Acrison®

Bulk Bag Unloader
Model 820

For Dry Solid Materials

Advanced design technologies for superior performance and reliability.

Acrison®

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Model 820

For Dry Solid Materials

Acrison's Model 820 Bulk Bag Unloader provides a clean, safe, and highly effective means for discharging a wide assortment of dry solid materials from within various size and type Bulk Bags. The bags, which can weigh up to 4000 pounds, may be supplied with or without a liner.

A Model 820 Bulk Bag Unloader, designed for bag loading with a forktruck, is shown discharging into a pneumatic conveying system.

Model 820 Bulk Bag Unloader

Operation

Positive product discharge is reliably achieved through the use of regulated vibration uniformly applied to the body of the Unloader, and in turn, directly into the Bulk Bag (and its contents). Vibration is produced by an adjustable, heavy-duty motorized vibrator, powered by a TENV motor.

When a Bulk Bag is placed into a Model 820 Unloader, the bag 'sits' completely on the bed of the unloader, conforming to its shallow body. When energized, powerful flow-inducing forces (vibration) transfer from the body of the Unloader into the material contained within the bag, effectively and efficiently causing its contents to discharge until empty. Vibration is confined to the body of the Unloader.

The Model 820 Bulk Bag Unloader is resiliently mounted onto a ruggedly constructed, heavy-duty tubular structure designed for floor mounting. A Bag Lifting Rack attaches to the lifting straps or loops of a Bulk Bag to lift the bag into the Unloader. From floor level, Bulk Bags are lifted and placed into the Unloader by a forktruck, a hoist and trolley system incorporated into the Unloader's support structure, or by a separate overhead hoist.

Once a Bulk Bag has been placed into the Unloader, the bag is primarily supported by the Unloader, and to a minimal extent, by the Bag Lifting Rack. As an option, the Bag Lifting Rack may include Acrison's Automatic Bag Tensioner to automatically maintain upward lift on the bag as it empties, facilitating the emptying process. The Bag Lifting Rack may also include the optional Bag Liner Tensioner.

In addition, the Model 820 Bulk Bag Unloader includes Acrison's Model 82-SCM Bag Spout Clamping Mechanism for easy, dust-free bag spout untying and attachment to auxiliary equipment (process interface). In addition, the inclusion of Acrison's optional Model 82-SCV Bag Spout Closure Valve provides the ability to easily close-off and remove a partially empty bag in a dust-controlled manner.

Operator attaching the lifting straps of a Bulk Bag to the Unloader's Bag Lifting Rack for loading by a forktruck. The Bag Lifting Rack includes Acrison's Automatic Bag Tensioner.

Model 820 Bulk Bag Unloader

In many applications, product discharges from the Bulk Bag Unloader into an Acrison metering mechanism (e.g., feeder), mounted beneath. In other applications, the Bulk Bag Unloader may discharge into auxiliary equipment, typically for transporting elsewhere.

The Model 820 Bulk Bag Unloader is often provided as an integral component of a system that includes Acrison Volumetric and/or Gravimetric Feeders.

For example, operation of the Unloader may be controlled by a demand probe mounted in the supply hopper of an Acrison metering mechanism, or in the transition chute of a take-away conveyor located beneath (e.g., a screw or belt conveyor, pneumatic system, etc.).

In other applications, operation of the Model 820 Bulk Bag Unloader is initiated at the same time a valve of some type is energized (opened), possibly to supply product to a Weight-Loss Weigh Feeder for refill, which operation ceases when refill has been satisfied and the valve closes.

A Model 820 Bulk Bag Unloader discharging into an Acrison Volumetric Feeder (operates on demand by a level probe in the feeder's hopper). The Bulk Bag is loaded by an integral hoist and the Bag Lifting Rack includes both Acrison's optional Automatic Bag Tensioner and Bag Liner Tensioner.

A Model 820 Bulk Bag Unloader discharging (on demand) into a pneumatic conveying system. The Bulk Bag is loaded by a forktruck, and the Bag Lifting Rack includes Acrison's optional Automatic Bag Tensioner.

