

Titan 3W & Titan 4W Scooters



User's Manual

(28-75-901)

Original instructions

Dear User,

Tzora Active Systems Ltd. thank you for choosing the ***Titan 3W/Titan 4W*** scooter and wish you safe and enjoyable journeys.

For proper operation and to maintain the scooter's operational readiness, we recommend that you read this user manual and all warning labels prior to using the scooter.



Kibbutz Tzora, 99803, Israel

Tel: +972-72-2463131, Fax: +972-2-9991552

Internet Mail: info@tzora.com

Internet Address: www.tzora.com

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SECTION A – PRE-SALES INFORMATION

REMARK: For people with impaired vision, this manual is available in digital format upon request from the manufacturer; please send an email to info@tzora.com.

1. INTRODUCTION

Indications for Use

The ***Titan*** is a mobility assistive device for indoor and outdoor use on mild terrain. It is not used as a transportation vehicle on roads and freeways used by cars.

General Information

The ***Titan 3W*** and ***Titan 4W*** are electrically powered scooters. They are intended to be used by individuals who are able to walk, but suffer from mobility limitations. The user must have sufficient arm and leg strength to get on and off the ***Titan*** alone and to safely steer under all driving conditions.

The ***Titan 3W*** and ***Titan 4W*** have reflectors and lights, which should be used in the dark or in limited visibility conditions.

CAUTION: Failure to follow the instructions contained in this manual may result in injury to the user or to other persons.

IMPORTANT:

- **Charge the batteries for 24 hours before first use.**
- **Ensure that the tyres are fully inflated before first use.**

We recommend that the tyres be inflated to the following pressures:

| Titan 3W | Titan 4W |
|-------------------|-------------------|
| 35 psi. (2.5 bar) | 45 psi. (3.2 bar) |

2. TECHNICAL DATA

| Item | Titan 3W | Titan 4W |
|--|---|--------------------------------------|
| Category | Class B | |
| Maximum speed | 11.0 km/h (6.8 mph) | 11.8 km/h (7.3 mph) |
| Minimum braking distance and time | <2.2 m (7.2 ft), <1 s | |
| Power supply | 24V from 2 12V-26Ah batteries. | |
| Charge time | 7-10 hours | |
| Estimated range | 20 km (12.5 miles) depending on operating conditions | |
| Theoretical maneuvering range | 2.9 km | |
| Climbing slope | 8° (14%) | |
| Reversing width | 750 mm. | 1050 mm. |
| Curb (step) climbing | 50 mm. (2 in.) maximum (see note on page 9) | |
| Ground clearance | 8 cm. (3.1 in.) | |
| Maximum load | 136 kg. (300 lbs.) | |
| Liquid ingress protection | IPX4 | |
| Resistance to ignition of materials & assemblies | UL94 V-0 (burning of material stops within 10 seconds) | |
| Scooter weight (excluding batteries) | 45 kg (99.2 lbs.) | 53 kg (116.8 lbs.) |
| Front chassis weight (Including seat) | 22 kg (48.5 lbs.) | 27 kg (59.5 lbs.) |
| Rear chassis weight (excluding batteries) | 23 kg (50.7 lbs.) | 26 kg (57.3 lbs.) |
| Rear chassis weight (including batteries) | 42 kg (92.6 lbs.) | 45 kg (99.2 lbs.) |
| Seat Weight | 6 kg (13.2 lbs) | |
| Battery pack weight | 9.5 kg (20.9 lbs.) x 2 | |
| Front Wheels | 31x5.5 cm (12.5x2.2 in.) | 26x8 cm (10.2x3.1 in.) |
| Rear Wheels | 31x5.5 cm (12.5x2.2 in.) | 34x6.5 cm (13.4x2.6 in.) |
| Dimensions (Length, Width, Height) | 139X60X95 cm (54.7x23.6x37.4 in.) | 137x62x95 cm (53.9x24.4x37.4 in.) |

