Mobility scooter

TECHNICAL MANUAL EN

Trophy

STERLING®

Table of content

1 Introduction

1.1 This manual

This manual contains the instructions for repairs and general maintenance of the Trophy Scooter.
Mechanics who do repairs on this scooter must be well trained and familiar with the repair methods and the maintenance of the Trophy scooter.
Always make sure that the work is carried out safely, particularly with respect to procedures requiring the scooter to be lifted up.
We advise that you contact our service department before doing repair work on a scooter that has been involved in an accident.
The following specifications are important when ordering parts:

- Model
- Year of manufacture
- Colour
- ID-number
- Part number
- Name of the part concerned

This information is provided on the identification plate. See 'Identification of the product'.

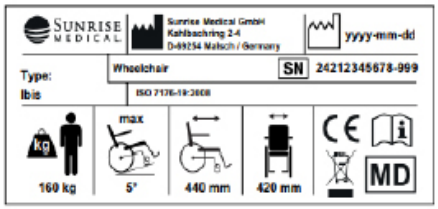
Available documentation
The following technical documentation is available / required to service this scooter:

- User manual
- Service manual

Service and technical support
For information concerning specific settings, maintenance or repair works please contact the Sunrise Medical HCM Customer Service department. They are always prepared to help you. Ensure you have at hand:

- Model
- Year of manufacture
- ID-number

1.2 Identification of the product



Ibis	Product Name/SKU Number
	Maximum safe slope with anti-tip tubes fitted. Depends on wheelchair setting, posture and physical capabilities of the user.
	Seat width
	Seat depth
	Load Maximum
CE	CE Mark
	User's Guide
XXXX-XX-XX	Date of manufacture
SN	Serial number
MD	This symbol means Medical Device
	Manufacturer's address
ISO 7176-19:2008	Crash tested according to ISO 7176-19:2008

1.3 Symbols used in this manual

Note!
Pointing out possible problems to the user of this manual.

⚠ ***Caution!***
Advice for the user of this manual to prevent damage to the product.

⚠ ***Warning!***
Warnings for the user of this manual to prevent personal in jury.

Not following these instructions may result in physical injury, damage to the product or damage to the environment!

Reference symbol
When necessary this service manual refers to other manuals as shown below:
🕮 Battery charger: refers to the user manual of the battery charger
🕮 Scooter: refers to the general user manual of the Trophy

2 Safety

2.1 Personnel qualification

Repairs may only be carried out by trained and authorised service technicians.
During the execution of their work, they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.
Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

2.2 Identification on the product

Safety
Safety information is indicated with the warning symbol.

⚠ ***Warning!***
Follow the instructions carefully next to these warning symbols! Not paying careful attention to these instructions could result in physical injury or damage to the scooter or the environment. Wherever possible, safety information is also provided in this manual in the relevant chapter.

2.3 Temperature

⚠ ***Warning!***
Avoid physical contact with the scooter's motor. The motor is continuously in motion during use and can reach high temperatures. After use, the motor will cool down slowly. Physical contact may cause burns.

Ensure that the scooter is not exposed to direct sunlight for extended periods of time. Certain parts of the scooter, such as the seat, the backrest, the armrests and the steering device become hot if exposed to the sun for too long. This may cause burns or skin irritation.

2.4 Electromagnetic radiation and interference

The scooter has been tested for compliance with the applicable requirements regarding electromagnetic radiation (EMC requirements).
The Trophy's immunity level is 20 volt/metre.

Note!
It cannot be excluded that electromagnetic radiation emanating from mobile telephones, medical apparatus and other sources, may have an influence on the scooter.

It cannot be excluded that the scooter will interfere with the electromagnetic fields of, for example, shop doors, burglar alarm systems and/or garage door openers.

In the unlikely event that such problems do occur, you are requested to notify your dealer immediately.

Powered wheelchairs and scooters can be affected by sources of radio waves, such as radio and TV transmitters, amateur radio stations, lifts, transmitting equipment, stereo radios and mobile telephones If the scooter's electronics are not well shielded, sensitive electrical devices, such as shop alarm systems and garage door openers, can be affected. The scooter has been tested for such interference. Please report any problems of this nature to your dealer immediately.

The following advices are intended to prevent the electric scooter from being driven unintentionally, which could lead to serious injury.

1. Do not turn on any manually controlled equipment for personal communication, such as a radio transmitter or mobile telephone, while the electric scooter is switched on.
2. Keep at a distance from transmitter equipment, such as radio and TV stations.
3. If the scooter starts making unintended movements, or if the brake goes into freewheel / neutral mode, turn off the powered wheelchair or scooter by removing the ignition key from the lock.
4. Be aware of the fact that any accessories, components or adaptations installed on the scooter may increase the effect of radio waves.

Note:
There is no easy way of testing the effects of radio waves on the general immunity of powered wheelchairs or scooters.

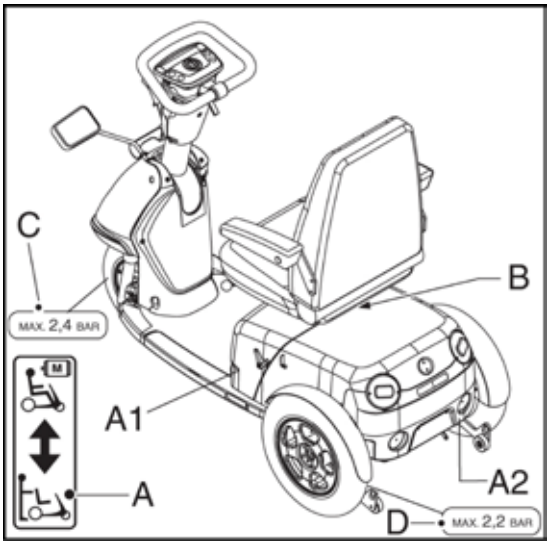
5. All cases of unintended movements of the scooter spontaneously going into freewheel / neutral mode should be reported to your dealer or to the scooter manufacturer. When reporting, please indicate whether a source of radio waves was nearby at the time.

2.5 Markings on the scooter

Never remove or cover up the markings, symbols and instructions affixed to the scooter. These safety measures must remain present and clearly legible throughout the entire lifestam of the scooter.

Replace or repair any markings, symbols or instructions that have become illegible or damaged immediately. Please contact your dealer for assistance.

Product labels
The following sticker/label can be found on the product:



A1 Free wheel Trophy Alpine (and models < 2012)
A2 Free wheel Trophy (if not A1)
B. Identification plate
C. Tyre pressure front wheel(s)
D. Tyre pressure rear wheels

Freewheel handle position

1. DRIVE mode: Lever fully upper position: Motor brake applied, scooter can not be pushed
2. FREEWHEEL / NEUTRAL mode: Lever lowest position: Motor brake not applied. Scooter can be pushed manually when electronics are off.

Instruction for transportation (📖 Scooter)

⚠ 

Warning!
The scooter is not intended to be used as seat in motor vehicle.

2.6 Technical specifications

No changes may be made to the technical specifications.

2.7 Modifications / Adaptations

Modifications, not executed by Sunrise Medical HCM, to components and electronics of this product are not permitted.

3 Tools

3.1 Tools

The tools below are needed for various mechanical settings and maintenance:

Quantity	Description	Size (mm)
1	Screwdriver, medium	5
1	Screwdriver, crosshead	-
1	Hammer (plastic)	-
1	Chaser	-
1	Circlip pliers	-
1	Ring spanner	7 / 10 / 11 / 13 / 17
1	Torque wrench	-
1	Socket	7 / 8 / 10 / 11 / 12 / 13 / 16 / 17
1	Socket bit	6
1	Allen key	3 / 4 / 5 / 6 / 8
1	Loctite	243
1	Shock absorber adjustment key	-

Use only high-quality tools for the adjustment(s) described.
Make sure that the hexagon of the spanner is attached securely to the hexagon of the fastening article. This prevents the 'rotation' of hexagons of fastening articles and spanners that may affect proper adjustment.

The following tools are needed for various electronic settings:

Quantity	Description	Function	
1	PG - pc programmer B-version	Adaptation of the drive programs and technical settings. Reading out the fault history	PR0210
1	PG - programmer unit SPIB handheld	Alternative device for PC. Adaptation of the drive programs and technical settings. Reading out the fault history	10237

4 Spare parts

4.1 Use of the parts lists

This document is meant as a reference book to be used to order parts for the scooter that is shown on the front cover.

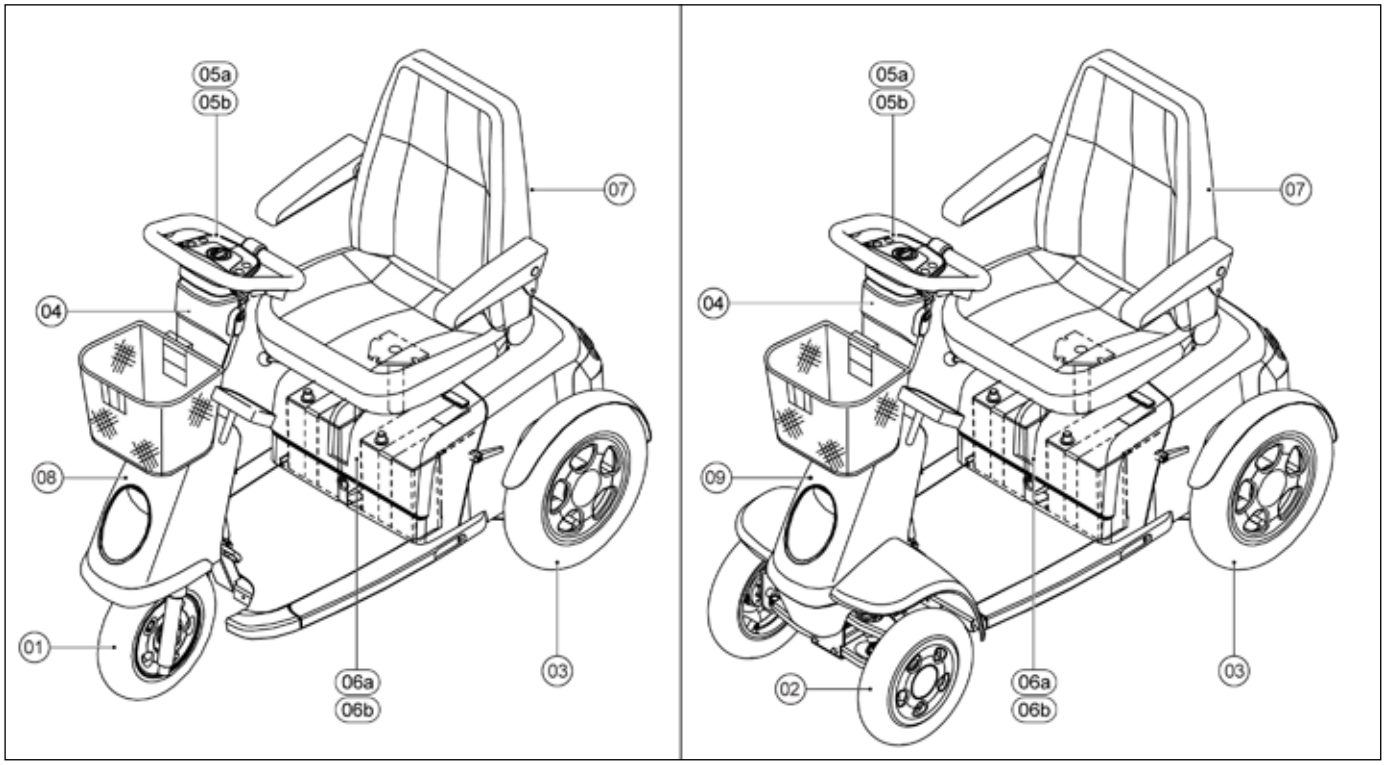
How to order
When ordering parts, please specify:
- ID-number (see the identification plate)
- Group (to which the relevant part belongs)
- Article number
- Number of parts required
- Description (in the relevant language)
- Dimensions (if applicable)

Remark
- If a part does not have an article number, it means that the part concerned cannot be purchased separately. The part concerned is part of the assembly shown. This assembly must be ordered as one piece. It has to be replaced in its entirety.
- Boxed position numbers refer to the relevant drawing.

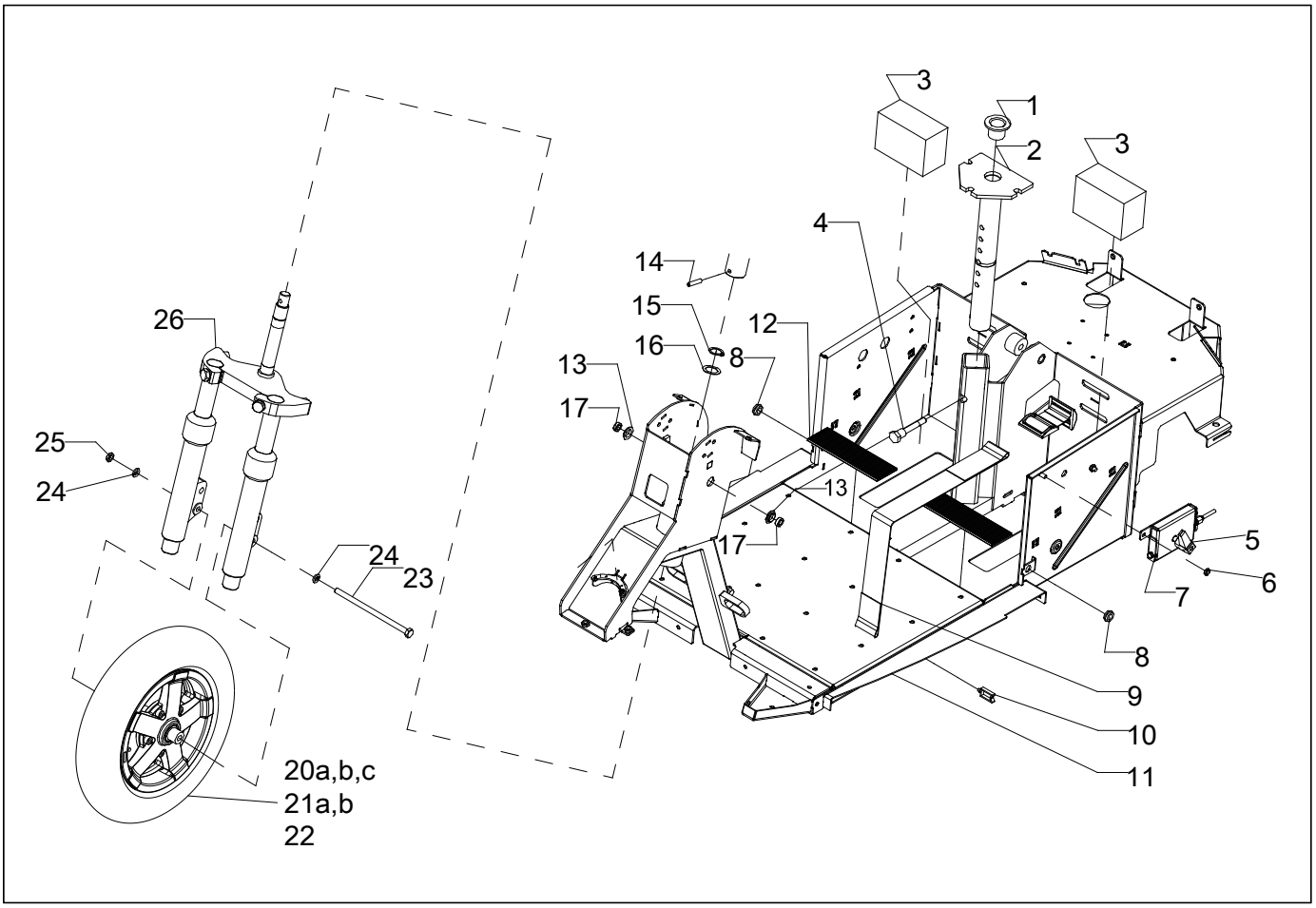
Order address
Please mail or fax your orders to your supplier.

Service technicians
Repairs may only be carried out by trained and authorised service technicians. During the execution of their work they are at all times fully responsible for the fulfilment of locally applicable safety guidelines and standards.
Temporary employees and persons in training may only carry out repair and replacement work under the supervision of an authorised service technician.

4.2 Overview exploded views

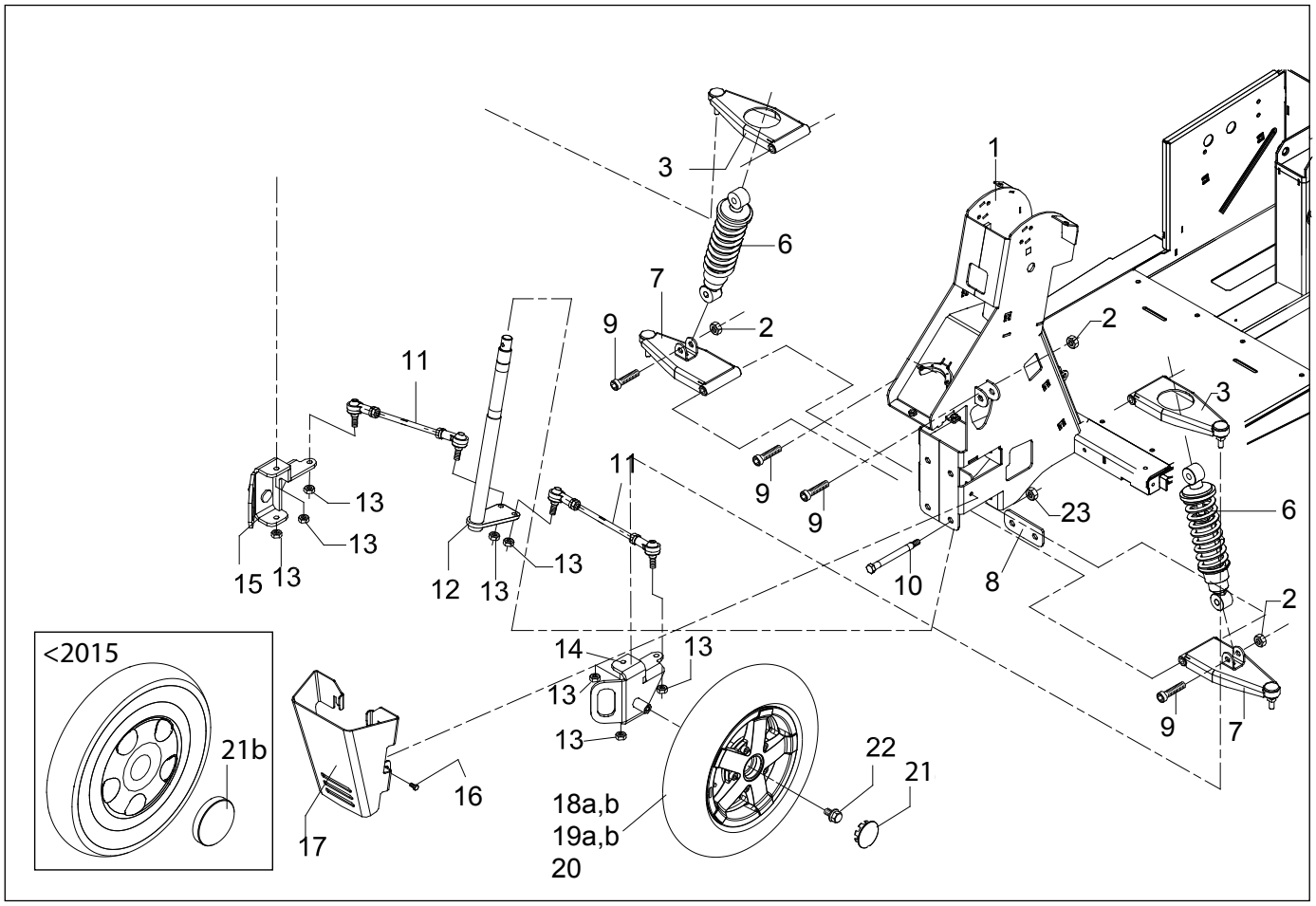


01 Front frame, front fork and front wheel Trophy 3W



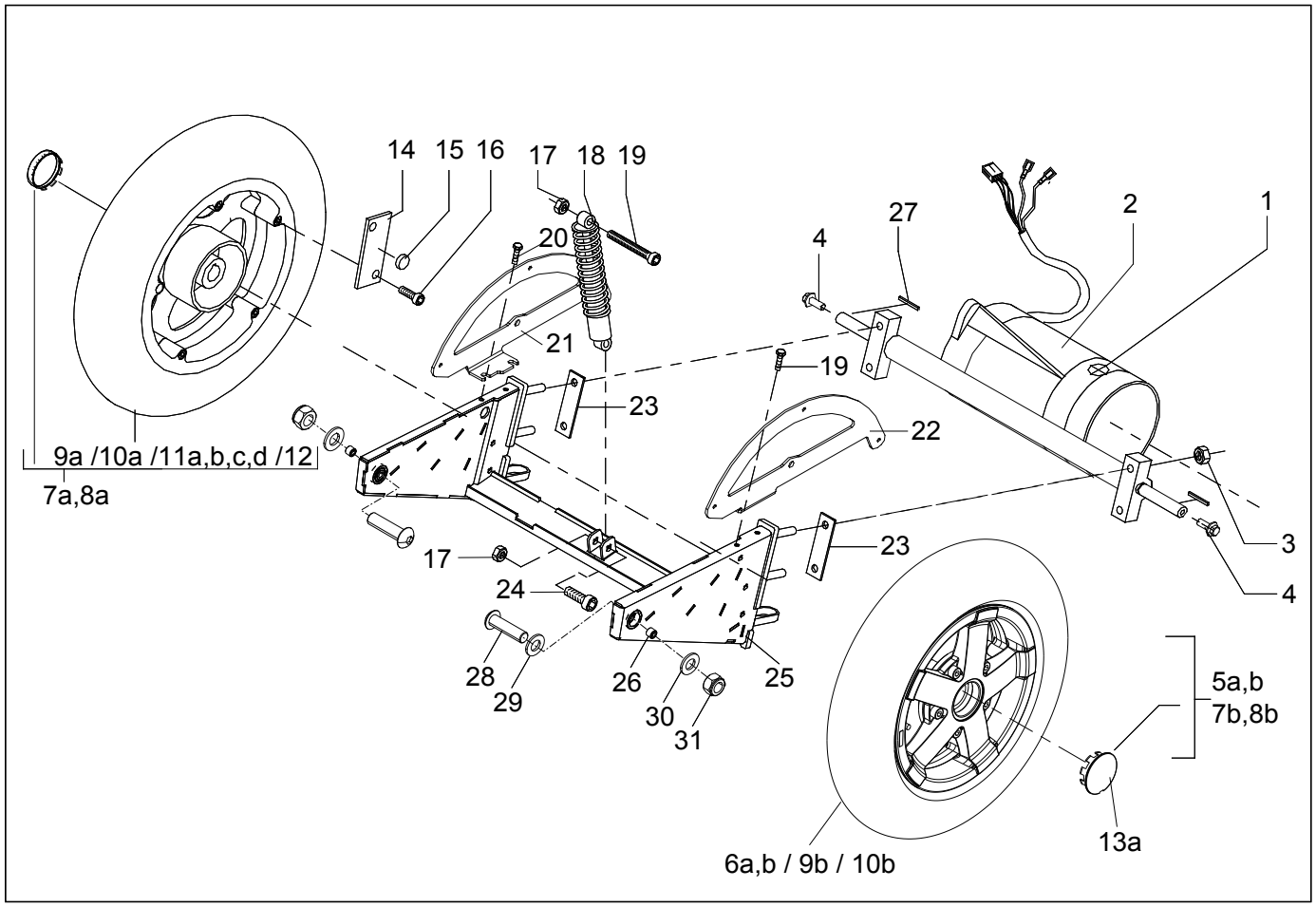
Pos	Qty	Article number	Description
1	1	9003907	Nylon bearing seat post
2	1	9004025	Seat post
3	2	00001.0008	Spacer block, battery
4	1	9005156	Seat post bolt
5	1	9000762	Lever freewheel
6	2	1021401	Lock nut M6 (10x)
7	1	9000178	Freewheel mechanism for Schmid transaxle
7	1	9000871	Hand brake mechanism
8	2	9000630	Tulle
9	2	9000591	Strap, battery retention
10	14	9000788	Clamp, cable
11	1	1010286	Front frame, incl. ball-head bearings Trophy 3W
12	2	1001277	Anti-slip mat
13	2	00000.5306	Bearing bush 14x16x4 Iglidur
14	1	00001.0804	Rolled pin 6x30
15	1	1001796	Lock washer
16	1	00000.6008	Ring 20x28x1
17	2	9000632	Bush bearing tiller
20b	1	1015265	Front wheel 12½ x 2¼", grey air, block profile 3W
20c	1	1015264	Front wheel 12½ x 2¼", black air, block profile 3W
21a	1	1015112	Outer tyre 12½ x 2¼", grey block profile
21b	1	1015113	Outer tyre 12½ x 2¼", black block profile
22	1	1015118	Inner tube 12½ x 2¼"
23	1	9002166	Hex bolt M8x150
24	2	1021407	Spring washer M8 (10x)
25	1	1021402	Lock nut M8 (10x)
26	1	9000504	Front fork, complete
-	2	9000493	Ball-head bearing 6004 2NSE
-	2	00000.5500	Ball bearing 6002 2NSL (front wheel)

02 Front frame, front suspension and front wheels Trophy 4W



Pos	Qty	Article number	Description
1	1	1010287	Front frame, incl. ball-head bearings Trophy 4W
2	4	1021403	Lock nut M10 D985 (10x)
3	2	9002090	Swing arm top assy (grey)
3	2	9004458	Swing arm top assy (black)
6	2	9001641	Shock absorber
7	2	9002091	Swing arm low assy (grey)
7	2	9004459	Swing arm low assy (black)
8	1	9001895	Connection plate
9	4	1021420	Hex bolt M10x40 D931 (10x)
10	2	9001803	Axle suspension parallel bracket
11	2	9002101	Steer rod
12	1	9001802	Steer shaft
13	8	1021402	Lock nut M8 (10x)
14	1	9001795	Wheel bracket left (grey)
14	1	9003406	Wheel bracket left (black)
15	1	9001801	Wheel bracket right (grey)
15	1	9003408	Wheel bracket right (black)
16	2	00000.4307	Hex bolt M6x12
17	1	9001940	Bumper plate Trophy 4-wiel
18a	2	1015263	Front wheel 12½ x 2¼", grey air, block profile 4W
18b	2	1015262	Front wheel 12½ x 2¼", black air, block profile 4W
19a	2	1015112	Outer tyre 12½ x 2¼", grey, block profile
19b	2	1015113	Outer tyre 12½ x 2¼", black, block profile
20	2	1015118	Inner tube 12½ x 2¼"
21	2	9007193	Cover grey
22	2	9002155	Tensilock bolt Precote 85 M8x12
23	4	00000.1702	Lock nut M8
-	2	9000493	Ball-head bearing 6004 2NSE
-	1	1017424	Replacement set front wheel 12½ x 2¼", grey air, block profile 4W
-	1	1017433	Replacement set front wheel 12½ x 2¼", black air, block profile 4W

