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*The labor-saving automation of the Harvestore system gives the family 100 percent flexibility.*

Celmar Dairy, Norwich, Ontario

**5a Raptor Series Premium Unloader Cutter and Conveyor Chains**  
**5b**

Using high strength materials and high levels of manufacturing precision, the Harvestore Raptor Series Premium Unloader Cutter and Conveyor Chains satisfy the highest technical requirements in terms of wear resistance.

- Smooth bearing surfaces
- Proprietary steel alloys
- Heat treated sidebars
- Laser-cut finished pitch holes
- Case hardened pins and bushings
- Pre-lubricated joints
- Shot peened sidebars

**Two Harvestore XL Unloader Models to Meet Your Needs**

**XL 200:** Designed for 20ft (6m) Harvestore Structures, with either a 24in (60cm) wide or 30in (76cm) wide by 7.5in (19cm) deep trough, and 25ft (7m) Harvestore Structures with a 30in (76cm) wide by 7.5in (19cm) deep trough.

**XL 400:** Designed for 25ft (7m), 28ft (8m), and 31ft (9m) Harvestore Structures with 32in (81cm) wide by 10in (25cm) deep trough.

**6 Advanced Gearbox Performance**

The new XL Unloader Gearbox is designed to meet the demands of today's modern feeding systems. Harvestore XL 200 and XL 400 Unloaders can be easily retrofitted to the new gearbox.

- Extended bearings for better drive shaft support
- Integrated drive shaft for reduced clearances and improved gearbox life
- Regreasable bearing that prevents bearing contamination
- Sight glass included on all units

XL Unloader Series Technical Data	XL 200	XL 400
<b>Structure Size</b>	20ft and 25ft (6m and 7m)	25ft, 28ft and 31ft (7m, 8m and 9m)
<b>Trough Size</b>	24in or 30in x 7.5in (60cm or 76cm x 19cm)	32in x 10in (81cm x 25cm)
<b>Motor HP</b>	25	30
<b>Power Supply</b>	230V 1ph or 3ph	230V 1ph or 3ph
	460V 3ph	460V 3ph
	575V 3ph	575V 3ph
	400V 3ph 50hz	400V 3ph 50hz
<b>Speed Settings</b>	6	6
<b>Cutter Chain Strength</b>	70,000 lbf	90,000 lbf
<b>Conveyor Chain Strength</b>	45,000 lbf	90,000 lbf
<b>Programmed Cutter Arm Force</b>	325 lbf	425 lbf

Optional Unloader Features	XL 200	XL 400
Paddle attachments to increase discharge capacity by increasing the area of the paddle	✓	
Paddle extensions to reduce chain tension and maximize chain and gearbox life**		✓
Hazardous duty motors	✓	✓
Intrinsically safe barrier for load cell sensor	✓	✓
Remote control and monitoring features built into control panel	✓	✓

\*\*Standard Unloader Feature

**Worldwide Availability**



★ Manufacturing facilities and technical design centers      ● Regional Sales Offices

CST is committed to providing its customers with the highest engineered quality, best service, longest product life and greatest value for every storage solution we supply. Contact CST for all of your agricultural feed and waste storage needs.

For more information contact your local authorized Harvestore dealer, visit [cstindustries.com](http://cstindustries.com) or call 844-44-TANKS.

\*Source: In-house trials with Harvestore XL 400. The unloader delivery rates referenced in this document are representative of observed field tests on typical dairy farms in North America. Your results may vary. Results achieved on any particular farm are contingent upon weather conditions, moisture content of the stored haylage, length of chop and the employment of good management practices.

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XL-BR-1708

**Harvestore XL™ Unloader**  
 Expect Extra Large Performance



» BIGGER. BETTER. FASTER PERFORMANCE.

## » The Best Performing Unloader Just Got Even Better

Harvestore XL™ Unloaders are the culmination of 75+ years of field-proven experience. Harvestore XL Unloaders are well-known for high capacity and superior feed quality. That all adds up to top performance and trouble-free operation. Why Harvestore XL Unloaders?

The Harvestore XL 400 Unloader is capable of moving up to 400 pounds (181 kilograms) per minute of 55 percent moisture haylage\*. At that speed, farmers have a viable option to unload haylage as fast or faster than they can from a plastic silo bag or a concrete bunker.

The Harvestore XL Unloader series features new technologically advanced Raptor Premium Chains and a new improved XL Unloader Gearbox. These main operational factors make the Harvestore XL Unloader series unlike any previous unloader providing a foundation for lower maintenance and bigger, better and faster performance.

