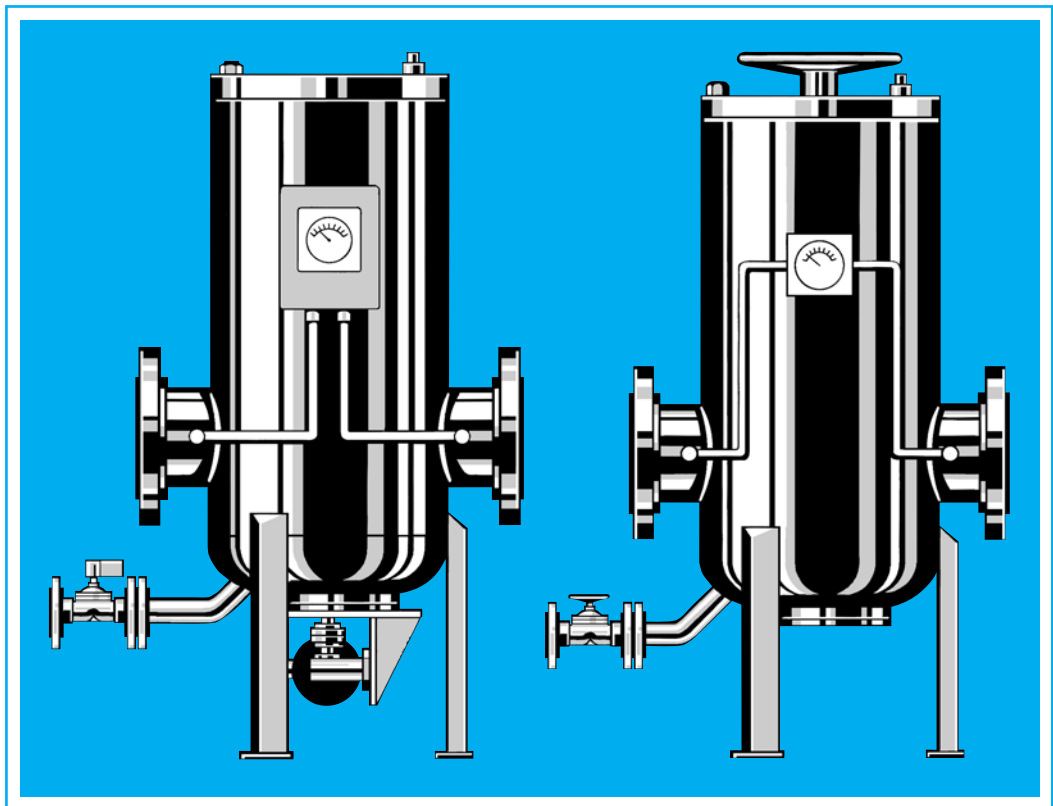


Ulbrec ABW series Automatic Backwash

- Fully automatic P.L.C. control
- Robust, premium quality fabricated body
- Sizes from 50mm to 600mm
- Variety of body materials available
- Stainless steel internal components
- Electric backwash drive
- Optional design code compliance



Ulbrec ABW Series Automatic Backwash Strainers

The Ulbrec Auto Backwash System offers you, the customer, great versatility plus a wide variety of options that can be adapted to suit just about any requirement. Should you require assistance on this matter, please contact us or our Agent, as we may be able to customise your application at little or no cost.

Ulbrec Automatic Backwash Strainer

OPERATION

Filter cycle

Liquid passes into the strainer body, up into the filter element, through the filtered liquid chamber and on to the strainer outlet.

