

Typical Installations



Controlled coal reclaim from an above-ground storage hopper.



Large-capacity Jeffrey feeders blending stone.

Stone blending is controlled by Jeffrey feeders.



Model HP300 feeder continuously feeding to belt conveyor.

Feeder with power unit overhead for tight quarters.



Model HP400 feeds 700 TPH of stone. Note belt deflectors on deck, a Jeffrey first.

Group of feeders blending stone to meet highway specifications and fitted with dust seals.



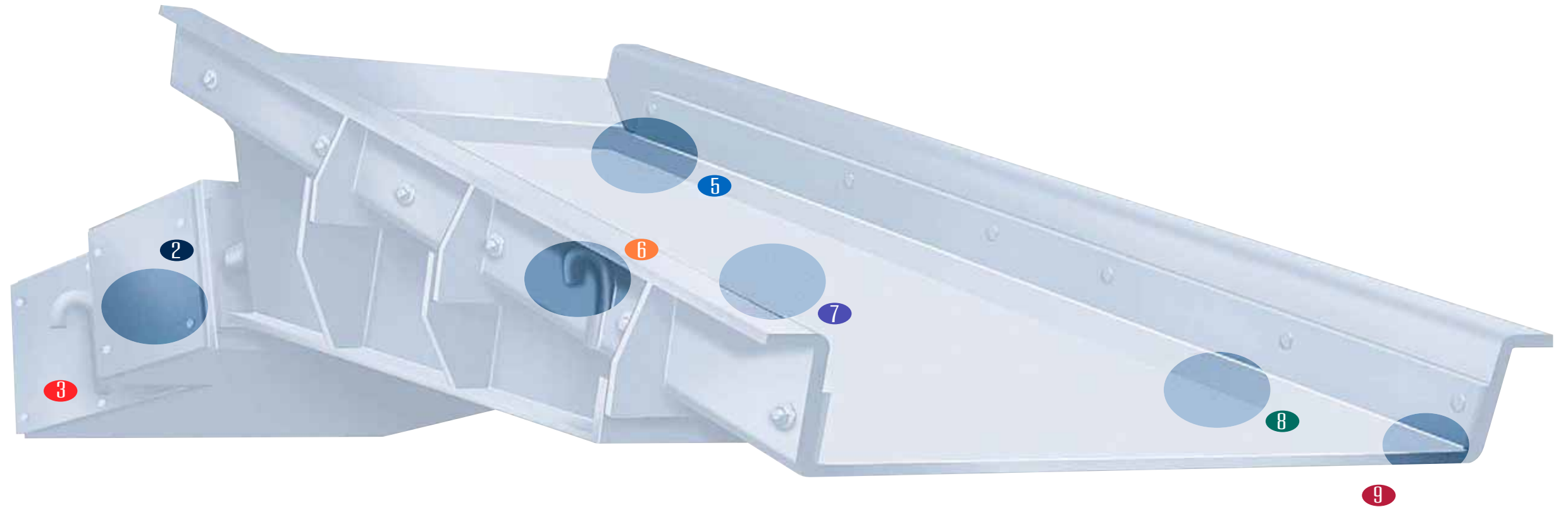
**HIGH-PERFORMANCE
HP ELECTROMAGNETIC VIBRATING FEEDERS**



398 Willis Rd • Woodruff SC 29388
864-476-7523 • FAX: 864-476-7510
1-800-615-9296



Jeffrey HP Electromagnetic Vibrating Feeders Offer Highest Capacity For Deck Size In The Industry.



1 Homogeneous Core

Only fine-grain, homogeneous-steel laminations are used for our wound stator core. This produces a more powerful electromagnetic drive for higher stroke, larger capacity, and thus a smaller feeder than the competition. Plus, it results in more tonnage—even on deck sizes the same as our competition. (See page 3.)

2 Sub-Resonance Tuning

As the deck liner wears, sub-resonance tuning assures efficient, continued feeder operation.

3 Electromagnetic Operation

There are no moving parts that could wear and require replacement. With a well-maintained Jeffrey feeder, you're assured trouble-free service.

