EASY TRAVEL Lite

Service Manual
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NOTE: Design details may change without notice
1. SYSTEM COMPONENTS AND DETAILS

1.1. EasyTravel Lite parts – (Figure 1)

1. Battery pack (detachable)
2. Front column (foldable)
3. Column lock/release triggers
4. Controller cover
5. Charging socket
6. Front drive wheels
7. Foot platform
8. Seat shell
9. Seat cushions
10. Folding seat latch
11. Rear wheel
12. Utility basket (holding capacity 9kg)
13. Control Panel
14. Freewheel switch
15. Charger and connecting cables (Fig. 1B)

1.2. Control Panel – Figure 2

1. Switch
2. Hand control lever (right and left)
3. Speed adjusting knob
4. Battery indicator light (LED)
5. Hand-grips

**BELL:** If the user requires an audible warning device, a standard bicycle bell can be attached to the handlebar.
2. SERVICE

For reasons of safety and the prevention of accidents caused by wear which is not detected in time, the EasyTravel Lite should be tested and serviced once a year. All safety-related components of the Easy-Travel Lite should be checked and serviced, safety and functional tests should be performed. It is important to detect initial wear in time and to use exclusively original spares, or such parts that were authorized by the manufacturer.

Test the following maintenance items:

- The components of the EasyTravel Lite frame for overload and initial cracks.
  - The collector brushes of the electric motor (3-A) for wear. Wear limit is approx. 7 mm.
  - Wear of tires on wheels.
  - All screws and attachments for safe securing, cable connections for wear, and the mechanisms of the EasyTravel Lite for correct functioning.
  - The proper functioning of the electronic system and brakes.

Figure 3
3. SPARE PARTS REPLACEMENT

3.1 Control Panel Assembly

Kit number E0-00-1-040 (for models with front wheel drive)
Kit Number E0-00-1-202 (for models with rear wheel drive)

Tools:
Phillips #2 Screwdriver

For kit number E0-00-1-202, see next page.

1. Push Handgrips (4-A) outwards
2. Open Screws (4-B) and remove Control Panel Cover (4-C)
3. Disconnect the Control Cable (4-D)
4. Open Screws (4-E) and remove Control Panel (4-F)
5. Open Screws (4-N) and remove Panel Bottom Cover (4-P)
6. Place new Bottom Cover (4-P) and secure it with Screws (4-N)
7. Secure new Control Panel (4-F) with Screws (4-E)
8. Connect the Control Cable (4-D) to Control Panel (4-F)
9. Secure Control Panel Cover (4-C) with Screws (4-B)
10. Push Handgrips (4-A) back over the Cover
11. Check all Control Panel functions: indication, drive, brake and speed control
Kit Number E0-00-1-202

Tools:
Phillips #2 Screwdriver

1. Open Screws (5-A) and remove top and bottom Control Panel Cover (5-B, C)
2. Disconnect the Control Cable (5-D)
3. Open Screws (5-E) and remove Control Panel (5-F)
4. Secure new Control Panel (5-F) with Screws (5-E)
5. Connect the Control Cable (5-D) to Control Panel (5-F)
6. Secure top and bottom Control Panel Cover (5-B, C) with Screws (5-A)
7. Check all Control Panel functions: indication, drive, brake and speed control

Figure 5
3.2 Handgrip pair

*Kit number E0-00-1-070*

Tools:
Silicone spray
Phillips #2 Screwdriver

1. Remove Control Panel Assembly, see instructions 3.1
2. Open Screws (6-A) and remove Control Panel Bottom Cover (6-B)
3. Remove the Handgrips, (7-A)
4. Spray Handlebars (7-B) of the Column Frame and inside of the new Handgrips lightly with Silicone Spray and push them onto the Column Frame
5. Reassemble Control Panel Bottom Cover and Control Panel Assembly
6. Push the Handgrips back over both Covers

NOTE: Check that Handgrips do not slide off of Covers easily – this can cause a safety hazard if control lever gets caught under Handgrip edge. Remove excess silicon if needed.
3.3 Controller Cover

*Kit Number E0-00-1-034*

**Tools:**
Phillips #2 Screwdriver

1. Remove Screws (8-A) at the top and bottom of the Controller Cover (8-B) and remove Cover
2. Disconnect Connector (8-C) from Interface Circuit Board (8-D)
3. Check that the solder tabs of the Freewheel Switch on new Cover are bent apart
4. Insert Connector of new Cover (8-C) to Interface Circuit Board
5. Secure the Cover on the Column
   **NOTE:** Ensure that the Power Cable is routed under the Controller (see Figure 13) and that it will not be pinched when closing and securing the Cover
6. Check drive, brake and freewheel operation

*Figure 8*
3.4 Controller

**Kit Number E0-00-1-032** (Solo Controller) Figure 9

**Kit Number E0-00-1-115** (S-Drive Controller) Figure 10

Tools:
- Short Phillips #2 Screwdriver
- Pliers

REMARK: The S-Drive controller can be fitted on a unit that originally was issued with a Solo controller; this will require a new Interface Circuit Board, E0-00-1-116

