



# Suspended Overhead Magnets

Magnetic Separation For Belt Conveyed Products

TRAMP METAL

TG-12B

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## Introduction to Suspended Magnetic Separators

Suspended magnets are designed for separation of ferrous metal from a variety of over-the-belt conveyor applications. Proven in industries such as Mining, Aggregate, Recycling, Tire Shredding, Foundry, Wood Chip, Pulp & Paper, Power Generation, Construction and Demolition.

### Benefits of Suspended Magnetic Separators:

- Protect vital processing equipment from ferrous metal damage
- Improve product purity and quality for high volume belt conveyed products
- Deep reaching magnetic circuits supply superior separation capabilities
- Use prior to a metal detector to achieve maximum separation and system performance capabilities
- Reclaims valuable ferrous metal
- Reduce product liability

### Self-Cleaning Permanent Magnets (SMS)

The SMS magnets offer optimum operating efficiency with a continuous cleaning belt to keep the magnet face free of collected metal. The powerful, deep reaching magnetic circuit pulls metal to the face of the magnet where the cleaned belt can remove the metal off the end of the magnet and out of the product flow. The compact design of the SMS makes it ideal for use on portable size reduction equipment.

### Suspended Electromagnets (SEMO)

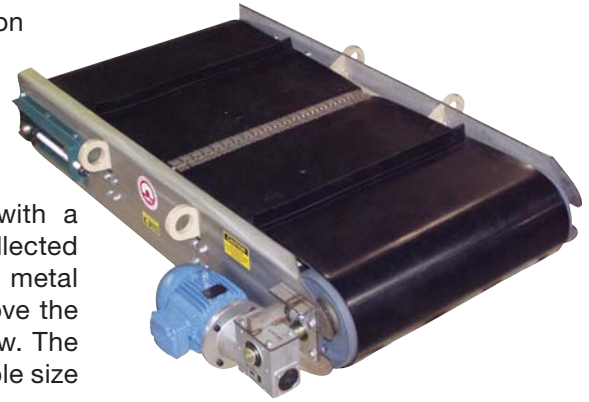
These powerful electromagnets are designed to deliver peak ferrous metal separation performance. The "Deep Reaching" magnetic field is ideal for applications that require increased suspension heights for the magnet or that have a deep product burden.

The Self-Cleaning Suspended Electromagnet offers optimum separation capacity by removing collected metal from the magnet face instantly and discharging it out of the product flow. This continuous cleaning function allows the magnetic circuit to maintain maximum magnetic strength at all times.

Manual Clean SEMOs are best suited for applications with a lower volume of ferrous metal in the product flow or in applications where the system is only run intermittently. The ability to turn the magnet "OFF" makes removing the collected metal easy for the operator.

### Manual Clean Permanent Magnets (SPM and SPMX)

These magnets are a good economical solution for applications that require a magnet for equipment protection but don't encounter enough ferrous metal in their product flow to justify a self-cleaning magnet.



### Key Markets

Mining & Aggregate, Waste Recycling, Pulp & Paper, Foundry

### Related Products

Magnetic Separation Pulleys, Drum Separators, EddyCurrent (Aluminum) Separators, Extractors, Vibratory Feeders, M.A.R.S.

All Photos And Drawings Represent The Products At The Time Of Publication (05/08)

# Suspended Overhead Magnets

## FEATURES:

- Unique magnetic circuit engineered for extended reachout through heavy product burdens
- Low profile design is ideal for portable systems
- Uniform magnetic field across belt width for full coverage
- Extra long field for extended magnetic exposure
- Continuous operation at peak magnetic efficiency
- Stainless steel housing and side guards
- Industrial welded construction
- Four rugged lift lugs for easy suspension
- Pick-up test data is available upon request

## SMS Standard Specifications:

- Ceramic grade 8 magnet material
- Stainless steel magnet box & guards
- 240/480 volt 3 phase motor (Option D)
- 3/8" thick 2 ply rubber belt (Option 1)
- Cross-Belt Application configuration Option X (Std)
- Crowned head & tail pulleys

## SMS Performance Specifications:

- 26 = 26" wide by 8" thick magnet. Magnet cleaning belt speed is 315 FPM.
- 38 = 38" wide by 10.5" thick magnet. Magnet cleaning belt speed is 380 FPM.
- 44 = 44" wide by 12.5" thick magnet. Magnet cleaning belt speed is 440 FPM.

