2021

# MAGNETIC FILTER Y-STRAINER


ONE EYE INDUSTRIES

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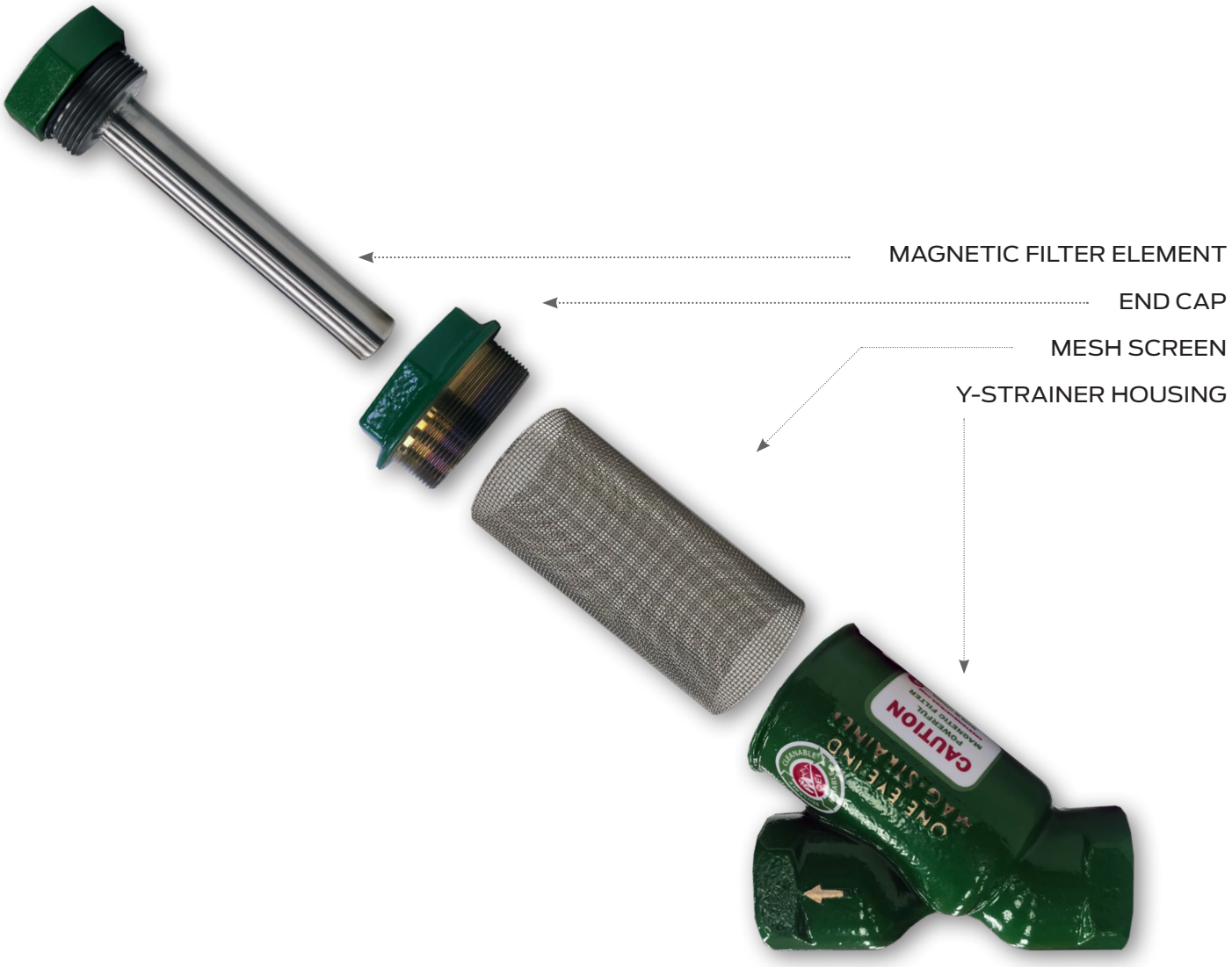
# Y-STRAINER SERIES