1. Remove Controller Cover, see instruction 3.3
2. Detach wiring from Controller (9a-A)
3. Remove Controller (9a-A) by unscrewing Screws (9a-B)
4. Secure new Controller to Column Frame
5. Attach Wires to Controller (Fig. 6b): from Battery Contacts Assembly, the red wire (A) to “B+” tab (B), the black (C) to “B-” tab (D); from Interface Circuit Board insert 11-pin connector into top socket P2 (E); the two white wires (F) to the white capped cables (G) from Power Cable; from Power Cable the #1 wire to “M+” tab (H), the #2 to “M-” tab (J)
6. Secure Controller Cover to Column Frame
7. Check drive, brake and freewheel operation
**Kit Number E0-00-1-115 (S-Drive Controller)**

Tools:
Phillips #2 Screwdriver
Pliers

REMARK: The S-Drive controller can be fitted on a unit that originally was issued with a Solo controller; this will require a new Interface Circuit Board, E0-00-1-116

1. Remove Controller Cover, see instruction 3.3
2. Detach wiring from Controller (10a-A)
3. Remove Controller (10a-A) by unscrewing Screws (10a-B)
4. Secure new Controller to Column Frame with Screws (10b-A)
5. Attach Wires to Controller: from Battery Contacts Assembly (E): the red wire to “B+” tab, the black to “B-” tab; the Connector from the Interface Circuit Board (B); the two white wires (C) to the white and green/yellow cables from Power Cable (C); from Power Cable (D) the red wire to “M+” tab, the black to “M-” tab
6. Secure Controller Cover to Column Frame, ensure that no wires will be pinched or damaged by the Cover or the Screws
7. Check drive, brake and freewheel operation
3.5 Battery Contacts

*Kit number E0-00-1-059*

Tools:
Phillips #2 Screwdriver

1. Remove Controller Cover, see instruction 3.4
2. Disconnect wiring to Controller (11-A) and Interface Circuit Board (11-B)
3. Unscrew Screws (11-C) and remove Battery Contacts Assembly (11-D)
4. Secure new Battery Contacts Assembly (11-D) with Screws (11-C)
5. Connect Wiring (11-A) to Controller (red to “B+” tab, black to “B-” tab), Connector (11-B) onto Interface Circuit Board
6. Reassemble Controller Cover, see instruction 3.4
7. Check drive, brake and freewheel operation

*Figure 11*
3.6 Interface Circuit Board

**Kit number E0-00-1-058** (for Solo controller) (for serial # with 7 digits)

**Kit Number E0-00-1-116** (for S-Drive controller) (for serial # with 11 or 13 digits)

Tools:
Phillips #1 Screwdriver
Phillips #2 Screwdriver

1. Remove Controller Cover, see instruction 3.3

**Solo:**
2. Disconnect Control Cable (12a-A), wiring to Controller (Fig. 9a-B), Contact Pins Assembly (12a-C) and Power Cable (12a-D)
3. Unscrew 3 Screws (12a-E) and remove Interface Circuit Board (12a-F)
4. Secure new Interface Circuit Board (12a-F) with Screws (12a-E)
5. Connect Control Cable (12a-A), wiring to Controller (12a-B), Contact Pins Assembly (12a-C) and Power Cable (12a-D)

**S-Drive:**
2. Disconnect Control Cable (12b-A), wiring to Controller (Fig. 9b-B) and Contact Pins Assembly (12b-C)
3. Unscrew 3 Screws (12b-D) and remove Interface Circuit Board (12b-E)
4. Secure new Interface Circuit Board (12b-E) with Screws (12b-D)
5. Connect Control Cable (12b-A), wiring to Controller (12b-B) and Contact Pins Assembly (12b-C)
6. Reassemble Controller Cover
7. Check drive, brake and freewheel operation

**Figure 12a**

**Figure 12b**
3.7 Control Cable

*Kit number E0-00-1-054*

Tools:
Phillips #2 Screwdriver

1. Open Control Panel Cover, see instruction 3.1
2. Open Controller Cover, see instruction 3.4
3. Disconnect Control Cable from Control Panel (5-C) and Interface Circuit Board (12-A)
4. Remove Control Cable
5. Insert new Control Cable
6. Connect Control Cable to Control Panel and Interface Circuit Board
7. Reassemble Controller Cover and Control Panel Cover, see instructions 3.1 and 3.4
8. Check all Control Panel and Controller functions: drive, brake, speed and indication
3.8 Motor Cover

**Kit Number E0-00-1-082** (for models with front wheel drive, serial # 7 digits)
**Kit Number E0-00-1-099** (for models with front wheel drive, serial # 11 digits)
**Kit Number E0-00-1-721** (for models with rear wheel drive)

Tools:
Phillips Screwdriver 2

1. Unscrew Screw (13-A) and remove Cover (13-B)
2. Note the motor wire routing and maintain it in position
   NOTE: If force is needed to fit Cover, check the wire routing and ensure that it will not be pinched
3. Secure new Cover (13-B) with Screw (13-A)
Kit Number ES-00-1-721 (for models with rear wheel drive)