| Disclosure Information per ISO 7176-15:1996 | | | | |
|---|----------|---------|----------|-----------|
| Item | Titan 3W | | Titan 4W | |
| | Min | Max | Min | Max |
| Overall length with legrest | | 1390 mm | | 1370 mm |
| Overall width | | 600 mm | | 620 mm |
| Folded length | | 1390 mm | | 1370 mm |
| Folded width | | 600 mm | | 620 mm |
| Folded height | | 660 mm | | 660 mm |
| Total mass | | 64 kg | | 72 kg |
| Mass of the heaviest part | | 23 | | 27 kg |
| Static stability downhill | | 8° | | 8° |
| Static stability uphill | | 8° | | 8° |
| Static stability sideways | | 4° | | 4° |
| Energy consumption | | 25 km | | 25 km |
| Dynamic stability uphill | | 8° | | 8° |
| Obstacle climbing | | 50 mm | | 50 mm |
| Maximum speed forward | | 11 km/h | | 11.8 km/h |
| Minimum braking distance from max speed | | 2200 mm | | 2200 mm |
| Seat plane angle | 3° | 5° | 3° | 5° |
| Effective seat depth | 420 mm | 440 mm | 420 mm | 440 mm |
| Effective seat width | | 440 mm | | 440 mm |
| Seat surface height at front edge | 560 mm | 570 mm | 560 mm | 570 mm |
| Backrest angle | 10° | 11° | 10° | 11° |
| Backrest height | 360 mm | 370 mm | 360 mm | 370 mm |
| Footrest to seat distance | 380 mm | 390 mm | 380 mm | 390 mm |
| Leg to seat surface angle | 12° | 16° | 12° | 16° |
| Armrest to seat distance | 170 mm | 180 mm | 170 mm | 180 mm |
| Minimum turning radius | 1200 mm | | 1400 mm | |

| BATTERY | |
|---|---|
| Manufacturer | Kung Long Batteries Industrial Co., Ltd. No. 6, Tzu-Li 3 Road, Nantou City, Taiwan |
| Model | WP26-12 |
| Type | Rechargeable Sealed Lead Acid Battery |
| Nominal Capacity | 20hour rate (1.3A to 10.50V) 26Ah |
| Charge Retention (shelf life) at 20°C (68°F) | 1 month 92% 3 month 90% 6 month 80% |
| Life expectancy: | Cycle Use: 100% depth of discharge 200 cycles 80% depth of discharge 225 cycles 50% depth of discharge 500 cycles Standby Use: 3~5years |
| No. of batteries | 2 |
| Nominal Voltage | 12 V |
| Power | 12V 26Ah |
| Weight | Approx. 9.3kg (20.5Lbs.) |

| MOTOR | |
|---------------|-------|
| Rated Voltage | 24 V |
| Power | 400 W |

3. SAFETY

The scooter is intended to be operated by the occupant and used by individuals who are able to walk but suffer from mild mobility limitations. The user must have sufficient arm and leg strength to get on and off the scooter alone and the cognitive and visual ability to safely operate the scooter under all driving conditions.

Operation

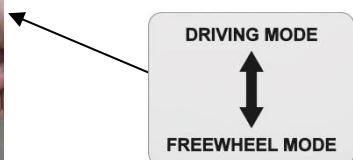
These safety considerations and tips will help you operate the scooter safely. The scooter is a powerful electric vehicle, and the following rules will help you prevent personal injury and damage to your scooter.

- Make sure that your weight does not exceed the recommended weight limit of the scooter (see Technical Specifications).
Do not carry passengers.
- Always ensure that the power is switched off, when getting on or off of the scooter.
- When getting on and off the scooter, do not step on the foot rest.
- At all times while driving, keep your feet on the foot rest.
- Be aware of the environment around you when choosing a desired speed. For indoor environments, we recommend that you select the slowest speed setting. For outdoor operation select a speed that is comfortable for you to control it safely.
- Reduce speed when making sharp turns.
- The scooter is intended to be used on paved surfaces and mild terrain, e.g., gardens, gravel, etc.
- Do not use the scooter on heavy terrain, e.g., beaches, dunes, etc. This can cause the scooter to have difficulty driving or to get stuck.
- Do not switch off the power when the scooter is still moving forward. This will bring the scooter to an extremely abrupt stop.
- Avoid jerky stop/start motions as it will result in excessive battery drain and increased tire wear. To break in an emergency, simply release the forward/reverse lever.
- Make sure the wheel release lever is in driving mode prior to operation (see Fig. 1).

- In “freewheel” mode the scooter may be moved manually. If the operator is unable to reach the control lever, it may be adjusted by an assistant. See also “Moving the Scooter” on Page 18.
- Make sure the forward/reverse lever is in the proper position according to your desired direction.



Figure 1



Driving/Freewheel Mode Label

- If the automatic brake fails to work, the user should immediately turn the key-switch to the off position.
- In the event of a failure of the electro-magnetic brake, a manual handbrake with locking snib (for parking) is provided, situated next to and below the seat (see Fig. 1 on page 6.)
- Do not attempt to drive the scooter while it is charging as operation is inhibited.

