

Operating Instructions

KYBURZ DXP



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Translation of original operating instructions


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Introduction

	READ THE INSTRUCTIONS AND THEN STORE IN A SAFE PLACE
	<p>Unfamiliarity with, or disregard to these operating instructions can result directly in injury to persons, damage to vehicles or harm to the environment. Knowledge acquired from these operating instructions is absolutely essential for safe operation of the vehicle. This document should therefore be read thoroughly, and all instructions therein implemented to the letter. Please store these instructions for reference throughout the entire service life of the vehicle.</p>


About these operating instructions


To make reading easier, we do not use a male or female linguistic form. All personal designations apply to both genders.


Extent of content and scope of application (product identification)

These operating instructions are applicable for the **DXP Vehicle** and all options included in the scope of delivery in accordance with the purchase agreement. These operating instructions are intended for use by the vehicle driver.

Safety and information notes

	OBSERVE INSTRUCTION
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	GENERAL WARNING INFORMATION
	<p>An appropriate additional text describes a situation or course of action, which may result in injury if it is disregarded.</p>

	ATTENTION SIGN ("ATTENTION")
	<p>Information to be specifically observed, for example, in order to avoid damage to property.</p>

Safety instructions



- Check the vehicle prior to every journey:
 - Is there visible damage? If you spot any damage, assess or arrange for a professional to assess whether the vehicle is still roadworthy.
 - Are the lights and the horn working?
 - Is the tyre pressure at the prescribed 3 bar?
 - Are the reflectors securely attached to the wheel?
 - Do the batteries have sufficient charge?
 - Do the brakes work?
- Do not drive the vehicle on a public road if you are in doubt as to its operating safety.
- Keep both hands on the handlebars during travel and ensure that both feet always remain placed on the foot board.
- Ensure that the vehicle is correctly loaded.
- Due to the extremely low-noise operation, collisions with inattentive pedestrians and other road users can occur. Adjust your driving style accordingly.
- Do not wear long items of clothing (such as scarves or long skirts) which could become caught up in the wheels during travel.

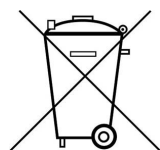
Notes on safety with regard to the batteries (LiFePO₄)

During normal use, no special protective measures are necessary.

The batteries on the vehicles should not be short circuited or connected with reverse polarity, stored in immediate proximity to heaters, broken open or punctured by mechanical means or immersed in liquids. Never overcharge or undercharge the batteries. The battery charger protects against overcharging. Immediate charging after each journey helps to prevent undercharging.

If, however, the batteries outgas due to a defect, you must thoroughly ventilate the room immediately. Direct contact with the batteries must be avoided (if eyes or skin come into contact with the battery fluid, rinse for at least 15 minutes and seek medical assistance; if you inhale the vapours, immediately remove the source and go outside into the fresh air; if you swallow the battery fluid, drink lots of water and try to vomit; consult a doctor). Following outgassing as a result of a defect, the room must be thoroughly ventilated before it is used again.

In the event of smoke: Allow white smoke to dissipate without extinguishing; with black smoke, extinguish the batteries using chemical powder, CO₂ or plenty of water.



Disposal: Used or defective batteries should not be thrown out with household waste. You are legally obliged to return used or defective batteries to KYBURZ Switzerland AG or to an authorised dealer, who will dispose of them correctly.

Technical data

The KYBURZ DXP is a vehicle designed for the transportation of one person and goods weighing a max. 30 kg at the front and a max. 90 kg at the rear, refer to the section *Loading*.

Speed	up to 45 km/h
Climbing performance	Up to 30%
Dead weight	175 - 204 kg (without batteries and driver, depending on respective model)
Payload	up to 120 kg
Length	176 – 240 cm (depending on respective model)
Width	78 – 83 cm (depending on respective model)
Height	120 – 150 cm (depending on respective model)
Wheelbase	113 – 152 cm (depending on respective model)
Tyre pressure	3.0 bar
Tyre dimensions	80/80-16 M/C 45B Tubeless or 90/100 – 16 M/C 45B Tubeless
Batteries	Lithium-iron phosphate (LiFePO ₄), maintenance-free, 25.6 V, 200 - 300 Ah
Temperature range	Charging the batteries: 0°C to 45°C Discharging the batteries (driving): -15°C to 45°C
Motor	AC 15 V / 3.6 kW peak performance
Trailing load	up to 200 kg (braked KYBURZ trailer only)

Before driving

Remove the charging cable

Remove the charging cable from the socket and the vehicle and roll it up before placing in the storage compartment in the loading area.

Make sure the cable is undamaged.

Adjusting the seat position

Adjust the seat position so that you are sitting comfortably and have unimpeded access to all controls.

The seat (1) can be adjusted longitudinally to suit your respective body height. Pull up the lever (2) in front of the seat and slide the seat either forwards or backwards. Ensure that the lever engages in its locking position again to secure the seat for driving.




Adjusting the rear-view mirror

Position the handlebars so that the front wheel is pointing directly ahead and look in the rear-view mirror. Adjust the mirror by moving the black plastic frame (3) until you attain an optimum view to the rear when facing straight ahead.

Loading

Loading is the responsibility of the driver. You must adhere to the legal provisions of the respective country. The following provides you with information on how to load the vehicle for optimal visibility and stability. KYBURZ Switzerland AG shall accept no liability or warranty for damage caused as a result of incorrect loading.