## 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<br>20, 30, 40, 60, 100 or X | Stainless Steel | |
| Seals | Standard | Buna |
| | High Heat | Viton |
| | Sub Zero | EDPM |

## INSTALLATION

| | |
|---|---|
| Port Size | ½" - 4" |
| Ports | » NPT<br>» Flange |

| | |
|---|---|
| Element Clearance | Housing length + 4" |
| Mount Type | Inline |

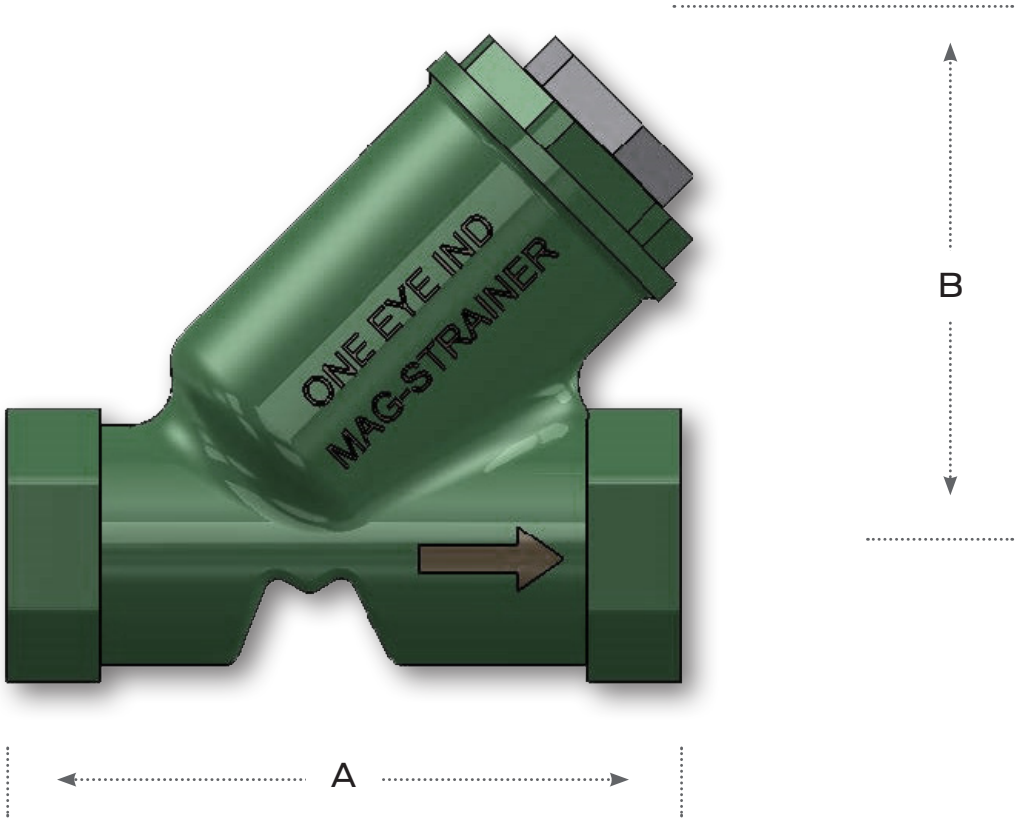
## LIMITED WARRANTY

| | |
|---|---|
| Magnetic Filter Element | 3 years |
| Housing and components | 1 year |

## SERVICE LIFE

| | |
|---|---|
| Magnetic Filter Element | 18+ years |
| Mesh Screen | 5 years |

