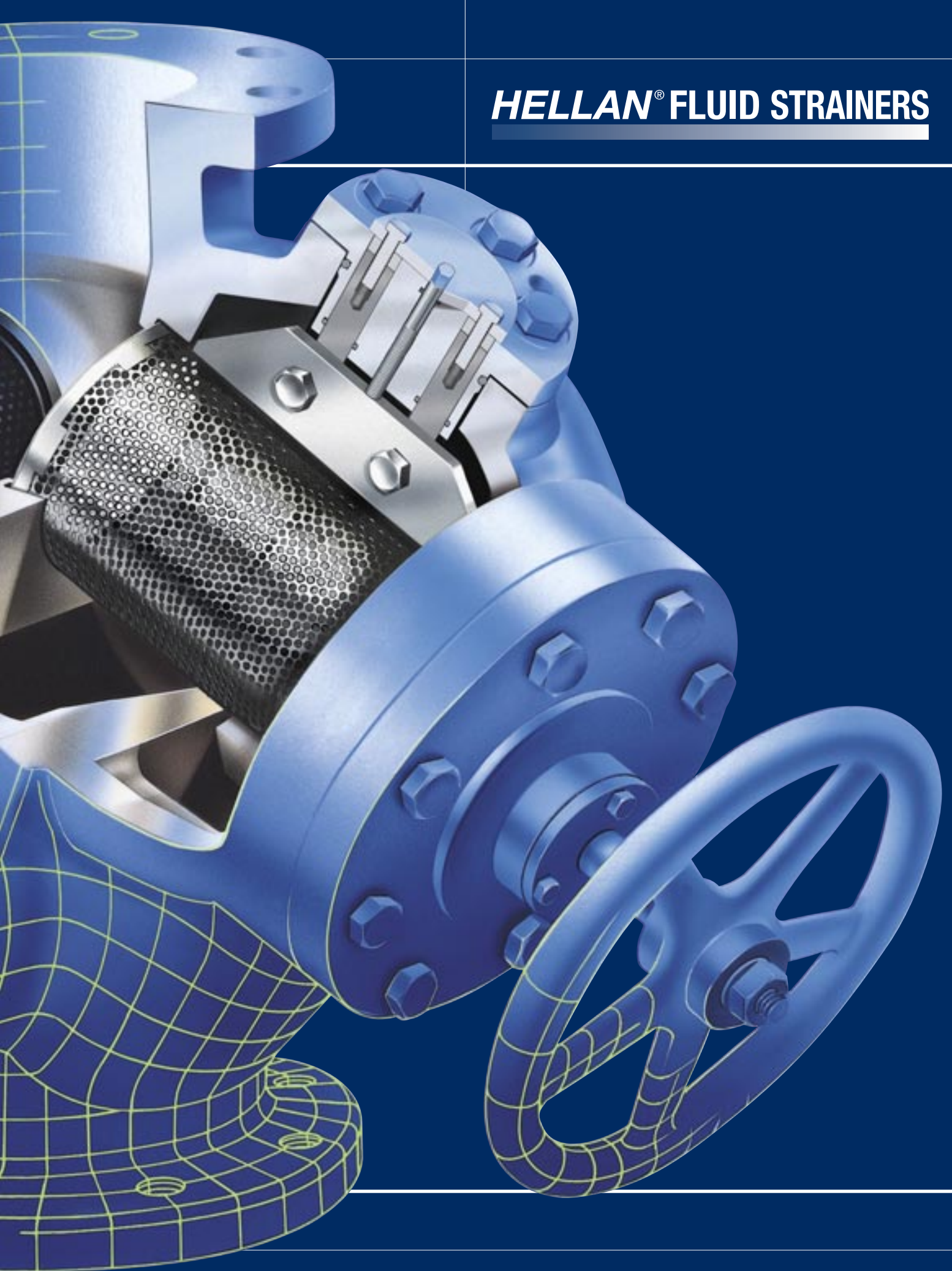


HELLAN® FLUID STRAINERS



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REMOVE SOLIDS WITHOUT STOPPING THE FLOW

Instead of trapping solids in a basket which must then be removed for frequent clean-outs, the Hellan Strainer removes solids from the fluid flow without stopping the flow or disassembling the strainer. A simple turn of the hand wheel (or actuation of the screen motor in automatic units) rotates the screen against a scraper bar. Debris moves to a sump area where it is removed by periodic flushing.

LOW OPERATING COSTS

Removing solids from the screen takes about thirty seconds, compared to one or two hours for a basket strainer. Labor costs can be completely eliminated with our automatic self-cleaning strainer.

SAFETY FOR EMPLOYEE PERSONNEL

The Hellan Strainer closed system protects personnel from contact with strained debris that may include contaminants or hazardous materials.

HIGH QUALITY CONSTRUCTION

Hellan Strainers are designed and built to ANSI/ASQC Standard Q94-1987. Each strainer is proof pressure tested to 150% MAWP, per ASME standards, before shipment. Quality Assurance and manufacturing systems are registered for compliance with ISO-9001 International Standard.

MEET OR EXCEED MAJOR CE/PED, AND INTERNATIONAL STANDARDS

Hellan Strainers are available in models that comply with major U.S. industrial codes and standards, including ASME, the American Bureau of Shipping, Lloyd's Register, and CE/PED. Select models are listed with Underwriters Laboratories. Models are also available in compliance with major international standards, including D.I.N., I.E.C. and Cenelec specifications.

MATERIAL OF CONSTRUCTION FOR A VARIETY OF APPLICATIONS

Hellan Strainer bodies are available in cast iron, cast steel, cast stainless steel, bronze and custom materials such as Super Duplex to meet the demands of a wide range of applications.

LOW MAINTENANCE COSTS

While there is no routine disassembly needed with a Hellan Strainer, all of the internal components can be changed without any special tools. Servicing or parts replacement is therefore very inexpensive.

LOW INSTALLATION COSTS

A Hellan Strainer weighs about half as much as comparable conventional basket-type strainers and requires about 60% of the space. It may be mounted in-pipeline, in a vertical or horizontal position. No special foundation is needed and installation is simple and less costly.

MANUAL OR AUTOMATIC OPERATION

Hellan Strainers are available in manual or automatic models. A full array of controls is available for remote, automated operation of automatic models. Manual models can be upgraded to automatic operation in the field without disruption of the fluid handling system.

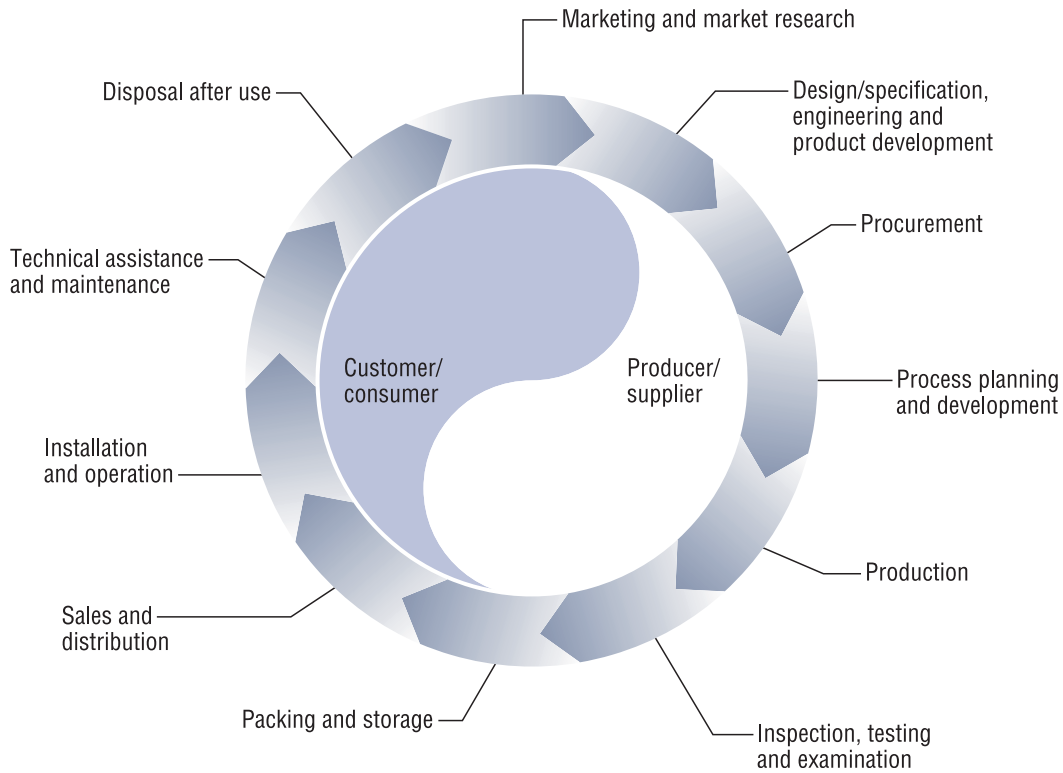
LOW CAPITAL INVESTMENT

Hellan Strainers are competitively priced.

Hellan Strainers are designed and manufactured under a stringent Total Quality Management Program. This TQM program and a continuous improvement policy keep our quality standards and procedures among the highest in the industry. Designed to ISO 9001, our quality program directs all aspects of our business, including procurement, design, manufacturing, inspection and testing.

Every Hellan Strainer is designed and built to ANSI/ASQC Standard Q94-1997. Prior to shipment, each strainer is proof pressure tested to 150% MAWP, per ASME standards.

Our commitment to quality and the unique operating features of our strainer design assure our customers that Hellan Strainers will provide consistent performance in even the most challenging applications.



Hellan Strainers are available in models that comply with major U.S. and international standards, including those of the following organizations:



American Society of Mechanical Engineers (ASME)

Hellan Strainers are designed and manufactured in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Division 1. All strainers are proof pressure tested at 150% of their recommended maximum allowable operating pressure.



American Bureau of Shipping

Most Hellan Strainers appearing in this catalog have been type approved for service in fuel oil, lube oil, fresh water and sea water service by the American Bureau of Shipping. ABS has rated Hellan Strainers for 150 PSI (10.34 bars) MAWP to 450 PSI (31.03 bars) MAWP, depending on flange class, construction material and temperature of the process fluid.



CE Certified

Non automatic strainers cast in steel or stainless steel pipe sizes 4"-12" can be CE certified to Pressure Equipment Directive PED 97/23/EC if requested.



ISO-9001

Quality systems certified by DNV-GL to ISO-9001 International Standard. Certificate No. 09458.



American Iron and Steel (AIS)

The Hellan Strainer Co is pleased to supply products that are in compliance with the Consolidated Appropriations Act of 2014 (Public Law 113-76) "American Iron and Steel (AIS)"

International Standards

Hellan Strainers are available in models that comply with most international standards, including D.I.N., I.E.C. and Cenelec specifications.



Underwriters Laboratories

Non-automatic Hellan Strainers constructed of cast iron, cast steel, bronze or cast stainless steel in pipe sizes from 2" through 14" with screen perforations of 3/32", 1/8" or 3/16" are listed with Underwriters Laboratories (Re-examination service) and are UL listed under Strainers, Pipe Line (HLCV), File EX 1708(N), "Fire Main Pipe Strainer."



Certified to NSF/ANSI 61-G & 372

NSF Mark

The NSF mark assures consumers, retailers and regulators that products have been rigorously tested to comply with all standard requirements. Contact factory for certified sizes and materials.



Lloyd's Register

Hellan Strainers are Type Approved by Lloyd's Register and have met their requirements for use in fresh and salt water systems (including fire main), fuel oil systems and lubricating oil systems. Certificate No. 01/60001



Hellan Strainers TR CU Certificates

Hellan Strainers, in both manual and automatic types, are certified to Russian TR CU standards. (Formerly GOST-R standards)



Conflict Minerals

Section 1502 of the US law known as the "Dodd-Frank Act" includes a requirement that companies using gold, tin, tungsten and tantalum make efforts to determine if those materials came from the Democratic Republic of Congo (DRC) or an adjoining country and, if so, to carry out a "due diligence" review of their supply chain to determine whether their mineral purchases are funding armed groups in eastern DRC.

Patent Protection

Hellan Strainers are protected by several U.S. patents. Design applications on file for new patent protection.



PETROLEUM

Hellan Strainers are used on offshore rigs and FPSOs in filtration systems, deluge fire protection systems, protection of plate and frame heat exchangers and other applications.

4

PETROCHEMICAL

Hellan Strainers protect plant equipment (i.e., condensers, spray nozzles, heat exchangers, pumps, etc.) strain cooling tower water, remove polyethylene fines from process water and are used in deluge fire protection systems.



MARINE

Hellan Strainers are used on U.S. Navy ships in sea water cooling of electronic equipment (i.e., sonar, radar, close in weapon systems, etc.), lube oil, firemain systems, and fuel filtration.



FIRE PROTECTION

Hellan Strainers are U.L. approved for spray nozzle protection in all types of fire protection systems.



WASTE WATER TREATMENT

Hellan Strainers are used in belt filter presses for protection of spray nozzles and in secondary effluent systems for protection of chlorinators, seal water, plant service and foam control.



ETHANOL PLANT

Hellan Strainers are used to protect plate and frame heat exchangers downstream of the slurry tank. Used to capture corn slurry from caustic solution during cleaning of the slurry tank.



POWER UTILITY PLANTS (FOSSIL, HYDRO & NUCLEAR)

Hellan Strainers remove zebra mussels, sand, grit, small fish, etc., from lakes and rivers for protection of plant equipment. Strains water for turbine bearings.



IRON AND STEEL FACILITIES

Hellan Strainers are used in recirculating water, descaling water and cooling water for hot strip and plate mills, blast furnaces, open hearths and continuous casting mills.



IRRIGATION SYSTEMS

Hellan Strainers are used in irrigation systems, including golf courses, to protect spray nozzles by removing debris from lakes, rivers and ponds.

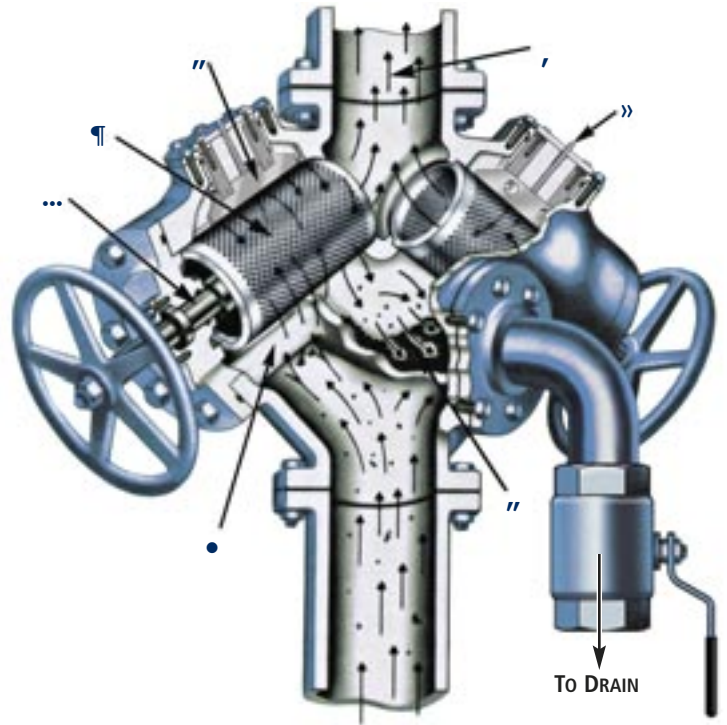
THE HELLAN STRAINER DESIGN PROVIDES SOLIDS REMOVAL WITHOUT INTERRUPTING THE FLUID FLOW

Instead of trapping solids in a basket which then must be removed for frequent clean-outs, the Hellan Strainer removes the solids from fluid without stopping the flow or disassembling the strainer. The sequence of operation is illustrated below.

- ¶ Fluid passes into the strainer and through a screen.
- A deflection rib protects the screen from large objects.
- , The screened fluid flows out of the strainer and into service.
- “ Rotating the screen, by either handwheel or motor, moves the outer screen surface against a scraper bar. The scraper bar removes collected debris from the screen’s outer surface.
- ” Debris moves to the sump area of the strainer where it is removed by periodic flushing.

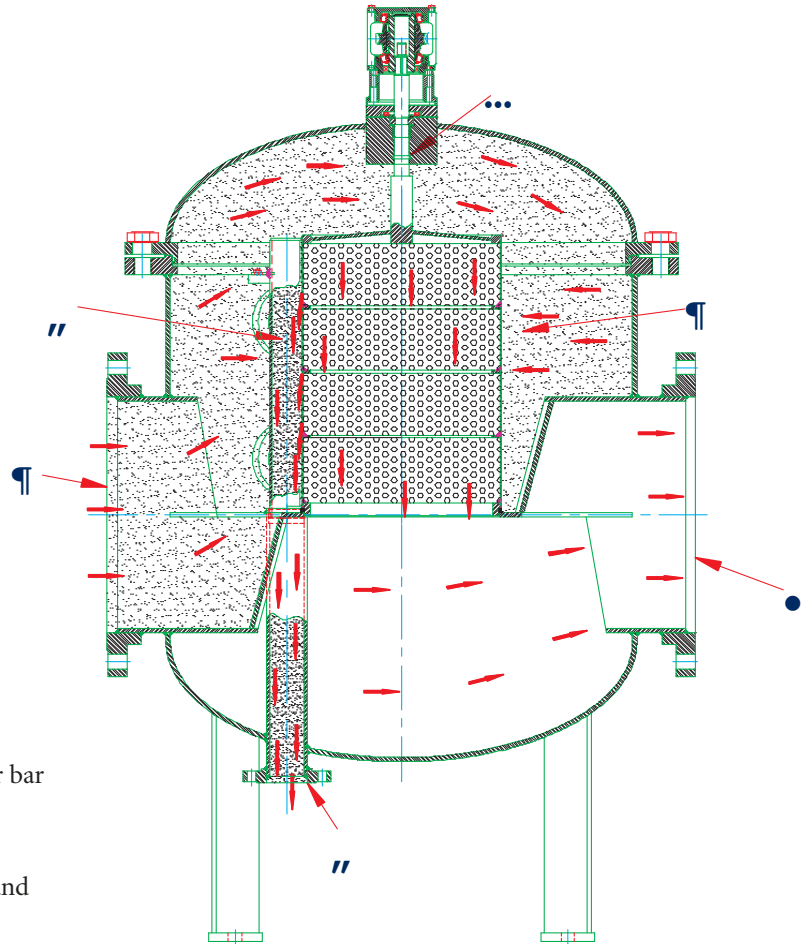
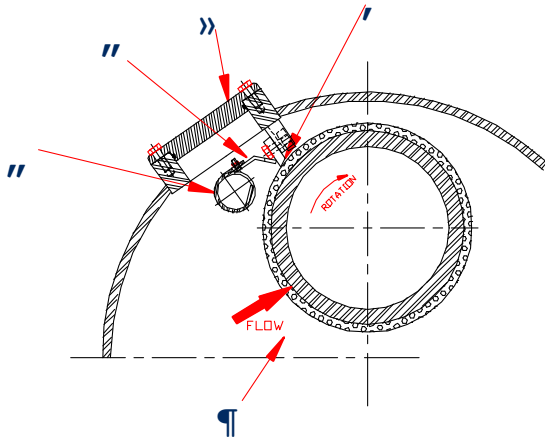
SPECIAL FEATURES PROVIDE CONVENIENCE AND HIGH PERFORMANCE.

- » External scraper adjustment, if supplied.
- ... O-rings at the screen cover plate and shaft provide a tight seal while allowing operation at low torque.
- ⊗ Backwash system is available to remove debris from screen on low pressure applications except 2", 2-1/2" and 3" angle types and 3" D-type.
- Eductor is available at discharge for low-pressure applications.
- ⊘ Brush can replace solid scraper on all but 2" and 2-1/2" Angle-type and 2-1/2" and 3" D-type.

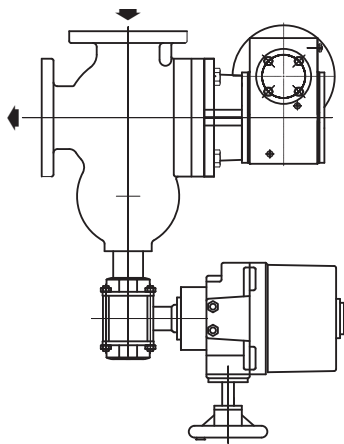
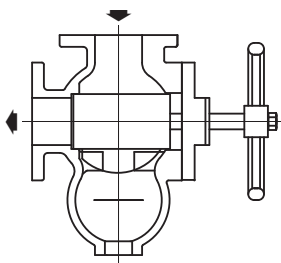
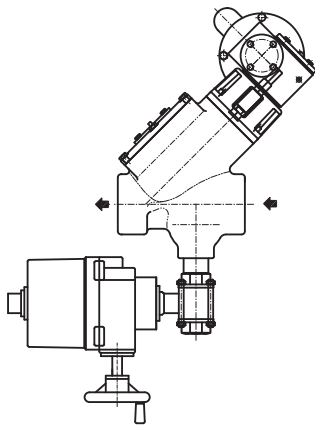
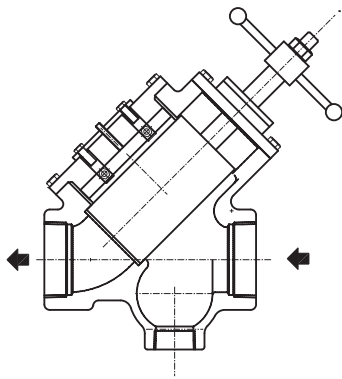


OPERATING FEATURES THAT PROVIDE REAL BENEFITS

- **Eliminate downtime for solids removal**
The Hellan Strainer allows users to eliminate solids and debris from fluids without stopping the flow of the fluid. Processes requiring the fluid continue uninterrupted.
- **Employees are not exposed to possible contaminants**
Debris that may include contaminants and hazardous materials is removed from the fluid flow without disassembly of the strainer. Maintenance personnel and other employees do not come into contact with this debris.
- **Minimum labor requirements for solids removal**
The Hellan Strainer reduces the time required to remove solids from the fluid flow. Manually-operated models require only a periodic turning of the handwheel to remove solids. Labor and cleaning time is usually less than 30 seconds. Labor requirements can be completely eliminated with automatic strainers that can be controlled by timers and/or pressure differential switches.



- ¶ Fluid passes into the strainer and thru the screens.
- The screened fluid flows out of the strainer.
- , Rotating the screen, by motor, moves the outer screen surface against the scraper bar. The scraper bar dislodges and removes collected debris from the screen's outer surface.
- „ While the screen is rotating, the drain is opened and the debris is forced out through the drain in use.
- “ A drain separator is used to prevent the fluid velocity from pulling the debris away from the drain tube opening.
- » Large inspection ports, sealed with O-rings, permit easy, external adjustment of the scraper bars and drain separators.
- ... O-rings at the screen shaft provide a tight seal while allowing operation at low torque.



INLINE FLOW BODY-SINGLE SCREEN

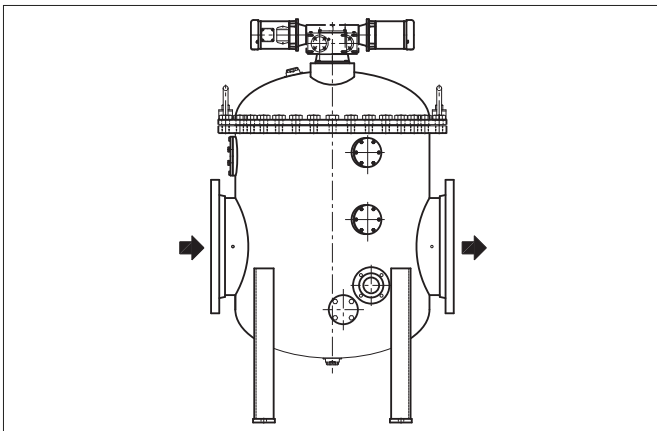
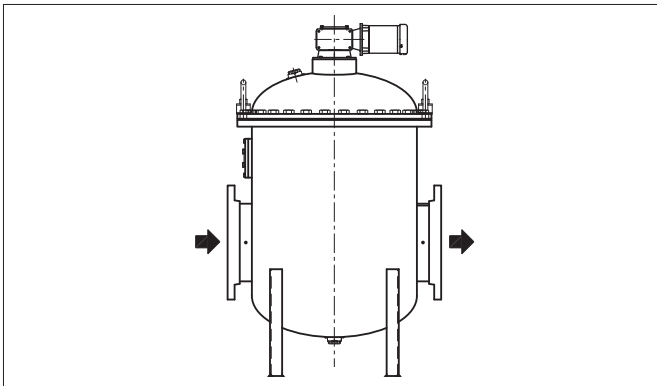
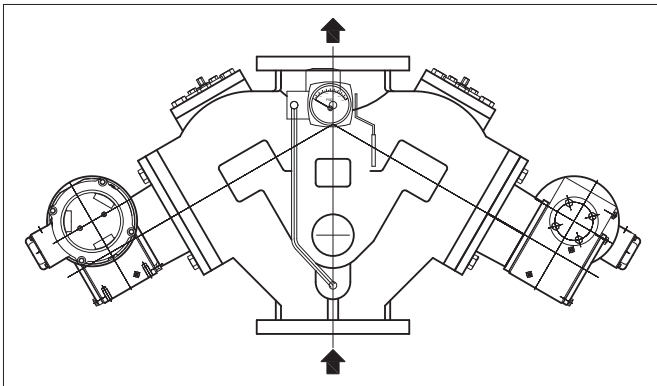
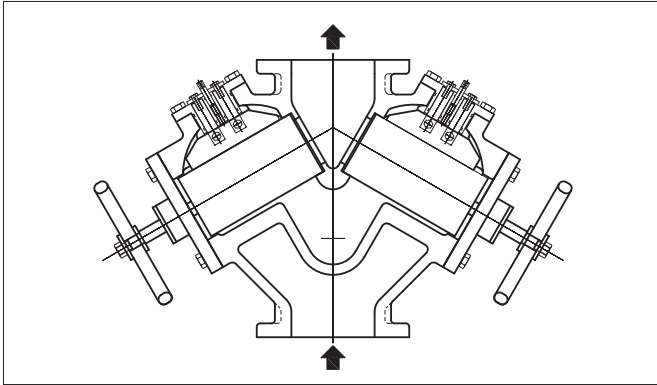
- Inline Flow, Manual Strainers (Type TSH) (Single Manual Rotating Screen) (Sizes 1-1/2", 2", 2-1/2", 3")** Type TSH Hellan Strainers employ a single handwheel equipped rotating screen and a rigid scraper bar to remove solids from the surface of the screen when the handwheel is rotated. A solids collecting sump is also provided. Cleaning of the Type TSH is accomplished by opening a valve on the sump flush connection and rotating the handwheel several times. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type TSH must be installed in horizontal flow position as illustrated.

- Inline Flow, Automatic Strainers (Type TSA) (Single Motorized Rotating Screen) (Sizes 1-1/2", 2", 2-1/2", 3")** Type TSA Hellan Strainers employ a single, electric motor-driven rotating screen and a rigid scraper bar to remove solids from the surface of the screen when the screen is rotated. A solids collecting sump is also provided. Cleaning of the Type TSA is initiated when the motor and flush valve operator are actuated. Controls to accomplish these electrical functions are provided. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type TSA must be installed in horizontal flow position as illustrated.

ANGLED FLOW BODY-SINGLE SCREEN

- Angled Flow, Manual Strainers (Type AH) (Single Manual Rotating Screen) (Sizes 2", 2-1/2", 3")** Type AH Hellan Strainers employ a single hand-wheel equipped rotating screen and a rigid scraper bar to remove solids from the surface of the screen when the handwheel is rotated. A solids collecting sump is also provided. Cleaning of the Type AH is accomplished by opening a valve on the sump flush connection and rotating the handwheel several times. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type AH must be installed in vertical down-flow position as illustrated.

- Angled Flow, Automatic Strainers (Type AA) (Single Motorized Rotating Screen) (Size 3" Only)** Type AA Hellan Strainers employ a single, electric motor-drive rotating screen and a rigid scraper bar to remove solids from the surface of the screen when the screen is rotated. A solids collecting sump is also provided. Cleaning of the Type AA is initiated when the motor and the flush valve operator are actuated. Controls to accomplish these electrical functions are provided. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type AA must be installed in vertical down-flow position as illustrated.

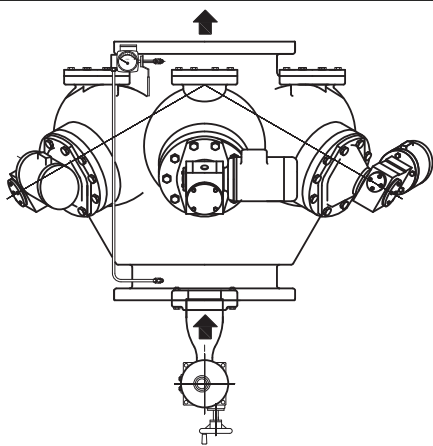
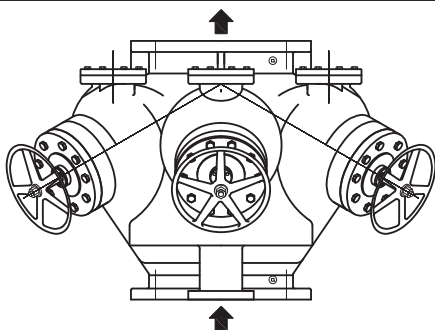
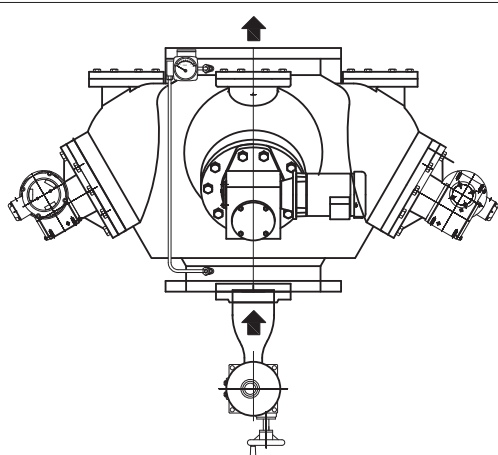
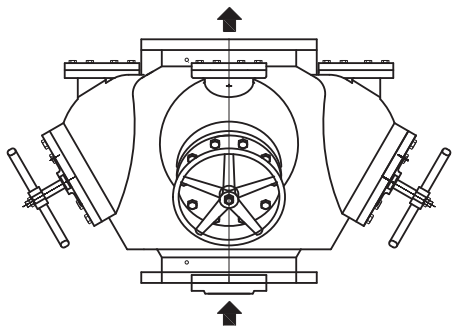


INLINE FLOW BODY-TWO SCREENS

- Inline Flow, Manual Strainers (Type DH) (Two Manual Rotating Screens) (Sizes 2-1/2", 3", 4", 6", 8", 10", 12")**
 Type DH Hellan Strainers employ two handwheel-equipped rotating screens and rigid scraper bars to remove solids from the surface of the screens when the handwheels are rotated. A solids-collecting sump is also provided. Cleaning of the Type DH strainer is accomplished by opening a valve on the sump flush connection and rotating the handwheels several times. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type DH can be installed in vertical up-flow or horizontal flow position (with the drain discharging downward).
- Inline Flow, Automatic Strainers (Type DA) (Two Motorized Rotating Screens) (Sizes 4", 6", 8", 10", 12")**
 Type DA Hellan Strainers employ two electric motor-driven rotating screens and rigid scraper bars to remove solids from the surface of the screens when the screens are rotated. A solids-collecting sump is also provided. Cleaning of the Type DA strainer is initiated when the motors and the flush valve operator are actuated. Controls to accomplish these electrical functions are provided. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type DA can be installed in vertical up-flow or horizontal flow position (with the drain discharging downward).

INLINE FLOW BODY-ONE SCREEN

- Inline Flow, Automatic Strainers (Type WDA) (Two Motorized Rotating Screens) (Sizes 20", 24", 30") and (Type WSA) (One Motorized Rotating Screen) (Sizes 14" and 16")**
 These Hellan Strainers employ one or two electric motor-driven rotating screens and rigid scraper bars to remove solids from the surface of the screens when the screens are rotated. A solids collecting sump is also provided. Cleaning of the strainer is initiated when the motors and the flush valve operator are actuated. Controls to accomplish these electrical functions are provided. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type WDA and Type WSA must be installed in horizontal flow position as illustrated. Handwheel may be substituted for motorized drive but screen may be difficult to rotate.



INLINE FLOW BODY-FOUR SCREENS

- **Inline Flow, Manual Strainers (Type QH) (Four Rotating Screens) (Sizes 14" and 16")** Type QH Hellan Strainers employ four handwheel-equipped rotating screens and rigid scraper bars to remove solids from the surface of the screens when the handwheels are rotated. A solids-collecting sump is also provided. Cleaning of the Type QH strainer is accomplished by opening one or both valves on the two sump flush outlets and rotating the handwheels several times. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type QH must be installed in vertical up-flow position as illustrated.

- **Inline Flow, Automatic Strainers (Type QA) (Four Motorized Rotating Screens) (Sizes 14" and 16")** Type QA Hellan Strainers employ four motor-driven rotating screens and rigid scraper bars to remove solids from the surface of the screens when the motor-driven screens are rotated. A solids-collecting sump is also provided and equipped with two electrically-operated flush valves. Cleaning of the Type QA strainer is initiated when the screen drive motors and flush valve operators are actuated. Controls to accomplish these electrical functions are required. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type QA must be installed in vertical up-flow position as illustrated.

INLINE FLOW BODY-SIX SCREENS

- **Inline Flow, Manual Strainers (Type HH) (Six Rotating Screens) (Size 20" only)** Type HH Hellan Strainers employ six handwheel-equipped rotating screens and rigid scraper bars to remove solids from the surface of the screens when the handwheels are rotated. A solids-collecting sump is also provided. Cleaning of the Type HH strainer is accomplished by opening the valves on the two sump flush outlets and rotating the handwheels several times. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type HH must be installed in vertical up-flow position as illustrated.

- **Inline Flow, Automatic Strainers (Type HA) (Six Motorized Rotating Screens) (Size 20" only)** Type HA Hellan Strainers employ six motor driven rotating screens and rigid scraper bars to remove solids from the surface of the screens when the motor-driven screens are rotated. A solids-collecting sump is also provided and equipped with two electrically-operated flush valves. Cleaning of the Type HA strainer is initiated when the screen drive motors and flush valve operators are actuated. Controls to accomplish these electrical functions are provided. For best results, the cleaning cycle should be performed when the strainer is under a positive pressure. An eductor and/or backwash may aid in debris removal in low-pressure applications. Type HA must be installed in vertical up-flow position as illustrated.

There are eight application requirements that should be addressed when selecting a specific Hellan Strainer model. Here are the considerations and options available for each requirement:

1 PERFORATION SIZE OF THE SCREENS

Hellan recommends that a screen perforation hole diameter be selected that is 40% to 60% of the diameter of the smallest orifice in the system. Selecting a smaller perforation than required leads to unnecessary cleaning cycles and higher pressure drops during operation.

2 SIZE OF THE STRAINER

A) Existing Pipe Size Method

This method is used when a Hellan Strainer is installed in an existing network of piping. Flow rate and the intended pressure drop are within the application requirements.

In these situations, it is common practice to select a strainer size that matches the existing pipe size, i.e., an 8" strainer would be selected for an installation with an existing 8" line.

B) Flow Rate Requirement Versus Pressure Drop Method

This method should be utilized when selecting a strainer for a new application, or as a replacement strainer in existing systems where a specific flow rate needs to be maintained.

Refer to the chart at right for flow rates of available strainer sizes. Refer to the pressure drop versus flow rate charts for various size strainers, appearing on page 22.

C) High Concentration of Solids

For removal of debris greater than 100 PPM, a solid separator is recommended upstream of the Hellan strainer.

D) Discharge Side of Pump

It is recommended that a Hellan strainer be installed on the discharge side of a centrifugal pump with a minimum operating pressure of 30 PSIG or 2 BAR. If operating pressure is less, please contact the Hellan sales department for assistance.

3 STRAINER CONSTRUCTION MATERIALS

Hellan Strainers are available with cast bodies constructed in iron, steel, stainless, and bronze or fabricated in steel and stainless steel. Other materials such as Super Duplex are available by special order. The material used for internal components depends on the material of the body.

The selection of a body material depends on three criteria:

A) The operating pressure of the system

The body material selected should have a pressure rating that is appropriate for the operating pressure of the system. (See page 17 for maximum pressure ratings for strainers of various materials and flange types.)

B) The fluid to be strained

Standard cast iron models are commonly used for fresh water applications, while other materials are used to meet special needs: cast stainless steel for highly corrosive fluids, and bronze or monel for seawater applications.

C) The environment in which the strainer operates

A longer service life may be attained by specifying a construction material that is appropriate for the service environment. Stainless steel should be considered for highly corrosive environments and bronze for marine or other applications where salt air is present.

SCREEN OPTIONS								
Perforated Screens Round Opening Size					Wedge-Wire Screens Slot Width			
Fractional	Decimal	Metric	Mesh	Micron	Inches	Metric	Mesh	Micron
1/4"	.250"	6.35 mm	3	6350	.015"	0.38 mm	40	385
3/16"	.188"	4.77 mm	4	4750	.009"	0.23 mm	60	230
1/8"	.125"	3.18 mm	6	3175	.007"	0.18 mm	80	180
3/32"	.094"	2.38 mm	8	2450	*.005"	0.13 mm	100	140
1/16"	.063"	1.59 mm	12	1588	*.004"	0.10 mm	150	100
1/32"	.031"	0.79 mm	24	794				

Other perforated screen opening sizes and Wedge-Wire screen slot widths are available upon request. See page 13 for complete information on screens.

**Consult factory for these applications .*

STRAINER SIZE OPTIONS				
Pipe Size		Flow		Pressure/flow data
Inches	mm	GPM*	Liter/min.*	
1-1/2"	38	95	360	See Page 22
2"	51	95	360	
2-1/2"	64	160	606	
3"	76	235	890	
4"	102	360	1363	
6"	152	880	3331	
8"	203	1450	5489	
10"	254	2075	7855	
12"	305	2750	10410	
14"	356	4100	15520	
16"	406	5300	20063	
20"	508	8250	31230	
24"	610	10650	40315	
30"	762	16650	63027	

**1.5 psid with clean 1/8" perforated screen.*

4 FLANGE REQUIREMENT

Strainers of cast iron construction are normally furnished with integral flanges that have dimensions in accordance with ANSI B16.1, class 125 or class 250. Strainers of cast steel or cast stainless steel are normally furnished with integral flanges that have dimensions in accordance with ANSI B16.5, class 150 or class 300. Strainers of bronze construction are normally furnished with integral flanges that have dimensions in accordance with ANSI B16.24, class 150 or class 300.

Fabricated steel strainers are available with integral flanges in accordance with ANSI B16.5 class 150 in 14" through 24" sizes.

Fabricated 30" strainers are provided with ANSI B16.47 class 125-LW flanges.

TSH/TSA strainers with NPT connections are also available in cast iron, cast steel or cast stainless steel body construction.

Special flanges to accommodate the bolting dimensions of D.I.N. and other standards are also available.

Flange types should be selected using two considerations:

- A) **The flange on the strainer must match the mating flange to which it is being attached.**
- B) **The flange on the strainer should be appropriate for the system pressure.**

(See page 17 for information on flanges and pressure ratings.)

5 BODY STYLE REQUIREMENTS

Hellan Strainers are available in angled flow and inline flow body styles.

Angled flow body styles are available in 2", 2-1/2" and 3" sizes only.

Inline flow body styles are available in 1-1/2", 2", 2-1/2", 3", 4", 6", 8", 10", 12", 14", 16", 20", 24", and 30" sizes.

Additional strainer sizes and body styles are available and are custom designed. Consult the factory for more information.

6 COATINGS

The standard external paint for cast iron and cast steel body strainers is Kem Aqua 70P.

The standard external paint for fabricated steel strainers is Devcon 253.

Additional coatings are available; consult the factory for details.

7 METHOD OF OPERATION

Hellan Strainers are available with two methods of operation:

- A) **Manual operation utilizing a hand wheel**
- B) **Automatic operation for utilizing motorized screens**

Automatic operation normally utilizes a pressure differential switch, automatic discharge valve and a control panel.

A separate model number for the control panel must also be specified. (See pages 18 and 19 for information on automatic strainers and control panel options.)

8 AFTER YOU HAVE SELECTED A HELLAN STRAINER

After you have reviewed the above considerations and have selected a Hellan Strainer for your particular application, we suggest two additional steps be taken before ordering:

- A) **Check dimensional compatibility**

Once a Hellan Strainer model has been selected, the dimensions for the model be reviewed to make sure that appropriate clearances are available in the system design to accommodate the dimensions of the strainer.

Dimensional information for Hellan Strainer models appears on pages 23 through 53.

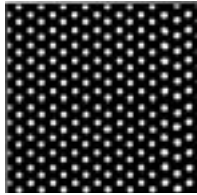
- B) **Specifying a model number**

A model number for the selected strainer may be specified by referring to the model number guide on pages 80 and 81. Remember that, when specifying an automatic strainer, a separate model number for the control panel must also be specified.