	<ul style="list-style-type: none"> • Never allow loads to protrude from the sides of the vehicle. • The entire load must be securely fastened, using lashing straps for example. • The helmet compartment (rear loading hatch) must be securely closed during travel. • Ensure the lowest centre of gravity possible for the load (heavier at the bottom and lighter at the top).
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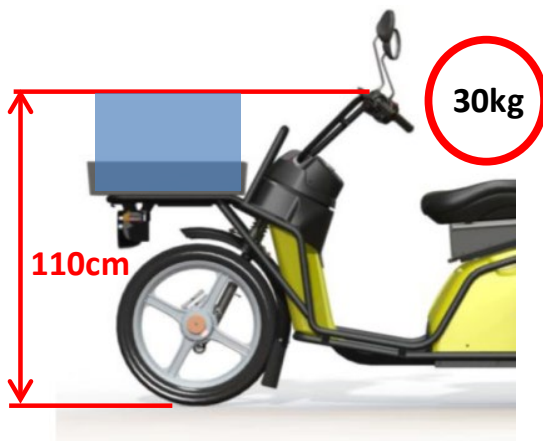
Load at the front

Maximum 30 kg:

Max. load as prescribed for Switzerland and for the EU

Maximum 110 cm from the ground:

Recommended height; always ensure that you have a clear view of the road ahead.



Load at the rear

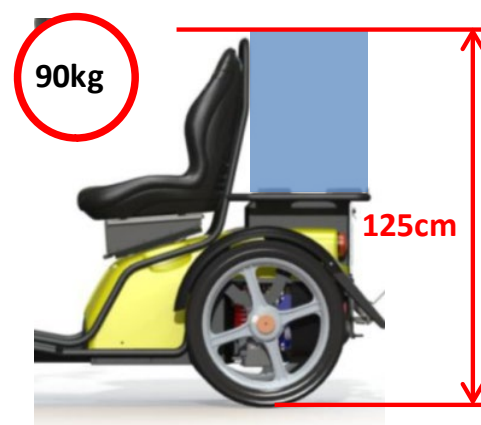
Maximum 90 kg:

Max. load as prescribed for Switzerland and for the EU

Maximum 125 cm from the ground:

Highest point of the load just below the height of the rear-view mirror.

Recommended height; boxes fastened securely to the vehicle may be higher; ensure that you have a clear view to the rear.



Controls on the left



- (1) Brake lever (main brake)
- (2) Light switch
(high beam/low beam)
- (3) Indicator switch
- (4) Horn

Brake lever (main brake)

To brake the vehicle, pull the braking lever (1) towards the hand grip. This will activate the brake and switch off the drive, even if the throttle is turned for acceleration. Test the brakes regularly when driving slowly as the braking action can be extremely powerful.



Inadequate use of the mechanical brake can be detrimental to its functioning, and in turn lead to brake failure.

- Apply the brake at least once during each journey.

Light switch

The light switch (2) enables switching between main beam and low beam.

Indicator

Slide the indicator switch (3) to the right to activate the indicator on the right-hand side of the vehicle.

Slide the indicator switch (3) to the left to activate the indicator on the left-hand side of the vehicle.

Pressing the indicator switch (3) switches off the indicator.

Horn

Pressing the horn switch (4) sounds the horn. This allows you to make yourself heard at any time.

Controls on the right




- (1) Throttle handle (auxiliary brake)
- (2) Switch for speed stages
- (3) Travel direction switch


Throttle grip (auxiliary brake)

A gentle twist of the throttle handle (1) towards the driver will slowly set the vehicle in motion. The vehicle will increase in speed the further the throttle handle is turned. Twisting the throttle handle away from the driver brakes the vehicle electrically to slow it down (the motor functions as a generator, whereby it supplies the batteries and assumes the role of an auxiliary brake).

Releasing the throttle grip brakes the vehicle to a complete standstill.

Tip: In ecological travel mode over relatively flat terrain, the braking action of the auxiliary brake on the throttle handle is usually sufficient.

	<p>WARNING: The auxiliary brake will not be sufficient in emergency situations or on steeper gradients.</p> <ul style="list-style-type: none"> • If in doubt, always use the main brake (refer to the section <i>Brakes</i> and the section <i>Controls on the left</i>).
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	<p>If the auxiliary brake is actuated when travelling at speeds below 5 km/h, the drive is switched off and the vehicle decelerates to a complete standstill.</p> <ul style="list-style-type: none"> • The throttle grip must be returned to its starting position in order to resume acceleration. This is a safety mechanism.
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Switch for speed stages

The switch for speed stages (2) allows you to restrict the maximum speed:

- Position 1: approximately 25 km/h (custom setting).
- Position 2: maximum speed (10, 20, 30 or 45 km/h, depending on the respective model).

(Comment: on older vehicles, this switch allowed you to select either parking light or headlight. This function has since been removed due to new legal provisions.)

Direction switch

The setting of the direction switch (3) determines the direction of travel.

- Position↑: Vehicle travels forward.
- Position↓: Vehicle travels in reverse. (With acoustic warning signal).

Controls in the centre



- (1) Ignition lock
- Manual ignition with ignition key (A)
 - Electronic ignition with RFID badge (B) (OPTIONAL)
 - Electronic ignition lock with main switch (pushbutton) and Keyless-Go smart key (C / D) (FOB) (OPTIONAL)
- (2) Headlight indicator lamp (OPTIONAL)
- (3) Display
- (4) Handle heating switch (OPTIONAL)

Ignition (1)



Ignition key

Manual ignition (1A)

Turn the ignition key in the ignition to switch the vehicle on and off.

The display (3) lights up as soon as the vehicle switches on. The vehicle is now ready to drive. When switched off, the vehicle can only be moved by hand. Refer to the section *Pushing the vehicle*.



RFID chip

Electronic ignition RFID (1B) (OPTIONAL)

Place the RFID badge (B) on the badge reader (1B) to switch the vehicle on and off.

The display (3) lights up when the vehicle is switched on. The vehicle is now ready to drive.