Tools:
Phillips #2 Screwdriver
Wrench 10 mm
Allen Key 4 mm
Drill bit 3.7 mm

Some models have the Motor Cover fitted with velcro instead of screws.
1. Open Screws (14-A) and remove Freewheel Lever (14-B)
2. Open on both sides Screw (15-A) and Nut (15-B) and fold Seat Support forward
3. Open Screws (16-C) and remove Cover
4. Place new Cover (16-A) over motor
5. Ensure that Cover (16-A) is aligned with Motor and Frame (16-B)
6. Secure Cover (16-A) with Screws
7. Replace Seat Support and secure with Screw (15-A) and Nut (15-B)
8. Replace Freewheel Lever (14-B) and secure with Screws (14-A)
3.9 Motor Brushes

Kit Number E0-00-1-037 (for serial # with 7 digits)

Tools:
Phillips #2 Screwdriver
Flat Blade Screwdriver

Refer to Figure 12
1. Remove the Motor End Cover, see instruction 3.8
2. Remove the plastic Brush Cap (12-C) and pull the Brush (17-A) gently from its housing
3. Remove Power Cable wire (17-B)
4. Insert the new Brush carefully into its housing and secure with Brush Cap (12-C)
   NOTE: Ensure that the Brush is fully inserted freely and smoothly and that the spring is not caught in the housing
5. Connect Power Cable wire (17-B) to contact tab (17-A)
6. Bend contact tab towards motor
7. Note the motor wire routing and maintain it in position.
8. Secure Motor Cover, see instruction 3.9
9. Check drive and brake operation

Figure 17
3.10 Power Cable to Motor

**Kit Number E0-00-1-093** (for models with front wheel drive)
**Kit Number E0-00-1-702** (for models with rear wheel drive)

Tools:
- Phillips #2 Screwdriver
- Pliers
- Cutter
- Cable Tie Tensioning Tool

The wheels MAY be removed to facilitate easier access for the replacement of parts, see instruction 3.11
For instructional purposes the Footrest Platform has been removed in figure 14.
1. Remove the Motor Cover, see instruction 3.8
2. Remove Cable Ties (18-A) from Motor
3. Remove the Wires from the Terminals (18-B) and Brakes (18-C) on the Motor
4. Remove Controller Cover, see instruction 3.3
5. Detach the Wires from the Controller (19-A) and Interface Circuit Board (19-B)
6. Carefully pull the Wire Assembly out of the Column Frame
7. Thread the new Wire Assembly from the Controller-end into the hole in the Column Frame out of tube and under the Screw (18-D)
8. Connect the #1 long Wire end to the positive/red colored Terminal, the #2 short Wire end to the negative/black colored Terminal, the #3 and green wire to the white wires from the electromagnetic Brake
9. Secure the Cable to the Motor with the two Cable Ties (22-A) and trim ends
10. Secure the Motor Cover over the end of the Motor, see instruction 3.8
NOTE: If force is needed to fit Motor Cover, check the wire routing and ensure that it will not be pinched

11. Attach from the Power Cable the black insulated #1 Wire End to “M+” tab, the red insulated #2 to “M-“ tab on Controller and the two white insulated Wire Ends to the Wires from Interface Circuit Board

12. Secure Controller Cover to the Frame, ensure that no wires will be pinched or damaged by the Cover or the Screws

13. Check drive, brake and freewheel function
Tools:
Phillips #2 Screwdriver
Pliers
Cutter
Cable Tie Tensioning Tool

The wheels MAY be removed to facilitate easier access for the replacement of parts, see instruction 3.11
1. Remove the Motor Cover, see instruction 3.8
2. Disconnect Power Cable from Motor, see instruction
3. Disconnect Power Cable from Controller, see instruction
4. Carefully pull the Power Cable out of the Column Frame and the Cable Guides, Fig.
5. Thread new Power Cable through Cable Guides
6. Thread the new Wire Assembly from the Controller-end into the hole in the Column Frame out of tube and under the Screw (14-D)
7. Connect Power Cable to Motor, see instruction
8. Replace Motor cover, see instruction
9. Connect Power Cable to Controller, see instruction
10. Check drive, brake and freewheel function

Figure 20
Figure 21
3.11 Front Wheel Assembly

**Kit Number E0-00-1-069** (for models with front wheel drive)
**Kit Number E0-00-1-068** (for models with rear wheel drive)

Tools:
- Allen Key 6 mm
- Loctite Adhesive #242 (1312)
- Soft Mallet

The figure shows the model with front wheel drive; these instructions apply to both models, front and rear wheel drive.

1. Remove old Cap (22-A), Screw (22-B), Disk (22-C) and Wheel (22-D)
2. Thoroughly clean the threaded hole in the end of the Axle (22-E) of adhesive residue
3. Slide the Wheel (22-D) onto Axle (22-E) aligning the groove in the Adapter with the Roll Pin on the Axle
4. Place Disk (22-C) on Screw (22-B) and apply Loctite #162 (1312) adhesive to the screw thread
5. Secure the assembly with Screw (22-C).
6. Fit new Cap (22-A) on the Wheel (22-D) by gently tapping it with a mallet

Figure 22
3.12 Gear Motor

*Kit Number E0-00-1-094* (for models with front wheel drive)
*Kit Number E0-00-1-722* (for models with rear wheel drive)

Tools:
- Phillips #2 Screwdriver
- Allen Key 5 mm
- Cable Tie Tensioning Tool
- Loctite Adhesive #242 (1312)

