2021

MAGNETIC FILTER Y-STRAINER

ONE EYE INDUSTRIES

SOLVING TOMORROW'S CHALLENGES TODAY.

Hubame

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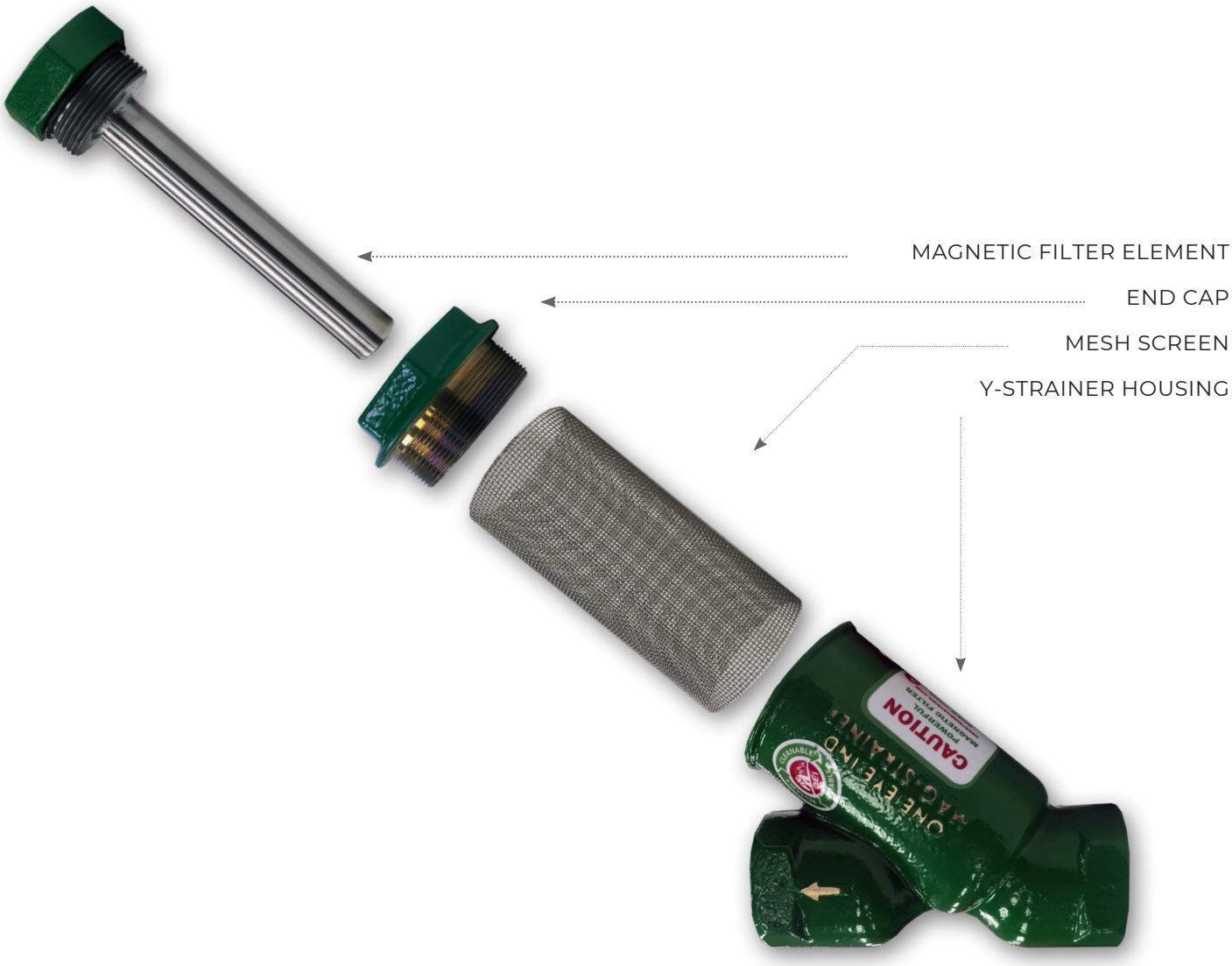
ONE EYE INDUSTRIES

Y-STRAINER SERIES



DESCRIPTION

OEI Magnetic Y-Strainers are recommended for low-flow applications with space restrictions. This filter employs a magnetic filter element and mesh screen. Systems are designed for the application's fluid, flow volume, viscosity, mobility, and mounting requirements. Y-strainer designs are offered for cryogenic, high-pressure, and high-temperature applications.

