ENGINEERING PRODUCTS

Automatic **Backwash Strainers**

FINE
FILTRATION
DOWN TO
50 MICRON

CUSTOM BUILT

COOLING & INTAKE WATER
SECONDARY EFFLUENT
WASTEWATER
PULP&PAPER
IRRIGATION
CHEMICALS
EQUIPMENT PROTECTION
TEXTILES
FOOD

TECHNICAL SPECIFICATIONS

BACKWASH-STRAINER AUTOMATIC CONTROL SYSTEMS

MAJOR COMPONENTS OF THE SYSTEM

1 Local control and indication for motor, backwash actuator and differential pressure controller: switches, lights, disconnects, alarms, timers and screens as required.

2 Circuit breaker protection with magnetic starter & overload for

3 PLC-based control system with adjustable timers for backwash arm operation

4 Differential pressure override protection and monitoring

5 Backwash valve actuation: Electric or pneumatic

6 Pre-wired and tested for easy installation

CONTROL OPTIONS

A 120V
230V
380V
400V
460/480V
575V
1PHor 3PH,
50 or 60 Hz

B Enclosure construction in FRP or SS / NEMA 4/12, NEMA 4X,

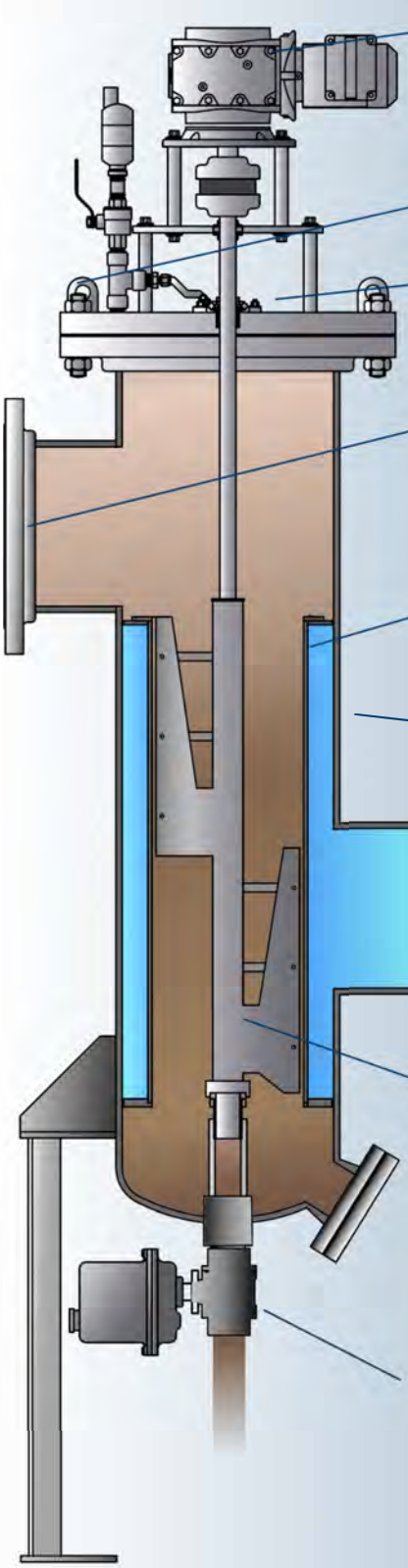
C Custom built to integrate into local control center system allowing for control or supervision of other

D Several options for local/remote indication, switches, timers, touch screen controls

E Common control panel available for multiple strainer units

F Remote supervision: dry contacts, PLC based, 4-20mA, audible alarms, DH-485, digital/analog

MODEL ACRS-OF OFFSET BACKWASH STRAINER



Motor and gear reducer for rotating shaft drive

Lifting Lugs

Seal Arrangements
- Mechanical seal
- Packing gland

Inlet Flange
-150#
-300#
-600#
- SO/WN
- RF/FF

Filtration Element
- Perforated
- Wire Mesh
- Wedgewire

Capacity ratio between 6:1 and 3:1

Body
- Carbon Steel
- SS304
- SS316
- Monel
- FRP
- Duplex 2205

Outlet Flange
-150#
-300#
- 600#
- SO/WN
- RF/FF

Backwash Mechanism
- Suction Arm
- Blades

Backwash Outlet
Coupling or flange to backwash valve or material collector.

