

JENIKE®
& JOHANSON
SCIENCE ENGINEERING DESIGN

Reliably Feeding Biomass and MSW into High Pressure Reactors

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Feedstocks Used for Biofuels Production







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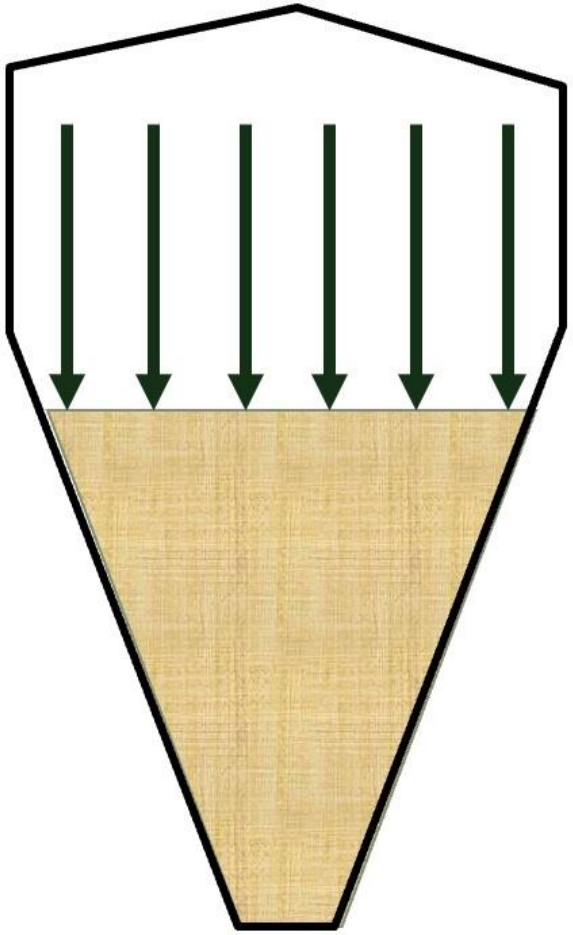
Common Flow Problems Feeding the Biofuel Reactor