BENEFITS

- Requires minimal consumables.
- High holding capacity allows for extended planned maintenance periods.

EFFICIENCY

Magnetic Filter Element	Ferrous Contamination	Captures ferrous wear particles down to 4 µ and below with up to 95+% efficiency.
	Non-ferrous Contamination	Non-ferrous particles are magnetically captured because of cross contamination from static charge or embedded ferrous particles.

OPERATING

Install the magnetic Y-strainer inline with the magnetic filter element on top for easy access when cleaning. For any installations on suction applications, the mesh screen must be removed to prevent cavitation.

Magnetic Filter Element:

» Remove the contamination with a lab cloth/non-fiber cloth that absorbs the contamination. Save the cloth in a sample bag to send for analysis.

Mesh Screen:

Clean with solvent, soap and water, a parts washer, or ultrasonically, then air dry.
Use the magnetic filter element as a predictive maintenance tool by removing contamination with a lab cloth or rubber glove and depositing it into a sample jar. Send the contamination for analysis to determine the source of equipment component wear and prevent system failure.

MATERIALS

Magnetic Filter Element		Rare-earth magnets configured in a patented radial field design.
Filter Housing, End Caps, Mounts	Standard	Bronze (end caps: carbon steel)
	Non-Corrosive	Stainless Steel
Mesh Screen 20, 30, 40, 60, 100 or X	Stainless Steel	
Seals	Standard	Buna
	High Heat	Viton
	Sub Zero	EDPM

