

# MILLER LEAMAN <sup>INC</sup>

## Manufacturing Sea Strainers with a Focus on Quality, Efficiency and Reliability

- Thompson SeaStrainer
- Basket Strainers
- Duplex Strainers
- Disc Filters



**MADE IN**  
  
**AMERICA**





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## Catalogue Registration Form

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The information requested in this form will be used to update the information we have on record for you. The information you provide will be for internal use only. This will enable us to send you periodic updates to the catalogue with our most current product information.

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Please provide us with the following information.

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<b>Company Name:</b>	
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<b>City:</b>	
<b>State:</b>	
<b>Zip Code:</b>	
<b>E-Mail Address:</b>	
<b>Phone Number:</b>	
<b>Fax Number:</b>	

<b>Comments:</b>	

MLIC-IND04

\*\*Please detach at dash line and return to Miller-Leaman, Inc. to complete Catalogue Registration. The completed information can be faxed to (386) 248-3033 or mailed to Miller-Leaman, Inc., 800 Orange Avenue, Daytona Beach, FL 32114

THANK YOU...for considering our innovative filtration products. This catalogue is designed to give you all the necessary information to promote our filtration products. If you find that you need additional information, or clarification on information that you see, please do not hesitate to contact us.

In addition to the exceptional quality of our products, customer satisfaction is our highest priority. There are many filtration manufacturers competing in our market; therefore, we will endeavor to differentiate ourselves by offering unique products backed by a dedication to customer satisfaction.

For additional information please visit our website at [www.millerleaman.com](http://www.millerleaman.com). On our website, you will find extensive technical information including 3D model drawings, product owner's manuals, and other valuable information.

We would appreciate the opportunity to assist you with any filtration applications you are working on. Our toll free number is 1-800-881-0320. You can also e-mail us at [sales@millerleaman.com](mailto:sales@millerleaman.com). We look forward to building a long-lasting, mutually beneficial relationship with your company.

Expect the Best,

*Chris Shuster*

Chris Shuster  
Vice President, Sales & Marketing



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# **Strainer Product Summary**

The logo for Miller Leaman Inc. features a stylized blue diamond shape with a white circle in the center, set against a white background.

**MILLER**  **LEAMAN** INC

Pure Filtration Solutions.

**Marine Products**

## Who is Miller-Leaman?

- Diversified Filtration Company est. 1991
- 52,000 sq ft Manufacturing Facility
- Producers of High Quality Stainless Steel Strainers



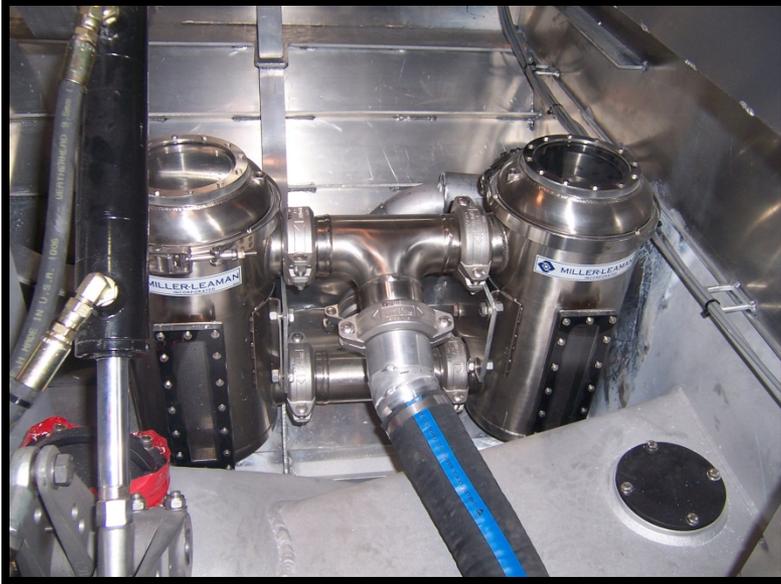


MILLER  LEAMAN <sup>INC</sup>



- Government / Military Vessels
- Work Boats
- Offshore Industry
- Yachts
- Racing Boats





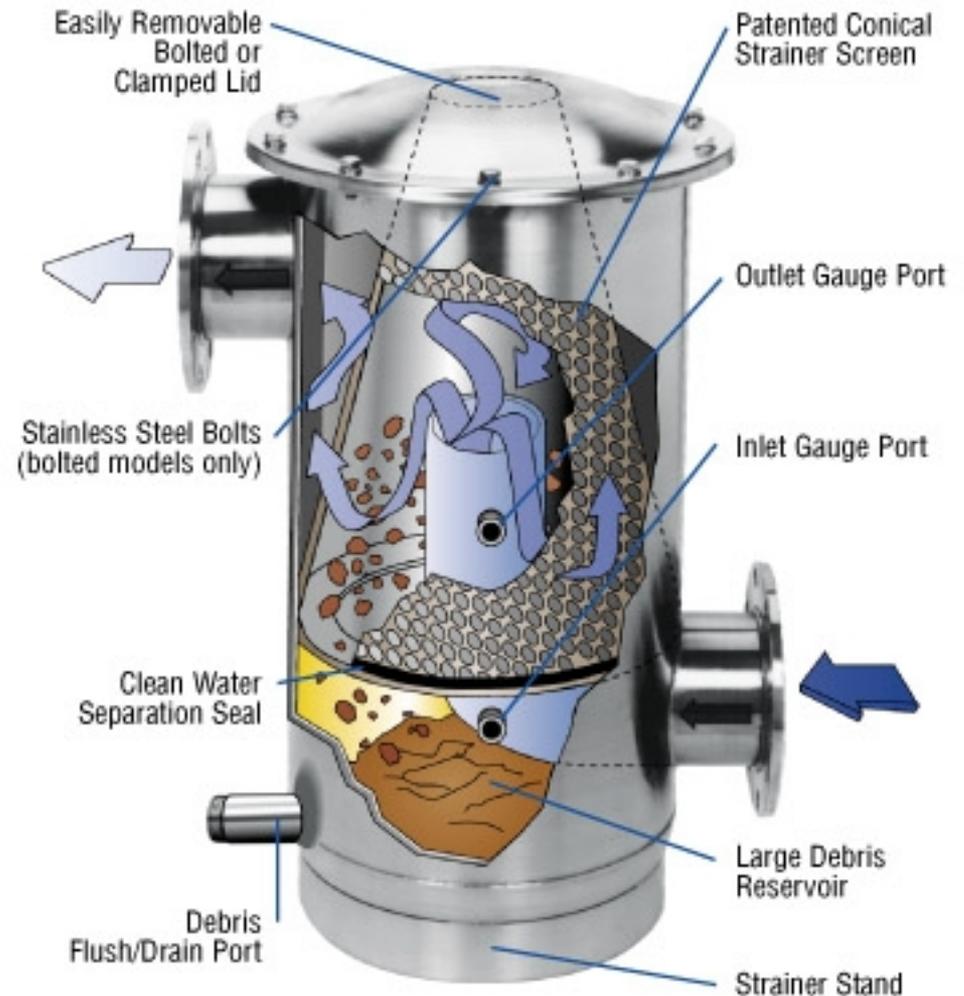
- Manufacturing custom strainers for new construction and retrofit applications
- Custom Thompson SeaStrainers (Simplex & Duplex)
- Custom Basket SeaStrainers (Simplex & Duplex)
- Various materials (316 SS, CuNi, etc)



- Miller-Leaman Proprietary Product



- Type 304 and Type 316 Stainless Steel  
*(Other Alloys Available)*
- 2", 3", 4", 6" Model Sizes  
*(Other Sizes Available)*
- Quick-Release Clamp Lid (2", 3", 4")
- Strainer Housings Designed for Suction or Pressure Side of Pump  
*(125 Max Pressure Rating)*
- Two Gauge Ports to Monitor Differential Pressure
- Standard Drain/Flush Port - 1 ½" NPT
- 5/64" (2 mm) Perforated Screen is Standard  
*(Other Screen Options Available)*





- High Quality, Durable Construction
- Customized to Exact Specifications to Minimize Footprint in engine room
- Flush/Drain Particles from Reservoir, via 1 ½" Port
- Substantially More Screen Surface Area Compared to Traditional Basket Strainers (*3 - 5 Times*) - Less Maintenance
- Heavy-Duty, Thick Gauge Screen
- Low Pressure Loss (*Less than 1 PSI when clean*)

Pressure Differential Alarm (PDA)



- Monitors Inlet & Outlet Pressure
- Signals When Screen Cleaning is Req'd
- Audible/Visual Alarm

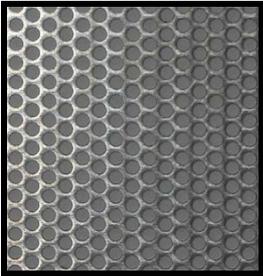
Automatic Timer Flush (ATF-EA-1.5)



- Automatically Purges Strainer Reservoir
- Adjustable Drain/Flush Frequency & Duration
- Manual Drain/Flush Switch

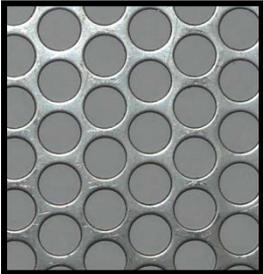


Industry  
Standard

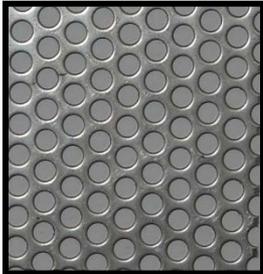


5/64" Holes

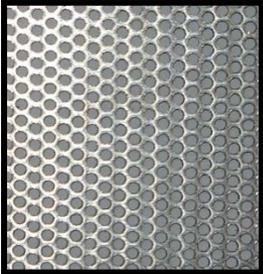
Miller-Leaman Standard



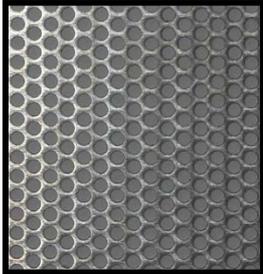
1/4" Holes



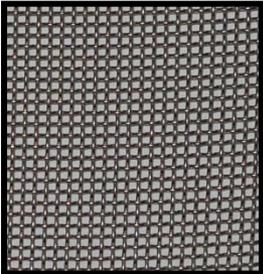
1/8" Holes



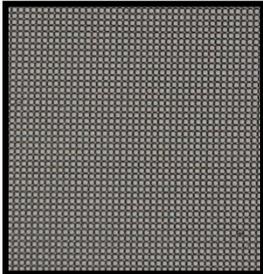
1/16" Holes



5/64" Holes

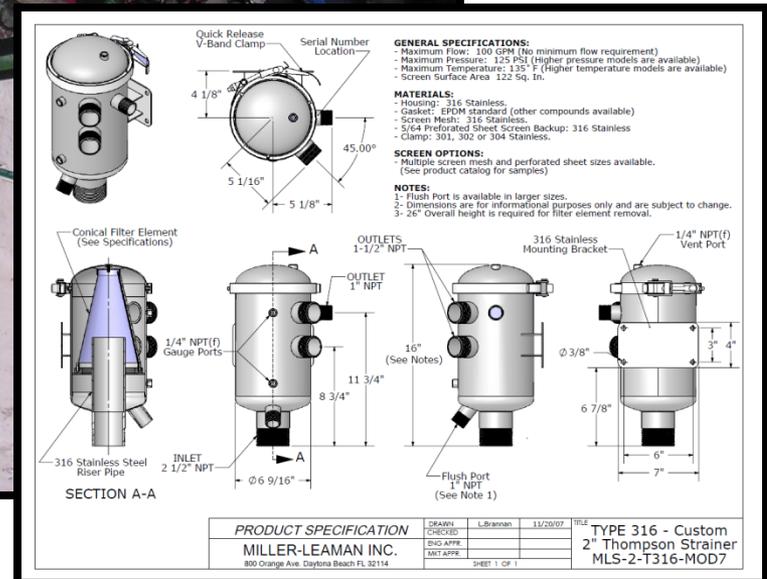
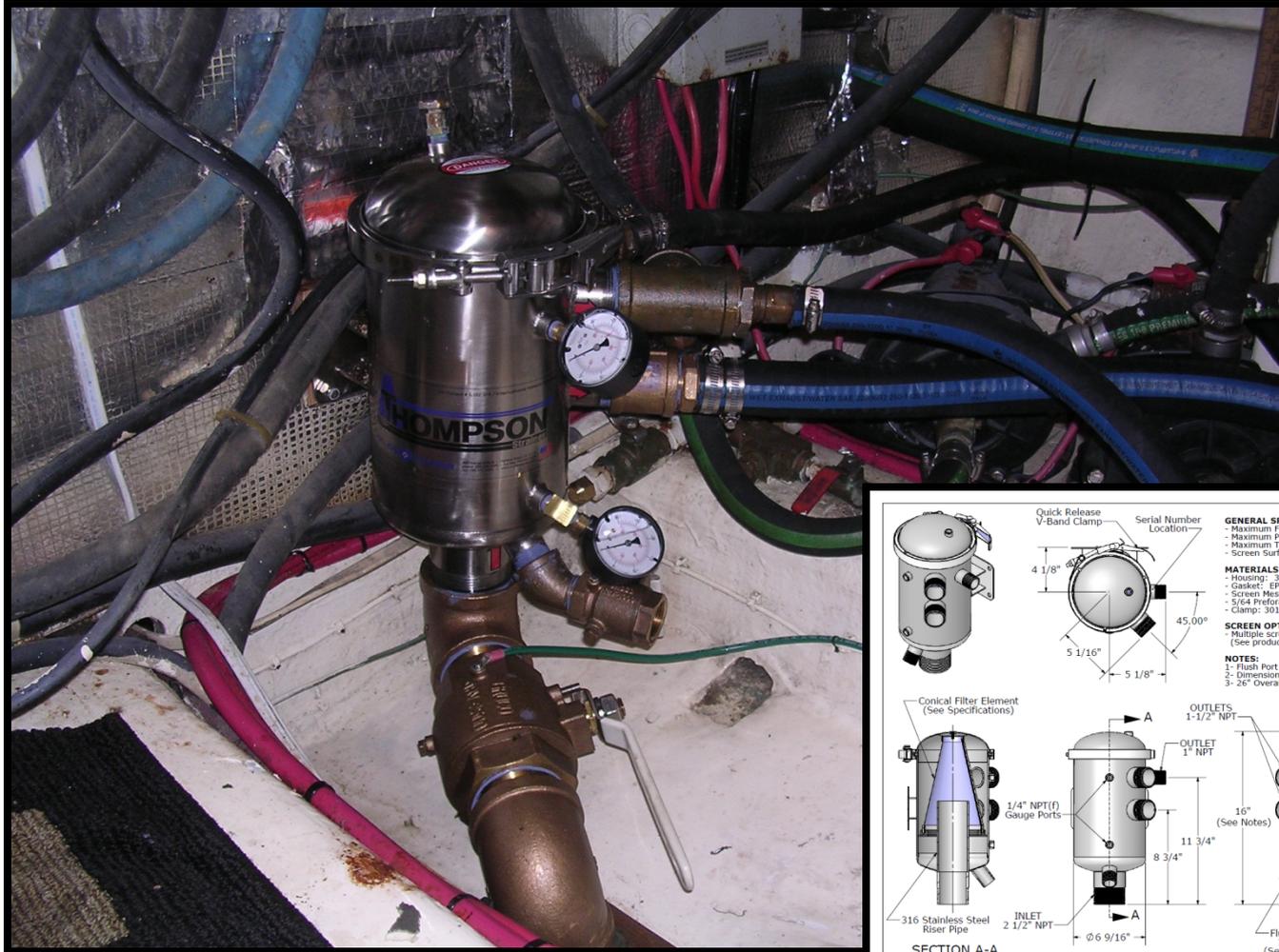


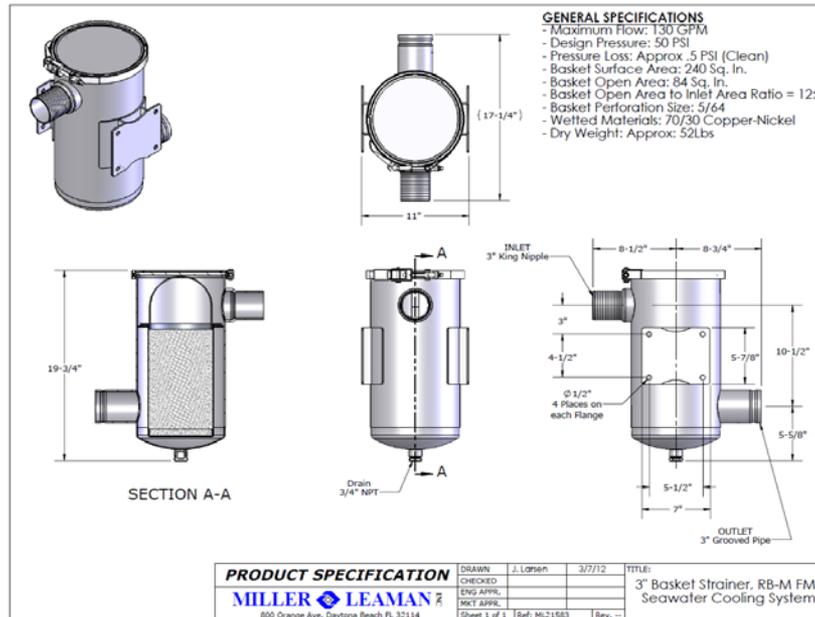
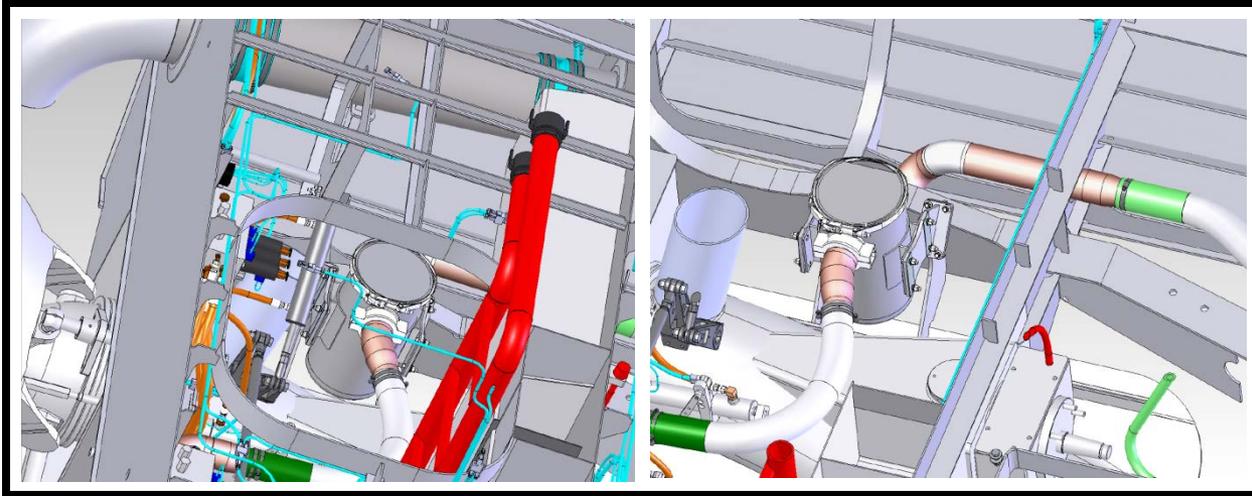
16 Mesh

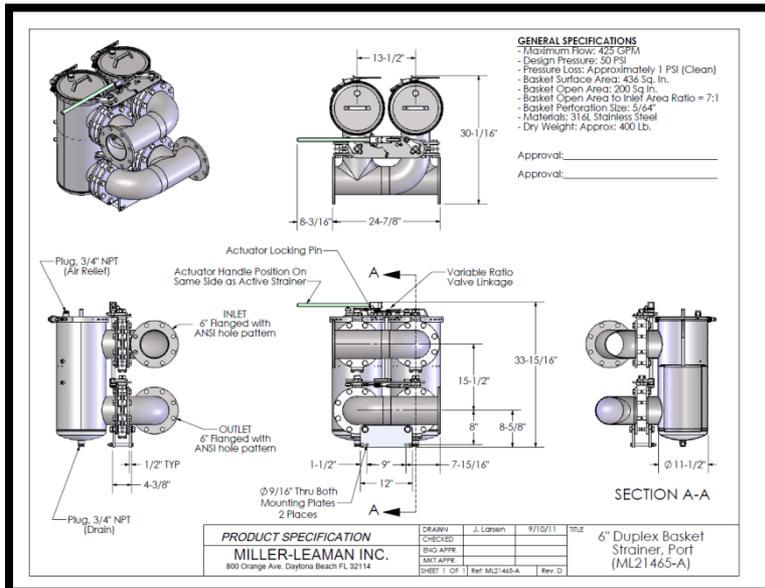
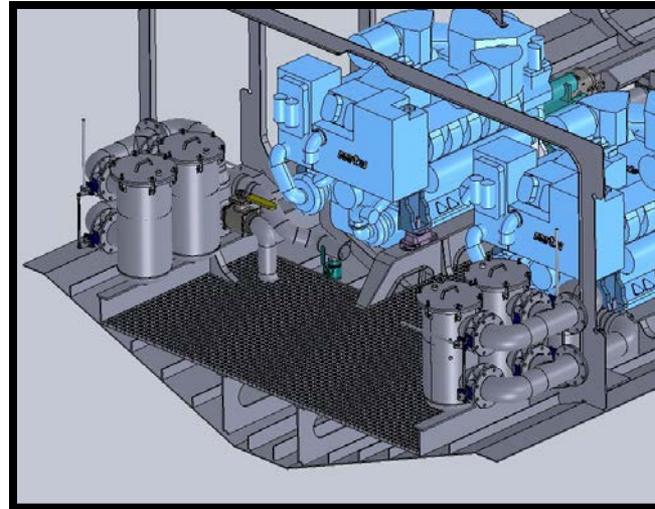


30 Mesh





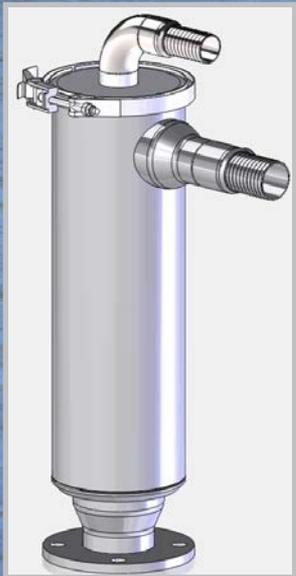








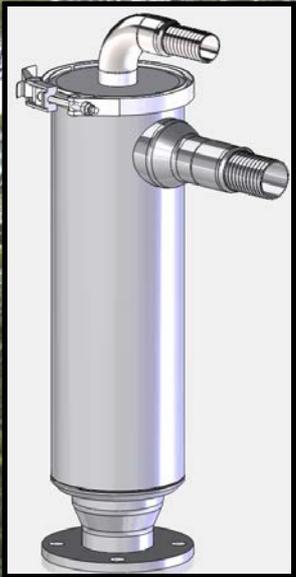




MILLER  LEAMAN <sup>INC.</sup>







- Customized to Exact Specifications
- Thompson SeaStrainer - Miller-Leaman Proprietary Patented Product
- Capable of Using Various Materials
- Over 20 years Experience Designing Custom Filtration Systems
- Expertise in Stainless Vessel Design and Fabrication
- Unique and Innovative Designs
- Quick Response Times
- Flexible Design Process
- Customer Driven and Dedicated to Customer Satisfaction



**MILLER**  **LEAMAN** INC  
Pure Filtration Solutions.

800 Orange Ave – Daytona Beach – Florida – 32114 – Phone 386.248.0500 – Fax 386.248.3033

[www.millerleaman.com](http://www.millerleaman.com)

# *Thompson SeaStrainers*

## A New Sea Strainer for Yacht Builders with Perfection as Their Standard.

The Stainless Steel Thompson SeaStrainer has created a space for itself in the marine industry by providing builders with a premium-level option for straining sea water.

- Substantially more screen surface area compared to traditional basket strainers and y-strainers
- Lowest pressure drop of any sea water strainer, resulting in optimal performance
- Knowledgeable staff capable of responding to product-related issues immediately
- Customizable to exact specifications, for a variety of applications
- Delivered in a timely manner, keeping your project on schedule
- Less frequent maintenance and easy-access lid assemblies
- Highest quality stainless steel strainer on the market. Matches engine room components with no refinishing, repainting or secondary enclosures needed
- Finest visual and technical example of premium yacht-building standards

BECAUSE THE FINEST YACHTS ARE A  
COMPILATION OF THE FINEST ELEMENTS.

The stainless steel Thompson SeaStrainer is, quite simply, the finest sea water strainer available. We created the Thompson SeaStrainer to last as long as your vessel.

The Thompson SeaStrainer is available in Type 304 and 316 stainless steel and features a large conical screen element. Our standard screen element is made from 5/64" perforated (0.077" or 2mm)



material. And, while this is the industry standard, Miller-Leaman stocks a variety of screens to match your custom application.

Precisely crafted by experienced professionals, the Thompson SeaStrainer is a brilliant selection for premium applications. Clean design. Highly polished stainless steel. Rigorously tested welds. Technically adept customer service technicians. Superior technology.



Optimal design considerations. Pride in workmanship. At Miller-Leaman, we've thought through the entire life span of a sea strainer.

We've anticipated everything so that you don't

have to. From start to finish, the Thompson SeaStrainer runs at the top of its class.

Whether your next project is an expeditionary or seasonal yacht, commercial vessel, or military craft, the stainless steel Thompson SeaStrainer is your optimal solution for sea water filtration.



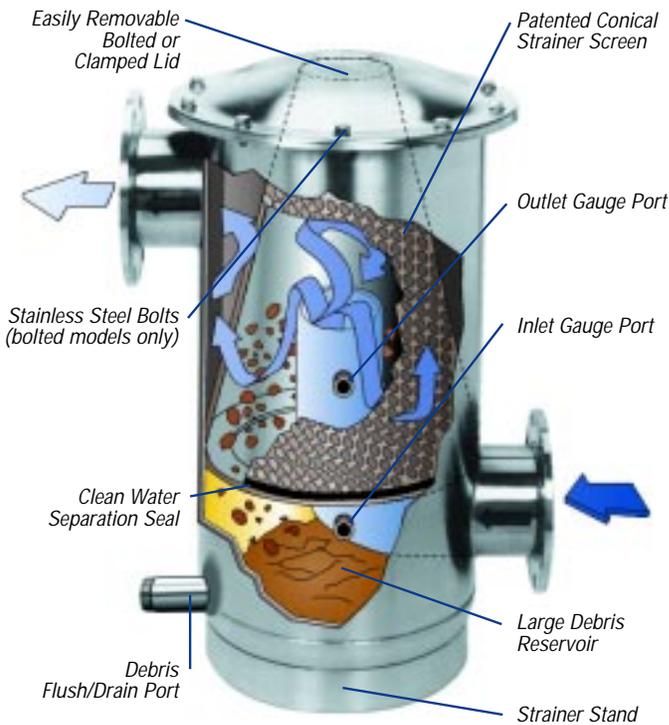
Please contact Miller-Leaman at (800) 881-0320 or [sales@millerleaman.com](mailto:sales@millerleaman.com) today for additional information, including actual screen samples.



# The Stainless Steel Thompson SeaStrainer



The shape and size of the element are what make the Thompson SeaStrainer more functionally efficient than any other strainer on the market. As water enters the bottom of the strainer housing and flows upward, heavier debris and particulate is accelerated downward (away from the conical screen) into the debris reservoir at the base of the strainer. The particulate is then flushed/drained from the reservoir via the debris flush port. Due to the non-torturous flow path through the strainer, in combination with the large surface area of the conical screens, all models operate with a minimal pressure drop. The Thompson SeaStrainer can also be customized to fit your specific vessel requirements.



## CONSTRUCTION MATERIALS

- Housing (All Models):
  - Type 316 Stainless Steel (recommended for sea water)
  - Type 304 Stainless Steel (optional)
- Strainer Elements:
  - Screen Frames: Type 316 Stainless Steel
  - Screen Mesh: Type 316 Stainless Steel

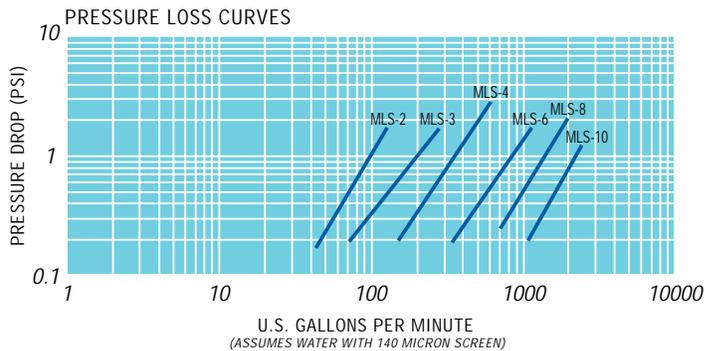
- Models MLS-4 through MLS-10 use a PVC elbow and riser pipe assembly. Stainless Steel is available on request.
- Gaskets: EPDM is standard, other compounds are available by special order.
- All Models: Inlet/outlet gauge ports (1/4" FPT)
- Debris flush/drain port (1 1/2" NPT)

## SCREEN OPTIONS AVAILABLE

5/64" perforated (.077" or 2mm) is standard  
 Fine mesh options: 16, 30, 40, 50, 60, 80, 100, 120, 150, 200

MODEL NUMBER	INLET/OUTLET SIZE & TYPE	MAXIMUM FLOW* (GPM)	MAXIMUM PRESSURE RATING	LID CLOSURE TYPE
MLS-2-T316	2"/NPT	100 GPM	125 PSI	Clamp
MLS-3-T316	3"/NPT	200 GPM	125 PSI	Clamp
MLS-4C-T316	4"/Flanged	350 GPM	125 PSI	Clamp
MLS-4B-T316	4"/Flanged	350 GPM	150 PSI	Bolted
MLS-6-T316	6"/Flanged	750 GPM	150 PSI	Bolted
MLS-8-T316	8"/Flanged	1300 GPM	150 PSI	Bolted
MLS-10-T316	10"/Flanged	2000 GPM	150 PSI	Bolted

\*Max flow rate depends on solids' loading and screen sizing



MILLER-LEAMAN

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LOCAL DISTRIBUTOR

# ***THOMPSON SEASTRAINER***

## Data Sheet

Model	Max. GPM	Screen Surface Area	Inlet/Outlet Style	Flush Port Size	Lid Type	Maximum PSI
<b>MLS-2-T316</b>	100	122 sq. in.	Male NPT	1 ½"	Clamp	125
<b>MLS-3-T316</b>	200	200 sq. in.	Male NPT	1 ½"	Clamp	125
<b>MLS-4C-T316</b>	350	367 sq. in.	Flanged	1 ½"	Clamp	125
<b>MLS-4B-T316</b>	350	367 sq. in.	Flanged	1 ½"	Bolt	150
<b>MLS-6-T316</b>	750	745 sq. in.	Flanged	1 ½"	Bolt	150
<b>MLS-8-T316</b>	1,300	1,559 sq. in.	Flanged	1 ½"	Bolt	150
<b>MLS-10-T316</b>	2,000	2,434 sq. in.	Flanged	1 ½"	Bolt	150

If you have any additional product related questions, please call us at (386) 248-0500.

Miller-Leaman, Inc. products undergo constant quality control and improvement evaluations.

The manufacturer reserves the right to make changes and improvements in the products without prior notice.

**MORE TECHNICAL INFORMATION CAN BE FOUND ON OUR WEB SITE AT:**

**[www.millerleaman.com](http://www.millerleaman.com)**

### **SAMPLE SPECIFICATION FOR THE *THOMPSON SEASTRAINER***

Supplier shall provide \_\_\_\_\_ (qty.) strainers. Strainer shall be designed for a flow of \_\_\_\_\_ gpm, with a maximum pressure loss at maximum flow of 1 PSI. Strainers shall be provided with a \_\_\_\_\_ perforated/mesh filter element, conical in shape and vertical in orientation. Pressure construction of the strainer housing, flanges, nipples, and screens shall be of T316 stainless steel. Strainers shall be provided with 1/4" gauge ports on inlet and outlet side of screen and with a debris flush port integral to the operation of the strainer.

Strainer housing shall be rated for 125/150 PSI operation.

Strainers shall be manufactured by Miller-Leaman, Inc. or approved equal.

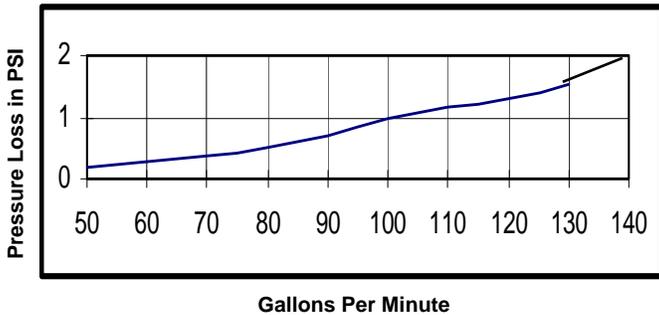
# THOMPSON SeaStrainer

## EFFICIENCY CURVES

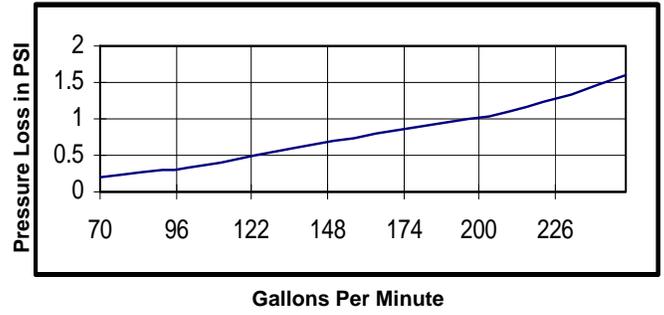
### INDUSTRY'S LOWEST PRESSURE DROP

All Thompson SeaStrainers have been designed to operate with less than a 1 PSI pressure loss at maximum flow when clean. This exceptional efficiency results in less energy consumption and reduced operating costs.

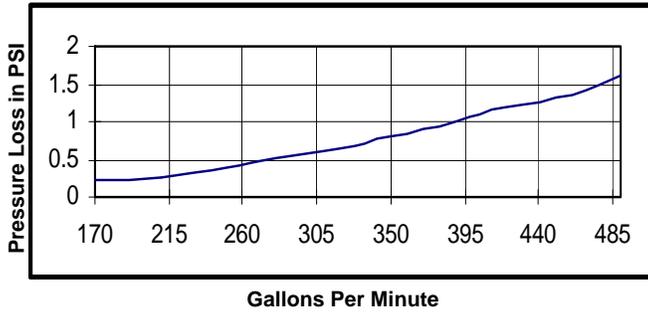
**2" THOMPSON SeaStrainer**  
(MLS-2-T316) Max Flow 100 GPM



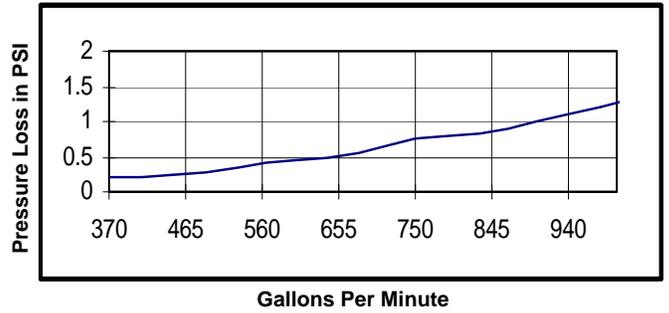
**3" THOMPSON SeaStrainer**  
(MLS-3-T316) Max Flow 200 GPM



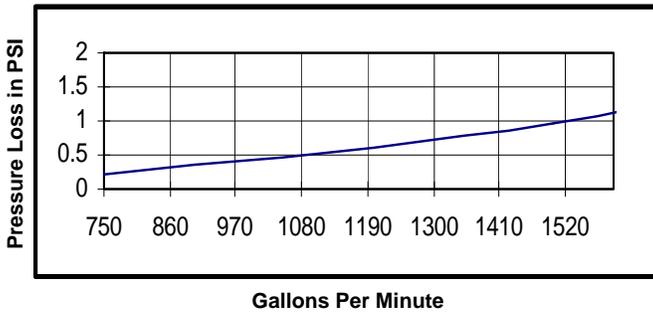
**4" THOMPSON SeaStrainer**  
(MLS-4C-T316 & MLS-4B-T316) Max Flow 350 GPM



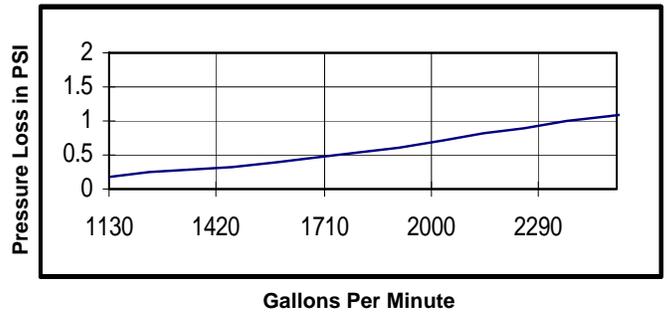
**6" THOMPSON SeaStrainer**  
(MLS-6-T316) Max Flow 750 GPM



**8" THOMPSON SeaStrainer**  
(MLS-8-T316) Max Flow 1300 GPM



**10" THOMPSON SeaStrainer**  
(MLS-10-T316) Max Flow 2000 GPM





*Thompson SeaStrainer*  
**Instrumentation Options**



## INSTRUMENTATION PACKAGE OPTIONS



### PRESSURE DIFFERENTIAL ALARM PACKAGE (PDA)

The Pressure Differential Alarm Package (PDA) continuously monitors the pressure drop across the internal conical screen. When the strainer screen becomes dirty, the switch-gauge triggers an audible and visual flashing alarm, intended to alert maintenance personnel when the screen needs to be removed from the housing for manual cleaning. At maximum flow, all Thompson Strainer models operate with less than a 1 PSI pressure loss (when clean). The alarm is factory set to engage when the differential pressure reaches approximately 7 PSID; however, this setting is adjustable by changing the set point contact at the base of the differential pressure gauge. The PDA package comes standard with auxiliary contacts for remote monitoring of the alarm. The PDA is housed inside a NEMA rated enclosure and comes with a 110V / 12VDC wall mount power supply.

### AUTOMATIC TIMER FLUSH PACKAGE (ATF-EA-1.5)

The Automatic Timer Flush Package (ATF-EA-1.5) automatically purges particles that have gravitated down into the debris reservoir at the base of the strainer. Purging the reservoir; however, does not clean the internal screen (see above PDA explanation). Depending on the solids' loading of the application, the user simply dials in the FLUSH FREQUENCY (time between flushes) and FLUSH DURATION (length of flush) of the valve. The flush frequency is preset for (24) hours and the flush duration is preset for (8) seconds; these settings can be substantially changed. Based on the parameters programmed, the robust stainless steel ball valve opens and closes. The user can override the timer by engaging a manual flush cycle.

