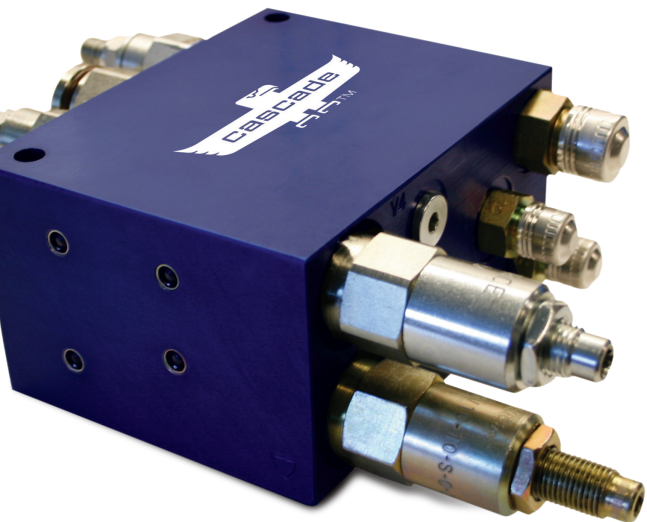




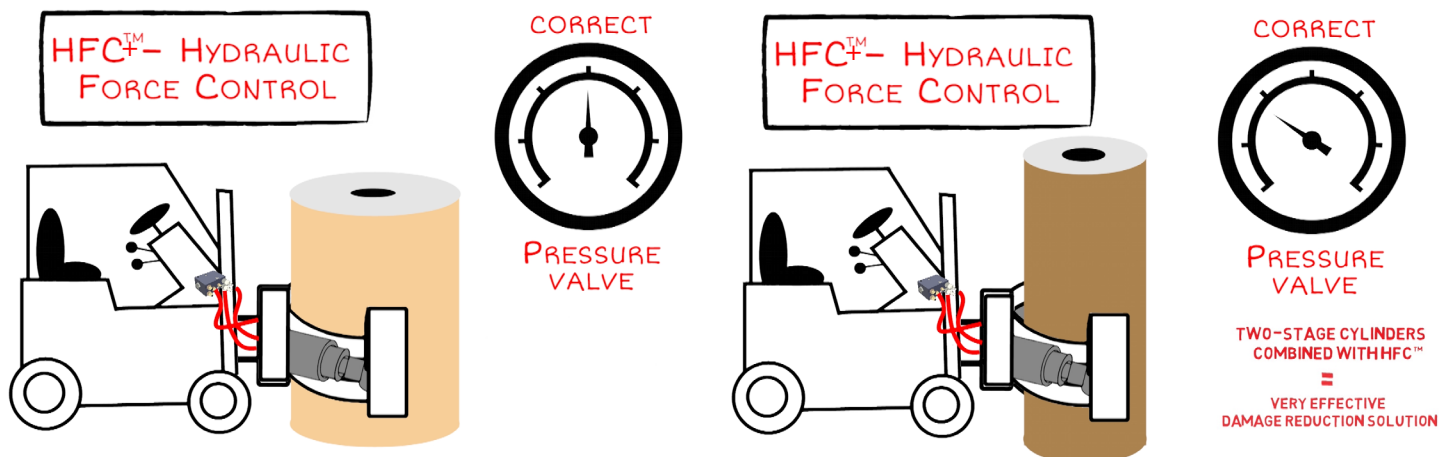
## HFC+™ – Hydraulic Force Control Two-stage Cylinder System