GENERAL DESCRIPTION

HOW IT WORKS

Designed for the continuous removal of suspended solids

Dirty fluid enters through top inlet, clean fluid flows through bottom outlet

Fluid passes uninterruped through Wedgewire screen; suspended solids are trapped

Cleaning is accomplished by a rotating backwash arm

Backwash line at the bottom of unit ejects suspended solids

Custom built control panel provides local/remote controls and indication

ADVANTAGES

Ability to remove suspended small particles from a variety of industrial applications

Close-mount backwash arm

Custom connection arrangement to suit any applicationrequirements (inline/offset) or current onsite piping

Intermittent cleaning cycle with low system pressure losses

Several control packages available with local/remote indication and controls

World-class support from highly trained technicians and engineers on demand

OPTIONS

Design
- Offset & Inline models
- 150#, 300#,600#

Body Construciton
- CS, SS304/316, FRP
- Monel 400, D2205

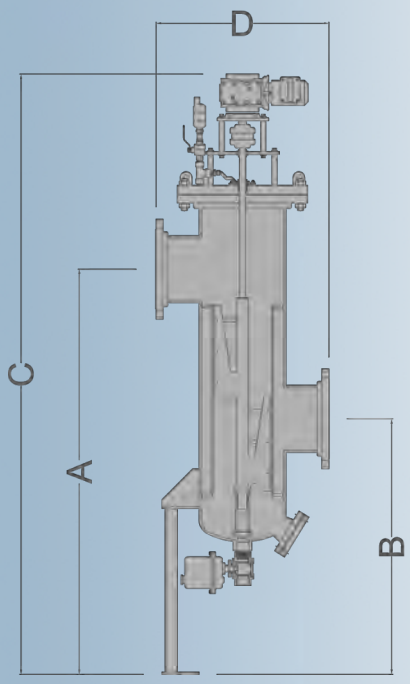
Internals Construction
- SS316, Monel 400, D2205

Backwash Mechanism
- FRP/Teflon Blades

Wedgewire/Perf Screen
- SS316, Monel 400
- 50 to 6000 micron slot

Strainer Controls
- PLC Fully Automated
- NEMA 4/12, 4X, 7X

Additional Options
- ASME Sec. VIII, Div. 1
- U-Stamp, CRN, PED



DIMENSIONS FOR - OF - OFFSET UNITS							
Acme Model	Inlet / Outlet	FLOW(GPM)	FLOW(M^3/H)	A	B	C	D
ACRS-OF-1-150-CS/SS	1" (25)	≤ 60	≤ 14	45 (1143)	30 (762)	20 (508)	69 (1753)
ACRS-OF-2-150-CS/SS	2" (50)	≤ 100	≤ 23	45 (1143)	30 (762)	20 (508)	69 (1753)
ACRS-OF-3-150-CS/SS	3" (75)	≤ 200	≤ 45	45 (1143)	30 (762)	20 (508)	69 (1753)
ACRS-OF-4-150-CS/SS	4" (100)	250 - 400	57-91	48 (1219)	30 (762)	22 (559)	72 (1829)
ACRS-OF-6-150-CS/SS	6" (150)	550-950	125-216	60 (1524)	36 (914)	24 (610)	93 (2362)
ACRS-OF-8-150-CS/SS	8" (200)	950-1500	216-340	66 (1676)	36 (914)	26 (660)	99 (2515)
ACRS-OF-10-150-CS/SS	10" (250)	1500-2000	340-450	55 (1397)	25 (635)	28 (711)	90 (2286)
ACRS-OF-12-150-CS/SS	12" (300)	2000-3500	450-795	58.5 (1486)	28 (711)	34 (864)	95 (2413)
ACRS-OF-14-150-CS/SS	14" (350)	3500-4500	795-1022	69.5 (1765)	33 (838)	36 (914)	106 (2692)
ACRS-OF-16-150-CS/SS	16" (400)	4500-5500	1022-1250	85 (2159)	45 (1143)	40 (1016)	126 (3200)
ACRS-OF-18-150-CS/SS	18" (450)	5500-7000	1250-1590	98.5 (2502)	32.5 (826)	50 (1270)	135 (3429)
ACRS-OF-20-150-CS/SS	20" (500)	7000-8500	1590-1930	98.5 (2502)	32.5 (826)	50 (1270)	135 (3429)
ACRS-OF-24-150-CS/SS	24" (600)	8500-12000	1930-2725	109 (2769)	61 (1549)	60 (1524)	150 (3810)
ACRS-OF-30-150-CS/SS	30" (750)	12000-18000	2725-4090	110 (2794)	50 (1270)	72 (1829)	160 (4064)
ACRS-OF-42-150-CS/SS	42" (1000)	26000-36000	5900-8175	132 (3353)	60 (1524)	96 (2438)	182 (4623)

**These dimensions are for reference only and can be changed to suit needs

PRESSURE DROP MULTIPLYING FACTORS																
		Temperature – Degrees Fahrenheit														
Type of Liquid	Viscosity SSU	70	80	90	100	110	120	130	140	150	160	170	180	200	220	240
Bunker "C" Fuel Oil	3000 S at 112°F	7.0	6.0	5.4	4.9	4.5	4.0	3.8	3.6	3.3	3.1	2.9	2.8	2.5	2.3	2.1
Heavy Lube Oil	500 S at 100°F	3.7	3.2	2.9	2.8	2.5	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3
Medium Lube Oil	300 S at 100°F	2.9	2.7	2.5	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2
Light Lube Oil	150 S at 100°F	2.2	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1	1.1	1.1	1.1

SELECTION AND ENGINEERING DATA

PERFORATED METAL SCREENS are available in brass, stainless steels, monel, etc. For fine perforations a large wire mesh may be used to provide additional rigidity.