INSTALLATION

Port Size	1/2” - 4”
Ports	» NPT » Flange

Element Clearance	Housing length + 4”
Mount Type	Inline

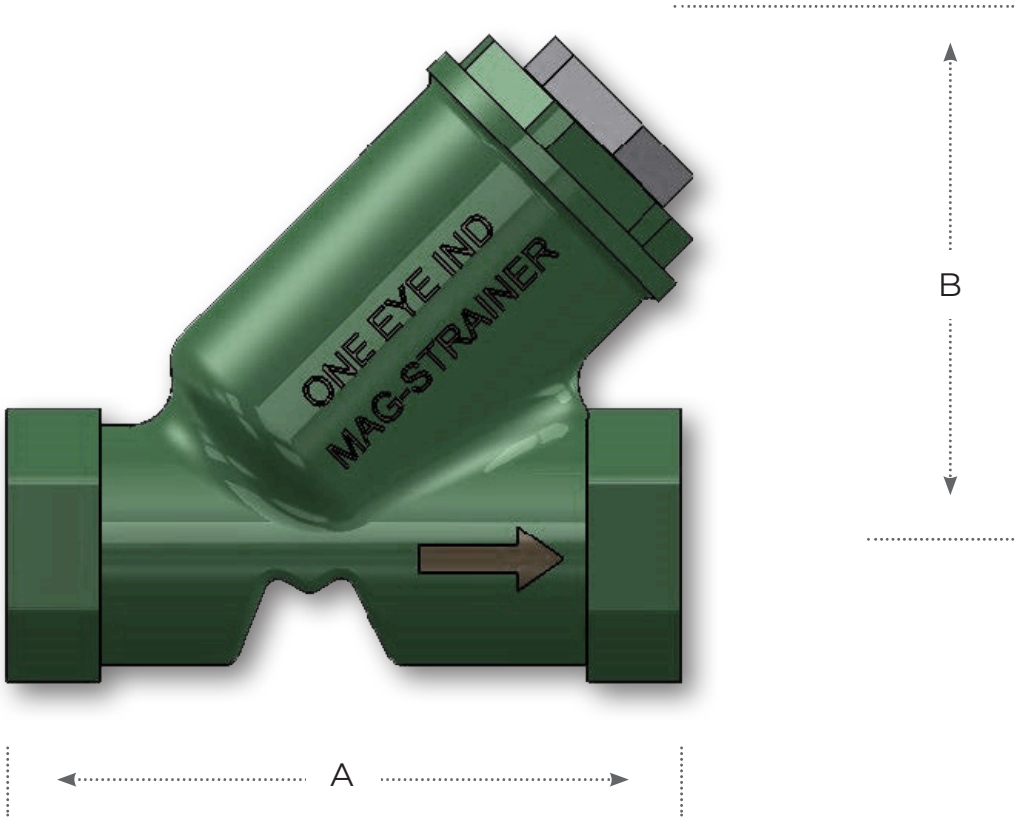
LIMITED WARRANTY

Magnetic Filter Element	3 years
Housing and components	1 year

SERVICE LIFE

Magnetic Filter Element	18+ years
Mesh Screen	5 years

BRONZE Y-STRAINERS



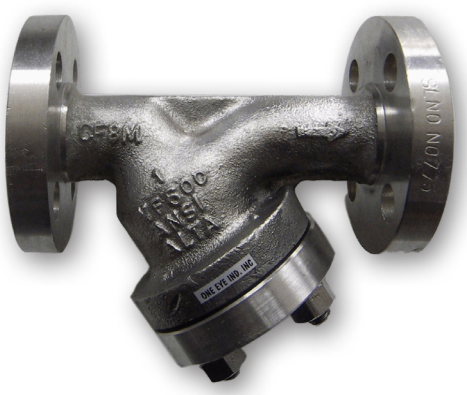
THREADED NPT

Pressure/Temperature Rating

NON SHOCK	20.7 bar (300 psi) @ 37.8° C (100° F) 27.5
STEAM RATED (WOG)	bar (400 psi) @ 65.6° C (150° F) 20.7 bar
CRYOGENIC	(300 psi) @ -195.6° C (-320° F)

PORT SIZE	PART NUMBER		HOUSING SIZE		MAGNETIC FILTER ELEMENT
	STANDARD	CRYOGENIC	A	B	
1”	5YB1T#	5YBC1T#	4 3 / 4 ”	4 ”	½” OD
1 1/2”	5YB112T#	5YBC112T#	5 3 / 4 ”	5 ”	3/4 ” OD
2”	5YB2T#	5YBC2T#	6 3 / 4 ”	6 ”	1” OD
2 1/2”	5YB212T#	5YBC212T#	8 ”	6 ”	1” OD
3”	5YB3T#	5YBC3T#	9 1/2”	7”	1” OD
4”	5YB4T#	5 Y B C4T#	12”	10”	1 1/2” OD

STAINLESS STEEL Y-STRAINERS



150# ANSI RAISED FACE FLANGE

19 bar (275 psi) @ 37.8° C (100° F)

PORT SIZE	PART NUMBER	HOUSING SIZE		MAGNETIC FILTER ELEMENT
		A	B	
1”	5YS1F1#	6 ⅜"	5 "	1/2” OD
1 1/2”	5YS112F1#	7 3/4"	5 1 / 4 "	1/2” OD
2”	5YS2F1#	7 7/8"	6"	1” OD

300# ANSI RAISED FACE FLANGE

49.6 bar (720 psi) @ 37.8° C (100° F)

PORT SIZE	PART NUMBER	HOUSING SIZE		MAGNETIC FILTER ELEMENT
		A	B	
2”	5YS2F3#	8 ⅜”	6 1/4"	1” OD

600# ANSI RAISED FACE FLANGE

99.3 bar (1440 psi) @ 37.8° C (100° F)