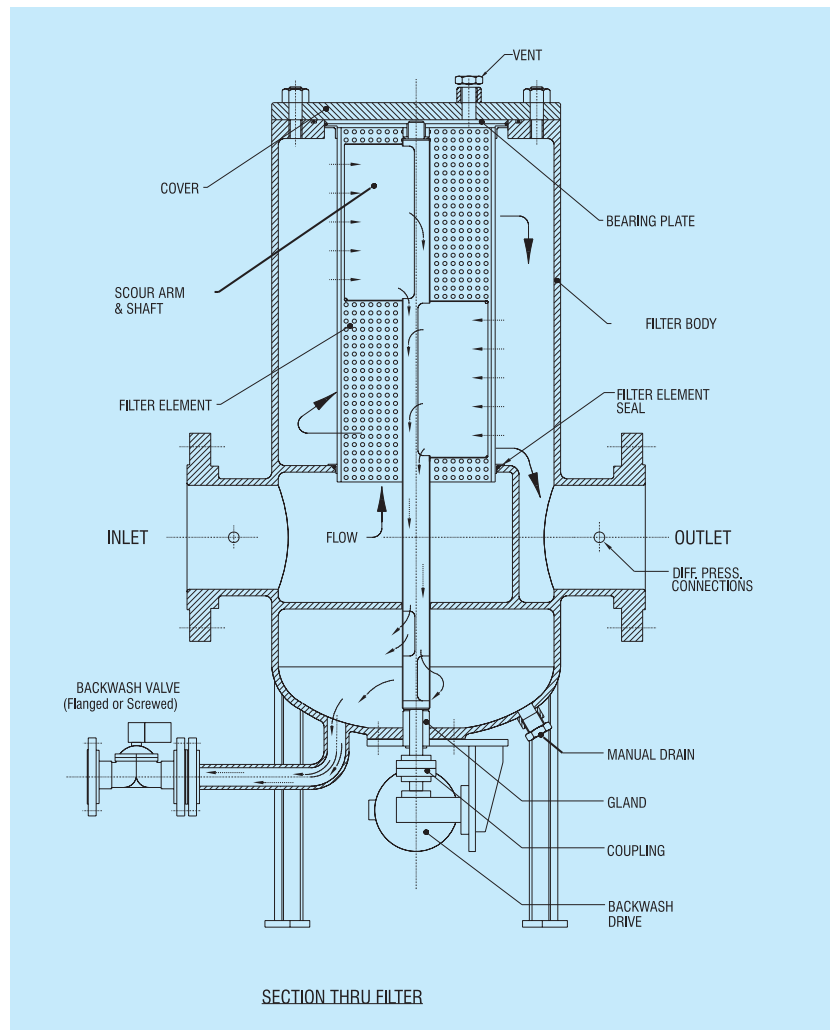
Particle matter, larger than the screen aperture size, is collected on the inside of the strainer element until the differential pressure increases to approximately 60kPa. This differential pressure is shown on the gauge mounted in the instrument panel. When the set differential pressure is reached, the strainer will commence the backwash cycle automatically.

Filtering will continue at a slightly reduced flowrate during the backwash cycle.

Backwash cycle

The strainer backwash cycle has been designed to provide flexibility of backwash duration and can be regulated to give minimum backwash time consistent with thorough cleaning.

When the backwash cycle is activated, the backwash motor starts, the scouring arms commence rotating and the backwash drain valve opens. Filtered water then flows back under full system pressure through the screen into the scouring arm apertures, releasing the



contaminant from the inner screen surface. The fluid and the contaminant then flow down the scour arm tube, into the backwash chamber and through the outlet valve.

The differential pressure is reduced to normal after one revolution of the scouring arms (20 seconds). The unit will return to the filter cycle automatically.

FEATURES & BENEFITS

Low Maintenance

The Automatic Backwash facility negates manual cleaning of the strainer elements normally associated with standard basket or 'Y' type strainer, thereby reducing manpower requirement.

Continuous Filtration

The Ulbrec Auto Backwash Strainer produces continuous filtration of the process flow, even

during the backwash cycle. Although some loss of flow occurs, it would normally be only 5-10%, dependant upon process conditions (ref. BACKWASHING for further details).

The strainer offers a wide and practical range of filtration screen sizes for the majority of strainer applications. Screens can vary from very large apertures, 25mm, to very small apertures, 150 microns. Finer aperture sizes are considered impractical in automatic backwash units due to rapid clogging, and hence excessive backwashing and consequent high backwash losses. Finer screen apertures are also inefficient in the filtration process as they reduce the available open area of the screen, thereby increasing differential pressure and, in the backwashing process, contaminants would be exceptionally difficult to release from the very small apertures. This would cause cumulative blocking and extended periods of shutdown for manual cleaning and maintenance.