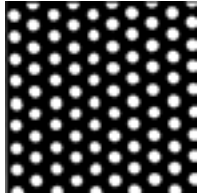
Please contact the factory at 888-4-HELLAN for assistance.

Hellan Strainers are available with screens manufactured from either perforated metal or wedge-wire materials. Information for standard perforated metal screen options and wedge-wire screen options are illustrated below.

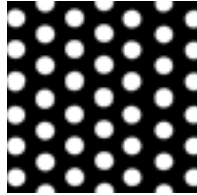
STANDARD PERFORATED METAL SCREEN OPTIONS



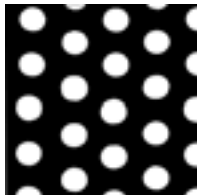
1/32" Staggered
(0.965 mm)
16% open



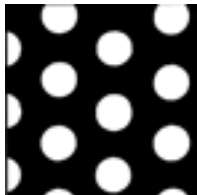
1/16" Staggered
(1.588mm)
24% open



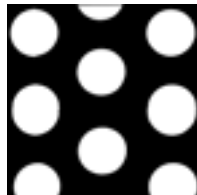
3/32" Staggered
(2.381mm)
33% open



1/8" Staggered
(3.175mm)
40% open



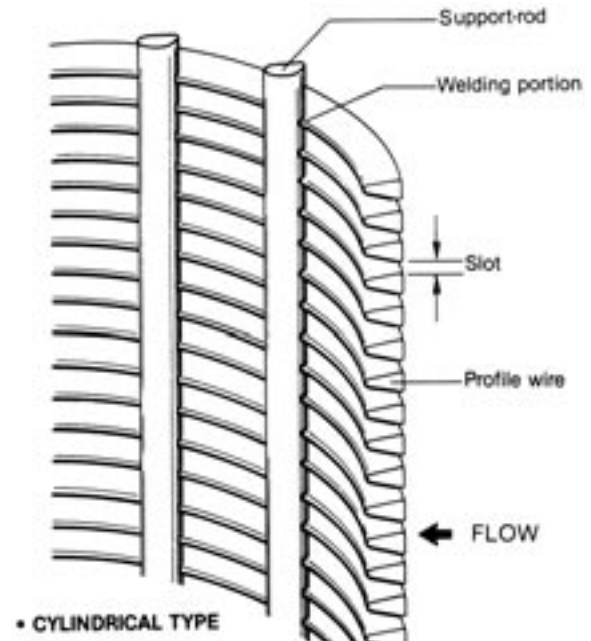
3/16" Staggered
(4.763mm)
51% open



1/4" Staggered
(6.350mm)
58% open

Note: Other perforated screen sizes are available on special order. Please contact the factory for more information. Open area percentage shown for 1/16" & 1/32" above are for double wrap over 1/4".

STANDARD WEDGE-WIRE SCREEN OPTIONS



Note: Other wedge-wire slot width sizes are available on special order. Please contact the factory for more information.

Wedge-wire slots can be made to order. Standard slots are listed below:

.015	27% open
.009	18% open
.007	15% open
.005	11% open*
.004	9% open*

*Consult factory

COMPONENT MATERIALS

STRAINER MATERIAL TYPE 7

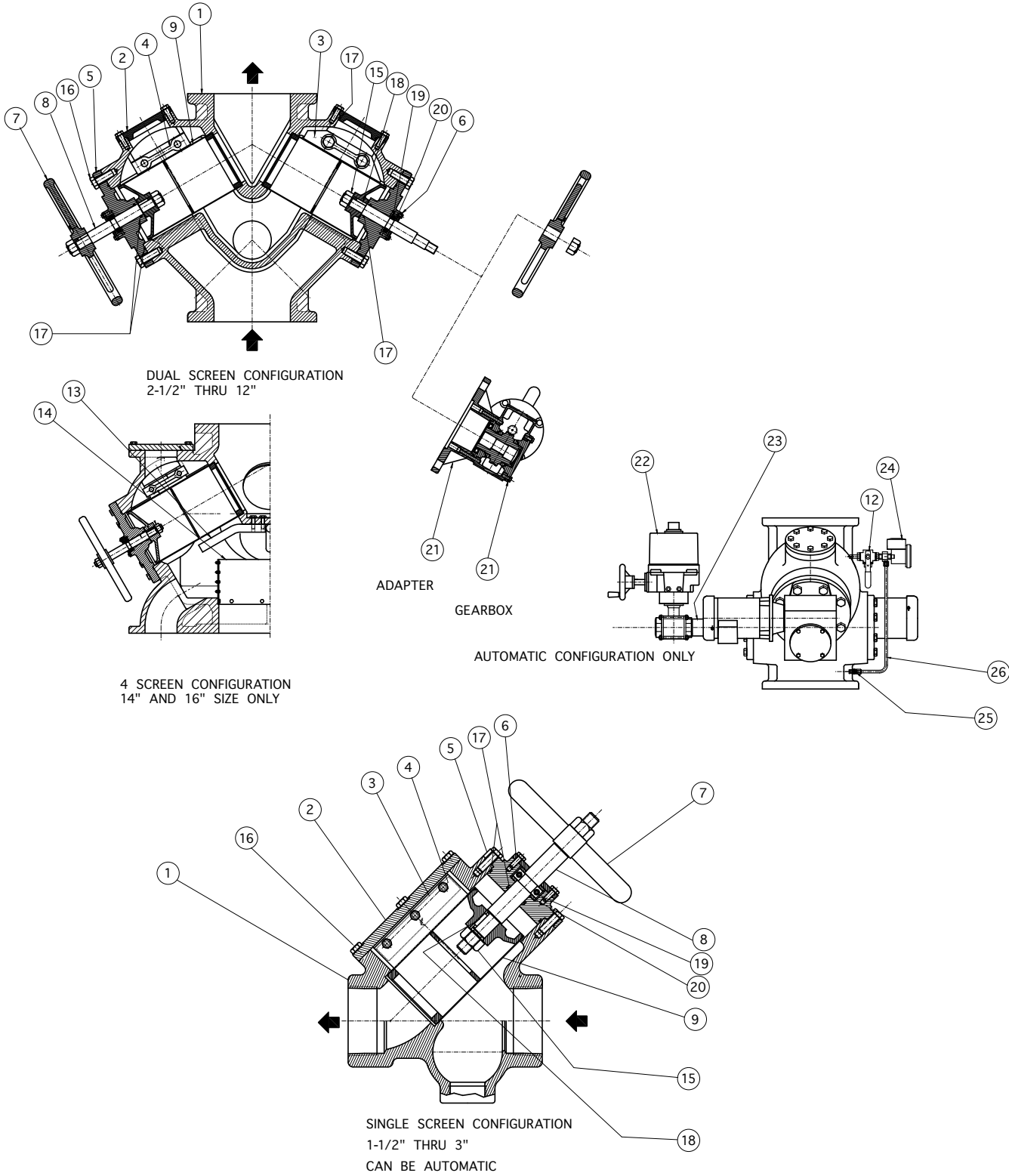
Components	Cast Iron	Welded Steel	Cast Steel	Cast Stainless Steel	Cast Bronze
1 Body	Cast Iron ASTM A278 Class 30	Carbon Steel ASTM A36	Cast Steel ASTM A216 WCB	Cast Stainless Steel ASTM A351 CF8M	Bronze C-95800
Screen Bushing	N/A	Bronze	Bronze	Bronze	N/A
2 Inspection Cover	Cast iron ASTM A278 Class 30	Carbon Steel	Carbon Steel ASTM A29 1018	Cast Stainless Steel ASTM A351 CF8M	Bronze C-95800
3 Scraper Blade ⁵	Manganese Bronze	316 Stainless Steel	Manganese Bronze	316 Stainless Steel	Cast Monel ASTM A494 Grade M35-1
4 Clamp Bar ⁵	Red Brass	316 Stainless Steel	Red Brass	316 Stainless Steel	Cast Monel ASTM A494 Grade M35-1
5 Screen Plate	Cast Iron ASTM A278 Class 30	Carbon Steel	Cast Steel ASTM A216 WCB	Cast Stainless Steel ASTM A351 CF8M ⁴	Bronze C-95800
6 Shaft Plate	Carbon Steel	Carbon Steel	Carbon Steel	316 Stainless Steel	Bronze C-93800
7 Hand Wheel	Cast Iron	N/A	Cast Iron	Cast Iron Zinc Plated	Bronze ASTM B61
8 Shaft	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
9 Screen ¹	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
10 Drain Separator	N/A	316 Stainless Steel	N/A	N/A	N/A
11 Drain Tube	N/A	316 Stainless Steel	N/A	N/A	N/A
12 3-way Ball Valve ⁴	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
13 Deflector ²	316 Stainless Steel	N/A	Carbon Steel	316 Stainless Steel	Monel 400 UNS N04400
14 Apron ²	316 Stainless Steel	N/A	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
15 Wetted Fasteners	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
16 External Fasteners	Medium Carbon Steel	316 Stainless Steel	Medium Carbon Steel	316 Stainless Steel	Monel 400 UNS N04400
17 O-Rings	Nitrile (Buna N)	Nitrile (Buna N)	Nitrile (Buna N)	Viton	Viton
18 Keys	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
19 Collar	303 Stainless Steel	303 Stainless Steel	303 Stainless Steel	303 Stainless Steel	303 Stainless Steel
20 Washer	Sintered Bronze	Sintered Bronze	Sintered Bronze	Sintered Bronze	Sintered Bronze
21 Motorized Drive ⁴ (Housing Adapter)	Cast Iron ASTM A278 Class 30	Cast Iron ASTM A278 Class 30	Cast Iron ASTM A278 Class 30	Cast Iron ASTM A278 Class 30	Bronze C-93800
22 Motorized Valve Body ⁴	Cast 316 Stainless	Cast 316 Stainless	Cast 316 Stainless	Cast 316 Stainless	Bronze
Ball and Stem	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Bronze
Packing and Seat	PTFE	PTFE	PTFE	PTFE	PTFE
23 Swage Nipple ⁴	Carbon Steel ASTM A234	N/A	Carbon Steel ASTM A234	Stainless Steel T-304	Monel 400 ASTM B61
24 Pressure Switch ⁴	316 L Stainless	316 L Stainless	316 L Stainless	316 L Stainless	316 L Stainless
Diaphragm	Viton	Viton	Viton	Viton	Viton
Seals	Viton	Viton	Viton	Viton	Viton
25 External Fittings ⁵	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
26 External Tubing	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Monel 400 UNS N04400
27 Lubricant ³	Mobil Grease XHP 200	Mobil Grease XHP 200	Mobil Grease XHP 200	Mobil Grease XHP 200	Mobil Grease XHP 200
28 External Paint ⁷	Kem Aqua 70P	Devcon 253	Kem Aqua 70P	N/A	N/A

Notes:

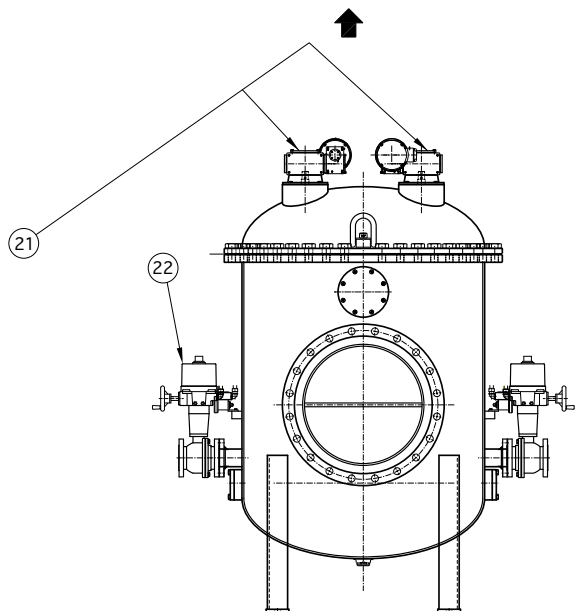
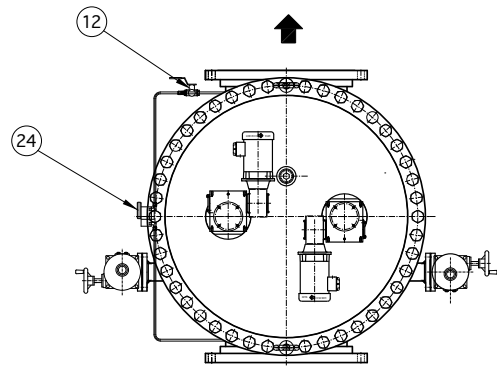
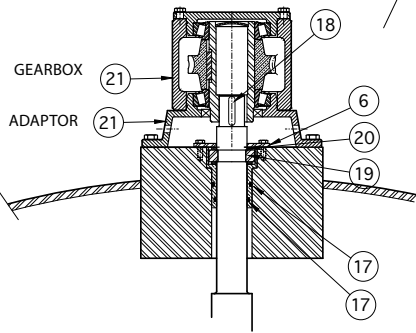
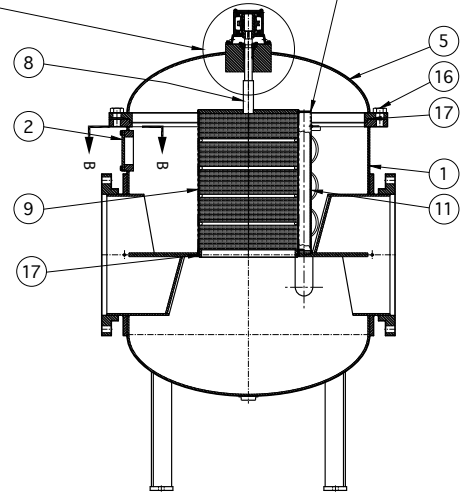
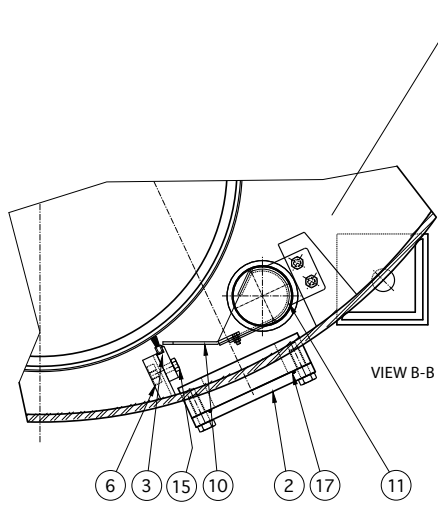
- 1) Comprise a welded assembly.
- 2) Deflector and apron are only in 14", 16" and 20" strainers.
- 3) Lubricant is applied to threaded fasteners, thrust washers and press fit parts.
- 4) Motorized components are used only on automatic strainers.
- 5) Strainers in sizes of 2" and 2-1/2" with single screens and 2-1/2" and 3" with dual screens have scraper blades integral with the body and do not use clamp bars.
- 6) Other coatings, such as epoxy, fuse coat epoxy and other special coatings are available upon request.
- 7) Body and component materials, other than those listed above, are available upon request.

The following drawings and chart list the standard component materials of construction for Hellan Strainers of various body materials.

The materials listed may change without notice and do not apply to non-standard strainers.



15



WELDED BODY CONSTRUCTION
14" AND 16" (SINGLE DRIVE AND DRAIN)
20" THRU 30" (DUAL DRIVE AND DRAIN)

The table below summarizes standard product, provides pressure ratings and shows the flow rate that will produce 1.5 psi of pressure drop with a 1/8" perforated screen. See page 22 for other screen options. Page 22 shows the flow rates that will produce 1.0 psi of pressure drop.

Standard Product, Pressure Ratings and Flow Rates													
Strainer Type	Flow Rate	Cast iron			Cast Steel			Stainless Steel		Cast Bronze		Carbon Steel (FAB)	Carbon Steel (FAB)
		NPT	Class 125	Class 250	NPT	Class 150	Class 300	Class 150	Class 300	Class 150	Class 300	ANSI ISO	AWWA 125 LW
	GPM liter/min.	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR	PSI BAR
1-1/2" & 2" TS	107	175			285			275		220			
	405	12.1			19.6			19.0		15.2			
2-1/2" & 3" TS	159	175			285			275		220			
	602	12.1			19.6			19.0		15.2			
2" Angle	107		175			285		275		220			
	405		12.1			19.6		19.0		15.2			
2-1/2" Angle	145		175			285		275		220			
	549		12.1			19.6		19.0		15.2			
2-1/2" D-Type	193		175			285		275		220			
	730		12.1			19.6		19.0		15.2			
3" Angle	190		175			285		275		220			
	719		12.1			19.6		19.0		15.2			
3" D-Type	290		175			285		275		220			
	1098		12.1			19.6		19.0		15.2			
4" D-Type	354		175	350		285	450	275	450	220	450		
	1340		12.1	24.1		19.6	31.0	19.0	31.0	15.2	31.0		
6" D-Type	842		175	350		285	450	275	450	220	450		
	3187		12.1	24.1		19.6	31.0	19.0	31.0	15.2	31.0		
8" D-Type	1464		175	350		285	450	275	450	220	450		
	5541		12.1	24.1		19.6	31.0	19.0	31.0	15.2	31.0		
10" D-Type	2013		175	350		285	450	275	450	220	450		
	7619		12.1	24.1		19.6	31.0	19.0	31.0	15.2	31.0		
12" D-Type	2623		175	350		285	450	275	450	220	450		
	9928		12.1	24.1		19.6	31.0	19.0	31.0	15.2	31.0		
14" Q-Type	4270		150			150							
	16,162		10.3			10.3							
16" Q-Type	5368		150			150							
	20,318		10.3			10.3							
20" H-Type	7930		150			150							
	30,015		10.3			10.3							
14" WSA	4270											75	
	16,162											5.2	
16" WSA	5368											75	
	20,318											5.2	
20" WDA	7930											75	
	30,015											5.2	
24" WDA	10,980											75	
	41,559											5.2	
30" WDA	16,470												75
	62,339												5.2

Note: Pressure ratings shown are for maximum temperature of 100°F for steel and stainless steel and 150°F for cast iron and bronze. Contact the factory for higher temperature.

Automatic Hellan Strainers are used whenever automatic self-cleaning of the strainer is required or advantageous. Under normal operating conditions, these units can perform a complete cleaning cycle in just 15 seconds.

OPTIMIZED CLEANING

Automatic cleaning allows you to optimize the cleaning cycle while you minimize maintenance labor costs. It provides the best cleaning action by simultaneously rotating the cleaning screen and opening the discharge valve which creates less debris out.

A balance must also be struck between the fluid discharge during a cleaning cycle and pumping efficiency across a clogged strainer. Clean too soon and you waste some fluid in the discharge. Clean too late and cleaning may be impaired.

The Hellan Automatic Strainer enables you to tailor the cleaning cycle to your specific needs. A timer is set to clean at the desired intervals.

Cleaning should be performed in time to keep pressure drop less than four times the clean pressure drop. Not to exceed 8 PSID.

AUTOMATIC STRAINER SIZES

Automatic strainers, in cast body construction, are available in 1-1/2" through 20" pipe sizes. The 1.5"-3" strainers (single screen) are furnished with one 1-1/2" discharge valve; the 4" through 12" (dual screens) are furnished with one 2" discharge valve; the 14" and 16" (4 screens) and 20" (6 screens) are furnished with two 2" discharge valves to obtain the optimum flushing action.

Automatic strainers, in fabricated body construction, are available in 14" through 30" pipe sizes. The 14" and 16" are furnished with two 2" discharge valves; the 20" and 24" are furnished with two 3" discharge valves; the 30" is furnished with two 4" discharge valves to obtain the optimum flushing action.

ELECTRICAL COMPONENTS

The basic components of the self-cleaning strainer are the differential pressure switch, the screen drive, the actuated discharge valve and the control panel.

The drive replaces the handwheel and rotates each screen at approximately 17 RPM.

An actuated ball valve opens and closes the waste discharge port. To sense the clogging of the screen, a differential pressure switch monitors pressure drop across the strainer.

The control panel synchronizes the screen drives and the discharge valve to achieve the optimum cleaning cycle. This cleans the screens without excessive discharge of the system fluid.

IEC STANDARDS

Motors are available to meet or exceed the following IEC standards: 1P21, 22, 23, 44, 54, 55, 56, 57, 65, 67 and 68.

SELECTION OF AUTOMATIC STRAINER MODEL

To select an automatic strainer and specify a model number, see the information on selecting and specifying a strainer model on pages 80-81.

EASY CONVERSION TO AUTOMATIC OPERATION

The strainer can be converted from manual to automatic operation in three easy steps.



1



2



3

HAND/OFF/AUTOMATIC

The rotary H-O-A selector switch allows for three modes of operation. In the “Hand” position, the screen drives and flush valve will be actuated until the switch is returned to off.

In the “OFF” position, the self-cleaning cycle does not function.

In the “AUTOMATIC” mode, there are three ways to initiate a cleaning cycle:

1. **Differential pressure switch.** As the screen becomes clogged, the pressure drop will increase. At a preset point, a cleaning cycle will start.
2. **Internal timer.** An automatic interval between cleaning cycles can be set from zero to 100 hours.
3. **Manual start.** A momentary push-button on the control panel will start a cleaning cycle.

SYSTEM SAFETY MONITORS

The control panel is a constant indicator of the status of your system. For example, a panel light illuminates when power is applied to the strainer motor relay.

If the strainer basket is not thoroughly cleaning during the normal cleaning cycle, the pressure drop continues to increase, causing the high pressure alarm light to illuminate.

This alarm is self-resetting when the differential pressure drop falls below the set point.

REMOTE OPERATIONS

Manual Cycle Start

You may attach a normally open, momentary push-button to the control panel terminal strip. The H-O-A switch must be in the AUTOMATIC position for the cycle to start.

High Pressure Alarm Option

A set of contacts controlled by the high pressure alarm light is available as an option.

Hand/Off/Automatic

If you require these functions at a remote location, the control panel H-O-A switch must be disconnected.

IEC STANDARDS

NEMA 12 controls panels meet or exceed IEC IP10 through IP65.

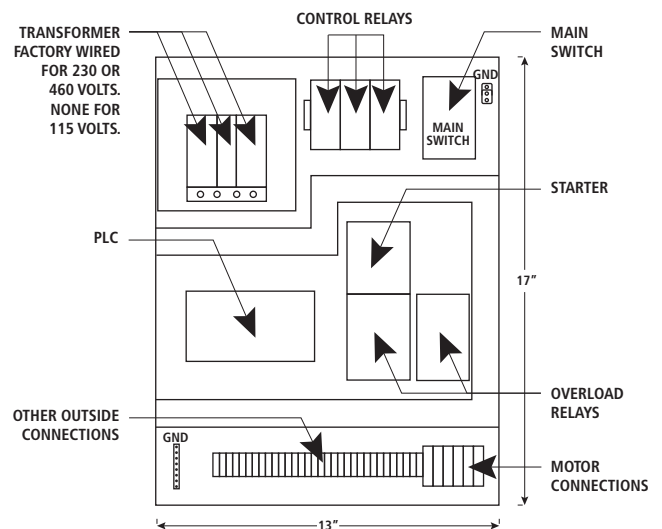
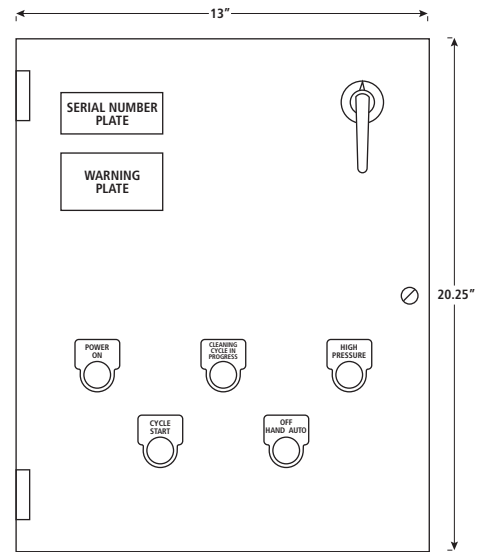
NEMA 4 control panels meet or exceed IEC IP66.

NEMA 4X control panels meet or exceed IEC 529 IP66.

Control panels are also available with IEC components.

SELECTION OF AUTOMATIC STRAINER CONTROL

Strainer controls are ordered separately from the strainer. The selection of the control is based on both the number of motors (i.e., “AA”, “SA” & “TSA” types have one motor; “DA” & “WDA” types have two motors; “QA” types have four motors and “HH” types have six motors) and their voltage. The voltage to the control panel must be the same as the motor voltage. To select a control panel and specify a model number, see the information on selecting and specifying a control panel model on page 81.

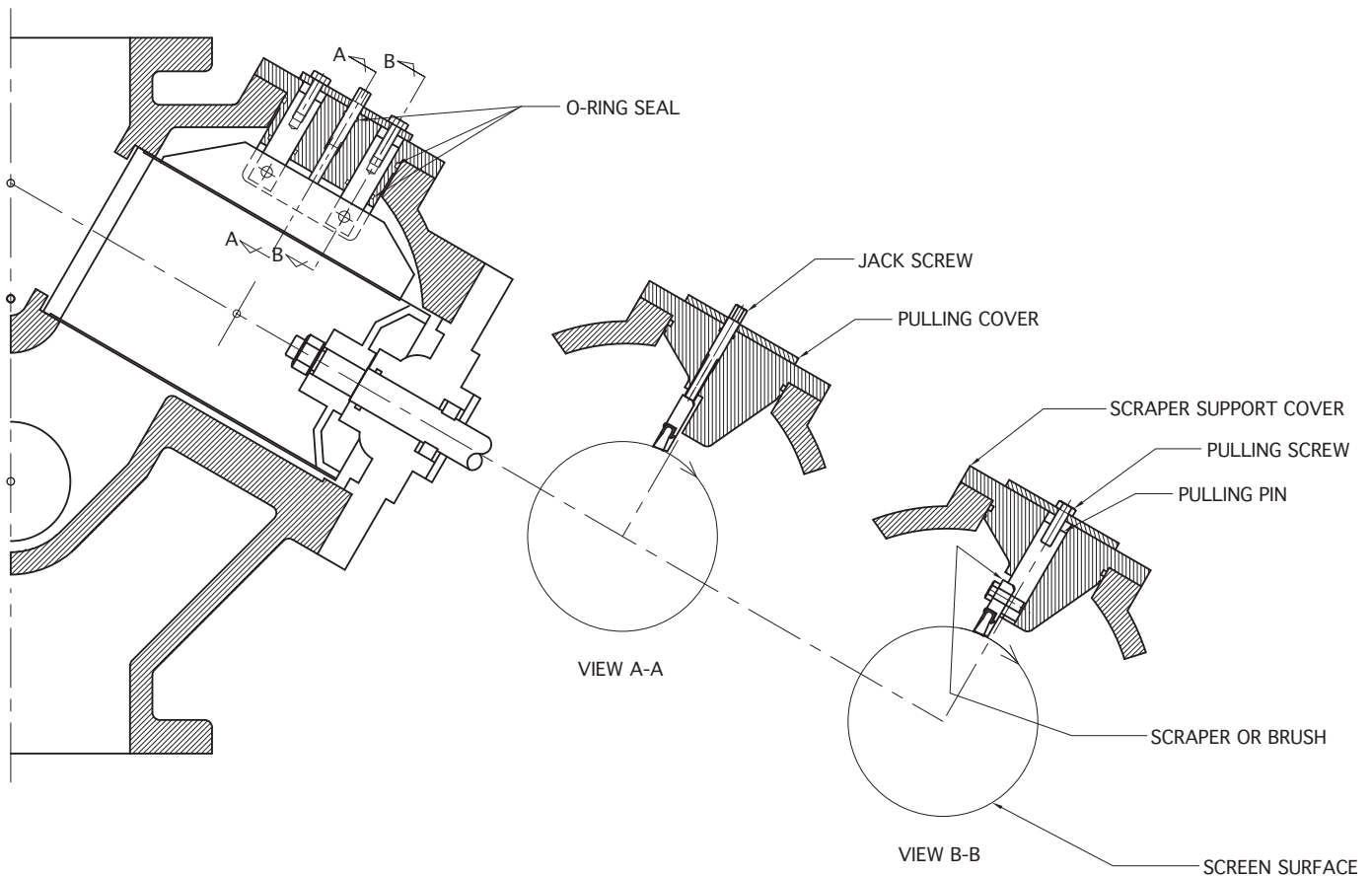


EXTERNAL SCRAPER ADJUSTMENT

As an option, TS and D-type Hellan Strainers can be equipped with an external adjustment for the scrapers or brushes. This is shown in the figure below. The scraper or brush is held in place by two pulling pins. The pins are o-ring sealed and the outward ends are threaded, allowing the pins to be tightened against the cover.

Once the scraper or brush is adjusted at the factory, it can be readjusted to compensate for wear. Brushes should be set to come into contact with the screen. Scrapers should be set to

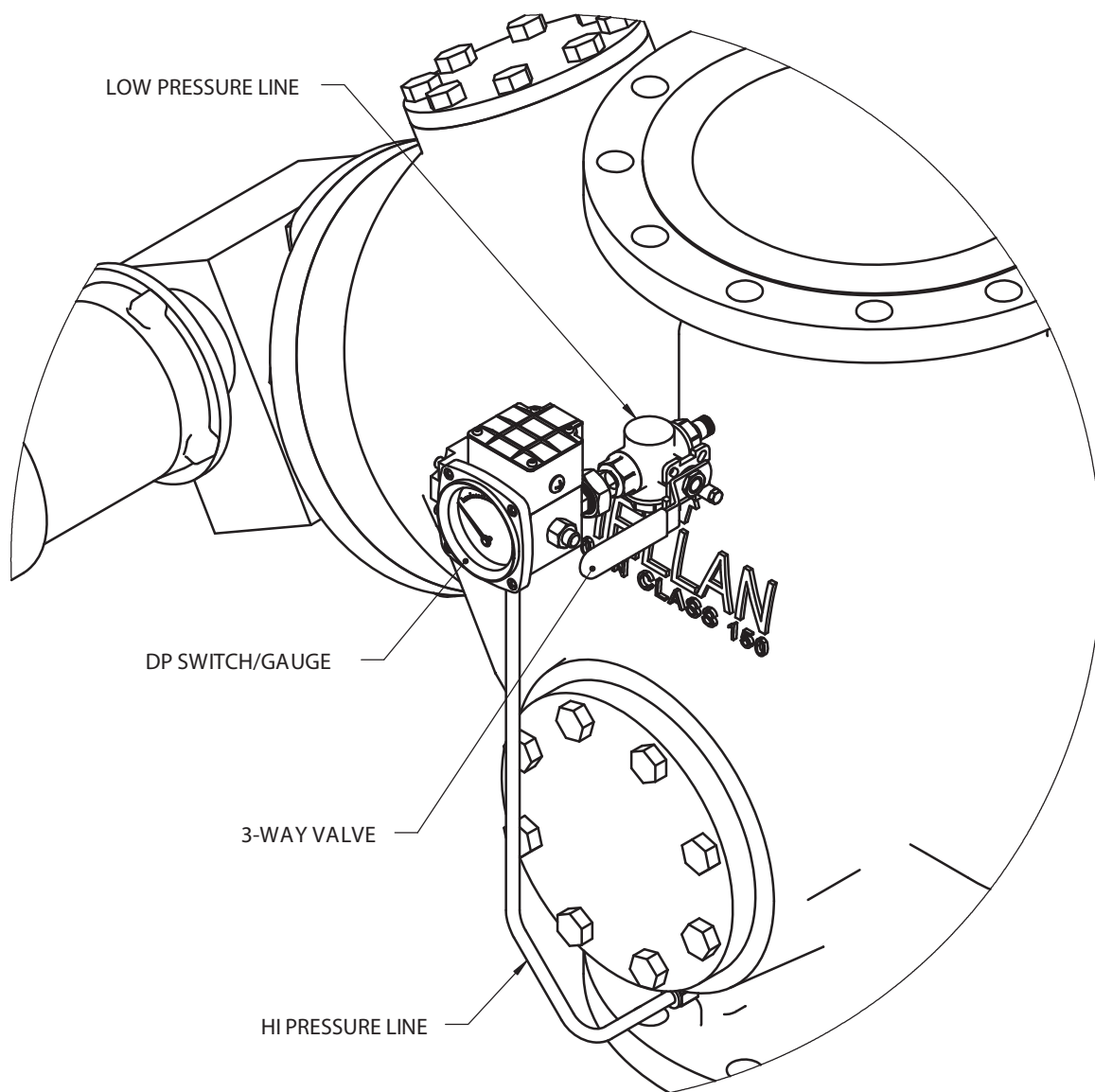
.005" to .010" away from the surface of the screen. To adjust the scraper or brush, first loosen the pulling screws. Next, turn the jack screw clockwise to move the scraper or brush towards the screen surface. After the scraper or brush is adjusted, it should be secured. For a brush, the pulling screws should be tightened to secure the brush against the jack screw. For a scraper, the jack screw should be rotated counterclockwise and the pulling screws should be tightened to secure the scraper.



The standard differential pressure switch supplied includes an indicator gauge and two switches that are preset at the factory at 4 psid and 8 psid. When the 4 psid set point is reached, the strainer's cleaning cycle is initiated. The 8 psid set point is used to indicate high pressure via an indicator light at the control panel. The two set points can be field adjusted, as needed. To verify the set points, follow these steps.

1. Locate the 3-way vent valve between the differential pressure switch and the strainer's low pressure port.

2. Slowly rotate the handle of the 3-way vent valve to vent the pressure/fluid from the differential pressure switch. When the "cleaning cycle" status light in the control panel illuminates, note the pressure on the gauge. This is the set point for the "clean" pressure switch.
3. Slowly continue to rotate the handle until the "high pressure" status light illuminates. The pressure reading shown is the set point for the "high" pressure switch.
4. Return the 3-way vent valve handle to the original start position.



FLOW RATE VS PRESSURE DROP

The table below lists the flow coefficient (Cv) for clean strainer screens.

	Outline Page		C _v @ Screen Opening (percent of open area)										
	Hand	Auto	1/4 (58%)	3/16 (51%)	1/8 (40%)	3/32 (33%)	1/16 (24%)	1/32 (16%)	.015 (27%)	.009 (18%)	.007 (15%)	.005* (11%)	.004* (9%)
1-1/2" & 2" TS	21	36	90.52	89.83	88.00	85.91	80.80	70.69	82.96	74.05	68.72	58.28	51.12
2-1/2" & 3" TS	22	37	133.6	132.6	130.0	127.0	119.6	105.0	122.8	110.0	102.1	86.81	76.25
2" Angle	23		90.52	89.83	88.00	85.91	80.80	70.69	82.96	74.05	68.72	58.28	51.12
2-1/2" Angle	24		121.7	121.0	119.0	116.7	110.9	99.92	113.4	103.0	96.50	83.29	73.84
2-1/2" D-Type	26		162.7	161.7	159.0	155.9	148.1	132.1	151.5	137.5	128.9	111.2	98.56
3" Angle	25	38	159.6	158.6	156.0	153.0	145.4	129.6	148.6	135.0	126.5	109.1	96.72
3" D-Type	27		243.5	242.0	238.0	233.4	221.8	197.8	226.7	205.9	193.0	166.6	147.7
4" D-Type	28	39	295.8	294.2	290.0	285.1	272.7	246.2	278.0	255.3	240.8	210.3	187.8
6" D-Type	29	40	698.1	693.1	680.0	664.9	627.7	556.9	643.5	577.9	538.2	459.2	404.2
8" D-Type	30	41	1235	1225	1200	1171	1101	962.4	1131	1008	935.4	792.7	695.0
10" D-Type	31	42	1695	1683	1650	1612	1519	1334	1553	1396	1292	1104	970.1
12" D-Type	32	43	2200	2186	2150	2108	2003	1786	2048	1860	1743	1504	1333
14" Q-Type	33	44	3609	3579	3500	3410	3193	2770	3284	2909	2689	2265	1929
16" Q-Type	34	46	4507	4477	4400	4310	4087	3629	4182	3784	3538	3041	2689
20" H-Type	35	49	6653	6611	6500	6372	6050	5388	6187	5612	5254	4528	4010
14" WSA*		45	3609	3579	3500	3410	3193	2770	3284	2909	2689	2265	1979
16" WSA*		47	4507	4477	4400	4310	4087	3629	4182	3784	3538	3041	2689
20" WDA*		48	6672	6624	6500	6357	6003	5290	6153	5529	5150	4396	3871
24" WDA*		50	9207	9151	9000	8826	8389	7485	8576	7791	7303	6304	5590
30" WDA*		51	13,890	13,782	13,500	13,178	12,390	10,834	12,134	11,351	10,531	8927	7828

PRESSURE LOSS CALCULATION USING C_v FACTOR

Standard Units

$$dP = \left[\frac{Q}{C_v} \right]^2$$

Q = Flow in GPM
C_v = Flow Coefficient
dP = Pressure Drop in psi

Metric Units

$$dP = \left[\frac{Q}{C_v} \right]^2 (133.6)$$

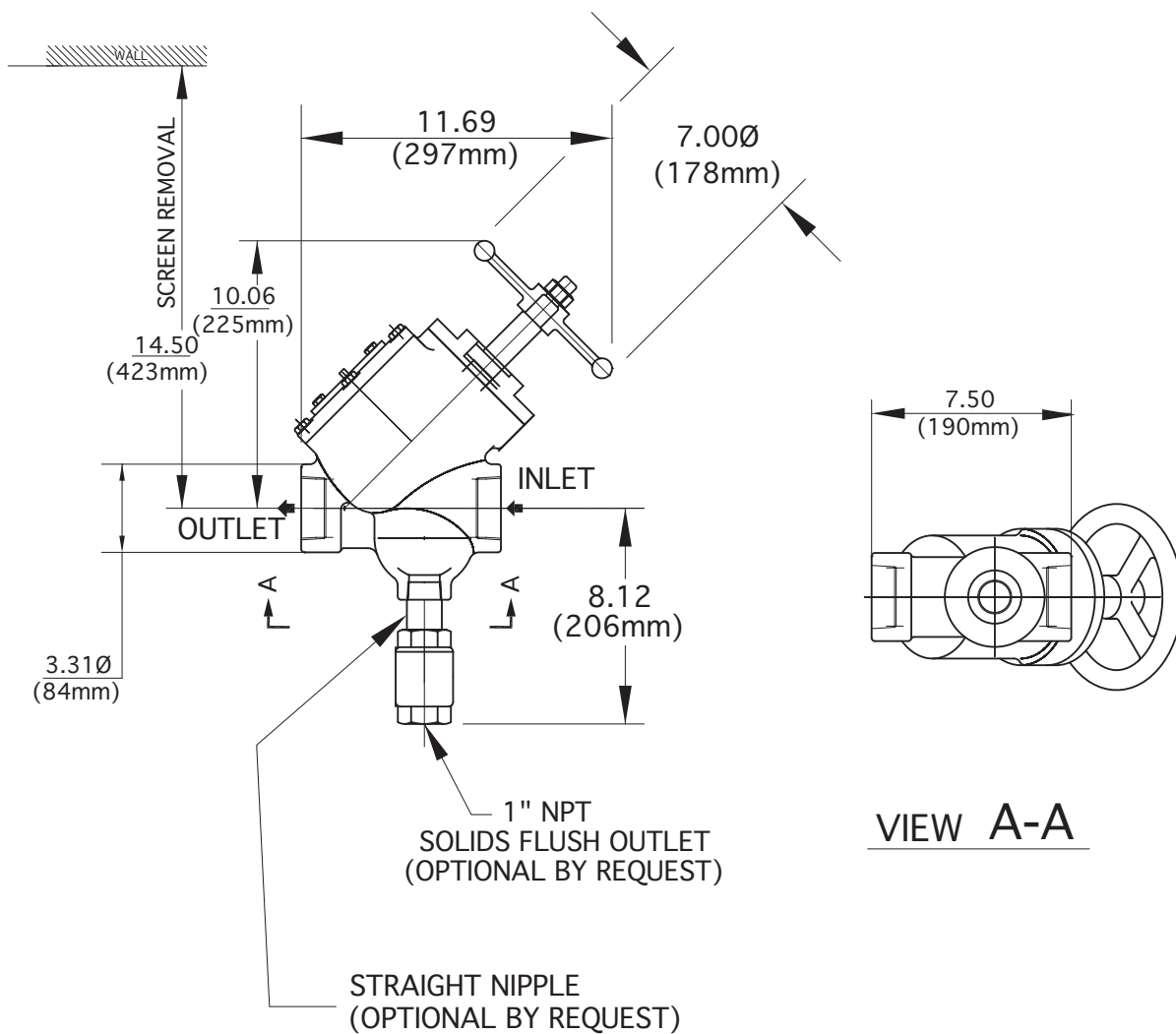
Q = Flow in m³/hr
C_v = Flow Coefficient
dP = Pressure Drop in kPa

The pressure loss across a strainer can be estimated using the system's flow rate and the C_v factor for that strainer.

* Flow coefficients for reference use.
Consult factory for additional information.