1. Remove Front Wheels, see instruction 3.11
2. Remove the Motor End Cover, see instruction 3.8
3. Detach Power Cable from Motor Assembly, see instruction 3.10
4. Remove the Screws (23-A) securing the Motor Assembly to the Motor Holder
5. Apply Loctite to the Screws (23-A) and secure with them the new Motor Assembly to the Motor Holder
6. Solder and attach Power Cable to Motor Assembly, see instruction 3.10
7. Secure Motor End Cover, see instruction 3.8
8. Secure Front Wheels, see instruction 3.11
Kit number E0-00-1-722 (for models with rear wheel drive)

Tools:
Phillips #2 Screwdriver
Allen Key 5 mm
Cable Tie Tensioning Tool
Loctite Adhesive #242 (1312)

1. Remove Motor Cover, see instruction 3.11
2. Disconnect Power Cable from Motor, see instruction
3. Open Nuts (24-A)
4. Remove Washer (24-B), Motor (24-E) and Spacers (24-C)
5. Place new Motor (24-E) on Screws (24-D)
   NOTE: Ensure that one Spacer (24-C) sits between Motor (24-E) and Frame
6. Place Spacers (24-C) and Washers (24-B)
7. Secure with Nuts (24-A)
8. Connect Power Cable to Motor, see instruction
9. Place Motor Cover, see instruction
10. Check drive, brake and freewheel function

Figure 24
3.13 Steering Column Stem

*Kit Number E0-00-1-122*

Tools:
Allen Key 6 mm
Open End Wrench 13 mm

1. Remove Nylock Nut (25-A) and Screw (25-B)
2. Carefully lift Steering Column from Stem as shown in Figure 26 and rest it alongside on the Footrest Platform without detaching the Power Cable
   NOTE: Ensure that the Column Release Pin is withdrawn before removing and replacing the Steering Column
3. Unscrew Screw (25-C) and lift the Stem (27-A) out of the Sleeve (27-B)
4. Place new Stem (27-B) in Sleeve (27-B), notice the correct position of the Truncated Nut (27-C)
5. Tighten Screw (25-C)
6. Apply some Lubricant on the inside of the connecting plates of the Steering Column and slide it over the Stem, aligning the holes in the connecting plates and the Stem
7. Insert Screw (25-B) and tighten with Nylock Nut (25-A)
   NOTE: Ensure that the Power Cable runs behind the Screw, as shown in Figure 18
   NOTE: Ensure not to over-tighten the Nut in order to allow smooth movement when folding and to prevent paint-damage on the inside of the connecting plates
3.14 Upper and Lower Bearings

*Kit Number E0-00-1-123*

Tools:
Allen Key 6 mm
Wrench, open end 13 mm
Wrench, open end 32 mm

1. Remove Steering Column and Stem, see instruction 3.13
2. Unscrew the Counter Screw (28-A), remove the Spacer (28-B) and unscrew the Upper Bearing Housing (28-B)
3. Remove the Upper Bearing
4. Remove the Motor Holder from the Sleeve and the Lower Bearing and the Spacer from the Motor Holder
5. Place new Spacer and Lower Bearing on the Motor Holder and slide it in the Sleeve
6. Place new Upper Bearing on top of it and secure it with new Upper Bearing Housing (28-C)
   NOTE: Do not use a wrench to tighten the Housing but do it by hand
7. Place new Spacer (28-B) and secure the assembly with Counter Screw (28-A)
   NOTE: Do not over-tighten Counter Screw
8. Check free rotation of the Motor Holder
9. Replace Steering Column and Stem, see instruction 3.13
3.15 Column Release Cable Kit

Kit Number E0-00-1-080

Tools:
Phillips #2 Screwdriver
Wrench, open end 8 mm
Allen key 3 mm
Wire Cutter
Pliers
Crimp Tool
Loctite Adhesive # 496 (3854)
Light grease/lubricant

1. Remove Control Panel Cover, see instruction 3.1
2. Remove Cable End Cone, Vinyl Caps and Screws (30x) and open Cable Locks
3. Slide Release Bushing out of Column Frame and remove Cable with Lock Pin and Spring
4. Thread Column Lock Pin (303-A) and Spring (303-B) onto the Column Lock Pin Cable (303-C)
5. Thread the Cable through the large hole in Connecting Plate (303-D), Column Lock Pin Housing (303-E) and the small hole in Connecting Plate (303-F)
6. Apply some lubricant to Lock Pin (303-A)
7. Thread the Cable Guide (303-G) onto the Cable and thread the cable into the Cable Guide Adjustable Stop (303-H) and through the Tube of Column Frame (303-J)
8. Thread the Release Bushing (303-K) with the single hole down onto the Cable making sure that the Cable passes through the two Cable Locks (303-L). Bring the Release Bushing (303-K) to its approximate position and lightly secure it with the Set Screws (303-P)
9. Take up the slack in the Cable (303-C) so that the end of the Column Lock Pin (303-A) is flush with the outside of Connecting Plate (303-D).

10. Release one of the two Set Screws (303-P) and bring the Release Bushing (303-K) to its final position, Set Screws (303-P) reaching the bottom of slot in Column Frame Tube (303-J).