Large filtration area

The Ulbrec 'ABW' Auto Backwash strainers are sized with large stainless steel elements to minimise initial differential pressure. The average screen size is approximately fifteen times the standard connection pipe cross-sectional area.

This large filtration area increases the time interval between backwash cycles, thereby decreasing the nett process fluid losses.

CONSTRUCTION

The Ulbrec Automatic Backwash Strainer consists of the following major component assemblies:

Strainer body

Fabricated carbon steel, (standard) or stainless steel (optional)

The strainer body consists of a vertical cylindrical shell with inline flanged inlet and outlet connections, cover, and backwash drain connection. All wetted parts are finished with epoxy resin coating (carbon steel only). The external coating comprises a blue oxide zinc base primer; this provides the base for finish coating to customer's colour requirements. (Optional external finish can be provided to customer specification).

Strainer element

Fabricated perforated stainless steel.
Optional fine S.S. mesh or wedgewire

available if required.

The strainer element is a vertical cylindrical screen that is located in the diaphragm of the strainer body against an 'O' ring seal. The top of the screen is fitted with a plate and bearing to locate the scour arm shaft.

Control panel

Polycarbonate waterproof enclosure.

The control panel is mounted on the front of the strainer body near the top cover. It contains a differential pressure gauge and switch, programmable logic controller, manual backwash button, alarm light and normal operation light. Optional facility for voltage free contacts are available.

Backwash mechanism

Fabricated stainless steel scour arm and shaft with electric gearmotor and solenoid valve.

The backwash mechanism comprises a central tube fitted with scouring arms extending to the internal diameter of the strainer element. This assembly is rotated by the electric gearmotor drive fitted to the underside of the strainer body. The backwash drain is fitted with a solenoid valve.

Backwashing

The backwashing mechanism of these Strainers offer strength and reliability of function combined with high efficiency. This simple system of backflushing is ideal for water or seawater with hard particle contaminants. For other applications or where contaminant may be sticky or fibrous, one of the many options available such as wiper or brush assemblies, may be a more suitable alternative, and should be discussed with Ulbrich Products or their Representative.

The backwash control system offers flexibility of the backwash cycle by having an adjustable differential pressure switch in addition to an adjustable backwash cycle P.L.C. Standard activation of backwashing is by differential pressure but can be provided with time control unit if required.

The backwash drain is sized to suit most applications. However, the size and type of the contaminant will determine the specific application requirement. The size of the backwash drain, together with the system pressure, will determine the backwash losses.