When switched off, the vehicle can only be moved by hand. Refer to the section *Pushing the vehicle*.



Keyless-Go smart key
with button

Electronic ignition lock Keyless-Go (1C) or (1D) (OPTIONAL)

Press the main switch (1C) to switch the vehicle on and off. When the vehicle is switched on, the switch (1C) lights up blue.

The vehicle is operational as long as the Keyless-Go smart key (C) is within a two-metre radius of the vehicle. If the vehicle is not automatically operational despite the smart key (C) being within range, the vehicle may be activated manually (refer to *Manual activation of the vehicle with Keyless Go*).

When switched off, the vehicle can only be moved by hand. Refer to the section *Pushing the vehicle*.

Smart key for Keyless-Go (C)



- The driver must retain possession of the smart key (C) at all times during travel.
- If no smart key (C) is detected, the vehicle automatically deactivates the next time it stops.
- You may have to push the vehicle off the road. Refer to the section *Pushing the vehicle*. In order to be able to operate the vehicle, the key must be within the aforementioned range again.
- If the Smart-Key is outside a two-metre radius of the vehicle, the vehicle is deactivated and cannot be operated. The lights, display etc. remained switched on so that the vehicle can still be seen.
- If the smart key (C) is within a two-metre radius of the vehicle, the vehicle is automatically ready to drive. In the event of a fault, the vehicle may be activated manually using the smart key (refer to *Manual activation of the vehicle with Keyless-Go*).


Manual activation of the vehicle with Keyless-Go (OPTIONAL)

If the vehicle will not move, despite the driver being in possession of the Keyless-Go smart key (C), the vehicle can be activated manually:

1. Press the button (D) on the Keyless-Go smart key. The vehicle is activated.
2. If activation is not possible with the button (D) (due to a flat battery, for example), place the Keyless-Go smart key (C) few seconds on the battery cover as shown in the photo below. The vehicle is activated.



Note: Following manual activation, the vehicle will remain ready to drive until it is switched off at the pushbutton, or until the Keyless-Go smart key is placed over the battery cover once again.

	<p>The battery of the Keyless-Go smart key has a service life of around 1 year for use on CH Post vehicles. When the battery is completely flat, the vehicle can be activated manually. To replace the battery, refer to the section <i>Maintenance</i>.</p>
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Main beam warning lamp (2)

The warning lamp lights up in blue when the main beam is switched on.

Display (3)



The display lights up as soon as the ignition is activated on the vehicle. The respective number of bars indicates the current charge status of the batteries. At 10 bars, the batteries are fully charged. At only 2-3 bars (red/yellow range), the batteries are depleted. As a general rule to ensure the batteries do not sustain damage, the charging status should be maintained within the white range at all times, and should never be permitted to fall into the red range. Refer also to the section *Charging and discharging the batteries*. The control display appears upon activation of the vehicle (6) (see photos). The total kilometre count is shown briefly (7) on the display, and then the travel speed (8) is displayed digitally in km/h.

Mode (10)

Pressing the Mode key (10) allows you to switch between displays of the daily kilometre count and the travel speed.

Reset (11)

Holding the Reset button (11) pressed will reset the daily kilometre count.

Error display (12)

If the LED to the right of the display is flashing red, an error code is indicated, refer to the section *Troubleshooting*. If a wrench (9) is indicated on the display, a maintenance service is due, refer to the section *Maintenance*.

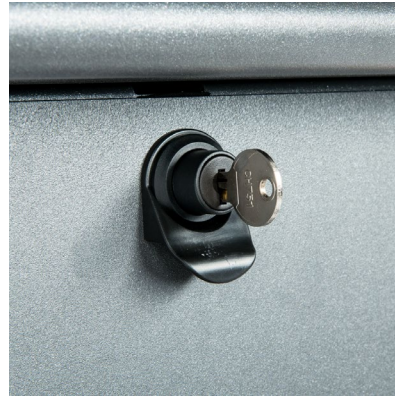
Handle heating (4) (OPTIONAL)

Actuate the rocker switch (4) on the cockpit to turn the handle heating on and off. The LED on the rocker switch lights up as soon as the handle heating is switched on. The handle heating switches off automatically when the vehicle is switched off.

Storage space in the vehicle

Rear compartment beneath the loading area

A compartment is situated beneath the rear loading area in which the charging cable (1) with charging socket (2) and service record (3) is stored. This compartment has a lock fitted and can be used for storing registered post, a small helmet or other utensils.



Compartment beneath the seat

The compartment beneath the seat is ideal for items such as gloves. This compartment does not have a lock. To access the compartment, simply lift up the seat by pushing the backrest forwards.



Folding top boxes (OPTIONAL)

The covers for the boxes serve as rain protection and security against theft. Side doors facilitate access to the load.



Opening and closing the folding top boxes

The folding top boxes can be opened by lifting the cover using the handle (1). The cover can be left open in any desired position, see photo above. Pull out the small handle on top of the flap or the side doors to open the flap and the side doors.

The covers can also be optionally fitted with electronic locking mechanisms below the handle (1). These locking mechanisms can only be opened when the vehicle is operational (refer to the sections *Controls in the centre*, *Ignition lock RFID* and *Keyless-Go*). Press the button (2/3) to unlock, and lift the cover using the handle. The keys for unlocking are situated on the left as viewed in the direction of travel, on the bottom edge of the boxes.

The front box has two keys (2), one next to the handlebars which can be reached from the sitting position, and one further forward so that the box can be unlocked when standing in front of the vehicle.

The electronic locking mechanisms are activated again as soon as the cover is closed.



Protruding loads can cause collisions and injuries.

- Ensure that no part of the load is protruding over the top.
- Secure the load before closing the container.
- Keep the front flap or the side doors of the boxes closed during travel.

