

# Acrison<sup>®</sup>

## Volumetric Feeders Models BDFM, BDF-1, BDF-1.5, BDFX-1.5 and BDFX-1.5-2

*For Dry Solid Materials*



*Advanced Materials-Handling Technologies Combined  
with Strong Mechanical Designs for Superior Metering  
Performance and Operational Reliability.*

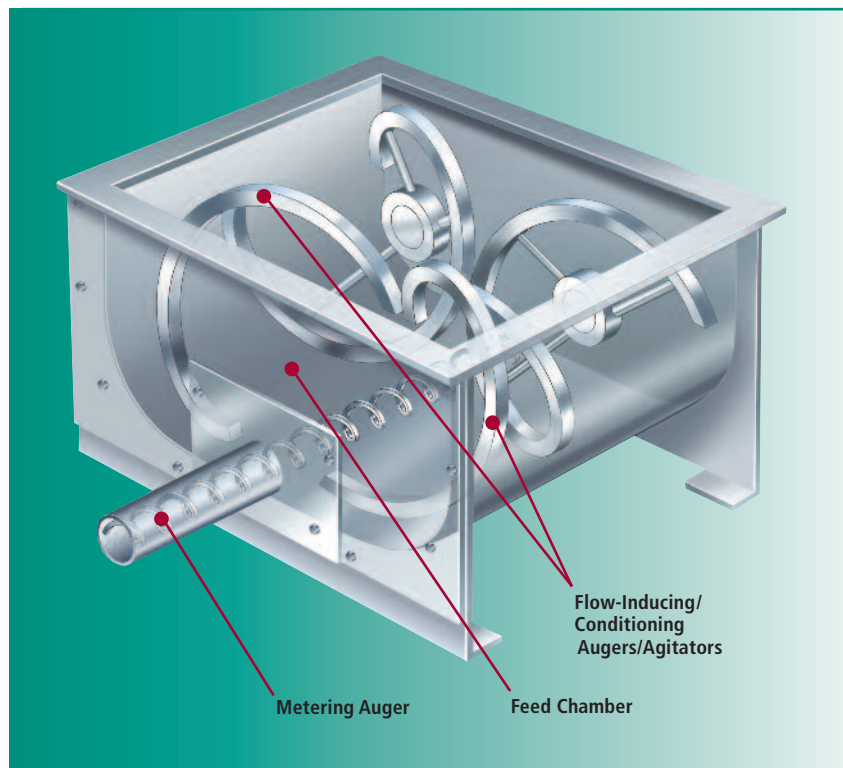
## Volumetric Dry Solids Feeders

### Models BDFM, BDF-1 and BDF-1.5

The Models BDFM, BDF-1 and BDF-1.5 Volumetric Feeders combine the highly effective *'flow-inducing/conditioning action'* generated by dual, counter-rotating Augers/Agitators with a Metering Auger for accurately and reliably feeding a wide assortment of dry solid materials.

Within the feed chamber, the unique *'action'* created by the slowly rotating large Augers/Agitators ensures that the much smaller, higher speed Metering Auger is continuously and positively *'filled'* with product of uniform consistency resulting in an exceptionally high degree of metering performance. In addition, the internal design of the feed chamber eliminates any type of convergence that could prove detrimental to product flow and feed.

Mechanically, the dual Augers/Agitators are geared together to rotate at the same speed, with the Metering Auger operating at a much slower speed. The feeders are powered by a single, heavy-duty, variable speed gearmotor.



### Standard Features

- Product contact surfaces are 304 stainless steel, including all drive shafts and seal components.
- Metering auger is 316 stainless steel and includes a threaded attachment to its drive shaft.
- Model BDFM augers/agitators are threaded onto their drive shafts.
- Model BDF-1 and BDF-1.5 augers/agitators are flange-attached to their respective drive shafts.
- The Model BDFM is furnished with a 0.25 cubic foot vertical supply hopper. Additional hopper sizes may be available depending upon product characteristics.
- The Model BDF-1 is furnished with a 1 cubic foot vertical supply hopper. Additional supply hopper sizes may be available depending upon product characteristics.
- The Model BDF-1.5 is furnished with a 4 cubic foot vertical supply hopper. Additional hopper sizes may be available depending upon product characteristics.
- The Models BDFM, BDF-1 and BDF-1.5 Feeders are furnished with AC or DC variable speed gearmotor drives available with various speed turn-down ratios..
- The Model BDFM is powered by a 1/2 HP motor; the Model BDF-1 by a 3/4 HP motor, and the Model BDF-1.5 by a 1 HP motor. The motors are totally enclosed.