4 High-Frequency Vibration

With an appropriate deck slope, high-frequency vibration affords conveying speeds as high as 65 FPM. This vibration is maintained even with varying line power fluctuation. (See page 3.)

5 Recommended Hopper Design

With every order, we furnish a recommended hopper design that is the result of decades of experience. Proper installation, in accordance with our charts, assures correct deck loading, proper material withdrawal from the hopper, and continuous production.

6 Vibration Absorbers

Shipped with each feeder are vibration-absorbing spring assemblies for either suspension or support mounting.

7 Design Flexibility

Our experience and longevity in the market have resulted in a variety of deck designs.

- Open
- Enclosed
- Tubular
- Grizzly
- Power Unit Overhead
- Conveyors with Multiple Power Units
- Decks with Screen Sections
- Special Discharge End Sections for Charging Furnaces

8 Liner Alternatives

- 235 BHN AR Plate (Standard)
- 400 BHN AR Plate
- Stainless Steel
- UHMW
- Ceramic
- Blanket Heater

9 Rugged Construction

HP feeders are designed with the latest CAD technology and built to maintain structural integrity, as well as withstand the forces imposed by high-performance electromagnetic operation.

10 Control

Many control systems are available: from local manual control to automatic control, from an external signal through PLCs. (See page 4.)

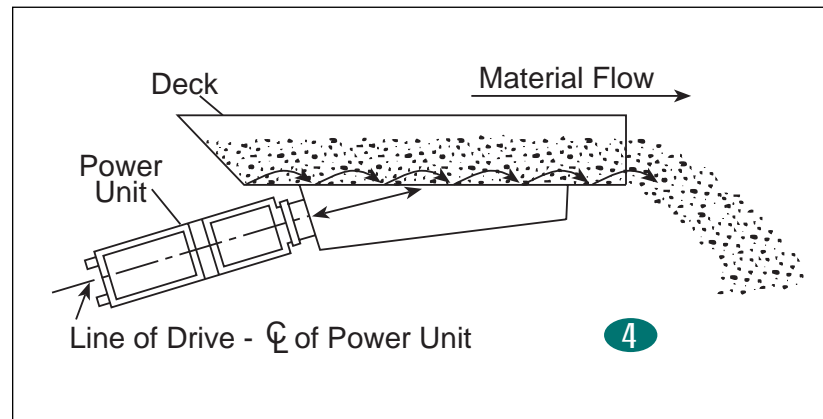
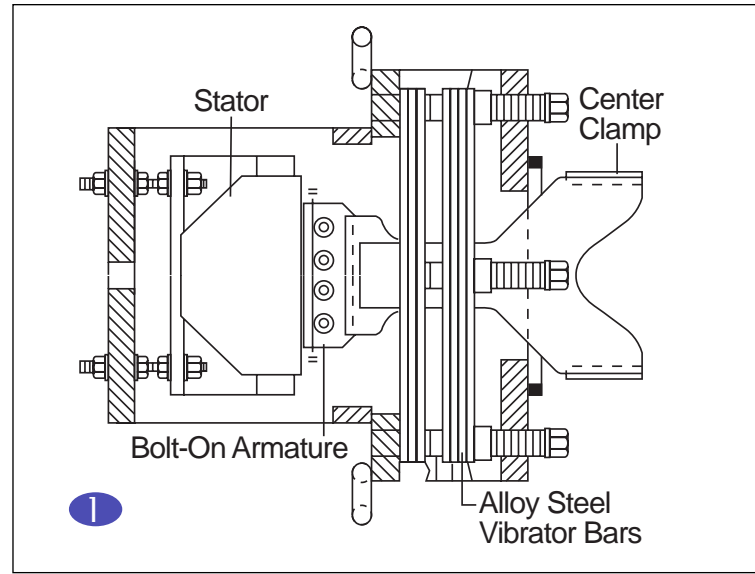
These Features Give You:

- **Minimum Downtime for More Production**
- **Reliability**
- **Lower Operating and Maintenance Costs**

Electromagnetic Operation

Jeffrey HP feeders operate through controlled, high-frequency vibration. This is accomplished with electrical pulses and a machine that is tuned to a mechanical resonant frequency that is higher than the electrical frequency of the power supply (sub-resonant tuning).