11. Lift the Cable by the top of it, not by the Set Screws, until the lower Cable Lock is flush with the lower hole and tighten the two Cable Locks (303-L).

12. Tighten the two Set Screws (303-P) and slide the two Vinyl Caps (303-Q) onto them.

   NOTE: do not over-tighten the Screws (303-P) against the Cable.

13. Trim Cable to approximately 25 mm. (1") beyond the end of the Column Frame Tube. Crimp the Cable End Cone (303-R) onto the end of the Cable.

14. Test the function of the Column Lock Pin Assembly and adjust as necessary.
3.16 Black Vinyl Cap

*Kit Number E0-00-1-078*

Tools:
- Screwdriver and/or
- Pliers

Refer to Figure 30
1. Pry Cap (30-Q) off with Screwdriver or pair of Pliers; be careful not to chip the paint
2. Place new Cap, make sure it covers the whole Set Screw (30-P)
3.17 Battery Case / Battery Replacement

*Kit Number E0-00-1-101*

Tools:
Phillips #2 Screwdriver
Pliers

1. Remove Screws (31-A) from Battery Case and remove Cover (31-B)
2. Remove Batteries (31-C) from Case and detach Wires (31-D/E)
3. Place Batteries in new Case (-H) and attach red Wire (31-D) to positive/red marked Tab (31-F) and black Wire (31-E) to negative/black marked Tab (31-G)
   
   NOTE: It is recommended to attach first the appropriate Wires to the Battery closest to the base of the Case and then insert it fully into the case; repeat in same order for Battery closest to Handlebar
4. Ensure that no Wires are caught under the Batteries
5. Secure Battery Cover (31-B) to Case with Screws (31-A)

![Figure 31](image-url)
3.18 Battery Cover

*Kit Number E0-00-1-102*

Tools:
Phillips #2 Screwdriver

1. Remove Screws (31-A) and Battery Cover (31-B)
2. Secure new Cover (31-B) to Case (31-H) with Screws (31-A)
3.19 Seat Assembly

Kit Number E0-00-1-116

Tools:
Phillips #2 Screwdriver
Loctite Adhesive # 242 (1312)

1. Remove the four Screws (32-A) holding the Seat to the Seat Guide Brackets (32-B)
2. Remove the two Screws (32-D) holding the Seat (32-F) to the "U" shaped Seat Attachment Bracket (32-E), the Sleeves and Seat (32-F)
3. Attach the replacement Seat (32-F) to the Bracket (32-E). Place the Sleeves between the holes in the Bracket (32-E) and tighten the two Screws (32-D) until any lash is removed. Over tightening may cause friction on the frame tube resulting in higher folding effort.
4. Place the metal strips (32-C) with the holes aligned to those in the Seat and place the Seat Guide Brackets (32-B) over the "U" shaped frame tube as shown in Figure 25
   NOTE: Ensure that the longer tab of the Guide Bracket is pointed towards the front, as shown in Figure 25
5. Secure the Guide Brackets (32-B) with the four Screws (32-A)
3.20 Seat Back Pad

*Kit Number E0-00-1-060* (for serial # with 7 digits)

*Kit Number E0-00-1-201* (for serial # with 1 or 13 digits)

Tools:
Phillips #2 Screwdriver

1. Remove the Screw Covers (33-A)
2. Remove the Screws (33-B) and Back Pad (33-C)
3. Align the tubes (33-D) of the Back Pad with the holes in the Seat Back (33-E)
4. Secure Back Pad with Screws (33-B)
5. Place Screw Covers (33-A)

Figure 33
3.21 Seat Bottom Pad

*Kit Number E0-00-1-062* (for serial # with 7 digits)

*Kit Number E0-00-1-203* (for serial # with 1 or 13 digits)

Tools:
Phillips #2 Screwdriver

1. Remove the Screws (34-A) and Bottom Pad (34-B)
2. Align the tubes (34-C) of the Bottom Pad with the holes in the Seat Bottom (34-D)
3. Secure Bottom Pad (34-B) with Screws (34-A)

![Figure 34](image_url)
3.22 Seat Backrest Lock kit

*Kit Number E0-00-1-063 (for serial # with 7 digits)*

Tools:
Phillips #2 Screwdriver

1. Remove Screw (35-D), Washer (35-C), Knob (35-B) and Stopping Snib (35-A)
2. Insert new Stopping Snib (35-A) in Seat Bottom
3. Attach Knob (35-B) to Stopping Snib and secure it with Washer (35-C) and Screw (35-D)
4. Check that a some effort is needed to open and close Lock
5. Check opening and closing functions of Lock and Seat

![Figure 35](image-url)
3.23 Seat Attachment Bracket

Kit Number E0-00-1-120

Tools:
Phillips #2 Screwdriver
Loctite Adhesive # 242 (1312)

Refer to Figure 25

1. Remove the two Screws (32-D) holding the Seat (32-F) to the "U" shaped Seat Attachment Bracket (32-E) and the Sleeves
2. Remove the Bracket (32-E)
3. Attach the new Bracket (32-E) to Seat (32-F). Place the Sleeves between the holes in the Bracket (32-E)
4. Apply Loctite to the two Screws (32-D) and tighten them until any lash is removed. Over tightening may cause friction on the frame tube resulting in higher folding effort.
3.24 Seat Guide Brackets