- Dust-tight, heavy-duty construction; silent when operating.
- All non-stainless steel external surfaces are painted with Acrison's standard blue enamel.
- Temperature:  
Ambient . . . . -20 to 140 degrees F  
Product . . . . -20 to 200 degrees F

### Optional / Accessory Equipment

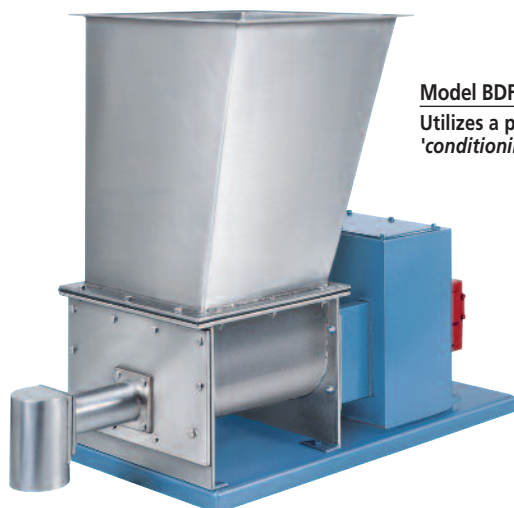
- Various materials of construction.
- Integral supply hoppers (larger than the standard sizes) may be available depending upon product-handling characteristics.
- Various variable speed AC and DC controllers, speed ranges, and control modes.
- Quick-disconnect construction for easy cleanout.
- Sanitary construction to satisfy USDA and FDA regulations (includes quick-disconnect construction).
- High temperature construction (product temperature up to 350 degrees F).
- Pressure construction (14.9 PSIG operating maximum).

# Models BDFM, BDF-1 and BDF-1.5 Volumetric Feeders



**Model BDFM**

Utilizes a pair of 3.75" diameter 'conditioning' augers/agitators.



**Model BDF-1**

Utilizes a pair of 6" diameter 'conditioning' augers/agitators.



**Model BDF-1.5**

Utilizes a pair of 10" diameter 'conditioning' augers/agitators.

**Volumetric metering accuracies generally range between  $\pm 1$  and 2 percent or better (error) for the majority of products. Accuracy is based on a given number of consecutive one minute samples.**

**MODEL BDFM FEEDER CAPACITY CHART**  
(Capacities shown in cubic feet per hour)

| Model Size | Maximum Output |
|------------|----------------|
| BDFM-A/2   | 0.03           |
| BDFM-B/2   | 0.075          |
| BDFM-BC/2  | 0.19           |
| BDFM-BB/2  | 0.27           |
| BDFM-C/2   | 0.45           |
| BDFM-CC/2  | 0.7            |
| BDFM-D/2   | 1.2            |
| BDFM-DD/2  | 2.1            |
| BDFM-E/2   | 3.0            |

**MODEL BDF-1 FEEDER CAPACITY CHART**  
(Capacities shown in cubic feet per hour)

| Model Size | Maximum Output |
|------------|----------------|
| BDF-1-B/2  | 0.075          |
| BDF-1-BC/2 | 0.19           |
| BDF-1-BB/2 | 0.27           |
| BDF-1-C/2  | 0.45           |
| BDF-1-CC/2 | 0.7            |
| BDF-1-D/2  | 1.2            |
| BDF-1-DD/2 | 2.1            |
| BDF-1-E/2  | 3.0            |
| BDF-1-EE/2 | 4.4            |
| BDF-1-EF/2 | 5.7            |
| BDF-1-F/2  | 7.0            |
| BDF-1-FF/2 | 9.5            |

**MODEL BDF-1.5 FEEDER CAPACITY CHART**  
(Capacities shown in cubic feet per hour)

| Model Size   | Maximum Output |
|--------------|----------------|
| BDF-1.5-D/2  | 1.2            |
| BDF-1.5-DD/2 | 2.1            |
| BDF-1.5-E/2  | 3.0            |
| BDF-1.5-EE/2 | 4.4            |
| BDF-1.5-EF/2 | 5.7            |
| BDF-1.5-F/2  | 7.0            |
| BDF-1.5-FF/2 | 9.5            |
| BDF-1.5-G/2  | 14.5           |
| BDF-1.5-GG/2 | 21.0           |
| BDF-1.5-H/2  | 25.5           |
| BDF-1.5-HH/2 | 36.0           |
| BDF-1.5-K/2  | 48.0           |

