

HELLAN® FLUID STRAINERS

TOUGH, DEPENDABLE, PROVEN



**REMOVE
SOLIDS
WITHOUT
STOPPING
FLOW**

**LOW
OPERATING
COSTS**

**OPERATOR
SAFE**

**LOW
MAINTENANCE
COSTS**

**LOW
INSTALLATION
COSTS**

UNIQUE OPERATING FEATURES

Hellan Manual or Motorized Strainer

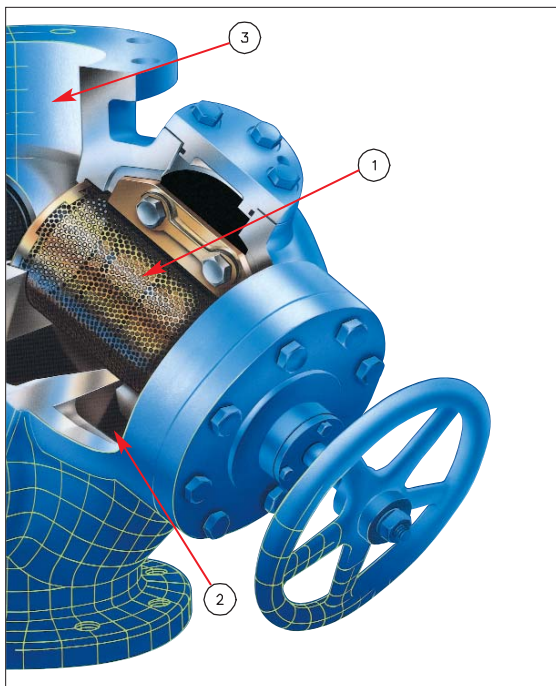
(1.5" – 12" pipe sizes)

REMOVE, DON'T TRAP

Instead of trapping solids in a basket which then must be removed for frequent clean-outs, the Hellan strainer removes the solids from the flow, without stopping the flow or disassembling the unit. Fluid passes into the strainer (1) and through the screen. A deflector rib (2) protects against large objects. The screened fluid (3) flows into service. A simple turn of the hand-wheel (or its motorized equivalent) moves the screen against the scraper bar. Debris moves to the sump where it is later removed during the periodic flushing operation.

LOWER COST, START TO FINISH

Clean-out takes thirty seconds, compared to the three or four hours needed for a basket-type, for minimal labor cost. (Or no labor cost, with the automated version.) While there's no routine disassembly needed with a Hellan strainer, all the internal components can be changed in less than 15 minutes, for minimal maintenance cost.



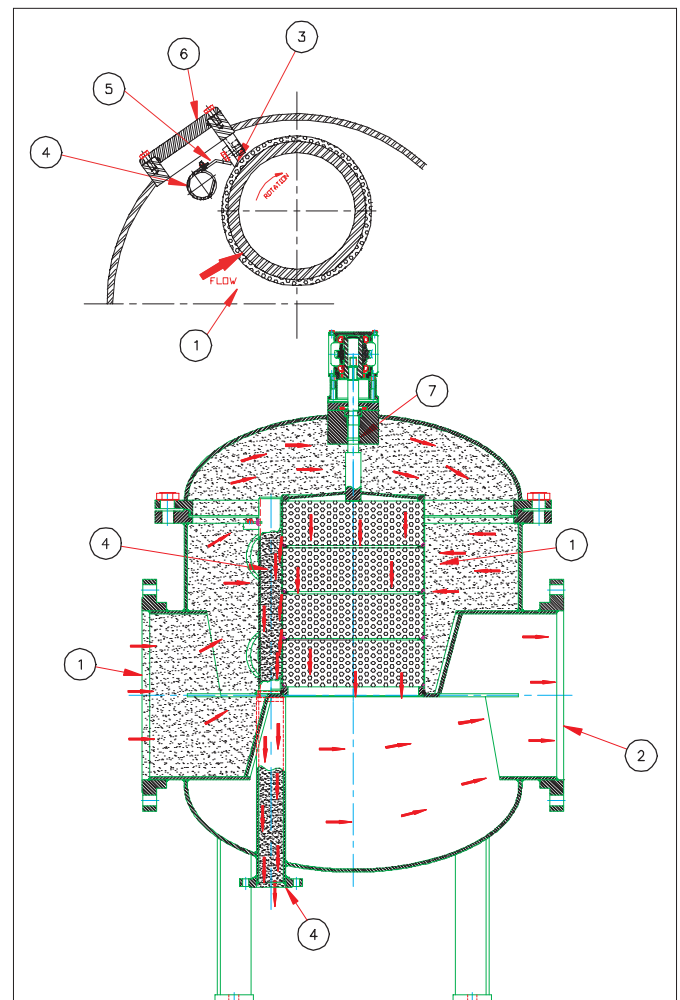
UNIQUE OPERATING FEATURES

Hellan Automatic Strainer

(14" – 36" pipe sizes)