Optional Equipment/Construction/Accessories

- Structure designed for use with an electric (or pneumatic) hoist and trolley assembly.
- Integral hoist and trolley, manual or motorized with hand controls.
- Various Bag Lifting Racks are available with Acrison's Automatic Bag Tensioner to maintain the Bulk Bag taut at all times during the bag emptying process, which also aids in the downward flow of material through and out of the Bulk Bag.
- Model DC-100 Dust Collector.
  Although the Model DC-100 Dust Collector is an optional feature available with the Model 820 Bulk Bag Unloader, it plays an important role to maintain a completely dust-free environment during normal operation, when removing a partially emptied Bulk Bag, or when removing an empty bag. When removing an empty bag, the Dust Collector draws-out the majority of dust-laden air entrained within the bag itself, 'deflating' the Bulk Bag prior to removal. In addition, the Dust Collector will also remove any residual dust remaining in the bag spout area during the bag removal process.
- Bag Liner Tensioner.
- Bag Spout Closure Valve (Model 82-SCV)
- Sanitary construction.
- All stainless steel construction.
- The Model 820 Bulk Bag Unloader can be mounted on an Acrison Model 404Z(BU) Weighing System (Scale) for batch weighing applications. The Bulk Bag can be loaded into the Model 820 Unloader by either a forktruck or an independent overhead hoist.
- Bulk Bag Unloader support structure mounted on load cells, typically for level indication, inventory control, etc.
- Electrical construction for operation in hazardous areas. Some restrictions may apply to a hoist and trolley for use in hazardous areas (a pneumatically operated hoist and trolley may be an option).

Model 820 Bulk Bag Unloader

Model 82-SCM Bag Spout Clamping Mechanism

Designed for use with the Model 820 Bulk Bag Unloader, Acrison's patented Model 82-SCM Bag Spout Clamping Mechanism provides a quick and easy method of securely affixing (clamping) the discharge spout of a Bulk Bag to auxiliary equipment for a fully dust-tight arrangement.

Acrison's Bag Spout Clamping Mechanism employs a "Clam-Shell" clamping system that allows an operator unobstructed access to attach the bag spout to the process interface connection and downstream equipment.

After a Bulk Bag has been placed into a Model 820 Bulk Bag Unloader, connection of the bag's spout for unloading is illustrated.

The following photographs show a Model 820 Bulk Bag Unloader equipped with both Acrison's optionally available Model 82-SCV Bag Closure Valve and Model DC-100 Dust Collector.

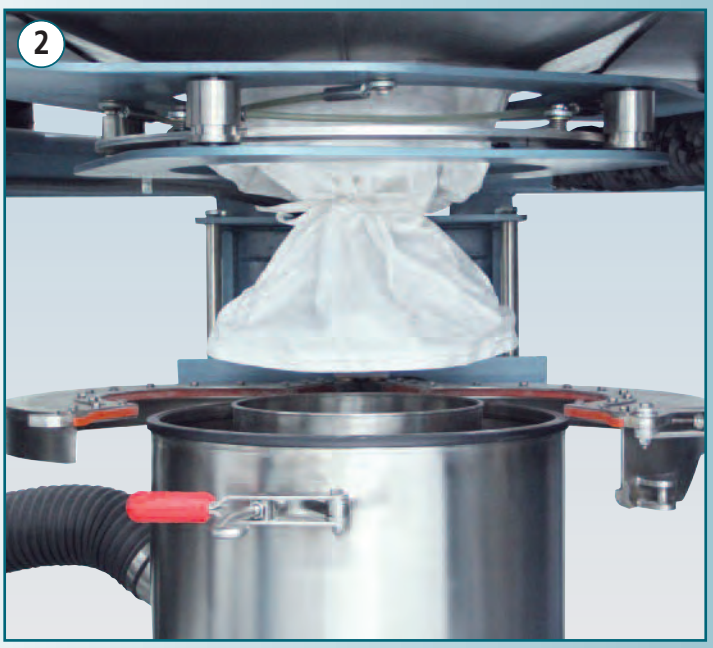
(1) Looking from beneath the body of the Unloader, the optionally supplied *Model 82-SCV Bag Spout Closure Valve* can be seen in the open position; the bag spout has not yet been pulled down, and the *Model 82-SCM Bag Spout Clamping Mechanism* is in the low position.

(2) The still tied bag spout has been pulled down.

(3 and 4) The *Model 82-SCM Bag Spout Clamping Mechanism* is raised to its upper position, and the still tied bag spout is then placed over the *inside cylindrical bag spout adapter of the Bag Spout Clamping Mechanism.*

(5) The manually operated *'Clam Shell Clamp'* is closed, positively securing the still tied bag spout to *the inside bag spout adapter*, while simultaneously sealing the *outer surface of the process interface connection* for totally dust-tight unloading.

(6 and 7) The bag spout is then untied and the *Bag Spout Clamping Mechanism* lowered until the bag spout becomes taut, thereby allowing product discharge to flow freely through both the bag spout and process interface transition chute, and into the process.

