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*THE PESTICIDE STEWARDSHIP ALLIANCE*

*8TH ANNUAL PESTICIDE STEWARDSHIP CONFERENCE*

# Baling Technologies: Benefits and Limitations

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# Plastics Recycling Design & Engineering Consulting

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## Our Services

- Consulting: Design & Engineering
- System Design, Fabrication, Upgrading
- Turn-Key Projects
  - Plastics Sorting Systems
    - Float/Sink, Optical, Gravity, Centrifugal
  - Plastics Washing Systems
  - Control Automation, Remote Monitoring



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# Baling Technologies: Benefits and Limitations

## Overview

- **This presentation will cover:**
  - Typical Plastic Container Sizes
  - Bulk Container Transportation
  - Volume Reduction Options
  - Plastics Baling Technical Aspects
  - Standard Baler Types
  - Baling Benefits and Limitations

# Baling Technologies: Benefits and Limitations

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## Typical Plastic Container Sizes



2.5 Gallon: 1.3 Lbs

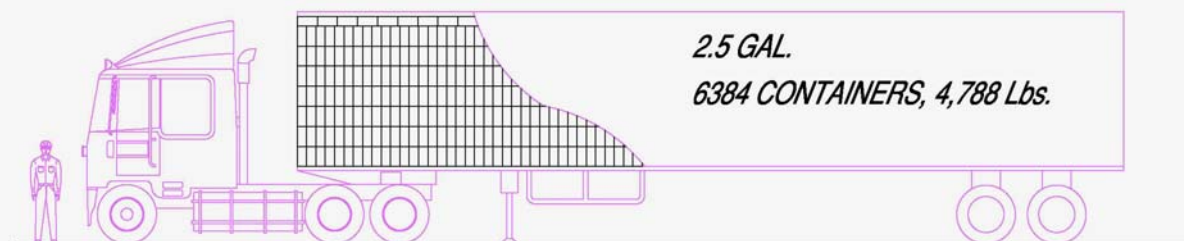
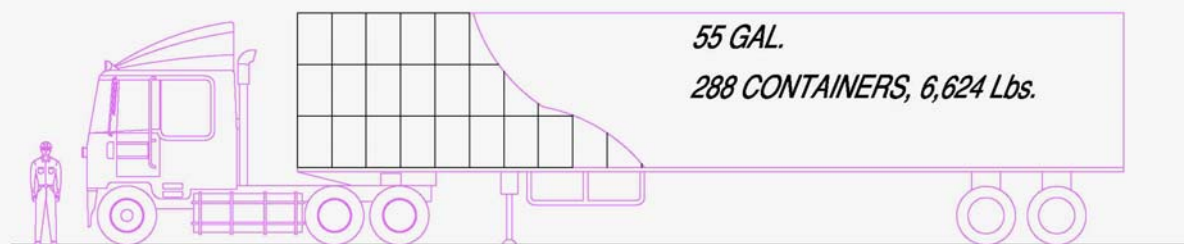


30 Gallon: 15 Lbs



30 Gallon: 25 Lbs

## Maximum Truck Load Weight



## Baling Technologies: Benefits and Limitations

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Actual Truck Load Weight ~1,500/2,000 Lbs.



## Volume Reduction Options:

- Stepping
- Flatteners/Perforators
- Compactors
- Baling
- Shredding
- Grinding



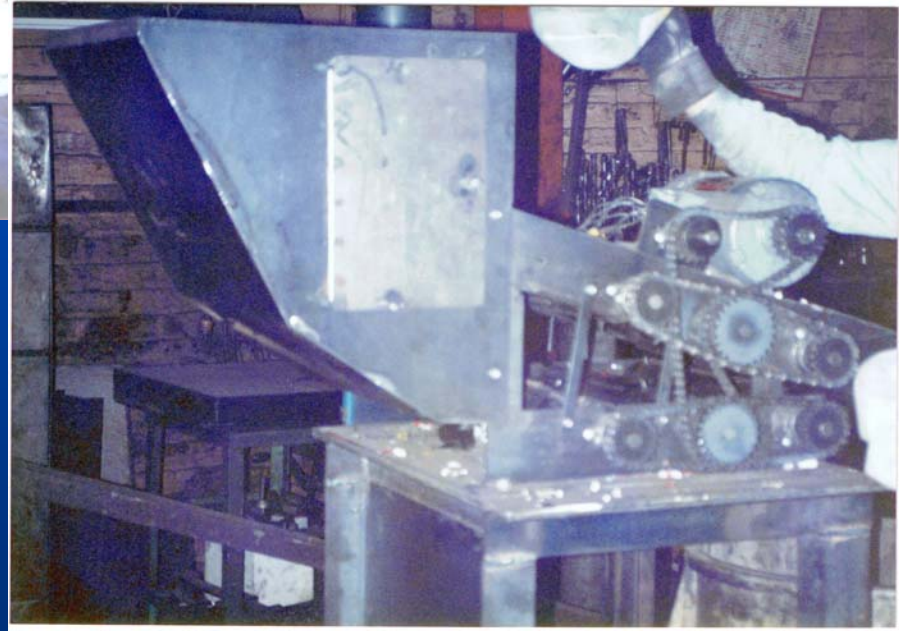
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# Baling Technologies: Benefits and Limitations