Ramps and Curbs (Sidewalks)

- Use extra caution when driving down a slope.
- Never drive across a slope.
- Do not turn sharply on a slope.
- Do not drive in reverse on a slope or on a bumpy surface.
- When driving over a curb or raised surface, make sure that the bottom of the scooter has sufficient clearance (see Technical Specifications).
- The Titan scooter requires some momentum to climb a curb (step). The curb should be approached from a "run up" distance of approximately 1 meter (3 ft.).
- No attempt should be made to ascend or descend a curb of a height greater than 50 mm. (2 in.)

General Instructions

- Please note that assistance may be needed for lifting heavy parts when assembling and disassembling the scooter.
- Do not attempt to lift or move a power scooter by any of its removable parts. Personal injury and damage to the power scooter may result.
- Avoid driving in the dark or in times of limited vision.
- Do not connect any electrical or mechanical devices to the scooter that are not authorized by Tzora or the authorized dealer. Doing so may cause personal injury or damage to equipment, and voids the manufacturer's warranty.
- Do not operate your vehicle if it is not functioning properly. Contact your service center immediately.
- The Titan scooter is **NOT** intended to be used as a seat in a motor vehicle.
- When exposed to external sources of heat (e.g. sunlight) surface temperatures of the scooter can increase. Exercise caution before touching exposed surfaces.
- **DO NOT** perform stretching exercises, wheelies or other stunts with the scooter.
- **DO NOT** drive the scooter on a roadway.
- **DO NOT** use the scooter on an escalator.
- **DO NOT** use the scooter during weight training as the maximum loading may be exceeded and the stability of the scooter compromised.
- **DO NOT** remove under any circumstances the Anti-tip wheels at the rear of the scooter.

Influence of Medication or Alcohol

- Check with your physician if you are taking any medication that may affect your ability to operate your power scooter safely.
- Do not operate your vehicle while you are under the influence of alcohol, as it impairs your ability to operate your power scooter in a safe manner.

Warning Label

- Please read the warning label situated on the back of the Tiller (see Fig. 2).

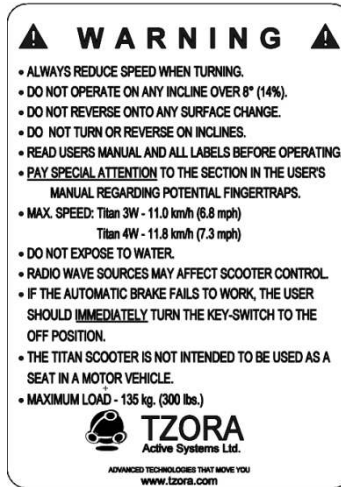


Figure 2

Important Note

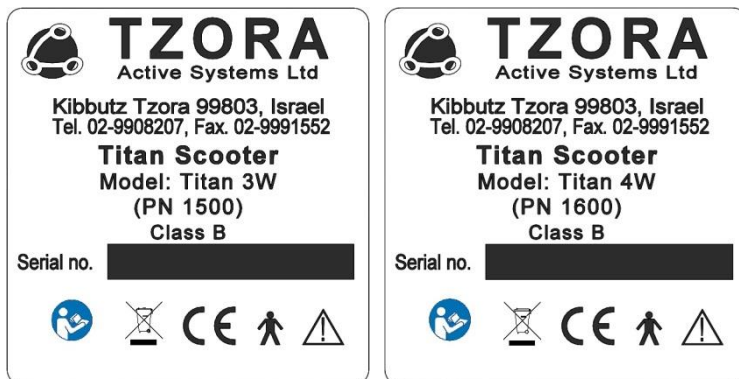
There are a number of potential finger traps on the scooter as indicated below. The operator or his/her assistant should be aware of these and take particular care to avoid personal injury. (see Figs. 3 & 4)



Figures 3 & 4

The Type Plate

The Type Plate can be found on the back of the Tiller.



Figures 5a and 5b

This label contains the serial number of the ***Titan***.

The serial number consists of 11 digits and one letter:

Example: Serial no. **15001503006X**

| | | | | |
|-------------|-----------|-----------|------------|----------|
| 1500 | 15 | 03 | 006 | X |
| 1 | 2 | 3 | 4 | 5 |

1. Model: ***Titan 3W***
2. Year of manufacturing (last two digits of the year)
3. Month of manufacturing
4. Sequential number of batch
5. Letter identifying the manufacturing location

Tire Size

The tire size is marked on each of the tires.

Legend:



Read this user manual and all labels before operating.



When this equipment is no longer operational it must be sent to a separate collection facility for recovery and recycling.



CE approved



Type B equipment.



Read the warnings in this manual before operating.

Motor Warning Label

The Motor Warning label can be found on the motor in the rear chassis.