APPLICATIONS

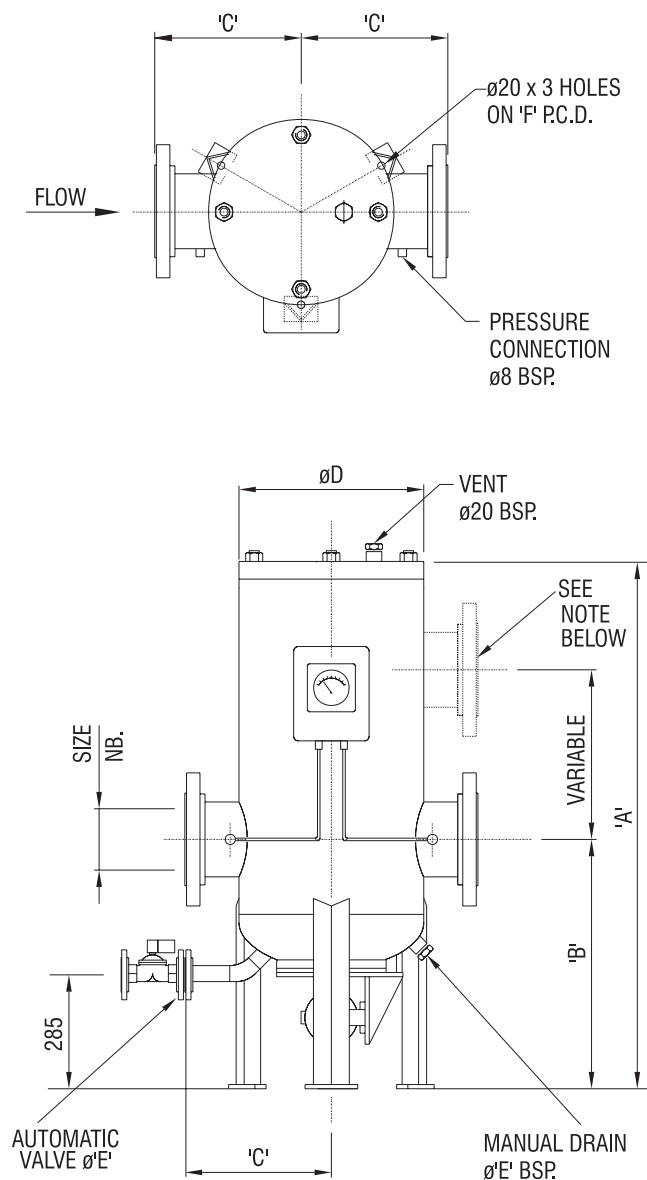
In order to reduce the contaminant to acceptable levels, treatment in a process system or for acceptable disposal of waste water, Ulbrec Auto Backwash Strainers are designed for use in water and some chemical applications.

These units are ideally suited to the following applications:

- Prefilters in water treatment systems for the production of potable water.
- Continuous process cleaning systems where contaminants can vary from dirt and grit to bottle tops and labels, cigarette butts and general consumer waste materials.
- Primary flow filters in electro chlorination systems for Power Stations.
- Insurance filters for the protection of downstream equipment and instrumentation in fresh water and sea water applications.
- Effluent treatment system filters for the reduction of solid and fibrous contaminants in process water and sewerage effluents.
- Cooling water strainers in power stations, drawing water from fresh water streams/ rivers and seawater containing high levels of dirt, sand and organic vegetable matter.

The standard Strainers are unsuitable for suction duty applications unless they operate with positive up stream pressure.

DIMENSIONS



MODEL No.	SIZE	A	B	C	D	E	F	Weight (kg)	Screen Area cm ²
	mm.	mm.	mm.	mm.	mm.	mm.	mm.		
ABW50	50	780	480	180	220	20	210	77	626
ABW65	65	780	480	180	220	20	210	80	626
ABW80	80	780	480	180	220	20	210	82	626
ABW100	100	930	540	250	275	25	265	120	1176
ABW150	150	1240	600	330	360	40	350	200	2865
ABW200	200	1450	650	390	460	40	450	300	4690
ABW250	250	1810	710	420	510	40	500	400	8140
ABW300	300	2020	750	475	610	50	610	550	11680
ABW350	350	2230	780	500	660	50	660	750	14230
ABW400	400	2450	810	550	760	50	760	980	18850
ABW450	450	2650	930	625	915	50	915	1340	24100
ABW500	500	3050	950	730	915	50	915	1500	30040
ABW600	600	3050	1030	810	1070	50	1070	2340	43880

ALL DIMENSIONS ARE NOMINAL AND SUBJECT TO MANUFACTURING TOLERANCES.
 CERTIFIED DRAWINGS ARE AVAILABLE UPON REQUEST.
 OUTLET CAN BE LOCATED OR ORIENTATED TO SUIT CUSTOMER REQUIREMENTS.