REMOVE, DON'T TRAP

- 1 Fluid passes into the strainer and thru the screens.
- 2 The screened fluid flows out of the strainer.
- 3 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.
- 4 While the screen is rotating, the drain is opened and the debris is discharged out through the drain in use.
- 5 A drain separator is used to prevent the fluid velocity from pulling the debris away from the drain tube opening
- 6 Large inspection ports, sealed with O-rings, permit easy, external adjustment of the scraper bars and drain separators.
- 7 O-rings at the screen shaft provide a tight seal while allowing operation at low torque.



STANDARDS, CERTIFICATIONS, AND PATENTS

- American Bureau of Shipping (ABS)
- America Society of Mechanical Engineers (ASME)
- Fluid Control Institute (FCI)
- Lloyd's Register
- ISO-9001 (Det Norske Veritas)
- Hellan strainers are patent protected

MATERIALS OF CONSTRUCTION

- Cast Iron
- Cast Ductile Iron
- Cast Bronze
- Cast Steel
- Cast Stainless Steel
- 25% Cr Stainless Steel
- Fabricated Steel
- Other Alloys

There are four 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 attendant 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.

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 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.

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	Inches	Metric	Mesh	Micron
1/4"	.250"	6.35 mm	.015"	0.38 mm	40	385
3/16"	.188"	4.77 mm	.009"	0.23 mm	60	230
1/8"	.125"	3.18 mm	.007"	0.18 mm	80	180
3/32"	.094"	2.38 mm	.005"	0.13 mm	100	140
1/16"	.063"	1.59 mm	.004"	0.10 mm	150	100
1/32"	.031"	0.79 mm				

Other perforated screen opening sizes and Wedge-Wire screen slot widths are available upon request.

STRAINER SIZE OPTIONS

Pipe Size		Flow	
Inches	mm	GPM*	Liter/min.*
1-1/2"	38	95	360
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
36"	914	24000	90850

**1.5 psid with 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 B 16.1, 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 and 125LW in 30" and 36" sizes or D.I.N. specifications. 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:

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

MARKETS AND APPLICATIONS

The following are just a few of the markets and applications where Hellan strainers are being used throughout the world.

POWER GENERATION PLANTS – FOSSIL, HYDRO AND NUCLEAR

- Boiler Feed
- Cooling water systems
- Inlet water from lakes, rivers and streams
- Turbine Lubricant Water (Hydro Electric Plants)

POTABLE WATER AND WASTEWATER TREATMENT PLANTS

- Membrane Filters
- Belt filter presses
- Secondary effluent systems
- Chlorinators, seal water and plant service water

PETROLEUM REFINERIES, OFFSHORE RIGS AND FPSO'S

- Fire protection (deluge) systems
- Plate and frame heat exchangers
- Process cooling water
- Water flood systems
- Oil process
- Petroleum filtration

IRON AND STEEL PLANTS

- Re-circulating water
- Descaling water
- Cooling water systems

ETHANOL PLANTS

- Plate and frame heat exchangers
- Slurry tank

CHEMICAL PLANTS

- Plate and frame heat exchangers
- Cooling water systems

MARINE (COMMERCIAL AND MILITARY)

- Plate and frame heat exchangers
- Stern tube shaft seal
- Ballast water
- Bilge water
- Engine cooling water
- A/C condensers and distillers

*Manufactured with quality in the United States
Protected under U.S. Patent #5,194,160*

The Hellan Strainer Company

subsidiary of
Industrial Manufacturing Company LLC

3249 East 80th Street

Cleveland, Ohio 44104 (USA)

Phone: 216/206-4200

Fax: 216/206-4242

Toll Free: 888-4-HELLAN

Web: www.hellanstrainer.com

Printed in the United States
5/06 0M WP

THE HELLAN® STRAINER COMPANY

CLEVELAND, OHIO USA
PHONE (216) 206-4200 • FAX (216) 206-4242
WWW.HELLANSTRAINER.COM