Figure 5c

4. SYSTEM COMPONENTS AND DETAILS

Your power scooter comes partially disassembled for protection during shipment. After unpacking, please familiarize yourself with the following components (see Figs. 6, 7 and 8)



Figure 6 (Titan 4W)



Figure 7 (Titan 3W)

1. Control Panel
2. Tiller
3. Front Wheel
4. Foot Platform
5. Foldable Seat
6. Foldable armrests
7. Basket and support tube
8. Battery packs (detachable)
9. Rear Wheels
10. Anti-tip Wheels
11. Battery Charger



Figure 8

SECTION B – USER INFORMATION

5. ASSEMBLY INSTRUCTIONS

It is very easy to assembly your scooter. Please follow the steps below. Contact your service center in any problems occur.

Installing the batteries

1. Take the batteries out of the box.
2. Place the battery into the rear tray with the protruding part towards rear (see Fig. 9).
3. Then, lower the battery until it stops (the connectors will engage).

Note: The batteries are partially charged. We recommend charging them fully prior to usage.



Figure 9

Chassis Installation

1. Using the handle located behind the seat, raise the front chassis and connect it to the back chassis. Make sure they are aligned and locked (see Fig. 10).



Figure 10

Tiller Positioning

1. Pull up the tiller handle, in order to release the position lock (see Fig. 11).
2. Adjust the tiller to a driving position, according to your own preference.



Figure 11

Installing the Seat

1. Raise the seat assembly until it reaches a locked position (see Fig. 12).
2. Raise the backrest to an upright position.



Figure 12

Installing the Basket Support Frame and Rear Basket

1. Insert the legs of the basket support frame into the two tubes located on either side of the rear tray. Make sure the frame is secure and stable.
2. Insert the basket into the basket support frame. Make sure it is seated securely (see Fig. 13).



Figure 13

Moving the Scooter

When moving the scooter (without operating it), be sure to follow these instructions:

1. Turn the power off.
2. Ensure that the wheel release lever is in Freewheel mode (see Fig. 1).
3. Move the scooter carefully and slowly.
4. To brake the scooter, move the wheel release lever to the Drive position.

Note: Do not change the scooter to freewheel mode when on a slope.

Disassembly

If necessary, the scooter can be easily disassembled. To transfer the scooter safely, follow these steps:

1. Turn the power off.
2. Fold the backrest down, slightly raise the seat and push it forward and down. (see Fig. 14).



Figure 14

3. Remove the rear basket and the basket support frame (see Fig. 15).



Figure 15

4. Disconnect and remove the batteries from the rear tray (see Fig. 16).

Note: Pull the battery up first to disconnect from electrical contacts.



Figure 16

Note: To avoid damage when disassembling the scooter, make sure it is stabilized in a fixed position.

5. Raise the tiller handle slightly in order to release the tiller lock. Then fold the tiller towards the seat (see Fig. 17).



Figure 17

6. Lift the front chassis using the handle located under the seat. Disconnect the front chassis from the rear chassis (see Fig. 18).



Figure 18

Adjustments for Seating Comfort

Your power scooter allows you adjust the tiller and the arm rests to maximize seating comfort and configure the scooter to your body structure.

1. Tiller Angle Adjustment

- A. Pull the tiller lever up (see Fig. 19). Alternatively, the tiller lever may be pushed from the back of the tiller.
- B. Move the tiller to the desired position and release to lock.



Figure 19

2. Arm Rests

When getting on or off the scooter, you can raise the arm rest for easier access and motion (see Fig. 20).



Figure 20

6. OPERATING THE SCOOTER

Operating the scooter is not complicated. However, we recommend reading these instructions prior to using the scooter, to ensure full understanding of the scooter operations.

Note: Be aware of the environment around you when choosing a desired speed. For indoor environments, we recommend that you select the slowest speed setting. For outdoor operation, select a speed that is comfortable for you to control safely.

Control Panel

The control panel is located in the center of the tiller. It enables you to control the steering, lights and signals of the scooter, supplies information on the battery status, and shows fault warnings (see Fig. 21).