Emergency opening of the folding top boxes

If the electronic locking mechanisms are faulty, the containers can be opened manually.

There is a small opening beneath the handle of the cover. Insert a piece of wire or a pin into the opening to open the locking mechanism manually.



Driving

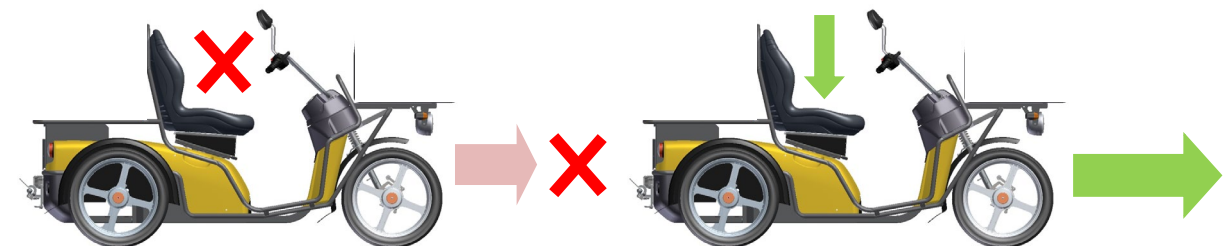


Observe the following information:

- The KYBURZ DXP is essentially suitable for use in any weather.
- Sudden changes in direction and extreme braking manoeuvres should be avoided, especially in icy and snowy conditions.
- Adapt your speed when driving around bends. All three wheels must remain on the ground at all times (risk of tipping).
- Driving through water which is deeper than 12 cm is prohibited.
- Always navigate ledges such as kerbs, doorsteps or gutters at a right angle to the edge. Reduce your speed.
- Handlebar mitts must be attached in a professional manner. Ensure that the handlebar mitts do not impair handling.
- The DXP is equipped with a seat switch which prevents you from driving off inadvertently. The vehicle is only authorised for operation if the driver is sitting on the seat.

1. Position yourself on the seat and either turn the ignition key to the right in the ignition lock, place the chip on the chip reader or press the pushbutton for Keyless-Go (OPTIONAL). The DXP is ready to drive.
2. Gently turn the throttle handle towards you to set the vehicle in motion. Your speed will continue to increase as you turn the throttle handle further.
3. Use the brake lever on the left handle to brake on steeper terrain, to brake more quickly or as an urgency measure in emergency situations.
4. For “normal” braking, turn the right-hand throttle grip forwards. The vehicle brakes with the assistance of the electric auxiliary brake.

Refer also to the section *Controls*.



Brakes

Main brake

The main brake on the left handle functions as a mechanical drum brake with brake blocks applied to all three wheels. It will also continue working in the event of the electrical and electronic systems failing completely. Refer also to the section *Controls on the left*.

Apply the main brake when traversing steeper terrain, to brake more quickly or as an urgency measure in emergency situations (braking lever). Ensure that you can operate the main brake at all times. This brake is extremely effective.

The drive is shut down automatically upon actuation of the main brake.

Auxiliary brake

As a rule, the auxiliary brake will be wholly adequate for regular, everyday journeys. Turning the throttle grip forwards or releasing it altogether decelerates and brakes the vehicle via the motor. The use of this auxiliary brake is extremely practical for regular journeys as power is supplied back into the batteries. The auxiliary brake (motor brake) is only applied to the powered rear wheels. They are not suitable for abrupt braking manoeuvres or emergency braking. Refer also to *Controls on the right*.

Automatic parking brake

When at a standstill, the automatic parking brake secures the vehicle against rolling away, refer to the section *Pushing the vehicle*.

Automatic emergency brake

The emergency brake automatically engages when overvoltage is detected at the batteries and when, at the same time, the actual speed is higher than the speed set at the throttle grip.

Operating sequence of the automatic emergency brake:

1. Soft automatic braking to the speed set at the throttle grip.
2. If the speed set at the throttle grip is not reached after a defined time period, the emergency brake engages to brake the vehicle until it comes to a standstill.
3. If emergency braking reoccurs several times, contact KYBURZ Service.




WARNING – risk of accident if this is not observed

The automatic emergency brake is only an aid. The driver of the vehicle is responsible for the speed and for braking in plenty of time.

- Always pay close attention to the traffic situation and do not solely rely on the automatic emergency brake.
- Be ready to brake and if necessary swerve out of the way.

Charging/discharging the traction batteries

Charging the traction batteries

	WARNING – electrical voltage
	<ul style="list-style-type: none">• Inspect the charging cable for damage before using it• If the cable is damaged, replace it immediately.

The charging cable and the charging socket (1) are situated in the compartment beneath the rear loading area.




Insert the charging cable into the charging socket, and then into the mains socket (230 VAC).


The display lights up and the bars in the battery display are flashing. This indicates that the batteries are being charged.

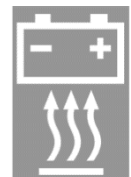
If the entire display is flashing, this means there is a fault.

The charge display indicates the current charge status. It is recommended that the vehicle remains plugged in whenever it is not being used. **There is no risk of overloading the batteries.** The installed charger stops charging automatically as soon as the batteries are fully charged.

Remove the charging cable before driving off. The DXP is not operational as long as the cable is still connected. **Caution:** This safeguard is only active if power is being supplied from the socket.

