

SWISS•TRAC®

Instruction Manual

English, Version 5.2



Model SWT-1



Model SWT-2

This instruction manual applies to the following Swiss-Trac models:
SWT-1 from series H onwards, SWT-1HD, SWT-1S, and SWT-2.

Information for specialist dealers: During the first commissioning and the annual maintenance stipulated by the manufacturer, the proof of maintenance on page 30 has to be stamped.

More information online: On our website you can find videos for the handling of the Swiss-Trac, documentation on the available accessories, addresses of our specialist dealers and much more:

www.swisstrac.ch



The Swiss-Trac tractor for manual wheelchairs mod. SWT-1, SWT-1S, SWT-1HD and SWT-2 described in this instruction manual comply with the Directive 93/42/EEC and correspond to Swiss regulations for medical products (MepV).
Medical appliance number Germany: 18.99.04.0020

Dear customer,

We appreciate that you have chosen a Swiss-Trac tractor for manual wheelchairs. We thank you for your trust in us.

Your manual wheelchair and the Swiss-Trac make for a powerful combination. The high mobility, plus the ease of use and transport deliver the highest possible independence and flexibility.

We will continue to fulfil the wish of wheelchair users for more independence and improve their mobility with the Swiss-Trac.

Before the first use, please read this instruction manual carefully. Information on the use of the battery charger is provided in the corresponding instruction manual.

- ⓘ Ignoring the instruction manual, as well as improper maintenance or repair will endanger your safety and will result in the expiry of the warranty as well as the product liability.
- ⓘ Please also observe the safety instructions in the instruction manual of your wheelchair.

On our website you can find videos for the handling of the Swiss-Trac, documentation on the available accessories, addresses of our specialist dealers and much more:

www.swisstrac.ch

We wish you a safe journey!



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Safety Instructions

The Swiss-Trac is a high-performance tractor for manual wheelchairs. Please comply with the following instructions to guarantee operating safety:

Trailing Load and Gradability

Never overload your Swiss-Trac or use it for purposes other than those intended. The maximum trailing load is dependent on the model (see p. 24, "Technical Data") and must not be exceeded under any circumstances. The maximum gradability depends on the model and the ground surface. This value can decrease drastically with wet conditions or snow.

If the incline is too steep or the trailing load too great, a beep signal is sounded and the Swiss-Trac automatically slows down. Reduce the speed immediately using the gas stick, otherwise the Swiss-Trac will switch off within a few seconds and must be turned off and on again using the ignition key. Please avoid overstressing the Swiss-Trac in this way, as its service life will be reduced.

Cross Slope

Additionally, please follow the safety instructions in the instruction manual of your wheelchair. The maximum permissible tilt in particular depends on the lateral stability of your wheelchair, not on the Swiss-Trac.

Do not drive on a road or a path with a steep cross slope. There is a risk of tipping sideways.

Bracket and Wheelchair

The bracket must only be used in its original condition and after having been correctly attached. To guarantee functional safety, please have the wheelchair's bracket and the Swiss-Trac checked annually.

Driving and Steering

Avoid sudden acceleration or sharp steering motions.



Never drive without a proper connection to the Swiss-Trac.

Braking

Do not use the handbrake while driving. It only serves for parking. The Swiss-Trac is equipped with a very efficient motor brake, with which the combination can be slowed down reliably at any time.

Ledges and Obstacles

Kerbs and other obstacles always have to be driven over at right angles, never sideways. Do not try to drive over ledges higher than 13 cm. This can damage the wheelchair.

Parking

When parking the Swiss-Trac, always remove the key and apply the handbrake.

Reflectors and Rear Lights

We recommend the installation of yellow reflectors on the spokes of the wheelchair wheels and 2 red rear lights on the back of the wheelchair.

Road Safety and Liability

The Swiss-Trac is an auxiliary drive for wheelchairs and can be driven in pedestrian areas at walking speed. Please follow the current traffic regulations. We recommend taking out liability insurance.

Road Traffic Approval

In Switzerland no approval test is currently required.

Germany: From 7 km/h, an operating permit is required from the relevant authorities for road traffic. Insurance, tail lights and reflectors are also required in accordance with the road traffic licensing regulations (StVO).

The user is responsible for the fee-based individual assessment and acquiring insurance for the combination.

Electromagnetic Fields

Radiation from electronic equipment, such as radio equipment, portable radios or other powerful transmission devices, generates electromagnetic fields. This can influence the Swiss-Trac controls. If you notice unusual performance, stop and switch off the Swiss-Trac. In certain cases, the Swiss-Trac itself can cause malfunctions of electromagnetic fields. However, the use of wireless telephones and mobile phones does not pose a problem.

Maintenance

Check the functionality of the gas stick at least once a week. Please do not drive if the gas stick does not return exactly to neutral position due to the internal spring resistance. Inform your specialist dealer and arrange for a repair.

Keep the Swiss-Trac and the wheelchair in dependable working order. In particular, the brakes of the wheelchair must work flawlessly.

- ❗ To guarantee functional safety, the Swiss-Trac and its bracket have to be maintained by an authorised specialist dealer once every year. The proof of maintenance (see p. 30) has to be updated by the specialist dealer.

Product Description



* Different parts for the bracket are required depending on the type of wheelchair.

** Different types of drawbars are available. Your specialist dealer will be glad to advise you.

! Where the customer has carried out the mounting of the bracket by him- / herself, we give no guarantee and do not accept any liability.

Checking the Bracket on the Wheelchair

The bracket, which is mounted to the wheelchair, is necessary to attach the Swiss-Trac to the wheelchair.

Due to the many different types of wheelchairs, assembly and adjustment of the bracket requires expertise and experience. Therefore, the assembly must be carried out by an authorised specialist dealer. This also applies to a change of wheelchair or after changes to the sitting position or inclination.

The bracket is properly adjusted when only minimum effort is needed for driving and the front wheels of the wheelchair are lifted sufficiently when passing over ledges.

