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WHAT MAG TRAPS DO

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MAGTRAPs remove the hazards of unwanted ferrous and work-hardened stainless contaminants from processing lines. They capture the very fine of particles that pass undetected through electronic metal detectors. Placed in front of pumps, screens and mills, they protect vital plant equipment from metal damage, with its costly resultant - downtime. When product purity is paramount, install a MAGTRAP in front of the filler. MAGTRAPs work with virtually all pumped products. Their rare earth magnets catch all sizes of ferrous debris found in product lines. They also capture particles of work-hardened 304 and 316 stainless steels as well as nickel and carbide items that sometimes appear in process lines. MAGTRAPS are available from 1/2" through 6" line sizes.

TWO MAG TRAP STYLES

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MAGTRAPs magnets are either enclosed in tubes (Models 130, 135, 135EC, 170 and Micro Magtrap) or in a flat plate configurations (Models 115, 120 and 125). Tube magnets are used for liquids, purees, and products with smaller (less than 1/2") included solids not susceptible to size reduction. Flat plate magnets are for products with fragile included solids (fruit preserves, cooked meat chunks, cottage cheese, etc.), chunks larger than 1/2", long, sinewy items, and products that are hard to pump.

USEFUL NOTES

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MAGTRAPs can be supplied with all types of line connectors. Models 125 and 135 can have dissimilar inlet and outlet line sizes. MAGTRAPs may be mounted in vertical, horizontal or sloped lines without affecting the magnetic efficiency. For complete drainage required by Clean-In-Place (CIP) systems (no sump area), install MAGTRAPs in a vertical line. CESCO would be pleased to provide you with suggestions and information regarding your application. Complete instructions accompany every MAGTRAP.

Good Reasons for using Magtraps:

- No Electricity
- No Moving Parts
- Built to Sanitary Standards
- Easy to Install
- Available to 300°F
- Built to Last
- Pressures to 200 psi
- Easy to Clean
- Clean-In-Place (CIP) Capable
- Captures Items Smaller than Electronic Metal Detectors Sense

HOW TO SIZE A MAGTRAP

Maximum magnetic efficiency is attained with slow flow rates. It is easier to extract metal through low viscosity products than through high viscosity products. With the above in mind, use **TABLE A** to select your product's viscosity class (Example: Water is Class 1, Molasses = Class 4), then move to **TABLE B**. From Table B, match your line's viscosity class and maximum pumping capacity with the various MAGTRAP model's maximum flow ratings, then select the appropriate model and line size. Line reducers (expanders) may be needed. When operating at or near a MAGTRAP's upper flow capacity, move up one line size to assure meeting future increased pumping needs.

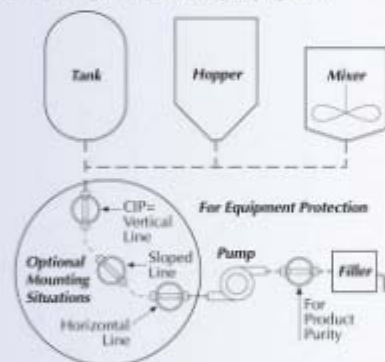


TABLE A

Select a class that best matches the most viscous product to be pumped. Remember that temperature and percent of liquid can greatly affect a product's viscosity class. If needed, water jackets can be added to heat or cool the product.

CLASS 1

Beverages, clear broths, thin soups, juices, warm jellies, light sauces, thin salad dressings.

CLASS 2

Applesauce, pulped fruits and vegetables, syrups, custards, baby foods, cranberries, hot preserves.

CLASS 3

Chopped foods, creamed cheese, pumpkin filling, frozen slush, heavy sauces, batters, heavy purees.

CLASS 4

Cooled products, pet foods, nut butters, minced meat, thick batters and slow flowing products.