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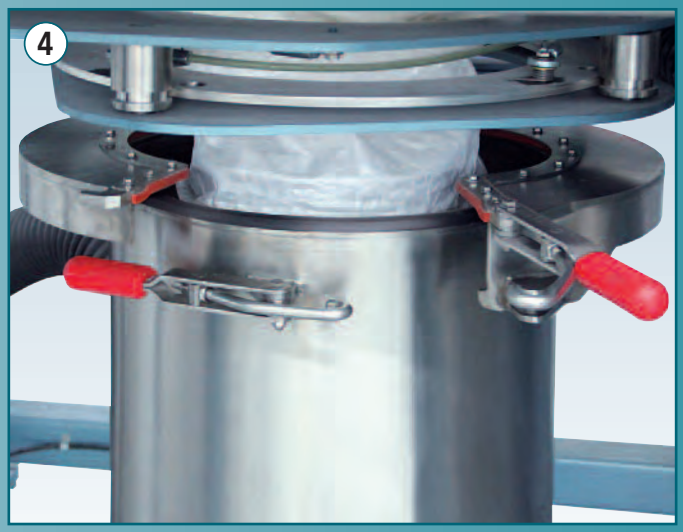
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Model 820 Bulk Bag Unloader

Model 82-SCV Bag Spout Closure Valve

Specifically designed for the Model 820 Bulk Bag Unloader, Acrison's optional (patented) Model 82-SCV Bag Spout Closure Valve is typically used to close-off the discharge spout of a Bulk Bag so that the bag spout can be re-tied, usually when it's desired to remove a partially emptied bag.

When this mechanism is set in motion by a pneumatic actuator, four high strength coated flexible steel cables converge around the center of the Bulk Bag's discharge spout forming a tight "basket weave" closure. Once closed, product is prohibited from discharging.

Close-up of a Model 82-SCV Bag Spout Closure Valve in the open position (top), and then closed onto the bag spout (bottom). Normally, this option is included when a user desires to close-off a partially empty bag. Once closed, the bag spout can then be tied-off and the bag removed.

Operator placing the lifting straps of a Bulk Bag onto the hooks of a Bag Lifting Rack for lifting into a Model 820 Bulk Bag Unloader by a forktruck. The Bag Lifting Rack includes Acrison's optional Automatic Bag Tensioner.

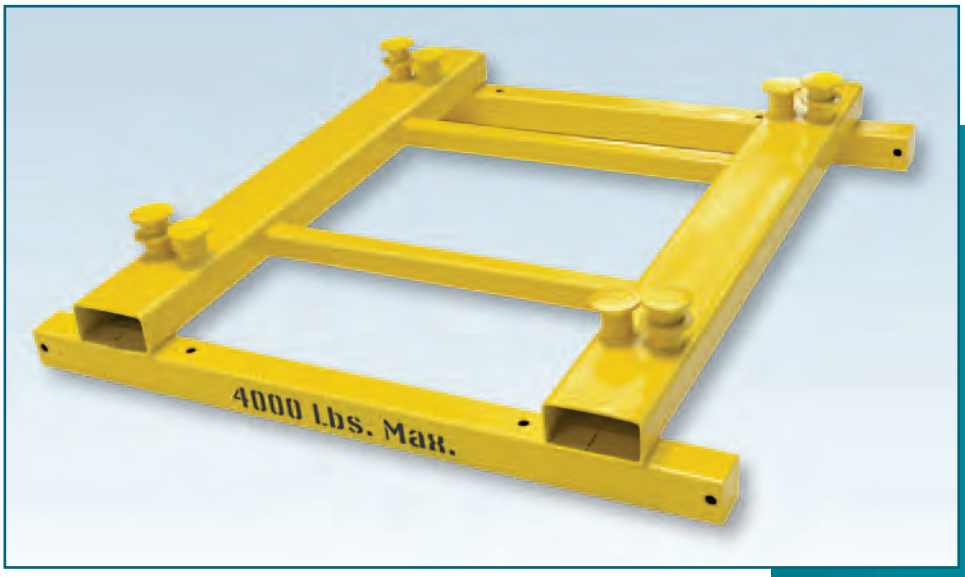
After attaching the Bulk Bag to its Lifting Rack, the Operator lifts the bag into the Model 820 Bulk Bag Unloader.

