

SATTE SX Top-Mount Sand Filter



SATTE SX

Typical Applications

- Swimming pool filtration for residential, villa and light institutional pools, in-ground and above-ground.
- Hot spa tubs, plunge pools and small hotel or apartment pools.
- Packaged filtration sets with a SATTE SPL or SHL pump on a common base (FSF combo).
- Water features, koi ponds and small aquaculture systems requiring clear water.

Features

- Non-corroding GRP tank moulded from glass-reinforced polymer for strength, durability and an indefinite service life.
- Top-mounted, flange-connected six-position multiport valve with union connections, giving a secure watertight seal and simple media replacement.
- Specially designed internal collector laterals maximise filtration efficiency during operation and backwashing while minimising media loss.
- High-grade 0.5 - 0.8 mm silica sand media removes impurities and debris, maintaining cleanliness and clarity.
- Over twenty years of production experience behind the SX range: optimal performance, reliability, longevity and value.

Operating Conditions

- Maximum working pressure 2.5 bar (36 psi); test pressure 4.5 bar. Maximum water temperature 43 C (109 F).
- Rated flow is at about 50 m/h filtration velocity; for heavily used pools size at 30 - 40 m/h.
- Backwash when the gauge reads 0.5 bar above the clean-bed pressure; rinse before returning to filter.
- Install on a level base indoors or under cover, with clearance above the valve for media loading.
- Universal standard union connections; height of outfall equals height of outlet.

Materials of Construction

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|---|---|
| • Tank: Blow-moulded GRP | • Laterals: ABS, slotted |
| • Base: Reinforced polymer | • Lid / gauge: ABS with pressure gauge and air release |
| • Multiport valve: ABS / PP, 1 1/2" flange-connected with unions | • Media: Silica sand 0.5 - 0.8 mm |

SATTE SX Technical Data

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		Rated	Pump options		Pool capacity (litres)			Recommended piping	
		flow (m3/h)	SATTE model	Power (kW)	Light use	Normal use	Heavy use	Suction	Delivery
SX 300	300	4	SPL 601 / SPL 550	0.6 / 0.55	4,000	30,000	25,000	1.5"	1.5"
SX 500	520	10	SPL 601 / SPL 550	0.6 / 0.55	100,000	80,000	60,000	1.5"	1.5"
SX 600	620	14	SPL 801 / SPL 750	0.8 / 0.75	140,000	115,000	85,000	2"	1.5"
SX 750	770	21	SPL 1101 / SPL 1100	1.1 / 1.1	220,000	180,000	130,000	2.5"	2"
SX 800	770	24	SPL 1501 / SHL 200	1.6 / 1.1	250,000	200,000	150,000	2.5"	2"
SX 900	925	30	SPL 1501-2201 / SHL 300	1.6-2.2 / 1.5	300,000	240,000	180,000	3"	2"

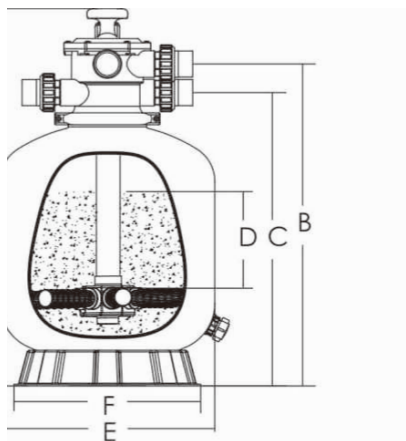
	Filter	Dimensions (mm)		MPV	Pressure (bar)		Media	Weight (kg)	
	area (m2)	H	D	valve size	Test	Working	Sand (kg)	Net	Working*
SX 300	0.07	839	300	1 1/2"	4.5	2.5	20	11	115
SX 500	0.2	830	520	1 1/2"	4.5	2.5	65	13	170
SX 600	0.3	980	620	1 1/2"	4.5	2.5	115	15	250
SX 750	0.43	1060	770	1 1/2"	4.5	2.5	225	21	420
SX 800	0.5	1280	770	1 1/2"	4.5	2.5	275	25	525
SX 900	0.67	1400	925	1 1/2"	4.5	2.5	390	32	820

* Working weight includes media and water. Sand quantity is approximate for the standard bed depth with 0.5 - 0.8 mm silica sand.

Pool capacity: light use is a private pool with one turnover in 8 hours; normal use is a residential pool with 6-hour turnover; heavy use is a semi-public or hotel pool with 4-hour turnover. Pump options are the SATTE models whose duty at a typical residential system head (8 - 12 m) gives the rated filter flow; select the pump against its performance curve for the actual pipe run.