TABLE B - MODEL 135

Line Size	Maximum Flow - Gallons/Minute				Maximum Pressure
	Class 1	Class 2	Class 3	Class 4	
1.5"-2"	150	105	60	30	200 PSI
2.5"-3"	250	175	100	50	200 PSI
4"	340	240	140	70	200 PSI

TABLE B - MODEL 125

Line Size	Maximum Flow - Gallons/Minute				Maximum Pressure
	Class 1	Class 2	Class 3	Class 4	
1.5"-2"	130	90	52	26	200 PSI
2.5"-3"	200	140	80	40	200 PSI
4"	250	175	100	50	200 PSI

TABLE B - MODEL 115

Line Size	Maximum Flow - Gallons/Minute				Maximum Pressure
	Class 1	Class 2	Class 3	Class 4	
2"	60	42	24	12	200 PSI
3"	85	60	34	17	200 PSI

FOOD GRADE I-RING GASKETS

PROPERTY	EPDM (Std.)	BUNA-N	VITON
Temperature Range	-50 to 400°F.	-20 to 225°F.	-15 to 400°F.
Acid resistance	fair	good	excellent
Alkali resistance	good	fair	good
Veg. Oil resistance	poor	excellent	excellent
Steam, to 250°F	good	poor	poor

LINE CONNECTIONS (FERRULES)

Tri-Clamp and weld ends are standard. To assure a perfect weld end match, specify your line's outside and inside diameters. Bevel Seat (Acme Thread), International Dairy Fitting (IDF), pipe sizes and threads, Victaulic, Cam-Lock, John Perry, I-line, Q-line, 150# pipe flanges, connections with captive nuts and various other domestic and European sanitary ferrules are available. Non-similar end sizes are available on Models 125 and 135. Inquire regarding other connection options.

OTHER CESCO MAGTRAPS

CESCO Model 170 MAGTRAPS for pressures to 800 psi, Micro MAGTRAPS for micro line size applications, Models 120's and 130's for 6" line size and Model 135EC's (Easy Clean) that allow easy removal of captured trash and pneumatic actuation.

Continual improvement and customization require that these specifications are subject to change without notice.



Highland Equipment Limited

STAINLESS STEEL EQUIPMENT

MAGTRAPS

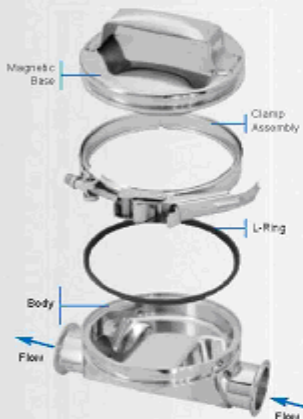
• MODEL 115 •



• All 316 Stainless Steel • Rare Earth Magnets Available To 300°F • All US Components

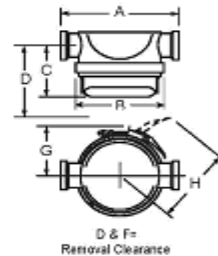


MAGTRAP IN-LINE



MAGTRAP MODEL 115

These USDA approved (*US Department of Agriculture Approved*) units are for low volume applications requiring gentle flow characteristics. It provides minimum tearing and breakage of fragile solids. In the exploded view, product can flow in either direction, past the flat plate magnet. Currently available in 2" and 3" line sizes.



Magtrap Dimensions & Weights (Inches & Pounds)

Line Size	A	B	C	D	E	F	G	H	Net WL.	Ship Wt.
2"	8.25"	7	4.9	5.4	-	-	5.3	8.7	24	29
3"	10.25"	9	5.8	6.1	-	-	6	10	43	53

*Standard line connections only - Others may vary



Highland Equipment Limited

STAINLESS STEEL EQUIPMENT

Powerful rare earth magnets remove unwanted ferrous, nickel and work-hardened stainless items from processing lines. Micro Magtraps are available in 1/2" and 3/4" line sizes, with or without line connections.

MICRO MAGTRAP



All product contact surfaces are 316 stainless steel, except for the food grade gasket. The magnet is held in place with a 2" Tri-Clamp connection. This unit is perfect for micro-line size applications. They operate at pressures to 200psi and temperatures to 300°F. (150°C.).





Highland Equipment Limited

STAINLESS STEEL EQUIPMENT

• MODEL 125 •



• All 316 Stainless Steel • Rare Earth Magnets Available To 300°F • All US Components



MAGTRAP IN-LINE



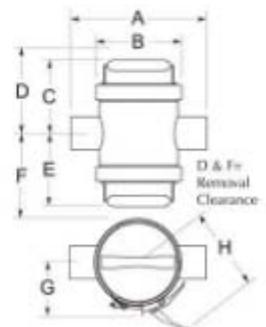
MAGTRAP MODEL 125

These USDA approved (*US Department of Agriculture Approved*) units are for high volume applications requiring gentle flow characteristics. From the exploded view, the product flow is split by the internal baffle and diverted onto two flat plate magnets. Line sizes to 4". Water jackets are optional.