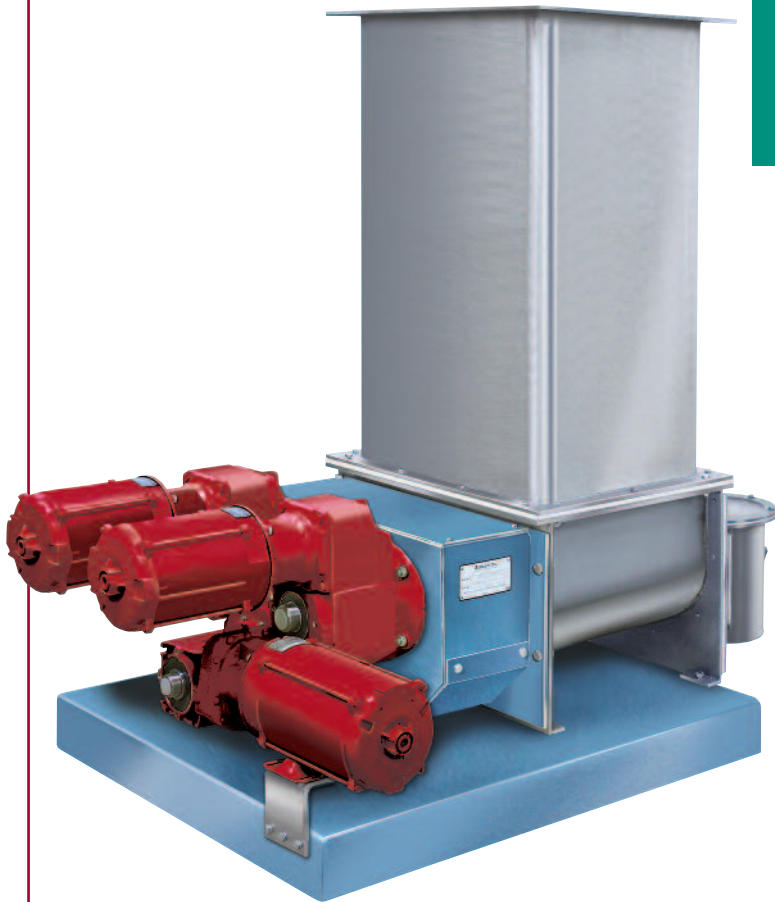
## Output Capacities

The above charts indicate the maximum feed output capacity for each size metering auger available with the Models BDFM, BDF-1 and BDF-1.5 Feeders. The minimum feed output for each metering auger is a function of the feed range capability of the feeder's variable speed drive.

Since the physical properties of a given product have a direct effect on the exact feed rate output, the stated capacities can vary.

## Volumetric Dry Solids Feeder Model BDFX-1.5

The Model BDFX-1.5 Volumetric Feeder combines the highly effective 'flow-inducing/conditioning action' generated by dual (counter-rotating) augers/agitators with a metering auger to produce positive flow and feed of an exceptionally wide variety of dry solid materials. However, unlike the Model BDF-1.5 Feeder, which is driven by a single variable speed gearmotor, the Model BDFX-1.5 Feeder is powered by three independent heavy-duty gearmotors.



Typically, the dual augers/agitators operate at a constant speed, although depending upon application parameters, their individual gearmotors may be electronically configured to operate in proportion to the speed of the metering auger, which operates at a variable speed.

This particular model feeder is generally used in applications where the Model BDF-1.5 Feeder has certain limitations (e.g., when hoppers larger than the standard size are used, and/or when metering products possessing very difficult handling characteristics).

*Volumetric metering accuracies generally range between  $\pm 1$  and 2 percent or better (error) for the majority of products. Accuracy is based on a given number of consecutive one minute samples.*

# Model BDFX-1.5 Volumetric Feeder

## Standard Features

- Product contact surfaces are 304 stainless steel, including all drive shafts and seal components.
- The metering auger is 316 stainless steel and includes a threaded attachment to its drive shaft.
- The augers/agitators are flange-attached to their respective drive shafts.
- The standard hopper (vertical) for the Model BDFX-1.5 Feeder is 4 cubic feet in capacity. Additional hopper sizes may be available depending upon product characteristics.
- The metering auger is powered by a heavy-duty, 3/4 HP, variable speed gearmotor available with various speed turn-down ratios.
- The dual augers/agitators normally operate at a constant speed, individually driven by heavy-duty, 1/3 HP gearmotors. However, based on application parameters, the speed of the augers/agitators may be 'slaved' to the speed of the metering auger,
- All motors are totally enclosed.
- Dust-tight, heavy-duty in construction; silent when operating.
- All non-stainless steel external surfaces are painted with Acrison's standard blue enamel.
- Temperature:  
Ambient . . . . -20 to 140 degrees F  
Product . . . . -20 to 200 degrees F

