



# CHAPTER 1

## GENERAL INFORMATION AND OPERATING INSTRUCTIONS

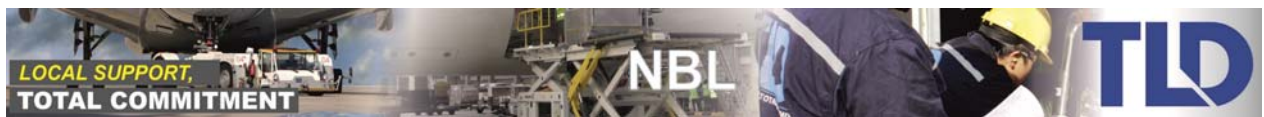


**NBL**

Original manual



**BLANK PAGE**



## 0- TABLE OF CONTENTS

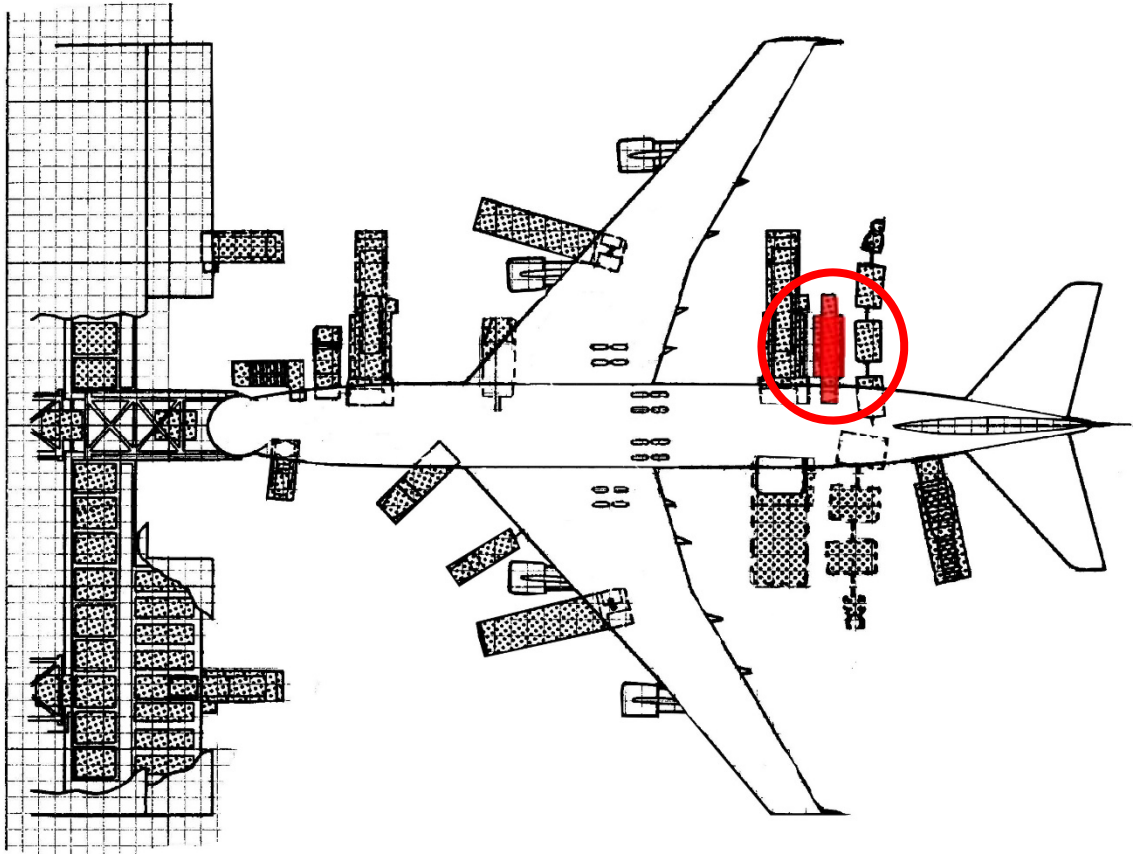
0- TABLE OF CONTENTS .....	3
1- GENERAL DESCRIPTION .....	1
1-1- FIELD OF USE .....	1
1-1-1- AUTHORISED LIMITS .....	2
1-2- DESCRIPTION .....	3
1-2-1- FIRE EXTINGUISHER .....	5
1-3- WORK STATIONS .....	6
1-3-1- DRIVING POSITION .....	6
1-3-2- STANDARD CONTROL POSITION .....	7
1-3-3- CONTROL POSITION (LPG VERSIONS) .....	8
1-3-4- CONTROL POSITION (SPECIFIC VERSIONS) .....	8
1-3-5- CONTROL POSITION (SPECIFIC VERSIONS) BELT CONTROL FROM DESK .....	9
1-3-6- STANDARD BOOM CONTROL UNITS .....	10
1-3-7- BOOM CONTROL UNITS (DEPENDING ON VERSIONS) .....	11
1-3-8- VARIABLE BELT SPEED (DEPENDING on VERSIONS) .....	12
2- USE .....	1
2-1- ACCESS AND CONTROL .....	1
2-1-1- CHECKS BEFORE START-UP .....	1
2-2- ACTIONS ON ALARMS .....	2
2-3- USING VEHICLES AT LOW TEMPERATURES .....	2
2-4- MAIN BRAKE - ENGINE BRAKE .....	3
2-5- MOVEMENT DIRECTION SELECTOR .....	3
2-6- PARKING .....	4
2-7- PLACING IN SERVICE .....	5
2-7-1- SWITCHING ON .....	5
2-8- DRIVING: .....	6
2-9- BOOM ELEVATION / DESCENT: .....	6
2-9-1- FRONT ELEVATION .....	6
2-9-2- FORWARD DESCENT .....	6
2-9-3- REAR ELEVATION .....	6
2-9-4- REAR DESCENT .....	6
2-10- BARRIER ADJUSTMENT (DEPENDING ON VERSIONS): .....	7
2-10-1- FIXED DOUBLE EXTENSION GUARD RAILS .....	7
2-10-2- LEFT SIMPLE EXTENSION GUARD RAILS .....	7
2-10-3- RETRACTABLE GUARD RAILS .....	8
2-11- OPERATION .....	9
2-11-1- OPERATOR PERSONNEL HOLD ACCESS .....	9
2-11-2- FOR OVERFLOWING LOADS .....	10
2-11-3- BAGGAGE LOADING/UNLOADING .....	10
2-12- STOPPING .....	11
2-12-1- SWITCHING OFF .....	11
3- SPECIFICATIONS AND CAPACITIES .....	1
3-1- DIMENSIONS .....	1
3-2- TURNING CIRCLE .....	2
3-3- NON-LOADED WEIGHT .....	2
3-4- PERFORMANCE .....	2
3-5- BRAKING DISTANCES .....	2
3-6- ACOUSTIC LEVEL .....	3
3-7- VIBRATION LEVEL .....	3
4- DESPATCH - TRANSPORT - HANDLING .....	1
4-1- LIFTING POINT FOR SLINGS .....	2
4-2- LIFTING POINTS FOR JACKS .....	3
4-3- SUPPORT POINTS .....	4



