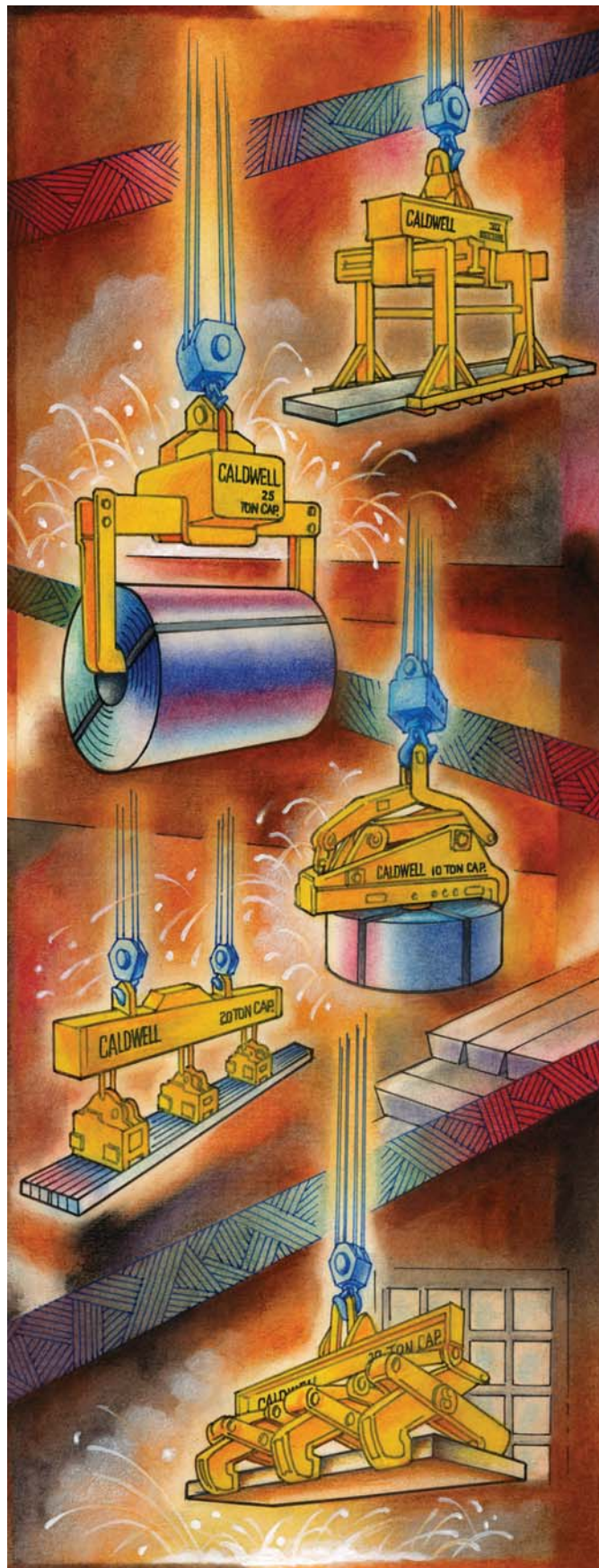


# MILL DUTY LIFTERS

For BTH-1 Service Classes 3 or 4 - Heavy or Severe Service



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## Coil Grabs

Pages B.4 - B.9



## Ingot/Slab Handling

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## Lifting Beams

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## Motorized Rotating Crane Hooks

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# Index to Mill Duty Lifters



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Quality & Engineering .....B.3

**Coil Handling** - Multiple design options for manipulating coils with the eye in either the horizontal or vertical position.

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Single Rim.....	B.6
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## Coil Handling



## Ingot/Slab Handling

**Ingot/Slab Handling** - Lifters are designed to handle raw or finished slabs of steel during the manufacturing process.

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## Lifting Beams

**Lifting Beams** - Large custom designed beams for metal, shipyard or any application that requires a lifting beam.

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## Motorized Rotating Crane Hooks

**Motorized Rotating Crane Hooks** - Allow independent and precise positioning of a load with full 360° rotation. Available with integral weighing system and read-out option.

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## Sheet/Plate Handling

**Sheet/Plate Handling** - Grabs or beams ideal for handling bundles of sheet or plates of steel.

Telescopic Sheet Lifter.....	B.18
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Care & Use .....B.23

The Caldwell Group Inc. has been manufacturing lifting equipment since 1954. It is our goal to manufacture high quality, long lasting lifting products that will safely increase productivity and reduce operating costs. To accomplish this goal, The Caldwell Group designs and manufactures all crane suspended products to meet or exceed ASME standards.

The lifters shown in this catalog are custom designed and manufactured to be utilized in heavy duty and severe duty environments. We utilized design features in these lifters that incorporate mechanical components to insure long life with minimum maintenance. Techniques such as interlocked, parent metal structural connections to reduce weld stress due to high stress factors and duty cycles; insuring years of safe, reliable operation with minimal maintenance. The product images and applications shown are a small representation of Caldwell Mill Duty lifting products designs. Please contact our specialists to discuss a custom designed lifting solution for your specific application.

## Caldwell Mill Duty Design and Manufacturing Standards

- These lifters are custom designed for heavy and severe duty service per ASME B30.20, BTH-1 Design Category “B”, Service Class “3” or “4”.
  - Design Category “B” – when loads and conditions are not accurately defined (ASME BTH-1).
  - Service Class “3” – 500,001 to 2,000,000 load cycles.
  - Service Class “4” – over 2,000,000 load cycles.
- Interlocked, parent metal structural connections.
- Designs include replaceable wear plates/hardened steel bushings in high friction areas.
- Suspensions are designed for long term life.
- Slip clutches located on gear box output shaft for drive train protection.
- Lifters are registered with metal identification tags attached.
- Rated capacities and safety warnings clearly visible.

