USER MANUAL

(EN)

Device

KLAXON TWIST - FTD_30_WHEELCHAIR_FW-V3.8.0

KLAXON Mobility GmbH - EN

Dear customer,

Thank you for choosing a KLAXON product.

We sincerely hope that KLAXON MOBILITY's products can improve your day and your activities in many ways and we remain at your disposal for any information or clarification you may require. We also encourage you to keep up to date on the latest news of our product range, on the accessories available and on our company's events and initiatives.

You can contact us by writing an e-mail to info@klaxon-klick.com, through our web site at www.klaxon-klick.com, on our Linkedin page www.linkedin.com/company/klaxon-mobility or on our Facebook page www.facebook.com/klaxonklickworld.

Please note also that in compliance with European regulations, KLAXON MOBILITY GMBH holds CE Certification for all products in the KLAXON range; they are classified as Class I medical devices according to Annex VIII EU745/2017 MDR.

CE

The TWIST devices belongs to:

- code GMDN 42805 (Wheelchair electric-motor-driven propulsion system)
- code UMDNS 17952 (Power Conversion Kits, Wheelchair)

⚠	EU WARNING: In the event of any serious accident related to the TWIST device, the user must immediately notify the manufacturer and the competent authority of the European country where the user has bought the product.
NOTE	A PDF copy of this manual is available to people with visual impairment on our website www.klaxon-klick.com.
NOTE	The address of KLAXON dealers can be found on our website www.klaxon-klick.com in the "Klick Stores" area.

Thank you again for having chosen our products. We wish you a good day and enjoyable use.

Best regards.

The Staff of KLAXON MOBILITY GMBH

Download the Klaxon App on smartphone:

SOMMARIO

GENERAL INFORMATION

INTRODUCTION

This End User's Manual explains how to use the KLAXON device called TWIST suitable for increasing the mobility of people with disabilities. The KLAXON product described in this manual is as follows:

- TWIST - Firmware: FTD_30_WHEELCHAIR_FW-V3.8.0

MANUFACTURER'S IDENTIFICATION DATA

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Hereinafter: **KLAXON**.

REVISION INFORMATION

REVISION	CHANGE DESCRIPTION	DATE
01	FIRST ISSUE	2022.07.07
02	SECOND ISSUE	2024.12.04

All information, illustrations and specifications in this document are based on the latest product information available at the time of publication.

This document is subject to change due to technical innovations, without prior notice.

To stay up to date with the latest solutions and software updates for the device, download the latest version of the manual from the Klaxon App (see link on Page 1), in the manuals section.

1. WARNINGS

- Read these instructions carefully before using the device.
- KLAXON is not liable for any failure of the end user to comply with the contents of this document.
- The use of the KLAXON TWIST device is specifically dedicated to persons with disabilities who are using a manual wheelchair.
- The use of KLAXON TWIST device in public spaces (streets, sidewalks, squares, cycle paths, etc.) must comply with the specific regulations of the country in which it is used. KLAXON is not liable for use that is not in accordance with specific regulations in force.
- If any anomalies that may endanger the user are found during the usage: do not use the device and promptly contact KLAXON's technical support.
- Non-original spare parts and accessories have not been tested by the manufacturer. Therefore we cannot certify that these components are compliant with the needed performance and safety requirements.
- KLAXON is not responsible for any damage caused by the use of non-original spare parts or accessories.
- The installation of the product and its maintenance must be carried out exclusively by authorised KLAXON technicians, who will issue a declaration of compliance. The user must request the declaration of compliance during the first activation and after every maintenance. If the device does not comply with the declaration, the warranty will expire with immediate effect and KLAXON will not be liable for any damage resulting from the use of the device.
- Not all the provisions included in this User's Manual are valid for all the countries and for all the KLAXON products. Please always refer to the local regulations, settings and models that are provided and applied in the country of purchase and of use. The points of the manual marked with the following symbols should be read carefully:

The points of the manual marked with the following symbols should be read carefully:

	Generic DANGER sign: it indicates the existence of a danger that can derive from various causes. The word DANGER is used to describe a potential situation that, if not avoided, could produce death, serious injuries, and/or property damages.
CAUTION	The word CAUTION indicates a potentially hazardous situation, which, if not avoided, may cause minor injuries or property damage.
NOTE	The word NOTE indicates important instructions or special information.
	High voltage DANGER sign: indicates the presence of high voltages.
	Burn hazard DANGER sign: indicates the risk of burn injuries.
	Sign indicating the warnings regarding the disposal of components.

2. SAFETY NOTICES

NOTE	KLAXON devices meet all the requirements of ISO 7176-14.
	The user must read this document entirely and have become familiar with its contents before using the device.
	If the device is not used in accordance with the given specifications, the manufacturer's expected level of safety may decrease.
	During the initial period of use the user must familiarize with operation to avoid potential risks caused by incorrect use.
	EMC - The device complies with ISO 7176-21:2009 CLAUSE 5.4 standards on electromagnetic compatibility, but to ensure the safety of the user, it is recommended not to use the device in the presence of strong environmental electromagnetic fields (>20V/m).
	EMC - The device complies with ISO 7176-21:2009 CLAUSE 5.4 standards on electromagnetic compatibility. Despite this, during its operation, the device may affect other devices with its electromagnetic field.
	Children, incapacitated persons, or those that are insufficiently familiar with the device or are physically unsuited, must not use it.
NOTE	For technical and safety information, please contact a KLAXON dealer. The addresses of the KLAXON dealers can be found on the website www.klaxon-klick.com in the “Klick Stores” area.

- The device may skid on wet pavement, on gravel or on uneven terrain: always adjust the speed and driving style to the conditions (weather, surface, individual capacity, etc.); never drive straight towards

an object, and drive carefully towards narrow passages.

- On wet or uneven terrain, the value of the maximum rated slope allowed inclination and the value of the maximum allowed step height are decreased in order to safeguard the safety of the user.
- In the event of a collision, the user could suffer serious injuries to its body parts.
- At high speeds the user may lose control of the wheelchair and a tip over may occur. Never drive faster than 20 km/h (6 Km/h in Controller mode), both uphill and downhill, and avoid impacts in general.
- Always use the TWIST-equipped wheelchair appropriately. Always brake in order to avoid obstacles (steps, edges, door frames, etc.), during descents, turns, and/or dangerous inclines.
- Driving performance of the TWIST-equipped wheelchair may be affected by electromagnetic fields. If a malfunction occurs in these conditions please contact KLAXON or one of its authorised resellers.
- Avoid contact with liquids leaking from the battery in case the battery is damaged.
- While using the device, some system components can get very hot (e.g.: braking system, etc.). A contact of these components with the skin may cause scalding and burns: be extremely careful to avoid contact.
- Always observe the operating limits for the manual wheelchair on which the TWIST device is installed.

3. INTENDED USE OF THE DEVICE

The TWIST is a medical device for active wheelchair users with a user weight of 120 kg and who are reliant on a wheelchair as a result of their disability. The TWIST is an add-on drive for wheelchairs that is

for use on a manual wheelchair, converting it into an electrically driven wheelchair and thus significantly increasing the wheelchair user's mobility and flexibility.

The TWIST must always be used, transported, maintained and serviced carefully to maintain its performance, efficiency and safety. The TWIST must only be attached to and operated with

wheelchairs that are selected by the specialist dealer or by Klaxon itself.

	Any other use or misuse could lead to hazardous situations.

4. USAGE ENVIRONMENT

Indications for Use

The TWIST is an add-on drive accessory for wheelchairs.

The TWIST device is intended to provide auxiliary power to manual wheelchairs to reduce the pushing power needed by their users.

TWIST device is designed to provide support to active wheelchair users who are physically and mentally able to safely control a manual wheelchair in typical situations, including inclines, even manually.

Operating Environment

The TWIST device is manufactured in order to be installed on most wheelchairs on the market. TWIST can be used both indoors and outdoors, within the limits stated in this document and, in general, according to the same limitations of use as those of the manual wheelchair (as established by its manufacturer). In case of uncertainty please verify all the limitations by reading the End User Manuals or by contacting the manufacturers concerned.

5. OPERATING LIMITS

The device must be used consistently with the intended use described in the preceding chapters, any other use is considered as improper.

In particular do not use TWIST:

- If not installed to a manual wheelchair.
- After intake of alcohol or if the user's psycho-physical conditions are unsuitable
- On poorly surfaced roads and off-road.
- On soft surfaces where the Twist wheelchair and wheels could sink (e.g. mud, gravel).
- In poor visibility conditions (fog, etc.).
- If the user weighs over 120 kg or is heavier than allowed for the wheelchair used.
- In adverse weather (rain, strong wind, etc.).
- When going uphill or downhill on slopes that are exceeding 6°/ 10%.
- In overcoming, either in going up or down, steps higher than 30 mm in height.

6. USER REQUIREMENTS

The TWIST device and its accessories can be used autonomously by a user:

- that is informed and has had sufficient practice in the proper use of the device.
- who is aware of the risks associated with its use.
- who is in possession of sufficient physical and mental capabilities to ensure the appropriate use of the device in complete safety.

7. WARNINGS AND PRECAUTIONS

	This User's Manual is an integral part of the device and must always be available to the user. If it is lost or damaged, contact KLAXON or download the manual from the specific product web page on www.klaxon-klick.com.
	The TWIST device and its accessories can only be used by users who are aware of the risks associated with their use.
	The TWIST device and its accessories may be used only and exclusively by a user who has been informed and has had sufficient practice in the proper use of such devices.
	Absolutely never remove, modify or replace components of the device. If necessary, these operations must be carried out only by technical personnel authorised by KLAXON.
	Never use the device after having drunk alcohol, taken drugs and in general if the user's psycho-physical conditions are unsuitable.
	The use of the TWIST device is prohibited to users weighing more than 120 kg; the total weight of the user must not exceed the amount specified by the manufacturer of the wheelchair in use.
	The user is responsible for monitoring and maintaining the efficiency of the device and its accessories in accordance to the instructions contained in this document.
	It is absolutely forbidden to use the device outside of the stated environmental operating conditions.

	Periodic maintenance must be performed to ensure proper operation and the safety of the device.
	Do not use a TWIST device to carry more than one person.
	In case the TWIST device is front- or rear-installed and used without handlebar: in such configurations, the TWIST is intended for a user who is physically and mentally capable of safely controlling the manual wheelchair in typical use situations, including inclines, using the wheelchair's handrims to brake safely.
	Potential finger traps are shown in chapter 21. Potential squeezing points are shown in chapter 21.
	The TWIST device is equipped with a carrying handle (Figure 1 Letter A). Use this handle to move and transport the device when it is not installed.
	Do not use a TWIST device unless it is installed to a manual wheelchair.
	Do not use the supplied battery pack with devices different from the TWIST device for which it is designed.
	Do not leave the battery in the sun or adverse weather when not in use.
	Do not short-circuit the battery.
	Do not get the battery wet or immerse it in water.
	Do not attempt to open the battery pack.
	Do not allow children to play with the battery.
	Do not allow children to use the TWIST device.
	If the battery has reached the end of its life, it must be disposed of in accordance with the local regulations of the country in which it will be disposed of.
	While using the device, some system components can get very hot (e.g.: braking system, etc.). A contact of these components with the skin may cause scalding and burns: be extremely careful to avoid contact.
	The components can become very hot if exposed to the sunlight. Skin contact may cause scalding and burns: be extremely careful to avoid contact.
	DANGER: The voltages inside the device can be lethal.
	DANGER: Do not connect/disconnect power cables when the device is on.

	DANGER: Any maintenance and/or cleaning operations performed on the device must be carried out with the device switched off and disconnected from the mains.
	DANGER: Do not remove any of the unit's cover panel, contact the Technical Support Service.
	The use of the TWIST device in public spaces (streets, sidewalks, squares, cycle paths, etc.) must comply with the specific regulations of the country in which it is used. KLAXON is not liable for use that is not in accordance with specific regulations in force.
	Adjust the speed in relation to the characteristics of the wheelchair, the road conditions, the lateral inclination of the road and the radius of the curves to be negotiated.
	It is forbidden to use the Twist simultaneously with other propulsion system.
	The TWIST device is equipped with a front light, however it is recommended to take the utmost care when driving in poor lighting conditions. Driving in poor lighting conditions is prohibited if the front light is not working or the lighting conditions are insufficient (even if the front light is on). Driving in poor lighting conditions is only possible if permitted by local country regulations and in accordance with applicable laws.
NOTE	The front light can only be operated via the Klaxon App. The front light only works when the device is assembled on the front.
	The TWIST device is equipped with a rear light that allows you to be visible from behind. It is recommended to pay the utmost attention when driving in poor lighting conditions. Driving in poor lighting conditions is prohibited if the rear light is not active. Driving in poor lighting conditions is only possible if permitted by local country regulations and in accordance with applicable laws.
NOTE	The rear light can only be operated via Klaxon App. The rear light only works when the device is installed on the rear.
	Pay attention to side-skidding due to steering while moving.
	Pay attention to side-skidding due to the slope of the road.
	Do not use the TWIST device on roads with unsuitable surfaces such as, for example, off-road tracks or in the presence of sand or mud. Do not drive through deep puddles (see chapter 13).
	Pay attention to side-skidding due to strong wind.
	Do not use the TWIST device in adverse weather conditions (rain, strong wind, etc.).
	Please bear in mind that traction and stability may be affected by the pavement and environmental conditions even within the maximum rated slope value (6°/10%).
	It is recommended to go downhill at no more than two thirds of maximum speed; avoid sudden braking or acceleration when going on inclines.
	Never attempt to overcome obstacles when going uphill or downhill.

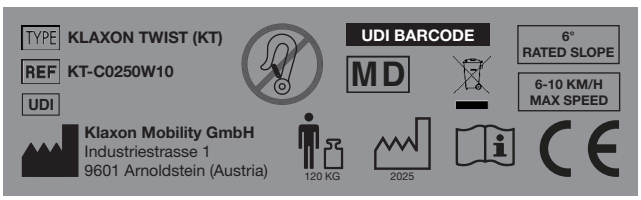
	Do not go up or down staircases.
	Do not attempt to overcome obstacles diagonally: ensure that the rear wheels always overcome the obstacle at the same time. Never stop before having completely passed the obstacle. Do not attempt to drive over obstacles higher than 30 mm.
	When the device is in motion, avoid moving the centre of gravity or moving the body abruptly.
	It is advisable to drive through narrow passages at minimum speed and with the utmost caution.
	When using the TWIST device, the danger of tipping over when turning increases: reduce speed before making a change of direction. Only accelerate again once the curve has been exited and only when the front wheel is straight again (aligned with the Linking System).
	When using the TWIST device, it is absolutely forbidden to make U-turns or start from a standstill with the handlebar turned on nominal slopes greater than 3° (or less depending on the floor conditions) and at a speed greater than 1st gear, when driving with the Controller, and 3 km/h, when driving with the handlebar (or less depending on the floor conditions).
	When entering a building and/or lift, always keep in mind the turning diameter of the wheelchair equipped with the TWIST device. Avoid driving situations from which it is no longer possible to exit because it is impossible to turn the wheelchair.
	It may be difficult to manoeuvre in front of a lift or in front of a building entrance because the wheelchair's turning diameter increases once the TWIST device is installed; this may be in contrast to the building regulations or the actual dimensions of the entrances.
	Absolutely never use the TWIST device along tramways, rails and metro tracks. Pay the utmost attention, when passing a pedestrian crossing in the presence of tracks, to keep the TWIST and the wheelchair wheels at a safe distance. Failure to comply with this precaution could cause serious damages to the device and to the user. The same precautions apply to water drains, manholes and all kinds of hollows along the way.
	Please take into account that the stopping distance on inclines can be significantly greater than on flat terrain.
	Switch off the device before entering and before leaving an indoor ambient.
	Make sure the surroundings are free of hazards, precipices, drains, obstacles, collision elements, people and/or animals each time the device starts up or re-starts moving.
	Avoid collisions, crashes, dangerous routes, routes near precipices, holes and/or drains and, in general, any condition that could endanger one's own safety and the safety of people, animals and/or property.
	The TWIST device can be used only with compatible wheelchairs. KLAXON provides its distributors with an Installation Manual that contains the linking criteria. Only authorised KLAXON technicians can decide, under their own responsibility, if the specific wheelchair can be properly used with the TWIST device (according to both wheelchair features and its general condition).
	Using the device when not properly installed exposes the driver to the risk of losing control of the device.
	The TWIST device may only be operated by a user who has the necessary psychophysical capabilities to use the device in total safety. The final evaluation of the user's capabilities, according to the chosen product configuration, is under the responsibility of the dealer or, if the device is supplied under prescription, of the prescribing physician. In no way can KLAXON be held responsible for an erroneous evaluation.

8. MARKINGS

The device is uniquely identified by its serial number (SN), shown on the plate of the device, attached to the motor unit near the battery. The meaning of the symbols shown in the plate are as follows:

	Manufacturer
KLAXON TWIST (KT)	Type name
	UDI number
	KT-C0250W10
	Medical Device
	Year of manufacture
	Symbol indicating to follow the instructions for use
	Symbol indicating that the wheelchair (device) is not intended to be used as a seat in a motor vehicle
	Maximum User Weight
	CE mark
	Electrical device disposal via separated collection (special disposal, electrical components)
MAX SPEED	Maximum speed of the device (configuration without handlebar - configuration with handlebar)
RATED SLOPE	Maximum inclination that can be negotiated with the device

Example of CE label, applied on each TWIST device:



9. PRODUCT

9.1 TWIST

A

B

C

D

E

F

A	KLAXON TWIST
B	Controller
C	Klaxon App
D	Hex keys
E	TWIST Battery Charger
F	USB-A/USB Type-C cable or USB Type-C charger (depending on the country of sale)

NOTE	The Klaxon App can be considered, to all intents and purposes, as an accessory as the TWIST device can also be used without it.
NOTE	The Klaxon App provides additional functionalities that are useful but not essential to operate the device. KLAXON highly recommends use of the Web App to enjoy a personalised driving experience.
NOTE	It is possible to access and download the Klaxon App from the QR Codes on Page 1. To use the Klaxon App it is necessary to register.

Figure 1

KLAXON TWIST device components

A	Handle
B	Front light (activated via Klaxon App)
C	On/off button and LED bar indicating the remaining charge level (when TWIST device is switched on)
D	Battery
E	Wheel and motor unit
F	Multi-link Klaxon®: steering unit with housing to connect driving configuration adaptations (e.g.: handlebar)
G	Upper and lower pin bracket

H	Housing for the knob screw (Figure 17 Letter K) designed to reduce the play between the Linking System and the device
I	Rear light (activated via Klaxon App)
J	Stand base with adjustable handle

Inserting/removing the battery

Place the TWIST on a flat surface and make sure the device is switched off then:

- to insert the battery, place it inside its housing using the appropriate slot (Figure 2)
- to remove the battery, slide it out of its housing using the appropriate slot (Figure 3)

Switching on the device and the battery

To switch on the TWIST and its battery, ensure that the latter is charged and correctly inserted in its housing, then press the power button (Figure 2 Letter A) for three seconds until the LED bar lights up. The device will emit a double acoustic signal (Beep) to confirm that it has been switched on.

