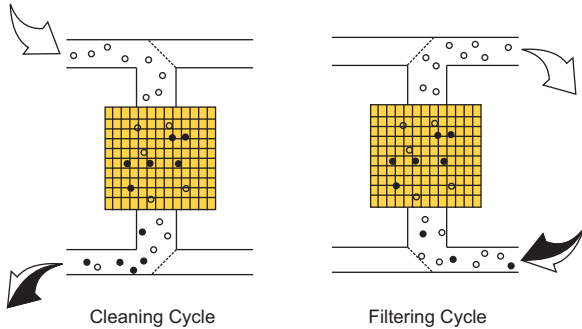


HIF



The effective separation of fine magnetic particles requires a high-intensity, high-gradient magnetic field. The **HIF** electromagnetic matrix-type separator has demonstrated superior performance in achieving this, making it one of the most efficient technologies for fine particle separation. This type of separator employs a high-intensity electromagnetic field in combination with a flux-converging matrix. The matrix serves to amplify the magnetic field and generate high-gradient collection zones, enabling efficient capture of fine magnetic contaminants.

The electromagnetic filter consists of a solenoid coil encased within a low-carbon steel housing, engineered to generate a uniform magnetic field throughout its bore. A stack of expanded metal discs, referred to as the matrix, is positioned within the bore and becomes magnetized by the applied field, forming numerous high-gradient collection sites for capturing fine magnetic particles. The matrix functions as a flux concentrator, enhancing the background magnetic field and creating localized regions of extremely high magnetic field gradient. These high-gradient zones act as active capture sites for paramagnetic particles. As the feed material flows through the matrix, paramagnetic contaminants experience a magnetic force sufficient to overcome hydrodynamic and gravitational forces, resulting in their entrapment within the matrix structure and subsequent removal from the bulk particle stream.

HIF filters offer superior separation efficiency compared to conventional magnetic systems currently available. The high-intensity magnetic fields can capture ultra-fine ferrous and even weakly magnetic stainless-steel particles, which are common sources of contamination and product defects. Automated magnetic filters have been proven to significantly reduce iron contamination related defects when installed in glaze and slip processing lines. The HIF filter delivers superior magnetic separation performance on mineral slurries, including silica and feldspathic sands. Its separation efficiency can exceed that of other wet high-intensity separators by up to 30%.

In food, chemical, mineral processing, and ceramic production, HIF filters enable advanced separation of fine ferrous contaminants, thereby significantly enhancing product purity. HIF filters with automated cleaning cycles offer highly efficient operation and, when configured in tandem with a secondary filter, enable continuous separation processes. The automated system features valves integrated with a central control panel to regulate product and material flow. It also includes a comprehensive control unit with computerized timers to precisely synchronize valve opening and closing operations.

Features and benefits

- Purification of raw materials
- Achieves substantial (>90%) reduction in product defects caused by iron contamination when installed on glaze and slip lines
- Reduced product rejects and enhanced productivity
- Enhances the brightness and whiteness of the final product
- Easy cleaning
- Increased magnetic strength
- Customized designs availability
- Automatic self-cleaning separator
- High gradient field
- Minimal pressure drops across the system
- Low rinse water required





Model	Pipeline size		Maximum Magnetic field	Rated power	Cooling type	Max capacity	Weight
	Inch	mm					
HIF 2-10	2	50	10,000	1,500	Naturally oil cooling	3	800
HIF 2-15			15,000	3,850	Forced oil cooling		1,200
HIF 2-25			25,000	21,000	Forced water cooling		2,300
HIF 3-10	3	80	10,000	2,200	Naturally oil cooling	6	1,150
HIF 3-15			15,000	4,380	Forced oil cooling		2,150
HIF 3-25			25,000	25,000	Forced water cooling		2,800
HIF 4-10	4	100	10,000	2,300	Naturally oil cooling	10	1,850
HIF 4-15			15,000	5,700	Forced oil cooling		4,230
HIF 4-25			25,000	28,000	Forced water cooling		4,500
HIF 6-10	6	150	10,000	2,400	Naturally oil cooling	15	2,150
HIF 6-15			15,000	4,500	Forced oil cooling		6,500
HIF 6-25			25,000	34,000	Forced water cooling		5,100