## SMS Drive Package Options:

- Option D (Std) - Direct Drive 3 phase motor
- Option H - Direct Drive Hydraulic Motor (8 gpm, 2000 psi)
- Option B - Shaft Mounted Belt Drive

## SMS Cleaning Belt Options:

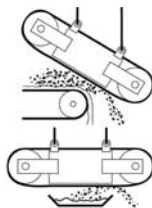
- Option 1 (Std)  
220 2 ply Rubber Belt, R2S Flexco Lacing, Vulcanized Cleats
- Option 2  
220 2 ply Rubber Belt, R2S Flexco Lacing, 304 Stainless Steel Cleats
- Option 3  
Urethane Belt 150 PIW, R2S Flexco Lacing, Vulcanized Cleats
- Option 4  
220 2 ply Rubber Belt, R2S Flexco Lacing, 304 Stainless Steel Cleats and Belt Cladding
- Option 5  
H.D. 330 3 ply Rubber Belt, R2S Flexco Lacing, 304 Stainless Cleats

## SMS Application Type:

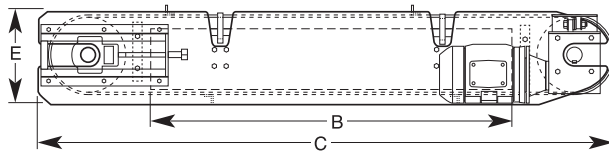
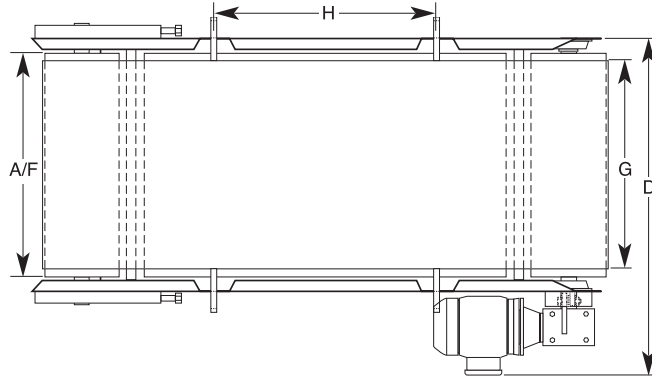
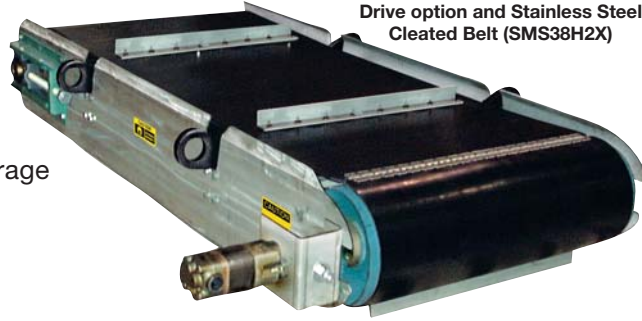
- Option I - In-line Applications: The Magnet runs parallel to the conveyor belt and is suspended over the discharge end of the belt.
- Option X (Std) - Cross-Belt Applications: The Magnet runs across the conveyor belt and discharges the collected metal off to the side of the conveyor.

## OTHER AVAILABLE OPTIONS:

- 380 volt, 50Hz, 3 phase motor
- Explosion proof motor
- Custom construction and guarding



SMS Shown with Hydraulic Drive option and Stainless Steel Cleated Belt (SMS38H2X)



Before selecting a magnet let IMI's Tramp Metal Group assess your application and specify the proper solution for your installation.

## Model Specifications By Belt Speed (FPM)

Model No.	Magnet Size	Lg.	Wd.	Ht.	Pulley Width	Pulley Dia.	Belt Width	Lift Lugs Ctr	Motor H.P.	Wt. Lbs.
<b>315 FPM</b>										
SMS2624	26" x 24"	77"	49"	14"	26"	10"	24"	22"	2	1,300
SMS2630	26" x 30"	77"	49"	14"	26"	10"	24"	22"	2	1,540
SMS2636	26" x 36"	77"	49"	14"	26"	10"	24"	22"	2	1,770
SMS2642	26" x 42"	77"	49"	14"	26"	10"	24"	22"	2	2,010
SMS2648	26" x 48"	95"	49"	14"	26"	10"	24"	40"	2	2,350
SMS2654	26" x 54"	95"	49"	14"	26"	10"	24"	40"	2	2,590
SMS2660	26" x 60"	95"	49"	14"	26"	10"	24"	40"	2	2,820