5- STORAGE.....	1
5-1- ELECTRICAL PARTS: .....	1
5-2- MECHANICAL PARTS:.....	1
5-3- HYDRAULIC CIRCUIT:.....	1

# 1-GENERAL DESCRIPTION

## 1-1-FIELD OF USE



*Fig 1-1: Field of use*

This conveyor is designed to be used in airport traffic areas to load and unload passenger hand luggage weighing a maximum of 250 kg. Access to the hold may also be authorised under certain conditions described in chapter 1;

This equipment is designed to be used at airports.

Only use the loads for which the machine is designed;

Any other use is prohibited, as is use in explosive atmospheres or the use on any surface other than concrete or asphalt;

The operator will be held responsible if these rules are not respected: TLD may not be held responsible for any accident to equipment or people under these conditions.

It is forbidden to climb on the vehicle outside the zones specified for this purpose or to use it to transport people.

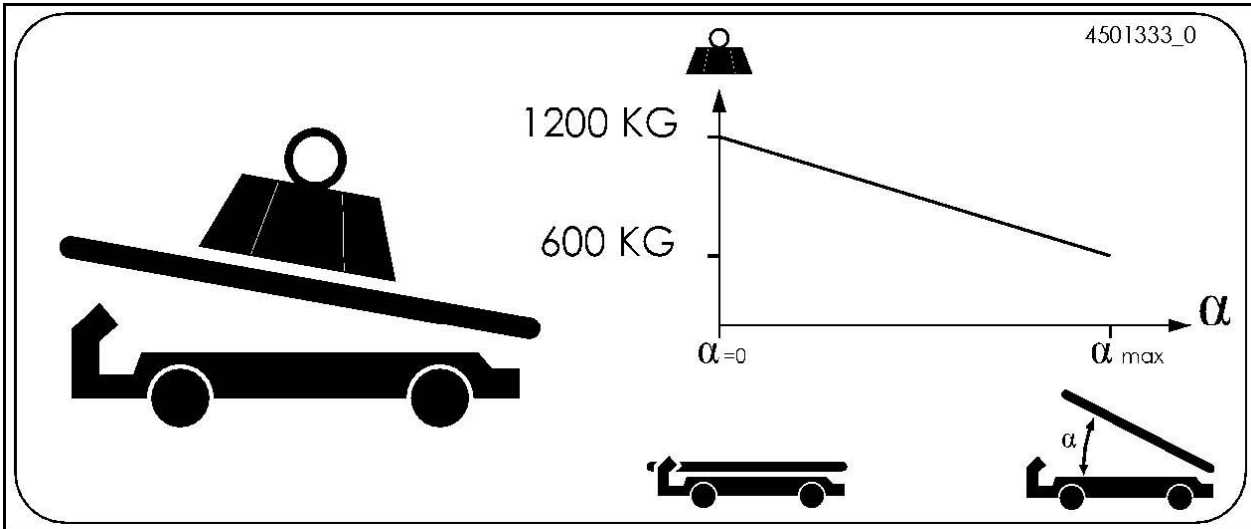
The vehicle is not designed to cross obstacles.

Do not manoeuvre it within the plane's fire safety perimeter during refuelling.

This list of prohibitions is not exhaustive and any use other than that planned is prohibited.

### 1-1-1-AUTHORISED LIMITS

- Max load per baggage : 250 kg
- Max distributed load in maximum tilt position : 600 kg
- Max distributed load in horizontal position : 1200 kg



- Max number of people in the driving position : 1
- Max wind speed for use : 90 KM/H
- Max permitted slope:





## 1-2-DESCRIPTION

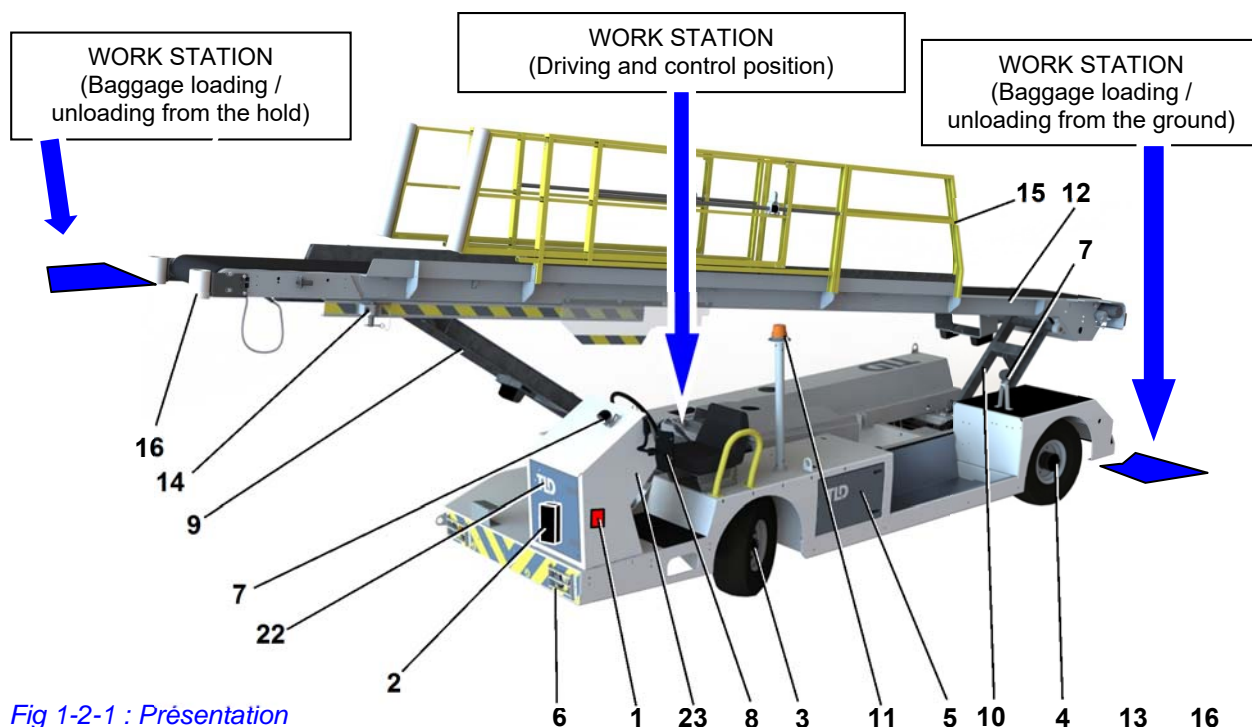
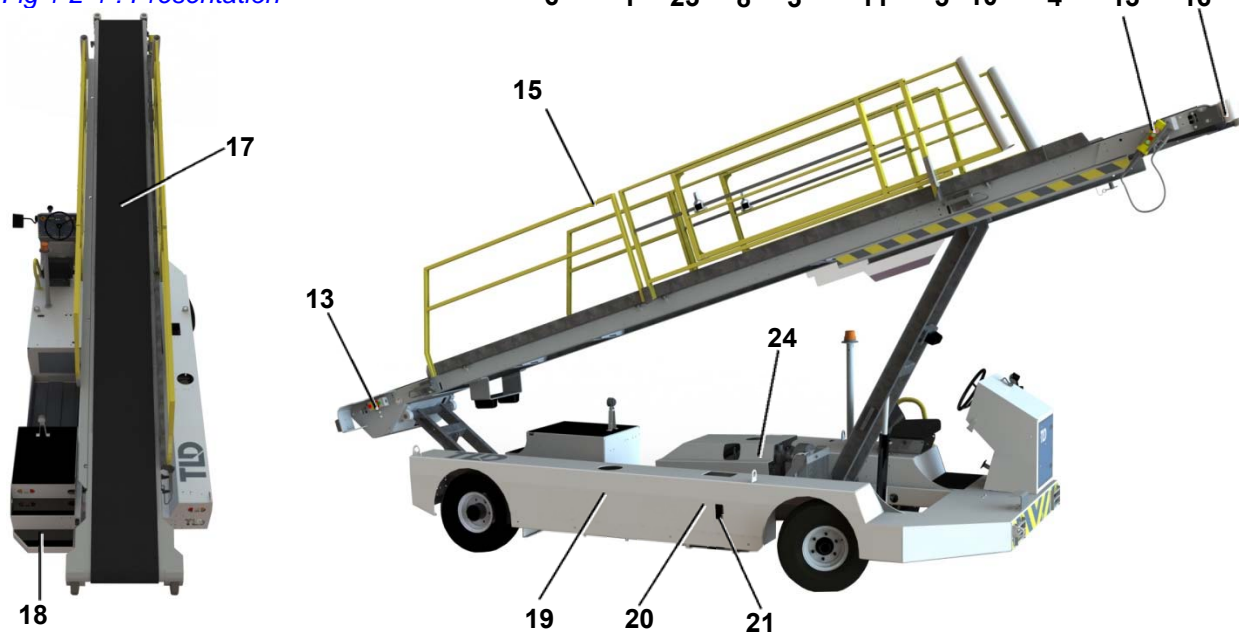
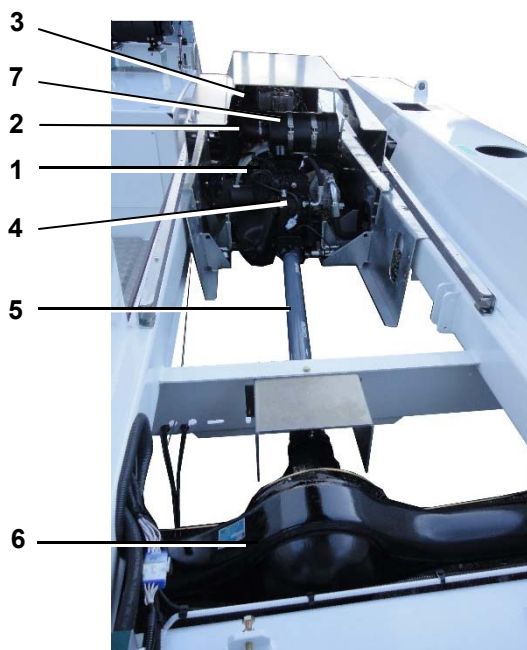