**Service Class Illustration**

Cycles/Day	Desired Life (years)			
	5	10	20	30
50				3
100			3	3
200		3	3	4
300	3	3	4	4
750	3	4	4	4
1000	3	4	4	4

Refer to ASME BTH-1 for detailed design considerations of lifting devices.

## ASME B30.20 & BTH-1 Standards

The American Society of Mechanical Engineers (ASME) developed and released ASME BTH-1 to designate design criteria for below-the-hook lifting devices (ASME B30.20) and to serve as a guide to designers, manufacturers, purchasers, and users of these types of lifters.

- ASME B30.20 addresses safety requirements.
- ASME BTH-1 does not replace ASME B30.20.
- ASME BTH-1 addresses design requirements.
- Design criteria set forth are minimum requirements that may be increased at the discretion of the lifting device manufacturer or a qualified person.

For additional information on ASME B30.20 and BTH-1 standards, please visit our web site at [www.caldwellinc.com/standards](http://www.caldwellinc.com/standards).



# Coil Handling



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## Model 285 - Telescoping Coil Grab

This rack and pinion style grab allows for handling of a wide range of coil sizes with minimum manpower. Optional motorized rotation allows the crane operator to spot the coil with precise positioning. Coil grabs are custom designed per application.



### PRODUCT FEATURES:

- Low headroom design.
- Lockout switch in carrying foot to prevent inadvertent opening.
- Replaceable wear plates.
- Hinged covers.
- Heavy duty worm gear reducer.
- Drive protection includes slip clutch.
- Machined slide arms.
- Curved supports on lifting feet for coil protection.
- Designed for easy maintenance.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Photo eye to sense coil I.D.
- Coil protection.
  - Trip plates with sensors.
  - Toe rollers on carrying feet.
  - Coil I.D. sensor.
  - Polyurethane coverings.
- Heavy duty function indicator lights.
- Integral weighing system.
- Maximum open/minimum close limit switches.
- DC power.
- Parking or maintenance stand.
- Electrical reversing motor controls.

**NOTE:** To request a price quotation on your specific application, please fill in the Coil Handling Application Evaluation on page B.9 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Coil Handling

## Model 286 - Parallelogram Coil Lifter

The motorized Parallelogram Leg Drive Coil Lifter is ideal where aisle space between coils is limited. This lifter is designed so that the weight of the coil keeps the lifter closed. Optional motorized rotation allows the crane operator to spot the coil with precise positioning. Coil grabs are custom designed per application.



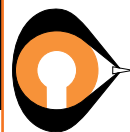
### PRODUCT FEATURES:

- Narrow aisle design.
- All pivot points supplied with hardened steel bushings/pins equipped for lubrication.
- Heavy duty worm gear reducer.
- Drive protection includes slip clutch.
- Electrical controls include stall relay.
- Curved lifting pads for coil protection.
- Designed for easy maintenance.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Coil protection.
  - Trip plates with sensors.
  - Grip shoe toe rollers.
  - Coil I.D. sensor.
  - Polyurethane coverings.
- Heavy duty function indicator lights.
- Built in load scales.
- Maximum open/minimum close limit switches.
- DC power.
- Parking or maintenance stand.

**NOTE:** To request a price quotation on your specific application, please fill in the Coil Handling Application Evaluation on page B.9 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



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# Coil Handling



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## Model 280 - Single Rim Coil Tong/Grab

Automatic Single Rim Coil Grabs are designed for use in the primary metals industry. The grab has two opposing jaws to grip one wall of the coil (single rim) when in the eye vertical position. Grabs are custom designed per application.



### PRODUCT FEATURES:

- Auto-Latch mechanism for attach and release operation of grab. (Hoist line must be slack to engage and disengage Auto-Latch mechanism).
- All pivot points furnished with hardened steel bushings/pins and lubrication fittings.
- Handles a wide range of coil sizes and capacities.
- Grip jaws conform to coil sizes.

### PRODUCT OPTIONS:

- Motorized grab.
- Replaceable facing on grip jaws for coil protection.
- Parking or maintenance stands.

**NOTE:** To request a price quotation on your specific application, please fill in the Coil Handling Application Evaluation on page B.9 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Coil Handling



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## Model 281 - Double Rim Coil Tong/Grab

Automatic Double Rim Coil Grabs are designed to handle light gauge or highly finished coils when in the eye vertical position. The grab grips both walls of the coil when in the eye vertical position to minimize gripping pressure. Coil grabs are custom designed per application.



### PRODUCT FEATURES:

- Auto-Latch mechanism for attach and release operation of tong. (Hoist line must be slack to engage and disengage Auto-Latch mechanism).
- All pivot points furnished with hardened steel bushings/pins and lubrication fittings.
- Handles a wide range of coil sizes and capacities.
- Grip jaws conform to coil sizes.

### PRODUCT OPTIONS:

- Motorized grab.
- Replaceable facing on pads for coil protection.

**NOTE:** To request a price quotation on your specific application, please fill in the Coil Handling Application Evaluation on page B.9 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Coil Handling



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## Model 282 - C-Hook

C-Hooks are designed to handle coils in the eye horizontal position and are available in a wide range of capacities and coil sizes and design styles. C-Hooks are custom designed per application.