Model 820 Bulk Bag Unloader

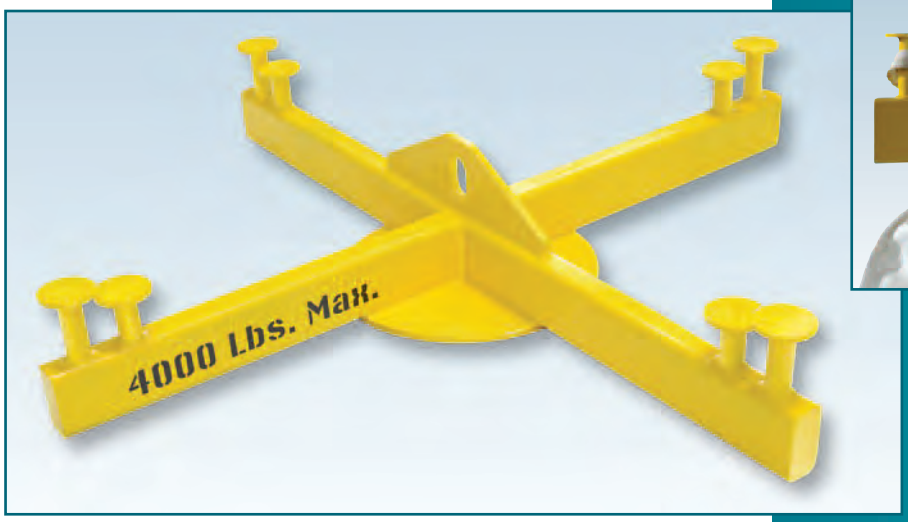
Bag Lifting Racks

The Model 820 Bulk Bag Unloader is available with several different Bag Lifting Rack configurations, the selection of which depends on how the Bulk Bag will be lifted into the Unloader. Bag Lifting Racks include either a Lifting Lug for attachment to a hoist, or channels for the blades of a forktruck. Additionally, Bag Lifting Racks may also be equipped with Acrison's Automatic Bag Tensioner and Bag Liner Tensioner.

Acrison's various Bag Lifting Racks are heavy-duty in construction, designed with robust bag attachment studs as standard. However, when furnished with Acrison's optional Automatic Bag Tensioner, lifting hooks (with spring actuated safety latches) are provided for safe and positive attachment to the four bag lifting straps.



A basic Bag Lifting Rack for placing a Bulk Bag into the Model 820 Unloader with a forktruck.

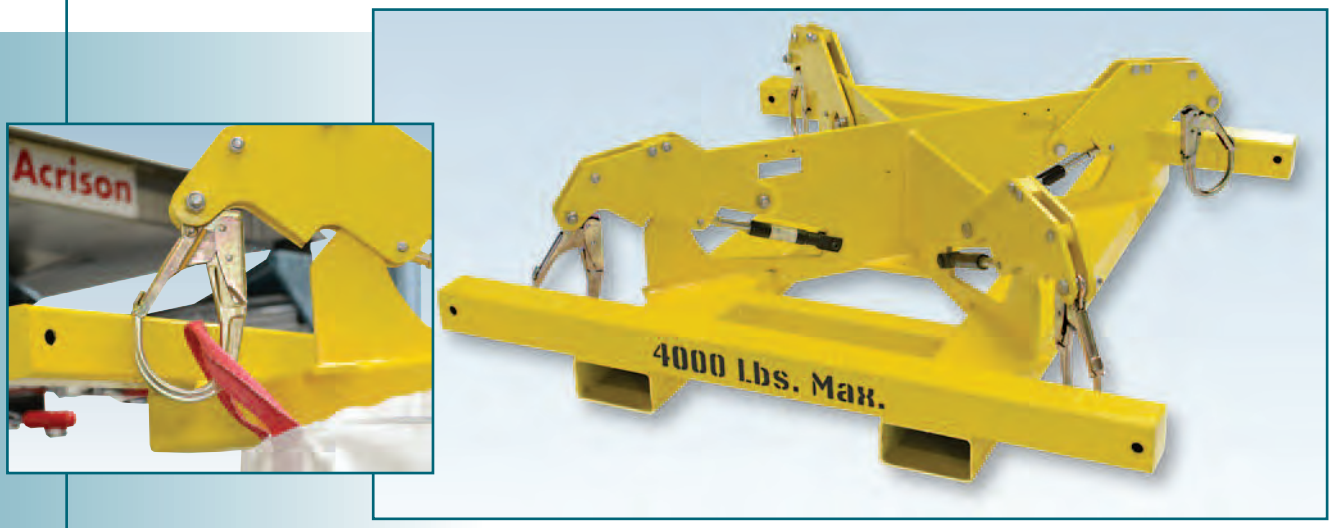


A basic Bag Lifting Rack for placing a Bulk Bag into the Model 820 Unloader with a hoist.

Bag Lifting Rack with Acrison's optional Automatic Bag Tensioner and Bag Liner Tensioner

To avoid the possibility of a Bulk Bag folding inward during the unloading process, which can adversely affect downward product flow and bag emptying, Acrison can provide an Automatic Bag Tensioning Mechanism that automatically maintains upward tension (or lift) on a Bulk Bag as the bag empties. The Automatic Bag Tensioner also eliminates the need for operator intervention during the Bulk Bag discharging process to verify that the bag hasn't developed any pleats or folds that could trap material and interfere with product discharge.