03 Rear frame, drive unit and rear wheels

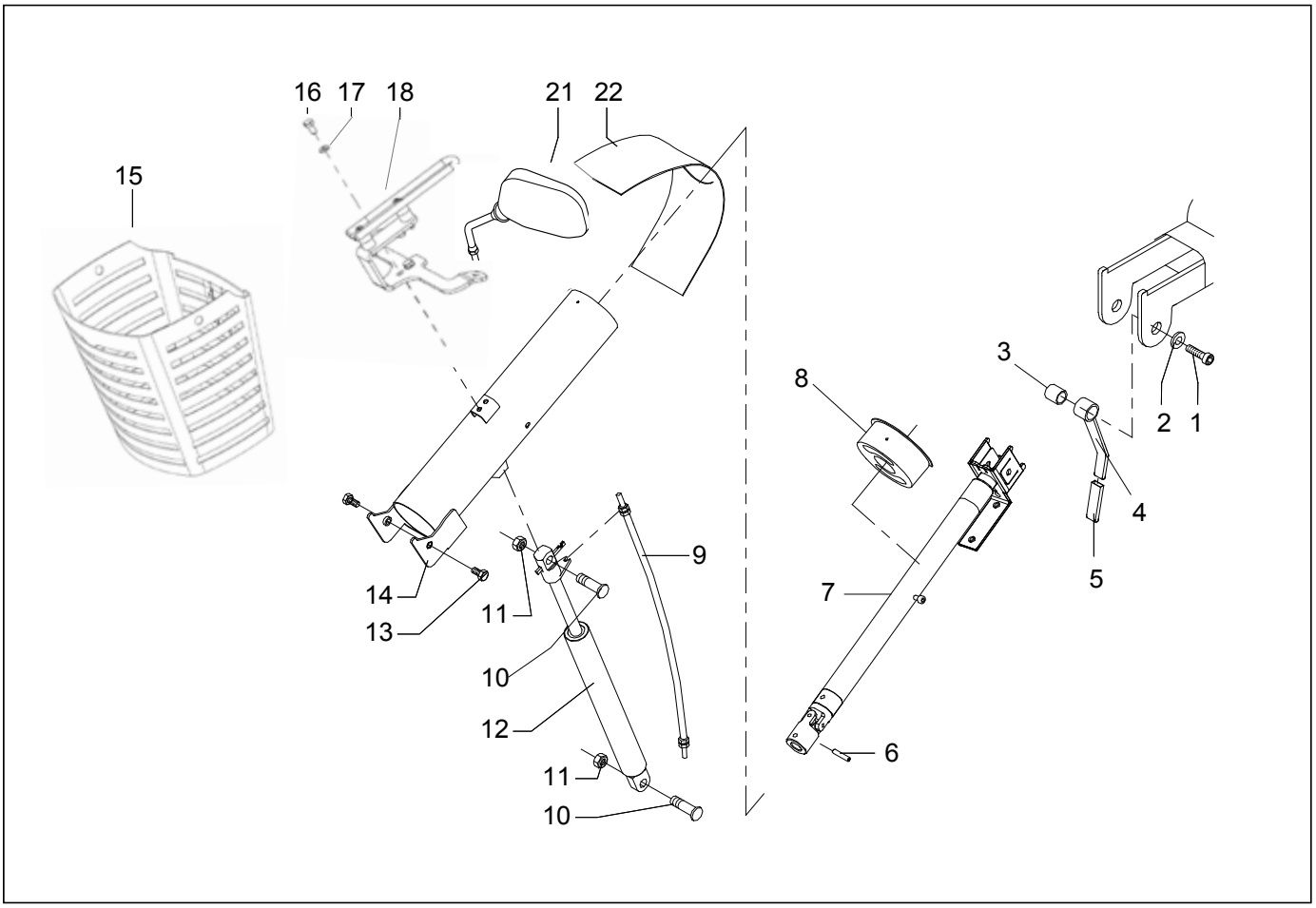


Pos	Qty	Article number	Description
1	4	103.00031.000	Carbon brush for Trophy with S-Drive (8x12 mm)
1	1	1011585	Carbon bruch set for CT transaxle (10x18 mm)
-	4	9012454	Carbon brush screw cap for Schmid transaxle
2	1	1008565	Transaxle Trophy Alpine, S-Drive (max. 11 km/h)
2	1	1013184	Transaxle CT Trophy 3 and 4-wheel, S-Drive
3	4	1021403	Lock nut M10 D985 (10x)
3	4	1013185	Lock nut low M10 D985
4	2	1012527	Hex. flange bolt M12x30 (torque 90Nm, use locktite 243)
5a	1	1016162	Rear wheel 3.00x10", grey air with block profile tyre and brake hub, left = right
5a	1	1017428	Rear wheel 3.00x10", grey air with block profile tyre and brake hub, set
5b	1	1015955	Rear wheel 3.00x10", black air with block profile tyre and brake hub, left = right
5b	1	1017432	Rear wheel 3.00x10", black air with block profile tyre and brake hub, set
6a	1	1016164	Rear wheel 3.00x10", grey air with block profile tyre, left = right
6a	1	1017427	Rear wheel 3.00x10", grey air with block profile tyre, set
6b	1	1015953	Rear wheel 3.00x10", black air with block profile tyre, left = right
6b	1	1017431	Rear wheel 3.00x10", black air with block profile tyre, set
7a	1	1015266	Rear wheel 3.00x10", grey air with highway profile tyre and brake hub, right
7b	1	1015267	Rear wheel 3.00x10", grey air with highway profile tyre and brake hub, left
7a,7b	1	1017425	Rear wheel 3.00x10", grey air with highway profile tyre and brake hub, set
8a	1	9011891	Rear wheel 3.00x10", black air with highway profile tyre and brake hub, right
8b	1	9011890	Rear wheel 3.00x10", black air with highway profile tyre and brake hub, left
8a,8b	1	9011892	Rear wheel 3.00x10", black air with highway profile tyre and brake hub, set
9a	1	1015268	Rear wheel 3.00x10", grey air with highway profile tyre, right
9b	1	1015269	Rear wheel 3.00x10", grey air with highway profile tyre, left
9a,9b	1	1017426	Rear wheel 3.00x10", grey air with highway profile tyre, set
10a	1	9011893	Rear wheel 3.00x10", black air with highway profile tyre, right
10b	1	9011894	Rear wheel 3.00x10", black air with highway profile tyre, left
10a,10b	1	9011895	Rear wheel 3.00x10", black air with highway profile tyre, set
11a	2	1015114	Outer tyre 3.00x10 grey with highway profile

Continued from **02 Front frame, front suspension and front wheels Trophy 4W**

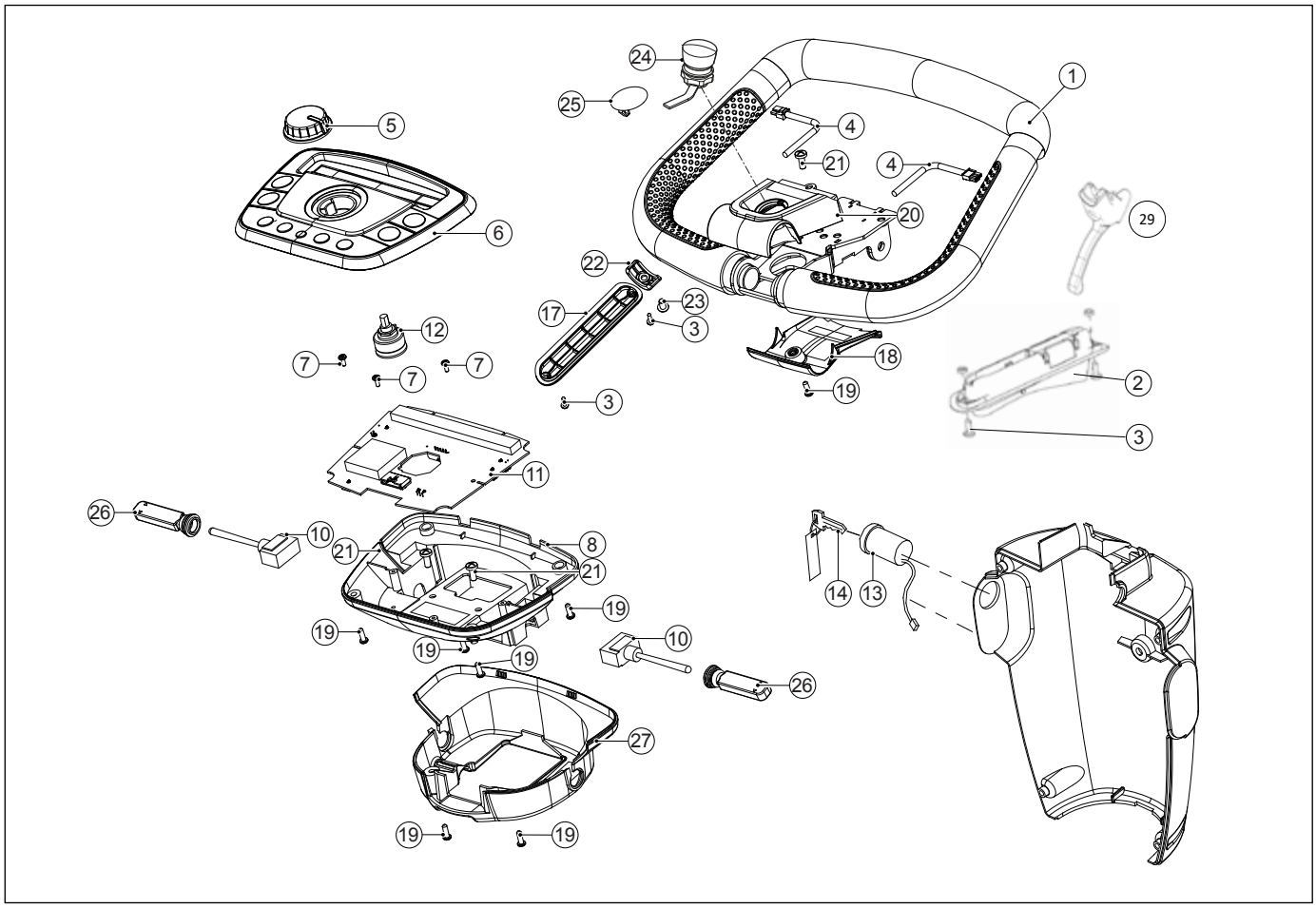
Pos	Qty	Article number	Description
11b	2	1015102	Tyre grey with block profile rear wheel Trophy
11c	2	9011889	Tyre black rear wheel Trophy
11d	2	9007725	Tyre black with block profile rear wheel Trophy
12	2	1015119	Inner tube 3.00x10
13a	2	9007193	Cover grey
14	1	9000821	Magnet plate, speed sensor
15	1	9000642	Speed sensor magnet
16	1	00000.4009	Allen bolt M8x35
17	2	1021403	Lock nut M10 D985 (10x)
18	1	9000603	Rear spring, standard (black)
18	1	9000683	Rear spring, heavy duty (black with orange sticker, previously chrome)
19	1	1002243	Allen bolt M10x75
20	4	00000.4307	Hex bolt M6x12
21	1	9000256	Mounting bracket, right mud guard
22	1	9000257	Mounting bracket, left mud guard
23	2	9000689	Rubber mounting strip, transaxle
24	1	1002242	Allen bolt M10x40
25	1	9000494	Back frame
26	2	1353	Hinge bush M8
27	2	103.00091.000	Wedge for Schmid transaxle
28	2	00000.3715	Buttonhead M8x30 ISO7380
29	2	9002221	Washer M8x30x1,5
30	2	00000.2003	Washer M8 DIN125A-VZ
31	2	1021402	Lock nut M8 DIN985/8/VZ (10x)
-	1	1012104	Motor brake for CT transaxle
-	1	1012106	Freewheel lever for CT transaxle

04 Steering column, mirror and basket



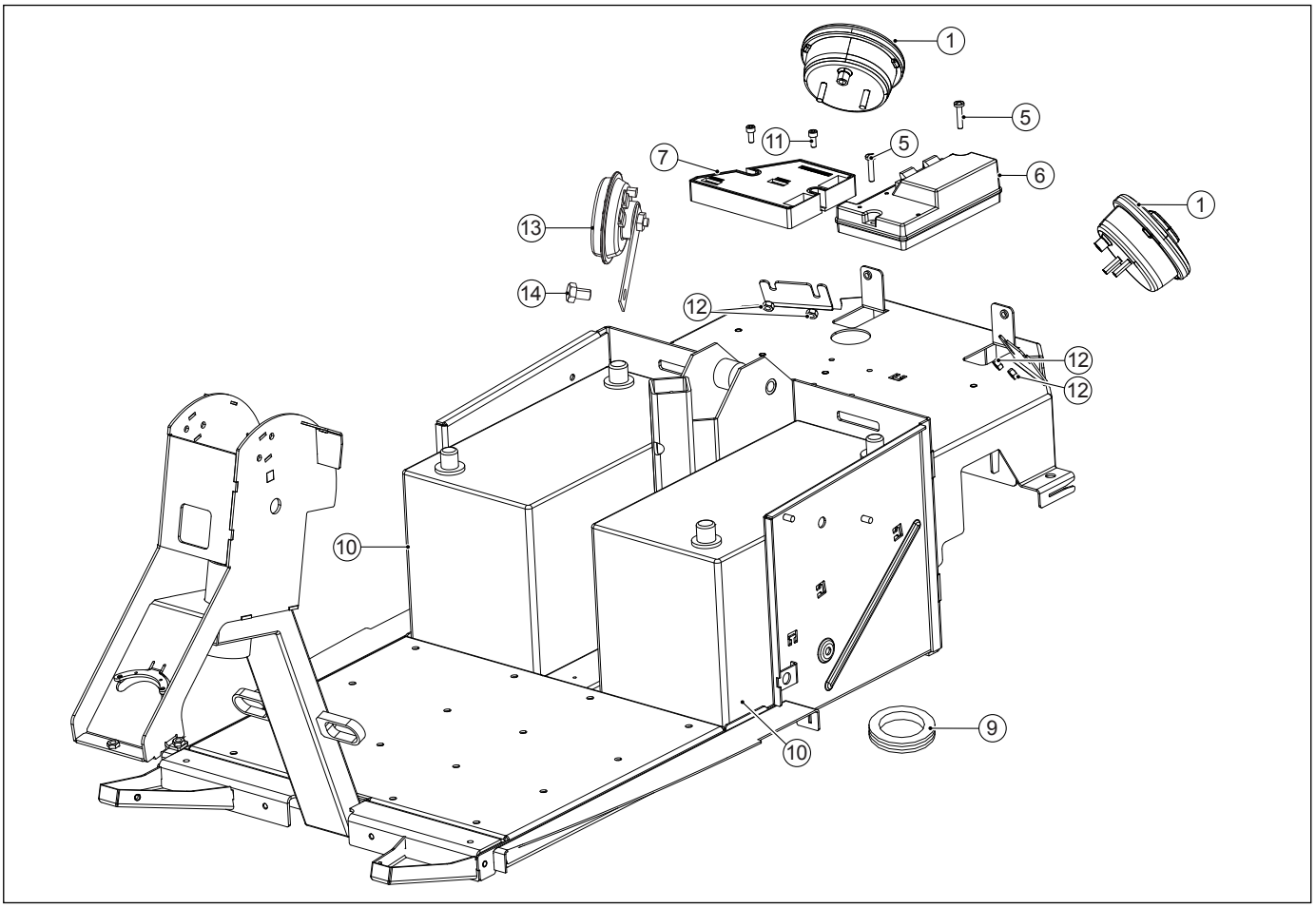
Pos	Qty	Article number	Description
1	1	00000.4041	Allen bolt M8x55
2	1	1021407	Spring washer M8 (10x)
3	1	9000019	Spacing bush
4	1	9000648	Handle, steering adjustment
5	1	9000781	Cap, steering adjustment handle
6	1	00001.0804	Rolled pin 6x30
7	1	9001095	Steering column adjustment tube
8	1	1008573	Nylon bushing, steering column
9	1	9000610	Control cable, gas spring for steering adjustment
10	2	9000826	Shoulder bolt, gas spring
11	2	1021401	Lock nut M6 (10x)
12	1	9000684	Gas spring, steering adjustment inc. operating mechanism
13	2	9008687	Hex bolt Precote 85 M8x25
14	1	9000435	Cylinder, steering column
15	1	030282	Basket, front side (max. load 5 kg)
16	2	00000.4307	Hex bolt M6x12
17	2	00000.2202	Spring washer M6
18	1	9012530	Bracket basket on Trophy
21	1	1010832	Mirror, black (left side)
22	1	9000601	Cover plate, steering adjustment

05 Console, printed circuit board and throttle control for advanced electronics (ID-no > QT02400)



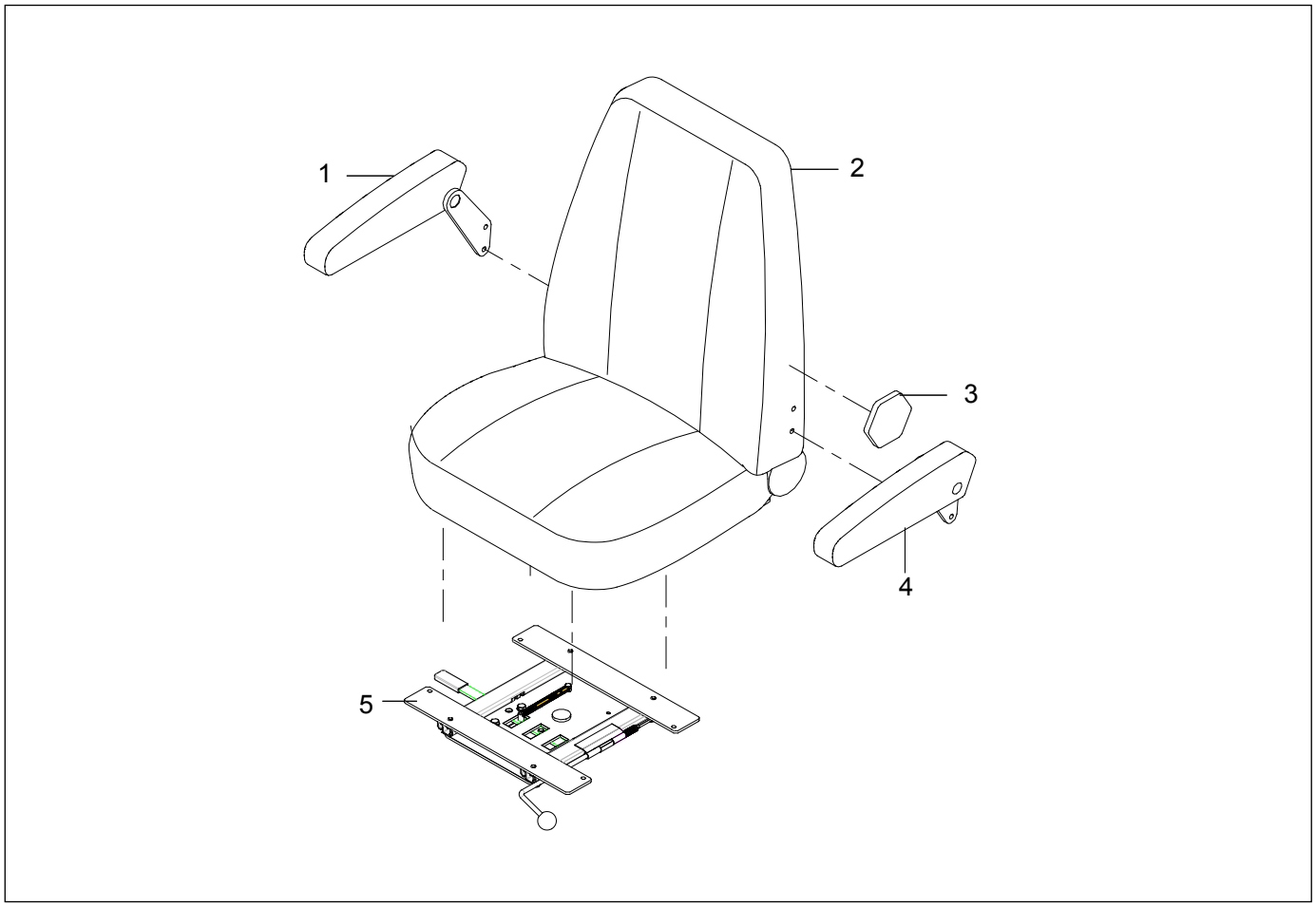
Pos	Qty	Article number	Description
1	1	9004185	Steering wheel
2-3	1	9012431	Trophy throttle spare set
3	4	00000.3307	Sheet-metal screw 2,9x13
4	2	9004641	Throttle harness
5	1	1012536	Assy Dashboard speed knob
6	1	9007568	Assy Top Standard for advanced electronics (ID-no > QT02400)
6	1	1012535	Assy Top Full option for advanced electronics (ID-no > QT02400)
7	3	9002792	Screw Ejot K30x6
8	1	9007223	Console Bottom
10	2	9004435	Indicator switch for advanced electronics (ID-no > QT02400)
11	1	9008789	Tiller PCB Basic for advanced electronics (ID-no > QT02400)
11	1	9008791	Tiller PCB Dual Control for advanced electronics (ID-no > QT02400)
11	1	9008790	Tiller PCB Full Option for advanced electronics (ID-no > QT02400)
12	1	9004438	Speed switch for advanced electronics (ID-no > QT02400)
13	1	9004432	Ignition switch for advanced electronics (ID-no > QT02400)
14	1	9005810	Ignition key for advanced electronics (ID-no > QT02400)
17	1	9007423	Cover steering wheel
18	1	9004302	Steering wheel cover bottom
19	7	9005802	Srew Ejot K40x12
20	1	9004301	Steering wheel cover top
21	3	00000.3200	Recessed buttonhead screw M5x12
22	2	9004331	Cover brake position
23	2	00000.3719	Buttonhead screw M5x10
24	1	9006138	Emergency stop button
25	1	9000904	Emergency stop button dummy
26	2	9004303	Cover for indicator switch
27	1	9006980	Cover Steering Console
28	1	1016535	Full option steering wheel for advanced electronics (ID-no > QT02400)
29	1	9012339	Electronic brakehandle Trophy

06 Wiring, electronics and batteries for advanced electronics (ID-no > QT02400)



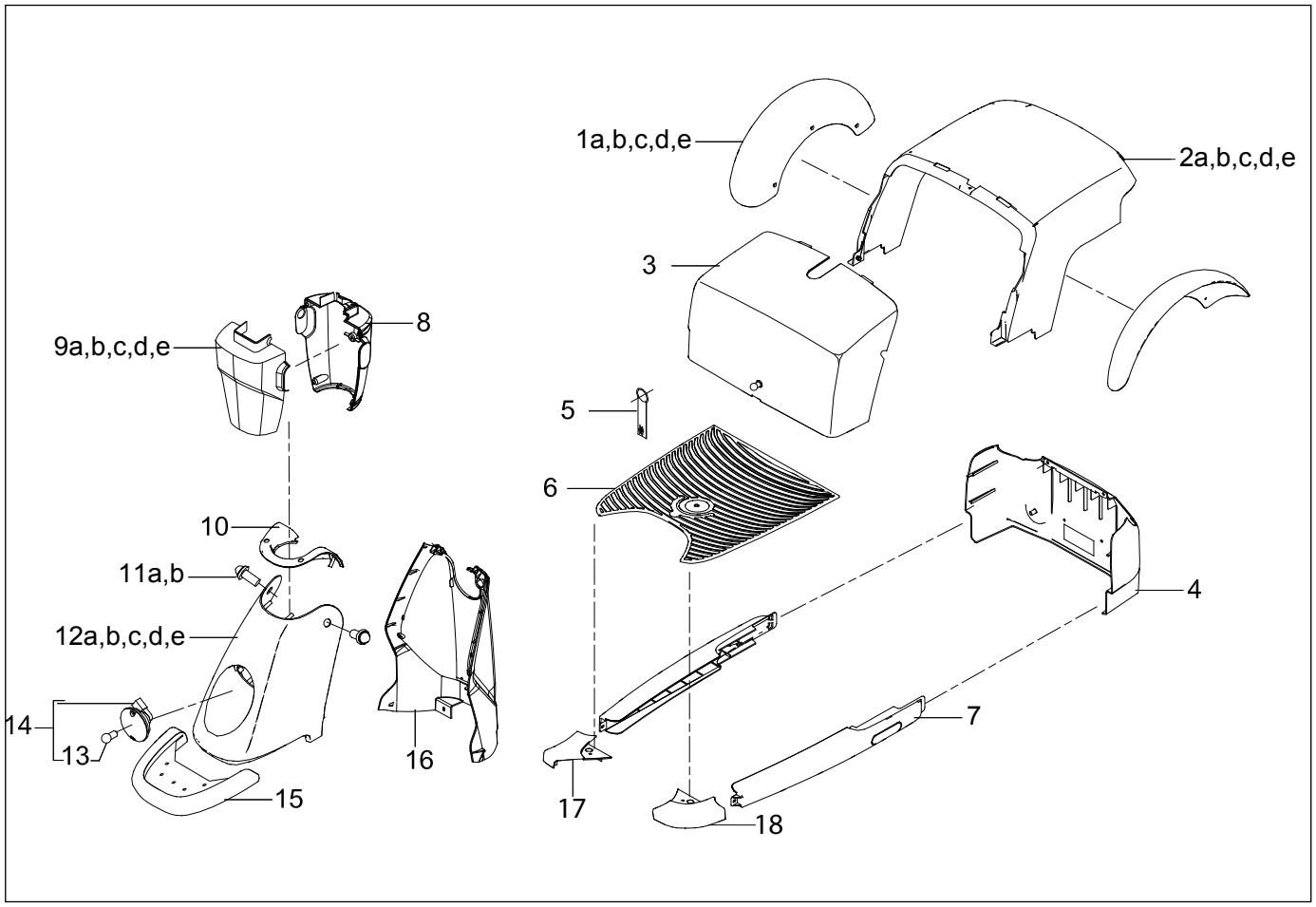
Pos	Qty	Article number	Description
1	2	9004503	Rear light LED
5	2	00000.3204	Screw M5x25
6	1	1012504	Controller S-Drive 140A
7	1	9008778	Controller interface for advanced electronics (ID-no > QT02400)
9	1	9000782	Tulle 32 x 1.6
10	2	9002759	Battery 60 Ah (C20) Gel
10	2	9002761	Battery 86 Ah (C20) Gel
11	2	1021412	Screw M5x12 (10x)
12	4	00000.1501	Hexagon nut M6
13	1	9004433	Horn for advanced electronics (ID-no > QT02400)
14	1	00000.4322	Hexagon bolt M8x12
15	1	1012412	Connector cover
16	2	9002752	Set battery connection covers

07 Seat and seat post



Pos	Qty	Article number	Description
1	1	118.00221.000	Armrest, right
2	1	1002861	Master seat with armrests
3	1	1003383	Lumbar knob
4	1	118.00231.000	Armrest, left
5	1	9000034	Seat frame with slider (right-side operation)
-	1	9000042	Seat fixation strip
-	1	1366	Plastic cover for seat fixation strip
-	1	1002241	Master seat with seat frame
-	1	1008392	Master seat comfort (Enschede) with seat frame
-	1	1002392	Master seat Fabric with seat frame and rain cover
-	1	232.00011.000	Headrest receiver (set of 2)
-	1	237.00011.000	Headrest
-	1	1001806	Height adjustable armrests, stepless (19-33 cm), extra long (40 cm) and soft
-	1	1002394	Height adjustable armrests, 20 (standard), 22 and 24 cm
-	1	1008411	Rain cover Master seat

08 Covers Trophy 3W

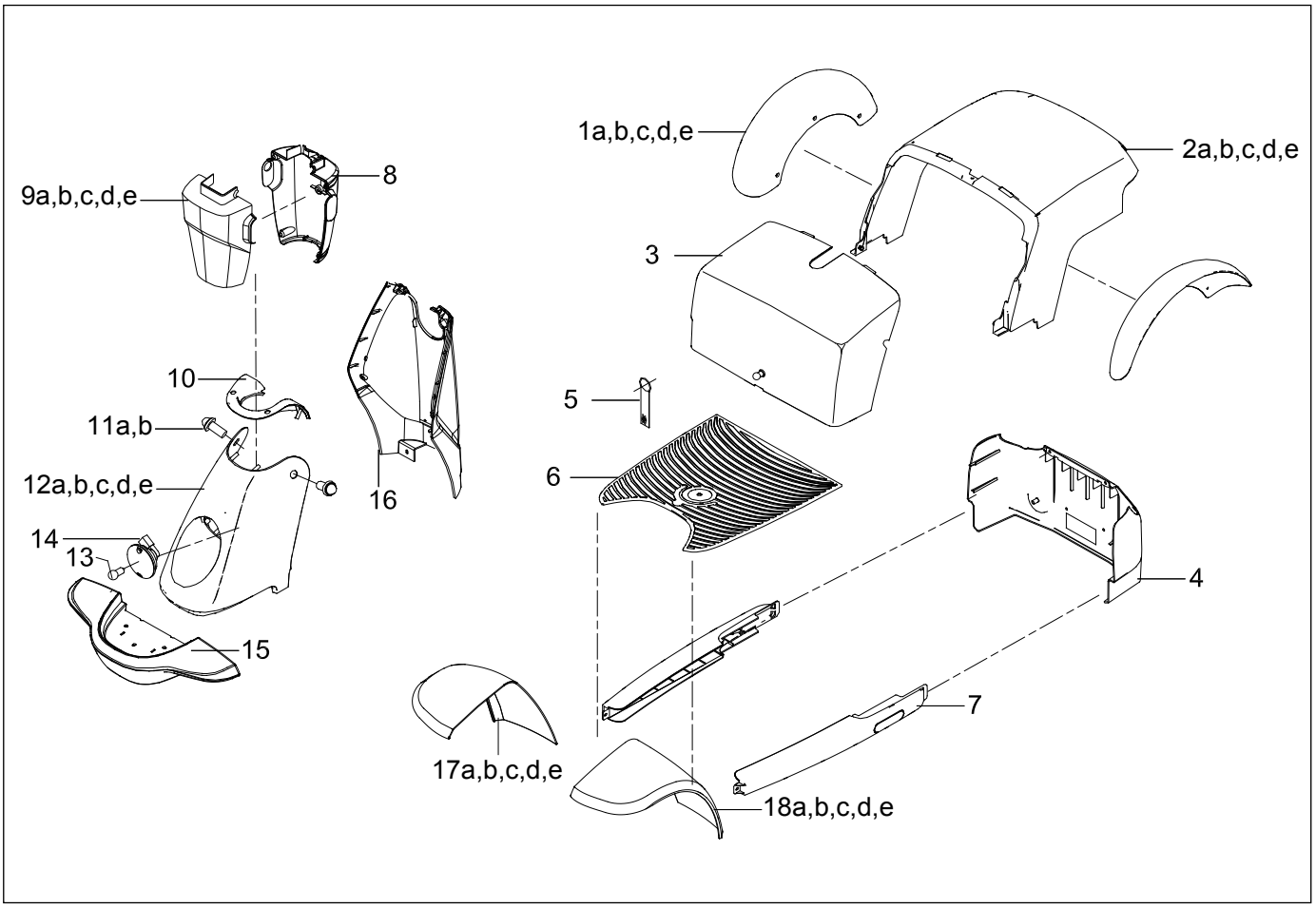


Pos	Qty	Article number	Description
1a	2	1001905	Mudguard Red metallic
1b	2	1015765	Mudguard Moonstone blue metallic
1c	2	1015770	Mudguard Sparkling champagne metallic
1d	2	1015775	Mudguard Platinum white metallic
1e	2	1015780	Mudguard Graphite black metallic
2a	1	1007754	Rear cover assy Red metallic
2b	1	1015760	Rear cover assy Moonstone blue metallic
2c	1	1015761	Rear cover assy Sparkling champagne metallic
2d	1	1015762	Rear cover assy Platinum white metallic
2e	1	1015763	Rear cover assy Graphite black metallic
3	1	1007757	Battery cover assy
4	1	1007755	Rear bumper assy
5	1	9000917	Rubber strap, battery cover
6	1	9002229	Plateau mat
7	1	1009940	Side skirt assy black, set (replacement set)
8	1	9006856	Rear cover, steering column black > 31-10-2011
8	1	9006997	Rear cover, steering column black. with hole for switch > 31-10-2011
9a	1	1001895	Front cover, steering column Red metallic
9b	1	1015766	Front cover, steering column Moonstone blue metallic
9c	1	1015771	Front cover, steering column Sparkling champagne metallic
9d	1	1015776	Front cover, steering column Platinum white metallic
9e	1	1015781	Front cover, steering column Graphite black metallic
10	1	9000486	Front cover, front portion
11b	1	1018758	Indicator light 24V for advanced electronics (ID-no > QT02400)
-	2	9002236	Foam ring for indicator
12a	1	1001899	Front cover Red metallic
12b	1	1015767	Front cover Moonstone blue metallic
12c	1	1015772	Front cover Sparkling champagne metallic
12d	1	1015777	Front cover Platinum white metallic
12e	1	1015782	Front cover Graphite black metallic