### PRODUCT FEATURES:

- High tensile strength alloy steel plate minimizes physical size.
- Counter balanced to hang level when empty.
- Inside radius on hooks avoid coil edge contact.
- Curved coil support on lower arm is standard.
- Guide handles for ease of coil positioning.
- Handles a wide range of coil widths.

### PRODUCT OPTIONS:

- Replaceable urethane facing available for additional coil protection.
- Recessed counterweight for close stacking.
- Long carrying arm style for multiple slit coils.
- High temperature environment capability.
- Storage stand.

**NOTE:** To request a price quotation on your specific application, please fill in the Coil Handling Application Evaluation on page B.9 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



# Coil Handling - Application Evaluation



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Specify type of lifter desired: \_\_\_\_\_

## COIL INFORMATION:

Minimum: O.D. \_\_\_\_\_ I.D. \_\_\_\_\_ Width/Height \_\_\_\_\_ Weight \_\_\_\_\_

Maximum: O.D. \_\_\_\_\_ I.D. \_\_\_\_\_ Width/Height \_\_\_\_\_ Weight \_\_\_\_\_

Is coil telescoped? ☐ No ☐ Yes, distance \_\_\_\_\_ ☐ O.D. or ☐ I.D.

In which position will coil be handled? ☐ Eye Vertical ☐ Eye Horizontal

Describe coil material: ☐ Steel ☐ Aluminum ☐ Brass/Copper

☐ Other, describe: \_\_\_\_\_

Is coil hot? ☐ No ☐ Yes If yes, please answer questions below (1, 2, 3):

1. Maximum load temperature: \_\_\_\_\_ 2. Maximum time Lifter is in contact with load: \_\_\_\_\_

3. Minimum cool down time between lifts: \_\_\_\_\_

Describe characteristics of coil (ex. tightly wound, banded, telescoped, oily, hot, etc.). \_\_\_\_\_

Describe where coil is resting and where it will be placed (ex. on a flat surface, pallet, turnstile arm, etc.). \_\_\_\_\_

Do the coils need to be protected from damage?

☐ Yes, describe: \_\_\_\_\_ ☐ No

## ADDITIONAL INFORMATION:

Are reversing motor controls required?

☐ No ☐ Yes

If yes, ☐ Furnished Loose ☐ Mounted On Lifter

Storage / maintenance stand required? ☐

CMAA Crane Duty Class (A, B, C, D, E, F): \_\_\_\_\_

Select lifter service class required based on desired fatigue life: Please reference the chart on page 3 for estimated years of service.

### Service Class

### Load Cycles

☐ 3

500,001 – 2,000,000

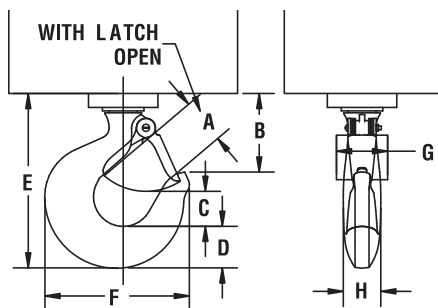
☐ 4

over 2,000,000

Please use the space provided below for additional application information or lifter options required

(ex: headroom limitations, clearances where load is picked up and placed, etc.). \_\_\_\_\_

## CRANE HOOK DATA:



### INCHES

A \_\_\_\_\_ +0

B \_\_\_\_\_ +0

C \_\_\_\_\_ +0

D \_\_\_\_\_ -0

E \_\_\_\_\_ -0

F \_\_\_\_\_ +/-

G \_\_\_\_\_ -0

H \_\_\_\_\_ -0

### Measurement Tolerances

+0 = Measurement should be no larger but can be smaller than actual.

-0 = Measurement should be no smaller but can be larger than actual.

+/- = Measurement can be larger or smaller than actual.

Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

For a price quote on your specific application, please complete the above form and fax to The Caldwell Group at **815-229-5686** or you can complete this form online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Ingot/Slab Handling



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## Model 272 - Motorized Ingot/Slab Swivel Grab

This screw type grab allows for handling of a wide range of ingots. Additional grip force is applied by the wedge action of the points when the load is lifted. This unit is designed to grip an ingot in the vertical position and lay it down to the horizontal position. Grabs are custom designed per application.



### PRODUCT FEATURES:

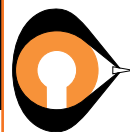
- Screw drive for a wide range of ingot widths.
- Bronze drive nuts for long life and smooth operation.
- Wedge action applies grip force.
- Low headroom design.
- Close tolerance machined slide beam and grip arms.
- Heavy duty worm gear reducer.
- Designed for ease of maintenance.
- Heavy duty drive guards.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Integral weighing system.
- Maximum open/minimum closed limit switches.
- Swivel rest arms for proper rollover clearance.
- Heavy duty function indicator lights.
- Wedge locks.
- DC power.
- Electrical reversing motor controls.

**NOTE:** To request a price quotation on your specific application, please fill in the Ingot/Slab Handling Application Evaluation on page B.13 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Ingot/Slab Handling



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## Model 274 - Ingot/Slab Handling Grab

This rack and pinion grab is designed to handle a wide range of ingots when in the horizontal position. Gripping force is applied through the legs by the tong action when an ingot is lifted. This unit is suitable for low headroom operations. Grabs are custom designed per application.



### PRODUCT FEATURES:

- Low headroom design.
- Replaceable wear plates.
- Dual rack and pinion drive.
- Grip force developed through tong geometry.
- Includes slip clutch for drive protection.
- Close tolerance machining for sliding arms.
- Designed for ease of maintenance.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Maximum open/minimum closed limit switches.
- Integral weighing system.
- Heavy duty function indicator lights.
- DC power.
- Electrical reversing motor controls.