Model No.	Magnet Size	Lg.	Wd.	Ht.	Pulley Width	Pulley Dia.	Belt Width	Lift Lugs Ctr	Motor H.P.	Wt. Lbs.
<b>380 FPM</b>										
SMS3824	38" x 24"	77"	56"	14"	38"	12"	36"	22"	3	2,470
SMS3830	38" x 30"	77"	56"	14"	38"	12"	36"	22"	3	3,030
SMS3836	38" x 36"	77"	56"	14"	38"	12"	36"	22"	3	3,430
SMS3842	38" x 42"	77"	56"	14"	38"	12"	36"	22"	3	4,030
SMS3848	38" x 48"	95"	57"	14"	38"	12"	36"	40"	5	4,680
SMS3854	38" x 54"	95"	57"	14"	38"	12"	36"	40"	5	5,230
SMS3860	38" x 60"	95"	57"	14"	38"	12"	36"	40"	5	5,680

Model No.	Magnet Size	Lg.	Wd.	Ht.	Pulley Width	Pulley Dia.	Belt Width	Lift Lugs Ctr	Motor H.P.	Wt. Lbs.
<b>440 FPM</b>										
SMS4424	44" x 24"	77"	62"	18"	44"	14"	42"	22"	3	3,250
SMS4430	44" x 30"	77"	62"	18"	44"	14"	42"	22"	3	3,980
SMS4436	44" x 36"	77"	62"	18"	44"	14"	42"	22"	3	4,710
SMS4442	44" x 42"	77"	62"	18"	44"	14"	42"	22"	3	5,440
SMS4448	44" x 48"	95"	63"	18"	44"	14"	42"	40"	5	6,410
SMS4454	44" x 54"	95"	63"	18"	44"	14"	42"	40"	5	7,140
SMS4460	44" x 60"	95"	63"	18"	44"	14"	42"	40"	5	7,870

**SPECIAL CONSIDERATIONS:** The removal of tramp metal can create many challenges and is dependent upon many factors. These include product size, density, moisture, tramp metal geometry, orientation, entrapment by large product pieces, location in the burden, magnet suspension height and many others.

\*Note: Add the appropriate drive package, belt type and application type initials to the end of the Model Number before ordering.  
Example: SMS3824D2X is the SMS2438 Magnet with the "Direct Drive" package D, belt package 2 and cross belt X application design.

# Suspended Overhead Magnets



## Self-Cleaning Electromagnetic Overhead

### SEMO(SC) OPERATION:

As the product on a conveyor belt flows under the powerful magnetic field, ferrous material is pulled out of the product flow up to the face of the magnet. With Self-Cleaning models, continuous cleaning of the magnet face is made possible by a heavy duty belt that encircles the magnet on a series of rotating pulleys. As ferrous metal is attracted and held by the magnet, the moving belt carries the collected metal outside of the magnetic field where it is then released beyond the product flow.

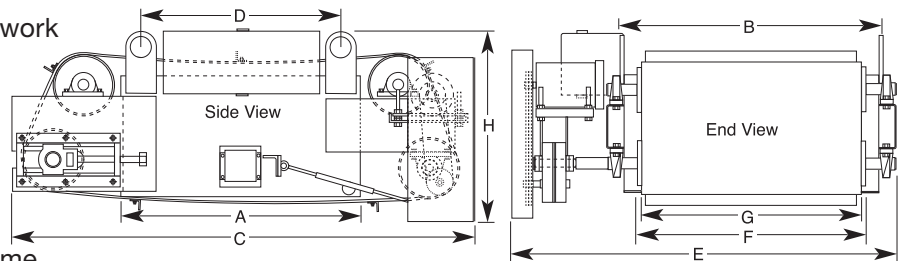
### SEMO(SC) SPECIFICATIONS:

- Dodge drive components
- 240/480 volt, 3 phase, AC motor
- Shaft mounted belt drive
- Anodized Aluminum coils
- Non-combustible coolant
- External expansion tank
- 2" high stainless steel cleats
- Multi-layer industrial grade rubber belting
- Standard industrial bearings and take-ups
- Heavy duty steel channel framework
- Manganese impact plate
- 10 year limited coil warranty

Note: All dimensions are stated in inches.

