

Segway® Personal Transporter i2, x2, x2 Turf Preventive Maintenance Guide



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Contact Information

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Important Safety Information

If you have any questions or concerns regarding the safety information or messages in this guide, refer to the Segway Personal Transporter (PT) Reference Manual, Segway PT Getting Started Manual, and Segway PT Safety Video DVD that came with your Segway PT.

Standards

Safety messages for this guide and product safety signs and labels are based on standards set forth by the American National Standards Institute (ANSI) for Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials. To assist in the communication of safety information across language barriers, some safety graphics are based on standards set forth by the International Standards Organization (ISO).

Safety Alert Symbol



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages associated with this symbol to avoid possible injury or death.

Signal Words



WARNING! indicates a hazard situation which, if not avoided, could result in death or serious injury.



CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION

CAUTION, used without the safety alert symbol, is used to address practices not related to personal injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

NOTE

NOTE identifies important points, helpful hints, special circumstances, or alternative methods.

Introduction

This guide has been designed to provide a Segway® Personal Transporter (PT) inspection checklist and maintenance schedule to insure optimal performance, safety, and life of your Segway PT. Included in this guide is identification of the Segway PT components that are considered user replaceable parts and the recommended tools required to perform self maintenance of the Segway PT. This guide also includes references to the Segway PT Reference Manual, which is included as part of your standard user materials, and should be used in conjunction with this guide. To the extent that this guide provides different instructions than the Segway PT Reference Manual, this guide shall control.

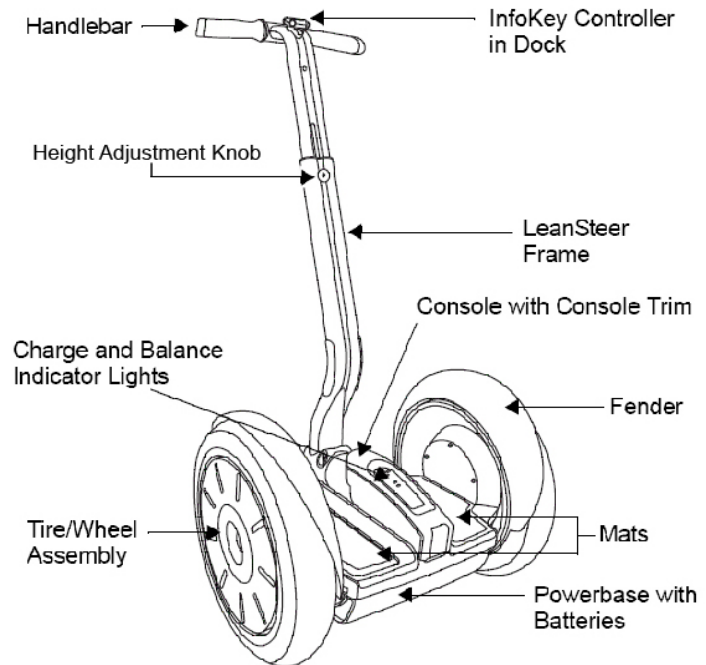
The Recommended Segway PT Operation Pre-Ride Checklist, found on the last two pages of this guide, can be copied and used as a posted reminder to inspect the machine before riding. The Recommended Segway PT Maintenance Schedule found on page 10 has been designed to be used as a form for recording the history of service and maintenance that you have performed. We recommend making copies of this schedule to have on hand for your own designated service personnel to use.

In addition to the regular inspection of your Segway PT we also recommend the following:

- Record the serial number(s) of both your Segway PT and the InfoKey™ Controllers that come with the Segway PT and keep the serial number information in a secure place separate from your Segway PT.
- Your Segway PT will come with two InfoKey Controllers. We recommend that you maintain a spare InfoKey at all times. To order a new InfoKey, contact your Segway Dealer or Distributor and be prepared to provide the serial number information mentioned above. To locate the nearest Segway Dealer or Distributor please visit www.segway.com.
- Keep a spare set of Segway PT packaging materials for shipping the machine when necessary.
- Keep a copy of the standard Segway PT User Materials on hand, which includes the Segway PT Reference Manual, Getting Started Manual, and Safety Video. If you do not have these materials, contact an Authorized Segway Dealer, Distributor, or Segway Customer Care via phone (866.4SEGWAY) or email (customeroperation@segway.com). You may also download the materials from www.segway.com.