Switching off the device and the battery

To switch off the TWIST device and its battery, press and hold down the switch-off button (Figure 3 Letter A) for three seconds until the LED bar goes off.

Figure 2

Figure 3

STEERING DIRECTIONALITY CONTROL SYSTEM

Figure 3 Letter C: The device is equipped with a spring-loaded mechanical system that allows to vary the firmness of the steering system. Figure 4 illustrates how in position A the system changes direction more easily, while in position B the system has greater resistance to changes in direction and consequently greater stability in straight line travel.

A B *Figure 4*

⚠	For uphill travel, it is advisable to use the position indicated in Figure 4 Letter B.

CARRYING HANDLE

Place the KLAXON TWIST device on a flat surface. Use the dedicated central slot to extract the handle from its seat (Figure 5).

A B *Figure 5*

REAR LIGHT

The rear light (Figure 6) can only be activated via the Klaxon App.

Figure 6

ADJUSTABLE REAR HANDLE

Unscrew the two tightening keys highlighted in red in Figure 7. Then adjust the handle to the desired inclination. Tighten the tightening keys again.

Figure 7

9.2 CONTROLLER

NOTE	The Controller is provided with the Quokka® attachment system. As an optional, a Velcro attachment system is available.

Figure 8

A	Stop button
B	Speed selection lever
C	Power button
D	LED bar
E	Adjustment ring for position adjustment - Version with Quokka® attachment system
F	Velcro strap for securing the Controller to the wheelchair (available only on the optional Velcro attachment version)
G	Hole for Velcro insertion (available only on the optional Velcro attachment version)
H	Micro USB Type C connector for charging
I	Safety loop of the Velcro strap (available only on the optional Velcro attachment version)
J	Adjustment ring for position adjustment - Version with Velcro attachment system

Right Side Controller

If the Right Side Controller was chosen at the time of purchase, it must be installed on the right side of the wheelchair. In order to shift gears, simply push the lever forward. Conversely, to be able to downshift gears, simply push the lever backwards.

⚠	If the controller is installed on the opposite side to the one it was designed for, the controls will work in reverse. (Figure 9). Always ensure correct installation before operating.

Figure 9

Left controller

If the left Controller was chosen at the time of purchase, it will need to be installed on the left side of the wheelchair. In order to shift gears, simply push the lever forward. Conversely, to be able to downshift gears, simply push the lever backwards.

⚠	If the controller is installed on the opposite side to the one it was designed for, the controls will work in reverse. (Figure 10). Always ensure correct installation before operating.

Figure 10

9.2.1 INSTALLING THE CONTROLLER ON THE WHEELCHAIR

⚠	If it is intended to mount the Controller on the Right, make sure that a Right Controller has been purchased. If installing the Left Controller, make sure the Left Controller has been purchased.
⚠	NOTE For the standard Quokka® system attachment please refer to this subsection and to the manual of the product provided with the attachement. For the instructions related to the Velcro attachement please refer to this subsection and to subsection 9.2.2.

- Find the most convenient, reachable assembly position to install the controller (Figure 11).

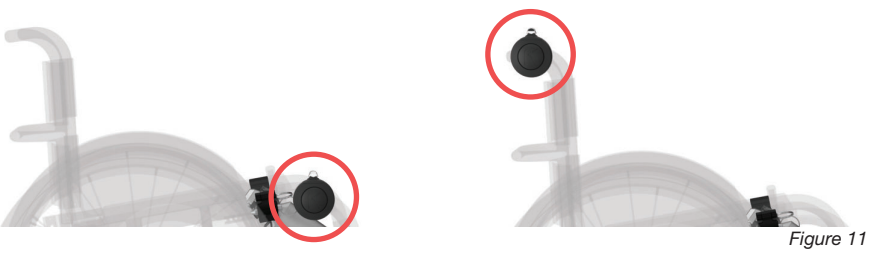


Figure 11

⚠	It is recommended to mount the Controller in such a way that it does not interfere with or prevent the use of the wheelchair brakes.
⚠	When mounting and/or operating any accessories or components on the wheelchair, ensure that they do not interfere with or impair the use of the Controller.
⚠	Mount the Controller in such a way that no controls, levers and/or buttons can be operated unintentionally (including those on the wheelchair and all the accessories).

- Once the position has been found, screw the adjustment ring (for Velcro or Quokka®) to the Controller using the 4 screws and the supplied hex key (Figure 12).

Figure 12

9.2.2 INSTALLING THE CONTROLLER WITH VELCRO ATTACHMENT SYSTEM

- Wrap the wheelchair tube with the Velcro tape (Figure 13).
- Pull the Velcro tight and fold it over its counterpart, securing it
- Pass the head of the Velcro tape through the safety loop to prevent the Velcro from accidentally slipping off.

Figure 13

If necessary, cut off the excess of Velcro, taking care not to shorten it too much. The folded Velcro should adhere to the counterpart wrapped around the tube, along its entire length. Excessively short Velcro may not guarantee a good mechanical hold of the Controller.

9.2.3 CONTROLLER'S USER MANUAL

General information:

The Controller is supplied by KLAXON in two versions, one that can be mounted on the right side and one that can be mounted the left side of the wheelchair.

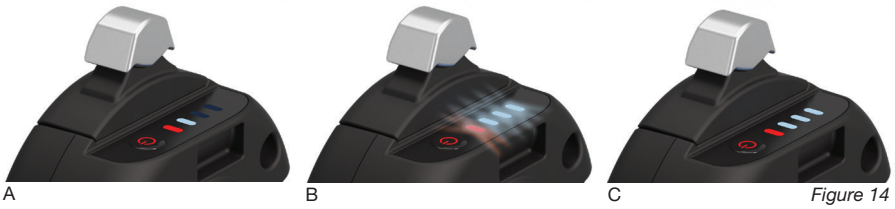
At the time of purchase, the type of Controller will be decided on by taking into consideration the most comfortable usage position for the user.

⚠	Do not mount the Right Side Controller on the left or the Left Side Controller on the right, as the operation of the speed selection lever would work in the opposite direction.

The Controller is equipped with a battery that guarantees approximately 15 hours of use.

The LED bar and the emission of certain acoustic signals indicate the status of the device:

- The number of lit LEDs indicates the battery charge level of the Controller (Figure 14 Letter A)
- Flashing LEDs indicate that the Controller is not connected to the TWIST (Figure 14 Letter B)
- Lit, non-flashing LEDs indicate that the Controller is connected and ready for use. An acoustic signal (Beep) will alert you when the connection between the Controller and TWIST has been made (Figure 14 Letter C)
- A long acoustic signal (Beep) followed by a short one warns you that the Controller has been disconnected from TWIST.



A B C *Figure 14*

⚠	The Controller must only be activated when the TWIST device is installed to the wheelchair. Otherwise the TWIST could move abruptly if accidental or intentional driving commands are given through the controls.
⚠	Always switch off the Controller before disconnecting the TWIST from the wheelchair.
⚠	The Controller must never be turned on if it is not connected to the wheelchair.
⚠	It is advisable to avoid using the device when the Controller's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).
⚠	Do not leave the Controller with its battery empty for long periods.
⚠	Always switch off the Controller when not in use or when using other driving controls.
⚠	Do not clean the Controller with solvents or products not recommended for plastic materials. Before applying the cleaning product, check the instructions of the chosen product to ensure that it is compatible.
⚠	Do not wet or immerse the Controller in water.
⚠	Use only the supplied battery charger to charge the Controller.

Controller usage Information - Braking types

⚠	The motor of the TWIST device does not perform any braking and/or blocking action on the device when it is not in motion (recorded speed approx. 0 Km/h). This also refers to the Braking and the Temporary Braking functions triggered by the Controller when the device stops (reaches approx. 0 Km/h). It is therefore necessary to act on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position.

Braking: A quick press of the stop button activates the TWIST motor braking function until the device stops (recorded speed of approximately 0 Km/h) (Figure 15).

Quick push

Figure 15

⚠	When the TWIST is installed at the front, braking will be very effective in all conditions of use even when riding downhill. When the TWIST is rear-installed the wheel will not be able to brake the device, therefore activating the Braking function will only stop the wheel's power output but will not effectively slow down the device (Figure 15).
⚠	In any case, it will be necessary to act by actively braking the manual wheelchair to keep it stationary in position.

Temporary Braking: A prolonged press (more than 1.5 seconds) on the stop button activates the Temporary Braking function of the motor; the device will slow down to a stop (approx. 0 Km/h) as in the Braking function but, when the button is released, the motor will restart moving at the minimum speed (1st gear) of approx. 2 km/h (Figure 16).

Keep the pressure on the button for more than 1.5 seconds

Figure 16

⚠	When the TWIST is installed at the front, braking will be very effective in all conditions of use even when riding downhill. In case the TWIST is installed at the rear, the wheel will not be able to brake the TWIST; therefore, activating the Temporary Braking function will only ensure that the wheel's power output is stopped, but will not brake the wheelchair (Figure 16). If it is necessary to remain stationary in position before the restart, act by actively braking the manual wheelchair.
⚠	If the Temporary Braking function is activated by mistake, press the stop button immediately and quickly to execute the Braking function. It will then be necessary to act by actively braking the manual wheelchair to keep it stationary in place.

Controller usage information - Speed management

A first quick forward push and the subsequent release of the speed selection lever sets a travel speed of approximately 2 km/h (1st gear).

⚠	Caution: the speed will only be set when the speed selection lever is released.

A second quick forward push and the subsequent release of the speed selection lever sets a travel speed of approximately 3.5 km/h (2nd gear).

⚠	Caution: the speed will only be set when the speed selection lever is released.

A third quick forward push and the subsequent release of the speed selection lever sets a travel speed of approximately 4.5 km/h (3rd gear).

⚠	Caution: the speed will only be set when the speed selection lever is released.

A fourth quick forward push and the subsequent release of the speed selection lever sets a travel speed of approximately 6 km/h (4th gear).

	Caution: the speed will only be set when the speed selection lever is released.

It is possible to shift up and down quickly from 1st to 4th gear by quickly giving 4 quick pushes in sequence.

To reduce the speed, apply a quick push on the speed selection lever in the opposite direction.

	Caution: the speed will only be set when the speed selection lever is released.

Each action in the Controller will be matched by an acoustic signal from the TWIST confirming that the command has been received.

The acoustic warning can be disabled using the dedicated Klaxon App on a Smartphone.

	When the TWIST device and the wheelchair are being controlled by a third person, that person must have read and understood this document in its entirety and must comply entirely with the user's requirements.
	When the TWIST device and the wheelchair are controlled by a third person, this person must always ensure that it has the psycho-physical ability to control the TWIST device, to operate the manual wheelchair and to brake/stop both the TWIST device and the wheelchair. If in doubt, please consult all the available manuals for all the aids used, including the wheelchair, and/or to undertake the appropriate training to use them.
	When the TWIST device and the wheelchair are controlled by a third person, this person must guarantee that it can always control, and if necessary brake/stop, the TWIST device and the manual wheelchair at all times. This person is also responsible for choosing the route, driving correctly, controlling the suitability of the route, the pace and of the braking/stopping of the device and of the wheelchair, as well as for everything that happens to the people, objects, animals and the environment involved as long as the TWIST device is installed to the wheelchair.
	It is forbidden, under any circumstances, that the control of the device should be transferred/assigned to persons who do not meet the requirements stated in this document.
	It is forbidden, under any circumstances, to leave the controls in such a way that its operator cannot access them at any time during use.

In case of Controller connection problems

In the event that the Twist does not restart moving, stops or does not execute commands be sure to be in a location away from danger and follow these steps: press the Stop button. If the problem persists: switch the Controller off and on again. If the problem persists: switch the Controller and Twist off and on again. If the above steps do not solve the problem: do not use the device and contact an authorised KLAXON service centre.

9.3 HANDLEBAR ACCESSORY FOR RIDING WITH THE HANDLEBAR

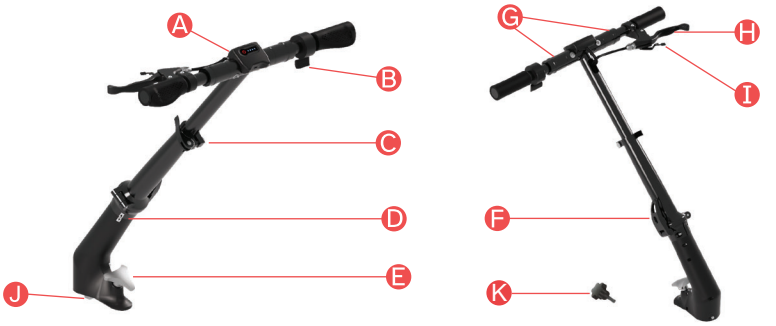


Figure 17

A	Handlebar Control with power button and LED bar
B	Accelerator
C	Release lever for handlebar height adjustment
D	Alignment arrows for matching the upper and lower handlebar components
E	Knob for fixing the handlebar to the TWIST device
F	Release lever to fold the handlebar
G	Right and left cuff to be operated in order to fold the upper part of the handlebar
H	Mechanical and electronic brake lever
I	Parking brake
J	Steering system hub
K	Knob screw designed to reduce the play between the Linking System and the device

Positioning the handlebar on the TWIST (Figure 18). See chapter 11 for the complete procedure.

Figure 18

Handlebar installed on the TWIST (Figure 19).

Figure 19

DETAIL 1

Figure 20: Detail of the alignment arrows between the lower handlebar component and the upper handlebar component..

Figure 20

DETAIL 2

Figure 21: Detail of the parking brake on the brake lever.

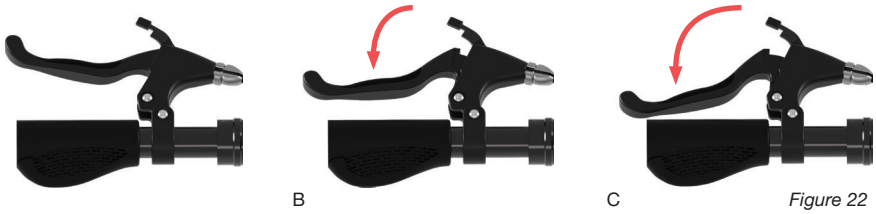
Figure 21

9.3.1 BRAKE LEVER AND PARKING BRAKE

Connecting the handlebar to the TWIST device enables the mechanical brake and parking brake of the device..

Mechanical Brake and Electronic Brake System (EBS)

- Brake lever (Figure 22 Letter A).
- Lightly pressing on the brake lever activates only and exclusively the electronic brake EBS (Figure 22 Letter B).
- Exercising greater pressure on the brake lever will also activate the mechanical brake (Figure 22 Letter C).



A B C *Figure 22*

⚠	The EBS brake will slow the device until it stops (recorded speed approx. 0 km/h) but will not hold the device and wheelchair in place. Act on the mechanical brake on the handlebar or on the wheelchair to keep the TWIST and wheelchair in position.

Parking brake

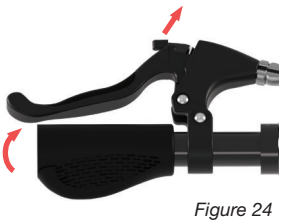
Here below the instructions for enabling the parking brake on the handlebar accessory:

- Press the brake lever.
- Lower the parking brake lever (Figure 23 Letter E).
- Release the brake lever after making sure that the parking brake is properly engaged (Figure 23 Letter F).

D E F *Figure 23*

Below the instructions for disabling the parking brake on the handlebar accessory:

- Press the brake lever until the parking brake lever is free to move.
- Lift the parking brake lever without releasing the brake lever (Figure 24 Letter G).
- Release the brake lever which will return to its natural position as shown in Figure 23 Letter D.



G *Figure 24*

9.3.2 OPENING AND CLOSING THE HANDLEBAR ACCESSORY

The handlebar of the TWIST is designed so that it can be folded or unfolded in 4 moves.

Figure 25

A	Right cuff for folding the upper part of the handlebar
B	Left cuff for folding the upper part of the handlebar
C	Lever for adjusting the length of the upper part of the handlebar
D	Central joint
E	Brake cable

- Pull the cuff (Figure 25 Letter A) on the accelerator side handlebar (Figure 26 Letter A).
- Pull the cuff (Figure 25 Letter B) on the brake side handlebar (Figure 26 Letter B).

A B *Figure 26*

- Bend the two upper handlebars by 90° (Figure 27).

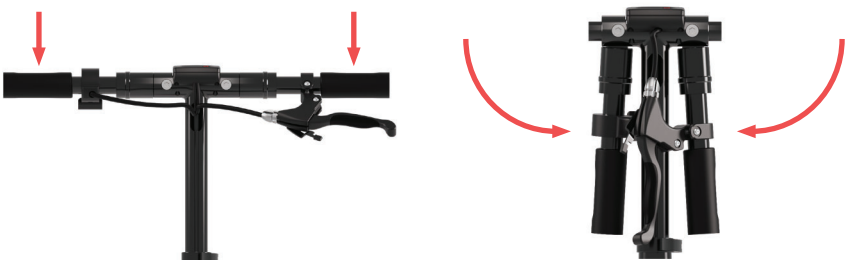


Figure 27

- Disengage the fixing lever (Figure 25 Letter C) and lower the handlebar into its seat to shorten it (Figure 28).

Figure 28

- Re-engage the lever (Figure 25 Letter C)
- Disengage the central joint lever (Figure 25 Letter D)
- Slowly fold the two parts of the handlebar, while being sure to accompany the brake cable sheath (Figure 25 Letter E), which is located inside it, avoiding straining it during folding.
- To reopen the entire handlebar, perform the same operations in reverse. Always take great care not to bend the brake cable sheath, and to accompany it everytime during the operation.

⚠	Once the handlebar has been mounted, always check that the mechanical brake is working properly before using the device.
⚠	If the brake sheath is strained during the opening and closing operations of the handlebar, there is a risk of damaging the mechanical brake, and rendering it inoperative. If this happens, do not use the device and contact a KLAXON service centre.
⚠	If the brake cable is damaged or does not work, the mechanical brake may not work. Do not use the device and contact a KLAXON service centre.
⚠	The adjustment of the brake lever may only be carried out by an authorised KLAXON technician. An overtightened brake can cause the vehicle to roll over if the brake lever is squeezed too hard.

9.4 CAREGIVER CONTROLLER

Figure 29

Figure 30

A	Controller
B	Power button
C	Accelerator
D	USB Type-C charging port
E	LED bar
F	Accelerator support
G	Accelerator support screw
H	Controller closure
I	Long tightening flywheels
J	Short tightening flywheels

9.4.1 POSITIONING THE ACCELERATOR OF THE CAREGIVER CONTROLLER

The accelerator can be positioned to the right or left of the controller support (Figure 31).

