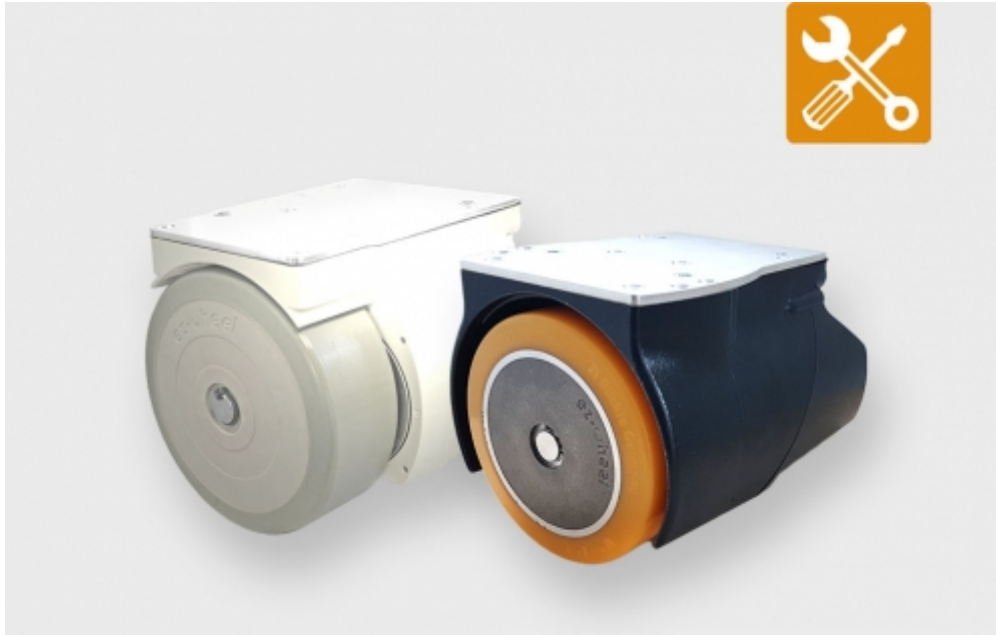


OPERATING MANUAL

Original manual - Version B - 08 June 2020

Wheels ezW160 / ezW150 - Wired versions



Do not use ez-Wheel products for other purposes or in other conditions than those mentioned in the technical documentation. Read and make sure you have understood the manual before using ez-Wheel products. Observe all the warnings and usage instructions in this manual. Keep this manual for reference throughout the life of the product. In the event of loss, you can obtain a copy of this manual from your dealer or from the ez-Wheel Service Department. If the product is transferred to another owner, make sure that the manual is transferred as well. The characteristics, descriptions, and illustrations in this document are applicable at the date of publication. ez-Wheel reserves the right to make any modifications and revisions to this document. Product users obtain their own information on these modifications.

Installation of the suspended fork

The installation of a driving wheel on a wheeled machine must be done in accordance with the Machinery Directive in force. Refer to the Declaration of Incorporation at the back of this document and make sure that the machine equipped with the wheel satisfies the directives and standards applying to it.



When using as a 5th wheel or for the addition of a driving wheel on an existing machine we recommend installing the wheel with a system of suspension or shock absorbing blocks.

Contact your dealer for more information on the fitting of the ez-Wheel and the installation accessories available.

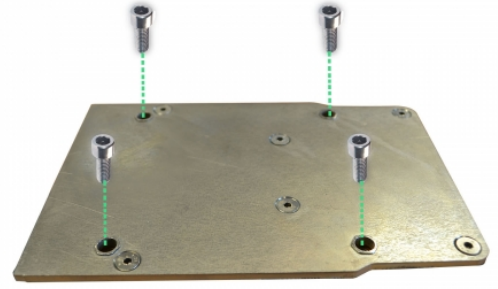


- Fix the mounting plate under the application with 4 M6 screws.

Centre distance: 102 x 105 mm
Fitting drawings available on request

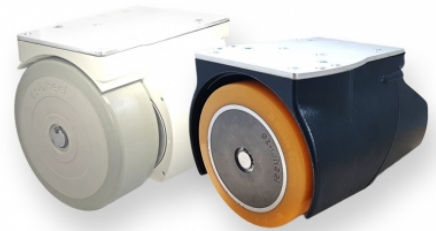
The tightening torque for the screws is 7 Nm; do not exceed this torque. The maximum length of the screws in the plate is 16 mm.

The wheel can be mounted as a fixture on the chassis. In this case, check the maximum load carried by the wheel.



FITTING THE WHEEL ON THE APPLICATION

The range of autonomous wheels, ezW160 / ezW150 enable powerful electric drive to be installed quickly and easily. ezW160 / ezW150 wheels are controlled by a wired interface connected directly to the back of the wheel casing. Many accessories are available for controlling the wheels in the ez-Wheel range. This operating manual contains the instructions to be followed for the installation of ezW160 / ezW150 wheels.



CHARACTERISTICS OF THE EZ-WHEEL PRODUCT

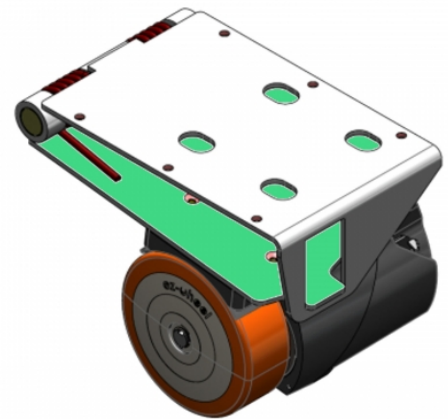
The ezMCS/160 suspended fork is intended for fitting 160 / 150 Series wheels to applications requiring shock absorption to obtain good wheel to ground adhesion.

Mounting the wheel and suspended fork on the application

- Mount the suspended fork on the mounting plate using the 4 M6 screws. It is essential to fix the 4 screws.

Centre distance: 102 x 105 mm
Installation drawings available below

The tightening torque of the screws is 7 Nm. Do not exceed the tightening torque. The maximum length of the wheel plate screws is 16 mm, i.e. a maximum length of 21 mm allowing for the thickness of the suspended fork plate.