Continued from **07 Seat and seat post**

Pos	Qty	Article number	Description
13	1	9000536	Spherical bulb 24V 21W
14	1	1010852	Headlight, complete (Version 2, from 11-11-2010)
15	1	1009956	Front bumper Trophy 3W
16	1	9000485	Front cover, rear portion Trophy 3W
17	1	1009947	Foot support, right
18	1	1009946	Foot support, left
19	1	1009941	Foot support set (replacement set)
-	1	9000426	Logo Trophy
-	1	1012522	Logo Sterling
-	2	00001.1503	Reflector red round 60 mm

09 Covers Trophy 4W

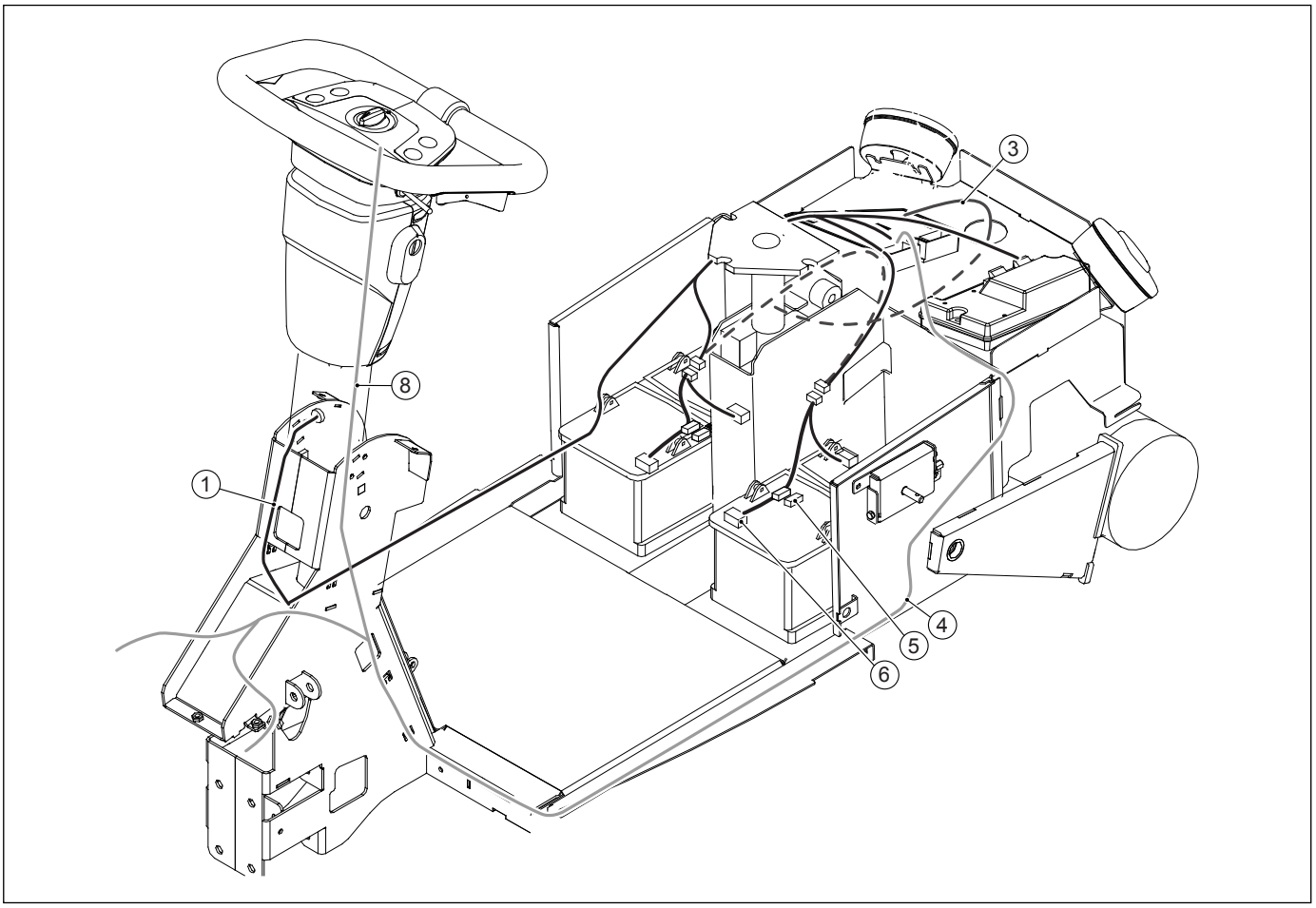


Pos	Qty	Article number	Description
1a	2	1001905	Mudguard Red metallic
1b	2	1015765	Mudguard Moonstone blue metallic
1c	2	1015770	Mudguard Sparkling champagne metallic
1d	2	1015775	Mudguard Platinum white metallic
1e	2	1015780	Mudguard Graphite black metallic
2a	1	1007754	Rear cover assy Red metallic
2b	1	1015760	Rear cover assy Moonstone blue metallic
2c	1	1015761	Rear cover assy Sparkling champagne metallic
2d	1	1015762	Rear cover assy Platinum white metallic
2e	1	1015763	Rear cover assy Graphite black metallic
3	1	1007757	Battery cover assy
4	1	1007755	Rear bumper assy
5	1	9000917	Rubber strap, battery cover
6	1	9002230	Plateau mat
7	1	1009940	Side skirt assy black, set (replacement set)
8	1	9006856	Rear cover, steering column black > 31-10-2011
8	1	9006997	Rear cover, steering column black. with hole for switch > 31-10-2011
9a	1	1001895	Front cover, steering column Red metallic
9b	1	1015766	Front cover, steering column Moonstone blue metallic
9c	1	1015771	Front cover, steering column Sparkling champagne metallic
9d	1	1015776	Front cover, steering column Platinum white metallic
9e	1	1015781	Front cover, steering column Graphite black metallic
10	1	9000486	Front cover, front portion
11b	1	1018758	Indicator light 24V for advanced electronics (ID-no > QT02400)
-	2	9002236	Foam ring for indicator
12a	1	1001899	Front cover Red metallic
12b	1	1015767	Front cover Moonstone blue metallic
12c	1	1015772	Front cover Sparkling champagne metallic
12d	1	1015777	Front cover Platinum white metallic
12e	1	1015782	Front cover Graphite black metallic

Continued from **09 Covers Trophy 4W**

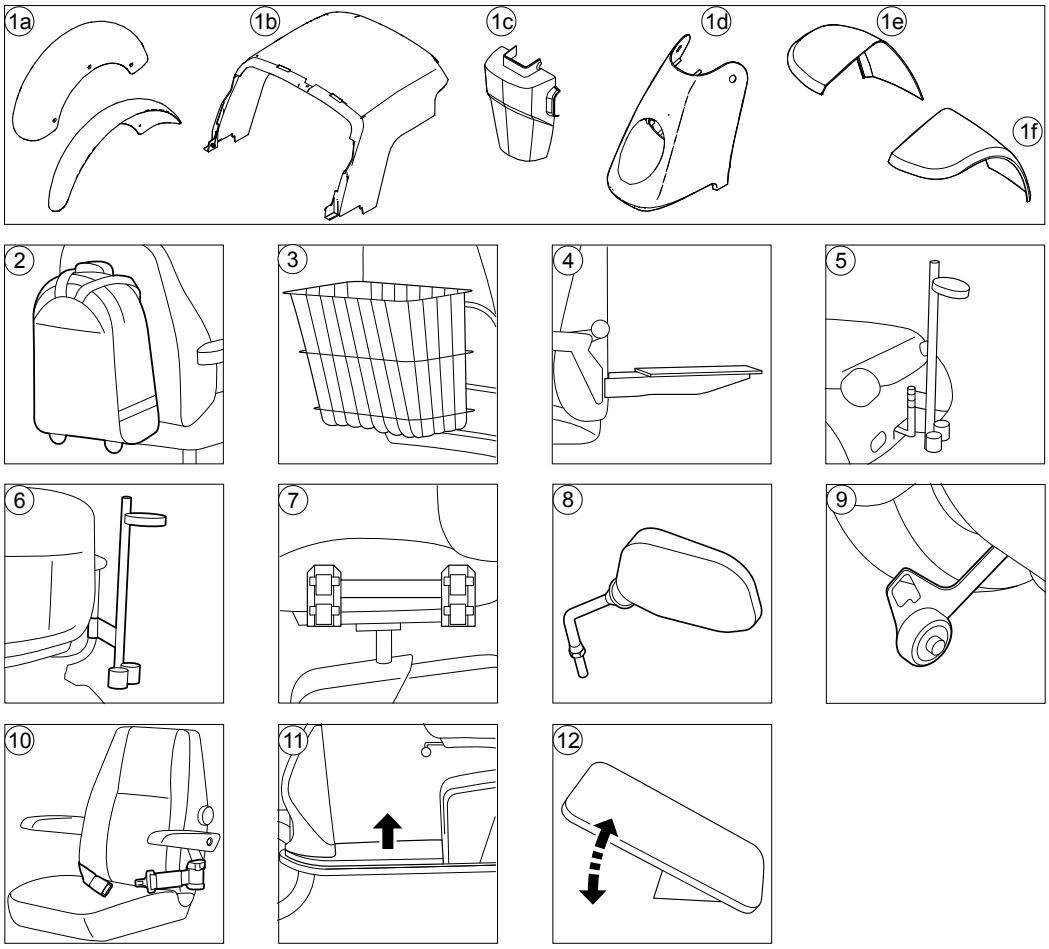
Pos	Qty	Article number	Description
13	1	9000536	Spherical bulb 24V 21W
14	1	1010852	Headlight, complete (Version 2, from 11-11-2010)
15	1	9001970	Front bumper Trophy 4W
16	1	9001921	Front cover, rear portion Trophy 4W
17a	1	9001963	Mudgard right hand front Red metallic
17b	1	1015768	Mudgard right hand front Moonstone blue metallic
17c	1	1015773	Mudgard right hand front Sparkling champagne metallic
17d	1	1015778	Mudgard right hand front Platinum white metallic
17e	1	1015783	Mudgard right hand front Graphite black metallic
18a	1	9001964	Mudgard left hand front Red metallic
18b	1	1015769	Mudgard left hand front Moonstone blue metallic
18c	1	1015774	Mudgard left hand front Sparkling champagne metallic
18d	1	1015779	Mudgard left hand front Platinum white metallic
18e	1	1015784	Mudgard left hand front Graphite black metallic
-	1	9000426	Logo Trophy
-	1	1012522	Logo Handicare
-	2	00000.1503	Reflector red round 60 mm
19	2	051.00031.000	Reflector, yellow

10 Cabling for advanced electronics (ID-no > QT02400)



Pos	Qty	Article number	Description
1	1	9004029	Power cable complete with charge socket and ring lugs, S-Drive
2	-	-	-
3	1	9004431	Speed sensor
4	1	9004429	Main Harness for advanced electronics (ID-no > QT02400)
5	2	99117	Fuse 100A
6	2	9006564	Batterry cable with ring lugs
7	-	-	-
8	2	9007367	Indicator extension harness for advanced electronics (ID-no > QT02400)

4.3 Options



Pos	Qty	Article number	Description
1a-1d	1	1017464	Colour exchange set Red metallic 3W
1a-1d	1	1017458	Colour exchange set Moonstone blue metallic 3W
1a-1d	1	1017459	Colour exchange set Sparkling champagne metallic 3W
1a-1d	1	1017460	Colour exchange set Platinum white metallic 3W
1a-1d	1	1017461	Colour exchange set Graphite black metallic 3W
1a-1f	1	1017463	Colour exchange set Red metallic 4W
1a-1f	1	1017415	Colour exchange set Moonstone blue metallic 4W
1a-1f	1	1017416	Colour exchange set Sparkling champagne metallic 4W
1a-1f	1	1017417	Colour exchange set Platinum white metallic 4W
1a-1f	1	1017418	Colour exchange set Graphite black metallic 4W
-	1	9000620	Bracket for trolleybag and rear basket
3	1	9012455	Rear basket
4	1	1001813	Luggage carrier for seat frame
-	1	1001814	Walking aid bracket for chassis mounting (not for Gemino)
-	1	A810	Walking aid bracket for chassis mounting (for Gemino)
5	1	1001754	Cane holder mounted to chassis
6	1	2537	Cane holder mounted to chair, vertical
7	1	1003095	Cane holder mounted to chair, horizontal
-	1	1003097	Clamp for cane and crutch holder (diameter 20 - 30 mm)
8	1	1010833	Mirror right

Continued from **4.3 Options**

Pos	Qty	Article number	Description
-	1	9000752	Bracket for mirror right
-	1	1002421	Mirror right with mounting bracket
9	1	9000436	Anti tip wheel left
9	1	9000437	Anti tip wheel right
10	1	1015507	Lap strap with roll-up for Master Seat
-	1	4824	Retractable seat belt
11	1	1001752	Elevated footplate for SH 35 - 42 cm
12	1	1001753	Angle adjustable footrest, range of 0° til 50° (not i.c.w. 4-wheel)
-	1	9000825	Adjustment tool for rear spring
-	1	9007569	Assy foot throttle incl. assy top full option for advanced electronics (ID no > QT02400)
-	1	9007499	Assy foot throttle for advanced electronics (ID no > QT02400)

5 Service instructions

This document is a reference book to be used to order parts for the scooter model shown on the front cover.

5.1 Maintenance plan

Below, we have indicated what needs to be checked, how often this should be done and by whom.

Time	Description	To be carried out by	
		User	Dealer
Daily	Charging the batteries, after each use	x	-
Weekly	Checking the tyre pressures	x	-
Monthly	Cleaning the scooter	x	-
	Cleaning the upholstery (if necessary)	x	-
Every three months	Grease the seat's swivel mechanism: the seat needs to be removed for this. See 'Removing the seat'. Lithium grease is recommended	x	x (Annually)
Annually	Inspecting the electrical system	-	x
	Checking the batteries	-	x
	Inspecting the drive. (see 7.6)	-	x
	Inspecting the mechanical parts	-	x
	Inspecting the bearings	-	x
	Inspecting the suspension	-	x
	Checking the tyres	-	x
	Checking all fastenings and bolts: tighten if necessary	-	x
	Sign the inspection record table in the user manual	-	x

It is recommended that the dealer carries out a service on the scooter at least once a year. If the scooter is used intensively, the service should be carried out every six months.

Maintenance requirement for re-use
Disinfect surfaces with commercially available disinfectants and clean the surfaces with damp cloths and cleaners tuned.

⚠ ***Warning***
Do not use high pressure cleaners or similar to clean the product!

The following work most be carried out before re-use:

	Annual inspection						
	1	2	3	4	5	6	7
Electronics							
On / off switch							
Output connector							
Operation							
Brake							
Programmable settings							
Batteries							
Level							
Connections							
Capacity test							
Wheels and tyres							
Tread depth							
Pressure							
Bearings							
Wheel fixing nuts							
Motors							
Cables							
Noise							
Connections							
Brake							
Brushes							

	Annual inspection						
	1	2	3	4	5	6	7
Chassis							
Condition							
Steering							
Seating							
Seat							
Backrest							
Armrests							
Electrical							
Harnesses							
Connections							
Lighting system							
Test							
Forwards							
Backwards							
Emergency stop							
Left turn							
Right turn							
Uphill / downhill							
Obstacle							
Brake							
List of necessary repairs:							

⚠ ***Warning***
Pull the charge cable out of the battery charging connection of the scooter before carrying out any maintenance on the scooter.

5.2 Batteries

Always follow the instructions related to battery maintenance & storage as given by the battery manufacturer (🕮 Battery charger).

The scooter is equipped with gel batteries. These batteries are fully encased and sealed and require no maintenance. A sticker indicates how the batteries are to be connected. This sticker is located on the rear cover and on the battery cable.

⚠ ***Warning***
Ensure that the batteries are always well charged.

Do not use the scooter if the batteries are almost flat. Doing so may damage the batteries and means you run the risk of coming to an unexpected standstill.

Ensure that the batteries are never completely flat. This can seriously damage the batteries and shorten their lifespan.

Only use gel-batteries

Replacing the batteries
If battery capacity is so low (after fully charging) that the scooter can only make short trips, or can not be driven at all, then the batteries have reached the end of their lifespan. Replace the batteries as soon as possible.

⚠ ***Warning***
Once the new batteries have been put in place they will need to be charged and 'run in' (🕮 Battery charger)

For the correct way to dispose of batteries see (🕮 Scooter) 'Used scooters and the environment'

Cleaning the batteries
Gel batteries are maintenance-free. However, attention may be paid to the following matters:

Note!
Ensure that the batteries remain clean and dry: dirt and water can cause leaks, as a result of which battery capacity can be reduced.

Clean the battery terminals and then grease them using acid-free Vaseline.

5.3 Tyres

To ensure that your scooter performs well, it is of great importance for the tyres to be kept at the right pressure.

Inflating the tyres
The tyres are equipped with a car tyre valve. Remove the caps from the valves before inflating the tyres. If the tyres are not adequately inflated, the range of the scooter may be reduced and the tread may wear more quickly.

⚠ ***Warning***
When inflating tyres, never exceed the maximum recommended tyre pressure which is stated on the tyres (2.4 bar front and 2.2 bar rear).

Never forget to replace the valve cap after inflating the tyres. The valve cap prevents dirt and sand from getting into the valve. See the ‘Maintenance table’ regarding tyre checks.

5.4 Assembly, replacement and adjustment instructions

This chapter covers illustrated assembly, replacement and adjustment instructions.
Every separate visual instruction is prefaced with:
- Preparations
- Instructions (suggestions and advice to help you carry out tasks or procedures more easily)
- Relevant article numbers
- Tools used
- Notices (extra notes covering information you need when executing the specific task)

The tools for the specific task are illustrated in the visual instructions. The visual instructions are based on the Trophy 20, functioning for the Trophy is similar, but therefore may visual deviate from the Trophy.

5.4.1 Console

Replacing the throttle for advanced electronics (ID-no > QT02400)

Preparation
- Switch off the scooter with the ignition key.

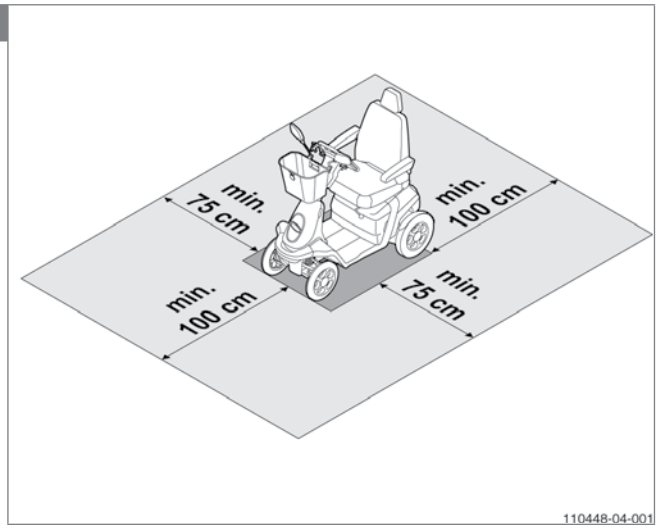
Instructions
The following operations are required to replace the throttle:
Note! Suitable work area required!
- Remove the two sheet metal screws and the throttle; disconnect in between the connector of the throttle.
- Guide the steering harness from the console. The tiller PCB should be lifted to do this. Never pull on a throttle lever or on a connector. This can result in serious product faults.
- Disconnecting the gas throttle connector requires precise handling. For the best result use a small flat screw driver. Push the tip of the screwdriver under the foremost (longest) lip and gently pull the connectors. The connectors will come loose and the gas throttle can be removed.

Mounting the gas throttle
- Assemble the two included white plastic bushes in combination with the two mounting screws (fig.3).
- Attach the connector of the gas throttle to the connector of steer harness.
- Guide the cable steer harness gently in the steer towards the console. Guide the harness from the console. Make sure the gas throttle connector is positioned inside the steering wheel metalwork. The gas throttle can be assembled.
- Assemble the gas throttle (fig 3). WARNING: Assembly of the screws until the black steering wheel material starts to deform. Afterwards the gas throttle must be checked on normal freedom of movement. This can be checked by moving the gas throttle to reverse and to forward direction. The gas throttle must return by itself to its middle position. The gas throttle should not stick! If the gas throttle sticks, loosen the screws a few turns, until sticking of the gas throttle disappears.
- If the problem still exists, please contact service department of Sunrise Medical Tel : +31 492 593888

Relevant article numbers
- 9012431 Throttle (potentiometer)

Tools used
- Screwdriver, crosshead

1



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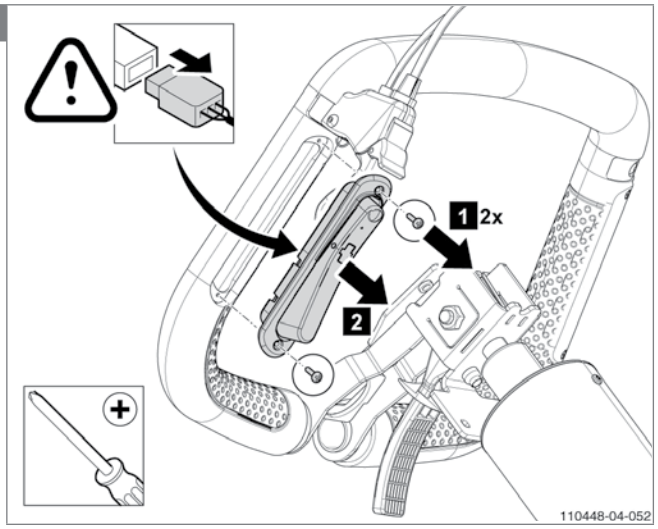

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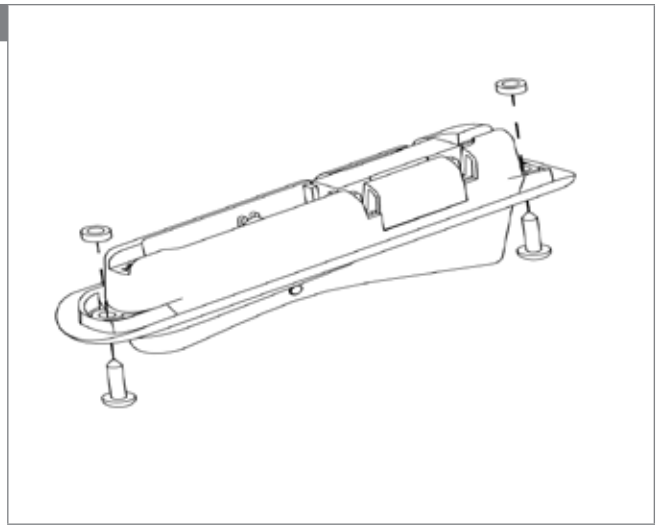


5.4.2 Front frame 3W

Replacing the front wheel and fork

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

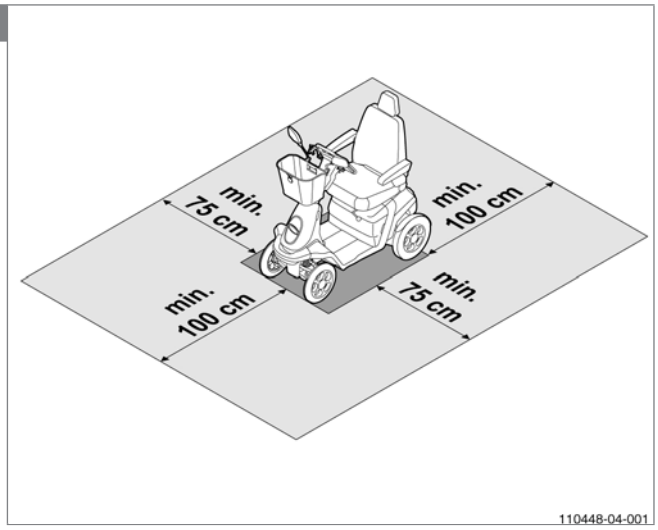
Instructions
The following operations are required to replace the front fork 3W:
- Remove the front cover and the front cover rear part.
- Remove the retaining ring and spiral pin.
- Remove the complete fork with wheel.
- Remove the hexagon nut, washer and bolt to take out the wheel.
- Replace the new front fork 3W.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9000504 Front fork

Tools used
- Torque wrench, socket, 13 mm
- Screw driver, crosshead
- Hammer (plastic)
- Chaser
- Circlip pliers
- Open ended spanner, 13 mm

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Some operations have to be carried out by two persons; this is indicated by a symbol.

1



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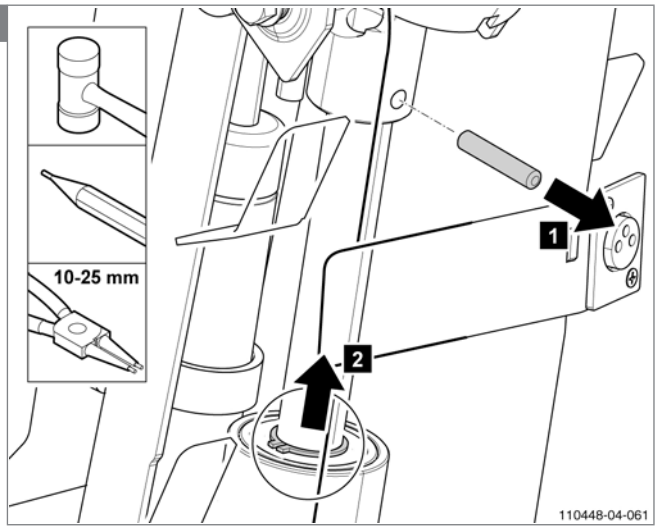

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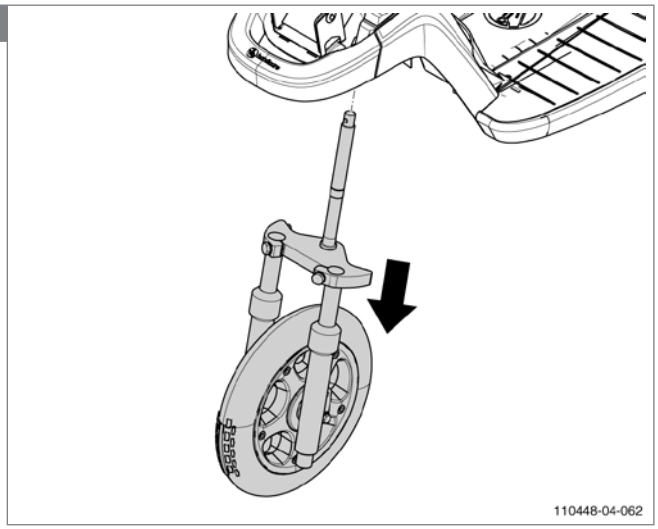

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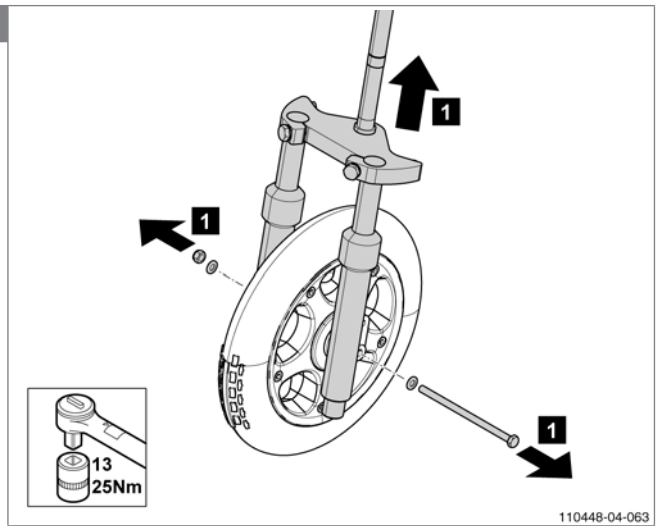


5.4.3 Front frame 4W

Replacing the front wheel

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

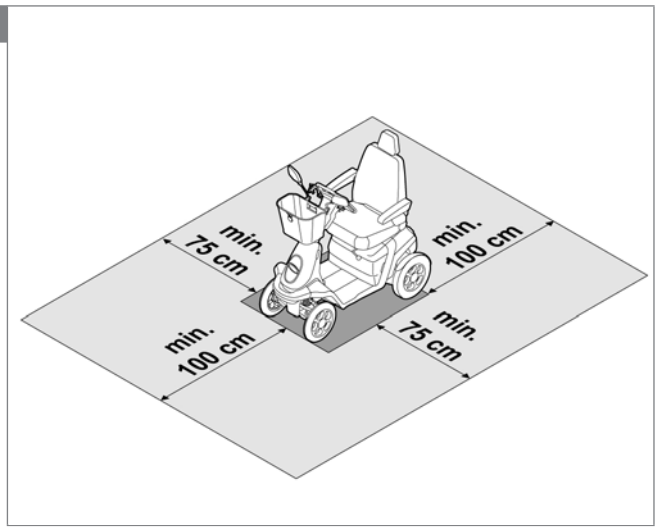
Instructions
The following operations are required to replace the front wheel:
- Remove the cover and the four hexagon screws to remove the front wheel.
- Mount the new front wheel in the reverse order.