PORT SIZE	PART NUMBER	HOUSING SIZE		MAGNETIC FILTER ELEMENT
		A	B	
1”	5YS1F6#	8 5/8”	5" 6”	1/2” OD
1 1/2”	5YS112F6#	9 7/8”	6	1/2” OD
2”	5YS2F6#	11 ⅜”	3/4”	1” OD

600# ANSI NPT

99.3 bar (1440 psi) @ 37.8° C (100° F)

PORT SIZE	PART NUMBER	HOUSING SIZE		MAGNETIC FILTER ELEMENT
		A	B	
1”	5YS1T6#	6 ⅜"	5"	1/2” OD
2”	5YS2T6#	7 1/2"	6 1/2"	1” OD

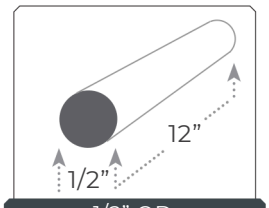
CORE TECHNOLOGY

DESCRIPTION

The patented magnetic filter element attracts ferrous wear particles down to 4 microns and below with up to 95+% efficiency. The magnetic filter element attracts both ferrous and non-ferrous particles. The radial magnetic field design offers incredible holding strength and a high dirt holding capacity.

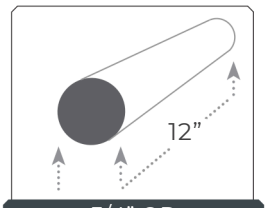
OEI magnetic filter elements are employed in various housings designed with calculated dwell times for optimal filtration. Magnetic filter elements come in five sizes from 1/2” to 2” outer diameter (OD) (shown below).

1” magnetic filter elements with varying loads of contamination. Dirt holding capacity*: 3.97 lb-ft.



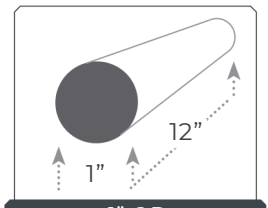
1/2” OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 1.8 lb-lft



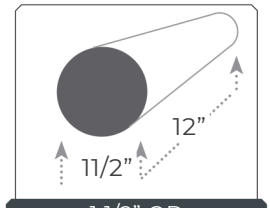
3/4” OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 3.0 lb-lft



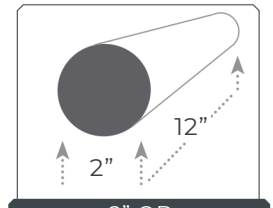
1” OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 4.0 lb-lft



1 1/2” OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 16 lb-lft



2” OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 31.3 lb-lft

CORE TECHNOLOGY BENEFITS

CLEAN AND REUSE

OEI products are reusable for 18+ years, and require minimal consumables. Conventional filters require frequent, costly changeouts, and disposal.

PREDICTIVE MAINTENANCE

OEI Magnetic Filter Elements are effective predictive maintenance tools when used for condition monitoring. When removed for inspection, magnetic filter elements will have varying quantities of contamination. Abnormally high quantities of contamination indicate component failure. The composition of contamination will identify which components are stressed, worn, or failing.

Visual analysis of the quantities of wear contamination collected on magnetic filter plugs can determine component failure. Analysis of wear particle compositions and sizes will determine early component wear.

GOES WHERE NO CONVENTIONAL FILTER HAS GONE BEFORE

OEI magnetic filters can be installed on suction lines to protect pumps without risk of cavitation. Unlike conventional filters, they accommodate space restrictions and unique applications such as splash oil gearboxes, reservoirs, and small coolant lines.

CAPTURES NON-FERROUS CONTAMINATION

Non-ferrous particles are magnetically captured because of cross-contamination. Particles become statically charged from flow velocity. This charge is a principal force of particle adhesion; iron particles contaminate non-ferrous particles by adhering to their statically charged surface. Another form of cross-contamination occurs when sub-micron iron particles embed in softer non-ferrous particles after abrasive impact.