## Optional / Accessory Equipment

- Various materials of construction.
- Integral supply hoppers (larger and smaller than the standard size) may be available. Larger hoppers than the standard would depend upon product-handling characteristics.
- Various variable speed AC and DC controllers, speed ranges, and control modes.
- Quick-disconnect construction for easy cleanup.
- Sanitary construction to satisfy USDA and FDA regulations (includes quick-disconnect construction).
- High temperature construction (product temperature up to 350 degrees F).
- Pressure construction (14.9 PSIG operating maximum).

**MODEL BDFX-1.5 FEEDER CAPACITY CHART**  
(Capacities shown in cubic feet per hour)

| Model Size  | Maximum Output |
|-------------|----------------|
| BDFX-1.5-D  | 2.4            |
| BDFX-1.5-DD | 4.2            |
| BDFX-1.5-E  | 6.0            |
| BDFX-1.5-EE | 8.7            |
| BDFX-1.5-EF | 11.4           |
| BDFX-1.5-F  | 14.0           |
| BDFX-1.5-FF | 19.0           |
| BDFX-1.5-G  | 29.0           |
| BDFX-1.5-GG | 42.0           |
| BDFX-1.5-H  | 51.0           |
| BDFX-1.5-HH | 72.0           |
| BDFX-1.5-K  | 96.0           |

## Output Capacities

*The above chart indicates the maximum feed output capacity for each size metering auger available with the Model BDFX-1.5 Feeder. The minimum feed output for each metering auger is a function of the speed range capability of the feeder's variable speed drive.*

*Since the physical properties of a given product have a direct effect on the feed rate output, the stated capacities can vary.*



**Model BDFX-1.5**

Utilizes a pair of 10" diameter  
'conditioning' augers/agitators.

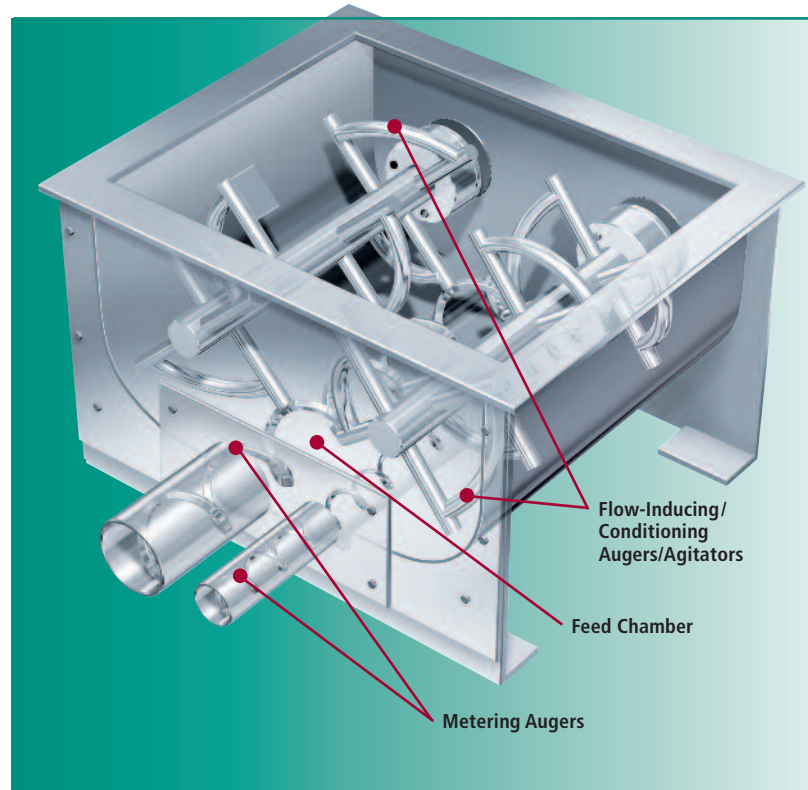
## Volumetric Dry Solids Feeder Model BDFX-1.5-2