The controller attached to the valve is housed inside a NEMA enclosure. If ordered with the PDA alarm package, an electrical cord from the PDA supplies power to the ATF-EA-1.5 valve package. If the ATF-EA-1.5 is ordered separately, a 110V / 12VDC wall mount power supply is included.



#### PRESSURE DIFFERENTIAL ALARM:

- Monitors Differential Pressure
- Signals When Screen Cleaning is Required
- Audible and Visual Alarm
- Auxiliary Contacts For Remote Monitoring
- Comes With Bracket for Mounting



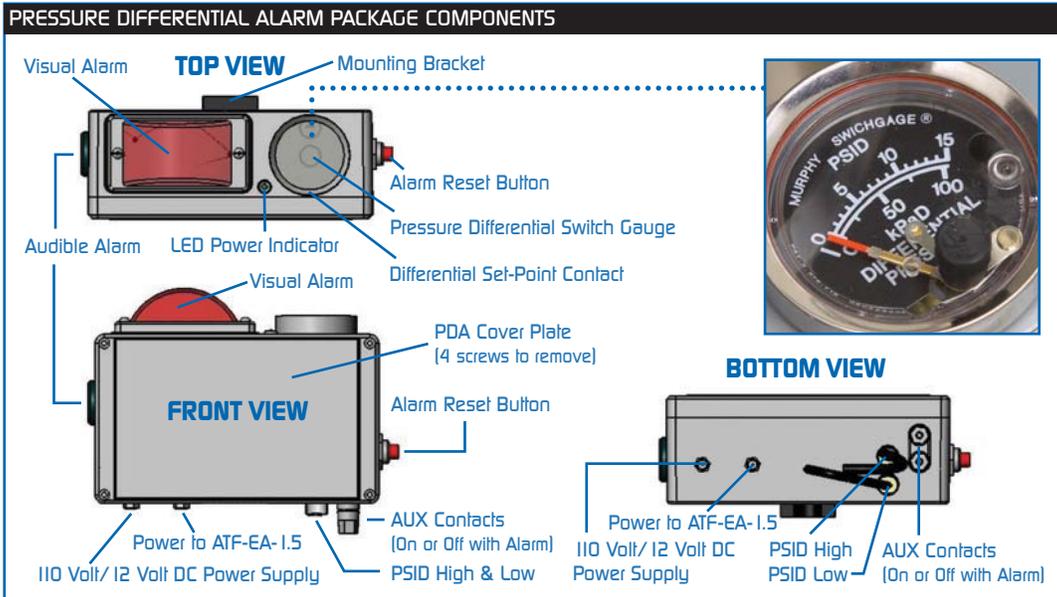
#### AUTOMATIC TIMER FLUSH VALVE:

- Automatically Purges Particles from Bottom Reservoir
- Robust Stainless Steel Ball Valve
- Adjustable Flush Frequency and Flush Duration
- Manual Flush Override
- Valve Threads On Strainer Flush Port

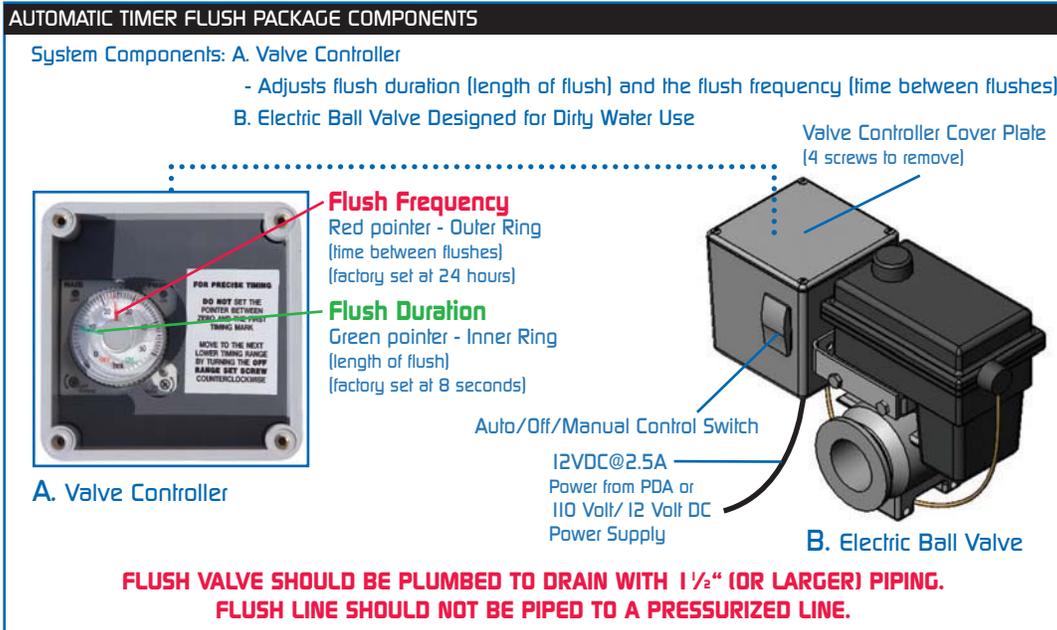




## PRESSURE DIFFERENTIAL ALARM PACKAGE (PDA)



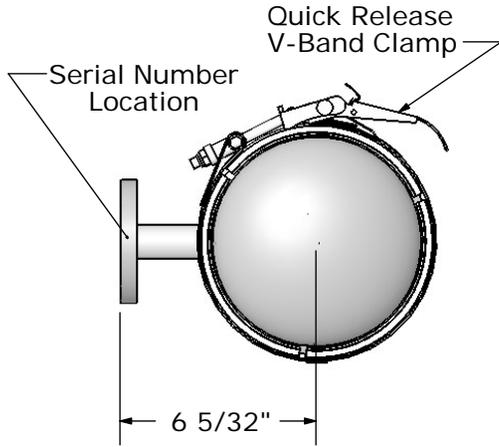
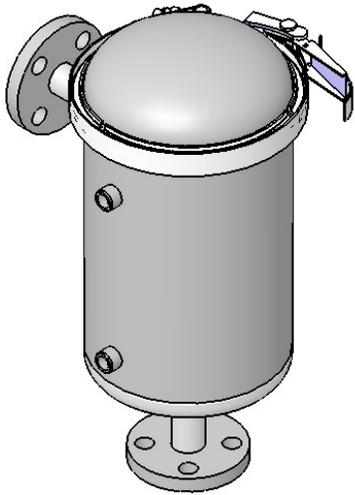
## AUTOMATIC TIMER FLUSH PACKAGE (ATF-EA-1.5)



PART NUMBER	DESCRIPTION	ELECTRICAL
PDA	Pressure Differential Alarm Package (comes with mounting bracket to mount on strainer)	Comes with 110V/ 12VDC Power Supply
ATF-EA-1.5*	Automatic Timer Flush Package - (Threads on 1 1/2" Flush Port) - For use on all Thompson Strainer models: MLS-2, MLS-3, MLS-4, MLS-6, MLS-8, MLS-10	Power from PDA Package or Comes with 110V/ 12VDC Power Supply
ATFR-2000	110 V/ 12VDC Wall Mount Power Supply (included with purchase of PDA and/or ATF-EA-1.5)	Plugs in 110V Wall Plug
PG-1/4-150	Pressure Gauges (0-150 PSI); (2) required per strainer	N/A

\*1" and 2" valve packages also available: 1" valve part# ATF-EA-1.0; 2" valve part # ATF-EA-2.0

*Thompson SeaStrainer*  
**Sample Drawings**



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 100 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI (Higher pressure models are available)
- Maximum Temperature: 135 °F (Higher temperature models are available)
- Screen Surface Area 122 Sq. In.

**MATERIALS:**

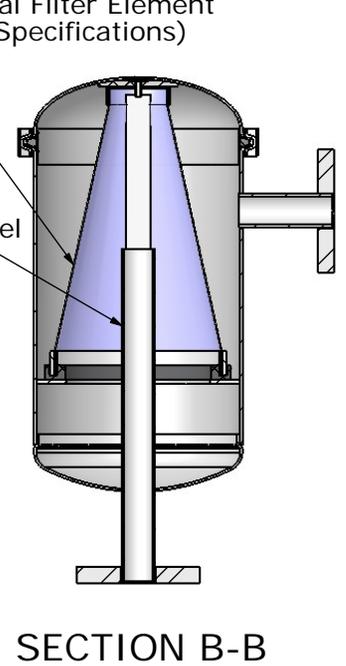
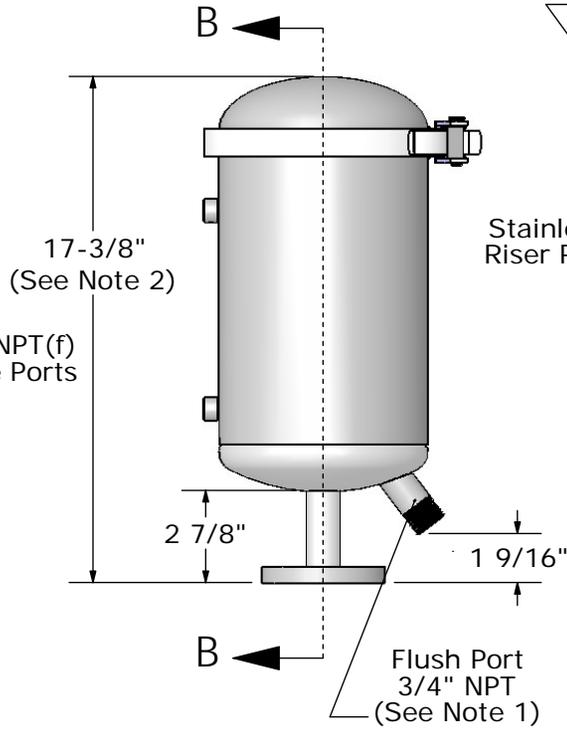
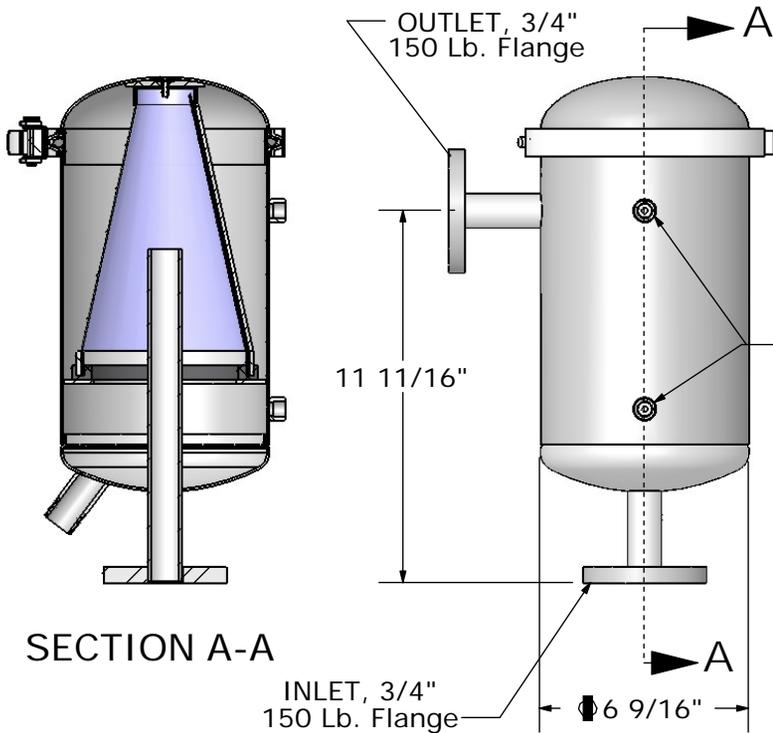
- Housing: 316 Stainless.
- Gasket: EPDM Standard (Other Compounds Available)
- Screen Mesh: 316 Stainless.
- 5/64" Perforated Sheet Screen Backup: 316 Stainless.
- Clamp: 301, 302 or 304 Stainless.

**SCREEN OPTIONS:**

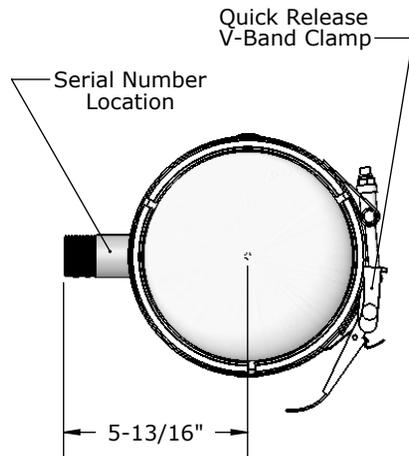
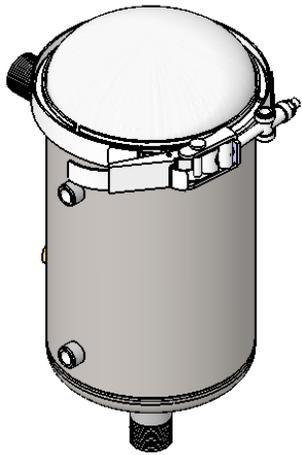
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 27" Overall height is required for filter element removal.



<p><b>PRODUCT SPECIFICATION</b></p> <p><b>MILLER-LEAMAN INC.</b></p> <p>800 Orange Ave. Daytona Beach FL 32114</p>	DRAWN	L.Brannan	11/6/07	<p>TITLE</p> <p><b>Type 316 Thompson</b></p> <p><b>Strainer MLS-2-T316-MOD5</b></p> <p>Tail Shaft Fwd Bearing Cooling Strainer</p>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			



**GENERAL SPECIFICATIONS:**

- Maximum Pressure: 125 PSI (Higher pressure models are available)
- Maximum Temperature: 135° F (Higher temperature models are available)
- Screen Surface Area 122 Sq. In.

**MATERIALS:**

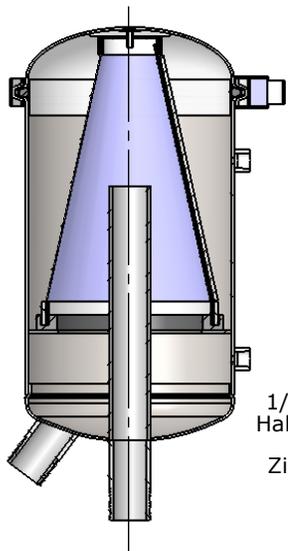
- Housing: 316 Stainless.
- Gasket: EPDM standard (other compounds available)
- Screen Mesh: 316 Stainless.
- Preforated Sheet Screen Backup: 316 Stainless
- Clamp: 301, 302 or 304 Stainless.

**SCREEN OPTIONS:**

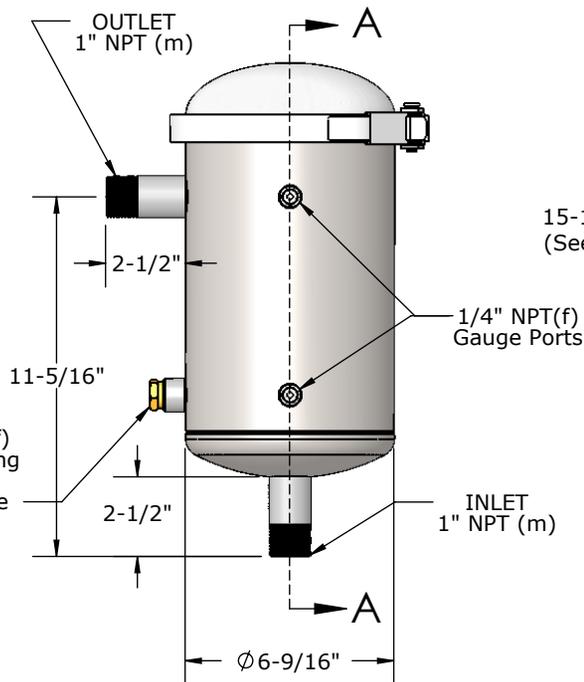
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

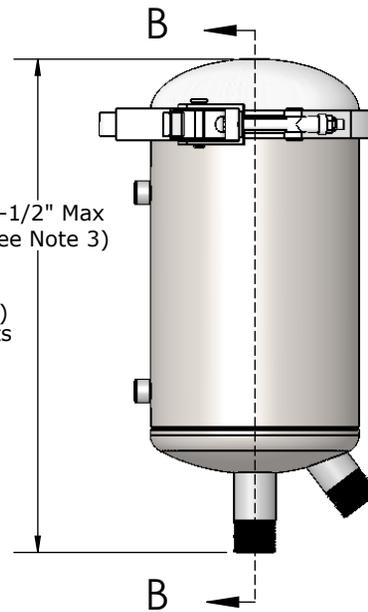
- 1- Flush Port is available in larger sizes.
- 2- Dimensions are for informational purposes only and are subject to change.
- 3- 25" Overall height is required for filter element removal.



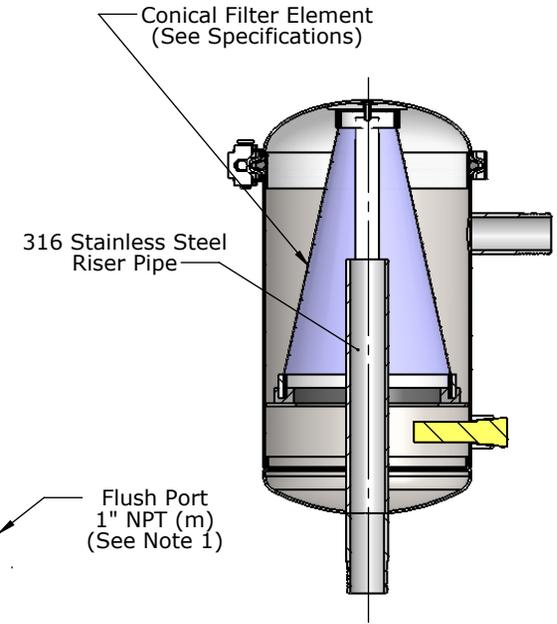
SECTION A-A



15-1/2" Max  
(See Note 3)



SECTION B-B

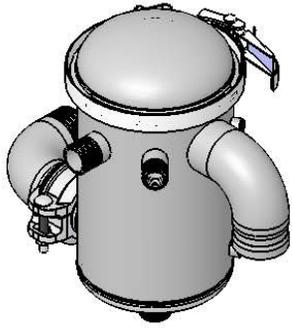


<b>PRODUCT SPECIFICATION</b>
<b>MILLER-LEAMAN INC.</b>
800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	2/19/10
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

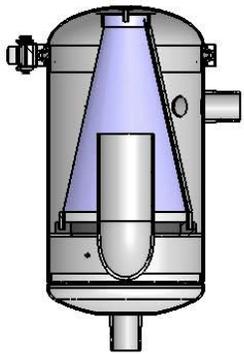
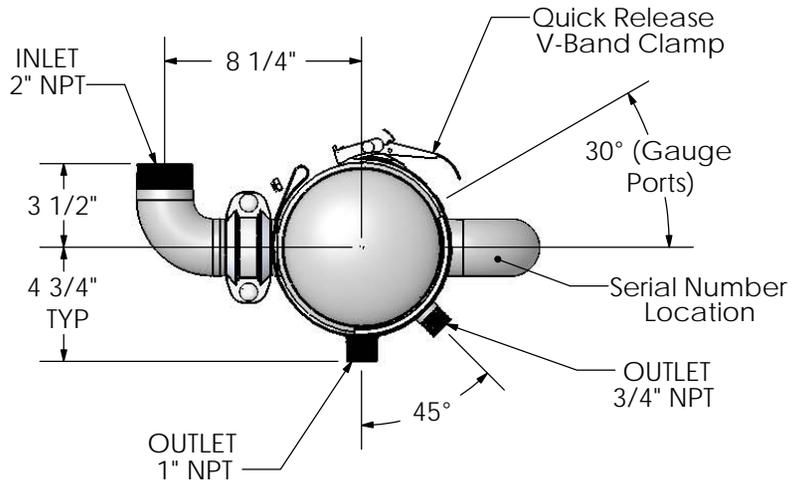
TITLE	<b>TYPE 316 Thompson Strainer MLS-2-T316-MOD22</b>
-------	--

Rev A

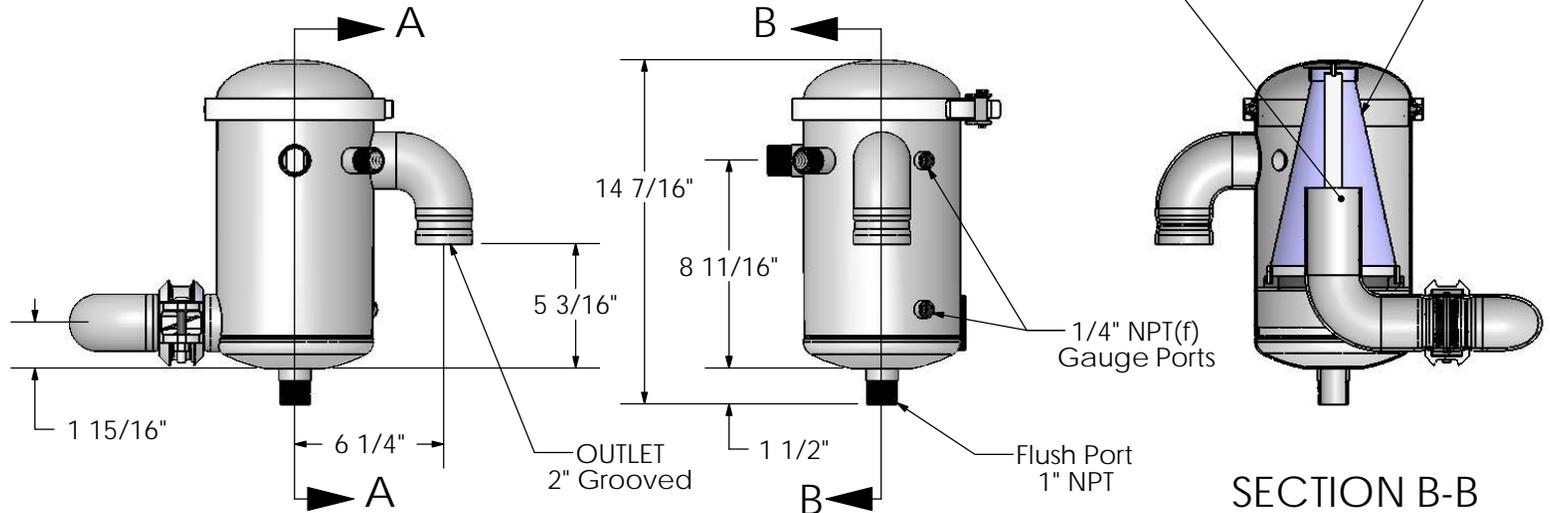


- GENERAL SPECIFICATIONS:**
- Maximum Flow: 100 GPM  
(No minimum flow requirement)
  - Maximum Pressure: 125 PSI
  - Maximum Temperature: 135° F
  - Screen Surface Area 122 Sq. In.

- MATERIALS:**
- Housing: 316 Stainless
  - Gasket: EPDM (other compounds available)
  - Screen: 5/64" perforated sheet, 316 Stainless



SECTION A-A



SECTION B-B

PRODUCT SPECIFICATION

**MILLER-LEAMAN INC.**

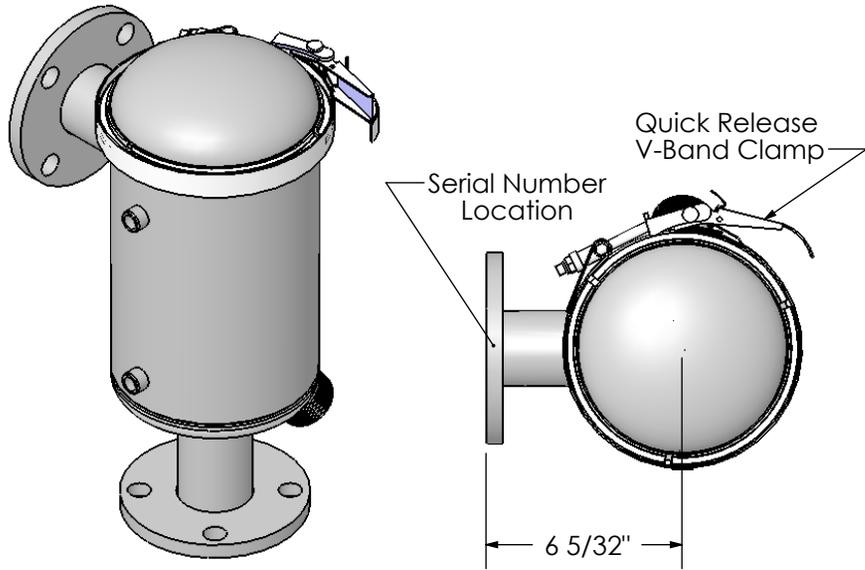
800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	4/25/06
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

TITLE

**Thompson Strainer  
MLS-2-MOD1**



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 100 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI (Higher pressure models are available)
- Maximum Temperature: 135° F (Higher temperature models are available)
- Screen Surface Area 122 Sq. In.

**MATERIALS:**

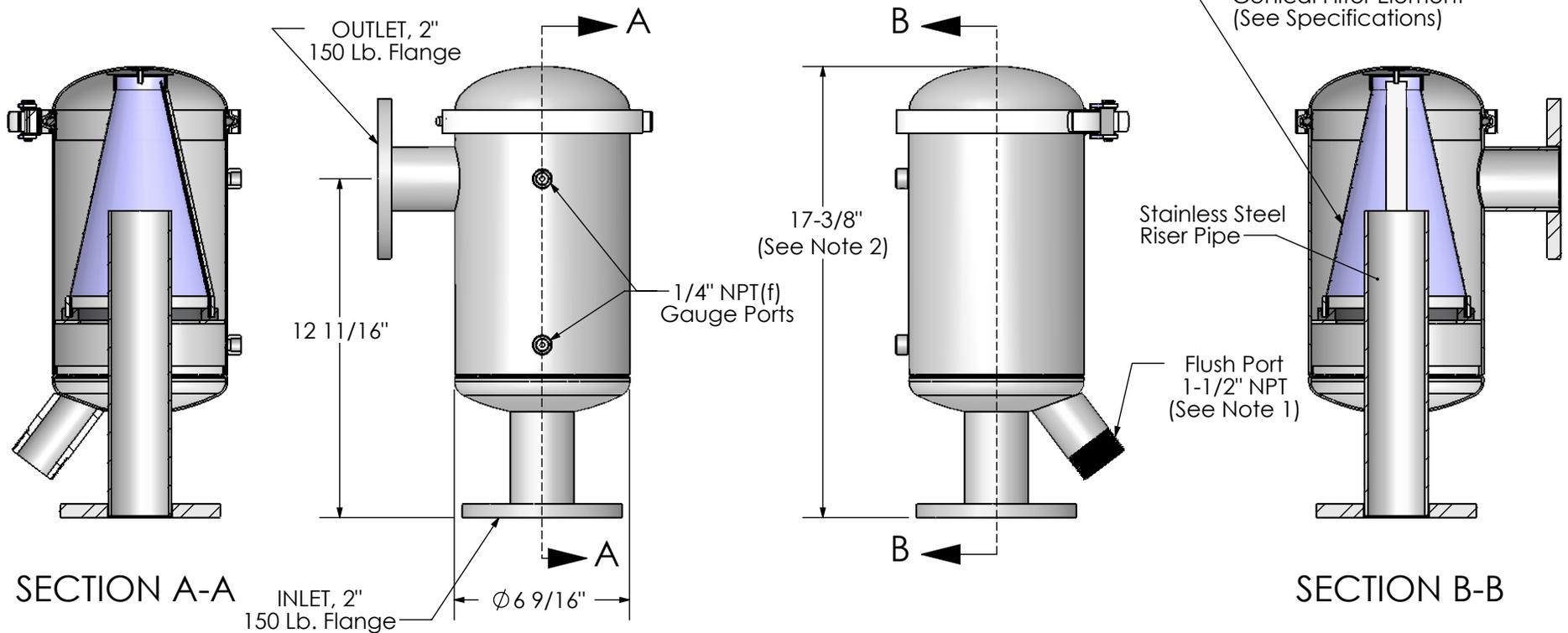
- Housing: 316 Stainless.
- Gasket: EPDM standard (other compounds available)
- Screen: 5/64" Perforated, 316 Stainless.
- Clamp: 301, 302 or 304 Stainless.

**SCREEN OPTIONS:**

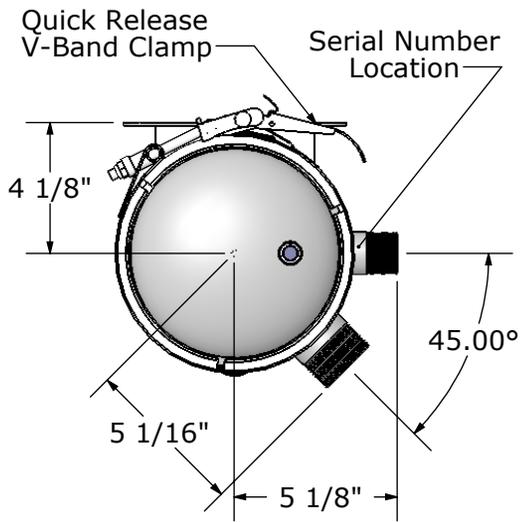
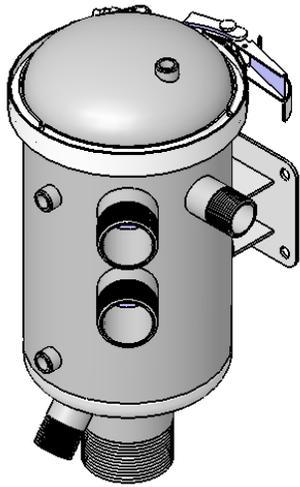
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 27" Overall height is required for filter element removal.



<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	1/12/07	TITLE <b>Custom TYPE 316          Thompson Strainer          MLS-2-T316-MOD2</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 100 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI (Higher pressure models are available)
- Maximum Temperature: 135° F (Higher temperature models are available)
- Screen Surface Area 122 Sq. In.

**MATERIALS:**

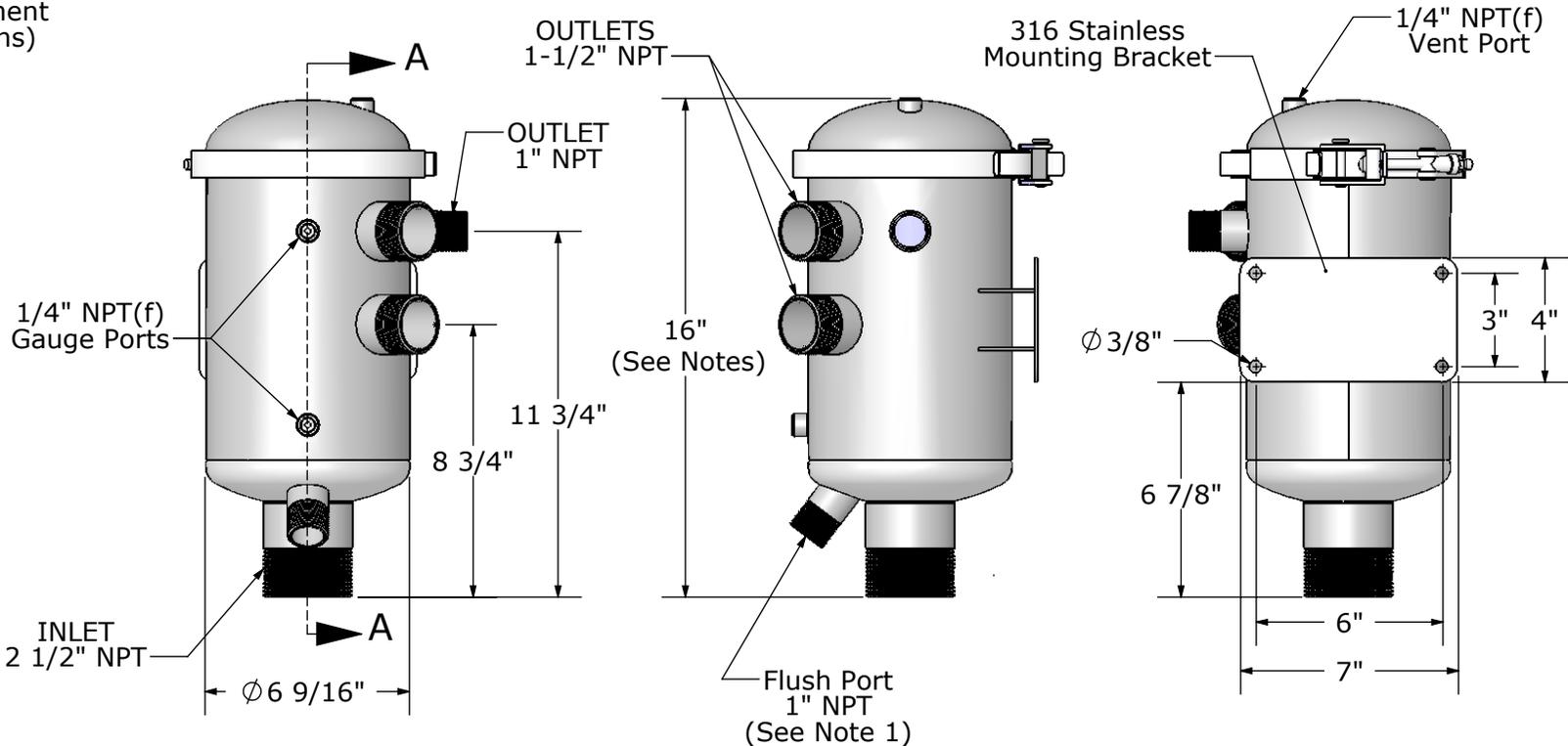
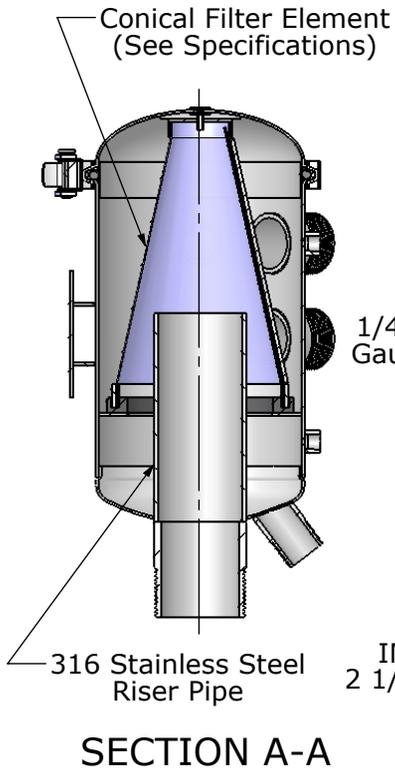
- Housing: 316 Stainless.
- Gasket: EPDM standard (other compounds available)
- Screen Mesh: 316 Stainless.
- 5/64 Preforated Sheet Screen Backup: 316 Stainless
- Clamp: 301, 302 or 304 Stainless.

**SCREEN OPTIONS:**

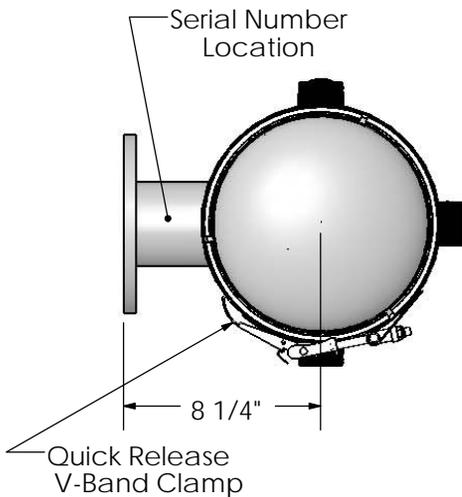
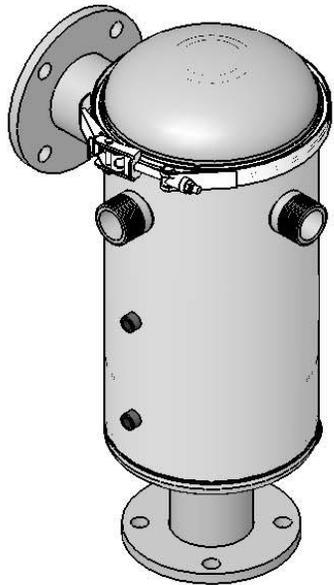
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Flush Port is available in larger sizes.
- 2- Dimensions are for informational purposes only and are subject to change.
- 3- 26" Overall height is required for filter element removal.



<p><b>PRODUCT SPECIFICATION</b></p> <p><b>MILLER-LEAMAN INC.</b></p> <p>800 Orange Ave. Daytona Beach FL 32114</p>	DRAWN	L.Brannan	11/20/07	<p>TITLE</p> <p><b>TYPE 316 - Custom</b></p> <p><b>2" Thompson Strainer</b></p> <p><b>MLS-2-T316-MOD7</b></p>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 200 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135 °F
- Screen Surface Area 200 Sq. In.