Relevant article numbers
- 1015263 Front wheel 12½ x 2¼", grey air, block profile 4W
- 1015262 Front wheel 12½ x 2¼", black air, block profile 4W

Tools used
- Screwdriver, medium
- Torque wrench, socket bit, 6 mm

Notice
- N.a.

1



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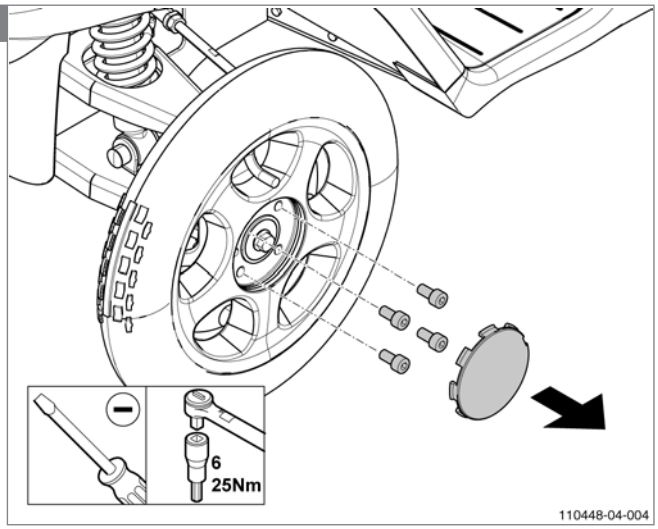
3



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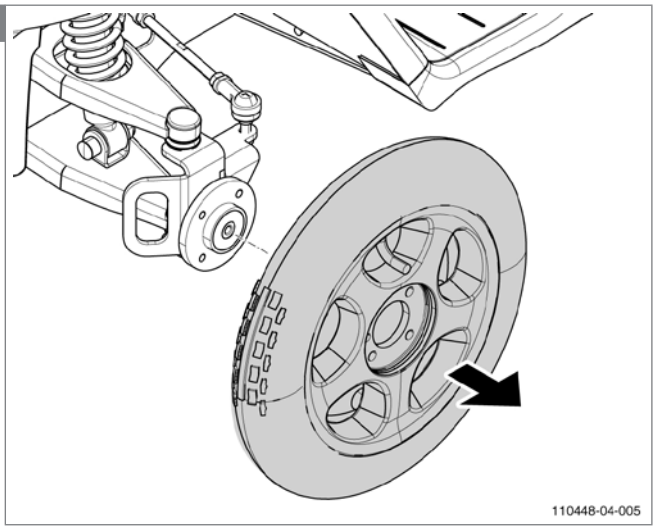


Adjustment shock absorber - front

Preparation
- Switch off the scooter with the ignition key.

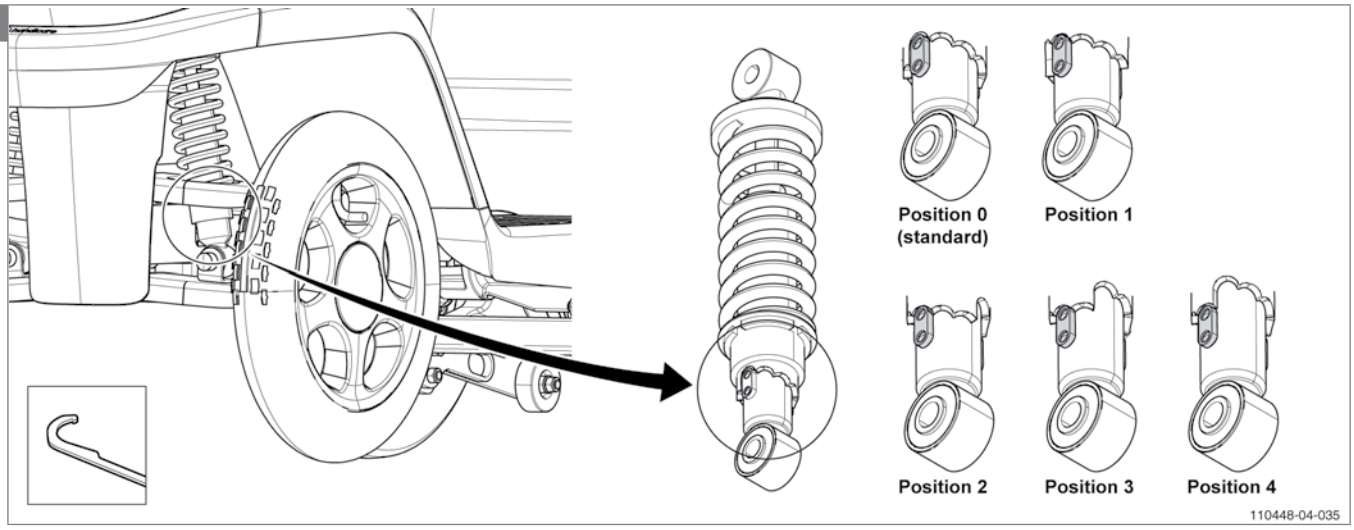
Instructions
The following operations are required to adjust the shock absorber - front:
- Read the table for more information about the adjustment of shock absorbers.
- Use the suspention adjustment key to adjust the shock absorber as desired.

Relevant article numbers
- N.a.

Tools used
- 9000825 Suspension adjustment key

Notice
- Position 0 soft and position 4 hard

1



Replacing the shock absorber - front

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

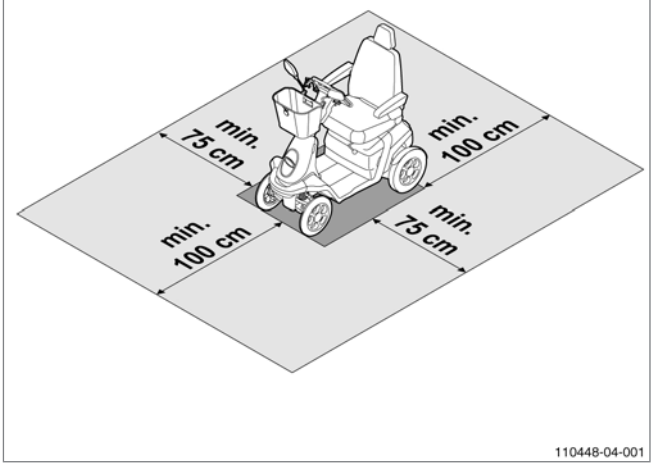
Instructions
The following operations are required to replace the shock absorber - front:
Note! Suitable work area required!
- Remove the basket, the front tiller cover, the mounting bracket for the mirrors, the front cover, the front spoiler, the front cover rear part, the front fender L/R, the front cover bottom and the front bumper.
- Remove the Allen hexagon screws and locknut form the shock absorbers on the swing arm top and lower assy.
- Remove shock absorber
- Adjust the new shock absorber according the specifications.
- Replace the new and adjusted shock absorber.
- Rebuild the scooter in the reverse order.
- **Note!** Be sure you fasten all bolts and nuts with the correct torque!

Relevant article numbers
- 9001641 Shock absorber - front

Tools used
- Torque wrench, socket,17 mm
- Socket, 7 mm
- Screwdriver, crosshead
- Allen key, 8 mm
- 9000825 Suspension adjustment key

Notice
- Position 0 soft and position 4 hard

1



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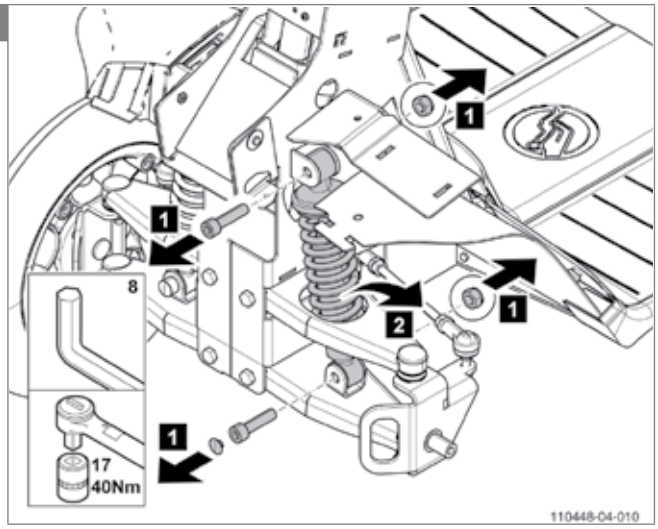
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8
17
40Nm
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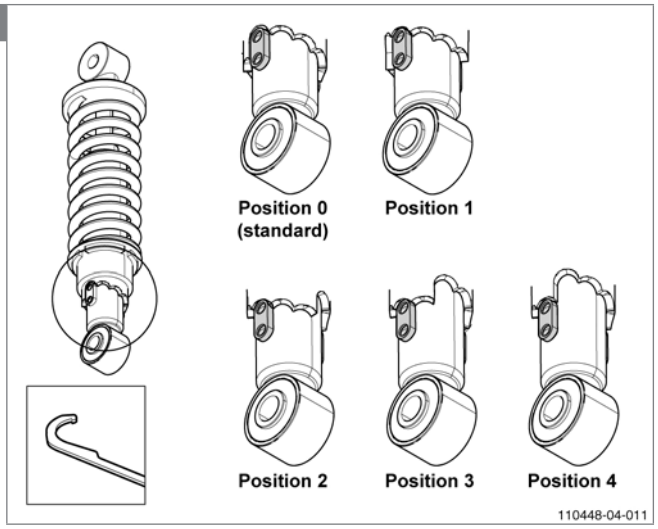
4


Position 0
(standard)
Position 1
Position 2
Position 3
Position 4
110448-04-011

Replacing the swing arms (top and lower assy)

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

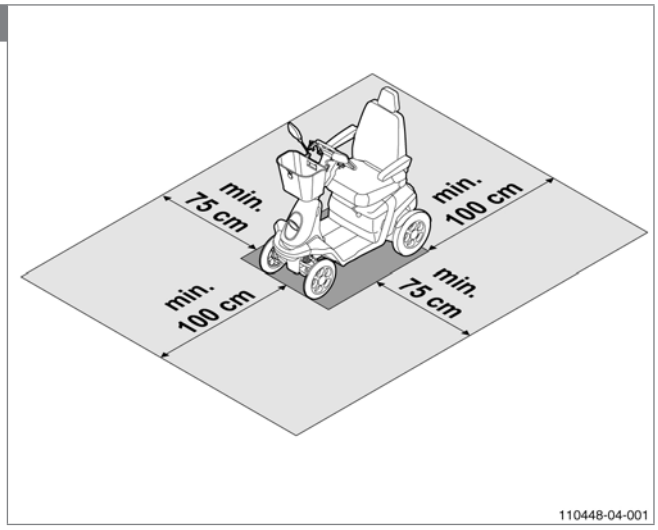
Instructions
The following operations are required to replace the swing arms:
Note! Suitable work area required!
- Remove the front spoiler.
- Remove the cover and the hexagon bolt to remove the front wheel.
- Remove the hexagon screw from the lower swing arm.
- Remove the two axle suspension parallel bolts.
- Remove the lock nut at the wheel side of the swing arm and turn the swing arm out of its position.
- Replace the new swing arm.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9002091 Swing arm lower assy
- 9002090 Swing arm top assy

Tools used
- Torque wrench, socket, 7 mm-13 mm / socket bit, 6 mm
- Torque wrench, socket, 17 mm
- Allen key, 8 mm
- Screwdriver
- Open ended spanner, 10 mm

Notice
- N.a.

1



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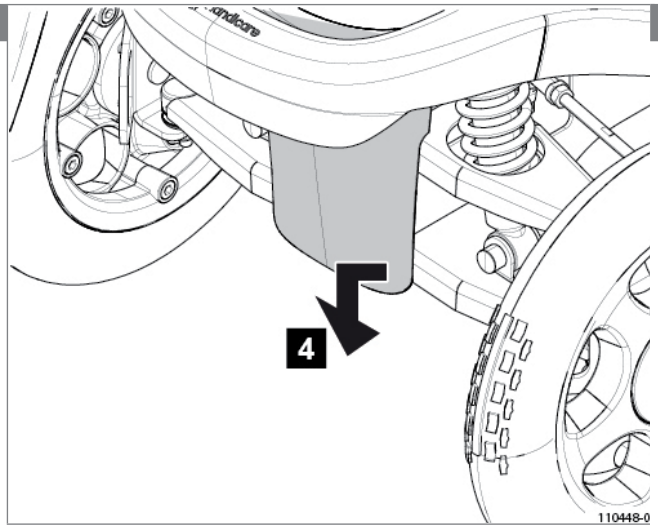

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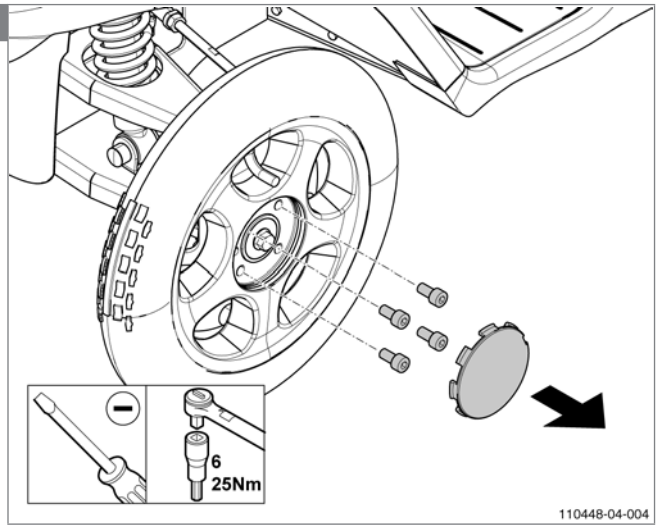

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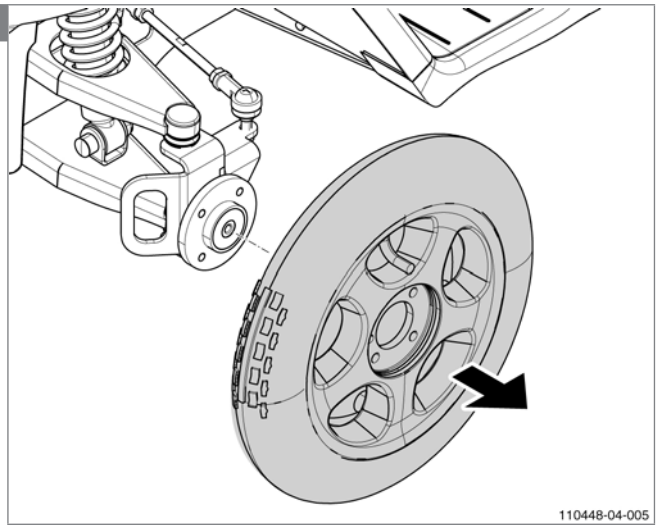
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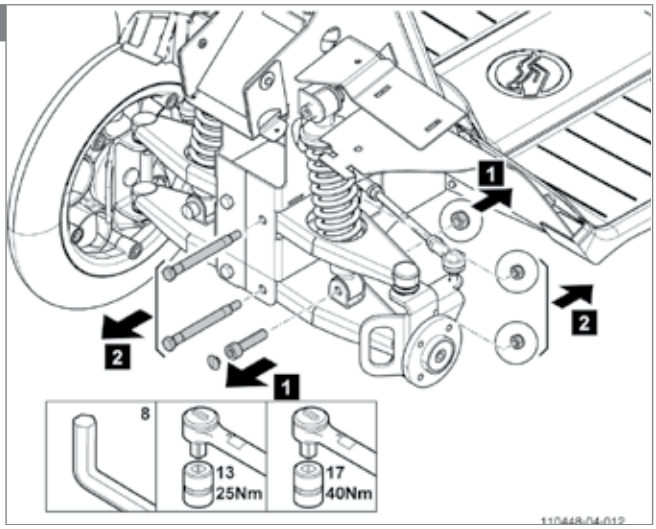
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40Nm

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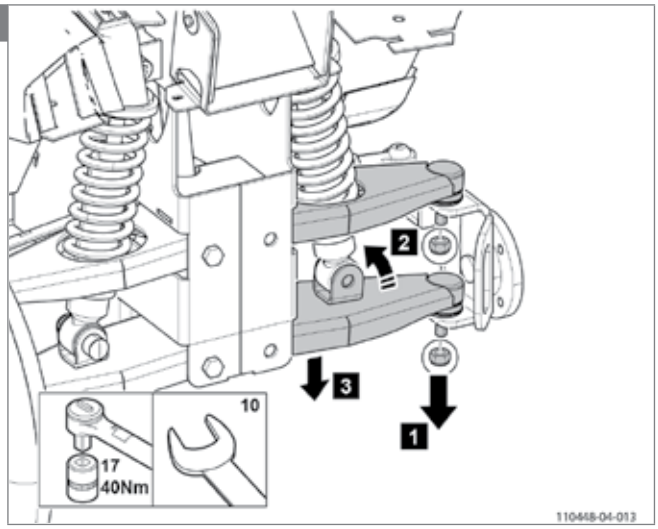
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110448-04-013

5.4.4 Rear frame

Replacing the rear wheel

Preparation
- Switch off the scooter with the ignition key.
- Use a lifting device to raise the scooter clear of the ground.

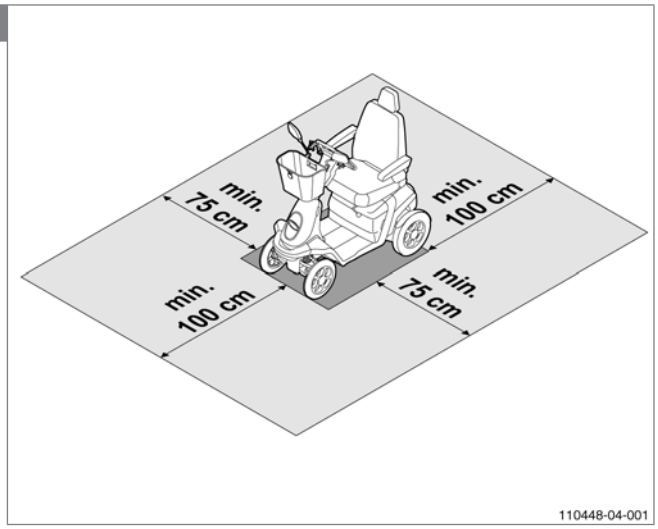
Instructions
The following operations are required to replace the rear wheel:
Note! Suitable work area required!
- Remove the cover and four hexagon head cap screws to remove the rear wheel.
- Mount the new rear wheel in the reverse order.

Relevant article numbers
- 1017428 Rear wheel 3.00x10", grey air with block profile tyre and brake hub, set
- 1017432 Rear wheel 3.00x10", black air with block profile tyre and brake hub, set
- 1017427 Rear wheel 3.00x10", grey air with block profile tyre, set
- 1017431 Rear wheel 3.00x10", black air with block profile tyre, set
- 1017425 Rear wheel 3.00x10", grey air with highway profile tyre and brake hub, set
- 1017430 Rear wheel 3.00x10", black air with highway profile tyre and brake hub, set
- 1017426 Rear wheel 3.00x10", grey air with highway profile tyre, set
- 1017429 Rear wheel 3.00x10", black air with highway profile tyre, set

Tools used
- Screwdriver
- Torque wrench, socket bit, 6 mm

Notice
- N.a.

1



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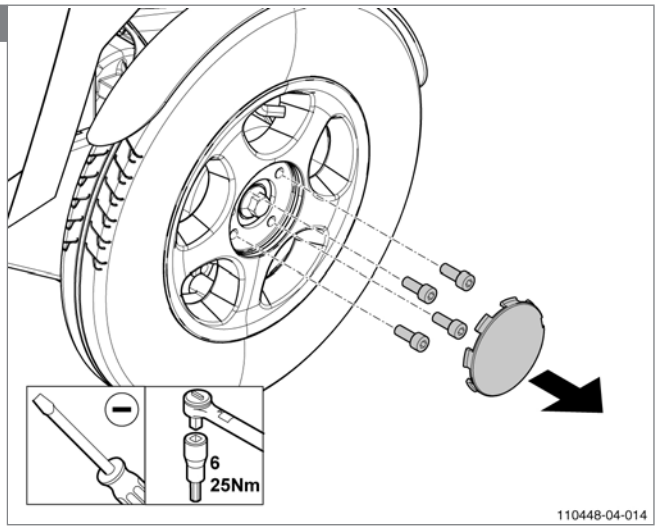

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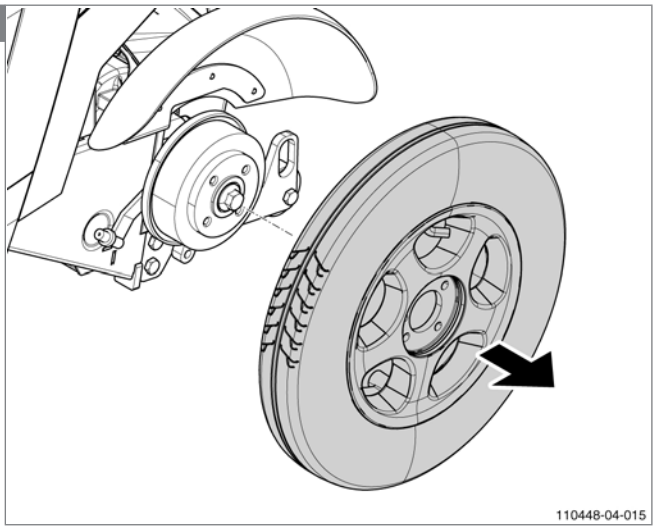


Replacing the carbon brushes

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a lifting device to raise the scooter clear of the ground.

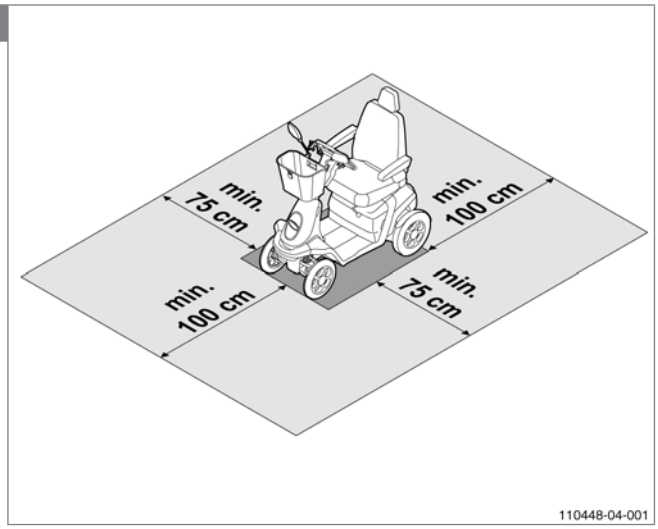
Instructions
The following operations are required to replace the carbon brushes:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller.
- Lock the freewheel lever.
- Remove four hexagon bolts and remove the motor cover.
- Unscrew the carbon brush cover.
- Pull the carbon brush out of the housing and remove the brush.
- Inspect the collector on the anchor of the motor; if the collector is seriously worn, replace the entire drive unit.
- Clean the collector on the anchor of the motor from dust with pressed air.
- Place the carbon brush in the holder; this can be done in one way only.
- Screw the new plastic screw cap onto the carbon brush holder.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 103.00031.000 Carbon brush for Trophy with S-Drive
- 1011585 Carbon brush set for CT transaxle

Tools used
- Lifting device
- Screwdriver short
- Allen key, 4 mm
- Socket, 7 mm, 10 mm and 16 mm

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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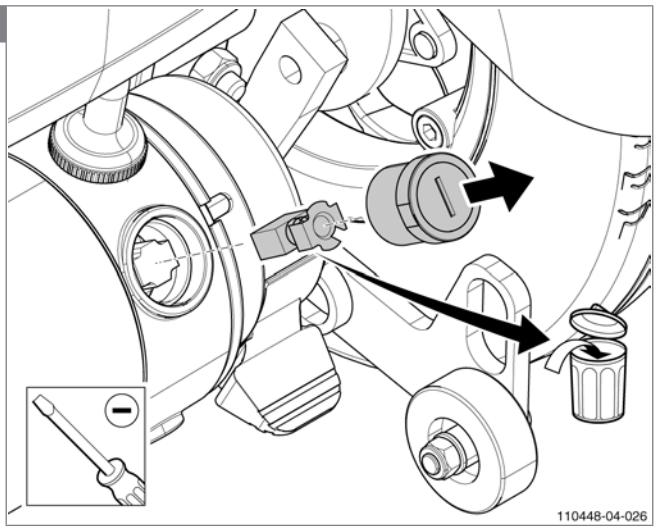


Replacing the motor brake

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a Lifting device to raise the scooter clear of the ground.

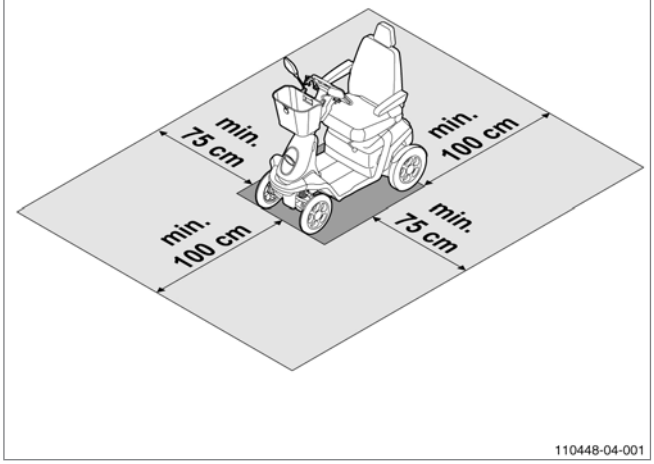
Instructions
The following operations are required to replace the free wheel lever:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller and the speed sensor cable.
- Lock the freewheel lever.
- Remove the four hexagon bolts and remove the motor cover.
- Remove the hexagon screws and remove the free wheel lever.
- Mount the new free wheel lever.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1012104 Motor brake for CT transaxle

Tools used
- Screwdriver
- Socket, 7 mm
- Allen key, 4 mm

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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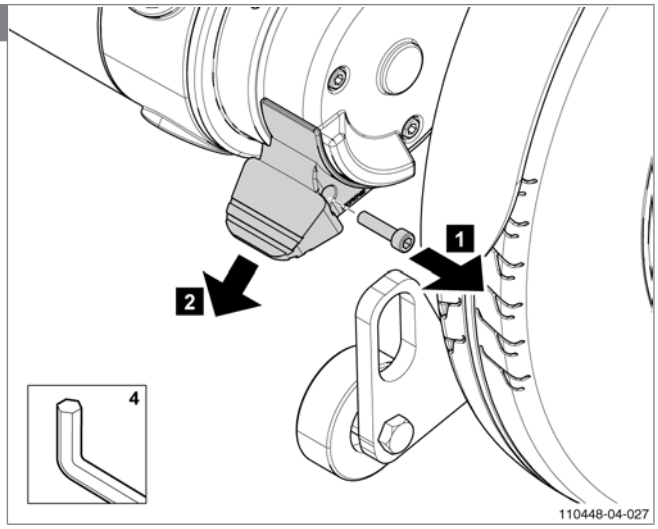

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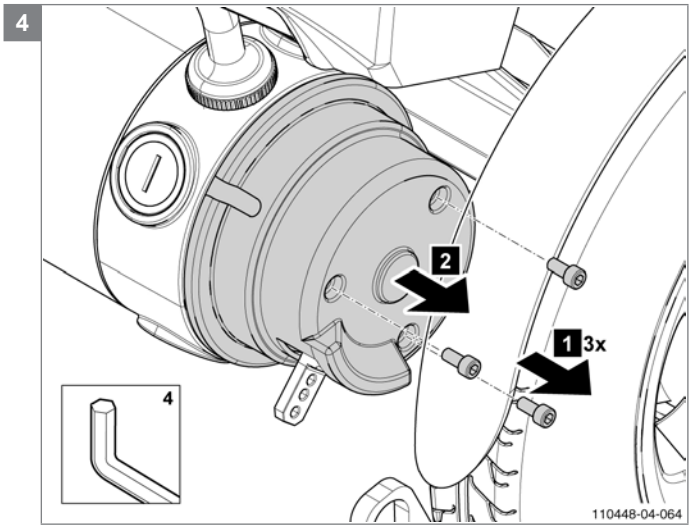

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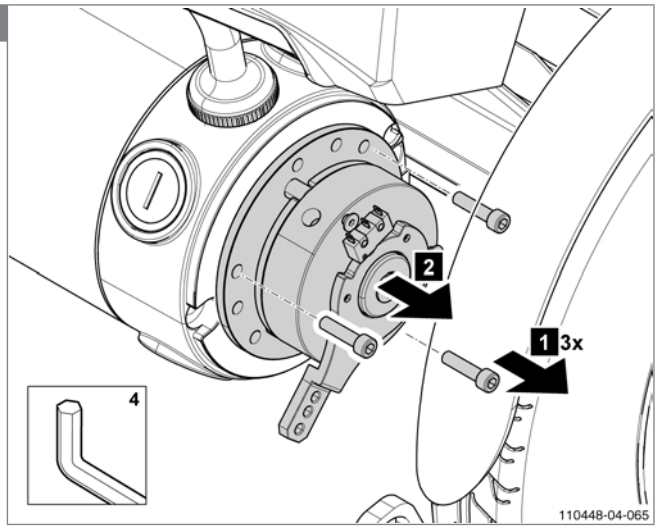


Replacing the transaxle

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.
- Use a lifting device to raise the scooter clear of the ground.