**The Model BDFX-1.5-2 Volumetric Feeder combines the highly effective 'flow-inducing/conditioning action' generated by dual (counter-rotating) augers/agitators with two metering augers to produce positive flow and feed of an exceptionally diverse variety of dry solid materials. The two metering augers and dual augers/agitators are individually driven by heavy-duty gearmotors.**

In those feeder applications where a wide feed range is a requirement (e.g., in excess of 20:1), feed output pulsations become more pronounced at lower auger speeds, which for certain processes, may be undesirable. Also, in some applications, processors may desire to change the size of the metering auger for different feed rate ranges in order to minimize feed output pulsations, thus necessitating several different metering augers. Maintaining a 10:1 feed range (or less) for a given size metering auger would be ideal for optimum overall metering performance.

On the other hand, some processors may elect to operate feeder metering augers at higher speeds than typically used in order to attain a wider feed range, and perhaps to reduce feed output pulsations as well. However, operating metering augers at speeds in excess of 175-225 RPM for example, can create other problems such as heat generation (that may adversely affect product characteristics), product degradation, attrition, adhesion, auger wear, etc.

The Model BDFX-1.5-2 Volumetric Feeder is designed with two metering augers mounted side by side in the lower area of the feeder's feed chamber, centrally positioned between the two flow-inducing/conditioning augers/agitators. The two metering augers are independently driven by variable speed gearmotors. Likewise, the dual augers/agitators are independently driven, typically at a constant speed by heavy-duty gearmotors. However, based on application parameters, the speed of the augers/agitators may be configured to operate in a proportional relationship to the speed of the metering augers.



The Model BDFX-1.5-2 Feeder eliminates the undesirable, if not burdensome task of changing the size of the metering auger whenever an uncommonly wide feed range is required (a single metering auger is typical of most auger type dry solids feeders). Also, this particular model feeder can provide both high and low feed outputs for batching applications so that the highest degree of batch accuracy can be achieved.

The Model BDFX-1.5-2 Feeder provides users with an extremely wide feed range by sizing the two independently driven metering augers accordingly. Usually, only one metering auger operates at a time, each covering a specific feed range, the combination of which provides a very wide

***Volumetric metering accuracies generally range between  $\pm 1$  and 2 percent or better (error) for the majority of products. Accuracy is based on a given number of consecutive one minute samples.***