PREVENT OXIDIZATION AND VARNISH

OEI effectively removes iron and steel particles under 10 microns that are known to promote oil oxidation because of their catalytic properties. Oxidation can deplete additives that protect against wear, corrosion, sludge, varnish, and viscosity changes that affect the thickness of films between bearing surfaces, friction, control of temperature, and energy consumption.

NO WORMHOLING OR CHANNELING

OEI filters eliminate the opportunity for wormholing and channeling that conventional paper, fiberglass, and polymer media filter elements are subject to.
Wormholing: when wear contamination punctures the filter media.
Channeling: when fluid flows through punctured holes because it takes the path of least resistance.

MAGNETIC FILTER ELEMENT

EFFICIENCY

Ferrous Contamination Filtration	Captures ferrous wear particles down to 4 µ and below with up to 95+% efficiency.
Non-Ferrous Contamination Filtration	Non-ferrous particles are magnetically captured because of cross-contamination. Particles become statically charged from flow velocity. This charge is a principal force of particle adhesion; iron particles contaminate non-ferrous particles by adhering to their statically charged surface. Another form of cross-contamination occurs when sub-micron iron particles embed in softer, non-ferrous particles after abrasive impact.

OPERATING PARAMETERS

Pressure Rating	Standard	< 34.5 bar (500 psi)
	High Pressure	< 689.5 bar (10000 psi)
Temperature Rating	Standard	< 150° C (300° F)
	High Heat	< 300° C (600° F)
Flow Rate	Housing Dependent	
Bypass Setting	Continuous	

CLEANING

Remove the magnetic filter element from the housing, then remove the contamination with a lab cloth/ non-fiber cloth that absorbs the contamination. Save the cloth in a sample bag to send for analysis.

Use the magnetic filter element as a predictive maintenance tool by removing contamination with a lab cloth or rubber glove and depositing it into a sample jar. Send the contamination for analysis to determine the source of equipment component wear and prevent system failure.

MATERIALS

Magnetic Filter Element	Rare-earth magnets are configured in a patented radial field design
Casing	Stainless Steel

LIMITED WARRANTY

Magnetic Filter Element	3 years

SERVICE LIFE

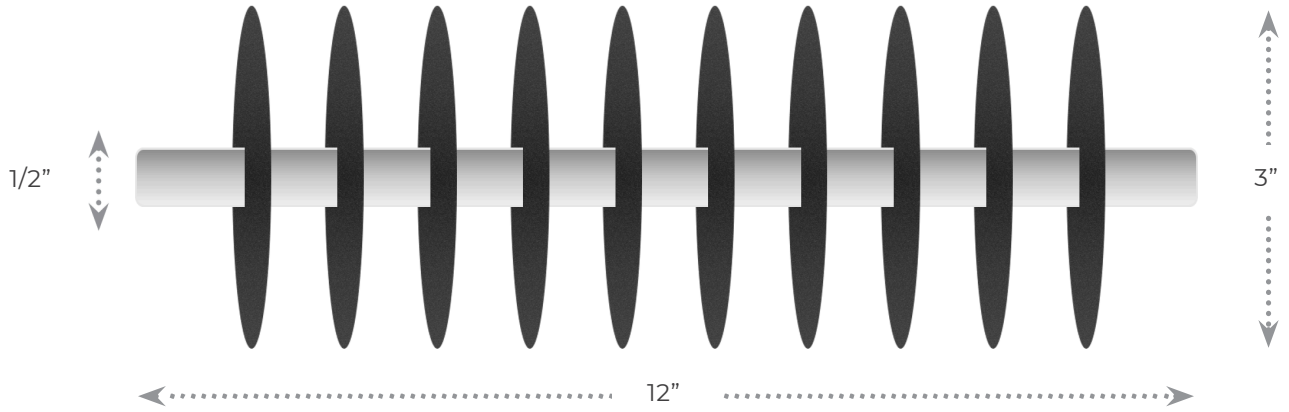
Magnetic Filter Element	18+ years

1/2” OD X 12” L

SPECIFICATIONS

Holding Strength	57 ft-lb
Dirt Holding Capacity	1.8 lb-lft
Length Options	9", 12”, 24"