WEDGEWIRE SCREENS used for fine screening are very rigid and more clog-resistant than wire mesh screens. They have a reinforced construction and wedge shaped profile reducing the possibility of retaining particles smaller than the screen opening.

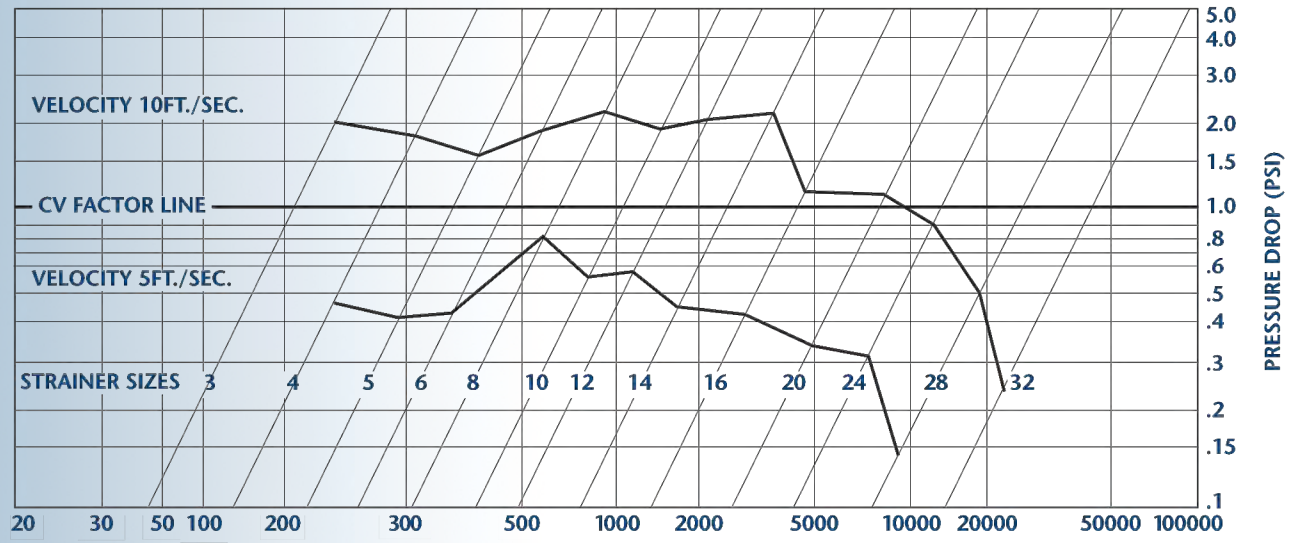
WIRE MESH SCREENS are manufactured from woven wire cloth in a variety of metals. They are usually used for fine straining with openings unachievable with perforated metal.

SCREEN CAPACITY RATIO is the ratio between the total screen openings area and the area of the inlet pipe opening. For example: if the inlet pipe's cross section is 20 sq. in and the screen's total open area is 80 sq. in, the ratio is "4 to 1". A high ratio results in a lower pressure drop and reduces the scraping system's frequency of operation.

CLOGGED SCREENS: These charts represent the results of tests conducted with strainers containing clean screens. With screens 50% clogged pressure drop results are approximately double those shown in charts.

MULTIPLYING FACTORS: All results are based upon the use of .033 diam. through 1⁄4 " diam. perforations. Mesh lined perforated metal screens: multiply pressure loss by 1.25.

SCRAPER STRAINER CAPACITY CHART – CLEAN WATER – STANDARD SCREENS



STRAINER ELEMENT / OPENING EQUIVALENTS		
Inches	**Millimeters**	**Mesh**
.004	.1016	150
.007	.1778	80
.009	.2286	60
.015	.3810	40
.034	.8636	20
Inches	**Millimeters**	**Perforation**
.033	.838	1/32
.045	1.143	3/64
.070	1.778	1/16
.094	2.387	3/32
.125	3.175	1/8
.150	3.810	5/32
.1875	4.762	3/16
.250	6.350	1/4
.375	9.525	3/8
.500	12.70	1/2

CONVERSION FACTORS
Bars x 14.5 = PSI
KPa x .145 = PSI
Kg/cm^2 x 14.2 = PSI
Ft. of water x .433 = PSI
m^3/HR x 4.4 = GPM
Liter/Min x .265 = GPM
Tons of water/day x .166 = GPM
Barrels (oil) x 42 = Gallons (oil)
$\frac{GPM \times .4085}{ID^2 \text{ in inches}}$ = Velocity ft./sec
mm x .03937 = inches
Kilograms x 2.2 = pounds
Mg/L = PPM
SSU = Centistoke x 4.6347
Centipoise = Centistoke x specific gravity

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