Kit Number E0-00-1-121

Tools:
Phillips #2 Screwdriver

Refer to Figure 25

1. Remove the four Screws (32-A) holding the Seat to the Seat Guide Brackets (32-B)
2. Place the metal strips (32-C) with the holes aligned to those in the Seat and place the Seat Guide Brackets (32-B) over the “U” shaped frame tube as shown in Figure 25
   NOTE: Ensure that the longer tab of the Guide Bracket is pointed towards the front, as shown in Figure 25
3. Secure the Guide Brackets (32-B) with the four Screws (32-A)
3.25 Footrest Platform

Kit Number E0-2-30

Tools:
Cleaning detergent
Clamps

1. Remove old Platform (36-A) and any remainders of Adhesive Tape
2. Clean Frame surface (36-B) with a detergent and wipe dry with a clean cloth
3. Remove protective film from Tape sections on the inside of the Platform
4. Secure Platform (36-A) to Frame (36-B) with two clamps
5. Leave for 15 minutes before removing the clamps

Figure 36
3.26 Rear Wheel Assembly

Kit Number E0-00-1-068

Tools:
Circlip Pliers
Screwdriver
Soft Mallet
Extractor with scratch protection

1. Remove old End Cap (37-C) using a screwdriver. Remove old Circlip (37-B) and Wheel. If needed use an extractor to remove the bearing from the Axle (Figure 38)

2. Place new Wheel (37-A) on Axle of Rear Frame (37-D)

3. Fit new Circlip (37-B) into its groove at the end of the Axle

4. Fit new End Cap (37-C) to the end of the Axle using a mallet
   NOTE: Protect the End Cap with rubber or a cloth; direct sharp blows will deform the Cap

5. Ensure that the Wheel rotates freely on the Axle
3.27 Flat Cap (front platform)

*Kit Number E0-00-1-074*

Tools:
- Screwdriver and/or
- Pliers
- Soft Mallet

1. Cover the flat tip of a screwdriver with masking tape or electrical tape to prevent paint damage
2. Remove the old Cap (39-A)
3. Tap the Cap (39-A) gently into the Tube end using a mallet
   
   **NOTE:** Sharp blows will deform the Cap

![Figure 39](image)
3.28 Seat Support Paint Protector Clip

*Kit Number E0-00-1-073*

Tools:
Screwdriver and/or
Pliers
Soft Mallet

Refer to Figure 39
1. Cover the flat tip of a screwdriver with masking tape or electrical tape to prevent paint damage
2. Remove the old Cap (39-B)
3. Align the new Clip’s slotted stud (39-B) with the hole in the Tube. Tap it into place using a mallet or by squeezing with your fingers.
3.29 Rear Frame Paint Protector Clips

*Kit number E0-00-1-071*

Tools:
Screwdriver
Soft Mallet

1. Cover the flat tip of a screwdriver with masking tape or electrical tape to prevent paint damage
2. Remove the old clip (40-A) from the Tube (40-B)
3. Align the new Clip’s slotted stud (40-A) with the hole in the Tube (40-B). Tap it into place using a mallet or by squeezing with your fingers.

*Figure 40*
4. PROGRAMMING OF THE CONTROLLER

4.1 Introduction

The *EasyTravel Lite* electric system is operated by the Solo or S-Drive Controller manufactured by Penny & Giles Technologies Ltd. (UK).

4.2 The SP1 Programmer

The SP1 is a handheld programmer for use with the Solo or S-Drive Controller.

The programmer is a menu-driven device, which plugs directly into the controller.

The SP1b Programmer (Engineering Version) can set all of the key controller speed, acceleration and braking characteristics, and allows different settings to be tried out while the programmer is still plugged into the controller. A context-sensitive help function is available to guide users through the menus and the SP1b can also display error messages from the controller. This allows any problems with the vehicle electrical system to be identified and corrected quickly.

**WARNING**

Programming should only be conducted by competent personnel with in-depth knowledge of Penny & Giles electronic controllers. Incorrect programming could result in an unsafe set-up of a vehicle for a user. Tzora Active Systems accepts no liability for losses of any kind if the programming of the controller is altered from factory pre-set values.
The following table shows the Solo or S-Drive Controller settings for the *EasyTravel Lite* as defined by Tzora Active Systems.