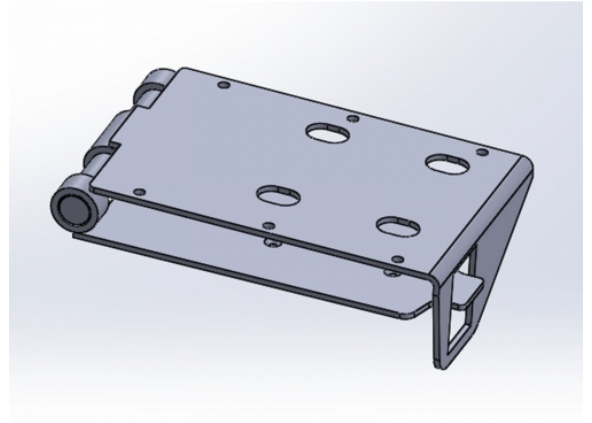
Mounting the wheel on the suspended fork

All the mechanical drawings for the installation of ez-Wheel products are supplied to order. All the accessories mentioned are available in the ez-Wheel catalogue.

Three levels of operation on the fork are available on this product:

- · Position 1: Free position (deployed), for crossing a hollow
- · Position 2: Nominal position, for flat floor operation
- · Position 3: Compressed position, for crossing an obstacle

Follow the installation instructions to ensure perfect operation by the suspended fork.

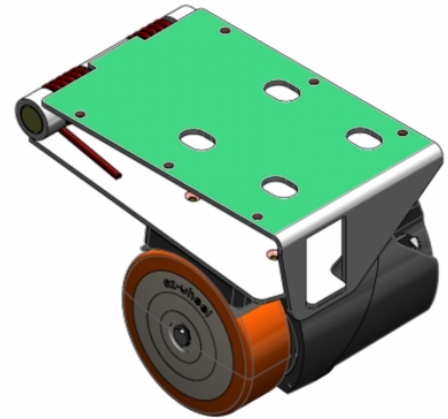


- Screw the pre-assembled unit to the machine.
 - o Refer to the drawing of the fork top plate for the positions of the mounting screws.
 - o It is essential to fix at least 4 screws; mounting with 6 screws is ideal for better stability of the system.

Use screws and nuts with a maximum length of 11 mm so as not to obstruct complete compression of the suspended fork.

- Refer to the drawing of “tolerance of the suspended fork mounting screws on the application”.

Centre distance: 110 x 180 mm
Installation drawings available below

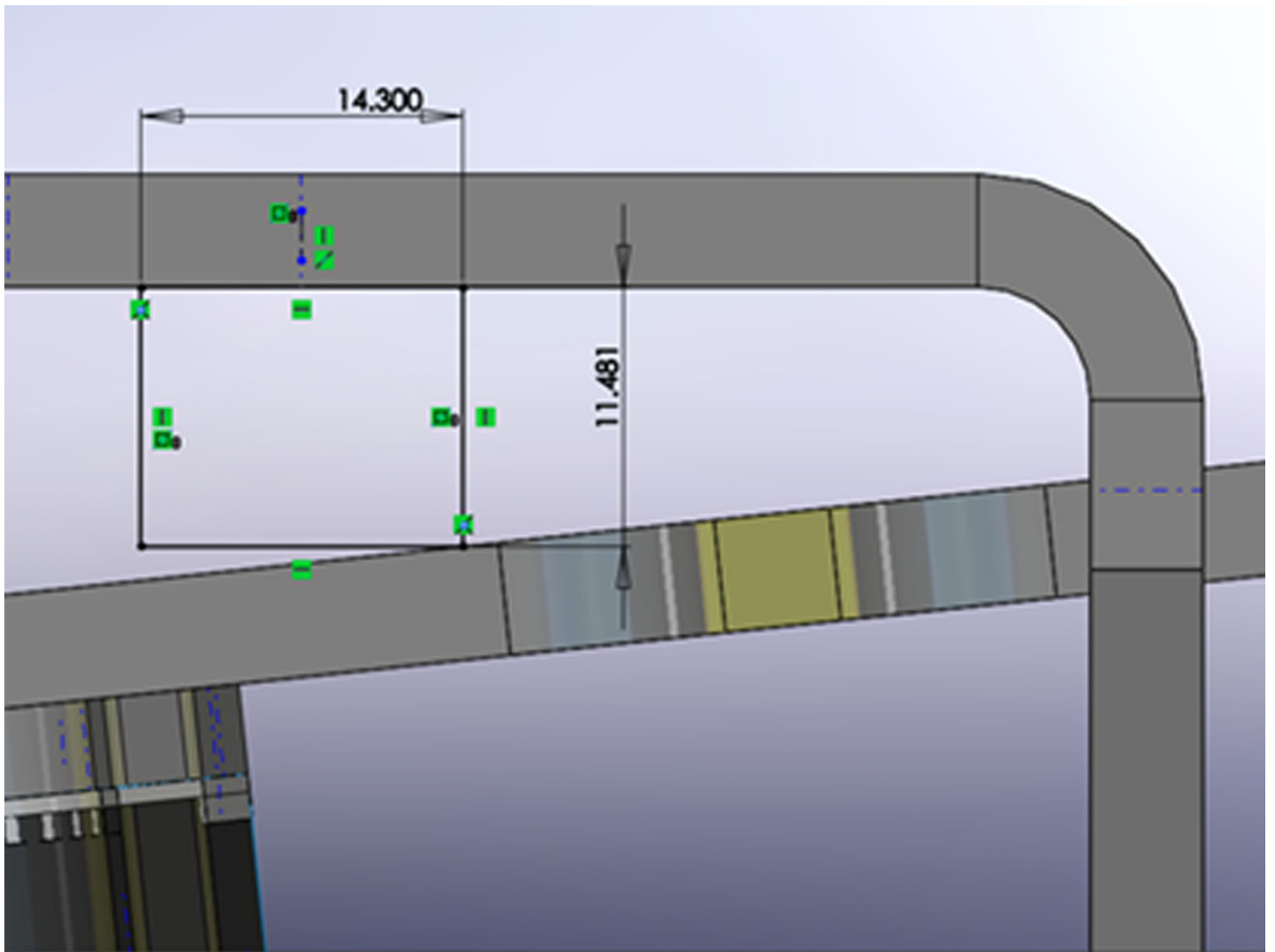


Test the complete system and check that the electric drive of the wheel functions properly without skidding on the floor.
The horizontal driving force provided by the wheel is 20 daN maximum.
If skidding is observed despite the force applied by the suspended fork, check that the rest position of the suspended fork is the nominal position: The top and bottom plates of the suspended fork should be parallel.