Parts Requiring Regular Inspection

- Tires and Wheels
- Fenders
- Platform Mats
- LeanSteer™ Frame
- InfoKey™ Controller
- Batteries for both the machine and the InfoKey Controller



Basic Tool Box

The following tools are recommended for assembling and maintaining your Segway PT. Segway offers a basic tool kit that contains these items for purchase. Please inquire with your Authorized Segway Dealer or Distributor for details.




Tool Description

- 1/4" Clicker 4-25 N-m Torque Wrench
- 3/8" Clicker 10-100 N-m Torque Wrench
- 3/8 X 1/4 M 3/8" Drive Adapter
- 1/4" SQ X 1/4" Hex Bit Adapter
- 6" 3/8ths Extension
- T-45 3/8" Torx bit socket
- T-20 X 3 1/2" long 1/4" hex power Torx bit
- 5 mm 1/4" Hex Power Drive Bit
- Tire Pressure Gauge
- 3/8" Drive Reversible Ratchet
- 1/4" 2-36 in-lb Torque Screwdriver
- 13 mm 3/8" Dr 6PT Deep Socket
- 4 mm Hex Bit
- 3 mm 4" long hex bit
- 3 mm T-handle
- 5 mm T-handle



Segway PT Recommended Preventive Maintenance

WARNING!

- To perform maintenance or replace parts on the Segway PT, you must read and follow all instructions and warnings in the Segway PT Parts Replacement Guide or the Segway PT Reference Manual, as applicable.
 - Always power off your Segway PT before performing any maintenance or installing any part or accessory. Failure to follow these instructions could lead to electrical shock, serious injury, death, or damage to property.
 - Always unplug the AC power cord before performing any maintenance or installing any part or accessory. Failure to follow these instructions could lead to electrical shock, serious injury, death, or damage to property.
 - Wear safety glasses to avoid injury.
 - Use only Segway-approved fasteners.
 - Do not tighten or reuse any fastener except the battery fasteners, wheel nuts, and LeanSteer™ clamp bolt. Instead, when any fastener is loose or removed, replace the fastener with a new Segway-approved fastener.
 - Before using a fastener, make certain the fastener is the correct size and type with any necessary washer and thread lock in place.
 - Since the pre-applied thread lock compound is intended for single use only, reuse of fasteners is not permitted with the exception of the battery fasteners, wheel nuts, and LeanSteer™ clamp bolt.
 - Do not attempt to repair any stripped or damaged screw hole. Instead, replace the part. If replacement part is not available, do not reassemble.
 - Insert fasteners slowly and carefully. Do not cross-thread or over-tighten fasteners. Tighten only to the prescribed torque.
 - Failure to adhere to these warnings could lead to electrical shock, serious injury, death, or damage to property.
-
-  1. Make sure the Segway PT is unplugged and powered off. Inspect the Segway PT from top to bottom to ensure that no part is damaged or loose. Start at the top of the PT with the handlebars and work your way down to the wheels and tires. If a part is damaged and/or loose refer to the appropriate part installation document for instructions on how to correctly install a replacement part. If there are no instructions available for a particular damaged part, please call your Authorized Segway Dealer or Distributor. Refer to your Segway PT Reference Manual for more details on the location of machine components. If you do not have your Segway PT Reference Manual visit www.segway.com to download a copy.
-  2. Inspect the LeanSteer™ frame for tightness: the LeanSteer™ wedge and bolt should be torqued to **11 N-m**. (See LeanSteer™ Frame Wedge and Bolt installation instructions in the Segway PT Reference Manual for details.) Make sure the Segway PT is unplugged and powered off. Tilt the LeanSteer™ frame fully left and then right, until it touches each fender. Release the LeanSteer™ and verify that it returns to a straight-up position perpendicular to the PT's chassis. The LeanSteer™ frame should be replaced if any part is bent or otherwise broken.
-  3. Check that all fasteners are in place, secured, and torqued to the specifications in the Recommended Segway PT Maintenance Schedule table on page 11. Adhere to torque specifications when tightening fasteners. Over-tightening or under-tightening fasteners can result in damage or malfunction.