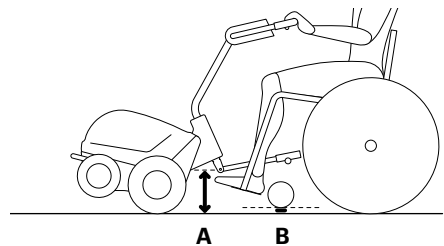
During driving, hold the handlebars loose and between 10 and 15 cm above your thighs. The front wheels of your wheelchair should always be 1.5 – 2 cm above the ground.

If this is not the case, request an adjustment by your specialist dealer.

→ You can easily check the adjustment yourself with a connected Swiss-Trac during standstill, as shown here:

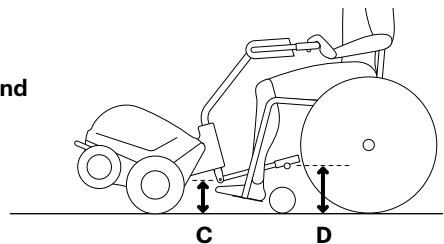
Driving position

- A** Ground – Drawbar bearing: 19 cm
- B** Ground – Wheelchair front wheel: 1.5 – 2 cm



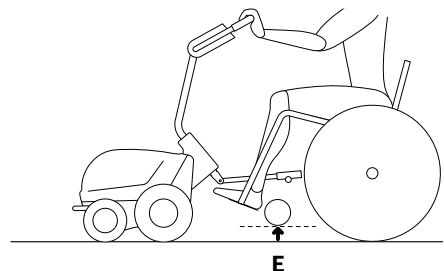
Front wheels of wheelchair on the ground

- C** Ground – Drawbar bearing: 15 cm
- D** Ground – Bracket:
 - Straight drawbar 20 – 22 cm
 - Bent drawbar 25 – 28 cm

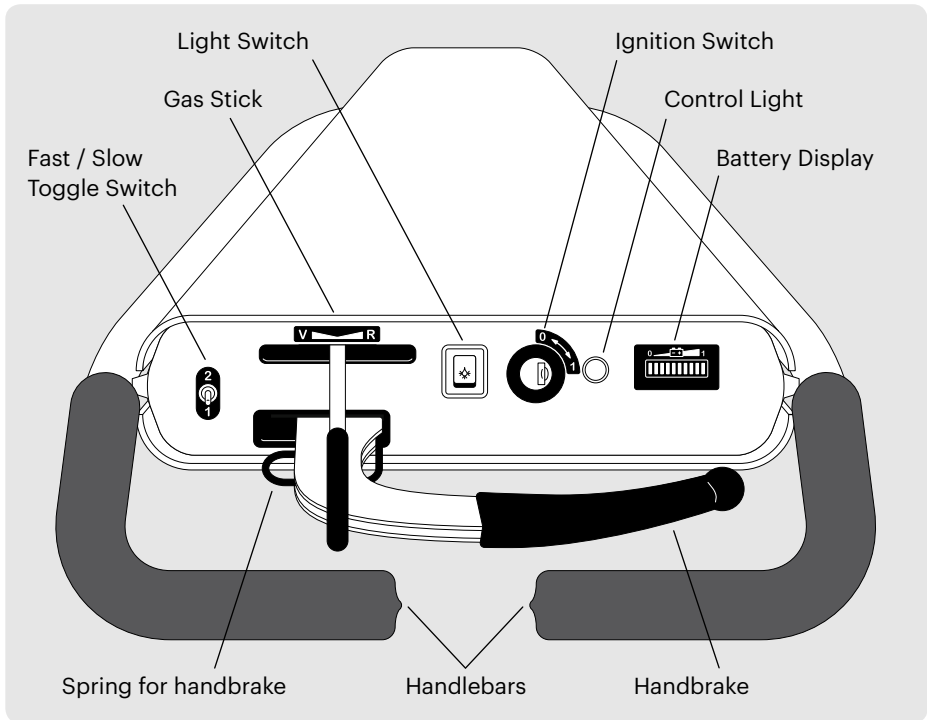


All 4 Swiss-Trac wheels on the ground

- E** Ground – Wheelchair front wheel: at least 5 cm



Control Panel and Handling



The operating elements are arranged inversely on the special version with the "Gas stick on the right".

Ignition

Insert the key into the ignition switch on the control panel and turn it to the right. After turning, the control light ignites and signals that Swiss-Trac is ready to be driven.
 → Do not operate the gas stick during startup / ignition. Otherwise, the procedure described above has to be repeated after a short waiting time.

- i The control light also serves as an error display. In combination with an acoustic signal, it indicates possible errors or improper operation (see p. 26, "Optical and Acoustic Error Display").

Driving and Controlling Speed

Forward and backward speed can be continuously controlled by use of the gas stick. Move the gas stick slowly and constantly. To stop, move the gas stick back into neutral position.

You can preselect the maximum speed using the fast / slow toggle switch: 4.5 km/h on level 1 and depending on the model, approx. 6 or 9 km/h on level 2.

Attach and Detach

Make sure to be on a flat surface during attaching and apply the brakes to your wheelchair.

Attach

1. Align your wheelchair as straight as possible behind the Swiss-Trac. Now lock the wheelchair on both sides. Firstly, move the drawbar until its tip is at the height of the seat cover. The drawbar should be located perpendicular to the bracket on the wheelchair.
 - Should you be located too close to the tractor, move the Swiss-Trac forward slightly in such a manner that you can barely reach it with both hands.
2. Hold the handlebars with both hands and tilt the Swiss-Trac until the drawbar is at the level of the bracket on the wheelchair and the control panel is just above your knees.
3. Now drive the Swiss-Trac backwards carefully and very slowly. During this process, the drawbar has to slip into the bracket on the wheelchair. An audible click confirms a proper connection.
 - If the handlebars are held too high or the wheelchair is not aligned behind the Swiss-Trac properly, your wheelchair might be pushed backwards by the Swiss-Trac. You can correct such misalignment by moving the handlebars slightly.