1-1/2" & 2" MANUAL STRAINER

In-Line Flow Type TSH

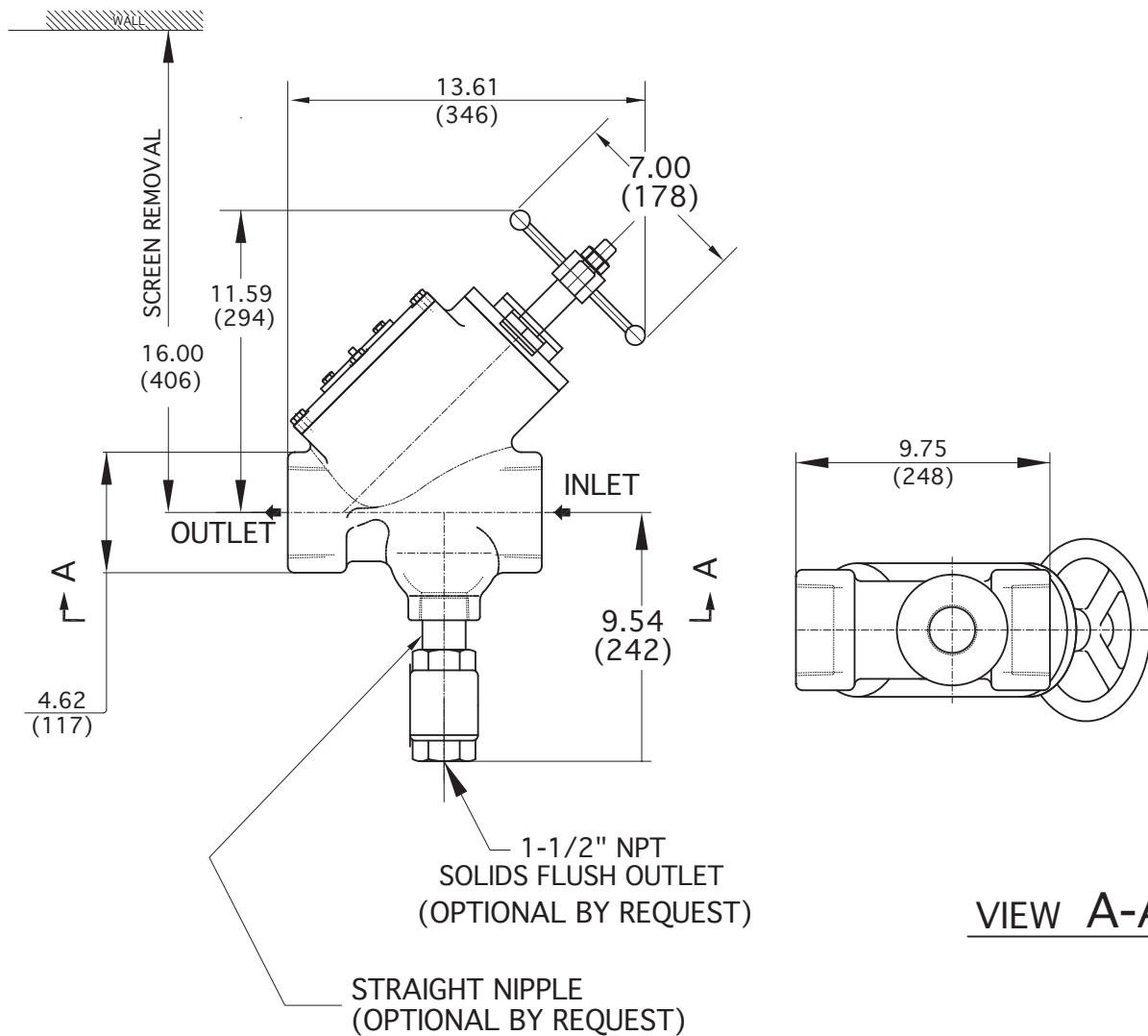


STRAINER SIZE	THREAD SIZE	APPROX. WEIGHT
1-1/2"	1-1/2" NPT CAST IRON	46 lb 21 kg
	1-1/2" NPT CAST STEEL and STAINLESS STEEL	49 lb 22 kg
2"	2" NPT CAST IRON	46 lb 21 kg
	2" NPT CAST STEEL and STAINLESS STEEL	49 lb 22 kg

ORIENTATION - DRAIN MUST BE DOWN.
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

2-1/2" & 3" MANUAL STRAINER

In-Line Flow Type TSH

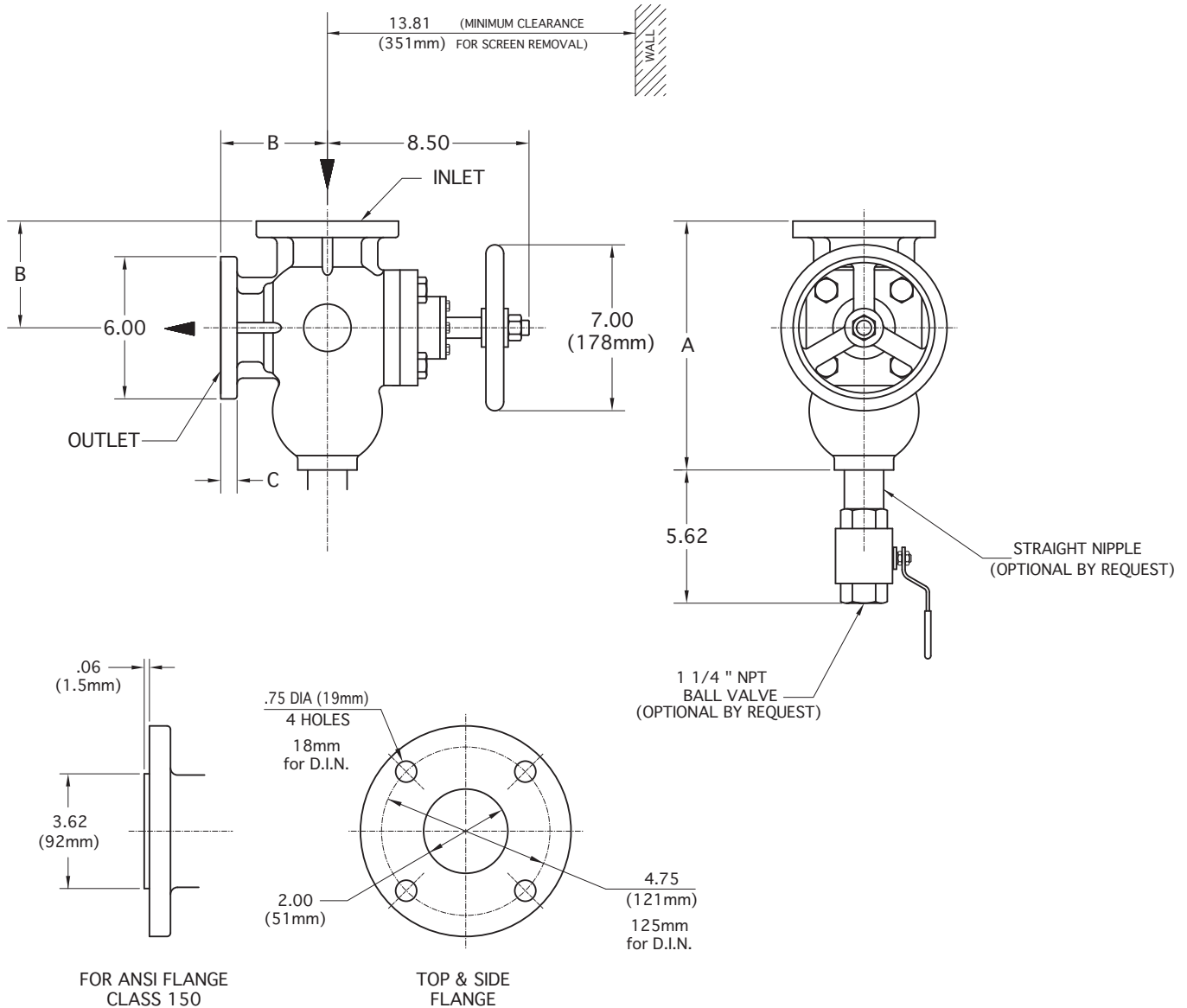


STRAINER SIZE	THREAD SIZE	APPROX. WEIGHT
2-1/2"	2-1/2" NPT CAST IRON	84 lb
		38 kg
	2-1/2" NPT CAST STEEL and STAINLESS STEEL	89 lb
		40 kg
3"	3" NPT CAST IRON	84 lb
		38 kg
	3" NPT CAST STEEL and STAINLESS STEEL	89 lb
		40 kg

ORIENTATION - DRAIN MUST BE DOWN.
 THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

2" MANUAL STRAINER

Angled Flow Type AH



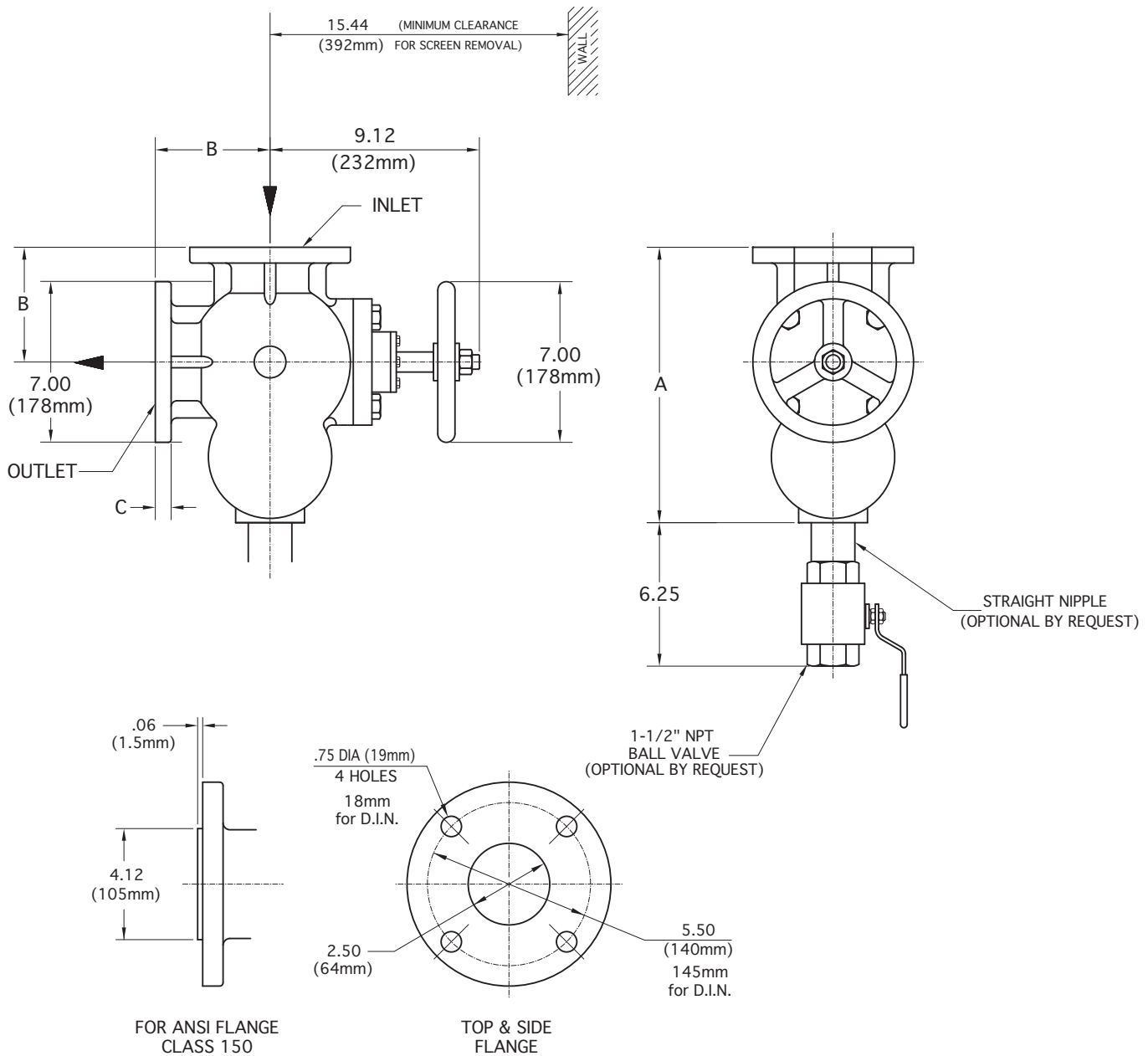
FLANGE SIZE		A	B	C	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	10.50	4.50	.69	55 lb
	MM	267	114	18	25 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	10.56	4.56	.75	58 lb
	MM	269	116	19	26 kg
50 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.				

ORIENTATION - DRAIN MUST BE DOWN

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

2-1/2" MANUAL STRAINER

Angled Flow Type AH



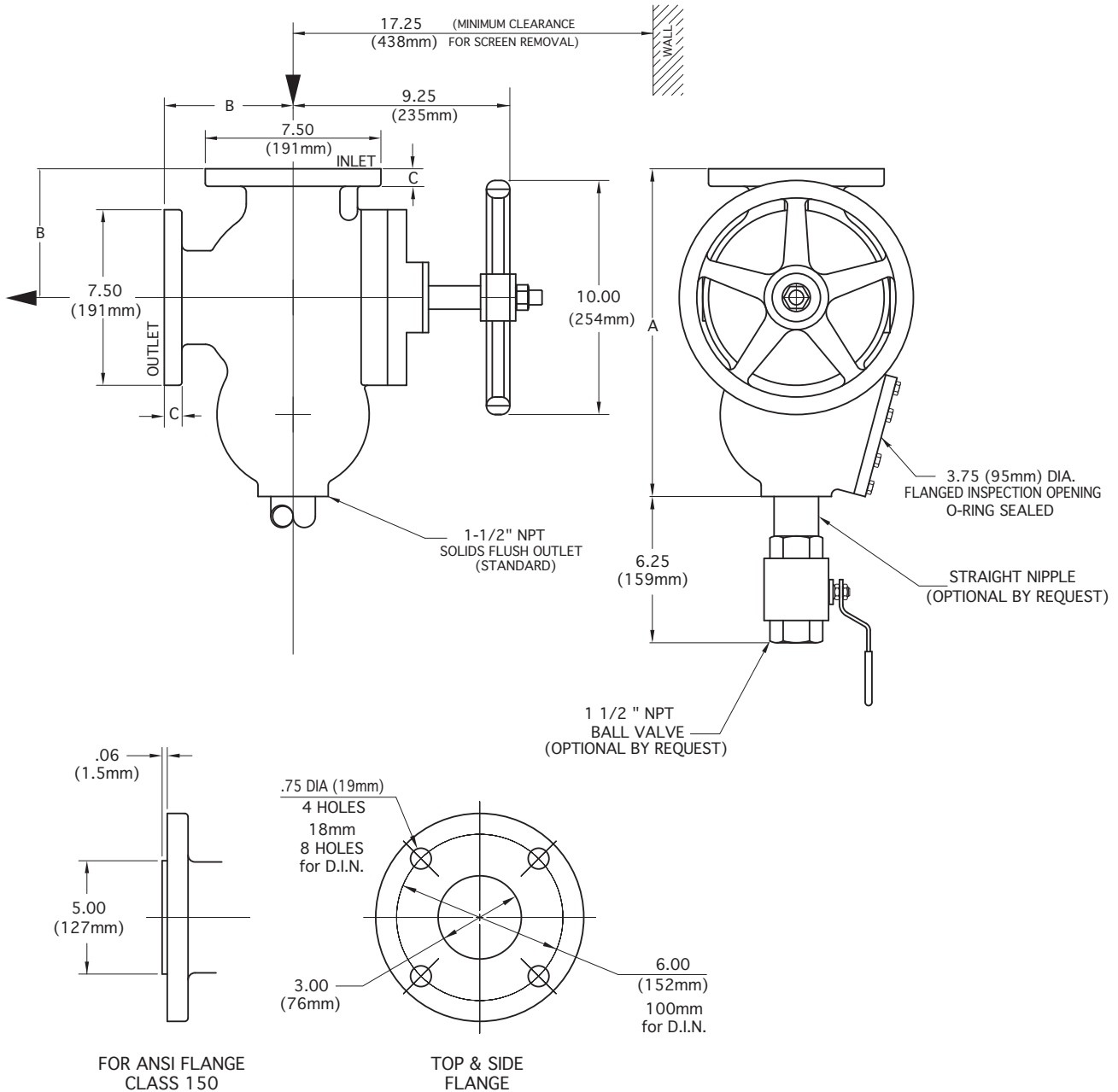
FLANGE SIZE		A	B	C	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	12.00	5.00	.69	70 lb
	MM	305	127	18	32 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	12.19	5.19	.88	74 lb
	MM	310	132	22	34 kg
65 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.				

ORIENTATION - DRAIN MUST BE DOWN

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3" MANUAL STRAINER

Angled Flow Type AH



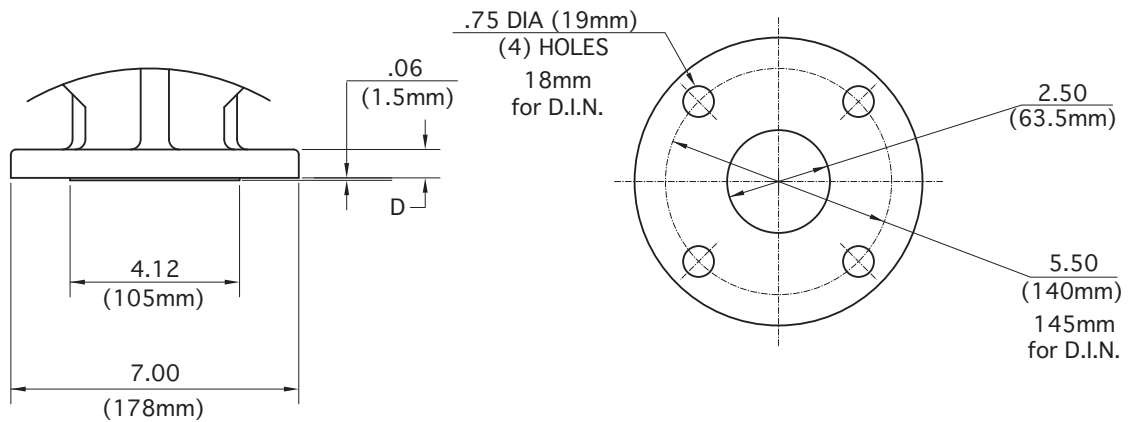
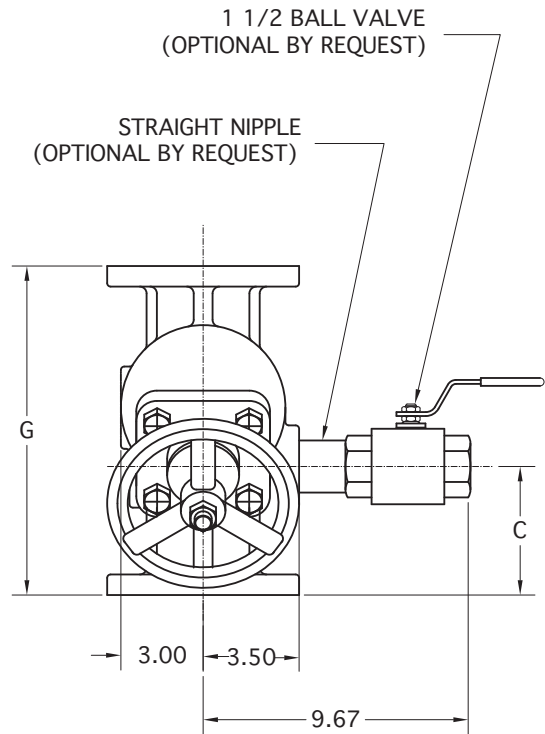
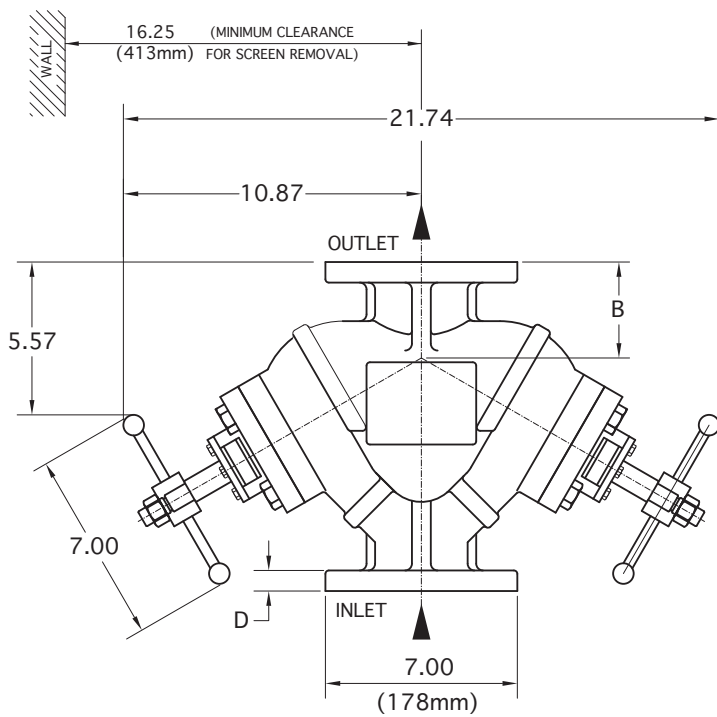
FLANGE SIZE		A	B	C	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	14.00	5.50	.75	101 lb
	MM	356	140	19	46 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	14.19	5.69	.94	105 lb
	MM	360	144	24	48 kg
80 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.				

ORIENTATION - DRAIN MUST BE DOWN

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2-1/2" MANUAL STRAINER

In-Line Flow Type DH



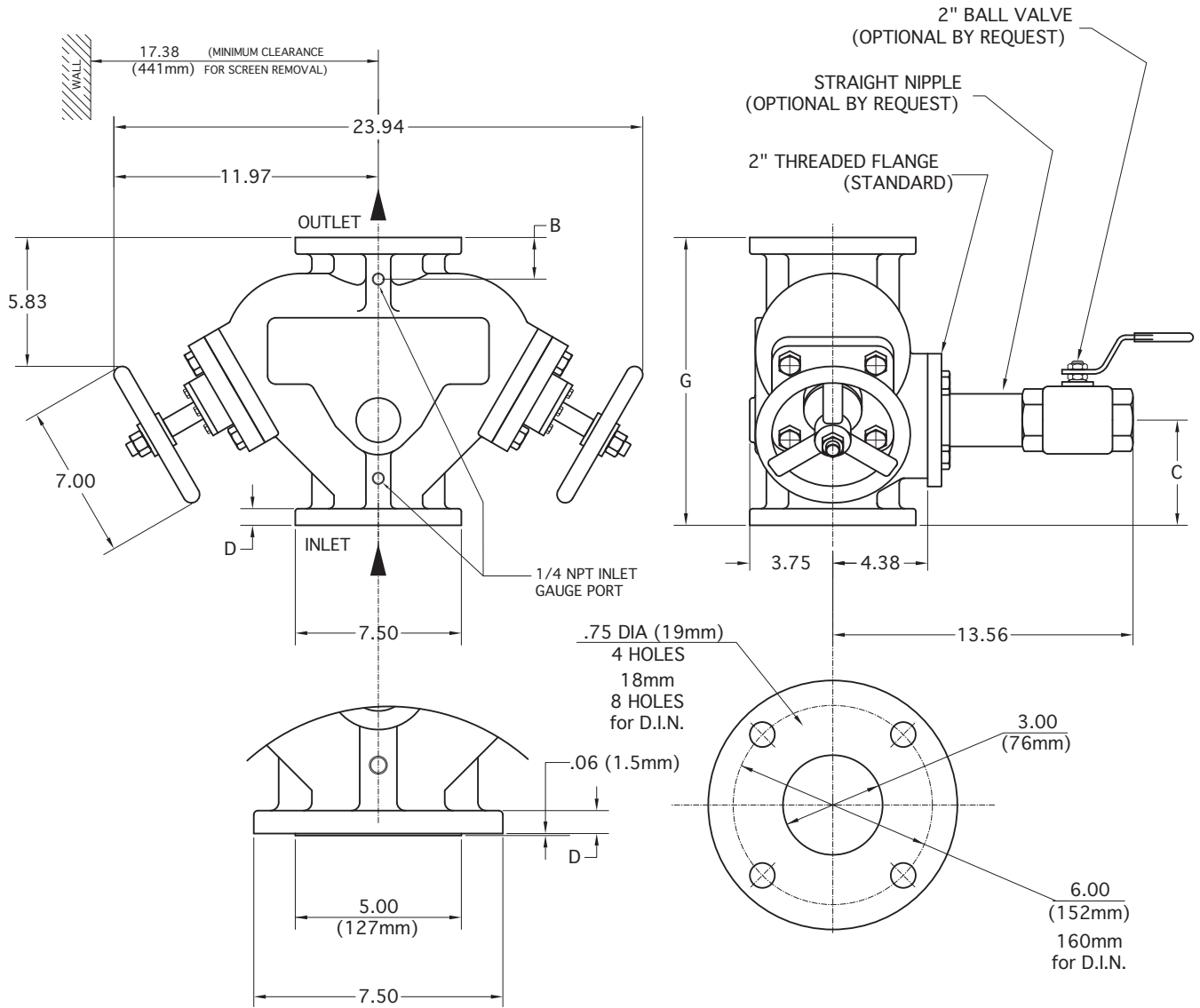
FLANGE SIZE		B	C	D	G	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	3.50	4.69	.75	12.00	100 lb
	MM	89	119	19	305	45 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	3.62	4.81	.88	12.25	105 lb
	MM	92	122	22	311	48 kg
65 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.					

ORIENTATION - DRAIN MUST BE DOWN

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

3" MANUAL STRAINER

In-Line Flow Type DH



FOR ANSI FLANGE CLASS 150

TOP & BOTTOM FLANGES

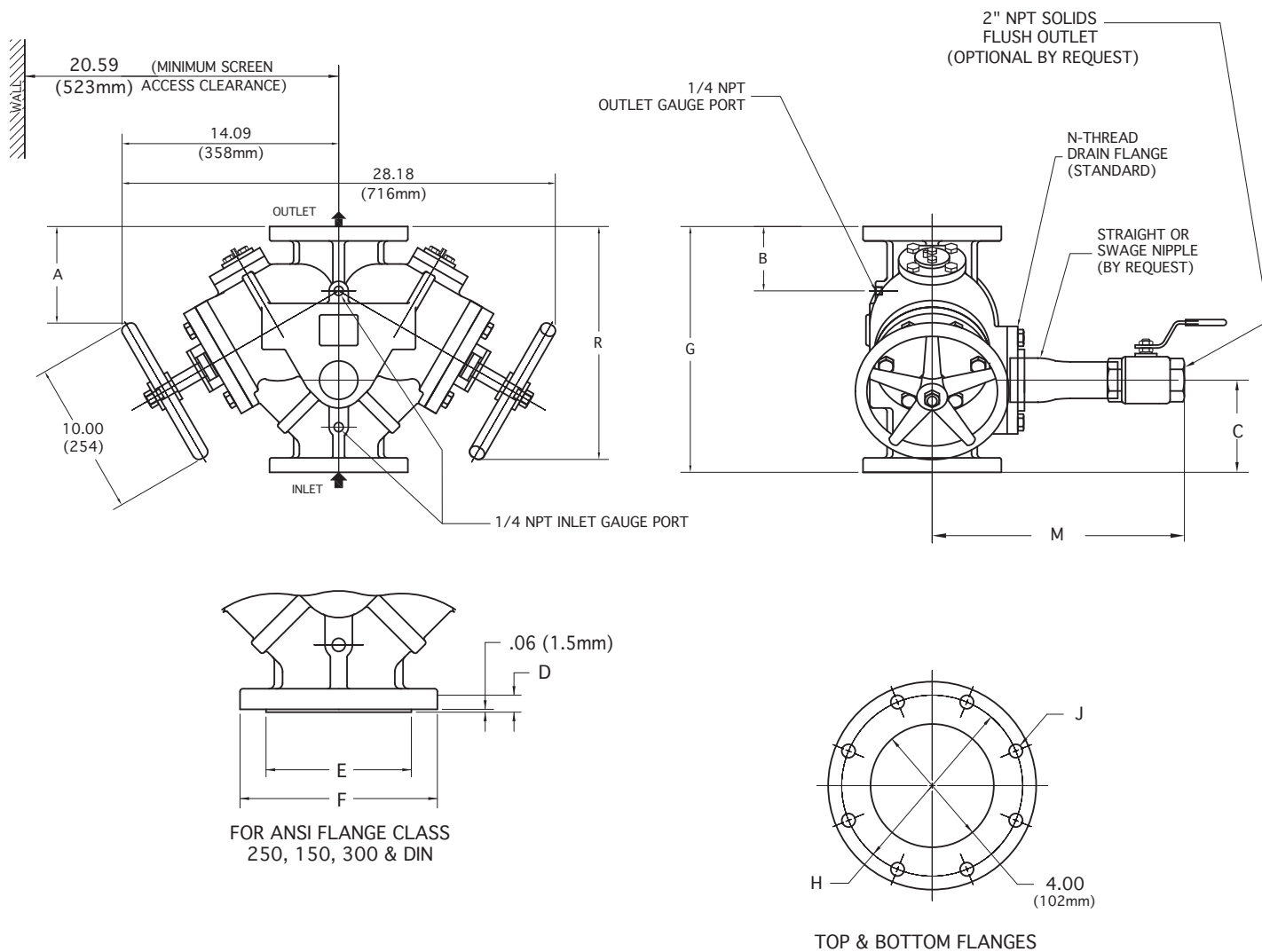
FLANGE SIZE		B	C	D	G	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	1.88	4.75	.75	13.00	135 lb
	MM	48	121	19	330	61 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	2.06	4.94	.94	13.38	145 lb
	MM	52	125	24	340	66 kg
80 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.					

ORIENTATION - DRAIN MUST BE DOWN

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

4" MANUAL STRAINER

In-Line Flow Type DH



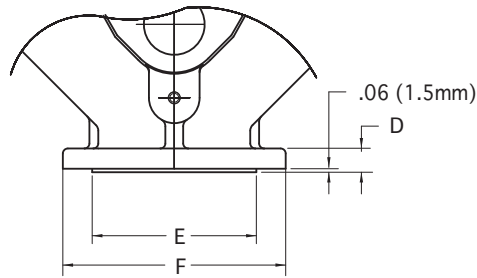
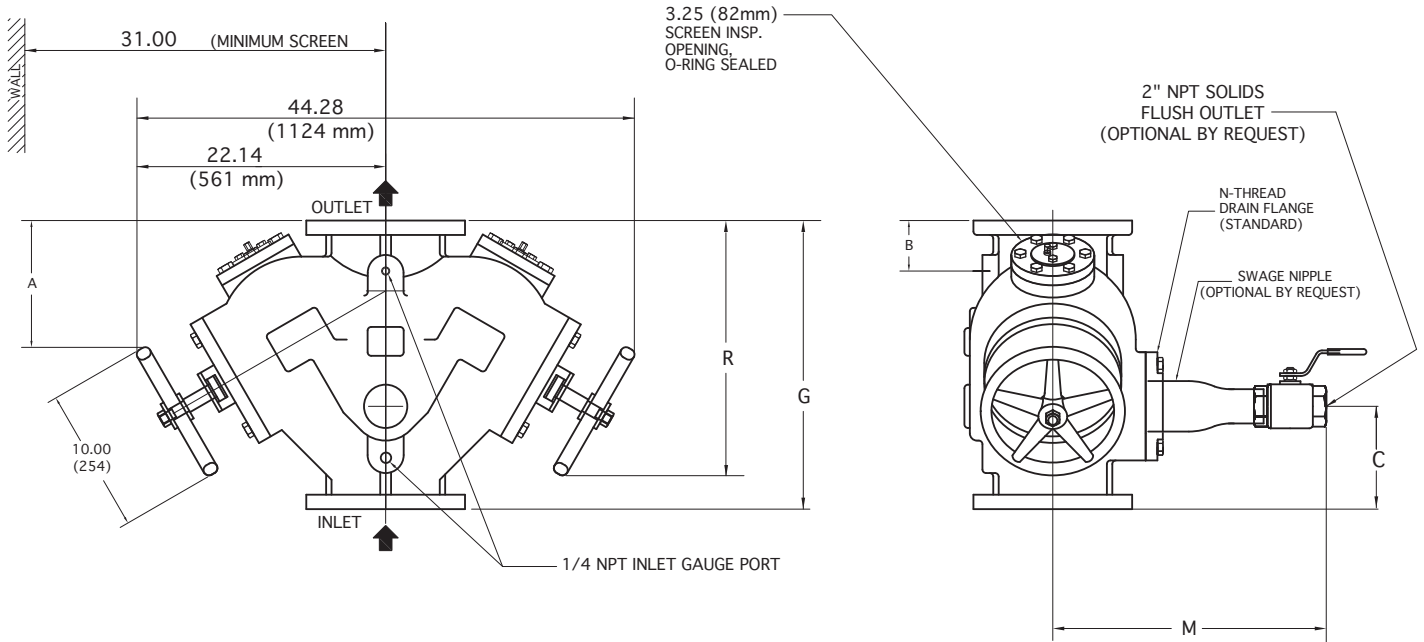
30

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES)		M	R	N DRAIN FLANGE SIZE	APPROX. WEIGHT
										No.	DIA.				
ANSI class 125 CAST IRON	INCH	6.29	4.19	6.00	.94	NA	9.00	16.00	7.50	8	.75	16.41	15.16	2-1/2" NPT	170 lb
	MM	160	106	152	24	NA	229	406	191	8	19	416	385		77 kg
ANSI class 250 CAST IRON	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.88	8	.88	12.54	15.47	2" NPT	190 lb
	MM	168	114	160	32	176	254	422	200	8	22	318	393		86 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	6.29	4.19	6.00	.94	6.19	9.00	16.00	7.50	8	.75	13.79	15.16	2" NPT	180 lb
	MM	160	106	152	24	157	229	406	191	8	19	350	385		82 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.88	8	.88	14.10	15.47	2" NPT	200 lb
	MM	168	114	160	32	176	254	422	200	8	22	358	393		90 kg
100 DN 10 DIN 2501	INCH	6.29	4.19	6.00	.94	6.19	9.00	16.00	7.09	8	.71	13.79	15.16	2" NPT	180 lb
	MM	160	106	152	24	157	229	406	180	8	18	350	385		82 kg
100 DN 16 DIN 2501	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.09	8	.71	14.10	15.47	2" NPT	200 lb
	MM	168	114	160	32	176	254	422	180	8	18	358	393		90 kg

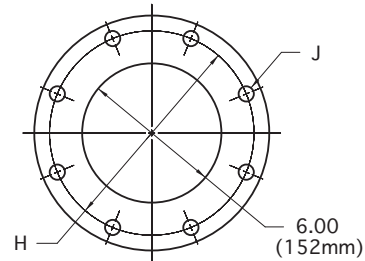
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

6" MANUAL STRAINER

In-Line Flow Type DH



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN



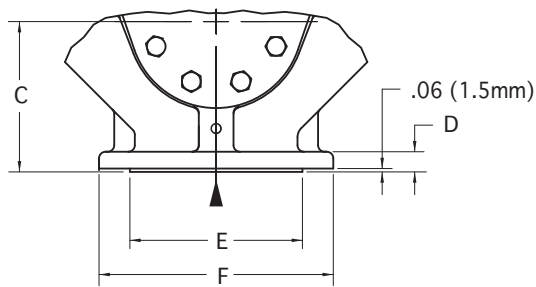
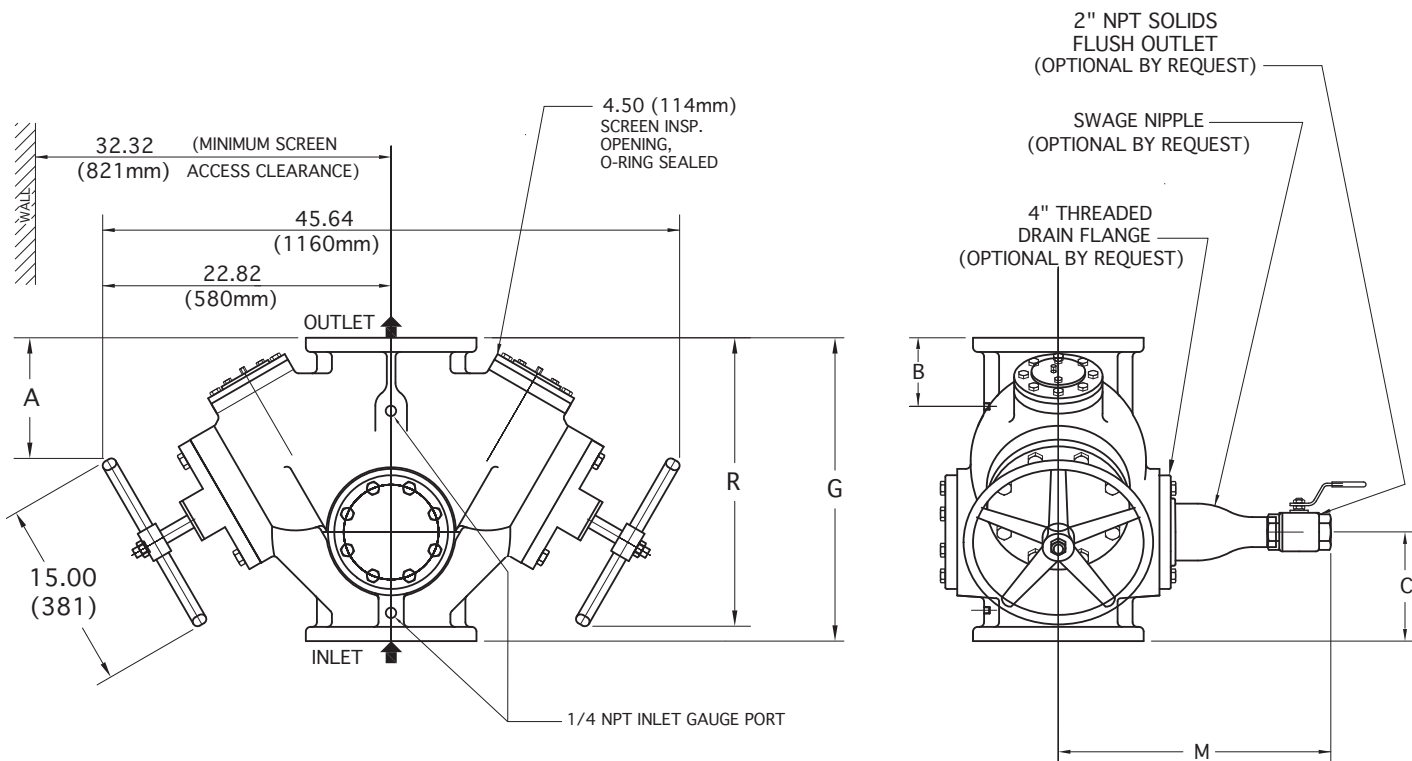
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES) No. DIA.	M	R	N DRAIN FLANGE SIZE	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	8.79	3.50	7.12	1.00	NA	11.00	20.00	9.50	8 .88	18.95	17.68	3" NPT	400 lb
	MM	223	89	181	25	NA	279	508	241	8 22	481	449		182 kg
ANSI class 250 CAST IRON	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	10.62	12 .88	19.06	18.12	2 1/2"	425 lb
	MM	234	135	192	37	246	318	530	270	12 22	484	460		193 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	8.79	4.88	7.12	1.00	8.50	11.00	20.00	9.50	8 .88	19.62	17.68	3"	430 lb
	MM	223	124	181	25	216	279	508	241	8 22	498	449		195 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	10.62	12 .88	19.00	18.12	2 1/2"	455 lb
	MM	234	135	192	37	246	318	530	270	12 22	483	460		207 kg
150 DN 10 DIN 2501	INCH	8.79	4.88	7.12	1.00	8.50	11.00	20.00	9.45	8 .71	19.62	17.68	3"	430 lb
	MM	223	124	181	25	216	279	508	240	8 18	498	449		195 kg
150 DN 16 DIN 2501	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	9.45	8 .81	19.00	18.12	2 1/2"	455 lb
	MM	234	135	192	37	246	318	530	240	8 22	483	460		207 kg

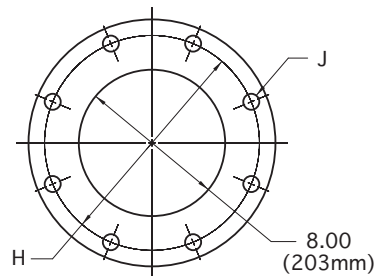
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

