

Operating instruction

SR 500 EX



General information

Instructions for use for SR 500 EX should be read before use.

The SR 500 EX is a battery-powered fan unit that, together with filters and approved head top, is included in the Sundström fan-assisted respiratory protective device systems conforming to EN 12941/12942:1998.

Available head tops for the SR 500 EX are listed in Instructions for use.

When selecting filters and head top, the following are some of the factors that must be taken into account:

- Possible occurrence of explosive atmosphere
- Types of pollutants
- Concentrations
- Work intensity
- Protection requirements in addition to respiratory protective device.

The risk analysis should be carried out by a person who has suitable training and experience in the area.

Unpacking the SR 500 EX



Packing list:

- Fan unit SR 500 EX, bare
- Battery SR 502 EX
- Belt SR 508 EX
- Filter adapters SR 511, 2x
- Particle filters P3 R, SR 510, 2x
- Pre-filters SR 221, 10x
- Pre-filter holders SR 512 EX, 2x
- Flow meter SR 356
- Battery charger EX, R06-2081
- User instructions
- Cleaning tissue SR 5226
- Vaseline tube
- Plug kit

1. Battery assembly and charging



1.1 New batteries must be charged before they are used for the first time.

On delivery, the battery fitted in the fan unit is provided with protective tape over the terminals.

The battery cover locks the battery. Raise the cover a few centimetres, push with the thumb resting on the battery and withdraw the battery.



1.2 Remove the tape and charge the battery.



1.3 Connect the battery to the battery charger. Connect the charger plug to a wall socket.
N.B. Main voltage 100-240 V



1.4 Ensure the white mark on the connector lines up with the mark on the battery connection.

The charger carries out charging automatically in three stages:

1. Yellow LED.
2. Yellow flash LED.
3. Green LED.

When charging has been completed, pull the plug out of the socket before separating the battery from the charger.

Charging time up to 80%, 2 h.

Fully charged after about 4 h.

Note! Disconnect the battery from the charger and wait 15 seconds before the next battery is connected, to reset the battery charger.

1.5 Push the battery back into the battery compartment. Check that the battery has been pushed in as far as it will go and that its lock is operative.

2. Maintenance of battery



2.1 Check before use that the gasket around the opening to the battery terminals are undamaged.

Any dirt on the battery gasket is wiped off with a dry cloth. Relubricate the gasket with Vaseline to facilitate mounting.



2.2 During long-term storage a scheduled charging procedure is recommended, as follows:

- Store the battery at room temperature.
- The-battery must be charged at least every 6 months.

3. Assembly belt



3.1 Place the fan upside down. The belt should be mounted so that the belt is pointing upwards. Insert the three tongues of the belt half into the slot in the fan.

Begin to insert the upper tongue and then turn the belt into the fan.



3.2 Press down the three lips locking the belt half.



3.3 Correctly mounted belt.

4. Particle filter

4.1 Check that the gaskets in the filter mounting of the fan unit are in place and are in good condition.



4.2 Snap the filter onto the filter adapter.



4.3 Do not press onto the centre of the filter – it might damage the filter paper.



4.4 Screw the adapter into the filter mounting so far that the adapter will be in contact with the gasket.



Then turn it about 1/8 turn further in order to ensure a good seal.



4.5 Fit one pre-filter into the filter holder.

The pre-filter should have slipped under the shoulders in the pre-filter holder.

Press the filter holder onto the particle filter.



4.6 Correctly mounted pre-filter holder with particle filter.

5. Combined filters, Gas filter + particle filter

5.1 Snap the particle filter onto the gas filter.



5.2 The arrows on the particle filter must point towards the gas filter.

Do not press onto the centre of the filter it might damage the filter paper.



5.3 Check that the gaskets in the filter mounting of the fan unit are in place and are in good condition.



5. Combined filers, Gas filter + particle filter

The filters used must be of the same type,
i.e. two SR 510 P3 or two SR 518 A2/SR510 P3, etc.

When filters are changed, both filters/combined filters must be
changed at the same time.



5.4 Fit one pre-filter, SR 221
into the filter holder.

Screw the filter combination
into the filter mounting so far
that the filter will be in contact
with the gasket. Then turn it
about 1/8 turn further in order
to ensure a good seal. Press
the filter holder onto the
particle filter.



5.5 Correctly mounted
pre-filter holder.

6. Operation/Performance



6.1 Start the fan by pressing the control button.

To switch of fan unit, keep the control button depressed for about two seconds.



6.2 After the button has been pressed, a programmed test will be run on the fan and the display will then light up, the audible signal will sound.



6.3 After the internal test, all symbols will be extinguished except the small green fan symbol. This indicates normal operating status with a flow of at least 175 l / min.

Operation/Performance



6.4 If the button is pressed again, boosted operating status will be activated, with a flow at least 225 l/min. This is indicated by the larger green fan symbol lighting up. To revert to normal operation, press the control button once again.



6.5 If the battery capacity has dropped to about 5-10 % of the original charge, this is indicated as follows:

- A sound signal will be repeated twice at intervals of two seconds.
- The yellow battery symbol of the display will flash.

The battery symbol will flash continuously, whereas the sound signal is repeated at intervals of 30 seconds.

Action: Immediately interrupt the work, leave the area and change/charge the battery.