**MATERIALS:**

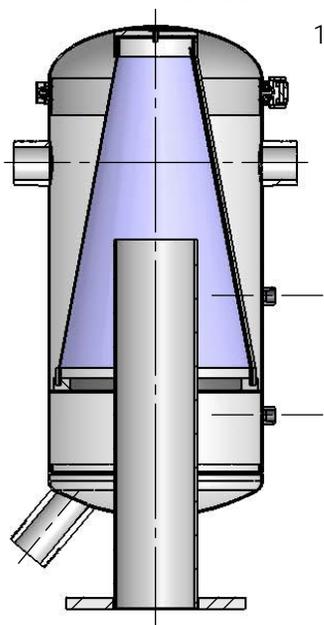
- Housing: 316 Stainless
- Gaskets: EPDM
- Screen Mesh: 316 Stainless (1/4" perforated sheet backup)

**SCREEN OPTIONS:**

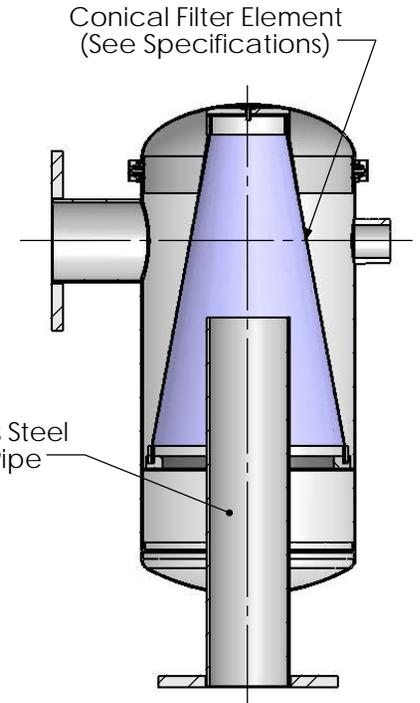
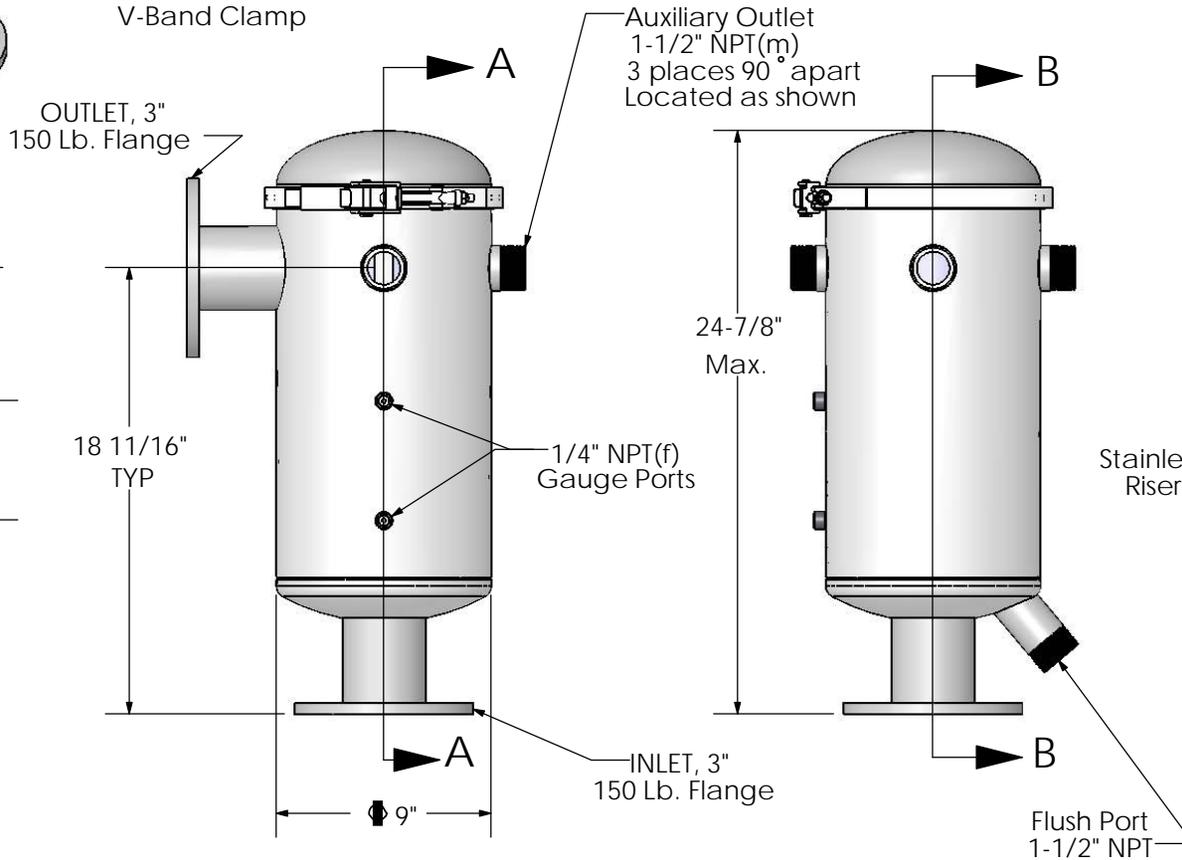
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

1- Dimensions are for informational purposes only and are subject to change.



SECTION A-A



SECTION B-B

PRODUCT SPECIFICATION

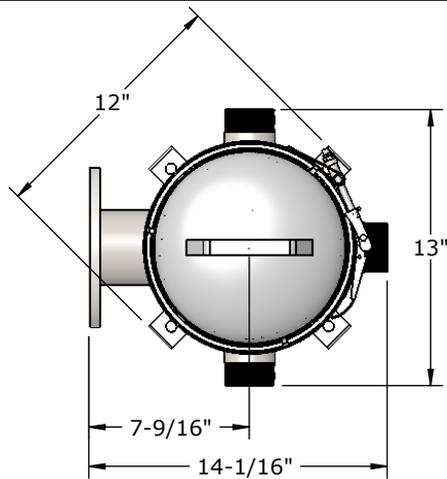
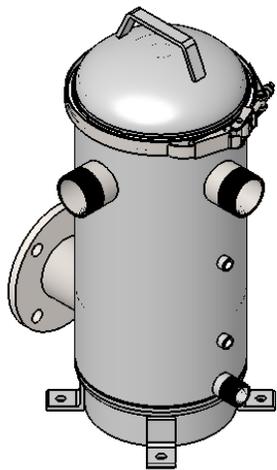
**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	2/23/05
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE

Thompson Strainer  
MLS-3-MOD1



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 200 GPM (No minimum flow requirement).
- Maximum Pressure: 125 PSI (Higher pressure models available).
- Not Designed for Suction / Vacuum.
- Screen Surface Area 200 Sq. In.
- Dry Weight: 30 lbs.
- Wet Weight: 68 lbs / Volume: 4.6 gal.
- Maximum Temperature: **135° F.**  
(Consult Factory for higher temperature applications).

**MATERIALS:**

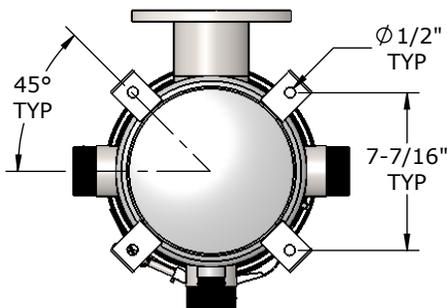
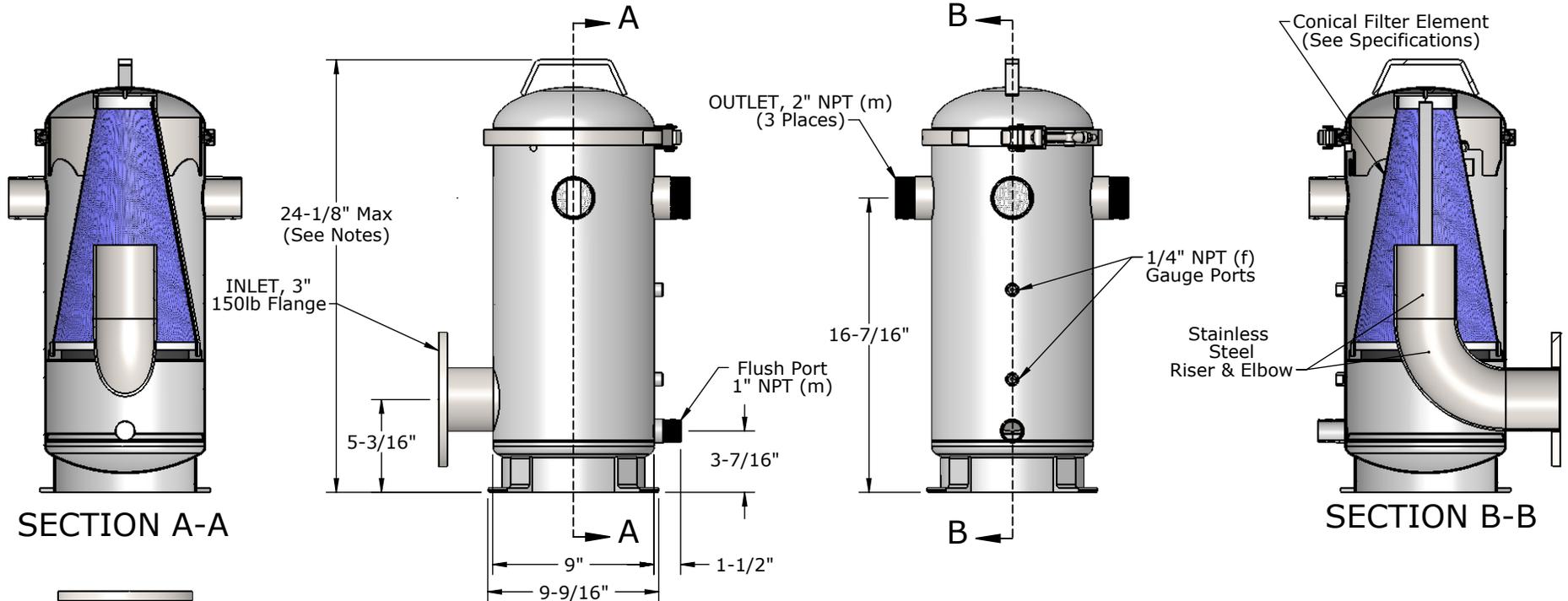
- Housing: 316 Stainless
- Gasket: EPDM standard (other compounds available).
- Screen Mesh: 316 Stainless (1/4" perforated sheet backup).

**SCREEN OPTIONS:**

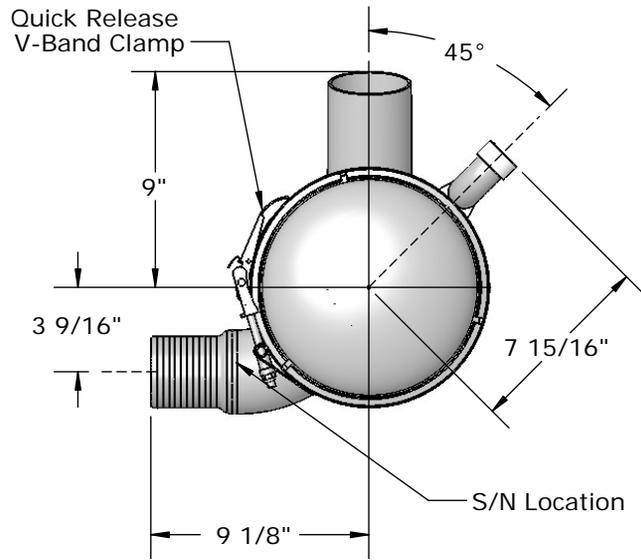
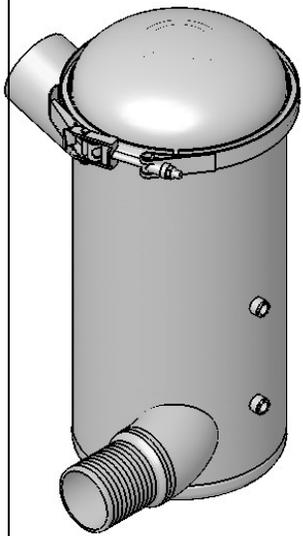
- Multiple screen mesh and perforated sheet sizes available.  
(See product catalog for samples).

**NOTES:**

- 1- Flush Port is available in larger sizes.
- 2- Dimensions are for informational purposes only and are subject to change.
- 3- 38" Overall height is required for filter element removal.



<p><b>PRODUCT SPECIFICATION</b></p> <p><b>MILLER LEAMAN</b> INC</p> <p>800 Orange Avenue, Daytona Beach, FL 32114</p>	DRAWN	L.Brannan	1/6/12	TITLE
	CHECKED			<p><b>Thompson Strainer</b> <b>MLS-3-T316-MOD29</b></p>
	ENG APPR.			
	REVISION			
	MLI FILE #	ML20450-MOD29		



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 150 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI (Higher pressure models are available).
- Maximum Temperature: 135 °F (Higher temperature models are available).
- Screen Surface Area 200 Sq. In.

**MATERIALS:**

- Housing: 316 Stainless
- Gasket: EPDM standard (other compounds available)
- Screen: 5/64" Perforated, 316 Stainless.
- Clamp: 301, 302 or 304 Stainless.

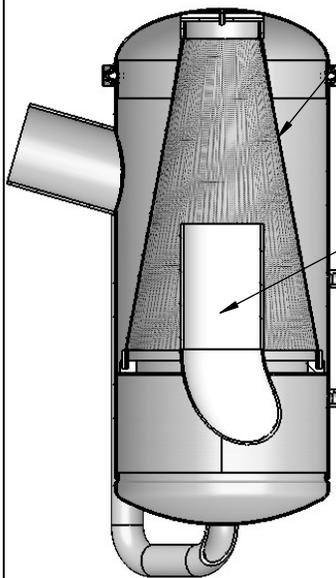
**SCREEN OPTIONS:**

- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

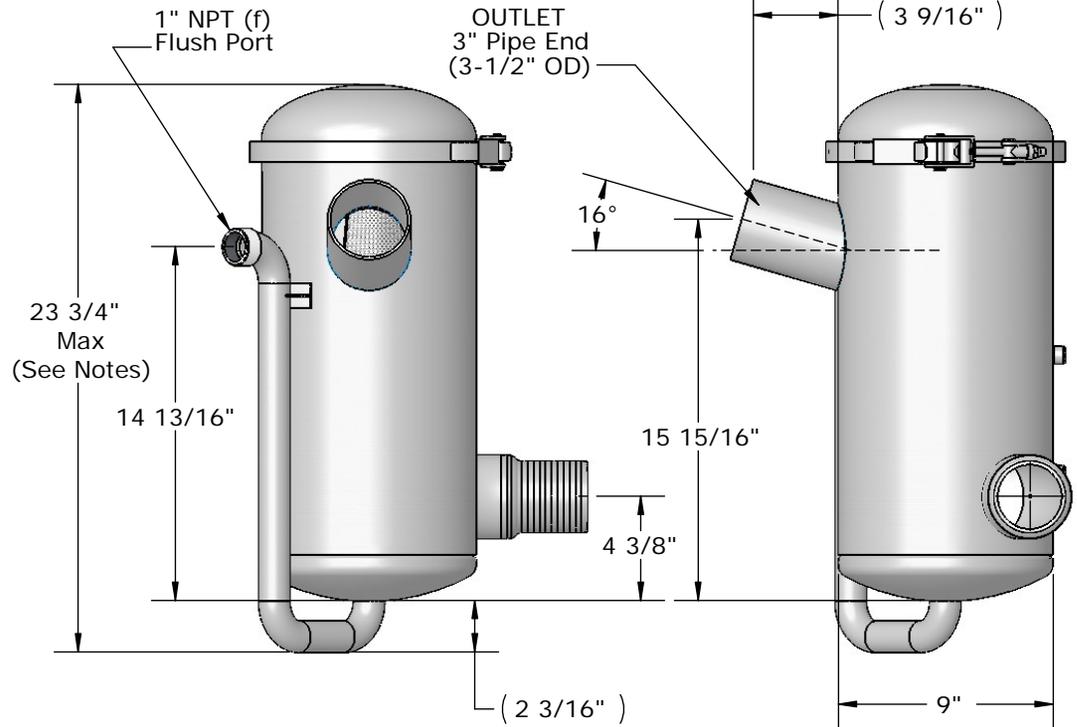
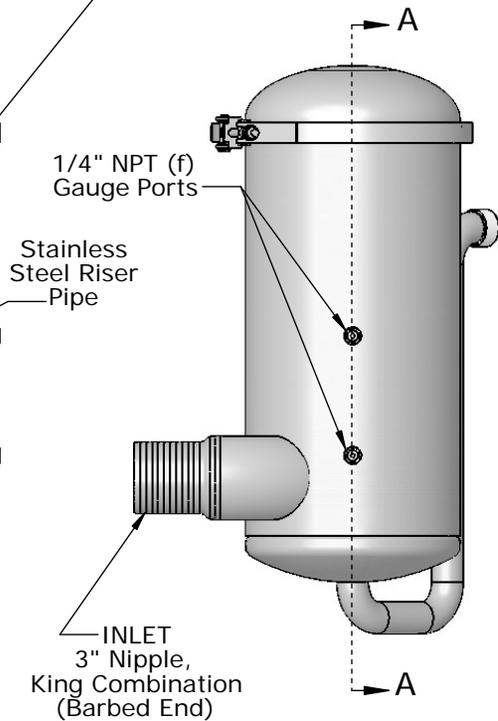
**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 37" Overall Height is required for filter element removal.

Conical Filter Element  
(See Specifications)



SECTION A-A



**PRODUCT SPECIFICATION**

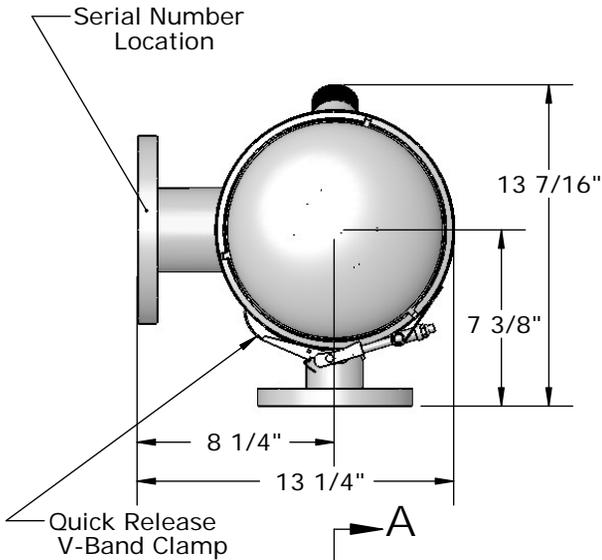
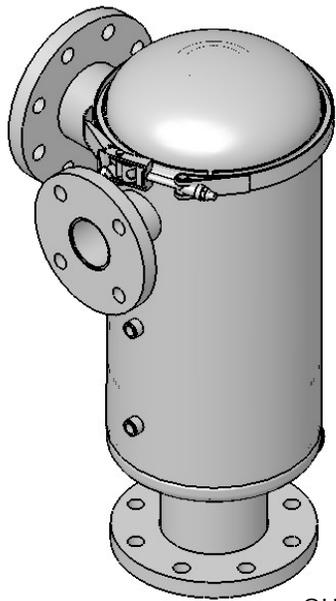
**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	2-13-09
CHECKED		
ENG APPR.		
MKT APPR.		

TITLE

Thompson Strainer  
MLS-3-T316-CADENZA B



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 200 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135 °F
- Screen Surface Area 200 Sq. In.

**MATERIALS:**

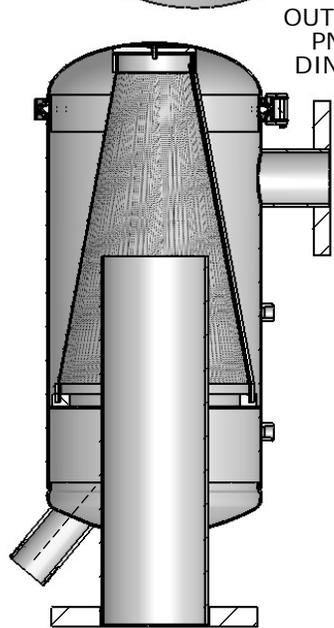
- Housing: 316 Stainless
- Gaskets: EPDM
- Screen: 5/64 Perforated, 316 Stainless

**SCREEN OPTIONS:**

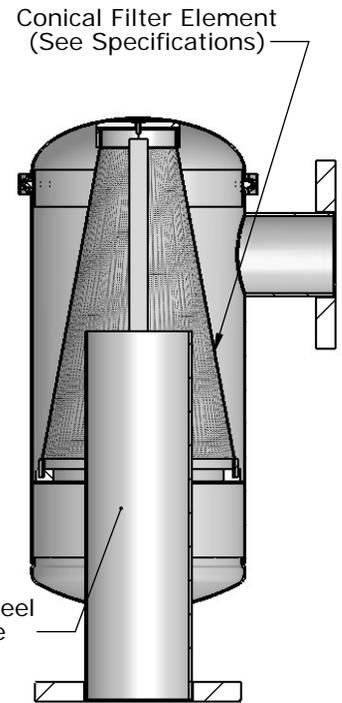
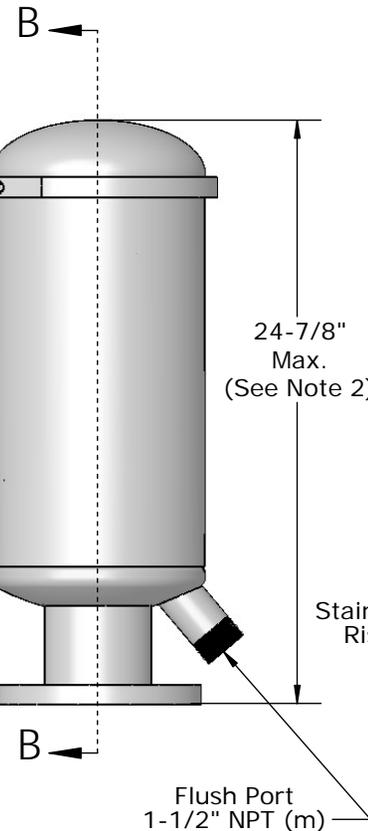
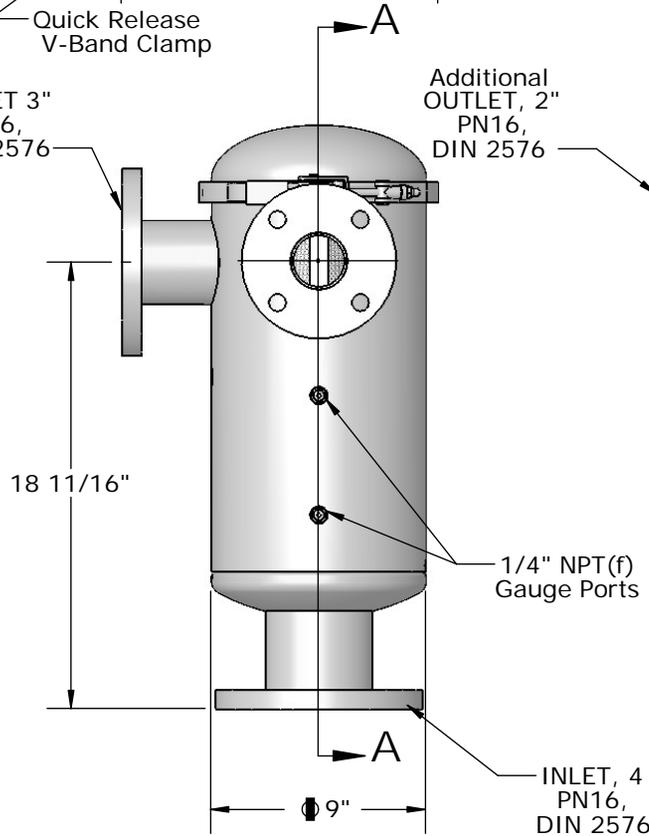
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 36" Overall Height is Required for Filter Element Removal.
- 3- Maximum Hydro-Tested pressure and Material Certificates for Type 316 Stainless Steel to be provided.



SECTION A-A



SECTION B-B

PRODUCT SPECIFICATION

**MILLER-LEAMAN INC.**

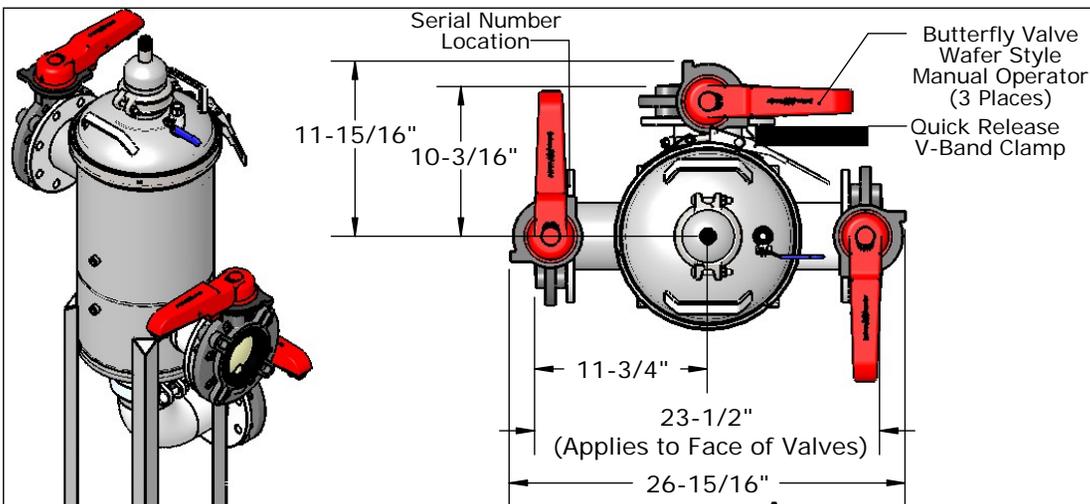
800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	2/24/09
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

TITLE

Custom TYPE 316  
Thompson Strainer  
MLS-3-T316-MOD15



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135 °F
- Screen Surface Area 367 Sq. In.
- Spray Nozzle Capacity: 28 GPM @ 60 PSI

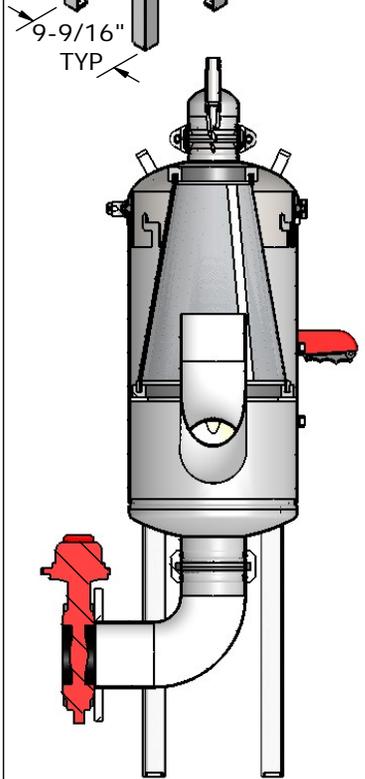
**MATERIALS:**

- Housing: 316 Stainless Steel
- Gasket: EPDM standard (other compounds available)
- Screen Mesh: 316 Stainless (1/4" Perforated Backup)
- Clamp: 301, 302 or 304 Stainless Steel

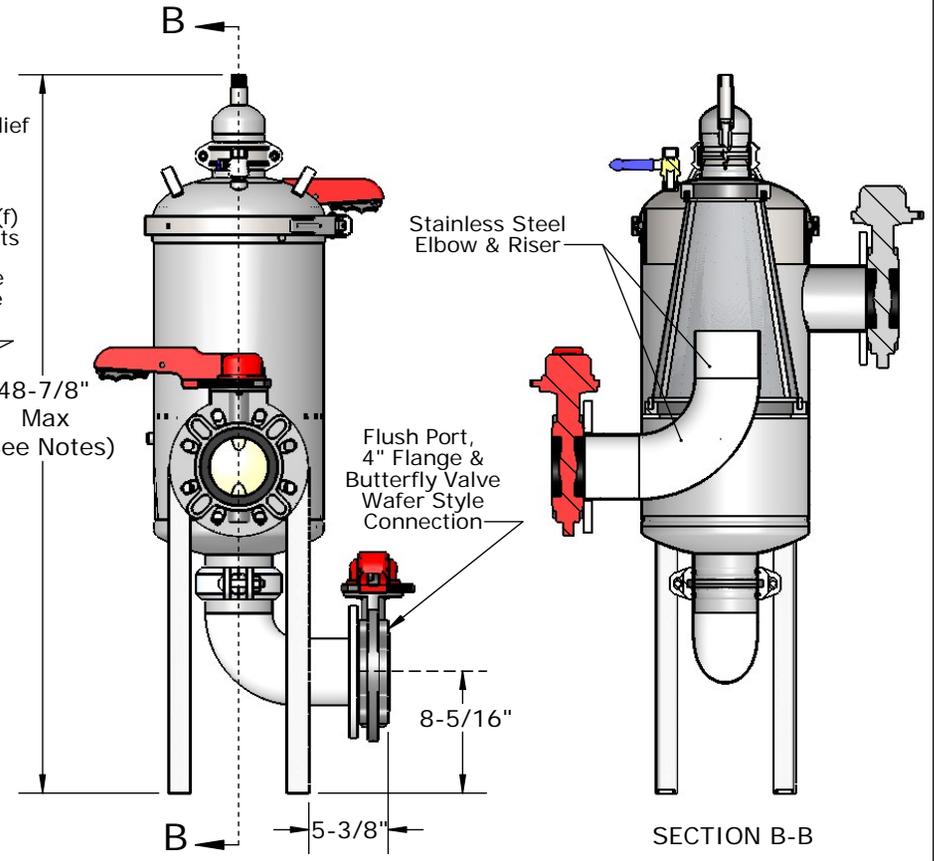
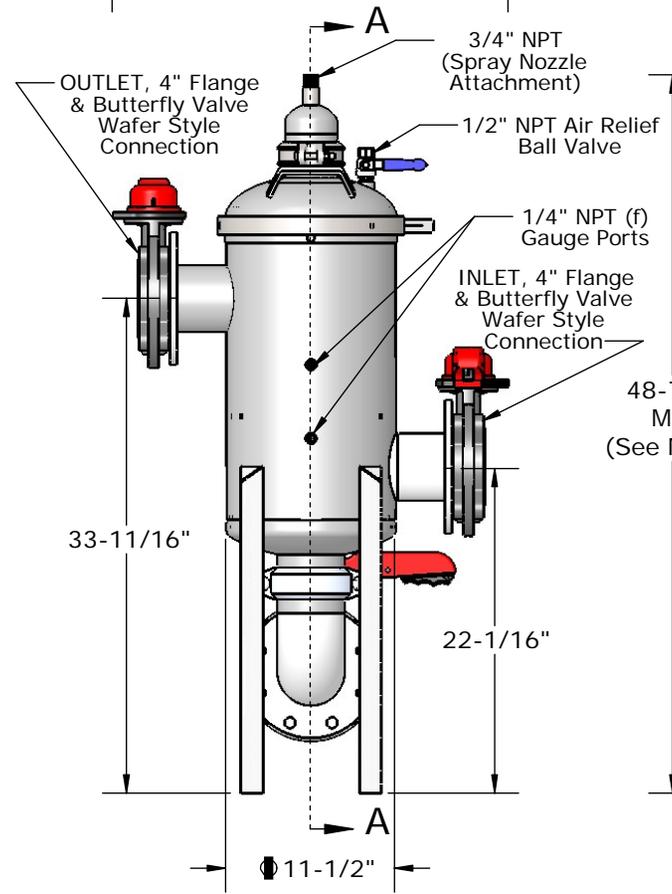
**SCREEN OPTIONS:**

- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

1- Dimensions are for informational purposes only and are subject to change.  
2- 62" Overall height required for Filter element Removal.

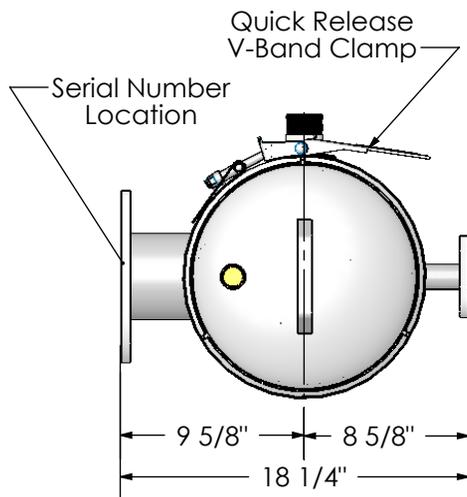
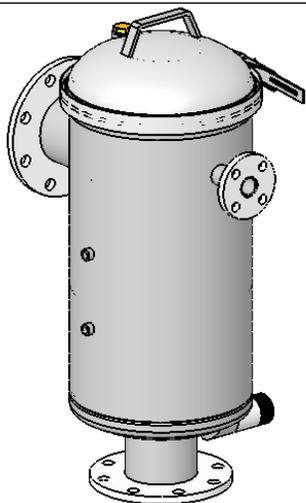


SECTION A-A



SECTION B-B

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	L.Brannan	5/7/10	TITLE <b>Thompson Strainer</b> <b>MLS-4C-MOD44</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135° F
- Screen Surface Area 367 Sq. In.

**MATERIALS:**

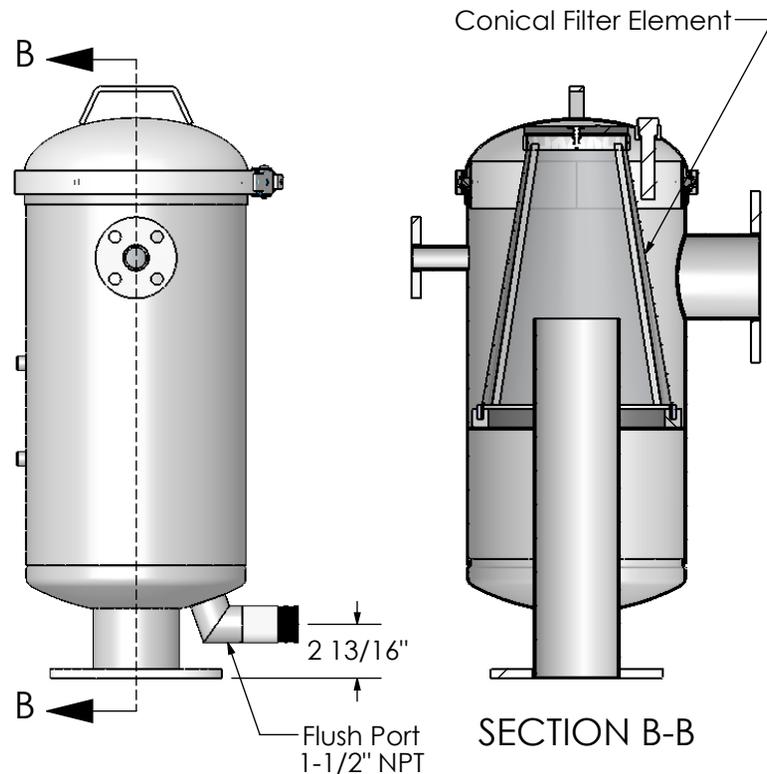
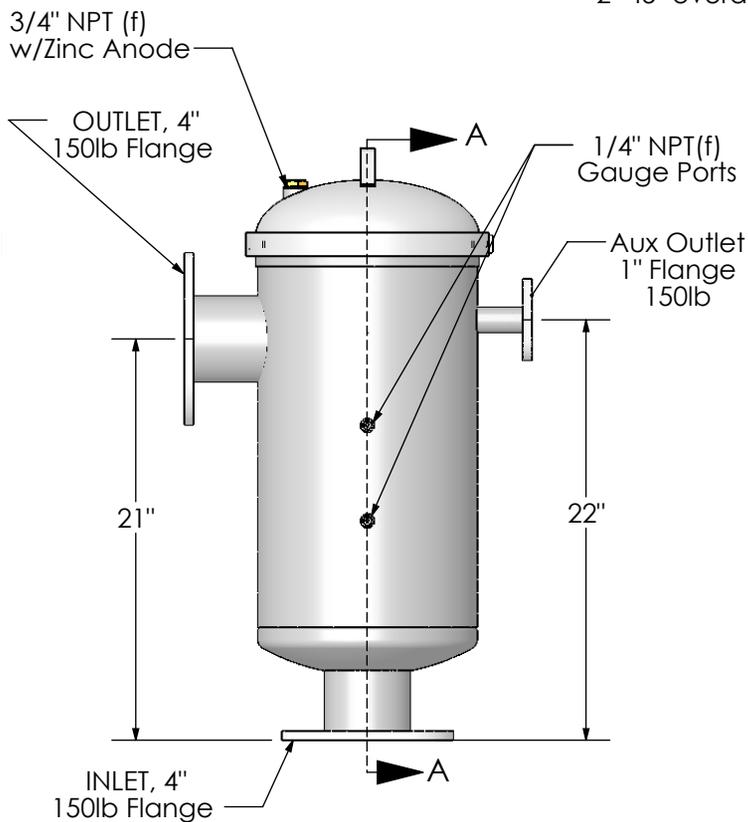
- Housing: 316 Stainless Steel
- Gasket: EPDM (other compounds available)
- Screen Mesh: 316 Stainless (1/4" perforated sheet backup)
- Clamp: 301, 302, or 304 Stainless

**SCREEN OPTIONS:**

- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 45" overall height is required for filter element removal.

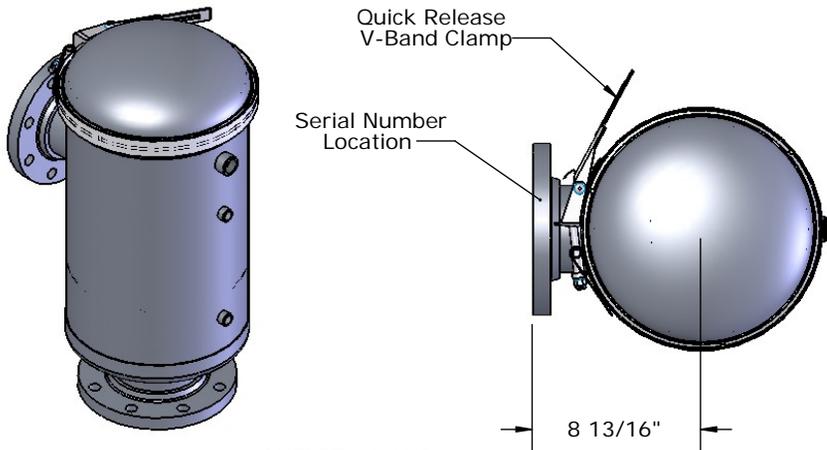


SECTION A-A

SECTION B-B

REV A

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	L.Brannan	10/25/07	TITLE Type 316 Thompson Strainer MLS-4C-MOD17
	CHECKED			
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				



8 13/16"

**GENERAL SPECIFICATIONS:**

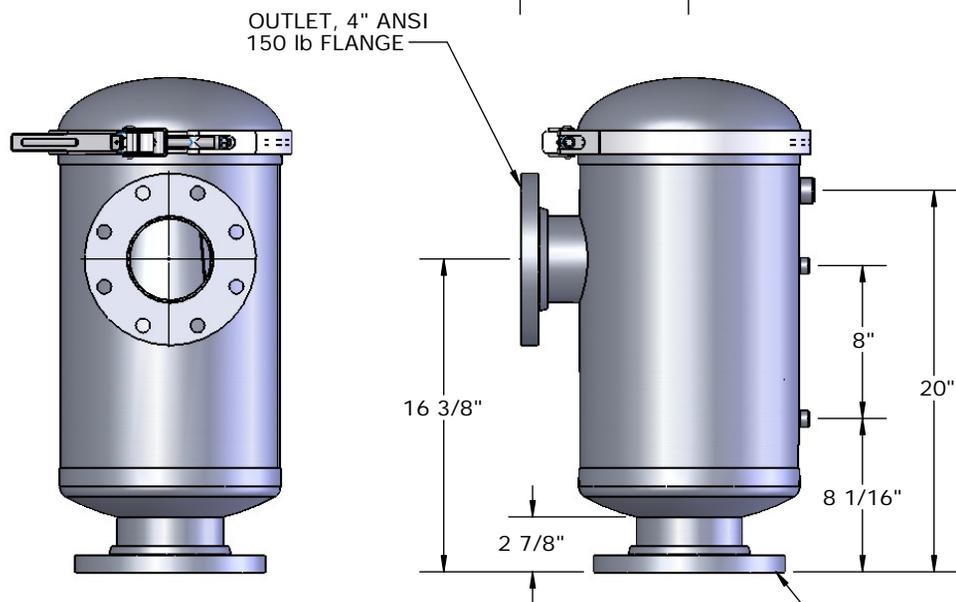
- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 50 PSI
- Maximum Temperature: 135 °F
- Screen Surface Area: 367 Sq. In.