Radial Magnetic Fields (12")	10 3"
Radial Magnetic Field Diameter	68.7 in3
Magnetic Surface Area (12")	

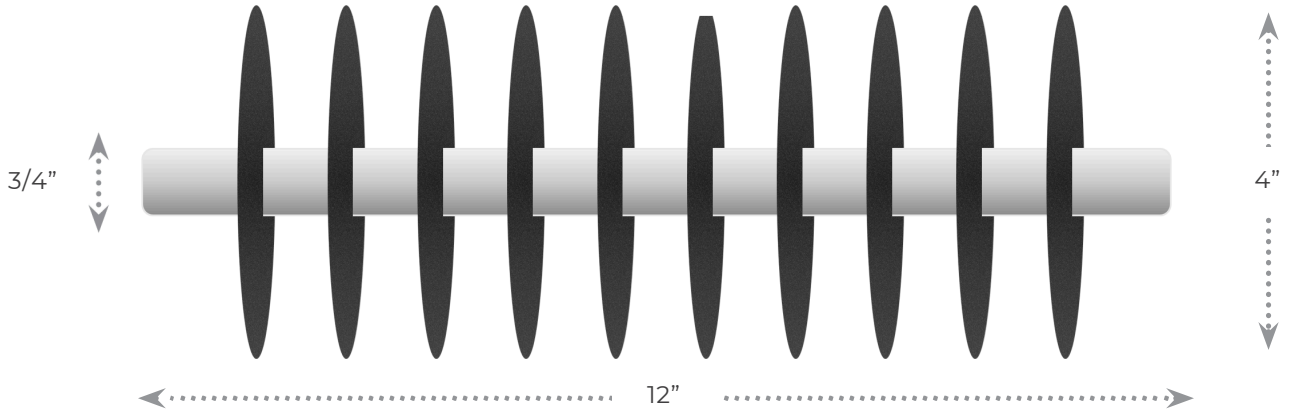


3/4” OD X 12” L

SPECIFICATIONS

Holding Strength	123 ft-lb
Dirt Holding Capacity	3.0 lb-lft
Length Options	9", 12”, 24", 36"

Radial Magnetic Fields (12")	10 4”
Radial Magnetic Field Diameter	125.2 in3
Magnetic Surface Area (12")	

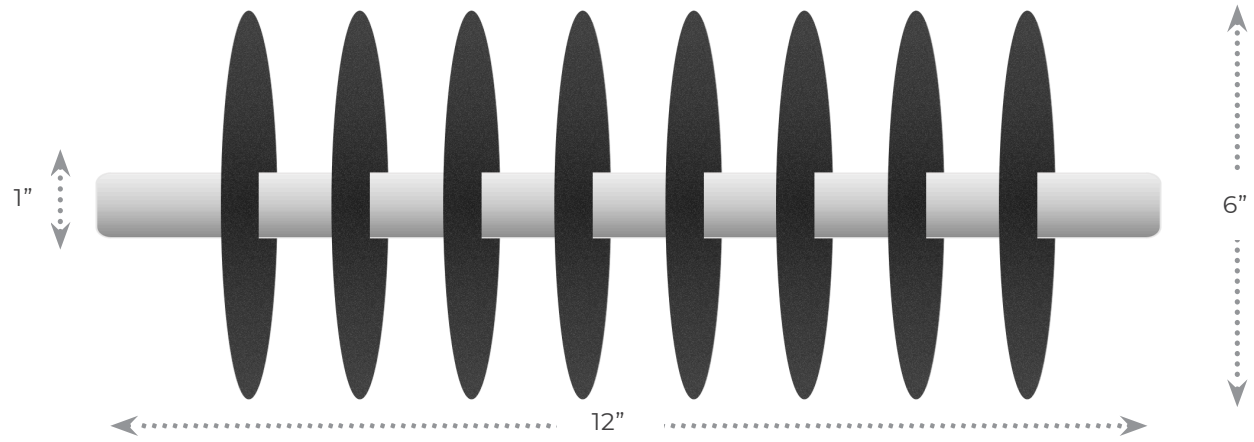


1” OD X 12” L

SPECIFICATIONS

Holding Strength	270 ft-lb
Dirt Holding Capacity	4.0 lb-lft
Length Options	9", 12”, 24", 36"

