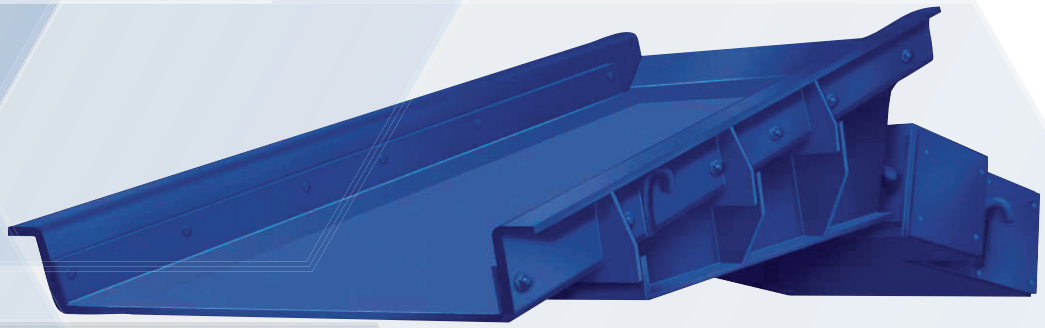
ASTEC®

Jeffrey Rader® Electromagnetic Feeders

EF Electromagnetic Feeder



HP Electromagnetic Feeder

Power in Precision:
Reliable, Energy-Efficient Material Control Across Industries

Highest capacity for deck size in bulk material feeding industry.

Operation

Jeffrey Rader® EF & HP electromagnetic 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 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. 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 the deck moves (stroke) can be changed by varying the voltage to the coils. 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 Control

The electrical controllers are designed around halfwave rectification of AC power. All feeders include a control which accepts a 4-20mA feedback signal. All standard controllers comply with NEMA 12 design standards. A variety of custom controllers are available (consult factory).

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

Manual or process variable controllers are available.

General Information:

- No moving or rotating parts
- Variety of deck sizes & liner materials
- 100% Range of Control
- Manual or Auto Operation (4-20mA input signal)
- Control Enclosure: NEMA 12 (Standard), 4 or 4X (Optional) electrical controll

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Efficiency in Motion: Jeffrey Rader® Electromagnetic Feeders

EF Model Features:

The EF model maximizes material handling efficiency in tight spaces, with easy-access, rebuildable power units and a removable rear cover for simplified maintenance and reduced ownership costs.

HP Model Features:

The HP model's homogenous core design uses fine-grain, high flux density steel laminations in the wound stator, delivering a more powerful electromagnetic drive with higher stroke and capacity, allowing for a smaller feeder. This results in more tonnage per deck size than the competition.

Electromagnetic Operation:

EF/HP feeders have no moving parts to wear out, ensuring reliable, trouble-free service with proper maintenance.

Sub-Resonance Tuning:

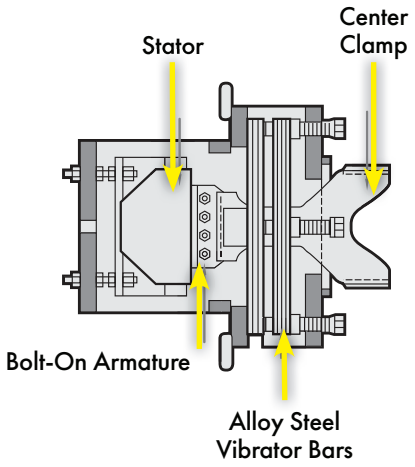
As the deck liner wears, sub-resonance tuning assures efficient, continued feeder operation.

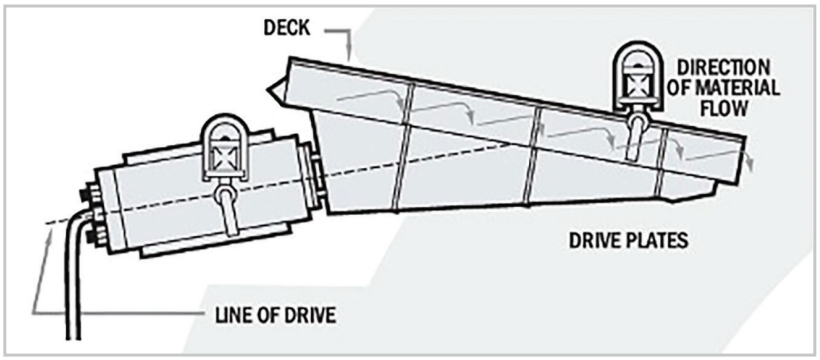
Vibration Absorbers:

Each feeder is equipped with vibration-absorbing spring assemblies, designed for either suspension or support mounting, and shipped as part of the package.