Filter flow at other velocities: m3/h = filter area (m2) x velocity (m/h). Example: SX 750 at 40 m/h = 0.43 x 40 = 17 m3/h.

Dimensions



A / B overall height to valve / to lid flange

C / D tank height / sand bed depth

E / F base width / tank diameter

H overall height (table)

D tank diameter (table)

Dimensioned outline for the series. Per-model dimensions are tabulated above. Certified drawings are available on request for final design.

SATTE SX Pool Sizing Guide

How Many Filters Do I Need?

Design flow = pool volume / turnover time. The tables below use a filtration velocity of 40 m/h, which gives clear water with a reasonable backwash interval. Turnover: private pool 8 h, residential / apartment or hotel 6 h, public or heavily used pool 4 h. Where more than one filter is needed, install them in parallel with one pump per filter, each pump sized at about 10 m system head (SPL and SHQS for residential heads, SFLS and SNP for larger flows).

Capacity per Filter

Model	Filter area (m ²)	Flow at 40 m/h (m ³ /h)	Private pool, 8 h (m ³)	Residential / hotel, 6 h (m ³)	Public pool, 4 h (m ³)	Pump per filter
SX 300	0.07	3	22	17	11	SPL 601
SX 500	0.20	8	64	48	32	SPL 601
SX 600	0.30	12	96	72	48	SPL 801
SX 750	0.43	17	138	103	69	SPL 1101
SX 800	0.50	20	160	120	80	SHQS 1500
SX 900	0.67	27	214	161	107	SFLS 3-300

Example: a 250,000-litre (250 m³) hotel pool at 6-hour turnover needs 42 m³/h. One SSX 900 gives 26 m³/h at 40 m/h, so two SSX 900 filters in parallel, each with its own SHQS 1500 (or SPL 1101) pump, are recommended.

Recommended Filters by Pool Volume (6-hour turnover)

Pool volume	Design flow (m ³ /h)	Recommended filters - choose one option	Matching SATTE pumps (one per filter, same order)
30 m ³ (30,000 L)	5	1 x SX 500 or 2 x SX 300	1 x SPL 601 or 2 x SPL 601
50 m ³ (50,000 L)	8	1 x SX 600 or 2 x SX 500 or 3 x SX 300	1 x SPL 601 or 2 x SPL 601 or 3 x SPL 601
80 m ³ (80,000 L)	13	1 x SX 750 or 2 x SX 500	1 x SPL 801 or 2 x SPL 601
100 m ³ (100,000 L)	17	1 x SX 750 or 2 x SX 600 or 3 x SX 500	1 x SPL 1101 or 2 x SPL 601 or 3 x SPL 601
150 m ³ (150,000 L)	25	1 x SX 900 or 2 x SX 750 or 3 x SX 600	1 x SFLS 2-200 or 2 x SPL 801 or 3 x SPL 601
200 m ³ (200,000 L)	33	2 x SX 750 or 3 x SX 600	2 x SPL 1101 or 3 x SPL 801
250 m ³ (250,000 L)	42	2 x SX 900 or 3 x SX 750	2 x SHQS 1500 or 3 x SPL 801
300 m ³ (300,000 L)	50	2 x SX 900 or 3 x SX 750	2 x SFLS 2-200 or 3 x SPL 1101
400 m ³ (400,000 L)	67	3 x SX 900	3 x SFLS 2-200
500 m ³ (500,000 L)	83	Use SSX side-mount range	-
750 m ³ (750,000 L)	125	Use SSX side-mount range	-

Top-mount filters are limited to 1 1/2" valves and are best suited to pools up to about 150 m³; where the table shows three units or more, the SSX side-mount range is the better choice.

Selection Notes

- Prefer several medium filters over one very large filter on commercial pools: one unit can be backwashed or serviced while the others keep the pool running.
- Two or more filters must be the same model, each with an identical pump and its own multiport valve, on a common suction manifold and a common return manifold.
- Check the pump against its curve: the flow at the actual system head (pipe run + filter + heater) must reach the filter's design flow, and the backwash flow must be at least the rated filter flow.
- Pipework: keep suction velocity below 1.5 m/s and return below 2.5 m/s - 50 mm pipe up to 8 m³/h, 63 mm to 14 m³/h, 75 mm to 22 m³/h, 90 mm to 32 m³/h, 110 mm to 50 m³/h per line.
- SATTE can size and quote a complete plant room (filters, pumps, chlorinator, valves and manifolds) from the pool drawings - contact SB Innovations Ltd.