Figure 31

Tools

To change the position of the accelerator support, use an Allen key no. 3.

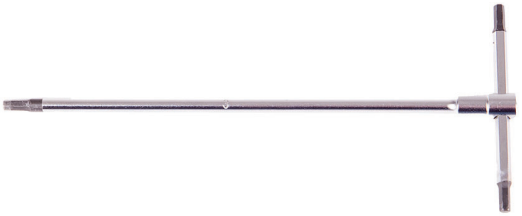
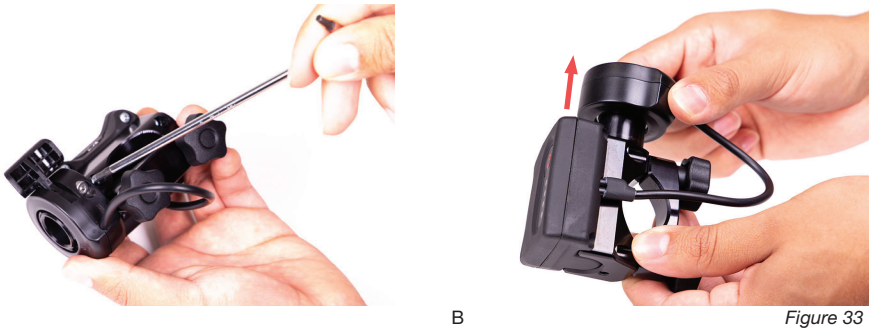


Figure 32

Procedure

To change the position of the accelerator:

- Unscrew the accelerator fixing screw (Figure 33 Letter A)
- Remove the accelerator (Figure 33 Letter B)



A B *Figure 33*

- Unscrew the accelerator support screw (Figure 34 Letter C)
- Screw the accelerator support on the opposite side (Figure 34 Letter D)

C D *Figure 34*

- Assemble the accelerator on its support (Figure 35 Letter E)
- Tighten the accelerator fixing screw (Figure 35 Letter F)

E F *Figure 35*

9.4.2 POSITIONING THE CAREGIVER CONTROLLER ON THE WHEELCHAIR

To install the controller on the wheelchair, choose the tightening flywheels of the size best suited to the wheelchair handles.

Use the short tightening flywheels when the profile of the handles has a measurement L (Figure 36) between 22 mm and 28 mm.

Use the long tightening flywheels when the profile of the handles has a measurement L (Figure 36) between 28 mm and 36 mm.

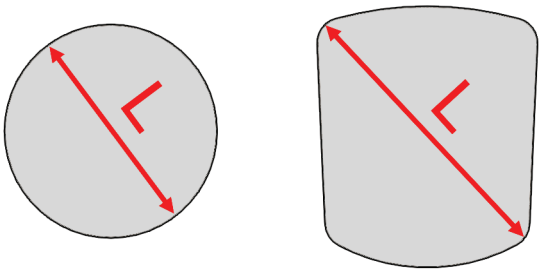


Figure 36

After choosing the correct size flywheels, proceed with the following instructions:

- Place the Caregiver Controller on the preferred side of the wheelchair (Figure 37)

Figure 37

- Tighten the tightening flywheels equally ensuring that the Controller is securely anchored to the wheelchair handle (Figure 38)

Figure 38

9.4.3 CAREGIVER CONTROLLER USER MANUAL

The Caregiver Controller can be used with the Twist installed at the front and with the Twist assembled at the rear.

Figure 39

Turning the Caregiver Controller On and Off

- Turn the Controller on by pressing the power button (Figure 29 Letter B) until the LED bar lights (Figure 29 Letter E) turn on (Figure 40 Letter A).
- Turn the Controller off by pressing the power button (Figure 29 Letter B) until the LED bar lights (Figure 29 Letter E) turn off (Figure 40 Letter B).

A B *Figure 40*

General information about the Caregiver Controller

The Caregiver Controller is equipped with a battery that guarantees approximately 15 hours of use. The LED bar indicates the status of the device:

- The lit LEDs indicate the battery charge level of the Handlebar Control. (Figure 41 Letter A).
- The flashing LEDs indicate that the Handlebar Control is not connected to the TWIST. (Figure 41 Letter B).
- The LEDs that are on and not flashing indicate that the Handlebar Control is connected and ready for use (Figure 41 Letter C).

A B C *Figure 41*

NOTE	Do not leave the Caregiver Controller with a discharged battery for long periods of time.
⚠	Always turn off the Caregiver Controller when not in use, during assembly on the TWIST or when using other driving controls.
NOTE	Do not clean the Caregiver Controller with solvents or products not recommended for plastic materials. Before applying, check the instructions of the chosen product to ensure that it is compatible.
⚠	Do not wet or immerse the Caregiver Controller in water.
⚠	To charge the Caregiver Controller, use only the charger/charging cable provided.
⚠	Always turn off the control before removing the Caregiver Controller and/or the Twist from the wheelchair.
⚠	The Caregiver Controller must never be turned on if the Twist is not connected to the wheelchair, except during pairing between the 2 devices.

⚠	It is advisable to avoid using the device when the Caregiver Controller's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).
⚠	When assembling the Caregiver Controller and connecting it, make sure that no other controls nearby are turned on.

9.5 TWIST'S FRONTAL INSTALLATION KIT - CENTRAL LINKING SYSTEM KLAXON®

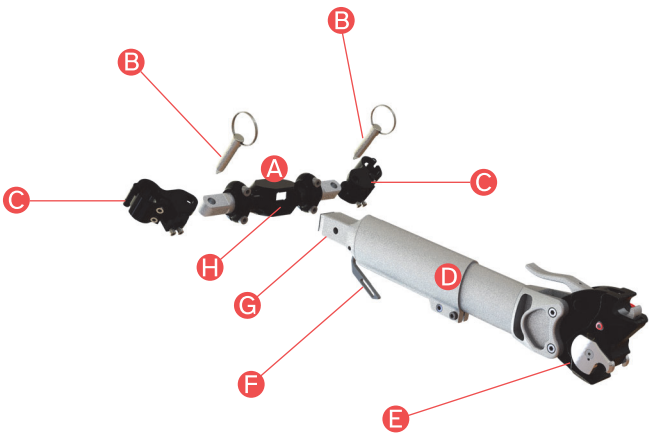


Figure 42

A	Crossbeam
B	Locking Pins
C	Clamping rings
D	Connector
E	Front Hook 2.0 Klaxon®
F	Connector's lock/unlock lever
G	Mounting system in the crossbeam (with ball type lock)
H	Square seat for the insertion of the crossbeam

⚠	The Cuffs (Figure 42 Letter C) are a component that remains mounted on the wheelchair frame and cannot be installed/removed except by an authorised KLAXON dealer.
⚠	The Linking Systems can only be installed on compatible wheelchairs. KLAXON provides its distributors with an Installation Manual that contains the linking criteria. The Linking Systems must be installed only by authorised KLAXON technicians who may decide, under their own responsibility, if the specific wheelchair can be properly used with that Linking System (according to both wheelchair features and its general condition).

9.5.1 LINKING STEPS - CENTRAL LINKING SYSTEM KLAXON®

⚠	Throughout the linking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.
⚠	Be careful not to squeeze or entrap your fingers during the linking operations. Potential finger traps and squeezing points are shown in chapter 21.

- Insert the crossbeam (Figure 42 Letter D) into one of the two cuffs (Figure 42 Letter C) and secure it by inserting the appropriate pin (Figure 42 Letter B). (Figure 43).

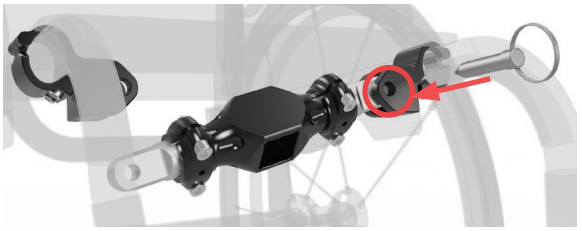


Figure 43

- Also insert the crossbeam into the second cuff and secure it by inserting the appropriate pin (Figure 44). Note: The crossbeam can always remain installed on the wheelchair; if necessary (for loading and unloading from vehicles and closing the foldable wheelchair) it can be removed and placed in a safe place.

Figure 44

- Insert the connector (Figure 42 Letter D) into the square seat (Figure 42 (Letter H) of the crossbeam (Figure 42 (Letter A), pressing the lever (Figure 42 (Letter F) located in the lower part of the same. Once inserted, release the lever and make sure that the connector is firmly locked (Figure 45).

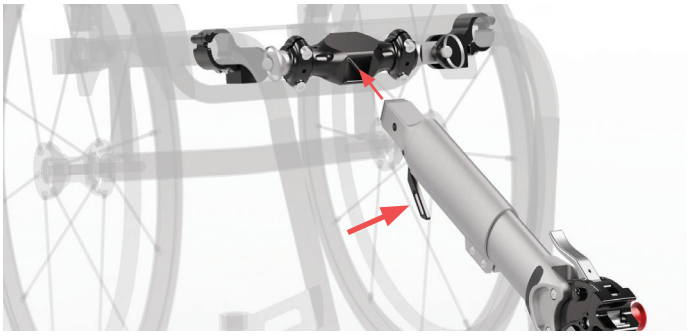
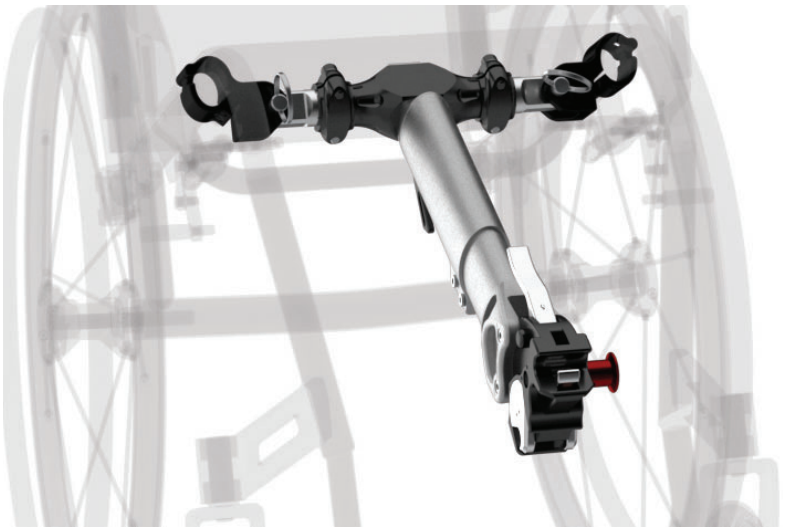


Figure 45

- Once the connector is inserted, the linking system will appear as in Figure 46 and Figure 47.

- In order to proceed with the TWIST linking please follow the instruction in chapter 10.

Side view: Central Linking System Klaxon® *Figure 46*



View in perspective: Central Linking System Klaxon® *Figure 47*

9.5.2 UNLINKING STEPS - CENTRAL LINKING SYSTEM KLAXON®

⚠	Throughout the unlinking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.

⚠	Be careful not to squeeze or entrap your fingers during the unlinking operations. Potential finger traps and squeezing points are shown in chapter 21.

- Remove the device as described in sections 10.2 and 11.4.
- Remove the connector (Figure 42 Letter D) by pressing the lever located in the lower part of the same (Figure 42 Letter F).

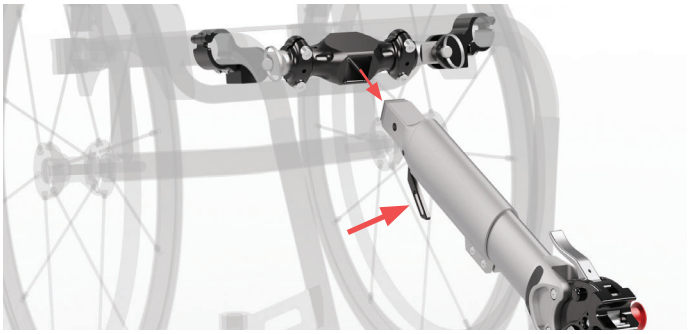


Figure 48

- Store the connector in a safe place.

9.6 TWIST'S FRONTAL INSTALLATION KIT - LATERAL LINKING SYSTEM KLAXON®

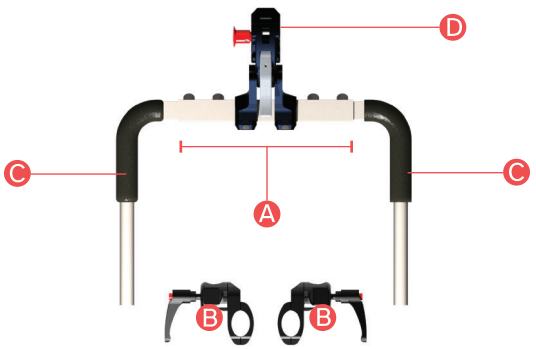


Figure 49

Lateral Linking System Klaxon® kit:

A	Crossbeam
B	Complete cuffs
C	Forks
D	Front Hook 2.0 Klaxon®

Complete cuff (Figure 49 Letter B) detailed in Figure 50:

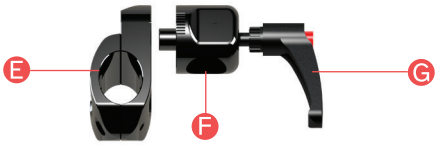


Figure 50

E	Cuff
F	Clamp
G	Clamp's fixing screw

⚠	The Complete Cuffs (Figure 50) are a component that remains assembled on the wheelchair frame and cannot be assembled/disassembled except by an authorised KLAXON dealer).
⚠	The Linking Systems can only be installed on compatible wheelchairs. KLAXON provides its distributors with an Installation Manual that contains the linking criteria. The Linking Systems must be installed only by authorised KLAXON technicians who may decide, under their own responsibility, if the specific wheelchair can be properly used with that Linking System (according to both wheelchair features and its general condition).

9.6.1 LINKING STEPS - LATERAL LINKING SYSTEM KLAXON®

⚠	Throughout the linking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.
⚠	Be careful not to squeeze or entrap your fingers during the linking operations. Potential finger traps and squeezing points are shown in chapter 21.

- Loosen both clamp fixing screws (Figure 50 Letter G) enough to allow the fork tubes (Figure 49 Letter C) to slide inside them easily and without interference (Figure 51).

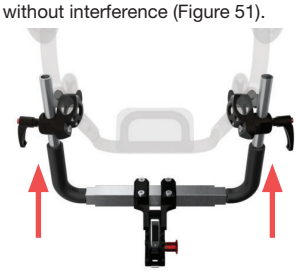


Figure 51

- Insert the fork tubes into the clamps (Figure 50 Letter F) of the size indicated by the installation technician. It is important to ensure that the forks come out of the clamps at least 30 mm from the rear and by the same distance on both sides (Figure 52).
- Verify that the forks are correctly and evenly inserted. If you have made a mistake, correct the insertion and then proceed as follows (Figure 52).

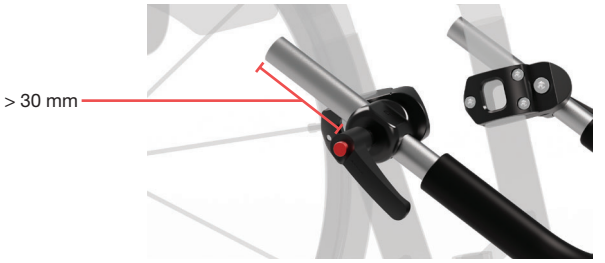


Figure 52

- Tighten both clamp fixing screws until the forks are securely and firmly fixed (Figure 53).

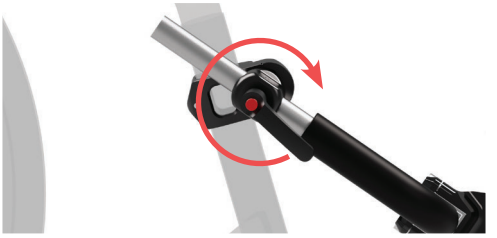


Figure 53

- Verify that the forks are correctly secured so that they cannot move and so that they cannot slide out of the clamps during use. In case the forks are not fixed enough, tighten more the clamps' lever screws until they meet the requirement then proceed as follows.
- After inserting the forks, the device will be as illustrated in Figure 54 and Figure 55.
- In order to proceed with the TWIST connection please follow the instruction from chapter 10.

Side view: Lateral Linking System Klaxon®

Figure 54

View in perspective: Lateral Linking System Klaxon® *Figure 55*

9.6.2 UNLINKING STEPS - LATERAL LINKING SYSTEM KLAXON®

⚠	Throughout the unlinking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.
⚠	Be careful not to squeeze or entrap your fingers during the unlinking operations. Potential finger traps and squeezing points are shown in chapter 21.

- Remove the device as described in sections 10.2 and 11.4.
- Loosen the clamp fixing screws (Figure 50 Letter G) so that the forks (Figure 49 (Letter C) can be easily removed without interference (Figure 56).

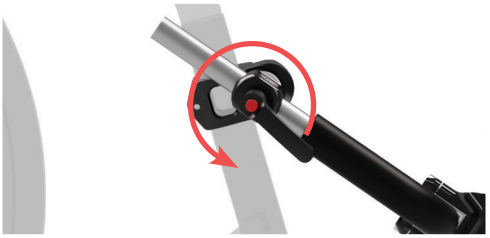


Figure 56

- Remove the lateral linking system kit by sliding the forks out of the clamps (Figure 50 Letter F). (Figure 57).

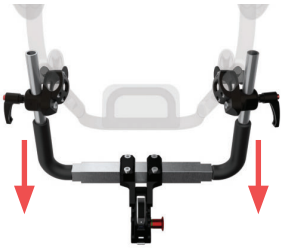


Figure 57

- At this point the Lateral Linking System is disconnected both from the TWIST and the wheelchair as shown in Figure 46. Please note that the Complete Cuffs always remain installed on the wheelchair.

Figure 58

- Store the Lateral Linking System kit in a safe place.

9.7 TWIST'S REAR INSTALLATION KIT - REAR LINKING SYSTEM KLAXON®

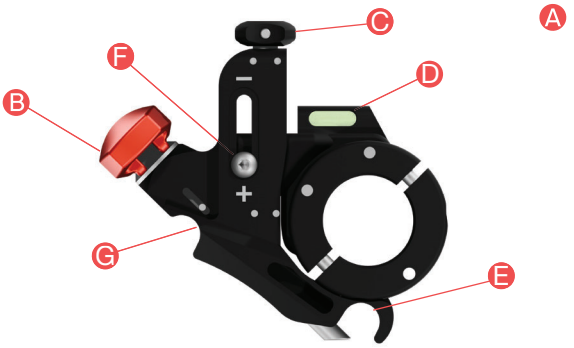


Figure 59

Figure 60

A	Rear linking
B	Unlinking/linking button
C	Hook height adjustment wheel
D	Spirit level
E	Seat of the upper pin
F	Adjustment wheel fixing screw
G	Lower pin linking seat
H	Steering block frame
I	Fixing knob
J	Front kickstand

⚠	The Linking Systems can only be installed on compatible wheelchairs. KLAXON provides its distributors with an Installation Manual that contains the linking criteria. The Linking Systems must be installed only by authorised KLAXON technicians who may decide, under their own responsibility, if the specific wheelchair can be properly used with that Linking System (according to both wheelchair features and its general condition).