Fig 1-2-1 : Présentation

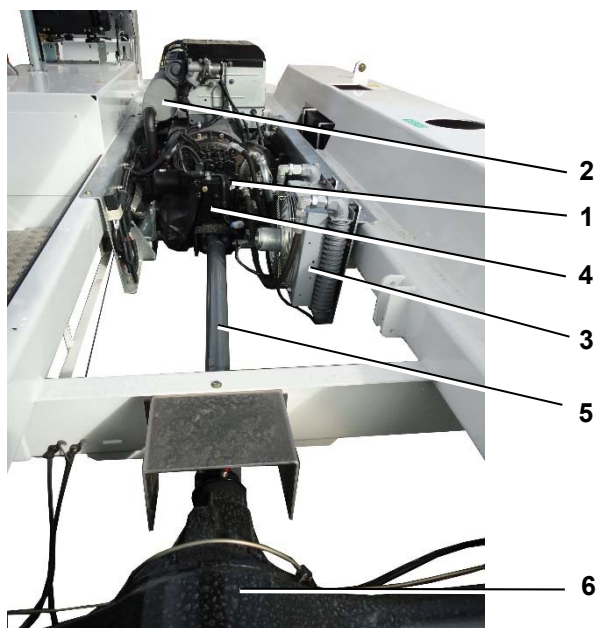


1. Identification plate	13. Belt rotation control unit
2. Operator manual storage box	14. Safety pin
3. Front axle	15. Barriers (depending on versions)
4. Rear axle	16. Boom protection (depending on versions)
5. Battery unit	17. Conveyor belt
6. Light grills	18. Hold access staircase
7. Working lamp	19. Fuel tank
8. Rear view mirror	20. Hydraulic tank
9. Front swing bar	21. Hydraulic level
10. Rear swing bar	22. Hydraulic compartment
11. Flashing light	23. Electric compartment
12. Boom	24. Engine (see fig.1-2-2)

Fig 1-2-2 : Engines (depending on version)



Perkins



Deutz



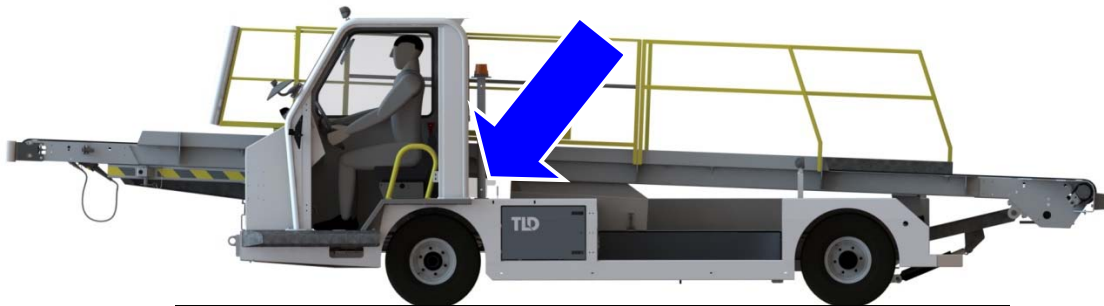
LPG - Hyundai

1- Engine	5- Transmission shaft
2- Exhaust	6. Rear axle
3- Cooling system	7- Air filter
4- Gearbox	



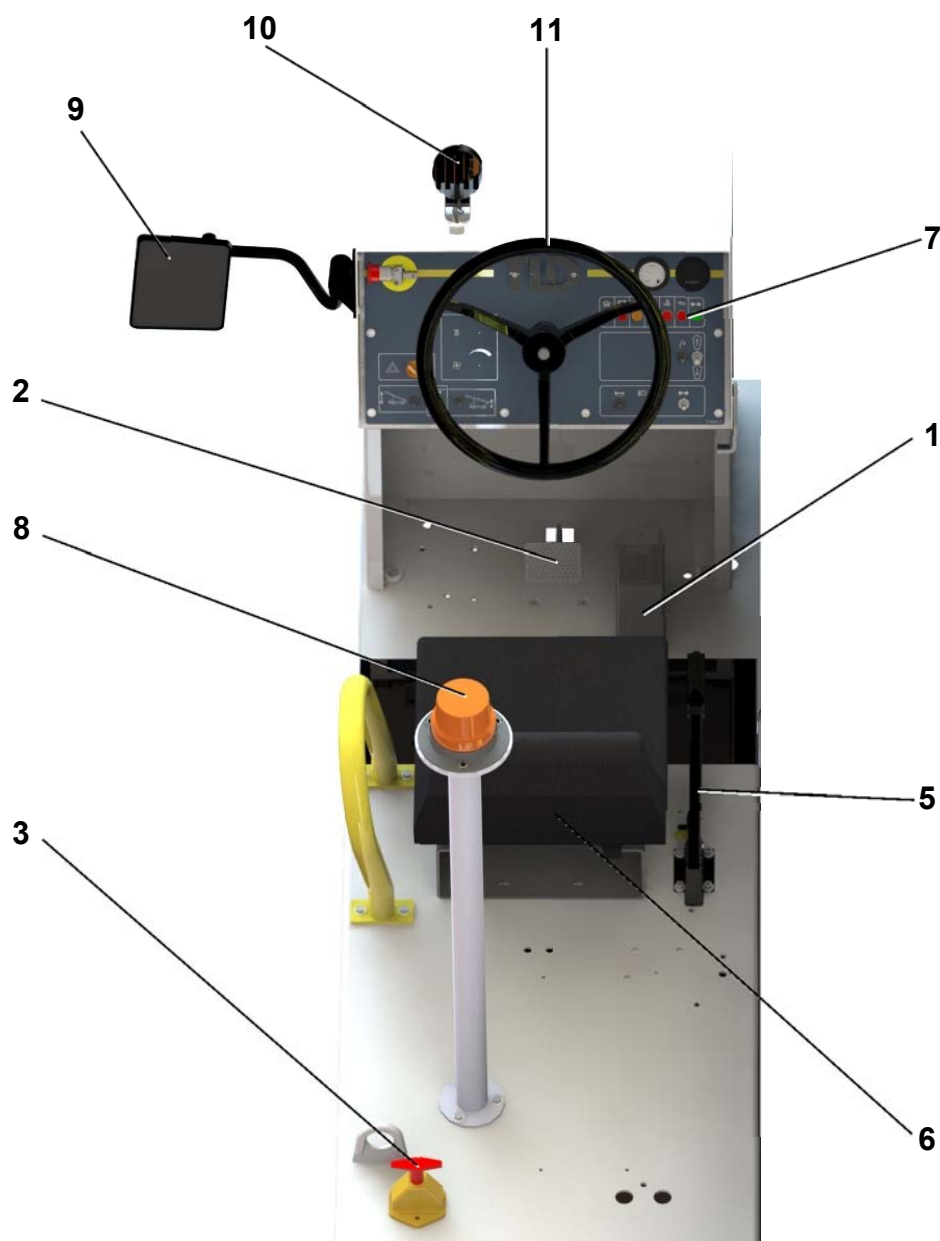
## 1-2-1-FIRE EXTINGWISHER

A place is available behind the drive seat, or behind the cab, for fire extinguisher.