Common Flow Problems Feeding the Biofuel Reactor



- Excessive compression /jamming
- Wear
- Pressure blowbacks

Limitations of Existing Feeding Technologies

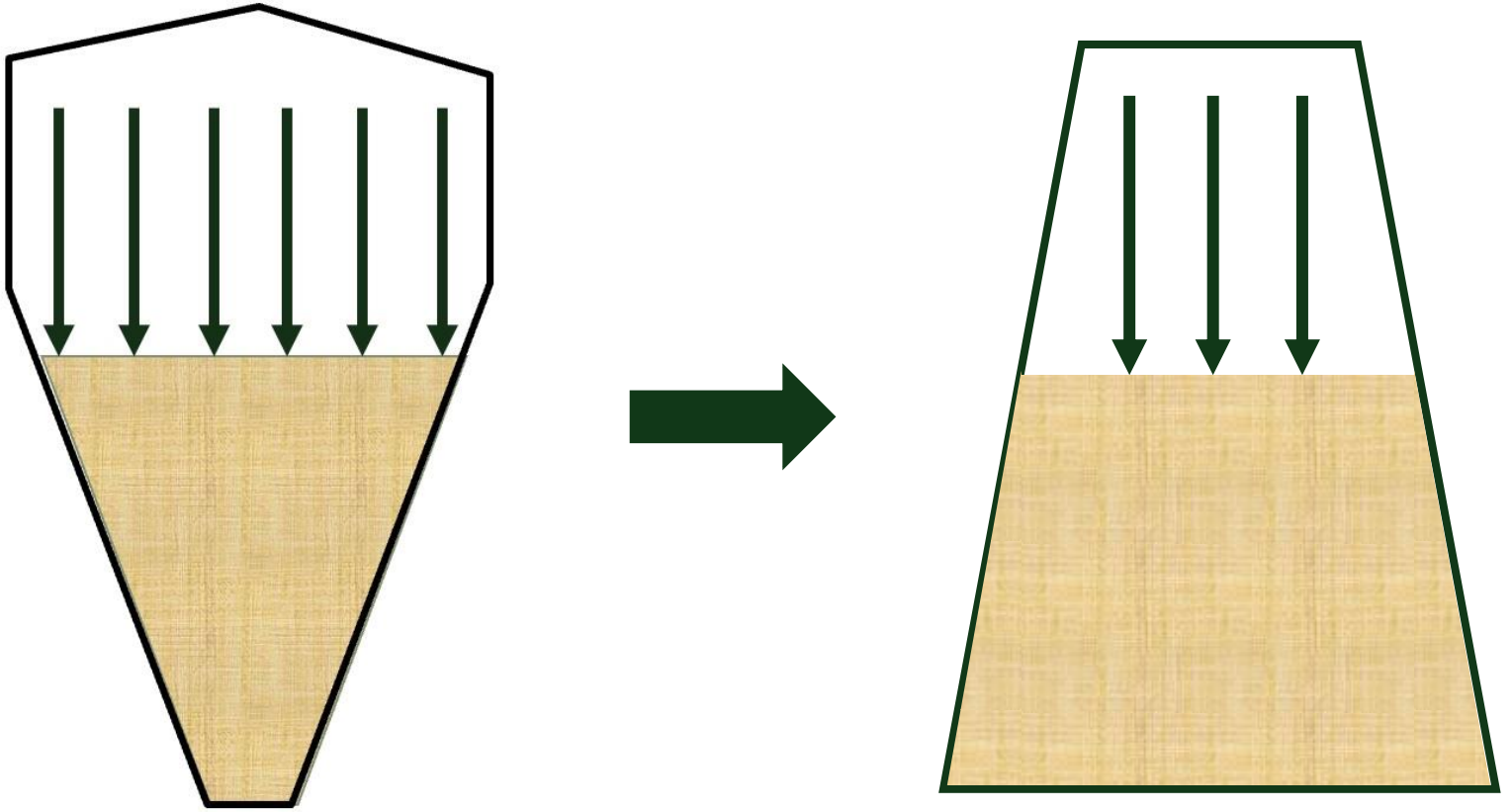
- Today's feedstocks:
  - non-uniform particle size
  - low-bulk density
  - Fibrous
  - Highly compressible

- Existing feeding technologies have difficulty working with such feedstocks



Feeding High Pressure Reactor – Novel Approach

Jen-Zero™



Diverging pressurization chamber

Patented technology

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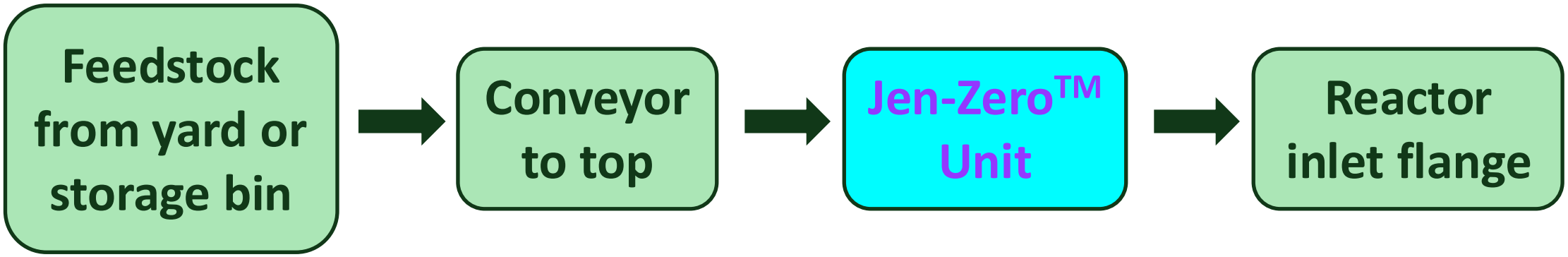
How Jen-Zero™ Works ?