9.7.1 TWIST'S REAR INSTALLATION KIT - VARIANT: REAR LINKING SYSTEM KLAXON® FOR FOLDABLE WHEELCHAIRS

Figure 61

Rear Linking System Kit for foldable wheelchairs

K	Rear Hook (described in detail in the Figure 59)
L	Clamping Lever
M	Crossbeam
N	Telescopic Axle (recognisable by the presence of the Clamping Lever)

O	Fixed Axle

⚠	The Linking Systems can only be installed on compatible wheelchairs. KLAXON provides to the distributors the Installation Manual which contains the coupling criteria and the possible configurations. The Rear Linking System Kit for foldable Wheelchair can only be configured by authorised KLAXON technicians who may decide, under their own responsibility, if the specific wheelchair can be properly used with the aforementioned system (according to both wheelchair features and its general condition).

9.7.2 LINKING STEPS - REAR LINKING SYSTEM KLAXON® FOR FOLDABLE WHEELCHAIRS

⚠	Throughout the linking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.

1. Unscrew the Clamping Lever (Figure 61 Letter I) by half a turn to unlock the Telescopic Pin (Figure 61 Letter N). (Figure 62).

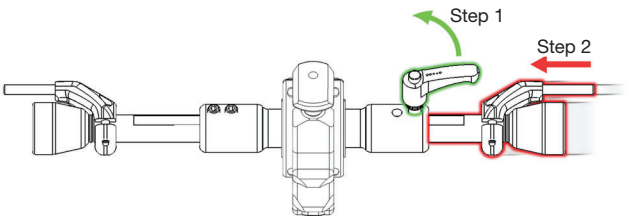


Figure 62

2. Retract the Telescopic Pin (Figure 61 Letter N) until it reaches the minimum extension. Do not tighten the Tightening Lever until having reached step number 5 (Figure 62).
3. Position the Rear Linking Kit for folding wheelchairs, at its minimum extension, between the wheel axles of the wheelchair (Figura 50).

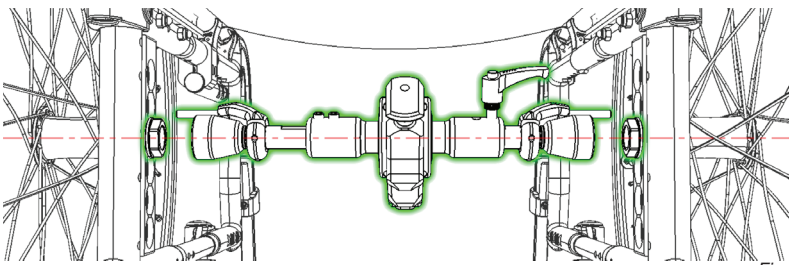


Figure 63

4. Extend the Telescopic Pin until it reaches the maximum possible extension between the wheels of the wheelchair (Figura 51).
5. Tighten the Tightening Lever to secure the Telescopic Pin in place (Figura 51).

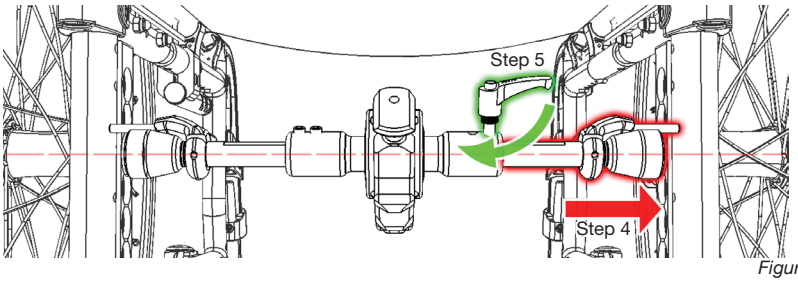


Figure 64

6. Check that the Kit is securely fixed to the pins/nuts of the wheelchair. The correct fixing position is given by the spirit level (Figure 59 Letter D), when the air bubble is in the central position, as illustrated in Figure 65. Figure 66 and Figure 67 show examples of incorrect positioning where the spirit level indicates non-central positions.

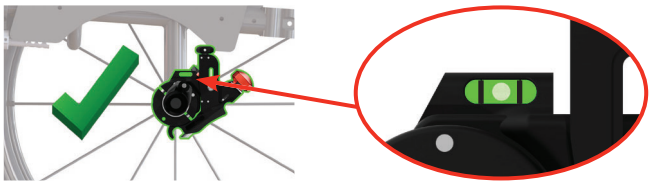


Figure 65

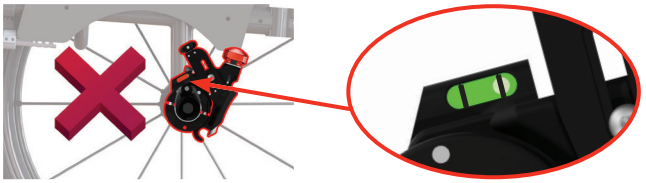


Figure 66

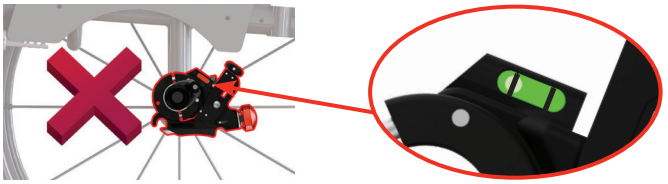


Figure 67

7. In order to proceed with the TWIST connection please follow the instruction from chapter 12.

⚠	Using the device with the Kit incorrectly mounted to the wheelchair may expose to dangerous driving situations and to DANGEROUS conditions.

9.7.3 UNLINKING STEPS - REAR LINKING SYSTEM KLAXON® FOR FOLDABLE WHEELCHAIRS

⚠	Throughout the unlinking phase, make sure to be on a flat area, as free as possible of unevenness in the terrain and away from dangers to the safety of the person and of others.

1. Unscrew the Clamping Lever (Figure 61 Letter L) by half a turn to release the Telescopic Pin (Figure 61 Letter N). (Figure 68).
2. Retract the Telescopic Pin until it reaches the minimum extension (Figure 68).

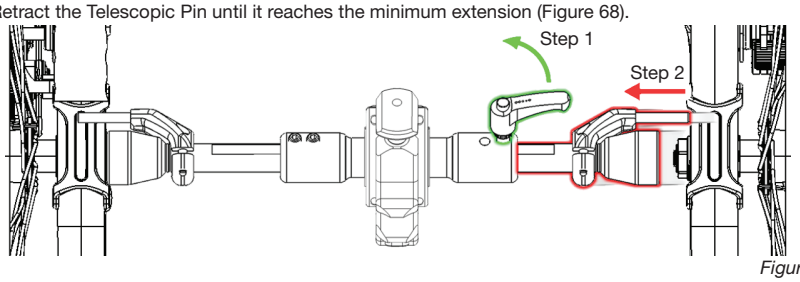


Figure 68

3. Remove the Kit from the wheelchair (Figure 69).

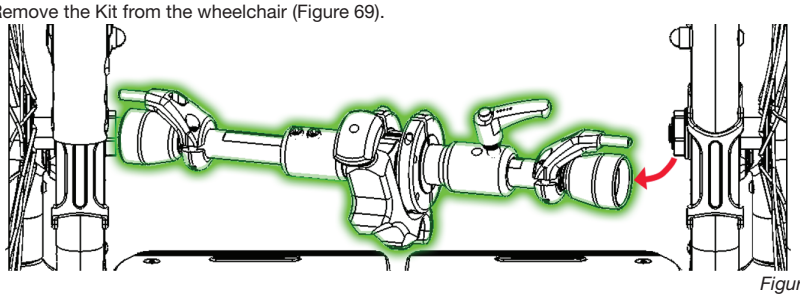


Figure 69

4. Store the Kit in a safe place.

10. HOW TO INSTALL THE TWIST TO THE FRONT OF THE WHEELCHAIR

The TWIST is designed to be used and therefore to be installed to the wheelchair in various positions on the wheelchair's frame. Each of these different applications are designed to meet precise user's needs and driving requirements.

⚠	Always carry out the mounting operation on a flat surface and if possible with the wheels of the wheelchair and the TWIST lying on a smooth surface.
⚠	It is very dangerous to carry out the linking operation of the TWIST to the wheelchair if the Controller/Handlebar Control is switched on. Make sure the Controller is switched off before proceeding.
⚠	Before switching on the device make sure that the controls are mounted on the wheelchair (Controller) or on the device (Handlebar Control). Only proceed with switching on the controls when the TWIST linking procedure has been completed.
⚠	Once the TWIST is installed to the wheelchair, make sure that only the control you intend to use is activated. Make sure that any other controls are switched off.
⚠	It is advisable to avoid using the device when the Controller's/Handlebar Control's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).
⚠	Before linking the TWIST, ensure that the battery is present and that it is inserted correctly and completely into its slot.

CAUTION	If the battery is not inserted in the TWIST, the latter will become unbalanced and therefore unstable on its stand.
⚠	If the battery is not fully inserted in its housing, it may impede the rotation of the steering system.

10.1 ENGAGEMENT OF THE TWIST WHEN INSTALLED AT THE FRONT

The following instructions apply both to the front installation with the Central Linking System and to the front installation with the Lateral Linking System.

- Insert the linking system as per the instructions in subsections 9.5.1 and 9.6.1 (Figure 70)

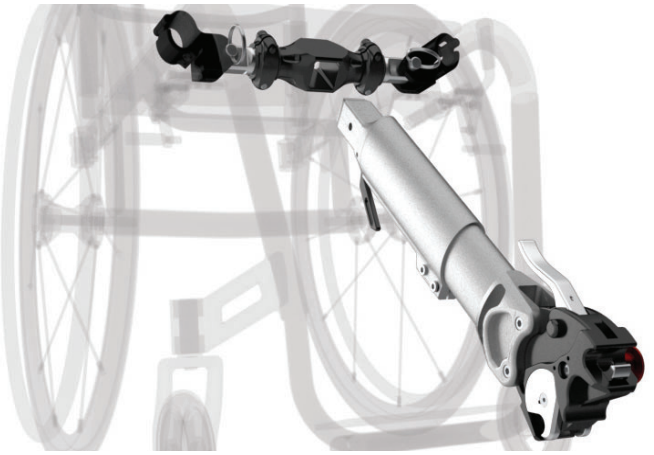


Figure 70

- Place the TWIST on the ground in front of the wheelchair and then on the Klaxon® Front Linking 2.0, resting it on its four-legged stand (Figure 71).

Figure 71

- Press the red button (Figure 72 Letter A) on the side of the Front Hook 2.0 Klaxon® to make sure that the hook opening is free and ready to accommodate the upper pin. If the button is locked, it means that the system is ready for linking (Figure 72).

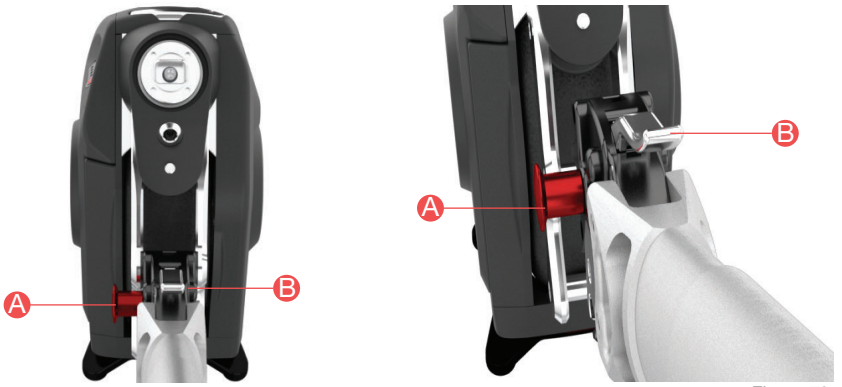


Figure 72

- Using the wheelchair wheels, move closer to the TWIST until the upper pin linking completely envelops the upper pin (Figure 73).

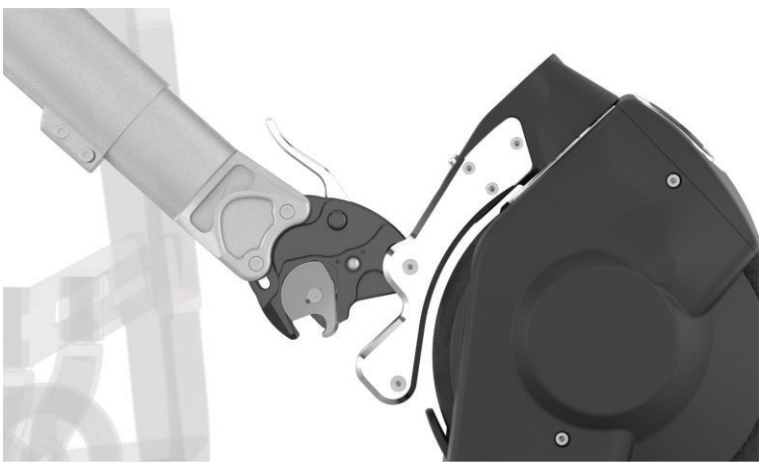


Figure 73

- If necessary and possible, help yourself with one hand by holding the TWIST still, making sure that it does not move forward during the linking phase (Figure 74).

Figure 74

- Lift the lever (Figure 75 Letter B) forcefully until it stops and until the 2.0 Klaxon® Front Hook snaps in, blocking the TWIST. Check that the linking has taken place correctly by checking that a green sign has appeared around the red button (Figure 75 Letter A). This will confirm that the linking has taken place (Figure 75). If the green mark does not appear, repeat the operation from the start.

⚠	If the green mark does not appear when the operation is repeated, this means that the Front Hook 2.0 Klaxon® is not properly engaged. Please contact a KLAXON service centre to carry out a technical check.

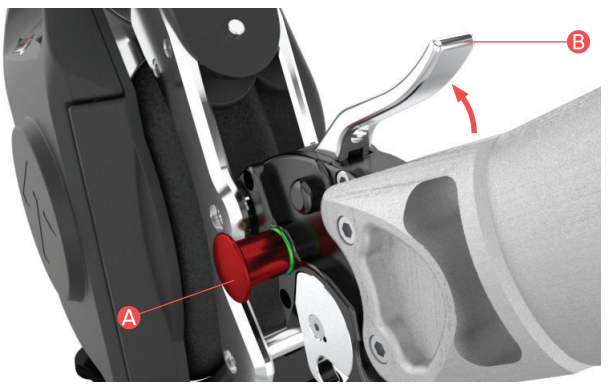


Figure 75

- Make sure that the wheels of the wheelchair are not blocked by the brakes. Push the two wheels of the wheelchair forward at the same time to establish the complete linking of the TWIST to the wheelchair and to lift up the front castors. (Figure 76)

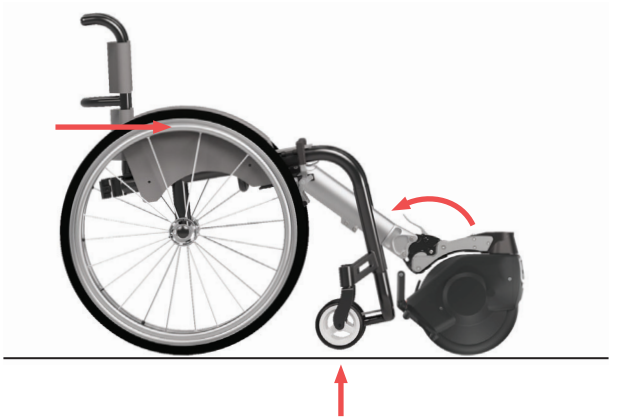


Figure 76

⚠	Once the device has been installed to the wheelchair, it is important to check that the front castors of the wheelchair are between 25 mm and 40 mm above the ground. If this requirement is not fulfilled, do not use the device under any circumstances and contact an authorised KLAXON service centre immediately.

10.2 DISENGAGEMENT OF THE TWIST WHEN INSTALLED AT THE FRONT

⚠	Always carry out the unlinking operation on a flat surface and if possible with the wheels of the wheelchair and of the TWIST lying on a smooth surface.
⚠	It is very dangerous to carry out the unlinking operation of the TWIST to the wheelchair if the Controller/Handlebar Control is switched on. Make sure all the controls are switched off before proceeding.
⚠	Make sure there are no other controls switched on when switching off the Controller/ Handlebar Control.
⚠	When unlinking the TWIST, it is recommended to block the wheelchair's wheels using the wheelchair's brakes.

- Switch off the connected wireless control.
- Lift the lever (Figure 75 Letter B) to disengage the lower pin and allow the TWIST to rest on its stand.

⚠	To prevent the TWIST from touching the ground abruptly during this release phase, the user (who must have sufficient motor skills to perform the action described below) can hold the TWIST with one hand and simultaneously lift the lever (Figure 75 Letter B) during the release phase (Figure 77).

Figure 77

- Press the red button (Figure 75 Letter A) to permanently disengage and disconnect the TWIST from the wheelchair. (Figure 78)

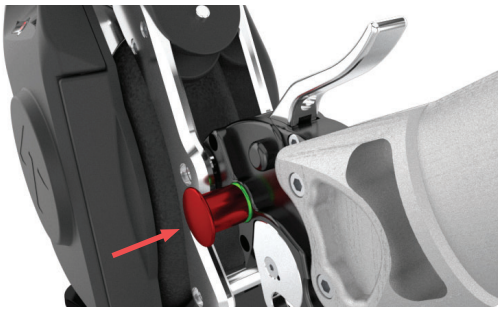


Figure 78

- Switch off the TWIST by pressing the off button on the battery. The battery, and consequently the TWIST, will switch off. In the event of a 10-minute period of inactivity, the battery and TWIST will switch off automatically.

11. HOW TO MOUNT THE HANDLEBAR ACCESSORY

Mounting the handlebar on the TWIST can be done in two ways:

- with the TWIST already installed to the wheelchair
- by mounting the handlebar on the TWIST before linking it to the wheelchair.

⚠	It is very dangerous to mount the handlebar on the TWIST if the control is on. Make sure the Handlebar Control is deactivated before proceeding.
⚠	Always perform this procedure with the brakes of the wheelchair engaged.
⚠	Always carry out the mounting operation on a flat surface and if possible with the wheels of the wheelchair and the TWIST lying on a smooth surface.

General Information

The Handlebar Control (Figure 79 A, Figure 17 Letter A) is equipped with a battery that guarantees use of approximately 15 hours of use. The LED bar indicates the status of the device:

A B C *Figure 79*

- The lit LEDs indicate the battery charge level of the Handlebar Control. (Figure 79 Letter A).
- The flashing LEDs indicate that the Handlebar Control is not connected to the TWIST. (Figure 79 Letter B).
- The LEDs that are on and not flashing indicate that the Handlebar Control is connected and ready for use (Figure 79 Letter C).