Silent Power, Reliable Performance: Jeffrey Rader® Vibratory Feeders

Excitation Force Type	Stroke Length	Max Stroke Frequency	Electrical/Mechanical Efficiency	Rate Control
Electromagnetic	Short (0.70"/1.78 mm)	3600 per minute	Excellent	Excellent

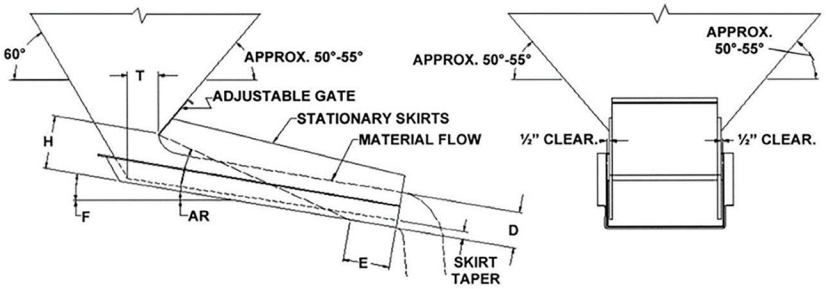




How It Works

1. Electromagnet operated
   - Coil driven stator
2. Two massing spring system
   - Precision tuned and tested
3. Voltage controlled
4. Short stroke, high frequency vibration

Design Considerations



Applications:

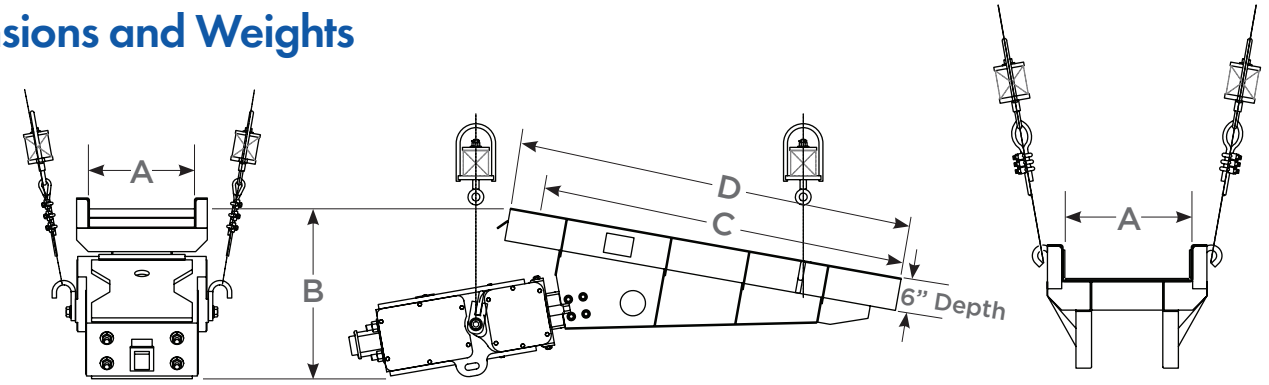
- Coal (for non-XP environments)
- Aggregates
- Minerals
- Biofuels & Pellets Production
- Power Generation
- Industrial materials
- Agricultural/Food Processing
- Waste Management
- Various blending substances for steel manufacturing

Other Features:

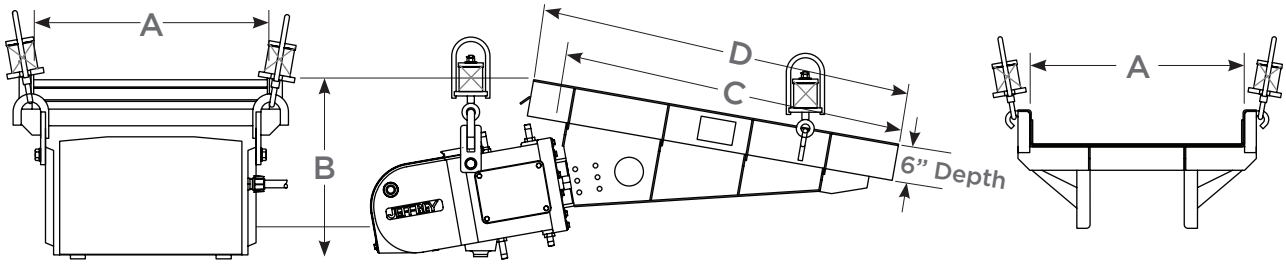
- Highest capacity per deck size due to the tuning of the unit
- Outstanding material control
- Ease of maintenance; no bearing to grease
- All components made in North America
- (CSA) approved controls (available upon request)

Dimensions and Weights

HP Model



EF Model



EF and HP Electromagnetic Vibrating Feeder* Approximate Dimensions** and Weights									
MODEL	Deck Sizes (STPH)	Capacity (STPH) @ Bulk Density			A Deck Width	B Overall Height	C Overall Length	D Deck Length	LBS (KG)
		50 PCF	75 PCF	100 PCF					
HP050	12" x 42" (305 x 1067)	50	75	100	12" (305)	21" (533)	67" (1702)	42" (1067)	510 (231)
	18" x 30" (457 x 762)	50	85	115	18" (457)	19" (483)	55" (1397)	30" (762)	510 (231)
	18" x 36" (457 x 914)	65	100	135	18" (457)	19" (483)	60" (1524)	36" (914)	525 (238)
EF1	18" x 24" (457 x 1067)	80	125	155	18" (457)	23" (584)	73" (1854)	42" (1067)	935 (424)
	24" x 30" (610 x 762)	80	125	155	30" (762)	23" (584)	73" (1854)	42" (1067)	1,150 (522)
	24" x 42" (610 x 1067)	110	165	220	24" (610)	23" (584)	73" (1854)	42" (1067)	1,020 (463)
EF2	24" x 60" (610 x 1524)	170	245	320	24" (610)	29" (737)	88" (2235)	60" (1524)	1,655 (751)
	30" x 42" (762 x 1067)	150	200	270	30" (762)	23" (584)	73" (1854)	42" (1067)	1,150 (522)
	30" x 48" (762 x 1219)	175	235	310	30" (762)	27" (686)	80" (2032)	48" (1219)	1,650 (748)
EF3	30" x 60" (762 x 1524)	210	330	400	30" (762)	30" (762)	92" (2337)	60" (1524)	2,650 (1,203)
	36" x 60" (914 x 1524)	240	375	460	36" (914)	30" (762)	90" (2286)	60" (1524)	2,700 (1,225)
EF4	30" x 84" (762 x 2134)	310	450	475	30" (762)	35" (889)	113" (2870)	84" (2134)	3,350 (1,520)
	36" x 72" (914 x 1829)	310	450	475	36" (914)	33" (838)	100" (2540)	72" (1829)	3,200 (1,452)
	42" x 60" (1067 x 1524)	310	450	475	42" (1067)	31" (787)	91" (2311)	60" (1524)	3,400 (1,543)
EF5	42" x 72" (1067 x 1829)	375	525	610	42" (1067)	37" (940)	112" (2844)	72" (1829)	4,700 (2,132)
	48" x 72" (1219 x 1829)	410	575	650	48" (1219)	37" (940)	112" (2844)	72" (1829)	4,850 (2,200)
EF6	42" x 84" (1067 x 2134)	450	590	660	42" (1067)	40" (1016)	121" (3073)	84" (2134)	5,600 (2,541)
	48" x 84" (1219 x 2134)	500	620	700	48" (1219)	40" (1016)	124" (3150)	84" (2134)	5,650 (2,563)
	54" x 72" (1372 x 1829)	515	675	830	54" (1372)	38" (965)	112" (2844)	72" (1829)	5,700 (2,585
EF8	60" x 96" (1524 x 2438)	830	1110	1125	60" (1524)	48" (1219)	138" (3505)	96" (2438)	10,200 (4,627)

* Standard Slope is 10°.

** List is of standard deck size offerings. Any deck size can be constructed.