

WEMCO SILVER BAND

Separator

APPLICATIONS

- Treatment of suspended solids and oil residues

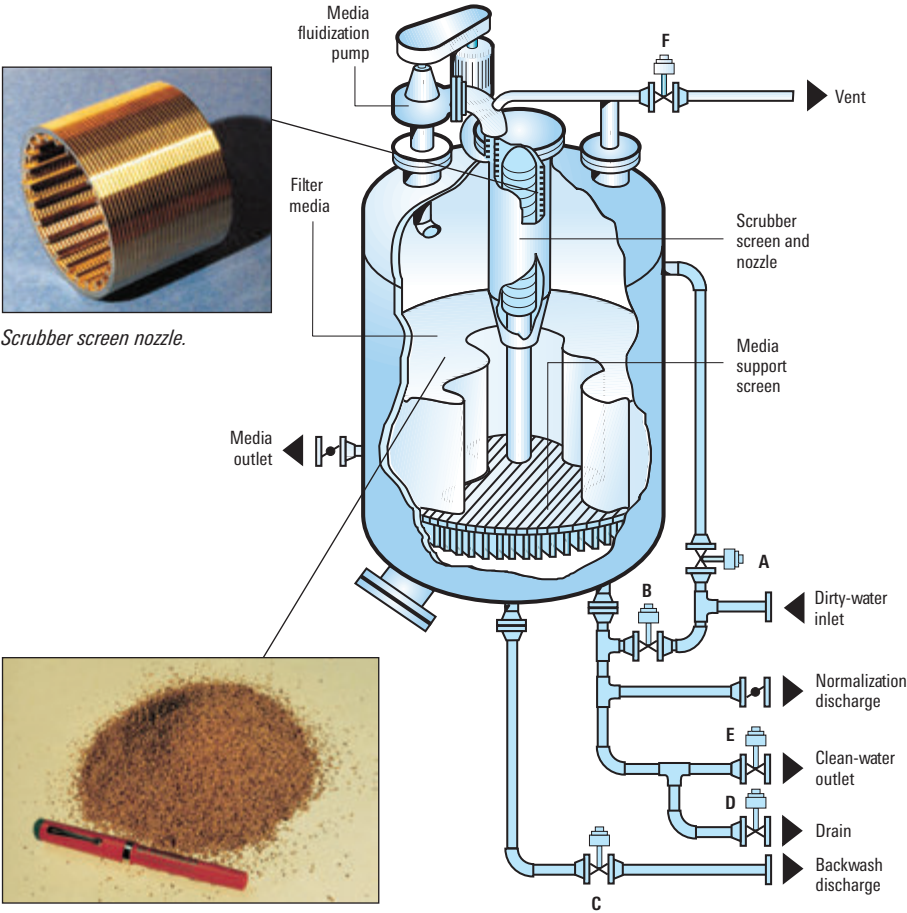
ADVANTAGES

- Enables use of raw inlet water for regeneration, eliminating the need for clean-water backwash storage tanks
- Requires less floor space compared with other deep-bed filters
- Uses smaller and fewer filters for specific applications
- Eliminates the need for large auxiliary backwash pumps, associated piping, and control
- Enhances removal efficiency or media cleaning during filtration or regeneration, creating additional benefits
 - Reduced corrosion and environmental problems
 - Filtrate quality independent of outside interaction
 - By-product waste free of chemical contamination for easy treatment
 - Separate normalization outlet that enables reduced waste volume by a third or half of other standard systems

The WEMCO® SILVER BAND* separator is a high-performance, downflow media filter. It typically can remove 98% of suspended solids and insoluble hydrocarbons in most applications. Using an exclusive fluidization process that strips oil and contaminants from the media, the SILVER BAND separator eliminates the need for gas and oil scouring, surfactants, and high volumes of backwash water.

Designed to lower system costs

Our filter system design and proprietary filter media provide efficient bulk separation of oil and solid contaminants from liquid streams. In the SILVER BAND separator, a stainless steel media support screen is situated on supports near the bottom of the vessel. A fluidization nozzle located in the top center of the filter extends down to the top of the media. Inside of the fluidization nozzle is the stainless steel scrubber screen, which allows dirty fluid to exit the vessel while retaining the media.



Scrubber screen nozzle.

Pecan and walnut shell media.

The SILVER BAND separator has a simple, automatic design for decreased system costs.