7. Performance check, minimum flow



7.1 Check that the fan unit is complete, correctly mounted, thoroughly cleaned and undamaged.

Connect the hose from the head top to the fan unit and turn it about 1/8 of a turn clockwise.



7.2 Turn the flow meter bag inside out and the flow meter appears.



7.3 Place the head top in the flow meter bag and start the fan.

Grip the lower part of the bag in order to seal around the hose.

Grip around the measuring tube and hold the tube vertical.

The ball should now float level with or just over the 175 l/min marking.

If the minimum flow is not achieved, check that:

- The flow meter is vertical
- The ball moves freely
- The bag seals well around the hose

8. Performance check, alarms

The equipment is designed to provide a warning if the air flow is obstructed, and this should be checked in conjunction with the flow. Check before the equipment is taken into use.

N.B. If the minimum flow is not achieved or if the alarm signals do not operate as intended, the fan must not be used.



8.1 Cause a flow stoppage by still holding tightly the joint between the hose and the flow meter bag and then blocking off the flow meter outlet.



8.2 The fan will now initiate an alarm by audible and visual signals.



8.3 If the flow meter outlet is now unblocked and the air is allowed to flow freely, the alarm signals will cease within 10 – 15 seconds.

Switch off the fan and remove the head top from the flow meter bag.

9. Putting the equipment on

Before putting the equipment on, read carefully the user instructions for the head top.

After the filter has been fitted, a performance check has been carried out and the head top has been connected, the equipment can be put on.



9.1 Snap the two ends of the belt together.

After the buckles have been connected, tighten the belt so that it is comfortable.



9.2 The fan should be firmly in contact with the wearer's back in order to ensure optimum comfort and ergonomic benefits.



9.3 Put the belt ends in the clips on each side of the belt.

10. To change the particle filters

10.1 Change particle filter by bending the pre-filter holder from the filter adapter.

Bear in mind that both filters must be changed at the same time.



10.2 Grip the filter with one hand.

Place the thumb of the other hand on the underside of the adapter at the semicircular gap. Then prise out the filter.



10.3 Change pre-filter by press it in the middle and then remove it.

To change the gas filters, combined filters



10.4 To change the gas filter: Unscrew the filter/combined filter. To change the gas filter, prise the particle filter off the gas filter.

Both filters/combined filters must be changed at the same time and must be of the same type and class.



10.5 As an alternative, the filter combination can be separated by means of the filter adapter.

11. Cleaning/Disinfection

Wipe the outside of the fan.

If necessary, spray the product with 70 % ethanol or isopropanol solution for disinfection.



11.1 The Plug kit is used for cleaning or decontamination of the fan unit and prevents dirt and water from entering the fan housing.

Disconnect the breathing hose and the filters and install the plugs.



11.2 In the event of heavy fouling, a soft brush or sponge wetted with a solution of water and dishwashing detergent can be used.



11.3 An SR 5226 cleaning wipe should be used for daily cleaning.

Cleaning/Disinfection



11.4 Clean the gasket on the battery.

N.B.! Check that the gasket which is situated around the contact plate opening underneath the battery is intact. If it's not, change battery..



11.5 Clean the pre-filter holders inside and out.



11.6 Wipe the filter adapter clean.

Check that the sealing ridge for the particle filter is undamaged.



11.7 Wipe the belt clean.

12. Maintenance schedule

	Before use	After use	Annually
Inspection of battery gasket	•		
Visual inspection	•	•	
Performance check	•		•
Cleaning		•	
Change of fan gaskets			•



12.1 The gasket has a groove all round and is fitted on a flange below the threads in the filter mounting.

Remove the old gasket.



12.2 Fit the new gasket onto the flange. Check that the gasket is in place all round.

Troubleshooting schedule

Fault	Reason	Action
The fan unit fails to start	Battery discharged	Recharge battery
	Fan-battery contact problems	Bend/adjust/clean the battery terminals. Check that there are three terminals. Check the contact rivets on the fan.
	Battery faulty	New battery, test another battery
	Charger faulty, fails to charge the battery.	Make a visual check and make sure that there is no dirt on the contacts to the charger or battery. A new battery charger.
	Fan motor/electronic fault	Send the fan unit for repair
Yellow battery symbol flashes	Battery discharged	Recharge the battery

Troubleshooting schedule

Fault	Reason	Action
Red triangle flashes on the display and the fan sounds	Filters clogged	Change the pre-filters Change the particle filters
	Hose damaged	Check that the air flows freely through the hose and that the hose is in good condition
	Valves	Check that the exhalation valves with membranes are fitted to your head top.
Irregular air flow	Filter clogged Incorrect combination No filters mounted	Check that there are filters in the fan unit and that they are of the same type. i.e. SR 518 A2 + SR 510 P3

Troubleshooting Battery charger

Fault	Reason	Action
2 Red blinks	Battery is connected to charger with wrong polarity	Make sure the charger is undamaged
3 Red blinks	Charger output is shorted	Check the output cable connection
4 Red blinks	Battery voltage is low	Check battery status or voltage
5 Red blinks	Safety timer has run out	Check battery status or capacity
LED off	Battery voltage is too high	Check battery voltage
Yellow with 1 red blink	Battery temperature is too low (<0°C)	Battery needs to be >0°C - <45°C when charging
Yellow with 2 red blinks	Battery temperature is too high (>45°C)	Battery needs to be >0°C - <45°C when charging