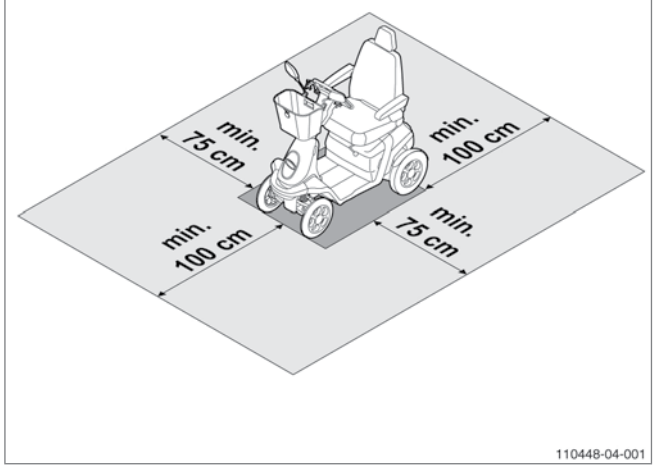
Instructions
The following operations are required to replace the transaxle:
Note! Suitable work area required!
- Remove the rear cover.
- Disconnect all motor connectors from the S-drive controller and the speed sensor cable..
- Lock the freewheel lever.
- Remove the cover and hexagon flange bolt to remove the rear wheel.
- Remove the brake cable
- Remove the two hexagon head cap screws to remove the brake mounting, key and brake.
- Remove the four lock nuts and remove the transaxle and rubber mounting strips.
- Mount the new the transaxle.
- Rebuild the scooter in the reverse order.
- Use Loctite 243 before fastening the hexagon flange bolt with 90 Nm.

Relevant article numbers
- 1008565 Transaxle Trophy Alpine, S-Drive (max 11 km/h)
- 1013184 Transaxle CT Trophy 3 and 4- wheel, S-Drive

Tools used
- Socket, 7 mm
- Socket, 17 mm
- Torque wrench, socket, 16 mm
- Screwdriver
- Allen key, 4 mm
- Loctite 243

Notice
- Some parts need to be replaced; the replacement is indicated by a symbol.
- Make sure the scooter is switched off.

1



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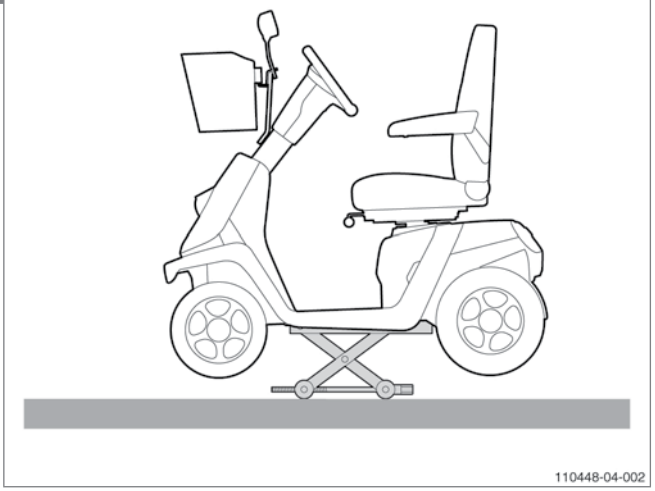

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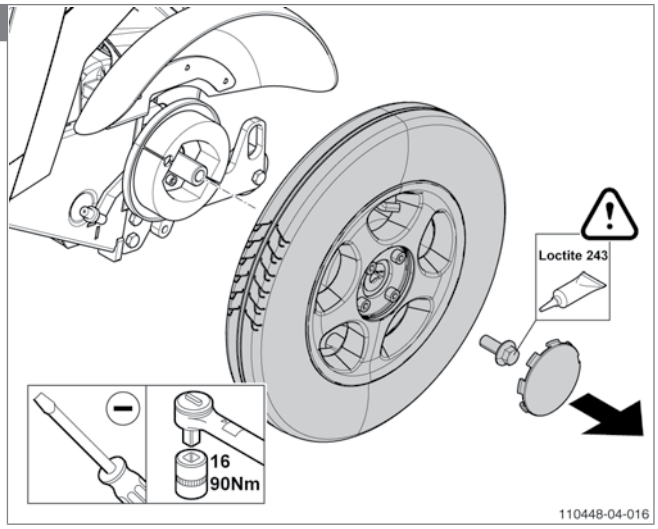

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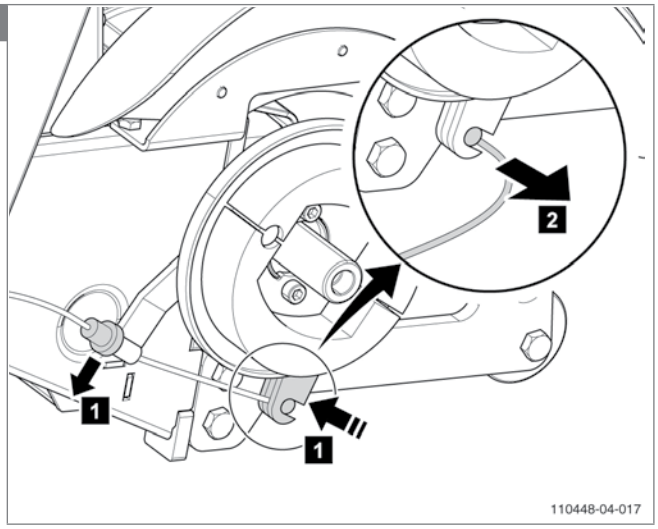
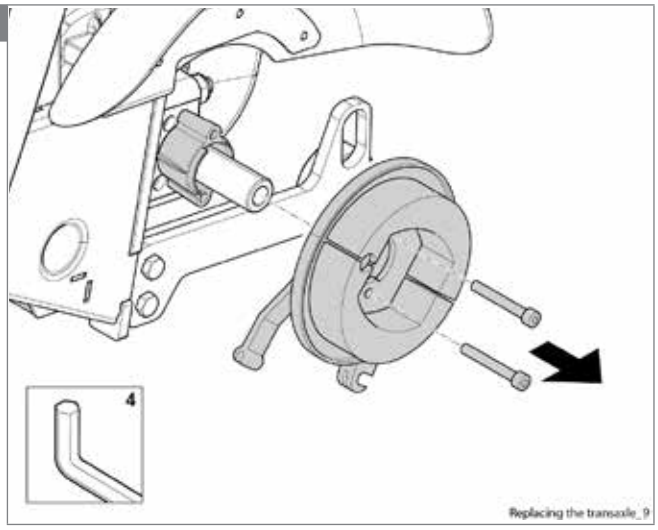


Note! *Use Loctite 243 at the indicated locations during assembling the scooter.*

5



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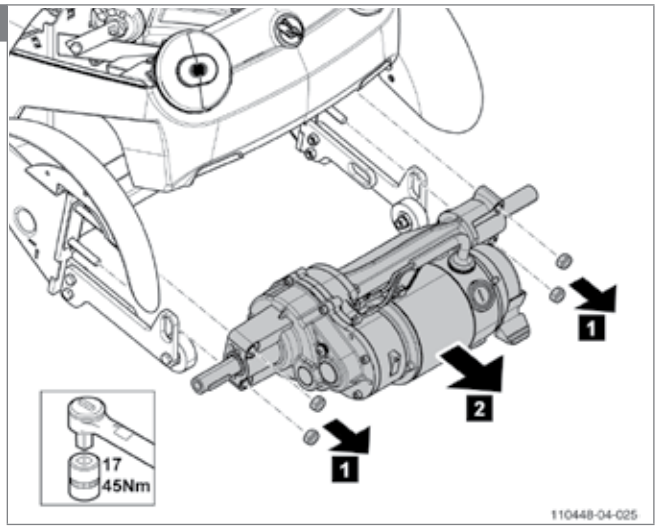


Adjustment the shock absorber - rear

Preparation
- Switch off the scooter with the ignition key.

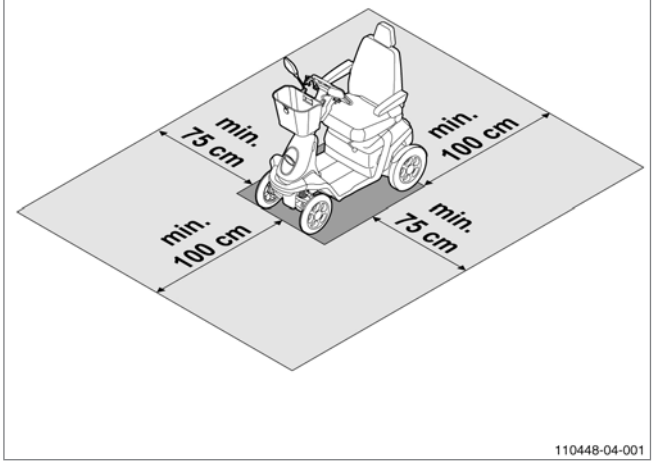
Instructions
The following operations are required to adjust the shock absorber - rear:
Note! Suitable work area required!
- Remove the seat.
- Remove the battery cover.
- Loosen the battery strap.
- Disconnect all connectors from the battery.
- Remove the battery.
- Read the table for more information about the adjustment of shock absorbers.
- Use the special adjustment tool to adjust the shock absorber as desired.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- N.a.

Tools used
- 9000825 Suspension adjustment key

Notice
- Make sure the scooter is switched off.

1



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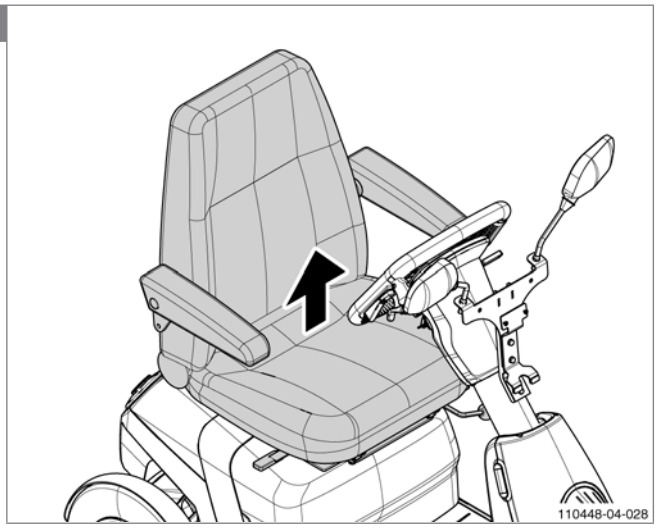

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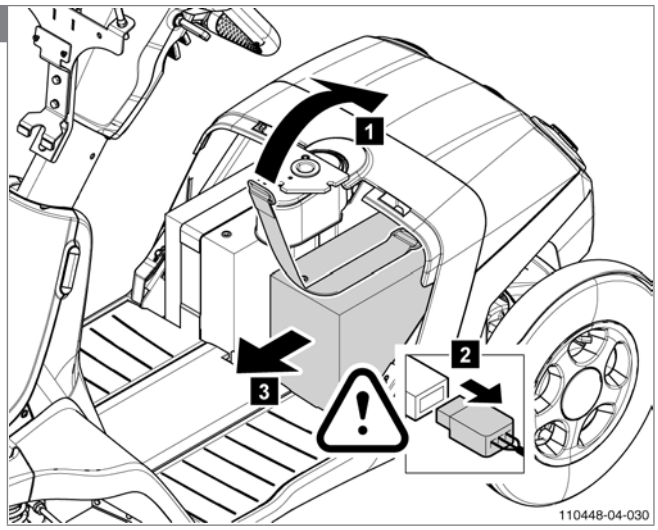
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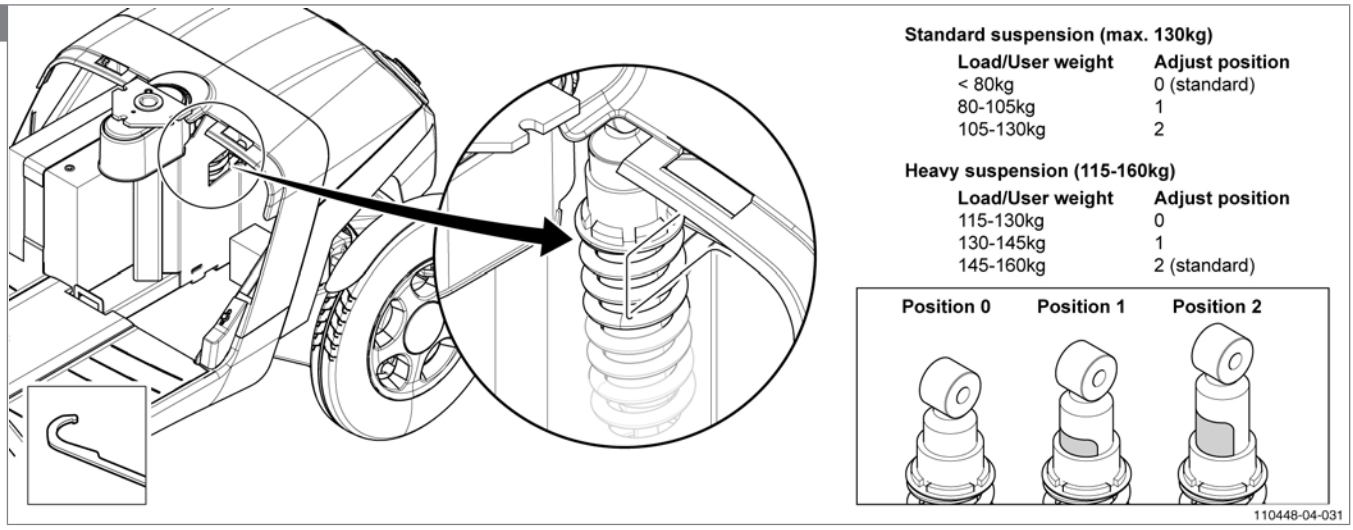

Standard suspension (max. 130kg)
Load/User weight Adjust position
< 80kg 0 (standard)
80-105kg 1
105-130kg 2
Heavy suspension (115-160kg)
Load/User weight Adjust position
115-130kg 0
130-145kg 1
145-160kg 2 (standard)
Position 0
Position 1
Position 2
110448-04-031

Replacing the shock absorber - rear

Preparation
- Switch off the scooter with the ignition key.

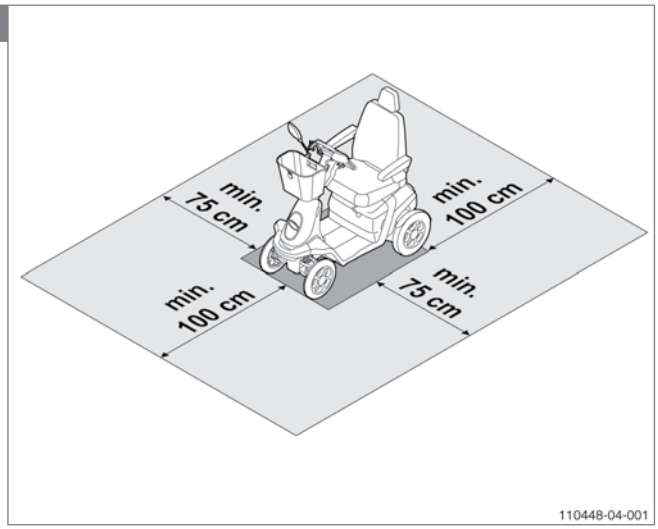
Instructions
The following operations are required to replace the shock absorber - rear:
Note! Suitable work area required!
- Remove the seat.
- Lift the scooter to raise the wheels clear from the ground.
- Remove the rear cover.
- Remove the battery cover.
- Remove the bolts of the rollbar 6x
- Remove the roll-bar
- Remove the hexagon head cap screw
- Take out the shock absorber.
- Read the table for more information about the adjustment of shock absorbers.
- Use the special adjustment tool to adjust the shock absorber as desired.
- Mount the new, correct adjusted, shock absorber.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9000603 Shock absorber standard
- 9000683 Shock absorber heavy duty

Tools used
- Socket, 7 mm / 17 mm
- Allen key, 8 mm
- 9000825 Suspension adjustment key

Notice
- Make sure the scooter is switched off.

1



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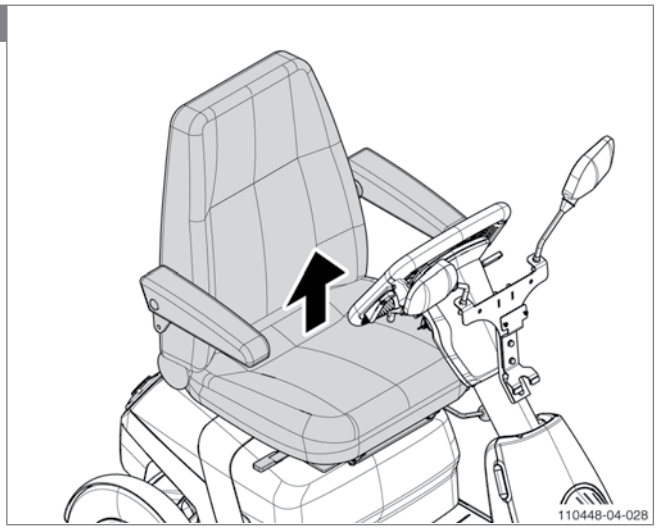

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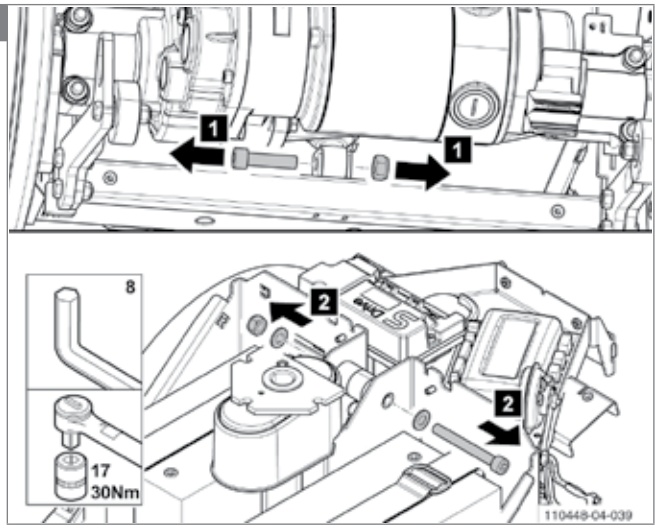
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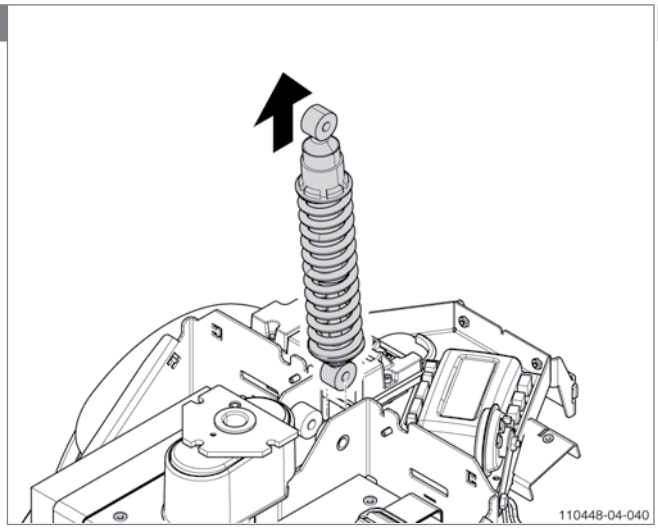
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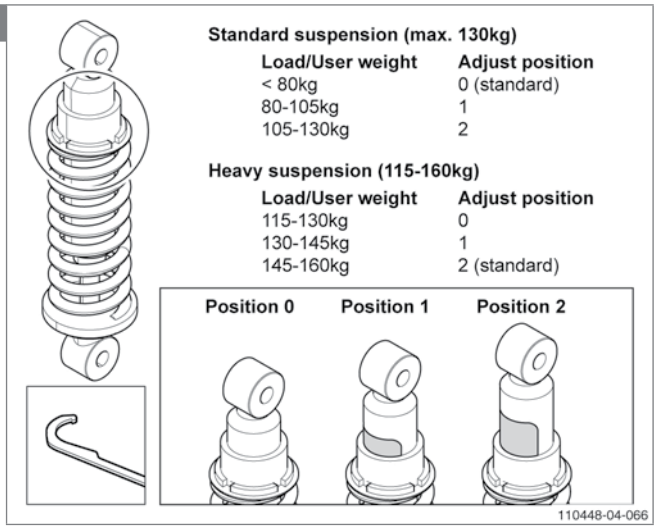

Standard suspension (max. 130kg)
Load/User weight
Adjust position
< 80kg
0 (standard)
80-105kg
1
105-130kg
2
Heavy suspension (115-160kg)
Load/User weight
Adjust position
115-130kg
0
130-145kg
1
145-160kg
2 (standard)
Position 0
Position 1
Position 2
110448-04-066

Replacing the tiller PCB

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

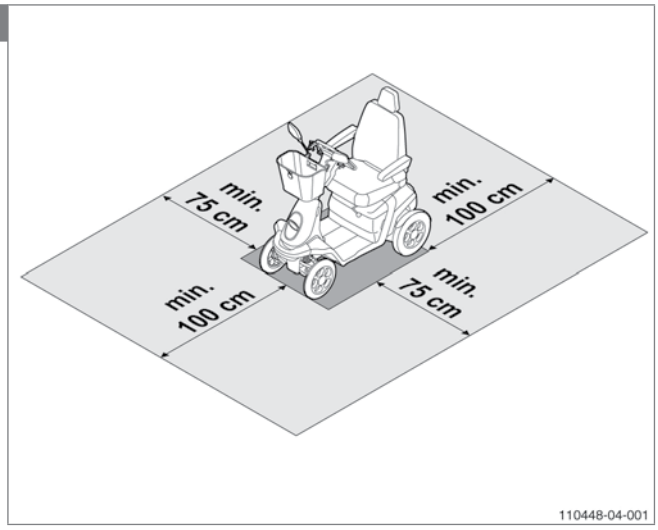
Instructions
The following operations are required to replace the tiller PCB:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Remove the two bolts and remove the front tiller cover.
- Remove the tyrap
- Remove the nut, the four Ejot screws and the dashboard.
- Disconnect all connectors from the tiller PCB.
- Remove the three Ejot screws to remove the tiller PCB.
- Mount the new tiller PCB.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9008789 Tiller PCB Basic for advanced electronics (ID-no > QT02400)
- 9008791 Tiller PCB Dual control for advanced electronics (ID-no > QT02400)
- 9008790 Tiller PCB Full option for advanced electronics (ID-no > QT02400)

Tools used
- Socket, 10 mm
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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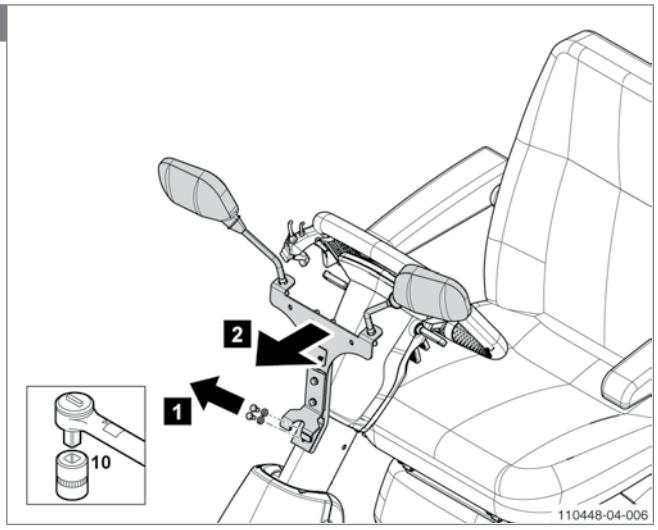

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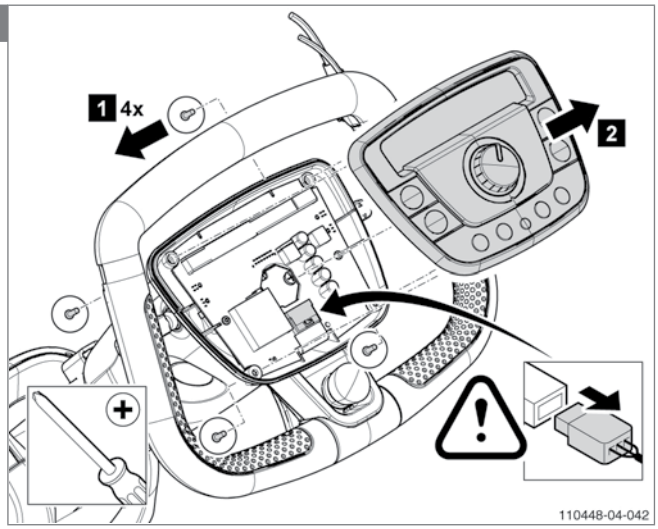

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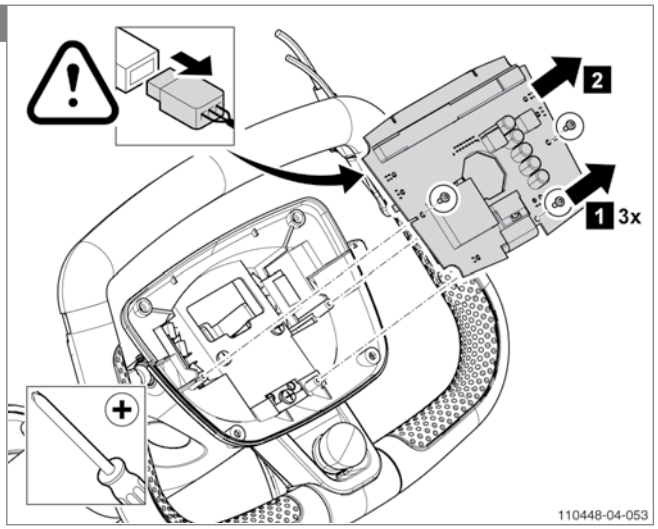


Replacing the stop switch

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

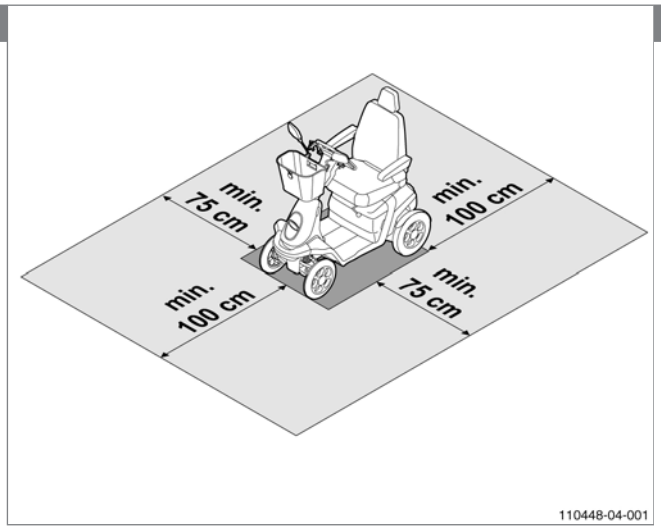
Instructions
The following operations are required to replace the stop switch:
Note! Suitable work area required!
- Remove the basket and the mounting bracket for the mirrors.
- Remove the two bolts and remove the front tiller cover.
- Remove the nut, the four Ejot screws and the dashboard.
- Remove the tyrap
- Disconnect all connectors from the tiller PCB.
- Remove the three Ejot screws to remove the tiller PCB.
- Disconnect the connectors of the console bottom.
- Remove the recessed button head and Ejot screws, disconnect the connectors the stop switch and remove the top and bottom steering wheel covers.
- Mount the new stop switch.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 9006138 Emergency stop

Tools used
- Socket, 10 mm
- Screwdriver, crosshead

Notice
- Make sure the scooter is switched off.