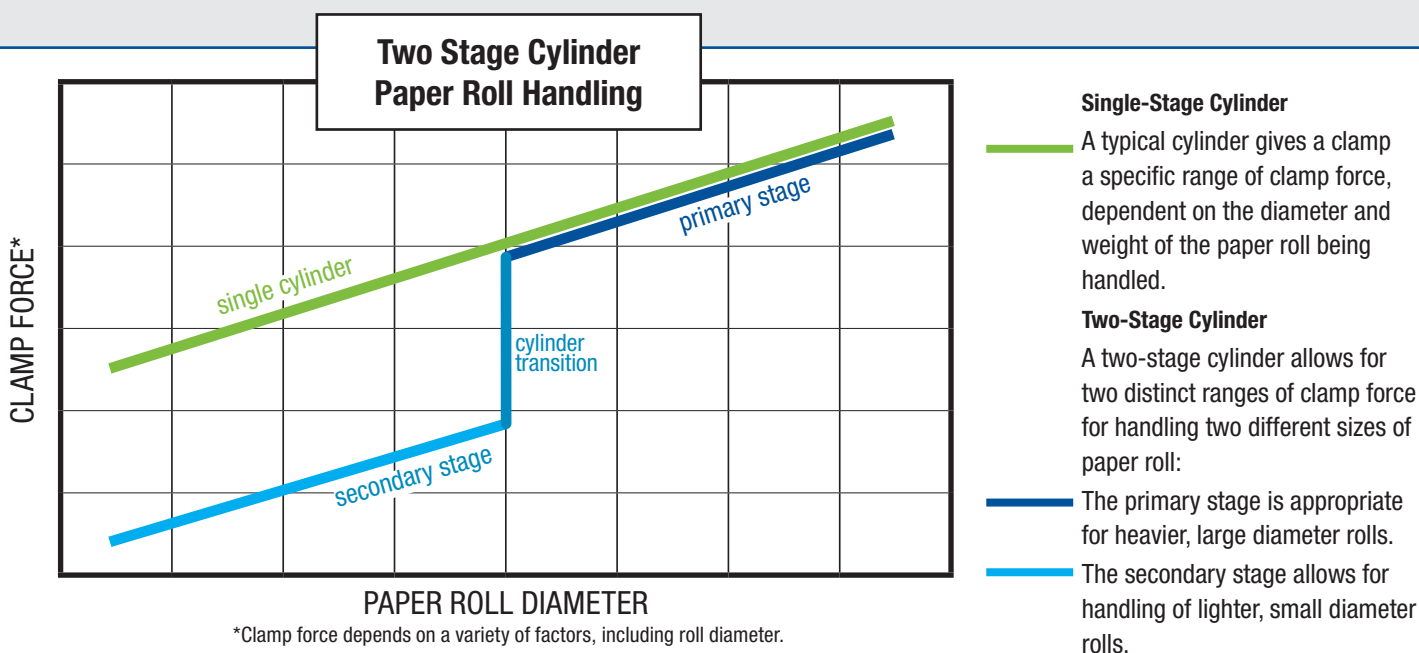
Automatic Clamp Force for Versatile  
Handling and Reduced Product Damage

# Cascade's line of Paper Roll Clamps offer material handling solutions for many different types and varying sizes of paper rolls.