Detach

1. Lock the wheelchair to detach. Keep the Swiss-Trac switched on.
2. Turn the handlebars slightly to the left until you can reach the lever lug. Now move the lever lug to the maximum.
3. Drive the Swiss-Trac forward very slowly. The drawbar slips out of the bracket. Release the gas stick as soon as the drawbar is free.
 - Do not push on the handlebars during detaching, as the drawbar will jam in the bracket!

On-Road and Off-Road Driving

Take your time for the first attempts at driving. Operate the gas stick carefully and avoid driving around tight corners.

→ Before driving, check that the brakes are released on both the Swiss-Trac and wheelchair.

i Extensive driving instructions are provided by your specialist dealer.

The front wheels of your wheelchair should be raised about 2 cm when driving. To achieve this, push the handlebar of the Swiss-Trac slightly forward when driving. This ensures a more comfortable drive on uneven surfaces and trails.

i To achieve ideal handling properties, the bracket has to be assembled on the wheelchair professionally (see p. 7, "Checking the Bracket on the Wheelchair").

i With a driving assistance, the drawbar can be attached in such a manner that the combination automatically remains in the ideal driving position (see p. 14, "Driving Assistance").

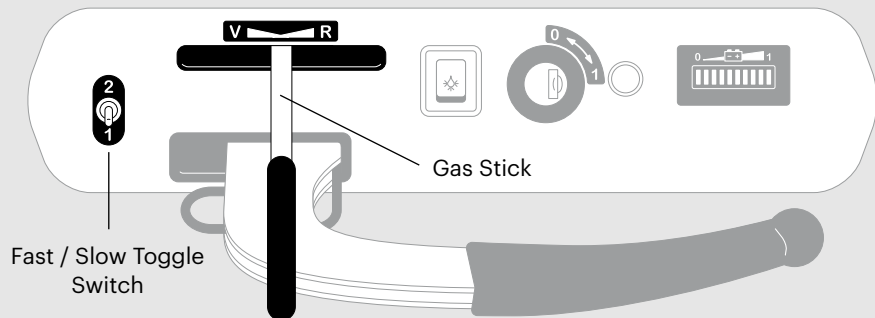
Brakes

The Swiss-Trac is equipped with a motor brake, controlled by the motor-speed control. This guarantees maximum driving safety.

Motor Brake

The motor brake is operated by means of the gas stick: When the gas stick is moved into neutral position during driving, the motor brake engages automatically. When driving downhill, the motor brake limits the speed reliably at all times.

→ To drive more slowly, switch the fast / slow toggle switch to level 1.

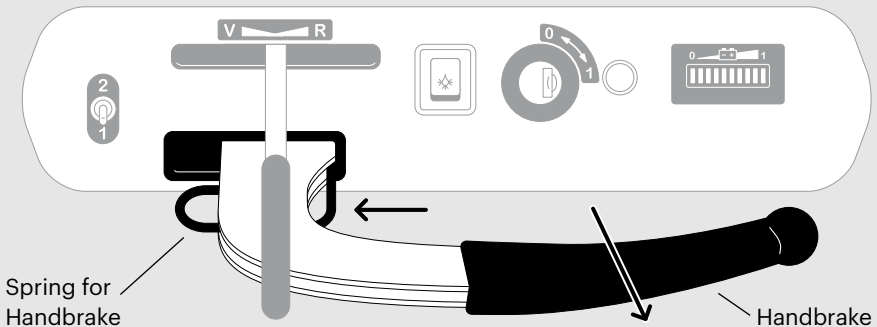


Do not be startled if the Swiss-Trac rolls backwards slowly when you stop on a hill. This is a controlled process which does not impose a risk. You can react to this by slightly accelerating forwards.

→ If you intend to stop with the tractor for a longer period of time, you can utilize the handbrake to secure the combination.

Handbrake (Parking Brake)

The handbrake may only be used for parking – with its help the Swiss-Trac can be locked. Pull the handbrake and at the same time push the spring to the left with the other hand. First release the handbrake, then the spring.



! The handbrake must not be used while driving. The risk of skidding is very high, especially on steep ground!

Turns and Turning Radius

Reduce the speed in tight curves if necessary. Disable the driving assistance during manoeuvring.

→ Please consider that the turning radius can be more than 1.5 m depending on the wheelchair. In narrow aisles or in front of an elevator, it could prove difficult to turn the combination. In such cases, we recommend detaching the tractor, turning the Swiss-Trac and the wheelchair separately and reattaching them again afterwards.

Passing Ledges and Obstacles

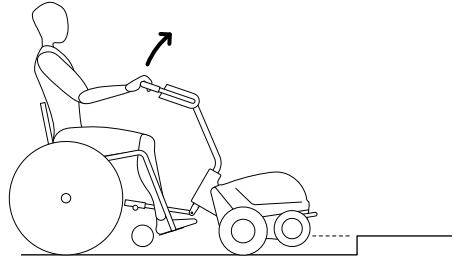
Passing over ledges requires a bit of practice. You will soon be able to carry out this process with ease.

- ① The driving assistance must always be released before passing over obstacles to avoid damaging the front wheels of the wheelchair.

Upwards

1.

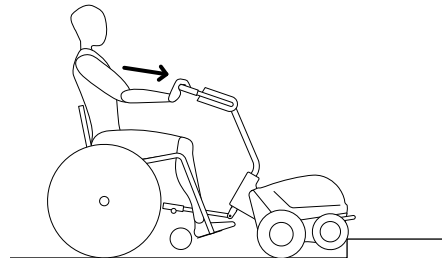
Approach the ledge slowly and as perpendicular as possible. Start to lift the handle slightly, so that the front wheels of the Swiss-Trac are raised a little above the ground.



2.

