

MMPB-450M

Dry Vibrating Magnetic Filters

FOR FINE POWDERS



ERIEZ

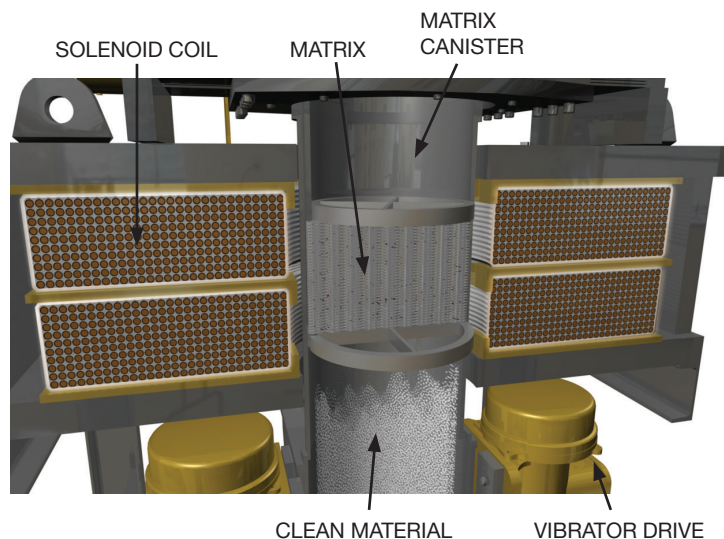
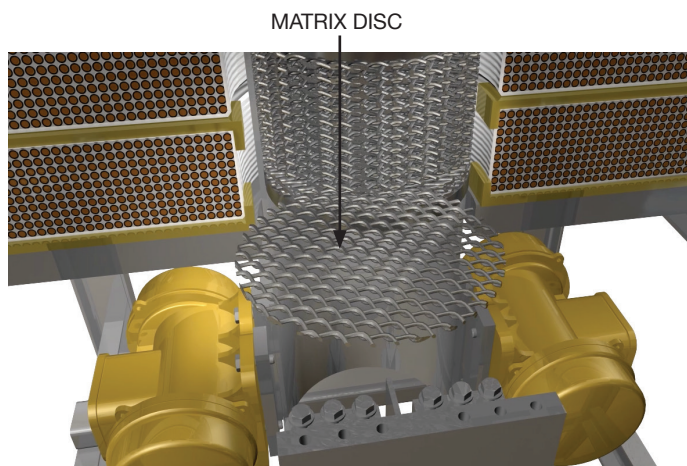
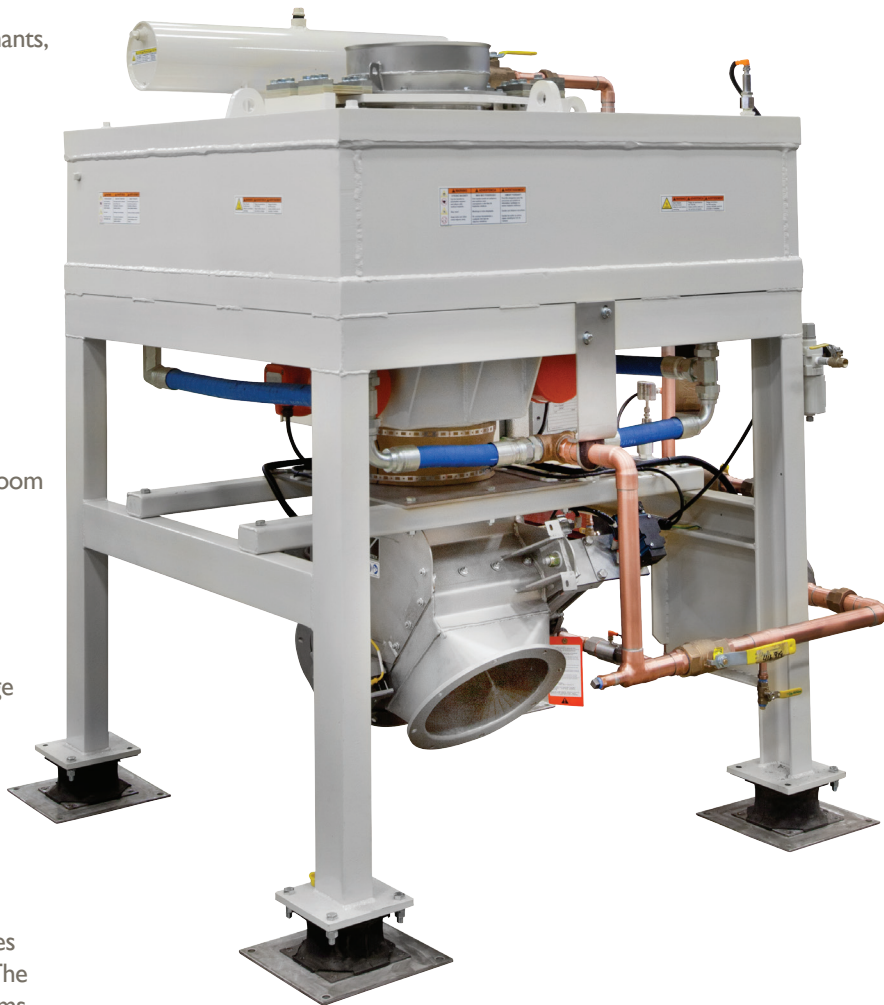
DRY VIBRATING *Magnetic Filters*

Eriez' unique DryVibrating Magnetic Filter (DVMF) is a high intensity electromagnetic filter designed to remove fine ferrous contaminants from dry powder. It incorporates vibrating magnetized filter elements to capture iron-bearing contaminants, resulting in a high-purity product while maintaining a high capacity material flow.