⚠	Do not leave the Handlebar Control with its battery empty for long periods.
⚠	Always switch off the Handlebar Control when not in use, during the mounting phases on the TWIST or when using other driving controls.
⚠	Do not clean the control with solvents or products not recommended for plastics. Before applying, check the instructions of the chosen product to ensure that it is compatible.
⚠	Do not get the Handlebar Control wet or immerse it in water.
⚠	Use only the supplied battery charger to charge the Handlebar Control.
⚠	Always switch off the control before removing the handlebar and/or TWIST from the wheelchair.
⚠	The control must never be switched on if the handlebar and TWIST are not installed to the wheelchair.
⚠	It is advisable to avoid using the device when the Handlebar Control's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).
⚠	When mounting the handlebar and connecting it, make sure that no other controls in the vicinity are switched on.

11.1 INSTALLATION OF THE HANDLEBAR WITH THE TWIST ALREADY INSTALLED TO THE WHEELCHAIR

- Make sure that the TWIST is correctly installed to the wheelchair and is in the correct operating position (the wheelchair should have the front castors raised off the ground). It will not be possible to attach the handlebar if the TWIST is not in the position indicated (Figure 80).

Figure 80

- Ensure that the TWIST has the wheel aligned with the handlebar. The wheel must not be turned to the right or left (Figure 81).

Figure 81

- Make sure the Handlebar Control is switched off.
- Make sure that the Controller is also switched off.
- Hold the handlebar, making sure that the two alignment arrows are aligned with each other. Only when this position is reached will it be possible to assemble the handlebar (Figure 82).

Figure 82

⚠	Do not use the device with handlebar if the arrows in Figure 82 are not aligned. In case the arrows are not aligned, the controls are not in the expected position for driving straight.

- Insert the handlebar base into the steering base with a movement perpendicular to the TWIST steering. (Figure 83).

Figure 83

- Make sure that the handlebar is fully inserted into its housing on the steering unit (Multi-link Klaxon®) and therefore fully supported by the latter (Figure 84).

Figure 84

- Screw the knob clockwise until it is as tight as possible. Attention, do not use tools but only your hands (Figure 85).

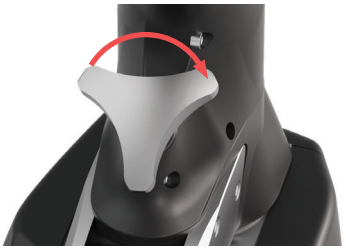


Figure 85

⚠	Using the device with the knob in Figure 73 not securely tightened exposes to the risk that the handlebar disengages with a consequent loss of control of the device.

- Adjust the length of the handlebar by acting on the release lever (Figure 86). Once the handlebar height has been adjusted, make sure that the lever blocks sliding and is therefore securely tightened.

Figure 86

⚠	Using the device with the handlebar with the lever (Figure 86) not correctly tightened exposes the driver to the risk of losing control of the vehicle.

11.2 REMOVING THE HANDLEBAR WHEN THE TWIST IS STILL ATTACHED TO THE WHEELCHAIR

⚠	Make sure the Handlebar Control is switched off before disconnecting the handlebar from the TWIST. An unintentional press on the accelerator would cause the TWIST to move.
⚠	Always perform this procedure with the brakes of the wheelchair engaged.
⚠	Make sure there are no other controls switched on when switching off the Handlebar Control.

- After making sure that the Handlebar Control is off, completely unscrew the fixing knob anti-clockwise (Figure 87).

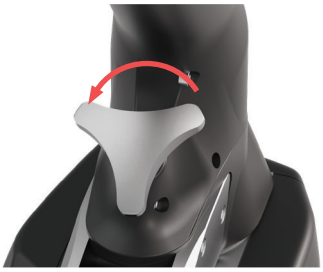


Figure 87

- Pull the handlebar upwards and perpendicularly to the TWIST steering system (Figure 88).

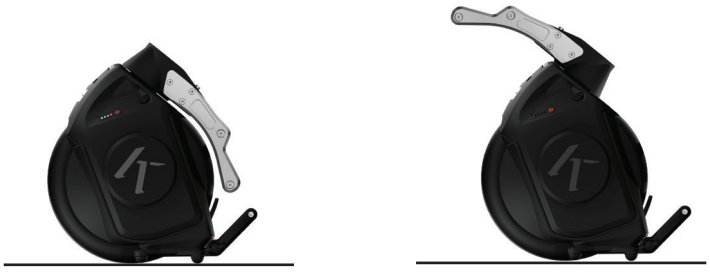
Figure 88

11.3 LINKING THE TWIST AT THE FRONT WITH THE HANDLEBAR ALREADY INSTALLED

Figure 89

⚠	It is very dangerous to mount the handlebar on the TWIST if the control is on. Make sure the Handlebar Control is deactivated before proceeding.
⚠	Always carry out the mounting operation on a flat surface and if possible with the wheels of the wheelchair and the TWIST lying on a smooth surface.
⚠	Follow the instructions carefully to prevent the handlebar from hitting the user violently during the linking operations.
⚠	When linking the TWIST, the handlebar must always be held with one hand.
⚠	The TWIST with the handlebar engaged may under no circumstances be installed and uninstalled using only one hand. Always use two hands, one of which must always hold the handlebar.
⚠	Always switch off the Handlebar Control before installing the handlebar and/or TWIST to the wheelchair.
⚠	The Handlebar Control must never be switched on if the handlebar and TWIST are not installed to the wheelchair.
⚠	It is advisable to avoid using the device when the Handlebar Control's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).

⚠	When mounting the handlebar and when connecting the Handlebar Control to the TWIST device, make sure that no other controls in the immediate surroundings are switched on.



A B *Figure 90*

- Position the TWIST on its stand and on a flat surface (Figure 90 Letter A).
- Rotate the steering system 180° so that the upper and lower linking pin support (Figure 1 Letter G) is facing the front light (Figure 90 Letter B).
- Ensure that all controls are switched off. Hold the handlebar, making sure that the two alignment arrows are aligned with each other. Only in this position will it be possible to assemble the handlebar (Figure 91).

Figure 91

⚠	Do not use the device with handlebar if the arrows in Figure 91 are not aligned. In case the arrows are not aligned, the controls are not in the expected position for driving straight.

- Insert the handlebar base into the steering base (Multi-link Klaxon®) with a movement perpendicular to the TWIST steering. (Figure 92 Letter A).
- Make sure that the handlebar is fully inserted and fully in contact with the steering base. (Figure 92 Letter B).

A B *Figure 92*

- Screw the knob clockwise until it is as tight as possible. Attention, do not use tools but only your hands (Figure 93).

Figure 93

⚠	Using the device with the knob in Figure 93 not firmly tightened exposes to the risk of the handlebar coming loose and consequently of losing control of the vehicle.

- Press the red button (Figure 72 Letter A) on the side of the Front Linking System 2.0 to make sure that the hook opening is free and ready to accommodate the upper pin. If the Red button is blocked, it means that the system is ready for linking.
- Grip the handlebar and tilt the TWIST towards the wheelchair to position the upper pin (in orange in Figure 94) at the linking inlet (Figure 94) and (Figure 95).

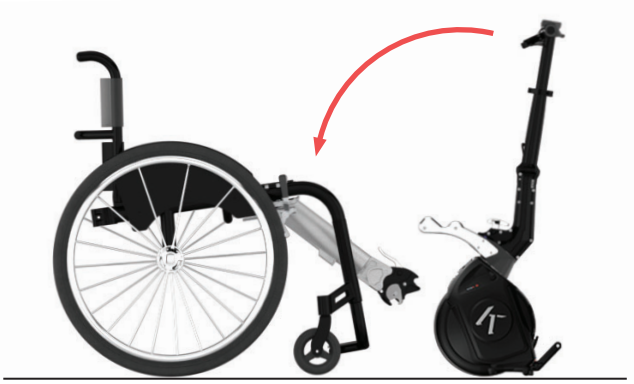


Figure 94

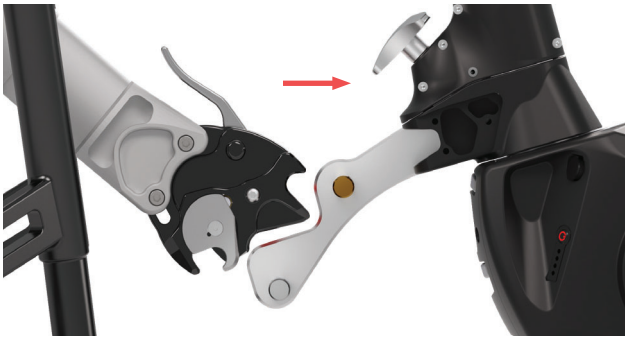


Figure 95

- Lift the lever (Figure 72 Letter B) to engage the linking and lock the TWIST. Make sure that the red button springs outwards until the green ring on the left shows that it is correctly linked (Figure 96). If the green mark does not appear, repeat the operation from the start.

Figure 96

⚠	If the green mark does not appear when the operation is repeated, this means that the Front Hook 2.0 Klaxon® is not properly engaged. Please contact a KLAXON service centre to carry out a technical check.

- Make sure that the wheelchair brakes are not engaged (Figure 97).

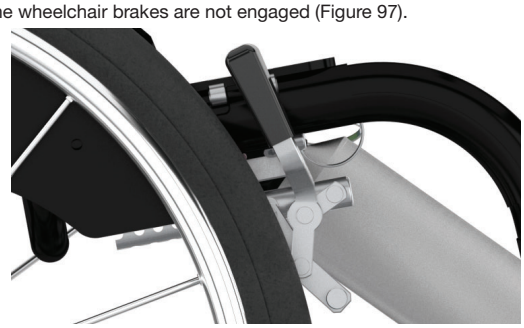


Figure 97

- Push the handlebar forward until the lower pin is engaged and the wheelchair's front castor wheels are lifted off the ground (Figure 98).

Figure 98

- Rotate the handlebar 180° to have the handlebar correctly facing the wheelchair and ready for forward movement (Figure 99).

Figure 99

⚠	Once the device has been installed to the wheelchair, it is important to check that the front castors of the wheelchair are between 25 mm and 40 mm above the ground. If this requirement is not fulfilled, do not use the device under any circumstances and contact an authorised KLAXON service centre immediately.

11.4 UNLINK THE TWIST FROM THE WHEELCHAIR WHILE KEEPING THE HANDLEBAR INSTALLED

⚠	It is very dangerous to perform the operation of removing the handlebar from the TWIST if the control is on. Make sure the Handlebar Control is deactivated before proceeding.
⚠	Make sure there are no other controls switched on when switching off the Handlebar Control.
⚠	Follow the instructions carefully to prevent the handlebar from hitting the user violently during the unlinking operations.
⚠	When unlinking the TWIST, the handlebar must always be held with one hand.
⚠	The TWIST with the handlebar engaged may under no circumstances be installed and uninstalled using only one hand. Always use two hands, one of which must always hold the handlebar.
⚠	Always carry out the unlinking operation on a flat surface and if possible with the wheels of the wheelchair and of the TWIST lying on a smooth surface.

- Stand with the wheelchair on a flat and smooth surface on which the wheelchair can stop without having to engage the wheelchair brakes. Caution: with the wheelchair brakes engaged, the operation cannot be performed.
- Make sure the Handlebar Control is switched off.
- Rotate the handlebar and then the TWIST 180° until the front light of the TWIST is facing the wheelchair. (Figure 100).

Figure 100

- Make sure the wheelchair brakes are not engaged.
- With one hand push the handlebar forward with the palm placed in the centre of the handlebar and with the other hand lift the lever (Figure 72 Letter B) on the Front Hook 2.0 Klaxon®. At this point, by means of the user's weight, the Klaxon® Front Hook 2.0 will release from the lower pin and the wheelchair's wheels will rest on the ground (Figure 101). Accompany the lowering with the hand so that the TWIST does not drop lower abruptly.

Figure 101

⚠	This operation must be carried out only by a user with the complete control over both its hands and who must have sufficient motor skills to perform the action described.
⚠	There is a risk of injury if the handlebar descent is not accompanied correctly during the unlinking phase.

- While holding the handlebar firmly with one hand or, alternatively, resting the handlebar on the user's legs, press the red button on the left of the linking system to disengage the upper hook and definitively free the TWIST.(Figure 102).

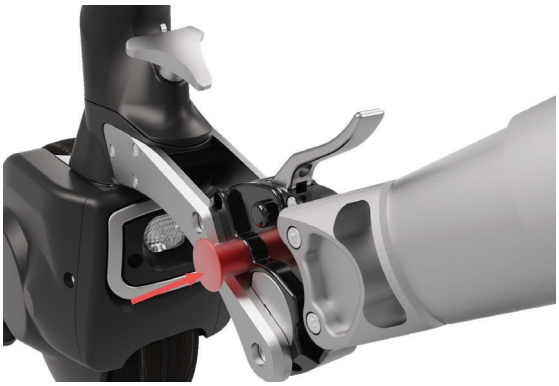


Figure 102

- Raise the handlebar to a vertical position and park the TWIST with the handlebar installed. The TWIST, thus positioned, is already in the ideal position for a new linking (Figure 103).

Figure 103

12. INSTALLATION OF THE TWIST AT THE REAR OF THE WHEELCHAIR

When linking the TWIST at the rear, it is possible to decide whether to link it by the manual procedure or by adopting the automatic procedure described as follows.

Before carrying out the automatic procedure, it is mandatory to read the warnings very carefully.

Preparing the TWIST for linking

Assembling the appropriate frame (Figure 60 Letter H) on the TWIST

NOTE	Before attaching the frame to the TWIST, ensure that the battery is present and that it is inserted correctly and all the way into its housing.
NOTE	It will not be possible to insert the battery after installing the frame.

- Place the TWIST on flat ground (Figure 104).

Figure 104

- Bring the frame closer to the Twist, orienting it as shown in Figure 105.

Figure 105

- Push the frame all the way into position (Figure 106).

Figure 106

- Tighten the fixing knob (Figure 107).

⚠	Using the device with the knob in Figure 107 not firmly tightened exposes to the risk of the frame coming loose and consequently of losing control of the device.

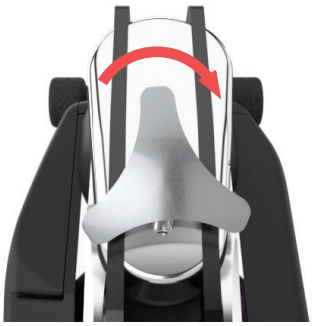


Figure 107

- Park the TWIST on the new front stand (Figure 60 Letter H). (Figure 108).

Figure 108

- Unscrew the two tightening keys highlighted in red in Figure 109. With the Twist parked on the front stand, adjust the handle inclination as shown in Figure 109 taking care not to orient it vertically or horizontally.

Figure 109

- Tighten the tightening keys again.

12.1 MANUAL LINKING OF THE TWIST TO THE REAR OF THE WHEELCHAIR

⚠	It is very dangerous to carry out the linking operation of the TWIST to the wheelchair if the Controller is switched on. Make sure the Controller is switched off before proceeding. Switch on the Controller only when the TWIST linking procedure has been completed.
⚠	Always carry out the linking operation on a flat surface and, if possible, with the wheels of the wheelchair and the rubbers of the TWIST front kickstand resting on a smooth surface.
⚠	The Controller must never be turned on if it is not connected to the wheelchair.
⚠	Once the TWIST is installed to the wheelchair, make sure that only the Controller is activated. Make sure that any other controls are switched off.
⚠	It is advisable to avoid using the device when the Controller's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).
⚠	Always perform this procedure with the brakes of the wheelchair engaged.

- Turn on the TWIST by pressing the button on the battery.
- Grip the TWIST by the handle (Figure 110).

Figure 110

- Place the TWIST on its front stand (Figure 60 Letter H). (Figure 111).

Figure 111

- Grip the handle and bring the TWIST close to the hook until the lower pin rests perfectly on the hook (Figure 112 and Figure 113).

Figure 112

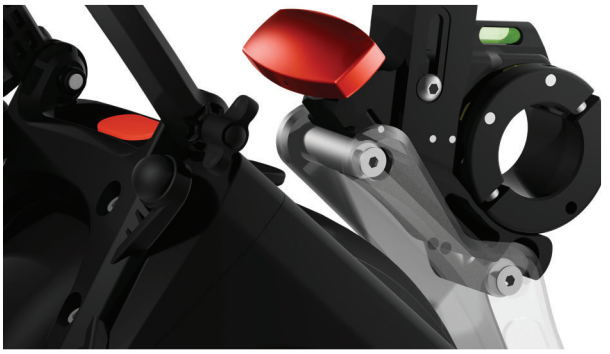


Figure 113

- Push the TWIST handle forward and down to link it. You will hear a “click” to confirm that it has been linked to the wheelchair. Move the handle up and down forcefully to make sure that it has been linked correctly (Figure 114).

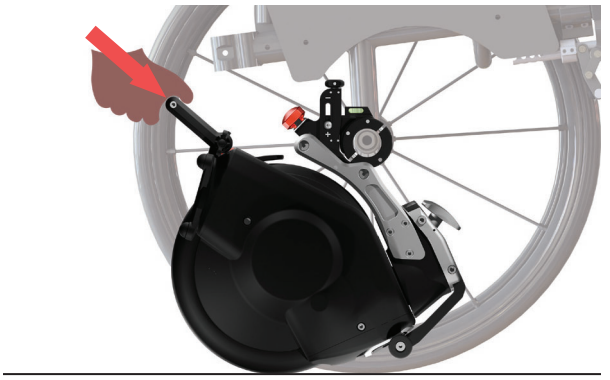


Figure 114

⚠	Using the device when not properly installed exposes the driver to the risk of losing control of the device.

12.2 AUTOMATIC LINKING OF THE TWIST TO THE REAR OF THE WHEELCHAIR

⚠	The Controller must never be turned on if it is not connected to the wheelchair.
⚠	Once the TWIST is installed to the wheelchair, make sure that only the Controller is activated. Make sure that any other controls are switched off.
⚠	It is advisable to avoid using the device when the Controller's battery is running low as, if its battery runs out, the TWIST will perform a safety stop and can then only be moved by manual push (no function is active when the Controller is switched off).

⚠	Always carry out the linking operation on a flat surface and, if possible, with the wheels of the wheelchair and the rubbers of the TWIST front kickstand resting on a smooth surface.
⚠	It is very important to read the entire sequence described before performing this procedure .
⚠	Before performing this procedure, it is very important that the manual procedure explained in section 12.1 has been carried out correctly at least one time.
⚠	Do not perform this operation if there are obstacles of any kind in front of the wheelchair, be they things, people or animals.
⚠	Always perform this procedure with the brakes of the wheelchair engaged.
⚠	Perform this operation for the first time only in the presence of a support person. Continue to perform this operation with a support person until the technique has been mastered.
⚠	We recommend performing this procedure only if a rear anti-tip system is installed on the wheelchair.