Magtrap Dimensions & Weights (Inches & Pounds)

Line Size	A	B	C	D	E	F	G	H	Net Wt.	Ship Wt.
1.5"-2"	8.25"	7"	4.8	3.3	4.8	5.3	5.3	8.7	27.8	33
2.5"-3"	10.25"	9"	5.7	6.2	5.7	6.2	6	10	45.7	55
4"	10.25"	9"	6.5	7"	6.5	7"	6	10	55	64

*Standard line connections only - Others may vary





Highland Equipment Limited

STAINLESS STEEL EQUIPMENT

• MODEL 135 •



• All 316 Stainless Steel • Rare Earth Magnets Available To 300°F • All US Components



SANITARY INTERIOR
CNC WELDS



TRAPPED METAL

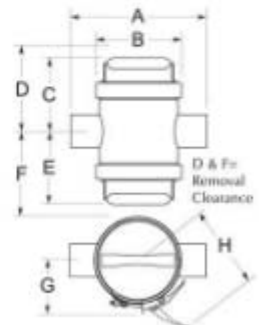


MAGTRAP IN-LINE



MAGTRAP MODEL 135

Our most popular and effective MAGTRAP has USDA approval (*US Department of Agriculture Approved*). Designed for liquids and slurries with chunks up to 1/2". In the exploded view, the product flows from right-to-left through intense, multiple, magnetic fields generated by the protruding tubes. Trash is held on the tubes, until the unit is cleaned. Units to 2" line size have five tubes, while 2 1/2" to 4" line sizes have seven tubes. The removable base makes the unit easily accessible for cleaning. Water jackets are optional.



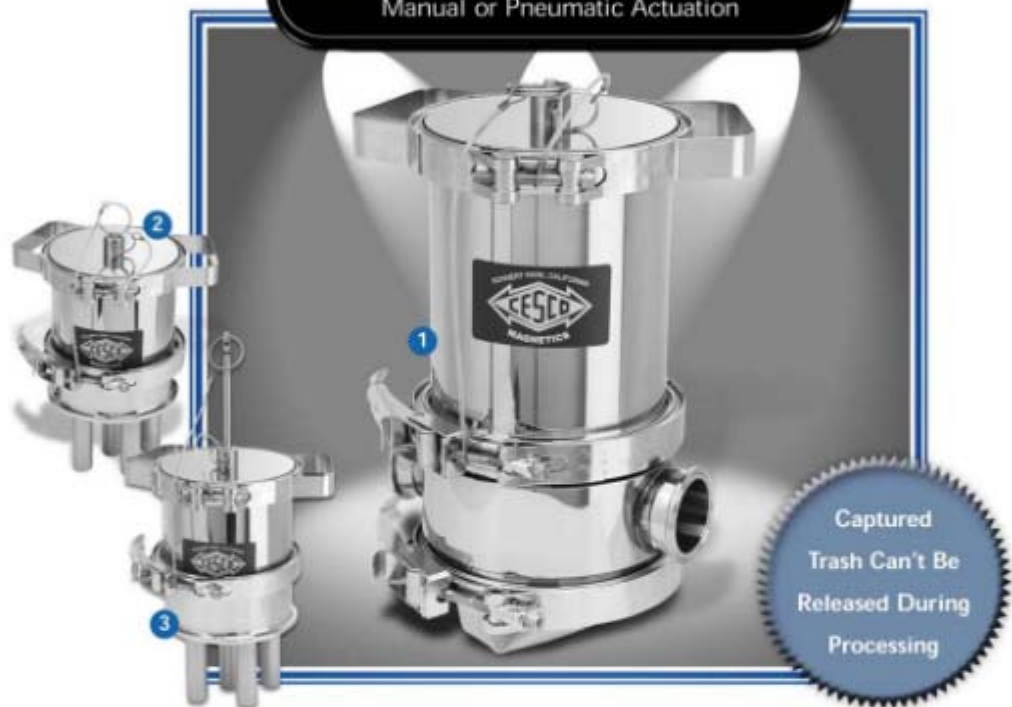
Magtrap Dimensions & Weights (Inches & Pounds)

Line Size	A	B	C	D	E	F	G	H	Net Wt.	Ship Wt.
1.5"-2"	8.25"	7	4.4	8.5	4.4	4.9	5.3	8.7	23.4	28
2.5"-3"	10.25"	9	5.3	10.3	5.1	5.6	6	10	38.5	48
4"	10.25"	9	5.9	12.5	5.9	6.4	6	10	49.7	59

*Standard line connections only - Others may vary

SERVING THE FOOD INDUSTRY SINCE 1946

• **MODEL 135EC (EASY CLEAN) MAGTRAP** •
Manual or Pneumatic Actuation



Easy Clean Magtrap - One Pull And Unwanted Trash Is Gone

Magtraps Remove Unwanted Ferrous From Your Products

Easy Clean (EC) Magtraps and elements are available in line sizes to 4". Release of captured metal during processing is impossible without leaving evidence of tampering. Carry handles provide ease of handling. Available with water jackets. All types of connections are available.