**MATERIALS:**

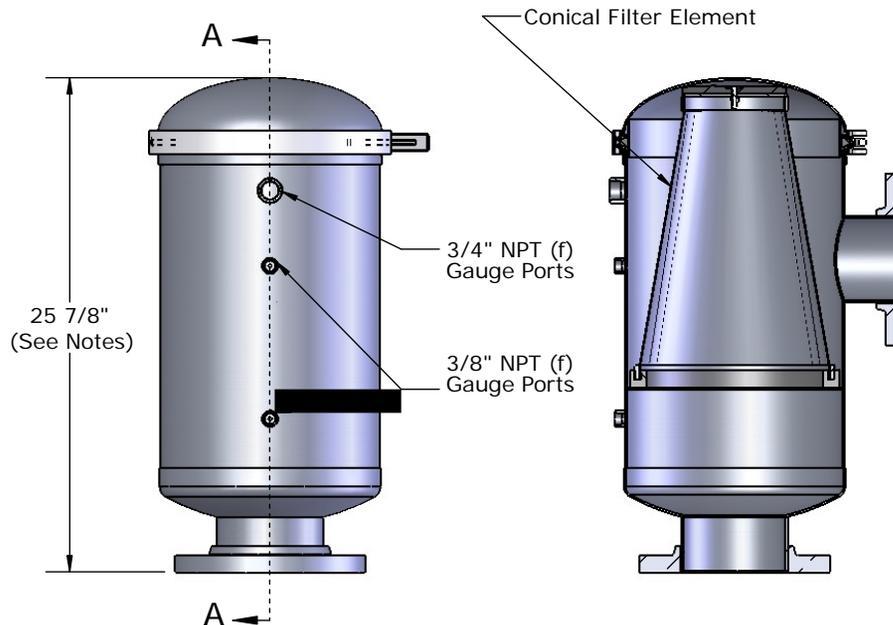
- Housing and all wetted parts: 90/10 Copper Nickel
- Gaskets: EPDM
- Screen Frame: 90/10 Copper Nickel
- Screen: 90/10 Copper Nickel .063" Perforated Sheet .078" on .125" staggered centers (35% open)
- Clamp: 301, 302, or 304 Stainless

**Notes:**

1- 41" overall height is required for filter element removal.



INLET, 5" ANSI 150 lb FLANGE



SECTION A-A  
SCALE 1 : 10

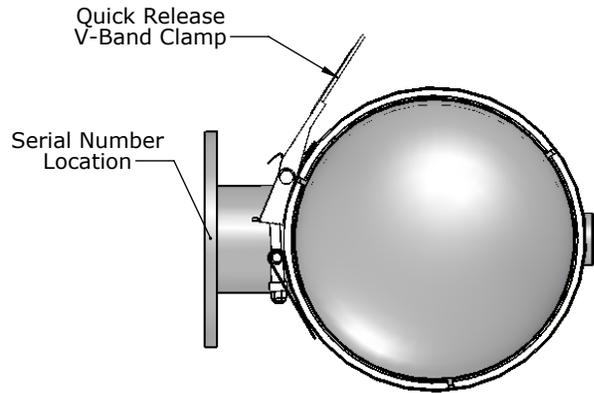
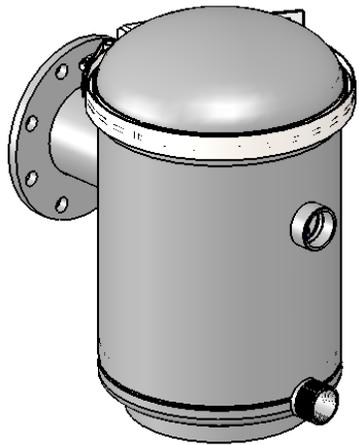
**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	9/5/08
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE  
Thompson Strainer  
MLS-4C-CuNi-MOD3



**GENERAL SPECIFICATIONS:**

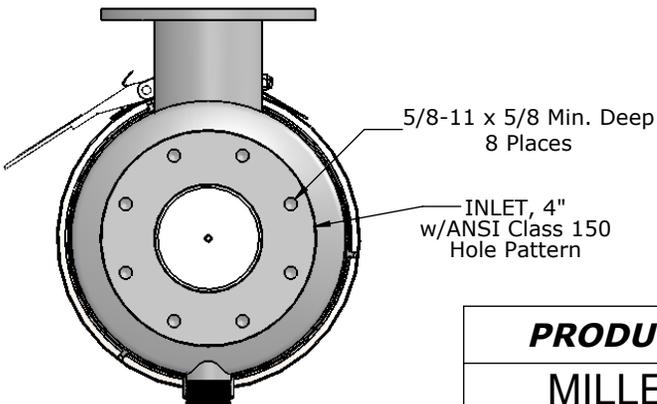
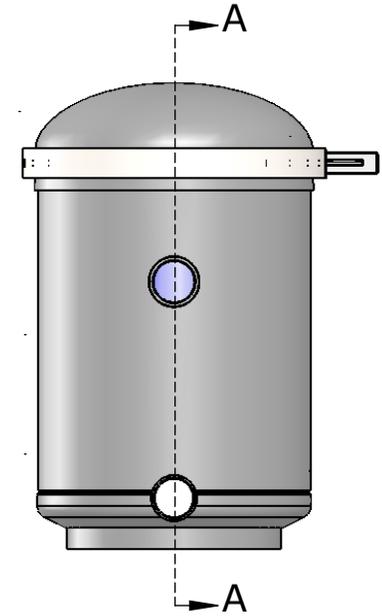
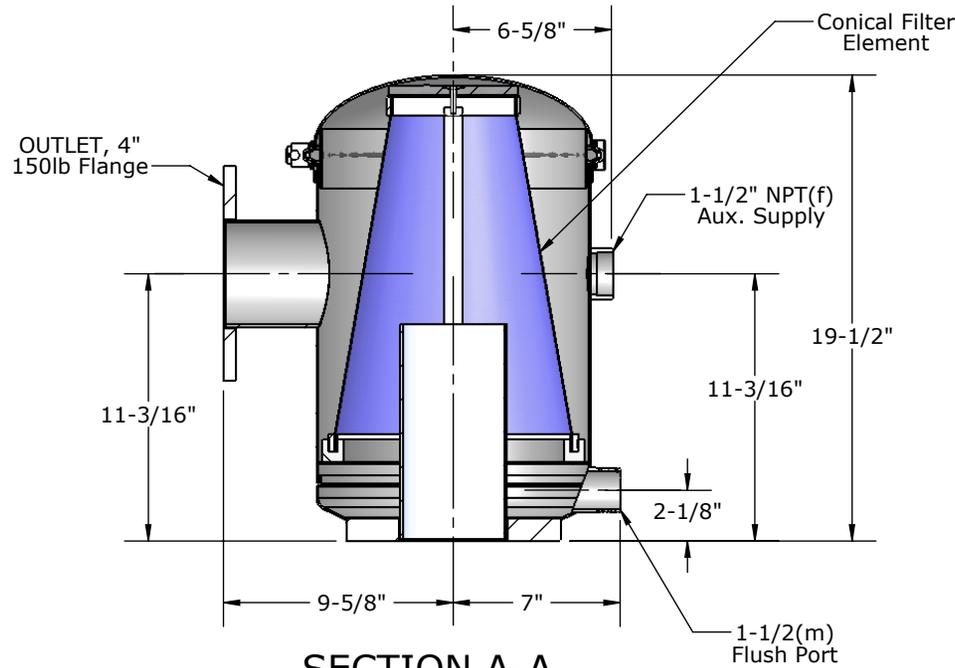
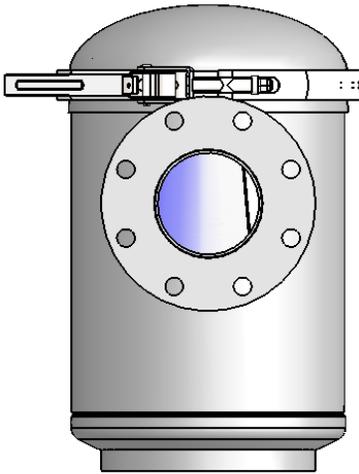
- Maximum Flow: 410 GPM (No minimum flow requirement)
- Maximum Pressure: 20 PSI
- Maximum Temperature: 135° F
- Screen Surface Area 367 Sq. In.

**MATERIALS:**

- Housing: 316 Stainless
- Gasket: EPDM
- Screen Frame: 316 Stainless
- Screen: 316 Stainless, 1/16" Perforated Sheet
- Clamp: 301, 302, or 304 Stainless

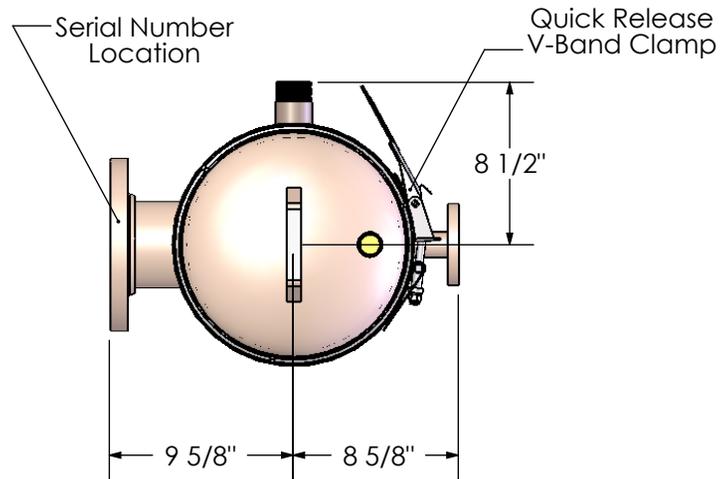
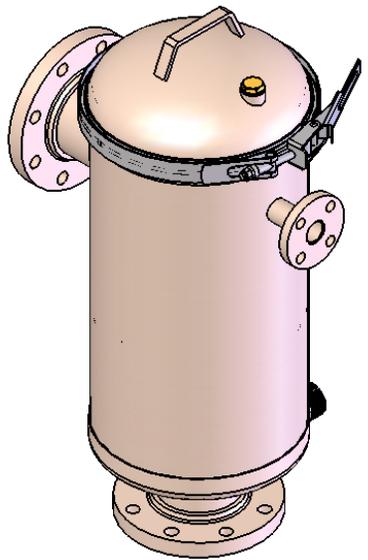
**NOTES:**

1- 32" overall height is required for filter element removal.



**SECTION A-A**

<b>PRODUCT SPECIFICATION</b>	DRAWN	J. Larsen	11/8/11	TITLE
	CHECKED			
<b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	ENG APPR.			Thompson Strainer MLS-4C-T316-MOD56
	MKT APPR.			
	SHEET 1 OF 1	Ref: ML20398-MOD56	Rev. -	



**GENERAL SPECIFICATIONS:**

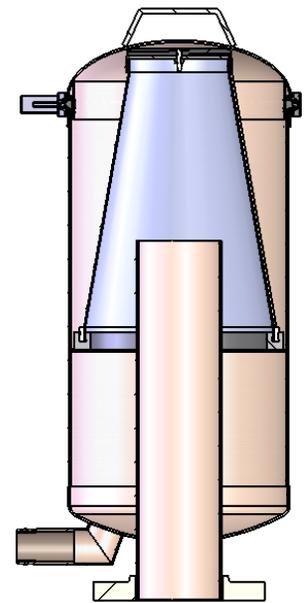
- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 50 PSI
- Maximum Temperature: 135° F
- Screen Surface Area: 367 Sq. In.

**MATERIALS:**

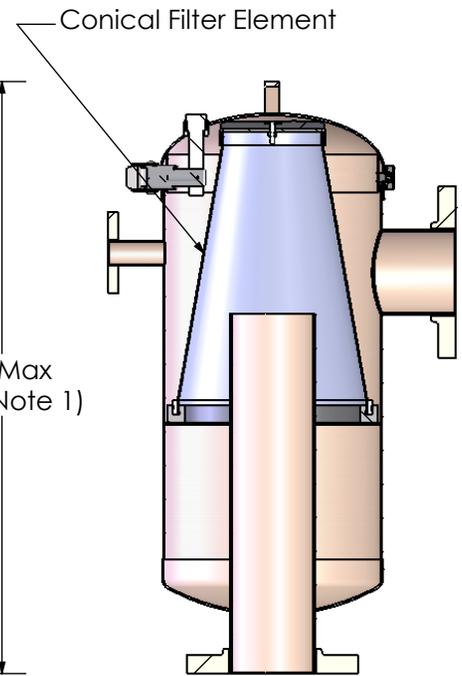
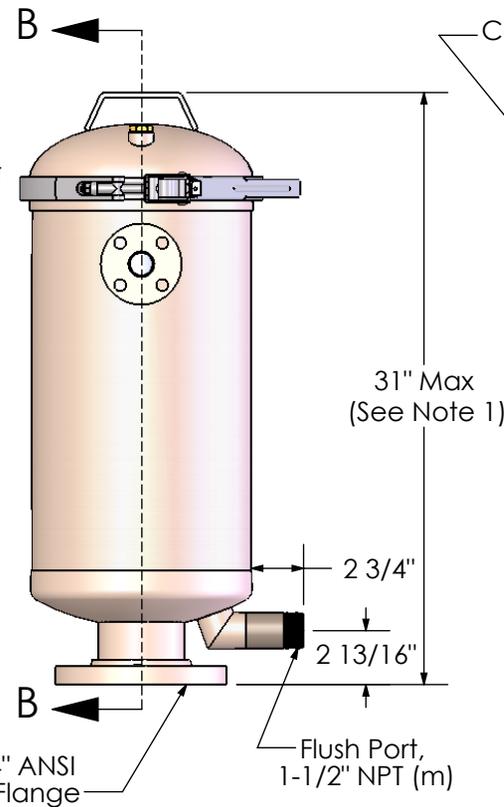
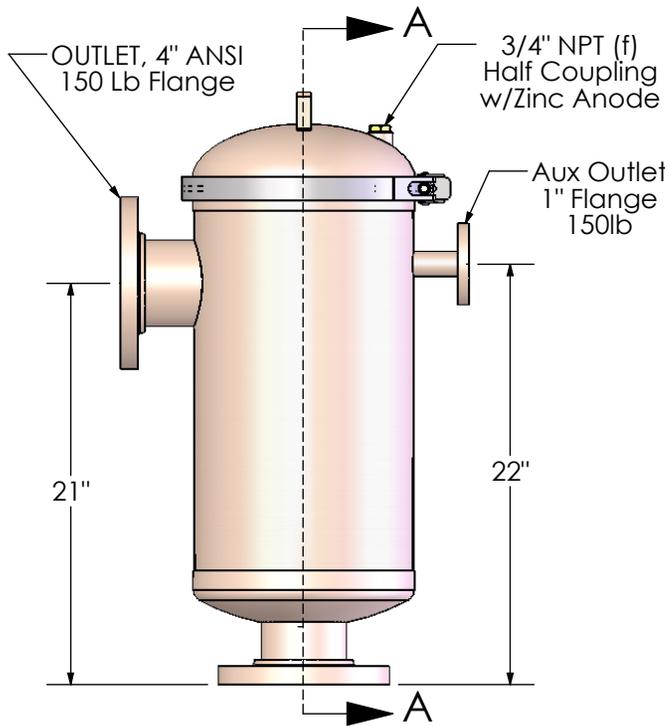
- Housing and all wetted parts: 90/10 Copper Nickel
- Gaskets: EPDM
- Screen Frame: 90/10 Copper Nickel
- Screen: Copper Nickel .063" Perforated Sheet  
.078" on .125" staggered centers (35% open)
- Clamp: 301, 302, or 304 Stainless

**Notes:**

1- 45" overall height is required for filter element removal.



SECTION A-A



SECTION B-B

**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

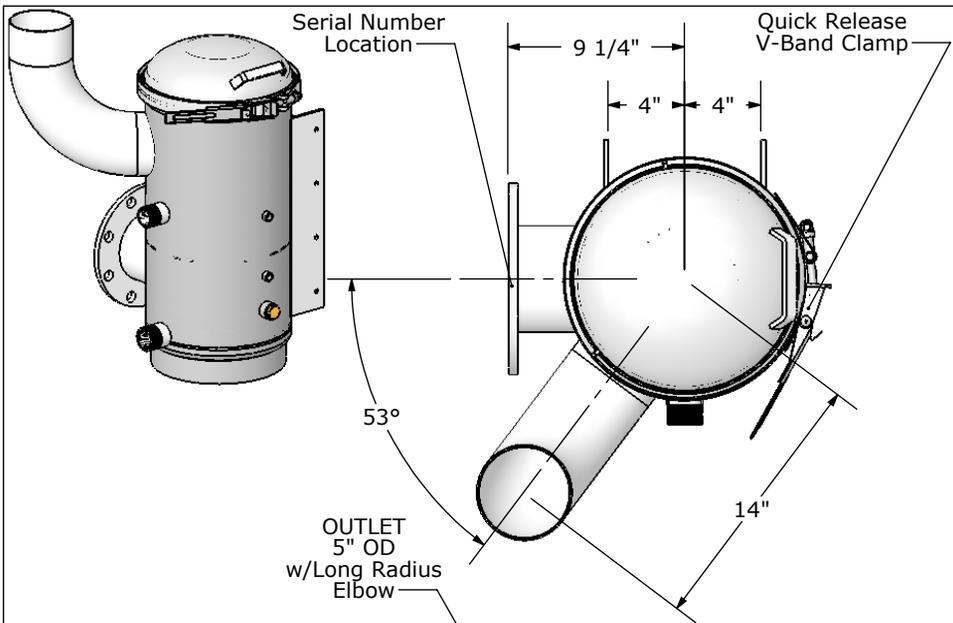
DRAWN	L.Brannan	1/19/10
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

TITLE

Thompson Strainer  
MLS-4C CuNi-MOD8

ML20950



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135° F
- Screen Surface Area 367 Sq. In.

**MATERIALS:**

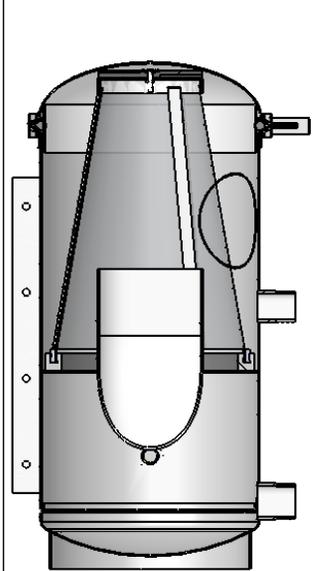
- Housing: 316 Stainless Steel
- Gasket: EPDM (other compounds available)
- Screen Mesh: 316 Stainless (1/4" perforated sheet backup)
- Clamp: 301, 302, or 304 Stainless

**SCREEN OPTIONS:**

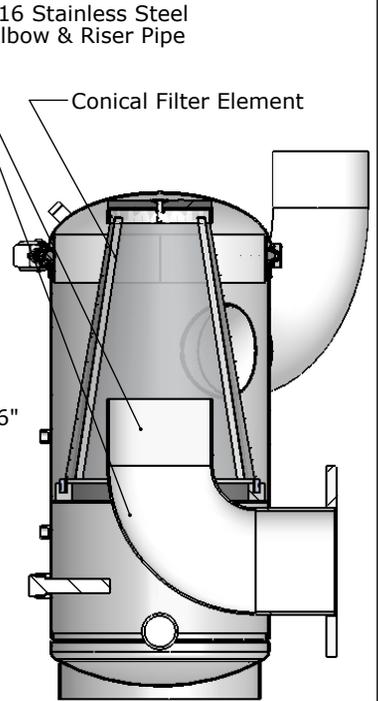
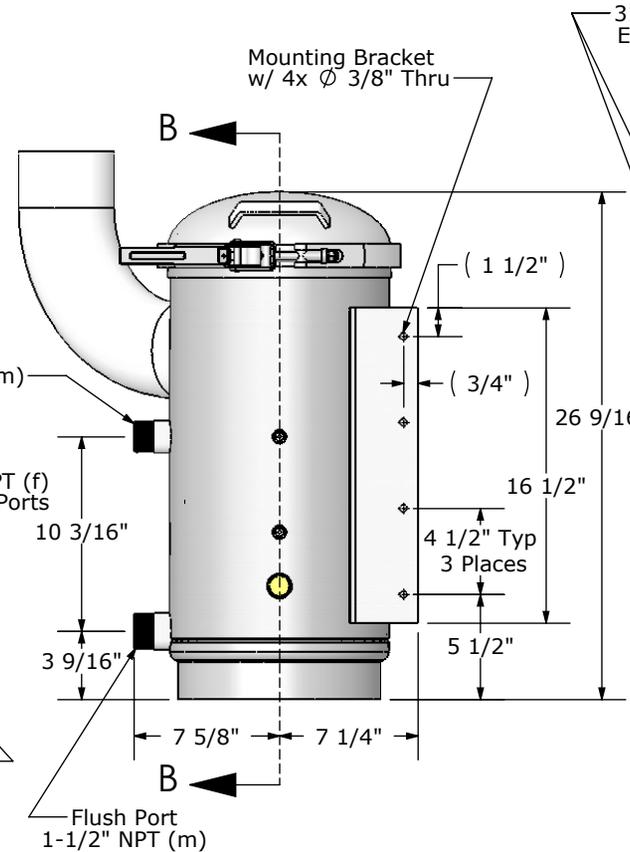
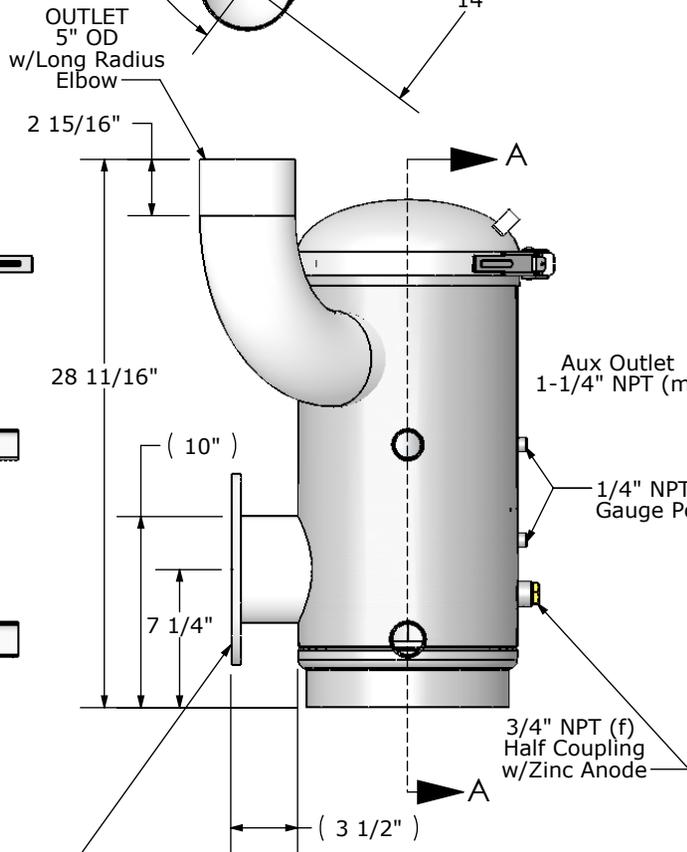
- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 45" overall height is required for filter element removal.



SECTION A-A



SECTION B-B

INLET, 5" 150lb Flange

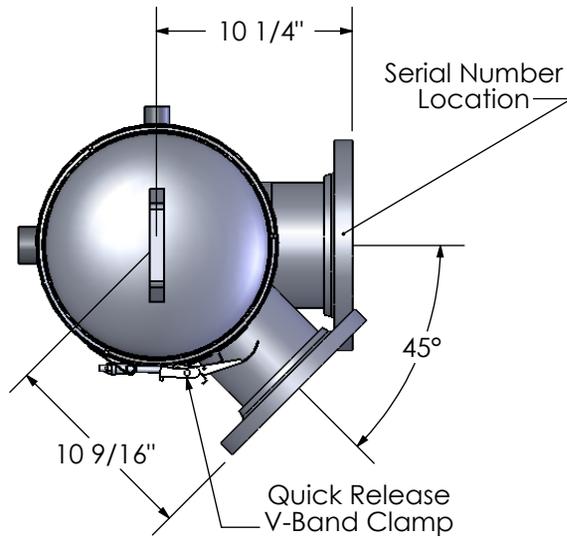
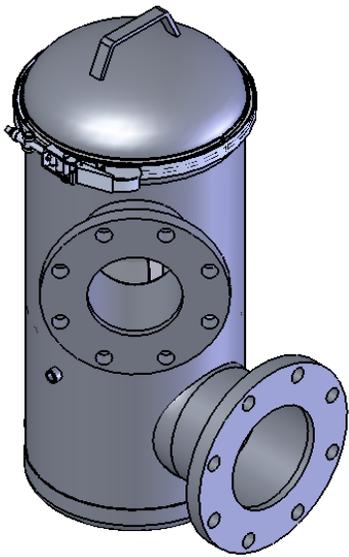
**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	6/29/09
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE	Thompson Strainer MLS-4C-T316-MOD36
REV A	



**GENERAL SPECIFICATIONS:**

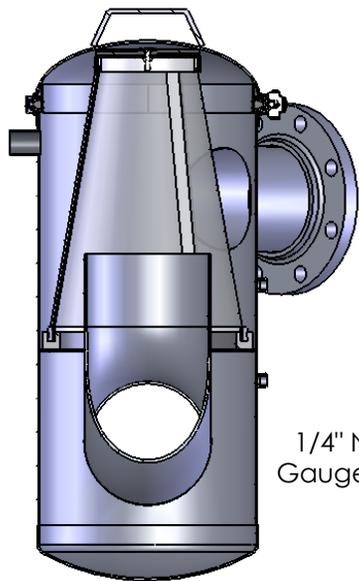
- Maximum Flow: 350 GPM (No minimum flow requirement)
- Maximum Pressure: 50 PSI
- Maximum Temperature: 135° F
- Screen Surface Area: 367 Sq. In.

**MATERIALS:**

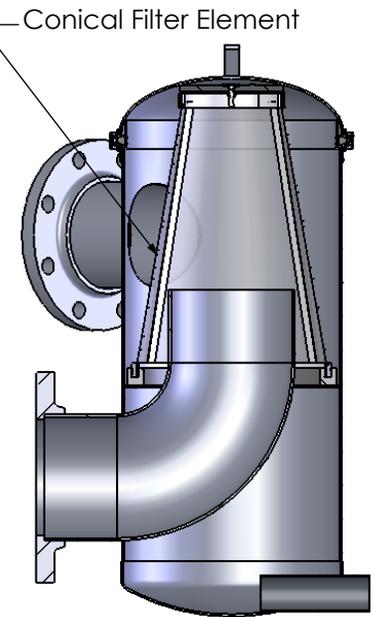
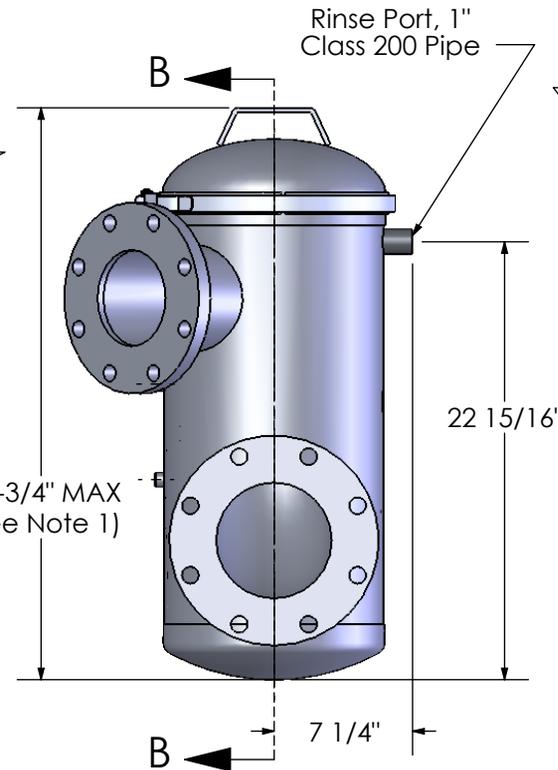
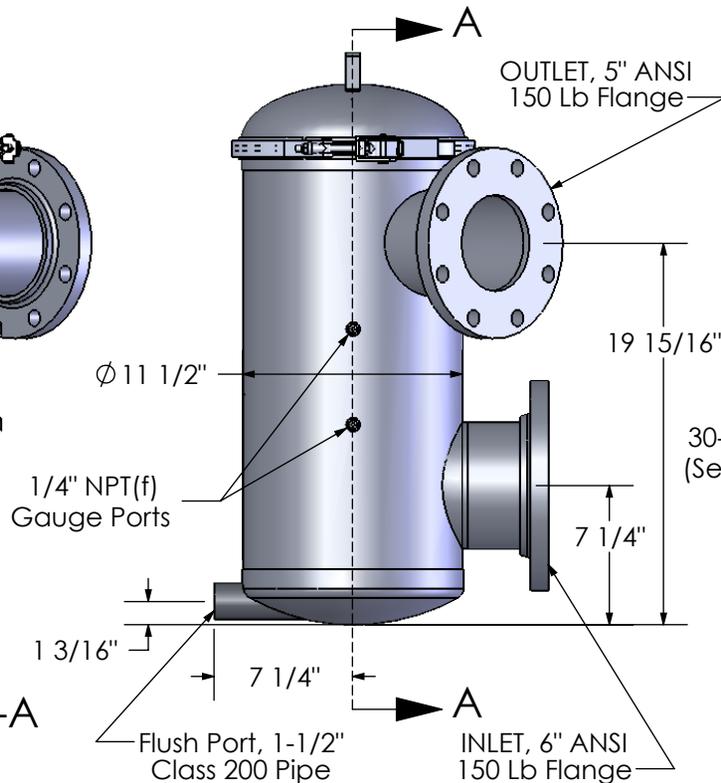
- Housing and all wetted parts: 90/10 Copper Nickel
- Gaskets: EPDM
- Screen Frame: 90/10 Copper Nickel
- Screen: 90/10 Copper Nickel .063" Perforated Sheet .078" on .125" staggered centers (35% open)
- Clamp: 301,302, or 304 Stainless

**Notes:**

1- 41" overall height is required for filter element removal.

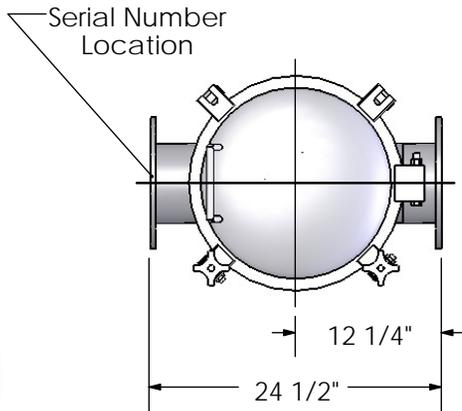
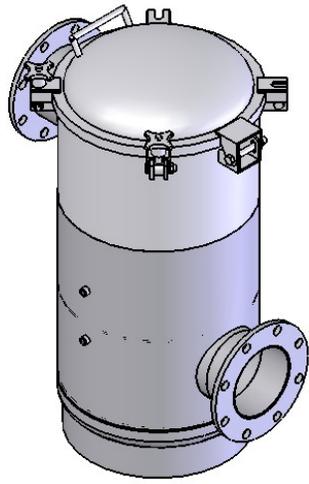


SECTION A-A



SECTION B-B

<p><b>PRODUCT SPECIFICATION</b></p> <p><b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114</p>	DRAWN	J. Larsen	3/19/08	<p>TITLE</p> <p>Thompson Strainer MLS-4C Cuni-MOD2</p>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 750 GPM (No minimum flow requirement)
- Maximum Pressure: 57 PSI
- Screen Surface Area 745 Sq. In.

**MATERIALS:**

- Housing: 316 Stainless standard
- Gasket: EPDM standard (other compounds available)
- Screen Mesh: 5/64" perforated sheet, 316 Stainless

**SCREEN OPTIONS:**

- Multiple screen mesh and perforated sheet sizes available. (See product catalog for samples)

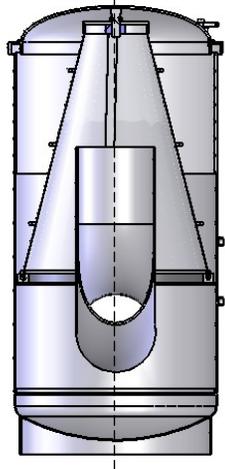
**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- 21" additional height required for screen removal.

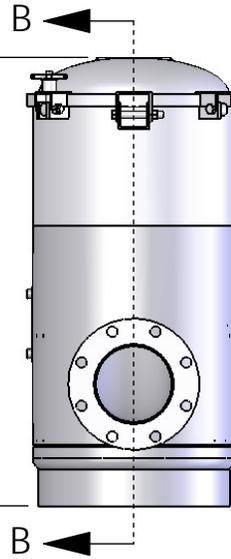
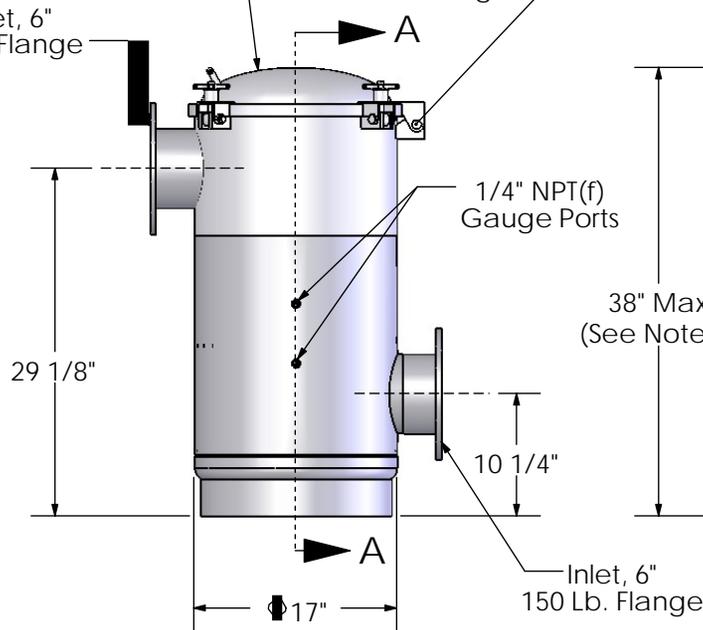
Hinged Lid Enclosure  
Wetted Parts: 316 Stainless  
Non-Wetted Parts: 304 Stainless

Lid Enclosure  
Hinge

Outlet, 6"  
150 Lb. Flange

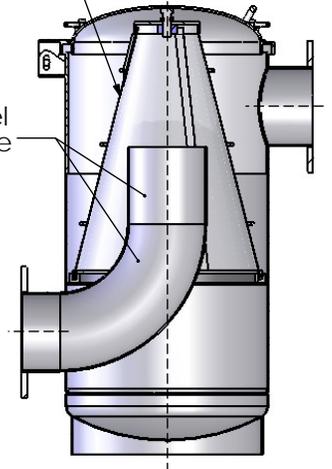


SECTION A-A



Conical Filter Element  
(See Specification)

316 Stainless Steel  
Elbow & Riser Pipe



SECTION B-B

**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	5/22/07
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

TITLE

Type 316 Thompson  
Strainer MLS-6-MOD9

**GENERAL SPECIFICATIONS**

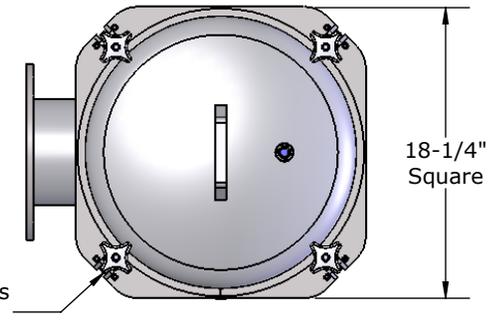
- Maximum Flow: 925 GPM
- Maximum Pressure: 50 PSI
- Maximum Temperature: 135° F
- Dry Weight: Approx. 115 Lbs.

**MATERIALS**

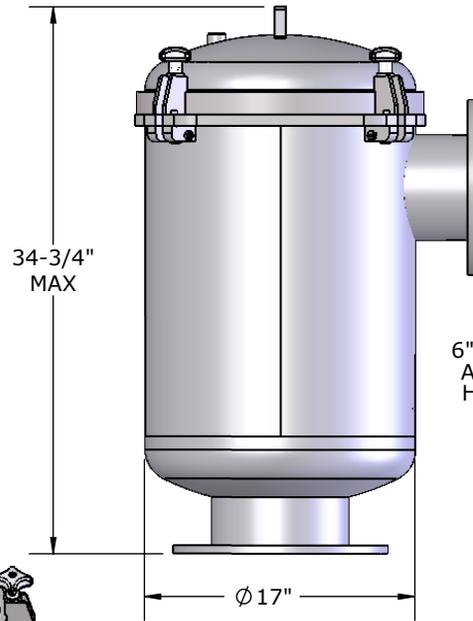
- Housing: 316L Stainless
- Gasket: EPDM
- Screen Frame: 316 Stainless
- Screen: 316 Stainless,
- Swing Bolt Hardware: 300 Series Stainless

**NOTES:**

- 51" Overall height is required for filter element removal.