- Place the TWIST in front of the hook. The upper pin must be placed in the inlet of the hook on the wheelchair (Figure 115).

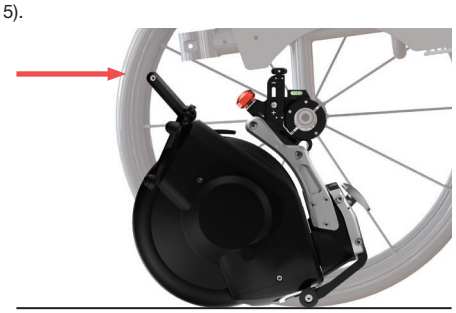


Figure 115

- Make sure there are no obstacles in front of the wheelchair for at least a few metres.
- Turn on the Controller and engage first gear (see section 9.2). The TWIST will automatically engage and lift upwards. At this point, stop the power supply to the TWIST using the stop button on the Controller.
- The system is installed and ready for use. To start moving, release the wheelchair brakes and engage the gear.

⚠	Using the device when not properly installed exposes the driver to the risk of losing control of the device.

12.3 UNLINKING OF THE TWIST WHEN INSTALLED TO THE REAR OF THE WHEELCHAIR

⚠	Always carry out the unlinking operation on a flat surface and, if possible, with the wheels of the wheelchair and the rubbers of the TWIST front kickstand resting on a smooth surface.
⚠	It is very dangerous to unlink the TWIST from the wheelchair if the Controller is switched on. Make sure the Controller is switched off before proceeding with the unlinking operation.

⚠	Make sure there are no other controls switched on when switching off the Controller.
⚠	When unlinking the TWIST, it is recommended to block the wheelchair's wheels using the wheelchair's brakes.

- Make sure that the Controller is switched off and thus that all LEDs are off.
- Pull the unlinking/link lever with your fingers (Figure 116 Letter A).

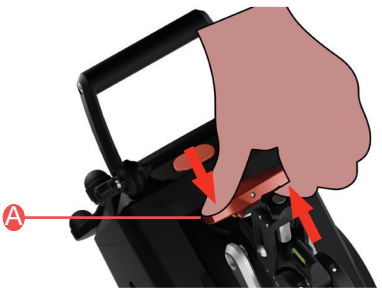


Figure 116

- The TWIST is now disconnected and can be removed by gripping the handle and pulling it backwards (Figure 117).

Figure 117

- Place the TWIST on the front stand (Figure 118).

Figure 118

- Switch off the TWIST by pressing the off button on the battery.

13. IMPORTANT NOTES AND PRECAUTIONS CONCERNING THE USE OF THE TWIST

Where and how to use the TWIST

In all its configurations, the TWIST is designed for both indoor and outdoor use, but not for off-road use.

It is, however, possible to negotiate short off-road routes as long as the terrain is dry, whether it is paved or on grass. On the other hand, it is not possible to ride on terrain with significant unevenness, mud or puddles of water.

⚠	Do not use the TWIST on off-road routes with major irregularities.
⚠	Do not use the TWIST on sandy and muddy off-road tracks.
⚠	Do not drive the TWIST over puddles with a water level higher than the height of the tyre itself. The maximum height permitted is up to the wheel fairing at the bottom of the TWIST (Figure 119).
⚠	In off-road use it is recommended to always use the handlebar accessory installed.

Figure 119

⚠	Always drive over puddles at low speed, taking care that the water level does not exceed the one indicated in the previous point. By low speed is meant the lowest possible speed.
⚠	The electronic brake only works when the TWIST is installed at the front with or without the handlebar equipped.
⚠	The mechanical brake only works when the TWIST is installed at the front and with the handlebar equipped.
⚠	When the TWIST is installed at the rear, the wheelchair cannot be slowed down or braked using the Controller. When the TWIST is rear-installed, braking must be performed by acting on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position.
⚠	The TWIST installed at the rear does not allow the front castor wheels of the wheelchair to be lifted mechanically off the ground. For this reason, the use of the rear-installed TWIST is recommended on terrain with no bumps or small steps that could block the front wheels of the wheelchair, causing the wheelchair to catapult the passenger dangerously forward. For use on uneven terrain and therefore generally in the outdoors, link the TWIST at the front (with or without handlebar).

⚠	When using the TWIST rear-installed, the maximum step that can be negotiated is the one declared by the wheelchair manufacturer. Always switch off the power supply to the motor when negotiating a step and switch to manual driving mode.

Figure 120

⚠	When the device is installed at the front, the maximum step that can be negotiated is 30 mm (Figure 120).
⚠	The TWIST may only be used on routes with inclinations of no more than 6° / 10%.
⚠	At high speeds the user may lose control of the wheelchair and a tip over may occur. Never exceed the maximum speed of 20 km/h in handlebar mode (6 km/h in Controller mode) when going uphill or downhill. Avoid collisions in general.

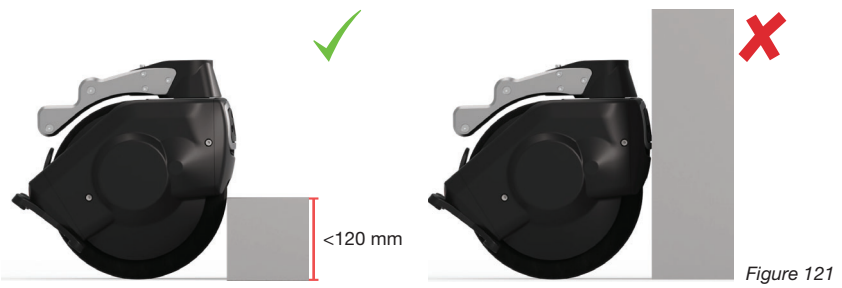


Figure 121

NOTE	Do not lean the TWIST against steps or obstacles higher than 120 mm, as this could damage the plastic chassis. Below 120 mm the tyre will rest safely on the obstacle (Figure 121).
⚠	The motor of the TWIST device does not perform any braking and/or blocking action when the device is not in motion (recorded speed 0 Km/h). This also refers to the braking action performed by the Electronic Brake System (EBS) when the device stops (reaches 0 km/h). It is therefore necessary to act on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position. If the handlebar is used, it is also possible to act on the mechanical and parking brake of the TWIST (provided that the handlebar is properly connected to the device) to block the movement and keep the wheelchair locked in position.

14. DRIVING THE TWIST

Depending on the installation position of the TWIST and which accessory will be used, the driving style of the TWIST changes radically. Below you can find the necessary instructions for an easy and safe driving in all the different configurations.

Driving of the TWIST can also be customised through the specific Klaxon App accessory, which can be downloaded and used at any time (links to download on Page 1).

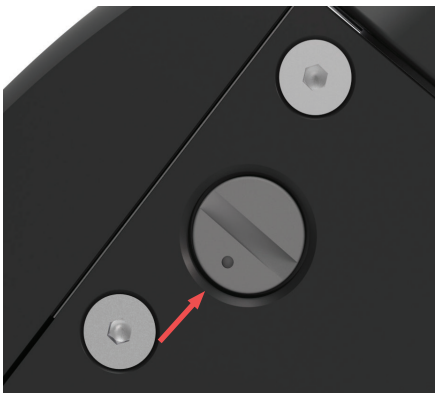
14.1 MANAGEMENT (ON/OFF) OF THE STEERING DIRECTIONALITY CONTROL SYSTEM

The TWIST is equipped with a mechanical system that acts on the steering, allowing for easier directionality during driving (Figure 122).

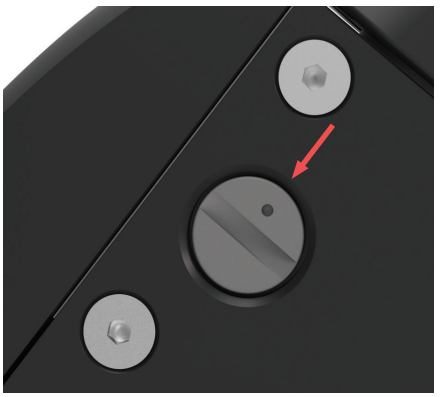
Figure 122

Thanks to this solution, the TWIST is able to maintain the directionality more easily when riding uphill and when going against gradient.

To activate or deactivate the system, simply turn the adjustment screw with a coin. The small dot at the top indicates that the steering control system is active. The dot at the bottom indicates that the system is disengaged (Figure 123).



The dot on the lower part indicates that the system is deactivated and therefore the TWIST will not assist in maintaining the directionality



The dot on the upper part indicates that the system is activated and therefore the TWIST will assist in maintaining directionality

Figure 123

14.2 DRIVING THE TWIST WITH THE CONTROLLER WHEN INSTALLED AT THE FRONT

The front-installed TWIST allows the front castors of the wheelchair to be raised off the ground. This allows moving around safely even on uneven terrain.

Before driving:

- Make sure the TWIST is installed to the wheelchair and that the wheelchair has its front castors lifted off the ground (see linking instructions in section 10.1).
- Make sure the TWIST is turned on by pressing the appropriate button on the battery. Two short acoustic signal will be emitted by the TWIST.
- Make sure the Controller is installed on the wheelchair.
- Make sure the Controller has been turned on by pressing the appropriate button on the control. The LEDs will light up and flash until the connection with the TWIST is made. A short acoustic signal will be emitted to confirm the successful connection, while the LEDs of the control will remain lit without flashing.

To start driving:

If the TWIST is installed at the front, it is possible to start and stop in two different ways.

⚠	In either mode, the Controller must always be activated and connected to enable the device to brake.

Assisted start and braking through the use of the wheelchair's wheels

The motor can be activated, with the Controller active and connected, by pushing the wheelchair manually (Assisted Start). When the speed set for gear 1 is reached (or one of the speed levels available on the Klaxon App for this function), the motor will activate and maintain that speed. Once in motion, it is always possible to increase the speed or stop the device via Controller.

The device can also be braked manually by blocking the wheels of the wheelchair. This Assisted Braking function is always possible when the Controller is active and connected to the TWIST.

Start and stop through the use of the Controller

From the Klaxon App it is possible to choose between two controller driving modes: “Gear Control” and “Variable Speed”.

Gear Control:

- To start, press forward and release the gear selection lever (Figure 8 Letter B) to move into gear 1 and repeat the same operation to increase the speed. There are 4 speeds and the maximum will be 6 Km/h.
- To reduce speed, press and release the speed selection lever in the opposite direction of the drive direction. With each press and release, the speed will be reduced until it reaches the zero gear, which corresponds to the neutral.
- To stop the device immediately, briefly press the stop button on the Controller.
- To slow down to 0 km/h and restart without remaining still, press and hold the stop button for more than 1.5 seconds. When released, the device will restart from the speed of the first gear.

Variable speed:

- To start, press forward and release the speed selection lever (Figure 8 Letter B). The device will accelerate until reaching the maximum speed (6 Km/h) or, if the lever is pressed forward again, the acceleration will stop, maintaining the speed reached at that moment. Repeat the same operation to increase the speed.
- To reduce speed, press and release the speed selection lever in the opposite direction of the drive direction. The device will start to decelerate until it reaches 0 Km/h or, if the lever is pressed again in the same direction, the deceleration will stop maintaining the speed reached at that moment. Repeat the same operation to reduce the speed.
- To stop the device immediately, briefly press the stop button on the Controller.

Steering

The TWIST installed at the front, and without the handlebar accessory equipped, can be steered by braking and pushing the wheels of the wheelchair or by performing the two operations simultaneously to achieve a faster response, just as when steering the wheelchair without the TWIST installed. Please note that the power provided by the motor increases as the resistance increases (as, for example, when driving uphill) such as

to maintain the set speed constant.

An example: to turn right, brake the right wheel and push the left wheel at the same time. To turn left, brake the left wheel and simultaneously push the right wheel.

Automatic speed reduction when turning

In its front-installed configuration, the TWIST employs a number of electronic features to make the driving experience simple and intuitive. In particular, the automatic speed reduction when turning and the interruption of motor thrust when a turning angle of around 90°, to the left or right, is surpassed.

Once the curve has been completed and the wheel is repositioned in the straight direction, the speed will increase to the speed set before steering (Figure 124).

Thanks to these electronic functions, which can be modified and customised from the Klaxon App, the driving experience will always be safe and calibrated to the user's needs and control capabilities.

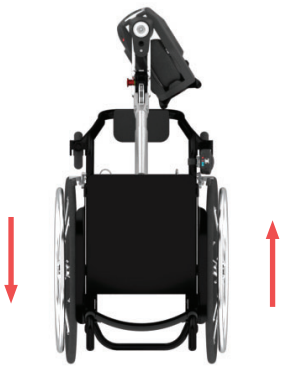


Figure 124

Automatic maintenance of a set speed

Once a speed has been set via the Controller, this speed will be automatically maintained both uphill and downhill.

⚠	When driving downhill, the speed can be significantly higher than the set speed, according to the slope.

Always-on driving safety

Safety is always guaranteed even if the control should disconnect or its battery runs out. In this case, the TWIST will stop immediately by braking automatically until it reaches 0 km/h.

⚠	The motor of the TWIST device does not perform any braking and/or blocking action when the device is not in motion (recorded speed 0 Km/h). This also refers to the emergency stop from disconnection when the device comes to a halt (reaches 0 Km/h). It is therefore necessary to act on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position. If the handlebar is being used, it is also possible to act on the mechanical brake of the TWIST (provided that the handlebar is properly connected to the device) to block the movement and keep the wheelchair stationary in position.

Monitoring driving information via smartphone

It is possible to use your smartphone as a dashboard to display driving parameters in real time. By attaching the smartphone to the wheelchair and activating the Klaxon App on the Dashboard page, it is possible to display the travel speed, the number of kilometres travelled, the battery charge level of the TWIST and of the connected control, and the remaining range of kilometres in real time.

⚠	When using the Klaxon App accessory as a display, the smartphone or any other electronic device they must absolutely be attached to the wheelchair. Always use the TWIST device only with both hands free and available for driving.
⚠	It is advisable to perform the first driving tests always and only on flat, obstacle-free terrain.
⚠	Should the Controller be detached or become temporarily inaccessible to the driver, please remember that the Assisted Braking function is always available through the blocking of the wheelchair wheels. Alternatively, it will be sufficient to brake one of the two wheels of the wheelchair to steer and reduce speed until the motor's thrust is deactivated; this will occur when the steering angle exceeds 90°.
CAUTION	The wireless control must always be firmly mounted to the wheelchair (see section 9.2).

14.3 DRIVING THE TWIST WITH THE HANDLEBARS WHEN INSTALLED AT THE FRONT

For the installation of the handlebar please read chapter 11.

The front-installed TWIST with the handlebar accessory equipped allows the front castors of the wheelchair to be raised off the ground. This allows moving around safely even on uneven terrain.

Before driving:

- Make sure all the controls are switched off.
- Make sure the TWIST is installed to the wheelchair and that the wheelchair has its front castors raised off the ground (see chapters 10 and 11).
- Make sure the TWIST is turned on by pressing the appropriate button on the battery. Two short acoustic signal will be emitted by the TWIST.
- Make sure the handlebar is securely mounted on the TWIST.
- Make sure the Handlebar Control has been turned on by pressing the appropriate button on the control. The LEDs will light up and flash until the connection with the TWIST is made. A short acoustic signal will be emitted to confirm the successful connection, while the LEDs of the control will remain lit without flashing.

Start driving and speed control

Use the accelerator to start driving and to set the desired speed within the maximum limit of 20 km/h. The accelerator can be configured by the dealer to brake the TWIST at the moment the lever is released (Motor Brake function). This function can be disabled completely. This driving option can be adjusted in intensity via the Klaxon App.

Adjusting the power delivery

The level of power delivery during acceleration can be adjusted via the Klaxon App. A driving mode with smooth acceleration or one with a powerful acceleration can be set according to the user's personal driving needs.

Set the desired maximum speed

Through the Klaxon App it is possible to set the preferred speed limit. The maximum speed that can be set is 20 Km/h. The minimum speed that can be set is 6 km/h.

Proceed in reverse:

To proceed in reverse:

- Rotating the handlebar beyond 90 degrees makes the reverse function active and not enabled. An acoustic signal (Beep) will be emitted to indicate that the mode has been changed.
- Press the accelerator all the way down to the maximum speed position to enable the reverse gear. Release the accelerator. Press the accelerator gently to start the reverse motion. Please note that speed will be limited to 3 km/h.
- The device will automatically brake when the accelerator is released.

To return to the forward motion:

- Release the accelerator.

- Turn the handlebar to the forward drive position. An acoustic signal (Beep) will be emitted to indicate that the mode has been changed.
- Proceed to drive forward normally.

Monitoring driving information via smartphone

It is possible to use your smartphone as a dashboard to display driving parameters in real time. By attaching the smartphone to the wheelchair and activating the Klaxon App on the Dashboard page, it is possible to display the travel speed, the number of kilometres travelled, the battery charge level of the TWIST and of the connected control, and the remaining range of kilometres in real time.

⚠	When using the Klaxon App accessory as a display, the smartphone or any other electronic device they must absolutely be attached to the wheelchair/handlebars. Always use the TWIST device only with both hands free and available for driving.
⚠	Before unmounting the handlebar from the TWIST or before linking and unlinking the device, always ensure that the Handlebar Control is switched off.

In case of problems with the Handlebar Control connection

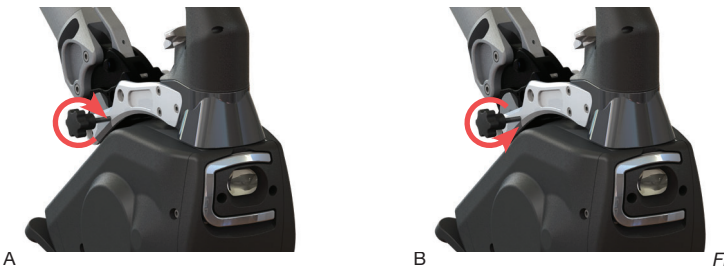
In the event that the Twist does not restart moving, stops or does not execute commands make sure to be in a location away from danger and follow the following steps: switch the Handlebar Control off and on again. If the problem persists: switch the Handlebar Control and the Twist off and on again. If the above steps do not solve the problem: do not use the device and contact an authorised KLAXON service centre.

⚠	Do not cover the Handlebar Control (Figure 17 Letter A) with your hand while driving. A hand placed on the Handlebar Control could reduce the range of the Bluetooth signal and lead to a possible disconnection from the device.

How to reduce the play between the Linking System and the device

It is possible, if deemed necessary, to reduce the play between the device and the linking system by tightening the screw with knob (Figure 17 Letter K) supplied with the handlebars.