Model No.	Magnet Dim. A x B	Total Lg. C	Lift Ctr. D	Total Wd. E	Pulley Width F	Belt Width G	Total Ht. H	Number of Pulleys	Pulley Dia.	Motor H.P.	Wt. Lbs.
SEMO241SC	24" x 24"	62"	16"	44"	20"	18"	32"	2	16"	2	1,359
SEMO301SC	30" x 30"	75"	22"	51"	26"	24"	32"	2	20"	2	2,206
SEMO361SC	36" x 36"	89"	28"	58"	32"	30"	34"	2	24"	2	3,078
SEMO422SC	42" x 42"	95"	34"	64"	38"	36"	34"	2	24"	3	4,334
SEMO482SC	48" x 48"	93"	40"	69"	44"	42"	38"	4	12"	3	5,982
SEMO542SC	54" x 54"	95"	46"	75"	51"	48"	42"	4	12"	3	7,222
SEMO602SC	60" x 60"	97"	52"	81"	57"	54"	45"	4	12"	5	9,688
SEMO662SC	66" x 66"	103"	58"	87"	63"	60"	48"	4	12"	5	13,560
SEMO722SC	72" x 72"	120"	64"	93"	69"	66"	51"	4	12"	7.5	19,579

\*Dimensions represent product at date of publication. If dimensions are critical call for up to date changes. Coolant oillevels must be checked regularly.



### SEMO(SC) OPTIONS:

- Turnbuckles
- Stainless steel clad belt
- Custom steel tube mounting frame
- Permanent plate magnet extensions

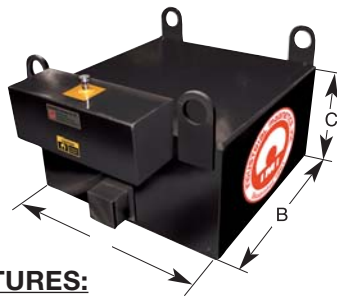
## Manual Clean Electromagnetic Overhead

### MANUAL CLEAN OPERATION:

Ferrous material is pulled out of the product flow and held to the face of the magnet. The collected tramp metal is held in place for as long as the unit has power. To clean the unit, the power source is simply turned off, instantly releasing the metal from the magnet's hold.

### SPECIFICATIONS:

- 10 year limited coil warranty
- Non-combustible coolant
- External expansion tank
- Anodized Aluminum coils with Glastic™ Spacers
- Manganese impact plate



### SEMO POWER SUPPLY FEATURES:

- Standard enclosures meet NEMA 4 or 12 specifications
- Input and output fused
- Isolation transformer
- Three phase full wave bridge rectifier
- Transformer overrated for additional protection

Note: Power Supplies are available in VAC single phase and 240/480 and 575 three phase.

SEMO Model No	Required Power Supply	Dimensions H x W x D	Input V 3 Phase	Output Voltage	Supply Watts
241(SC)	PSS43200	24" x 24" x 12"	240VAC	115VDC	2,000
	PSS53200	24" x 24" x 12"	480VAC	115VDC	2,000
301(SC)	PSS43300	24" x 24" x 12"	240VAC	115VDC	3,000
	PSS53300	24" x 24" x 12"	480VAC	115VDC	3,000
361(SC)	PSS43400	24" x 24" x 12"	240VAC	115VDC	4,000
	PSS53400	24" x 24" x 12"	480VAC	115VDC	4,000
422 (SC)	PSS44500	36" x 30" x 16"	240VAC	230VDC	5,000
	PSS54500	36" x 30" x 16"	480VAC	230VDC	5,000
482(SC)	PSS44700	36" x 30" x 16"	240VAC	230VDC	7,000
	PSS54700	36" x 30" x 16"	480VAC	230VDC	7,000
542(SC)	PSS44800	36" x 30" x 16"	240VAC	230VDC	8,000
	PSS54800	36" x 30" x 16"	480VAC	230VDC	8,000
602(SC)	PSS441000	36" x 30" x 16"	240VAC	230VDC	10,000
	PSS541000	36" x 30" x 16"	480VAC	230VDC	10,000
662(SC)	PSS441250	36" x 30" x 16"	240VAC	230VDC	12,500
	PSS541250	36" x 30" x 16"	480VAC	230VDC	12,500
722(SC)	PSS441500	36" x 30" x 16"	240VAC	230VDC	15,000
	PSS541500	36" x 30" x 16"	480VAC	230VDC	15,000

SEMO Model	Magnet Size A x B	Magnet Height C	Magnet Voltage VDC	Magnet Watts	Wt. Lbs.
SEMO241	24" x 24"	14"	115	1,650	974
SEMO301	30" x 30"	16"	115	2,700	1,556
SEMO361	36" x 36"	20"	115	3,800	2,088
SEMO422	42" x 42"	22"	230	5,000	3,284
SEMO482	48" x 48"	24"	230	6,600	4,717
SEMO542	54" x 54"	26"	230	8,000	6,372
SEMO602	60" x 60"	30"	230	10,000	8,278
SEMO662	66" x 66"	32"	230	12,250	11,485
SEMO722	72" x 72"	32"	230	14,500	15,304

Note: All dimensions are stated in inches.\*Dimensions represent product at date of publication. If dimensions are critical call for up to date changes. Coolant oillevels must be checked regularly.