• **THE EASY CLEAN (EC) MAGTRAP** is available complete, as shown in photo 1, or as an element, as shown in photo 2. Elements fit all existing CESCO Model 135 bodies. A manually operated EC is shown. Pneumatic actuation is available.

• **THE EASY CLEAN ELEMENT IN THE "OPERATING POSITION"** (Photo 2) The Easy Clean (EC) element is removed from the Magtrap body by releasing the middle clamp. A stainless safety cable connects this clamp to the lift rod. This cable prevents release of collected trash during processing. Product flows past the stainless

tubes beneath the element. Rare earth magnets inside the tubes capture and hold the unwanted ferrous, nickel, carbide and work-hardened stainless debris.

• **THE EASY CLEAN ELEMENT IN THE "CLEANING" POSITION** (Photo 3) Raising the lift rod instantly releases all collected metal trash from the magnets. The tubes are then rinsed and cleaned. The lift rod is lowered into the "operating" position (photo 2). The Easy Clean element is reattached to the body (photo 1) and processing can continue.

Model 135EC (Easy Clean) Magtrap



LINE CONNECTIONS: Tri-Clamp and weld ends are standard. To assure a perfect match on weld ends, specify your line's outside and inside diameters. Bevel Seat (Acme Thread), John Perry, International Dairy fittings (IDF), Q-line, I-line, pipe threads, connections with captive nuts, pipe flanges and various European sanitary females are available at extra cost. Non-similar sized ends are also available. For all except our standard connections, please inquire.

MAGNETS: Rare earth magnets capture and hold the very finest of ferrous and nickel particles as well as bits of work hardened 300 series stainless steel and carbide. Standard rare earth magnets operate to a maximum of 210°F. (99°C.) without degrading their strength. By substituting other rare earth magnets the maximum working temperature can be extended to 400°F. (204°C.).

SPECIFICATIONS: All product contact surfaces are type 316L stainless steel except for gaskets. Gaskets are available in several Food Grade compounds.

REPLACEMENT PARTS (Part numbers on left): CESCO maintains stock of replacement parts at all times. Please provide the serial number stamped on the unit, or the model and line size, when ordering parts.

HOW TO SIZE A MAGTRAP:

MAGTRAPs work best with slower flow rates. It is easier to pull particles through low viscosity products than through higher viscosity products. Use **TABLE A** to classify your product's viscosity (Example: Water is Class 1, Cold Molasses, Class 4). From **TABLE B** select the appropriate size by comparing your line's maximum pumping capacity with various size MAGTRAP maximum flow ratings and product classes. If operating near the top of a flow capacity limit, move up one MAGTRAP size to provide for future increased pumping needs.

TABLE A:
 Select a class that best matches the most viscous product to be pumped. Remember that temperature and percent of liquid greatly affect viscosity.

CLASS 1:
FLUID AND STRAINED PRODUCTS (1-1,000 CPS):
 Beverages, clear broths, thin soups, juices, warm jellies, light sauces, thin salad dressings.

CLASS 2:
PULPED PRODUCTS (1,000-5,000 CPS):
 Applesauce, pulped fruits and vegetables, syrups, custards, starchy foods, cranberries, hot preserves.

CLASS 3:
VISCOUS PRODUCT (5,000-50,000 CPS):
 Chopped foods, creamed cheese, pumpkin filling, frozen slush, heavy sauces, batters, heavy purees.

CLASS 4:
VERY VISCOUS PRODUCTS (50,000+ CPS):
 Cooled products, pet foods, nut butters, minced meat, thick batters and slow flowing products.