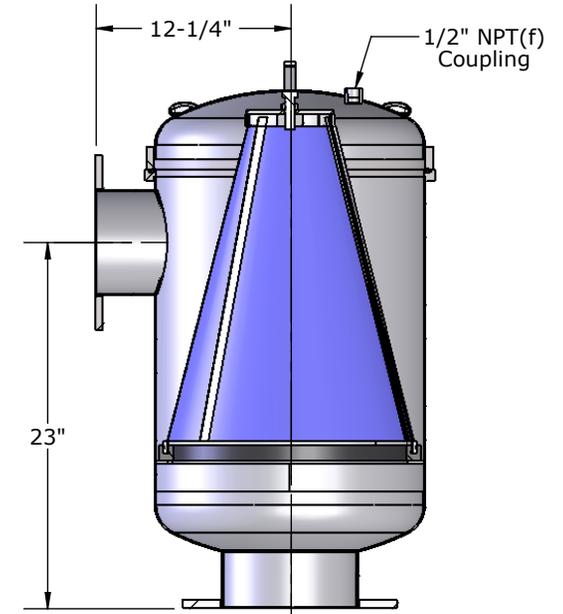
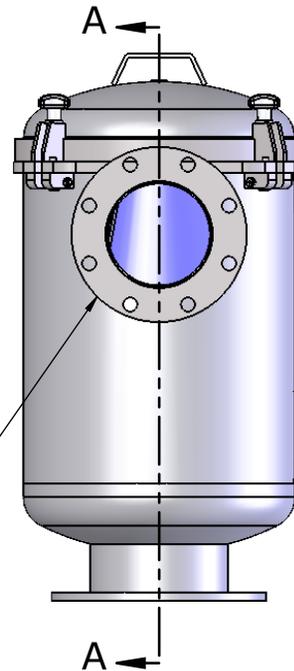


1/2-13 Swing Bolts (4)



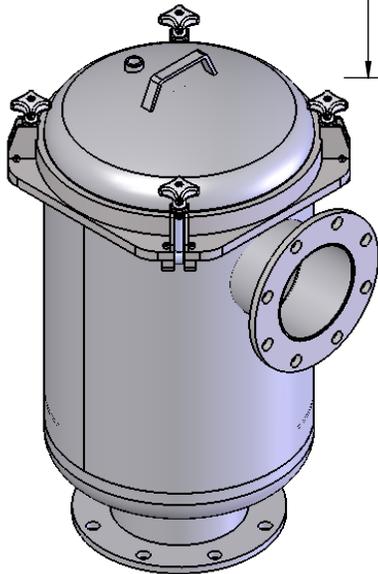
6" Flange with ANSI 150 Lb Hole Pattern

Ø17"

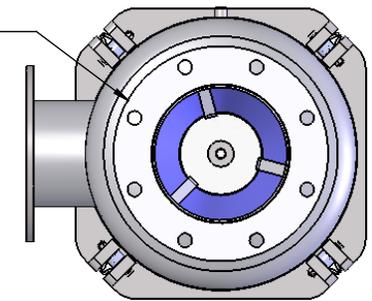


1/2" NPT(f) Coupling

SECTION A-A



8" Flange with ANSI 150 Lb Hole Pattern



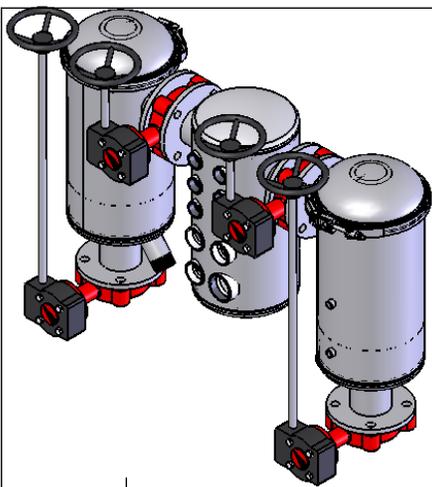
**PRODUCT SPECIFICATION**

**MILLER LEAMAN** INC

800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	3/20/01
CHECKED		
ENG APPR.		
MKT APPR.		
Sheet of 1	Ref: ML21582-02	Rev. A

TITLE: Type 316 Thompson Custom Strainer 8" Inlet/6" Outlet



**GENERAL SPECIFICATIONS:**

- Maximum Flow: 200 GPM (No minimum flow requirement) Each Unit.
- Maximum Pressure: 125 PSI
- Maximum Temperature: 135° F
- Screen Surface Area 200 Sq. In. Each Unit.

**MATERIALS:**

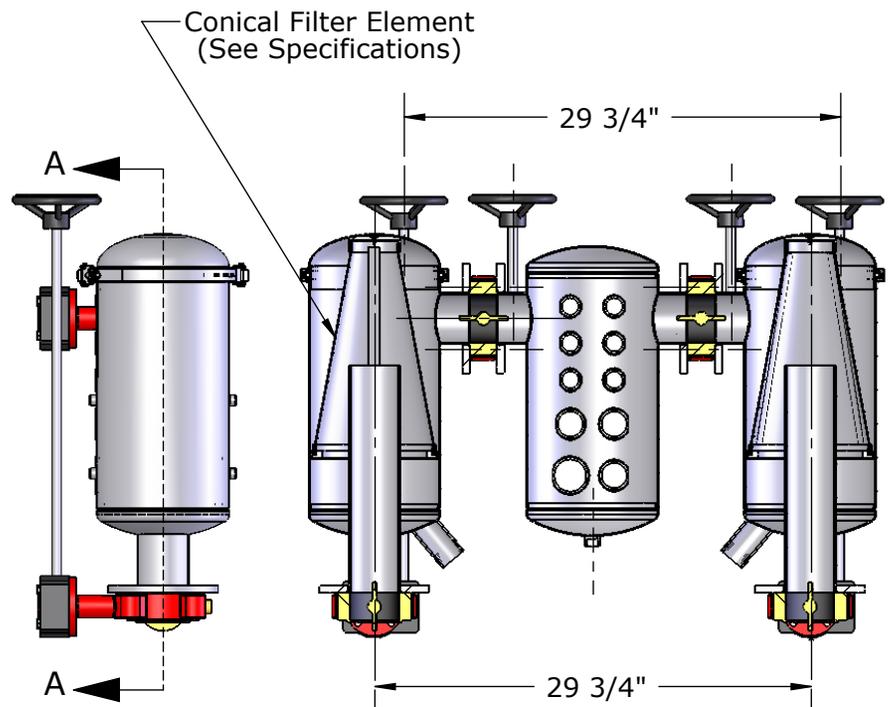
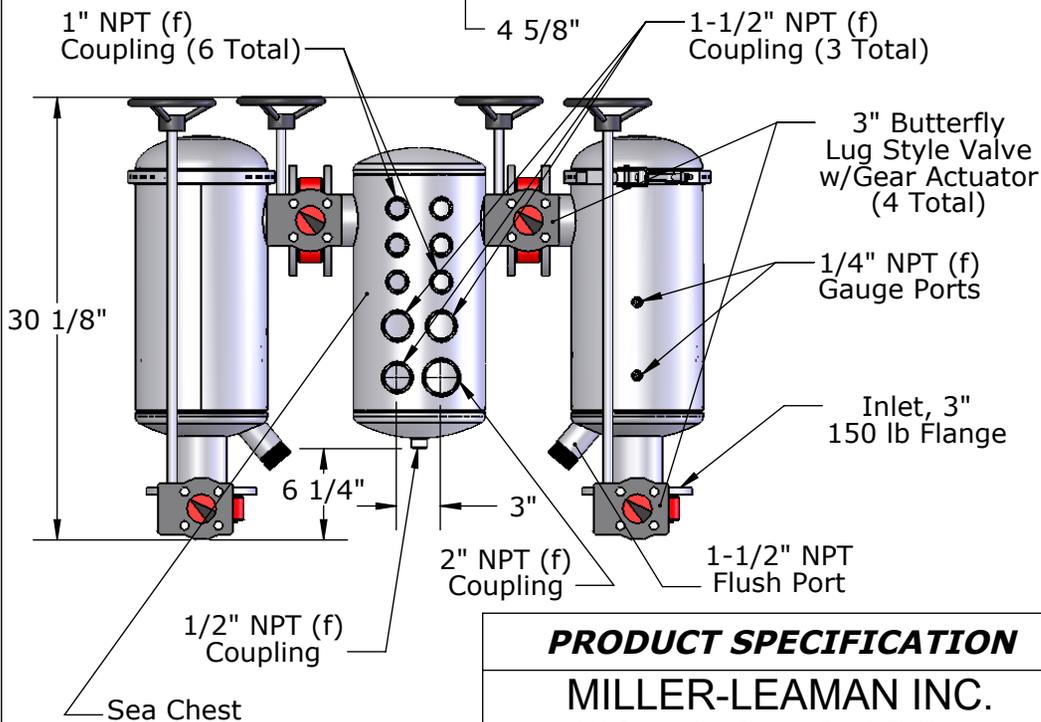
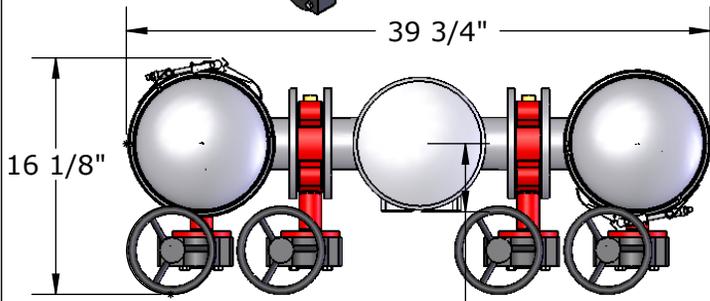
- Housing: 316 Stainless.
- Gaskets: EPDM.
- Screen Mesh: 5/64" perforated sheet backup, 316 Stainless.

**SCREEN OPTIONS:**

- Multiple screen mesh and perforated sheet sizes available.  
(See product catalog for samples)

**NOTES:**

- 1- Dimensions are for informational purposes only and are subject to change.
- 2- Overall Height of 39" required for Filter Element Removal.

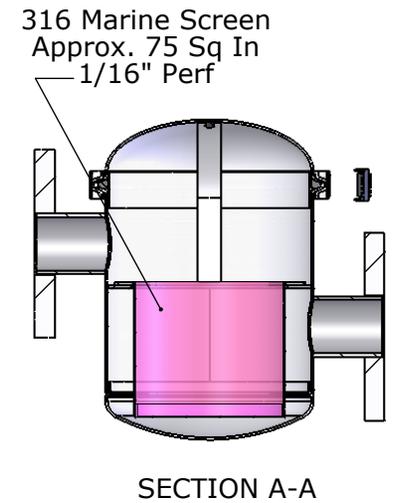
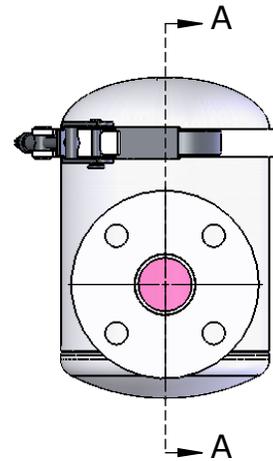
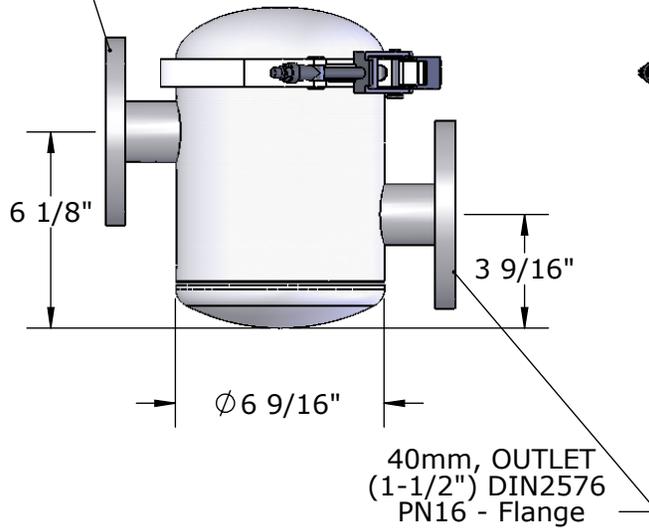
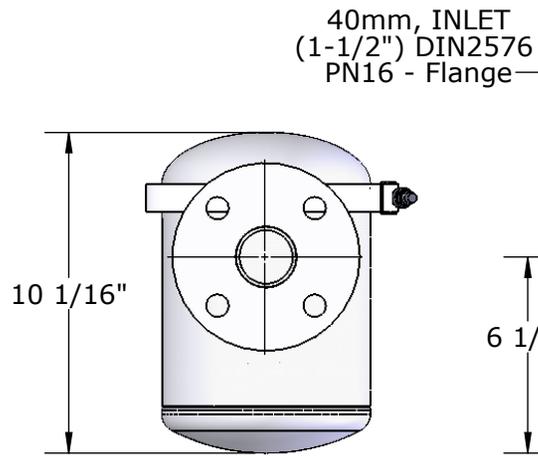
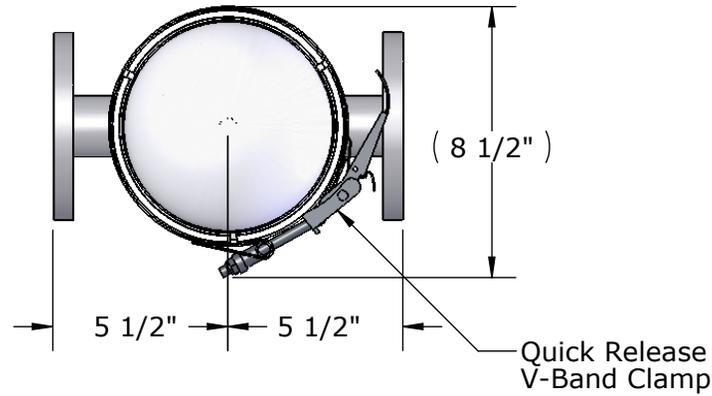
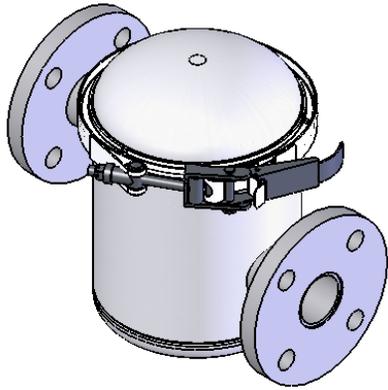


<p><b>PRODUCT SPECIFICATION</b></p> <p><b>MILLER-LEAMAN INC.</b></p> <p>800 Orange Ave. Daytona Beach FL 32114</p>	DRAWN	L.Brannan	3/5/08	<p>TITLE</p> <p><b>Thompson Strainer</b></p> <p><b>MLS-3-T316-MOD9</b></p> <p><b>W/Sea Chest</b></p>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			

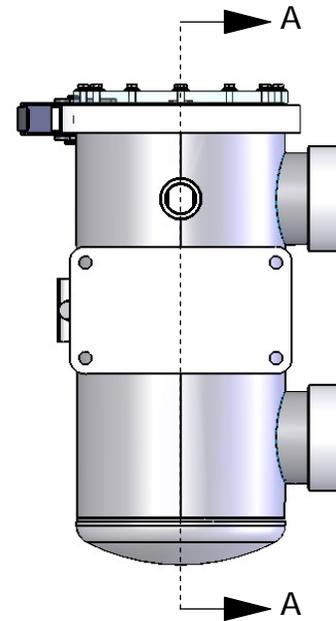
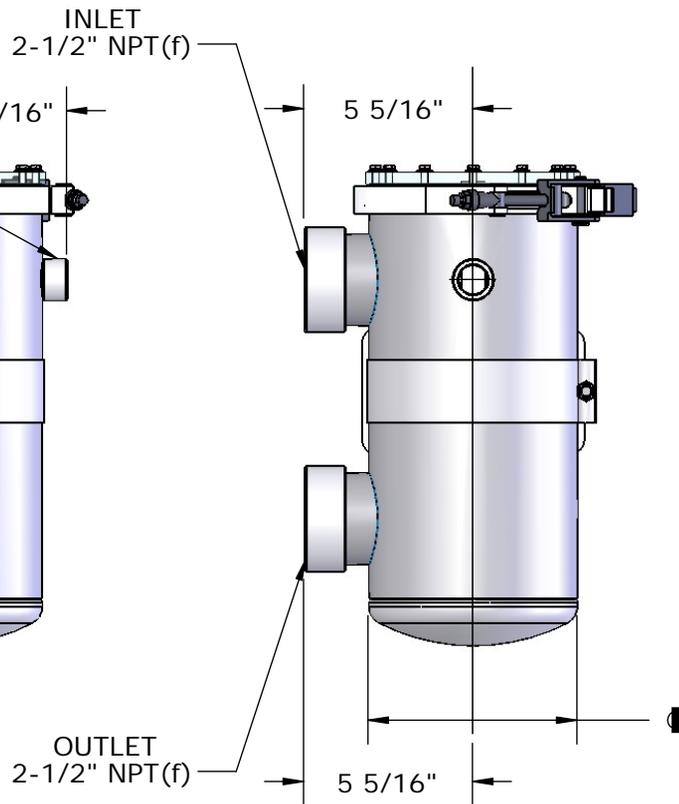
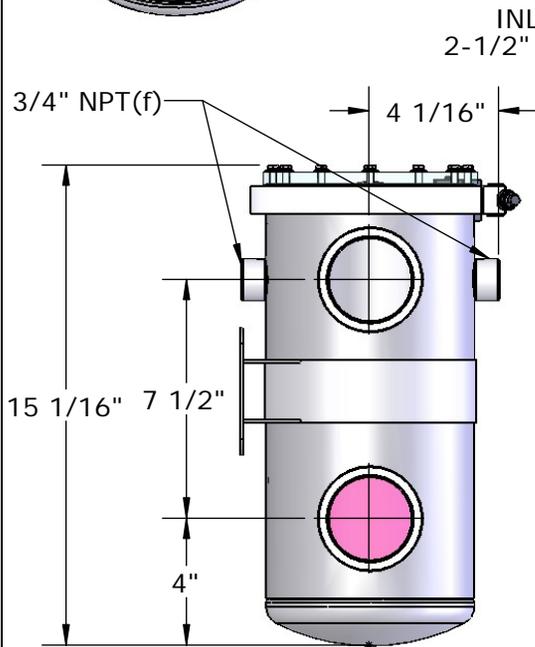
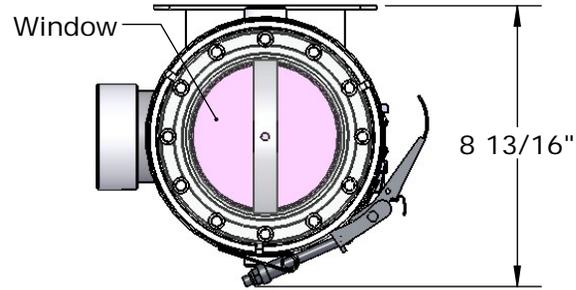
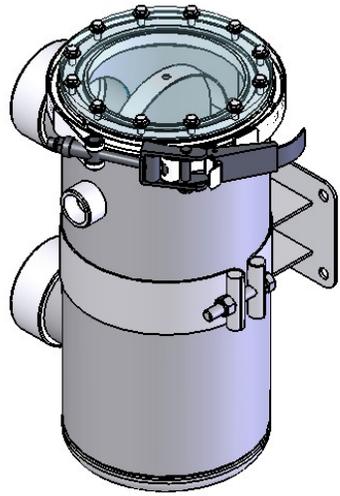
# **Custom Basket Strainers And Duplex Strainers**

# *Custom Basket Strainers And Duplex Strainers*

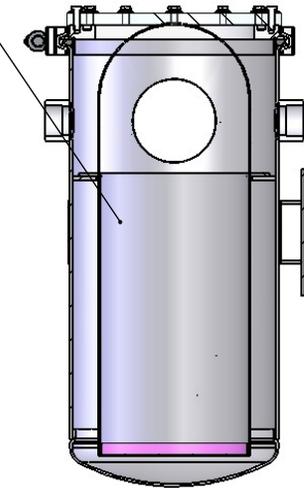




<b>PRODUCT SPECIFICATION</b>  <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	L.Brannan	5/7/09	TITLE <b>Basket SeaStrainer</b> Ø 6-5/8" Housing MOD7
	CHECKED			
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				



316 Marine Screen  
Approx. 150 Sq. in. Mesh Surface



SCALE 1 : 6

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

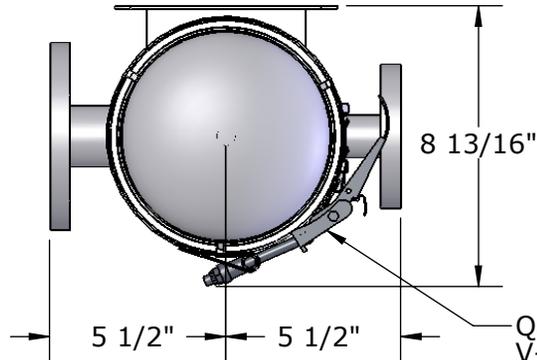
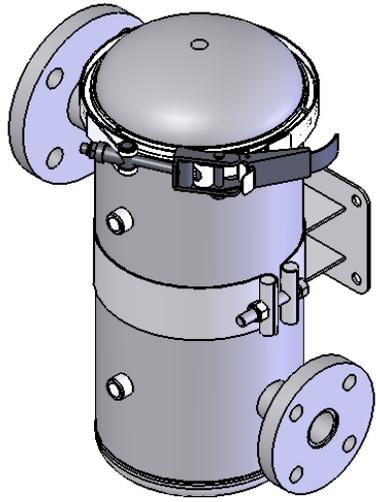
800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	3/12/08
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

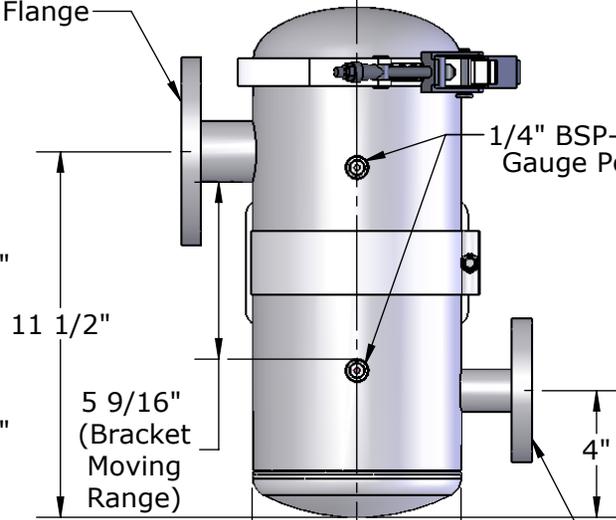
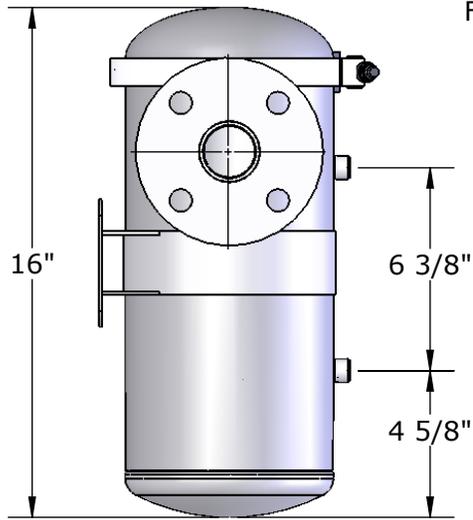
TITLE

Basket SeaStrainer  
6-5/8" Housing, Multi-Port  
MOD4



Quick Release V-Band Clamp

40mm INLET  
(1-1/2")  
DIN2576 PN16  
Flange



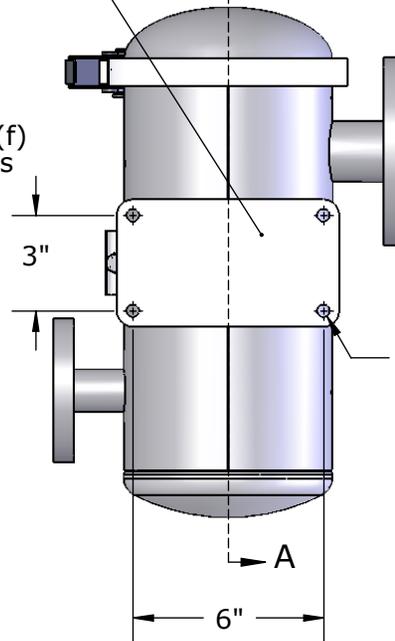
1/4" BSP-T (f)  
Gauge Ports

11 1/2"  
5 9/16"  
(Bracket Moving Range)

Ø 6 9/16"

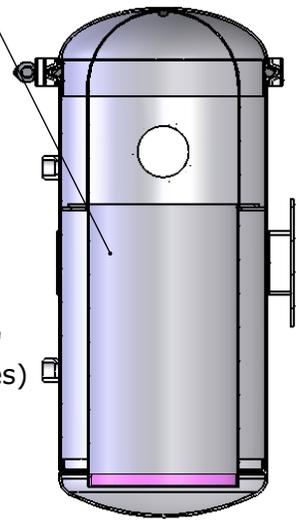
25mm OUTLET  
(1")  
DIN2576 PN16  
Flange

Mounting Bracket



316 Marine Screen  
Approx. 150 Sq. in.  
1/16" Mesh Surface

Ø 3/8"  
(4 Places)



SECTION A-A

**PRODUCT SPECIFICATION**

**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

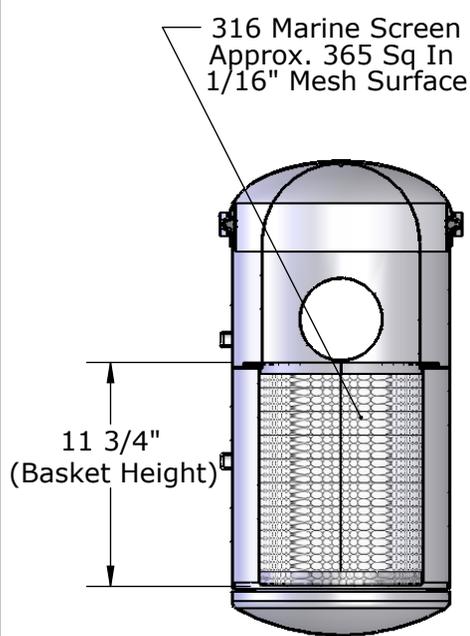
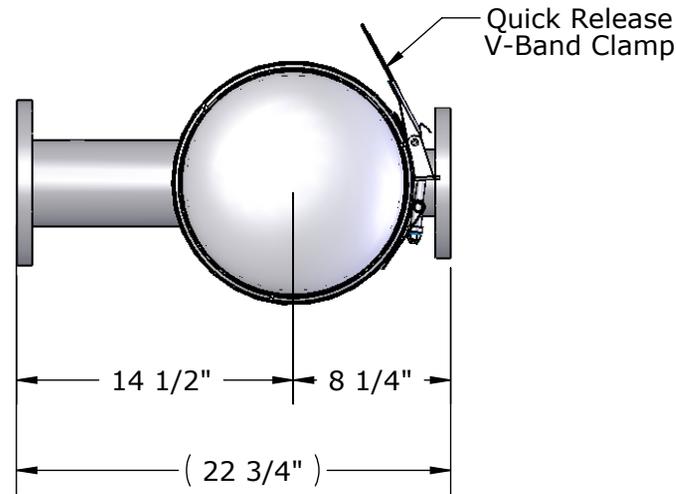
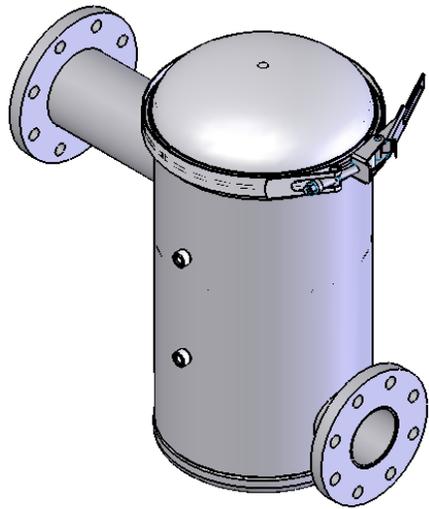
DRAWN	L.Brannan	10/24/08
CHECKED		
ENG APPR.		
MKT APPR.		

SHEET 1 OF 1

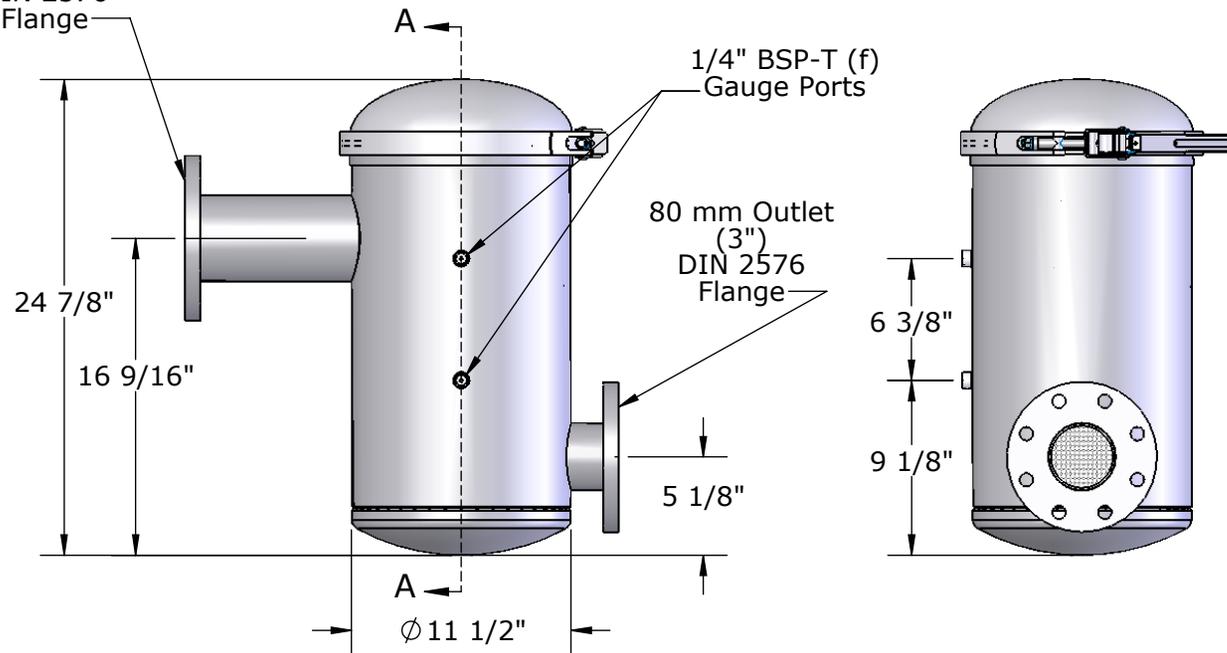
TITLE

**Basket SeaStrainer**  
Ø 6-5/8" Housing  
MOD5

REV B



SECTION A-A



**PRODUCT SPECIFICATION**

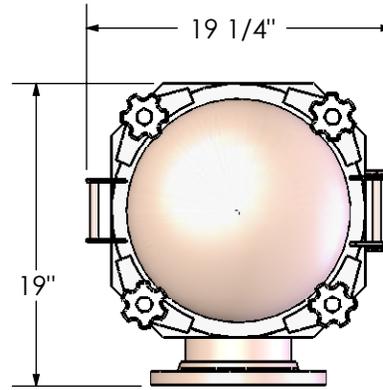
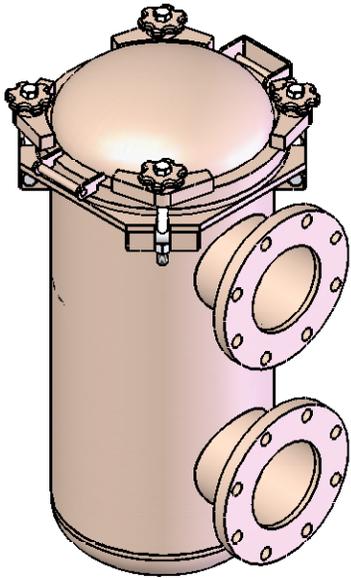
**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	L.Brannan	10/23/08
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

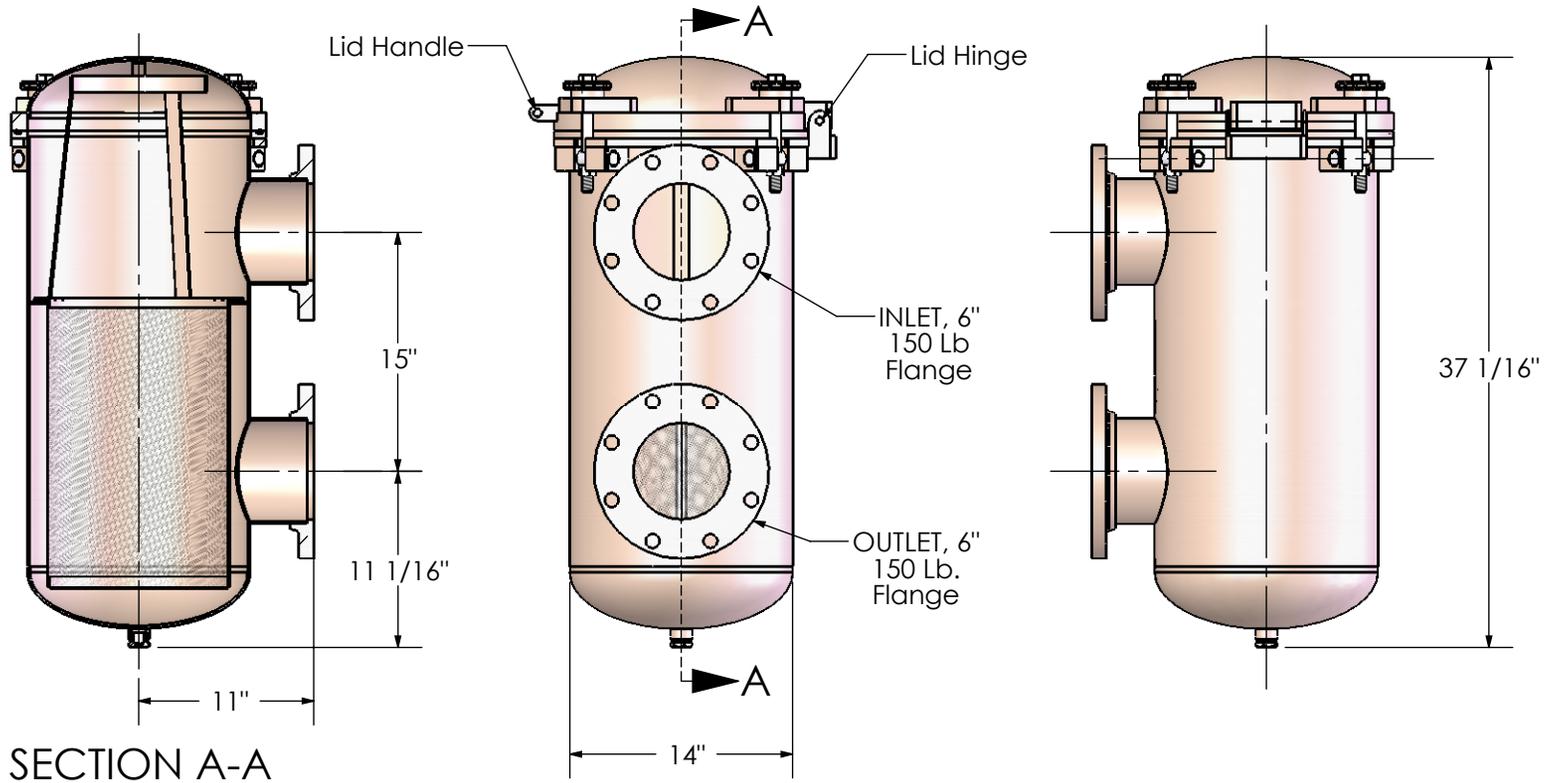
TITLE

**4" Basket SeaStrainer**  
Ø 11.5" Housing  
MOD1



**GENERAL SPECIFICATIONS**

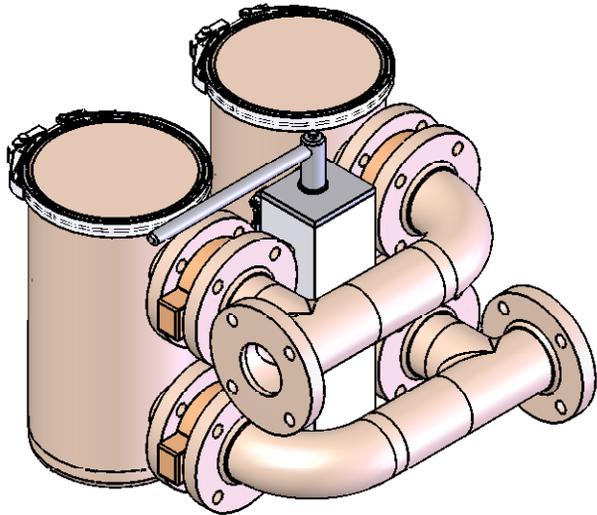
- Maximum Flow: 750 GPM
- Maximum Pressure 50 PSI
- Basket Surface Area: 700 Sq. In.
- Housing Material: 90/10 Copper Nickel
- Basket Material: 90/10 Copper
- Weight: 220 Lbs.