Radial Magnetic Fields (12")	8
Radial Magnetic Field Diameter	6”
Magnetic Surface Area (12")	195.5 in3

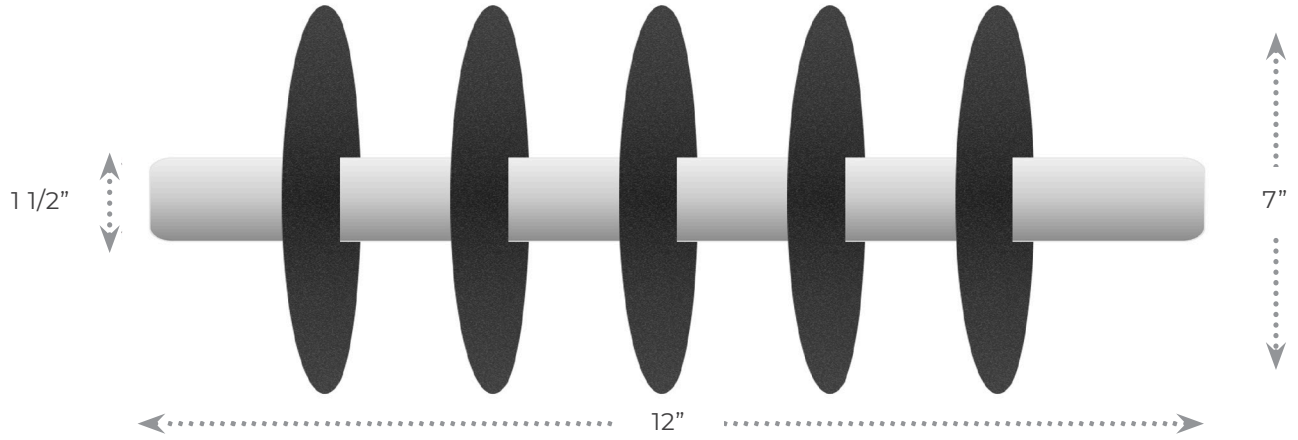


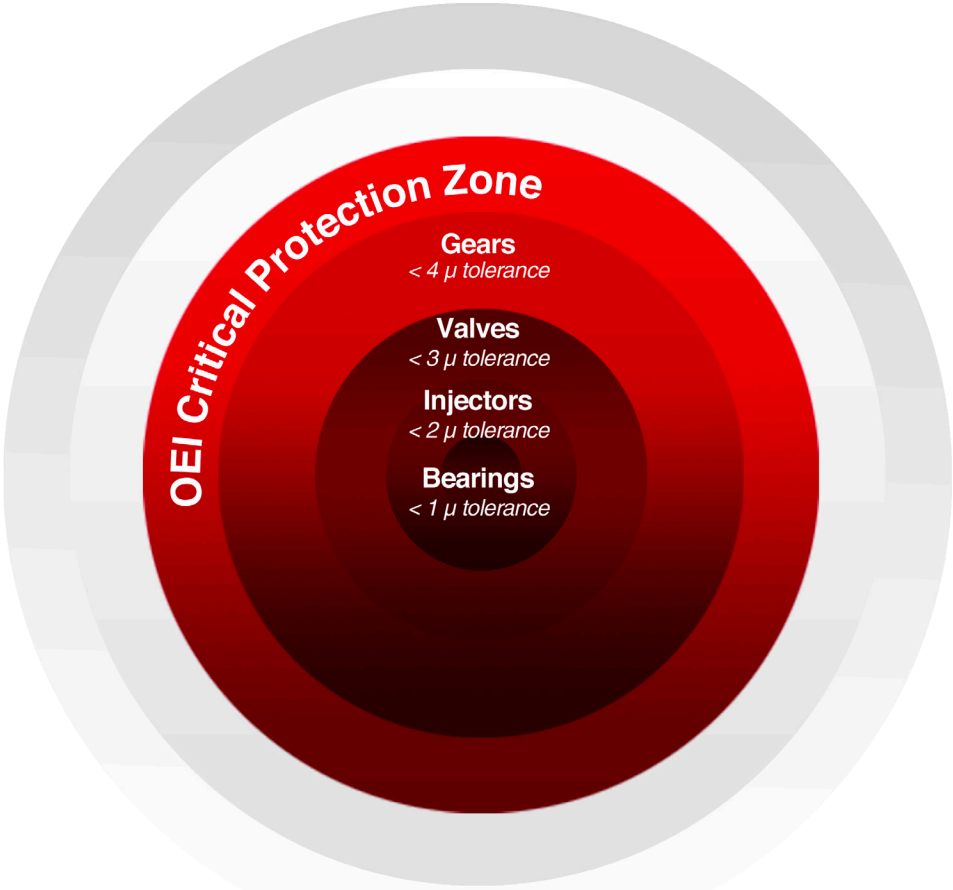
1 1/2” OD X 12” L

SPECIFICATIONS

Holding Strength	500 ft-lb
Dirt Holding Capacity	16.0 lb-lft
Length Options	9", 12”, 24", 36"

Radial Magnetic Fields (12")	5
Radial Magnetic Field Diameter	7”