4. Check that the mats are intact, secured, and free of debris. It is appropriate to replace a mat if any worn edges or tears are observed. For replacement instructions, see the Segway PT Reference Manual.
5. Check tires and wheels for wear, tightness, and tire pressure. i2 tires should be inflated to 15 psi, x2 and x2 Turf tires to 4 psi. Wheel nuts should be torque to 30 N-m.

Excessive tire wear is determined as follows:

- Model i2 – Center rib is worn flush with tire surface
- Model x2 – Diamond pattern on center rib is no longer visible
- Model x2 Turf – Tire tread depth is less than 3/32" (2.38 mm)

See page 10 of this document for visual examples.

6. Power the Segway PT on and off twice to ensure it is able to power on and off reliably. Confirm that the Wireless InfoKey controller is displaying a "happy face" icon as seen in the image to the right.



7. Check that the fenders are intact, secured, and free of debris. The fenders on the Segway PT are designed to protect the rider from debris. The fender will also shield the rider from having the tire rub against their leg while leaning in turns. Cracked or otherwise broken fenders should be replaced. For replacement instructions see the Segway PT Reference Manual.
8. Turn on the Segway PT and test the rider detect sensors. When your feet are properly positioned on the rider mats, all four rider detect sensors depress, allowing the Segway PT to operate normally in Balance Mode. See the Segway PT Reference Manual for more details.

Examples of Tire Wear

i2 TIRE WITH TREAD DEPTH IN SPEC.

Robust center rib



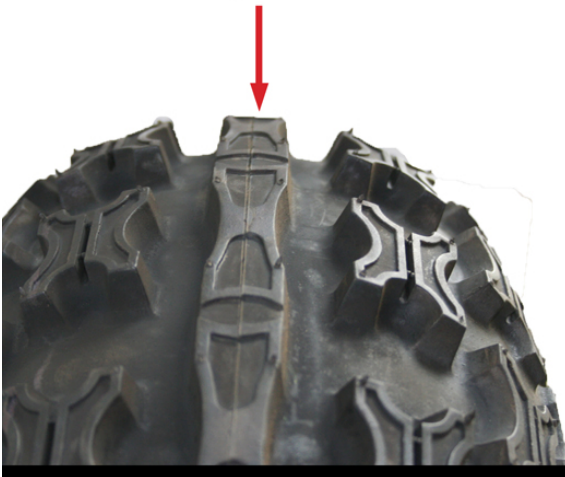
i2 TIRE THAT REQUIRES REPLACING

Center rib is worn flush with tire surface



x2 TIRE WITH TREAD DEPTH IN SPEC.

Diamond pattern on center rib is clearly visible



x2 TIRE THAT REQUIRES REPLACING

Diamond pattern on center rib is no longer visible



Recommended Segway PT Maintenance Schedule

Product:	Date:
Serial Number:	Mileage:
Inspected By:	Hours:

Monthly Checks	Circle Accordingly			
Check LeanSteer installation and torque – 11 N-m	Yes	No	Repaired	Replaced
Check tire wear and pressure – i2 = 15 PSI; x2 = 4 PSI	Yes	No	Repaired	Replaced
Ensure rider mats are intact, secured, and free of debris	Yes	No	Repaired	Replaced
Inspect handle bar grips for proper installation excessive wear	Yes	No	Repaired	Replaced
Inspect docking station for condition and functionality	Yes	No	Repaired	Replaced
Inspect fenders for cracks and obstructions	Yes	No	Repaired	Replaced
Check operation of height adjustment knob	Yes	No	Repaired	Replaced
Power on PT. Ensure operability and document hours/miles	Yes	No	Repaired	Replaced