## 1-3-WORK STATIONS

### 1-3-1-DRIVING POSITION

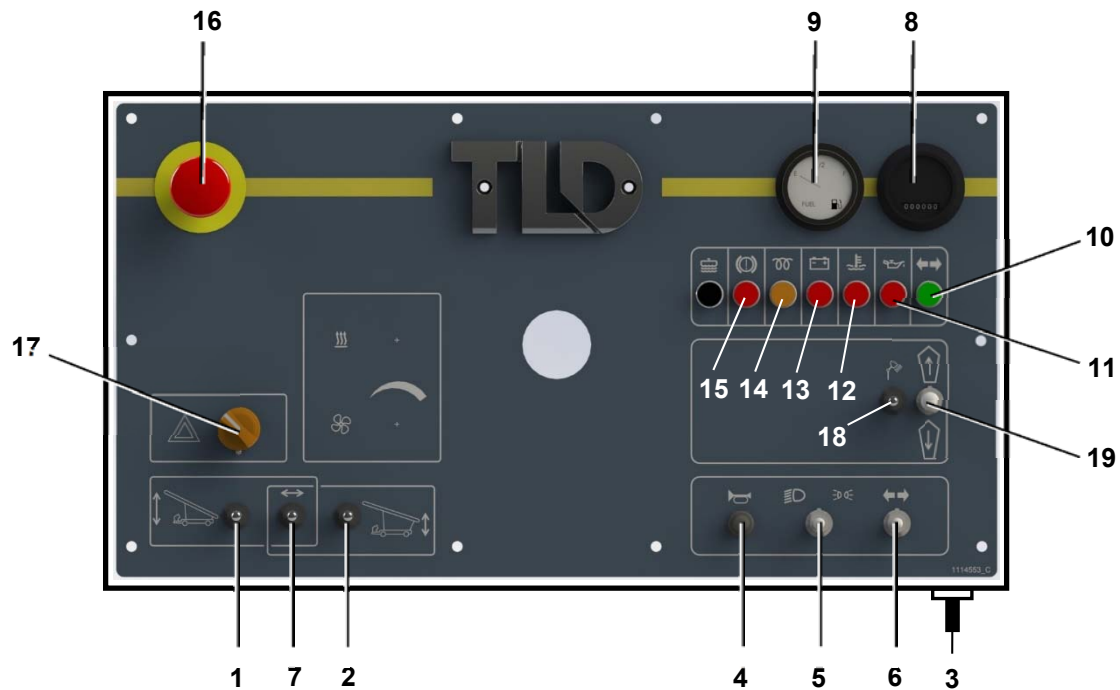


*Fig 1-3-1 : Driving position*

1 - Accelerator pedal	7 - Control panel
2 - Brake pedal	8 - Flashing light
3 - Battery cut-off	9 - Rear view mirror
4 - No used	10 - Floodlight
5 - Parking brake	11 - Steering wheel
6 - Seat	12 - Seat belt

### 1-3-2-STANDARD CONTROL POSITION

*Fig 1-3-2: Control position*



<b>1</b> - Front elevation descent control	<b>11</b> - Oil pressure light
<b>2</b> - Rear elevation descent control	<b>12</b> - Water temperature light
<b>3</b> - Contact - starter	<b>13</b> - Battery charge light
<b>4</b> - Horn	<b>14</b> - Warm-up light
<b>5</b> - Low beam / Lights	<b>15</b> - Parking brake on and brake fluid level low light.
<b>6</b> - Direction indicator command	<b>16</b> - Emergency stop
<b>7</b> - Elevation/descent command authorisation	<b>17</b> - Warning light control
<b>8</b> - Hour meter	<b>18</b> - Floodlight
<b>9</b> - Fuel gauge	<b>19</b> - Movement direction selector
<b>10</b> - Direction indicator light	

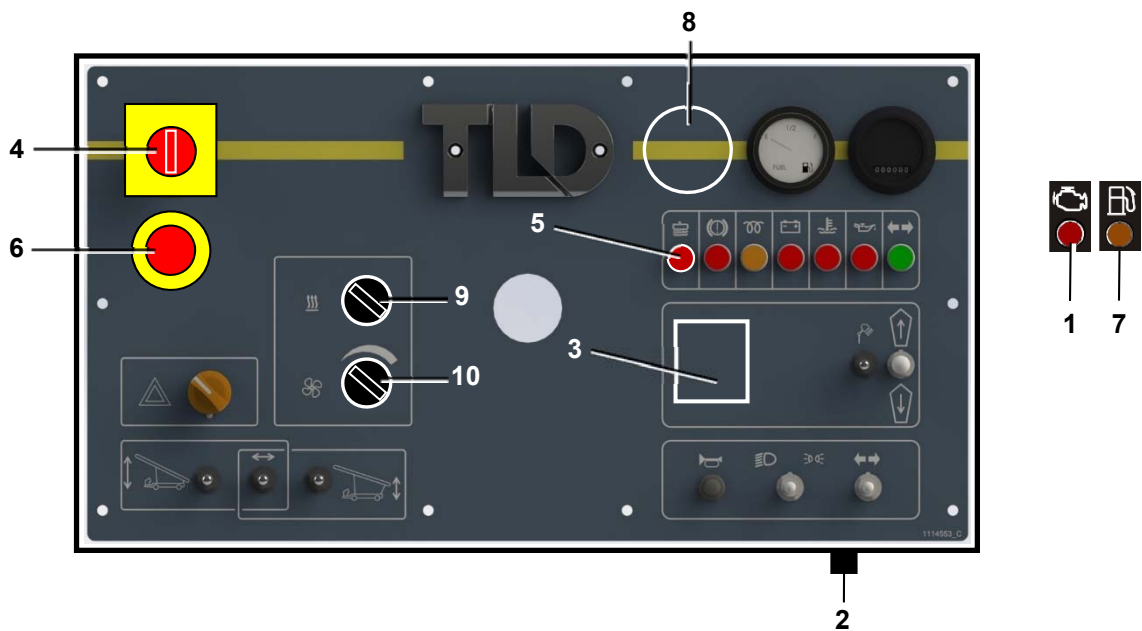
### 1-3-3-CONTROL POSITION (LPG VERSIONS)

