sprinte
move your lift

Lift control panel

tetra

INSTALLATION MANUAL

for hydraulic lifts

Besoin d'aide technique ?

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Safety rules

Some informations need particular attention, it will be marked as follow all through this document

DANGER	Risk of death or serious accident if procedures are not followed.
ATTENTION	Risk of accident or materials damage if procedures are not followed
IMPORTANT	Mandatory instruction to follow to ensure the proper operation and safety of the lift.
NOTE	Recommendation to make operations efficient and avoid minor problems

These informations could be accompanied with the following symbols (EN ISO 7010:2012 compliant) :


. General danger


Danger,electrial voltage


Parts susceptible to damage by ESD


. Danger, hot surface


. Danger,rotating parts


. Danger,risk of falling


. Danger,risk of crushing


Obligation to shutdown electrical power supply before any operation


Obligation to wear a protection helmet


Obligation to wear protection gloves


Obligation to wear protection visor

Edition version: 2026-03-06 .

Temporary operation

DANGER

Temporary operation shall be used only during installation of the lift by authorized and skilled technicians.

Temporary box

ATTENTION

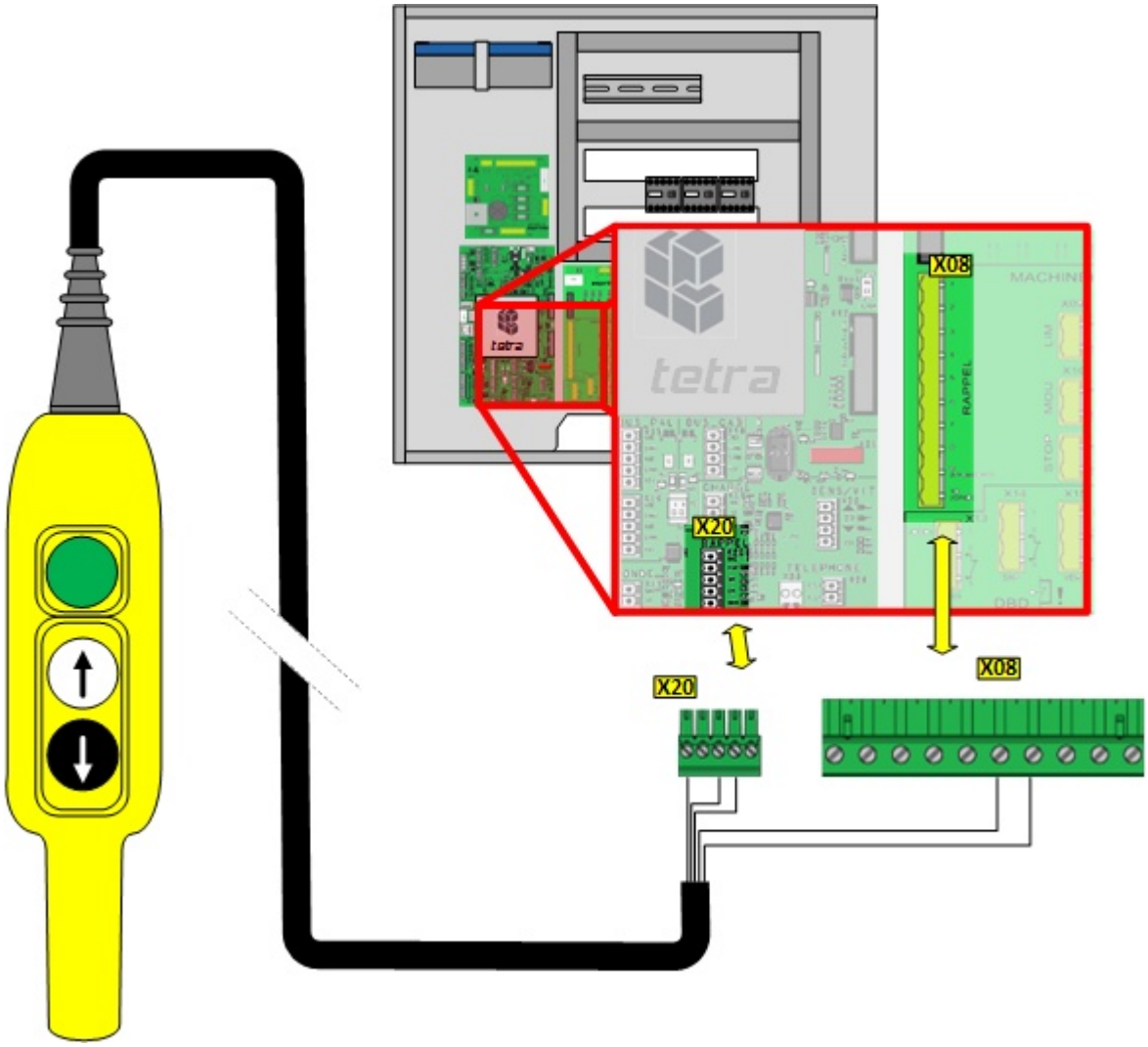
Temporary box bypasses all the safety chain and shall be used during lift's mounting step only, under skilled and authorized technicians control.

NOTE

As the safety chain is not plugged onto 405 board anymore, only the VER led of 400SP board is lit on the closing of the safety chaine by pressing up or down button of the box.

- ***With the up & down box***

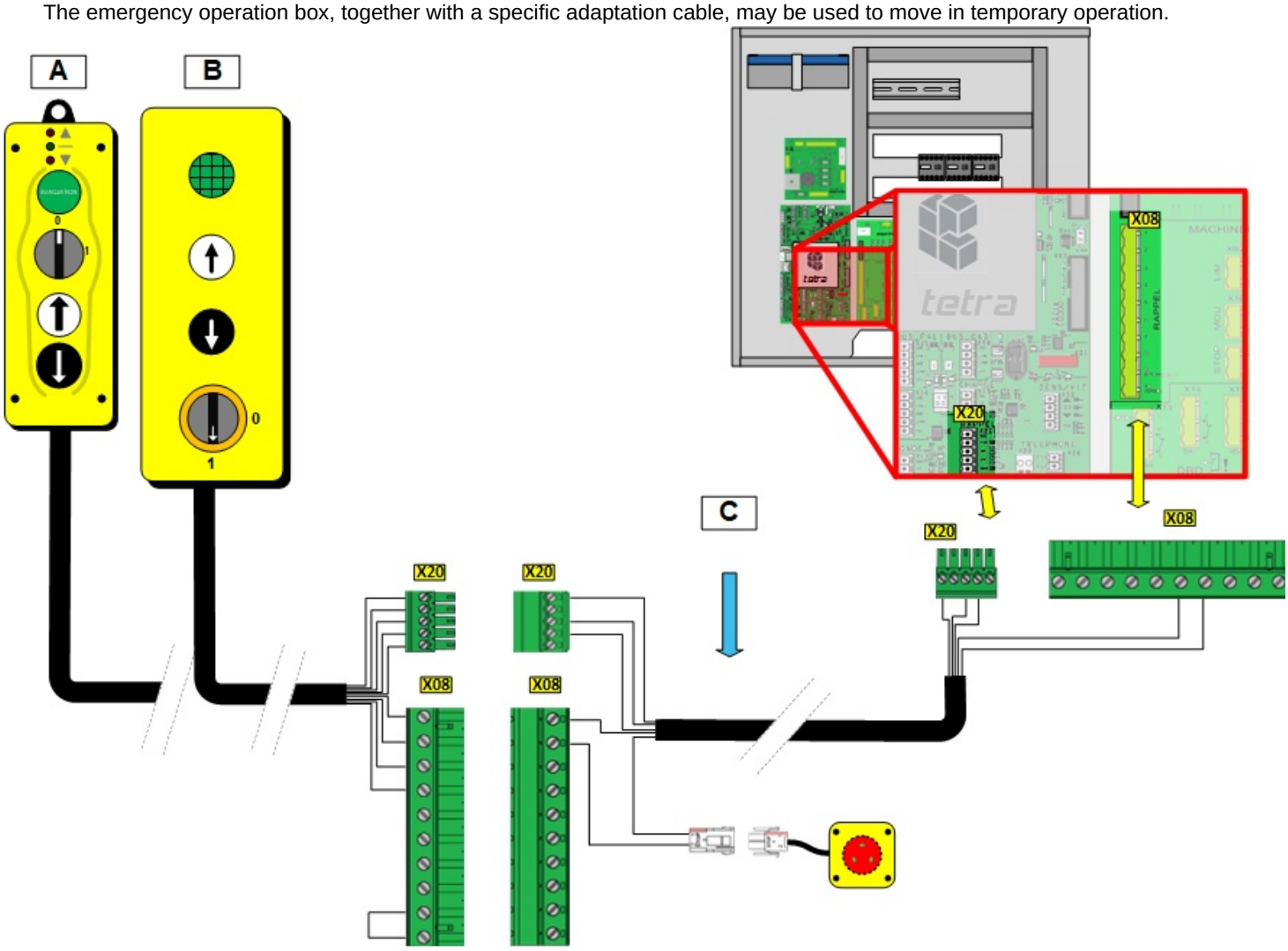
The Up & Down box may be used to move in temporary operation.



- Plug the connector X20 of the box cable onto 400SP board.
- Plug the connector X08 of the box cable onto 405SP board.

- ***With the emergency operation box***

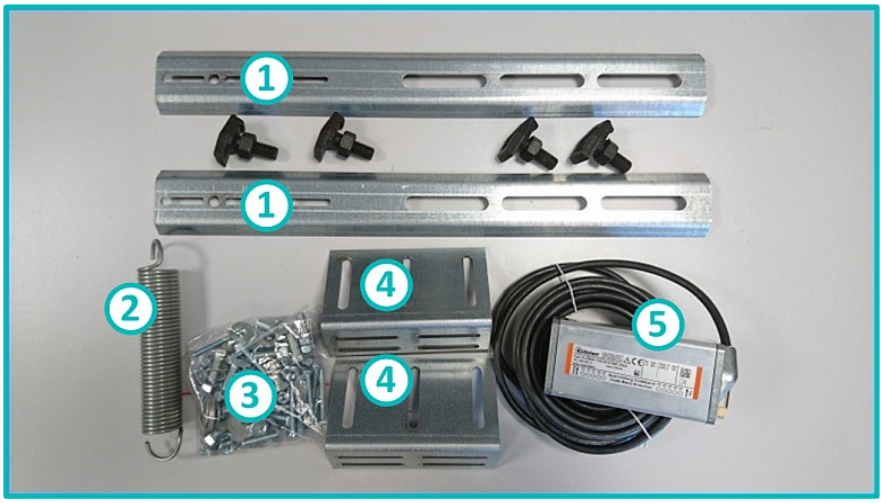
The emergency operation box, together with a specific adaptation cable, may be used to move in temporary operation.