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## Flattener/Perforator



# Baling Technologies: Benefits and Limitations

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## Flattener/Perforator



# Baling Technologies: Benefits and Limitations

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## Flattener/Perforator



## Volume Reduction Options:

- Stepping
- Flatteners/Perforators
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- Grinding



# Baling Technologies: Benefits and Limitations

## Onboard Compactor



## Volume Reduction Options:

- Stepping
- Flatteners/Perforators
- Compactors
- Baling
- Shredding
- Grinding

## Review Baling Technical Aspects

- Dimensions:
  - Feed Opening
  - Baling Chamber
  - Bale Size
- Ram pressure: Min. 60 psi
- Full Ram Penetration
- Plastics memory: retaining dogs



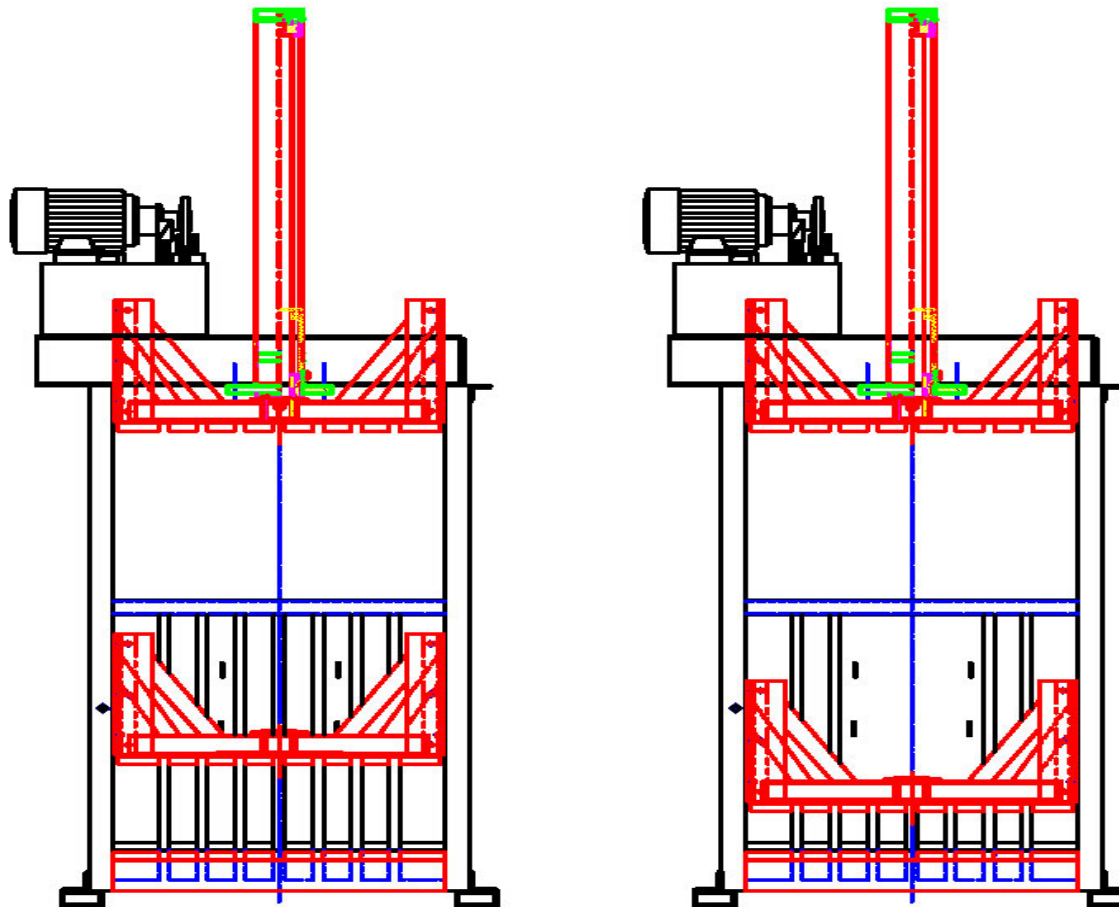
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## Review Baling Technical Aspects

- Dimensions:
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  - Bale Size
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## Full Ram Penetration



## Review Baling Technical Aspects

- Dimensions:
  - Feed Opening
  - Baling Chamber
  - Bale Size
- Ram pressure: Min. 60 psi
- Full Ram Penetration
- Plastics memory: retaining dogs