# BRONZE Y-STRAINERS



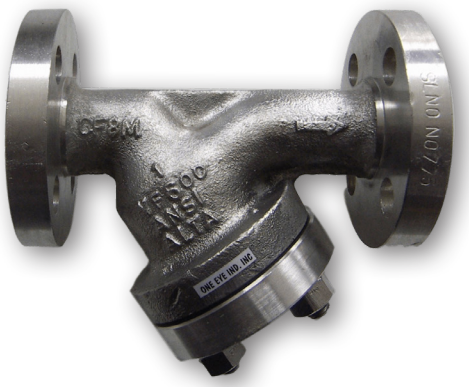

## THREADED NPT

Pressure/Temperature Rating

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

| PORT SIZE | PART NUMBER | | HOUSING SIZE | | MAGNETIC FILTER ELEMENT |
|---|---|---|---|---|---|
| | STANDARD | CRYOGENIC | A | B | |
| 1” | 5YB1T# | 5YBC1T# | 4 ¾” | 4” | ½” OD |
| 1 ½” | 5YB112T# | 5YBC112T# | 5 ¾” | 5” | ¾ ” OD |
| 2” | 5YB2T# | 5YBC2T# | 6 ¾” | 6” | 1” OD |
| 2 ½” | 5YB212T# | 5YBC212T# | 8” | 6” | 1” OD |
| 3” | 5YB3T# | 5YBC3T# | 9 ½” | 7” | 1” OD |
| 4” | 5YB4T# | 5YBC4T# | 12” | 10” | 1 ½” 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" | ½” OD |
| 1 ½” | 5YS112F1# | 7 ¾" | 5 ¼" | ½” OD |
| 2” | 5YS2F1# | 7 ⅞" | 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 ¼" | 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 ⅝” | 5" | ½” OD |
| 1 ½” | 5YS112F6# | 9 ⅞” | 6” | ½” OD |
| 2” | 5YS2F6# | 11 ⅜” | 6 ¾” | 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 ½" | 6 ½" | 1” OD |

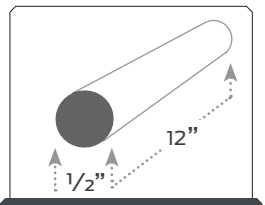
# CORE TECHNOLOGY

## 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.

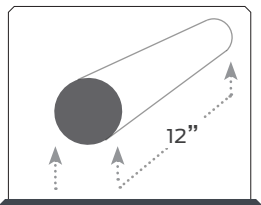
OEI magnetic filter elements are employed in various housings designed with calculated dwell times for optimal filtration. Magnetic filter elements come in five sizes from ½" to 2" outer diameter (OD) (shown below).

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



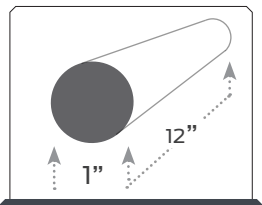

½" OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 1.8 lb-lft



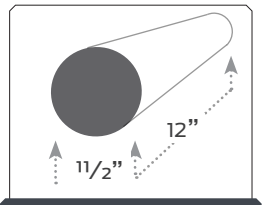

¾" OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 3.0 lb-lft



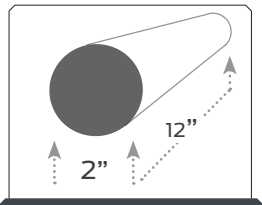

1" OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 4.0 lb-lft




1 ½" OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 16 lb-lft




2" OD MAGNETIC FILTER ELEMENT

Dirt holding capacity: 31.3 lb-lft

*Dirt holding capacity is the quantity of contaminant mass a filter element can trap and hold before the maximum allowable back pressure, or delta P level, is reached.