The use of a suspended fork is ideal for:

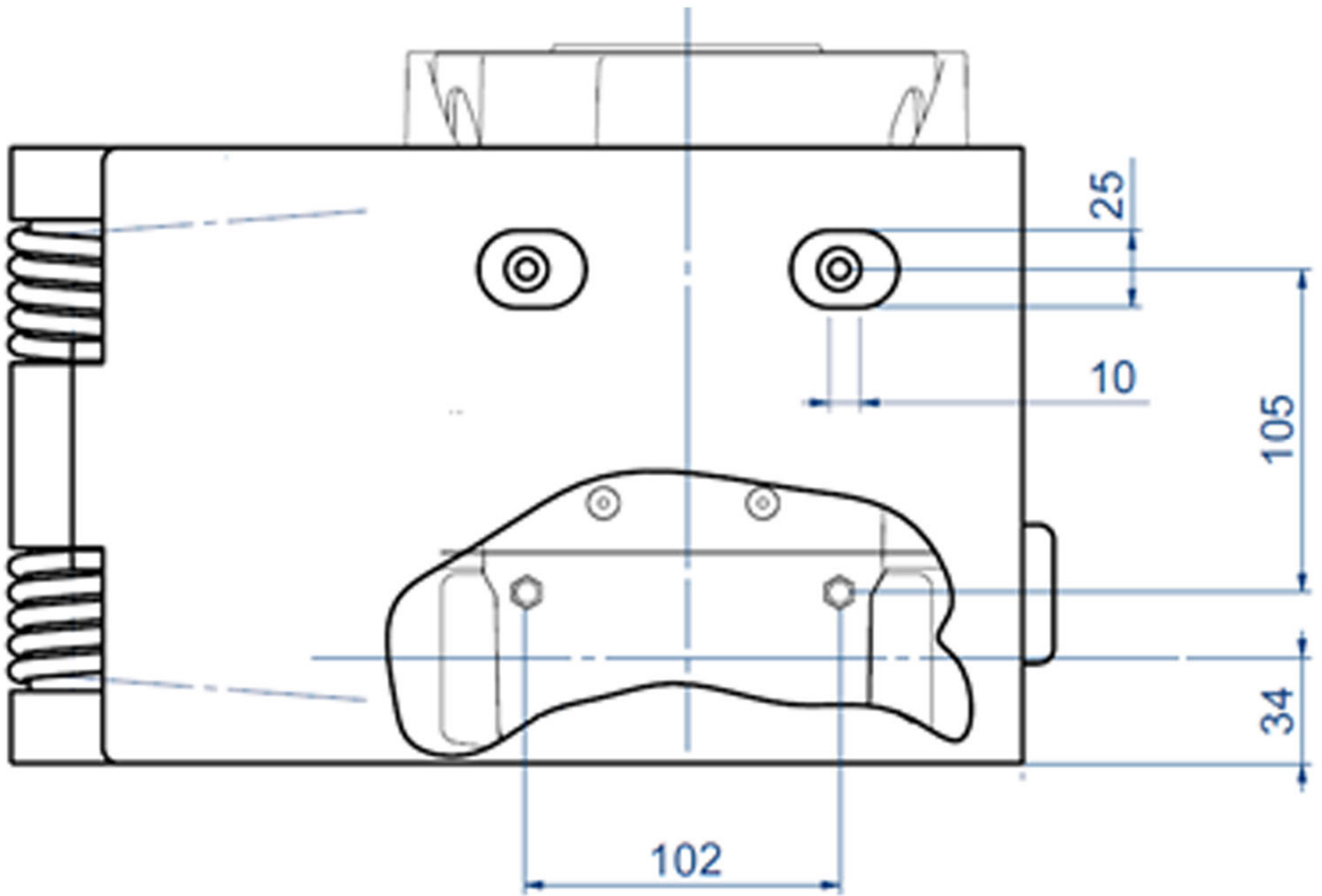
- 5th wheel applications
- the addition of a driving wheel to an existing machine

Tolerance of the suspended fork mounting screws on the application:



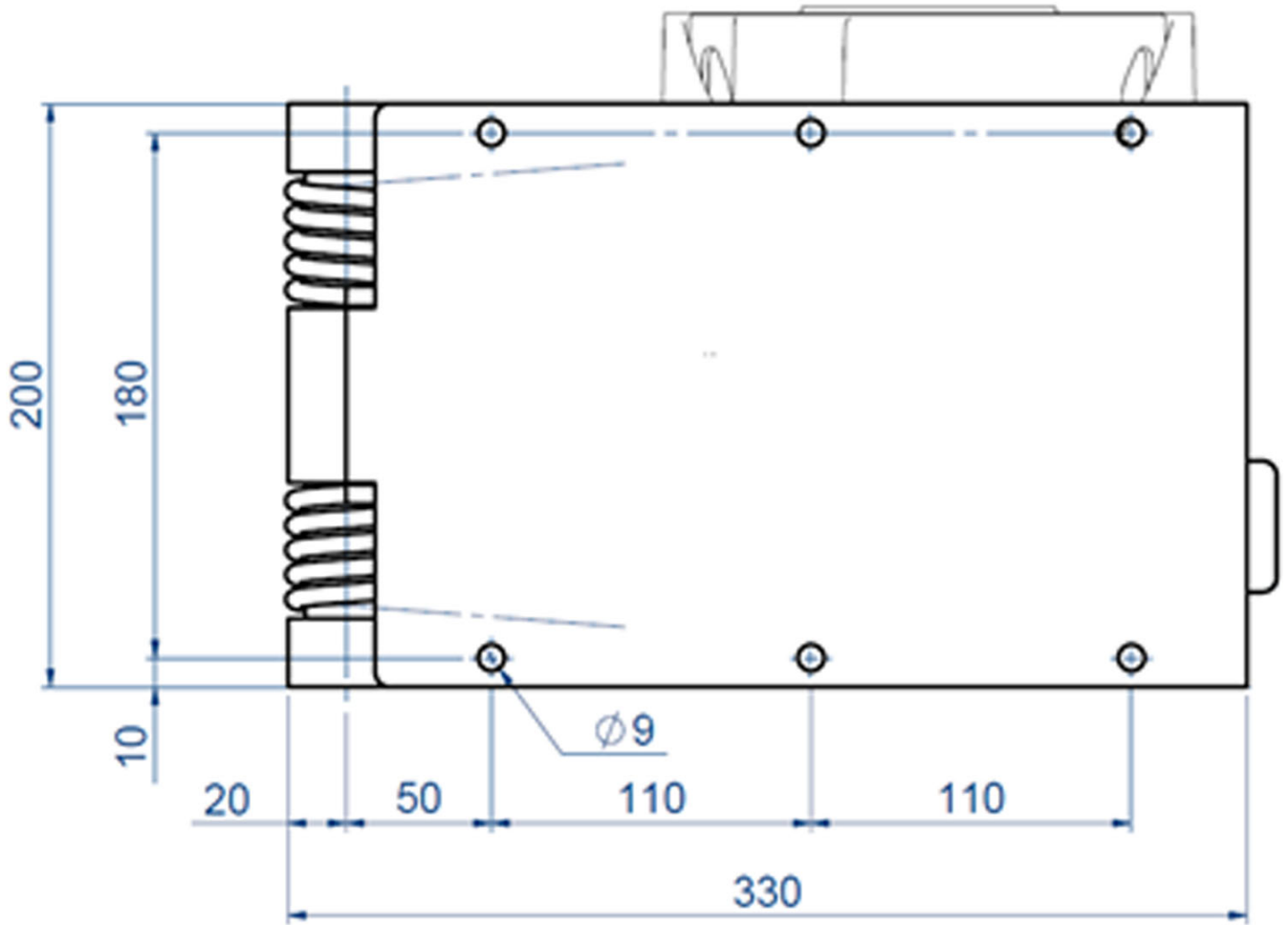
Lower plate drawing

The lower plate of the suspended fork fixes to the 160 / 150 Series wheel. The upper plate has 4 slots to facilitate screw mounting to the wheel plate.



Top plate drawing

The top plate of the suspended fork fixes to the machine.



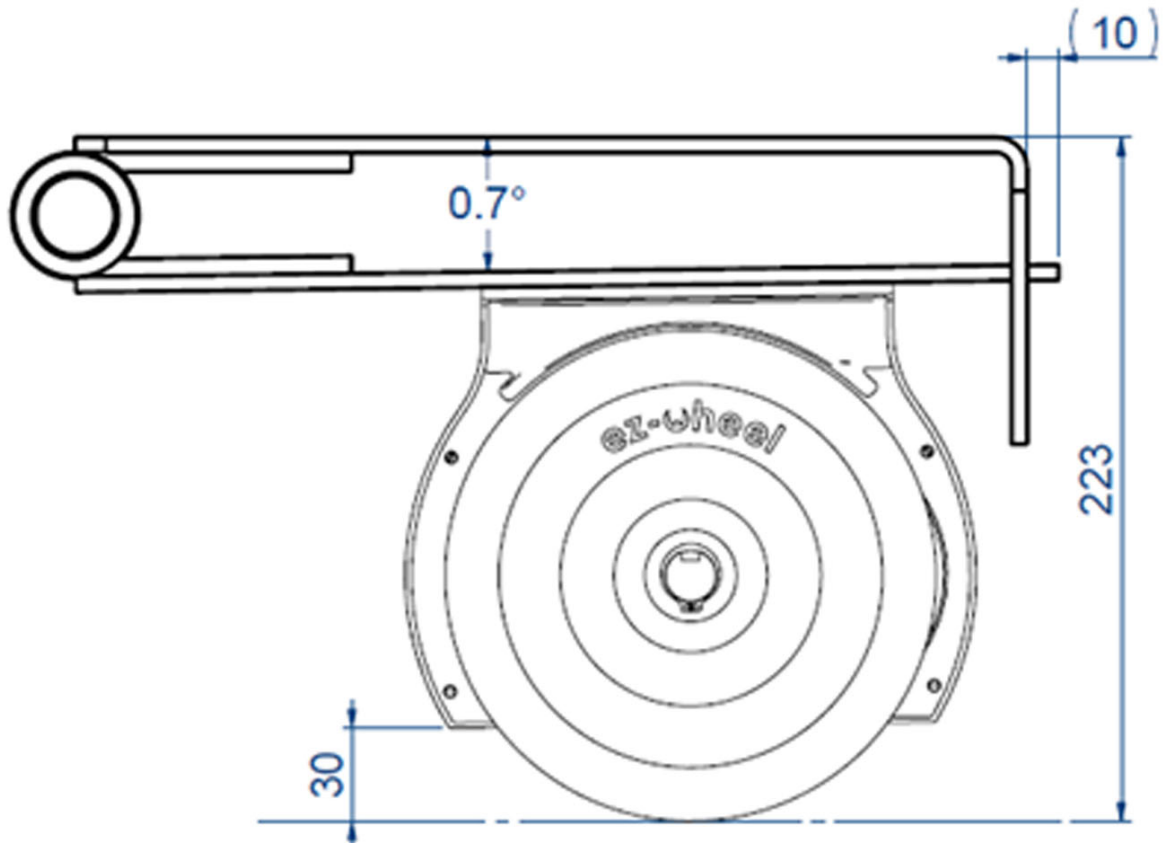
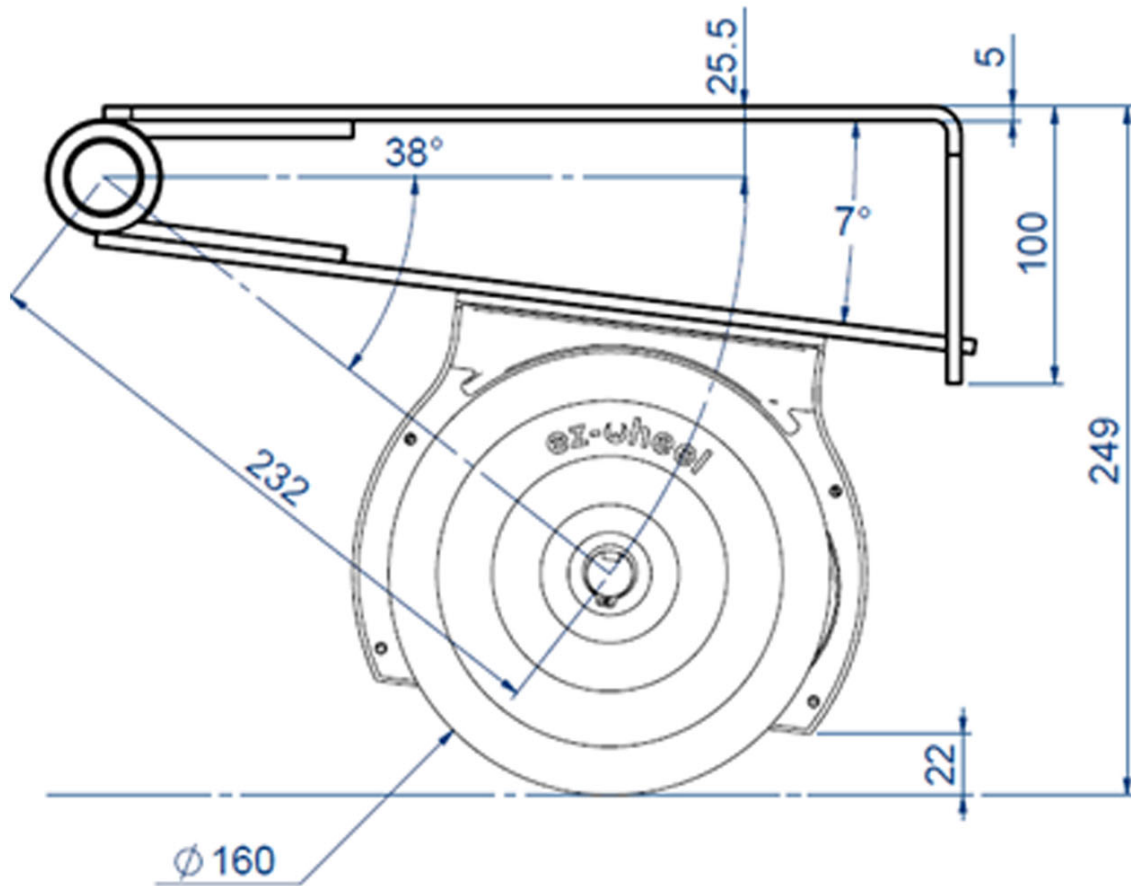