## Standard Baler Types

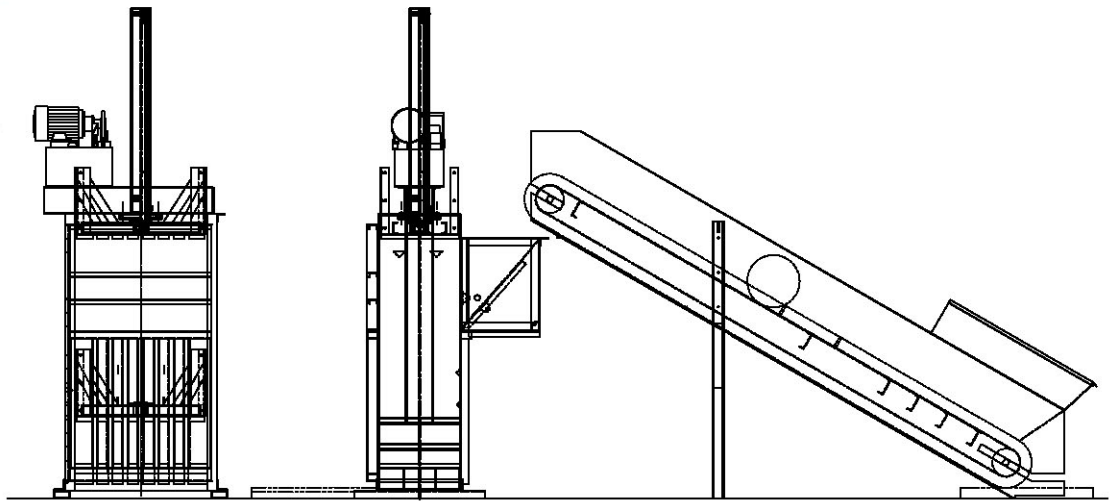
- Low Throughput: 2-3 bales per hour
  - Vertical & Horizontal Manual Tie
- High Throughput: 10+ bales per hour
  - Horizontal Auto-Tie: Single and Dual Ram

# Baling Technologies: Benefits and Limitations

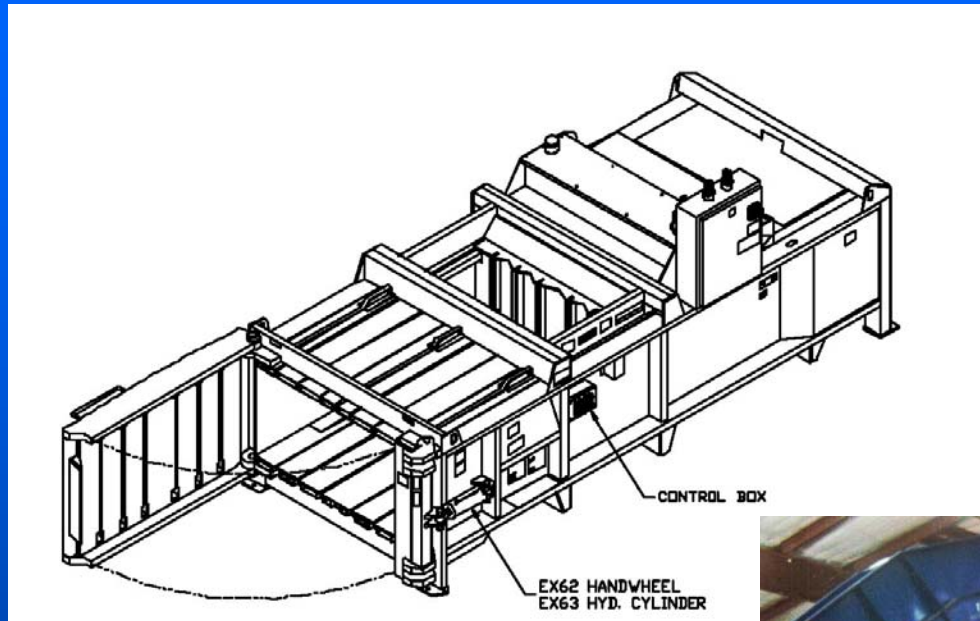
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Rear Feed Vertical Baler



# Baling Technologies: Benefits and Limitations



Closed Door  
Horizontal  
Manual Tie



# Baling Technologies: Benefits and Limitations

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## Horizontal Auto Tie



Single Ram

Dual Ram





# Baling Technologies: Benefits and Limitations

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## Portable Baler



## **Baling Benefits**

- Containers meet market standards
- Reduces storage requirements
- Reduces transportation costs, expand markets
- Lower operating cost than grinding
- Allows sortation by intermediate processors/end users
- End markets: Drain Tile, Pipes, and Plastics Lumber
- Baling other materials: OCC, Film

## Limitations

- Not feasible for very large containers
- Lower material price than regrind

## Recommendations

- Preferable small bale size
- Manual Tie
- Automated Feeding Conveyor: Incline, Cleat Size
- Drip pans



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