	<p>Please observe the following information to ensure correct use of the batteries:</p> <ul style="list-style-type: none"> • Always recharge the batteries of the KYBURZ DXP completely after driving. This will help to conserve the batteries and ensure that the DXP is ready for travel. • Always charge the batteries completely and do not terminate an active charging process (automatic timers are not recommended). A full battery charge will require 8 (200 Ah) to 12 (300 Ah) hours at room temperature. At temperatures below 0°C, the charging process will take up to twice as much time and is only permissible with the optional battery heating system. • The charging status of the batteries should be maintained within the white range of the display. Depletion of the batteries should only ever be permitted as far as the yellow range in exceptional cases, and never into the red range. Negligence in this regard will result in reduced life-expectancy of the batteries. Observe the information regarding the battery protection system.
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	<p>Only charge batteries at temperatures above 0°C At temperatures below 0°C, you may only charge the batteries if the "Battery-heating system" is installed.</p> <ul style="list-style-type: none"> • The battery heating system is installed when the adjacent symbol is found on the cover under the seat. • The heating system works automatically when charging. There's no need to manually switch it on or off.
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Protecting the batteries

A warning mechanism has been installed in the vehicles as protection for the batteries. Symbols on the display notify you when the batteries need to be recharged urgently.

As soon as the batteries are depleted to such an extent that they reach the yellow, and therefore critical range, a battery symbol begins flashing in the display. This indicates that the batteries must be charged.



Battery symbol flashing
Note: Charge battery!

If no action is taken and the display falls into the red range, the battery symbol stops flashing and remains lit. Output and speed of the vehicle are reduced continuously to conserve the batteries.



Battery symbol lit without flashing
Output and speed are reduced continuously

If you continue driving, "bAt LO" appears in the display and the vehicle speed is restricted to 6 km/h.



"bAt LO" display
Speed restricted to 6 km/h

When the batteries are completely drained, error message 53 "FLt 53" is displayed for a few seconds and then the vehicle shuts down.



Error message 53
Battery flat. Vehicle shuts down

Pushing the vehicle



Position 1: Parking brake is released and the vehicle can be pushed.



Position 2: Parking brake is activated and the vehicle is ready for use.

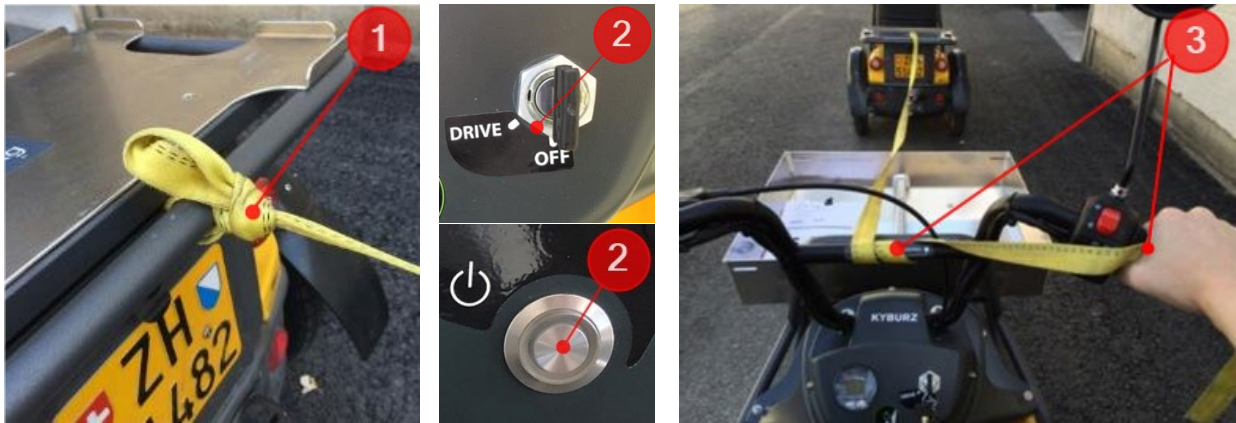
The KYBURZ DXP is completely deactivated and is secured against rolling away with an automatic parking brake. In order to be able to push the vehicle by hand, the parking brake must be released manually:

1. **Switch off the vehicle using the ignition key or the pushbutton (with the Keyless-Go OPTION)!**
2. Turn the lever in the compartment beneath the rear loading area to Position 1.
3. The parking brake is released. The vehicle can now be pushed by hand.
4. Turn the lever back into Position 2 for normal operation. This will activate the parking brake and the DXP is operational. Always turn the lever completely until it reaches the end position!



- The KYBURZ DXP is at risk of rolling away with the parking brake released!
- Ensure that you can operate the main brake (braking lever) at any time when releasing the parking brake.
- Only release the parking brake if you are sure that the KYBURZ DXP is not susceptible to any kind of movement.
- Never sit on the vehicle with the parking brake released! (An exception can be made in this regard for towing, refer to the section *Towing*.)

Towing



Procedure:

1. Attach the towing rope securely to the vehicle (1).
2. The vehicle being towed must be switched off (2).
3. Wrap the towing rope around the handlebar of the vehicle to be towed (3) and hold onto the end with your hand on the throttle grip.
Important: It must be possible for the driver sitting on the vehicle being towed to be able to let go of the rope at any time.
4. Release the parking brake in the rear compartment of the vehicle being towed, refer to the section *Pushing the vehicle*.
5. **Towing with a max. speed of 15 km/h.** Ensure that tension is retained in the towing rope at all times during the towing procedure. Both vehicles must be driven by drivers in possession of the appropriate driving licenses.



- The towing rope between the vehicles must be clearly discernible. Chains and metal cables are not permitted.
- It must be possible to brake the vehicle being towed. Check the mechanical brake before towing, refer to the section *Braking lever (main brake)*.
- Transport the load from the vehicle being towed onto the towing vehicle. Vehicles may only be towed without a trailer.
- If the vehicle has been involved in an accident, towing is only permissible using a suitable vehicle (no overtaking of other vehicles etc. when using a towing rope).
- All statutory laws regarding the towing of vehicles in the respective country of use must be respected.