TABLE B
 Maximum Effective flow in
 Gallons/Minute & Liters/Minute

Line Size	Class 1	Class 2	Class 3	Class 4
1" - 2"	120	105	60	30
38 - 50	570	400	230	115
2.5" - 3"	250	175	100	50
65 - 75	950	660	380	190
4"	340	240	140	70
100	1290	900	520	260

Weight in Pounds & Kilograms

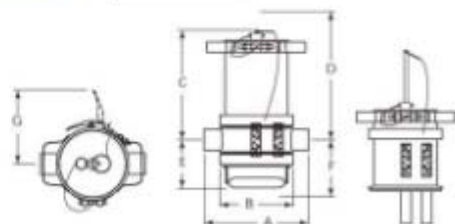
Line Size	Elements Only		Complete	
	Net	Ship	Net	Ship
1" - 2"	19	25	34	40
38 - 50	8.6	11.3	15.4	18.2
2.5" - 3"	33	43	57	67
65 - 75	14.9	19.5	25.8	30.4
4"	39	49	70	80
100	17.7	22.3	31.8	36.4

**Call for information regarding
 pneumatic actuation**

Dimensions - English (inches) & Metric (mm)

Line Size	A	B	C	D	E	F	G
1" - 2"	10	7	4.3	8.3	4.3	4.8	8.5
38 - 50	254	178	108	210	108	120	216
2.5" - 3"	12	8.9	5.1	10.3	5.1	5.5	10
65 - 75	305	225	130	260	130	152	254
4"	12	8.9	5.9	12.8	5.9	6.3	10
100	304	225	150	324	150	160	254

Dimensions and weights subject to change.



D & F = Removal Clearance

Model 170 High Pressure Magtrap



HOW TO SIZE A MAGTRAP:

MAGTRAPs are more effective at slower rates of flow. It is easier to extract metal trash through low viscosity products than through higher viscosity products. With this in mind, use TABLE A to select your product's viscosity class (Example: Water is Class 1, Molasses = Class 4), then move to TABLE B. From TABLE B, match your line's viscosity class and maximum pumping capacity with the MAGTRAP's maximum flow rates and select the appropriate line size.

TABLE A:

Select a class that best matches the most viscous product to be pumped. Remember that temperature and percent of liquid can greatly affect a product's viscosity class.

CLASS 1 (1-1000 CPS)

Beverages, clear broths, thin soups, juices, warm jellies, light sauces, thin salad dressings.

CLASS 2 (1000-5000 CPS)

Applesauce, pulped fruits and vegetables, syrups, custards, baby foods, cranberries, hot preserves.

CLASS 3 (5000 - 50,000 CPS)

Chopped foods, creamed cheese, pumpkin filling, frozen slush, heavy sauces, batters, heavy purées.

CLASS 4 (50,000+ CPS)

Cooled products, pet foods, nut butters, minced meat, thick batters and slow flowing products.

TABLE B Maximum Flow in Gallons/Minute & (Liters/Minute)
Maximum Pressure - 750 PSI (53 Bar)

Line Size	Class 1		Class 2		Class 3		Class 4	
	GPM	LPM	GPM	LPM	GPM	LPM	GPM	LPM
1" - 2.5"	90	(340)	65	(240)	36	(135)	18	(70)

LINE CONNECTIONS (FERRULES):

Tri-Clamp and weld ends are standard. To assure a perfect weld end match, specify your line's outside and inside diameters. Bevel Seat (Acme Thread), International Dairy Fitting (IDF), pipe sizes and threads, John Perry, I-line, Q-line, Camlocks, 150# pipe flanges, connections with captive nuts and various other domestic and European sanitary ferrules are available. Non-similar sizes are available on special order. Inquire regarding other connection options.

MAGNETS:

Rare earth magnets capture and hold the very finest of ferrous and nickel particles as well as bits of work hardened 300 series stainless steel and carbide. Standard rare earth magnets operate to a maximum of 210°F. (99°C.) without degrading their strength. By substituting other rare earth magnets the maximum working temperature can be extended to 400°F. (204°C.).

REPLACEMENT PART NUMBERS:

(on left) CESCO maintains replacement parts ready for immediate shipment. When ordering parts, please provide the serial number stamped on the unit.



Line Size	A	B	C	D	E	F	G	H	Net Wt.	Ship Wt.
1" - 2.5"	about B*	6.1	5.3	10	2.4	3.5	3.7	6.6	26	30
(25) - (63.5)	(203)*	(155)	(135)	(254)	(60)	(90)	(95)	(165)	(12)	(13.6)

Metric values in parenthesis *Varies with each type of connector