8" MANUAL STRAINER

In-Line Flow Type DH



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN



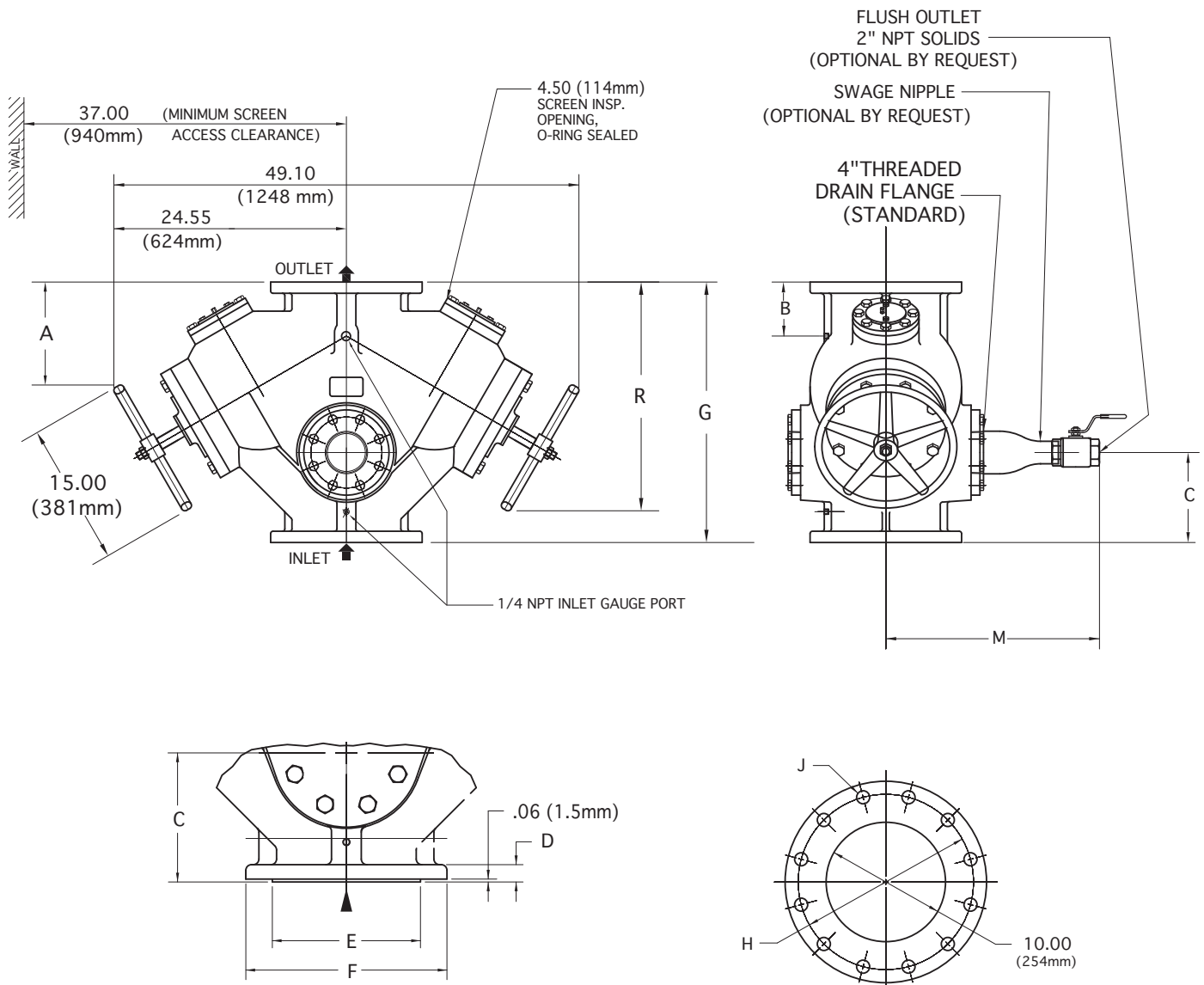
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES) No. DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	9.54	5.38	8.62	1.12	NA	13.50	24.00	11.75	8 .88	21.56	22.82	700 lb
	MM	242	137	219	29	NA	343	610	298	8 22	548	580	318 kg
ANSI class 250 CAST IRON	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	13.00	12 1.00	22.00	23.32	750 lb
	MM	255	149	232	41	303	381	635	330	12 25	558	592	341 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	9.54	5.38	8.62	1.12	10.62	13.50	24.00	11.75	8 .88	21.56	22.82	750 lb
	MM	242	137	219	29	270	343	610	298	8 22	548	580	341 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	13.00	12 1.00	22.12	23.32	800 lb
	MM	255	149	232	41	303	381	635	330	12 25	562	592	364 kg
200 DN 10 DIN 2501	INCH	9.54	5.38	8.62	1.12	10.62	13.50	24.00	11.61	8 .87	21.56	22.82	750 lb
	MM	242	137	219	29	270	343	610	295	8 22	548	580	341 kg
200 DN 16 DIN 2501	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	11.61	12 .87	22.12	23.32	800 lb
	MM	255	149	232	41	303	381	635	295	12 22	562	592	364 kg

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10" MANUAL STRAINER

In-Line Flow Type DH



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN

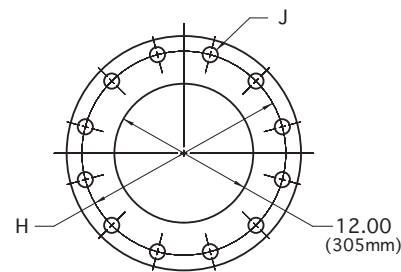
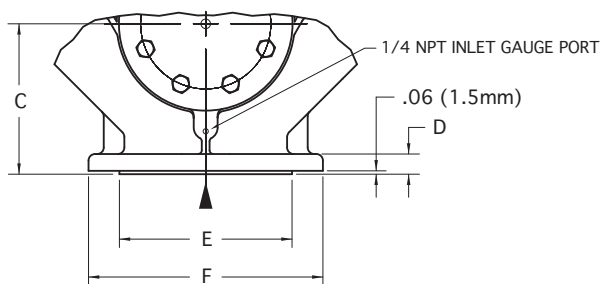
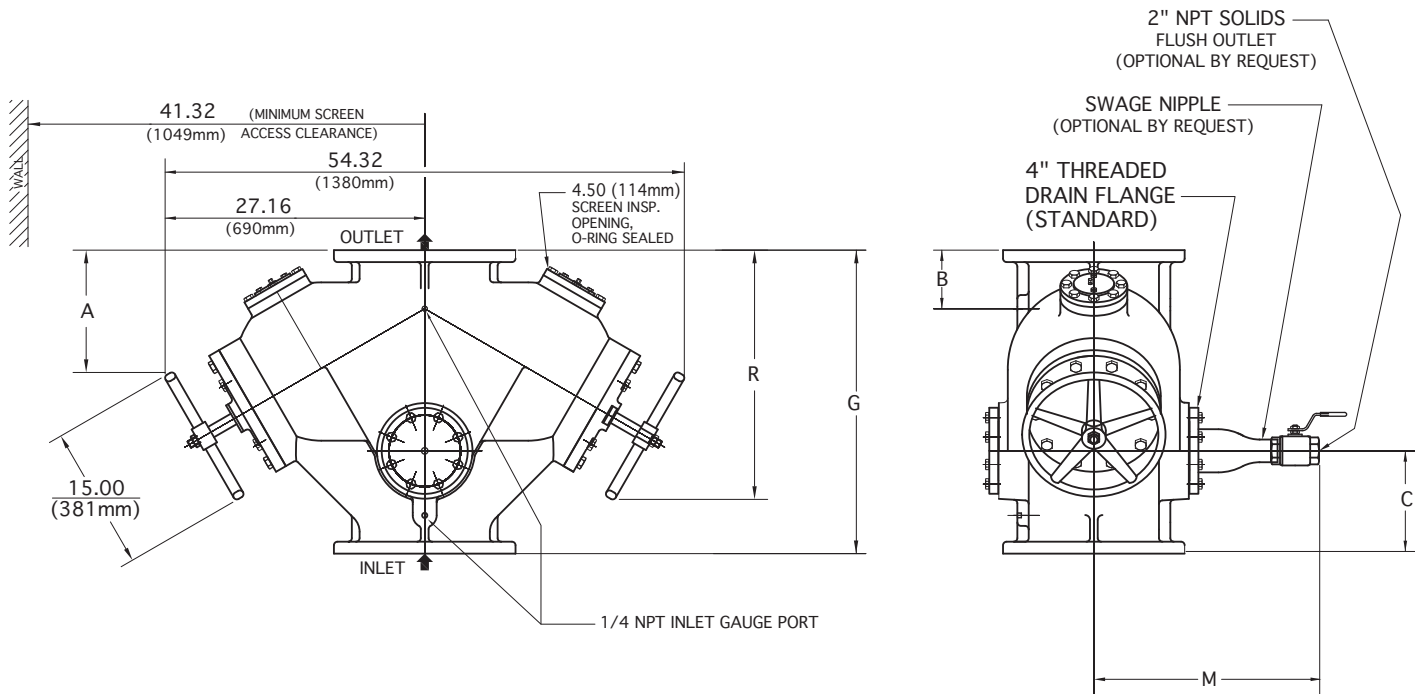
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J No.	(HOLES) DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	10.97	5.69	9.50	1.19	NA	16.00	27.50	14.25	12	1.00	22.55	24.15	950 lb
	MM	279	144	241	30	NA	406	699	362	12	25	573	613	432 kg
ANSI class 250 CAST IRON	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	15.25	16	1.12	23.00	24.84	1025 lb
	MM	296	162	259	48	357	445	733	387	16	29	584	630	466 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	10.97	5.69	9.50	1.19	12.75	16.00	27.50	14.25	12	1.00	22.55	24.15	1000 lb
	MM	279	144	241	30	324	406	699	362	12	25	573	613	454 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	15.25	16	1.12	23.12	24.84	1075 lb
	MM	296	162	259	48	357	445	733	387	16	29	587	630	488 kg
250 DN 10 DIN 2501	INCH	10.97	5.69	9.50	1.19	12.75	16.00	27.50	13.75	12	.87	22.55	24.15	1000 lb
	MM	279	144	241	30	324	406	699	350	12	22	573	613	454 kg
250 DN 16 DIN 2501	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	13.98	12	1.02	23.12	24.84	1075 lb
	MM	296	162	259	48	357	445	733	355	12	26	587	630	488 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

12" MANUAL STRAINER

In-Line Flow Type DH



FOR ANSI FLANGE CLASS
250, 150, 300 & DIN

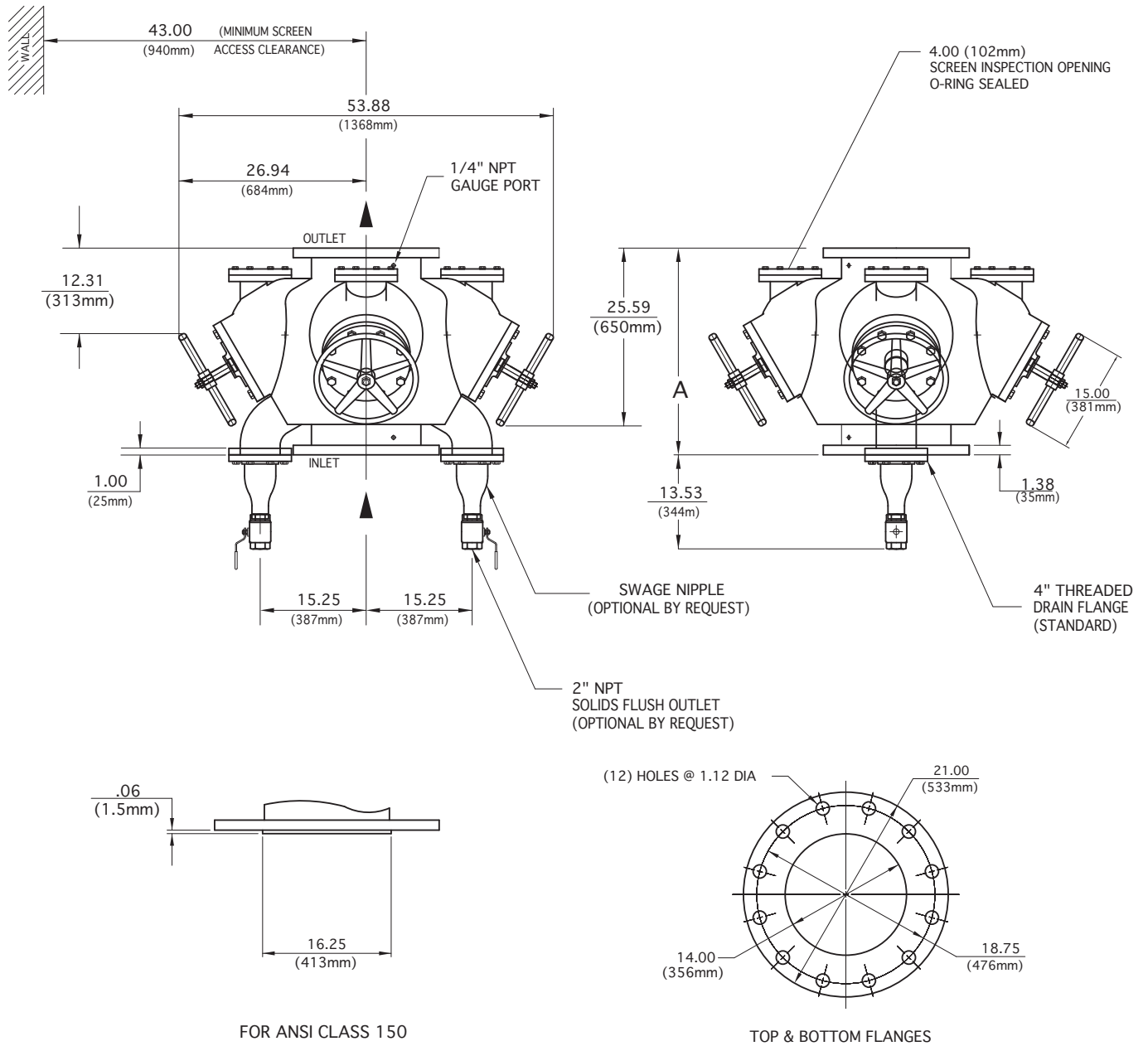
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES) No.	DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	12.80	6.12	10.75	1.25	NA	19.00	31.75	17.00	12	1.00	23.55	26.07	1350 lb
	MM	325	156	273	32	NA	483	806	432	12	25	598	662	614 kg
ANSI class 250 CAST IRON	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	17.75	16	1.25	24.00	26.82	1450 lb
	MM	344	175	292	51	417	521	844	451	16	32	609	681	659 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	12.80	6.12	10.75	1.25	15.00	19.00	31.75	17.00	12	1.00	23.55	26.07	1450 lb
	MM	325	156	273	32	381	483	806	432	12	25	598	662	659 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	17.75	16	1.25	24.12	26.82	1550 lb
	MM	344	175	292	51	417	521	844	451	16	32	612	681	704 kg
300 DN 10 DIN 2501	INCH	12.80	6.12	10.75	1.25	15.00	19.00	31.75	15.75	12	.87	23.55	26.07	1450 lb
	MM	325	156	273	32	381	483	806	400	12	22	598	662	659 kg
300 DN 16 DIN 2501	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	16.14	12	1.02	24.12	26.82	1550 lb
	MM	344	175	292	51	417	521	844	410	12	26	612	681	704 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

14" MANUAL STRAINER

In-Line Flow Type QH

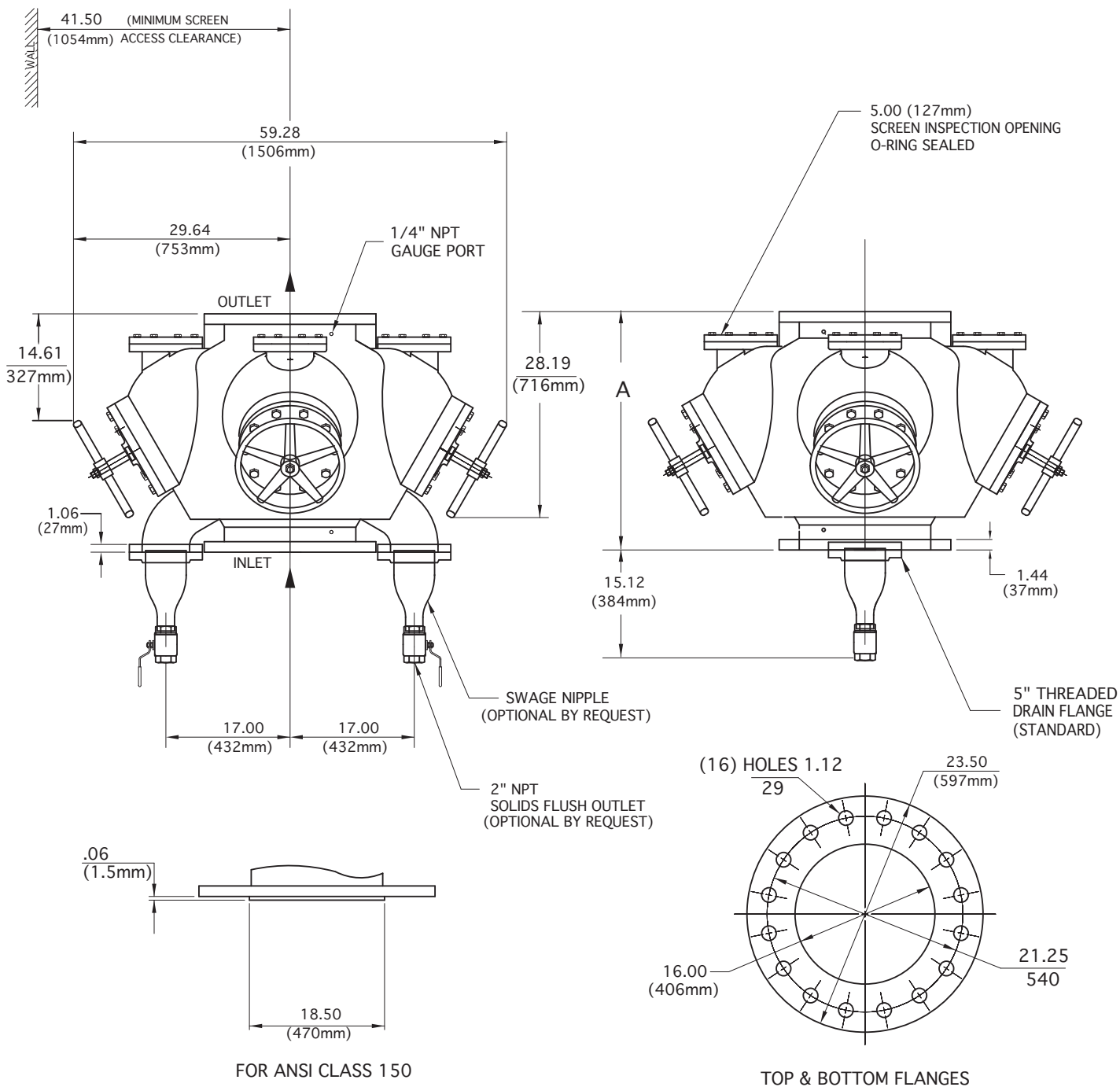


FLANGE SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	29.75	2275 lb
	MM	756	1034 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	29.44	2475 lb
	MM	748	1125 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

16" MANUAL STRAINER

In-Line Flow Type QH



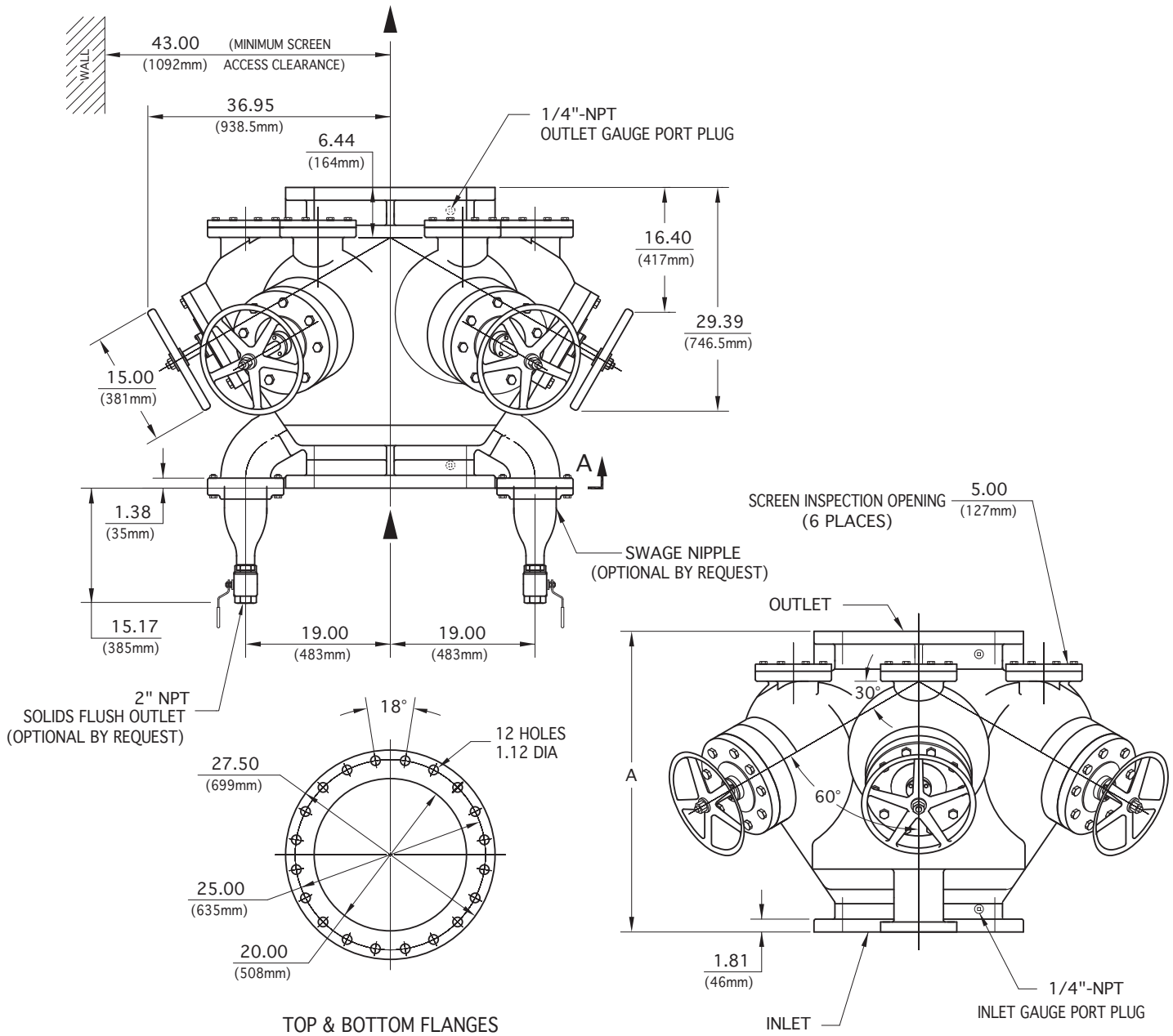
36

FLANGE SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	32.62	2980 lb
	MM	829	1350 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	32.28	3210 lb
	MM	820	1460 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

20" MANUAL STRAINER

In-Line Flow Type HH

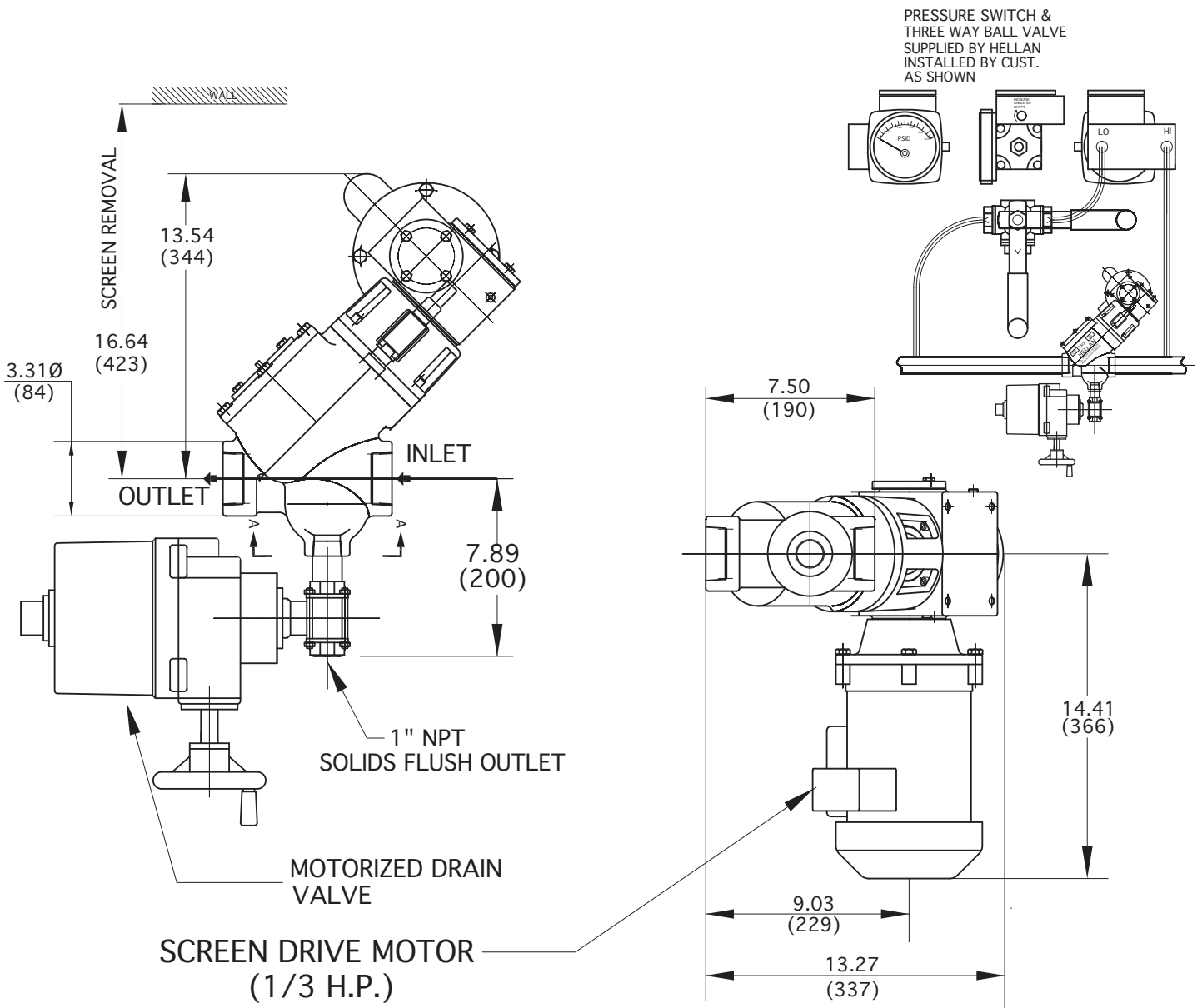


SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	39.50	3950 lb
	MM	1003	1790 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	39.09	4309 lb
	MM	993	1960 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

1-1/2" & 2" AUTOMATIC STRAINER

In-Line Flow Type TSA



VIEW A-A

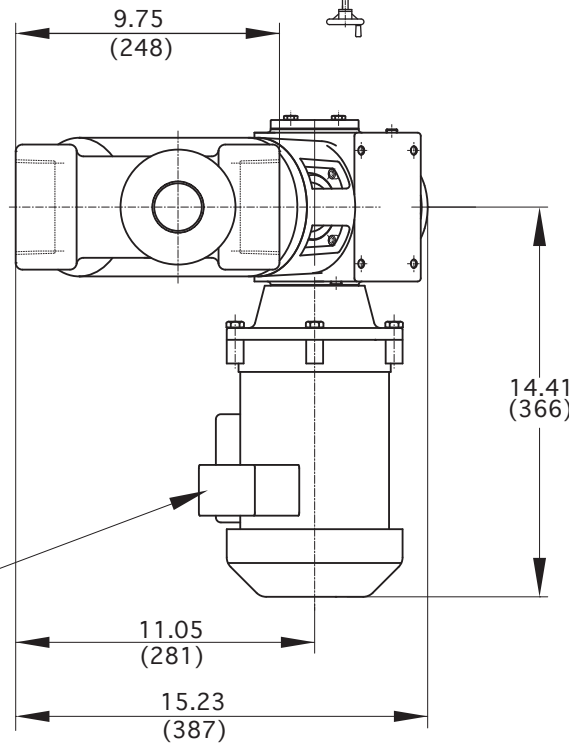
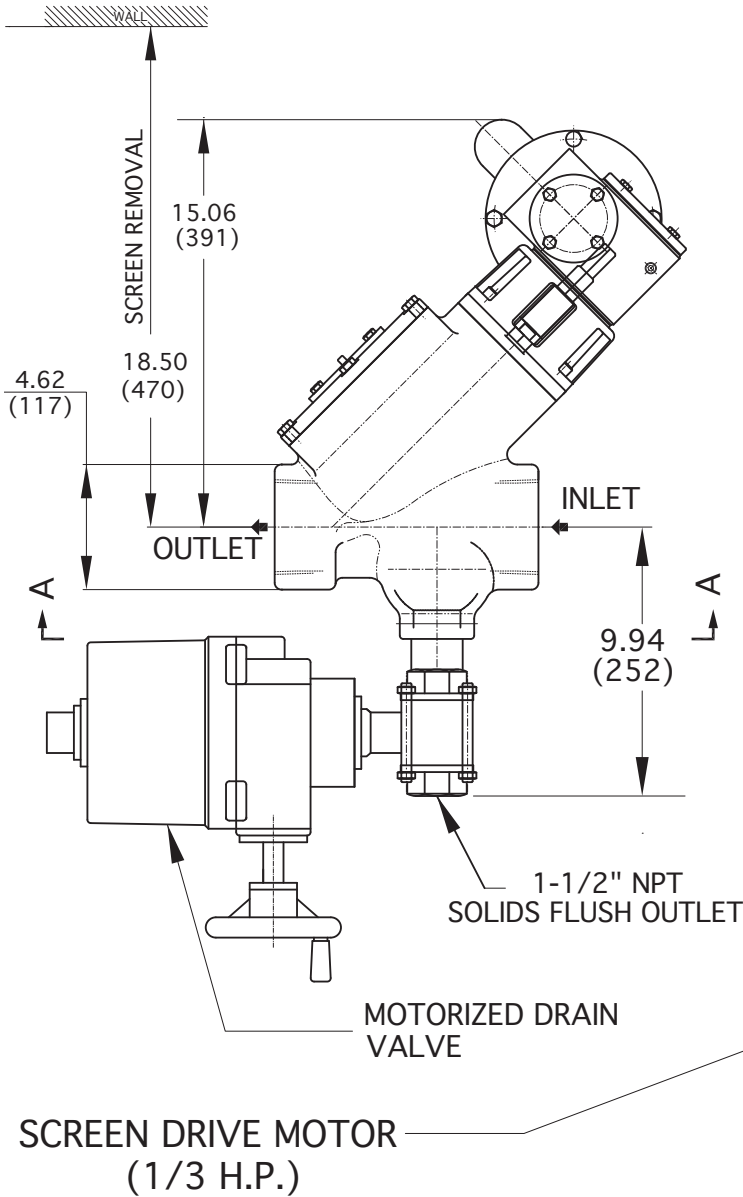
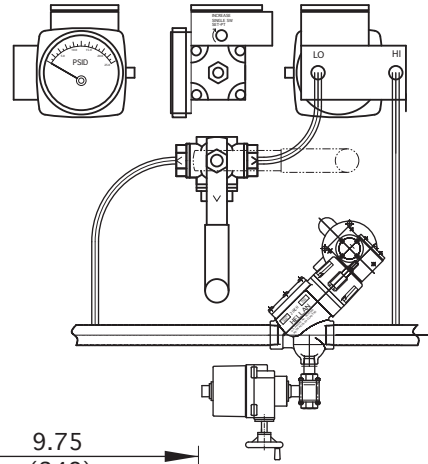
STRAINER SIZE	THREAD SIZE	APPROX. WEIGHT
1-1/2"	1-1/2" NPT CAST IRON	46 lb 21 kg
	1-1/2" NPT CAST STEEL and STAINLESS STEEL	49 lb 22 kg
2"	2" NPT CAST IRON	46 lb 21 kg
	2" NPT CAST STEEL and STAINLESS STEEL	49 lb 22 kg

ORIENTATION - DRAIN MUST BE DOWN.
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

2-1/2" & 3" AUTOMATIC STRAINER

In-Line Flow Type TSA

PRESSURE SWITCH &
THREE WAY BALL VALVE
SUPPLIED BY HELLAN
INSTALLED BY CUST.
AS SHOWN



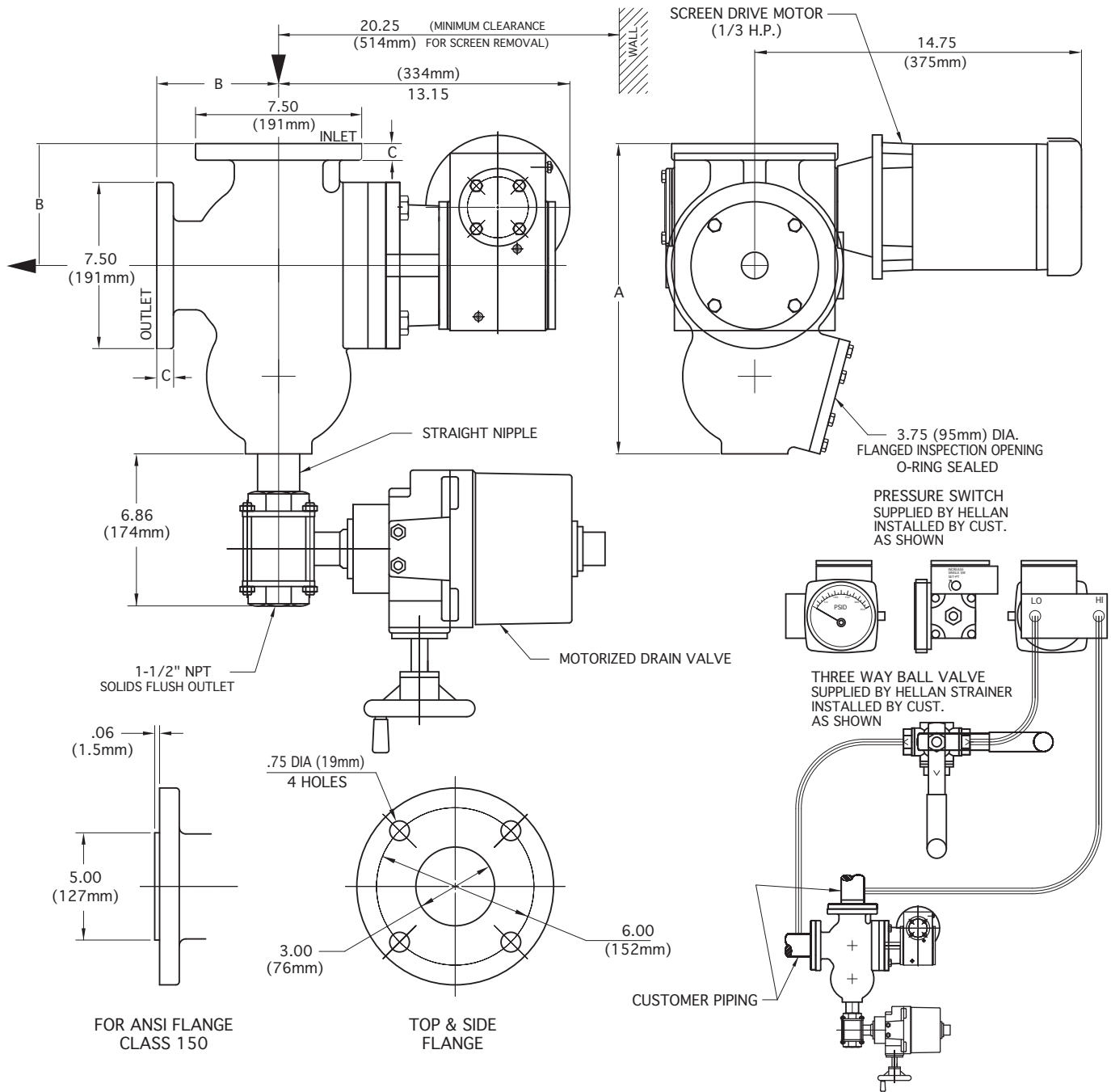
VIEW A-A

STRAINER SIZE	THREAD SIZE	APPROX. WEIGHT
2-1/2"	2-1/2" NPT CAST IRON	84 lb 38 kg
	2-1/2" NPT CAST STEEL and STAINLESS STEEL	89 lb 40 kg
3"	3" NPT CAST IRON	84 lb 38 kg
	3" NPT CAST STEEL and STAINLESS STEEL	89 lb 40 kg

ORIENTATION - DRAIN MUST BE DOWN.
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

3" AUTOMATIC STRAINER

Angle Flow Type AA



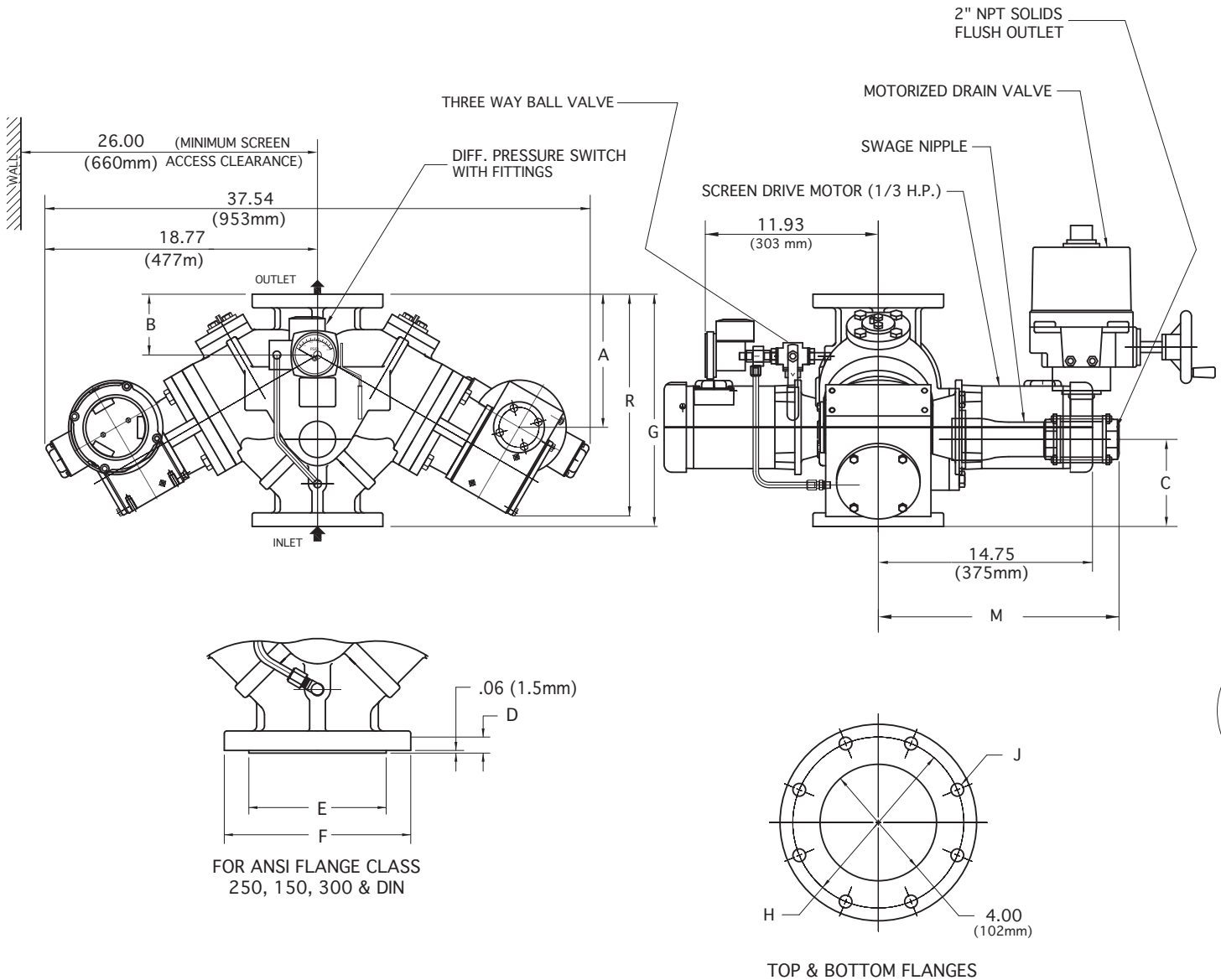
FLANGE SIZE		A	B	C	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	14.00	5.50	.75	155 lb
	MM	356	140	19	69 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	14.19	5.69	.94	163 lb
	MM	360	144	24	74 kg
80 DN 10 DIN 2501	FLANGE DRILLING (NUMBER AND SIZE OF HOLES AND BOLT CIRCLE) IS IN ACCORDANCE WITH D.I.N. STANDARDS. ALL OTHER APPLICABLE DIMENSIONS ARE IN ACCORDANCE WITH ANSI STANDARDS ABOVE.				