ABW SPECIFICATIONS

STANDARD DESIGN PRESSURE 1.05 MPa

COMPONENT	MATERIAL TYPE		MANUFACTURING STANDARD
	STANDARD(a)	OPTIONAL	
BODY			
SHELL	C1(b)	S1, S2	AS.1210-97
DISHED END	C2	S3, S7	AS. 1210-97
BRANCHES	C1 (c)	S1, S2	
FLANGES - Connections (d)	C3	C3/S3, S4	ANSI B16.5
FLANGES - Closure	C2	C2/S3, S4	AS.1210-97
BOLTING	S8	S9	BS4882-73
GLAND	S5/R1	S6, R1	
LEGS/FEET	C5	S5, S6	
SEAL	R1	R2, R3	BS1806-74
ELEMENT			
FRAME	S6	S10	
MESH	S5	S6, S10	BS481-PT1
MESH SUPPORT (e)	S3	S4, S10	
SEALS	R1	R2, R3	BS1806-74
BACKWASH MECHANISM			
GEARMOTOR (f)	V	-	NEMA
COUPLING	I	-	
FLEX ELEMENT	R2	-	
SCOUR ARM	S1, S3 & S5	S2, S4, S6	
BEARINGS	P1	-	
SEALS	R1	R2, R3	AS568/B51806
VALVE			
BODY	B	B/N, P3, S6	
DIAPHRAGM	R1	-	AS568/BS1806
SPRING	S5	S5/N	
SOLENOID (g)	B	P3	
CONTROL MODULE			
ENCLOSURE	P2	S4	IEC529-IP66
DIFF. PRESS. GAUGE (h)	P3/A	P3/S6	
DIFF. PRESS. SWITCH (i)	P3	-	
DIFF. PRESS. PIPING	B	S1, S2	
ELECTRICAL WIRING	W	-	AS3000-86
FINISH			
EXTERNAL	T1/T2	(d)	
INTERNAL	T1/T3	T1/R3	

Notes:

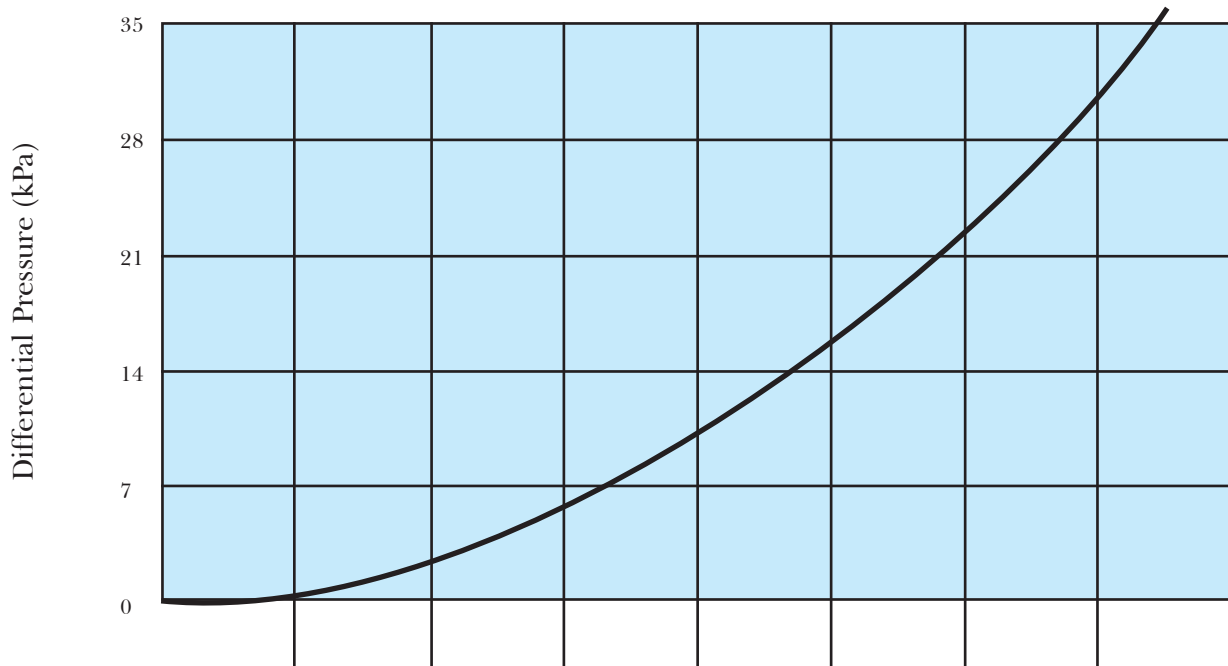
- | | |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| (a) Standard materials are for use only with water having a PH 7.5-7.8. | (f) Worm Drive 0.06 Kw, 3.2RPM, 230V, 1.1A, 50Hz, TENV, IP44. |
| (b) C.S. pipe sizes up to ABW 350, rolled plate on larger sizes. | (g) Rating 24VAC. |
| (c) C.S. pipe sizes up to ABW 600, rolled plate on larger sizes. | (h) Gauge face 65mm diameter, Range 0-100 Kpa. |
| (d) Customer Specification. | (i) Switch adjustment 5% to 95% of scale range, Max 0.25A S.P.D.T. |
| (e) Perforated sheet with high percentage open area. | (j) Stainless steel - low carbon 'L' is available in most sections but not all. |

