acme

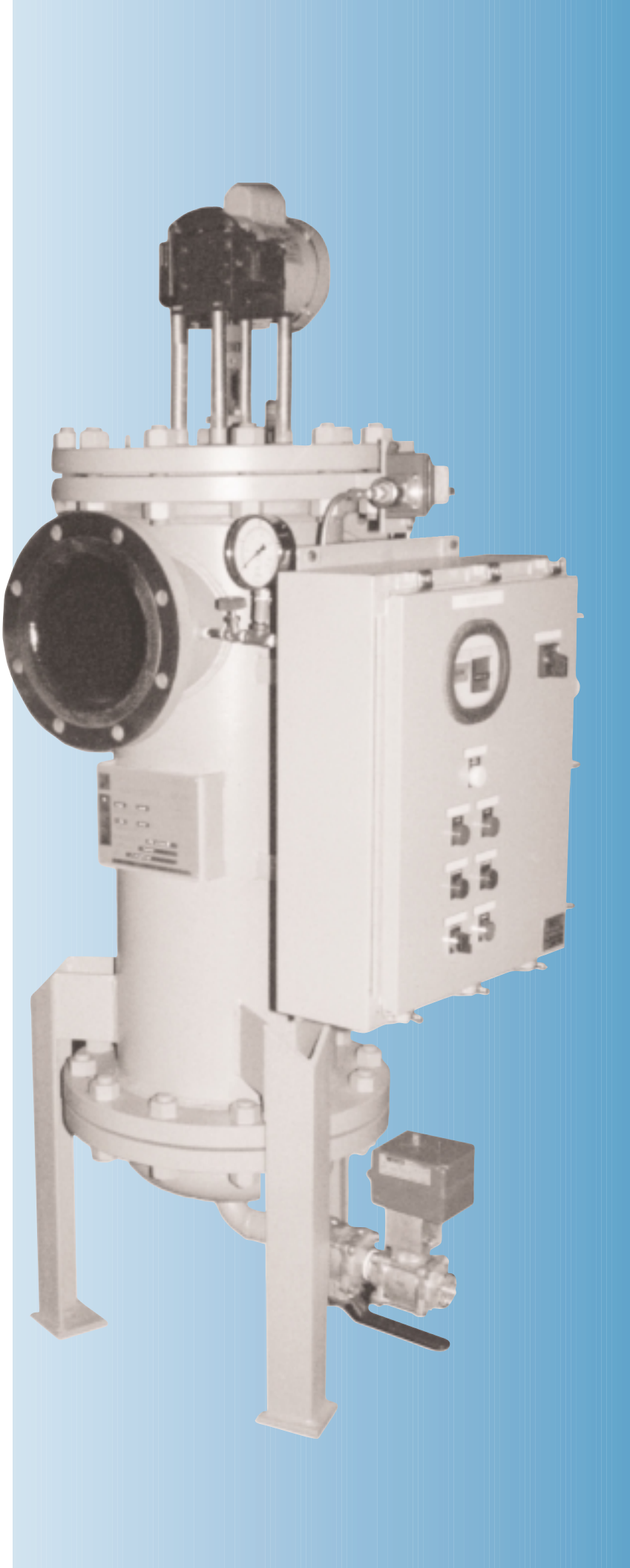
Automatic Scraper-Strainers

Features

- Removes large and small particles
- Fabricated strainer in any metal
- Connection arrangements to suit any application requirements
- Self adjusting scraper-strainer action
- Does not use backwash system or clean water for contaminant removal
- Automatic operation, self-cleaning with practically no maintenance
- ASME section VIII, Div. 1, code stamped, available

Typical Applications

- River and lake water intakes
- Cooling tower water
- Cooling water to power plants and chemical processes
- Wastewater from textile mills, laundries and other contaminated effluents
- Heavy slurries from power plants
- White water to paper machine showers
- Water to spraying systems
- Black liquor to burners



SCRAPER-STRAINER AUTOMATIC CONTROL SYSTEMS

The ACME Automatic Scraper-Strainers are supplied with a control system suitable for the application and incorporating the flexibility of field adjustments.

MAJOR COMPONENTS OF THE SYSTEM

1 Control panel enclosure, NEMA 1, 12 or 4 with terminal block, indicating lights and selector switch. The panel is installed on the strainer or supplied separately for remote installation.

2 Fused circuit and magnetic starter with overload for the scraper motor.

3 Adjustable cycle timer for the scraper motor and blowdown valve operation.

4 Differential pressure switch for scraper motor operation.

5 Blowdown valve, - electrically actuated.

6 Integral audible and visual alarm circuit with contacts for remote supervision.

OPTIONS

A 230V, 380V, 400V, 575V, 1 PH or 3 PH, 50 or 60Hz.