Diagram showing the mounting height under the application chassis in the nominal position

Ground clearance: 30 mm

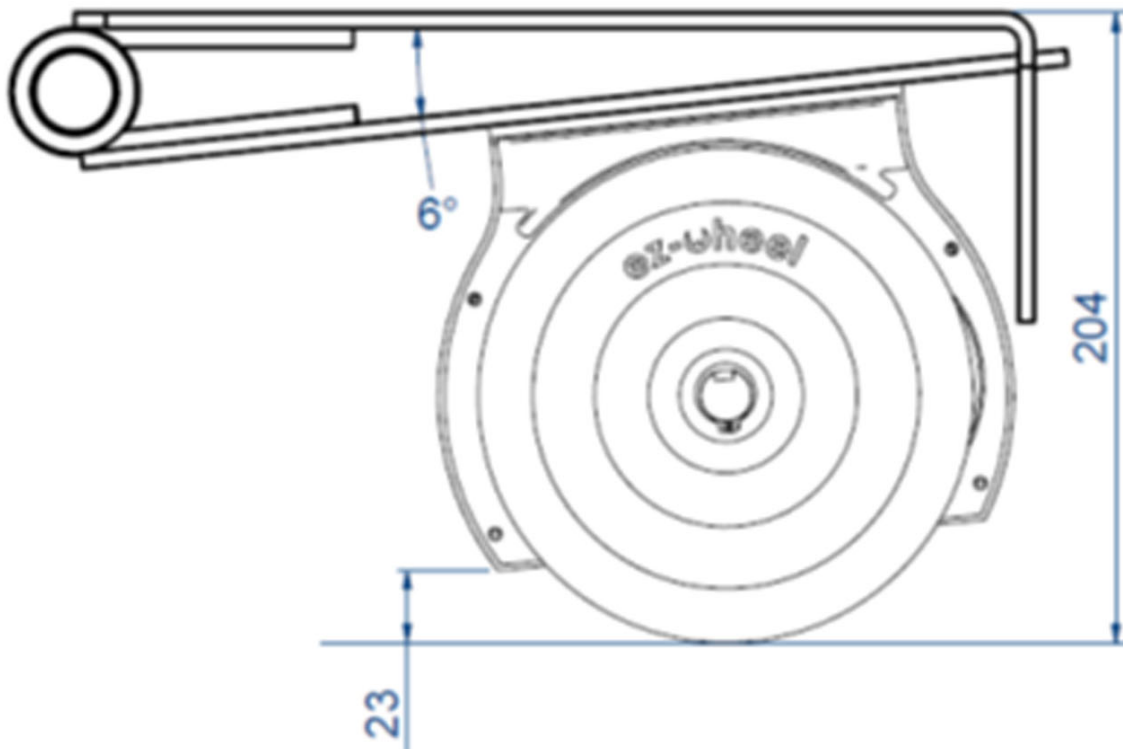
Diagram in the free position (deployed)