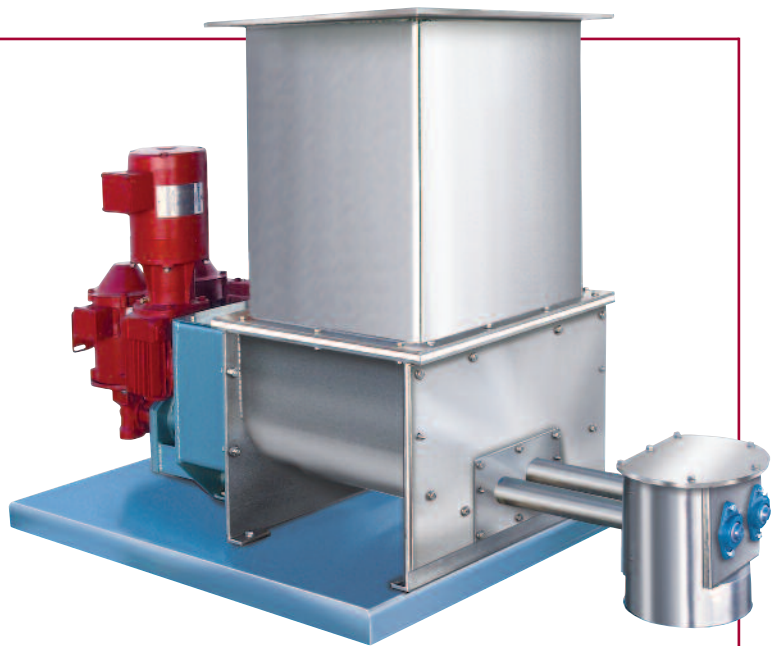
# Model BDFX-1.5-2 Volumetric Feeder

## Standard Features

- Product contact surfaces are 304 stainless steel, including all drive shafts and seal components.
- The metering augers are 316 stainless steel and include threaded attachments to their respective drive shafts.
- The augers/agitators are flange-attached to their respective drive shafts.
- The discharge cylinders for the two metering augers are mounted onto a common flange that attaches to the feed chamber.
- The standard hopper (vertical) for the Model BDFX-1.5-2 Feeders is 4 cubic feet in capacity. Additional hopper sizes may be available depending on product characteristics.
- The two metering augers are powered by heavy-duty, 3/4 HP variable speed gearmotors, available with various speed turn-down ratios.
- The dual augers/agitators normally operate at a constant speed, individually driven by heavy-duty, 1/3 HP gearmotors. However, based on application parameters, the speed of the augers/agitators may be 'saved' to the speed of the metering augers.
- All motors are totally enclosed.
- The feeder is rugged-duty in construction; dust tight, and silent when operating.
- All non-stainless steel external surfaces are painted with Acrison's standard blue enamel.
- Temperature:  
Ambient . . . -20 to 140 degrees F  
Product . . . -20 to 200 degrees F

## Optional / Accessory Equipment

- Various materials of construction.
- Integral supply hoppers (larger and smaller than the standard size) may be available. Larger hoppers than the standard would depend upon product-handling characteristics.
- Discharge cylinders equipped with a common right-angle down-spout.
- Various variable speed AC and DC controllers, speed ranges, and control modes.
- Quick-disconnect construction for easy cleanout.
- Sanitary construction to satisfy USDA and FDA regulations (includes quick-disconnect construction).
- High temperature construction (product temperature up to 350 degrees F).
- Pressure construction (14.9 PSIG operating maximum).



**Model BDFX-1.5-2**

Utilizes a pair of 10" diameter 'conditioning' augers/agitators.

## Metering Auger Combinations and Output Capacities

| MODEL BDFX-1.5-2 CAPACITY CHART                           |                          |                            |                          |                  |
|-----------------------------------------------------------|--------------------------|----------------------------|--------------------------|------------------|
| Based on a 10:1 Output Feed Range for each Metering Auger |                          |                            |                          |                  |
| First Metering Auger Size                                 | Feed Output (cubic feet) | Second Metering Auger Size | Feed Output (cubic feet) | Total Feed Range |
| CC                                                        | 0.14 to 1.4              | F                          | 1.4 to 14                | 100:1            |
| D                                                         | 0.24 to 2.4              | FF                         | 1.9 to 19                | 79:1             |
| DD                                                        | 0.42 to 4.2              | GG                         | 4.2 to 42                | 100:1            |
| E                                                         | 0.6 to 6                 | H                          | 5.1 to 51                | 85:1             |
| EE                                                        | 0.87 to 8.7              | HH                         | 7.2 to 72                | 83:1             |
| EF                                                        | 1.14 to 11.4             | K                          | 6.4 to 96                | 84:1             |
| F                                                         | 1.4 to 14                | K                          | 9.6 to 96                | 69:1             |

The metering auger sizes indicated in the above Capacity Chart are configured so that the maximum output of the first metering auger overlaps the minimum output of the second metering auger providing the **Total Feed Ranges** as shown.

The Chart indicates the maximum feed rate output capacity for each size metering auger available with the Model BDFX-1.5-2 Feeder, and the **Total Feed Range** capability based on the overlapping combination of the two specified metering auger sizes. Each auger is capable of a 10:1 speed turn-down ratio.

Wider speed range turn-down ratios may be available, which will increase the **Total Feed Range** capability of the different metering auger combinations.

Since the physical properties of a given product have a direct effect on the feed rate output, the stated capacities can vary.

## Discover the difference!

We cordially invite you to witness a test in Acrison's state-of-the-art Customer Demonstration Facilities handling your actual product(s) with the specific equipment we recommend for the application. Usually, there is no cost or obligation for this service.

Discover the difference in technology, quality and performance of Acrison equipment.



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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 905-18 Volumetric Feeder
- Bin Discharger Feeders
- Model 200 Weigh Belt Feeder Series
- Model 203B Weigh Auger Feeder Series
- Model 270 In-Line Weigh Feeder Series
- Models 402 and 404 Series, 405, 406, 407X, 408 and 410 'Weight-Loss' Weigh Feeders
- Model Series 403 'Weight-Loss' 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
- Models 500, 515, and 580X 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<sup>®</sup>, Inc.

20 Empire Blvd., Moonachie, NJ 07074

201-440-8300 • Fax: 201-440-4939

Toll Free: 800-4ACRISON

Email: [informail@acrison.com](mailto:informail@acrison.com)

[www.acrison.com](http://www.acrison.com)