The Automatic Bag Tensioning Mechanism incorporates four independently actuated heavy-duty hooks (with safety latches) that individually attach to the four lifting straps (or loops) of a Bulk Bag to lift the bag vertically as its contents are being discharged to ensure the bag empties completely. The Automatic Bag Tensioner may be utilized with any of Acrison's Bag Lifting Racks, and may also be equipped with a Bag Liner Tensioner to maintain upward tension on a Bag Liner to prohibit the possibility of the liner sliding downward with the material, which could also interfere with product discharge.



A Bag Lifting Rack for placing a Bulk Bag into the Model 820 Unloader wth a forktruck, which includes Acrison's optional Automatic Bag Tensioner.

A Bag Lifting Rack for placing a Bulk Bag into the Model 820 Unloader with a hoist, which includes both Acrison's optional Automatic Bag Tensioner and Bag Liner Tensioner.

Model 820 Bulk Bag Unloader

Forktruck Loading

When it's desired to lift a Bulk Bag into the Model 820 Bulk Bag Unloader with a forktruck, the Unloader's main structure and Bag Lifting Rack are specifically designed for this purpose. The Bag Lifting Rack is raised into position and placed onto adjustable mounting rails located on the upper portion of the Unloader's structure. The mounting rails have guides to aid in positioning the Bag Lifting Rack.

When loading with a forktruck, the Model 820 Bulk Bag Unloader is available with several different Bag Lifting Racks and optional accessories, the selection of which is determined by user preference and/or the specifics of a given application. The basic Bag Lifting Rack includes four bag support studs for attachment of the Bulk Bag, and channels for the blades of a forktruck.

For such applications, the Unloader is furnished with a Bag Lifting Rack Support Cradle designed with two horizontal rails that extend across the Unloader's Main Support Structure to support the Bag Lifting Rack.

The Support Cradle includes four mounting pin assemblies, two on each end, for attachment of the Cradle onto each of the four vertical support beams of the Unloader's Main Support Structure, which also includes cradle height adjustment provisions. [The Bag Lifting Rack Support Cradle requires vertical (height) adjustment based on the length of the Bulk Bag.] The majority of the bag's weight rests on the bed of the Unloader, with only a slight amount of lift on the Lifting Rack.

It is recommended to use a Bag Lifting Rack equipped with Acrison's optional Automatic Bag Tensioner to maintain upward lift as the bag empties. This will enhance the bag emptying process by eliminating pleats and folds that may form as the bag empties.