As soon as the front wheels of the Swiss-Trac touch the ledge, push the handlebars hard forwards with both hands and accelerate briefly. Like this, the front wheels have enough strength to pull you over the ledge.

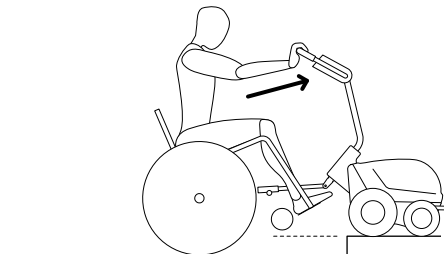
→ If the rear wheels spin, you might have pushed the handlebar forwards too late.



3.

Hold the handlebars in a forward position during the entire process. The front wheels of the wheelchair should be raised enough so that they do not bump against the ledge.

→ It is advantageous to shift your upper body forwards at the moment you pass over the ledge.

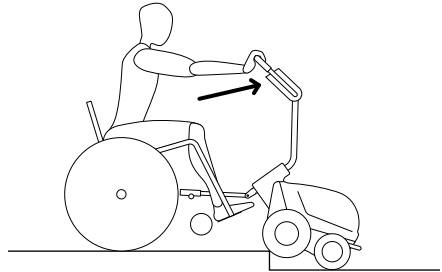


Downwards

1.

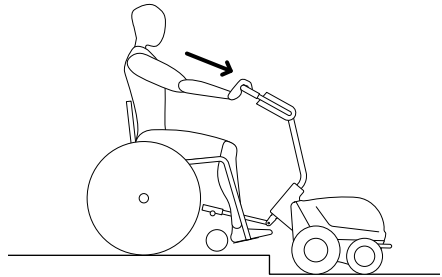
Approach the ledge slowly and at a right angle until the front wheels of the Swiss-Trac reach over the edge. Then push the handlebar hard forwards until the front wheels touch the ground below.

→ The front wheels of the Swiss-Trac must touch the ground below before the rear wheels. Otherwise, the bracket or the wheelchair could be damaged.



2.

Hold the handlebars pushed forward until the entire combination has passed the edge. Afterwards, lower the handlebars to the normal driving position.



- i** Maximum height of obstacles: 13 cm upwards, 15 cm downwards.
Do not try to drive over stairs with several steps!

More information and videos for proper handling can be found on our website:
www.swisstrac.ch

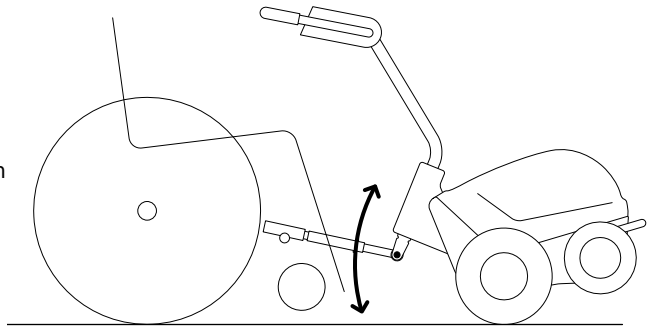
Driving Assistance

The driving assistance takes strain off the shoulders and arms by stabilizing the combination in the ideal driving position when enabled. At the same time, the effort required while driving decreases markedly. It is an addition to the drawbar which, when engaged, constantly holds the front wheels of the wheelchair in an elevated position.

For persons with limited functionality of the upper extremities and less strength in arms and hands, this makes driving longer distances with the Swiss-Trac possible.

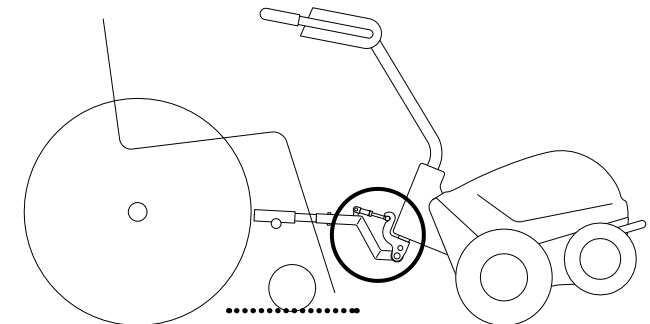
Drawbar without Driving Assistance

Wheelchair and Swiss-Trac are movable via the drawbar. The driver balances the combination actively.



Drawbar with Driving Assistance

When the driving assistance is engaged, the wheelchair and Swiss-Trac remain in the driving position automatically, the wheelchair front wheels are raised about 2 cm.



- ① Depending on the degree of disability, type of wheelchair and individual needs, different types of driving assistances and drawbars are utilized. Let your specialist dealer advise you.

Batteries

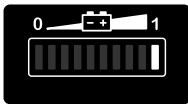
The AGM lead-acid batteries (dry-cell batteries) used for the Swiss-Tracs are of high quality. They are leakproof and meet the current requirements for safety and environmental compatibility. They also meet the current IATA / ICAO special provision A67 requirements and are approved for air transport.

→ For air travel, you can find a confirmation of the compliance with all safety standards on our website www.swisstrac.ch (see p. 20, "On Planes").

- ⓘ Avoid discharging the batteries completely (i.e. Avoid driving until the Swiss-Trac stops operating). Complete discharge of the batteries reduces the battery capacity and decreases the battery life drastically.
- ⓘ The replacement of batteries has to be carried out by the specialist dealer. The factory-set charging characteristics of the charger match the installed batteries and are not to be altered. The wrong charger may damage the batteries and the charging socket.

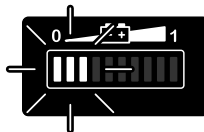
Battery Display

The battery display on the control panel displays the charge level of the batteries:



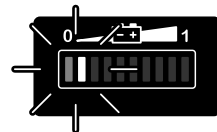
Full

The charge level is displayed as a red bar when the batteries are fully charged.