Cleaning

Only use water and mild soap, applied with a soft cloth and standard water hose to clean the vehicle.



Do not use a high-pressure cleaner to clean the vehicle.

Storage

Optimum storage and loading conditions

- Cool, dry and well-ventilated room without a continuous presence of personnel (not in an office, for example)
- Only minor fluctuations in temperature (temperature between 0°C and + 40°C for charging), not too close to a heater.
- A roof to protect the vehicle against heavy rainfall and direct sunlight.

Storing the vehicle

If you do not use or store the vehicle for **up to a maximum of one year**, observe the following information:

- Keep the vehicle plugged in over the entire period (charging).
- The charger switches off automatically when the batteries are full and only charges them when necessary.

If you do not use or store the vehicle for **more than one year**, observe the following information:

- Fully charge the vehicle's batteries and then discharge them to a charge level of 80% (8 bars on the charging display) by driving the vehicle.
- The battery must then be disconnected from the vehicle.
This work must be carried out by a qualified person (for example, KYBURZ Service or Service Partner).

Disposal



Refer to the local **DISPOSAL REGULATIONS** for:

- Operating materials such as *oils and grease
- Electrical and mechanical components
- Batteries (see chapter *Notes on safety with regard to the batteries*)

(*For environmental reasons, the remaining waste oil must be disposed of correctly in accordance with the regulations for the disposal of waste oil. Illegal disposal, even of small amounts, can result in the contamination of drinking water and ground water.)

Wheels and tyres

Tyre pressure

The prescribed tyre pressure is 3.0 bar.

Have the tyre pressure of your KYBURZ DXP checked at least once every 2 months. Optimum tyre pressure increases the travel range and prolongs the life of the tyres.

Replacing the wheels

We recommend having the wheels replaced by an authorised KYBURZ service centre. If you are replacing the wheels yourself, it is imperative that you observe the different mounting procedures for the front wheel and the rear wheels:

Front wheel:

A **Nord-Lock washer (1)** must be fitted on the shaft between wheel rim and wheel lock nut.

Tighten the wheel nut (2) to **85 Nm** using a torque wrench.



Rear wheels:

DO NOT use a Nord-Lock washer here, but rather the special **Nord-Lock wheel lock nut with integrated washer (3)**.

Tighten the wheel lock nut (3) to **160 Nm** using a torque wrench.



IMPORTANT: After initially tightening the Nord-Lock wheel locking nuts, loosen the nuts once again listening out for a clicking sound. If a clicking sound is evident when loosening the nuts, it is imperative that the respective nuts are replaced.

Front wheel and rear wheels:

Fit reflectors.



The KYBURZ DXP may only be driven with correctly mounted wheels and reflectors.

Maintenance

The following inspection intervals must be observed to ensure that the DXP and trailer remain fully functional and safe to operate at all times:

Weekly inspection

The following points must be checked on a weekly basis (for a video demonstration, visit www.kyburz-switzerland.ch):

DXP vehicle:

- Visual inspection for damage (tilting wheels, cracks in the chassis)
- Error messages in the display (the KYBURZ service partner must be notified immediately in this regard with details of the code being displayed)
- Lights
- Brakes, including seat switch (vehicle can only be driven with the driver actually sitting on the seat)
- Visual inspection of all tyres for wear
- Reflectors (“cats eyes”) must be fitted on the sides
- Correct functioning of the suspension
- Acoustic check for unusual noises
- Notify the KYBURZ service partner of any upcoming maintenance service, see below
- Tyre pressure: 3 bar

Maintenance service

A maintenance service must be performed on the vehicle yearly or every 5000 km (whichever occurs sooner). Contact the authorised KYBURZ service partner yearly or at the latest when the red triangle lamp lights up and the tool symbol is displayed on the DXP (appears after 5000 km).



Service partners for DXP service and repairs

Please contact your authorised KYBURZ service partner should you have any enquiries regarding service and repairs.

A list of all authorised KYBURZ service partners can be found in the on-line store at www.kyburz-switzerland.ch.

Keyless-Go smart key (OPTIONAL): Replacing the battery



Insert the side of a coin (1) into the groove. Open and remove the cover (2) by rotating it to the left or to the right. Hold the key ring attachment (3) in place or remove it altogether. Slide out the CR2450 battery (4) sideways from the terminal holder. Insert the new battery by repeating the steps in reverse order and refit the cover.

Data protection

The vehicle can be equipped with an optional Kyburz Fleet Management System, allowing technical and geographical data to be recorded for the vehicle. This can be used as support for maintenance, for example. Kyburz Switzerland AG handles this data with utmost confidentiality and uses it exclusively and with anonymity for statistical evaluations in fulfilment of the contract.

The purchaser has the right to assert his data protection rights at any time and to acquire, to amend, to supplement or to contest the processing of information pertaining to his collected personal data, or to demand that his personal data be deleted. Kyburz reserves the right to correspond with the purchaser electronically (in particular via email) in this regard.


The data protection provisions for Kyburz Switzerland AG (www.kyburz-switzerland.ch) apply.

Troubleshooting

In the event of a fault

Any of the following problems could stem from a fault which you can quite easily rectify yourself:

Problem	Potential causes	Potential solutions
Vehicle does not move	Vehicle still charging	Remove the charging cable
	Parking brake is released	Activate the parking brake (refer to the section <i>Pushing the vehicle</i>)
	Seat switch is not activated	Sit on the seat in order to enable the vehicle (refer to the section <i>Driving</i>)
	Brake switch is not activated	Apply and release the brake repeatedly (refer to the chapter <i>Braking lever</i>)
	Keyless-Go smart key (OPTIONAL) not detected (due to a malfunction or due to a flat battery)	Activate the vehicle manually (refer to the section <i>Controls in the centre – “Manual activation of the vehicle with Keyless-Go”</i>) In the event of a flat battery: To replace the battery, refer to the section <i>Maintenance</i>

	<p>If any other fault occurs on your DXP, please contact your authorised KYBURZ service partner specifying details of the error code as required (see below).</p>
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Error message on the display

When the red LED starts flashing alongside the display (11), an **error code between 12 and 99** is indicated on the display (display: FLT for “Fault”, followed by the number of the error code). Contact your KYBURZ service partner and specify the error code. A list of all error codes can be obtained in the appendix.