- Plug the emergency operation box (A or B model) onto the reverted connectors of the temporary operation cable (C).
- Plug this temporary operation cable onto 400SP board (X20) and 405SP board (X08)
- Plug the emergency stop device intended for the pit onto the dedicated connector of this cable

Shaft positioning system

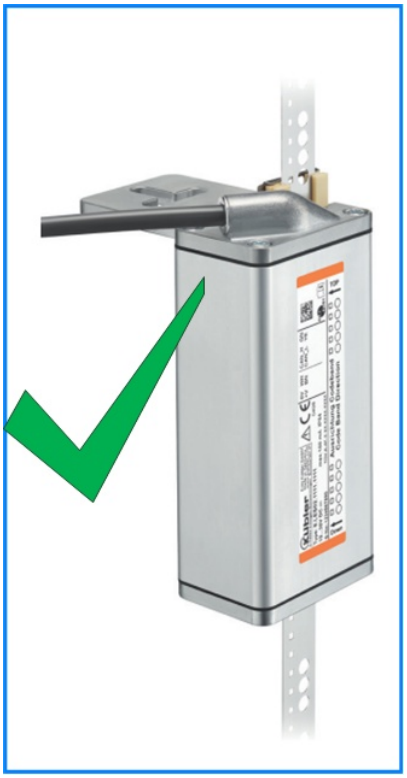
Kit contents



1. Rail fastening plates for the tape (x2) and clamping plates (x4)
2. Tension spring for the tape
3. Screws, bolts and nuts kit
4. Fixing bracket for the reader (x2)
5. Absolute reader case
6. Stainless steel encoded tape

NOTE *Before any mounting operations, note the fixture direction of the reader on the car*

Right mounting :

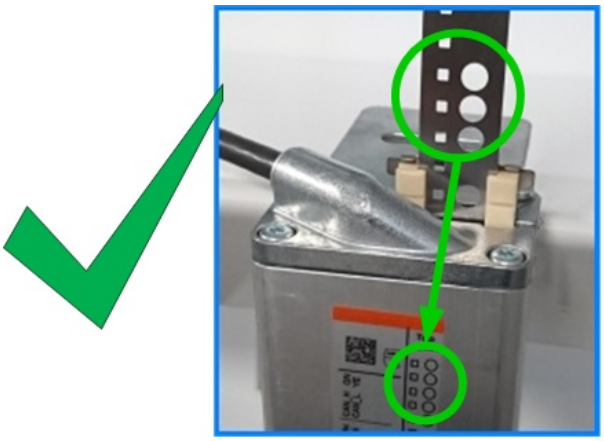


Wrong mounting:

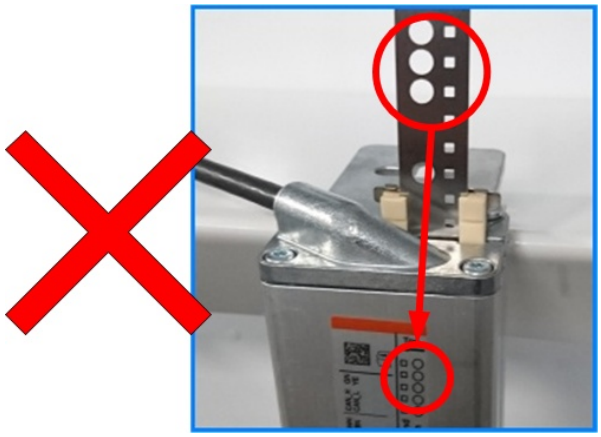
Mounting of the tape

NOTE *Before installing the tape, think of the correct insertion in the reader*

Right insertion :



Wrong insertion:



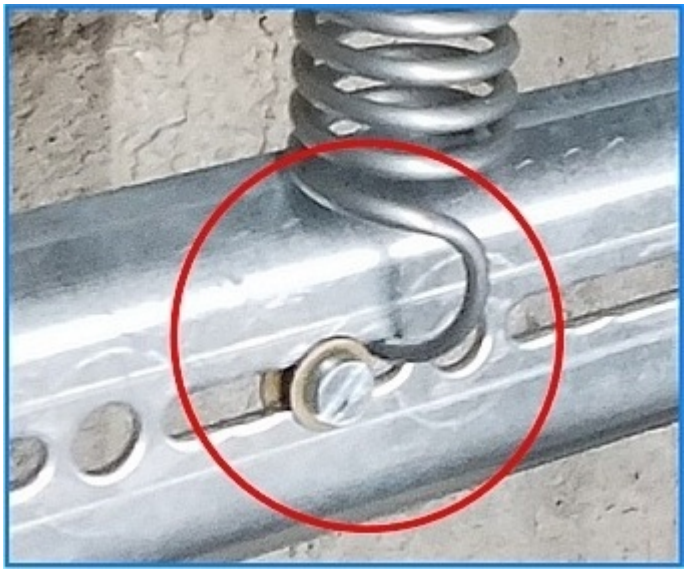
- Fix the first fastening plate for the band at the top of the rail with the clamping plates provided :

- With M5 screw, nut and washer, fix the band on the fastening plate while making a loop :

- Unroll the tape down to the bottom, keeping it in its box.

- Fix the second fastening plate for the band at the bottom of the rail with the clamping plates provided :

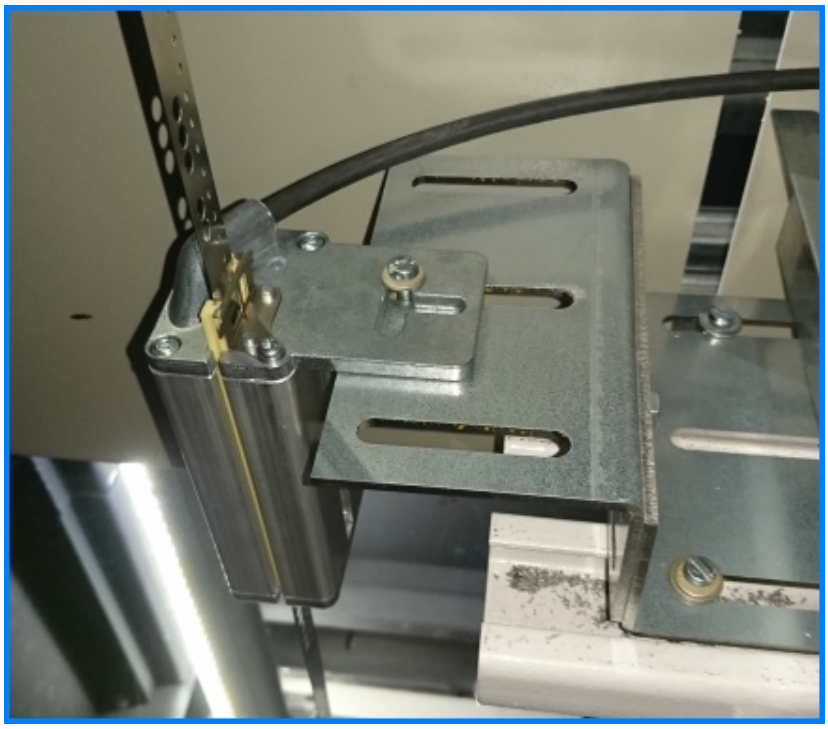
- Hang on the tension spring on this plate (keep 3cm to 6cm of tension between spring and plate), and block it with M5 screw, nut and washer :



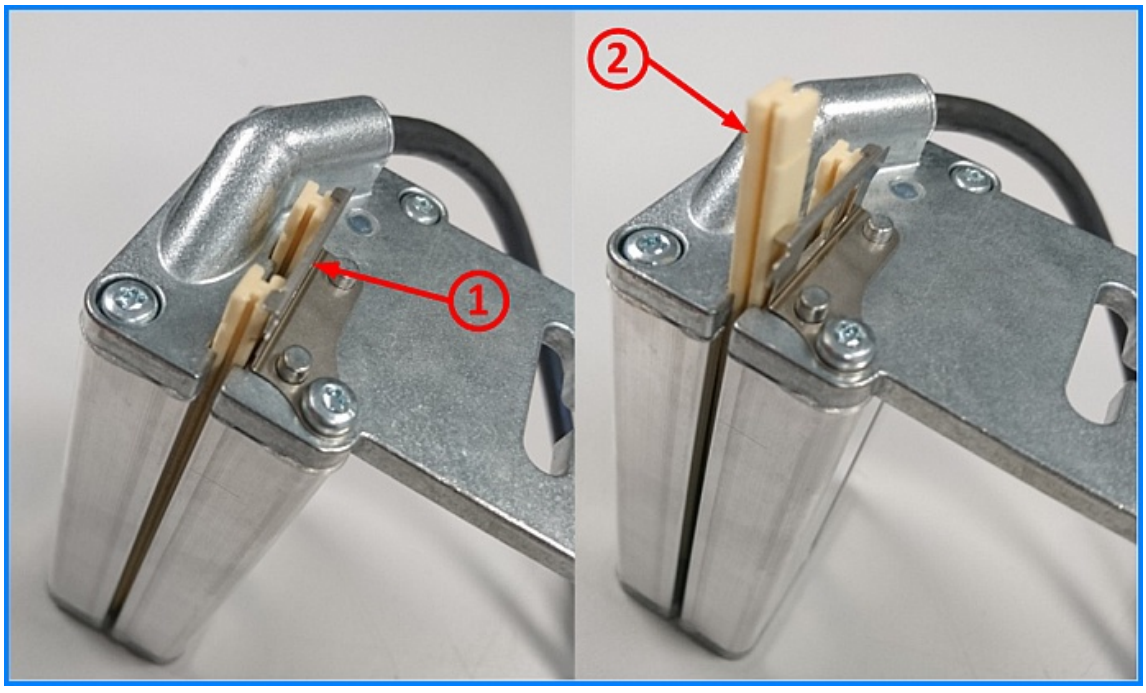
NOTE	*Take care to install the tape as vertically as possible*

Mounting of the reader

- Set together the fixing brackets on the car's roof, then fix the reader upon without a hard tighten for adjustment when inserting the tape:



- Gently bend the metallic tab (1) then remove the slide from the top (2). Insert the tape et replace the slide.