<table>
<thead>
<tr>
<th>Function</th>
<th>Fast</th>
<th>Slow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Acceleration</td>
<td>2.0 s</td>
<td>2.0 s</td>
</tr>
<tr>
<td>Forward Deceleration</td>
<td>0.9 s</td>
<td>1.3 s</td>
</tr>
<tr>
<td>Reverse Acceleration</td>
<td>3.0 s</td>
<td>3.0 s</td>
</tr>
<tr>
<td>Reverse Deceleration</td>
<td>2.5 s</td>
<td>2.5 s</td>
</tr>
<tr>
<td>Forward Speed</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Reverse Speed</td>
<td>50%</td>
<td>30%</td>
</tr>
<tr>
<td>Invert Throttle Polarity</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><em>Power Down Timer</em></td>
<td>10 min</td>
<td></td>
</tr>
<tr>
<td>Current Limit</td>
<td>20A</td>
<td></td>
</tr>
<tr>
<td>Motor Compensation</td>
<td>200mΩ</td>
<td></td>
</tr>
<tr>
<td>Hold Factor</td>
<td>152%</td>
<td></td>
</tr>
<tr>
<td>Mid Current</td>
<td>50%, 10 s</td>
<td></td>
</tr>
<tr>
<td>Brake Time</td>
<td>0.1 s</td>
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</tr>
<tr>
<td>ISO Tests</td>
<td>Off</td>
<td></td>
</tr>
<tr>
<td>Inhibit Polarity</td>
<td>Lo</td>
<td></td>
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<tr>
<td>Bridge Hold Time</td>
<td>200 ms</td>
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</tr>
<tr>
<td>Throttle Gain</td>
<td>750%</td>
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<tr>
<td>Pulse Reverse Alarm</td>
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<tr>
<td>Wig-wag Throttle</td>
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<td></td>
</tr>
<tr>
<td>Low Battery Flash Inhibit</td>
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<td></td>
</tr>
<tr>
<td>Throttle Deadband</td>
<td>15%</td>
<td></td>
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<tr>
<td>Output Voltage</td>
<td>24V</td>
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<tr>
<td>TruCharge Cable Resistance</td>
<td>40mΩ</td>
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</tr>
<tr>
<td>TruCharge Cal.</td>
<td>95</td>
<td></td>
</tr>
</tbody>
</table>

### 4.3 Using The SP1b

Please contact Tzora Active Systems for more information about and the acquiring of the SP1b Programmer. The Programmer is shipped with an extensive guide. Please read the guide carefully before using the SP1b Programmer.

Setting parameters to incorrect values could damage controllers and motors, and invalidate any warranties.
5. FAULT FINDING

5.1. Introduction

Tzora Active Systems provides for profound training in Fault Finding to the major distributors of the EasyTravel Lite. Please contact the authorized Tzora Distributor in your country or Tzora for more information.

5.2 Electrical System

5.2.1 Detecting that a Fault has occurred

A fault is signaled by a rapid flashing of the status indicator. Care should be taken because the controller gives a low battery warning by a slow flash of the status indicator. This is not a fault, just a reminder that you should charge your batteries. To detect a fault in the Solo or S-Drive Controller, the SP1b Programmer is used. It can detect various faults, for instance a motor wiring fault, a throttle fault, a possible controller fault or a fault in the solenoid brakes.

5.2.2 Fault Diagnosis using the SP1b

The SP1b indications should only be used to decide the starting point of your own diagnosis, as it is possible for the controller to indicate a fault in another component even though the controller itself is at fault. Nevertheless, experience has shown that connectors and wiring are the major cause of vehicle electrical problems, so it is necessary to examine these most vulnerable areas first.

Further information is to be found in the Programming and Fault Finding Guide that is shipped with the SP1b Programmer.

5.2.3 Servicing of Defective Solo or S-Drive Controllers

There are no serviceable parts within the Solo or S-Drive Controller. Consequently, any defective units must be returned to Tzora Active Systems for repair.

Opening or making any unauthorized adjustments or modifications to the controller or its components will invalidate any warranty and may result in hazards to the vehicle user, and is strictly forbidden.

WARNING

Faultfinding and repairs should only be conducted by competent personnel, authorized by Tzora Active Systems. Incorrect repair or tampering could result in a hazardous defect in the EasyTravel Lite. Tzora Active Systems accept no liability for losses of any kind arising from unauthorized adjustment or modification to the EasyTravel Lite.
6. CONTROL CONNECTIONS AND ELECTRICAL WIRING

Please refer to the connection diagram, Figure 42. For more information please contact your authorized Tzora Distributor or Tzora Active Systems.

Figure 42
7. CHARGER

Technical data:
- 24 Volts, 2Amp Constant Current  
  (equivalent to 3A tapered charger in charging time)
- Universal Input 100VAC to 240VAC - Suitable anywhere in the world
- Automatic Cut-off and then true Float. Can be left connected indefinitely without harming the battery
- Size
  Length: 165 mm (6.5")
  Width: 80 mm (3.1")
  Height: 50 mm (2.0")
- Weight
  550 grams (1.2 lbs.)
## 8. SPARE PARTS