Quarterly Checks	Circle Accordingly	
Check torque of all Fasteners: *Note: Only check with proper torque tool		
Perform all monthly checks		
Handle bar clamp = 6 N-m	Checked	Did not check
InfoKey dock = 2 N-m	Checked	Did not check
Batteries = 1.6 N-m	Checked	Did not check
Wheel = 30 N-m	Checked	Did not check
Fascia/Parking stand = 1.5 N-m	Checked	Did not check
Gearbox Trim = 6 N-m	Checked	Did not check
Fender = 1.5 N-m	Checked	Did not check
Perform Function Checks		
Check InfoKey operation for proper functionality	Checked	Did not check
Check InfoKey battery level (see PT Reference Manual)	Checked	Did not check
Inspect LeanSteer for damage	Checked	Did not check

Semi-Annually	Circle Accordingly	
Perform monthly and quarterly checks	Yes	No
Replace tires and handle bar grips as required	Checked	Replaced
Test ride PT, note any wheel alignment, drift, or performance issues	Yes	No

Annually	Circle Accordingly	
Perform monthly, quarterly, and semi-annual checks	Yes	No
Dealer to inspect elastomer and coupling as outlined in SB10-001	Yes	No
Replace components and update software as necessary, factory technicians only	Yes	No

Recommended Segway PT Pre-Ride Checklist

Thoroughly inspect your Segway Personal Transporter (PT) before each use. See the Segway PT Reference Manual and this guide for more information concerning the below checks.

- Check tire pressure**
15 PSI – i2
4 PSI – x2 & x2 turf

- Check for tire wear**
i2 – center rib is worn flush with the tire surface
x2 – diamond pattern on center rib is no longer visible
x2t – tire tread depth is less than 3/32" (2.38 mm)

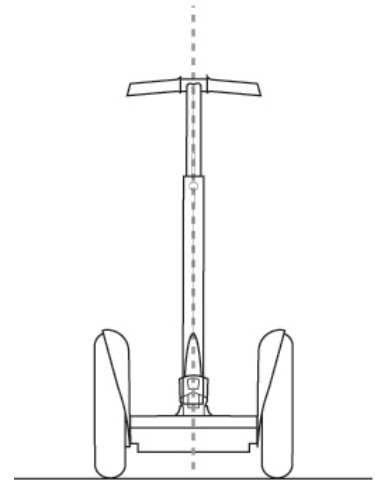
- Power on the Segway PT, confirm the battery level displayed on the InfoKey is at 4 bars minimum**

- Ensure that there is no visible damage to the PT**

- Check that the LeanSteer Frame is standing straight and upright as illustrated here**

- Check the LeanSteer Frame for tightness**
Torque to **11 N-m**

- Ensure the rider mats are intact, secured, and free of debris**



Recommended Segway PT Pre-Ride Checklist *for Tours*

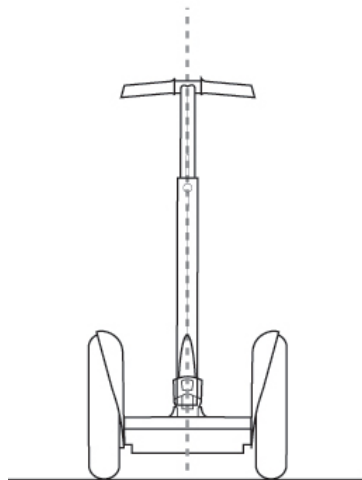
Thoroughly inspect all your Segway Personal Transporters (PT) before each day's use. See the Segway PT Reference Manual and this guide for more information concerning the below checks.

Beginning of Day

- Check tire pressure for the PTs being used on tour**
 - 15 PSI – i2
 - 4 PSI – x2 & x2 turf

- Check for tire wear**
 - i2 – center rib worn flush with tire surface
 - x2 – center rib diamond pattern not visible
 - x2t – tread depth below 3/32” (2.38 mm)

- Check the LeanSteer Frame for tightness**
 - Torque to **11 N-m**



**LeanSteer Frame
straight and upright**

Before Each Tour

- Power on the Segway PT, confirm the battery level displayed on the InfoKey is at 4 bars minimum**

- Ensure that there is no visible damage to the PT**

- Check that the LeanSteer Frame is standing straight and upright as illustrated below**

- Ensure the rider mats are intact, secured, and free of debris**

- Prior to each tour, press on the tires to ensure that they have not been punctured or compromised in any way during the previous tour**