1



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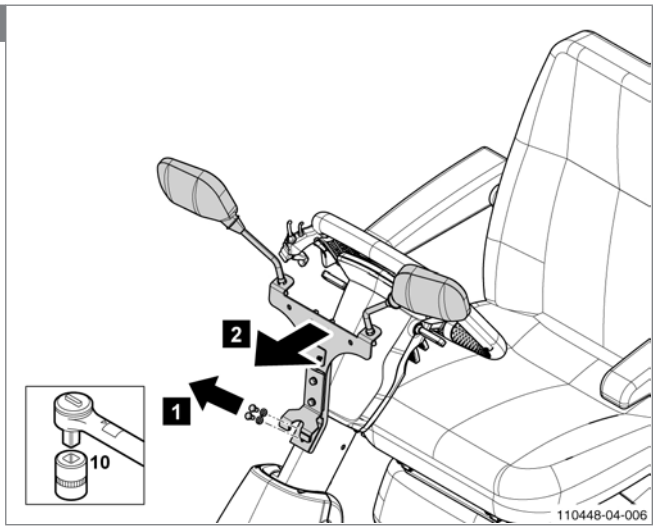

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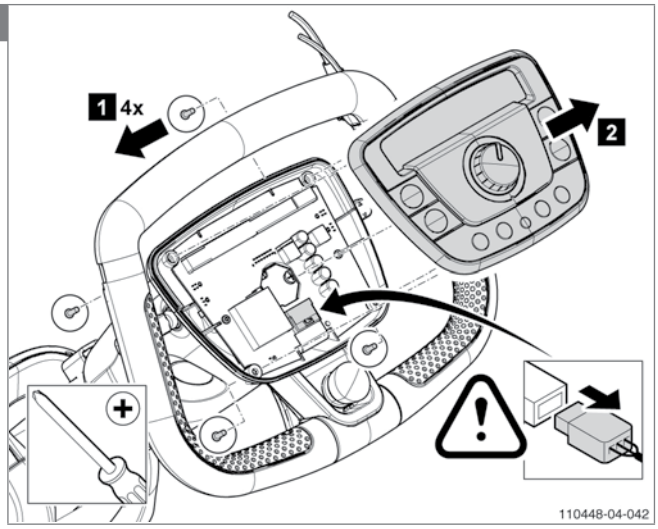
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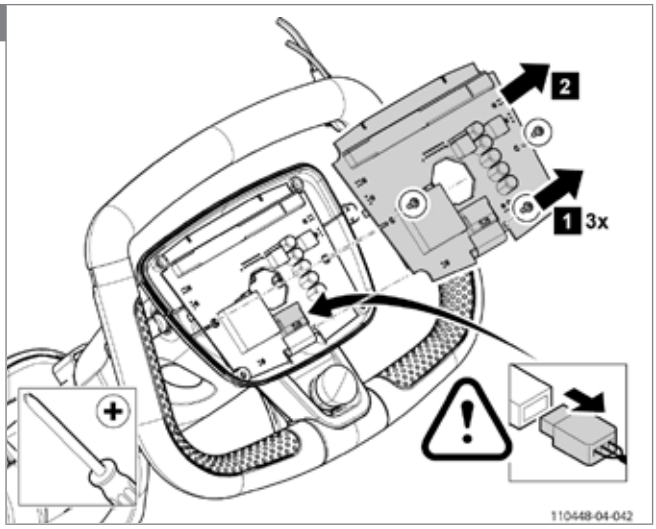
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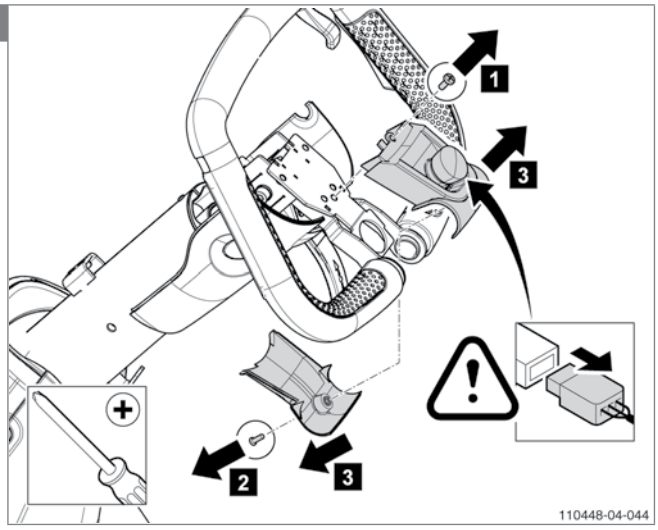
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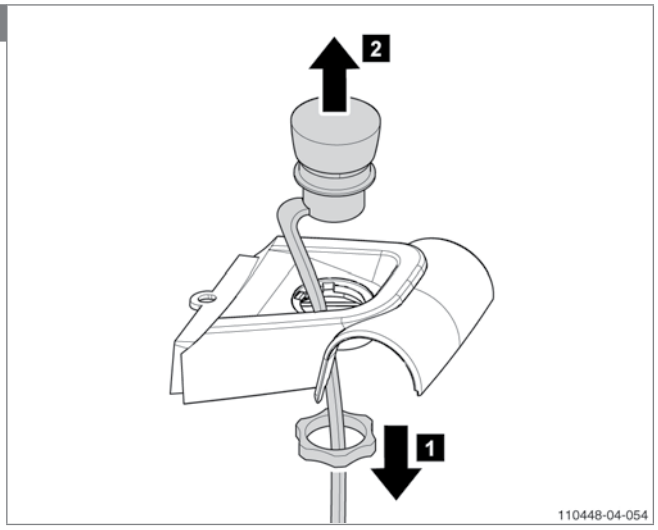
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110448-04-054

5.4.5 Electronics

Replacing the controller

Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

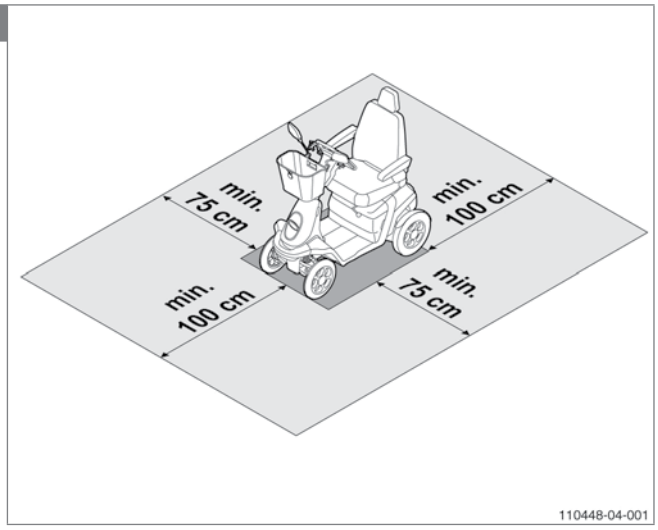
Instructions
The following operations are required to replace the controller:
Note! Suitable work area required!
- Remove the rear cover.
- Remove the S-drive cover.
- Disconnect all connectors from the S-drive controller.
- Remove the two hexagon head cap screws and remove the controller.
- Mount the new controller.
- Rebuild the scooter in the reverse order.

Relevant article numbers
- 1012504 Controller S-Drive 140A

Tools used
- Allen key, 5 mm

Notice
- In case of S-drive controller 90A watch out for motor harness and power harness.

1



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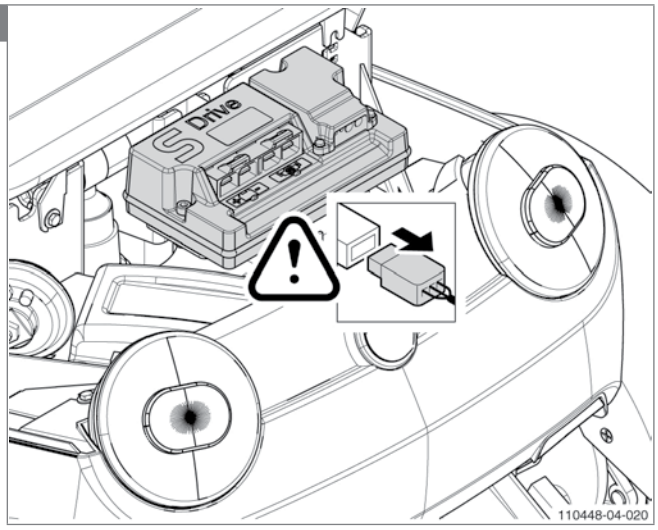

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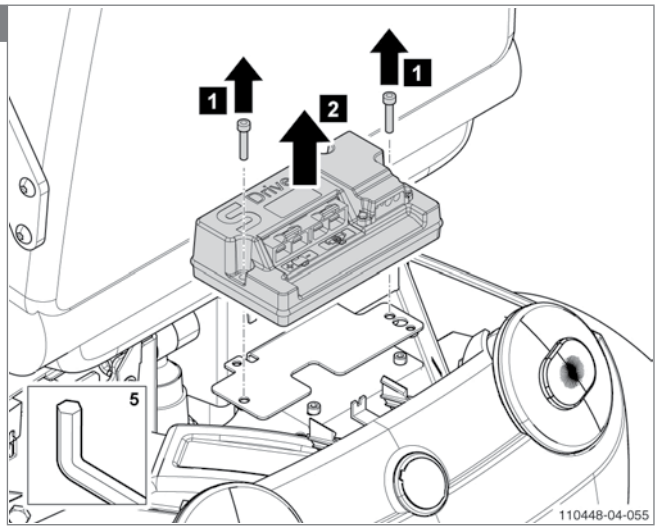


5.4.6 Accessories

Mount the crutch holder, horizontal

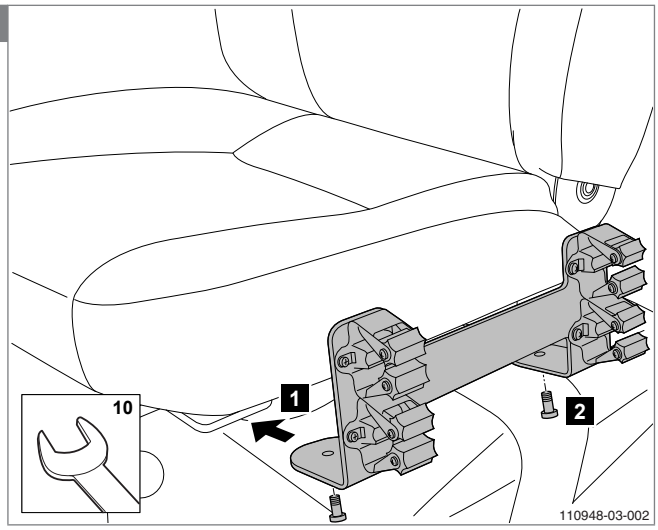
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the horizontal crutch holder:
Note! Suitable work area required!
- Mount the horizontal crutch holder with two bolts on the seat frame.

Relevant article numbers
- 1003095 Crutch holder mounted to chair, horizontal

Tools used
- Open ended spanner, 10 mm

1



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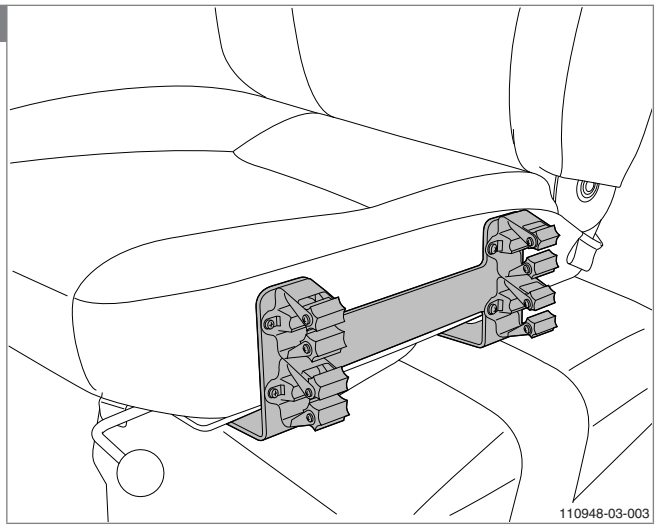


Mount the crutch holder, vertical

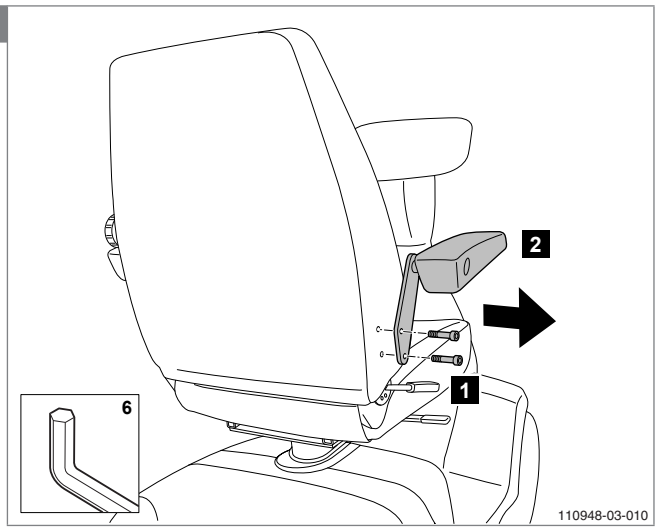
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the vertical crutch holder:
Note! Suitable work area required!
- Remove the armrest from the backrest frame.
- Mount the vertical crutch holder and the armrest with two bolts back on the backrest frame.

Relevant article numbers
- 2537 Crutch holder mounted to chair, vertical

Tools used
- Allen key, 6 mm

1



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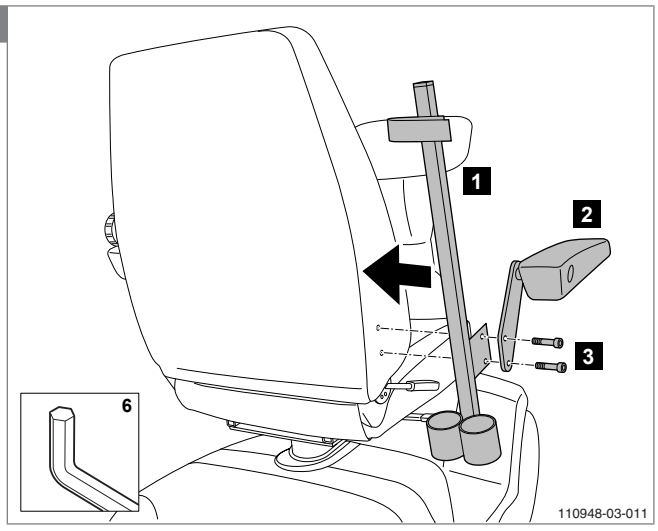


Mount the luggage carrier

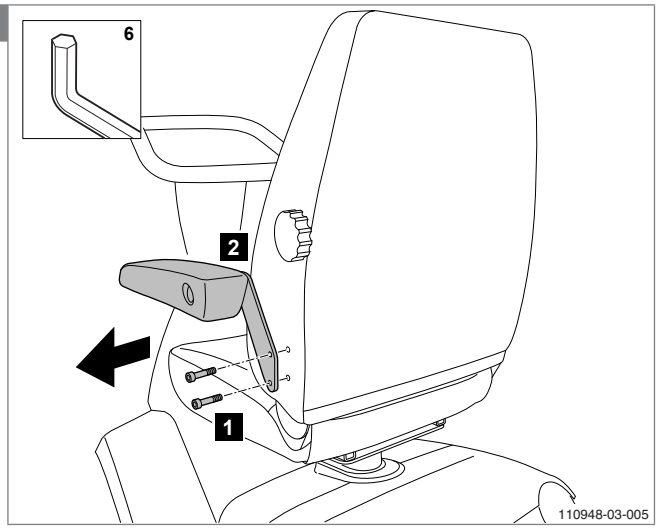
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the luggage carrier:
Note! Suitable work area required!
- Remove the armrest from the backrest frame.
- Mount with the two bolts on every side the luggage carrier on the backrest frame.

Relevant article numbers
- 1001813 Luggage carrier

Tools used
- Allen key, 6 mm

1



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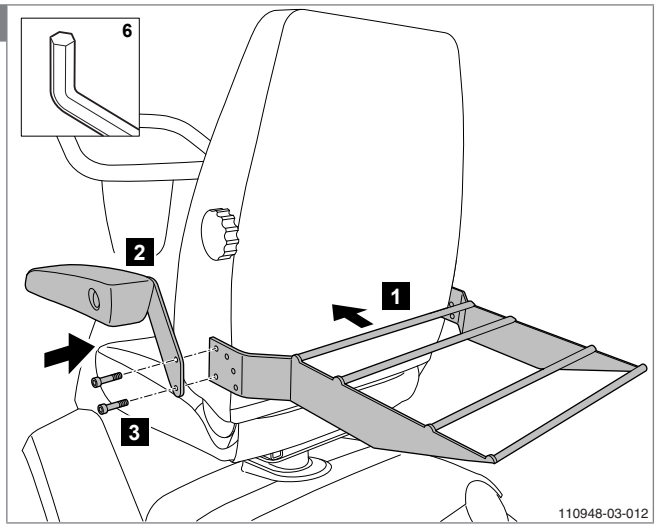


Mount the walking aid holder

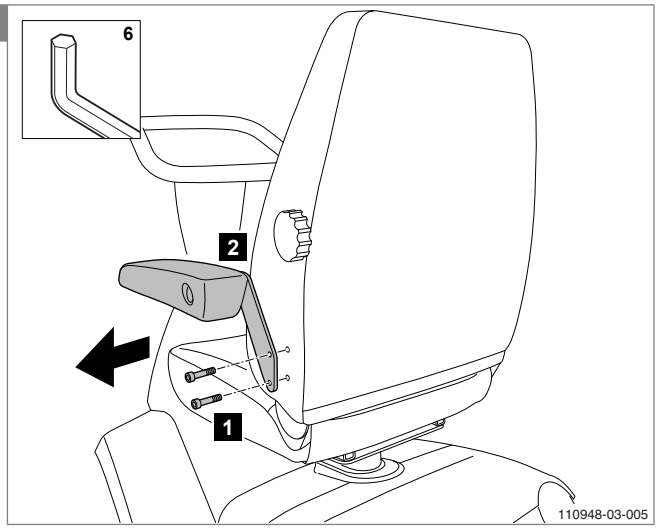
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the walking aid holder:
Note! Suitable work area required!
- Remove the armrest on both sides from the backrest frame.
- Mount with the two bolts on every side the walking aid holder on the backrest frame.

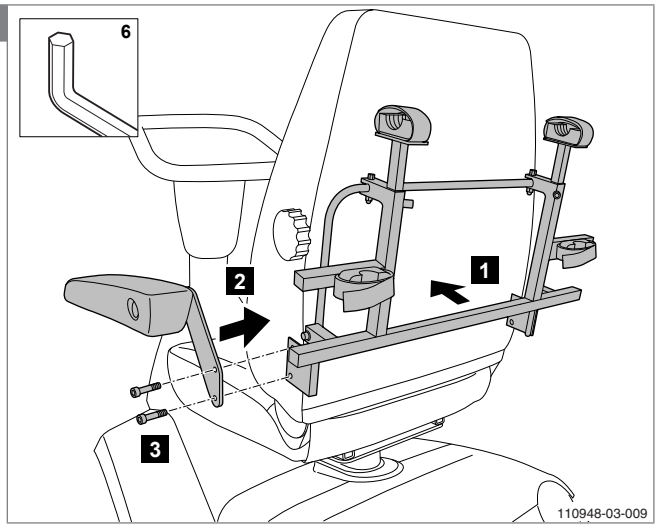
Relevant article numbers
- 1001814 Walking aid holder

Tools used
- Allen key, 6 mm

1



2



Mount the mounting bracket

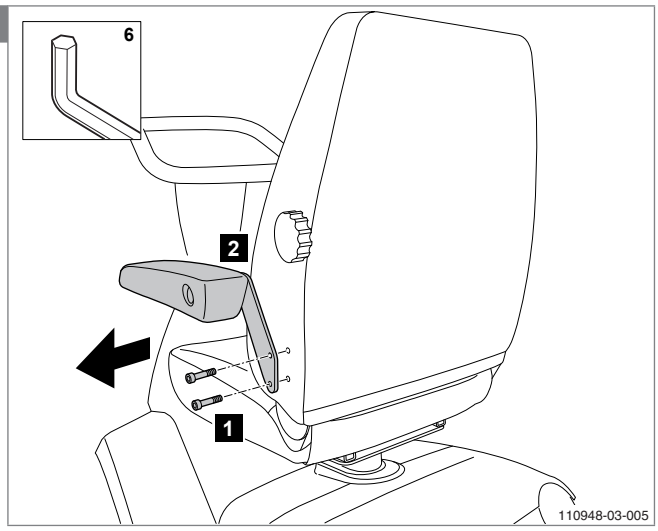
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the mounting bracket:
Note! Suitable work area required!
- Remove the armrest on both sides from the backrest frame.
- Mount with the two bolts on every side the mounting bracket on the backrest frame.
- Put the basket or trolley bag on the mounting bracket.

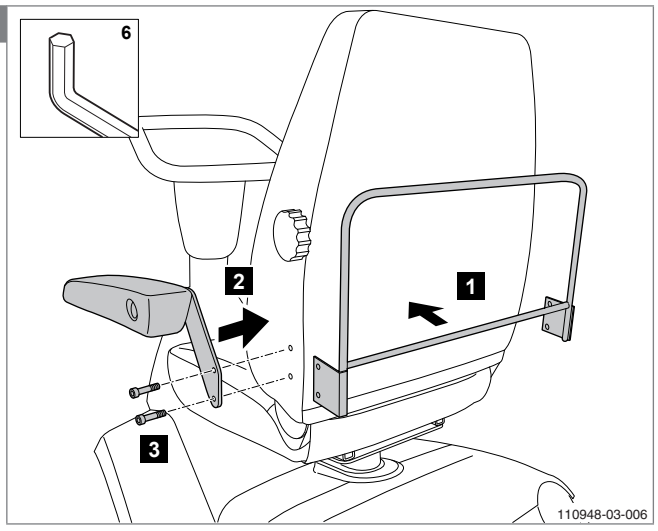
Relevant article numbers
- 9000620 Mounting bracket rear
- 9012455 Basket

Tools used
- Allen key, 6 mm

1



2



3

Mount the lap strap with roll-up to the Master seat

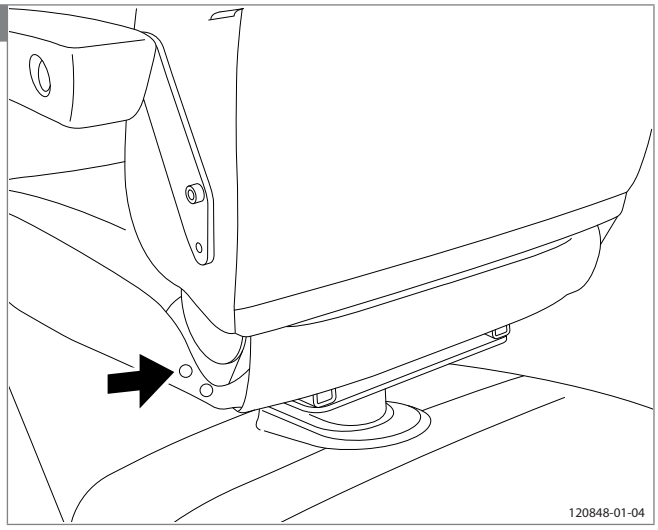
Preparation
- Switch off the scooter with the ignition key.

Instructions
The following operations are required to mount the lap strap with roll-up to the Master Seat:
Note! Suitable work area required!
- Unzip the cover from the Master seat
- The frame has a hole on the left and right side. Make on both sides (at the level of the hole) a notch in the cover.
- Left side: The locknut needs to be mounted on the inside of the frame.
- Right side: The plastic bushings and pivot van needs to be used on the right side.
- When everything is mounted, place the black cap on the bolts.
- Turn the flaps of the cover with velcro inside and close the zipper carefully. Fold also the zipper back inside.

Relevant article numbers
- 1015507 Lap strap with roll-up for Master Seat

Tools used
- Socket, 17 mm

1



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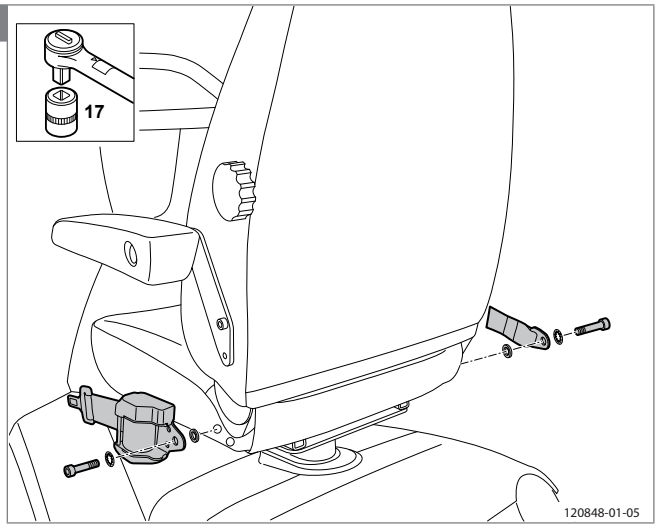


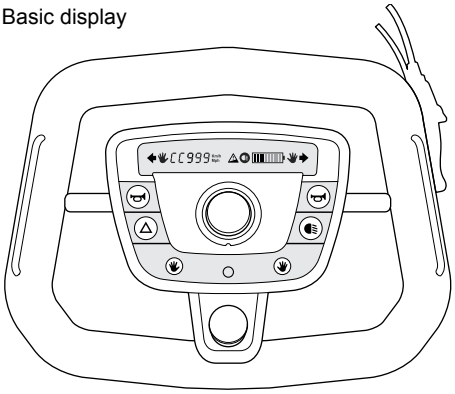
5.4.7 Upgrade instructions controllers

Mount the foot throttle for advanced electronics (ID-no > QT02400)

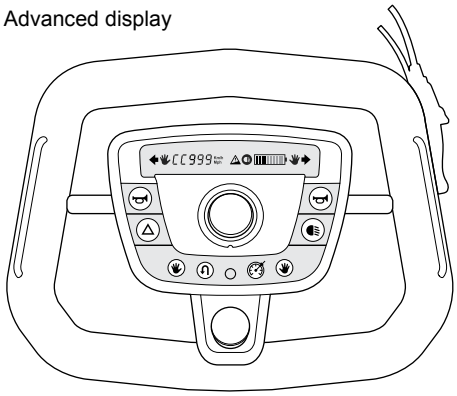
Preparation
- Switch off the scooter with the ignition key.
- Disconnect the batteries.

Instructions

Basic display



Advanced display



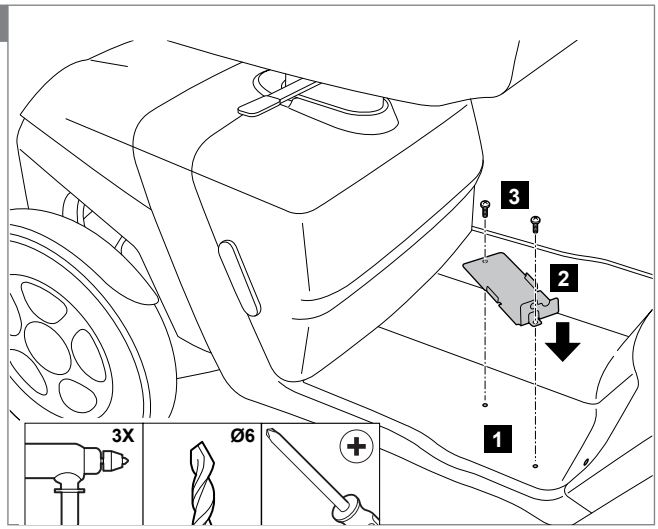
Note! This procedure is intended for the Throphy with the latest electronics. In case your Trophy has the dashboard as one above, you have the latest version electronics. Contact Sunrise Medical HCM in case you have another dashboard (original electronics ID-no < QT02400).