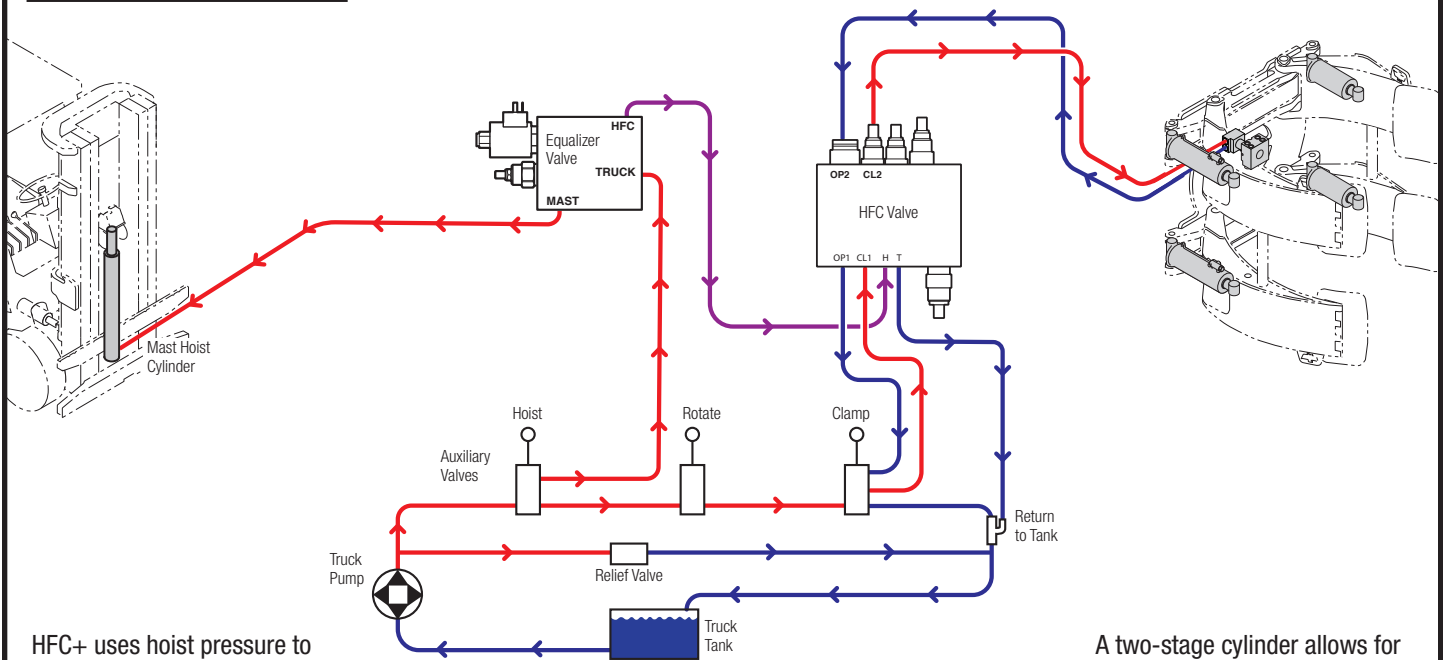
But what if you wanted to handle different weight and diameter paper rolls with just one attachment while reducing damage? That's exactly why Cascade created HFC+.



**HFC+** is the combination of HFC and a specially engineered two-stage cylinder solution. This innovative damage reduction system combines the benefits from both to enable the handling of multiple weight and diameter ranges of paper rolls with the same paper roll clamp. The clamp will automatically adjust clamp force based on the weight of the load and will shift to a lower clamp force setting when handling the smaller roll sizes. The customer can handle more product in less time while saving money on equipment, by not having to change trucks or attachments.



## How It Works



HFC+ uses hoist pressure to control clamp force based on load weight, which reduces product damage from excessive clamp force.

A two-stage cylinder allows for a wide range of clamp force for handling multiple sizes of paper rolls.

### FEATURES

- The clamp force is automatically adjusted without any special actions by the driver.
- Conveniently sized hydraulic valves mount easily onto the cowl of lift truck.
- Infinite adjustment of clamp force in the capacity range of the attachment. The system adjusts clamp force proportional to the roll weight.
- When installed with the equalizing valve, the clamp force remains constant between Freelift and Mainlift. This is accomplished with the use of an automatic switch that determines if the clamp is in Freelift or Mainlift.
- HFC+ is flexible, allowing easy adjustment for:
  - All clamp force settings.
  - Maximum pressure.
  - Balancing clamp force between Freelift and Mainlift.
  - Balancing clamp force when the size of the truck and clamp are not ideally matched.

### BENEFITS

- No need to change driver habits; driver can use normal operating procedures.
- Low maintenance system.
- Compatible with Split and Solid Arm Clamps.
- Enables handling of different weight and diameter paper rolls with one paper roll clamp.
- Removes the guesswork from roll handling.
- Minimizes paper roll damage due to incorrect clamp force.
- Handle more product in less time by not having to change trucks or attachments, resulting in improved productivity and reduced operating costs.