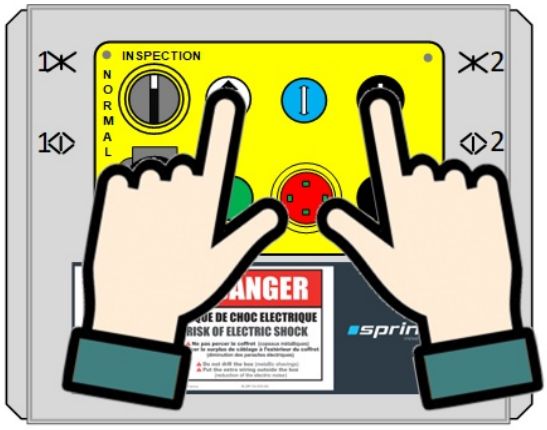
NOTE	*Check the presence of second slide before inserting the band*

- Ajdust the reader in order to avoid any deformation or twisting of the band, then hard tightened it on the fixing brackets.

Shaft's learning phase

Shaft's learning phase has to be performed in inspection mode from the car's roof.

To launch it, push together Up and Down buttons of the inspection box, and just follow the vocal instructions



Once the shaft's learning phase is over, you can visualize the heights recorded for each in the menu : ***CUSTOMIZATION ► EQUIPMENTS ► SHAFT READER ► FLOORS HEIGHTS :***

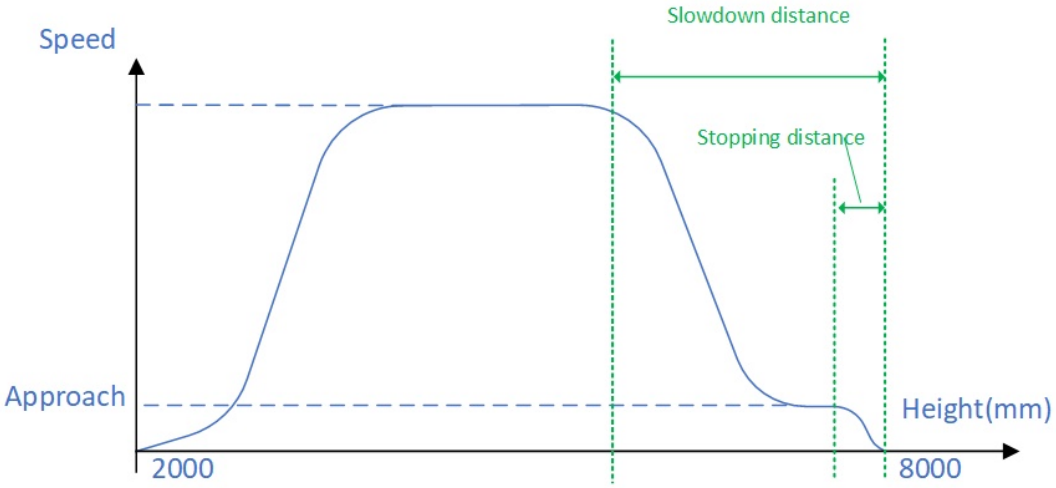
IMPORTANT	*From the top of the car it's very diffcult to record the height of the car matching precisely the ground of each floor; You will have to correct these heights from the menu pictured above* *But before corretc these heights, it is essential to fix the stopping accuracy of the regulation machine (VF, Hydraulics...); i.e. the car has stopped precisely at the height requested.* *Strictly follow the order of the two steps below, described in the next chapters :* • *Regulation stopping accuracy.* • *Floors adjustment.*

Regulation stopping accuracy

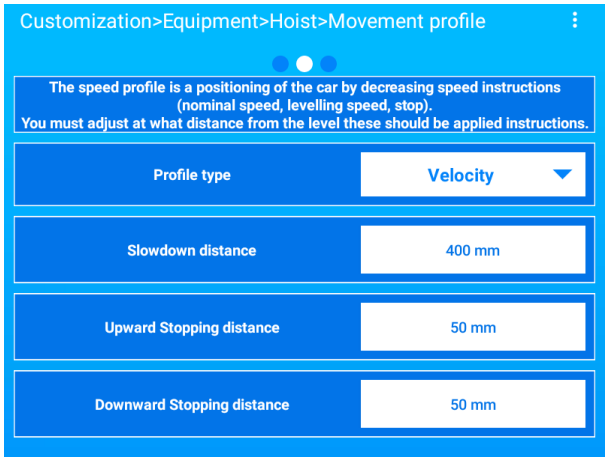
This chapter details how to adjust the stopping accuracy of the regulation, i.e. reach as close as possible the desired position.

- ***MOVEMENT PROFILE***
  - ***VELOCITY PROFILE***

The velocity profile is a positioning of the car by decreasing speed instructions (nominal speed, approach speed, stop), as shown in the figure below



At start, the **Nominal speed** is applied, then, when the **Slowdown distance** is reached, the **Approach speed** is applied.Finally when the **Stopping distance** is reached, a stop command is applied.
To reach a proper stopping accuracy, you have to adjust the values of these distances.
These settings are available in the menu ***CUSTOMIZATION► EQUIPMENTS ► HOIST ► MOVEMENT PROFILE :***



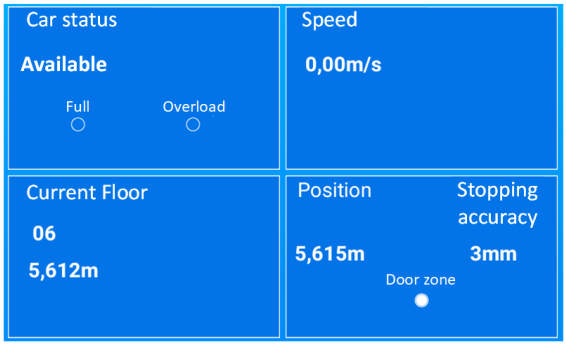
The **Slowdown distance** generally matches the nominal speed of the car:

- for a nominal speed of **0,63 m/s**, set the **Slowdown distance** at **630mm**.
- for a nominal speed of **0,40 m/s**, set the **Slowdown distance** at **400mm**.

The **Stopping distance** is generally set between **10mm** and **30mm**, according to the stopping reaction of the hydraulic power unit.
As this stopping reaction may be different in upward direction (stop with oil pump motor) and downward direction (stop with valves only), it is so possible to adjust separately the **Upward stopping distance** and the **Downward stopping distance.**

To check this stopping accuracy; use the indications of speed and position displayed on the dashboard of the Sprinte Control application.

CURRENT FLOOR
Here is displayed the floor where the car is located, and also its height valued saved during shaft's learning phase



SPEED
Here is displayed the speed of the car computed by the controller

POSITION
Indicates the exact position of the car

STOPPING ACCURACY
Displays the distance offset between the car and the height value saved of the floor.

Stopping accuracy in upward direction:

- Perform an upward travel to each floor , starting from the lowest one.
- At each slow down, check on the in the ***SPEED*** frame , that the **Approach speed** is maintained for 2s.
  - If the car doesn't maintain the **Approach speed**, it has slowed down too late; the **Slowdown distance** must be increased.
  - if the car maintains the **Approach speed** more than 2sà, it has slowed down too early; the **Slowdown distance** must be decreased
- Once the the **Slowdown distance**.is properly set, check at each stop in the ***STOPPING ACCURACY*** frame that it's between -3mm and 3mm.
  - If the car stops above 3mm , it has been stopped too late; the **Upward stopping distance** must be increased.
  - If the car stops below -3mm , it has been stopped too early; the **Upward stopping distance** must be decreased.

Stopping accuracy in downward direction:

- Perform an downward travel to each floor , starting from the lowest one.
- Check that the **Slowdown distance** adjusted during upward travels is correct for the downward travels.
  If not,,the upward and downward speeds are too different. Check the settings on the hydraulic power unit.
- Once done, check at each stop in the ***STOPPING ACCURACY*** frame that it's between -3mm and 3mm.
  - If the car stops below -3mm , it has been stopped too late; the **Downward stopping distance** must be increased.
  - If the car stops above 3mm , it has been stopped too early; the **Downward stopping distance** must be decreased.

Floors adjustements

You have now to check and correct for each level, the alignment of the ground of the car with the ground of the floor.

IMPORTANT	*This step of floors adjustment shall be done only if you have performed the stopping accuracy step before (see previous chapter).*

Send the car to each floor and measure the step from the ground of the car to the one of the floor. FIx then the height value saved according to your measurement.
The heights values saved can be mdified in the menu
CUSTOMIZATION ► EQUIPMENTS ► SHAFT READER ► FLOORS HEIGHTS :

NOTE	*If the stopping accuracy displayed is different from zero, it has to be considered in the new value of the floor height. Use the indications on the dashboard to know the stopping accuracy value*

Below are some examples of corrections to apply with different stopping accuracies :
In all those examples :

——— The blue line represents the height value currently saved for the floor

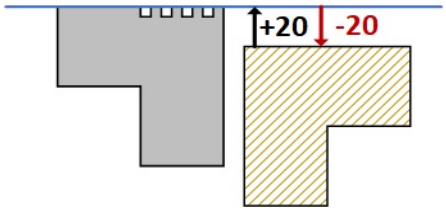
↑X The black number represents your measurement of the distance between car and floor.

↑X The blue number represents the stopping accuracy display on the dashboard

↑X The red number represents the correction that has to be set to height value saved.

- **EXAMPLE WITH A STOPPING ACCURACY OF +0MM**

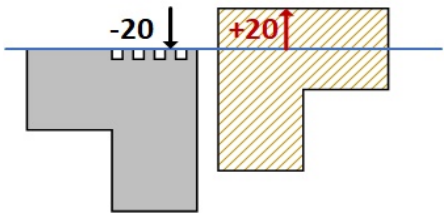
- Car above the floor:



The car is ↑ **20mm above** the ground of the floor.

You have to **substract** ↓**20mm** to the height value saved

- Car below the floor

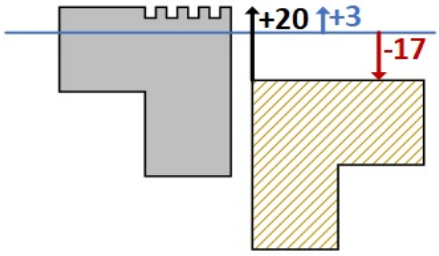


The car is ↓**20mm below** the ground of the fllor.

You have to **add** ↑**20mm** to the height value saved.

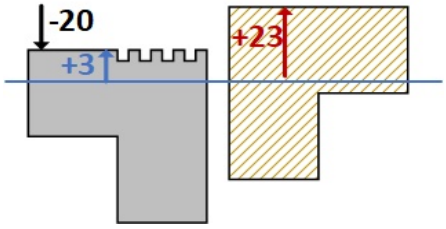
- **EXAMPLE WITH A STOPPING ACCURACY OF +3MM**

  - Car above the floor:



The car is ↑ **20mm above** the ground of the floor.,
As the car stopped ↑**3mm** higher than expected,
you have so to **substract only** ↓**17mm** to the height value saved.

