Electromagnetic Vibrating Feeders

Our EF and HP feeders provide the highest capacity for deck size in the bulk material feeding industry.

Electromagnetic vibrating feeders are ideal for bulk material feeding.

Applications

- Aggregates
- Coal
- Minerals
- Industrial materials
- Various blending materials for steel manufacture

Value Added

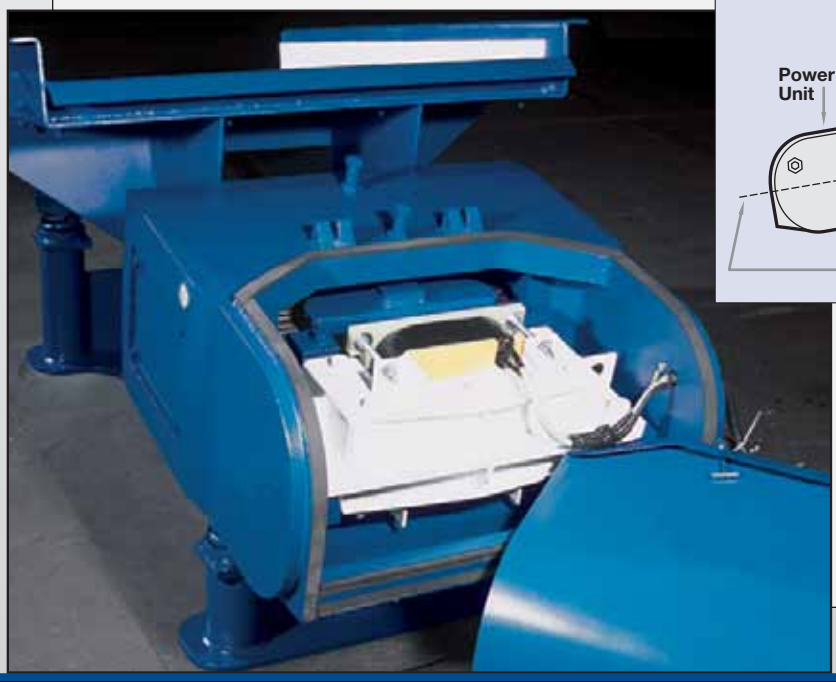
- Highest capacity per deck size due to the tuning of the unit
- Outstanding material control
- Ease of maintenance; no bearings to grease
- All components made in North America
- CSA approved controls

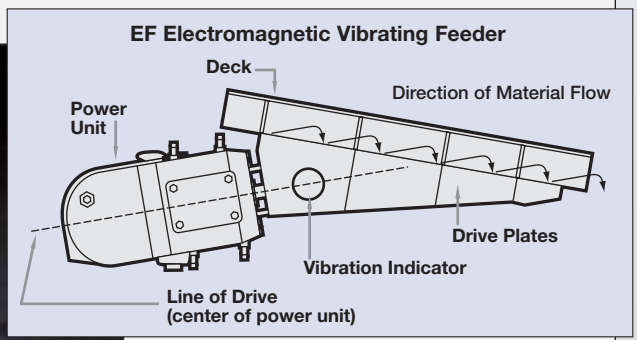
Operation

Jeffrey Rader EF and 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.

EF feeders feature easy-access power units that are designed to be rebuildable.





- **Removable cover**–Removable rear cover allows easy access to the power unit.
- **Rebuildable power unit**–Rebuildable power unit assembly simplifies maintenance and lowers the total cost of ownership.

CRUSH. FEED. PROCESS. CONVEY. STORE.

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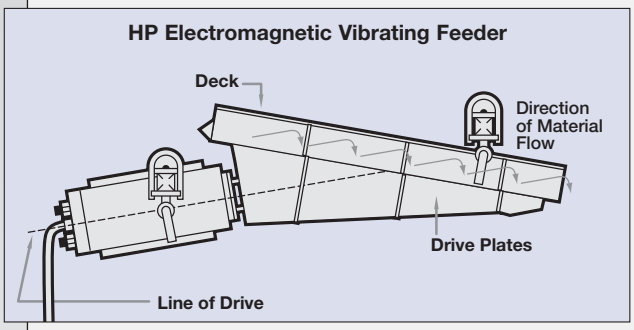
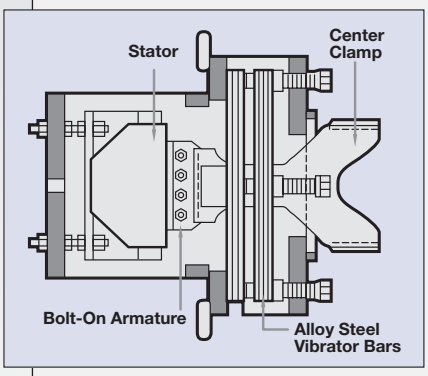


Homogeneous core of the HP design

Only grain-oriented, high flux density 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.

This results in more tonnage per deck size than our competition.

Electromagnetic operation

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

Sub-resonance tuning

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

Recommended hopper design

With every order, we furnish a recommended hopper design. Proper installation assures correct deck loading, proper material withdrawal from the hopper, and continuous production.

Vibration absorbers

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

Feeder control

The electrical controllers for our EF and HP feeders are designed around halfwave rectification of AC power. The electromagnetic feeder is sold with a control which accepts a 4-20mA feedback signal. All standard controllers comply with NEMA 12 and CSA design standards, and a variety of custom controllers are available (consult our factory).

The solid-state control circuit includes a "soft-start" feature. A regulator, requiring no additional connection to the feeder(s), maintains vibration to within ±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.

JEFFREY RADER™

UNITED STATES • CANADA • SWEDEN

USA: Corporate Headquarters
Jeffrey Rader Corporation
398 Willis Road
Woodruff, SC, USA 29388
Phone: 864.476.7523
Toll-Free (North America): 800.615.9296
Fax: 864.476.7510

CANADA: Montreal, Quebec
Jeffrey Rader Canada
2350 Place Trans-Canadienne
Dorval, Quebec
H9P 2X5 Canada
Phone: 514.822.2660
Fax: 514.822.2699

CANADA: Vancouver, BC
Jeffrey Rader Canada
Unit 2, 62 Fawcett Road
Coquitlam, BC
V3K 6V5 Canada
Phone: 604.299.0241
Fax: 604.299.1491

SWEDEN: Stockholm
Jeffrey Rader AB
Domnarvsgatan 11
163 53 Spånga
Stockholm, Sweden
Phone: +46 8 56 47 57 47
Fax: +46 8 56 47 57 48