# 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

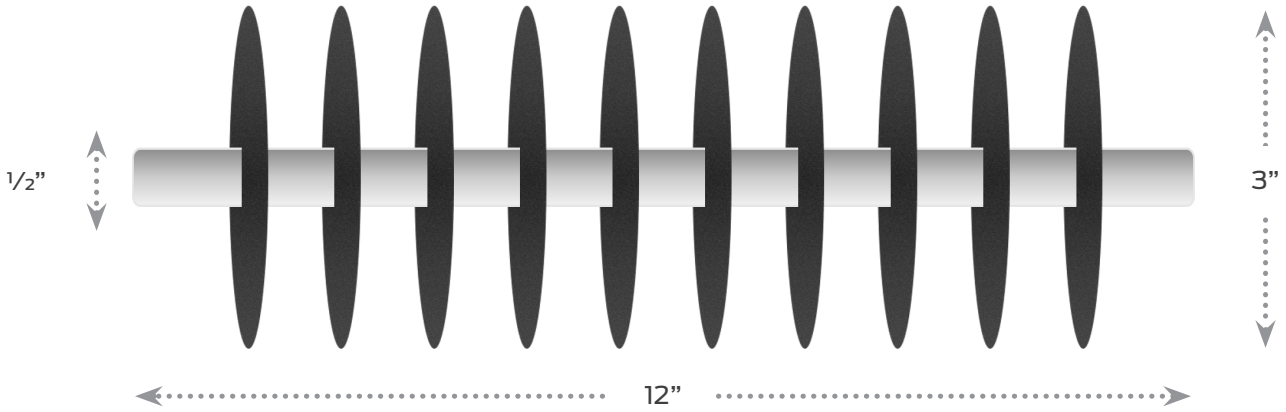
| | |
|---|---|
| Magnetic Filter Element | 18+ years |

## ½” 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 |
| Radial Magnetic Field Diameter | 3" |
| Magnetic Surface Area (12") | 68.7 in³ |