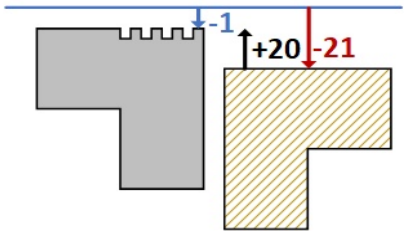
  - Car below the floor:



The car is ↓**20mm below** the ground of the fllor
As the car stopped ↑**3mm** higher than expected,
you have so to **add** ↑**23mm** to the height value saved.

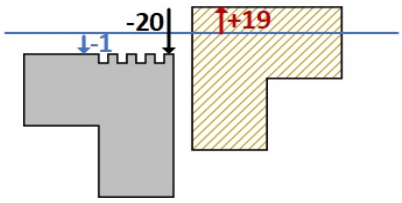
- **EXAMPLE WITH A STOPPING ACCURACY OF -1MM**

  - Car above the floor:



The car is ↑ **20mm above** the ground of the floor.,
As the car stopped ↓**1mm** lower than expected,
you have so to **substract** ↓**21mm** to the height value saved.

  - Car below the floor:



The car is ↓**20mm below** the ground of the fllor
As the car stopped ↓**1mm** lower than expected,
you have so to **add only** ↑**19mm** to the height value saved.

Relevelling

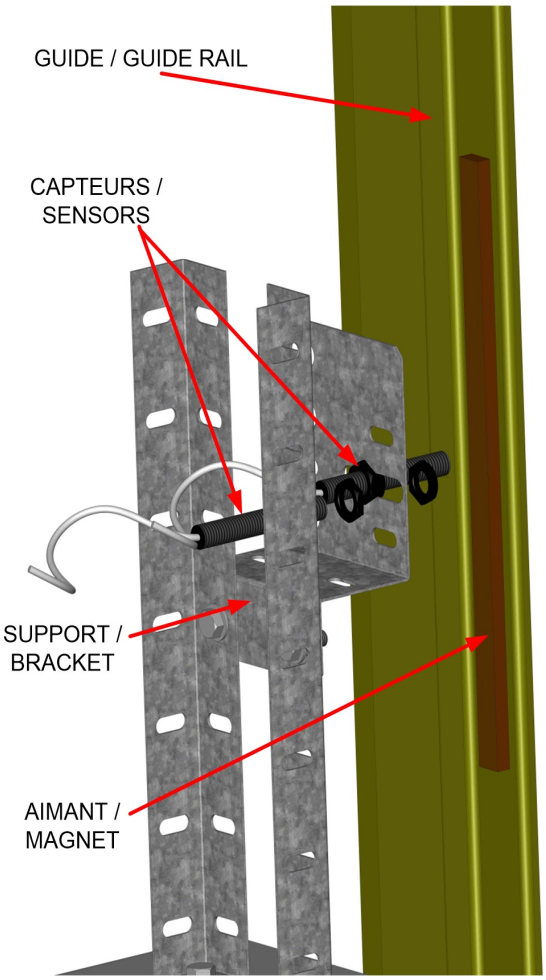
The releveling and leveling (early opening of the door) operations allow the movement of the car with the doors open only in the door's unlocking zone.
This movement with doors open is performed through a safety relay which closes to bypass the doors safety contacts and reopens as soon as the car leaves the unlocking zone, materialized by a 30cm long magnet.
The need to integrate the levelling/relevelling functions is determined by the lift manufacturer.

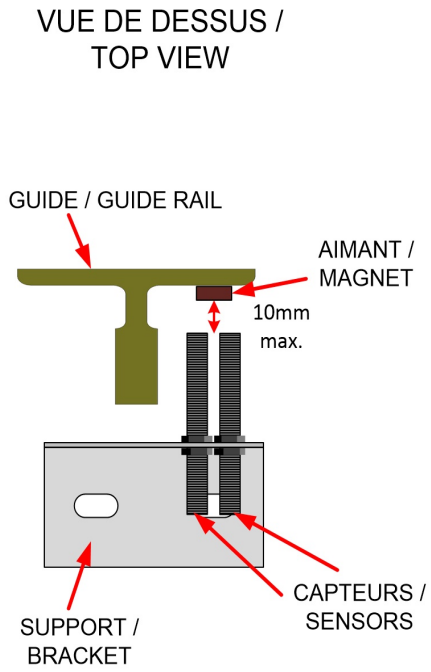
Sensors installation

The safety relay is already placed and wired in the car inspection box. You have to fix the sensors and place all the magnets materializing the unlocking door zones

- On the car roof, install the magnet sensors side by side , facing a rail guide , using the kit delivered (see below)
- Connect the magnet sensors on X11 terminal of 415SP board (see wiring diagram).
- For each level, place the car at the position of the landing and place the magnet on the rail guide , centered in front of the magnet sensors

NOTE	*The sensors and the magnets shall not be distant more than 10mm*





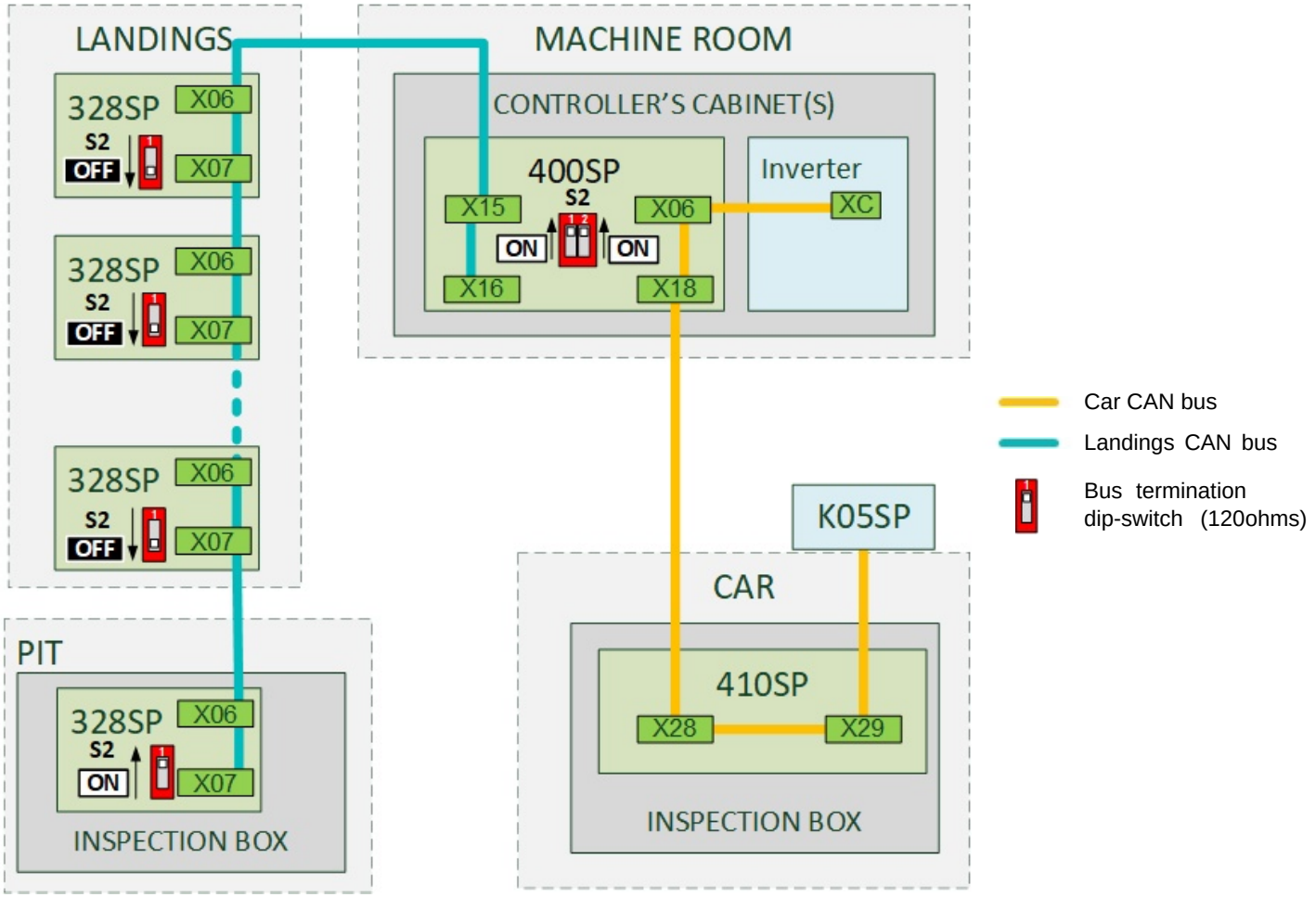
IMPORTANT	*The safety relay is a part of the protection device against unintended car movement, as it fulfills the detection function.* *Thus it has to be check on commissioning and at each maintenance visit.* *Use for that purpose the* ***Relevelling test*** *documented in Annex A9 of this manual*

Electrical synoptics

CAN buses architecture

For the proper operation of the controller, the CAN buses lines have to be terminated at each end.
On every electronic board of the Tetra's controller which is connected to a CAN bus, a dip switch enables or disables a 120ohms termination resistance.
But according to the machine room location, these are not the same boards that are connected at the end of the CAN bus.