ORIENTATION - DRAIN MUST BE DOWN

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

4" AUTOMATIC STRAINER

In-Line Flow Type DA

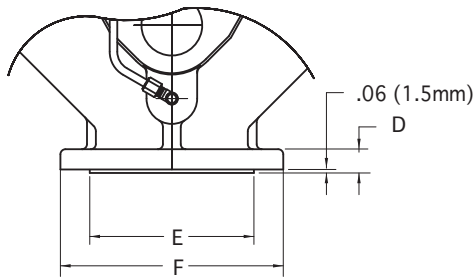
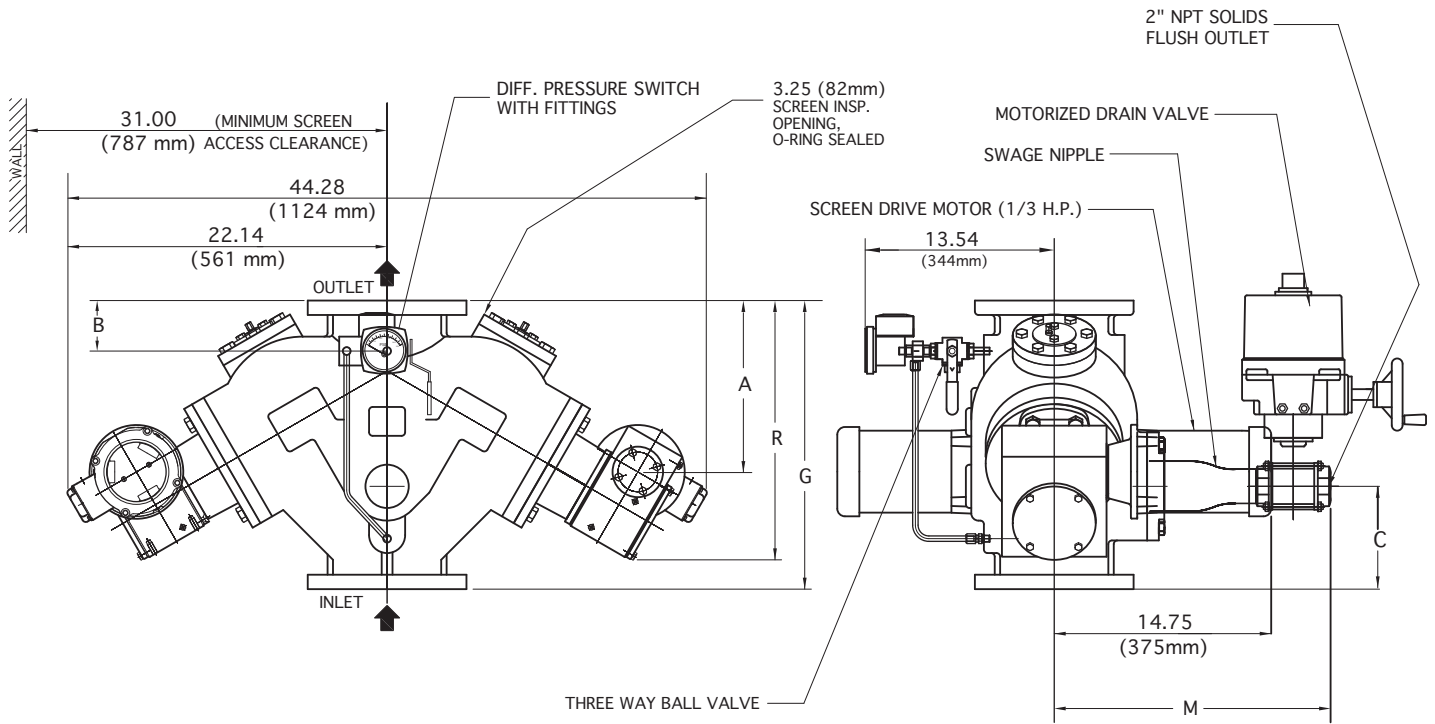


FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES)		M	R	N DRAIN FLANGE SIZE	APPROX. WEIGHT
										No.	DIA.				
ANSI class 125 CAST IRON	INCH	6.29	4.19	6.00	.94	NA	9.00	16.00	7.50	8	.75	16.41	15.16	2-1/2" NPT	170 lb
	MM	160	106	152	24	NA	229	406	191	8	19	416	385		77 kg
ANSI class 250 CAST IRON	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.88	8	.88	12.54	15.47	2" NPT	190 lb
	MM	168	114	160	32	176	254	422	200	8	22	318	393		86 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	6.29	4.19	6.00	.94	6.19	9.00	16.00	7.50	8	.75	13.79	15.16	2" NPT	180 lb
	MM	160	106	152	24	157	229	406	191	8	19	350	385		82 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.88	8	.88	14.10	15.47	2" NPT	200 lb
	MM	168	114	160	32	176	254	422	200	8	22	358	393		90 kg
100 DN 10 DIN 2501	INCH	6.29	4.19	6.00	.94	6.19	9.00	16.00	7.09	8	.71	13.79	15.16	2" NPT	180 lb
	MM	160	106	152	24	157	229	406	180	8	18	350	385		82 kg
100 DN 16 DIN 2501	INCH	6.60	4.50	6.31	1.25	6.94	10.00	16.62	7.09	8	.71	14.10	15.47	2" NPT	200 lb
	MM	168	114	160	32	176	254	422	180	8	18	358	393		90 kg

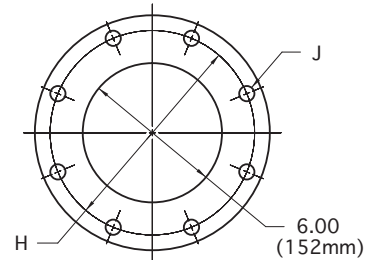
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

6" AUTOMATIC STRAINER

In-Line Flow Type DA



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN



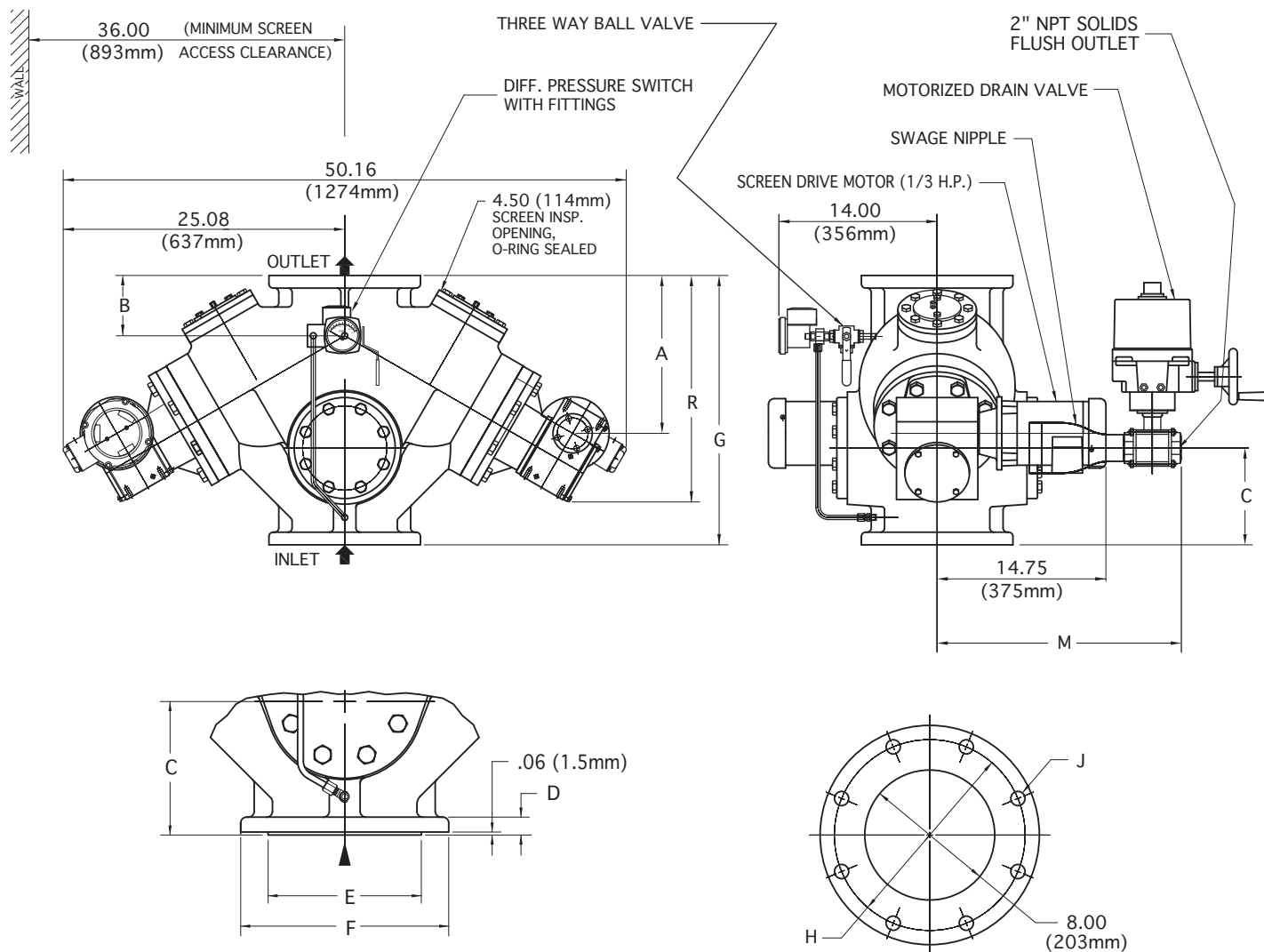
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES) No. DIA.	M	R	N DRAIN FLANGE SIZE	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	8.79	3.50	7.12	1.00	NA	11.00	20.00	9.50	8 .88	18.95	17.68	3" NPT	400 lb
	MM	223	89	181	25	NA	279	508	241	8 22	481	449		182 kg
ANSI class 250 CAST IRON	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	10.62	12 .88	19.06	18.12	2 1/2"	425 lb
	MM	234	135	192	37	246	318	530	270	12 22	484	460		193 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	8.79	4.88	7.12	1.00	8.50	11.00	20.00	9.50	8 .88	19.62	17.68	3"	430 lb
	MM	223	124	181	25	216	279	508	241	8 22	498	449		195 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	10.62	12 .88	19.00	18.12	2 1/2"	455 lb
	MM	234	135	192	37	246	318	530	270	12 22	483	460		207 kg
150 DN 10 DIN 2501	INCH	8.79	4.88	7.12	1.00	8.50	11.00	20.00	9.45	8 .71	19.62	17.68	3"	430 lb
	MM	223	124	181	25	216	279	508	240	8 18	498	449		195 kg
150 DN 16 DIN 2501	INCH	9.23	5.31	7.56	1.44	9.69	12.50	20.88	9.45	8 .81	19.00	18.12	2 1/2"	455 lb
	MM	234	135	192	37	246	318	530	240	8 22	483	460		207 kg

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8" AUTOMATIC STRAINER

In-Line Flow Type DA



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN

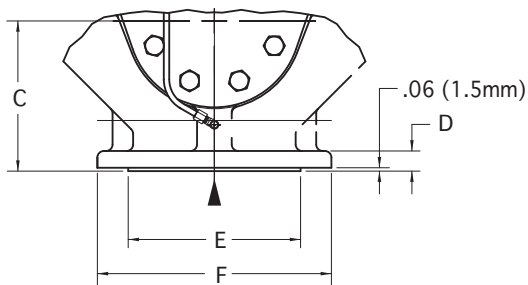
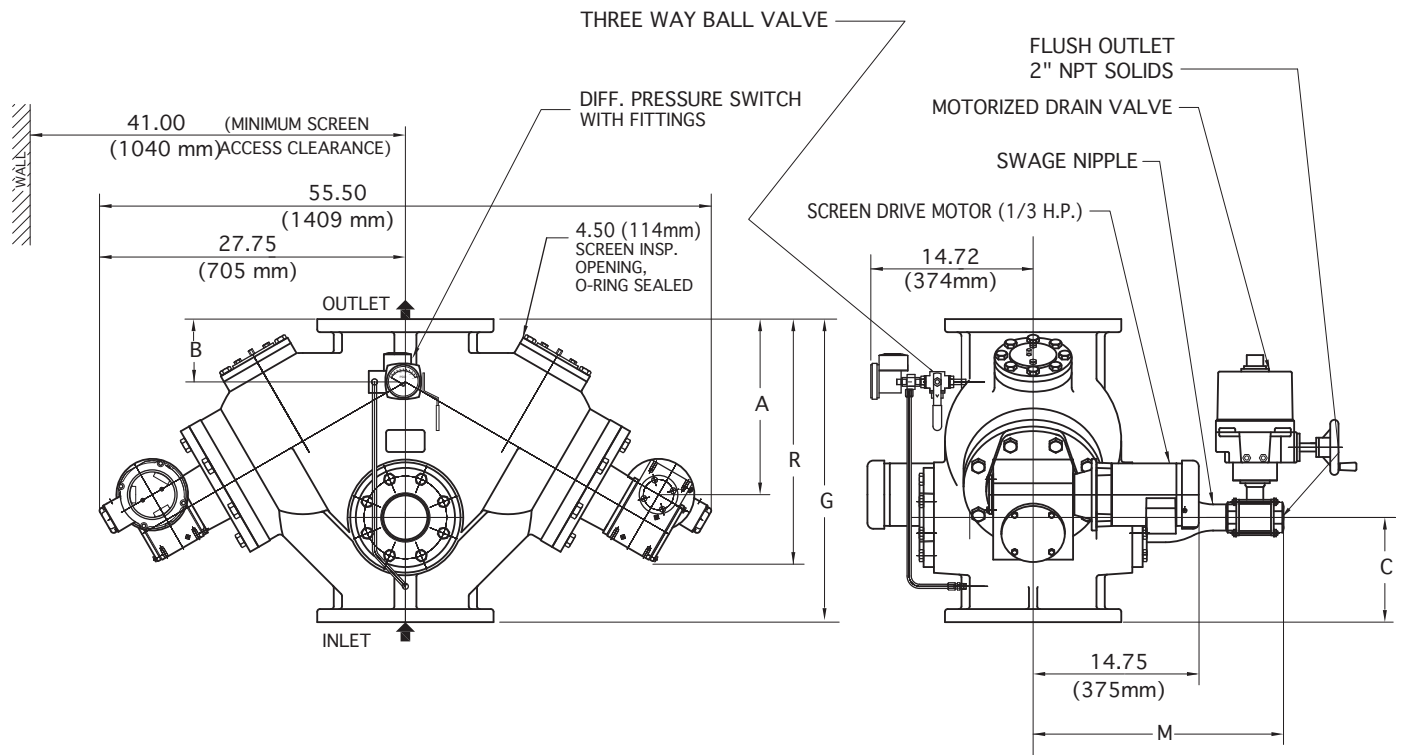
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J (HOLES) No.	J (HOLES) DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	9.54	5.38	8.62	1.12	NA	13.50	24.00	11.75	8	.88	21.56	22.82	700 lb
	MM	242	137	219	29	NA	343	610	298	8	22	548	580	318 kg
ANSI class 250 CAST IRON	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	13.00	12	1.00	22.00	23.32	750 lb
	MM	255	149	232	41	303	381	635	330	12	25	558	592	341 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	9.54	5.38	8.62	1.12	10.62	13.50	24.00	11.75	8	.88	21.56	22.82	750 lb
	MM	242	137	219	29	270	343	610	298	8	22	548	580	341 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	13.00	12	1.00	22.12	23.32	800 lb
	MM	255	149	232	41	303	381	635	330	12	25	562	592	364 kg
200 DN 10 DIN 2501	INCH	9.54	5.38	8.62	1.12	10.62	13.50	24.00	11.61	8	.87	21.56	22.82	750 lb
	MM	242	137	219	29	270	343	610	295	8	22	548	580	341 kg
200 DN 16 DIN 2501	INCH	10.04	5.88	9.12	1.62	11.94	15.00	25.00	11.61	12	.87	22.12	23.32	800 lb
	MM	255	149	232	41	303	381	635	295	12	22	562	592	364 kg

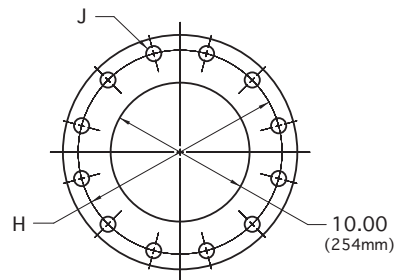
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

10" AUTOMATIC STRAINER

In-Line Flow Type DA



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN



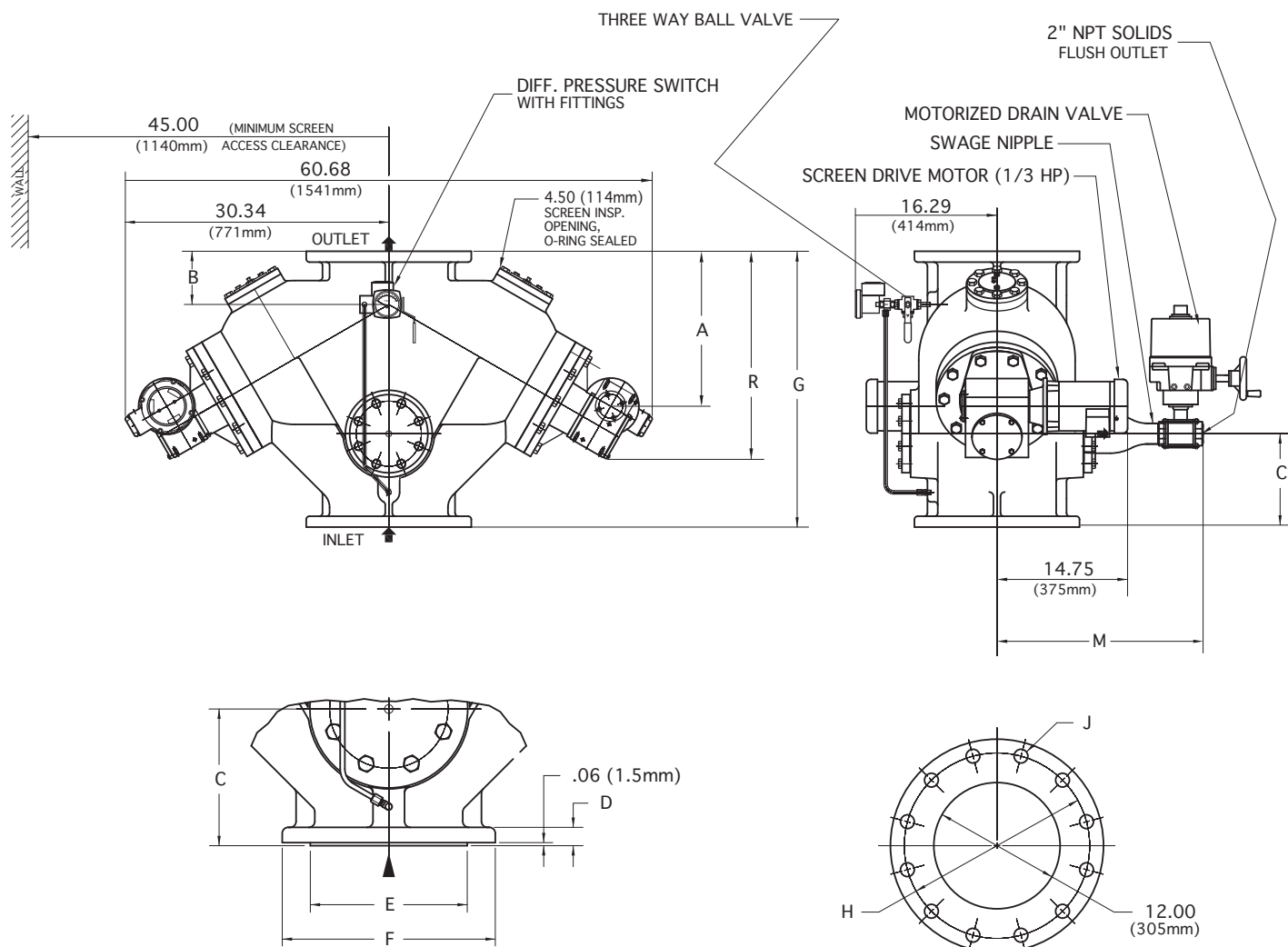
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J No.	(HOLES) DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	10.97	5.69	9.50	1.19	NA	16.00	27.50	14.25	12	1.00	22.55	24.15	950 lb
	MM	279	144	241	30	NA	406	699	362	12	25	573	613	432 kg
ANSI class 250 CAST IRON	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	15.25	16	1.12	23.00	24.84	1025 lb
	MM	296	162	259	48	357	445	733	387	16	29	584	630	466 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	10.97	5.69	9.50	1.19	12.75	16.00	27.50	14.25	12	1.00	22.55	24.15	1000 lb
	MM	279	144	241	30	324	406	699	362	12	25	573	613	454 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	15.25	16	1.12	23.12	24.84	1075 lb
	MM	296	162	259	48	357	445	733	387	16	29	587	630	488 kg
250 DN 10 DIN 2501	INCH	10.97	5.69	9.50	1.19	12.75	16.00	27.50	13.75	12	.87	22.55	24.15	1000 lb
	MM	279	144	241	30	324	406	699	350	12	22	573	613	454 kg
250 DN 16 DIN 2501	INCH	11.66	6.38	10.19	1.88	14.06	17.50	28.88	13.98	12	1.02	23.12	24.84	1075 lb
	MM	296	162	259	48	357	445	733	355	12	26	587	630	488 kg

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12" AUTOMATIC STRAINER

In-Line Flow Type DA



FOR ANSI FLANGE CLASS 250, 150, 300 & DIN

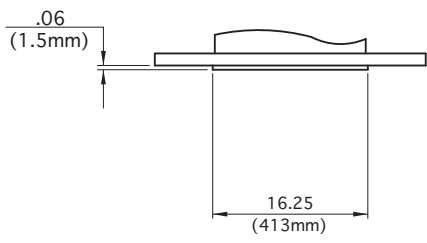
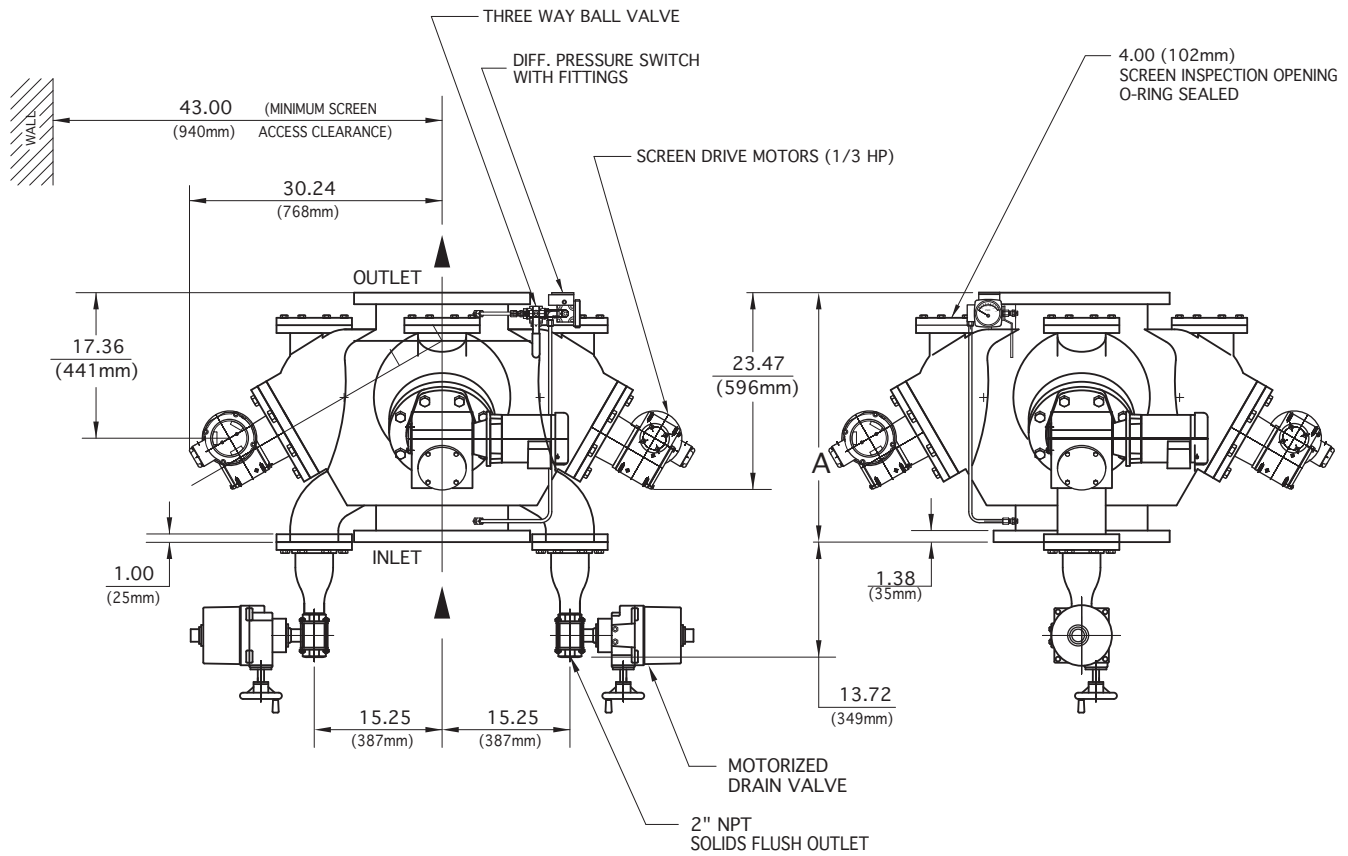
TOP & BOTTOM FLANGES

FLANGE SIZE		A	B	C	D	E	F	G	H	J No.	(HOLES) DIA.	M	R	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	12.80	6.12	10.75	1.25	NA	19.00	31.75	17.00	12	1.00	23.55	26.07	1350 lb
	MM	325	156	273	32	NA	483	806	432	12	25	598	662	614 kg
ANSI class 250 CAST IRON	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	17.75	16	1.25	24.00	26.82	1450 lb
	MM	344	175	292	51	417	521	844	451	16	32	609	681	659 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	12.80	6.12	10.75	1.25	15.00	19.00	31.75	17.00	12	1.00	23.55	26.07	1450 lb
	MM	325	156	273	32	381	483	806	432	12	25	598	662	659 kg
ANSI class 300 CAST STEEL & STAINLESS STEEL	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	17.75	16	1.25	24.12	26.82	1550 lb
	MM	344	175	292	51	417	521	844	451	16	32	612	681	704 kg
300 DN 10 DIN 2501	INCH	12.80	6.12	10.75	1.25	15.00	19.00	31.75	15.75	12	.87	23.55	26.07	1450 lb
	MM	325	156	273	32	381	483	806	400	12	22	598	662	659 kg
300 DN 16 DIN 2501	INCH	13.55	6.88	11.50	2.00	16.44	20.50	33.25	16.14	12	1.02	24.12	26.82	1550 lb
	MM	344	175	292	51	417	521	844	410	12	26	612	681	704 kg

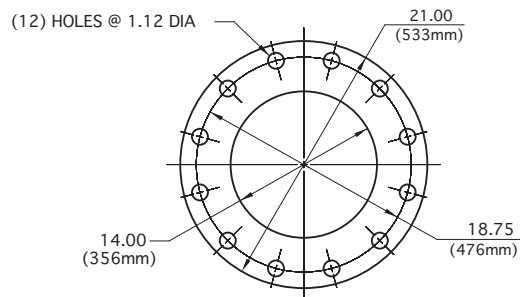
THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

14" AUTOMATIC STRAINER

In-Line Flow Type QA



FOR ANSI CLASS 150



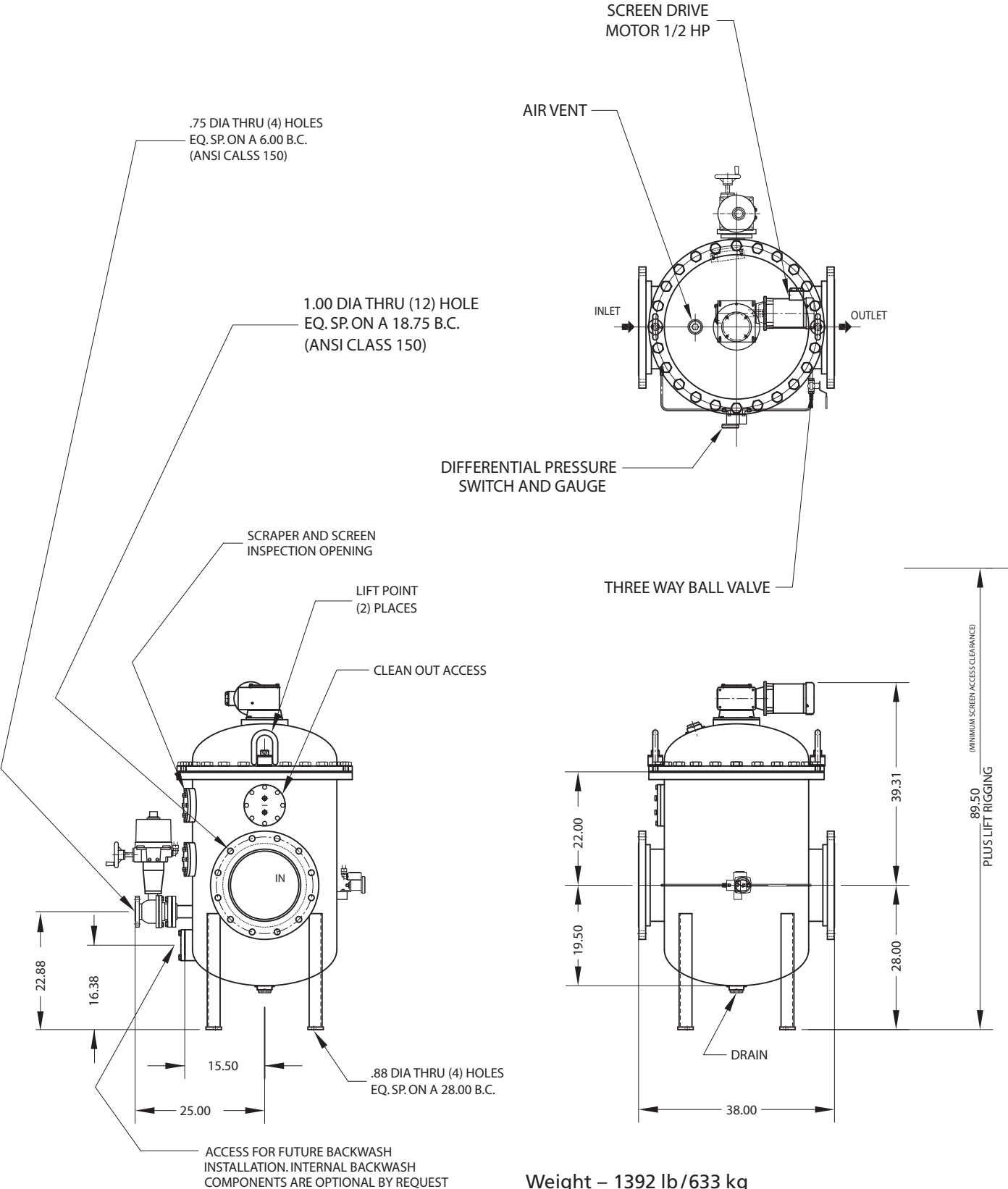
TOP & BOTTOM FLANGES

FLANGE SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	29.75	4000 lb
	MM	756	1818 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	29.44	4200 lb
	MM	748	1909 kg

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14" AUTOMATIC STRAINER

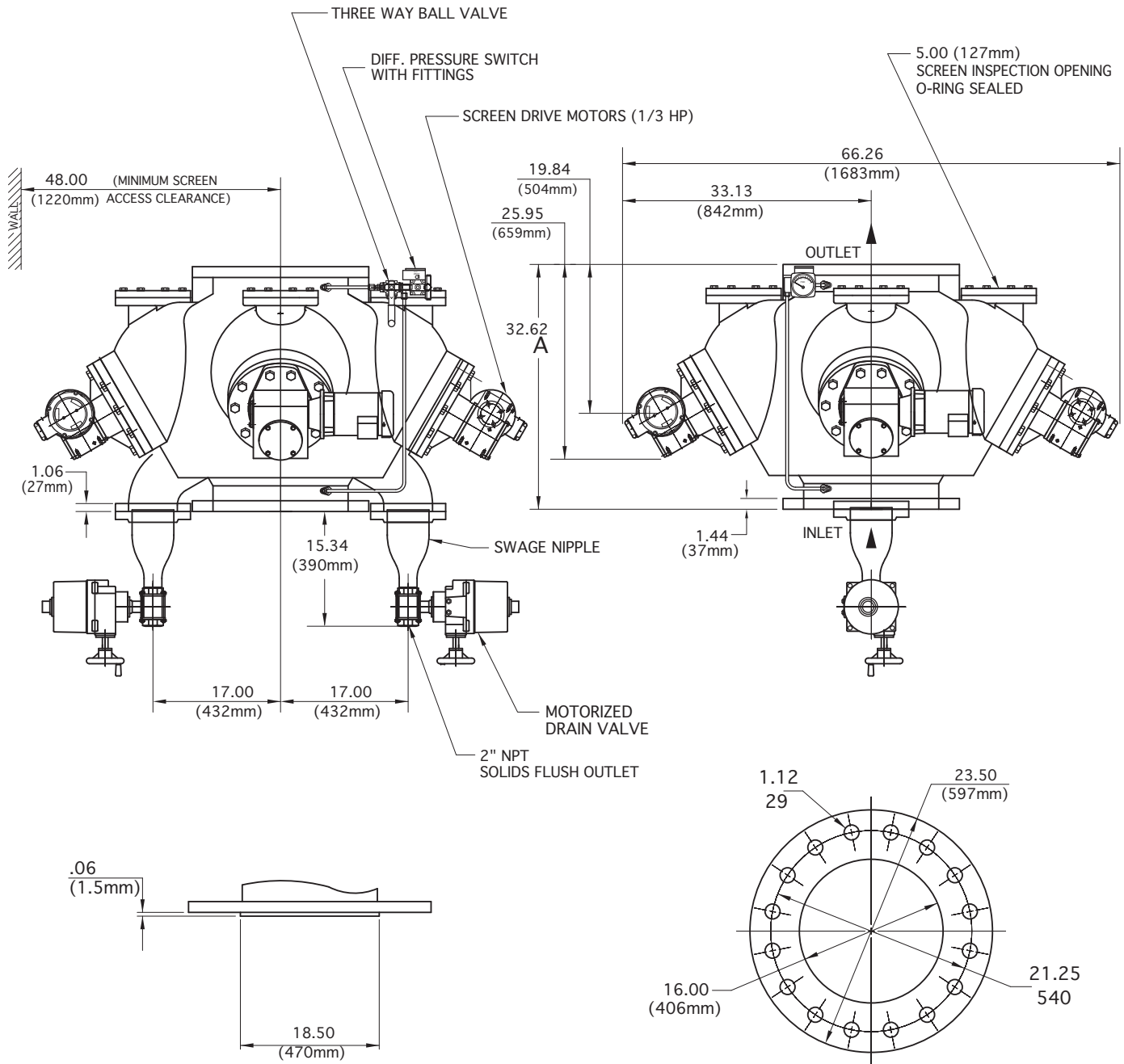
In-Line Flow Type WSA



THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

16" AUTOMATIC STRAINER

In-Line Flow Type QA



FOR ANSI CLASS 150

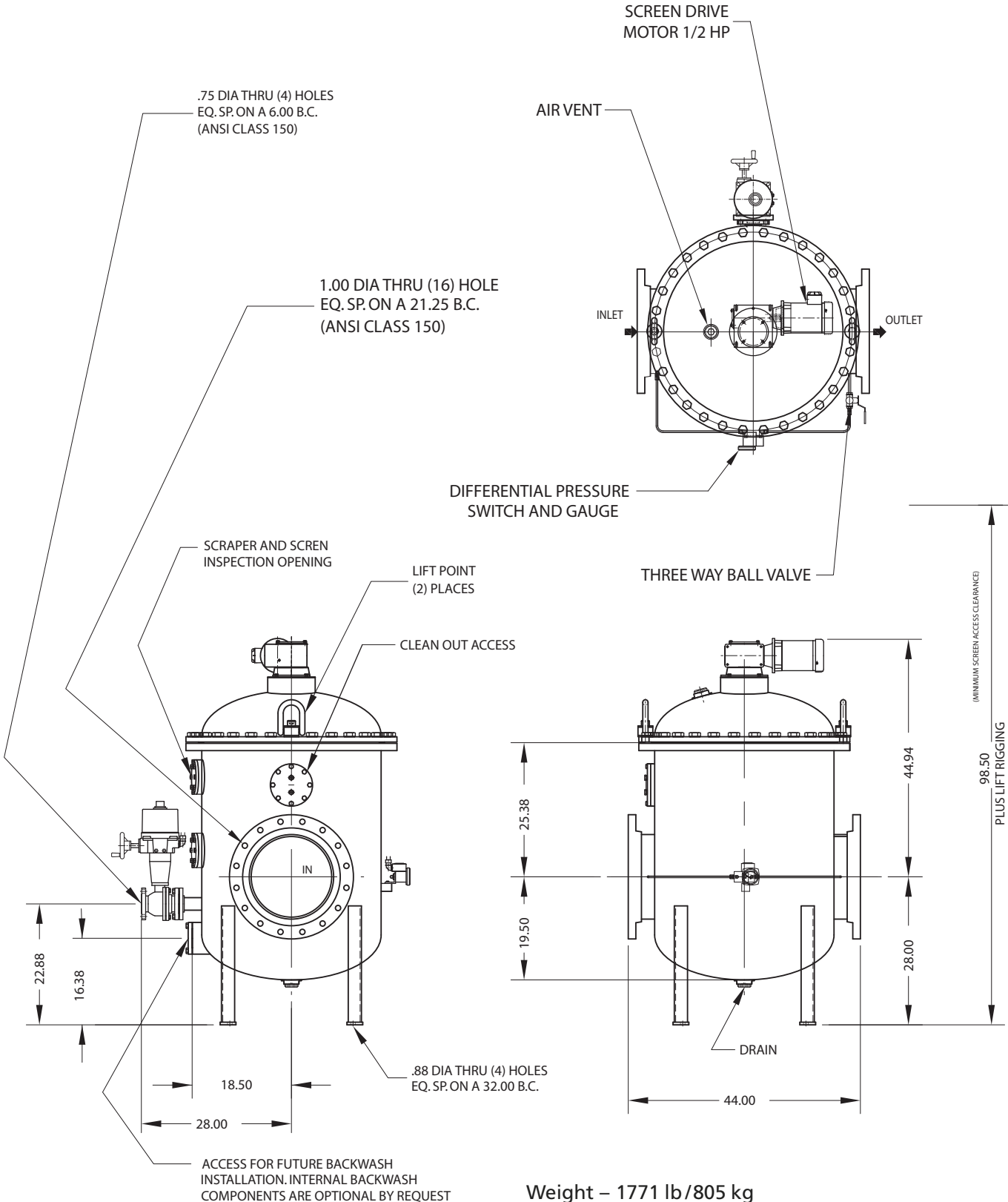
TOP & BOTTOM FLANGES

FLANGE SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	32.62	4600 lb
	MM	829	2090 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	32.28	4830 lb
	MM	820	2190 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