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The simple, automatic design provides lower system costs for several reasons:

- The system requires less floor space compared with other deep-bed filters.
- The designed flux rate necessitates smaller and fewer filters for specific applications.
- Filters use raw inlet water for regeneration, eliminating the need for clean-water backwash storage tanks.
- Each filter contains its own pump for backwash fluidization, eliminating the need for large auxiliary backwash pumps, associated piping, and control.
- Chemicals, air, or gas typically are not required to enhance removal efficiency or media cleaning during filtration or regeneration.

Improved filtration increases durability and efficiency

The pecan and walnut shell media used by the SILVER BAND separator is more efficient and cost-effective because it

- removes 98% of contaminants with particle size higher than two microns (in most applications)
- remains unaffected by heavy oil surges, resisting oil fouling better than other media
- is resistant to fouling by chemicals in the feedstream
- reduces downtime caused by oil buildup, screen plugging or too-frequent backwashes
- is durable and easy to clean, so it eliminates the need for full system replacements, but only an average of 5% to 10% replenishment per year (based upon recommended backwash operation)

In addition, the system provides reduced backwash volume for the nutshell media filters available. Often, this is 30% to 50% less waste volume, reducing the size of the associated tankage and handling equipment.

Lower maintenance and increased uptime

The SILVER BAND separator was designed to cost less to maintain and incur less downtime compared with any other deep-bed filters.

The result of this design focus is

- because high volumes of backwash water are not required, it provides low filtration costs per gallon of clean water available for this level of cleaning
- backwash offline time as little as 14 minutes
- fast, effective media regeneration performs positive cleaning of media in an average of 14 minutes, with upstream flow interruption of 1 to 2 minutes
- cleanup does not require removing media from the vessel, which eliminates the need to tear down and clean piping if power is lost during backwash.
- longer filter performance because of
 - positive regeneration cycle that prevents bed channeling and mudballing
 - thorough media cleaning that maintains filtration efficiency
 - regeneration volume that typically is less than 1% of throughput, compared with 6% to 12% required of other filters.

Unlike other media filters, the SILVER BAND separator does not force set media after cleanup. Instead, our filters use a settling step to allow gravity settling before pressurized flow resumes. Force settling, common to many other filters, can damage and plug the bottom screen. In contrast to other filters, the SILVER BAND separator is cleaned during every regeneration cycle before the media settle down.

Designed for the oil field, effective everywhere

The SILVER BAND separator is designed for use in the oil field. Its six operating valves (compared with almost a dozen in most other filter systems) mean simpler operation, lower costs, and less maintenance. These factors give our system an advantage over other bulk filters. In the case of power interruptions that might be more likely in an oilfield environment, the SILVER BAND separator recovers automatically, even if caught in the regeneration cycle.

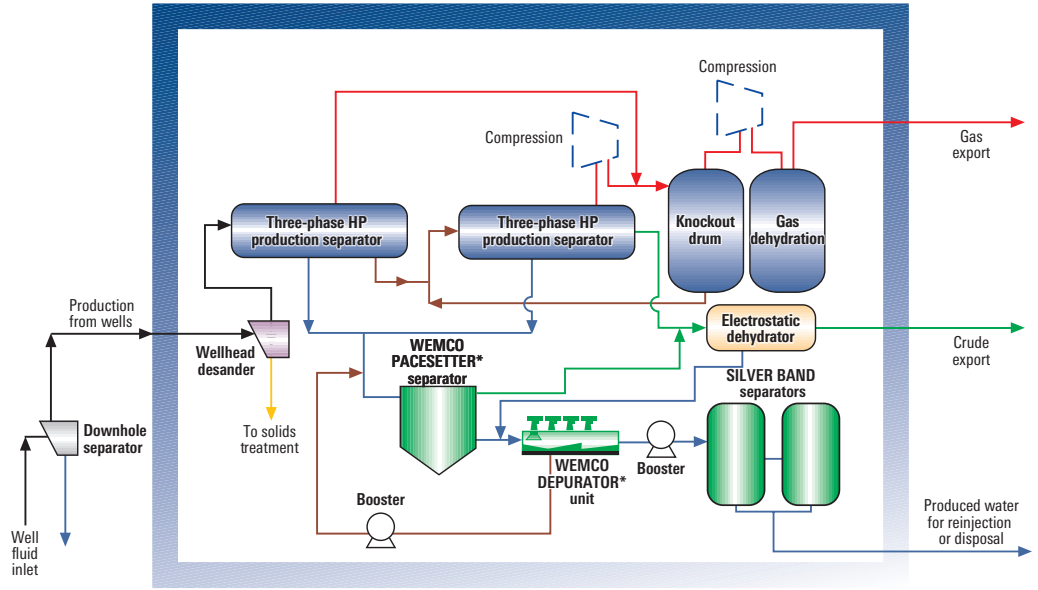
Although specifically designed for oilfield use, the system is equally effective when used to treat and remove suspended solids and oily residues from liquids such as those produced by refinery and petrochemical processes.