**NOTE:** To request a price quotation on your specific application, please fill in the Ingot/Slab Handling Application Evaluation on page B.13 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Ingot/Slab Handling



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## Model 270 - Ingot/Slab Tong

This automatic Ingot/Slab Tong is for use in the primary metals industry. Tongs are designed to your specific requirements to suit the width, length, thickness and maximum weight to be lifted.



### PRODUCT FEATURES:

- Full range automatic adjustment.
- Auto-Latch mechanism for holding tong open, relax on top of the load grip.
- All pivot points furnished with hardened steel bushing/pins and lubrication fittings.
- Handles a wide range of product lengths, widths, thicknesses and weights.
- High temperature product capability.

### PRODUCT OPTIONS:

- Landing pads for straight horizontal motion of grip points to handle thinner loads.
- Replaceable urethane facing on rest portion of lower legs to protect load.

**NOTE:** To request a price quotation on your specific application, please fill in the Ingot/Slab Handling Application Evaluation on page B.13 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



# Ingot/Slab Handling - Application Evaluation



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Specify type of lifter desired: \_\_\_\_\_

## INGOT/SLAB INFORMATION:

Minimum: Width \_\_\_\_\_ Thickness \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_

Maximum: Width \_\_\_\_\_ Thickness \_\_\_\_\_ Length \_\_\_\_\_ Weight \_\_\_\_\_

In which position will ingot/slab be handled? ☐ Vertical ☐ Horizontal

Describe ingot/slab being lifted: ☐ Steel ☐ Aluminum ☐ Brass/Copper  
☐ Other, describe: \_\_\_\_\_

Does ingot/slab need to be protected against damage? ☐ Yes, describe: \_\_\_\_\_ ☐ No

In which position will the ingot/slab be handled? ☐ Vertical ☐ Horizontal

Is ingot / slab hot? ☐ No ☐ Yes, if yes please answer questions below:

Maximum load temperature: \_\_\_\_\_

Maximum time lifter is in contact with load: \_\_\_\_\_

Minimum cool down time between lifts: \_\_\_\_\_

## ADDITIONAL INFORMATION:

Select lifter service class required based on desired fatigue life:

Please reference the chart on page 3.

CMAA Crane Duty Class (A, B, C, D, E, F): \_\_\_\_\_

### Service Class

### Load Cycles

☐ 3 500,001 – 2,000,000

☐ 4 over 2,000,000

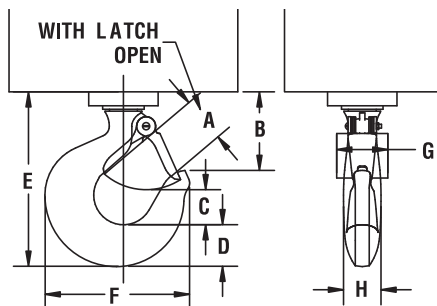
Please use the space provided below for additional application information or lifter options required (ex: headroom limitations, clearances where load is picked up and placed, etc.). \_\_\_\_\_

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## CRANE HOOK DATA:



INCHES

A \_\_\_\_\_ +0  
B \_\_\_\_\_ +0  
C \_\_\_\_\_ +0  
D \_\_\_\_\_ -0  
E \_\_\_\_\_ -0  
F \_\_\_\_\_ +/-  
G \_\_\_\_\_ -0  
H \_\_\_\_\_ -0

Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

### Measurement Tolerances

+0 = Measurement should be no larger but can be smaller than actual.  
-0 = Measurement should be no smaller but can be larger than actual.  
+/- = Measurement can be larger or smaller than actual.

For a price quote on your specific application,  
please complete the above form and fax to  
The Caldwell Group at **815-229-5686**  
or you can complete this form online at  
[www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Lifting Beams



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## Model 220 - Custom Lifting Beams

Lifting beams are available in a wide range of capacities and are custom designed to accommodate your application requirements. Lifting beams are designed per application.



### PRODUCT FEATURES:

- Low headroom design.
- Wide range of sizes and capacities.

### PRODUCT OPTIONS:

- Multiple spreads for hook placement.
- Multiple hoist lifting capability.
- High temperature environment capability.

**NOTE:** To request a price quotation on your specific application, please fill in the Lifting Beam Application Evaluation on page B.15 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Lifting Beam - Application Evaluation



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## LOAD INFORMATION:

Describe load: \_\_\_\_\_

Maximum weight: \_\_\_\_\_ Number of support points: \_\_\_\_\_

Distance between (spacing) support points: \_\_\_\_\_

Is load center of gravity centered between outer pick points? ☐ Yes ☐ No

If no, specify location in reference to pick points (attach a diagram if necessary). \_\_\_\_\_

Is load hot? ☐ No ☐ Yes, if yes please answer questions below (1, 2, 3):

1. Maximum load temperature: \_\_\_\_\_

2. Maximum time beam is in contact with load: \_\_\_\_\_

3. Minimum cool down time between lifts: \_\_\_\_\_

What type of attachment to the load?