FEATURES

- High intensity, high gradient magnetic field
- High frequency, low amplitude vibration
- Coarse and extra coarse expanded metal matrices
- "K" or "A" style diverter valves available
- Manually operated or fully automated with a PLC and a HMI (human-machine interface)
- Control rectifier capable of transmitting data to control room
- Four sizes available, including a laboratory model, to meet a range of capacity requirements
- Two high intensity magnetic field strengths available: 2,000 gauss and 5,000 gauss
- The 5000 gauss units are force cooled. The cooling package includes a recirculating pump, a plate type heat exchanger, flexible as well as solid piping and analog sensors that provide signals to PLC of proper operation of the electro magnetic filter.
- Isolating pads eliminate >90% of vibration transmitted to support structure

Eriez rectifier controls are available in NEMA 4/12 enclosures suitable for most environments where DVMF's are utilized. The rectifiers effectively communicate with central control systems via ethernet connection. The control rectifier provides instant data about the electro magnet and the cooling system. New units include canister replacement readout.

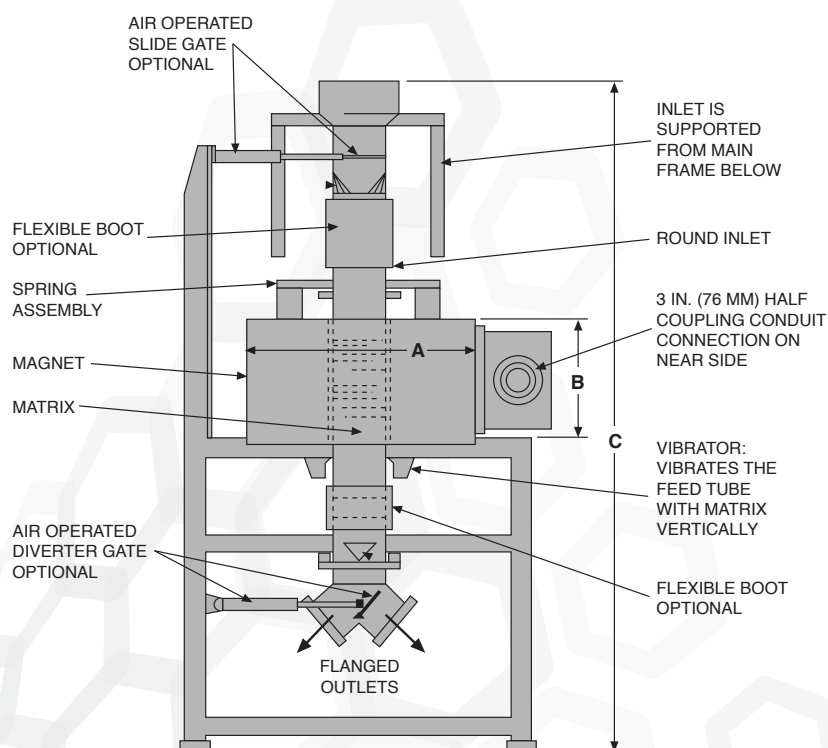


PRINCIPLE OF OPERATION

The electromagnet consists of a solenoid coil encased in a steel housing. A high intensity uniform magnetic field is generated in the bore of the coil. Within the bore is a canister, packed with filter elements which are referred to as the matrix. The matrix consists of a series of stainless steel expanded metal discs stacked 150 mm (6 in) high and arranged with staggered openings to accommodate the material flow.

A dual vibratory drive system mounted on the canister imparts a high frequency, low amplitude vibration to the matrix. When feed material flows through, the matrix amplifies the externally-applied magnetic field, producing regions of extremely high magnetic gradient and providing collection sites for the capture of ferrous contaminants. The non-magnetic product flows freely through the canister, aided by the matrix vibration.

The DVMF provides peak separation efficiency and a high purity product. Ferrous contaminants are typically reduced to the ppm level when treating materials such as alumina, talc, and silica and zircon flours.



Model No.	Field Strength	Canister Diameter		Capacity		Approx. Weight		Watts	A		B		C		Cooling Water	
	gauss	in	mm	lbs/hr	kg/hr	lb	kg	kw	in sq	mm sq	in	mm	in sq	mm sq	gpm	ipm
20-4	2000	4	102	800	370	1300	590	2.2	24	610	11	280	48	1220	--	--
20-6	2000	6	152	1800	820	2200	1000	2.4	35	890	13	330	55	1405	--	--
20-9	2000	9	229	4000	1820	4400	2000	2.9	40	1016	14	356	60	1524	--	--
20-12	2000	12	305	7200	3270	6400	2900	4.3	48	1219	14-7/8	378	60	1524	--	--
50-4	5000	4	102	800	360	2000	910	10.0	25	635	12-3/8	314	70	1780	10	38
50-6	5000	6	152	1800	820	3100	1410	11.3	32	813	13	330	70	1780	10	38
50-9	5000	9	229	4000	1820	8900	4000	14.8	40	1016	14	356	70	1780	10	38
50-12	5000	12	305	7200	3270	9000	4100	20.6	48	1219	14-7/8	378	70	1780	20	76

The readings above refer to the magnetic field strength in the open bore of the canister with the matrix removed. This uniform magnetic field provides the background energy necessary to induce the matrix. The matrix amplifies the background magnetic field, increasing the effective magnetic collecting force several fold.



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