16" AUTOMATIC STRAINER

In-Line Flow Type WSA

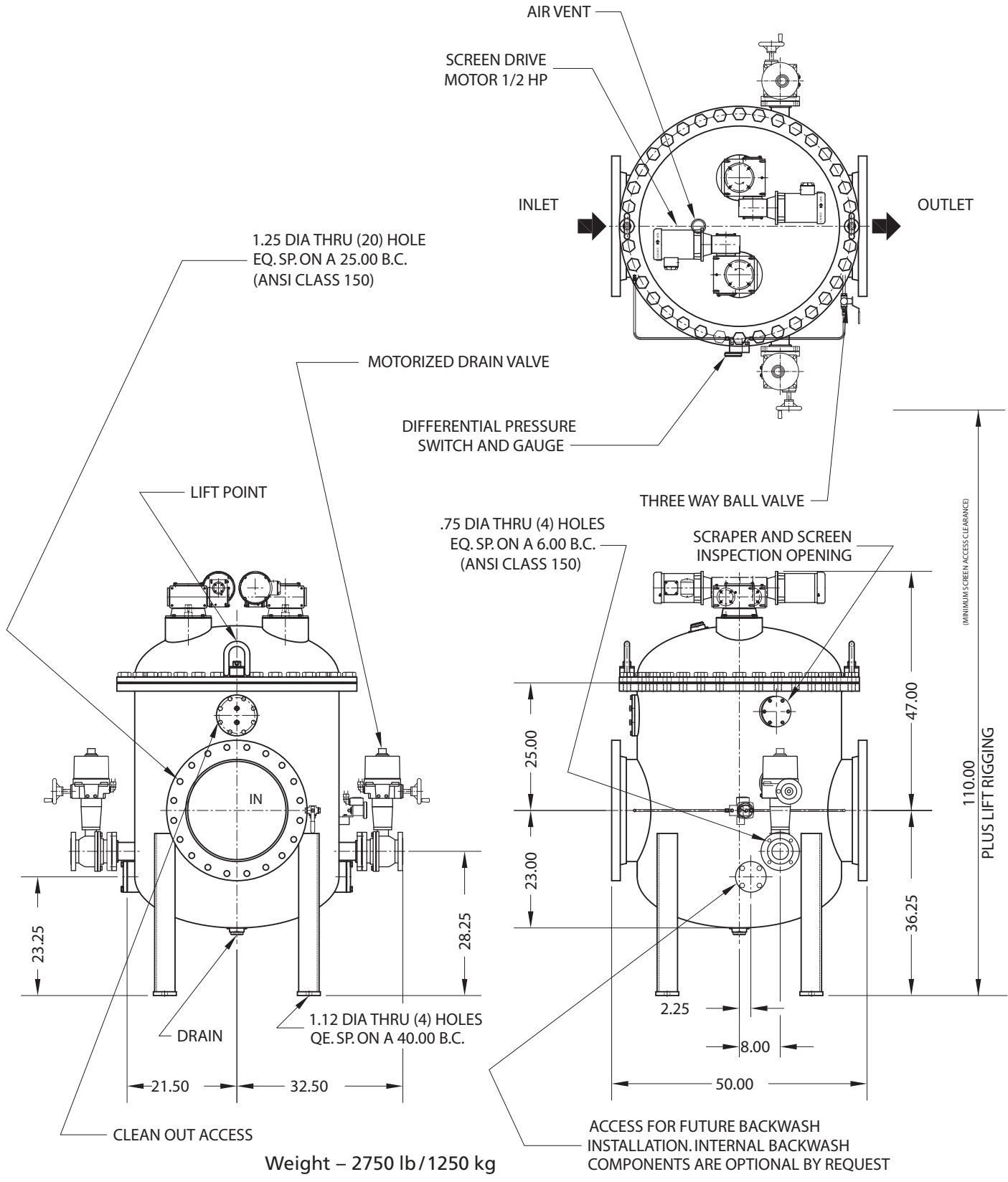


THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

20" AUTOMATIC STRAINER

In-Line Flow Type WDA

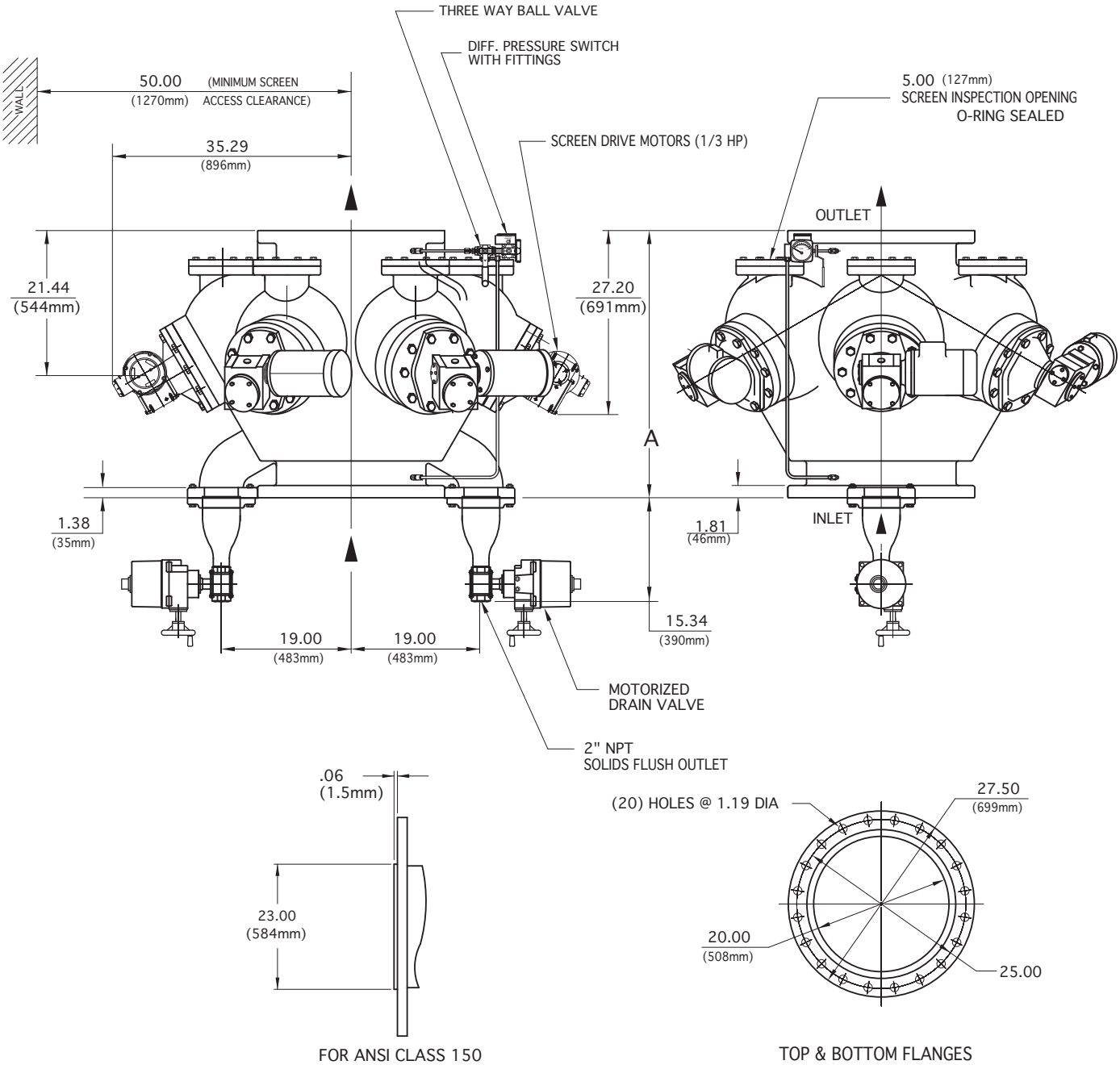
50



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20" AUTOMATIC STRAINER

In-Line Flow Type HA



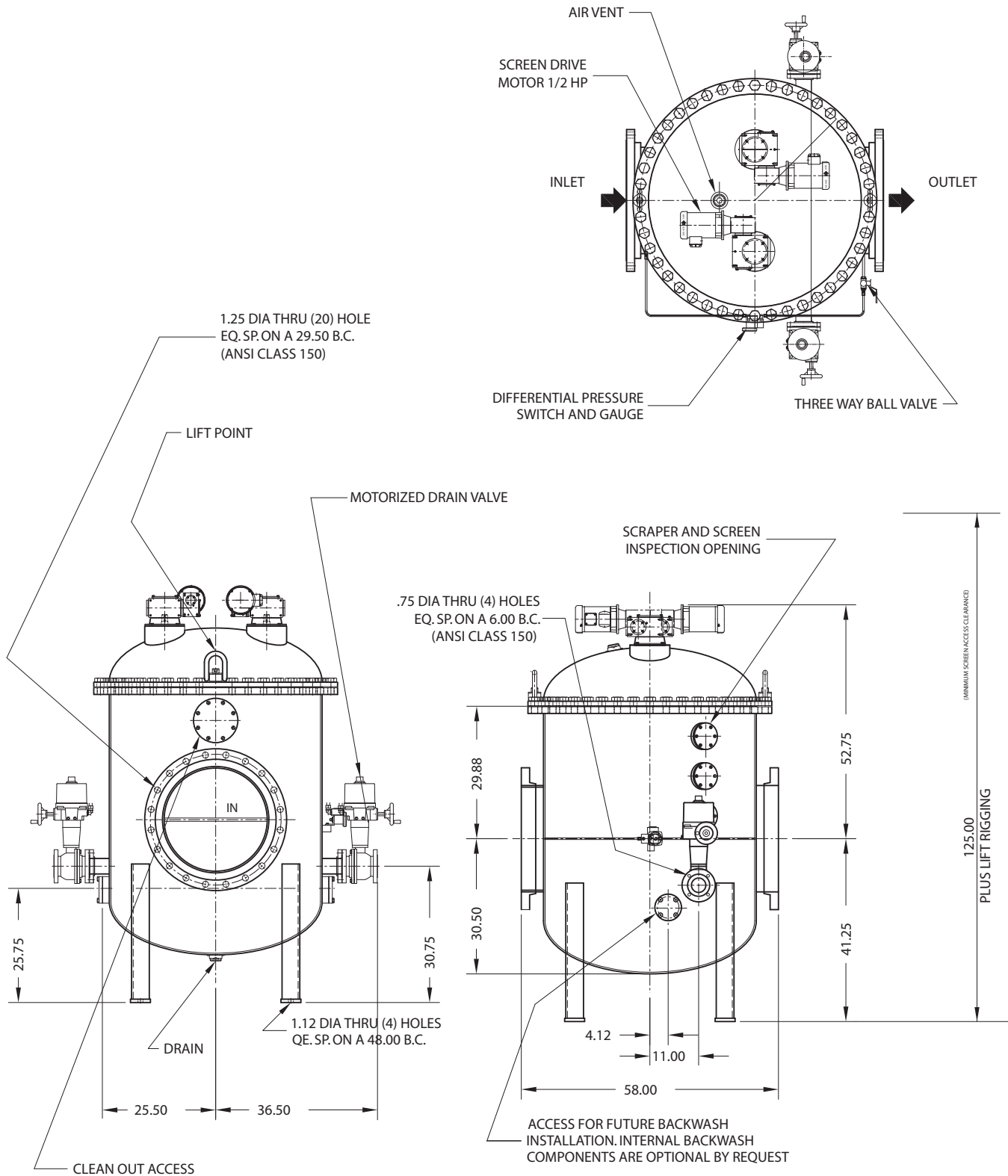
FLANGE SIZE		A	APPROX. WEIGHT
ANSI class 125 CAST IRON	INCH	39.50	5750 lb
	MM	1003	2588 kg
ANSI class 150 CAST STEEL & STAINLESS STEEL	INCH	39.09	6040 lb
	MM	993	13288 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

24" AUTOMATIC STRAINER

In-Line Flow Type WDA

52

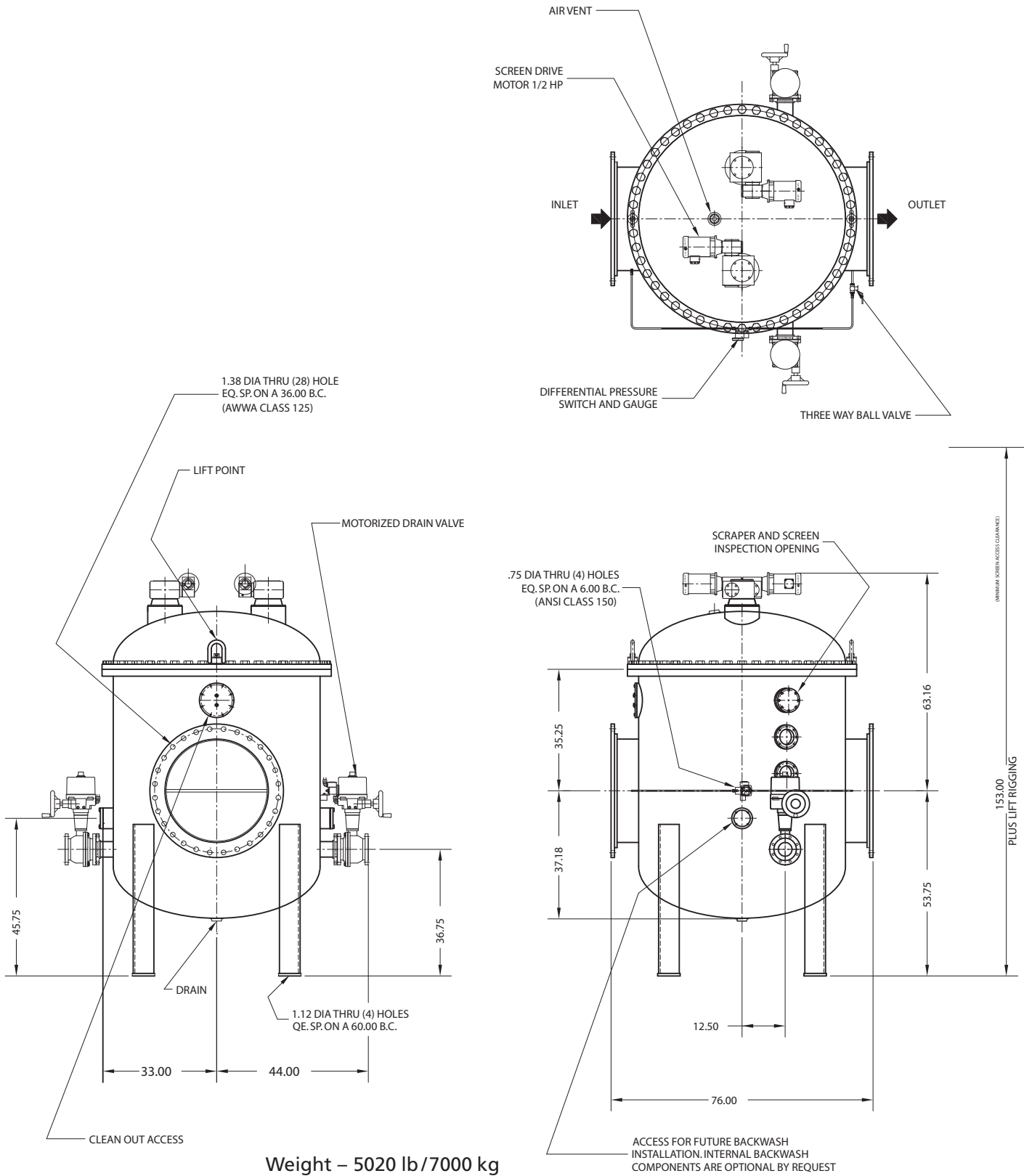


Weight – 3590 lb/1632 kg

THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

30" AUTOMATIC STRAINER

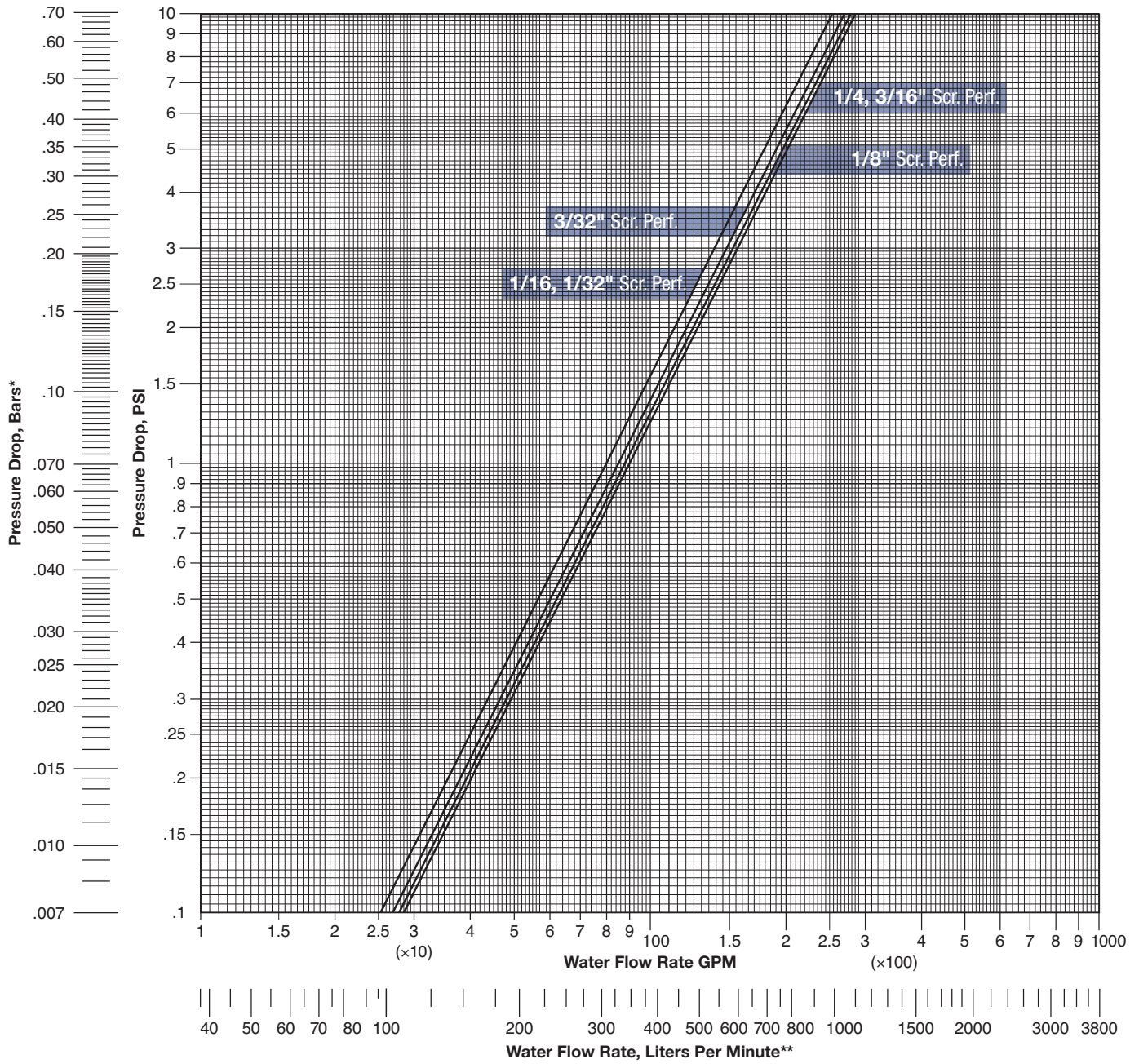
In-Line Flow Type WDA



THESE DIMENSIONS ARE FOR REFERENCE ONLY. FOR INSTALLATION PURPOSES, REQUEST CERTIFIED DRAWINGS.

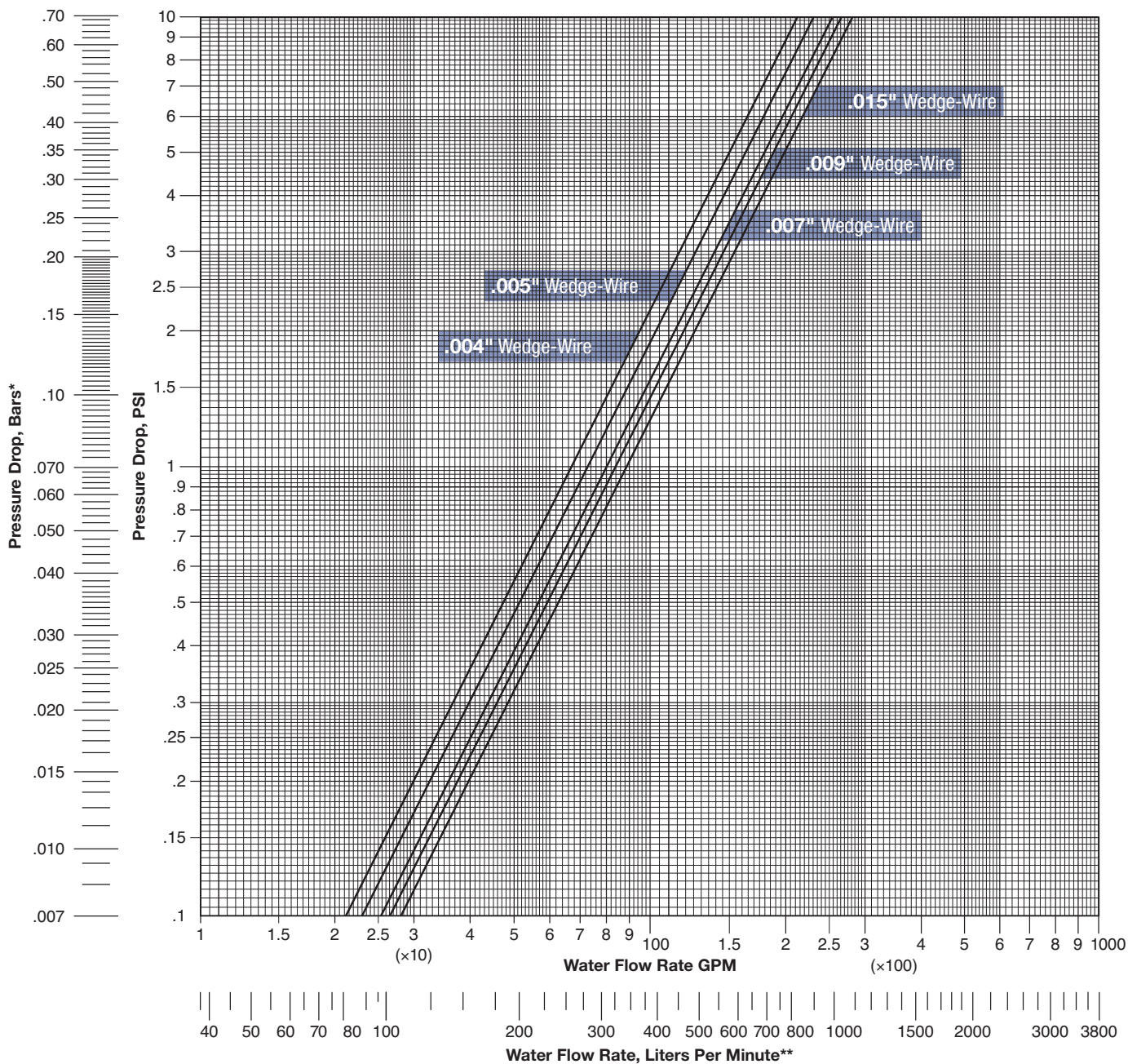
1½" & 2" TSH/TSA AND 2" AH STRAINER

Clean Pressure Drop vs. Flow Rate



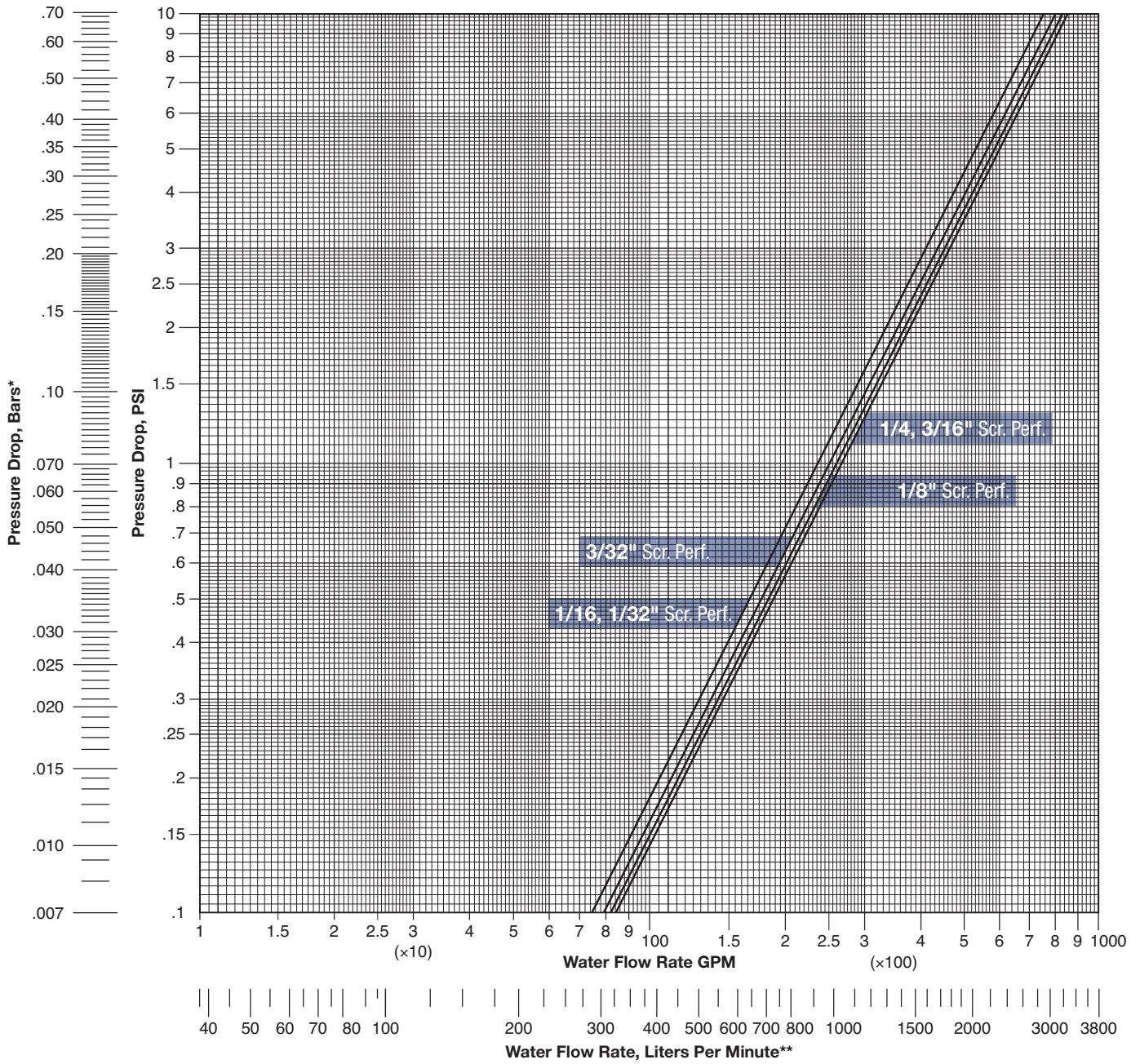
1 1/2" & 2" TSH/TSA STRAINER

Clean Pressure Drop vs. Flow Rate



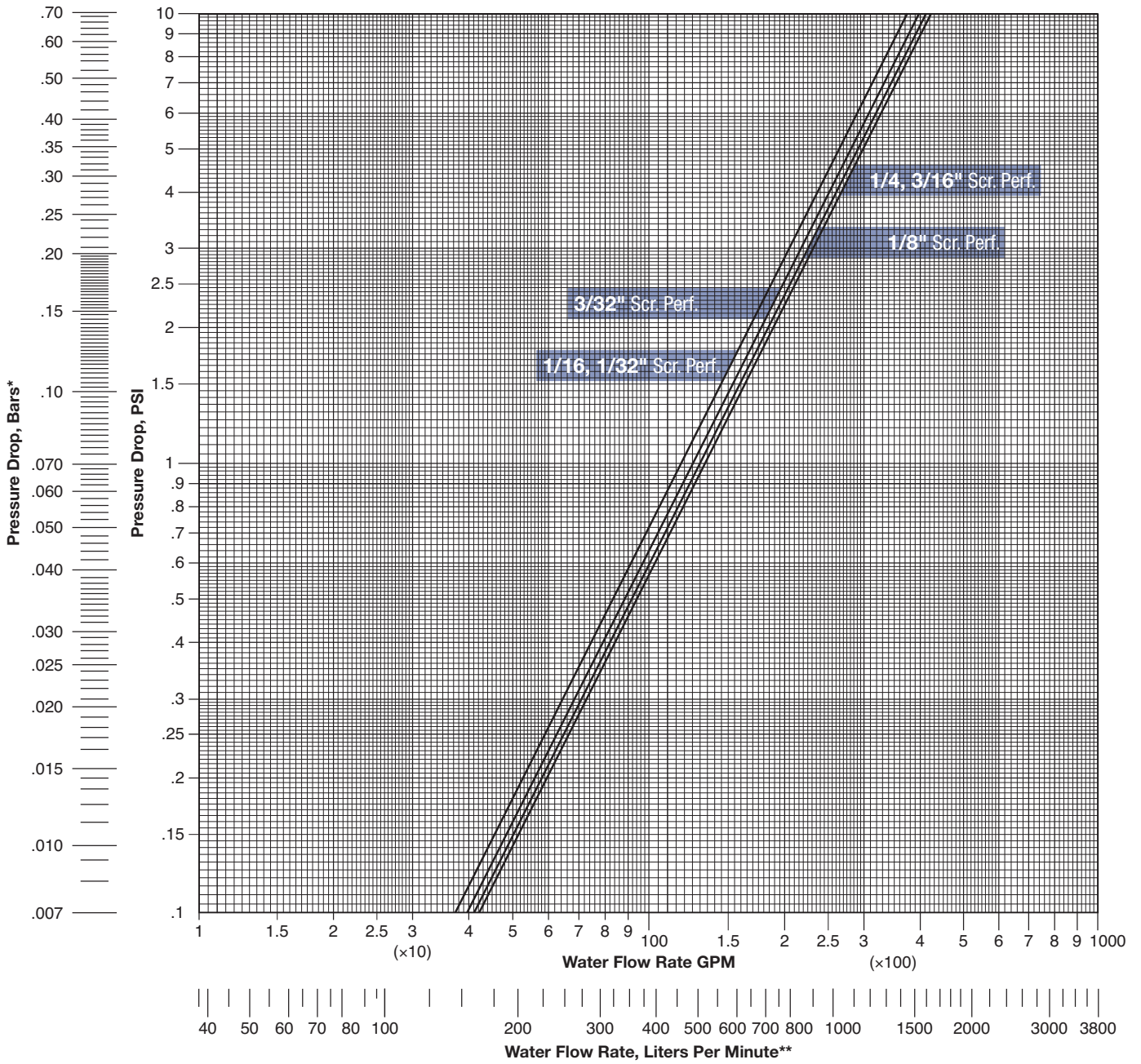
3" DH STRAINERS

Clean Pressure Drop vs. Flow Rate



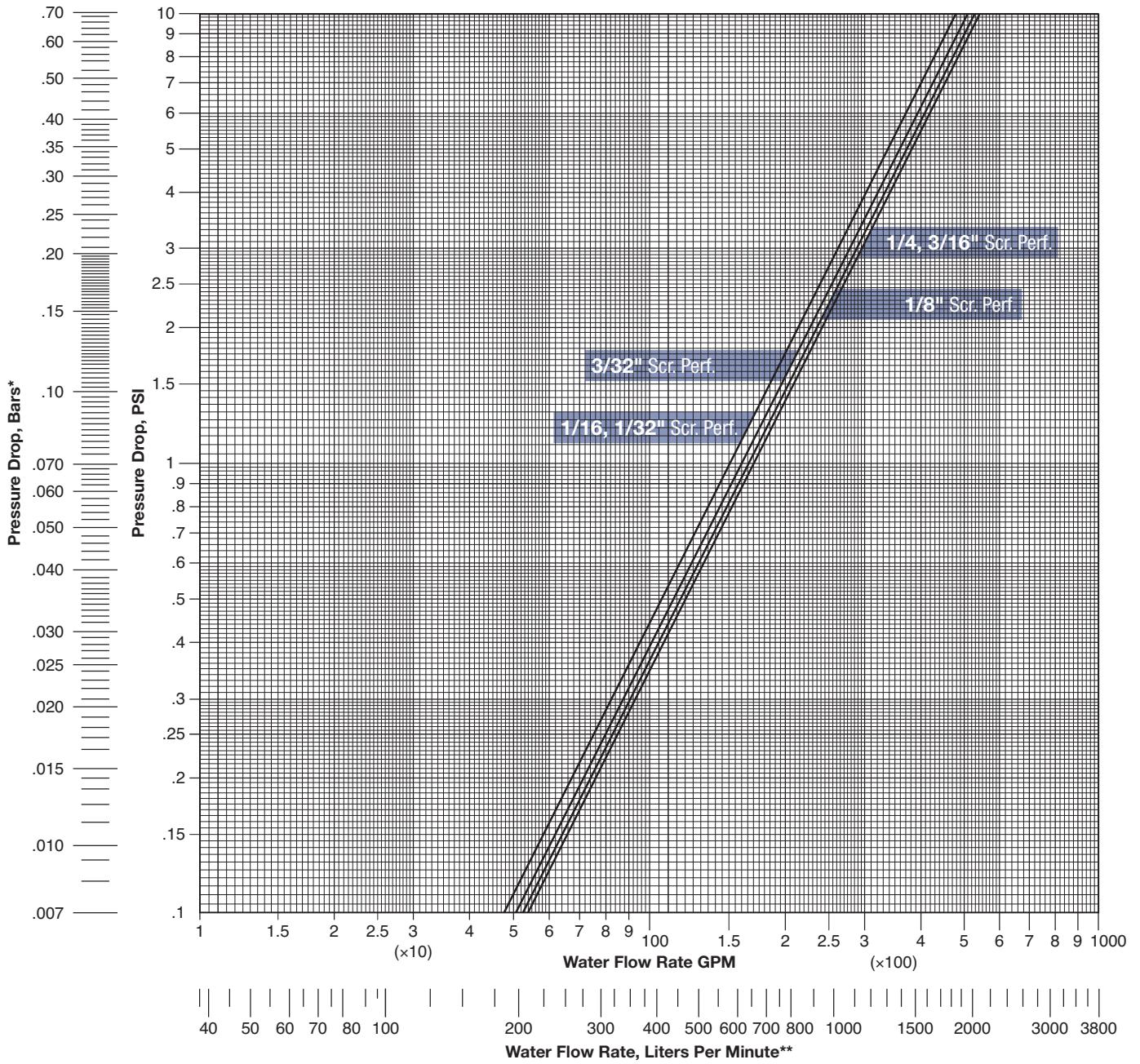
2-1/2" AH STRAINERS

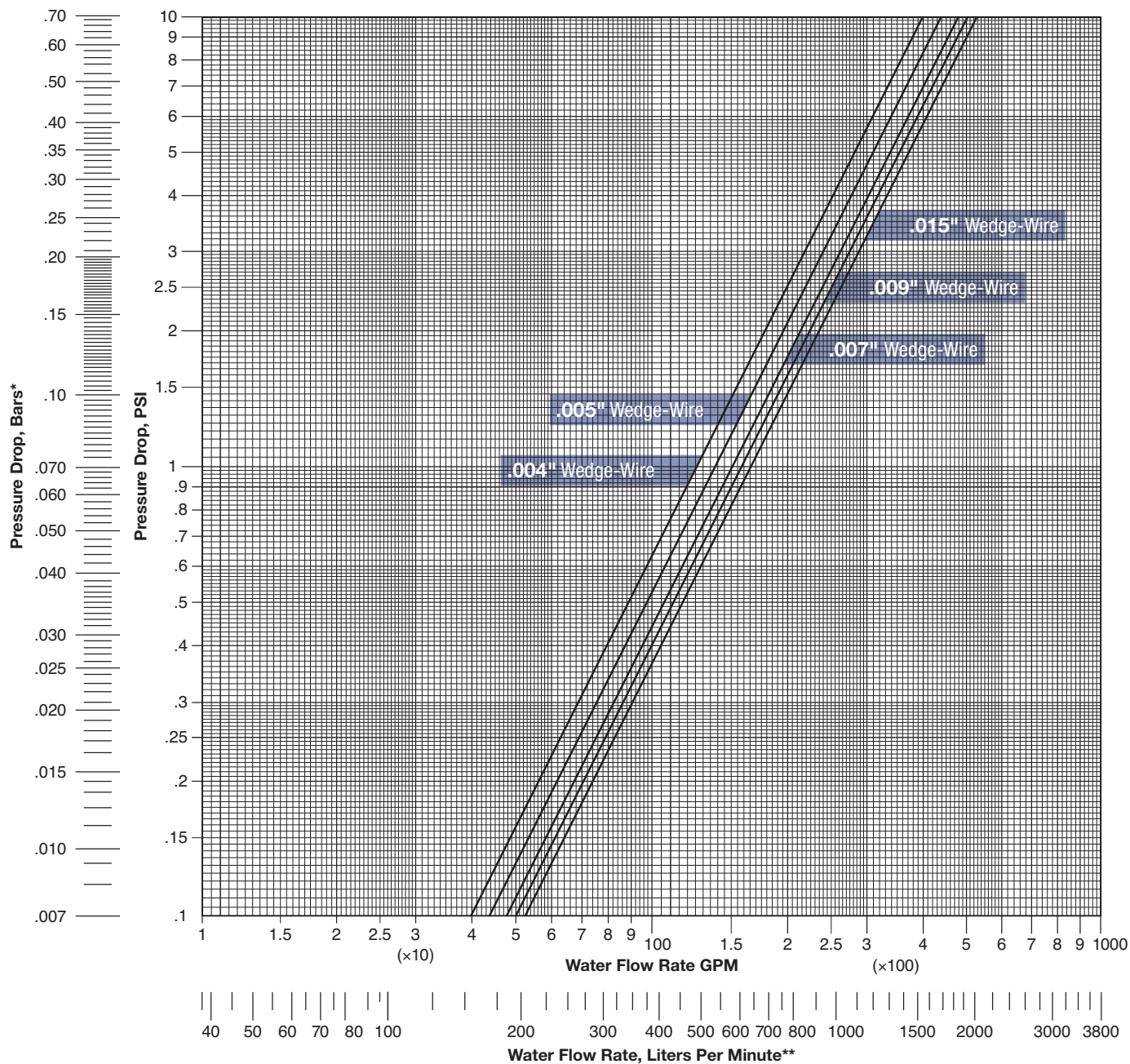
Clean Pressure Drop vs. Flow Rate



2 1/2" & 3" TSH/TSA AND 3" AH/AA STRAINERS

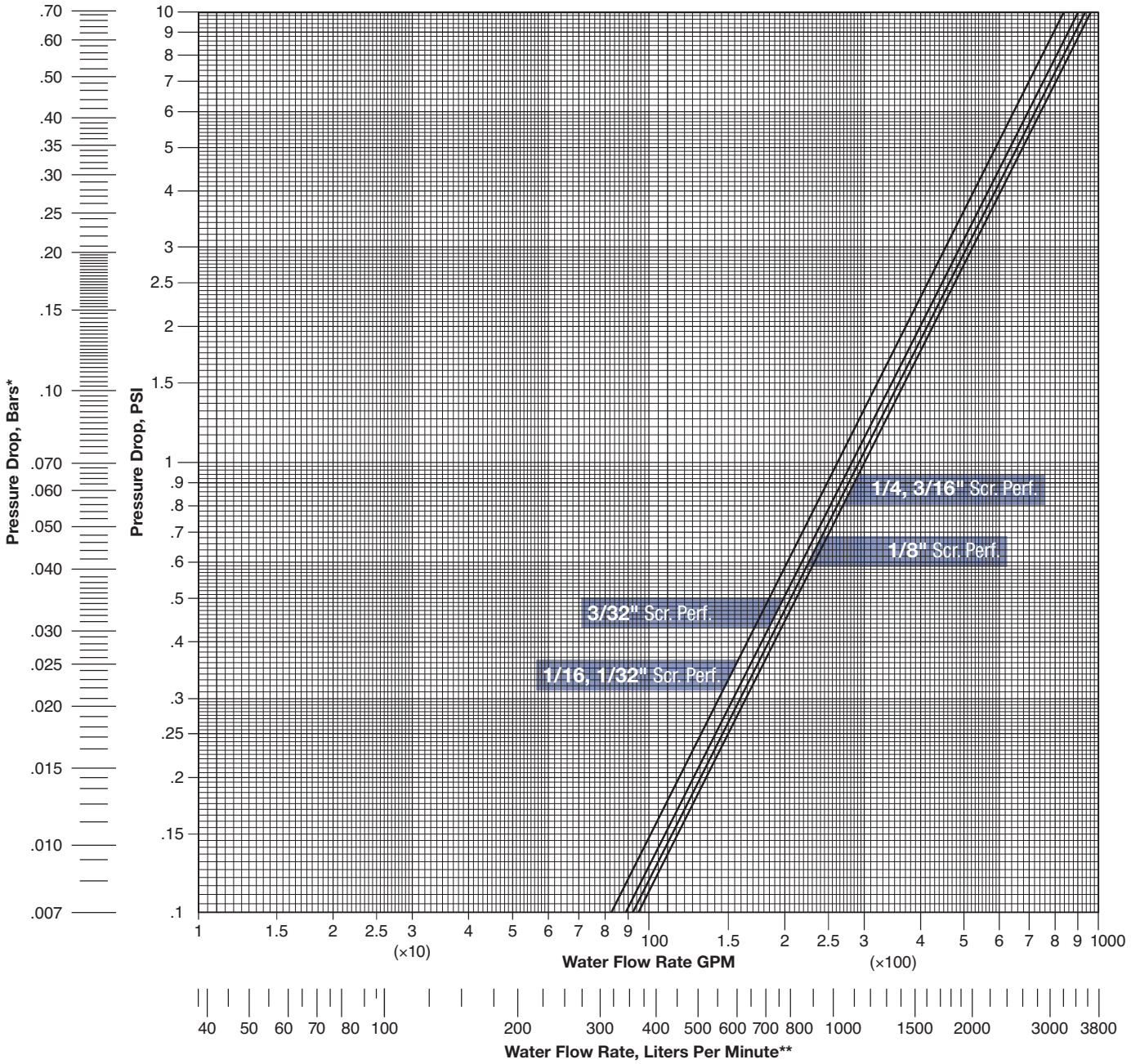
Clean Pressure Drop vs. Flow Rate





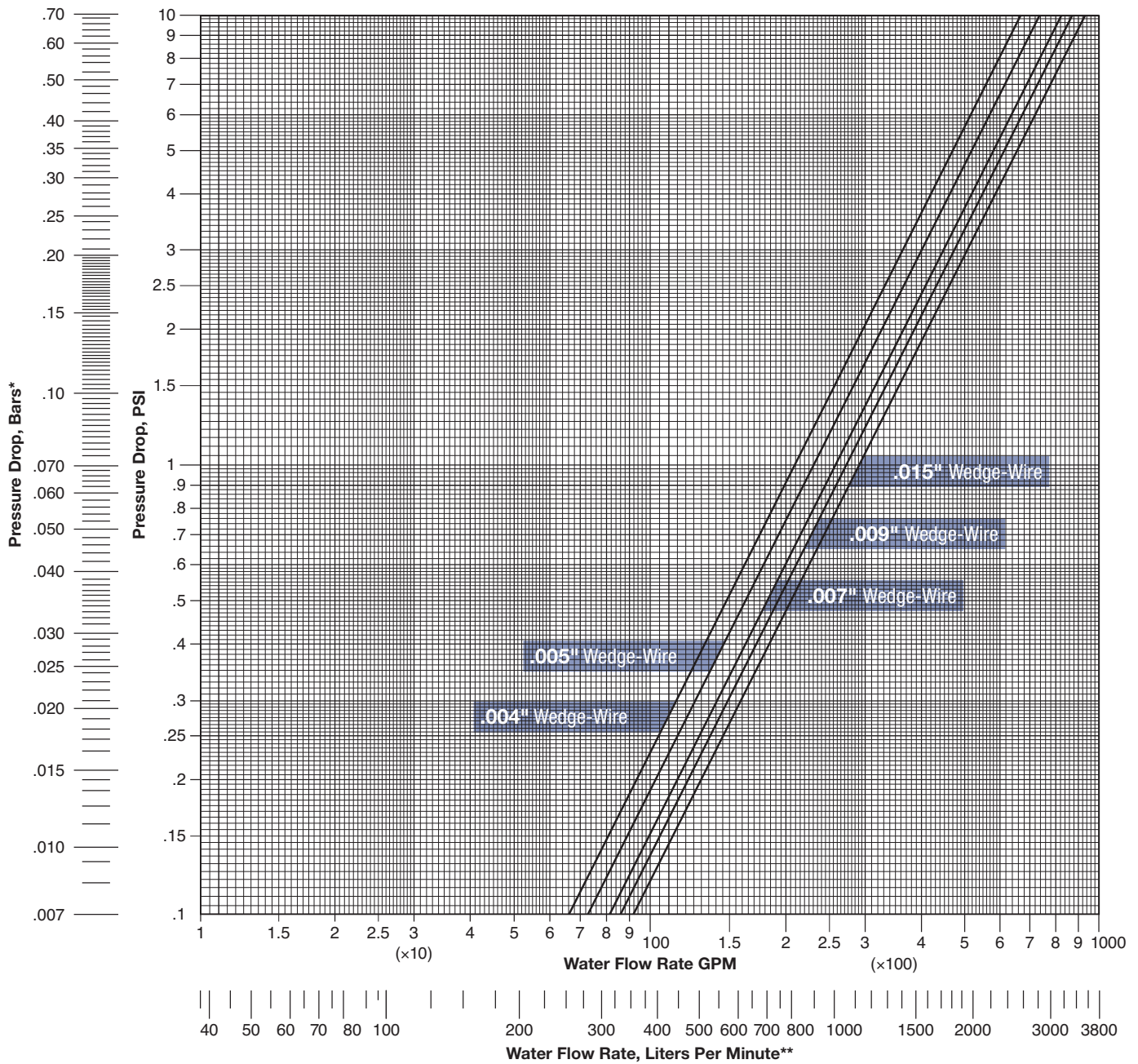
4" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