☐ Shackles ☐ Swivel Hooks ☐ Lifting Slings ☐ Other (specify) \_\_\_\_\_

Describe specific requirements: \_\_\_\_\_

## CRANE INFORMATION:

Approximate distance between load and crane: \_\_\_\_\_

### Single crane hoist information

Capacity: \_\_\_\_\_

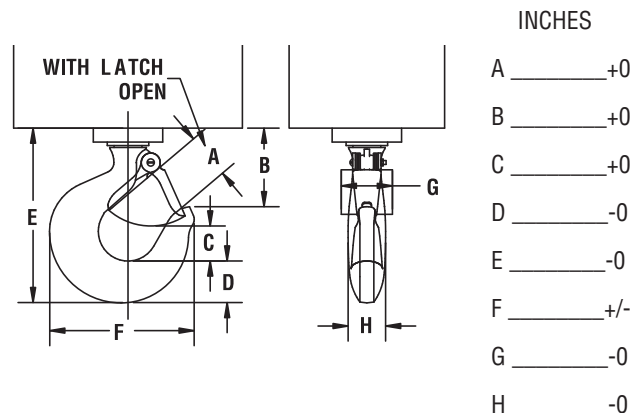
### Dual crane hoist information

Distance between: \_\_\_\_\_

Same capacity? ☐ Yes ☐ No

If no, specify capacities: \_\_\_\_\_

## CRANE HOOK DATA:



### Measurement Tolerances

+0 = Measurement should be no larger but can be smaller than actual.

-0 = Measurement should be no smaller but can be larger than actual.

+/- = Measurement can be larger or smaller than actual.

Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

For a price quote on your specific application, please complete the above form and fax to The Caldwell Group at **815-229-5686** or you can complete this form online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Motorized Rotating Crane Hooks



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## Model 250 - Motorized Rotating Crane Hook

Motorized Rotating Crane Hooks make rotating loads on the crane hook easy for the operator. Each unit is custom designed per your requirements.



### PRODUCT FEATURES:

- Sheave pin includes lubrication fittings.
- External lubrication on heavy duty thrust bearing.
- Heavy duty worm gear reducer.
- Chain and sprocket final drive.
- Drive protection includes slip clutch.
- Designed for ease of maintenance.
- 360 degree continuous rotation.
- AC power.

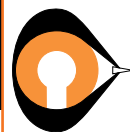
### PRODUCT OPTIONS:

- Pin bail type attachment.
- Clevis or lug instead of crane hook.
- Hook/drive disengagement.
- Bull gear and pinion final drive.
- Continuous rotation with electrical collector ring to operate motorized below-the-hook lifters.
- DC power.
- Mechanical stops.
- Electrical reversing motor controls.
- Integral weighing system.

**NOTE:** To request a price quotation on your specific application, please fill in the Motorized Rotating Crane Hook Application Evaluation on page B.17 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



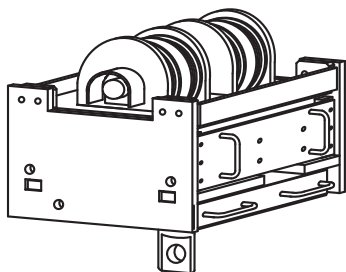
# Motorized Rotating Crane Hooks



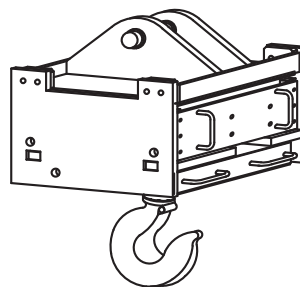
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## Clevis Style



## Pin Bail



## Motorized Rotating Crane Hook Application Evaluation

1. CMAA Crane Duty Class (A, B, C, D, E, F): \_\_\_\_\_

2. Capacity of crane: \_\_\_\_\_

3. Number of sheaves: \_\_\_\_\_

4. Sheave diameter: \_\_\_\_\_

5. Sheave spacing (A): \_\_\_\_\_ (X): \_\_\_\_\_

6. Type of sheave bearings: \_\_\_\_\_

7. Wire rope diameter: \_\_\_\_\_

8. Maximum degree of rotation required: \_\_\_\_\_

9. Will a motorized grab be suspended from the hook?

☐ Yes ☐ No

10. Operating voltage: \_\_\_\_\_

11. Headroom Dimension: \_\_\_\_\_

12. Describe load to be rotated:

a. Weight \_\_\_\_\_

b. Length \_\_\_\_\_

c. Width \_\_\_\_\_

d. Height \_\_\_\_\_

e. Shape \_\_\_\_\_

13. Will hook be exposed to a high temperature

environment? ☐ Yes ☐ No

14. Will hook be outdoors? ☐ Yes ☐ No

15. Operation controlled from:

☐ Cab ☐ Pendant ☐ Remote

16. Load scale required? ☐ Yes ☐ No

Describe requirements: \_\_\_\_\_

17. Options required: \_\_\_\_\_

Contact: \_\_\_\_\_

Company: \_\_\_\_\_

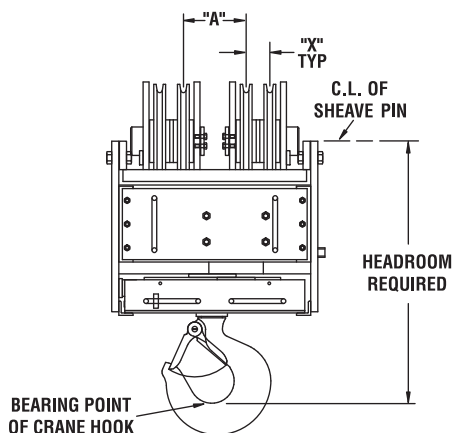
Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_



For a price quote on your specific application, please complete the above form and fax to The Caldwell Group at **815-229-5686** or you can complete this form online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Sheet/Plate Handling



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**Mill Duty Section  
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## Model 260 - Telescopic Sheet Lifter

This rack and pinion style lifter allows for handling of a wide range of sheets and plates with minimum manpower. Lifters are custom designed per application.