Abbreviations - Material Specification

A : Aluminium	S1 : Steel Stainless	A.S.T.M. A312 TP 304L Pipe
B : Bronze	S2 : Steel Stainless	A.S.T.M. A312 TP 316L Pipe
C1 : Steel Carbon	S3 : Steel Stainless (j)	A.S.T.M. A240 TP304L Plate
C2 : Steel Carbon	S4 : Steel Stainless (j)	A.S.T.M. A240 TP 316L Plate
C3 : Steel Carbon	S5 : Steel Stainless (j)	A.S.T.M. A276 TP 304 Bar
C4 : Steel Mild	S6 : Steel Stainless (j)	A.S.T.M. A276 TP 316 Bar
N : Electroless Nickel Plated	S7 : Steel Stainless	A.S.T.M. A403 Gr WP 316L
I : Cast Iron	S8 : Stainless Steel	GR 304SS
P1 : Polymer Alloy	S9 : Stainless Steel	GR 316SS
P2 : Polycarbonate	S10 : Monel	
P3 : Engineering Plastic	T1 : Grit Blast - Class 2.5	
P4 : Nylon	T2 : Blue Oxide Primer	
R1 : Rubber - Nitrile	T3 : Epoxy - ICI Dulux Amerlock 400	
R2 : Rubber - Synthetic		1 coat 100 - 150 microns thick.
R3 : Rubber - Neoprene	V : Metal - Various Types	
	W : Copper Wire Plastic Coated	

PRESSURE DROP CHART

(Each column in this table of flow rates relates to the vertical grid line immediately above that column).



MODEL

ABW 50	75	150	225	300	375	450	525	600
ABW 80	190	380	580	770	960	1150	1340	1540
ABW 100	300	600	900	1200	1500	1800	2100	2400
ABW 150	680	1350	2030	2700	3380	4050	4730	5400
ABW 200	1200	2400	3600	4800	6000	7200	8400	9600
ABW 250	1880	3750	5630	7500	9380	11250	13130	15000
ABW 300	2700	5400	8100	10800	13500	16200	18900	21600
ABW 350	3680	7350	11030	14700	18380	22050	25730	29400
ABW 400	4800	9600	14400	19200	24000	28800	33600	38400
ABW 450	6080	12150	18230	24300	30380	36450	42530	48600
ABW 500	7500	15000	22500	30000	37500	45000	52500	60000
ABW 600	10800	21600	32400	43200	54000	64800	75600	86400

Flow Rate (Litres Per Minute)

The above Pressure Drop Chart is based on flow of water. The single curve shown is within general engineering limits for all models and all standard mesh / perforation sizes.

MODEL No.	NOMINAL FLOW RATE	
	LPM	IGPM
ABW 50	350	80
ABW 80	900	200
ABW 100	1400	310
ABW 150	3200	700
ABW 200	5700	1250
ABW 250	8800	1940

MODEL NO.	NOMINAL FLOW RATE	
	LPM	IGPM
ABW 300	12700	2790
ABW 350	17300	3810
ABW 400	22600	4970
ABW 450	28600	6290
ABW 500	35300	7770
ABW 600	50900	11200

MANUFACTURED BY:



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