Fig 1-3-3: Control position (LPG version)



### 1-3-4-CONTROL POSITION (SPECIFIC VERSIONS)

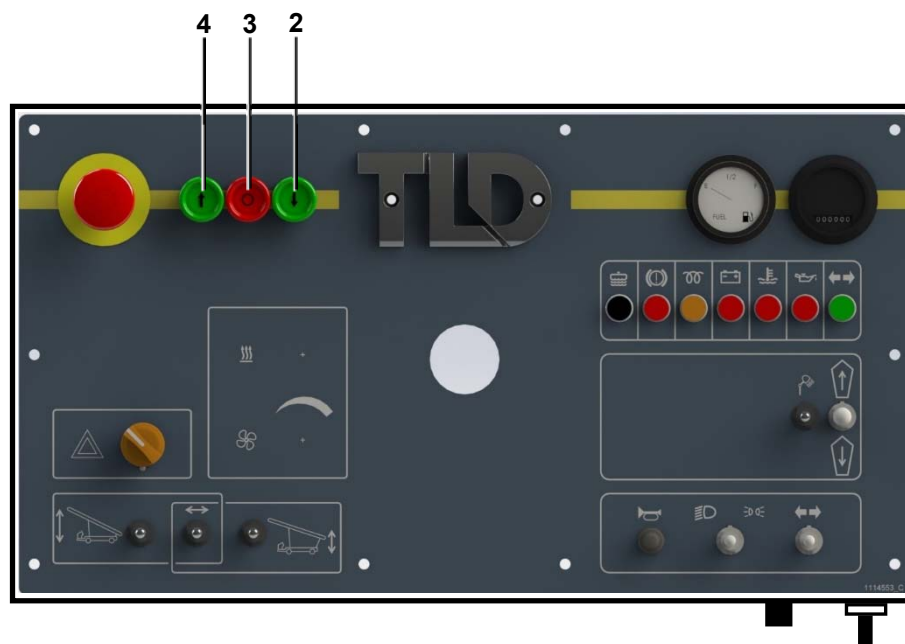
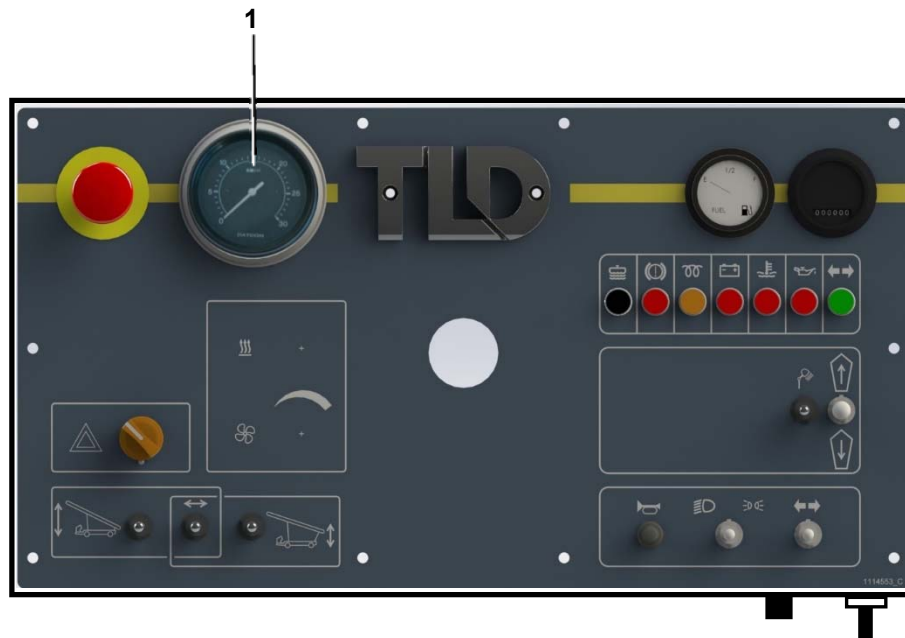
Fig 1-3-4: Control position (specific versions)



<b>1</b> - Engine fault	<b>6</b> - Emergency stop
<b>2</b> -Start button	<b>7</b> - Fuel low level light
<b>3</b> -Smart key location	<b>8</b> – Location for dial
<b>4</b> - Padlocked emergency stop	<b>9</b> - Heater/Defogger
<b>5</b> - Cooling fluid low level light	<b>10</b> - Ventilation

# 1-3-5-CONTROL POSITION (SPECIFIC VERSIONS) BELT CONTROL FROM DESK

Fig. 1-3-5 : Control from desk



1 - Speedometer
2 - Belt rotation command (to REAR)
3 - Mat rotation stop
4 - Belt rotation command (to FRONT)