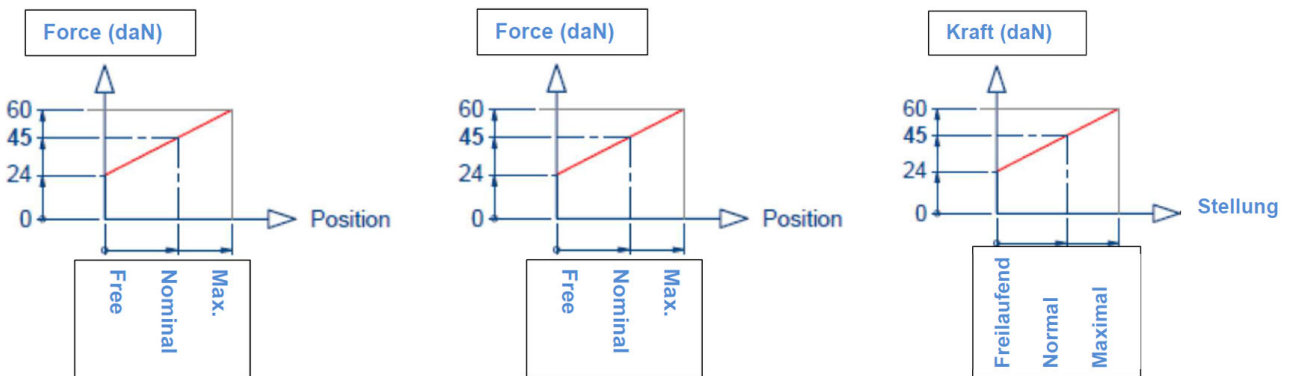
Ground clearance: 22 mm

Diagram in the compressed position

Ground clearance: 23 mm



If skidding is observed despite the force applied by the suspended fork, check that the rest position of the suspended fork is the nominal position.



The suspended fork produces a force on the wheel, maintaining it in contact with the floor.

- Follow the fitting instructions above to obtain a good grip on the floor.

Here is the curve of the theoretical force applied by the suspended fork:

Suspended fork/wheel pressure on the floor

OPENING/CLOSING THE CABLE CASING

Removing the cable casing

- Remove the 2 screws holding the cable casing to the chassis.

M4x12 Torx screws
Torx screwdriver

- Remove the cable casing



Cable routing

When installing or manipulating connected cables, make sure that they are positioned in the locations provided in the casing before refitting it. Once the casing is positioned on the wheel check that all the cables are routed correctly in the cable chute between the cover and the cable casing.

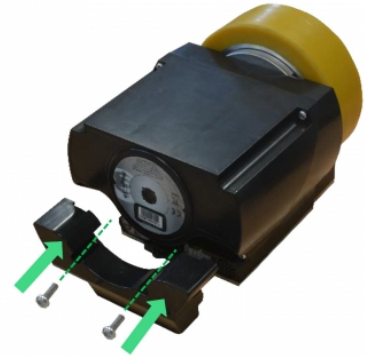


Refitting the cable casing

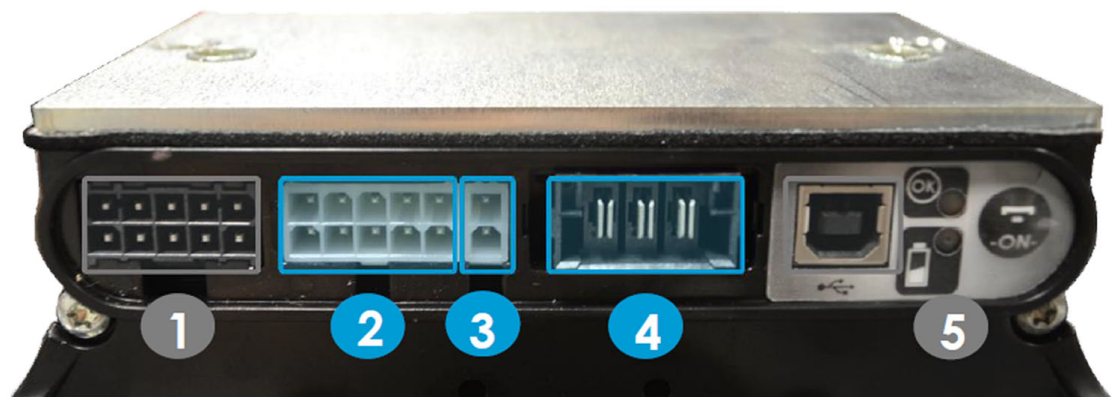
- Refit the cable casing in its original position.
- Screw up the 2 screws fully.

M4x12 Torx screws
Torx screwdriver and extension

The tightening torque for the screws is 2 Nm; do not exceed this torque



COMMISSIONING THE PRODUCT



1. "Other uses" connector

2. [Actuator connector](#)

3. [Charging connector](#)

4. [JUMPER](#)

5. USB port

Cable / connection pairing:

All the cables with an ezAC__/160 reference connect to the Molex® 10-pin female Jr Mini-Fit connector, Cf.2 on the above illustration.

All the cables with an ezCC__/160 reference and the chargers with the /160 suffix connect to the Molex® 2-pin female Jr Mini-Fit connector, Cf.3 on the above illustration.

Fitting the actuator

Connecting the actuator

- Mount the actuator on the application so that its use is intuitive and ergonomic.

Via an actuator panel for rotating handle, joystick and drawbar head type actuators;
At the end of a tube for trigger type actuators.

- Contact the dealer for installation drawings for the different types of actuator.



If the system does not have a starting switch, prepare an ezACxM/160 connecting cable of the length required for the installation on the application.

- Connect the actuator to the wheel with the ezACxM/160 adaptor cable as follows:

[Molex® 6-pin Jr Mini-Fit connector](#) on the actuator

[Molex® 10-pin Jr Mini-Fit connector](#) on the wheel

- Check that the locking pin holds the connector.

If the system has a starting switch, prepare an ezACxM-B/160 connecting cable of the length required for installation on the application.

- Connect the actuator and the switch to the wheel with the ezACxM-B/160 adaptor cable as follows:

[Molex® 6-pin Jr Mini-Fit connector](#) on the actuator

[Faston terminals](#) on the switch

[Molex® 10-pin Jr Mini-Fit connector](#) on the wheel

- Check that the locking pin holds the connector.

If the system has a starting switch with an indicator light,

- Connect the actuator and the switch to the wheel with the ezACxM-BD/160 adaptor cable of the length required for installation on the application as follows:

[Molex® 6-pin Jr Mini-Fit connector](#) on the actuator

[Molex® 4-pin Jr Mini-Fit connector](#) on the switch

[Molex® 10-pin Jr Mini-Fit connector](#) on the wheel

- Check that the locking pin holds the connector.



All mechanical drawings that could serve for the installation of the actuators are available on request.