Almost Empty

The display will start flashing in red when the batteries have discharged by about 75 % of their capacity. In this case, only drive in level 1.



Empty

When the last 2 bars start flashing alternately, the batteries are empty and urgently need to be recharged. If you continued to drive at this point, the batteries' life would be decreased.

Range

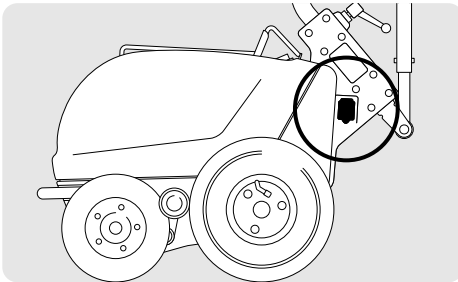
The range of the Swiss-Trac with fully charged batteries depends on several factors, such as weight, tyre equipment, gradient and the batteries' capacity.

On flat routes with an average speed of 5 km/h, a distance of about 30 km or more can be driven.

Ascents with high gradients reduce the range significantly. During descent, the batteries are partially recharged again.

Charging the Batteries

The Swiss-Trac is equipped with maintenance-free AGM lead-acid batteries and an external charger. Extensive information on the charger can be found in the corresponding instruction manual.



The charging socket for charging the batteries is located beneath a black hinged lid. Plug the round charging plug of the charger into the charging socket and the power plug into the power supply.

Charging the batteries completely takes at least 8 hours. Overcharging is not possible.

The charger operates with a voltage of 100 – 240 volts and can be used worldwide with a corresponding travel adaptor.

In general, the batteries should be charged after every long drive. Only charge the batteries in dry, well ventilated rooms at a temperature of +10 °C to +45 °C.

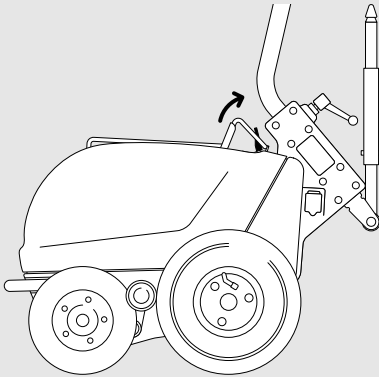
- ⓘ Use only the original charger. Other chargers can cause a short circuit in the charging socket and the charging plug, and damage the batteries.

Maintenance when Not in Use

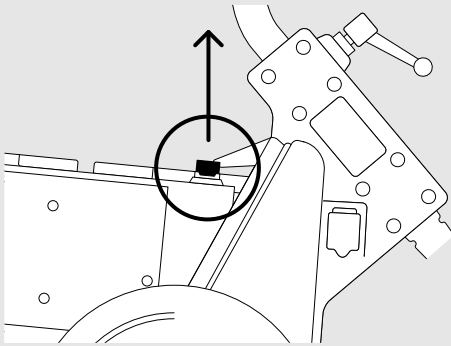
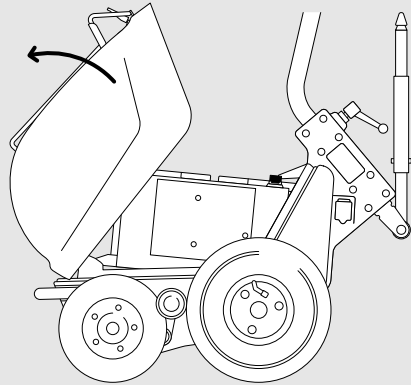
When the Swiss-Trac is not in use, it is recommended to charge the batteries every 4 to 5 weeks.

If lead-acid batteries are not used over several months, the battery capacity decreases due to self-discharge. To avoid this, charge the batteries completely prior to storage and proceed as follows to remove the main fuse:

1. Fold up the clasp on the upper end of the bonnet.



2. Open the bonnet by pulling on the luggage carrier.



3. The main fuse (40 amps) is orange and is located on the side, next to the batteries. Pull the main fuse out vertically upwards.

i The batteries are damaged if the main fuse is not removed for longer storage periods.

Disposal

The battery life is about 2 years. However, it also depends on usage and charging cycles. At the end of this battery life, the batteries are disposed of by your Swiss-Trac specialist dealer according to environmental regulations.

Transport

The Swiss-Trac can be loaded into a standard estate car independently by the wheelchair user. The Swiss-Trac can be transported on wheelchair accessible public transport. Transport on planes is also possible.

In the Car

Loading ramps are provided for loading the Swiss-Trac into a car. These can be used with every vehicle with a loading sill up to a height of 55 cm off the ground.

→ For cars with a higher loading sill, longer, foldable loading ramps are available (see p. 29, "Accessories").

Loading

1. Place the loading ramps on the loading sill and insert the spacer bar between the loading ramps.
2. Ensure the fast / slow toggle switch is on level 1.
3. Drive the Swiss-Trac backwards onto the loading ramps on speed level 1 until all 4 wheels are located on the ramps.
4. Loosen the lever screw of the steering handle while the Swiss-Trac is slightly rolling downwards again (see p. 6). The handlebars should remain raised for the moment.
5. Drive with the wheelchair diagonally to the left, next to the ramps, in such a way that you can still reach the gas stick with your right hand. Reverse the Swiss-Trac slowly and press on the control panel with your hand.
As soon as the Swiss-Trac is moving out of reach, swing the steering handle down to the side and release the gas stick.
6. The Swiss-Trac should be completely inside the car by now. Switch it off and apply the handbrake (see p. 10, "Brakes"). Finally, place the loading ramps in the car.
→ The Swiss-Trac should be secured during transport in the car. If your car is equipped with restraining belts, e.g. in the corners of the boot, span them tightly around the bumper of the Swiss-Trac.