Figure 21

The following table details the various systems on the control panel:

| Functionality | Description |
|------------------------------------|---|
| 1. Operating Key | Main On/Off switch (power source) for the Titan. (Remove the key when the scooter is not in use) |
| 2. Operating Lever (Left/Right) | Moving the lever controls the speed. To drive forward, pull the right lever toward you and push the left lever away from you. Releasing the lever will bring the scooter to a gradually stop. To drive backward, pull the left lever towards you. |
| 3. Horn | Pressing the button sounds the horn. |
| 4. Manual Speed Adjuster | The maximum speed is 11 km/h. Rotating the button to the lower speed (turtle icon) will reduce the speed, for slower, gentle operation. |
| 5. Turn Signal | Operates the turning signal lamps |
| 6. Hazard Lights Signal | Operates the emergency warning lights. |
| 7. Speed Selector Switch | Set the switch to the lower speed (turtle icon) position for slower operation. |
| 8. Battery Charge Indicator | Shows the state of the battery whenever the scooter is operation. |
| 9. Operation Indicator | Shows operational faults (See Table of Faults) |
| 10. Lights Switch | Turns the front and rear headlights on and off. |
| 11. Hand Grips | Flexible hand grips for comfortable hand support. |
| 12. Tiller Handle | Adjusts the tiller to your preferred position. |

Battery Charge Indicator (see Fig. 21/8)

- Before the scooter is switched on, the indicating needle will be on the extreme left of the meter.
- When switched on with the batteries **fully** charged, the needle will be at the right of the green section.
- As power is used, the needle will move gradually towards the yellow and then the red section.
- If the needle reaches the yellow section, the batteries should be charged **as soon as possible**.
- If the needle reaches the red section, although some power remains, the batteries should be charged **immediately**.

DO NOT operate the scooter with depleted batteries, this may get you stranded.

NOTE:

The indication is approximate and the user should allow a variation of $\pm 10\%$.

Batteries and Charger

Batteries

The **Titan** scooter is programmed to work with sealed, maintenance-free 12V batteries.

Note: Turn off the scooter before removing or installing batteries.

Full charging of the batteries prior to usage helps keep them operational and lengthens their lifespan. Batteries can be charged at any time, without concern for over-charging.

Note: Do not use a car battery. Car batteries are not designed for the scooters and can be dangerous. Battery lifespan is influenced by treatment, number of recharges, storage and usage.

Charging the Battery

The charger may be connected to a standard socket outlet, 100-120V or 180-240V according to the country in which it is being used.

The charger automatically prevents over-charging.

Note: The battery cannot be charged if it completely discharged. It is recommended that you recharge as often as possible.

The batteries can only be charged while they are connected to the scooter.

Plug the charger connector into the scooter input outlet and then connect the charger to the power source (see Fig. 22).

Driving or operation of the scooter is inhibited while the device is charging and should **NOT** be attempted.

Note: If the operator is unable to reach the charging socket, it may be connected by an assistant.



Figure 22

While charging, the charging indicator light will be lit red. When the batteries are fully charged, the indicator light will change to green. For maximum battery utilization, charge the battery overnight, or for at least 4 hours after

Safety Instructions

Follow these instructions to prevent damage or harm during charging:

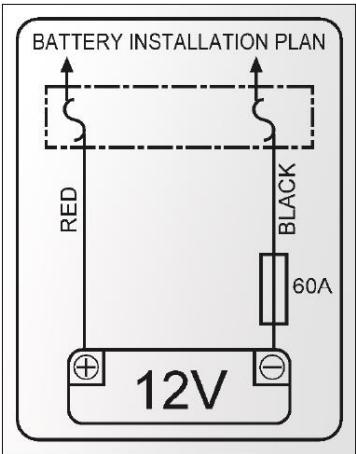
- Make sure the scooter is turned off and the key removed before charging.
- Use the charger only for charging the scooter batteries.
- Charge the batteries in a well ventilated area.
- Do not smoke near the batteries and keep away from source of heat or flames.
- Charge the batteries indoors or in a covered area, and avoid water.
- Always dry hands before charging.
- Remove jewelry before charging.
- Do not use charge cables that are damaged in any way.
- It is recommended that you change **both** batteries if they are weak.
- If you do not use the scooter for an extended period, be sure to charge the batteries at least once a month.
- Charge batteries overnight. There is no need for concern of over-charging.

Battery Troubleshooting

The battery indicator shows the battery status, and warns about problems by flashing.

| Action | Description |
|------------------------------------|---|
| Indicator is lit, with no flashing | System is operational |
| Slow flashing indicator | Charge the batteries as soon as possible |
| Quick flashing indicator | <p>Trouble indicator. Perform the following actions:</p> <ol style="list-style-type: none">1. Turn off the scooter.2. Make sure the rear wheels are locked.3. Make sure the charger is disconnected from the scooter.4. Make sure the operating lever is set in the middle. If the lever does not return to center, do not operate the scooter and contact your service center.5. Turn the scooter on and begin driving.6. If the indicator continues flashing quickly, count the number of flashes in each sequence, and check the specific problem in the Troubleshooting table at the end of this manual. |

Battery Wiring Diagram



Safety Measures

1. Read the directions before charging.
2. Charge in a well ventilated area.
3. Use only the manufacturer's recommended battery type.
4. Disconnect from the power source immediately upon completing charging.
5. Each battery pack contains sealed lead acid batteries.
6. Battery replacement should only be performed by an authorized agent.