- Features more chain and arm force capacity
- Available in 1-Phase or 3-Phase models
- Has low, high and four intermediate speeds, which can be changed as the unloader is running
- Offers a Load Sensing System to monitor and react to cutter arm loads
- Push button feeding – start the Harvestore XL Unloader and feed
- Smart sensors built in to help avoid costly breakdowns (arm pressure sensor)
- Designed and built with Harvestore BLUEPRINT Parts

## » Automate with Harvestore®

More and more farmers across the world are switching to automated feeding for improved storage, consistent feed quality and increased efficiency along with a better lifestyle. Harvestore XL Unloaders hook into all advanced automation systems. When combined with an automation system, owners can monitor arm pressure, oiling requirements and hours of operation – all remotely while enjoying family and not compromising on the quality of their feed.

Get more information on Harvestore XL Unloaders from the experts at your local authorized Harvestore dealer.

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*Our XL Unloader has 442 hrs. and no issues. It is easier to work with versus the Alliance and the unload rate is faster. We wouldn't be bothered if it was slower, as the conveyor is full and with the new hook sequence the arm no longer climbs.*

Dockendorf Dairy, Watkin, Minnesota

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*We thought moving to automation we would lose the personal touch, but now we know our cows better than we ever did.*

Sunny Glade Farms, near Blumenort, Manitoba

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*It gives us the flexibility to enjoy time together as a family and not compromise the quality of what's going on in the barn.*

Tibben Farms, Brinston, Ontario

### 1 Direct Variable Speed Drive System

The Harvestore XL Unloader series features significantly more chain and arm force capacity than any previous unloader model. The direct variable speed drive system is fully enclosed and requires no V-belts or pulleys. Consider these improvements:

- Motor and gearbox are 2.5 times more powerful than previous unloader models
- Designed for low maintenance
- Operation is smooth and quiet
- Designed for a slow, accelerated soft start and stop with no sudden impact loads on critical unloader components

Combine these with chain and pulling capacity improvements and you get haylage that is quickly unloaded from inside the Harvestore Structure.

### 2 Power Capacity and Control System

The technology built into the control box of the Harvestore XL 400 Unloader powers a 30 horsepower 3-phase motor. The Harvestore XL 200 Unloader control box powers a 25 horsepower 3-phase motor. Both can connect to either a 1-phase or 3-phase power source. This makes the Harvestore XL Unloader series more than twice as powerful than previously possible.

**It puts out more pounds / kilograms per minute, thus does not need to run as long, reducing electricity costs**

The Harvestore XL Unloader motors are available in the following models:

- 240 VAC 1-Phase or 3-Phase
- 480 VAC 3-Phase
- 575 VAC 3-Phase
- 400 VAC 3-Phase 50 Hz



### 3 Six Unloader Speeds

The Harvestore XL Unloader series has low, high and four intermediate speeds to choose from for optimum haylage delivery.

- Speeds can be changed while the unloader is running, to match stored haylage conditions or delivery needs
- The Harvestore XL Unloader's main drive and arm systems use separate motors and controls
- Speeds can be changed while the motors are running with no stopping to shift gears

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*Instead of feeding 400 cows in five hours, we are now feeding 700 cows in the same amount of time.*

Riegel Dairy, Washington, Missouri

### 4 Direct Arm Drive System with Load Sensor

The Harvestore XL Unloader series incorporates a direct arm drive system with a load sensor. The direct arm drive system provides fast and uniform delivery, while the load sensing system monitors and reacts to the cutter arm loads.

- The Harvestore Unloader control system reads the information and signals the control to advance the arm under light loads or hold the arm under heavy feed loads
- The arm drive system allows for precise load control and full automation on the cutter arm during its operation

The Harvestore XL Unloader has a direct coupled motor design with a fully enclosed assembly. This design requires very little maintenance, as there are no ratchet wheels, pawls, sleeve bearings or thrust washers like you might find on other unloaders.



- Ratchet wheel adjustments are not required nor are there flyback or wear items
- Operation is simple, the arm advance control automatically turns the cutter arm drive motor ON and OFF
- The cutter arm direction can be electronically reversed

### Remote Control Panel Features:

- Allen-Bradley 1734 Point I/O with Ethernet
- Inputs for System Powered, Local/Remote Status, Run Status and Fault Status
- Door Switch Status
- Outputs for Speed, Main Drive FWD/REV, Arm Drive FWD/ REV, Stop, Drive
- Resets
- Analog card for Motor Currents & Load Cell Measurement



» Arm Controls



» Load Sensor



» Load Sensing System