The following operations are required to mount the foot throttle:
Note! Suitable work area required!
Note! Remove always one finger-control! Replace it with cover steering wheel 9007423.
Note! In case you have a basic display, a advanced display will be delivered with the foot throttle. Dismount the basic display and mount the advanced display.
- Loosen the floor mat from the frame.
  Note! For mounting the foot throttle on the floor mat you have to drill two holes in the floor mat and frame. Be sure you will not damage any cables mounted under the frame!
- Determine the exact laying of the cables under the frame.
- Reposition the cables in case they will be damaged while drilling the two holes.
- Replace the floor mat and position the foot throttle mounting plate on the floor mat.
- Drill the holes and mount the foot throttle mounting plate.
- Mount the foot throttle on the mounting plate.
- Guide the cable trough and under the frame, to the electronics compartment on the backside of the scooter.
- Remove the rear cover.
- Connect the plug to the socket in the electronics compartment and replace the rear cover.

Relevant article numbers
- 9007499 Foot throttle Advanced electronics
- 1008730 4,8x19 self tapping screw

Tools used
- Allen key, 3 mm
- Metal drill, 6 mm
- Drill
- Screwdriver, crosshead

1



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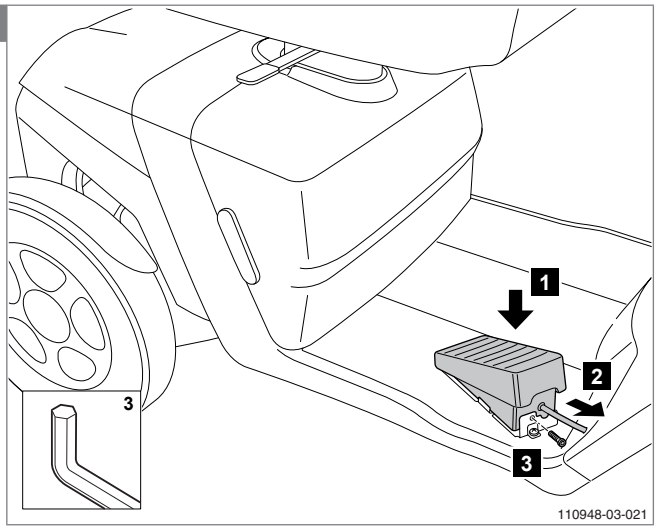

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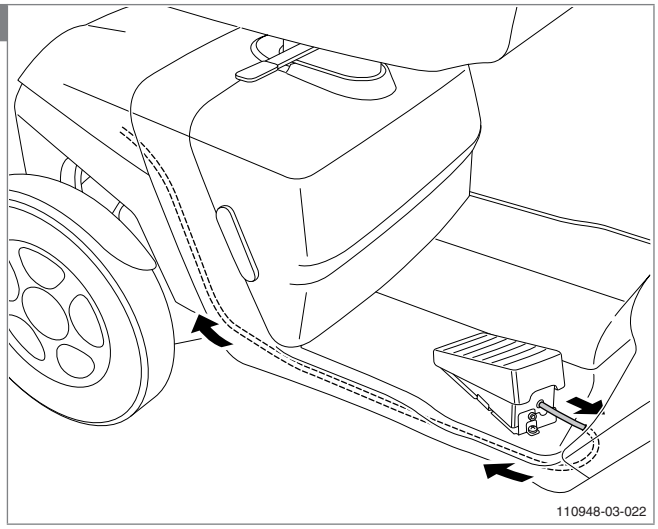

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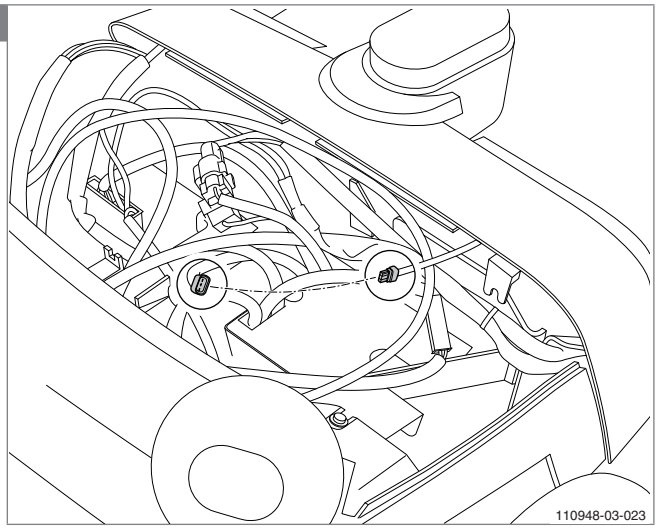
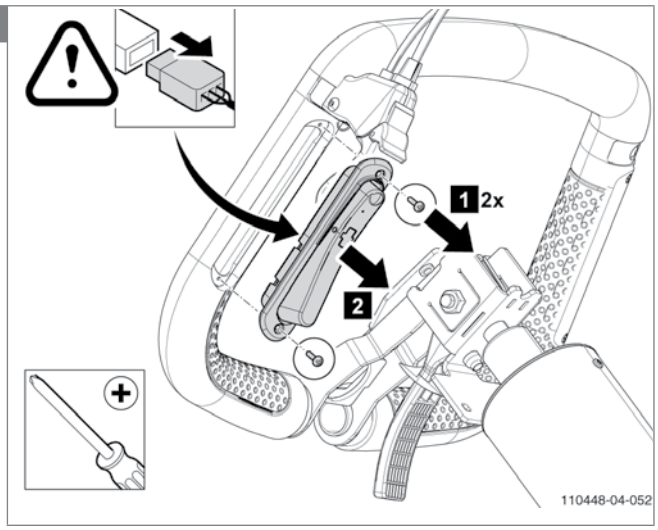


5



Expand controller options for advanced electronics (ID-no > QT02400)
Function button foils on dashbord

	Basic foil	Advanced foil
Left throttle selection switch	Yes	Yes
Revers switch for foot throttle	No	Yes
Display menu selection switch	Yes	Yes
Cruise control switch	No	Yes
Right throttle selection switch	Yes	Yes

Trophy's equipped with the finger/hand control the basic foil will be used If the foot throttle and/or cruise control is chosen, the advanced foil (with all icons) will be used. Be aware that the switches are always visible on the foil but not working when an option is not selected.

Upgrade can be done via spare part options (see matrix below):

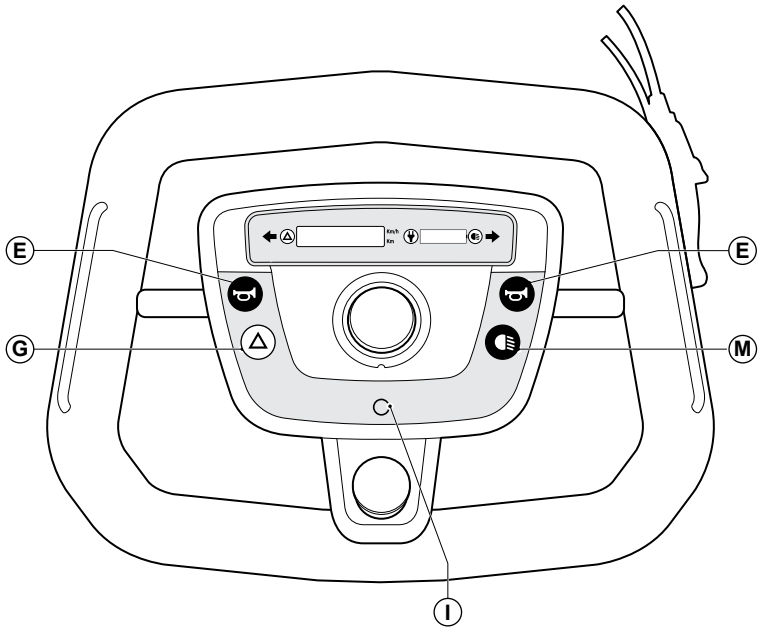
to / from	Right hand	Left hand	Foot	Hand/foot	Dual hand	CC	Emergency stop
Right hand	-	0	2	2+4	1+4	5+7+8 or (9)	8
Left hand	0	-	2	2+4	1+4	5+7+8 or (9)	8
Foot	1	1	-	1+4	2x1+4	5+8 or (9)	8
Hand/foot	0	0	0	-	1	5+8 or (9)	8
Dual hand	0	0	2	2	-	5+7+8 or (1+9)	8
CC (only works with 8)	standard	0	10	10	1	-	standard

0. Only remove/replay parts
1. 9012431 Throttle potentiometer
2. 9007569 Assy foot throttle incl. assy top full option (7)
3. 9008789 Tiller PCB Basic
4. 9008791 Tiller PCB Dual control
5. 9008790 Tiller PCB Full option
6. 9007568 Assy top standard (basic foil)
7. 1012535 Assy top full option (advanced foil)
8. 9006138 Emergency stop button
9. 1016535 Full option steering wheel (includes 1+5+7+8)
10. 9007499 Assy foot throttle

Since Full option steering wheel only means to exchange the complete steering wheel, this may be advisable to use always as upgrade for Cruise Control on single hand/finger control.
Cruise control will only work together with the Emergency Stop Button. If this button doesn’t function or isn’t present, the scooter will give an error and will not start. (Safety!)

5.5 Display menu settings

Starting the service menu for original electronics (ID-no < QT02400)



Dealer

△ + horn	Kilometer total (user)	Hold the hazard light button and press the left horn button briefly
R	Reset total (user	Push the I button (3 sec.)
△ + horn	Kilometer total (scooter)	Hold the hazard light button and press the left horn button briefly
△ + horn	Hours-on total (scooter)	Hold the hazard light button and press the left horn button briefly
△ + horn	Battery voltage	Hold the hazard light button and press the left horn button briefly
light	Leave dealer menu	Any other button

User

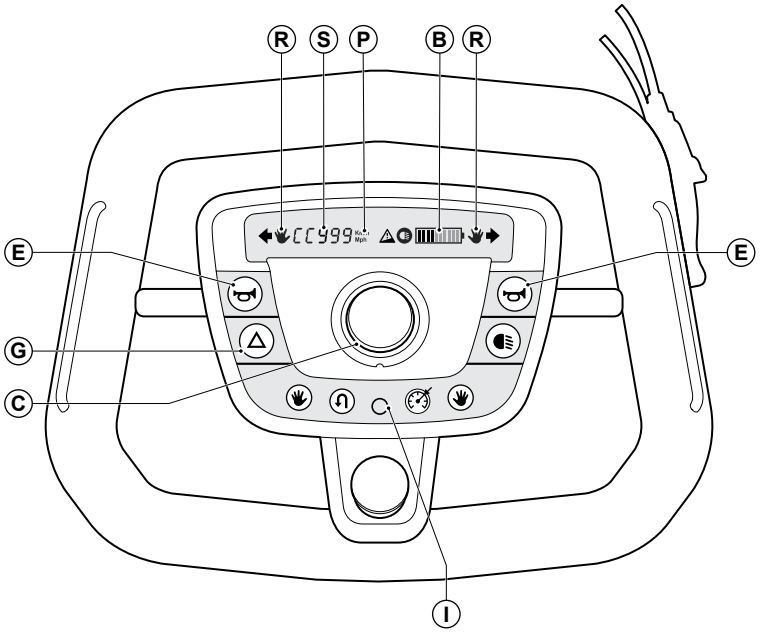
R	km/h	Push the I button
R	Daily kilometer counter	Push the I button
R	Reset daily counter	Push the I button (3 sec)
R	Kilometer total (user)	Push the I button

It's possible to fit the Trophy with either one foot throttle, one hand throttle or two hand throttles. See technical diagram chapter 7.

⚠ ***Warning!***
A combination of foot throttle and finger control is not possible.

Any guarantee on the Trophy is invalidated by the third-party fitting of electronic circuits, other than as described below, which interfere with the finger control or foot throttle signal.

Starting the service menu for advanced electronics (ID-no > QT02400)



Pushing the hazard-button (G) together with the claxon-button (E) more than 2 seconds, the service menu shall be visible.
- First information shown after starting the service menu is the “Total km-1”
- Pushing the hazard button again (G) allows you to scroll through the menu shown below.
- If any other button (other than the DSS (I), horn (E), hazard button (G)) is switched during the service menu, the display returns to the user menu and will show “actual speed”

When the batteries of the scooter are removed the service information shall not get lost for at least 1 year.

The display will blink at a frequency of 1-2HZ, indicating this value can be changed.

1. Total km-1 (S)
   The amount of km the scooter has driven after the last time this value was reset.
   Resettable by pressing the DSS (I) switch ≥ 2 seconds.

2. Total km-2 (S)
   The amount of km the scooter has ever driven in its total life.

3. Actual battery voltage (B)
   The actual battery voltage measured real time

4. Hours ON
   The amount of hours the scooter has been switched on in its life.
   First one character of the display show: H

5. Hours Driven
   The amount of hours the scooter has driven more than 5% of its maximum speed in its life.
   First one character of the display show: h

6. Software version
   First one character of the display show: F

7. Signal Actual throttle input: Range
   Actual input of the active throttle available (R)
   First characters of the display show: C
   The Icons on the tiller display will indicate the active throttle:
   - right hand is lit: right hand side throttle is active
   - left hand is lit: left hand side throttle is active
   - no hand icons are lit: foot throttle is active

   Foot throttle information is converted by the MC into a drive signal. This signal will be presented here. OK
8. Miles / hour reset (P)

Set speed and distance calculations to km or miles.
- Km icon on display is shown = km: km per hour
- m icon on display is shown = miles: miles per hour

Default: km
Change by pressing the DSS (I) switch ≥ 2 seconds.

9. Scooter type selection.
   This reflects the diameter of the wheels used.
   - “t30” Trophy speed algorithm (Trophy 30)
   - “t20” Trophy speed algorithm (Trophy 20)

   Default: “t30”
   Change by pressing the DSS (I) switch ≥ 2 seconds.

10. This reflects if a beeping sound is enabled
    - "0" no beep when driving backward
    - "1" beeping when driving backward

    default: "1"
    Change by pressing the DSS (I) switch ≥ 2 seconds
    First one character of the display show: b

Setting the options
Not all options are standard available. Some options are only available as ordered at Sunrise Medical HCM. Not activated values will not be shown in the service menu.

11. Cruise Control enable (S)
    - “0” disabled
    - “1” enabled

    Default: “0” = disabled
    Change by pressing the DSS (I) switch ≥ 2 seconds.
    First two characters of the display show: CC

12. Manual / intelligent throttle switch
    - “0” off
    - “1” Manual Throttle Switching (MTS)
    - “2” Intelligent Throttle Switching (ITS)
    - “3” ITS and MTS active

    Default: “0” = off
    Change by pressing the DSS (I) switch ≥ 2 seconds.
    First two characters of the display show: tS

6 Troubleshooting

If the scooter doesn't function, while the batteries are fully charged, check the following points.
A. Set the scooter off and then on again. Check if the problem is solved.
B. Check if all the battery connectors are properly attached and firmly connected.
C. Check whether the freewheel handle is in the DRIVE position.
D. Make sure the position of the speed controller has not changed.
E. If there is a problem, the lights of the battery condition meter flash. Use the table below to determine the cause of the problem.

Indication on the display	Description of problem	Corrective action
The complete LED bar flashes rapidly.	The Controller security has found something that causes a problem.	Switch off the scooter. Check all connectors. Check the condition of the batteries. Consult the manufacturer if the LED bar continues flashing after the scooter has been switched on.
The socket LED is lit continuously after the scooter is switched on.	Short circuit in the potentiometer. Cabling from the Tiller PCB to the controller interface is defective. Cabling from the Tiller PCB to the touch control is defective. Tiller PCB is defective.	Contact the manufacturer.
The first red LED of the LED bar is lit continuously.	The batteries require charging or there is a poor connection to the batteries.	Check all connections between the controllers and the batteries. If the connections are OK, try recharging the batteries.
LED bar left to right chase.	The batteries are being charged.	Disconnect the battery charger from the scooter.
Two LEDs of the LED bar are lit.	There is a poor connection to the motor.	Check all connections between the controller and the motor.
Three LEDs of the LED bar are lit.	There is a short circuit in the motor.	Check the motor cables or replace the motor.
Seven LEDs of the LED bar are lit.	The throttle was held in during start up. Speed potentiometer fault.	Restart the scooter without pressing the throttle. Check or replace the speed potentiometer.
Eight LEDs of the LED bar are lit.	The controller is malfunctioning.	Replace the controller.
Nine LEDs of the LED bar are lit.	The neutral handle is in the neutral position. The brake is malfunctioning.	Put the neutral handle in the drive position. Check the connections between the brake and the controller. Replace the brake.
Ten LEDs of the LED bar are lit.	The battery is malfunctioning.	Check the connections between the batteries and the controller. Check the batteries.

The table below provides explanation for the trip codes that can be indicated by the controller. These trip codes can be read with the manual programming unit (SP1) or the mobility programmer PG.

LED code	Trip code	Error type	Explanation
1	2c00	Low battery error	Low battery voltage
1	2c01	Low battery error	Low battery voltage
2	3B01	Motor fault 1	Motor disconnected
3	1400	Bridge fault 1	Motor wiring fault
4	7000	Startup with push selected	Parking brake off
4	7001	Push activated in drive mode	Parking brake off
6	1e03	Inhibit activated	Inhibit active
7	0810	Tiller fault 1	Throttle trip
7	0814	Tiller reference error	Throttle trip
7	0815	Tiller lo reference error	Throttle trip
7	0816	Tiller high reference iso error	Throttle trip
7	0817	Tiller lo reference error	Throttle trip
7	0300	Speed Limit Potentiometer wiper open	Throttle trip
7	1d02	Front end spec change trip	Throttle potentiometer trip
7	2f01	Tiller displaced error	Throttle displaced at power up
8	0002	Eeprom calibration checksum error 2	Possible controller trip
8	0003	Eeprom program checksum error 2	Possible controller trip
8	0100	Running checksum 1	Possible controller trip
8	0203	Eeprom calibration checksum error 1	Possible controller trip
8	0204	Eeprom program checksum error 1	Possible controller trip
8	1501	Brake fault 2	Possible controller trip
8	1705	Relay fault 1	Possible controller trip
8	1802	Watchdog voltage ref error	Possible controller trip

8	1805	Salty finger ref error	Possible controller trip
8	1b20	Both clamps measuring current	Possible controller trip
8	2102	Progres counter error	Possible controller trip
8	2d01	Front end spec change trip	Possible controller trip
8	3100	Battery bridge difference error 1	Possible controller trip
8	3102	Temperature settings incorrect	Possible controller trip
8	3210	No internal timers	Possible controller trip
8	3211	Internal timer out of range	Possible controller trip
8	3212	Atod readings not finished before next read	Possible controller trip
8	3213	Unknown mux channel	Possible controller trip
8	3600	Hardware error	Possible controller trip
8	3601	Test trip latch 1	Possible controller trip
8	3602	Test trip latch 2	Possible controller trip
8	3603	Test trip latch 3	Possible controller trip
8	3608	Test trip latch 8	Possible controller trip
8	3609	Test trip latch 9	Possible controller trip
8	360a	Test trip latch 10	Possible controller trip
8	360b	Test trip latch 11	Possible controller trip
8	360c	Test trip latch 12	Possible controller trip
8	360d	Test trip latch 13	Possible controller trip
8	360e	Test trip latch 14	Possible controller trip
8	4401	Generic ctrl error	Possible controller trip
9	1500	Brake fault 1	Solenoid brake fault
9	1502	Brake over current error	Solenoid brake fault
10	1600	High battery error	High battery voltage

7 Technical product information

7.1 CE Declaration and standards

This product complies with the regulations of the Medical Devices Directive and therefore bears the CE mark.

Standard	Definition/description	Weight test dummy
EU guideline 93/42 EEC	Applicable as mentioned in Appendix 1	N/A
NEN-EN 12182 (1999)	The requirements from EN12182 as mentioned in NEN-EN 12184 (1999): Technical aids for the handicapped – General requirements and test methods October 1997	160 kg
NEN-EN 12184 (1999) Class C	Electric wheelchairs, scooters and accompanying battery chargers – Requirements and test methods 2009	160 kg
ISO 7176-8	Requirements and test methods for static, impact and fatigue strengths July 1998	160 kg
ISO 7176-9	Climate tests for electric wheelchairs and scooters	N/A
ISO 7176-14	Requirements and test methods for control systems for electric wheelchairs 1997	N/A
ISO 7176-16	Requirements for resistance to ignition of upholstered parts May 1997	N/A

7.2 Technical specifications

Manufacturer	Sunrise Medical HCM®
Model	Trophy 3 wheels (3W) Trophy 4 wheels (4W)
Maximum user weight	160 kg (25.2 stone)

Description		3W	4W
Total length	mm (inches)	1400 (55.1)	1400 (55.1)
Total width	mm (inches)	660 (26)	660 (26)
Minimum height*	mm (inches)	760 (29.9)*	760 (29.9)*
Total weight excluding batteries	kg (stones)	110 (17.3)	121 (19.1)
Total weight including batteries (80 Ah)	kg (stones)	155 (24.4)	166 (26.1)
Weight of heaviest component	kg (stones)	90 (14.2)	101 (15.9)
Static stability in the downward direction	°	15	15
Static stability in the upward direction	°	15	15
Lateral static stability	°	15	15
Distance range (ISO 7176-4)**	km (miles)	60 (37.3)	60 (37.3)
Dynamic stability	°	11 (Alpine 14)	11 (Alpine 14)
Maximum speed forwards	km/h (mph)	15 (Alpine 11) (9.3, Alpine 6.8)	15 (Alpine 11) (9.3, Alpine 6.8)
Back angle	°	45 - 85 - 180	45 - 85 - 180
Effective seat depth	mm (inches)	430 (16.9)	430 (16.9)
Effective seat width	mm (inches)	500 (19.7)	500 (19.7)
Back height (excl. head rest)	mm (inches)	550 (21.7)	550 (21.7)
Seat height (front edge of seat)	mm (inches)	min 420 - max 550 (min 16.5 - max 21.2)	min 420 - max 550 (min 16.5 - max 21.2)
Armrest height	mm (inches)	min 150 - max 340 (min 5.9 - max 13.4)	min 150 - max 340 (min 5.9 - max 13.4)
Front armrest to backrest	mm (inches)	260 (10.3)	260 (10.3)
Distance between armrests	mm (inches)	457 - 610 (18 - 24)	457 - 610 (18 - 24)
Turning radius (ISO 7176-5)	mm (inches)	1250 (49.2)	1750
Reversing width	mm (inches)	1650 (65)	1940 (76.4)
Obstacle height (max. user weight)	mm (inches)	100 (3.9)	100 (3.9)
Ground clearance (max. user weight / loaded)	mm (inches)	70 (2.8)	70 (2.8)

Test data	
Test weight	160 kg (25.2 stone)

Operating force	
Operating handle	< 60 N
Parking brake	< 60 N
Electronic switches	< 13.5 [N]
Connecting the charger plug	< 60 [N]

Technical specifications for wheels		
Front wheel diameter (3W)	mm (inches)	320 x 60 (12.5 x 2.25)
Front wheel diameter (4W)	mm (inches)	320 x 60 (12.5 x 2.25)
Rear wheel diameter	mm (inches)	410 x 80 (16.1 x 3.1)
Tyre pressure 4W, front wheel	bar (psi)	2,5 (36.3)
Tyre pressure 4W, rear wheel	bar (psi)	2,5 (36.3)
Tyre pressure 3W, front wheel	bar (psi)	2,5 (36.3)
Tyre pressure 3W, rear wheel	bar (psi)	2,5 (36.3)

Batteries		
Maximum dimensions of batteries (lxbxh)	mm (inches)	334 x 178 x 253 (13.1 x 7 x 10)
Max. battery capacity C20	Ah	86
Max. battery capacity C5	Ah	72
Maximum permissible charging voltage	Voltage	13.6
Maximum permitted charging current	Ampère	12 RMS

* Excluding seat and tiller folded down

** range dependent on user weight, condition of tyres, type of terrain, condition of battery and weather conditions with 80 Ah (C20)

7.3 Driving programs

The driving programs for Sunrise Medical products can be found on our Web IQ programming configurator website.
To download driving programs:

- Open your web browser
- Go to http://www.sunmedwebiq.com
- Enter your user name and password. Alternatively follow the instructions on the screen to request a customer login and password.
- You will be logged on
- Accept the website terms of use
- In the navigation pane on the left, click ‘Sunrise HCM Powerchairs’
- Download the .ZIP file and find the files that correspond to your product configuration.

For more information about the use of Web IQ, in the navigation pane on the left, click ‘Support Documentation’ and download the Web IQ Dealer manual (OM-QDELPHI-Web IQ…).

7.4 Controller settings PG Drives Egis

Trophy Egis 120, 15 km/h

Speed Settings	Fast	Slow
Forward Acceleration (0,1 Seconds)	25	25
Forward Deceleration (0,1 Seconds)	13	13
Reverse Acceleration (0,1 Seconds)	40	40
Reverse Deceleration (0,1 Seconds)	25	25
Forward Speed (%)	100	100
Reverse Speed (%)	50	50

Operation Settings		
Sleep timer (minutes)	0	
Throttle Invert	On	

Battery Settings		
Low battery Flash Inhibit	On	
TruCharge Cable Resistance (milli-Ohms)	40	
TruCahrge Calibration	97	
Max Charge Amps (0,1 Amps)	15	
Min Charge Amps (0,1 Amps)	0	

Inhibit Settings		
Inhibit Mode	1	

General Settings		
Soft Stop	On	
Output Voltage (Volts)	24	
Pulsed Reverse Alarm	Off	
Brake Time (0,01 Seconds)	60	
Freewheel Voltage	100	
Freewheel Time-out (0,01 Seconds)	20	

Factory Settings	Max	Min
Forward Acceleration (0,1 Seconds)	100	1
Forward Deceleration (0,1 Seconds)	100	1
Reverse Acceleration (0,1 Seconds)	100	1
Reverse Deceleration (0,1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

Advanced Settings		
Profile Top	40	
Profile Bottom	80	

Throttle Settings		
Wig-Wag Throttle	On	
Throttle Deadband (%)	15	
Throttle Gain (%)	130	
Iso Test	On	

Options Settings		
Options Register	17	

Motor Settings		
Current Limit Max (Amps)	110	
Curerent Foldback Time (Seconds)	15	
Current Foldback Level (%)	50	
Hold Factor (%)	160	
Bridge Hold Time (centi-Secs)	80	
Motor Compensation (milli Ohms)	45	

Trophy Egis 120, 15 km/h, foot throttle

Speed Settings	Fast	Slow
Forward Acceleration (0,1 Seconds)	25	25
Forward Deceleration (0,1 Seconds)	13	13
Reverse Acceleration (0,1 Seconds)	40	40
Reverse Deceleration (0,1 Seconds)	25	25
Forward Speed (%)	100	100
Reverse Speed (%)	40	40

Operation Settings		
Sleep timer (minutes)	0	
Throttle Invert	Off	

Battery Settings		
Low battery Flash Inhibit	On	
TruCharge Cable Resistance (milli-Ohms)	40	
TruCahrge Calibration	97	
Max Charge Amps (0,1 Amps)	15	
Min Charge Amps (0,1 Amps)	0	

Inhibit Settings		
Inhibit Mode	1	

General Settings		
Soft Stop	On	
Output Voltage (Volts)	24	
Pulsed Reverse Alarm	Off	
Brake Time (0,01 Seconds)	60	
Freewheel Voltage	100	
Freewheel Time-out (0,01 Seconds)	20	

Factory Settings	Max	Min
Forward Acceleration (0,1 Seconds)	100	1
Forward Deceleration (0,1 Seconds)	100	1
Reverse Acceleration (0,1 Seconds)	100	1
Reverse Deceleration (0,1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

Advanced Settings		
Profile Top	40	
Profile Bottom	80	

Throttle Settings		
Wig-Wag Throttle	Off	
Throttle Deadband (%)	15	
Throttle Gain (%)	120	
Iso Test	On	

Options Settings		
Options Register	17	

Motor Settings		
Current Limit Max (Amps)	110	
Curerent Foldback Time (Seconds)	15	
Current Foldback Level (%)	50	
Hold Factor (%)	156	
Bridge Hold Time (centi-Secs)	80	
Motor Compensation (milli Ohms)	45	

7.5 Controller settings PG Drives S-Drive 120A

Trophy S-drive 120, 15 km/h

Speed Settings	Fast	Slow
Forward Acceleration (0,1 Seconds)	35	35
Forward Deceleration (0,1 Seconds)	13	13
Reverse Acceleration (0,1 Seconds)	40	40
Reverse Deceleration (0,1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings		
Sleep timer (minutes)	0	
Throttle Invert	Yes	

Battery Settings		
Low battery Flash Level (Bars)	0	
Cable Resistance (milli-Ohms	50	
Calibration Factor	100	
Low Battery Alarm	Off	

Inhibit Settings		
Inhibit 1: Mode	1	
Inhibit 1: Operation	Latching	
Inhibit 1: Speed (%)	0	
Inhibit 2: Mode	1	
Inhibit 2: Operation	Latching	
Inhibit 2: Speed (%)	0	
Inhibit 3: Mode	1	
Inhibit 3: Operation	Latching	
Inhibit 3: Speed (%)	0	
Aux Output: Mode	0	