- *CASE OF A MACHINE ROOM AT THE TOP*



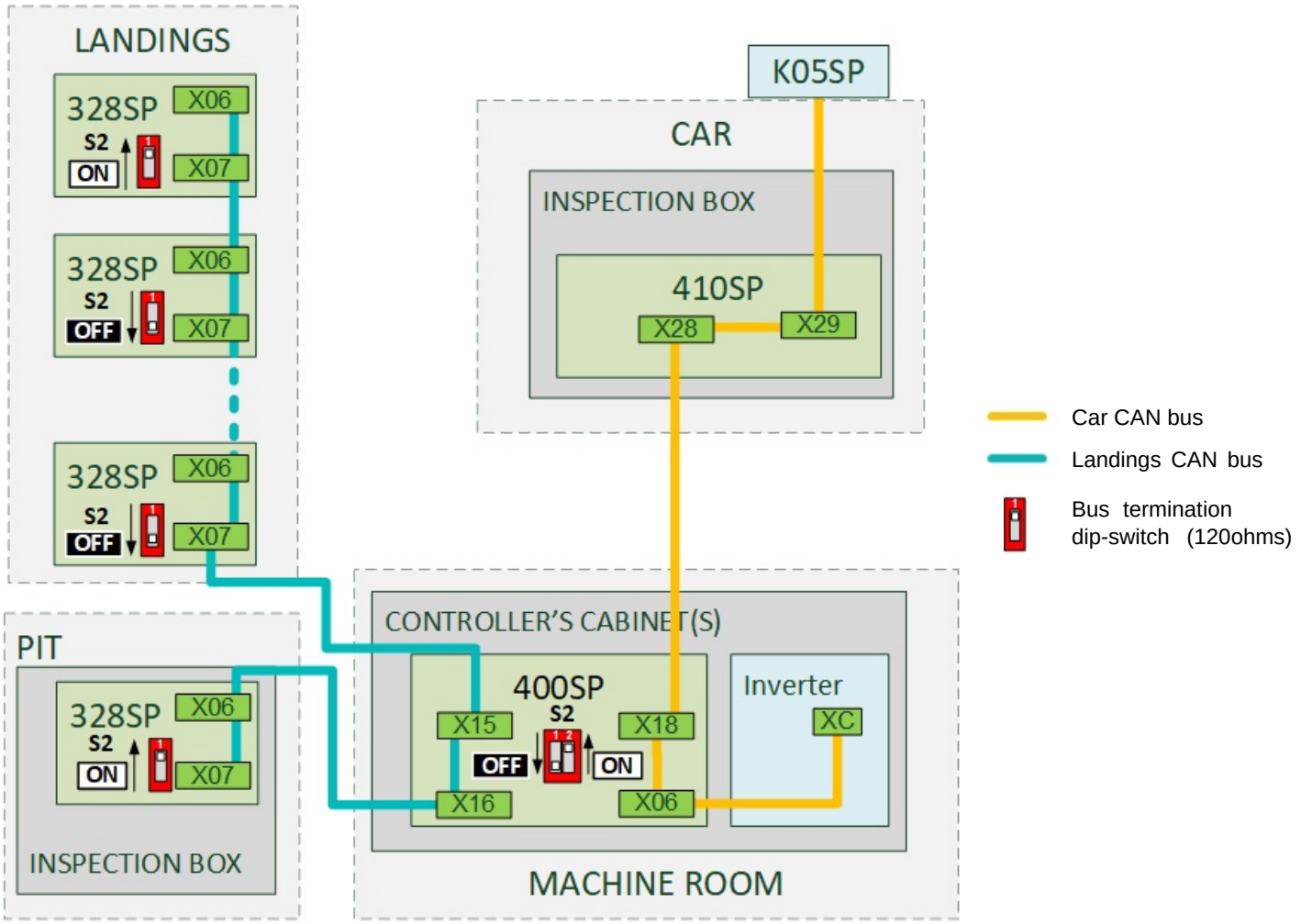
o CAR BUS

The inverter and K05SP reader are always connected at the end of the CAR bus line.
K05SP integrates a 120ohms termination resistance, the bus is then propoerly closed on its side.
The inverter doesn't integrate a resistancen, thus the S2-2 dip-switch on 400SP board has to be set to ON to close the bus line on this side.

o LANDINGS BUS

The 400SP board and the 328SP pit inspection board are connected to both ends of the landing CAN bus line.
Thus the S2-1 dip-switch of 400SP and S2 dip-switch of the 328SP inspection baord have to be set to ON to close the line on both ends.
The dip-switches of all of the 328SP landing boards have to be set to OFF.

- *CASE OF A BOTTOM MACHINE ROOM :*



o CAR BUS

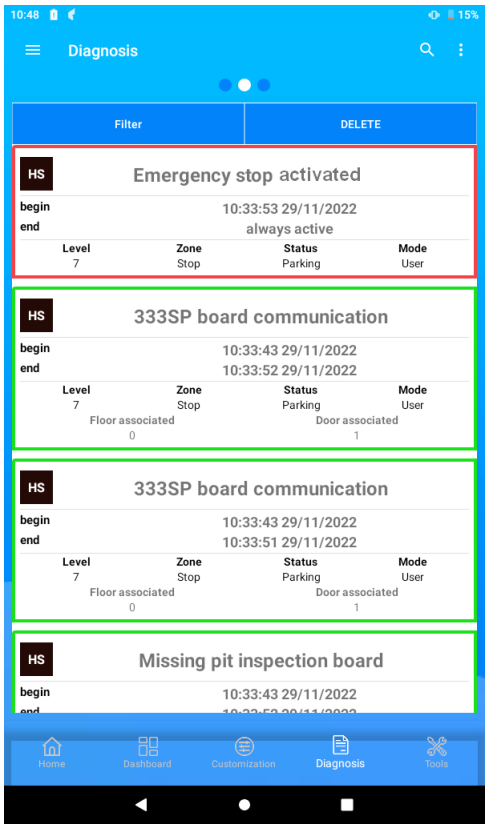
The inverter and K05SP reader are always connected at the end of the CAR bus line.
K05SP integrates a 120ohms termination resistance, the bus is then propoerly closed on its side.
The inverter doesn't integrate a resistancen, thus the S2-2 dip-switch on 400SP board has to be set to ON to close the bus line on this side.

o LANDINGS BUS

The 328SP board of the last floor and the 328SP pit inspection board are connected to both ends of the landing CAN bus line.
Thus the S2 dip-switch these two boards have to be set to ON close the line on both ends.
The dip-switches of all other 328SP landing boards and the dip-switch S2-1 of the 400SP have to be set to OFF.

Faults List

This chapter details all faults managed by the controller
The **Diagnosis -> Faults** menu of the Tetra App. displays the chronological list of faults that happened on the lift.



Faults list is detailed in tables as below :

Title	Severity	Description
....	...	...
....	....	....

- ***Title*** column***:***

  Message as displayed in the application fault menu

- ***Severity*** Column

  Gives severity level of the fault :

  ALR (Alarm) :
  This fault is a minor failure and doesn't prevent the operation of the lift
  OSU (Out of service for Users) :
  This fault sets the lift out of order for the users; but the lift keeps operational for technicians mode (inspection and emergencey operation)
  OSM (Out of service maintained) :
  This fault sets the lift out of order; and requests to be cleared by a technician the bring back the lift operational, event if the fault source disappeared.
  OST (Out of service for Technicien):
  This fault sets the lift out of order for users mode and tehcnicians mode, only temporary operation (for commissioning) is allowed.
  OS (Out of Service) :
  This fault sets the lift out of order for all modes of the lift.

- ***Description*** Column :

  Detailed explanation of the fault, with possible causes and solutions.

Power supply faults

Title	Severity	Description
Main power failure	OS	The main power supply of the controller is down ● *Check the main breaker DIJ1 and the PFS1 fuses.*
24Vdc power supply from grid is missing	OS	The 24Vdc low power supply generated by 404SP board form the grid power supply is missing.All of the electronic lboards of the lift controller are powerad by the back-up battery although the gird power supply is present. ● *Check the 22V fuse (5AT) on 404SP board.* ● *Check the power supply connections between 400SP board (X01) and 404SP board (X03).* ● *Check the transformer secondary voltage on X05-1 and X05-2 terminals of 404SP board. It has to be around 22Vac.*
Battery missing	OSU	The backup battery is missing or discharged. In case of main power failure, it will be impossible to fulfill the emergency operation for users. Lift keeps operational for inspection mode
Battery too low	ALR	The backup battery isn't charged enough to ensure the emergency operation up to 1h after a main power failure , as required in chapter 5.9.2.3.1.b of EN81-20 standard
Car llight	ALR	The power supply for car light is missing. ● *Check DIJ2 cirucit breaker and DJD1 RCD*
Voltage converter failure	OSU	The voltage converter didn't provide the 230Vac during the emergency operation after a power failure ● *Check the wiring of the voltage converter and its ON/OFF switch button*

Controller faults

Title	Severity	Description
Missing car inspection board ***Car inspection board communication***	OST	The controller can't communicate with 410SP car inspection board ● *Check CAN bus connections on controller (X18-400SP) and car inspection box (X28-410SP).* ● *Check dip-switch S2-2 of 400SP board , it to has to be set to ON.*
Missing pit inspection board ***Pit inspection board communication***	OSU	The controller can't communicate with pit inspection board ● *Check CAN bus connections on controller (X16-400SP), on the lowest landing board and in the pit inspection box* ● *Check dip-switch S2-1 of 400SP board :* *It to has to be set to ON in case of top machineroom.* *It to has to be set to OFF in case of bottom machineroom.*
328SP LOP board communication (#1 to #32)	ALR	The controller can't communicate with 328SP #xx LOP board ● *Check ID number of the 328SP board* ● *Check dip-switch S2-1 of 400SP board :* *It to has to be set to ON in case of top machineroom.* *It to has to be set to OFF in case of bottom machineroom.*
Missing VF Drive ***VF Drive communication***	OS	The controller can't communicate with VF Drive ● *Check CAN bus connections on the controller (X06-400SP) and the VF drive* ● *Vérifiez que le DIP S2-2 de la carte 400SP est positionné sur ON.*
Inverter configuration failure	OS	The controller failed to configure the inverter for the porpoer operation of the LIFT (I/O, STO function...) ● *Check CAN bus connections with the inverter (see above).* ● *Then power OFF and ON both controller and inverter (Main power supply circuit breaker)*
Button stuck	ALR	One of the user button of the lift is kept pressed longer than 2'30". The informations associated to this button(Lift, floor, door) are given in the diagnosis page of the smartphone app.
Stricken floor (0 to 31)	ALR	The lift can't stop anymore on floor X, as the associated fire detector has been activated
Controller clock not set	ALR	Date and time of the controller are not properly set. These informations are necessary for to controller to have relevant log events records
Roof SD card missing	ALR	The car's roof baord 410SP can't detect the presence of its SD card containing audio files. Vocal announcements can no longer work.
Machineroom overheating	OS	The thermal probe of the machineroom, connected on a 333SP expansion board, indicates an overheating status.