Note: The batteries may emit a minimal amount of acid fumes. When removing batteries, always place them on cardboard, newspaper, or any other material that will prevent damage to the surface on which they stand.

Battery Warning Label

- Please read the warning label situated on the Battery Cradle (see Fig. 23).



Figure 23

7. STORAGE AND TRANSPORTATION

Transporting and Storing the Scooter

Your **Titan** scooter can be disassembled and transported inside medium and large size car trunks.

When disassembling for transportation or storage:

1. Remove batteries from rear frame
2. Disconnect front frame from rear frame and fold front frame separately.
3. For storage – set down front and rear frame in a stable position.
4. For transportation, place **Titan** scooter components in car trunk.

Battery Storage

Before storing, make sure the battery packs are fully charged. When stored, bring out the batteries to charge at least once every 3 months.

Temperature for storage: -20°C to +40°C

Temperature for charging: 0°C to +40°C

Temperature for operation: -20°C to +50°C

8. HELPFUL HINTS FOR EVERYDAY USE

Before using your **Titan** take the following precautions:

- Ensure that the front and rear frame are locked together.

Speed Controls

Always operate your **Titan** at a reasonable speed for both your personal safety and others.

Stopping

Dynamic braking will gradually bring your **Titan** to a stop when hand control lever is released.

Ramps and Inclines

Lean forward and carefully manoeuvre your **Titan** up a ramp or incline. Be aware that not all ramps are constructed according to Government standards. The Government standard for wheelchair ramps is 2.5 cm (1 inch) rise per 30 cm (1 foot).

Lower the speed setting to a slow speed when descending inclines.

Using an elevator

Backing into an elevator allows you to exit forward. Be sure that the elevator is level with the floor.

Opening Doors

When a door opens towards you, approach at an angle and just off to one side. Adjust the speed control to a low setting. Grasp the doorknob, reverse and pull the door open. For doors that open away from you, position the front of the scooter against the door, close to the doorjamb on the doorknob side of the door. After you release the latch, use the scooter to push the door open.

WARNING: Be careful with glass doors to avoid personal injury!

9. EMI – ELECTROMAGNETIC INTERFERENCE

WARNING: It is important that you read this information regarding the possible effects of electromagnetic interference on your *Titan*.

- The *Titan* scooter might disturb the operation of devices in its environment that emit electromagnetic fields (e.g. alarm systems, automatic doors, etc.).
- The driving performance of the *Titan* scooter can be influenced by electromagnetic fields (e.g. those emitted by portable telephones, electricity generators or high power sources).

Electromagnetic Interference (EMI) From Radio Wave Sources

Motorized scooters may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones. The interference (from radio wave sources) can cause scooters to release their brakes, come to a sudden stop, or move in an uncontrolled manner. It can also permanently damage a scooter's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each Motorized scooter can resist EMI up to a certain intensity. This is called its "immunity level". The higher the immunity level, the greater the protection. The FDA has stated that all newly manufactured electric mobility vehicle models should have a resistance of at least 20 V/m, which would provide a reasonable degree of protection from the more common sources of radiated EMI.

Your *Titan* as shipped, with no further modification, has an immunity level of 20 V/m. This immunity was tested with the inclusion of these accessories: a utility basket with a spare battery-pack and the charger unit carried inside it.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized.

The sources of radiated EMI can be broadly classified into three types:

- 1) **Hand-held portable transceivers** (transmitters-receivers) with the antenna mounted directly on the transmitting unit. Examples include citizens band (CB) radios, "walkie-talkies", security, fire, and police transceivers, cellular telephones, and other personal communication devices.
**NOTE: Some cellular telephones and similar devices transmit signals while they are ON, even when not being used;
- 2) **Medium-range mobile transceivers**, such as those used in police cars, fire trucks, ambulances, and taxis. These usually have the antenna mounted on the outside of the vehicle; and
- 3) **Long-range transmitters and transceivers**, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.

NOTE: Other types of hand-held devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, and cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to motorized scooters.

Motorized scooter Electromagnetic Interference (EMI)

Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from hand-held radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the motorized scooter's control system while using these devices. This can affect the scooter's movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of your ***Titan***.


WARNINGS

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect motorized scooters. Following the warnings listed below should reduce the chance of unintended brake release or powered wheelchair movement, which could result in serious injury.