Shown with dunnage cutouts on carrying angle.



### PRODUCT FEATURES:

- Low headroom design.
- Replaceable wear plates.
- Heavy duty worm gear reducers.
- Drive protection includes slip clutch.
- Machined slide arms.
- Designed for ease of maintenance.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Heavy duty function indicator lights.
- Integral weighing system.
- Maximum open/minimum closed limit switches.
- Carrying angles with dunnage cutouts (pictured above).
- Detachable, auxiliary carrying angles for handling longer loads.
- Chain or cable reel mounted end hooks for thin gauge or extra wide material.
- DC power.
- Electrical reversing motor controls.

**NOTE:** To request a price quotation on your specific application, please fill in the Sheet/Plate Handling Application Evaluation on page B.22 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Sheet/Plate Handling



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## Model 266 - Parallelogram Sheet Lifter

The motorized Parallelogram Leg Drive Sheet Lifter is ideal where space between sheet stacks in storage is limited. This style lifter is designed so that the weight of the stacks of sheets or plates keeps the lifter closed. Optional motorized rotation allows the crane operator to spot the stack with precise positioning. Lifters are custom designed per application.



### PRODUCT FEATURES:

- Narrow aisle space design.
- All pivot points equipped with hardened steel bushings and pins equipped for lubrication.
- Heavy duty worm gear reducer.
- Drive protect includes slip clutch.
- Electrical controls include stall relay.
- Designed for ease of maintenance.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation with or without stops.
- Heavy duty function indicator lights.
- Integral weighing system.
- Maximum open/minimum closed limit switches.
- Carrying angles with dunnage cutouts.
- Chain or cable reel mounted end hooks for extra wide or thin gauge material.
- DC power.

**NOTE:** To request a price quotation on your specific application, please fill in the Sheet/Plate Handling Application Evaluation on page B.22 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).

# Sheet/Plate Handling

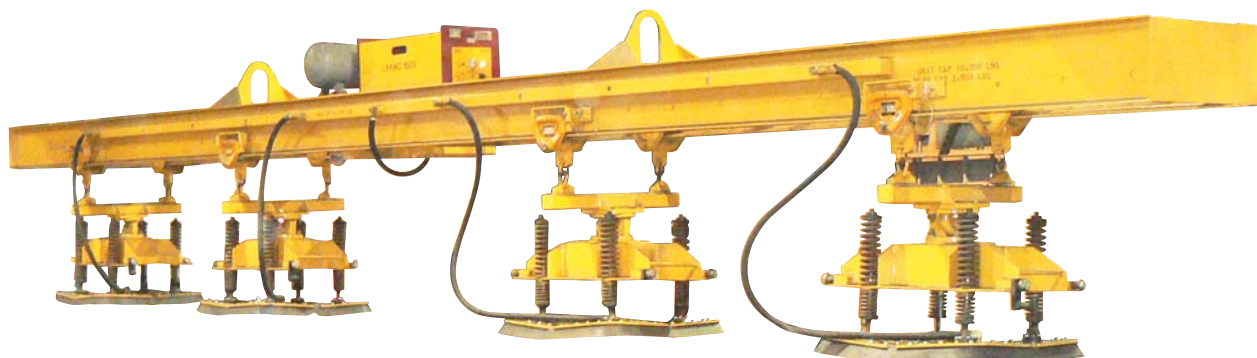


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## Model 222 - Vacuum Lifting Beam

These Vacuum Lifting Beams are designed to handle large sheets or plates of metal in the primary metal industry as well as various other industries. Designed to your material weight and size requirements. Units can be operated with a pendant, crane mounted controls, or radio controls. Lifting beams are custom designed per application.



### PRODUCT FEATURES:

- Trolley mounted crossarms for ease of adjustment.
- Vacuum pads and crossarms adjustable to handle a wide range of material sizes.
- Handles ferrous and non-ferrous material.
- Assures single sheet/plate handling.
- Minimizes product damage.
- Handles material up to 600 degrees Fahrenheit.
- Safety indicator lights.
- Vacuum reserve system to hold load during temporary power failure.
- Design assures quick attachment and release.
- AC power.

### PRODUCT OPTIONS:

- Powered rotation for horizontal location.
- Durable LED lights and gauges.
- Built in support stands.
- Low vacuum indicator warning system.
- DC power.