To reduce the play, once the TWIST has been linked, tighten the screw into its seat (Figure 1 Letter H) by hand until it is completely tightened (Figure 125 Letter A). Subsequently, to disconnect the TWIST device from the linking system, it will be necessary to first act on the screw, loosening it (Figure 125 Letter B) by a few turns or until the system is free from the constraint.



A B *Figure 125*

CAUTION	When linking and unlinking the device, always ensure that the knob screw does not obstruct the insertion of the Linking System. In this case, simply unscrew the knob screw a few turns until the Linking System engages without resistance.
⚠	Make sure that the knob screw is tightened enough. If it remains loose, it could detach during the usage.

14.4 DRIVING WITH THE TWIST INSTALLED AT THE REAR

The TWIST installed at the rear does not allow the front castor wheels of the wheelchair to be lifted mechanically off the ground. For this reason, the use of the rear-installed TWIST is recommended on terrain with no bumps or small steps that could block the front wheels of the wheelchair, causing the wheelchair to catapult the passenger dangerously forward.

⚠	In the rear-installed configuration, the TWIST does NOT use the electronic features that automatically reduce speed during curves as well as the automatic stop of the motor thrust when exceeding a steering angle of more than 90°. It is therefore advisable to reduce the speed via Controller before starting to move in a curve .
⚠	It is advisable to perform the first driving tests always and only on flat, obstacle-free terrain.
⚠	The wireless control must always be firmly mounted to the wheelchair (see section 9.2).
⚠	When using the TWIST installed at the rear, it is mandatory to have an anti-tipping system installed to the wheelchair. The anti-tipping system shall be extended and operative when using the TWIST device at the rear.
⚠	In order to avoid interferences, make sure that the anti-tipping system is extended and operative before connecting the TWIST at the rear.

Before starting

- Make sure the TWIST is turned on by pressing the appropriate button on the battery. Two short acoustic signal will be emitted by the TWIST.
- Make sure the TWIST is installed to the wheelchair (see chapter 12).
- Make sure the Controller is connected to the wheelchair.
- Make sure the Controller has been turned on by pressing the appropriate button on the control. The LEDs will light up and flash until the connection with the TWIST is made. A short acoustic signal will be emitted to confirm the successful connection, while the LEDs of the control will remain lit without flashing.

Start and stop through use of the wheelchairs' wheels

⚠	When the TWIST is installed at the rear, the Assisted Start function is deactivated.
⚠	When the TWIST is installed at the rear, it is not able to brake the wheelchair, in particular when driving downhill.

Start and stop through the use of the Controller

From the Klaxon App it is possible to choose between two controller driving modes: “Gear Control” and “Variable Speed”.

Gear Control:

- To start, push the speed selection lever forward and release it to shift into gear 1. Repeat the same operation to increase speed. There are 4 speeds and the maximum will be 6 Km/h.
- To reduce speed, press and release the speed selection lever in the opposite direction of the drive direction. With each press and release, the speed will be reduced until it reaches the zero gear, which corresponds to the neutral.
- To deactivate the motor thrust, briefly press the Controller's stop button.
- To temporarily deactivate the motor thrust and then reactivate it, press and hold the button for longer than 1.5 seconds. When released, the device will restart from the speed of the first gear.

Variable speed:

- To start, press forward and release the speed selection lever (Figure 8 Letter B). The device will accelerate until reaching the maximum speed (6 Km/h) or, if the lever is pressed forward again, the acceleration will stop, maintaining the speed reached at that moment. Repeat the same operation to increase the speed.
- To reduce speed, press and release the speed selection lever in the opposite direction of the drive direction. The device will begin to decelerate until it reaches 0 Km/h and deactivates the motor thrust or, if the lever is pressed again in the same direction, the deceleration will stop, maintaining the speed reached at that moment. Repeat the same operation to reduce the speed.
- To deactivate the motor thrust, briefly press the Controller's stop button.

Steering

The TWIST installed at the rear can be steered by braking and pushing the wheels of the wheelchair, or (recommended) by performing both operations simultaneously, just as when driving the wheelchair without the TWIST installed. Please note that the power provided by the motor increases as the resistance increases (as, for example, when driving uphill) such as to maintain the set speed constant.

An example: to turn right, brake the right wheel and push the left wheel at the same time. To turn left, brake the left wheel and simultaneously push the right wheel.

It is advisable, especially in the early stages of learning, to reduce the speed before starting to move in a curve by acting on the Controller (see section 9.2) (Figure 126).

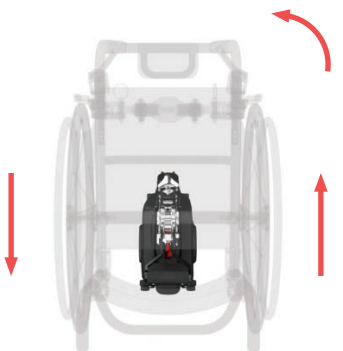


Figure 126

Brake

When the TWIST is rear-installed, the only braking action possible is by acting on the wheelchair by braking, acting on the handrims or, in the case of a third person controlling it, by stopping the wheelchair. In both cases the wheelchair must undergo a drastic reduction in speed that brings it close to 0 km/h. The Controller's stop button will interrupt the power supply from the motor, but the motor will not be able to slow down the device, in particular when travelling downhill.

Always-on driving safety

Safety is always guaranteed even if the control should disconnect or its battery runs out. In this case, the TWIST will stop immediately.

The motor stop also comes into operation in case the control detaches from the wheelchair.

In this case, once a certain distance has been passed, approximately 10 metres, the motor of the TWIST will stop automatically.

⚠	The motor of the TWIST device does not perform any braking and/or blocking action when the device is not in motion (recorded speed 0 Km/h). This also refers to the emergency stop from disconnection when the device comes to a halt (reaches 0 Km/h). It is therefore necessary to act on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position.

Monitoring driving information via smartphone

It is possible to use your smartphone as a dashboard to display driving parameters in real time. By attaching the smartphone to the wheelchair and activating the Klaxon App on the Dashboard page, it is possible to display the travel speed, the number of kilometres travelled, the battery charge level of the TWIST and of the connected control, and the remaining range of kilometres in real time.

	When using the Klaxon App accessory as a display, the smartphone or any other electronic device they must absolutely be attached to the wheelchair. Always use the TWIST device only with both hands free and available for driving.

14.5 DRIVING THE TWIST DEVICE WITH CONTROLLER BY A THIRD PERSON

If the TWIST is to be driven by a third person, the latter must read and fully understand this User Manual, that of any accessories and of the wheelchair itself. We also recommend reading sections 14.2 thoroughly if the TWIST is front-installed, or 14.4 if it is rear-installed. Please also read thoroughly section 9.2 concerning the use of the Controller.

Linking the TWIST at the front will facilitate driving over rough terrain and also allows the electronic braking management on both flat and downhill terrain.

Linking the TWIST at the rear will promote a greater freedom of movement on flat terrain and particularly in indoor environments. In this configuration, the motor brake management will not be active both when riding on flat ground or downhill.

	In the case of rear assembly, pay close attention while driving towards any obstacles that could suddenly block the front wheels of the wheelchair, catapulting the seated person forward.

For third-person driving, the Controller must be installed on the rear handles of the wheelchair.

	Never leave the wheelchair unattended with the Controller installed and active. An accidental pressure of the control could make the device move.

14.6 DRIVING THE TWIST DEVICE WITH CAREGIVER CONTROLLER BY A THIRD PERSON

WHEN DRIVING THE TWIST WITH THE CAREGIVER CONTROLLER, THE WHEELCHAIR MUST BE OPERATED BY A THIRD PERSON. THE THIRD PERSON MUST READ AND FULLY UNDERSTAND THIS USER MANUAL, THE MANUAL FOR ANY ACCESSORIES AND THE WHEELCHAIR ITSELF. WE ALSO RECOMMEND READING SECTIONS 14.2 THOROUGHLY IF THE TWIST IS FRONT-INSTALLED, OR 14.4 IF IT IS REAR-INSTALLED. PLEASE ALSO READ SECTION 9.5 CAREFULLY REGARDING USE OF THE CAREGIVER CONTROLLER.

Linking the TWIST at the front will facilitate driving over rough terrain and also allows the electronic braking management on both flat and downhill terrain.

Linking the TWIST at the rear will promote a greater freedom of movement on flat terrain and particularly in indoor environments. In this configuration, the motor brake management will not be active both when riding on flat ground or downhill.

	When a third person is driving, the Controller must be installed on the rear handles of the wheelchair.

For third-person driving, the Caregiver Controller must be installed on the rear handles of the wheelchair.

	When the Twist and the wheelchair are controlled by a third person, the third person must have read this document in its entirety and be aware of its contents. Furthermore, they must respect the user requirements set out in Chapter 6.

⚠	When the Twist and the wheelchair are controlled by a third person, the third person must have the physical and mental capabilities to ensure correct use of the Twist, to operate the wheelchair and to brake/stop both the Twist and the wheelchair. If in doubt, consult all available manuals for the Twist, its accessories and the wheelchair and/or undergo training in their correct use
⚠	When the Twist and the wheelchair are controlled by a third person, the third person must ensure that they are always able to control and, if necessary, brake/stop the Twist and the manual wheelchair at all times. This person is also responsible for choosing the route, its passability, correct driving, speed and braking/stopping of the device and the wheelchair, as well as everything that happens to persons, animals, objects and the surrounding environment while the Twist is installed on the wheelchair.
⚠	It is prohibited to transfer control of the device to persons who do not respect the requirements indicated in this user manual.
⚠	It is forbidden to leave the Caregiver Controller unattended, risking not having control of the device at all times.
⚠	Never leave the wheelchair unattended with the Controller installed and active. An accidental pressure of the control could make the device move.

Front-assembled use

Use the accelerator to start (Figure 127 Letter A). The maximum speed of the Twist is 3.7 Km/h. If the accelerator remains pressed, the device will maintain the speed, both uphill and downhill, until the accelerator is released.

When the accelerator is released (Figure 127 (Letter B), the Twist will brake until it stops (recorded speed of approximately 0 Km/h). When the vehicle is not moving (recorded speed of approximately 0 Km/h) it is necessary to intervene manually, actively blocking its advancement. In addition, it is necessary to act on the wheelchair to keep it still in position.

The maximum speed and intensity of the electronic braking are parameters that can be adjusted via the Klaxon App (links to Page 1).

A

B

Figure 127

⚠	The motor of the TWIST device does not perform any braking and/or blocking action when the device is not in motion (recorded speed 0 Km/h). This also refers to the emergency stop from disconnection when the device comes to a halt (reaches 0 Km/h). It is therefore necessary to act on the manual wheelchair by actively blocking its movement. It is also necessary to act on the manual wheelchair to keep it in stationary in position.

Rear assembled use

Use the accelerator to start (Figure 127 Letter A). The maximum speed of the Twist is 3.7 Km/h. If the accelerator remains pressed, the device will maintain the speed, both uphill and downhill, until the accelerator is released.

When the accelerator is released (Figure 127 Letter B), the Twist motor thrust will be deactivated but there will be no braking action by the device. Therefore, when the TWIST is assembled at the rear, the only possible

braking is by acting on the wheelchair by braking the handrims or, in the case of control by a third person, by stopping it.

The maximum speed is a parameter that can be adjusted through the Klaxon App (links to Page 1).

⚠	In the rear-installed configuration, the TWIST does NOT use the electronic features that automatically reduce speed during curves as well as the automatic stop of the motor thrust when exceeding a steering angle of more than 90°. It is therefore advisable to reduce speed using the accelerator before starting to move in a curve.
⚠	When the TWIST is installed at the rear, it is not able to brake the wheelchair, in particular when driving downhill.

15. INSTRUCTIONS FOR MAINTENANCE AND SERVICING

15.1 CHARGING THE TWIST BATTERY

Figure 128

- Switch off the TWIST by pressing the button on the battery.
- Connect the battery charger to the domestic power socket.
- Lift the rubber cap protecting the battery terminal and connect the plug to the battery of the TWIST.
- The battery LEDs will light up in sequence and the LED on the charger will glow red until the battery is fully charged.
- When the battery is fully charged, the battery LEDs will all remain lit without flashing and the charger LED will glow green.
- Disconnect the battery charger from the wall socket and from the battery and put the protective cap on the connector back on.
- To ensure that the charge has been completed, press the battery button, turn it on and check that all 4 LEDs are lit.

15.2 CHARGING THE CONTROLLER OR THE HANDLEBAR CONTROL'S BATTERY

Figure 129

- Switch the control off by pressing the button.
- Connect the battery charger to the domestic power socket.
- Connect the USB Type-C connector to the controller.
- The LEDs of the control will light up indicating the charge level of the control.
- When the battery is fully charged, the battery LEDs will all switch off.
- Disconnect the charger from the wall socket and from the control.
- To ensure that the charge has been completed, press the control button by switching it on and check that all 4 LEDs are all lit.

15.3 REPLACING THE TYRE

If the tyre is too worn, contact your dealer or KLAXON service centre to have it replaced.

15.4 REPLACEMENT OF COMPONENTS

For the replacement of the mechanical brake cable on the handlebar accessory, for the replacement of the mechanical brake cable on the TWIST or of the brake pads, please contact your dealer or a KLAXON service centre.

16. INSTALLATION

The TWIST device is provided by a KLAXON-authorised technician only after the Linking System has been pre-installed on the wheelchair.

⚠	The TWIST device and the Linking Systems can only be installed on compatible manual wheelchairs. KLAXON provides its distributors with an Installation Manual that contains the linking criteria. KLAXON products and Linking Systems may only be installed by authorised KLAXON technicians who can decide on their own responsibility whether the specific manual wheelchair can be used properly with the TWIST device and the chosen Linking System (based on both the characteristics of the manual wheelchair and the overall conditions).

17. MAINTENANCE

The TWIST device, its components, the Linking Systems and accessories must be serviced regularly, only in this way can the safety, reliability and effectiveness of the device be guaranteed.

	KLAXON is not liable for any damage caused by a lack of or for an insufficient maintenance. In such cases the validity of the warranty will be voided. The use of the device that has not undergone the maintenance procedures is considered as improper and thus effectively voids the warranty. The user is fully and solely responsible for any injury or damage resulting from a malfunction of the device due to not performing the mandatory maintenance.
	The TWIST device may only be repaired by authorised KLAXON technicians. Unscheduled maintenance can be carried out only by authorised KLAXON technicians.
	It is forbidden to remove any components from the TWIST device. Only authorised KLAXON technicians may remove components from the TWIST device. The only component that can be removed by the user is the battery.
	It is mandatory to verify the correct installation after one month. In order to do so please contact an authorised KLAXON technician. This operation will check the system settlement.
NOTE	Please contact a Klaxon Dealer to know whether a spare part is available or not.

17.1 PERIODICAL MAINTENANCE

The following periodical maintenance activities are mandatory:

	Check the wear condition of the tyres at least once a month. To replace the tyre, contact an authorised KLAXON technician.
	Check, at least once every two months, the tightening of all screws and fasteners of the device and of the Linking Systems.
	Check the tightening of the wheel axle bolts at least once a year with a dynamometric torque wrench set to 25 Nm. Contact an authorised KLAXON technician.
	Before each use, check that the accelerator and brakes are working properly: any replacement of wear parts (brake pads, discs, braking system in general) should only be carried out by authorised KLAXON technicians. It is also recommended to have the device checked whenever it is perceived that the braking capacity has diminished.
	Check that the battery is in good condition before each use. For the replacement of the battery, and any other electrical components, please contact only authorised KLAXON technician.
	Have a KLAXON authorized technician overhaul the entire device at least once a year, and/or whenever a malfunction occurs.
	The device must be checked by a KLAXON's authorized technician whenever you feel that the braking power has decreased.

17.2 MALFUNCTIONS

Should a malfunction occur when using the TWIST device, its components, Linking Systems and accessories, please contact KLAXON or an authorised KLAXON dealer.

Malfunction found	Possible cause	Corrective action
The device does not turn on	The battery is empty	Recharge the battery.
	The battery is positioned improperly	Check the position of the battery by removing it and inserting it again, making sure that the electrodes are inserted in the appropriate spaces.
	Generic problems	Do not use the device. Contact an authorised KLAXON service centre.
It vibrates excessively during use	Loose screws	Do not use the device. Contact an authorised KLAXON service centre.
The TWIST is not manoeuvrable	The front tyre is excessively worn	Do not use the device. Contact an authorised KLAXON service centre.
	The mounting angle of the device is incorrect	Do not use the device. Contact an authorised KLAXON service centre.
The controls switch on but the device does not respond	The battery is empty	Recharge the battery.
	Pairing was not performed or not performed correctly	Contact an authorised KLAXON service centre.
	Generic problems	Do not use the device. Contact an authorised KLAXON service centre.
The front castors of the wheelchair touch the ground	The frontal Linking System is installed too low	Do not use the device. Contact an authorised KLAXON service centre.
The Linking System does not engage	Presence of dirt on the Linking System	Clean the Linking System of all dirt and then apply a lubricant.
TWIST does not respond to commands	The control is switched off or its battery is out of charge	If in motion: stop the device and the wheelchair. Move to a safe position away from danger. Switch on or recharge the control.
		If not in motion: move to a safe position away from danger. Switch on or recharge the control.
	Generic problems	Do not use the device. Contact an authorised KLAXON service centre.
Twist does not restart moving, stops or does not execute commands	Command connection problems	Make sure to be in a position away from danger and carry out the following steps: 1) Press the stop button (if in Controller mode). If the problem still persists: 2) Switch the comand in use off and on again. If the problem still persists: 3) Switch the comand in use and the Twist off and on again. If this does not solve the problem: Contact an authorised KLAXON service centre.

Never use the TWIST device if the traction unit, the accessories and/or the Linking System are behaving abnormally. Immediately contact a Klaxon Dealer.

17.3 SERVICE LIFE OF THE PRODUCT

After careful analysis of the market, the technologies used, the state of the art, the intended use and the maintenance specifications KLAXON has estimated that the product has a service life of approximately 5 years. KLAXON would like to emphasize, in a very clear way, that this period is still an estimation and that it can be extended beyond this date if the user follows the correct maintenance procedures, uses the product

properly and with the appropriate care.

If the TWIST device reaches the end of this period please contact your health insurance, local health service, KLAXON dealer or the shop where the product was purchased.

18. BATTERY INFORMATION

18.1 TRANSPORTATION, STORING AND GENERAL INFORMATION

- The batteries supplied with the TWIST device are compliant with the EMC2004/108/EC regulation issued by the European Union regarding the CE Classification. It is therefore permitted to transport these batteries on a train, ship or airplane. Despite this classification they are considered, according to the UN Recommendations on the Transport of Dangerous Goods, as dangerous material and classified as Class 9, respectively as: code UN3480 (Lithium Ion Batteries) if transported as single units and UN3481 (Lithium Ion Batteries Contained in Equipment) if transported while connected to the TWIST device. This classification determines some restrictions regarding the transportation of the product by ship (IMDG Code) and by plane (IATA DGR) referring to: quantity of batteries transported, type of transport (if transported as single unit or connected to the device) and the Watt-hour value (Wh) of each single battery. In this regard, if you are planning to take your device with you, please contact directly the shipping company or the airline chosen for your travel.