- 1) Do not operate hand-held transceivers (transmitters-receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, while your **Titan** is turned ON;
- 2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
- 3) If unintended movement or brake release occurs, turn your **Titan** power switch OFF as soon as it is safe to do so;
- 4) Be aware that adding accessories or components, or modifying your **Titan**, may make it more susceptible to EMI (Note: There is no easy way to evaluate their effect on the overall immunity of your **Titan**);
- 5) Report all incidents of unintended movement or brake release to your Authorized **Titan** dealer or service center, and note whether there is a source of EMI nearby.

| Table 1:Guidance and manufacturer's declaration – electromagnetic emissions | | |
|---|--------------------|--|
| The Titan is intended for use in the electromagnetic environment specified below. The customer or the user of the Titan should assure that it is used in such an environment. | | |
| Emissions test | Compliance | Electromagnetic environment - guidance |
| RF emissions CISPR 11 | Group 1 Class B | The Titan uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment |
| Harmonic emissions IEC 61000-3-2 | A | The Titan is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes |
| Voltage fluctuations/ Flicker emissions IEC 61000-3-3 | Complies | |

| Table 2:Guidance and manufacturer's declaration – electromagnetic immunity | | |
|---|---|---|
| The Titan is intended for use in the electromagnetic environment specified below. The customer or the user of the Titan should assure that it is used in such an environment. | | |
| Immunity test | Compliance level | Electromagnetic environment - guidance |
| Electrostatic Discharge(ESD) IEC 61000-4-2 | ±2kV, ±4kV, ±6 kV contact ±2kV, ±4kV, ±8kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%. |
| Electrical fast transient/burst IEC 61000-4-4 | ±2 kV for power supply lines | Mains power quality should be that of a typical commercial or hospital environment |
| Surge IEC 61000-4-5 | ±1 kV lines to lines | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage dips, voltage interruptions IEC 61000-4-11 | For 0,5 cycle: >95% dip in U_T For 5 cycle: 60% dip in U_T For 25 cycle: 30% dip in U_T For 5 s: >95% dip in U_T | Mains power quality should be that of a typical commercial or hospital environment. |
| Power frequency (50/60Hz) magnetic field IEC 61000-4-8 | 30 A/m | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment |
| Note: U_T is the a.c. mains voltage prior to application of the test level. | | |

| Table 3: Guidance and manufacturer's declaration – electromagnetic immunity | | |
|---|----------------------|---|
| The Titan is intended for use in the electromagnetic environment specified below. The customer or the user of the Titan should assure that it is used in such an environment. | | |
| Immunity test | Compliance level | Electromagnetic environment-guidance |
| Conducted RF IEC 61000-4-6 | 3VRMS, 0.15MHz-80MHz | Portable and mobile RF communication equipment should be used no closer to any part of the SYSTEM, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{3.5}{E_1} \right] \sqrt{P} \quad 80\text{MHz to } 800\text{MHz}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P} \quad 800\text{MHz to } 2.5\text{GHz}$ Where P is the maximum output power rating of the transmitter in Watt (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). |
| Radiated RF IEC 61000-4-3 | 3V/m, 80MHz-2.5GHz | Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol:  |

SECTION C – SERVICE INFORMATION

10. GENERAL MAINTENANCE AND INSPECTIONS

Your scooter requires only minimal maintenance. Like any motorized vehicle there are some maintenance operations that are required.

- Avoid driving the scooter in the rain. Keep the scooter covered and stored in a shaded and dry place, away from damp or wet areas. Keep the batteries away from sun and rain.
- Keep the scooter clean. Clean the seat using a moist cloth. You can use a mild carpet cleaner. Painted areas can be further protected using car wax. Do not get the electrical cables or connectors wet.

Be aware that under extreme circumstances the scooter might come to a sudden stop at any time during operation.

To ensure a long and trouble-free operating life, we recommend the following regular maintenance operations:

Daily Checks

- Visually inspect the vehicle and the wheel condition.
- Watch the battery status.
- Make sure the operation lever returns to neutral position after release.

Weekly Checks

- Operation lever check: pull the lever to maximum speed. Turn the key to the "on" position. The scooter should not move and the indicator light should flash. If the scooter moves at all, contact your service center.
- Braking check – perform this check on a flat area, away from any obstruction within 1 meter.
 - Turn on the scooter.
 - Pull the operation lever to the Forward driving position, until you hear a click. Release the brake. The scooter should move forward slightly.
 - Release the operation lever. Within a few seconds, you should hear the click of the brake locking.
 - In addition, repeat this check for reverse driving.