Magnetic Surface Area (12")	328.7 in3



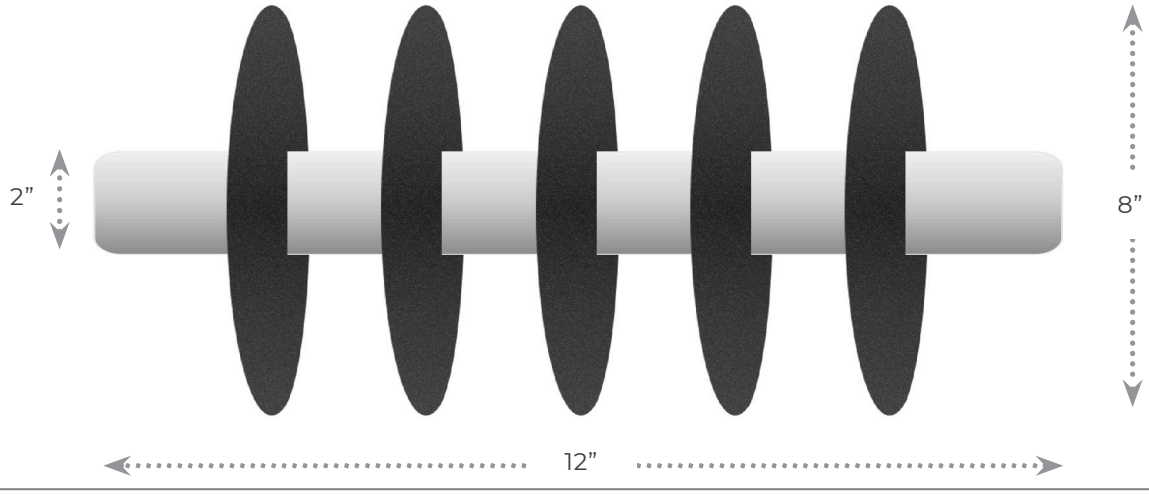


2” OD X 12” L

SPECIFICATIONS

Holding Strength	740 ft-lb
Dirt Holding Capacity	31.3 lb-lft
Length Options	9", 12”, 24", 36"

Radial Magnetic Fields (12")	5
Radial Magnetic Field Diameter	8”
Magnetic Surface Area (12")	420.9 in3



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