### 8.1 List of Spare Parts Kits

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Included in Kit</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0-00-1-109</td>
<td>Control Panel Assembly – \textit{EasyTravel Lite}</td>
<td>Control Panel, Top and Bottom Cover, Screws</td>
<td>7</td>
</tr>
<tr>
<td>E0-00-1-126</td>
<td>Handgrip pair</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>E0-00-1-106</td>
<td>Controller Cover</td>
<td>Controller Cover, Screws</td>
<td>9</td>
</tr>
<tr>
<td>E0-00-1-105</td>
<td>Solo Controller</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>E0-00-1-115</td>
<td>Battery Contacts</td>
<td>Battery contacts, Screws</td>
<td>11</td>
</tr>
<tr>
<td>E0-00-1-114</td>
<td>Interface Circuit Board</td>
<td>Screws</td>
<td>12</td>
</tr>
<tr>
<td>E0-00-1-112</td>
<td>Control Cable</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>E0-00-1-133</td>
<td>Motor End Cover</td>
<td>Screw</td>
<td>14</td>
</tr>
<tr>
<td>E0-00-1-108</td>
<td>Motor Brushes</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>E0-00-1-113</td>
<td>Power Cable</td>
<td>Securing Clip, Screw</td>
<td>16</td>
</tr>
<tr>
<td>E0-00-1-125</td>
<td>Front Wheel Assembly</td>
<td>Front Wheel, Allen Screw, Washer, Flat Cap</td>
<td>18</td>
</tr>
<tr>
<td>E0-00-1-107</td>
<td>Gear Motor</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>E0-00-1-122</td>
<td>Steering Column Stem</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>E0-00-1-123</td>
<td>Top Bearing for Steering Axis</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>E0-00-1-132</td>
<td>Column Release Cable Kit</td>
<td>Pin, Spring, Cable, Cable Guide, Adjustable Stop, Cable Stops, Release Bushing, Set Screws, End Cone, Vinyl Caps</td>
<td>22</td>
</tr>
<tr>
<td>E0-00-1-131</td>
<td>Black Vinyl Cap</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>E0-00-1-101</td>
<td>Battery Case</td>
<td>Electric Wiring, Screws</td>
<td>25</td>
</tr>
<tr>
<td>E0-00-1-102</td>
<td>Battery Cover – \textit{EasyTravel Lite}</td>
<td>Screws</td>
<td>26</td>
</tr>
<tr>
<td>E0-00-1-116</td>
<td>Seat Assembly</td>
<td>Seat Bottom + Pad, Seat Back + Pad</td>
<td>27</td>
</tr>
<tr>
<td>E0-00-1-117</td>
<td>Seat Back Pad</td>
<td>Screws, Washers, Screw Covers</td>
<td>28</td>
</tr>
<tr>
<td>E0-00-1-118</td>
<td>Seat Bottom Pad</td>
<td>Screws</td>
<td>29</td>
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<tr>
<td>E0-00-1-119</td>
<td>Seat Backrest Lock</td>
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<tr>
<td>E0-00-1-120</td>
<td>Seat Attachment Bracket</td>
<td>Bracket, Sleeves, Screws</td>
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<tr>
<td>E0-00-1-121</td>
<td>Seat Guide Brackets</td>
<td></td>
<td>32</td>
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<tr>
<td>E0-00-1-130</td>
<td>Footrest Platform</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>E0-00-1-124</td>
<td>Rear Wheel Assembly</td>
<td>Rear Wheel, Circlip, End Cap</td>
<td>34</td>
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<tr>
<td>E0-00-1-129</td>
<td>Flat Cap (Front Platform)</td>
<td>2 Caps</td>
<td>35</td>
</tr>
<tr>
<td>E0-00-1-127</td>
<td>Seat Support Paint Protector Clips</td>
<td>2 Semicircle Clips</td>
<td>36</td>
</tr>
<tr>
<td>E0-00-1-128</td>
<td>Rear Frame Paint Protector Clips</td>
<td>2 Full Circle Clips</td>
<td>37</td>
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</tbody>
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### 8.2 Spare Parts Kit Index

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<td>Handgrip pair</td>
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<td>E0-00-1-127</td>
<td>Seat Support Paint Protector Clips</td>
<td>36</td>
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<td>E0-00-1-128</td>
<td>Rear Frame Paint Protector Clips</td>
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<tr>
<td>E0-00-1-129</td>
<td>Flat Cap (Front Platform)</td>
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<td>E0-00-1-130</td>
<td>Footrest Platform</td>
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<td>E0-00-1-131</td>
<td>Black Vinyl Cap</td>
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<td>E0-00-1-132</td>
<td>Column Release Cable Kit</td>
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<td>E0-00-1-133</td>
<td>Motor End Cover</td>
<td>14</td>
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### 9. LIST OF TOOL TYPES

<table>
<thead>
<tr>
<th><strong>Screwdrivers:</strong></th>
<th><strong>Loctites:</strong></th>
<th><strong>Other Tools</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phillips #1</td>
<td>#242 (1312)</td>
<td>Cable Tie Tensioning Tool</td>
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<tr>
<td>Phillips #2</td>
<td></td>
<td>Circlip Pliers (normal)</td>
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<tr>
<td>Short Phillips #2</td>
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<td>Circlip Pliers (small)</td>
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<td>Flat Blade</td>
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<td>Clamps</td>
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<tr>
<td><strong>Allen Keys:</strong></td>
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<td>Cleaning detergent</td>
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<tr>
<td>3 mm</td>
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<td>Crimp Tool</td>
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<tr>
<td>4 mm</td>
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<td>Cutter</td>
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<td>Extractor</td>
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<td>Soft Mallet</td>
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<tr>
<td>Open End 32 mm</td>
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</tbody>
</table>

The *EasyTravel Lite* and its accessories have been designed, manufactured and tested in accordance with the specification of the following:

DIRECTIVE: Medical devices 93/42 EEC

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Manufactured by:

Kibbutz Tzora 99803, ISRAEL
Web Site: www.tzora.com

EC Authorized Representative:

Medical Specialities Ltd.
Blackburn, BB2 4HT UK