Connecting the cable: charging

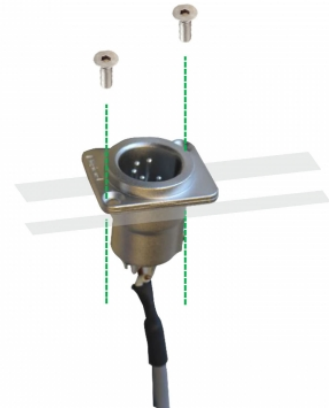
If the charging system comprises an XLR remote charging socket:

- Fix the flange-mounting XLR connector to the panel on the chassis with 2 screws.

FHC M3 screws
Torx screwdriver

- Fix the ezCCxM/160 charging cable on the application.

The flange-mounting XLR connector should be positioned in such a way as to facilitate its use.



- Connect the Molex® 2-pin connector on the ezCCxM/160 charging cable to the 2-pin female connector on the wheel.
- Check that the locking pin holds the connector.

If the charging system comprises an on-board charger (with the suffix /160):

- Fix the charger to the application chassis making sure that there is access to the mains cable for recharging.
- Connect the Molex® 2-pin connector from the charger to the 2-pin female connector on the wheel.



Connecting the external battery

If you have an external battery, contact the dealer for:

- confirmation of the batteries used
- connection of the external batteries

Never connect an external battery if the wheel has an internal battery.



Connecting the JUMPER/emergency stop switch

With a battery in the wheel:

- Check that the JUMPER is properly connected to the wheel before using.
- The JUMPER can be replaced by wiring up a remote emergency stop switch (or any other normally closed switch)

Battery voltage is accessible on this connector, take care not to cause a short circuit between the metal contacts.



In the absence of the JUMPER or a switch wired to this connector the wheel will not operate.

Other connectors

USB socket:

The USB socket is only used for setting the system.
Contact the dealer for more information.

“Other use” connectors:

These connectors are dedicated to other uses.
Contact the dealer for more information.

Before using for the 1st time check that the 3 main sockets: actuator, charging cable and JUMPER are connected.



OPENING/CLOSING THE COVER

- Remove the cable casing as described in the paragraph entitled: “Opening/Closing the cable casing”.

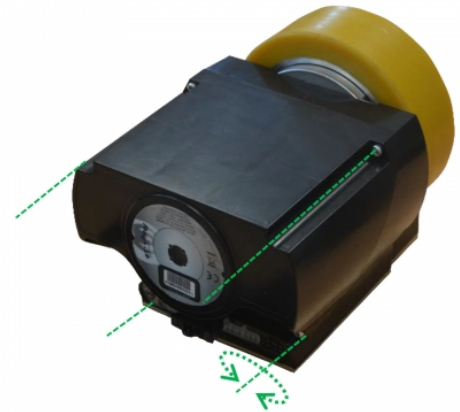
Removing the cover

- Disconnect all the cables (charge, actuator and JUMPER).



- Unscrew the 4 M4x30 Torx screws holding the cover on the chassis.

A Torx screwdriver extension is required.



- Remove the cover

This final step gives access to the wiring connectors, the batteries and their connections.



Refitting the cover

Take care not to pinch the wires when refitting the cover to the chassis.
This precaution is necessary to facilitate the closing of the cover.
A Torx screwdriver extension is required.

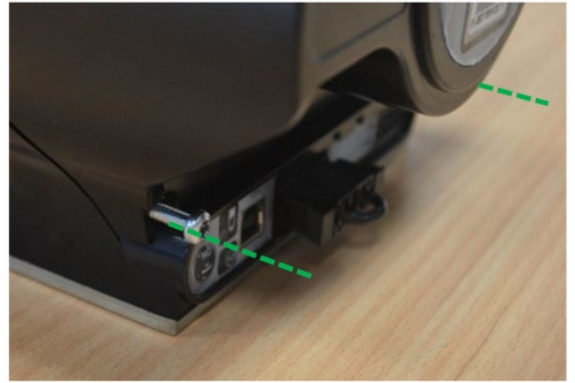
Align the casing to the chassis with the centring spacers.

- Position the two screws in the spacer housings - next to the connection interface

Torx M4x30 screws
Torx screwdriver and extension

- Screw the 2 Torx screws in until they touch.

Do not tighten the screws at this stage!

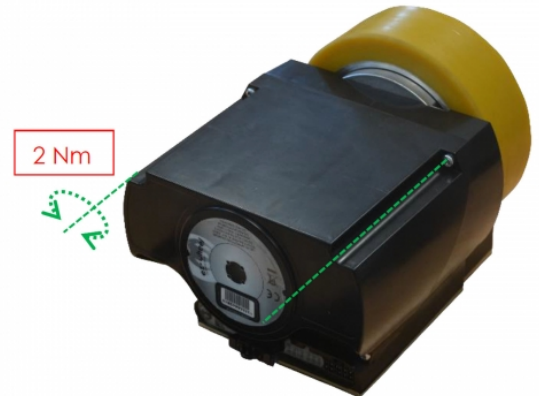


- Tighten the remaining 2 screws fully.

Torx M4x30 screws
Torx screwdriver and extension

- Tighten the first two screws fully.

The tightening torque for the screws is 2 Nm; do not exceed this torque.



FITTING OR REPLACING BATTERIES

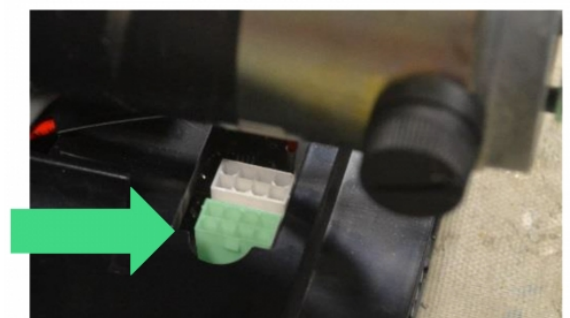
- Refer to the paragraph entitled: "Opening/Closing the cover" for the instructions for removing the cover.
- Remove the battery unit(s) from their location.