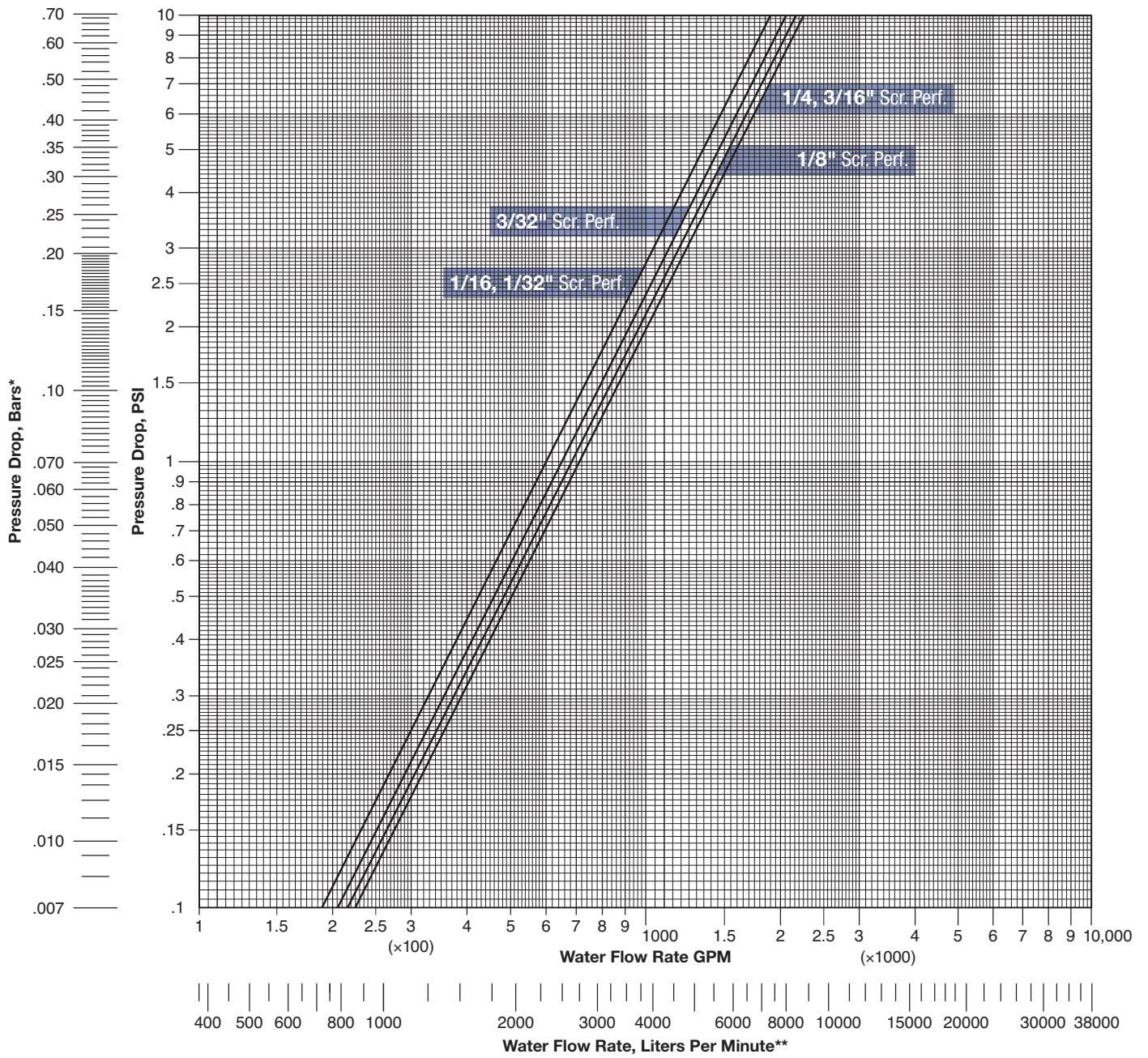
4" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



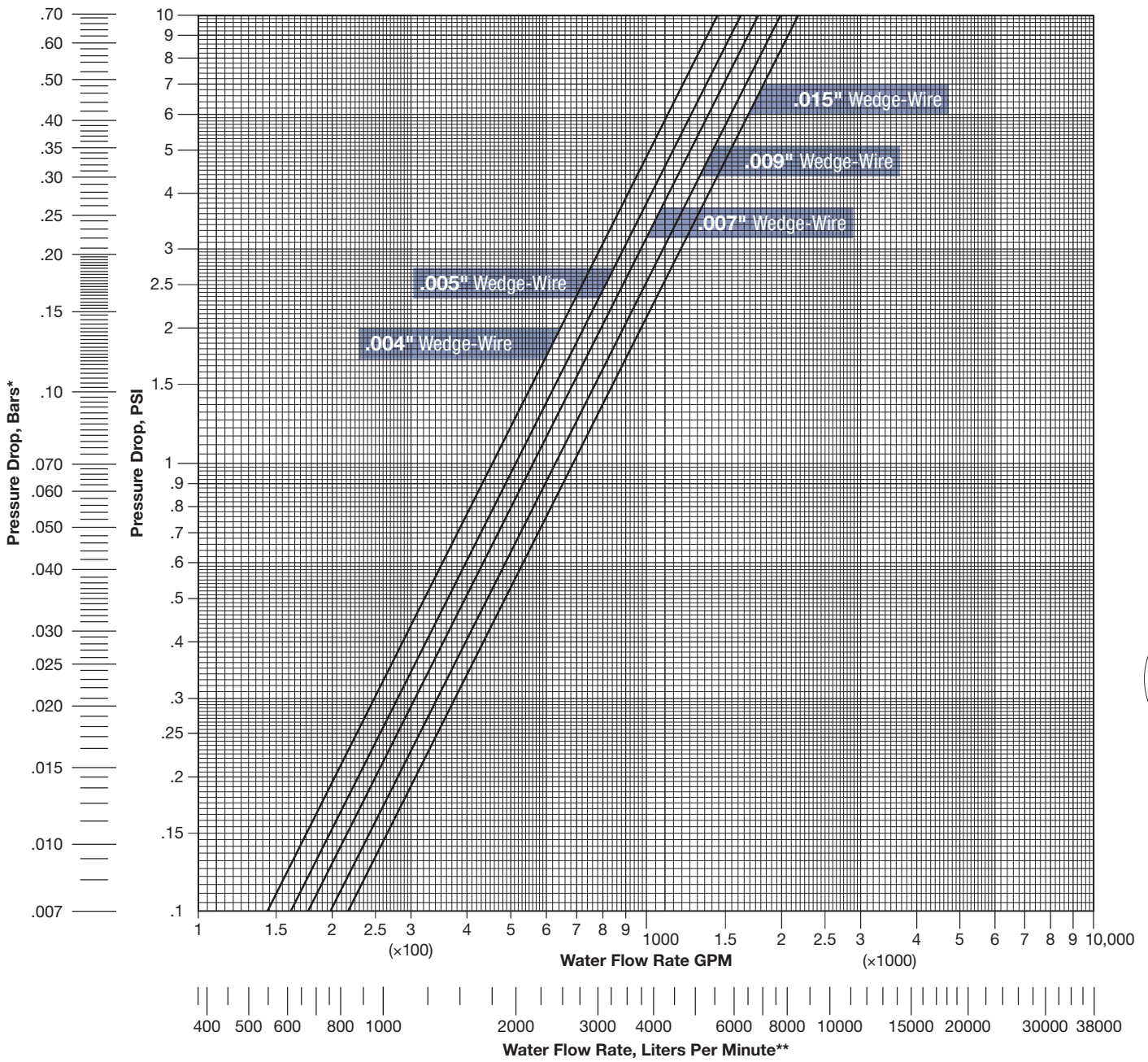
6" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



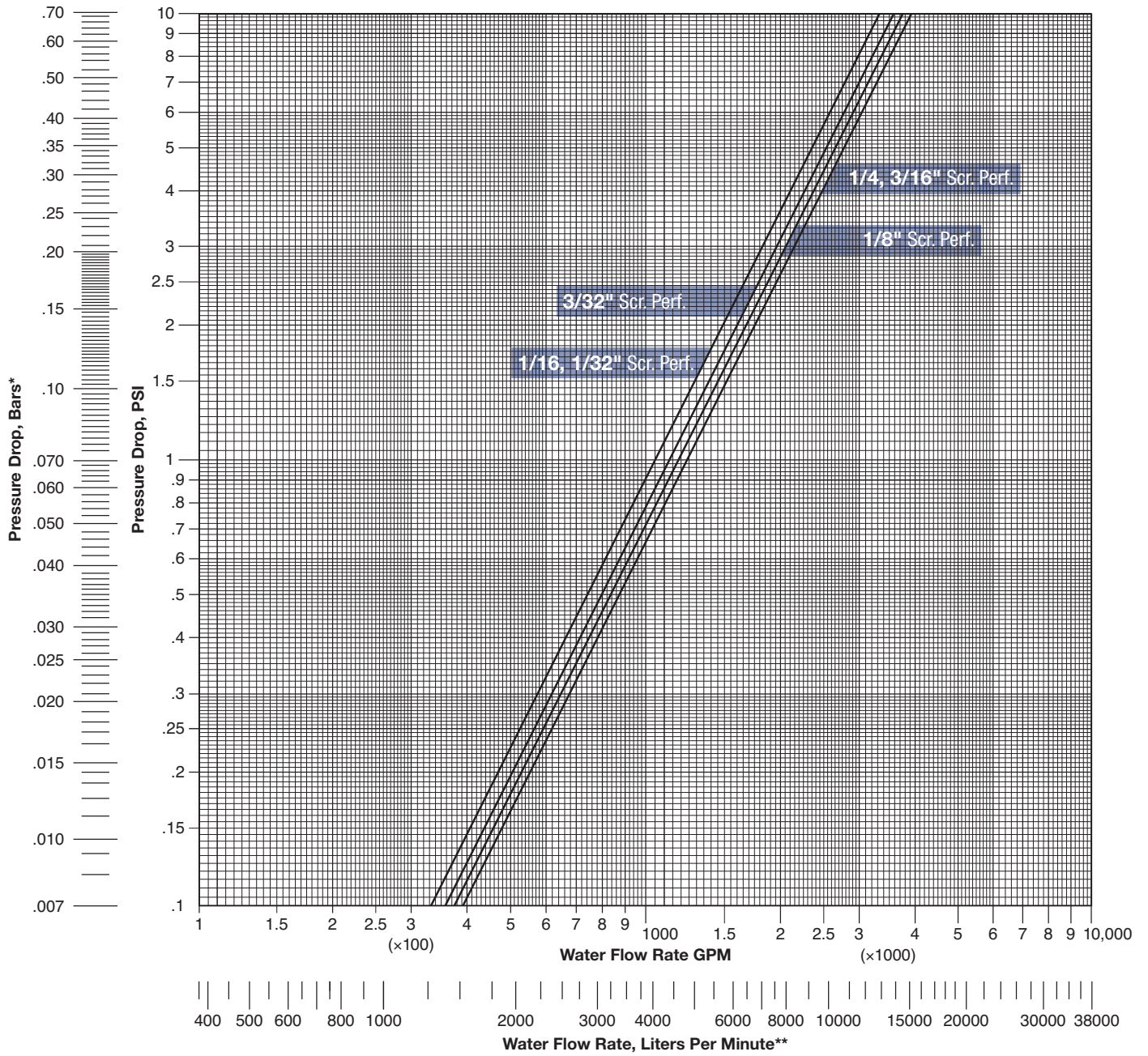
6" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



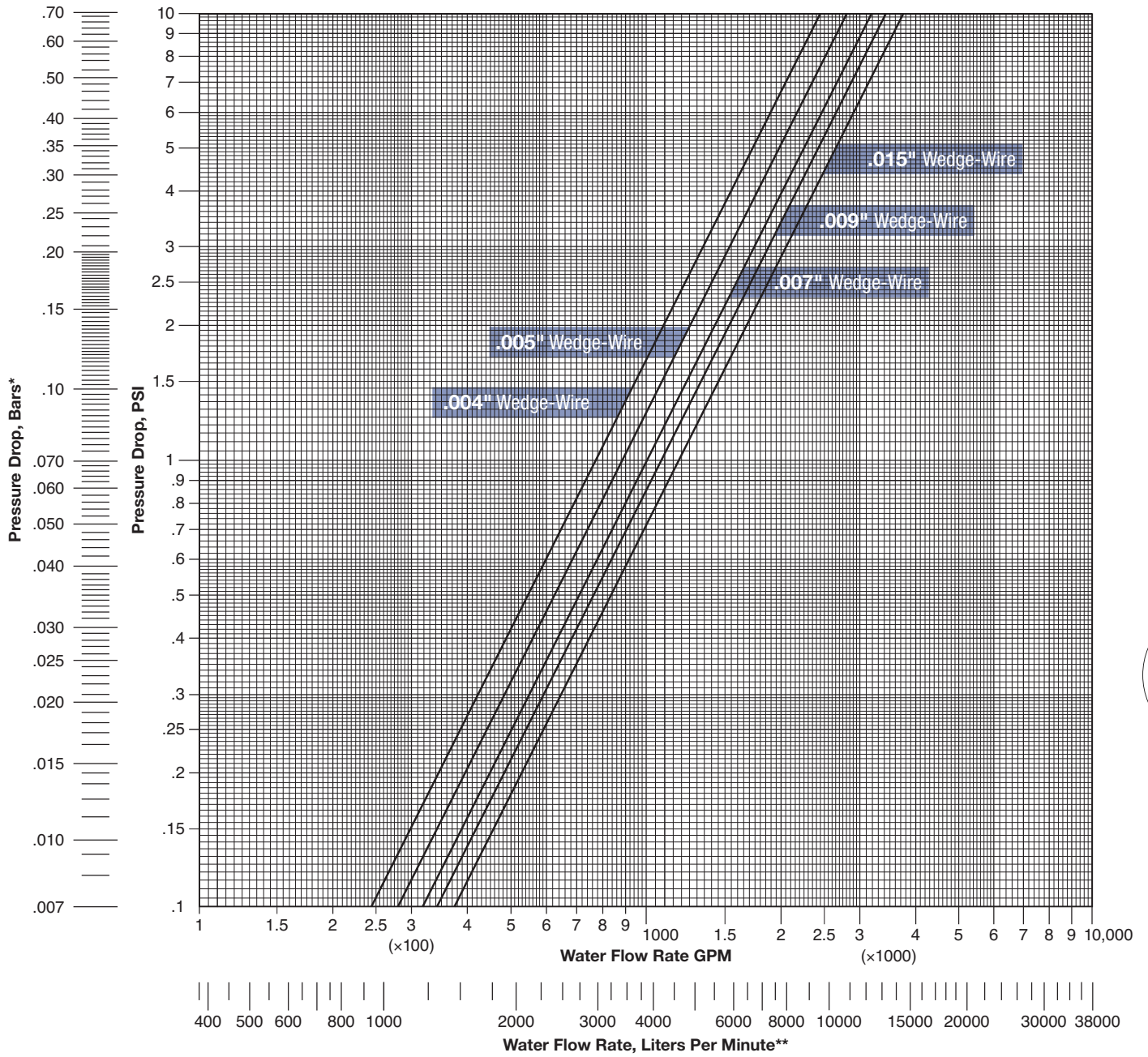
8" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



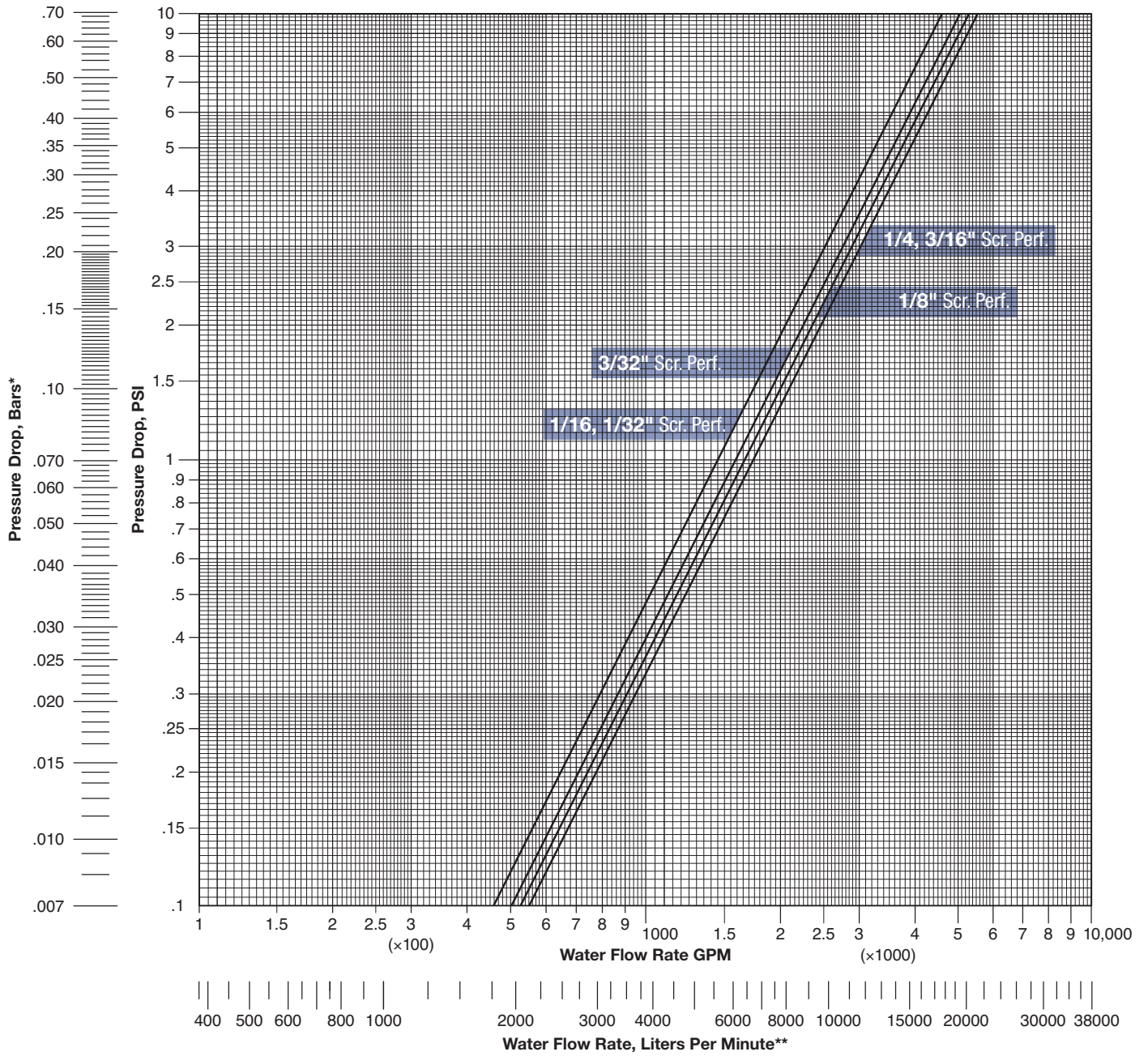
8" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



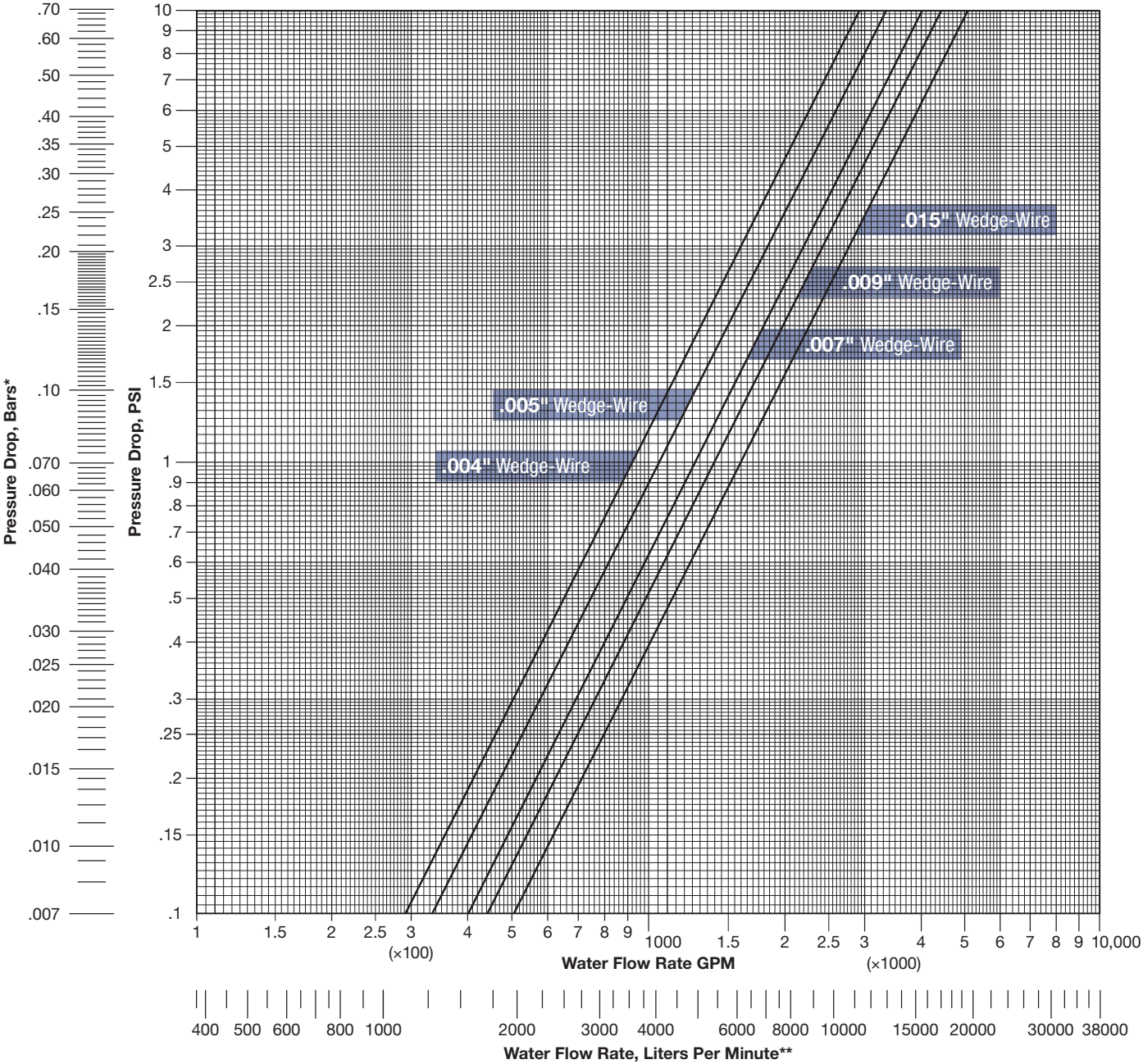
10" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



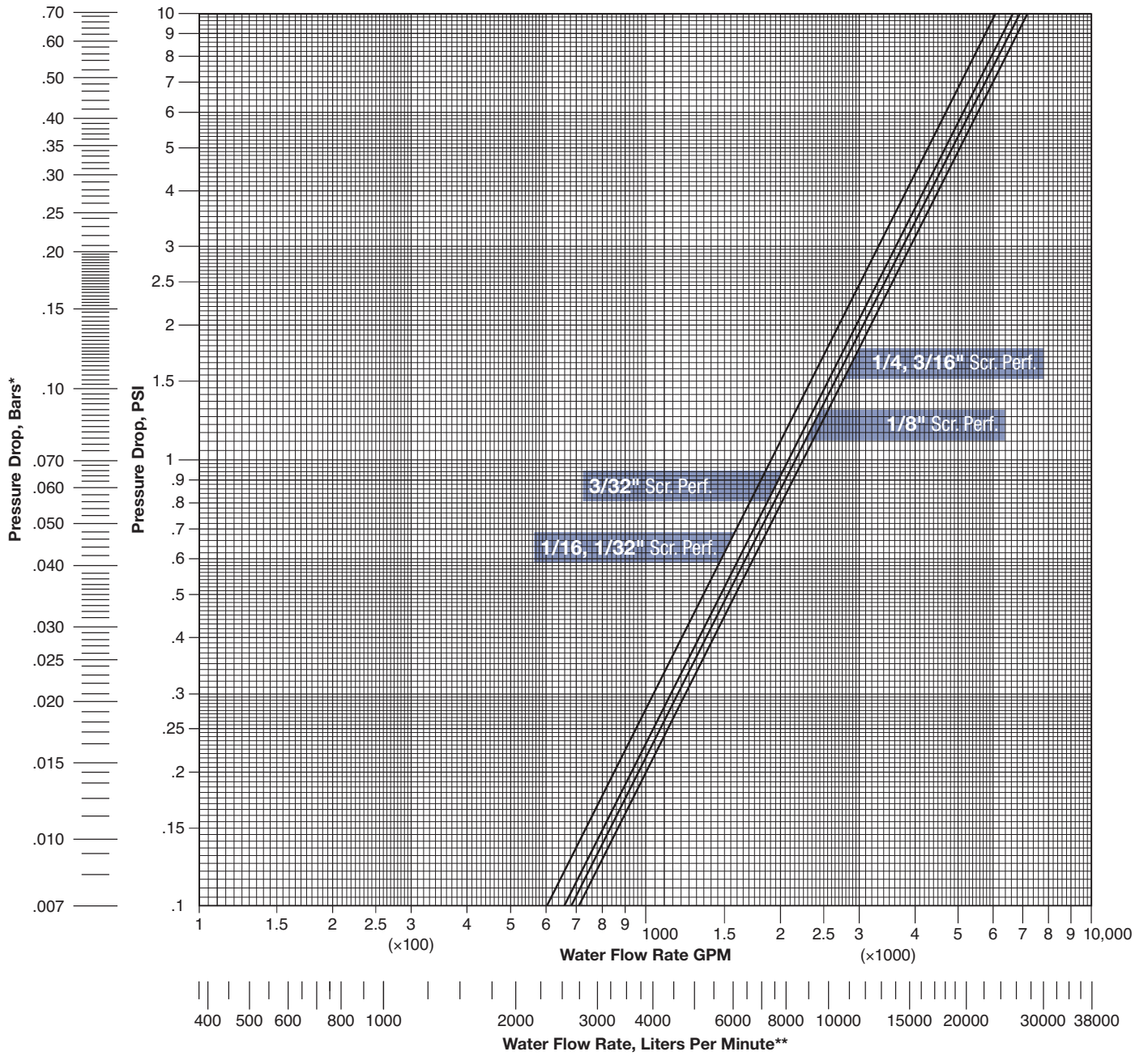
10" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



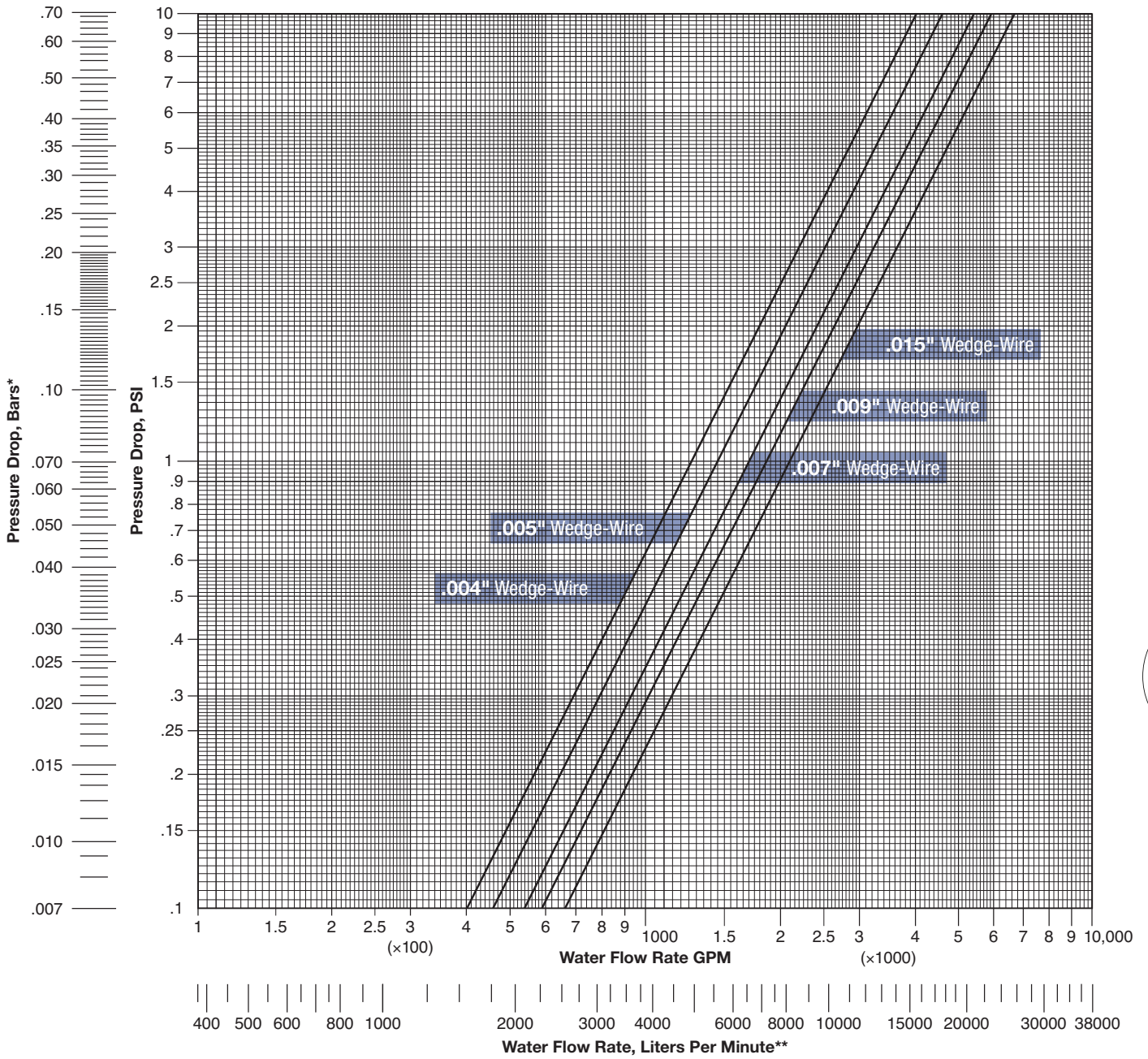
12" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