Aftermarket support

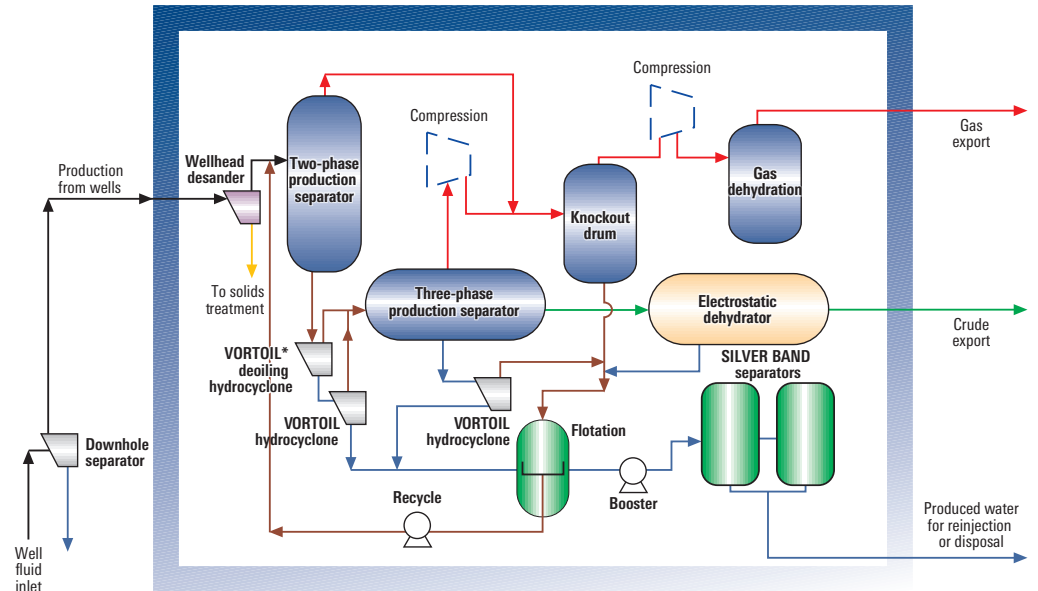
Schlumberger provides site support using a dedicated team of experienced service and project representatives. With strategically located hubs across the globe, this network provides turnkey expertise and support for customers for the duration of a project—from commissioning to operation. From replacement parts and spares, from field service to equipment repair, our mission is to provide the highest-quality support to ensure our customers' satisfaction.

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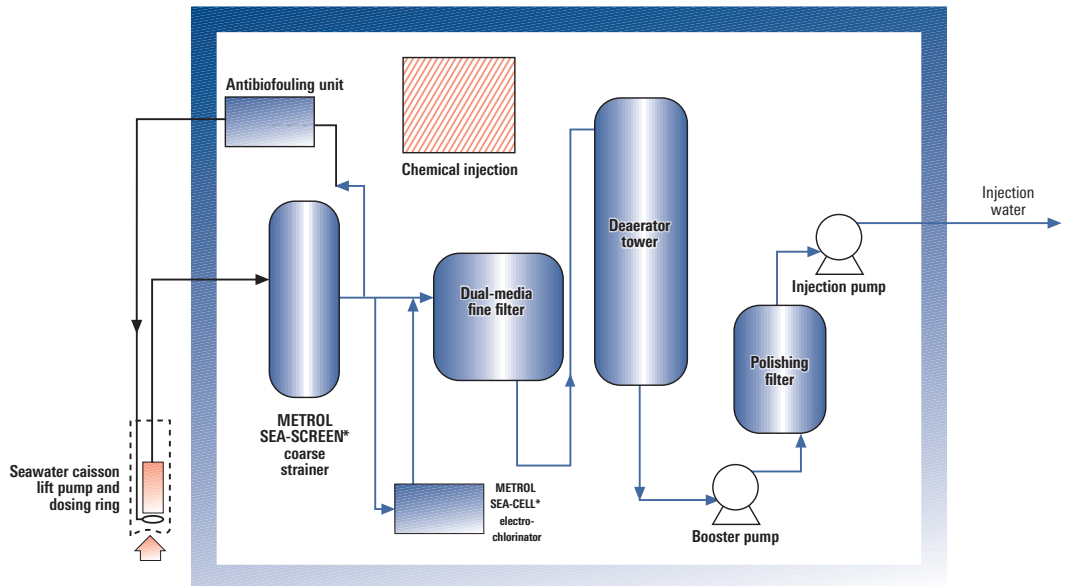
Typical onshore separation process flow diagram (PFD).