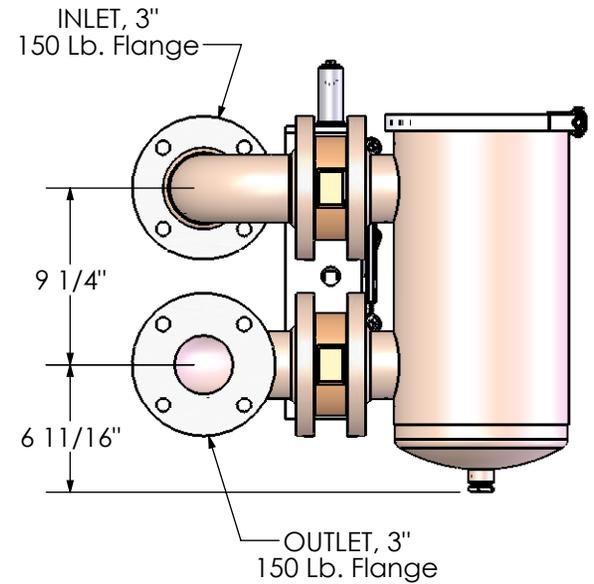
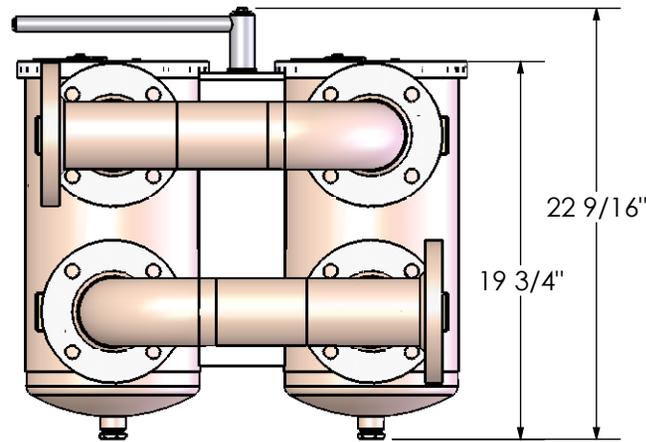
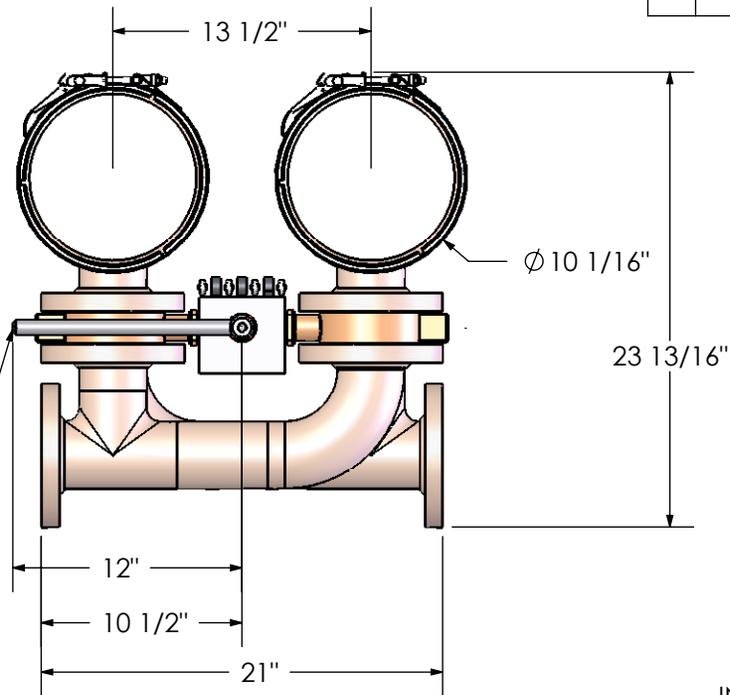
SECTION A-A

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	7/5/09	TITLE <b>6" Basket Strainer</b> <b>90/10 Copper Nickel</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

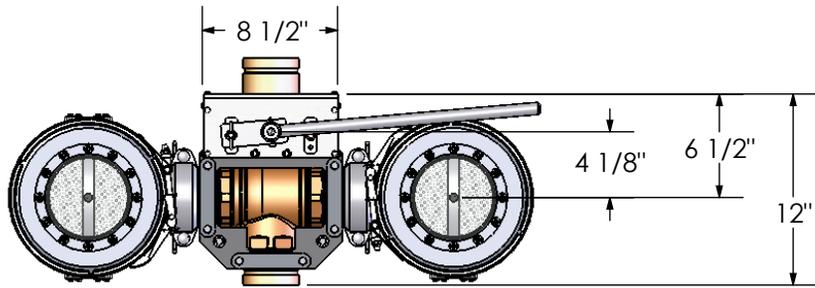


Valve Lever  
(180° swing required)

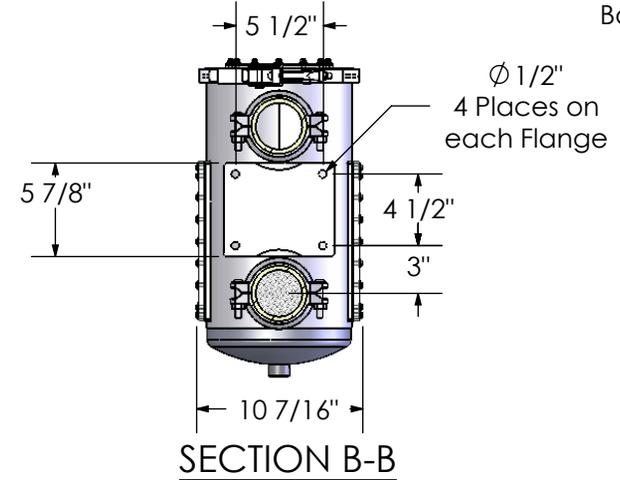
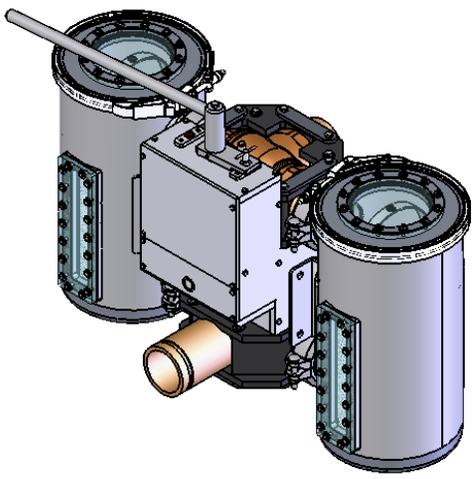
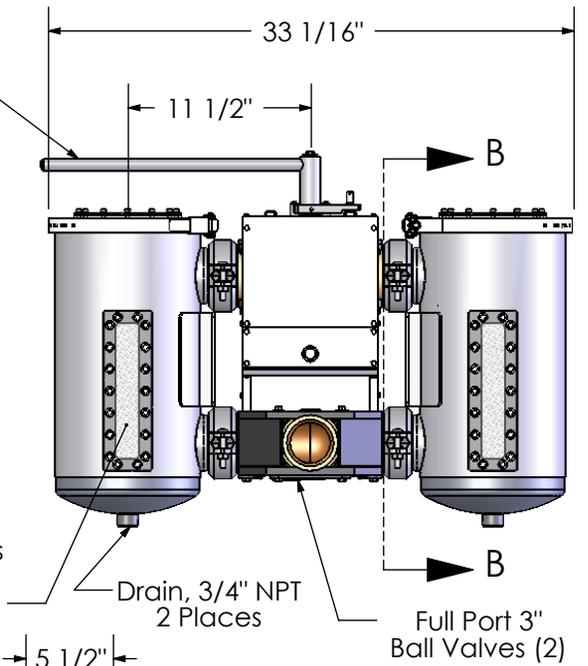
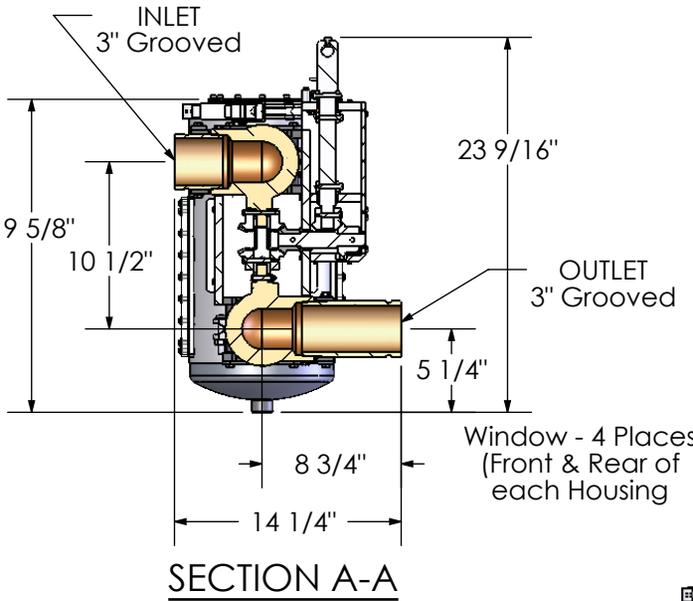
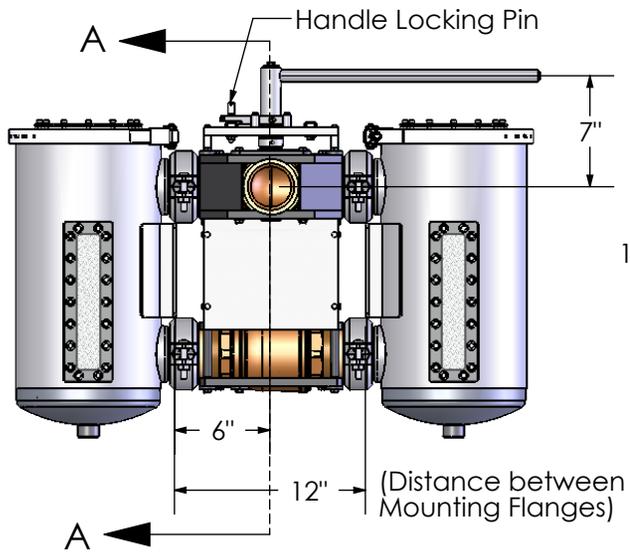


**PRELIMINARY**

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	3/20/09	<b>3" Duplex Basket Strainer</b> <b>ML21184-A</b> <b>(Port)</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	Actuator redesigned	6/8/07	JRL
B	6-1/4" was 5-1/8", 22-13/16" was 21-11/16"	6/11/07	JRL
C	33-1/16" was 32-1/8", 11" was 9-15/16"	7/24/07	JRL
D	7" was 6-1/4", 8-1/2" added, locking pin added.	7/31/07	JRL
E	8-3/4" was 5-1/2", 14-1/4" was 11"	8/22/07	JRL
F	Part number added to drawing.	8/29/07	JRL
G	23-9/16" was 23-13/16", 5-1/4" was 5-1/2", 19-5/8" was 19-7/8", Handle lock arm relocated.	10/3/07	JRL

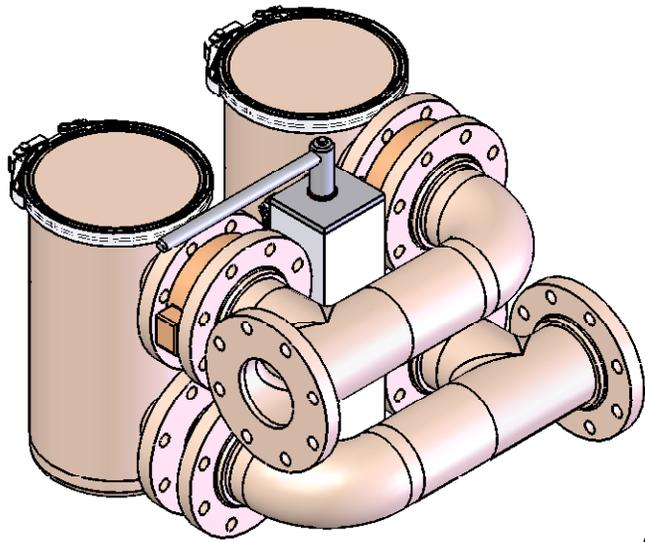


**PRODUCT SPECIFICATION**  
**MILLER-LEAMAN INC.**  
 800 Orange Ave. Daytona Beach FL 32114

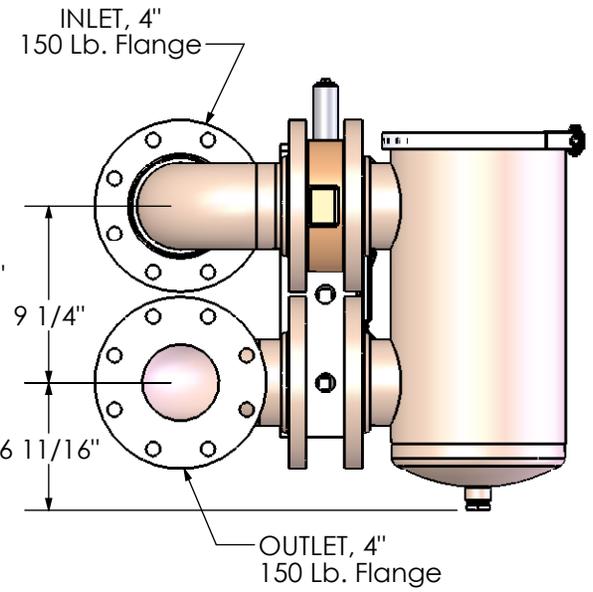
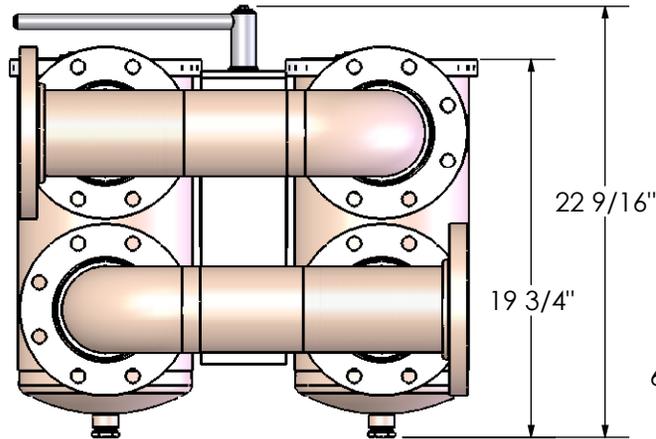
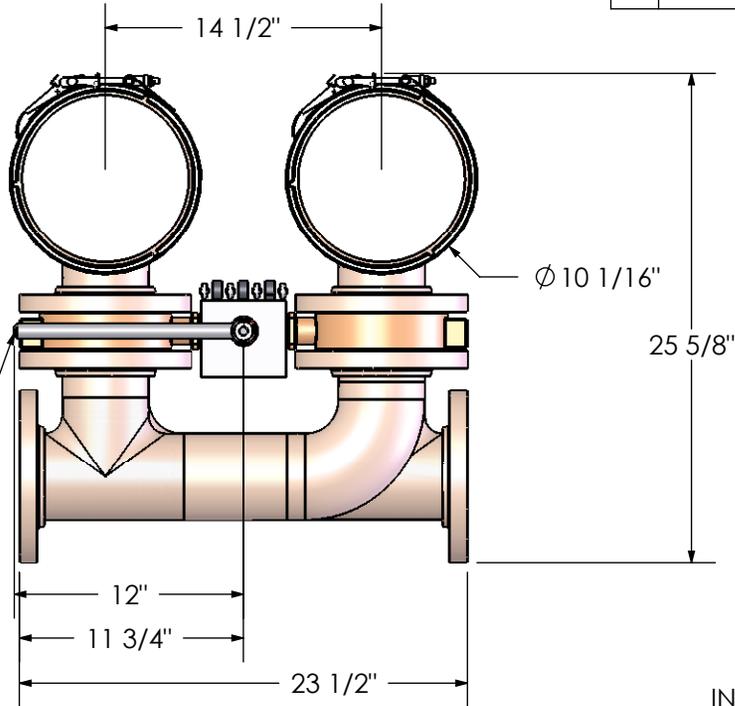
DRAWN	J. Larsen	5/31/07
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE	RBM-203976, Seawater Cooling System Strainer	
PART NO.	ML20750	REV. G

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

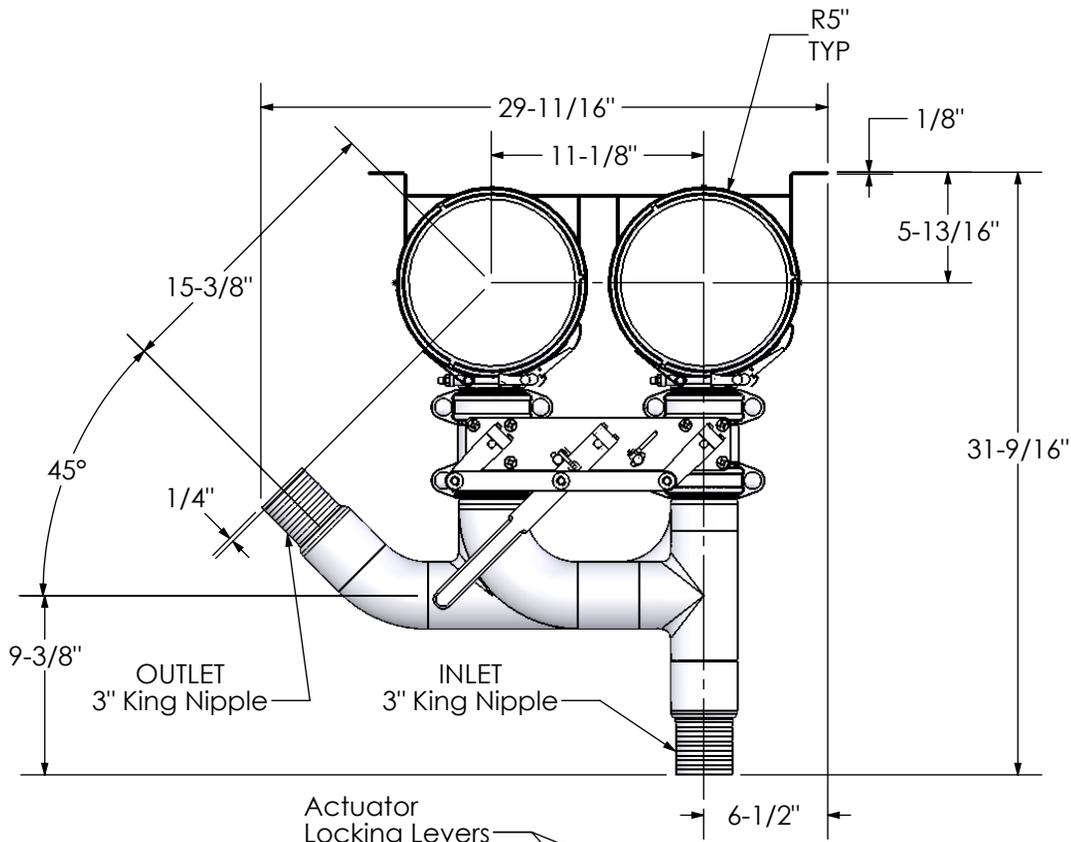


Valve Lever  
(180° swing required)



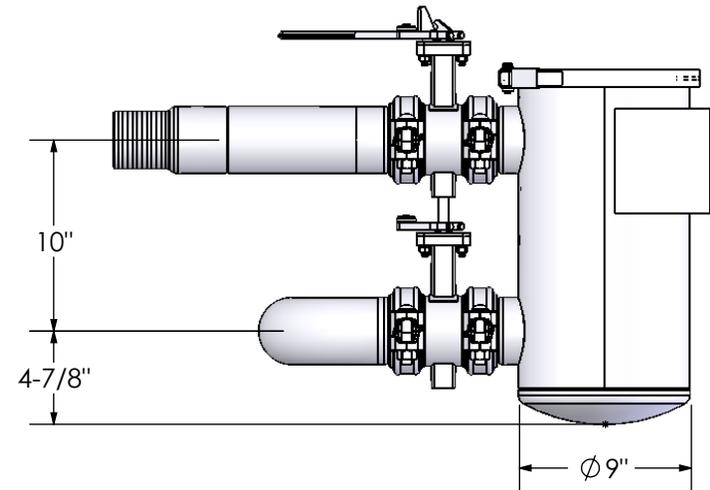
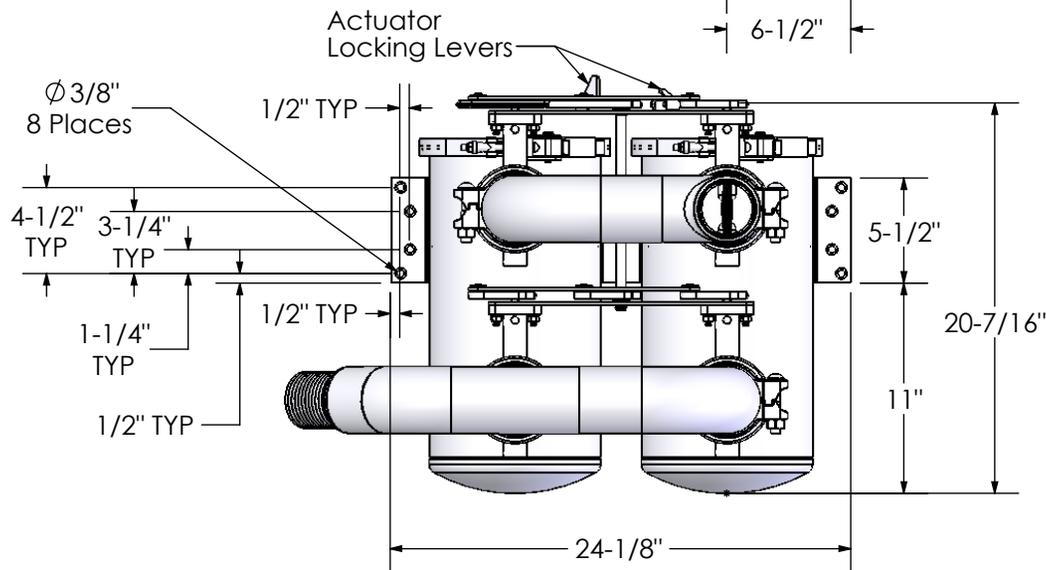
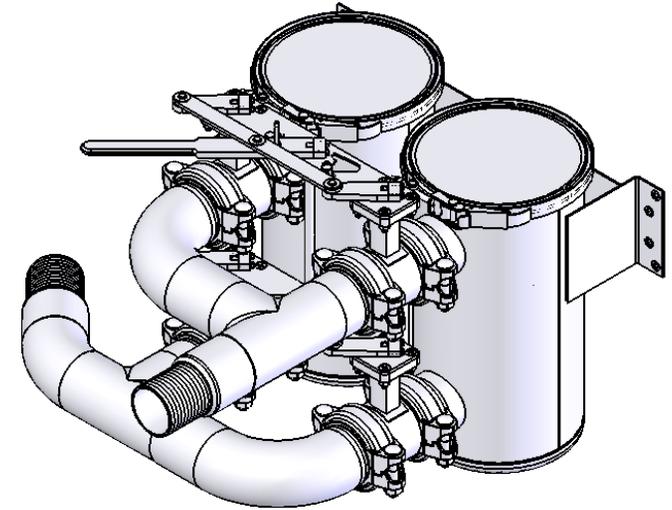
**PRELIMINARY**

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	4/23/09	TITLE
	CHECKED			<b>4" Duplex Basket Strainer</b> <b>ML21187</b>
	ENG APPR.			
	MKT APPR.			
SHEET 1 OF 1				



**GENERAL SPECIFICATIONS**

- Maximum Flow: 125 GPM
- Design Pressure: 50 PSI
- Pressure Loss: Approx. 1 PSI (Clean)
- Basket Surface Area: 240 Sq. In.
- Basket Open Area: 84 Sq. In.
- Basket Open Area to Inlet Area Ratio = 12:1
- Basket Perforation Size: 5/64"
- Materials: 316L Stainless Steel
- Dry Weight: Approx: 175 Lbs.



Approval: \_\_\_\_\_

Approval: \_\_\_\_\_

**PRODUCT SPECIFICATION**

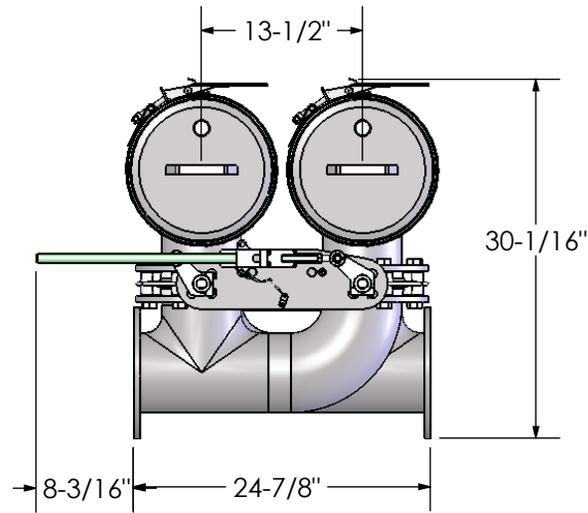
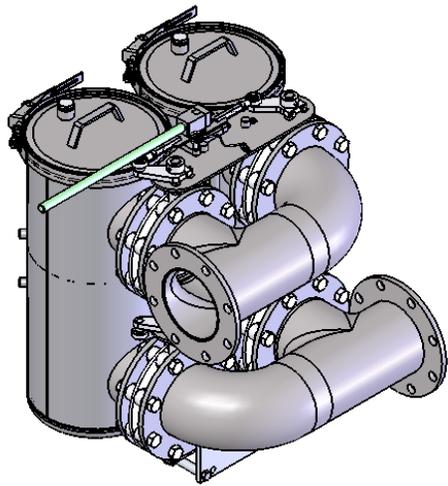
**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	12/9/11
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1	Ref: ML21552	Rev. A

TITLE

**3" Duplex Basket Strainer  
(316 Stainless)**

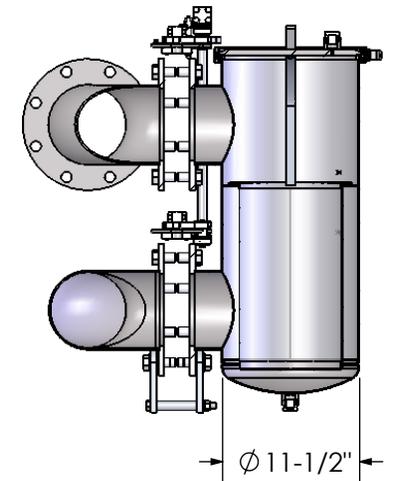
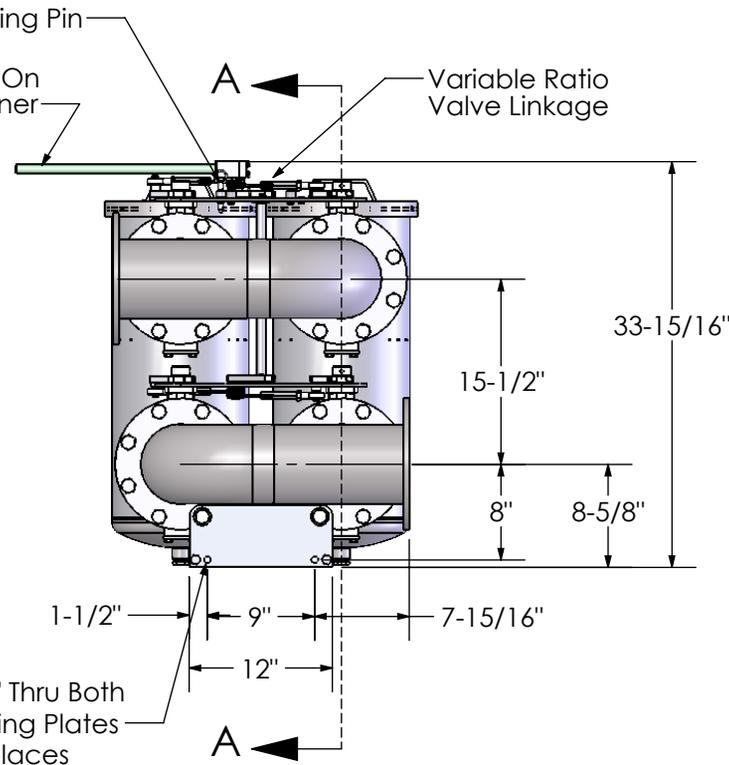
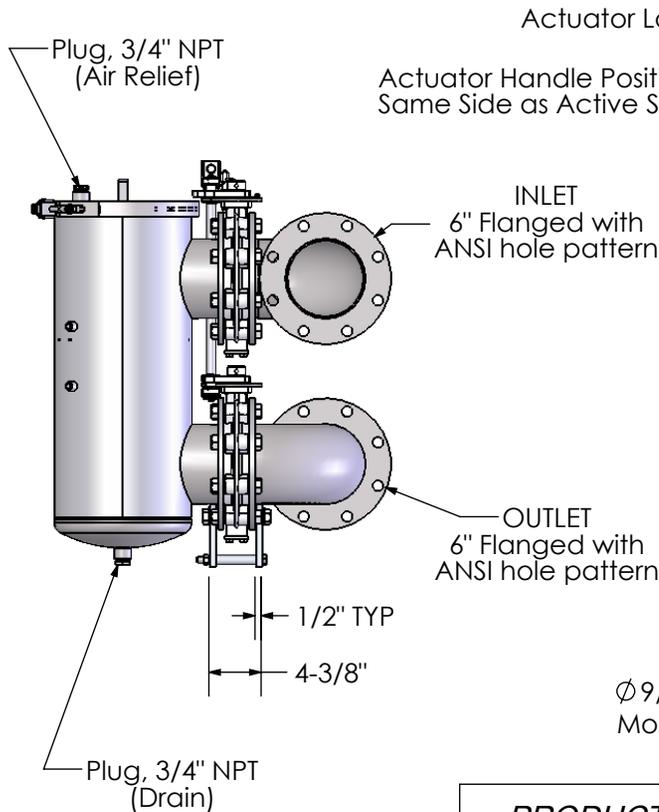


**GENERAL SPECIFICATIONS**

- Maximum Flow: 425 GPM
- Design Pressure: 50 PSI
- Pressure Loss: Approximately 1 PSI (Clean)
- Basket Surface Area: 436 Sq. In.
- Basket Open Area: 200 Sq In.
- Basket Open Area to Inlet Area Ratio = 7:1
- Basket Perforation Size: 5/64"
- Materials: 316L Stainless Steel
- Dry Weight: Approx: 400 Lb.

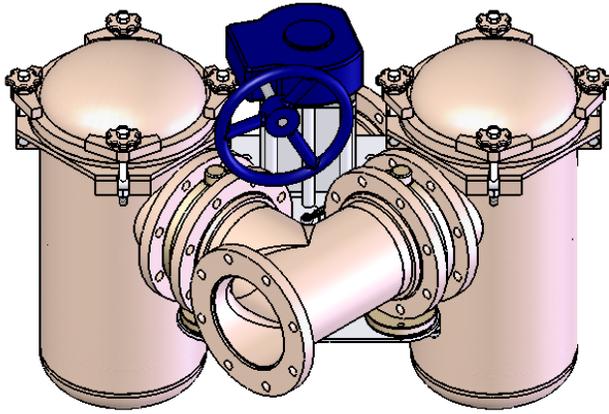
Approval: \_\_\_\_\_

Approval: \_\_\_\_\_



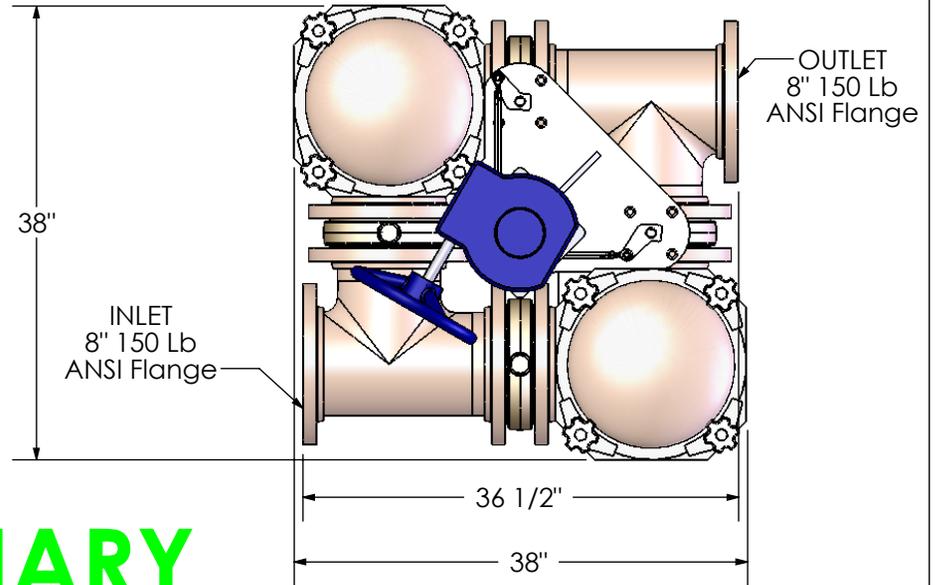
SECTION A-A

<b>PRODUCT SPECIFICATION</b>  <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	9/10/11	TITLE <b>6" Duplex Basket Strainer, Port (ML21524-A)</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1	Ref: ML21524-A	Rev. D	

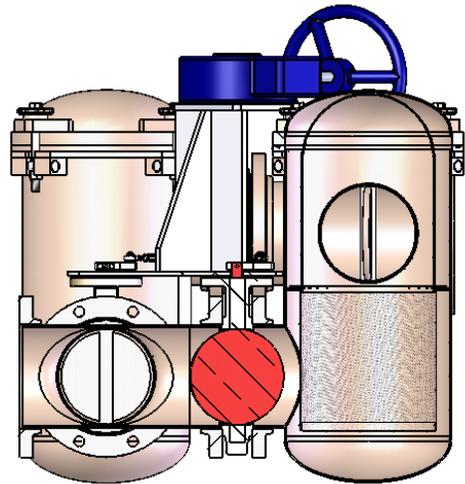


**GENERAL SPECIFICATIONS**

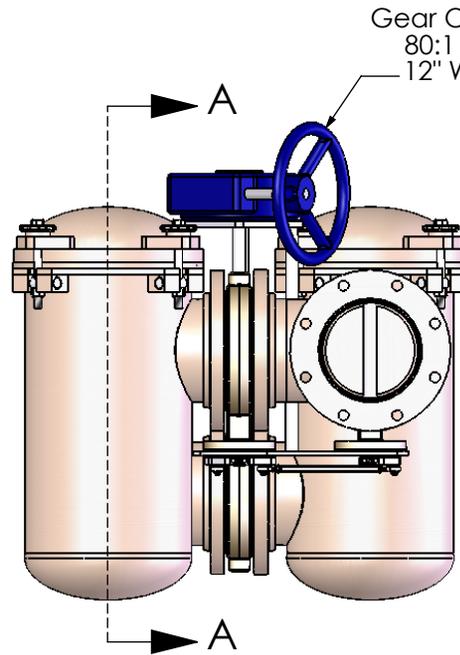
- Maximum Flow: 1310 GPM
- Design Pressure: 50 PSI
- Test Pressure: 75 PSI
- Burst Pressure: 200 PSI
- Temperature Range: 28-95° F
- Basket Surface Area: 490 Sq. In.
- Basket Perforation Size: .078"
- Basket Open Area: 173 Sq. In.
- Housing Material: 90/10 Copper Nickel
- Basket Material: 70/30 Copper Nickel



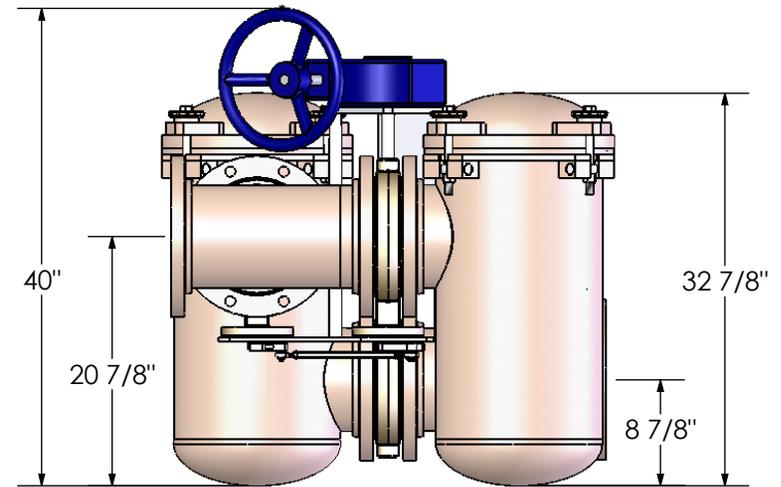
**PRELIMINARY**



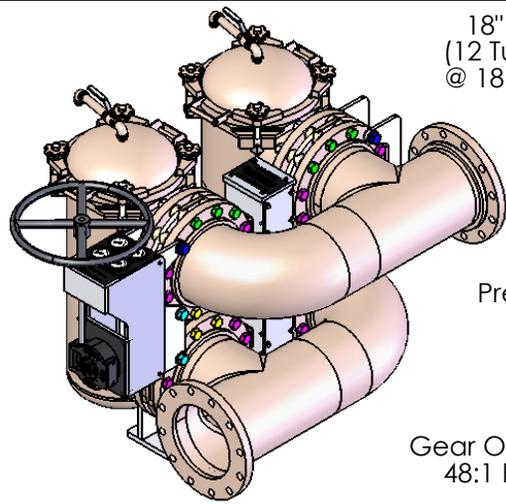
SECTION A-A



Gear Operator  
80:1 Ratio  
12" Wheel



<i>PRODUCT SPECIFICATION</i>	DRAWN	J. Larsen	12/18/08	TITLE
	CHECKED			8" Duplex Basket Strainer ML21144
<b>MILLER-LEAMAN INC.</b>	ENG APPR.			
800 Orange Ave. Daytona Beach FL 32114	MKT APPR.			
SHEET 1 OF 1				



18" Handwheel  
(12 Turns Required  
@ 18 Lbs. Rim Pull)

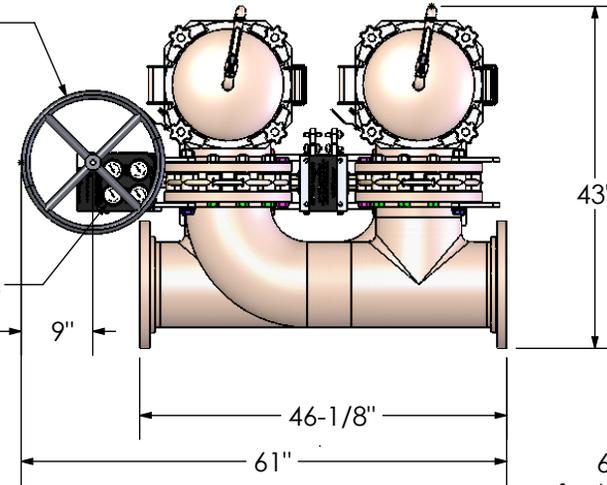
Pressure Gauges

Gear Operator  
48:1 Ratio

Pressure Relief  
Valve

3/4" NPT  
Drain Plug

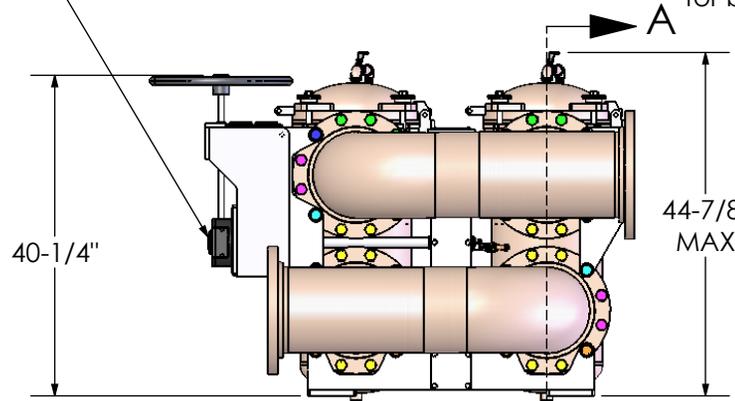
SECTION A-A



43"

**GENERAL SPECIFICATIONS**

- Maximum Flow: 1310 GPM
- Design Pressure: 50 PSI
- Pressure Drop: 2 PSI Max. @ 50 PSI (Clean)
- Test Pressure: 75 PSI
- Burst Pressure: 200 PSI
- Temperature Range: 28-95° F
- Basket Surface Area: 700 Sq. In.
- Basket Open Area: 248 Sq. In.
- Basket Perforation Size:  $\varnothing$ .078"
- Housing Material: 90/10 Copper Nickel
- Basket Material: 90/10 Copper Nickel
- Dry Weight: 1580 Lbs.
- Wet Weight: 2255 Lbs.