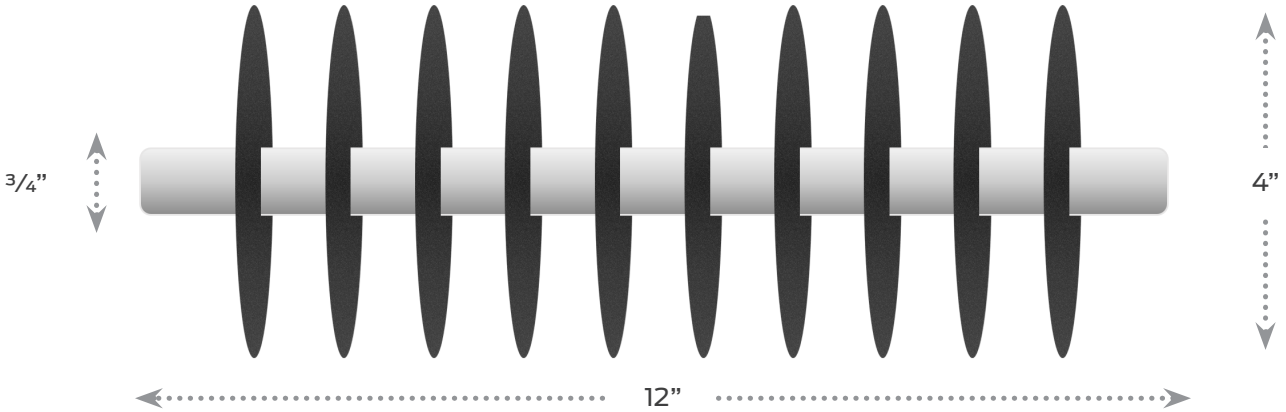



## ¾” OD X 12” L

### SPECIFICATIONS

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

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

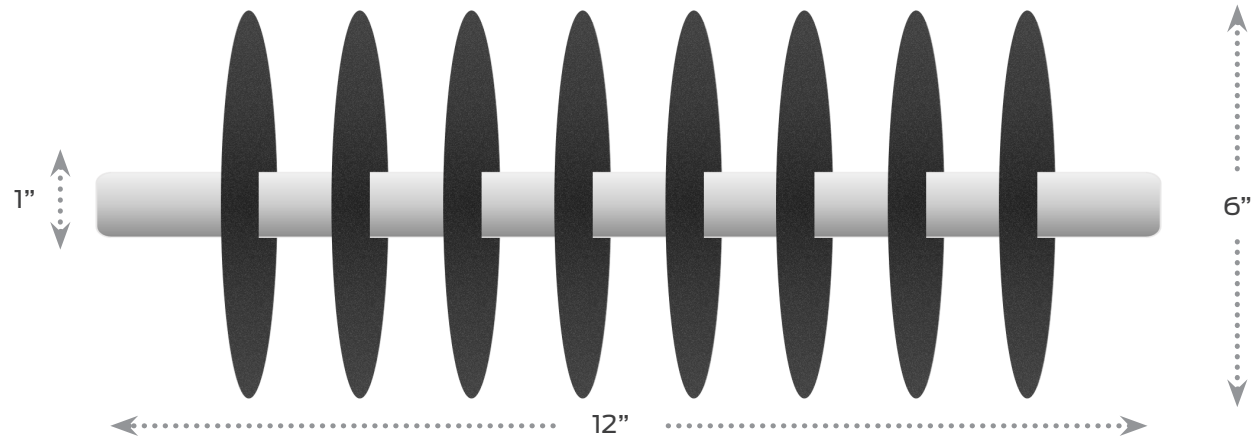


## 1” OD X 12” L

### 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 $in^3$ |

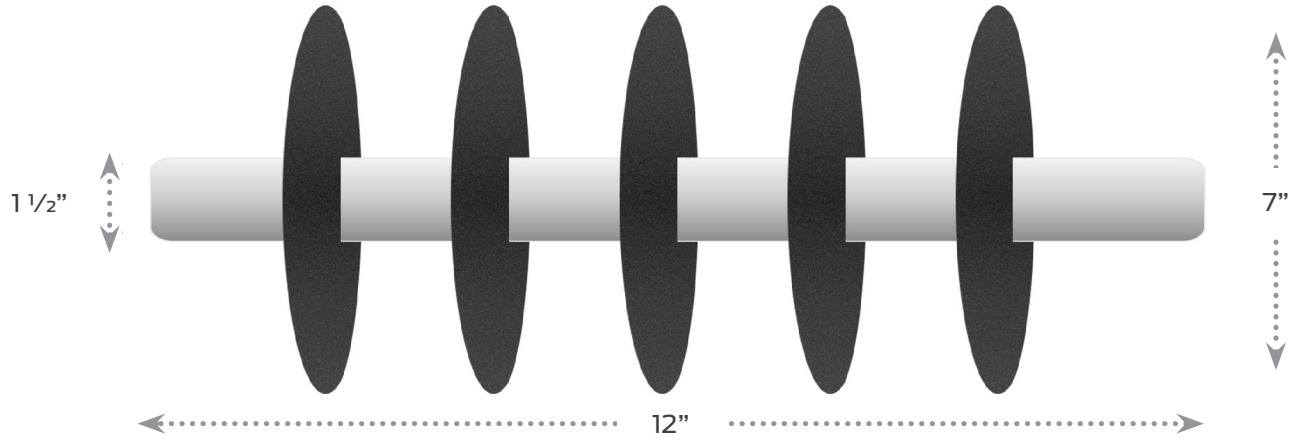