B Disconnect switch, door interlocked.

C Control of other filtration system components, such as pumps, filter presses, automatic valves, associated controls, etc, all to be incorporated into a single ACME control system.

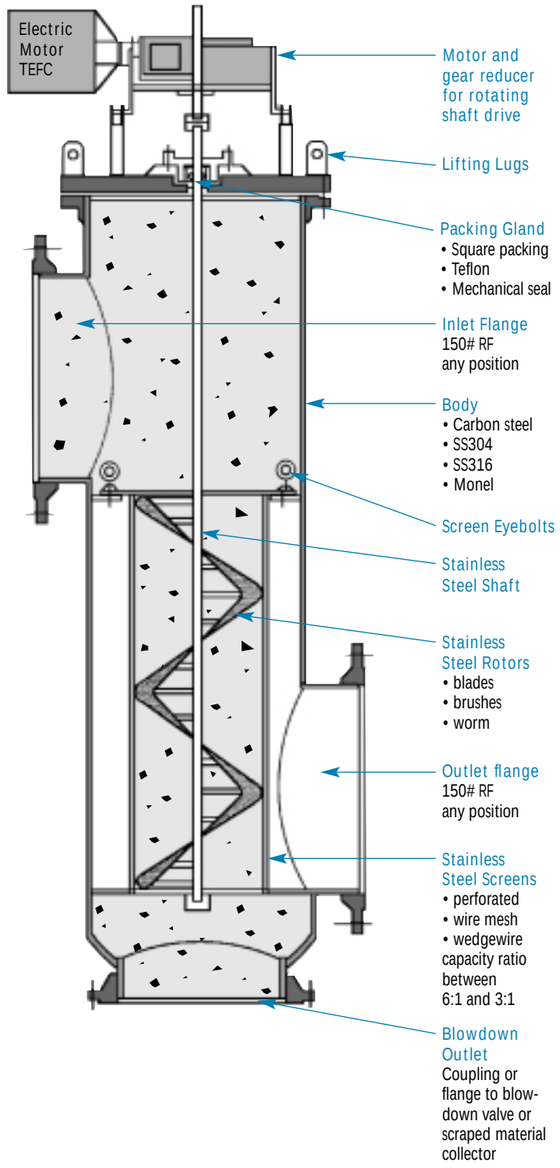
D PLC control of the complete system as above.

E Pneumatic interface for valve actuation or other pneumatic items included in the above.

F Control of isolating knife gate valves and flushing solenoid valves associated with waste collector systems attached to the scraper-strainer.

G Control of vacuum pumps in the drain line for ACME Scraper-Strainers installed on the suction side of main system pumps.

MODEL ACRS-OF OFFSET SCRAPER-STRAINER



GENERAL DESCRIPTION

ACME Automatic self-cleaning Scraper-Strainers can remove both large and small particles from dirty or contaminated fluid flows.

The ACME design is particularly suitable for large particles because it uses dirty water for the blowdown cycle. The particle size is not limited by the cleaning suction arm inlet or the size of the backwash outlet opening, common limitations of backwash-type units.

Rotating the blades scrapes the inside surface of the screen, dislodging foreign matter which is then flushed away with dirty liquid by automatic or periodic blowdown.

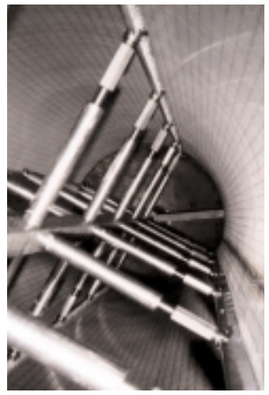
There are two models of ACME Automatic Scraper-Strainers:

Model: ACRS-L
designed for “in-line” pipe installations. This construction also has a flanged bottom section which provides inspection access without removing the top flange assembly. This flanged bottom section can also be sized to act as a collector if so required by the application.

Model: ACRS-OF
designed for offset installations. The inlet and outlet connections can be at different levels or in different directions.

Both models are fabricated units. Standard materials for body and bonnet are carbon steel, stainless steel 304 or stainless steel 316.

Rotor types available are standard blade in one or more sections, brush type in stainless steel or teflon which are self adjusting for efficient cleaning. Worm-type rotors are also available.



View of strainer internals with scraper mechanism and wedgewire screen.

Perforated metal, mesh or wedge-wire screens are provided depending on the application.