63" Required  
for basket removal

7-1/4"  
(to CG)

17"

10-3/4"

OUTLET  
10" 150 Lb  
ANSI Flange

1-1/2"  
MAX

INLET  
10" 150 Lb  
ANSI Flange

Center of  
Gravity

$\varnothing$ 1"  
4 Places

30"

8-1/16"

8-3/8"

14-1/16"  
(to CG)

9"

24-1/16" (to CG)

Center of  
Gravity

**PRODUCT SPECIFICATION**

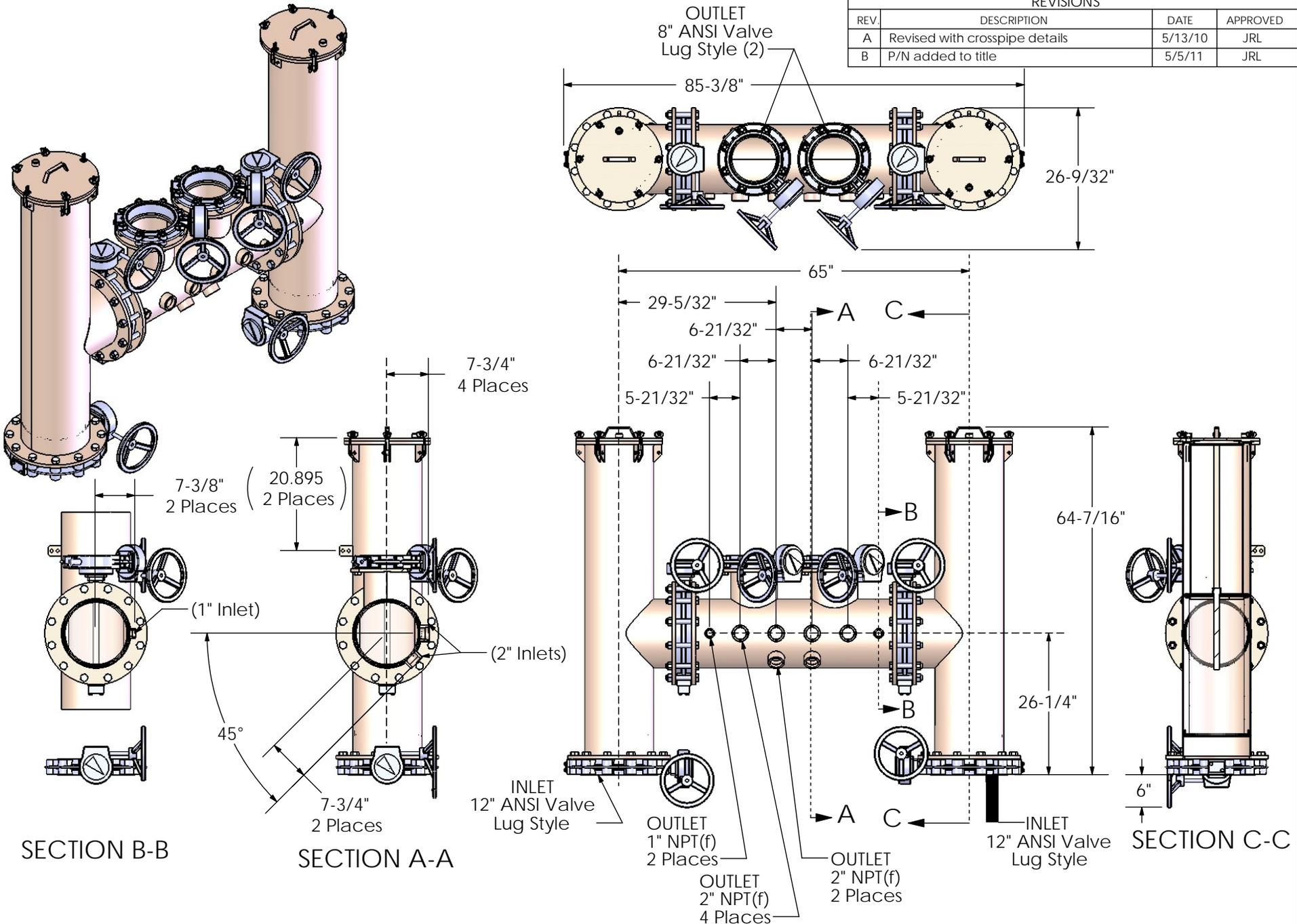
**MILLER-LEAMAN INC.**

800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	12/29/09
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1	Ref: ML21152-A	Rev. D

**10" Duplex Basket Strainer  
ML21152-A  
(Port)**

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	Revised with crosspipe details	5/13/10	JRL
B	P/N added to title	5/5/11	JRL

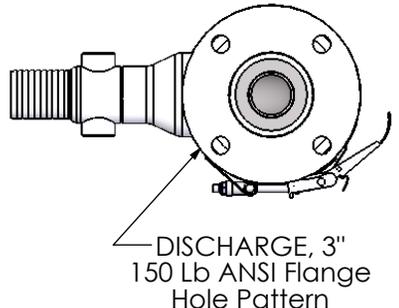
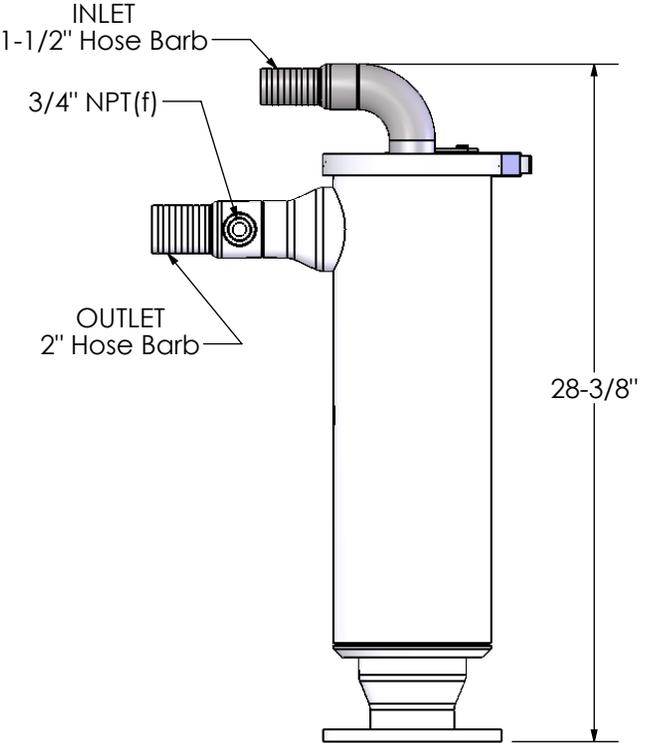
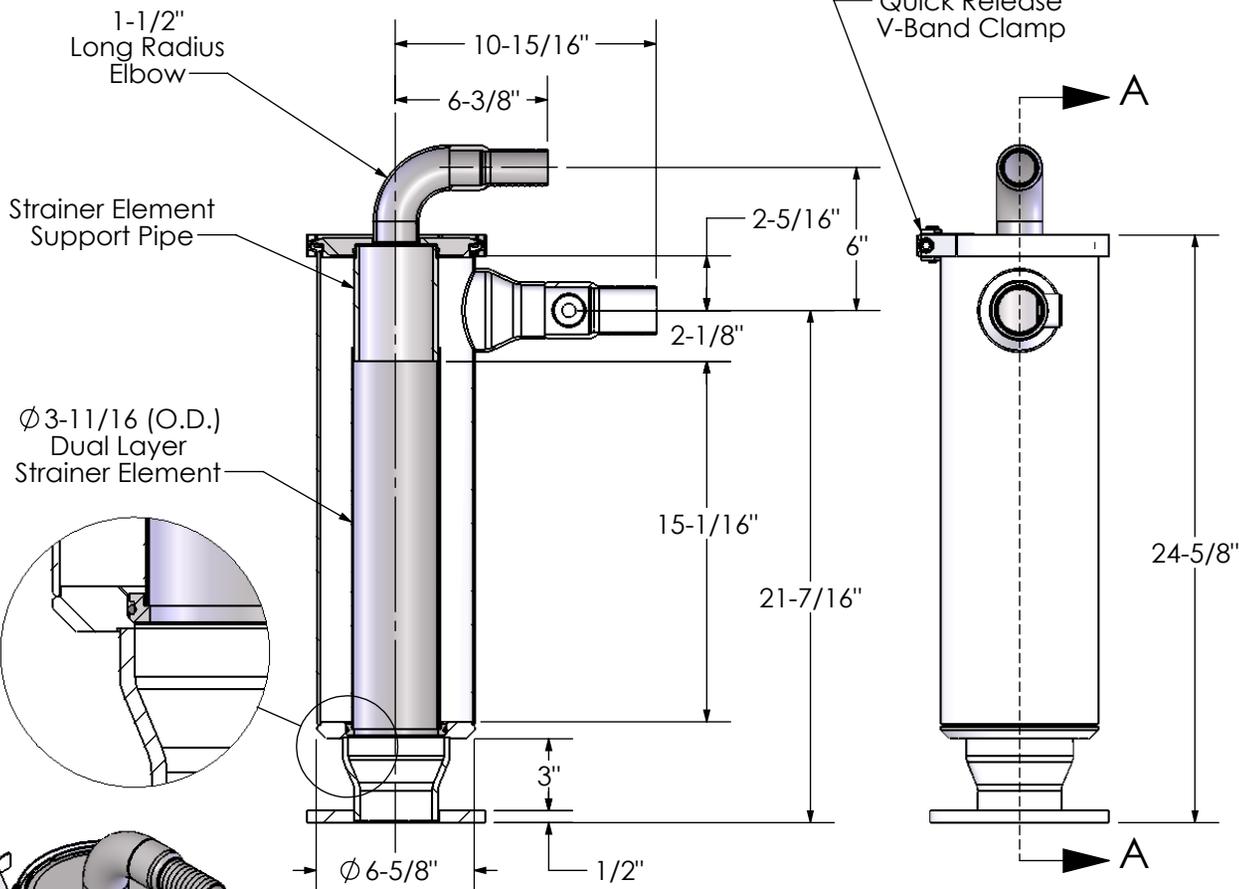


PRODUCT SPECIFICATION  
**MILLER-LEAMAN INC.**  
 800 Orange Ave. Daytona Beach FL 32114

DRAWN	J. Larsen	10/15/09
CHECKED		
ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE  
**Strainer Layout**  
 ML21292

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	Bottom end redesigned (see detail view)	1/20/12	JRL
B	"Starboard" added to title	1/23/12	JRL
C	"Starboard" deleted from title	2/2/12	JRL



SECTION A-A

- MATERIALS:**
- Housing: 316 Stainless Steel
  - Gaskets: EPDM
  - Screen Outer Layer: 26 Ga. (.0178") 316 Stainless Steel Perforated Sheet,  $\phi 5/64$ " holes on  $7/64$ " centers, 60° stagger (46% Open Area)
  - Screen Inner Layer: 316 Stainless Steel Woven Wire Cloth 30 x 30 Mesh,  $\phi .013$  Wire (37.1% Open Area)
  - V-Band Clamp: 300 Series Stainless Steel

Finish: Mechanically Polished

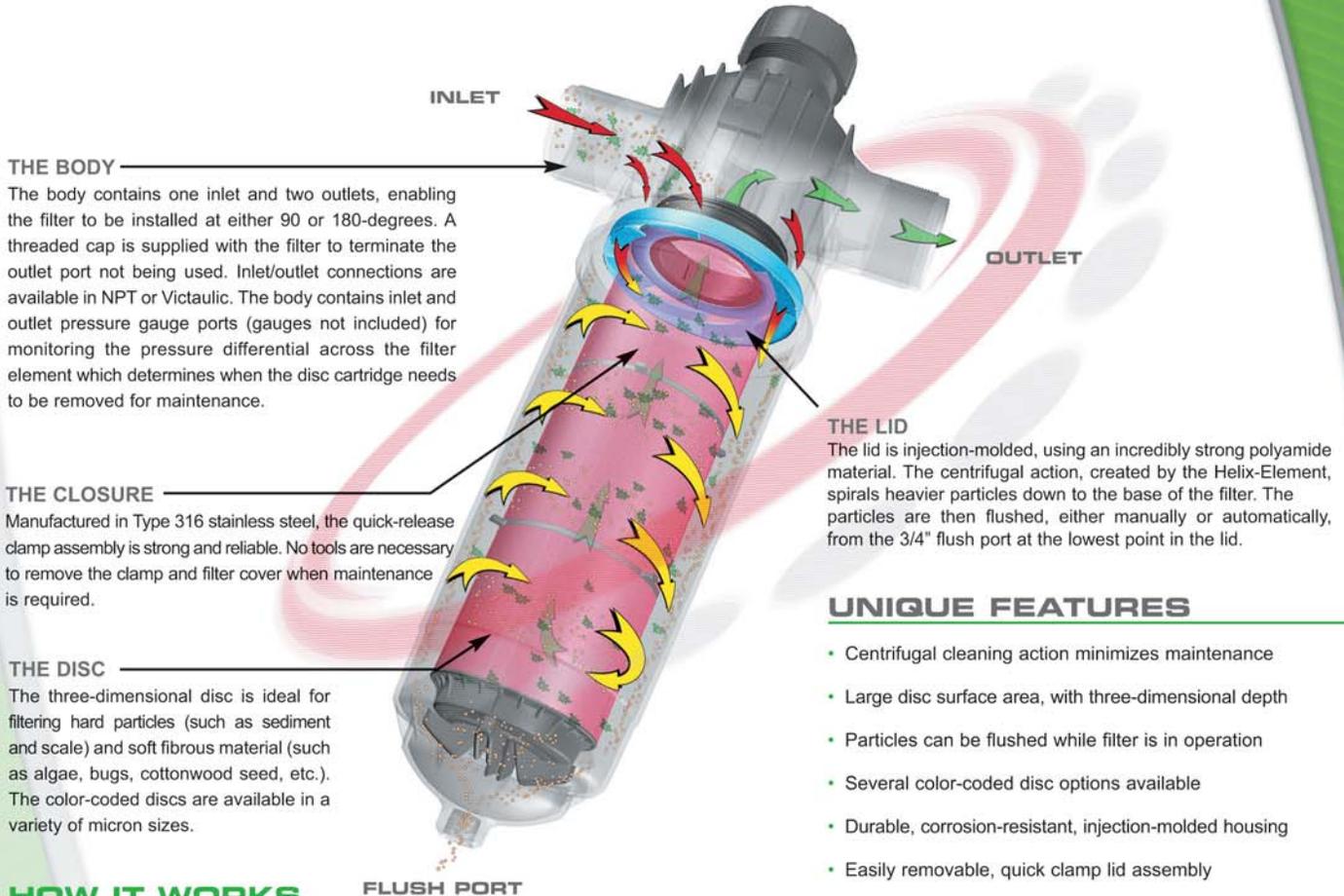
<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	J. Larsen	10/26/11	TITLE <b>Self-Cleaning Sea-Strainer</b>
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1	Ref: ML21300	Rev. C	

*Helix* Filters  
**HD Series/HS Series**



# HD SERIES

Miller Leaman's Helix Disc filter models are available in three different sizes: 2", 2" Super and 3". The filters can be installed in any orientation; however, it is preferable to install them in the inverted position (3/4" flush port at bottom). This helps the filtration system work at it's optimum. As water enters the filter housing, a high velocity centrifugal action occurs, spiraling heavier particles ( sediment, scale, etc.) away from the disc cartridge, down to the base of the filter. These accumulated particles are then flushed from the filter via the 3/4" flush port connection at the base of the filter (valve not included).



**THE BODY**  
The body contains one inlet and two outlets, enabling the filter to be installed at either 90 or 180-degrees. A threaded cap is supplied with the filter to terminate the outlet port not being used. Inlet/outlet connections are available in NPT or Victaulic. The body contains inlet and outlet pressure gauge ports (gauges not included) for monitoring the pressure differential across the filter element which determines when the disc cartridge needs to be removed for maintenance.

**THE CLOSURE**  
Manufactured in Type 316 stainless steel, the quick-release clamp assembly is strong and reliable. No tools are necessary to remove the clamp and filter cover when maintenance is required.

**THE DISC**  
The three-dimensional disc is ideal for filtering hard particles (such as sediment and scale) and soft fibrous material (such as algae, bugs, cottonwood seed, etc.). The color-coded discs are available in a variety of micron sizes.

**THE LID**  
The lid is injection-molded, using an incredibly strong polyamide material. The centrifugal action, created by the Helix-Element, spirals heavier particles down to the base of the filter. The particles are then flushed, either manually or automatically, from the 3/4" flush port at the lowest point in the lid.

### UNIQUE FEATURES

- Centrifugal cleaning action minimizes maintenance
- Large disc surface area, with three-dimensional depth
- Particles can be flushed while filter is in operation
- Several color-coded disc options available
- Durable, corrosion-resistant, injection-molded housing
- Easily removable, quick clamp lid assembly
- Pressure gauge ports molded into housing

### HOW IT WORKS

1. Dirty water enters the filter housing through the inlet connection.
2. As dirty water passes through the Helix-Element, the water starts to spin at high velocity. This centrifugal action spins the particles away from the disc media, minimizing manual cleaning frequency.
3. As particles are spun down to the base of the filter, they are flushed via the 3/4" female threaded flush port connection.
4. The dirty water passes from the outside to the inside of the discs. The grooves, molded into the surface of the three-dimensional discs, trap the remaining contaminants in the water.
5. After passing through the discs, the filtered water flows upward and exits the filter through one of the outlets. The outlet not being used is terminated with a threaded cap.





# HD SERIES

## TECHNICAL DATA

### Flow Rates for a Single Filter Housing

- 2"/100 GPM Max.\*
- 2" Super/100 GPM Max.\*
- 3"/200 GPM Max.\*

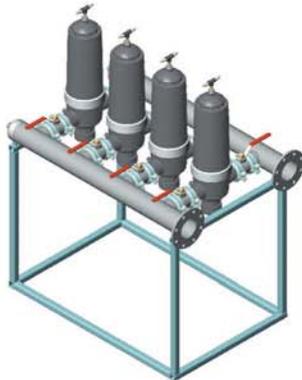
Multiple pods are manifolded for higher flow rates  
 \* Maximum flow rates should be derated for high solids loading, particularly for finer disc media.

### Pressure Rating

All units rated to 125 PSI

### Temperature Rating

All units rated to 140° F



Please contact your distributor about modular capabilities.

### Inlet/Outlet Configurations

2" and 3" models available with NPT and/or Victaulic inlet/outlet connections  
 In-line and 90-degree configurations standard  
 (Filter is supplied with a cap for outlet port not being used)

### Construction Materials

Housing: Polyamide  
 Discs: Polypropylene  
 Gaskets: EPDM  
 Filter Pod Clamp: Stainless Steel (Type 316)

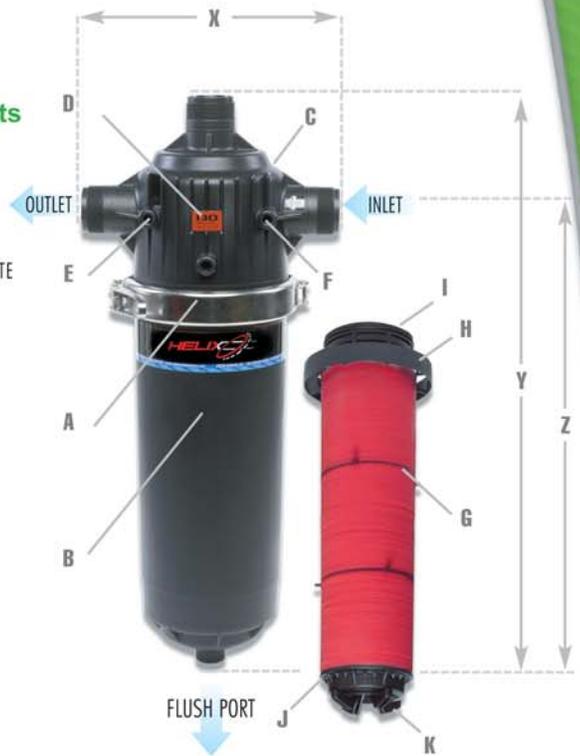
### Micron Options Available

- 200 Micron (80 Mesh)
- 100 Micron (150 Mesh)
- 130 Micron (120 Mesh)
- 50 Micron (250 Mesh)



### Filter Components

- A.** BAND-CLAMP ASSEMBLY
- B.** REMOVABLE FILTER LID
- C.** FILTER BODY
- D.** MICRON/MESH DATA PLATE
- E.** OUTLET GAUGE PORT (GAUGE NOT INCLUDED)
- F.** INLET GAUGE PORT (GAUGE NOT INCLUDED)
- G.** FILTER DISC CARTRIDGE
- H.** HELIX-ELEMENT
- I.** O-RING SEAL
- J.** CARTRIDGE COVER PLATE
- K.** THREADED WING BOLT
- X.** SEE TABLE BELOW
- Y.** SEE TABLE BELOW
- Z.** SEE TABLE BELOW



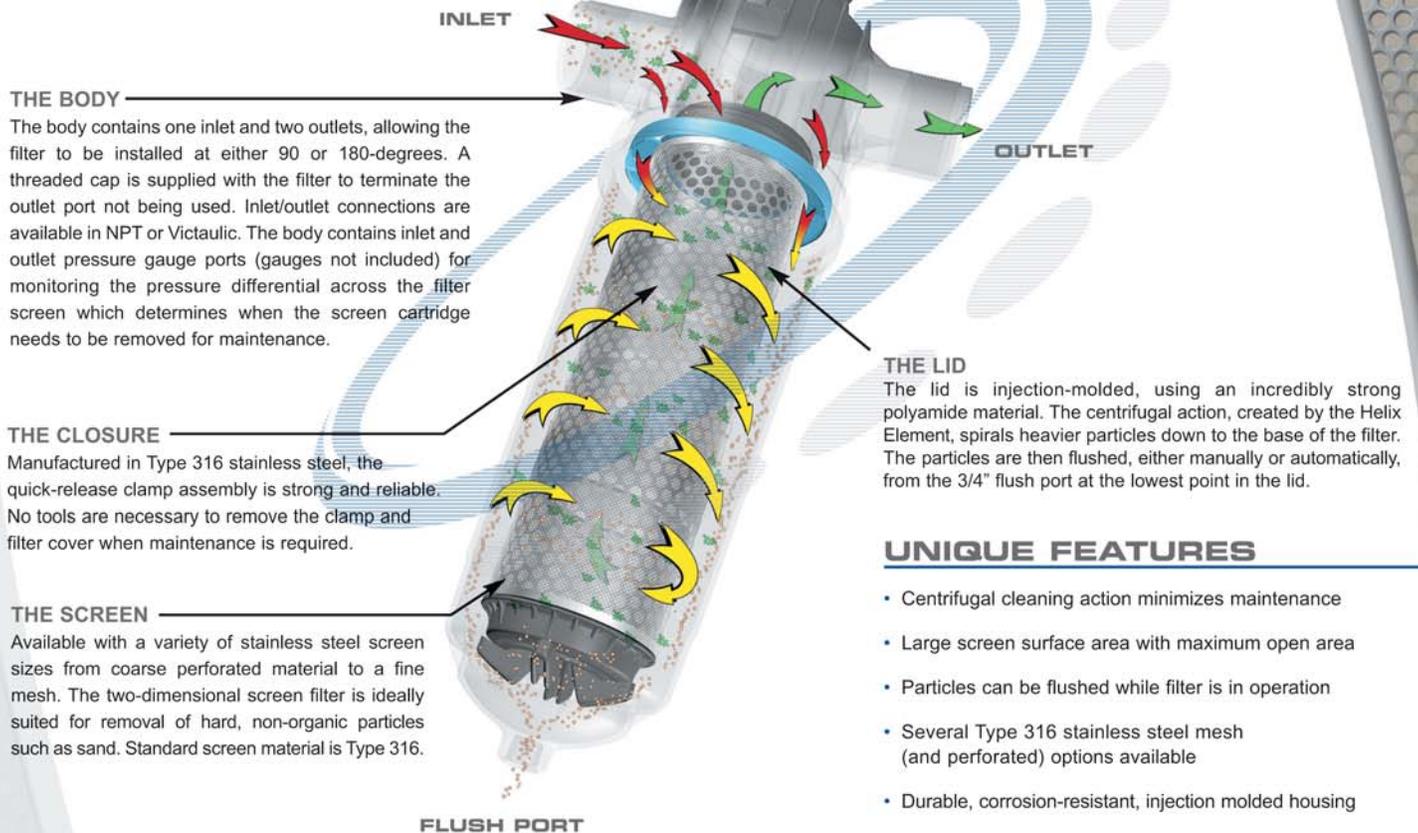
MODEL NUMBER	MODEL TYPE	INLET/OUTLET SIZE & TYPE	FILTER SURFACE AREA (SQ. IN.)	FLUSH PORT CONNECTION SIZE	MAXIMUM FLOW (GPM)	MAXIMUM PRESSURE RATING (PSI)	X	Y	Z
							(SEE DIAGRAM ABOVE)		
HD-2NA*	Regular	2"/NPT	186	3/4"	100	125 PSI	12 1/8"	24 1/8"	18"
HD-2SA*	Super	2"/NPT	263	3/4"	100	125 PSI	12 1/8"	28 3/4"	22 15/16"
HD-3NA*	Regular	3"/NPT	263	3/4"	200	125 PSI	13 1/4"	30"	22 15/16"
HD-2NW*	Regular	2"/Victaulic	186	3/4"	100	125 PSI	12 1/8"	24 1/8"	18"
HD-2SW*	Super	2"/Victaulic	263	3/4"	100	125 PSI	12 1/8"	28 3/4"	22 15/16"
HD-3NW*	Regular	3"/Victaulic	263	3/4"	200	125 PSI	13 1/4"	30"	22 15/16"

\* 50, 100, 130, & 200 micron options available. Please specify disc size when ordering. Example: HD-2SA-130 = 2" NPT Super with 130 - micron discs.

\*\* Disc cartridges for 2" regular models (HD-2NA and HD-2NW) and 2" super models (HD-2SA and HD-2SW) vary in size. The cartridge for the 2" regular models is 15.5" in height; The cartridge for the 2" super models is 20.5" in height. This means that the 2" super models have approximately 40% more surface area for filtration (186 sq. inches vs. 263 sq. inches).



Miller Leaman's Helix Screen filter models are available in three different sizes: 2", 2" Super and 3". The filters can be installed in any orientation; however, it is preferable to install them in the inverted position (3/4" flush port at bottom). This helps the filtration system work at it's optimum. As water enters the filter housing, a high velocity centrifugal action occurs, spiraling heavier particles (sediment, scale, etc.) away from the screen cartridge, down to the base of the filter. These accumulated particles are then flushed from the filter via the 3/4" flush port connection at the base of the filter (valve not included).



**THE BODY**  
The body contains one inlet and two outlets, allowing the filter to be installed at either 90 or 180-degrees. A threaded cap is supplied with the filter to terminate the outlet port not being used. Inlet/outlet connections are available in NPT or Victaulic. The body contains inlet and outlet pressure gauge ports (gauges not included) for monitoring the pressure differential across the filter screen which determines when the screen cartridge needs to be removed for maintenance.

**THE CLOSURE**  
Manufactured in Type 316 stainless steel, the quick-release clamp assembly is strong and reliable. No tools are necessary to remove the clamp and filter cover when maintenance is required.

**THE SCREEN**  
Available with a variety of stainless steel screen sizes from coarse perforated material to a fine mesh. The two-dimensional screen filter is ideally suited for removal of hard, non-organic particles such as sand. Standard screen material is Type 316.

**THE LID**  
The lid is injection-molded, using an incredibly strong polyamide material. The centrifugal action, created by the Helix Element, spirals heavier particles down to the base of the filter. The particles are then flushed, either manually or automatically, from the 3/4" flush port at the lowest point in the lid.

## UNIQUE FEATURES

- Centrifugal cleaning action minimizes maintenance
- Large screen surface area with maximum open area
- Particles can be flushed while filter is in operation
- Several Type 316 stainless steel mesh (and perforated) options available
- Durable, corrosion-resistant, injection molded housing
- Easily removable, quick clamp lid assembly
- Pressure gauge ports molded into housing

## HOW IT WORKS

1. Dirty water enters the filter housing through the inlet connection.
2. As dirty water passes through the Helix-Element, the water starts to spin at high velocity. This centrifugal action spins the particles away from the screen, minimizing manual cleaning frequency.
3. As particles are spun down to the base of the filter, they are flushed via the 3/4" female threaded flush port connection.
4. The dirty water passes from the outside to the inside of the stainless steel screen. The screen captures the remaining light and fibrous contaminants from the water.
5. After passing through the screen, the filtered water flows upward and exits the filter through one of the outlets. The outlet not being used is terminated with a threaded cap.



# HS SERIES

## TECHNICAL DATA

### Flow Rates for a Single Filter Housing

- 2"/100 GPM Max.\*
- 2" Super/100 GPM Max.\*
- 3"/200 GPM Max.\*

Multiple pods are manifolded for higher flow rates

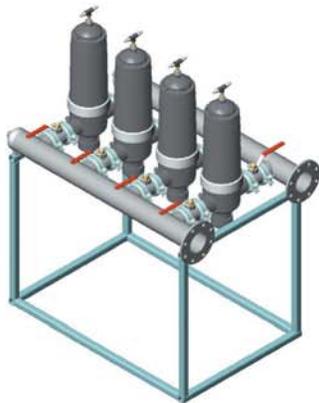
\* Maximum flow rates should be derated for high solids loading, particularly for finer mesh sizes.

### Pressure Rating

All units rated to 125 PSI

### Temperature Rating

All units rated to 140° F



Please contact your distributor about modular capabilities.

### Inlet/Outlet Configurations

2" and 3" models available with NPT and/or Victaulic inlet/outlet connections  
In-line and 90 degree configurations standard  
(Filter is supplied with a cap for outlet port not being used)

### Construction Materials

Housing: Polyamide  
Screen: Stainless Steel (Type 316)  
Gaskets: EPDM  
Filter Pod Clamp: Stainless Steel (Type 316)

### Screen Sizes Available

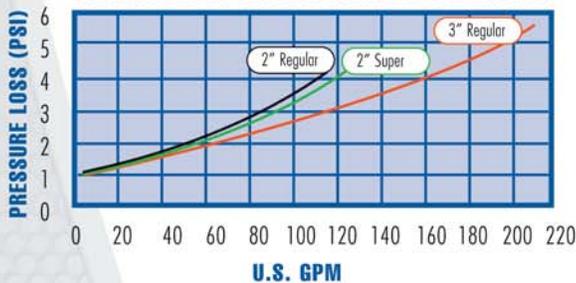
16, 30, 40, 50, 60, 80, 100, 120, 150, 200  
1/4" perforated, 1/8" perforated, 5/64" perforated,  
1/16" perforated (Other sizes available by special order)

### Filter Components

- A. BAND-CLAMP ASSEMBLY
- B. REMOVABLE FILTER LID
- C. FILTER BODY
- D. MESH/MICRON DATA PLATE
- E. OUTLET GAUGE PORT (GAUGE NOT INCLUDED)
- F. INLET GAUGE PORT (GAUGE NOT INCLUDED)
- G. FILTER SCREEN CARTRIDGE
- H. HELIX-ELEMENT
- I. O-RING SEAL
- J. CARTRIDGE COVER PLATE
- K. THREADED WING BOLT
- X. SEE TABLE BELOW
- Y. SEE TABLE BELOW
- Z. SEE TABLE BELOW



### PRESSURE LOSS THROUGH SINGLE FILTER HOUSING

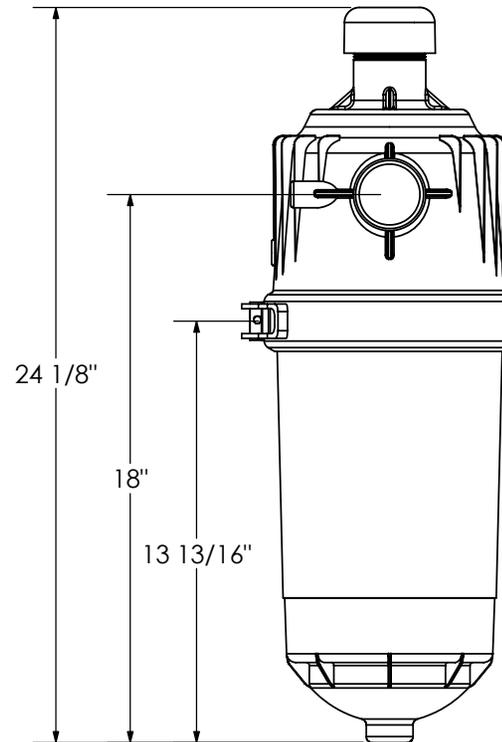
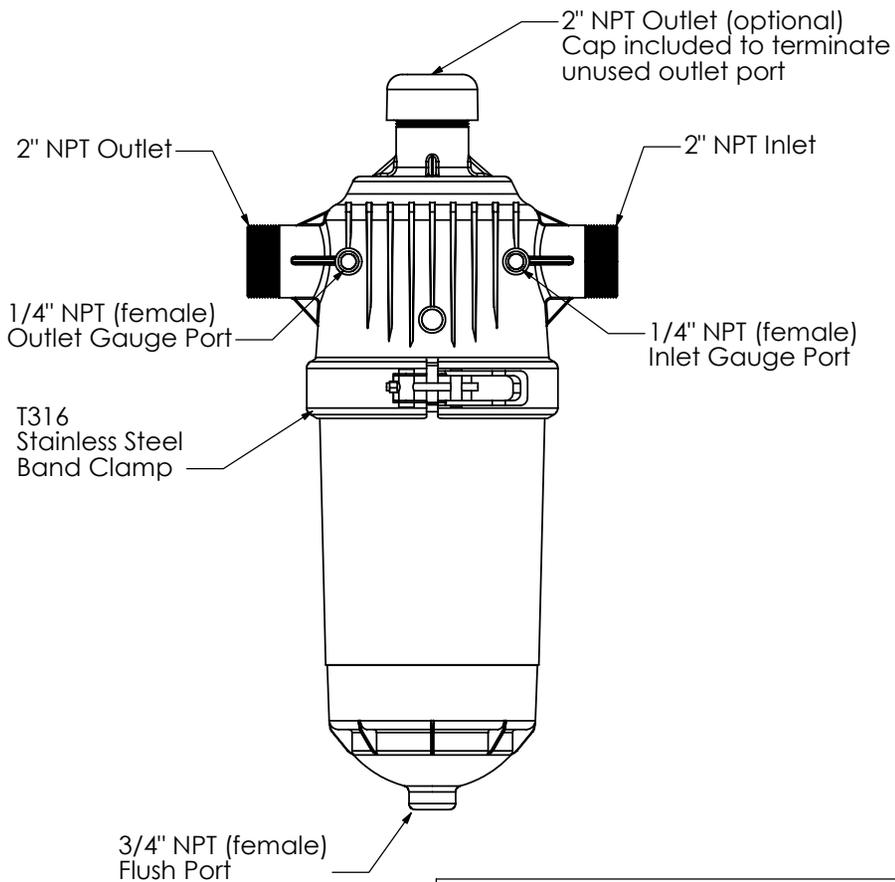
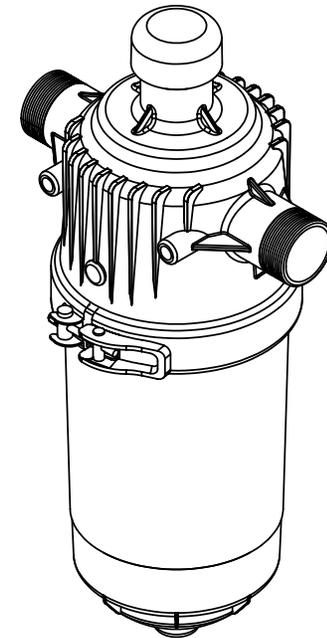
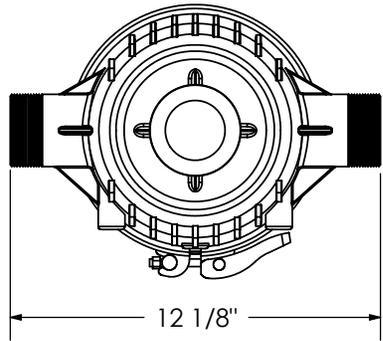


MODEL NUMBER	MODEL TYPE	INLET/OUTLET SIZE & TYPE	FILTER SURFACE AREA (SQ. IN.)	FLUSH PORT CONNECTION SIZE	MAXIMUM FLOW (GPM)	MAXIMUM PRESSURE RATING (PSI)	X	Y (SEE DIAGRAM ABOVE)	Z
HS -2NA-*	Regular	2"/NPT	186	3/4"	100	125 PSI	12 1/8"	24 1/8"	18"
HS -2SA-*	Super	2"/NPT	263	3/4"	100	125 PSI	12 1/8"	28 3/4"	22 15/16"
HS -3NA-*	Regular	3"/NPT	263	3/4"	200	125 PSI	13 1/4"	30"	22 15/16"
HS -2NW-*	Regular	2"/Victaulic	186	3/4"	100	125 PSI	12 1/8"	24 1/8"	18"
HS -2SW-*	Super	2"/Victaulic	263	3/4"	100	125 PSI	12 1/8"	28 3/4"	22 15/16"
HS -3NW-*	Regular	3"/Victaulic	263	3/4"	200	125 PSI	13 1/4"	30"	22 15/16"

\* Please specify screen size when ordering. Example: HS-2NA - 100 = 2" NPT filter with 100 - mesh screen.