Unloading

1. Place the loading ramps on the loading sill and insert the spacer bar between the loading ramps.
 2. Drive the Swiss-Trac very slowly onto the loading ramps.
 3. Without accelerating, let the Swiss-Trac roll downwards. In order to avoid tilting of the Swiss-Trac, push downwards lightly on the steering handle above the drive wheels.
 4. When the Swiss-Trac comes to a halt on the bottom of the loading ramps, swing the steering handle upwards and tighten the lever on the steering handle.
- i** Do not park the car with a loaded tractor in the sun! Extreme heat can damage the Swiss-Trac!



A video with instructions for loading and unloading can be found on our website:
www.swisstrac.ch

In Public Transport

The Swiss-Trac can be transported in wheelchair accessible public transport, such as a train, bus, tram, cable cars and passenger ships.

- Where possible, stay connected to the tractor in buses and trams. That way, the entire combination is more stable during bumpy drives.
- In case of doubt, clarify the precise procedure with the transport service.

On Planes

As a rule, all big airlines transport the Swiss-Trac free of charge as an accessory of the wheelchair. On our website you can find a leaflet with travel information and a confirmation that the utilized batteries meet the current requirements of the "ICAO Special Provision A67": www.swisstrac.ch

The Swiss-Trac weighs 65-70 kg (SWT-1), 70 kg (SWT-1HD, SWT-1S) or 55 kg (SWT-2).

Under normal circumstances, you will be able to drive the Swiss-Trac up to the check-in area or the bulky luggage counters and then prepare it for transportation.

1. Remove the key and the main fuse (see p. 17, "Maintenance when Not in Use"), then fold the steering handle downwards.
2. The lever screw for locking the steering handle must be tightened again.
3. Apply the handbrake and secure the drawbar with a strap or string on the side of the luggage carrier.
4. The key, main fuse and bracket are best transported in the hand luggage and not the suitcase.

- i** Do not transport the tractor on a belt. Attach the transport banner, which is available as an accessory, to the Swiss-Trac before the flight (see p. 29, "Accessories").



Maintenance and Cleaning

Keep the Swiss-Trac and the wheelchair safe to operate. To guarantee your safety, the Swiss-Trac and its accessories have to be periodically inspected and maintained. The inspection and maintenance has to be carried out by an authorised specialist dealer at least once a year. Please contact your specialist dealer for this (see p. 30, "Proof of Maintenance").

Gas Stick and Brakes

Check every week if the gas stick and the handbrake are functioning properly.

→ Please do not drive if the gas stick does not return to the neutral position automatically due to the internal spring resistance. Arrange for a repair by your specialist dealer.

Bracket on the Wheelchair

The wheelchair and its bracket have to be included in the maintenance. Check the mount and the proper functionality of the bracket (audible clicking when attaching) periodically.

Tyres and Air Pressure

Check the air pressure of the tyres every 2 months (see p. 22, "Air Pressure of the Tyres"). Also check the tyre equipment of the wheelchair, its air pressure and the functionality of both wheelchair brakes.

→ The wheels can be cleaned with the help of a water hose. Make sure that the bonnet and the charging socket's lid are closed during the process.

Control Panel and Bonnet

The control panel and the bonnet are best cleaned with a damp cloth.

- ⓘ Do not spray the control panel with the water hose during cleaning! Do not use high-pressure cleaners or aggressive cleaning agents to clean the tractor.

Tyre Equipment

All wheels of the Swiss-Trac are fitted with pneumatic tyres. Note that not all tyres require the same air pressure.

Air Pressure of the Tyres	Rear wheel	Front wheel
Block Profile Tyres (standard)	2.0 bars	2.5 bars
Cross Profile, Tractor & Studded Tyres	1.5 bars	2.5 bars

see p. 29, "Accessories" for cross profile, tractor and studded tyres.

→ To increase driving comfort and ground contact, the air pressure of the tyres can be lowered for trails.

Insufficient air pressure can damage the tyres. Therefore, please check the air pressure at least every 2 months. All inner tubes are equipped with American valves (Schrader valves). They can be pumped up at all petrol stations. To fill the front wheels with air, the Swiss-Trac has to be tilted backwards onto the drawbar, then, rotate the tyre until the tyre valve on the inside of the rim can be reached.

Wheel Repair

The large rear wheels can be removed entirely from the tractor when repairs are necessary.

For a wheel repair, the following repair tools are required:

- Socket Spanner 10 mm with cross-handle and extension
- Hexagonal pin spanner / Allen wrench SW 4 mm (for the front wheels)
- Tyre pump for American valves
- Tyre repair kit (available at bicycle shops)

Rear Wheel (Drive Wheel)

1. Deflate the tyre entirely by means of the valve.
2. Loosen the 3 wheel nuts on the rim and remove the wheel.
3. Loosen the remaining 3 nuts on the inside of the wheel.
4. Take apart the two-part rim. The inner tube can be repaired with the help of the tyre repair kit or by replacing it entirely.
5. Put the inner tube into the tyre and fill it slightly before further assembly.
→ Make sure that the valve is not placed above a wheel nut.
6. Assemble the wheel and attach it to the Swiss-Trac. Only now should the tyre be fully inflated.

Front Wheel

In case of a flat tyre on the front wheel, it is not necessary to completely remove the wheel to repair it. The rims also consist of 2 parts and the 5 screws on the inside of the rim can be loosened. The repair process for the front wheel corresponds to the repair process for the rear wheel.

- ⓘ Please contact your specialist dealer in case of any problems and for any spare parts you may need to order.

Headlight

You can easily replace a defective headlight bulb by yourself:

1. Switch off the Swiss-Trac.
2. Open the bonnet (see p. 17).
3. Turn the contact strip that pushes down the bulb in the middle to the side.
4. Remove the bulb by turning it slightly.
5. Put in the new bulb and finally turn back the contact strip.

Reuse and Disposal

The Swiss-Trac is a high-quality and durable product and therefore generally suitable for reuse. The requirement for this is the observation of the operating requirements and of the service and maintenance requirements.

- ❗ The bracket of the wheelchair or its parts must never be reused.