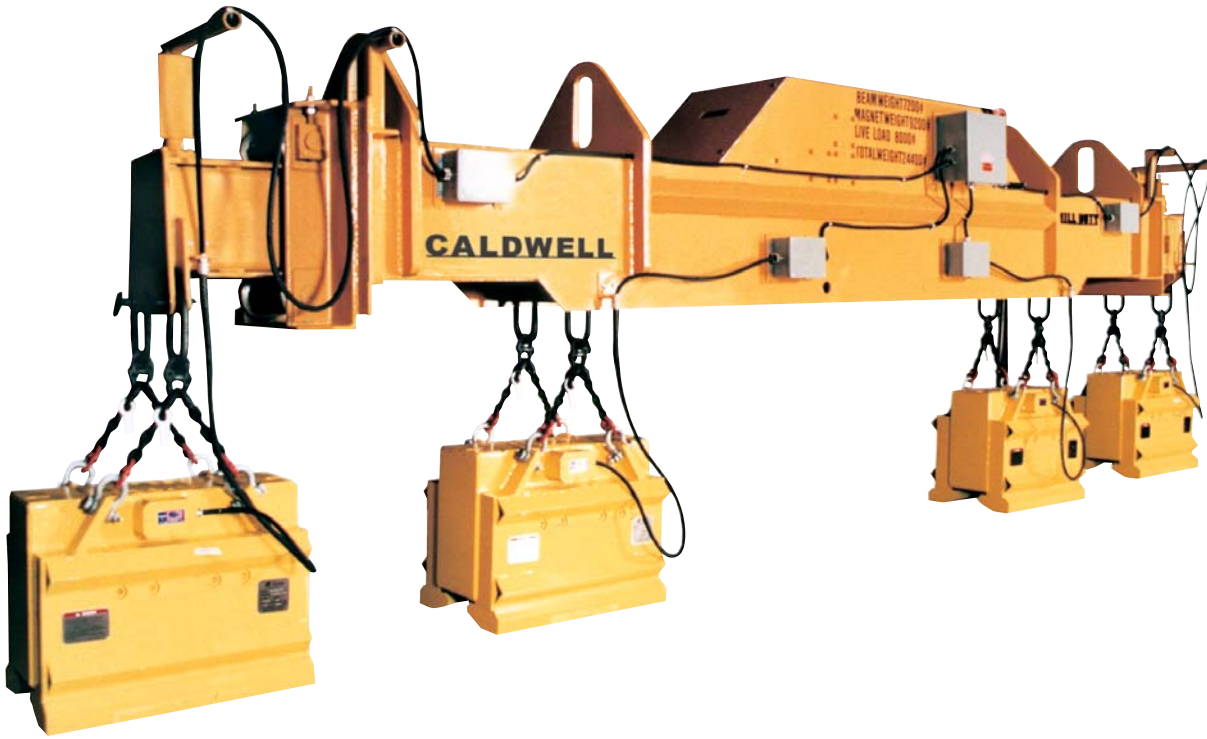
**NOTE:** To request a price quotation on your specific application, please fill in the Sheet/Plate Handling Application Evaluation on page B.22 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



# Sheet/Plate Handling

## Model 224 - Magnet Lifting Beam

This telescoping, rack and pinion style beam allows for handling of a wide variation of product lengths. Lifting beams are custom designed per application.



### PRODUCT FEATURES:

- Heavy duty rack and pinion telescoping drive.
- Telescopes to handle varying lengths.
- Heavy duty gear reducer.
- Drive protection includes slip clutch.
- Designed for easy maintenance.
- Designed to accommodate your lifting magnets.
- AC power.

### PRODUCT OPTIONS:

- Individual 90 degree rotation of magnets for wide loads.
- Parking stand.
- Non-telescopic units are also available.
- Supplied with lifting magnets.
- DC power.
- Electrical reversing motor controls.

**NOTE:** To request a price quotation on your specific application, please fill in the Sheet/Plate Handling Application Evaluation on page B.22 or online at [www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



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# Sheet/Plate Handling - Application Evaluation



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Specify type of lifter desired: \_\_\_\_\_

## LOAD INFORMATION:

Sheet and/or Plate Dimensions:

Minimum: Length \_\_\_\_\_ Width \_\_\_\_\_ Stack Height \_\_\_\_\_ Weight \_\_\_\_\_

Maximum: Length \_\_\_\_\_ Width \_\_\_\_\_ Stack Height \_\_\_\_\_ Weight \_\_\_\_\_

Will single sheet or plates be handled? ☐ Yes ☐ No If yes, minimum thickness: \_\_\_\_\_

Specify material being lifted: \_\_\_\_\_

Are loads palletized? ☐ Yes ☐ No ☐ Sometimes Specify pallet size \_\_\_\_\_

Sheet Condition: ☐ Dry ☐ Oily ☐ Banded ☐ Loose

Is load hot? ☐ No ☐ Yes, if yes please answer questions below:

Maximum load temperature: \_\_\_\_\_ Maximum time lifter is in contact with load: \_\_\_\_\_

Minimum cool down time between lifts: \_\_\_\_\_

## ADDITIONAL INFORMATION:

Operation required: ☐ Motorized ☐ Manual

If motorized, specify: ☐ DC ☐ AC Voltage \_\_\_\_\_ Phase \_\_\_\_\_ Cycle \_\_\_\_\_

Pendant required? ☐ Yes ☐ No

Are reversing motor controls required? ☐ No ☐ Yes If yes, ☐ Furnished Loose ☐ Mounted On Lifter

Select lifter service class required based on desired fatigue life:

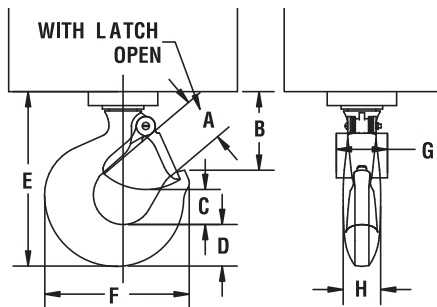
<u>Service Class</u>	<u>Load Cycles</u>
<input type="checkbox"/> 3	500,001 – 2,000,000
<input type="checkbox"/> 4	over 2,000,000

Please reference the chart on page 3.

CMAA Crane Duty Class (A, B, C, D, E, F): \_\_\_\_\_

Please use the space below to provide additional application information or options required (ex: headroom issues, space restrictions, lifter restrictions or options such as a chain wheel or end hooks). \_\_\_\_\_

## CRANE HOOK DATA:



INCHES

A \_\_\_\_\_ +0  
B \_\_\_\_\_ +0  
C \_\_\_\_\_ +0  
D \_\_\_\_\_ -0  
E \_\_\_\_\_ -0  
F \_\_\_\_\_ +/-  
G \_\_\_\_\_ -0  
H \_\_\_\_\_ -0

### Measurement Tolerances

+0 = Measurement should be no larger but can be smaller than actual.  
-0 = Measurement should be no smaller but can be larger than actual.  
+/- = Measurement can be larger or smaller than actual.