Typical compact offshore separation PFD.



Typical water injection PFD.



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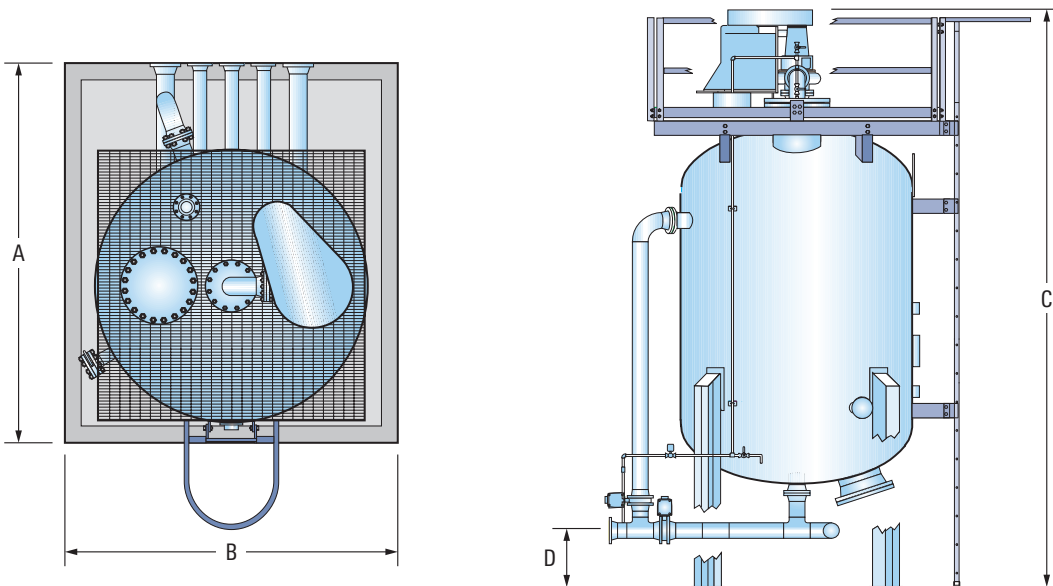
Specifications

	Model no.													
	SB18	SB49	SB70	SB126	SB196	SB283	SB385	SB502	SB636	SB785	SB950	SB1130	SB1327	SB1539
Nom. flow, bbl/d	820	2,300	3,300	5,800	9,100	13,100	17,800	23,300	29,500	36,400	44,000	52,400	61,400	71,250
Nom. flow, galUS/min	25	65	95	170	265	380	520	680	860	1,060	1,285	1,530	1,790	2,080
Nom. flow, m ³ /h	6	15	22	39	60	86	118	154	195	241	292	347	407	472
Ship weight, lbm	2,300	6,500	7,500	10,500	14,000	16,000	19,500	21,500	23,000	26,000	28,500	33,500	33,900	42,500
Operating weight, lbm	3,200	9,500	11,500	18,500	27,000	35,500	46,000	57,500	70,000	86,000	104,000	124,000	154,900	204,000
Process inlet, in	1	2	2	3	3	4	6	6	6	8	8	8	8	10
Process outlet, in	1	2	2	3	3	4	6	6	6	8	8	8	8	10
Backwash discharge, in	1	2	2	3	3	3	4	4	4	6	6	6	6	8
Normalization, in	1	2	2	3	3	3	4	4	4	6	6	6	6	8
Vessel OD, ft	1½	2½	3	4	5	6	7	8	9	10	11	12	13	14
Vessel S/S, ft	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Driver, hp	3	7.5	10	15	20	25	30	40	50	60	75	100	150	100
Pump size, ft	1½×3	2×3	2×3	3×4	4×6	4×6	4×6	6×8	6×8	8×10	8×10	8×10	8×10	8×10
Pump type	8	10	10	10	10	10	12	12	12	12	12	13	15	15

Dimensions, ft

	Model no.													
	SB18	SB49	SB70	SB126	SB196	SB283	SB385	SB502	SB636	SB785	SB950	SB1130	SB1327	SB1539
A	4	7	7	8¾	9	9¾	10	11¾	12	15	16	18	18	18
B	4	7	6	7	8	9¾	10	10	10	12	12	12	13	14
C	13½	14¾	15	15½	17½	18½	18½½	19½	20¾	23¾	24	24¾	25½	26½
D	1	1	1½	1½	1½	1½	2	2	2	2	2½	2¾	2¾	2¾

Dimensions shown are for preliminary planning only. Contact Schlumberger for exact dimensions at the time of purchase.



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