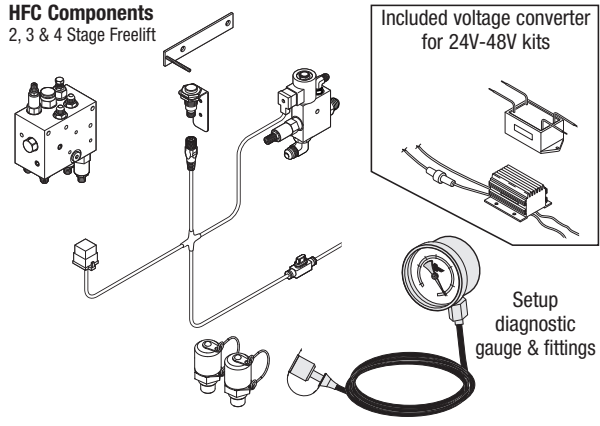




## Other HFC Options

### HFC Components

2, 3 & 4 Stage Freelift



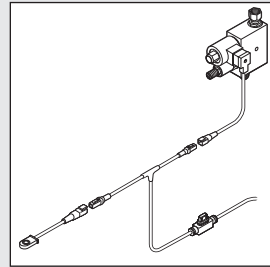
Included voltage converter for 24V-48V kits

Setup diagnostic gauge & fittings

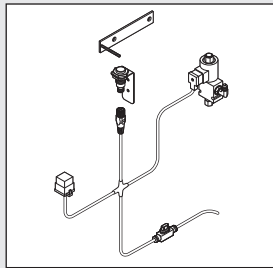
### HFC KIT FOR FREE LIFT MAST APPLICATIONS

For use on 2 Stage Full Free Lift (Duplex) and 3 Stage Full Free Lift (Triplex) mast applications. Includes equalization switch which equalizes system pressure for improved accuracy.

### OPTIONAL ARM SPEED OVERDRIVE SYSTEM

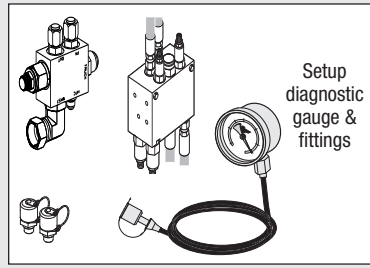


System drives the arms to close at full speed (used in applications where very low clamping pressure is required, resulting in lower arm speed). Conveniently attaches to the main HFC valve for easy installation.



### FULL HEIGHT PRESSURE LIMITER

Prevents excessive clamp force in applications where the mast is extended to full height on a regular basis while clamping a load.



### HFC KIT FOR LIMITED FREE LIFT MAST APPLICATIONS

For use on 2 Stage Limited Free Lift (Simplex) mast applications.

## Other Recommended Damage Reduction Options

### WPM™ - Wireless Pressure Monitor



Wireless Pressure Monitor is a system to monitor the hydraulic pressure in the clamping cylinders of an attachment on a real time basis. Perfect for allowing drivers to see the actual pressure during the clamp cycle to determine if the load holding components are malfunctioning.

### DTI™ - Digital Tilt Indicator



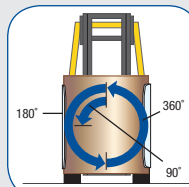
Cascade's Digital Tilt Indicator lets you know when your mast is tilted forward, backwards or true vertical. It clearly displays the angle of the mast at all times which eliminates guesswork and ultimately reduces damage and increases speed and efficiency.



Two-Way Tilt Control

### Tilt Control

Automatically controls the angle of the mast and attachment, aligning pad with the load.



### Electronic Rotational Control

Provides 90° (bilge) and 180° stops during 360° clamp rotation, which automatically aligns pad to roll.

Contact your local Cascade dealer to see how Cascade's damage reduction solutions can help you deliver a perfect roll every time.

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