- ⓘ Before reusing a Swiss-Trac it has to be inspected for functionality, condition and wear by an authorised specialist dealer.
Used parts must not be used in a new Swiss-Trac.

According to the modern state of the art, the Swiss-Trac has a service life of between 5 and 10 years. At the end of this period, it can be returned to your Swiss-Trac specialist dealer for professional recycling.

Technical Data

Model	SWT-1	SWT-1S
Safety	TÜV tested according to N12184:1999	
Medical aid Nr (GER)	18.99.04.0020	18.99.04.0020
Range	over 30 km on flat routes	over 30 km on flat routes
Speed	Continuously up to 6 km/h	Continuously up to 9 km/h
Max. Trailing Load	140 kg (Driver with wheelchair and luggage)	120 kg (Driver with wheelchair and luggage)
Max. Gradient	20 % with 140 kg trailing load	12 % with 120 kg trailing load
Sideways Inclination	Max. 20 %	Max. 20 %
Max. Step Height	13 cm upwards 15 cm downwards	13 cm upwards 15 cm downwards
Max. Obstacle Height	Protruding from ground 8 cm	Protruding from ground 8 cm
Weight	65 kg	70 kg
Transport Dimensions	About 75×51×53 cm	About 75×51×53 cm
Engine Power	400 Watt, 3150 min-1	400 Watt, 3850 min-1
Batteries	2 × 12V/40AH/C₂₀ Type: AGM (leakproof) Class-8, UN Nr. 2800 Corresponding to ICAO A67	2 × 12V/50AH/C₂₀ Type: AGM (leakproof) Class-8, UN Nr. 2800 Corresponding to ICAO A67
Charger	100-240 VAC/50-60 Hz	100-240 VAC/50-60 Hz
Charger Power	24 volts, 8 A	24 volts, 8 A
Charging Time	Min. 8 h when batteries are empty	Min. 8 h when batteries are empty
Main Fuse	40 amps ATO-Fuse Art: 257040.LN	40 amps ATO-Fuse Art: 257040.LN
Headlight	24 volts, 15 watts / P26	24 volts, 15 watts / P26
Brakes	Dynamic motor brake mech. parking brake	Dynamic motor brake mech. parking brake
Tyre Dimension	200×50 mm / 260×85 mm	200×50 mm / 4.10/3.50-4, 4PR
Tyre Pressure	Front 2.5 bars Rear 2.0 bars Special tyres 1.5 bars	Front 2.5 bars Rear 1.5 bars Special tyres 1.5 bars
Max. Carrier Load	40 kg	40 kg
Max. Temperatures	Ambient: -20 °C to 45 °C Charge batteries: 10 °C to 45 °C Storage: 10 °C to 25 °C	Ambient: -20 °C to 45 °C Charge batteries: 10 °C to 45 °C Storage: 10 °C to 25 °C

Model	SWT-1HD	SWT-2
Safety		TÜV tested according to N12184:1999
Medical aid Nr (GER)	18.99.04.0020	18.99.04.0020
Range	over 30 km on flat routes	About 20 km on flat routes
Speed	Continuously up to 6 km/h	Continuously up to 6 km/h
Max. Trailing Load	160 kg (Driver with wheelchair and luggage)	80 kg (Driver with wheelchair and luggage)
Max. Gradient	20 % with 160 kg trailing load	20 % with 80 kg trailing load
Sideways Inclination	Max. 20 %	Max. 20 %
Max. Step Height	13 cm upwards 15 cm downwards	13 cm upwards 15 cm downwards
Max. Obstacle Height	Protruding from ground 8 cm	Protruding from ground 8 cm
Weight	70 kg	55 kg
Transport Dimensions	About 75×51×53 cm	About 66×51×53 cm
Engine Power	400 Watt, 3850 min-1	300 Watt, 3150 min-1
Batteries	2 × 12V/50AH/C₂₀ Type: AGM (leakproof) Class-8, UN Nr. 2800 Corresponding to ICAO A67	2 × 12V/28AH/C₂₀ Type: AGM (leakproof) Class-8, UN Nr. 2800 Corresponding to ICAO A67
Charger	100-240 VAC/50-60 Hz	100-240 VAC/50-60 Hz
Charger Power	24 volts, 8 A	24 volts, 5 A
Charging Time	Min. 8 h when batteries are empty	Min. 8 h when batteries are empty
Main Fuse	40 amps ATO-Fuse Art: 257040.LN	40 amps ATO-Fuse Art: 257040.LN
Headlight	24 volts, 15 watts / P26	24 volts, 15 watts / P26
Brakes	Dynamic motor brake mech. parking brake	Dynamic motor brake mech. parking brake
Tyre Dimension	200×50 mm / 4.10/3.50-4, 4PR	200×50 mm / 260×85 mm
Tyre Pressure	Front 2.5 bars Rear 1.5 bars Special tyres 1.5 bars	Front 2.5 bars Rear 2.0 bars Special tyres 1.5 bars
Max. Carrier Load	40 kg	40 kg
Max. Temperatures	Ambient: -20 °C to 45 °C Charge batteries: 10 °C to 45 °C Storage: 10 °C to 25 °C	Ambient: -20 °C to 45 °C Charge batteries: 10 °C to 45 °C Storage: 10 °C to 25 °C

Optical and Acoustic Error Display

The Swiss-Trac driving electronics unit is equipped with a multistage optical and acoustic error display (see Control panel, page 8).

Explanation of Signals:

Single, short beep signal

- Signals an okay during start up of the Swiss-Trac.

Slowly flashing control light

- Risk of overheating – the temperature inside the motor-speed control is over 65 °C
- no movement command – the motor-speed control has not received a movement command for more than 3½ minutes. The driving electronics will switch off automatically after another 3½ minutes if the gas stick is not operated.