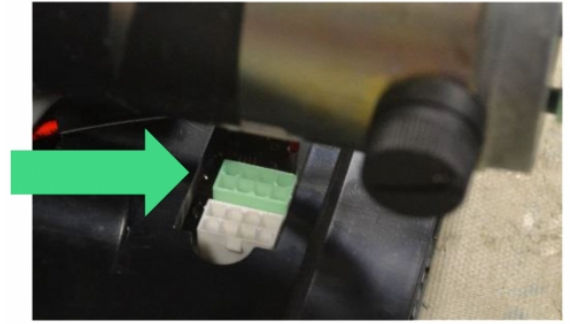
Removing the battery units

Connecting up battery unit(s)

- Connect the first battery unit to the left Molex® 8-pin female connector.



- Repeat the operation on the right side for the second battery unit.



- Once the battery cables are connected replace the batteries in their initial positions.

Refer to the paragraph entitled: "Opening/Closing the cover" for instructions for refitting the cover.



SAFETY RULES IN RELATION TO THE BATTERIES

The user should never, in any circumstances, dismantle the battery packs.

Batteries should be handled without metal or conducting tools.

Use only batteries supplied by ez-Wheel or your dealer.

All information and regulations concerning these batteries can be supplied on request.



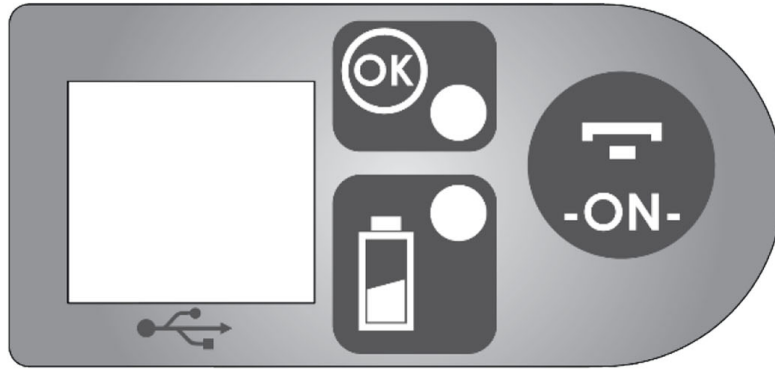
Ni-MH




CONTACTING YOUR DEALER'S SERVICE DEPARTMENT

If a product appears to be faulty, contact the dealer.

Warranty conditions are available with the general sales conditions, or from your dealer.

WHEEL DISPLAY



		Green Grün Vert	The wheel is working. Das Rad ist in Betrieb. La roue est en fonction.
		Flashing green/red Blinkend rot/grün Rouge/Vert Clignotant	Fault preventing operation or flat battery Fehler, der den Betrieb verhindert oder Akku leer. Défaut interdisant la motorisation ou batterie vide.

Declaration of Incorporation

In our quality as manufacturer, we

ez-Wheel SAS
 Rue Jean Doucet
 16470 Saint Michel
 France

declare that the ezW160 product is an incomplete machine within the meaning of the machinery directive 2006/42/EC.








This product is intended to be incorporated into an application, and cannot in any circumstances be put into operation before this application has been declared compliant to the requirements of directive 2006/42/EC.

Issued in St Michel, on 29/10/2013.

Jérôme Pénigaud, Chairman



DECLARATION OF INCORPORATION

		<p>Green Grün Vert</p>	<p>The wheel is charged. Das Rad ist geladen. La roue est chargée.</p>
		<p>Orange Orange Orange</p>	<p>The wheel is at half charge (50%). Das Rad ist halb geladen (50 %). La roue est à mi-charge (50%).</p>
		<p>Red Rot Rouge</p>	<p>The wheel charge is below 30% Das Rad ist zu weniger als 30 % geladen. La roue a une charge inférieure à 30%.</p>
		<p>Flashing red Blinkend rot Rouge clignotant</p>	<p>The wheel is completely discharged. It is impossible to use the system. Charging is necessary. Das Rad ist vollständig entladen. Eine Nutzung des Systems ist nicht möglich. Wiederaufladen nötig. La roue est totalement déchargée. L'utilisation du système est impossible. La mise en charge est nécessaire.</p>
		<p>Flashing orange Blinkend orange Orange clignotant</p>	<p>The wheel is charging. Das Rad wird aufgeladen. La roue est en charge.</p>
		<p>Flashing green Blinkend grün Vert Clignotant</p>	<p>The wheel is charged and connected to the charger. Das Rad ist aufgeladen und ans Ladegerät angeschlossen. La roue est chargée et branchée au chargeur.</p>

DECLARATION OF CE CONFORMITY

Déclaration d'incorporation

En qualité de fabricant,

ez-Wheel SAS
Rue Jean Doucet
16470 Saint Michel
France

déclare que le produit ezW160 est une quasi-machine au sens de la directive 2006/42/CE relative aux machines.

Ce produit est destiné à être incorporé dans une application et ne pourra en aucun cas être mis en fonction avant que l'application n'ait été déclarée conforme aux dispositions de la directive 2006/42/CE.

Fait à St Michel, le 29/10/2013.

Jérôme Pénigaud, Président



Déclaration de conformité CE

En qualité de fabricant,

ez-Wheel SAS
Rue Jean Doucet
16470 Saint Michel
France



déclare que le produit ezW160 est conforme :

aux dispositions réglementaires définies par la directive 2004/108/CE concernant la compatibilité électromagnétique.

Fait à St Michel, le 29/10/2013.

Jérôme Pénigaud, Président

A handwritten signature in black ink, appearing to be 'JP', written over a faint circular stamp or watermark.

EC Declaration of Conformity

In our quality as manufacturer, we

ez-Wheel SAS
Rue Jean Doucet
16470 Saint Michel
France



Declare that the ezW160 product complies:

with the regulatory requirements defined by the Electromagnetic Compatibility Directive 2004/108/EC

Issued in St Michel, on 29/10/2013.

Jérôme Pénigaud, Chairman

A handwritten signature in black ink, appearing to be 'JP', is written over a faint, circular stamp.

IMPORTANT - READ BEFORE USING

The wheel contains a rechargeable battery of which the charge level must be maintained even in the event of non-use. Failure to maintain the battery may reduce its performance or damage it irreversibly.

Monthly charging is recommended. Never exceed 50 days storage without charging.

Always charge the wheel before a prolonged shutdown.
Never leave an unused wheel totally discharged.

