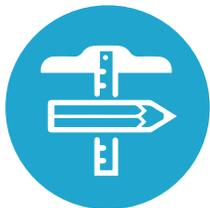
Short and wide Hog Fuel Feeder



Narrow and long Ash Feeder



Nine 100 ft long feeders - Self-unloading Cargo Ship, Various Cargoes



The Kamengo Feeder: A Design Advantage

The flow properties of difficult flowing materials often demand a fully live bin. This scenario is very difficult to achieve with a conventional feeder, but is easily achieved with a Kamengo Feeder.

The feeding of easier flowing materials such as pellets, from long storage piles is also hampered by the limitations of conventional feeders. This is because conventional feeders often cannot overcome the minimum piping dimensions of the stored material, resulting in rat-holing. In contrast, the Kamengo Feeder can be designed long, easily exceeding the piping dimension, which ensures reliable, even discharge of material. With a Kamengo Feeder, a shallow hopper such as those found on ships and inside domes will self-empty under gravity without the use of flow promoting devices.

Kamengo is able to deliver effective storage and feed solutions because the Kamengo Feeder is able to produce a fully live bin that is as wide and as long as needed. This design flexibility ensures that the hopper width and length exceeds what is required to avoid bridging and rat-holing, as well as delivers the length preferred for the storage arrangement.

The feeder's design flexibility is an advantage that is very difficult to replicate with a conventional feeder.

A SKILLED DESIGN PRACTICE





Skilled Design Practice

Over the past 25 years, Kamengo has developed a skilled design practice capable of tackling complex projects, including retrofits of existing problem storage and feed arrangements. Kamengo has the engineering capability to deliver complete packages of materials handling equipment including storage bins, feeders, chutes, structural work, and conveyors.

Since its founding, Kamengo has proven its expertise and technology in an array of industries and applications serving difficult flowing materials. Kamengo has delivered solutions for fibrous biomass, cohesive ore concentrates, fly and wet bottom ash, wood chips, corn fiber, pellets, and recycled and FGD Gypsum.

- ▶ **We invite you to explore how Kamengo can apply its specialized tool kit to solve your materials handling challenges.**



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