- Surge storage
- Pressurization using gas/air
- Continuous feed to reactor

Novel Solution: Jen-Zero™

Jen-Zero video: https://www.youtube.com/watch?v=Wlx7z7n5sB4

Additional Benefits of Jen-Zero™

Reliable flow



Minimal Pre-treatment





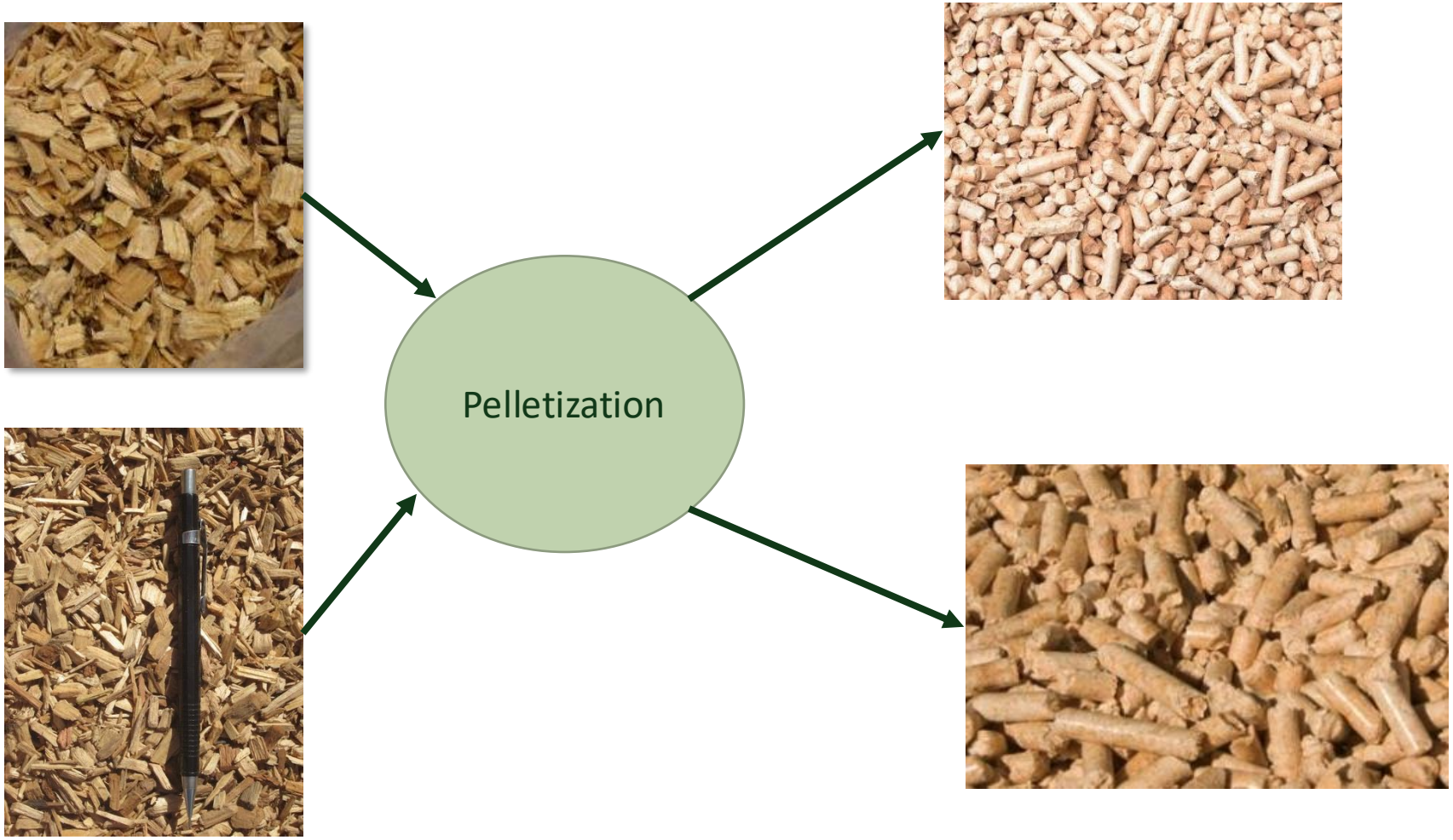
Size-reduction







Minimal Pre-treatment



Conclusions

- Feeding biomass and MSW feedstocks to a high-pressure biofuel reactor is one of the most challenging areas in achieving reliability and consistency in advanced biofuels production.
- Existing feeding technologies have not been able to work at commercial scale.
- Based on Jenike & Johanson's decades long experience in material flow and lock hopper design, we have launched patented Jen-Zero™ technology to reliably feed high-pressure reactors.

Questions ??

Stop by at our Booth to collect giveaways:
mass flow and segregation models