Contact: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

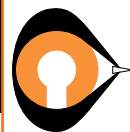
City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

For a price quote on your specific application,  
please complete the above form and fax to  
The Caldwell Group at **815-229-5686**  
or you can complete this form online at  
[www.caldwellinc.com/applications](http://www.caldwellinc.com/applications).



**Caldwell's Mill Duty Lifters** have been designed for specific tasks to withstand the particular forces imposed. Guidelines for installation, inspection, maintenance and repair, safe operation and operator training of these lifters follow (product specific information will be sent with each product):

## INSTALLATION

Below Hook Lifters shall be assembled and installed in accordance with the manufacturer's instructions, unless other specific arrangements have been approved in writing by manufacturer. When lifter/auxiliary power supply is required, user inspection shall ensure that the power source complies with ANSI/NFPA 70, National Electrical Code and shall include a power disconnect switch as required in accordance with ANSI/NFPA 70 based on the lifters requirements. If electrical connections are made, the power supply and corresponding power disconnects shall be connected to the line side (power supply side) of the crane disconnect or to an independent circuit as specified in the manufacturer's operating instructions.

Check for correct rotation of all pumps and power units, lubrication of moving parts, and filling of reservoirs, all in accordance with manufacturer's instructions.

## OPERATOR TRAINING

Lifters shall be operated in accordance with manufacturer's operating instructions, and by personnel who have received instructions described in the "Operating Practices" section of these guidelines. Training shall also include instruction regarding:

1. Details of the lifting cycle.
2. Application of the lifter to the load including (according to the manufacturer's instructions) adjustments to the lifter, if any, to adapt it to various sizes and kinds of loads.
3. Instruction in any special operations or precautions that may be required.
4. Recognition of proper load configuration. For example, preferred operation requires an orderly pattern of stacking.
5. Before assuming responsibility for using the lifter, an operator shall demonstrate his understanding of the lifting procedure to the instructor. The instructor should record notes of operator's demonstrated ability.

## INSPECTION

The lifter shall be visually inspected by or under the direction of an appointed person on a daily or weekly schedule depending on the nature of the lifter and the severity of the service.

Details to look for include but are not limited to:

1. Structural deformation.
2. Cracks in the structural frame, welds, hoist hook attachment points, mechanically operating parts, any attached slings, clevises and hooks.
3. Malfunctions during operation of a mechanically operating lifter.
4. Loose covers, fasteners and stops.
5. Faulty operation of automatic hold and release mechanisms.
6. Wear of hoist hooking points, load supporting clevises, pins, slings, linkages and mechanical parts.
7. Missing nameplates and markings. Contact Caldwell for replacements.

## MAINTENANCE AND REPAIRS

1. A preventive maintenance program should be established for each lifter by a qualified person based on recommendations made by its manufacturer.
2. A qualified person should have responsibility for repairs. Dated records and details of repairs and parts replacement should be carefully maintained by a qualified person, and copies kept in your possession.
3. Replacement parts shall be at least equivalent to the original manufacturer's specifications.

## OPERATING PRACTICES

### DO'S

1. The operator shall receive, read and understand the manufacturer's instruction manual.
2. The operator shall watch carefully that the lifter is performing properly during the lifting procedure.
3. The operator shall know the standard crane directing hand signals.
4. The operator shall only respond to signals from an appointed person. However, stop signals from anyone shall be obeyed.
5. The operator shall notify a designated person when he considers a load to be unsafe.
6. The operator shall inspect the lifter before using. Any defect observed shall be examined by a qualified person to determine if it is a hazard.

### DON'TS

1. The operator shall not operate a malfunctioning lifter or one with an "out of service" tag attached.
2. The operator shall not use the lifter for any purpose(s) other than those designated by the manufacturer's instruction manual.
3. The operator shall not use a lifter when the capacity, weight or safety markings are missing or are no longer legible.
4. No one shall make alterations or modifications to lifters without consulting the manufacturer.
5. No one shall obscure or paint over the manufacturer's capacity, weight, or safety markings.
6. Loads shall not be lifted higher than necessary or be left suspended unattended.
7. The lifter shall not lift a load that is not properly balanced for safe lifting.

## HANDLING THE LOAD

1. The lifter shall not be loaded in excess of its rated load.
2. Ensure the load can withstand forces applied by the lifter.
3. The combined weight of the lifter and load shall not exceed the rated load of the crane or hoist.
4. The lifter shall be applied to the load in accordance with the manufacturer's recommended operating procedure.
5. Lifter ropes and chains shall not be kinked, and multiple part lines shall not be twisted about each other.
6. The lifter shall not touch obstructions during load movement.
7. The lifter shall not be loaded with loose material that might fall during movement.
8. The operator or other personnel shall not place themselves or any part of their bodies beneath suspended loads.
9. The load or lifter shall not be slid on the floor or other surface.
10. The lifter shall not be used for loads for which it is not designed.
11. If suspended loads are moved manually, they shall be pushed, not pulled.
12. A preliminary lift of a few inches shall be made to establish that the load is stable.
13. All loads shall be accelerated and decelerated smoothly.

**Modifications or repairs performed on your lifting equipment without prior written approval from The Caldwell Group, Inc. voids your warranty. Refer to ASME standards for information regarding the liability of repaired or modified lifters.**



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