Fast flashing control light and repeated beep signal

- the charger is connected to the operating Swiss-Trac
- the gas stick is deflected at startup
- the incline is too steep or the trailing load too great. Reduce the speed immediately using the gas stick, otherwise the Swiss-Trac will switch off within a few seconds and must be turned off and on again using the ignition key. Avoid overstressing the Swiss-Trac in this way, as its service life will be reduced.
- the handbrake is engaged during driving or during operation of the Swiss-Trac
- the potentiometer (speed control) is defective
- the motor or the wiring is defective
- undervoltage or overvoltage of the batteries
- the motor controller is defective
- the Swiss-Trac has been turned off by means of the key. This is a precautionary measure, indicating a possible unintentional shutdown of the Swiss-Trac. In this case, no procedures are necessary.

Try to remove the error if possible or try turning the Swiss-Trac off and on again. Please contact your specialist dealer if the error continues to show up.

Troubleshooting

If a defect or error shows up, please search for a solution by means of the list below. Consult the corresponding separate instruction manual if problems with the charger arise. If the error cannot be removed, contact an authorized specialist dealer.

Error Description	Measure	Continue driving?	Contact authorised specialist dealer?
The green control light on the control panel does not light up after startup	Check main fuse and charge batteries	Yes	If error cannot be removed
The green control light (LED) on the control panel flashes after startup and a beep signal can be heard	Have potentiometer checked by the specialist dealer	Yes, after rectifying the problem.	Yes
Gas stick does not return to neutral position by itself	Swiss-Trac has to be repaired by a specialist dealer	No	Yes
Swiss-Trac drags to one side when driving	Pump up both big tyres evenly	Yes	No
After a short time, the charger lights up (or flashes in red) with "Error"	Pull out charging plug on the Swiss-Trac and plug it in again. This may have to be repeated a few times	After removal	If error cannot be rectified
The battery display does not display batteries as fully charged after charging	Repeat charging process, possibly check charger. Green or yellow LED has to light up while charging	No	If error cannot be rectified
The power LED (red) lights up but charger does not charge	Check charging socket and charging cable	Yes, only a short distance	If error cannot be rectified
Battery display always decreases rapidly during driving	Get batteries checked and replaced if required	Yes, only a short distance	Yes
Swiss-Trac accelerates when driving downhill	Swiss-Trac has to be repaired by a specialist dealer	No	Yes

Warranty, Liability and CE Conformity Declaration

The manufacturer, the company **ATEC Ingenieurbüro AG**, provides a guarantee for faultlessness and the explicit – according to the state of the art – assured properties of the Swiss-Trac.

The guarantee period is 24 months (batteries 6 months) after the date of invoice. The guarantee period for spare parts is 12 months.

The removal of defects under guarantee claims can be carried out through repair or replacement. Subsequent costs of any kind, such as freight and wage costs, expenses and so on, are explicitly not covered.

The Swiss-Trac is a high-quality product that meets current safety requirements. The company **ATEC Ingenieurbüro AG** as the manufacturer is not liable if the Swiss-Trac and its accessories

- were misused
- were repaired by unauthorised entities or foreign parts were used for repair
- were not installed properly
- were not checked by authorised entities on a regular basis
- were not used according to the instruction manual
- were assembled or adjusted by unauthorised entities
- cause damage by normal wear and tear

CE Conformity Declaration

Accreditation Number: STS 024, Report Nr. 12294.

ATEC Ingenieurbüro AG in 6403 Küsnacht, Switzerland, the manufacturer of tractors for manual wheelchairs, i.e. the **Swiss-Trac brand models SWT-1, SWT-1S, SWT-1HD and model SWT-2**, hereby declares under its sole responsibility that the products mentioned above comply with Directive 93/42/EEC and with Swiss regulations for medical products (Mepv), according to their construction type and distributed versions. We reserve the right to changes that serve technological progress.

Accessories

Supplies include the external charger and the loading ramps, as well as the bracket for the wheelchair.

The following accessories are available through your specialist dealer.



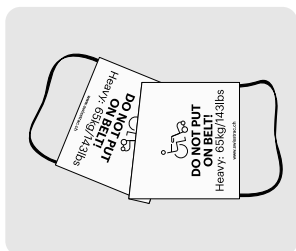
Gas Stick variants with ball, for quadriplegics



Driving assistances (see p. 14)



50 AH batteries (larger capacity)



Transport banner for air travel



Cycle computer, integrated



Child seat with quick coupling



Front basket with KLICKfix-mount on steering tube



Loading ramps, foldable, 1.4 m (with bag) or 1.6 m long



Tyres with block, cross, tractor profile and studded tyres

More information on accessories is provided by your specialist dealer or can be found on our website: www.swisstrac.ch

Proof of Maintenance

The tractor must be checked by a specialist dealer at least every **12 months**.

i Cost carriers generally assume the cost of annual maintenance at your dealer.

Commissioning
Specialist dealer's stamp:
Serial-No.: Date:
Signature:

Recommended maintenance
Specialist dealer's stamp:
Place, Date:
Signature:

Recommended maintenance
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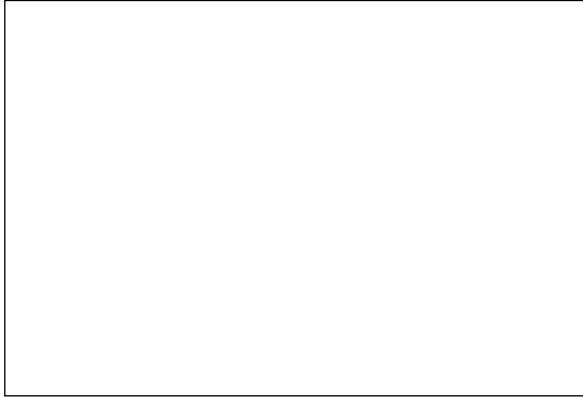
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Your Swiss-Trac specialist dealer



More information online

On our website you can find videos for the handling of the Swiss-Trac, documentation on the available accessories, addresses of our specialist dealers and much more:

www.swisstrac.ch