Title	Severity	Description
		• *Check the proper air cooling of the machineroom* • *Check the wiring of the thermal probe on 333SP board, and its trigger setting.*
Missing load weighing device ***Load weighing device communication***	OS	The controller can't communicate with the load weighing device on the CAN bus • *Check CAN bus connections on the weighing device and on 410SP board (weighing device on roof) or 328SP (weighing device in shaft)* • *Check the setup (EQUIPMENTS►LOAD WEIGHING DEVICE) matches the weighing device installed*
Load weighing device setup error	OS	A weighing device is detected on the CAN bus although a wired device is configured in the controller setup. • *Check the setup (EQUIPMENTS ►LOAD WEIGHING DEVICE) matches the weighing device installed.*
333SP for loading pawl device is missing	OS	The 333SP board used to manage the informations/command of loading pawls is not detected on the CAN Bus by the 400SP controller board. • *Check positions of dips-switches IT1-4 on 333SP board and S2-1 on 400SP board as described in wiring diagram : B-PE-24-057 333SP Boards can bus connections.* • *Check the dips-switches IT1-1 to 3 of 333SP board are set to ON (Up position).*

Hoist machine faults

Title	Severity	Description
Contactors control at startup ***Contactors control at stop***	OS	One of the power contactors (LA, LB, FR , L, LD, ✶ or ▲) is already closed on a startup or has remained closed at a stop. • *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace the external contactor and/or 405SP board*
Contactors control while moving	ALR then OS	One of the electromechanical device that operates the brakes (contactors FR, LA ou LB) didn't close at startup or opened while moving • *Clear the fault (see menu Diagnosis), and try another movement of the car. If the fault is always detected, replace the external contactor and/or 405SP board*
Traction motor overheating	OS	The thermal probe of the traction motor indicates an overheating • *Check the proper air cooling of the motor* • *Check the wiring of the thermal probe (X17-400SP, see Câblage de la sonde)*
Maximum moving time reached	OSU	The travel exceeded the maximum time allowed, as required by EN81-20 standard in chapter 5.9.7.2 Le déplacement a dépassé la durée maximum autorisée, conformément à l'exigence 5.9.2.7.2 de la norme EN81-20. • *Check the traction cables don't slip on the pulley* • *Check the nominal speed setting .*
Wrong moving direction	ALR then OSU	The moving direction of the car is in the opposite direction to that ordered to the VF drive • *Check the wring of the motor phases and the motor encoder (see Motor wiring)*
No car movement detected	OSM	On a travel order, the car didn't move for a time longer than the anti skidding timer. The lift shall be set out of order until the intervention of a technician as required in chapter 5.9.2.7.1 a) of EN81-20 standard • *Check the suspension means, power supply of the motor, and the shaft reader.*
Stopping accuracy	ALR then OSU	The car stopped beyond the stopping area when arriving at floor. If it occurs on 5 consecutive travels , the lift is set out of order. • *Check that the stopping distance set is not too short.* • *Check that the slowing distance set is not too short (used in case of speed profile, flags reader or hydraulic lift).*
Car sliding	OSU	The car stopped beyond the door unlocking area when arriving at floor. If it occurs on 5 consecutive travels , the lift is set out of order. • *In case of a flags reader, check that the screen for door area is properly placed.* • *Check that the slowing distance set is not too short (used in case of speed profile, flags reader or hydraulic lift).*

Hydraulic hoist faults

Title	Severity	Description
Oil overheating	OS	The thermal probe for the oil of the hydrulic hoist indicates an overheating ● *Check the proper air cooling of the motor and th hoist* ● *Check the wiring of the thermal probe for oil (X45-406SP)*
Hydraulic hoist overpressure	OS	The hydraulic hoist indicates an overpressure status on X45-SPR input of 406SP board. ● *Check the wiring on X45SPR and on the hydraulic device.* ● *Check the load in car.*
Grid phases reverted	OS	The controller detected that 2 phases among the three ones of the grid power supply are reverted. The lift is immediately set out of order to prevent the hydraulic hoist pump motor from rotating upside down. ● *Check the correct order of cables L1, L2 L3 in the electric board of the machine-room.* ● *Check the correct order of cables L1, L2 L3 i the terminal of the controller's panel.*
SMA signal enabled on start	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal has been detected ON before a new start ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal enabled while moving	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal has been detected ON during a travel ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal disabled on stop	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal remained OFF after a stop ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
SMA signal enabled for too long after a stop	OSM	In normal operation, the SMA control signal produced by the iCon Bucher board is enabled for 6s after a stop only. This fault has been recorded because this signal remained ON more than 6s after a stop ● *Check the wiring of SMA signal on X10 of iCon Bucher board.* ● *Check the wiring of SMA signal on input X50-I1 of 406SP board*
READY signal disabled on stop	OSM	In normal operation, the READY control signal produced by the GMV NGV-A3 hydraulic hoist is enabled on stop and disabled while moving. This fault has been recorded because this signal remained disabled after a stop ● *Check the wiring of READY signal on X3-51 of NGV-A3. hoist* ● *Check the wiring of READY signal on X50-I1 input of 406SP board*
RUN signal disabled while moving	OSM	In normal operation, the RUN control signal produced by the GMV NGV-A3 hydraulic hoist is disabled on stop and enabled while moving. This fault has been recorded because this signal remained disabled while moving ● *Check the wiring of RUN signal on X3-50 of NGV-A3. hoist* ● *Check the wiring of RUN signal on X50-I2 input of 406SP board*
READY signal enabled while moving	OSM	In normal operation, the READY control signal produced by the GMV NGV-A3 hydraulic hoist is enabled on stop and disabled while moving. This fault has been recorded because this signal remained enabled while moving . ● *Check the wiring of READY signal on X3-51 of NGV-A3. hoist* ● *Check the wiring of READY signal on X50-I1 input of 406SP board*
RUN signal enabled on stop	OSM	In normal operation, the RUN control signal produced by the GMV NGV-A3 hydraulic hoist is disabled on stop and enabled while moving. This fault has been recorded because this signal remained enabled after a stop ● *Check the wiring of RUN signal on X3-50 of NGV-A3. hoist* ● *Check the wiring of RUN signal on X50-I2 input of 406SP board*
RUN/READY signals invalid on start	OSM	In normal operation, the RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist are respectively OFF and ON before a start. This fault has been recorded because both signals were in the wrong state on start ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*

Title	Severity	Description
RUN/READY signals invalid on stop	OSM	In normal operation, the RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist are respectively OFF and ON after moving. This fault has been recorded because both signals were in the wrong state on stop ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*
RUN/READY signals are not operational	OSM	The RUN/READY control signals produced by the GMV NGV-A3 hydraulic hoist never change during travels of the lift. ● *Check the wiring of both signals on X3 of NGV-A3. hoist* ● *Check the wiring of both signals on X50-i1 & I2 inputs of 406SP board.*

Shaft reader faults

- ***ABSOLUTE READER***

Title	Severity	Description
Shaft reader error	**OSU**	The shaft reader has an internal fault; it shall be replaced.
Shaft reader invalid datas	**OSU**	The car position detected by the shaft reader is out of the range determined by the heights defined during the shaft's learning phase. ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Two floors have the same height	**OSU**	Once the shaft's learning phase has been performed, two floors have the same height's value, which is a fault case for the controller. ● *Change manually the heights in the menu Equipments►Reader menu* ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Two floors have opposite heights	**OSU**	Once the shaft's learning phase has been performed, one floor has an higher height value than another upper floor in the shaft. ● *Change manually the heights in the menu Equipments►Reader menu* ● *Carry out a new shaft's learning phase (see Shaft's learning phase)*
Wrong shaft reader	**OSU**	The shaft reader detected by the contrller doesn't match the one configured ● *Check the configuration in the menu PCustomization -> Equipments -> Shaft reader*
Missing shaft reader ***Shaft reader communication***	**OSU**	The controller can't communicate with the shaft reader ● *Check the connection of the shaft reader in the inspection box (X31-415SP)* ● *Check the position of dip-switches S1 ,that must be set to ON if X29 and X30 on 410SP board, are empty.*

- ***FLAGS READER***

Title	Severity	Description
Reader not calibrated	**ALR**	Indicates that a calibration phase has to be done before turning the lift in service for users.
Reader calibration error	**ALR** then **OSU**	The calibration of the reader has failed. After 3 failed attempts, the lift is set out of order. ● *Check the placement of each flag in the shaft.* ● *Check the placement of the down slowdown flag.* ● *Check the wiring of each sensors (A, B, C, RB & RH)*
Reader input XX error	**ALR**	Input A, B or C of the flag reader is not correctly detected while the car is moving. Then , the car stops, and a calibration phase is launched. ● *Check the wiring of the matching sensor*
Door area is missing	**ALR**	On arrival at the floor, the door area flag is not detected. ● *Check the placement of the door zone flag at the floor detected*
Door area wrongly placed	**ALR**	A door area flag has been detected between two floors.Then , the car stops, and a calibration phase is launched.This fault may be detected by one of the following cases : ● *A stopping or slowdown flag is missing, the reader can shift its position.* ● *Two stopping or slowdown flags are too close together, i.e. a closer than the distance between sensor A and sensor B.* ● *A stopping flag is still active while the door flag is not.*
Door area never detected	**ALR**	During a travel across several floors, no door area flags have been detected. Then , the car stops, and a calibration phase is launched. ● *Check the presence of sensor C and its wiring.* ● *Check also the correct alignment in front of the flag..*
End slowdown flags detected together	**OSU**	RB & RH sensors (connected on X12 of 410SP board)for end slowdown area detection are both enabled. ● *Check the presence of RH & RB flags in the shaft.* ● *Check also the correct alignment of the sensors in front of the flags...*

Relevelling faults

Title	Severity	Description
Uninedtended car movement	OSM	The car has overpassed the unlocking door zone while a releveliing or levelling operation was in progress. ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the brake system (leveling only)*
Safety realy always ON	OSU	The safety relay is closed with the car out of an unlocking door zone The lift will get back in order as soon as relay is in the correct state ● *Check the safety relay wiring* ● *Check the magnet sensor and its cable* ● *Check the connection of the magnet sensor on X11 terminal of 415SP board*
Safety relay alwas OFF	ALR	The safety relay didn't close as requested for a relevelling/levelling operation ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the safety relay wiring*
Relevelling too long	OSU	The car did not reach back the floor in the maximum time configured ● *Increase this maximum relevelling time* ● *Check the speed of relvelling*
Too many relevellings	OSU	The maximum number of consecutive relevelings at the same floor (within 2 minutes) has been reached.. ● *Check the relevelling start and stop distances* ● *Increase the value of this counter*
Unlocking door zone error	OS	The unlocking door zone has been detected 1meter far form the nearest floor. ● *Check the correct disposal of the magnet used for the unlocking door zone* ● *Check the connection of the magnet sensor on X06 terminal of 315SP board*