# Suspended Overhead Magnets

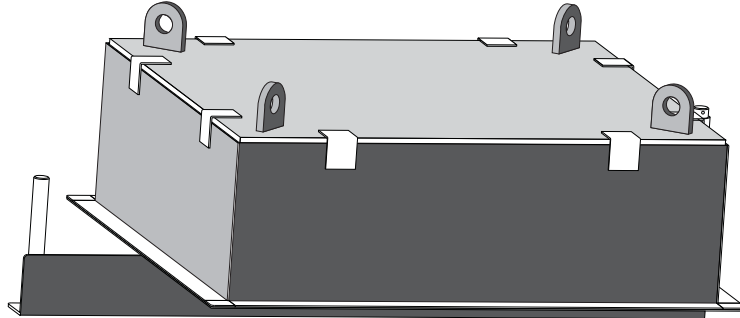
Manual Clean - Permanent Magnet Overheads

**BENEFITS:**

- Protects Processing Equipment from Ferrous Metal Damage
- Improves Product Purity

**DESIGN FEATURES (SPM and SPMX):**

- Powerful deep reaching Ceramic 8 magnetic circuit design to penetrate heavy product burdens.
- Uniform magnetic field across belt width for full coverage
- Long magnetic field for extended magnetic exposure
- Continuously operates at peak magnetic efficiency
- No operating cost
- Stainless steel housing
- Four rigid lift lugs for easy suspension
- All welded construction



Shown with EZ-Clean Swiper Bar

**SIZE AVAILABILITY:**

- Width from 18" to 66" (size availability varies by model)
- 10-5/8" High by 33" Long

**OPTIONAL FEATURES ( SPM & SPMX):**

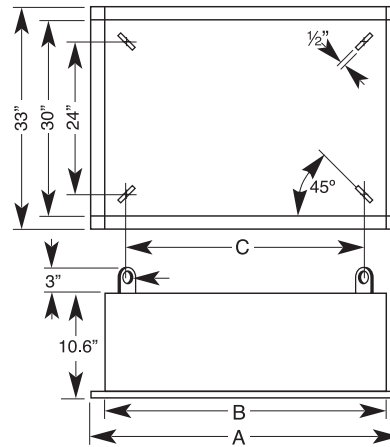
- EZ-Clean swiper bar
- Stainless steel (roller guided) slider plate design for easy removal of collected metal.
- Hand crank stainless steel slider with rack and pinion for even easier cleaning (shown below)
- Custom features available upon request.

**SPM DIMENSIONS & SPECIFICATIONS:**

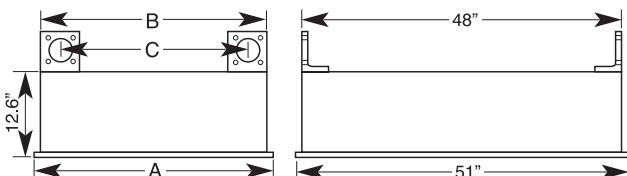
- High strength magnetic separator for typical over the belt applications
- Meets or exceeds typical product burdens and magnet suspension height requirements

**SPMX DIMENSIONS & SPECIFICATIONS:**

- Super strength magnetic separator for over the conveyor separation applications that have above average burden depths & magnet suspension height requirements
- The SPMX circuit is designed for applications that require more magnetic pulling force or deeper reachout.



In-Line SPM Models	Overall Width A	Magnet Width B	Lift Lugs Ctr C	Wt. Lbs.
SPM18	18"	15"	9"	1,200
SPM24	24"	21"	15"	1,200
SPM30	30"	27"	21"	1,500
SPM36	36"	33"	27"	1,850
SPM42	42"	39"	33"	2,200
SPM48	48"	45"	39"	2,500
SPM54	54"	51"	45"	2,800
SPM60	60"	57"	51"	3,150
SPM66	66"	63"	57"	3,500



In-Line SPMX Models	Overall Width A	Magnet Width B	Lift Lugs Ctr C	Wt. Lbs.
SPMX24	24"	21"	14"	2,200
SPMX30	30"	27"	20"	2,800
SPMX36	36"	33"	26"	3,400
SPMX42	42"	39"	32"	4,000
SPMX48	48"	45"	38"	4,600
SPMX54	54"	51"	44"	5,200
SPMX60	60"	57"	50"	5,800