- Air pressure check: the wheel air pressure should be as follows:

| Titan 3W | Titan 4W |
|-------------------|-------------------|
| 35 psi. (2.5 bar) | 45 psi. (3.2 bar) |

Keeping the air pressure at the proper level will lengthen the tire lifespan and will increase the travel distance per battery charge.

Semi-annual Checks

- Use lubrication (WD40 or similar) on the following areas:
 - Chassis locking pins.
 - Seat locking snib.
- Check the wear and tear of the wheels.

Annual Checks

- We recommend that an authorized technician perform the annual check. The technician will check functionality, all connections, the electric motor status and the battery condition.
- Fuse replacement should be done only by a service representative. Fuses are located in the following locations.
 - 60A Battery pack fuses – one in each battery pack
 - 5Ax2 electrical circuit fuses – under the rear cover.

Periodic Checks

- Clean upholstery, plastic and metal parts with a mild surface cleaner. **Caution:** keep cleaning solvents away from electrical wires and connectors.
- Keep dirt out of the wheel axes, including lint, hair, sand and carpet fibers.
- Check for tire wear. If the tires are worn, replace them immediately.
- In the case of a puncture, the tire should be repaired or replaced by authorized personnel and exclusively with original spare parts.

Warning: Do not attempt to repair or service the scooter or any of its components as this will void your warranty.

FOR SERVICE, REPAIR OR REPLACEMENT PARTS CONTACT YOUR AUTHORIZED DEALER

11. FAULT FINDING

| Fault Description | Action |
|---|--|
| Scooter drives slowly, and indicator light flashes slowly | Batteries are low. Recharge the batteries. |
| The wheels pull to one direction | Check the tire's air pressure. |
| Noises come from the motor and/or the wheels | Make sure no foreign objects or dirt is stuck in the wheels or wheel hubs. If you do not find any obstructions, contact the service center. |
| The scooter does not turn on | <ul style="list-style-type: none">• Check that the key is inserted properly.• Make sure that the batteries are inserted in the right position.• Check the battery charge. |
| Batteries do not charge | <ul style="list-style-type: none">• Check the connection between the charger and the scooter charge outlet.• Make sure that the batteries are inserted in the right position.• Make sure the charge indicator light is lit during charging.. |
| The scooter turns on, but does not drive | <ul style="list-style-type: none">• Make sure the wheel release handle is in drive position (See Fig.1).• Verify that there are no objects interfering with the scooter.• Check the battery charge status. |

If the scooter does not operate properly and the indicator light is flashing quickly, count the number of flashes in each sequence in order to define the problem in accordance with the table below.

| Number of Flashes | Description |
|-------------------|--|
| 1 | Either the battery needs charging or the batteries are not connected properly. |
| 2 | There is no connection to the motor. Check the connections between the motor and the controller. |
| 3 | There is a short circuit between the motor and the battery. |
| 6 | Check if the charger is connected. |
| 7 | Problem with the operation lever. Make sure it is set in the middle before operating the scooter. |
| 8 | Problem with the controller. Make sure all the connections into the control panel are tight and secure. |
| 9 | There is no connection between the controller and the brake. Make sure all connections to the brake and controller are tight and secure. |
| 10 | Controller overload. Likely a result of a failure in the battery connection. Check connections to the battery and controller. |

12. DISPOSAL AND RECYCLING

- The packing material must be separated to plastic and paper/cardboard components and submitted to authorized recycling locations.
- The ***Titan*** scooter consists of electronic components, cables, plastic parts, steel and aluminium frame and adapter parts. Do not discard of any components to normal refuse facilities. When the ***Titan*** scooter is no longer operational, it is to be dismantled and separated into the above material groups and submitted to authorized recycling facilities.

WARRANTY

The warranty period for the **Titan 3W & Titan 4W** is twelve months and covers faulty materials and workmanship (consumables not covered: tyres, upholstery, lamp bulbs, plastic coverings and batteries). Worn parts damaged as a result of excessive loading, improper handling, intentional damage or unauthorized maintenance or modifications are not covered by the warranty.

The expected life service of the **Titan 3W & Titan 4W** is approximately 5 years.

For safety and for warranty assurance reasons, any modifications and repair of the **Titan 3W & Titan 4W** or its components must be performed exclusively by authorized personnel and exclusively with original spare parts.

DIRECTIVE: Medical devices 93/42 EEC



Manufactured by:



Kibbutz Tzora, 99803, Israel

Tel: +972-72-2463131, Fax: +972-2-9991552

Internet Mail: info@tzora.com

Internet Address: www.tzora.com