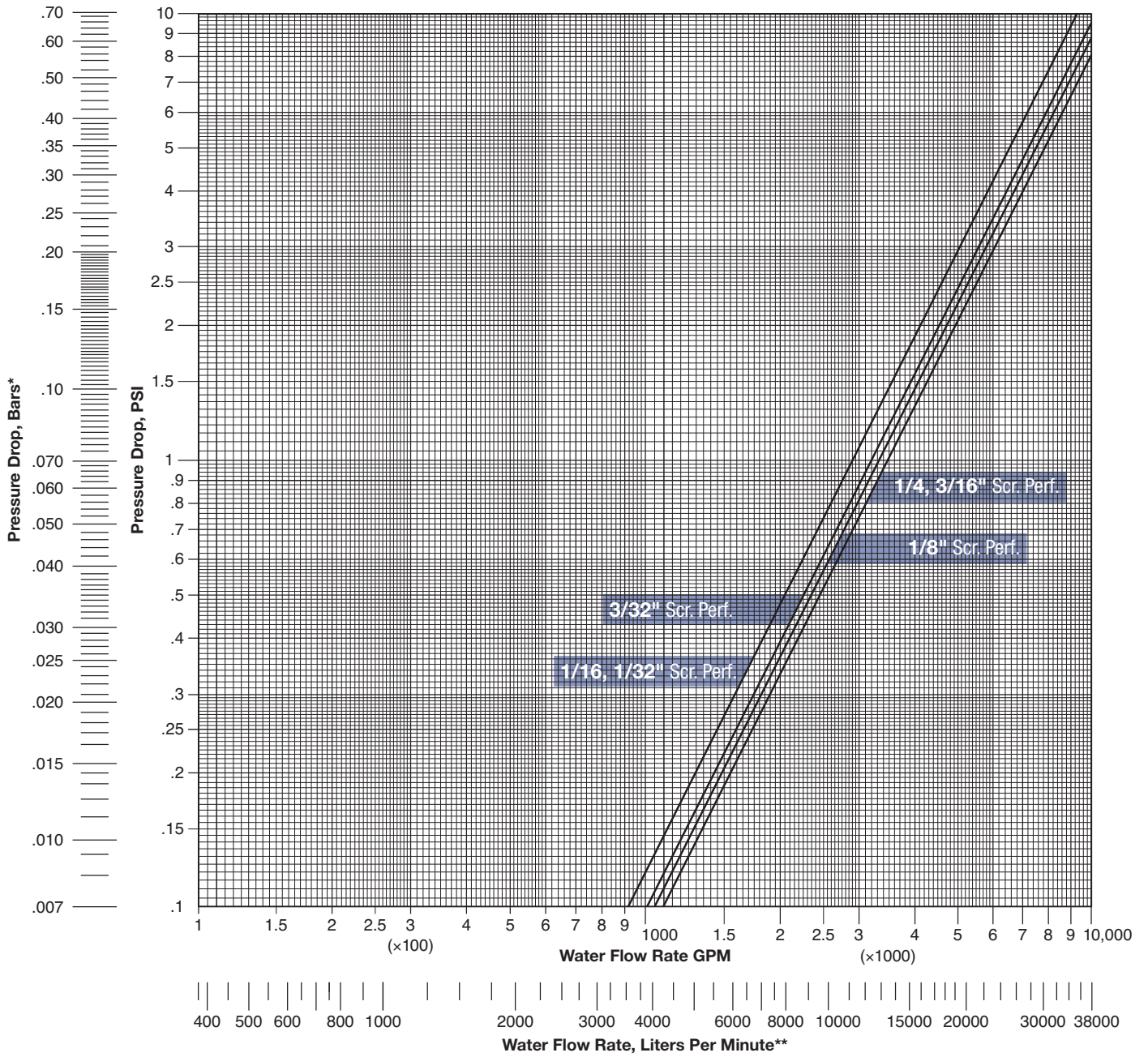
12" DH/DA STRAINERS

Clean Pressure Drop vs. Flow Rate



14" QH/QA STRAINERS

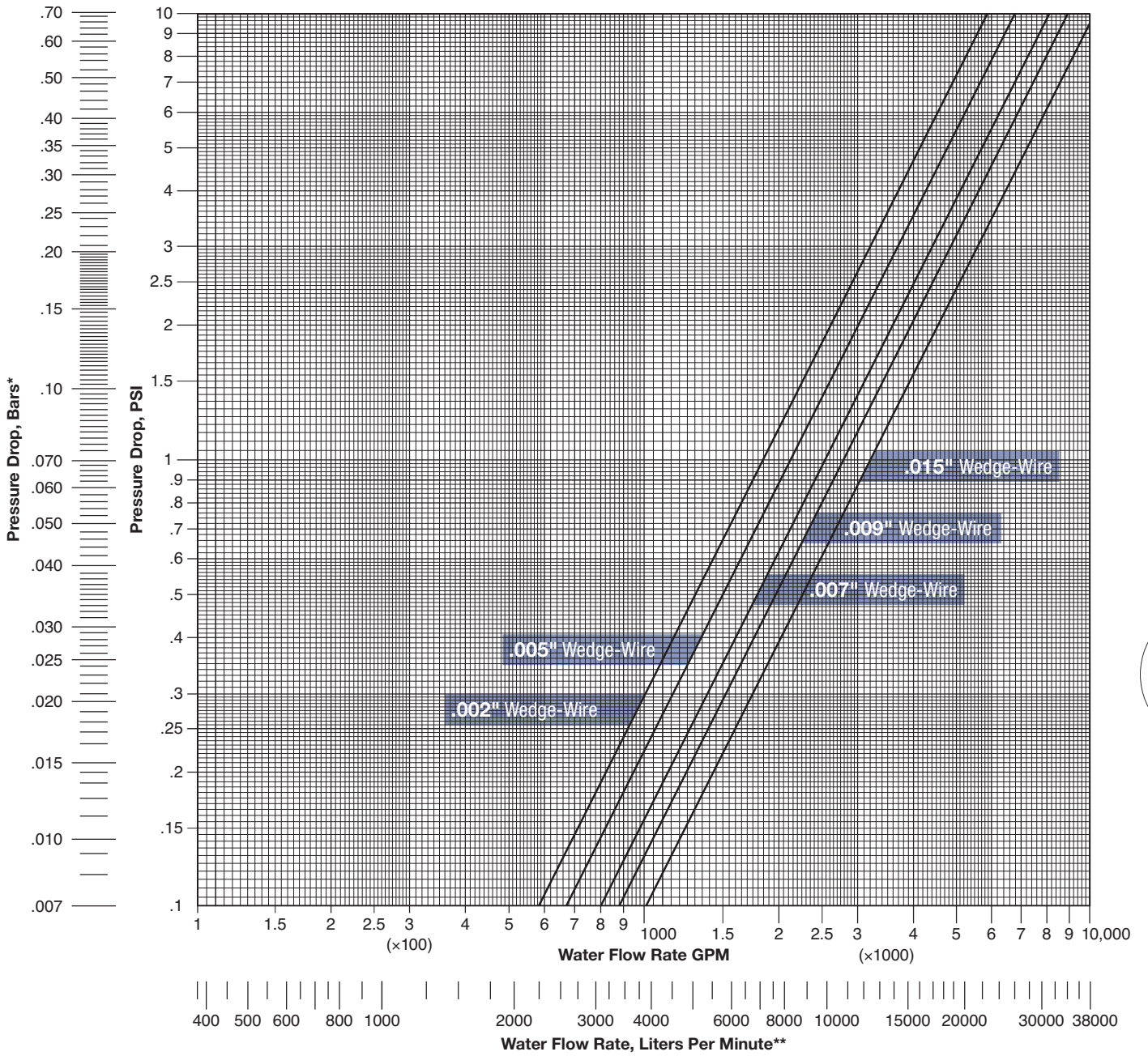
Clean Pressure Drop vs. Flow Rate



70

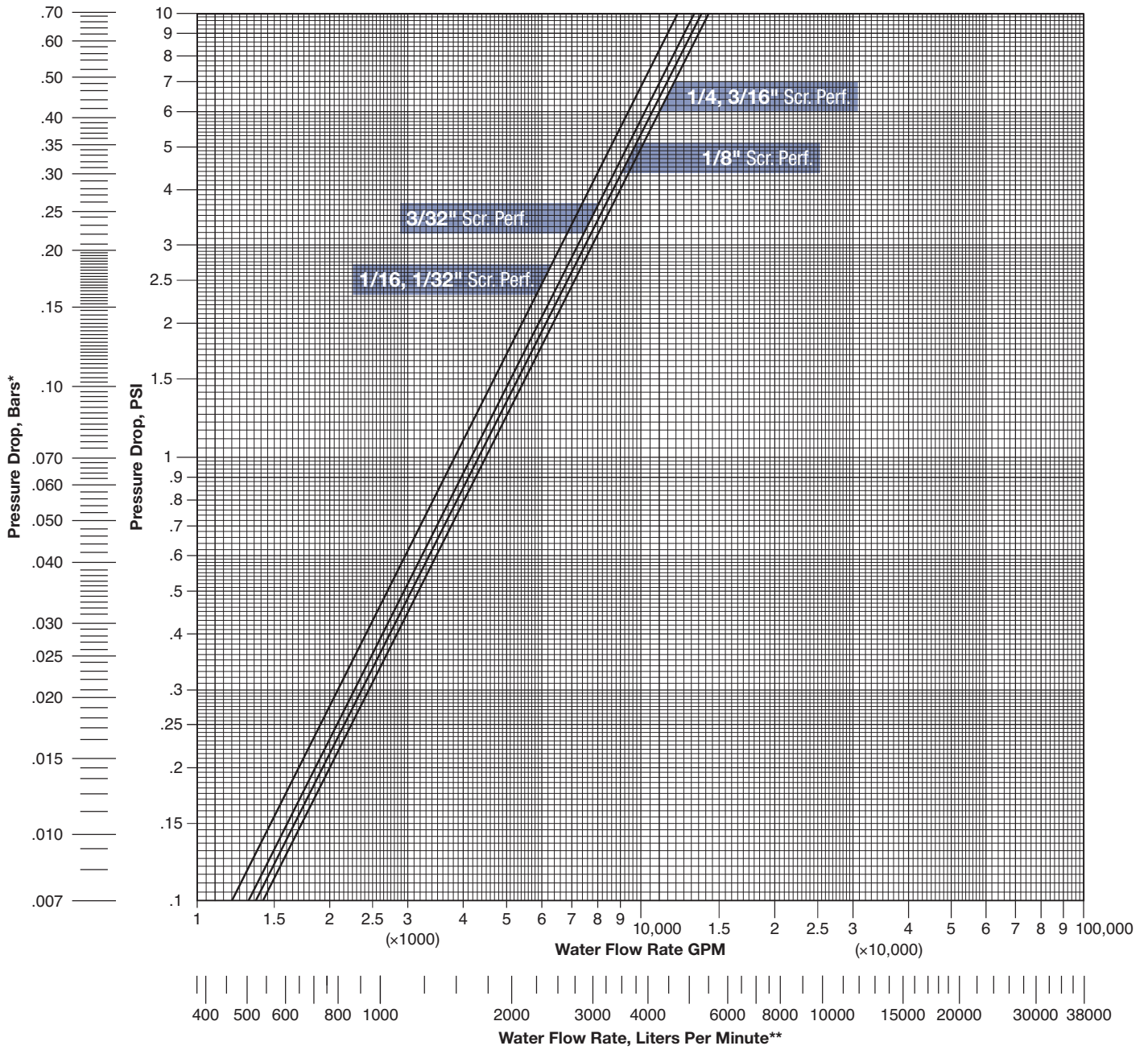
14" QH/QA STRAINERS

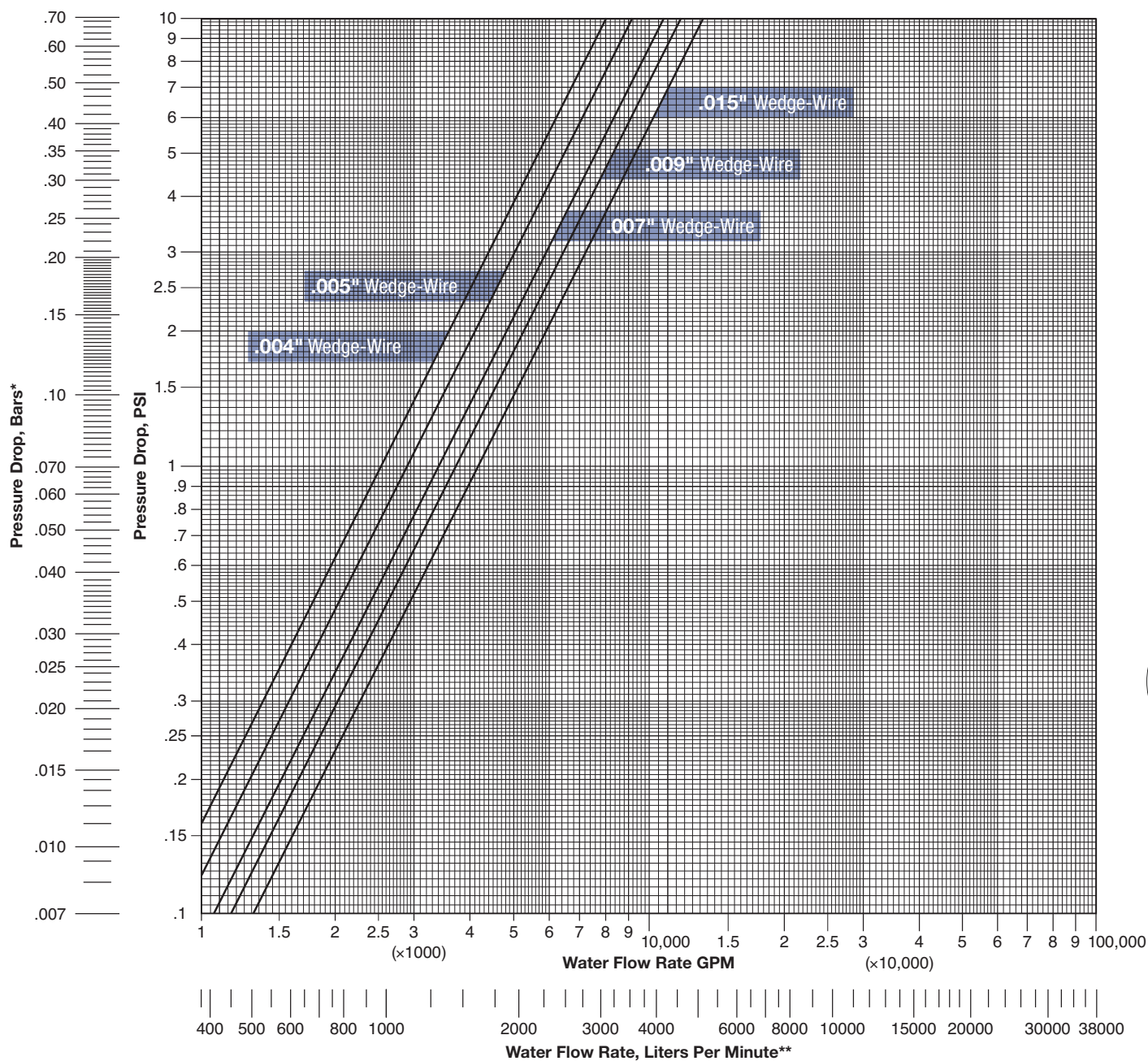
Clean Pressure Drop vs. Flow Rate



14" & 16" SA/WDA AND 16" QH/QA STRAINERS

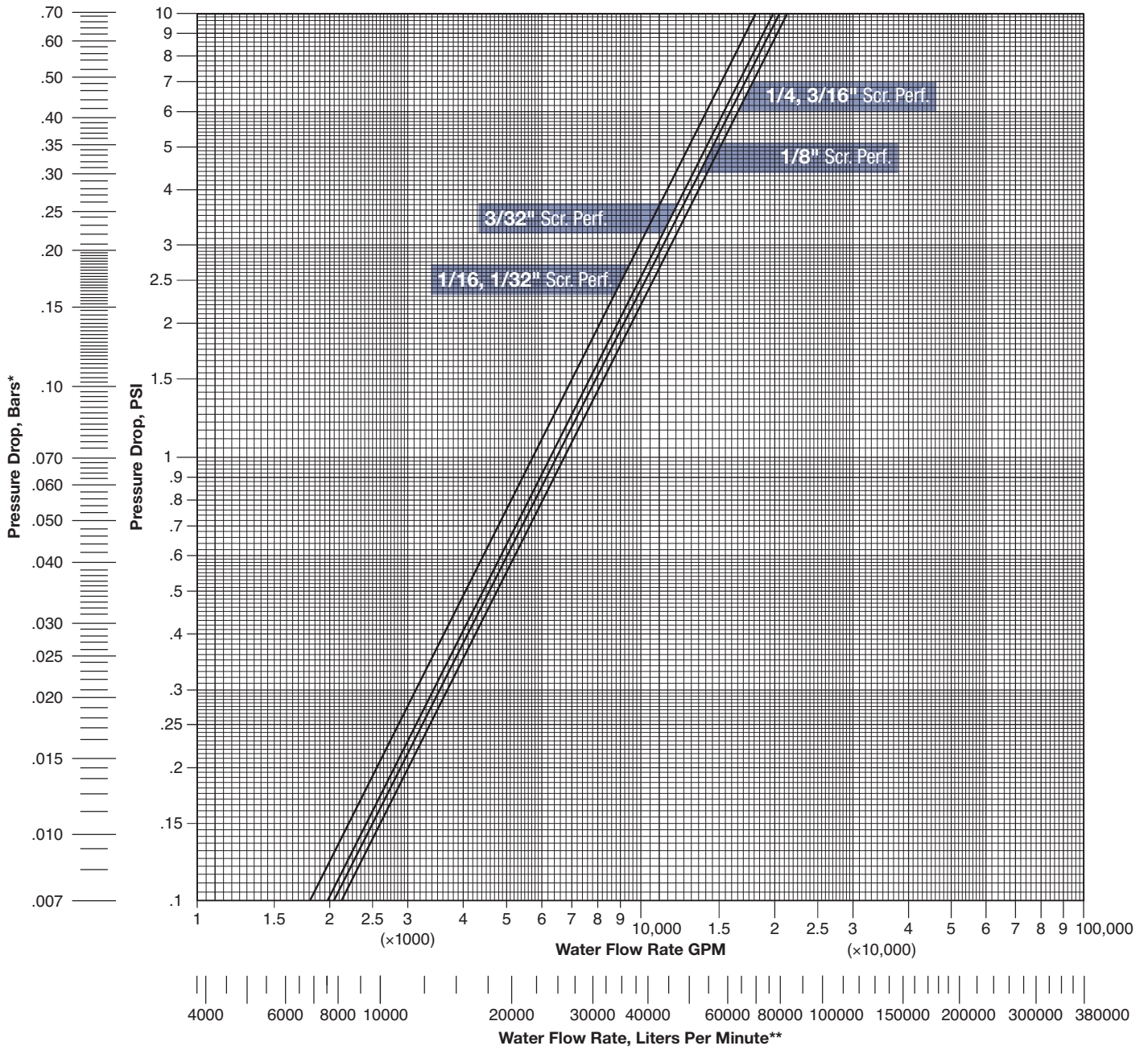
Clean Pressure Drop vs. Flow Rate





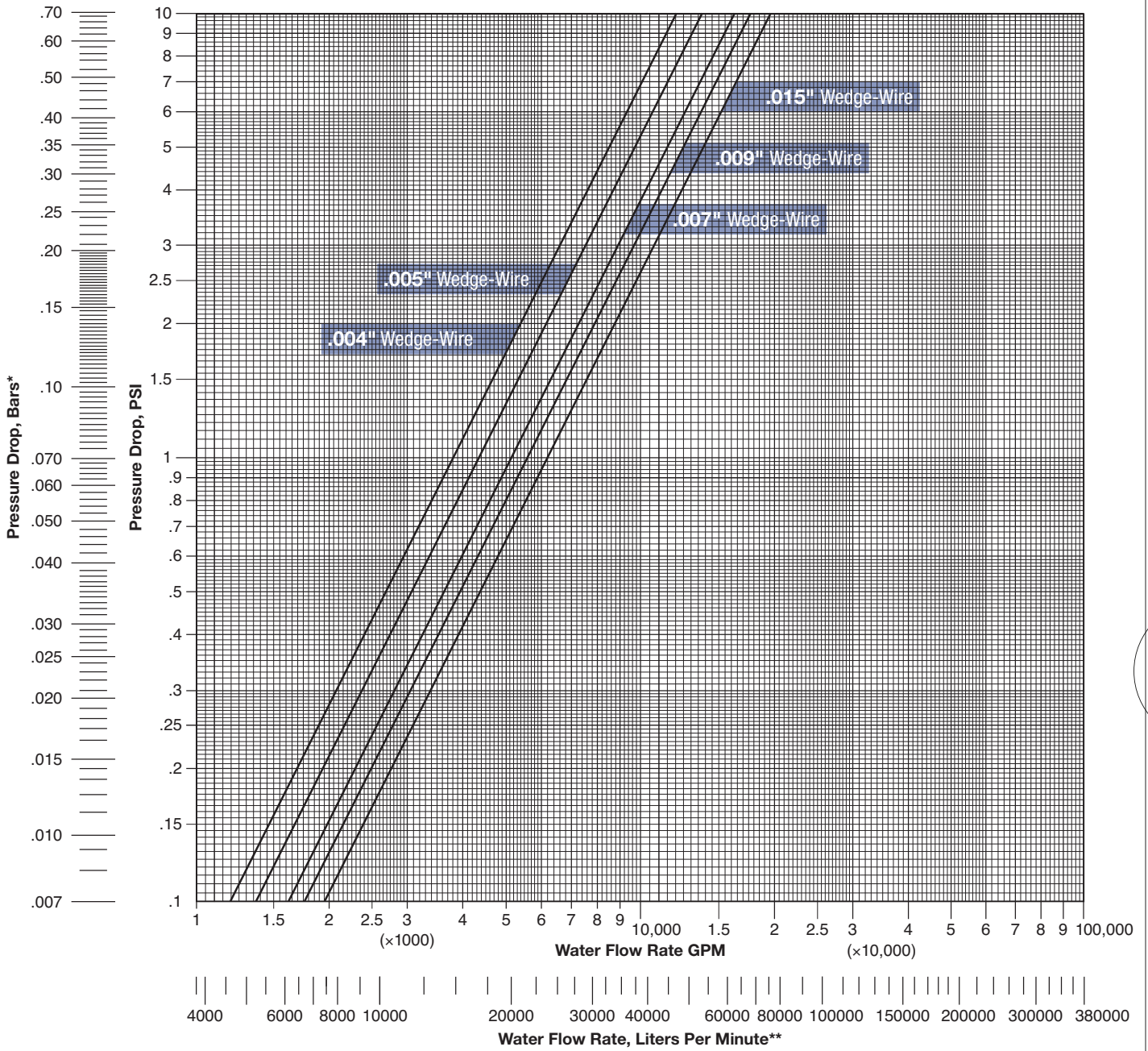
20" HH/AH AND 20" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



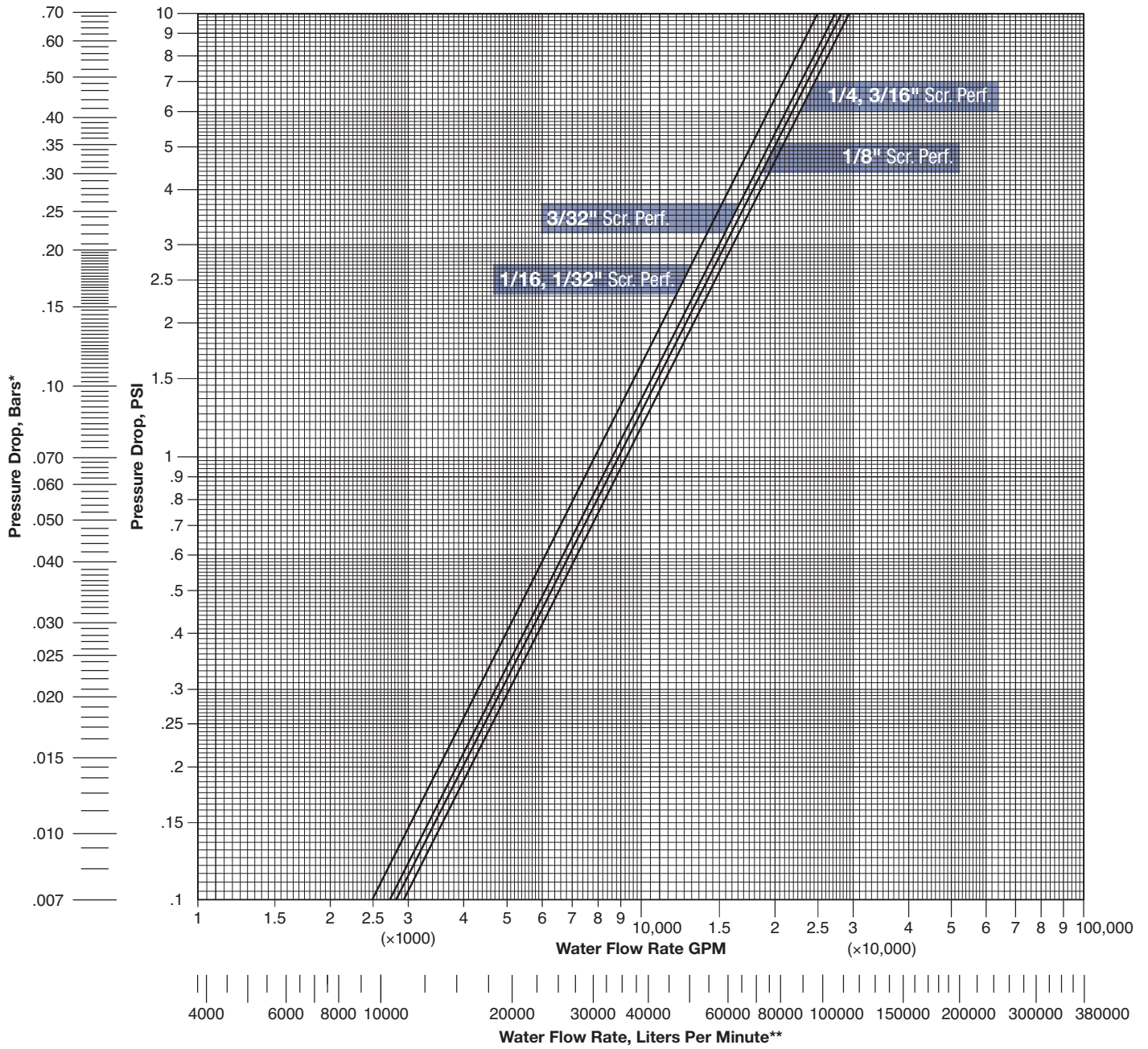
20" HH/AH AND 20" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



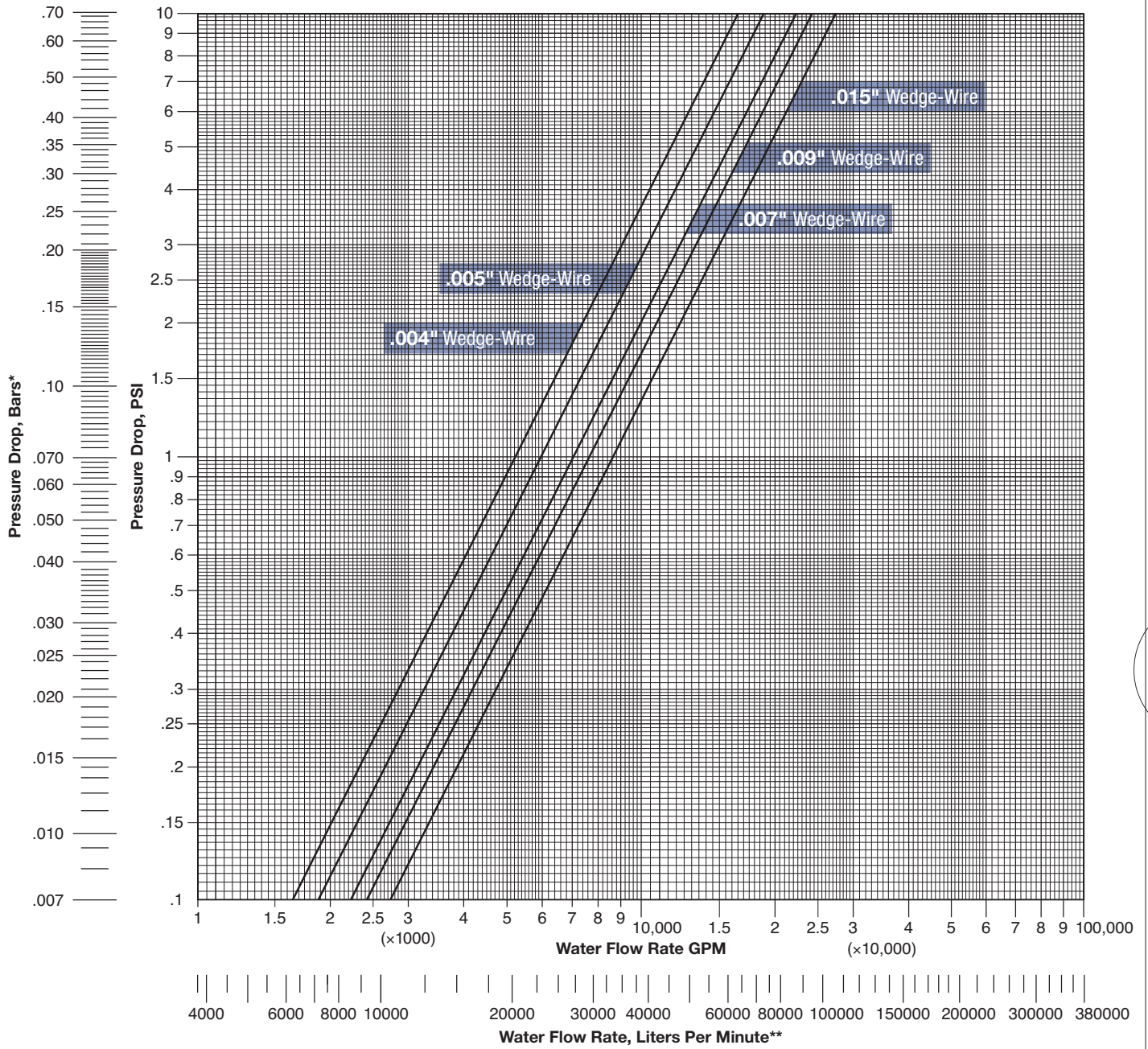
24" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



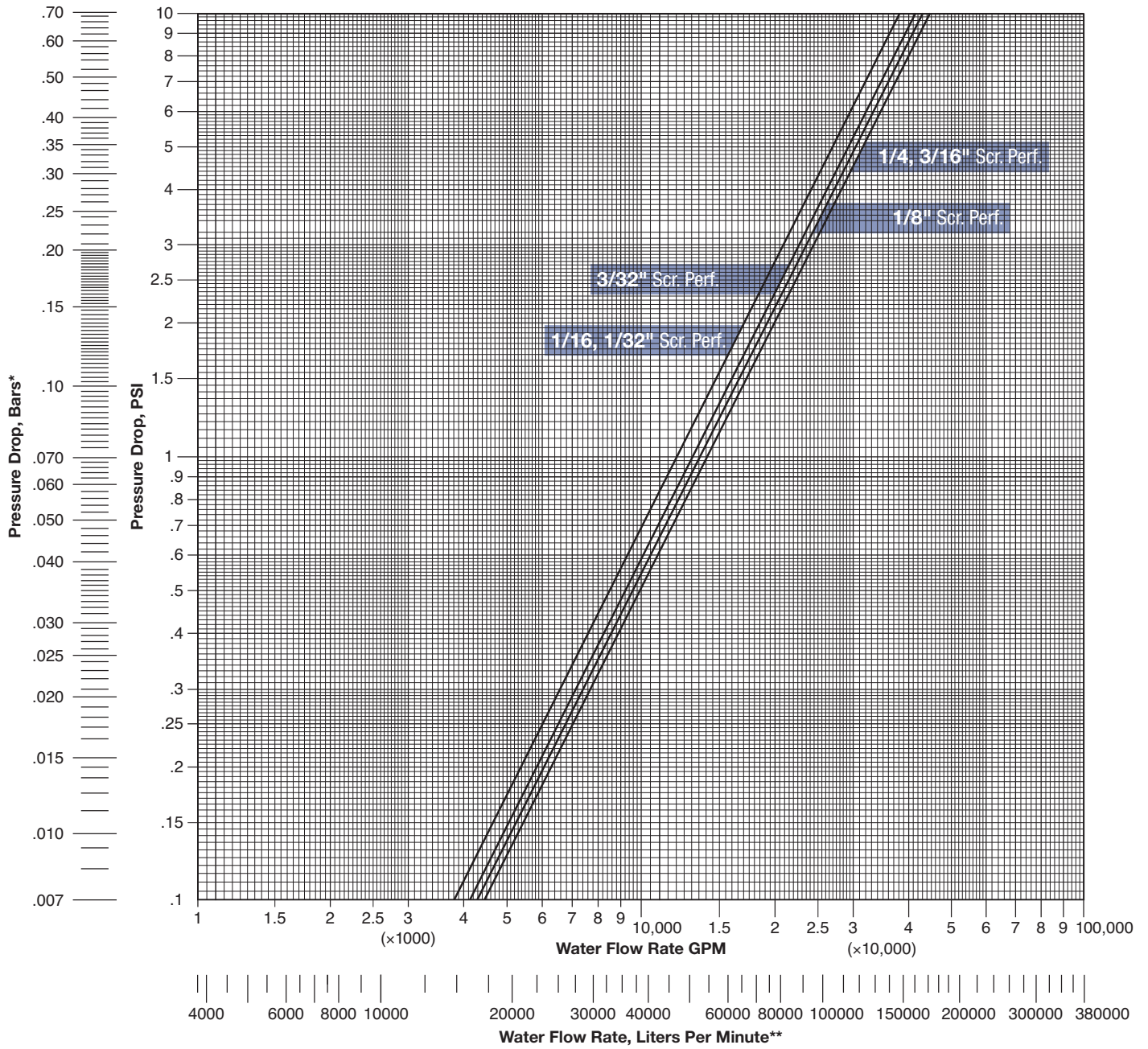
24" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



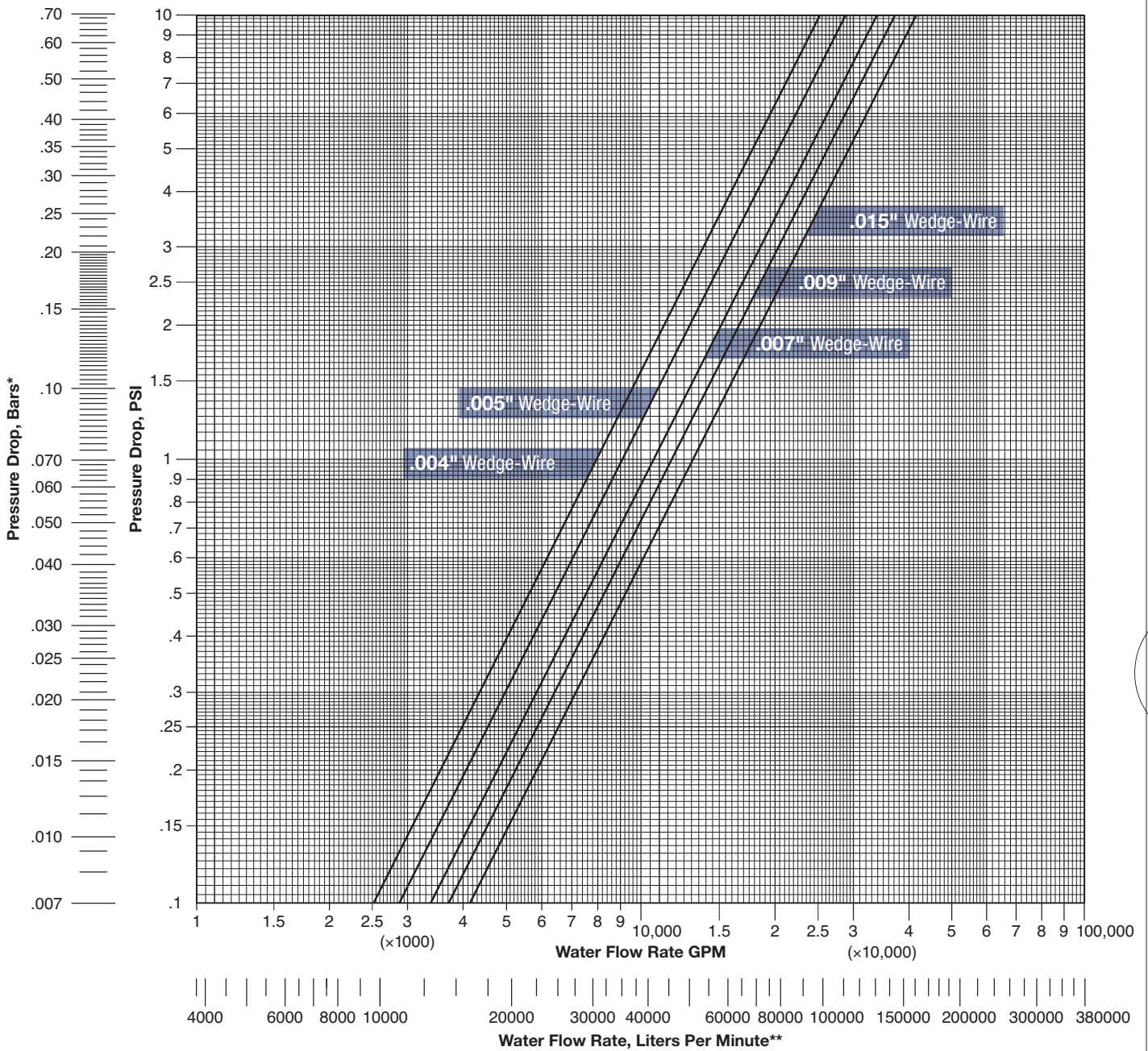
30" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



30" WDA STRAINERS

Clean Pressure Drop vs. Flow Rate



SPECIFYING A MODEL NUMBER

A model number for a Hellan Strainer may be specified by utilizing the charts and information below:

SAMPLE MODEL NUMBER

0 8 0 1 D H - 4 0 4 0 0

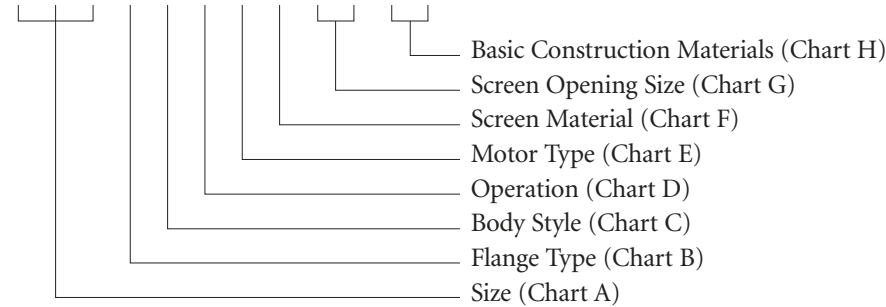


CHART A – STRAINER SIZE

Flow Rate (GPM)	Pipe Size	Part No. Code
95	1-1/2"	015
95	2"	020
160	2-1/2"	025
235	3"	030
360	4"	040
880	6"	060
1450	8"	080
2075	10"	100
2750	12"	120
4100	14"	140
5300	16"	160
8250	20"	200
10650	24"	240
16650	30"	300

(See page 11-12 for information on selecting size.)

CHART B – FLANGE TYPE

Flange Type	Available Materials	Part No. Code
Class 125 Flat Face	Cast Iron	1
Class 250 Raised Face	Cast Iron	2
Class 150 Raised or Flat Face	Steel, Stainless Steel and Bronze	3
Class 300	Steel, Stainless Steel and Bronze	4
NPT Threaded	Cast Iron Cast Steel Cast Stainless Steel	T

Note: Contact the factory for information on flange types not listed above.
 (See page 12 for information on flange selection.)

CHART C – BODY STYLE

Body Style	Part No. Code
Angled Flow, Single Screen	A
In-Line Flow, Dual Screens	D
In-Line Flow, Quad Screens	Q
In-Line Flow, Six Screens	H
In-Line Flow, Single Screen	S
Welded, Single Screen	WS
Welded, Dual Screens	WD

(See pages 8-10 for information on availability of strainers in various types of operation methods.)

CHART D – METHOD OF OPERATION

Method of Operation	Part No. Code
Manual (Handwheel)	H
Automatic	A

Note: Strainers with motorized option must be ordered with appropriate control panel.
 See information on specifying control panel below.
 (See pages 8-10 for information on availability of strainers in various types of operation methods.)

CHART E – MOTOR SPECIFICATIONS FOR AUTOMATIC STRAINERS

(For Manual Strainers, enter a "-" in this portion)

Motor Option	Part No. Code
230/460 VAC 50/60HZ, 3PH, TEFC	1
115/230 VAC 50/60HZ, 1PH, TEFC	2
230/460 VAC 50/60HZ, 3PH, NEMA 7	3
115/230 VAC 50/60HZ, 1PH, NEMA 7	4

Note: Contact the factory for information on motor options not listed above.

CHART F – SCREEN MATERIAL

Screen Material	Part No. Code
316 Screen, Cast Iron Hub, Cast Iron Center Ring, Bronze End Ring	4
316 Stainless Steel, All Parts	5
Monel Screen, All Parts	6

Note: Contact the factory for information on screen materials not listed above.

CHART G – SCREEN OPENING SIZE OPTIONS

Screen Opening Size	Part No. Code
Perforated Screen Options	
1/32"	02
1/16"	04
3/32"	06
1/8"	08
3/16"	12
1/4"	16
Wedge-Wire Screen Options	
.004"*	A4
.005"*	A5
.007"	A7
.009"	A9
.015"	B5

* Consult factory for additional information.
 (See page 11 for information on screen opening options.)

CHART H – BODY MATERIAL OPTIONS

Body Material	Part No. Code
Cast Iron, ASTM A278 Class 30	00
Bronze, C-95800	01
Cast Stainless Steel, ASTM A351 CF8M	04
Cast Steel, ASTM A216 WCB	07
Carbon Steel, Weldment, ASTM A36	10

Note: Contact the factory for body material options and coatings and finishes not listed above.
 (See page 14 for information on body material options.)

When ordering an automatic strainer, an appropriate control panel must also be ordered. Use the chart below to specify an appropriate part number for the control panel.

SAMPLE CONTROL PANEL PART NUMBER

S S P - C 2 D - P

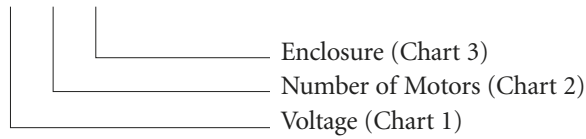


CHART 1 – CONTROL PANEL VOLTAGE OPTIONS	
Control Panel Voltage	Part No. Code
460 VAC 50/60 HZ, 3 PH	A
230 VAC 50/60 HZ, 3 PH	B
115 VAC 50/60 HZ, 1 PH	C
<i>Note: Contact the factory for information on control panel voltages not listed above.</i>	

CHART 2 – NUMBER OF MOTORS FOR CONTROL PANEL	
Number of Motors	Part No. Code
1 Motor	1
2 Motors	2
4 Motors	4
6 Motors	6

CHART 3 – CONTROL PANEL ENCLOSURE OPTIONS	
Enclosure Type	Part No. Code
NEMA 4X Polycarbonate	D
NEMA 4X Stainless Steel	C
<i>Note: Contact the factory for control panel enclosure options not listed above.</i>	

HELLAN MANUAL STRAINERS

The strainer shall be a _____" manual type employing _____ cylindrical straining screens of the peripheral inflow design. The straining screens shall have _____" round perforations or wedgewire _____" slots and be of Type 316 Stainless Steel material. Adjustable rigid scraper bars or brushes shall be mounted adjacent to the screens to accommodate scrapping of accumulated solids from the screens when the straining screens are rotated by means of a handwheel during a cleaning cycle. Removal of an inspection cover shall give access to the scraper bar or brush for inspection and adjustment and shall not require the disassembly of the strainer to accomplish those tasks.

The strainer shall also have a sump for storage of strained solids. A flush valve installed on the sump by others shall be used to flush solids from the strainer during cleaning cycles.

The strainer body shall be of cast or fabricated steel ASTM _____ and have integral, in-line _____" inlet, and outlet flanges. Flanges shall be ANSI class _____.

The assembled strainer shall be hydrostatically pressure tested to 1-1/2" times the maximum allowable working pressure for a period of 10 minutes.

The assembled strainer shall be painted with a high-quality alkyd machinery enamel (gray color), Sherwin-Williams Kem Aqua 70P.

An adjustable pressure differential switch (optional) shall be mounted on the strainer and shall be used to initiate an alarm if the pressure drop reaches a predetermined set point.

The strainer shall be a Hellan Strainer manufactured by The Hellan Strainer Company, Cleveland, Ohio.

HELLAN AUTOMATIC STRAINERS

The strainer shall be a _____" automatic type employing _____ cylindrical straining screens of the peripheral inflow design. The straining screens shall have _____" round perforations or wedgewire _____" slots and be of Type 316 Stainless Steel material. Adjustable rigid scraper bars or brushes shall be mounted adjacent to the screens to accommodate scrapping of accumulated solids from the screens when the straining screens are rotated with an electric motor and suitable gear reduction. Each motor shall be 1/3 to 2 horsepower (as required) _____ Volt, _____ Ph, _____ Hz, 1.15 SF Class "F" Insulation, TEFC, 56C-Face, Footless. Removal of an inspection cover shall give access to the scraper bar or brush for inspection and adjustment and shall not require the disassembly of the strainer to accomplish those tasks.

The strainer shall also have a sump for storage of strained solids. One 1-1/4" ball valve on 1-1/2" & 2" strainers, one 1-1/2" ball valve on 2-1/2" & 3" strainers, two 2" ball valves on 14" and 16" strainers, two 3" ball valves on 20" and 24" strainers and two 4" ball valves on 30" and 36" strainers.

The strainer body shall be of cast or fabricated _____ construction per ASTM _____ and have integral, in-line _____" inlet, and outlet flanges. Flanges shall be ANSI class _____.

The assembled strainer shall be hydrostatically pressure tested to 1-1/2 times the maximum allowable working pressure for a period of 10 minutes.

The assembled (cast construction) strainer shall be painted with a high-quality alkyd machinery enamel (gray color), Sherwin-Williams Kem Aqua 70P. Assembled strainer of fabricated construction will be painted with a white Devcon 253 Epoxy.

An electric control panel furnished by The Hellan Strainer Company shall control the strainer cleaning cycle. The panel shall include all motor starters, control relays, fuse and overload protection, control transformer, operation lights, etc., and shall be mounted in a NEMA 4X wall mounted polycarbonate enclosure equipped with a door disconnect switch. The control panel shall conform to current NEMA, NEC, and OSHA codes and regulations.

The strainer control panel shall be equipped with a programmable solid state timer to initiate cleaning cycles at predetermined intervals, a hand/off/automatic selector switch, and a push-button for manual starting. An adjustable cycle duration timer shall also be furnished to allow for control of the cleaning cycle duration. An adjustable pressure differential switch shall be mounted on the strainer and shall be used to initiate a cleaning cycle if the pressure drop reaches a predetermined set point.

The strainer shall be a Hellan Strainer manufactured by The Hellan Strainer Company, Cleveland, Ohio.

For assistance in selecting a strainer, or specifying a model, contact the Hellan sales department at 1-888-4-HELLAN.

The Hellan Strainer Company

A Subsidiary of
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3249 East 80th Street

Cleveland, Ohio 44104 (USA)

Phone: 216/206-4200

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Toll Free: 888-4-HELLAN

Web: www.hellanstrainer.com



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