  Here below a list with the details of the available battery models supplied by KLAXON:

  – TWIST battery: 36V x 4Ah (144 Wh)

- We recommend paying attention to the charge level indicator! We always advise you to recharge the battery after extended use. Lithium-ion batteries have no memory effect, so they can be charged without having to wait until they are completely discharged.
- Store the battery charger away from heat sources, in a dry place and protected from direct sunlight.

	When not using the battery, remember to charge it at least once a month.
	If you see that the battery is damaged, its housing is broken, if it swells or leaks, absolutely do not use it and contact KLAXON's Technical Support immediately.
	Only use the supplied battery charger together with the TWIST device: any damage or malfunction due to non-compliance with these instructions or use of products that do not comply with KLAXON's guidelines will not be covered by the warranty.
	There is a risk of injury due to short-circuits and risk of electric shock if the battery charger has been damaged. Avoid using the battery charger if it has been dropped or damaged.
	Avoid the use of extension cords unless absolutely necessary. When using them, make sure in advance that they are undamaged and in good condition to avoid risks of fire and electrical shock.
	Once the battery is fully charged, the charger automatically cuts the power supply. Do not leave the battery charger connected to the 230 V mains for too long after it has finished its charge cycle (green LED on).
	Always charge the battery in a well ventilated room and keep it away from flammable material.
	Always charge the battery before you start using the TWIST. Never use the device with an empty battery.

19. TECHNICAL DATA

19.1 CLASSIFICATIONS OF THE DEVICE

According to the Medical Devices Directive Annex VIII EU745/2017 MDR	Risk class I
Protection against electrical hazards	Class II
Degree of protection against direct and indirect contact	Type B
Use in oxygen-rich environments	No protection
Operating conditions	Device for continuous operation

19.2 PERFORMANCE

#	Feature	Value	Unit	Notes
1a	Available Speeds - Usage with Controller	2 - 3.5 - 4.5 - 6	Km/h	Other maximum speeds values depend on national regulations and available optionals
1b	Available Speeds - Usage with handlebars	0 to 20	Km/h	Other maximum speeds values depend from customised settings or national regulations
2	Range of the TWIST battery	21	Km	With a fully charged battery, on flat ground and with a user weighing 120 kg
3	Maximum negotiable rated slope	6	°	With a fully charged battery and user weighing 120 kg. The 6° corresponds to a 10% slope
4	Maximum negotiable obstacle height	30	mm	With a fully charged battery and user weighing 120 kg
5	Maximum negotiable ground unevenness height	30	mm	With a fully charged battery and user weighing 120 kg
6	Motor voltage	36	V	
7	Maximum weight of user	120	Kg	Consistently with the technical characteristics of the wheelchair to which it is installed to
8	Expected service life	5	years	Approximately 25,000 km

19.3 DIMENSIONAL DATA

#	Feature	Value	Unit	Notes
1	Length	310	mm	
	Length of handlebars	420	mm	
2	Width	150	mm	
	Width with handlebars	450	mm	
3	Height	340	mm	
	Height with handlebar	940	mm	
4	Weight	7.4	kg	without battery
		9.8	kg	with handlebar, without battery
5	Battery weight	1.4	kg	
6	Motor power	250	W	750 W of peak power

7	Tyre size	10	inch	70/65 6.5

19.4 ENVIRONMENTAL OPERATING CONDITIONS

#	Feature	Value	Unit	Notes
1	Maximum altitude	2.000	m	
2	Atmospheric pressure	700 to 1.060	hPa	
3	Temperature	-25 to 50	°C	Discharge temperature
		0 to 45	°C	Charging temperature

19.5 TRANSPORTATION AND STORAGE ENVIRONMENTAL CONDITIONS

#	Feature	Value	Unit	Notes
1	Temperature	-40 to 65	°C	10°C to 50°C is suggested
2	Relative humidity	30 to 90	%	

NOTE	Before a long period of storage, charge the battery between 30% and 80%. During a long period of storage, check the battery's charge level periodically and charge it at least once a month until it returns to the aforementioned values. Before starting to use the battery again after a long period of storage, fully charge the battery.

19.6 TECHNICAL DESCRIPTION OF BATTERY CHARGER

#	Feature	Value	Unit	Notes
1	Input voltage	230	V	
2	Frequency	50	Hz	
3	Output Voltage	48	V	

19.7 TECHNICAL DESCRIPTION OF THE BATTERY

NOTE	All KLAXON products are provided with a Li-Ion Maintenance Free battery.

TWIST battery (144 Wh)

#	Feature	Value	Unit	Notes
1	Rated voltage	36	V	
2	Capacity	4	Ah	
3	Charging time	approx. 2	h	Time to charge a completely discharged battery.

19.8 MAIN FEATURES

#	Feature	Value
1	Traction type	Electric
2	Brake	Disc (diameter 150 mm), mechanical
3	Type of use	Outdoor and indoor

19.9 STANDARD REQUIREMENTS INFORMATION DISCLOSURE

ISO 7176-1:2014 - Determination of static stability Information disclosure	
Forward wheelchair tipping angle	The tipping angle depends on the manual wheelchair
Rearward wheelchair tipping angle	
Wheelchair tipping angles, lateral orientation of least stability	
Anti-tip device tipping angles and whether the anti-tip device prevented tipping over of the wheelchair	
If an active-stability system is offered for the wheelchair tested, the manufacturer shall disclose the influence of that system on the above results in both the specification sheets and the wheelchair operator manual. If an active-stability system is offered for the wheelchair tested, the manufacturer shall disclose the influence of that system on the above results	

ISO 7176-2:2017 - Determination of dynamic stability of electrically powered wheelchairs Disclosure of results	
Rearward dynamic stability on ramp	The tipping angle depends on the manual wheelchair
Forward dynamic stability on ramp	
Lateral dynamic stability on ramp	
Lateral dynamic stability while turning in a circle	
Lateral dynamic stability while turning suddenly	
Rearward dynamic stability traversing step forward	
Rearward dynamic stability traversing step backward	
Forward dynamic stability traversing forward up a step	
Forward dynamic stability traversing forward down a step	
Travelling forward at an oblique angle to a downward step	

ISO 7176-3:2012 - Determination of effectiveness of brakes Disclosure of results	
Parking brakes (only for handlebar configuration):	
Maximum slope uphill	6.2°
Maximum slope downhill	6.2°

Running brakes, if fitted, minimum braking distance from maximum speed forward on horizontal surface:	
Normal operation without handlebar (6km/h)	0.97 m
Normal operation with handlebar (10km/h)	0.47 m

ISO 7176-4:2008 - Energy consumption of electric wheelchairs and scooters for determination of theoretical distance range Disclosure of results	
Theoretical continuous driving distance range with handlebar	21 km
Theoretical continuous driving distance range without handlebar	21 km
Theoretical manoeuvring distance range with handlebar	10 km
Theoretical manoeuvring distance range without handlebar	10 km

ISO 7176-8:2008 - Requirements and test methods for static, impact and fatigue strengths Disclosure of results
The device have been tested and met of all the applicable requirements of this part of ISO 7176-8

ISO 7176-9:2008 - Climatic tests for electric wheelchairs Disclosure of results
The device have been tested and met all of the applicable requirements of this part of ISO 7176-9

20. CLEANING

A regular cleaning of the device, in all its parts, guarantees a longer life and better functionality of the device.

It is recommended to (except as provided for in section 20.1):

- Always switch off the device and disconnect the charger before cleaning.
- Do not clean the surfaces of the TWIST and its accessories with solvents, alcohol or any other chemicals.
- Do not use abrasive substances, aggressive detergents and high-pressure cleaners.
- Dry the device thoroughly in case it has gotten wet.
- If the device is dirty, soften the dirt as soon as possible and remove it; then dry the device thoroughly.
- Carry out external cleaning of the entire device at least once a month and after every outing in dirty conditions.
- Take care not to get electrical parts (battery, motor, etc.) wet.
- Never immerse the TWIST or its accessories in water.
- Do not wash the TWIST or its accessories with a stream of water of any sort or intensity.
- Dry the parts immediately with a soft cloth after washing them.
- If electrical parts are wet, let them dry and do not use the device until they are dry.
- Use low-pressure compressed air (max. 2 bar) to remove dust and small debris. It is recommended to not insist too much on the front and rear light lens.
- Once dust and small debris have been removed, clean with a wet, soft, non-abrasive cloth.
- Check, in particular, that there are no stones or dirt in the battery compartment that would prevent it from being inserted.
- Check for (and remove) the eventual dirt that could get in under the steering.

- Check for (and remove) the eventual dirt that might have ended up in the Multi-Link Klaxon®.

⚠	The TWIST device and accessories are electrically powered. There is a risk of electric shock if they are not cleaned with due care.

20.1 DISINFECTION

Disinfecting the TWIST device is as important as the regular cleaning operation described in this chapter. In order to do so please proceed by using a detergent that complies with the disinfection procedures that respects the materials and components of the device. If in doubt, please refer to the instructions on the packaging of the chosen disinfectant. The disinfection must be done with certified, tested and of proven effectiveness disinfection products that are complying with your national hygiene standards. A list of currently approved and certified disinfectants can be found on the websites of renowned institutions such as the European Centre for Disease Prevention and Control (www.ecdc.europa.eu), the Centres for Disease Control and Prevention (www.cdc.gov), the website of the Robert Koch Institute (www.rki.de) and similar.

21. FINGER TRAPS AND SQUEEZING POINTS

The TWIST device and the Linking Systems present some places where fingers could be inadvertently trapped or squeezed during use. Please note and be aware of these points to avoid injury. Below are the various points highlighted in red:

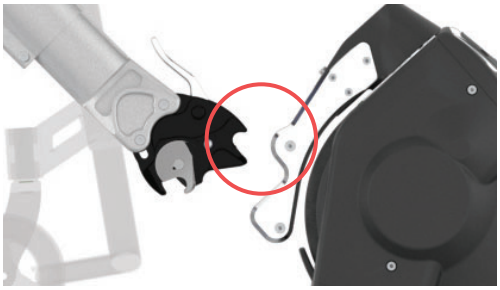


Figure 130

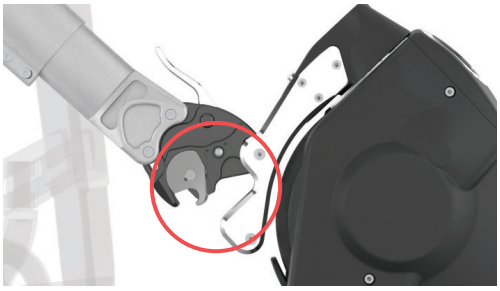


Figure 131

	The squeezing points/finger traps are indicated on the TWIST device by stickers as the one shown here. The stickers are an additional safety measure, in case of doubt please refer to this manual.

	The removal of the stickers indicating the squeezing points is prohibited.

22. DISPOSAL

	The disposal of the equipment inside the TWIST device, the Linking Systems and accessories must absolutely comply with the specific regulations of the country in which they are going to be disposed of. KLAXON is not responsible for disposal that does not comply with the specific regulations in force.
	Recycling of Li-Ion batteries depend from national regulations, ask your Klaxon Dealer for your country rules.

23. PRODUCT WARRANTY

The warranty period is 24 months for the traction device and for the linking systems and 12 months for the batteries, starting from the delivery date of the device.

Natural wear and tear of parts is not covered by the warranty, except for improper wear due to a manufacturing defect.

If a defect occurs during the warranty period, KLAXON will, at its discretion, repair or replace the defective component.

The manufacturer assumes no liability for damages caused by negligence, careless use and maintenance, tampering or incorrect maintenance performed by unauthorised persons, or for failure to follow the instructions for use set out in this Manual.

24. FREE WHEEL/PUSH OPTION

The TWIST wheel has a brushless motor that can rotate freely when turned off. Manual operation and pushing are both possible, without any problems, if it is not possible to use the motor as a propulsion. When installed to a wheelchair, the unit consisting of wheelchair and the TWIST traction device can therefore also be pushed manually without being subject to additional impediment. The mechanical braking system of the handlebar, when installed, allows safe braking even when the unit is switched off or inoperative. Alternatively, the TWIST traction device can also be detached from the wheelchair.

25. PROPERTY TRANSFER

If the TWIST devices has been provided by a medical insurance or national health system and is not needed anymore, please contact the involved insurance company, local health system or your local KLAXON Dealer. This action will lead to the assignment of the TWIST device to a new owner.

Everytime the TWIST device changes owner, even in the case of transfer of property through private negotiations, it must undergo maintenance and disinfection prior its first use. Please contact an authorized KLAXON Dealer to perform the maintenance. Please follow the correct cleaning and disinfection procedures as explained on the chapter 20 of the present manual.

26. IMPORTANT INFORMATION FOR US MARKET

26.1 FEDERAL LAW RESTRICTIONS TO SALES

	Federal law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which he/she practices.

26.2 POWERED ADD-ON DEVICES FOR MANUAL WHEELCHAIR'S ELECTROMAGNETIC INTERFERENCES (EMI)

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

	Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect add-on devices. Following the warnings listed below should reduce the chance of unintended brake release or add-on device movement which could result in serious injury. 1) Do not operate hand-held transceivers (transmitters-receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, radio frequency identification (RFID), while the add-on device is turned ON; 2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them; 3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe; 4) Be aware that adding accessories or components, or modifying the add-on device, may make it more susceptible to interference from radio wave sources. (Note: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and 5) Report all incidents of unintended movement or brake release to the add-on device manufacturer, and note whether there is a radio wave source nearby.

Important Information

20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (the higher the level, the greater the protection). All Klaxon power-drives have an immunity level of 20 V/m tested according with ISO 7176-21.

IT IS VERY IMPORTANT THAT YOU READ THE FOLLOWING INFORMATION REGARDING THE POSSIBLE EFFECTS OF ELECTRO-MAGNETIC INTERFERENCE ON YOUR POWERED WHEELCHAIR.

ELECTROMAGNETIC INTERFERENCE (EMI) FROM RADIO WAVE SOURCES

Add-on devices may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself.

It can also permanently damage the add-on device's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each add-on device can resist EMI up to a certain intensity. This is called its "immunity level". The higher the immunity level, the greater the protection.

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

1) Hand-held portable transceivers (transmitters-receivers) with the antenna, mounted directly on the transmitting unit.

Examples include: citizens band (CB) radios, "walkie talkie", security, fire and police transceivers, cellular telephones, radio frequency identification (RFID), and other personal communication devices.

Note: Some cellular telephones and similar devices transmit signals while they are ON, even when not being used;

2) Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances, and taxis.

These usually have the antenna mounted on the outside of the vehicle; and

3) Long-range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.

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

MR Safety Statement

The TWIST device is MR unsafe.

DO NOT USE THE DEVICE IN A MR, DIATHERMY, AND ELECTROCAUTERY ENVIRONMENT.

26.3 WIRELESS TECHNOLOGY INFORMATION

TWIST uses for communication between motor hub and wireless controls the IEEE 802.15.4 (Bluetooth Low Energy) protocol. Connection and control of the device is only allowed between a single controller and a single TWIST motor hub, only with a pre-existing pairing present on both wireless devices.

The TWIST motor hub acts as a BLE Server, when no controllers are connected it advertises its presence. After a correct connection with a controller is established, it disallows any further BLE devices to connect.

Critical drive command communication happens through a BLE characteristic that is updated by the controller connected every 100ms. This data transmission frequency has been chosen to ensure that even if the connection is degraded there is no noticeable loss of functionality.

The TWIST device passed the EMC testing according ISO 7176-21 including the active BLE connection and the Wireless Coexistence testing according ANSI C63.27:2017 successfully.

The following are the main features of the wireless technology used on TWIST.

DRIVE UNIT:

Type of wireless technology: EEE 802.15.4 (Bluetooth Low Energy)

FCC compliance: Part 15c

FCC ID: 2AC7Z-ESP32WROOM32E

Wireless Coexistence Compliance: ANSI C63.27-2017, Tier 1

EMC Compliance: ISO 7176-21

RF frequency range: 2.402 GHz to 2.480 GHz

RF maximum output power: 9dBm

Wireless operating range: 10m (32.8 ft) / class 2

Wireless functions: Speed, Emergency stop, Operating mode (handlebar, controller, front, rear)

CONTROLLER:

Type of wireless technology: IEEE 802.15.4 (Bluetooth Low Energy)

FCC compliance: Part 15c

FCC ID: 2AC7Z-ESP32WROOM32E

Wireless Coexistence Compliance: ANSI C63.27-2017, Tier 1

EMC Compliance: ISO 7176-21

Wireless RF frequency range: 2.402 GHz to 2.480 GHz

Wireless RF maximum output power: 9dBm

Wireless operating range: 10m (32.8 ft) / class 2

Wireless functions: Speed Level, Brake command, On/Off

HANDLEBAR/ATTENDANT CONTROL:

Type of wireless technology: IEEE 802.15.4 (Bluetooth Low Energy)

FCC compliance: Part 15c

FCC ID: 2AC7Z-ESP32WROOM32E

Wireless Coexistence Compliance: ANSI C63.27-2017, Tier 1

EMC Compliance: ISO 7176-21

Wireless RF frequency range: 2.402 GHz to 2.480 GHz

Wireless RF maximum output power: 9dBm

Wireless operating range: 10m (32.8 ft) / class 2

Wireless functions: Speed, Electronic Brake, On/Off

26.4 CYBERSECURITY

The Klaxon TWIST uses the wireless communication technology known as Bluetooth Low Energy (BLE). BLE allows two devices to exchange information in real time.

BLE is used to control the device at all times through the use of a controller or handlebar. The communication is encrypted and requires a pre-existing pairing to activate the motor.

Due to the communication structure of the Klaxon TWIST, the BLE communication happens in a different and independent control unit from the motor drive unit.

This means that in the unlikely event of a successful attack the device would be safely stopped and all power is removed from the motor. In this state no energy is provided to the motor and any unintended movement is impossible.

Even in the case of a successful attack to imitate a BLE command, the device would not be able to operate outside of the established limits (speed, acceleration, braking, etc.).

In the case unforeseen vulnerabilities are found, the firmware on the TWIST and TWIST R can be fully patched remotely by the user using Over-The-Air updates.

Any vulnerabilities would not be exploited remotely and any attack requires that the device Bluetooth is enabled and that the attacker is within close physical proximity (i.e., within Bluetooth range) of the device.

The chipset used on the Klaxon TWIST and TWIST R is up to date with modern vulnerabilities of the BLE stack and in particular already implements patches to the SweynTooth vulnerabilities.

27. ORIGINAL TEXT

This document is a translation of the original version written in Italian. Please note that in case of discrepancies between the two versions, the Italian version will be the one considered as official and valid.

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