Electrical pulses in the coils of the encapsulated stator create a series of magnetic pulls that attract the armature and the deck. Restoring forces in the bar oppose each pull, causing the armature to spring away from the magnet or stator. At an electrical frequency of 60 cycles per second, the armature and the deck operate at 3,600 times per minute (the vibration rate of the feeder). Material is moved by a series of "jumps" that correspond to the frequency of the vibrations. The distance that the bars travel can be changed by varying the power to the stator. With this variation in the length of each "jump," or vibration amplitude, the conveying speed of the material on the feeder deck changes, resulting in a capacity rate that fits your requirements.



Feeder Selection

The feed rate of a vibrating feeder is determined by a number of variables, all of which must be considered to properly select a feeder. These variables include required capacity, characteristics of the material to be handled, electric power service, and the space to be spanned (if appropriate).

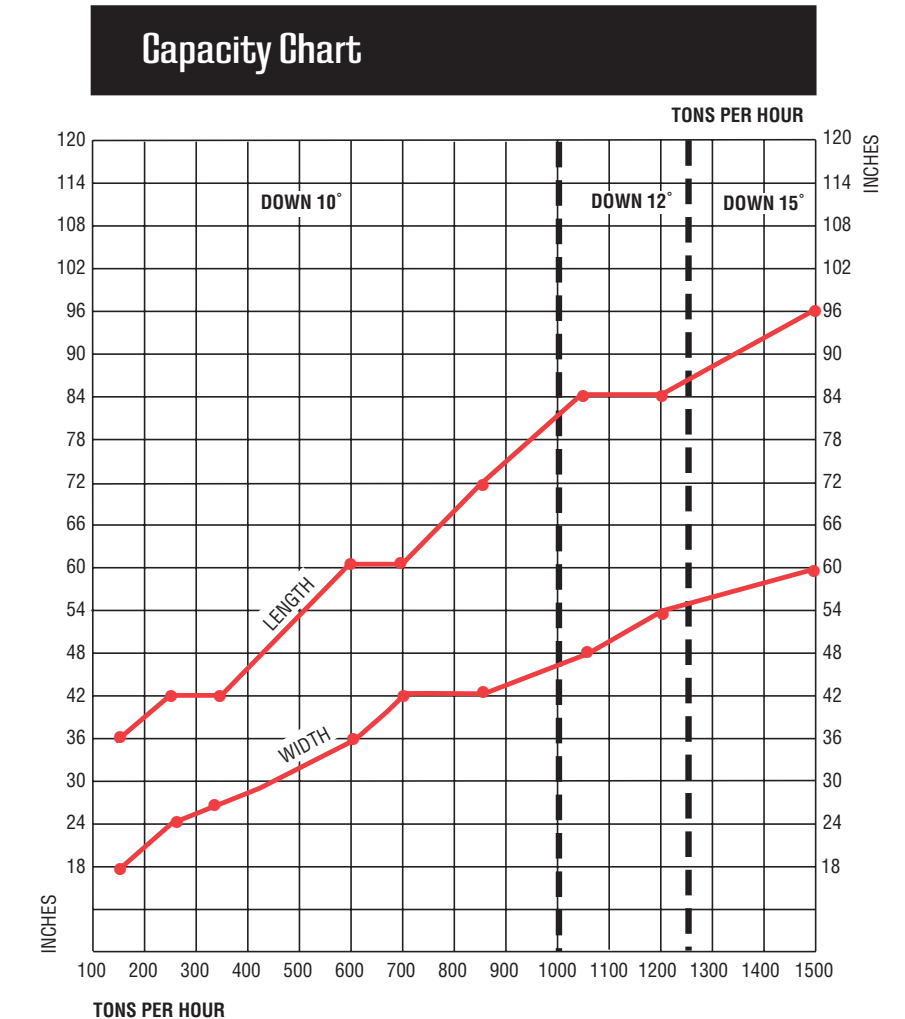
Among those factors that can be predetermined are the width of the deck, density of material, and the required capacity. However, two of the most important considerations (material bed depth and conveying speed) are generally unknown and are difficult to determine without the benefit of experience or laboratory testing.