You may be able to rectify the following error codes yourself:

No.	Name	Potential causes	Potential solutions
28	Motor temp hot cutback <i>Power limitation due to motor overtemperature</i>	Vehicle too heavily loaded Mechanical defect in the drive	Allow the vehicle to cool down Adapt the driving style (see next page) Check the tyre pressure (approx. 3 bar)
47 52	HPD / sequencing fault <i>Key/acceleration sequence incorrect</i>	Incorrect switch-on sequence Throttle grip fails to return to 0-position	Switch on first, then accelerate Operating error Replace throttle handle
56	Charger PDO timeout <i>Charger communication error</i>	CAN bus timeout Cabling fault Charger defective	Switch off the vehicle and then switch it back on again Check cabling and plug Inspect the charger
67	Safety Brake Overtime <i>Max. emergency brake time exceeded</i>	Emergency brake remained active longer than the maximum authorised time	Restart vehicle

Note on error 28:

Warning message Flt 28 announces an imminent overheating of the motor. If the motor temperature continues to rise, the drive power is reduced continuously. If the power is inadequate to continue driving, switch off the DXC for approx. 10 minutes and allow the motor to cool down.

In higher temperatures, in particular when combined with steep inclines and heavy loads, the motor temperature can be called up on the display. You may have to adjust your driving style accordingly:



1. Press the «Mode» button for approx. 5 seconds
2. The display changes and shows the battery voltage (U)
3. Press the «Mode» button repeatedly until the motor temperature value (n) is shown.

Appendix: DXP error codes

No.	Name	Potential causes	Potential solutions
12	Controller overcurrent	Motor cable short circuit Control unit defective	Check the motor cabling Replace motor/control unit
13	Current sensor fault	Earth connection on motor cable Control unit defective	Check the motor cabling Replace control unit
14	Precharge fault <i>Precharge failed</i>	External load at B+ connection (recuperation module defective)	Check the control unit cabling Check main contactor
15	Controller severe undertemp. <i>Control unit too cold</i>	Ambient temperature too cold Control unit defective	Warm up the vehicle Replace control unit
16	Controller severe overtemp. <i>Control unit too hot</i>	Ambient temperature too hot Control unit defective Control unit overloaded	Allow vehicle to cool down Replace control unit
17	Severe undervoltage	200 A fuse defective Battery defective/deeply discharged	Check main fuse Check batteries
18	Severe overvoltage	Recuperation current too high	Fit recuperation module Check batteries
22	Controller overtemp. cutback <i>Power limitation due to control unit overheating</i>	Control unit overloaded Ambient temperature too hot Control unit defective	Allow vehicle to cool down Replace control unit
23	Undervoltage cutback <i>Power limitation due to low battery voltage</i>	Battery discharged/defective Incorrect battery parameters	Check batteries Check main fuse
24	Overvoltage cutback <i>Power limitation due to high battery voltage</i>	Too much recuperation current Long downhill run/battery fully charged Battery defective	Fit recuperation module Slightly discharge battery before downhill run/check batteries
25	5 V supply failure	Load at 5V out (pin 26) too high Control unit defective	Check cabling & connectors Check sensor bearing Replace control unit
26	Digital out 6 overcurrent <i>Overcurrent at digital output 6</i>	Load at output 6 (pin 19) too high Control unit defective	Check cabling & connectors Replace control unit
27	Digital out 7 overcurrent <i>Overcurrent at digital output 7</i>	Load at output 7 (pin 20) too high Control unit defective	Check cabling & connectors Replace control unit
28	Motor temp hot cutback <i>Power limitation due to motor overtemperature</i>	Vehicle too heavily loaded Mechanical defect in the drive	Allow vehicle to cool down Check gearbox, drive shaft, etc./adapt route
29	Motor temp sensor fault <i>Motor temperature sensor defective</i>	Cable to sensor interrupted Sensor defective	Check cabling & connectors → Contact KYBURZ
31	Main open / short <i>Main contactor open/short circuit</i>	Cable to main contactor defective Main contactor defective	Check cabling & connectors Replace main contactor
32	EMBrake open / short <i>Magnetic brake open/short circuit</i>	Cable to magnetic brake defective Magnetic brake defective	Check cabling & connectors Replace magnetic brake
33	Coil 3 driver open / short	Driver output 3 (pin 4) short circuited FVP PCB defective Brake light control defective	Check cabling & connectors. Replace FVP PCB Check brake light
34	Coil 4 driver open / short	Driver output 4 (pin 3) short circuited Recuperation module defective (if present)	Check cabling & connectors Check recuperation module
35	PD open / short	PD output (pin 2) short circuited Cabling error	Check cabling & plug
36	Encoder fault <i>Sensor bearing fault</i>	Cable to sensor bearing defective Sensor bearing defective	Check cabling & connectors Replace sensor bearing/motor
37	Motor open <i>Motor phase open</i>	Motor cable interrupted Motor defective	Check cabling & connections Replace motor
38	Main contactor welded	Switching contacts short-circuited Main contactor defective/jammed	Switch ignition on/off and continue driving (triggers FLT65)
39	Main contactor did not close	Main contactor faulty	Replace main contactor
41	Throttle wiper high <i>Throttle grip signal too high</i>	Throttle grip unplugged Throttle grip defective	Check cabling & connectors Replace throttle grip
42	Throttle wiper low <i>Throttle grip signal too low</i>	Throttle grip short-circuited/open Throttle grip defective	Check cabling & connectors Replace throttle grip