Model 820 Bulk Bag Unloader

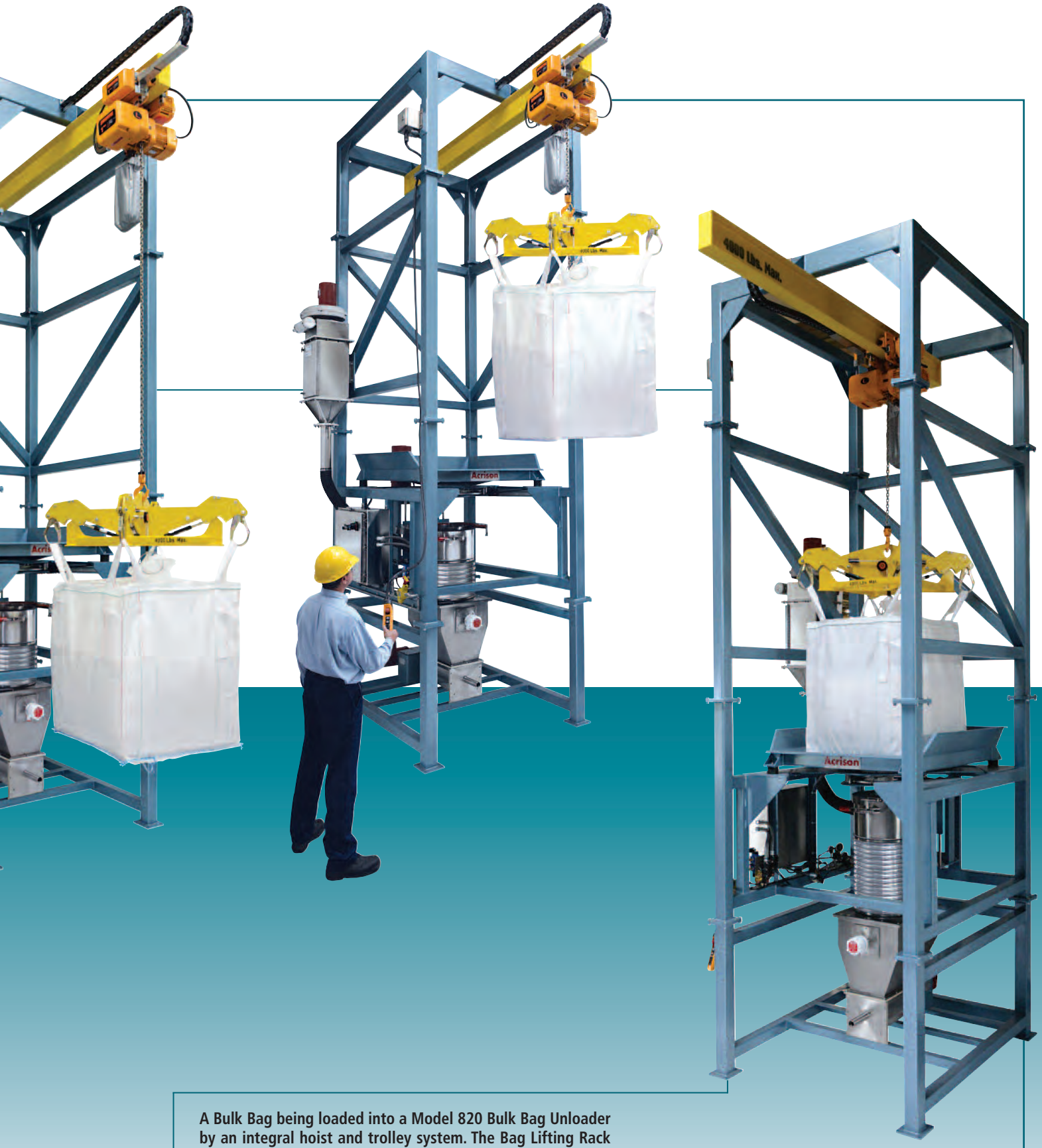
Hoist and Trolley Loading

When it's desired to lift a Bulk Bag into the Model 820 Bulk Bag Unloader with a hoist, the Unloader's main structure and Bag Lifting Rack are specifically designed for this purpose. The bag is raised into position by the hoist and remains attached to the hoist during the unloading process.

When loading with a hoist, the Model 820 Bulk Bag Unloader is available with several different Bag Lifting Racks and optional accessories, the selection of which is determined by user preference and/or the specifics of a given application. The basic Bag Lifting Rack includes four bag support studs for attachment of the Bulk Bag, and a lifting lug for attachment of the hoist.

After a Bulk Bag has been lifted into position above the body of the Unloader, the bag is then lowered until the majority of the bag's weight rests on the bed of the Unloader, with only a slight amount of lift on the Lifting Rack. If the Bag Lifting Rack is equipped with Acrison's Automatic Bag Tensioner, it will maintain upward lift as the bag empties, facilitating the emptying process, eliminating the need for adjusting the height of the Bag Lifting Rack as product discharges.

However, if the Bag Lifting Rack does not include the Automatic Bag Tensioner, the Lifting Rack may require a certain amount of upward height adjustment as the bag empties to ensure that the bag empties properly and completely.



A Bulk Bag being loaded into a Model 820 Bulk Bag Unloader by an integral hoist and trolley system. The Bag Lifting Rack includes both Acrison's optional Automatic Bag Tensioner and Bag Liner Tensioner.

Model 820 Bulk Bag Unloader

Due to height and various other constraints, it's often necessary to install Bulk Bag Unloaders in areas that provide easy and unrestricted access for loading the bags. In such applications, product typically discharges out of the Unloader into a conveying system (various types are available) that transports the material the necessary distance to the point of application.

Shown is a Model 820 Bulk Bag Unloader discharging into a pneumatic system that conveys and stores the material in its associated receiver hopper. The receiver hopper is mounted above an Acrison Model 405-170-0 'Weight-Loss' Weigh Feeder (located elsewhere) and refills the weigh feeder's supply hopper upon command from the feeder's control system. Refill is accomplished by means of an automatic valve located on the bottom of the receiver hopper.

A Model 820 Bulk Bag Unloader discharging into a flexible screw conveyor.
The Bulk Bag is loaded by a forktruck.

Model 820 Bulk Bag Unloader

Definition of Call-outs

(Reference page 19)

(1) Main Support Framework - The standard Main Support Framework of the Model 820 Bulk Bag Unloader is constructed of 4" square tubing (3/16" wall thickness) for exceptional rigidity, durability and longevity; the tubing does not have any mounting holes drilled through it as a means for adjusting the height of Bulk Bags. Also, the design of the support framework precludes water and other contaminants from entering the tubing, which over time, could compromise the structural integrity of the framework. The standard framework is carbon steel, painted with a durable industrial finish. As an option, the framework can also be provided in stainless steel.