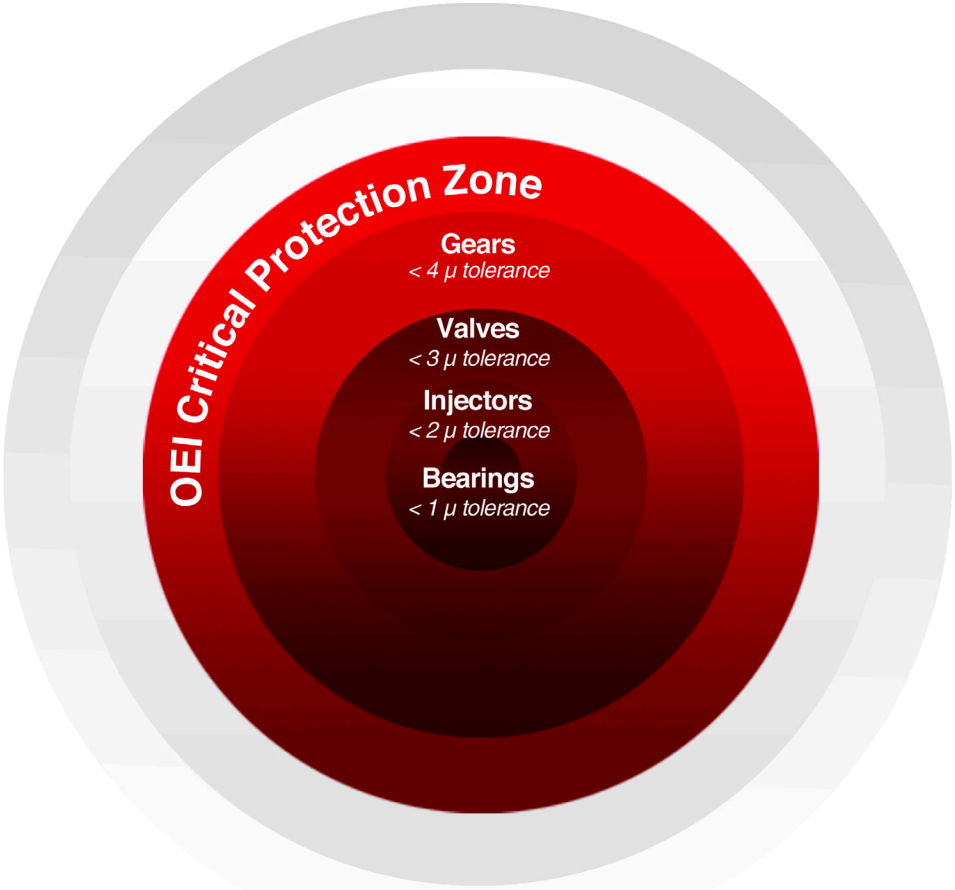

## 1 ½” OD X 12” L

### 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 $in^3$ |



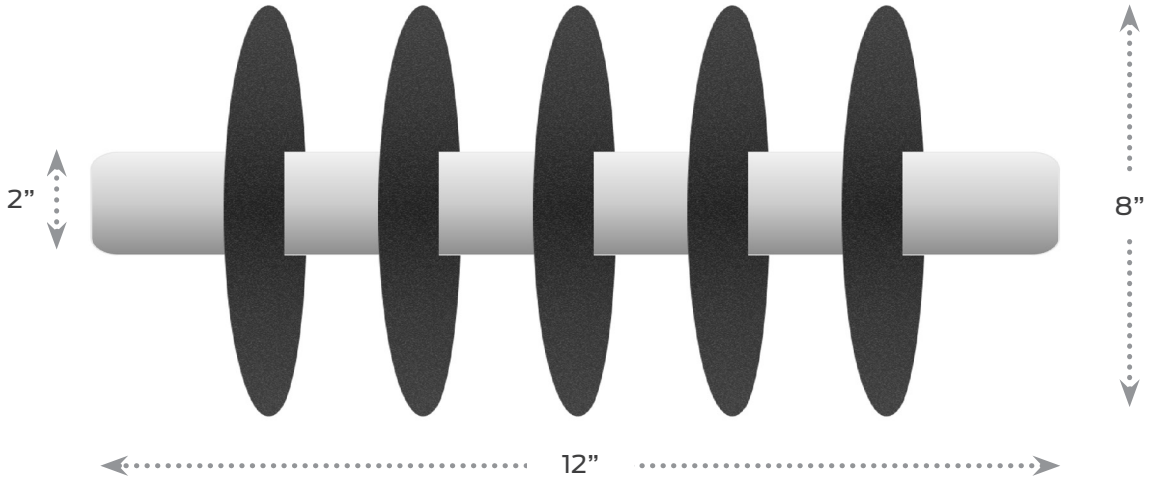



## 2” OD X 12” L

### 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 $in^3$ |



ONE EYE INDUSTRIES

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