Factory Settings	Max	Min
Acceleration (0,1 Seconds)	100	1
Deceleration (0,1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

Throttle Settings		
Throttle Type	1	
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
Throttle Reference Test	On	
Iso Test Resistor	Off	

Motor Settings		
Current Limit Max (Amps)	110	
Boost Drive Current (Amps)	120	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	110	
Curerent Foldback Time (Seconds)	15	
Current Foldback Level (%)	50	
Motor Cooling Time (Seconds)	120	
Current Foldback Temperature (Deg C)	80	
Current Limit Min (Amps)	18	
Motor Compensation (milli Ohms)	20	
Anti Rollback Level	12	
Pull-away Delay (centi-Seconds)	0	
Slope Factor	1275	
Anti Rollback Velocity	0	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Freewheel Speed Limit	35	
Freewheel Time Out (0,01 Seconds)	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

Trophy S-drive 120, 15 km/h, foot throttle

Speed Settings	Fast	Slow
Forward Acceleration (0,1 Seconds)	35	35
Forward Deceleration (0,1 Seconds)	13	13
Reverse Acceleration (0,1 Seconds)	40	40
Reverse Deceleration (0,1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings		
Sleep timer (minutes)	0	
Throttle Invert	No	

Battery Settings		
Low battery Flash Level (Bars)	0	
Cable Resistance (milli-Ohms	50	
Calibration Factor	100	
Low Battery Alarm	Off	

Inhibit Settings		
Inhibit 1: Mode	1	
Inhibit 1: Operation	Latching	
Inhibit 1: Speed (%)	0	
Inhibit 2: Mode	1	
Inhibit 2: Operation	Latching	
Inhibit 2: Speed (%)	0	
Inhibit 3: Mode	1	
Inhibit 3: Operation	Latching	
Inhibit 3: Speed (%)	0	
Aux Output: Mode	0	

Factory Settings	Max	Min
Acceleration (0,1 Seconds)	100	1
Deceleration (0,1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

Throttle Settings		
Throttle Type	0	
Throttle Deadband (%)	15	
Throttle Gain (%)	180	
Throttle Operated at Power-up	2	0 = Drive, 1 = Inhibit, 2 = Trip
Throttle Reference Test	On	
Iso Test Resistor	Off	

Motor Settings		
Current Limit Max (Amps)	110	
Boost Drive Current (Amps)	120	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	110	
Curerent Foldback Time (Seconds)	15	
Current Foldback Level (%)	50	
Motor Cooling Time (Seconds)	120	
Current Foldback Temperature (Deg C)	80	
Current Limit Min (Amps)	18	
Motor Compensation (milli Ohms)	20	
Anti Rollback Level	12	
Pull-away Delay (centi-Seconds)	0	
Slope Factor	1275	
Anti Rollback Velocity	0	

General Settings		
Soft Stop	On	
Brake Time (milli-seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Freewheel Speed Limit	35	
Freewheel Time Out (0,01 Seconds)	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	

7.6 Controller settings PG Drives S-Drive 140A

Trophy S-drive 140, 15 km/h original electronics (ID-no < QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	30
Forward Deceleration (0.1 Seconds)	13	12
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	15
Max Forward Speed (%)	100	50
Min Forward Speed (%)	10	30
Max Reverse Speed (%)	40	30
Min Reverse Speed (%)	5	30
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	0

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	Off	
Brake Time (milli-Seconds)	1400	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	140	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	25	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	1275	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	200	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	170	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	85	**(S Drive II Only)**

Throttle Settings		
Throttle Type	1	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140, 15 km/h, foot throttle original electronics (ID-no < QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	30
Forward Deceleration (0.1 Seconds)	13	12
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	15
Max Forward Speed (%)	100	50
Min Forward Speed (%)	10	30
Max Reverse Speed (%)	40	30
Min Reverse Speed (%)	5	30
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	No

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	0

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	Off	
Brake Time (milli-Seconds)	1400	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	140	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	25	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	1275	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	200	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	170	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	85	**(S Drive II Only)**

Throttle Settings		
Throttle Type	0	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	180	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140 Alpine original electronics (ID-no < QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	30
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	1

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	130	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	35	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	650	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	180	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	190	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	50	**(S Drive II Only)**

Throttle Settings		
Throttle Type	1	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140 Alpine, foot throttle original electronics (ID-no < QT02400)

Speed Settings	**Fast**	**Slow**
Forward Acceleration (0.1 Seconds)	35	30
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	1

Factory Settings	**Max**	**Min**
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	130	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	35	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	650	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	180	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	190	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	50	**(S Drive II Only)**

Throttle Settings		
Throttle Type	0	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	180	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140 Alpine advanced electronics (ID-no > QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	30
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Non-Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	1

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	Off	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	130	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	35	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	650	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	180	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	190	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	50	**(S Drive II Only)**

Throttle Settings		
Throttle Type	1	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140, 15 km/h CT original electronics (ID-no < QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	35
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Non-Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	0

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	140	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	25	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	900	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	180	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	170	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	75	**(S Drive II Only)**

Throttle Settings		
Throttle Type	1	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140, 15 km/h CT, foot throttle original electronics (ID-no < QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	35
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	100
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Non-Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	0

Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1500	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	On	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	140	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	25	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	900	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	180	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	170	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	75	**(S Drive II Only)**

Throttle Settings		
Throttle Type	0	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	180	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

Trophy S-drive 140, 15 km/h CT advanced electronics (ID-no > QT02400)

Speed Settings	Fast	Slow
Forward Acceleration (0.1 Seconds)	35	35
Forward Deceleration (0.1 Seconds)	13	13
Reverse Acceleration (0.1 Seconds)	40	40
Reverse Deceleration (0.1 Seconds)	25	25
Max Forward Speed (%)	100	100
Min Forward Speed (%)	10	10
Max Reverse Speed (%)	40	40
Min Reverse Speed (%)	5	5
Speed Limit Pot Enabled	On	

Operation Settings	
Sleep Timer (Minutes)	0
Throttle Invert	Yes

Battery Settings	
Low Battery Flash Level (Bars)	0
Cable Resistance (milli-Ohms)	50
Calibration Factor	100
Low Battery Alarm	Off
Trucharge Reset Voltage (Deci-Volts) **(S Drive 180A) (S Drive II)**	250
Battery Curve Scaler **(S Drive II Only)**	0

Inhibit Settings	
Inhibit 1: Mode	1
Inhibit 1: Operation	Latching
Inhibit 1: Speed (%)	0
Inhibit 2: Mode	1
Inhibit 2: Operation	Latching
Inhibit 2 Speed (%)	0
Inihibit 3: Mode	1
Inhibit 3: Operation	Non-Latching
Inhibit 3: Speed (%)	0
Aux Output: Mode	1

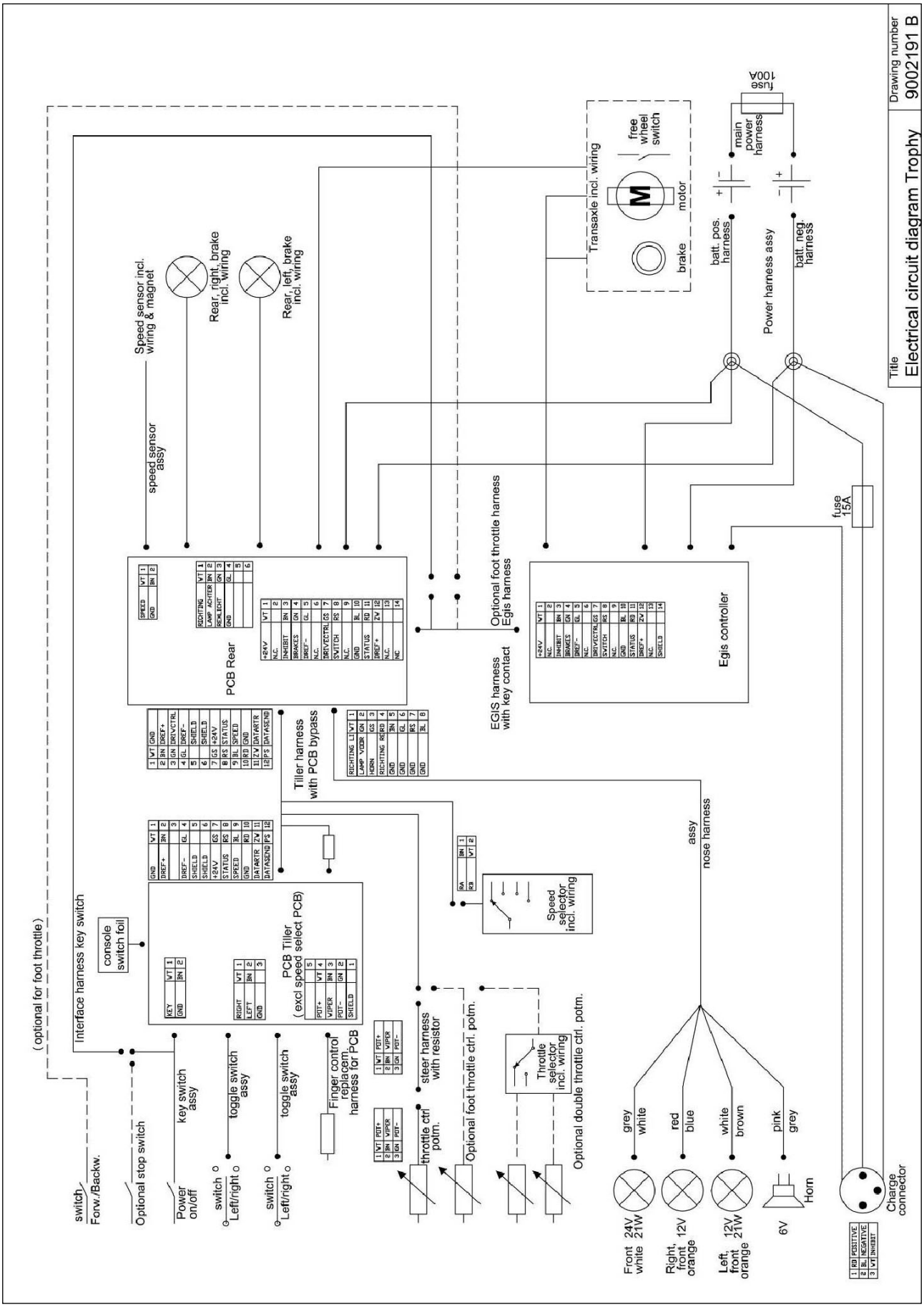
Factory Settings	Max	Min
Acceleration (0.1 Seconds)	100	1
Deceleration (0.1 Seconds)	100	1
Forward Speed (%)	100	0
Reverse Speed (%)	100	0

General Settings		
Soft Stop	On	
Brake Time (milli-Seconds)	1000	
Output Voltage (Volts)	24	
Status Output Type	0	(0 = Trucharge, 1 = LED, 2 = Analogue)
Diagnostic Flash Sequence	2	
Reverse Alarm	Off	
Pulsed Reverse Alarm	Off	
Diagnostic Alarm	Off	
Brake Disconnected Alarm	Off	
Brake Fault Detect	On	
Brake Light	Off	
Push too Fast Threshold	35	
Push too Fast Timeout	20	
Freewheel Enable	Disable	
Inhibit 2 Horn Input Enable	Off	**(S Drive 120,140,180A) (S Drive II)**

Motor Settings		
Current Limit Max (Amps)	130	
Boost Drive Current (Amps)	140	
Boost Drive Time (Seconds)	10	
Current Foldback Threshold (Amps)	80	
Current Foldback Time (Seconds)	70	
Current Foldback Level (%)	59	
Motor Cooling Time (Seconds)	660	
Current Foldback Temperature (Deg C)	30	
Current Limit Min (Amps)	10	
Motor Stall Timeout (Seconds)	0	**(S Drive II Only)**
Motor Compensation (milli-Ohms)	25	
AntiRollback Level	12	**(S Drive Only)**
Pull-away Delay (centi-Seconds)	0	**(S Drive Only)**
Slope Factor	900	**(S Drive Only)**
Anti Rollback Velocity	0	**(S Drive Only)**
Braking Current Limit (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Braking Current (Amps)	140	**(S Drive 180A) (S Drive II)**
Timed Foldback Speed (%)	100	**(S Drive 180A) (S Drive II)**
Enhanced Motor Compensation (Up) (%)	200	**(S Drive II Only)**
Enhanced Motor Compensation (Down) (%)	170	**(S Drive II Only)**
Enhanced Motor Compensation (Up) Gain	75	**(S Drive II Only)**

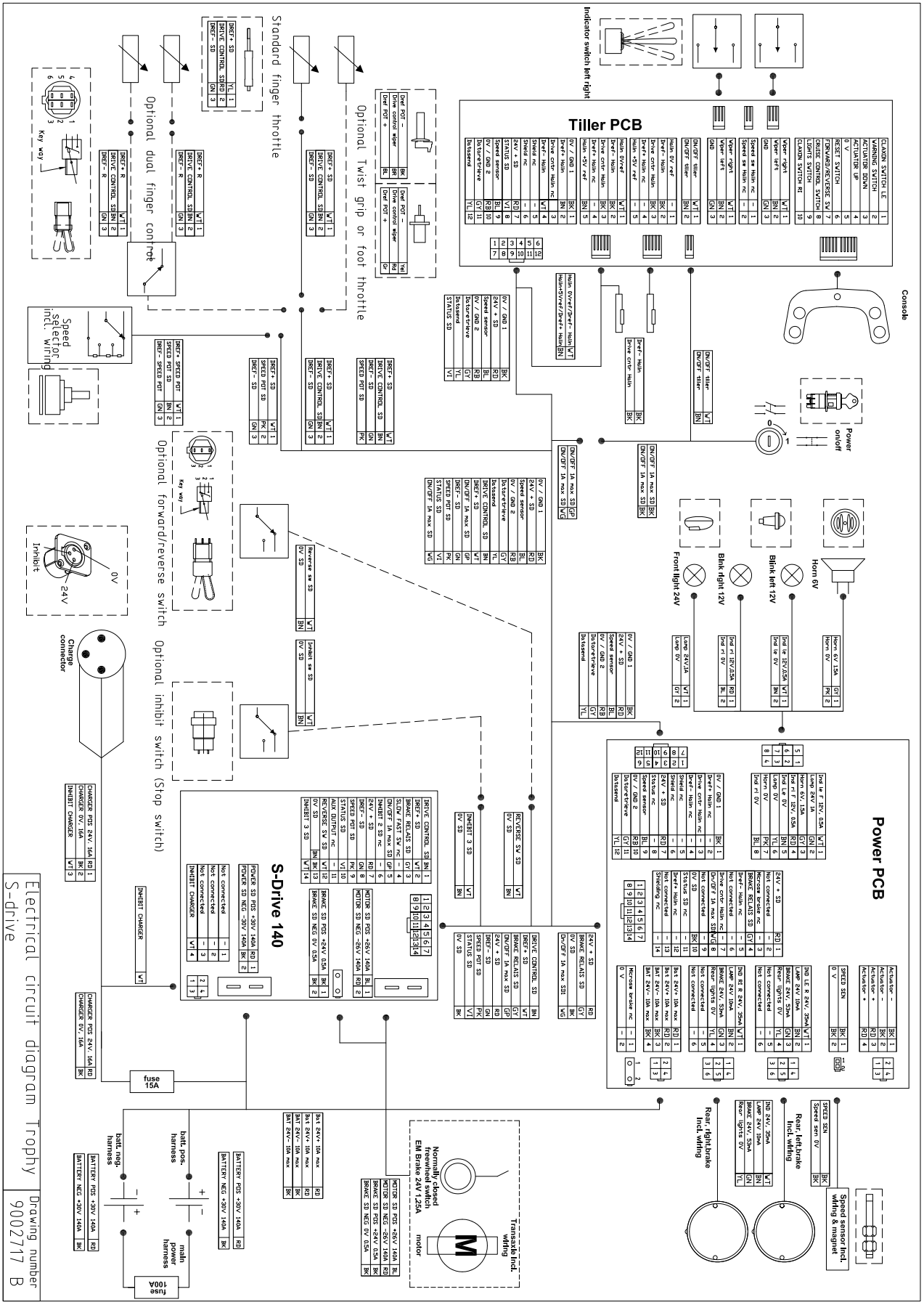
Throttle Settings		
Throttle Type	1	(0 = Single-ended, 1 = Wig-wag, 2 = Unipolar)
Throttle Deadband (%)	15	
Throttle Gain (%)	140	
Throttle Operated at Power-up	2	(0 = Drive, 1 = Inhibit, 2 = Trip)
Throttle Reference Test	On	
ISO Test Resistor	Off	
Timed Throttle Invert **(S Drive II Only)**	0	(0 = Off, 1 = Inhibit 2, 2 = Inhibit 3)

7.7 Electrical diagram Trophy Egis

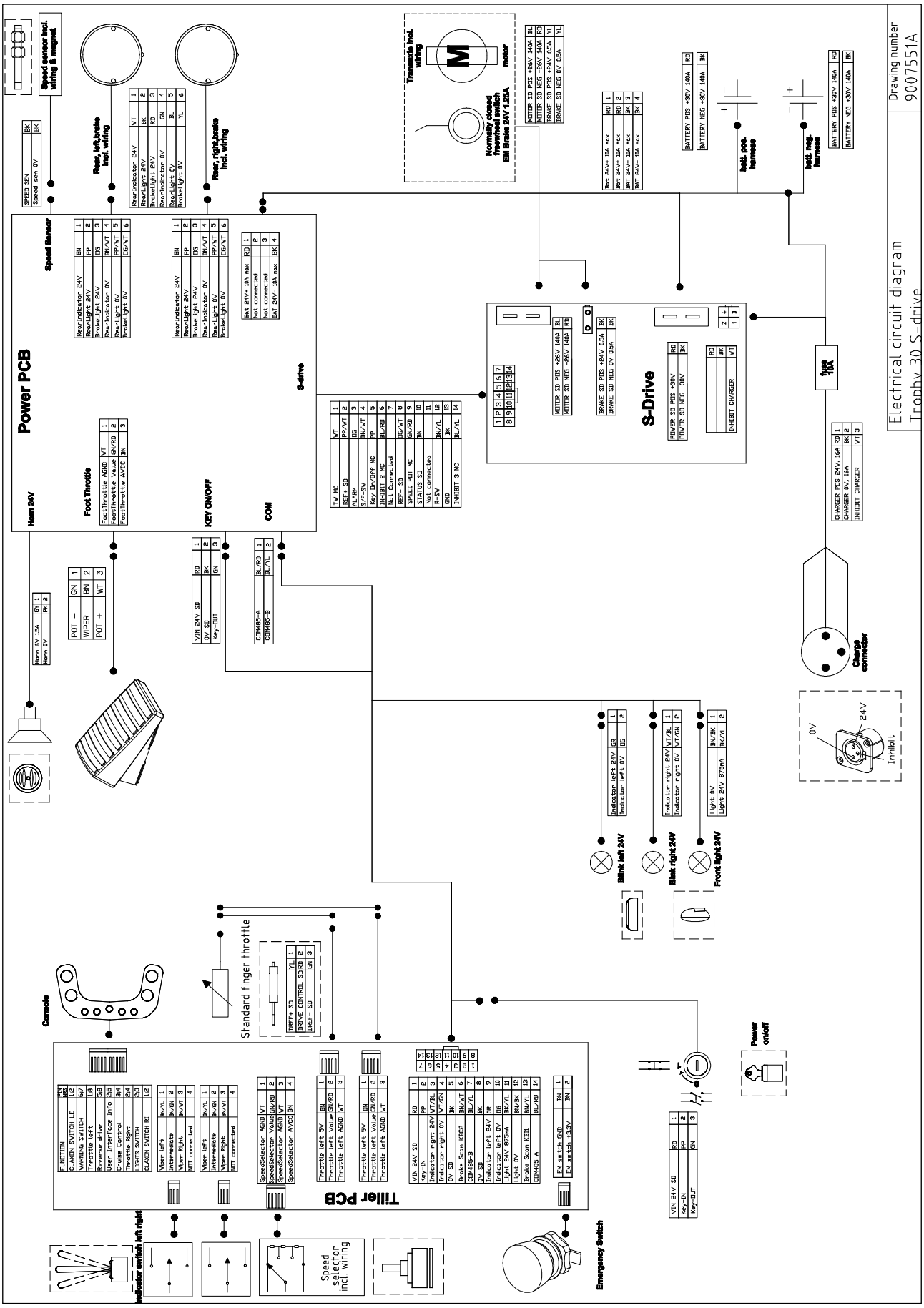


7.8 Electrical diagram Trophy S-Drive

Original electronics (ID-no < QT02400)



Advanced electronics (ID-no > QT02400)



7.9 Service information transaxles

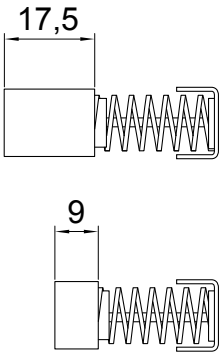
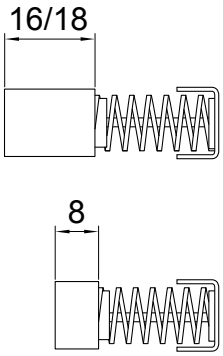
Summary
End of 2008 the product update "Trophy with S-Drive Controller" was published. Among other things, this update mentioned the new sturdier transaxles for Trophy with Egis controller and for Trophy with S-Drive controller. Since the benefits of these new transaxles remained underexposed in the load of information in the news item, we will explain here the improvements to the transaxle and summarise service instructions for these parts.
The new transaxles (Egis or S/Drive configuration) offer **improved bearing and bearing position**. New, **bigger motor brushes** also contribute to extend the life expectancy of the parts and reduces costs of ownership.
Regular preventative service checks are important to verify the condition of the parts and enables to replace them at the right time. See service instructions.

Description
The new transaxles (standard and heavy duty / Egis and S-Drive compatible) as presented in our Product News item "Trophy with S-Drive Controller" dated 10/09/2008 offer improved performance and life expectancy. This is due to the improved bearing and bearing position but also to some changes that were made to reduce wear of the commutator and brushes. This way service costs are reduced.
The new transaxles are equipped with bigger motor brushes. As a consequence the current density (Amps/mm2) in the commutator and brushes drops and this improves the life span of these parts. The effect is more pronounced in the Trophy Egis because this controller uses higher currents than the S-Drive controller.
Regular preventative service checks are important to verify the condition of the parts and enables to replace them at the right time. Therefore see the service check instructions.

Service checks instructions
Check if dimensions of commutator and motor brushes satisfy minimum dimensions as indicated in the illustrations, accordingly to the table below.

Part	Trophy with Egis controller and Schmid transaxle	Trophy with S-Drive controller and Schmid or CT transaxle
Commutator	Once every 3 years	Once every 3 years
Motor brush	At least once a year or every 1000 km	At least once a year or every 3000 km

Clean the collector on the anchor of the motor with pressed air from dust.

Commutator Schmid	Egis controller and Schmid transaxle	S-Drive controller and Schmid or CT transaxle
Dimensions: • minimum 35,4mm.	Dimensions: • maximum(17,5mm) • minimum(9mm)	Dimensions Schmid: • maximum(16mm) • minimum(8mm) Dimensions CT: • maximum (18mm) • minimum (8mm)
		

8 Warranty

8.1 Definitions of terms

Definitions of terms used in this warranty:
After sales service part: Part purchased after the intial product that is durable and may be subjected to natural wear and tear or natural contamination during normal operation within the lifetime of the product.;
Consumable part: Part that is subjected to natural wear and tear or natural contamination during normal operation within the lifetime of the product (section 9 of Sunrise Medical HCM B.V.'s general terms and conditions of sale);
Client: Those who purchase the product directly from Sunrise Medical;
Corrective action: Repair, replace or refund of the product;
Dealer: Those who re-sell the product to the User;
Defect: Any circumstance due to which the product is not sound or fit to use, caused by a lack of quality of the material used to manufacture the product as well as the quality of the manufacturing process;
Option: An accessory delivered with the initial product by Sunrise Medical to extend the standard product model;
Product: Product that is delivered according to brochure or contract (e.g. wheelchair, scooter, battery-charger etc.);
Part: Part of product that can be exchanged or replaced. This can be an option, accessory, service part or consumable part;
Returns: Product or part that needs to be returned;
RMA-process user: Process to return goods, contact your dealer;
RMA-process client: Process to return goods, contact Sunrise Medical's Customer Service;
User: Those who use the product;
Warranty: The rights and obligations set forth in this document;
Warranty period: The period of time during which the warranty is valid;
Warranty provider: Sunrise Medical HCM B.V., Vossenbeemd 104, 5705 CL Helmond, The Netherlands (also referred to as Sunrise Medical).

Notwithstanding the rights and obligations of Sunrise Medical, Client and User set forth in Sunrise Medical's general terms and conditions of sale, the rights of the Client and/or User towards Sunrise Medical in case of defects are limited to the provisions set forth in this warranty. For the duration of the warranty period Sunrise Medical guarantees that the product is without defects.
In case of any defects the User is required –within two weeks after discovery of the defect- to contact the dealer. He has to complete a return form and return the product or part via the RMA-process. Sunrise Medical will, at its sole discretion, take the corrective action it seems fit under the given circumstances within a reasonable period of time (depends on nature of claim) from receipt of the completed return form. The warranty period will not be extended after a corrective action.

8.2 Warranty period table

Scooters

Description	Warranty period	Examples include, but are not limited to the parts mentioned below
Frame	2 years	Weldment/frame
Drive system*	1 year	Transaxle, motor, motor brake
Electronics*	1 year	Controller, controlling mechanism, wiring harness, electronic components
After sales service parts	New: 1 year after invoice Repaired: 90 days after invoice	Brakes
Consumable parts	40 days after invoice	Carbon brushes, etc.
Options/Accessories	2 years	Mirror, mudguards etc. Delivered with the initial product

* also in case of after sales service part delivery

Sunrise Medical will only accept shipment costs and corrective costs related to warranty on equipment during the warranty period.

This warranty will void in case of:
The product and/or its parts being modified;
Changes in cosmetic appearance by use;
Failure to observe the instructions for use and maintenance, use other than normal use, wear and tear, negligence, collateral damage by neglect of earlier symptoms, overloading, third-party accidents, non-original parts used and defects not caused by the product;
Circumstances beyond our control (flood, fire, etc.).

This warranty does not cover:
Tyres and inner tubes
Batteries (covered by the battery manufacturer’s warranty).

Clients and/or Users have legal (statutory) rights under applicable national laws relating to the sale of consumer products. This warranty does not affect statutory rights you may have nor those rights that cannot be excluded or limited, nor rights against the entity from whom the product was purchased. Clients may assert any rights they have at their sole discretion.

Version list

Version	Page	Draw	Changes
2016-V1			Replaced Handicare by Sunrise Medical HCM
	12	1	• Changed article numbers 9001994 and 9004159 into 1015265 and 1015264 • Changed description article number 00000.5500 • Updated drawing
	13	2	• Changed article numbers 9001815 and 9004511 into 1015263 and 1015262 • Changed description article number 9002006 • Added article number 9007193, 1017424 and 1017433 • Updated drawing
	14	3	• Deleted article numbers 9000550, 9001996, 1015104, 9007719, 9007723, 9001172, 9001998, 1015154, 9007717, 9007721, 9000549, 9001995, 1015103, 9007720, 9007724, 9001173, 9001997, 1015154, 9007718, 9007722 and 1004272 • Changed description article number 9002006, 9001171 and 9000551 • Added article numbers 1015267, 1016162, 1015951, 1015955, 1015269, 1016164, 1015949, 1015953, 1015266, 1015952, 1015268, 1015950, 9007193, 1017425, 1017426, 1017427, 1017428, 1017429, 1017430, 1017431 and 1017432
	20	6a	• Deleted article number controller Egis 110A, no longer available • Changed description article number 9002759 and 9002761
	21	6b	Changed description article number 9002759 and 9002761
	34	5.4.1	Changed article number 9007083 into 9007499
	40	5.4.3	Changed article number 9001815 into 1015263 and 1015262
	46	5.4.4	Updated article numbers
	69	5.4.7	Changed article number 9007083 into 9007499

Version	Page	Draw	Changes
Rev.1.0.	-	-	Updated cover layout
	6		Update identification plate
	25	08	Changed description article number 1012522 from 'Logo Handicare' to 'Logo Sterling'
	27	09	Changed description article number 1012522 from 'Logo Handicare' to 'Logo Sterling'
	79		Update paragraph Driving Programs
	95-96		Update warranty text

Version	**Page**	**Drawing**	**Changes**
Rev.2.0.	16	02	Changed description article number 1003209 Friction disk for Schmid motorbrake
	23	07	Changed description and quantity for article number 232.00011.000 Headrest receiver (set of 2)
	25	08	Changed article number 0000.1503 into 0001,1503
	30	4.3	• Removed article number 9000703 Front bag. • Changed description article number 9000620 Bracket for trolleybag and rear basket

Version	**Page**	**Drawing**	**Changes**
2022-V1			• LCP247 - added spacer throttle
			• LCP269 - remove handbrake option
			• LCP303 - change article numbers JDE/Axapta
			• EOL20211001 - End of life Original electronics

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