Loading pawls devices faults

Title	Severity	Description
Loading pawls not released	ALR then OSU	During the phase of pawls releasing, the "Loading pawls released" signal doesn't appear in the allotted time (configurable). After the number of failed consecutive attempts (configurable), the lift is set out of order. ● *Check the pawls contacts and the wiring.* ● *Check the wiring of "Loading pawls released" signal on X04-2 of 333SP board on the controller* ● *Check the wiring of "Loading pawls retraction command" output on X06-1 of 333SP board on the controller.*
Loading pawls not retracted	ALR then OST	During the phase of pawls retraction, the "Loading pawls retracted" signal doesn't appear in the allotted time (configurable). After the number of failed consecutive attempts (configurable), the lift is set out of order. ● *Check the pawls contacts and the wiring.* ● *Check the wiring of "Loading pawls retracted" signal on X04-3 of 333SP board on the controller* ● *Check the wiring of "Loading pawls retraction command" output on X06-1 of 333SP board on the controller.*
No information whether the car is resting on pawls	OSU	Once the pawls have been released just above the floor, the car is moving down to rest on the pawls at the floor. This fault is logged if the "Car on loading pawls" signal doesn't appear and the car moved below the stopping zone or the signal doesn't appear 15s after the down movement. ● *Check the position of the rest mounting of the pawls in the shaft* ● *Check the wiring of "Car on loading pawls" signal on X04-1 of 333SP board on the controller side and "Zero pressure" signal on hydraulic unit side.*
Wrong information stating that the car is resting on pawls.	OSU	Either the "Car on loading pawls" signal appeared before the downward movement to rest the car on the pawls or the signal is always active. Both cases are erroneous. ● *Check the position of the rest mounting of the pawls in the shaft*

Title	Severity	Description
		• *Check the wiring of "Car on loading pawls" signal on X04-1 of 333SP board on the controller side and "Zero pressure" signal on hydraulic unit side.* • *Check that parameter "Pawls release distance" is not too low.*
Impossible to bypass the pawl safety contact.	**OSU**	During the phase of pawls retraction, the safety contacts are bypassed by a safety relay to allow the upward movement. This fault is logged if the safety chain isn't closed on X12 terminal of the 405SP board, when the safety relay is closed. • *Check the wiring of the safety relay on the roof on the car and on X12 terminal on 405SP.*
Missing magnet in the unlocking door zone error	**OSU**	The magnet used to enable the safety relay is not detected in the unlocking door zone. Thus, the bypass of the pawls safety contact isn't possible. • *Check the correct disposal of the magnet used for the unlocking door zone* • *Check the connection of the magnet sensor on X11 terminal of 410SP board*
Safety relay used to bypass pawl safety contacts is always closed	**OSU**	The safety relay is always closed even when not driven by the controller. • *Check the wiring of the safety relay on the roof on the car and on X12 terminal on 405SP.*

Other faults

Title	Severity	Description
Anti-creep always active	**OSM**	This fault only concerns the overspeed governor with a parking coil to prevent the creep of the car. It is detected when the coil is powered to make the car move, but the monitoring input of its state indicates that the overspeed governor is not released. • *Check the wiring of the monitoring input on 433SP or 428SP board* • *Check the configuration of this input and its polarity which has to be NC.* • *Check the proper operation of the coil.*
Anti-creep always inactive	**OSM**	This fault only concerns the overspeed governor with a parking coil to prevent the creep of the car. It is detected when the coil is not powered to ensure the car is stopped, but the monitoring input of its state indicates that the overspeed governor is still released. • *Check the wiring of the monitoring input on 433SP or 428SP board* • *Check the configuration of this input and its polarity which has to be NC.* • *Check the proper operation of the coil.*

Doors faults

Title	Severity	Description
Closing limit switch defective (door 1 or 2)	ALR then OSU	The closing limit switch is not detected when the door is supposed to be closed. ● *Check the wiring (X08.2-415SP door 1,, X44.2-417SP door 2).*
Opening limit switch defective (door 1 or 2)	ALR	The closing limit switch is not detected when the door is supposed to be closed. ● *Check the wiring (X08.3-415SP door 1, X44.3-417SP door 2).*
Door motor overheating (door 1 or 2)	ALR then OSU	The door motor thermal probe indicates an overheating ● *Check the motor is not permanently powered* ● *Check the wiring (X08.5-415SP door 1, X44.5-417SP door 2).*

Safety chain faults

Title	Severity	Description
Memorized primary security engaged	OSM	One of the primary safety contact bypassed by emergency operation box (safety gear, end limit switch, overspeed governor) is or was open.
Emergency stop activated	OST	One of the primary safety contact (MCY stops, wheel, toe-guard...) is open
Safety chain power supply failure	OS	Supply voltage for the safety chain is missing ● *Check DJD4 earth leak circuit breaker in the controller cabinet.*
Car door safety contact defective	OSU	Despite several attempts to close the car door , the associated safety contact is still open ● *Check the position of the safety contact.*
Hall door safety contact	OSU	Despite several attempts to close the hall door , the associated safety contact is still open ● *Check the position of the safety contact.*
Hall door locking contact	OSU	Despite several attempts to lock the hall door , the associated safety contact is still open ● *Check the position of the safety contact.*
Locking safety contact open while moving	ALR	The landing door locking safety contact opened during movement of the car Le contact de verrouillage des portes palières s'est ouvert pendant un déplacement. ● Check the landing door lock contact and the hook on the car door.
DBD active	OSU	The door bypass device is engaged, while the lift is not in maintenance mode (inspection, emergency operation, temporary). ● *Check the DBD connectors X13 to X16 on 405SP board*
Safety chain closed with a door open	OSU	In user mode, the safety chain kept closed with a door totally open ● *Check the locking door contacts is not bypassed on connector X19 of the 405SP board*
Safety chain closed during stop in maintenance mode	ALR	In maintenance mode (inspection, emergency operation, temporary) the safety chain is closed while the car is stopped. ● *Check the primary safety contact are not bypassed.*
Safety chain closed while cam is released	OSU	In user mode, with car available at the floor, the landing doors locking contact is closed although the cam is not engaged. ● *Check the locking door contacts is not bypassed on connector X19 of the 405SP board*
Safety chain closed with loading pawls released	OSU	In user mode, with car stopped, the safety chain is closed although the loading pawls are released. ● *Check that the safety contacts of the loading pawls on connector X12 of the 405SP board*
Toe-guard safety contact isn't properly wired	ALR	The safety chain is closed in the low area of the despite the toe guard despite the toe guard safety contact isn't bypassed. ● *Check the wiring of the bypass switch on X07 of 415SP board* ● *Check the wiring of the toe guard safety contact on X08 (and X09 if there is a second toe guard)of 415SP board*
Toe-guard is bypassed beyond the low area of the shaft	OS	The safety contact of the toe guard is bypassed despite the car is not in the low area of the shaft and the toe guard is unfold ● *Check the wiring of the bypass switch on X07 of 415SP board*

ANNEX A : Commissioning tests assistance

The TETRA controller integrates assistance to easily carry out the examinations and tests required by the EN81-20 standard in chapter 6.3. before commissioning the lift..

All these tests are available form the application Sprinte Control

Safety gear test

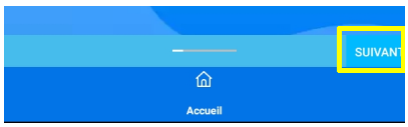
This test is required in chapter 6.3.4 of EN81-20 standard. It helps to check the correct operation of the safety gear of the lift.
It requires that the overspeed governor may be electrically remotely triggered

ATTENTION *To prevent any material damages of the lift, it is recommended to decrease the nominal moving speed during this test.*

IMPORTANT *In case of a **SEL20** ovespeed governor model, it is mandatory to unplug **X22** of the 410SP board.*

STEP 1

- Launch the test from menu ***Commissioning tests*** of the SprinteControl App, then ***Safety Gear Test.*** Then prress the "Next" button, to launch the test.



STEP 2

- Press "Up" or "Down" to move the car in the desired direction, then press "OK" whenever you want , to trip the overspeed governor

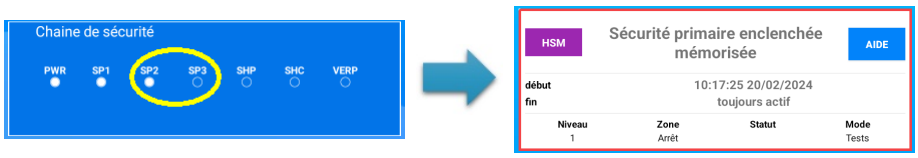
When pressing OK, the coil of the governor is powered for 2s, thus blocking itself, and therefore engaging the safety gear of the car.

STEP 3

- FInally press "End" butoon to exit the tripping of the overspeed governor.

STEP 4

- Checlk on the dashboard, the opening of the safety chain at SP3 point and check also in the fualt list of Diagnosis menu, that the fault "Memorized primary security engaged" is recorded .



NOTE *To get back the lift in order, you will have to reengage the overspeed governor, and then clear the fault recorded in the list.*

IMPORTANT *In case of a **SEL20** overspeed governor model, it is mandatory to plug back **X22** of the 410SP board.*

End limit switches test

The final liit switches shall open the safety chain as required in chapter 5.12.2.3.1 of EN81-20 standard.
This test helps to check this detection, the memorization of the matching fault in case of main power supply failure and the need of intervention (clearing faults) to have the lift back in service.

NOTE	*To perform this test, the lift shall be in user mode, with car available at level*

STEP 1

- Launch the test from menu ***Commissioning tests*** of the SprinteControl app, then ***End Limit switches***

STEP 2

- Push the UP button of the emergency recall box,to test the up end limit switch or the DOWN button to test the down end limit switch

STEP 3

- The car is moving toward the extreme floor matching the end limit to test, if it is not already located there

STEP 4

- Once the car is stopped, press OK button of the controller : the car is moving toward the end limit switch at inspection speed

STEP 5

- After a maximum moving duration of 10s :
  - The test has **succeeded** if the lift is now out of order with the fault "Memorized primary security engaged." recorded and the safety chain is opened..
    Go to step 6
  - The test has **failed** if the safety chain is not opened.

STEP 6

- Switch to emergency recall operation and move back the car to the floor
- Switch back to normal mode and delete the faults (.with application on tablet)
- 5s later, the lift is back in service

Re-leveling test

This test is required in chapter 6.3.12 of the EN81-20 standard , in order to verify the car maintains the leveling accuracy.
It also helps to check the detection and the stopping of an unintended car movement as required in chapter 6.3.13 of the EN81-20 standard

NOTE	*To perform this test, the lift shall be in user mode, with car available at level*

STEP 1

- The doors are opening first. All the test is performed with the doors open, in order to chek the safety relay effectively bypasses the doors safety contacts.

STEP 2

- Keep the emergency operation up button  pressed to move the car upward ,

  or down button  to move it downwardsAu.

STEP 3

- Once the button is released, the car stops and gets back to the floor.
- The test restarts at STEP 2.

Test of the unintended car movement protection mean

This test is required in chapter 6.3.13 of the EN81-20 standard , in order to verify the proper operation of the detection , activation and stopping components of this UCM protection mean.

STEP 1

- Run the re-levelling test described above to check the protection against an unintended car movement.

STEP 2

- Once the doors are open press the emergency operation up button  to move the car upward ,

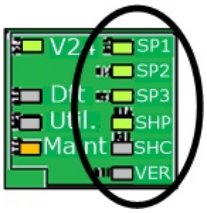
  or press down button  to move it downwards.