(2) Bulk Bag Unloader - The Body of the Bulk Bag Unloader is mounted on four resilient (rubber) isolators that allow the Unloader to vibrate uniformly and to effectively impart vibration into the bag for positive emptying. The isolators also minimize the amount of vibration transmitted into the support framework (structure).

(3) Vibrator - An adjustable, heavy-duty, permanently lubricated electric Vibrator powers the Model 820 Bulk Bag Unloader. The Vibrator's adjustable settings produce various levels of vibration that can be tailored to ensure positive discharge of a wide variety of dry solid materials out of virtually any Bulk Bag.

(4) Acrison's Model 82-SCV Bag Spout Closure Valve (optional)

(5) Acrison's Model 82-SCM Bag Spout Clamping Mechanism

(6) Process Interface Transitional Chute

(7) Bulk Bag

(8) Integral Electric Hoist and Trolley - When a Model 820 Bulk Bag Unloader is equipped with an optional Hoist with Trolley (a motorized Trolley is an option), floor-level loading and positioning the Bulk Bag into the body of the Unloader is greatly facilitated. Typically, the Electric Hoist is rated for a maximum capacity of 4000 pounds.

(9) Operator Hoist and Trolley Controls

(10) Hoist Cable Wireway - When the Model 820 Bulk Bag Unloader is furnished with an integral electric Hoist and Trolley for loading bags, the applicable electrical cables are housed in a flexible wireway that organizes, protects and defines the path of the cabling as the Hoist and Trolley travel back and forth on the mounting I-beam.

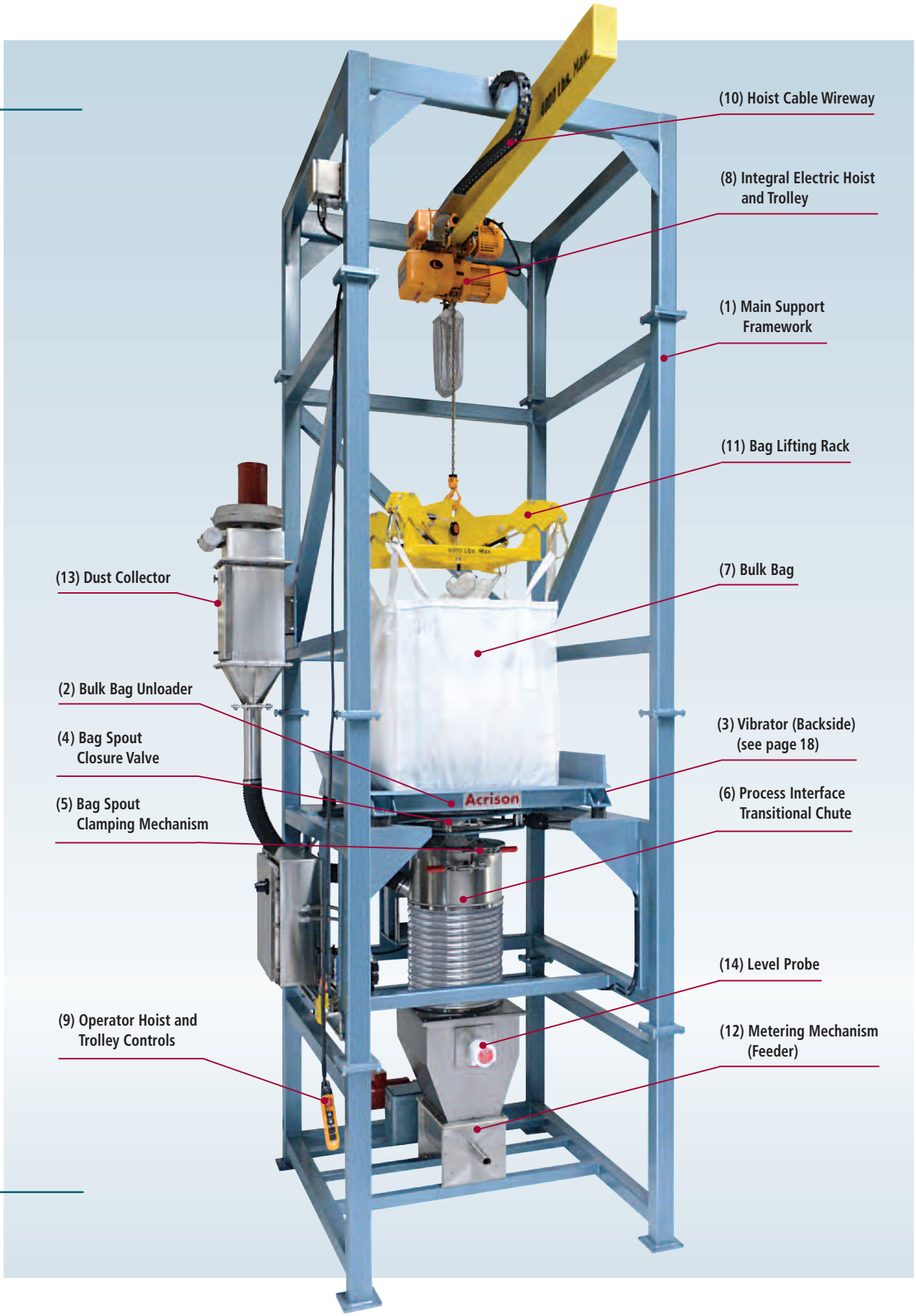
(11) Bag Lifting Rack (shown with Acrison's optional Automatic Bag and Liner Tensioners)