## 1-3-6-STANDARD BOOM CONTROL UNITS

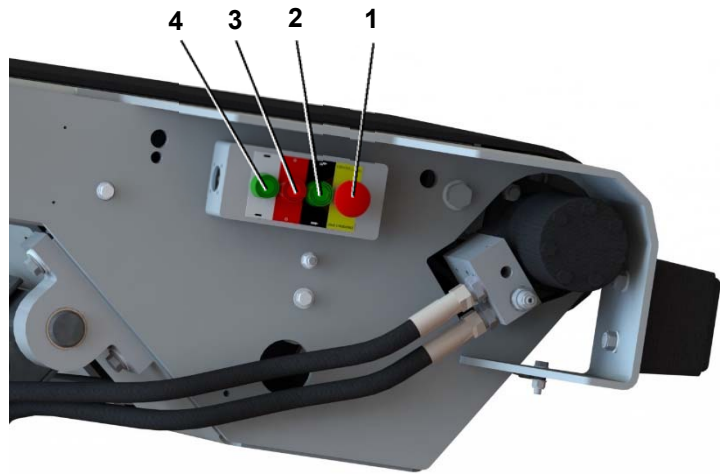
*Fig 1-3-6: Standard control units*



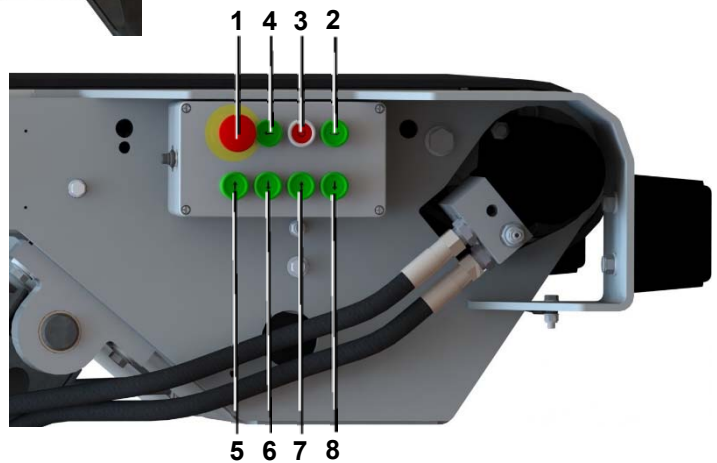
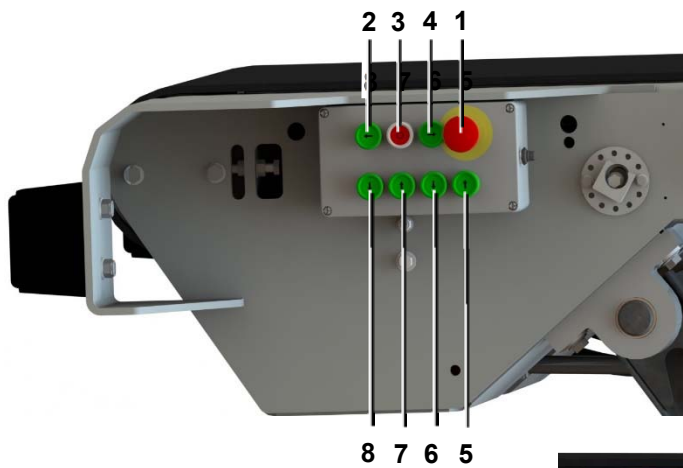
1 - Emergency stop
2 - Belt rotation command (to REAR)
3 - Mat rotation stop
4 - Belt rotation command (to FRONT)

## 1-3-7-BOOM CONTROL UNITS (DEPENDING ON VERSIONS)

*Fig. 1-3-7-1: Rear LH control unit*



*Fig. 1-3-7-2: Rear RH control unit*



*Fig. 1-3-7-3: Rear RH control unit*



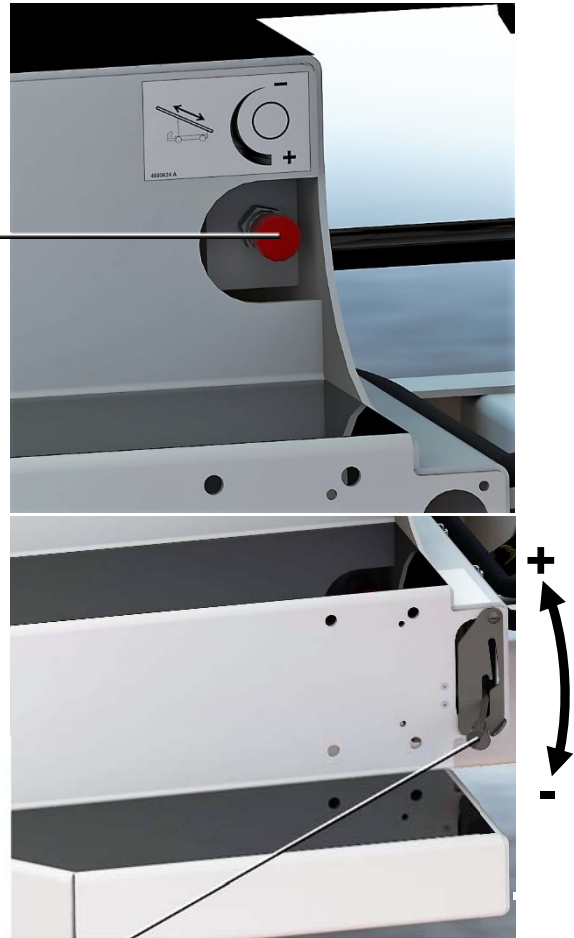
*Fig. 1-3-7-3: Front LH emergency stop*

1	Emergency stop
2	Belt rotation command (to REAR)
3	Mat rotation stop
4	Belt rotation command (to FRONT)
5	Front boom elevation
6	Front boom descent
7	Rear boom elevation
8	Rear boom descent