Jeffrey's experience has resulted in an extensive collection of information regarding applications and what works to build the best possible feeder.

The capacity chart shown will assist you in selecting the right deck size and deck slope for different tonnage requirements. The chart is based on handling dry, granular materials with proportional particle size throughout the material size range

and a bulk density of 100 pounds per cubic foot. For example, if 600 TPH is required, the standard deck size is 36" wide x 60" long, with a deck slope of 10° down.

Once the deck size is determined, refer to pages 5 and 6 for the corresponding power unit.



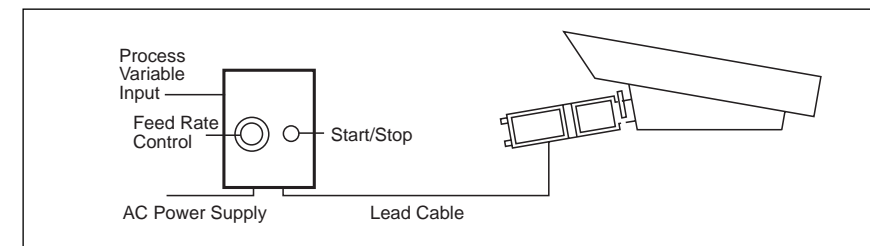
Feeder Control

The electrical controllers for our HP feeders are designed around half-wave rectification of AC power. The efficient switching mechanism of silicon-controlled rectifiers produces DC impulses without wasteful resistor or rheostat energy loss. Plus, it provides a full 0-100% range of control. A programmable micro-processor will define your specific requirements with only two, clearly labeled adjustments. All controllers comply with NEMA design standards.

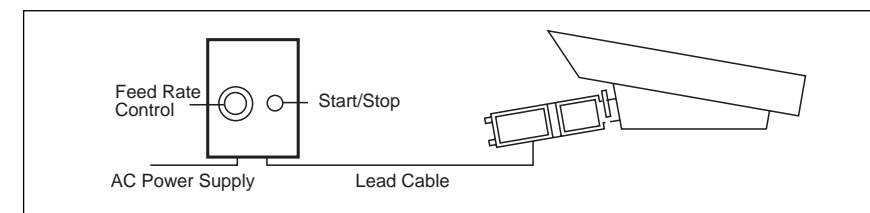
The control cabinet has a 115-volt push button for the magnetic contactor, which is in accordance with current NEC requirements. A separate control transformer is provided.

The solid-state control circuit includes a "soft-start" feature. A regulator, requiring no additional connection to the feeder(s), maintains vibration to within $\pm 0.002"$, provided the line voltage variations do not exceed $\pm 5\%$ and the line frequency is ± 0.5 Hz.

Manual or process variable controllers are available. There are also variations of these two basic arrangements. These include simultaneous, proportional, and sequential control for several feeders; HI/LO switches for batch weighing or filling operations; AMP demand control that affords efficient and effective feed to process machinery, such as size reduction equipment; and over-stroke protection.