No.	Name	Potential causes	Potential solutions
43	Pot 2 wiper high <i>Pot 2 input signal too high</i>	(Only for DXP 4.0 with KOP602) Temperature sensor at FVP open Temperature sensor defective	Check temp. sensor at FVP Replace temperature sensor
44	Pot 2 wiper low <i>Pot 2 input signal too low</i>	(Only for DXP 4.0 with KOP602) Temperature sensor at FVP def.	Check temp. sensor at FVP. Check cabling & connectors
45	Pot low overcurrent <i>Overcurrent at Pot1 & 2 – earth</i>	Wiring error Temperature sensor at FVP defective Throttle grip defective	Check cabling & connectors Check temp. sensor at FVP Replace throttle grip
46	EEPROM failure <i>Internal control unit fault</i>	Control unit faulty	Replace control unit
47	HPD / sequencing fault <i>Key/acceleration sequence incorrect</i>	Incorrect switch-on sequence Throttle grip fails to return to 0-position	Operating error: Switch on first then accelerate Replace throttle grip
49	Parameter change fault <i>Parameter change</i>	Certain parameter changes require a vehicle restart	Switch vehicle off and on Adjust the parameters only in consultation with KYBURZ!
51	E2 communication fault <i>Engage2 communication fault</i>	Cabling error Engage 2 (display) defective	Check cabling & connectors Replace display
52	HPD fault <i>Key/acceleration sequence incorrect</i>	Incorrect switch-on sequence Throttle grip fails to return to 0-position	Operating error: Switch on first then accelerate Replace throttle grip
53	BMS – undervoltage fault <i>BMS undervoltage</i>	At least 1 cell undervoltage BMS cable defective BMS PCB defective	Check batteries Check cabling & connectors Check BMS
54	Battery overtemp cutback <i>Power limitation due to excess temperature of battery</i>	Battery too hot Loose battery contact Temp. sensor Batt. Temp. sensor defective	Allow vehicle to cool down Check sensor cabling Replace Replace temp. sensor
55	Charger faulted <i>Charger problem</i>	Charger reports an error Mostly accompanied by second error message	Check charger incl. cable
56	Charger PDO timeout <i>Charger communication error</i>	CAN bus timeout Cabling fault Charger defective	Restart vehicle Check cabling & connectors Check the charger
57	Battery overtemp warning <i>Battery temperature warning</i>	Loose contact on batt. Temp. sensor Batt. Temp. sensor defective Battery too hot	Check sensor cabling & connector Replace Replace temp. sensor
58	BMS overvoltage cutback <i>Braking power limitation & charging stop due to BMS</i>	Loose contact on BMS cable BMS – Print defect At least 1 cell defective	Check cabling & connectors Check batteries Check BMS
59	Battery Overcharged	Charger to batt. connection Def. Incorrect capacity set	Check connection between battery and charger Check set capacity
61	Left Battery Temp. Sensor F <i>LEFT battery temperature sensor defective</i>	Cabling fault Left temperature sensor on charger defective	Check wiring & plugs Replace left temperature sensor on battery
62	Charger zero current fault <i>No charging current</i>	Charging cable to batt. interrupted Charging fuse 20 A defective Charger defective	Check cabling & connectors Check charger fuse Check the charger unit
63	Safety EM Brake warning <i>Warning magnetic brake due to emergency braking</i>	Magnetic brake has been used for the emergency brake beyond the maximum service life	Check wear of magnetic brake Replace magnetic brake
64	Recuperation Module Fault <i>Fault in recuperation module</i>	Cable break or defect in the recuperation module If no recuperation module is mounted, check the parameter “Protection module enable”.	Clear fault Check all cables to the recuperation module. Test the recuperation module.
65	Contacting light welded Fault <i>Slight welding of the main contactor</i>	The main contactor does not release immediately or at all. Follows fault 38.	Keep driving. The fault disappears as soon as the main contactor has released. Remains FLT65: Check cable or replace main contactor
66	Right Battery Temp. Sensor F <i>RIGHT battery temperature sensor defective</i>	Cabling fault Right temperature sensor on charger defective	Check cabling & connectors Replace right temperature sensor on batt.

No.	Name	Potential causes	Potential solutions
67	Safety Brake Overtime <i>Max. emergency brake time exceeded</i>	Emergency brake remained active longer than the maximum authorised time	Restart vehicle
68	VCL runtime error <i>Control unit software problem</i>	Control software faulty Control unit defective	Replace control unit
69	External supply out of range <i>External supply defective</i>	Cabling fault Control unit defective	Check cabling & connectors Replace control unit
71	OS General <i>Control unit internal fault</i>	Control software faulty Control unit defective	Replace control unit
72	PDO timeout <i>CAN bus timeout</i>	Control software faulty Control unit defective	Restart vehicle Re-install software Replace control unit
73	Stall detected <i>Blockage detected</i>	Motor blocked Sensor bearing defective	Check drive train Replace sensor bearing/motor
77	Supervisor Fault	Switch input remained in unauthorised range of 1.5 V – 4.4 V for more than 100 milliseconds.	Check switch inputs
89	Motor type fault <i>Wrong motor type</i>	Wrong motor type set Motor defective	Check parameters Replace motor Replace control unit
92	EMBrake failed to set <i>Magnetic brake fault</i>	Freewheel lever shifted Magnetic brake poorly adjusted Magnetic brake defective	Shift lever in helmet compartment Adjust magnetic brake Replace magnetic brake



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