STEP 3

- Keep the button pressed until the car leaves the unlocking door zone.

STEP 4

- The safety chain shall open at the car door closing contact SHC (or SHP if a swing door is open at the landing), thus activating the stopping mean of the car to stop its movement.



STEP 5

- The re-levelling test is cancelled and the lift is set out of order with "Unintended car movement" fault recorded.

Measurement of the insulation resistance

The measurement of the insulation resistance of the different lectrial ciruits is required in chapter 6.3.2.c) of EN81-20 standard

SAFETY PRELIMINARY OPERATIONS

IMPORTANT

Usage of your PPE is mandatory for all of the measurements described below

DANGER

- Switch off the main power supply circuit breaker **DIJ1**
- Switch off the earth leak circuit break for car lighting **DJD1**
- Switch off the earth leak circuit break for shaft lighting **DJD2**
- All downstream circuit breakers has to be switched ON
- Check for the absence of voltage out of the above mentioned circuit breakers before proceeding the measurements

NOTE

For all of the tests below, the measurement is done from the circuit to test to the earth

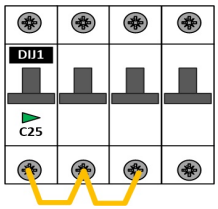
The tests have to be carrried out with a maximum voltage of 500Vdc

The electrical insulation is correct if the measured resistance is > **1MΩ**

TEST 1

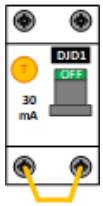
Check of main power and lighting circuits

Short circuit terminals L1, L2 et L3 on the output of main power circuit breaker DIJ1.



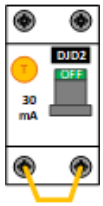
- Carry out the measurement on the outputs now short-circuited

Short circuit terminals N & P on the output of car ligthting earth leakwer circuit breaker DJD1.



- Carry out the measurement on the outputs now short-circuited

Short circuit terminals N & P on the output of car ligthting earth leakwer circuit breaker DJD2.

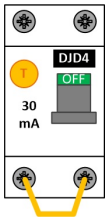


- Carry out the measurement on the outputs now short-circuited

TEST 2

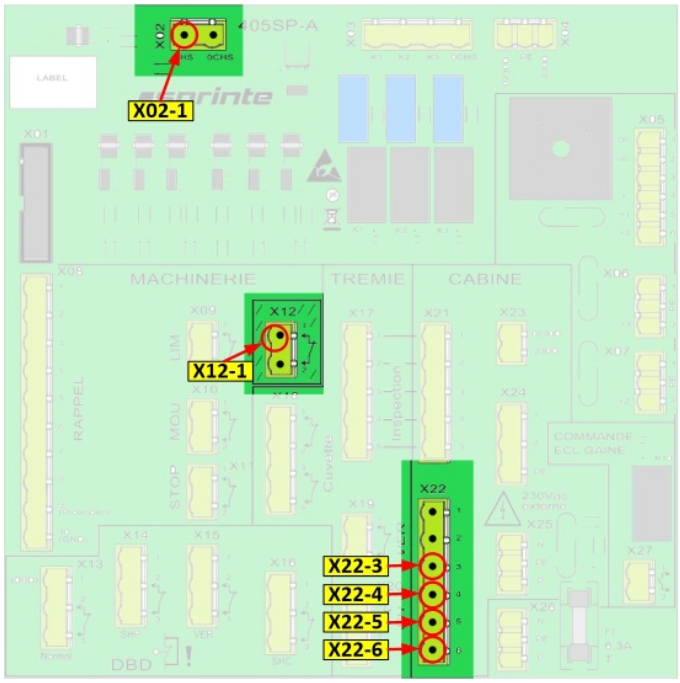
Check of the safety chain

Short-circuit terminals N & P on the output of safety chain earth-leakage circuit breaker DJD4.



- Carry out the measurement on the outputs now short-circuited

- Carry out the measurement on the entrance point of the saftey chain,
  terminal **X02-1** board **405SP**
- Carry out the measurement on the whole primary safety contacts ,
  terminal **X22-5** board **405SP**
- Carry out the measurement on the whole car doors safety contacts ,
  terminal **X22-3** board **405SP**
- Carry out the measurement on the whole landing doors closing contacts ,
  terminal **X22-4** board **405SP**
- Carry out the measurement on the whole landing doors locking contacts ,
  terminal **X22-6** board **405SP**
- Carry out the measurement on the end point of the safety chain ,
  terminal **X12-1** board **405SP**



Tripping overspeed governor

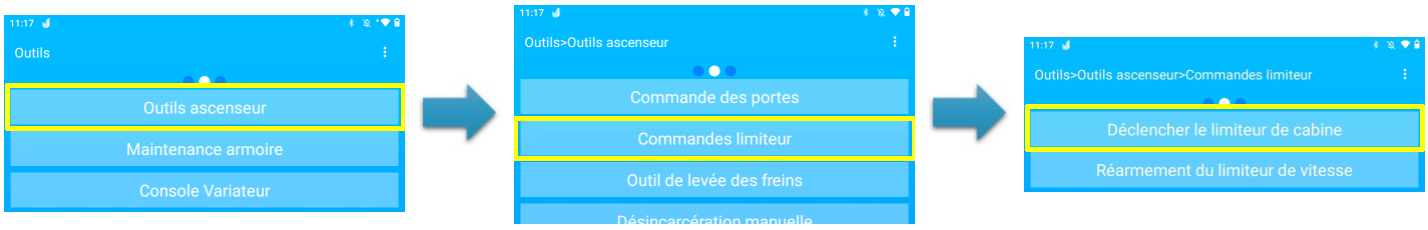
The overspeed governor may be tripped while the car is moving up, down or at stop while the lift is in normal operation mode.

ATTENTION	*To prevent any material damages of the lift, it is recommended to decrease the nominal moving speed during this test.*

IMPORTANT	*In case of a **SEL20** ovespeed governor model, it is mandatory to unplug **X22** of the 410SP board.*

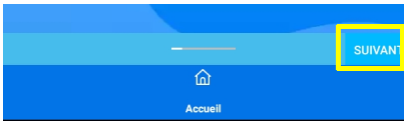
STEP 1

- Go to the Tools menu of SprinteControl App then ***Lift Tools ► Overspeed governor commands ► Trig the car's OSG.***



STEP 2

- Press the "Next" button, to launch the tripping of the overspeed governor.



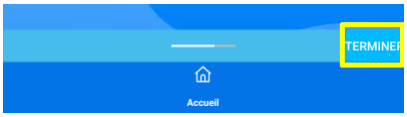
STEP 3

- Press "Up" or "Down" to move the car in the desired direction, then press "OK" whenever you want , to trip the overspeed governor

When pressing OK, the coil of the governor is powered for 2s, thus blocking itself, and therefore engaging the safety gear of the car.

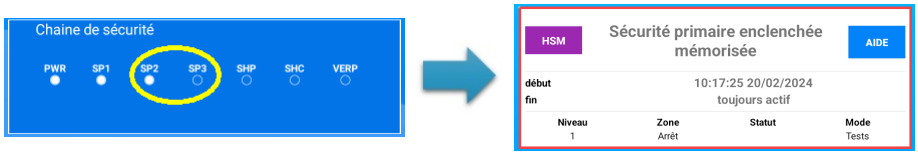
STEP 4

- FInally press "End" butoon to exit the tripping of the overspeed governor.



STEP 5

- Checlk on the dashboard, the opening of the safety chain at SP3 point and check also in the fualt list of Diagnosis menu, that the fault "Memorized primary security engaged" is recorded .



NOTE	*To get back the lift in order, you will have to reengage the overspeed governor, and then clear the fault recorded in the list.*

IMPORTANT	*In case of a **SEL20** overspeed governor model, it is mandatory to plug back **X22** of the 410SP board.*

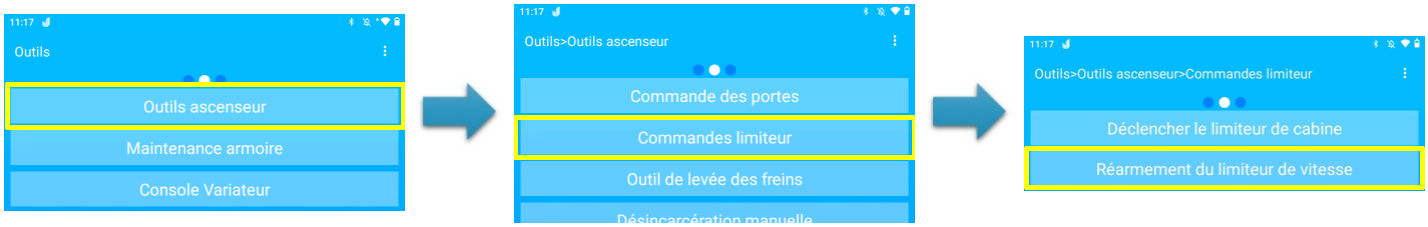
Overspeed governor reset

The following procedure helps resetting the overspeed governor if it has been tripped.

NOTE	*This procedure is valid only for overspeed governor with electric resetting system.*

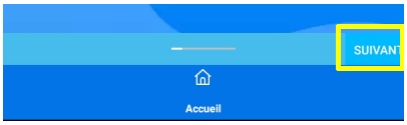
STEP 1

- Go to the Tools menu of SprinteControl App then ***Lift Tools ► Overspeed governor commands ► Resetting the car's OSG.***



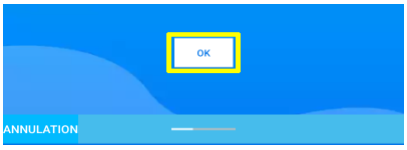
STEP 2

- Press the "Next" button, to start the resetting of the overspeed governor.



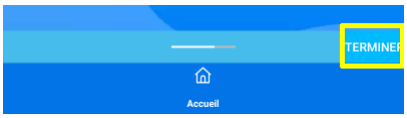
STEP 3

- Simply press the "OK" button to reset the overspeed governor.



STEP 4

- FInally press "End" butoon to exit the procedure.

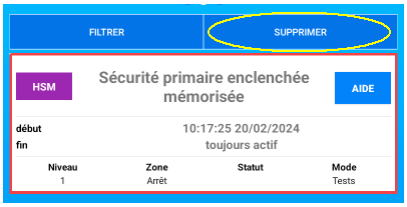


STEP 5

- Check on the dashboard, the closing of the safety chain at SP3 point.

STEP 6

- To get back the lift in order, gp the faults list of the Diagnosis menu, then clear the fault "Memorized primary security engaged" recorded .



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