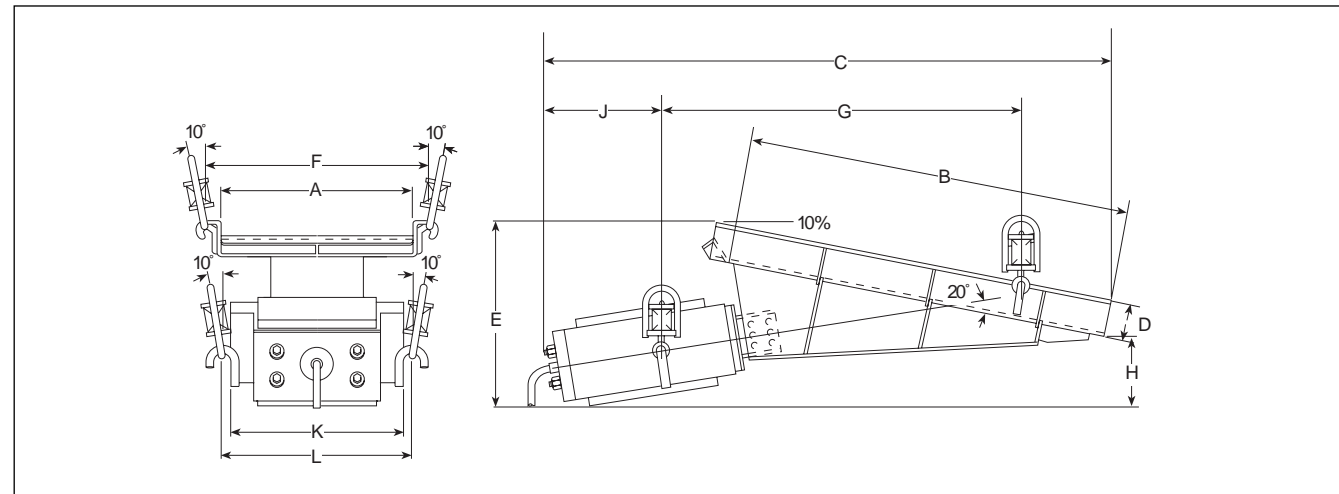
Process Variable Control
Any process variable input transmittable in small current signals can automatically increase or decrease material flow.



Manual Control
Vary the flow from 0 - 100% with a stepless potentiometer. Install the control cabinet at a local or remote location.

Dimensions & Specifications

Power Unit Underneath

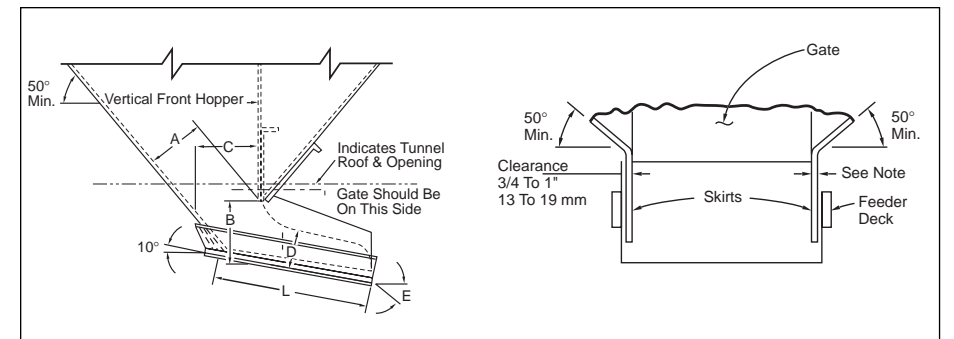


Recommended Hopper Design

The use of this recommended hopper design will help ensure correct design loading, proper material withdrawal from the hopper, and continuous production. Capacity, however, is affected by the distance between skirts, so the skirt thickness should be as small as practical. Note that a slide gate is recommended for additional material flow control. The gate opening (also known as the throat opening, A and B) should be 2.0 to 2.5 times the size of the largest piece of material to be fed. Also note that all hopper sides should be a minimum of 50° from the horizontal. The design angle of repose (E) should be less than the natural angle of repose of the material to be fed. If the design angle is greater, the material will,

in all probability, flood off the end of the feeder with a loss of control.

C is the minimum horizontal distance from the throat opening to the bottom of the rear hopper plate. D represents material depth measured at a point where the flow is parallel with the feeder deck.