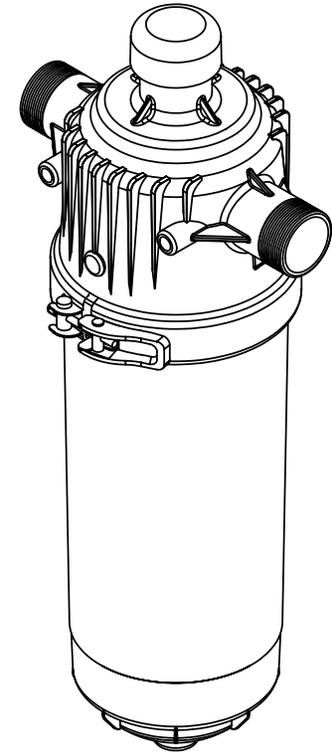
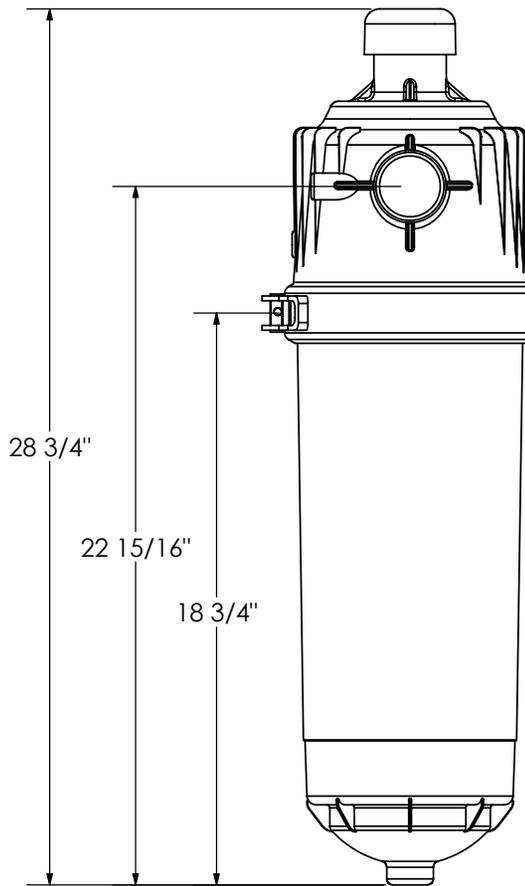
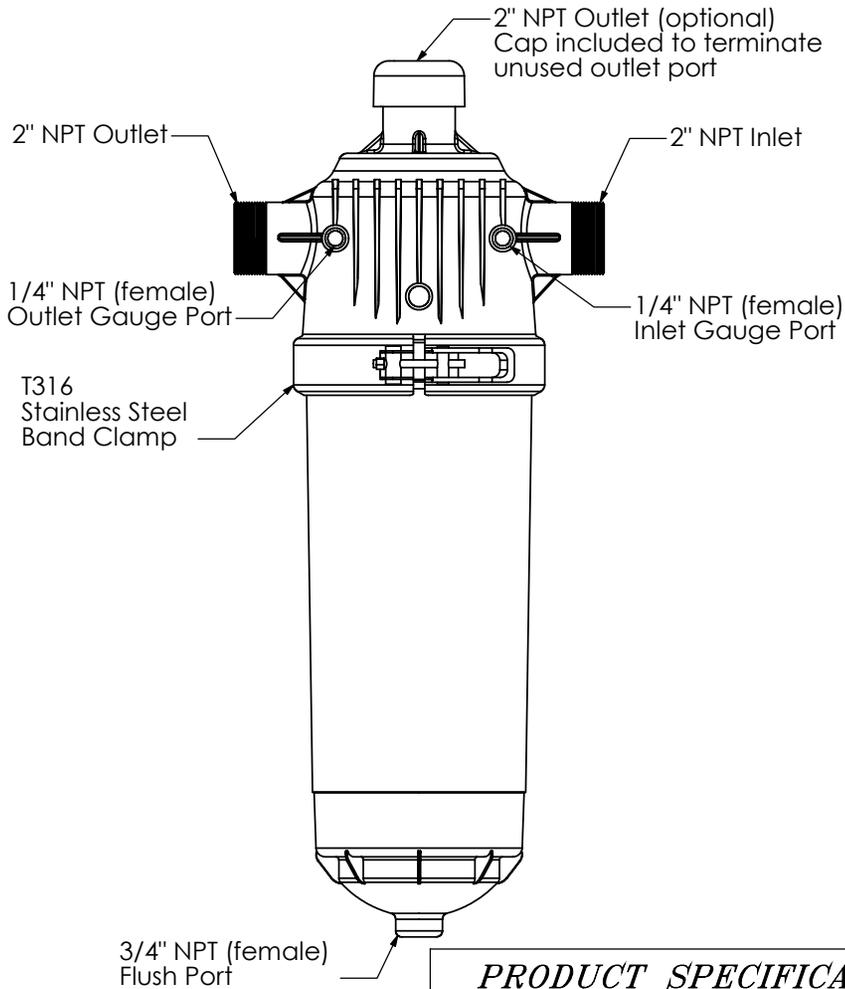
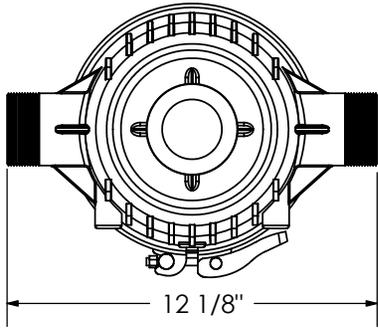
\*\* Screen cartridges for 2" regular models (HS-2NA and HS-2NW) and 2" super models (HS-2SA and HS-2SW) vary in size. The cartridge for the 2" regular models is 15.5" in height; The cartridge for the 2" super models is 20.5" in height. This means that the 2" super models have approximately 40% more surface area for filtration (186 sq. inches vs. 263 sq. inches).

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



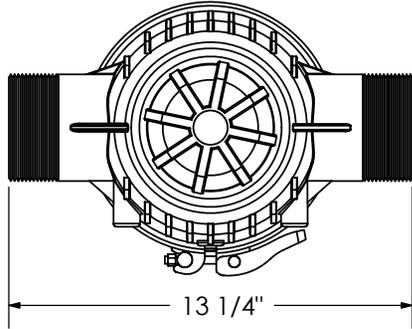
<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
		SHEET 1 OF 1			
					2NA Helix Filter Housing

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

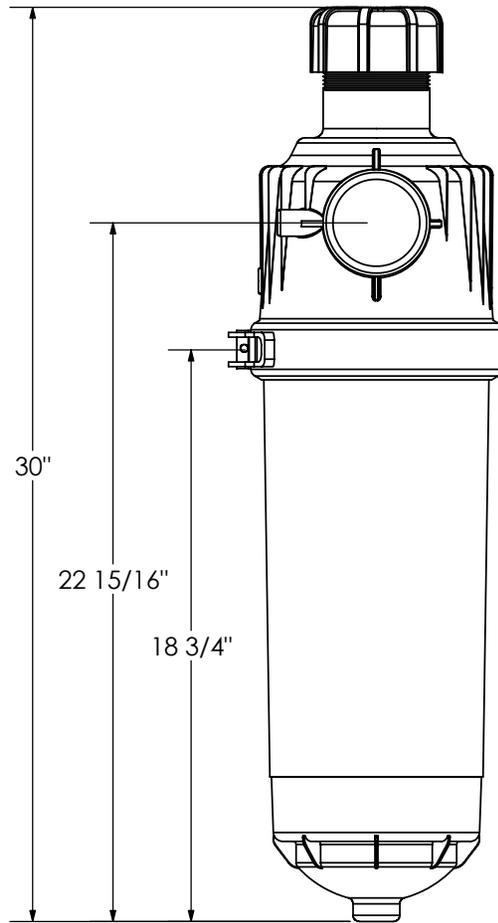
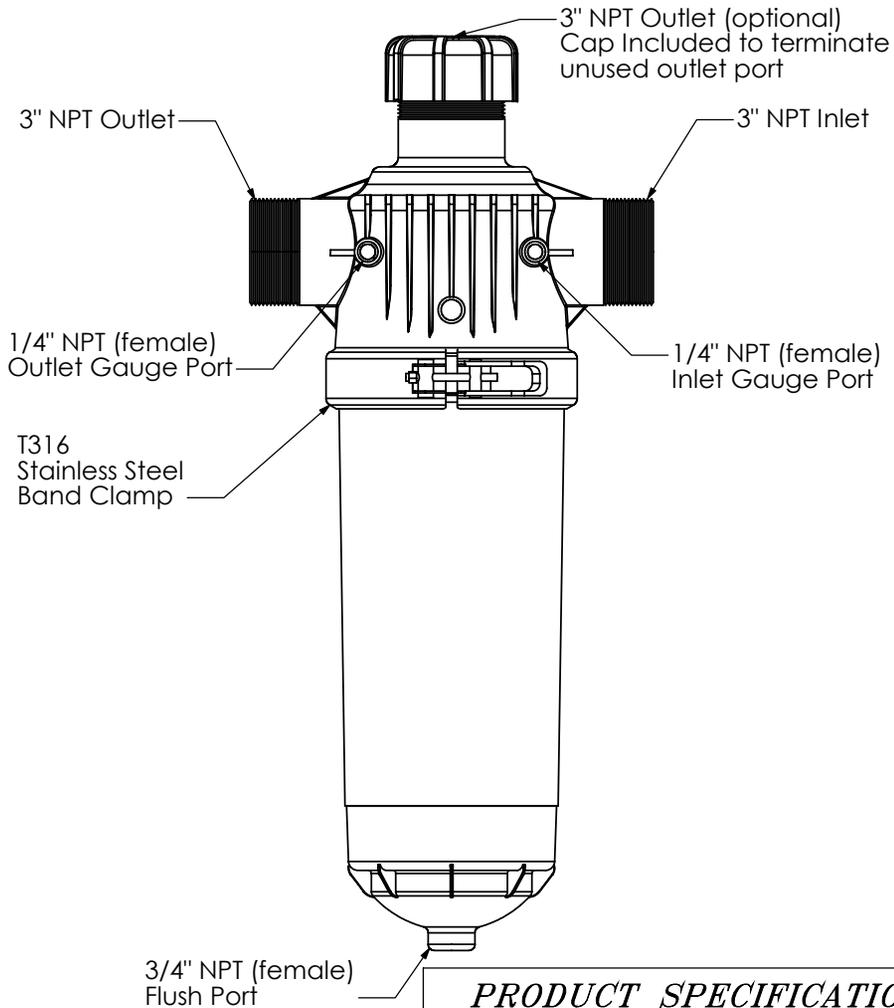


<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
		SHEET 1 OF 1			
					<b>2SA Helix Filter Housing</b>

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



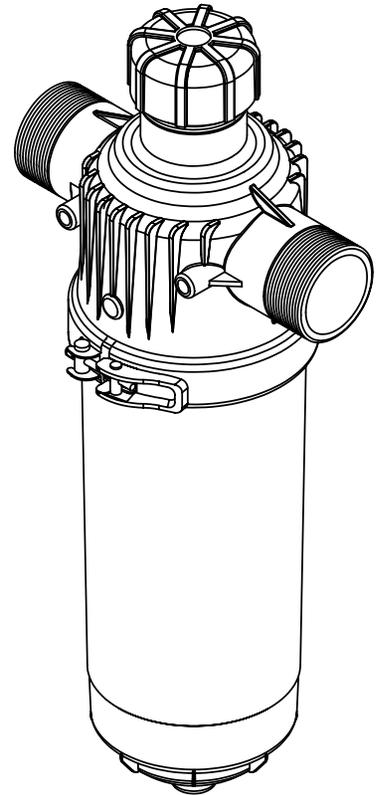
13 1/4"



30"

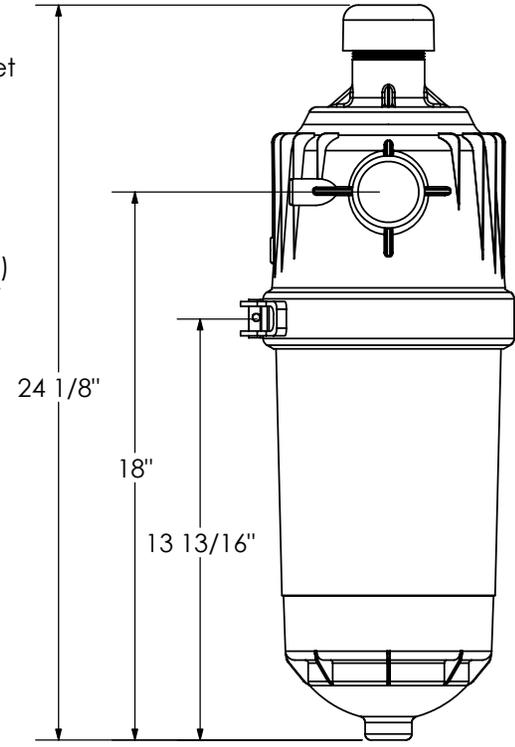
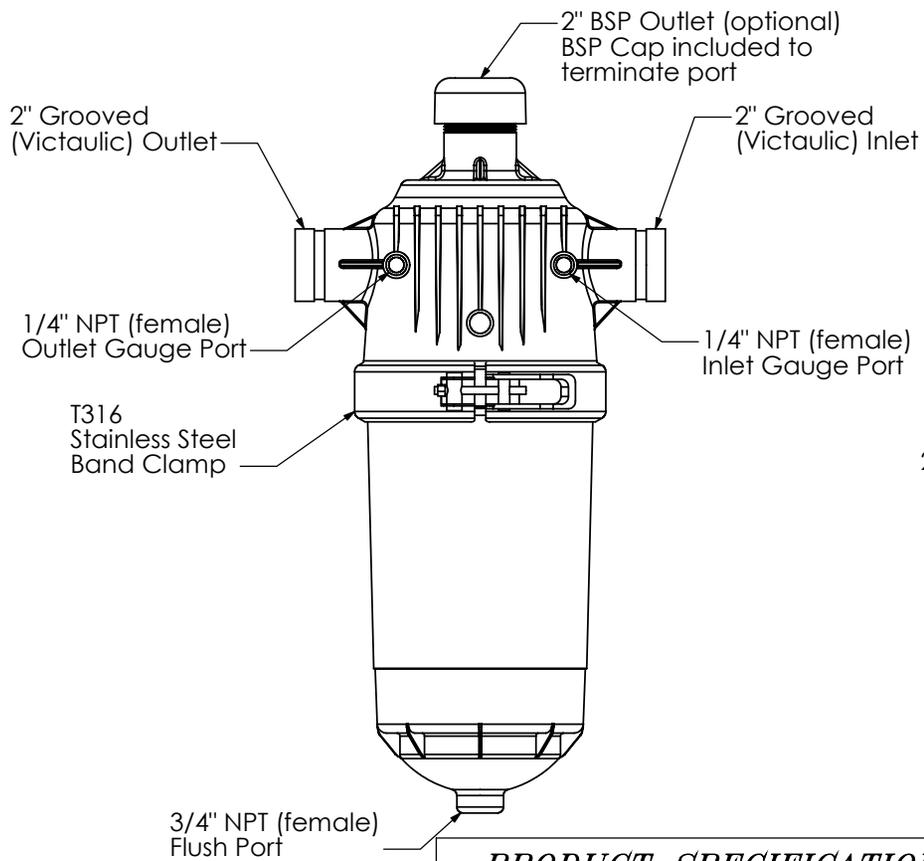
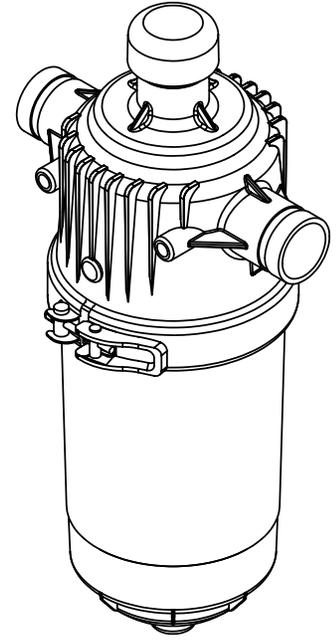
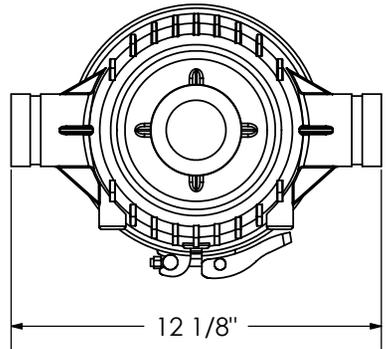
22 15/16"

18 3/4"



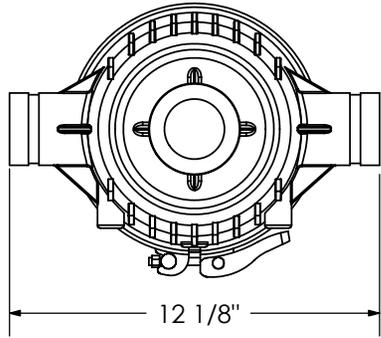
<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
		SHEET 1 OF 1			
					<b>3NA Helix Filter Housing</b>

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

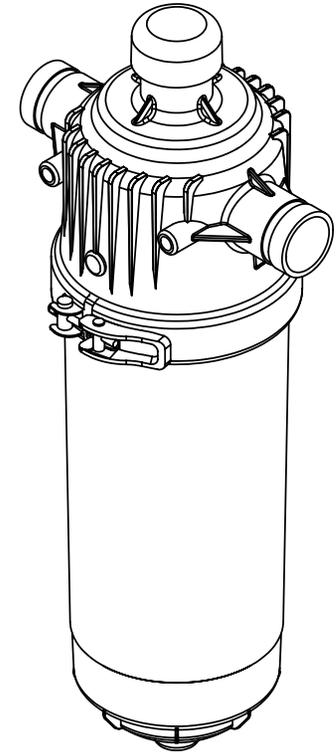
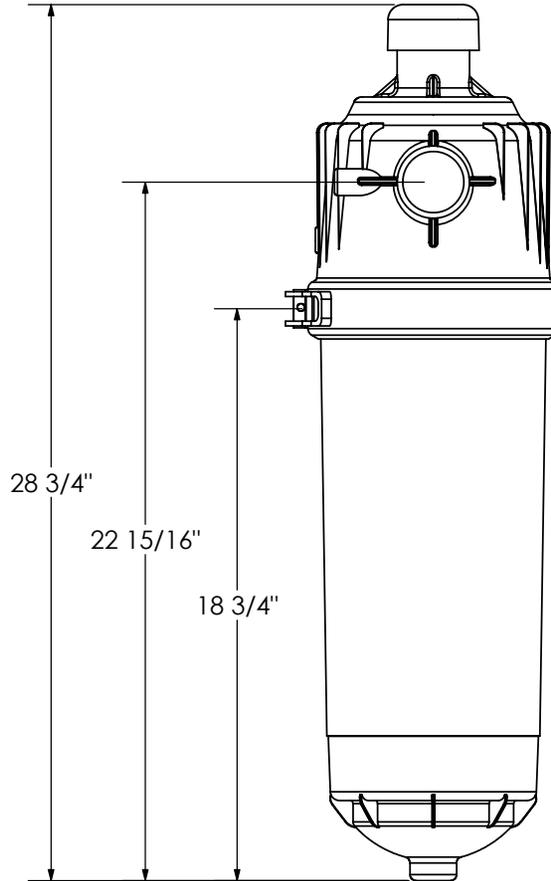
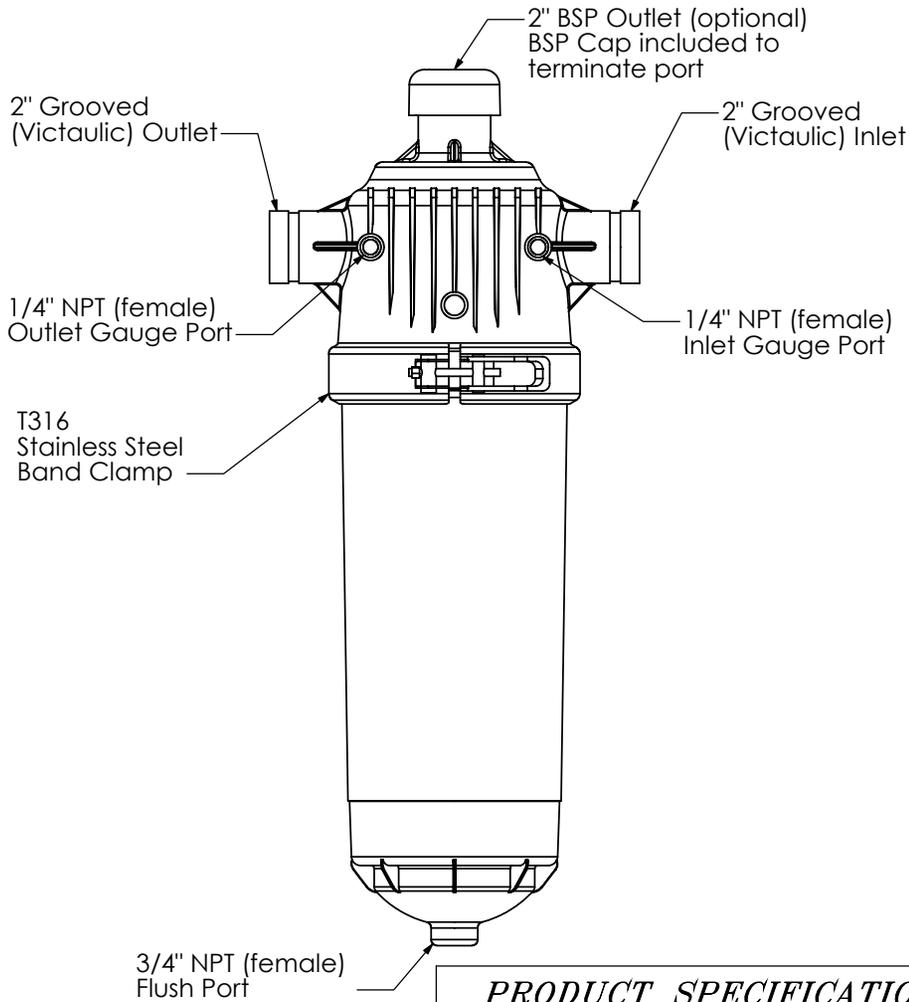


<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
		SHEET 1 OF 1			
					<b>2NW Helix Filter Housing</b>

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

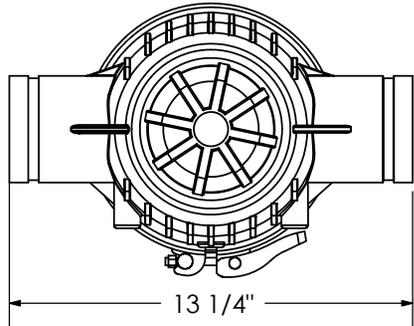


12 1/8"

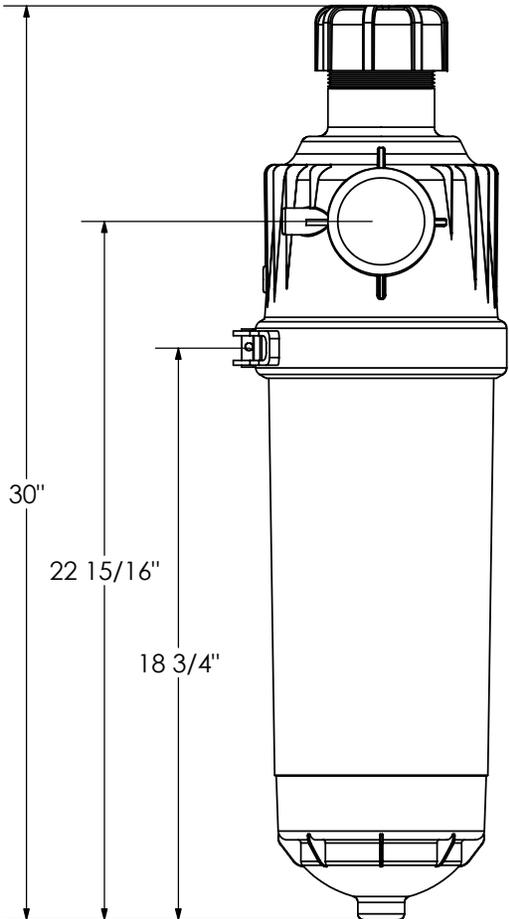
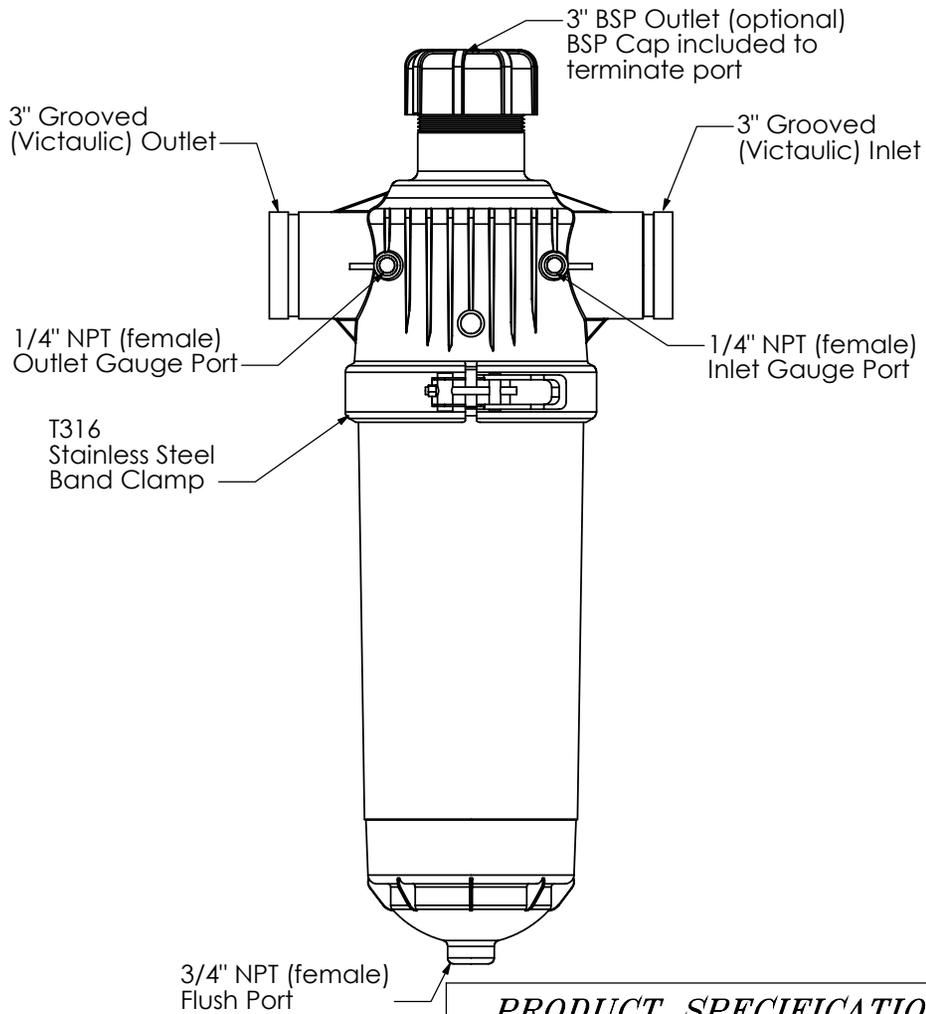


<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
SHEET 1 OF 1					
<b>2SW Helix Filter Housing</b>					

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



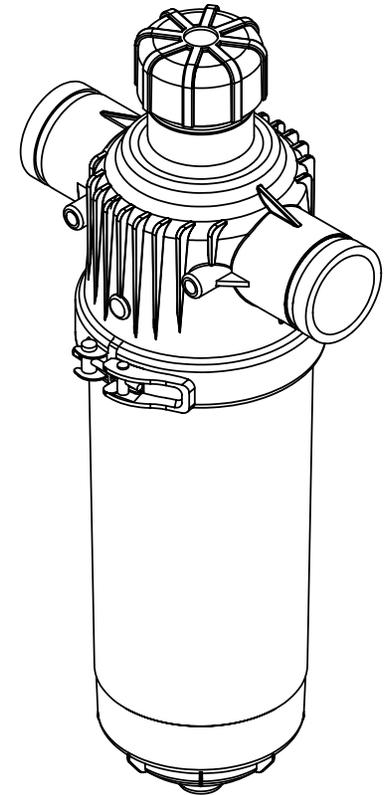
13 1/4"



30"

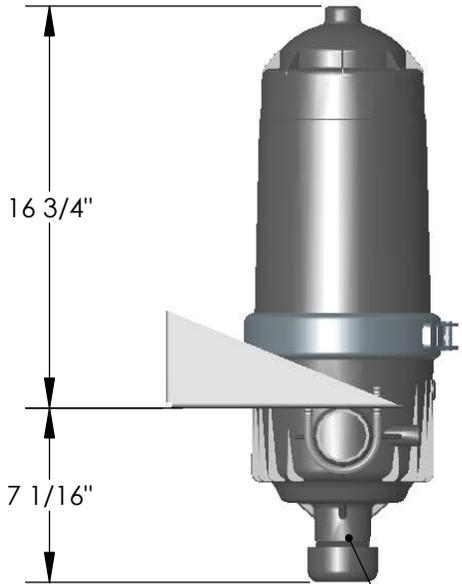
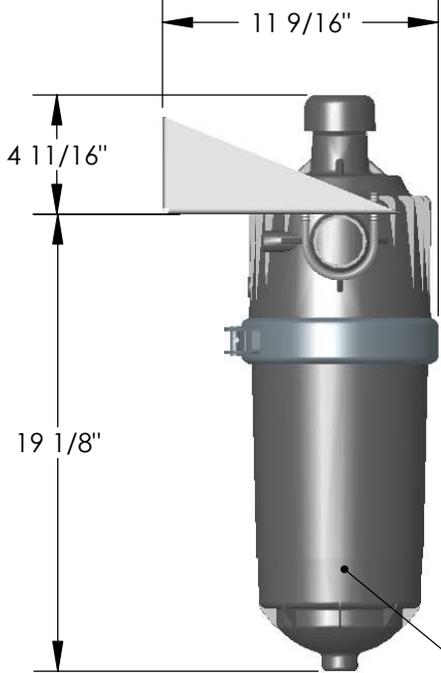
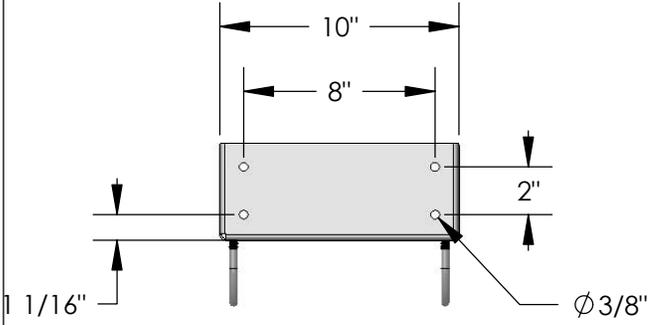
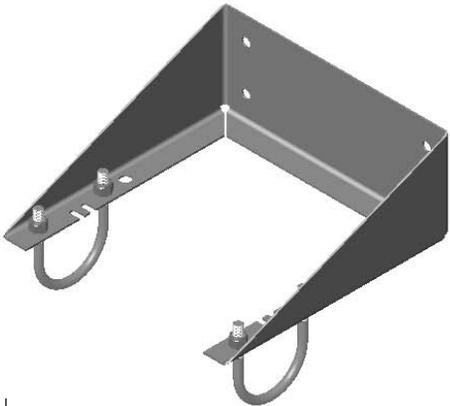
22 15/16"

18 3/4"



<b>PRODUCT SPECIFICATION</b>		DRAWN	S. Richards	9/26/03	TITLE
<b>MILLER-LEAMAN INC.</b>		CHECKED			
800 Orange Ave. Daytona Beach FL 32114		ENG APPR.			
		MKT APPR.			
		SHEET 1 OF 1			
					<b>3NW Helix Filter Housing</b>

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



Filter Housing mounted to bracket in upright position. Housing shown for reference only.

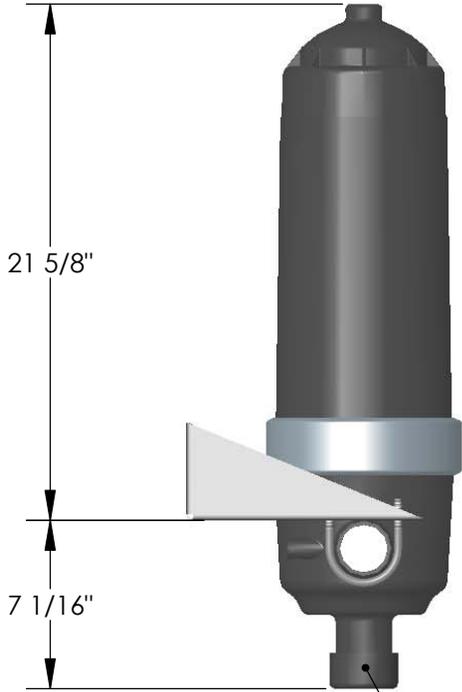
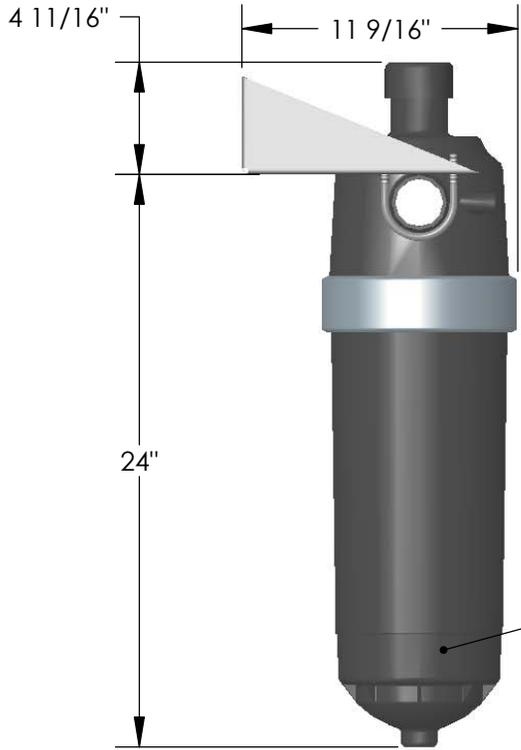
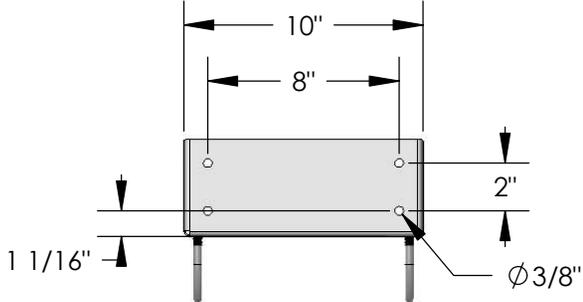
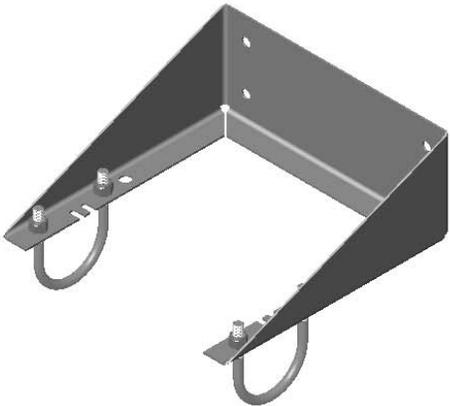
Filter Housing mounted to bracket in standard position (flush port at bottom). Housing shown for reference only.

**PRODUCT SPECIFICATION**  
**MILLER-LEAMAN INC.**  
 800 Orange Ave. Daytona Beach FL 32114

DRAWN	S. Richards	9/5/03
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ENG APPR.		
MKT APPR.		
SHEET 1 OF 1		

TITLE  
 Mounting Bracket, T304 SS  
 for 2" Helix

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

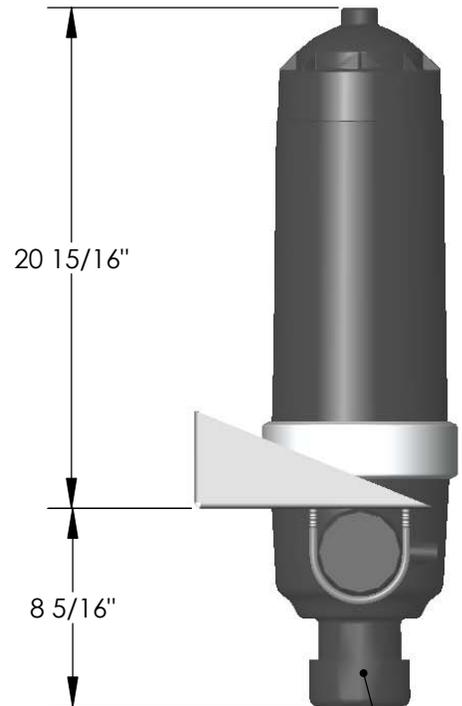
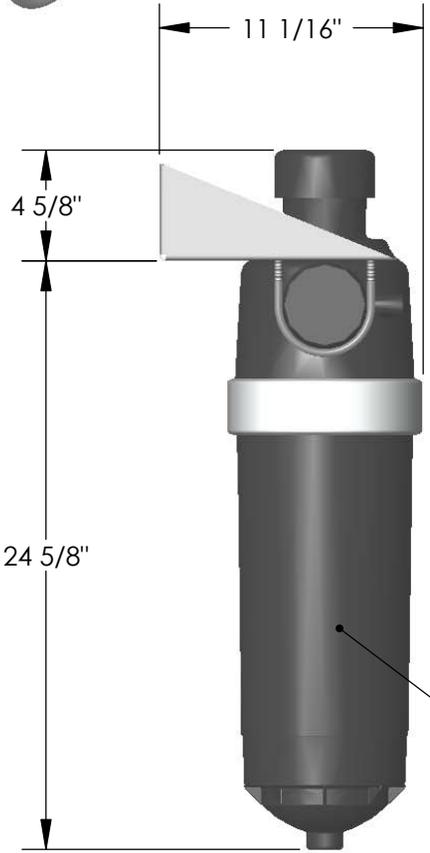
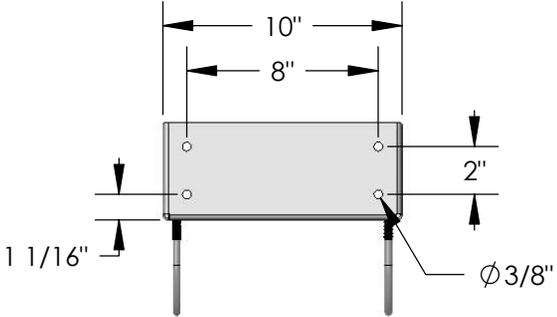
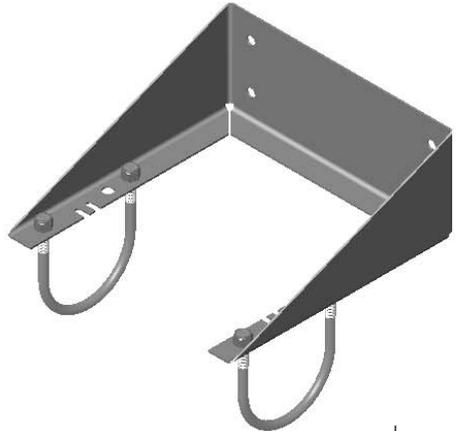


Filter Housing mounted to bracket in upright position. Housing shown for reference only.

Filter Housing mounted to bracket in standard position (flush port at bottom). Housing shown for reference only.

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	S. Richards	9/5/03	TITLE Mounting Bracket, T304 SS for 2" Super Helix
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



Filter Housing mounted to bracket in upright position. Housing shown for reference only.

Filter Housing mounted to bracket in standard position (flush port at bottom). Housing shown for reference only.

<b>PRODUCT SPECIFICATION</b> <b>MILLER-LEAMAN INC.</b> 800 Orange Ave. Daytona Beach FL 32114	DRAWN	S. Richards	9/5/03	TITLE Mounting Bracket, T304 SS for 3" Helix
	CHECKED			
	ENG APPR.			
	MKT APPR.			
	SHEET 1 OF 1			



800 Orange Avenue • Daytona Beach, FL 32114  
Toll Free: (800) 881-0320 • Phone: (386) 248-0500 • Fax: (386) 248-3033  
www.millerleaman.com • e-mail: sales@millerleaman.com