(12) Metering Mechanism (Feeder) - The selection of the Acrison metering mechanism into which an Unloader discharges is based on the handling characteristics of the product or products that will be handled. The Bulk Bag Unloader can also discharge into a mechanical or pneumatic conveyor.

(13) Dust Collector - Acrison's optional Model DC-100 Dust Collector is utilized in conjunction with Acrison Bulk Bag Unloaders to remove dust that may be generated, typically when untying the spout of a bag. The Model DC-100 includes an integral fan that draws air through a self-cleaning cartridge filter, typically arranged so that the collected dust continually discharges into the metering mechanism into which the Bulk Bag is discharging. Please reference Design Specification 1-200-0835.

(14) Level Probe - When Acrison Volumetric Feeders, or the hoppers associated with various types of conveying systems, are mounted directly beneath a Model 820 Bulk Bag Unloader, operation of the Unloader is typically controlled by a level probe installed in the hopper of such equipment (e.g., as shown on the adjacent page). When refilling the integral supply hopper of an Acrison 'Weight-Loss' Weigh Feeder, operation of the Unloader is initiated upon a low hopper level indication from the weigh feeder's controller, which ceases when refill has been satisfied.

A partial view of the side and back of a Model 820 Bulk Bag Unloader showing a portion of the Unloader's bed, the Model 82-SCM Bag Spout Clamping Mechanism, and the vibrator.


(10) Hoist Cable Wireway
(8) Integral Electric Hoist and Trolley
(1) Main Support Framework
(11) Bag Lifting Rack
(13) Dust Collector
(7) Bulk Bag
(2) Bulk Bag Unloader
(4) Bag Spout Closure Valve
(5) Bag Spout Clamping Mechanism
(3) Vibrator (Backside) (see page 18)
(6) Process Interface Transitional Chute
(14) Level Probe
(9) Operator Hoist and Trolley Controls
(12) Metering Mechanism (Feeder)
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Acrison products...

- Models 101 and 130 Volumetric Feeder Series
- Models V-101 and V-130 Volumetric Feeders
- Model 1015 Volumetric Feeder Series
- Model 105 Volumetric Feeder Series
- Model W-105 Volumetric Feeder Series
- Model 120 Volumetric Feeder
- Model 140 Volumetric Feeder Series
- Model 170 Volumetric Feeder Series
- Model 905-14 Volumetric Feeder
- Bin Discharger Feeders
- Model 200 Series Weigh Belt Feeders
- Model 203B Series Weigh Auger Feeders
- Model 270 Series of In-Line Weigh Feeders
- Models 402, 404, 405, 406, 407 and 410 Series ("Weight-Loss-Differential") Weigh Feeders
- Model Series 403 ("Weight-Loss-Differential") Weigh Feeders
- Model 403B(D) Batch/Dump Weighing Systems
- Model 404BZ(BU) Bulk Bag Unloader Batch Weigher
- Models 350 and 301 Continuous Blenders and Blending Systems
- Multiple Auger Bin Dischargers and Multiple Auger Bin Discharger Hoppering Systems
- Vibratory Bin Discharger Hoppering Systems
- Model 170-BD-30 Bin Discharger
- Model 800 Series Bulk Bag Unloaders
- Model 500 Series Polyelectrolyte Preparation Systems
- Water and Waste Water Treatment Systems
- Volumetric and Gravimetric Feeder Controllers and Control Systems
- Silo Systems
- Accessory Equipment for Acrison Products
- Systems Engineering

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Acrison®, Inc.

20 Empire Blvd., Moonachie, NJ 07074
201-440-8300 • Fax: 201-440-4939
Toll Free: 800-4ACRISON
Email: informail@acrison.com
www.acrison.com

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