Model	Standard Deck Size (Width X Length)	Maximum Capacity	Deck Slope	Feeder Weight	Amps	Watts	Available Deck Sizes (Width X Length)	A	B	C	D	E	F	G	H	J	K	L
HP040	12 X 30	75	10	480	**	312	10 X 36	10	36	60	4	19	16	33	6	14	17	21
							12 X 30	12	30	56	4	19	18	33	6	14	17	21
							18 X 24	18	24	50	4	19	24	26	6	14	17	21
HP050	18 X 36	180	10	580	5	470	12 X 42	12	42	73	4	21	18	36	6	14	17	21
							12 X 48	12	48	69	4	22	18	38	6	14	17	21
							18 X 36	18	36	60	4	19	24	33	6	14	17	21
HP100	24 X 42	275	10	1,055	10	940	12 X 60	12	60	80	5	25	18	52	7	19	19	24
							18 X 42	18	42	73	5	23	24	36	8	19	19	24
							18 X 48	18	48	69	5	23	24	42	8	19	19	24
							24 X 30	24	30	62	5	21	30	33	8	19	19	24
							24 X 42	24	42	73	5	21	30	36	8	19	19	24
HP200	30 X 42	345	10	1,300	15	1,410	12 X 72	12	72	100	5	30	18	61	6	19	19	24
							18 X 60	18	60	85	5	24	24	46	9	19	19	24
							24 X 48	24	48	76	5	24	30	44	8	19	19	24
							24 X 54	24	54	85	5	29	30	53	8	19	19	24
							30 X 42	30	42	73	5	23	34	40	8	19	19	24
HP250	30 X 48	415	10	1,700	15	18 X 72	18	72	100	5	31	24	63	10	19	19	24	
						24 X 60	24	60	85	5	29	30	52	9	19	19	24	
						30 X 48	30	48	80	5	27	34	49	8	19	19	24	
						30 X 54	30	54	84	5	29	34	53	9	19	19	24	
						36 X 36	36	36	67	5	22	42	37	8	19	19	24	

** 7.5 Amps, 120VAC

These specifications indicate maximum capacities for standard models, based on the use of Jeffrey's recommended hopper design; appropriate deck slope; and dry, granular materials weighing 100 pounds per cubic foot. Standard models appear in bold type. All feeders are furnished with vibration absorbers for suspension or supported mounting.

Model	Standard Deck Size (Width X Length)	Maximum Capacity	Deck Slope	Feeder Weight	Amps	Watts	Available Deck Sizes (Width X Length)	A	B	C	D	E	F	G	H	J	K	L
HP310	36 X 60	600	10	2,400	20	1,880	24 X 72	24	72	105	6	33	30	62	12	24	23	35
							24 X 84	24	84	116	6	35	30	75	14	24	23	35
							30 X 60	30	60	97	6	30	34	57	10	24	23	35
							30 X 72	30	72	105	6	33	34	63	11	24	23	35
							36 X 60	36	60	97	6	30	42	56	10	24	23	35
HP410	42 X 60	700	10	2,900	25	2,350	24 X 96	24	96	126	6	37	30	79	13	25	23	35
							30 X 84	30	84	116	6	34	34	71	13	25	23	35
							36 X 72	36	72	105	6	32	42	64	14	25	23	35
							42 X 60	42	60	97	6	31	48	56	11	25	23	35
							48 X 60	48	60	97	6	31	54	56	14	25	23	35
HP510	42 X 72	870	10	4,100	30	2,820	36 X 84	36	84	130	6	28	42	84	14	28	28	35
							42 X 72	42	72	119	6	36	48	72	15	28	28	35
							48 X 72	48	72	119	6	36	54	72	15	28	28	35
HP610	48 X 84	1,125	10	5,900	40	3,760	42 X 84	42	84	132	6	39	48	81	15	34	28	38
							48 X 84	48	84	132	6	40	54	82	15	34	28	38
							54 X 72	54	72	120	6	36	60	73	15	34	28	38
HP710	54 X 84	1,125	10	7,500	50	4,700	48 X 96	48	96	146	8	56	54	100	21	24	28	52
							54 X 84	54	84	134	8	45	60	78	24	24	28	52
							60 X 84	60	84	134	8	45	66	78	24	24	28	52
HP810	60 X 96	1,650	10	8,700	60	5,640	60 X 96	60	96	139	8	49	72	88	21	24	28	52
							60 X 108	60	108	150	8	49	72	96	22	24	28	52
							72 X 96	72	96	139	8	49	78	88	21	24	28	52