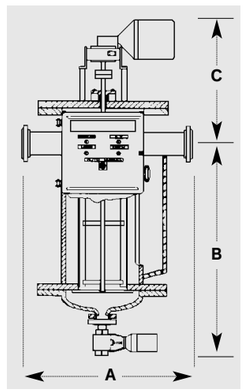
An electric motor with an associated gear train drives the scraper shaft. A timer programs the operation of the scraper motor and of the blowdown valve. A differential pressure switch is standard on all units and will override the programmed operation if the pressure drop across the ACME Scraper-Strainer exceeds a selected value. Visual and audible alarms are incorporated in the control panel of the unit.

Because of their construction, durability and flexibility, ACME Automatic Scraper-Strainers are a cost-effective solution to a wide range of demanding filtration applications.

Scraper-Strainer with top flange hoist mechanism.



MODEL ACRS-L



DIMENSIONS FOR MODEL ACRS-L IN LINE UNITS

Size In.	A Inches	B Inches	C Inches	Bottom Outlet
2	16	26	23	1
2 1/2	16	27	23	1
3	21	30	24	1 1/2
4	24	33	24	1 1/2
6	28	42	27	2
8	33	50	28	2
10	37	58	29	2
12	42	60	29	3
14	59	75	32	4
16	62	78	34	4
18	65	80	36	4
20	68	84	38	6
24	76	106	42	6

Notes: All dimensions are for general guidance only and subject to change. Type of support selected and position of blowdown valve will affect overall dimensions. Screen ratio to inlet varies between 6:1 and 3:1.

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 122° 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.

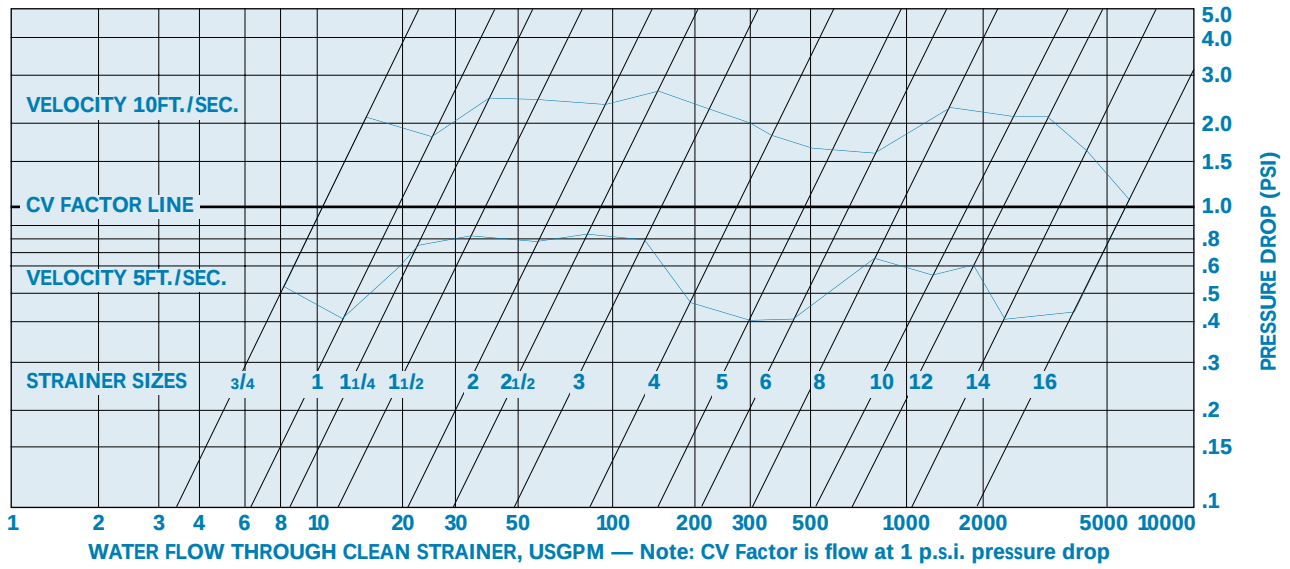
WIRE MESH SCREENS are manufactured from woven wire cloth in a variety of metals. They are usually used for fine straining with openings unachievable with perforated metal.

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 ¼ " diam. perforations. Mesh lined perforated metal screens: multiply pressure loss by 1.25.

SCRAPER STRAINER CAPACITY CHART - CLEAN WATER - STANDARD SCREENS



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

STRAINER ELEMENT/OPENING EQUIVALENTS

Inches	Millimeters	Mesh
.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	12.700	1/2

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Represented by:

The information in this bulletin is a general description of the units. All specifications are subject to change without notice. Installation, maintenance, operating and any other instructions furnished with the equipment must be carefully followed by installers, owners and users.