### 1-3-8- VARIABLE BELT SPEED (DEPENDING ON VERSIONS)

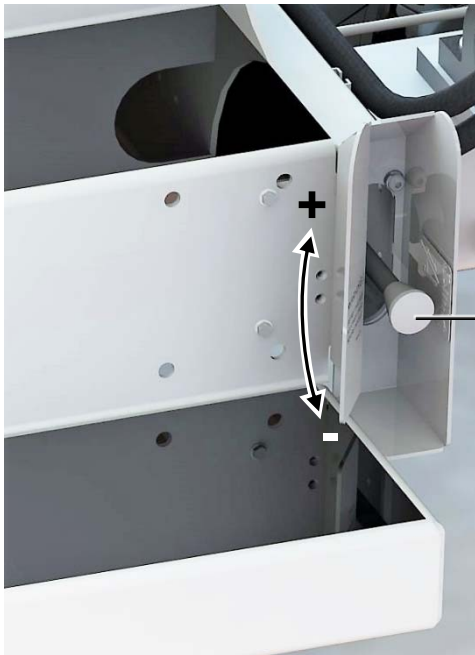
*Fig. 1-3-8-1: Hydraulic hand throttle wheel*

Hand throttle wheel - 1



*Fig.1-3-8-2: Mechanic hand throttle lever*

Hand throttle lever



*Fig. 1-3-8-3: Electronic hand throttle lever*

## 2-USE



### **IMPORTANT:**

**BEFORE USING THE MACHINE, READ THE GENERAL SAFETY REQUIREMENTS IN CHAPTER 0**



### **WARNING:**

**IT IS PROHIBITED TO OPEN THE ELECTRIC AND HYDRAULIC COMPARTMENTS. THESE OPERATIONS ARE RESERVED FOR MAINTENANCE PERSONNEL.**

## 2-1-ACCESS AND CONTROL

- The control station may only be accessed when the machine is at a stop.
- After making sure that the vehicle is secure (environment, safety, etc.), .....



### **WARNING:**

**DO NOT CLIMB ON THE MACHINE WHEN IT IS RUNNING.**



### 2-1-1-CHECKS BEFORE START-UP

- Inspect the machine, check that the rear view mirrors are in place and in good condition and that the levers and other components are in good condition.
- Check that there are no leaks on the machine;
- Carry out a visual check on the full tyres (for any wear, damage etc.);
- Never use a machine that is obviously not in good condition or not in a fully operational state.
- Check that the equipment is operating correctly (check signalling, emergency shut-down, that all covers are closed and locked and check all safety-related components).



## 2-2-ACTIONS ON ALARMS

Alarm	Location	Definition	Action
"Engine oil pressure" alarm	Light item 11 Fig. 1-3-2	Engine oil pressure fault	Immediate shutdown: return to workshop as soon as possible.
"Engine temperature" alarm	Light item 12 Fig. 1-3-2	See engine manual (CHAP. 5)	Immediate shutdown: return to workshop as soon as possible.
"Battery fault" alarm	Light item 13 Fig. 1-3-2	Battery fault	return to workshop as soon as possible.
"Min brake fluid" alarm	Light item 15 Fig. 1-3-2	Minimum brake fluid limit reached.	Immediate shutdown: return to workshop as soon as possible.

## 2-3-USING VEHICLES AT LOW TEMPERATURES

In cold weather, remove the glass from the headlights and the windscreen and other windows if the vehicle has a cab.

At low temperatures, hydraulic oil is less fluid and may trigger the clogging indicators.

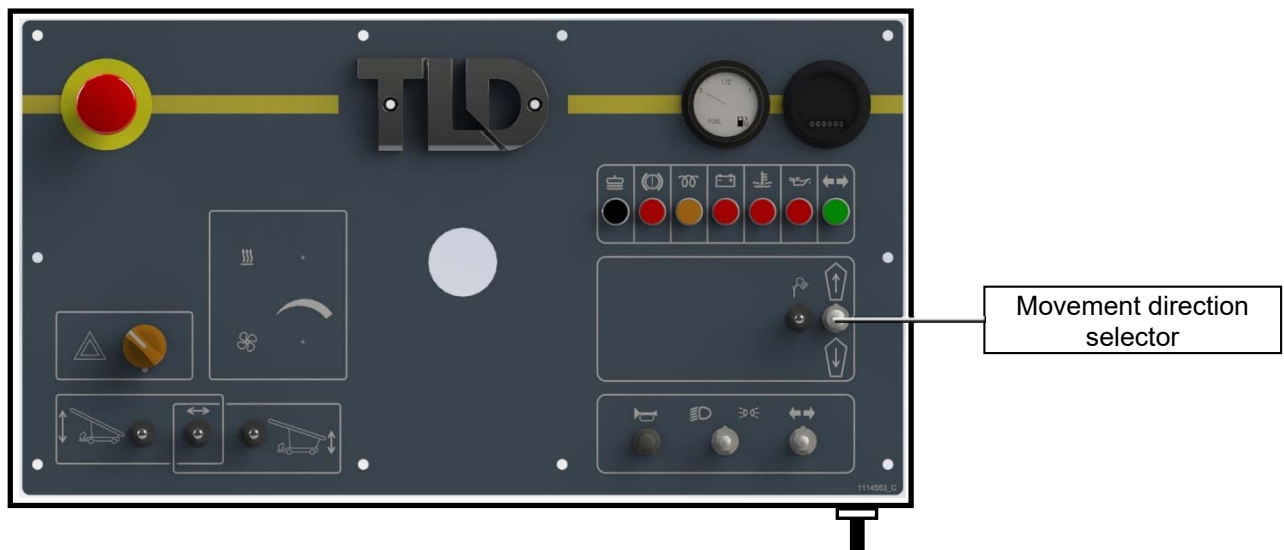
When the vehicle starts, it needs to run for 5 minutes to warm up the oil before carrying out any operations.



## 2-4-MAIN BRAKE - ENGINE BRAKE

- Main brake: by activating the brake pedal, works on the front wheels.
- Engine brake: - when the accelerator pedal is released.

## 2-5- MOVEMENT DIRECTION SELECTOR



Movement direction selector

*Fig 2-5: Driving position*

The transmission is mechanical;

The movement direction selector only has three positions: Neutral, forward and reverse.

- Forwards motion : selector pushed to the front of the driver.
- Reverse motion : selector pushed to the rear of the driver.
- Neutral : selector in the centre

## 2-6-PARKING

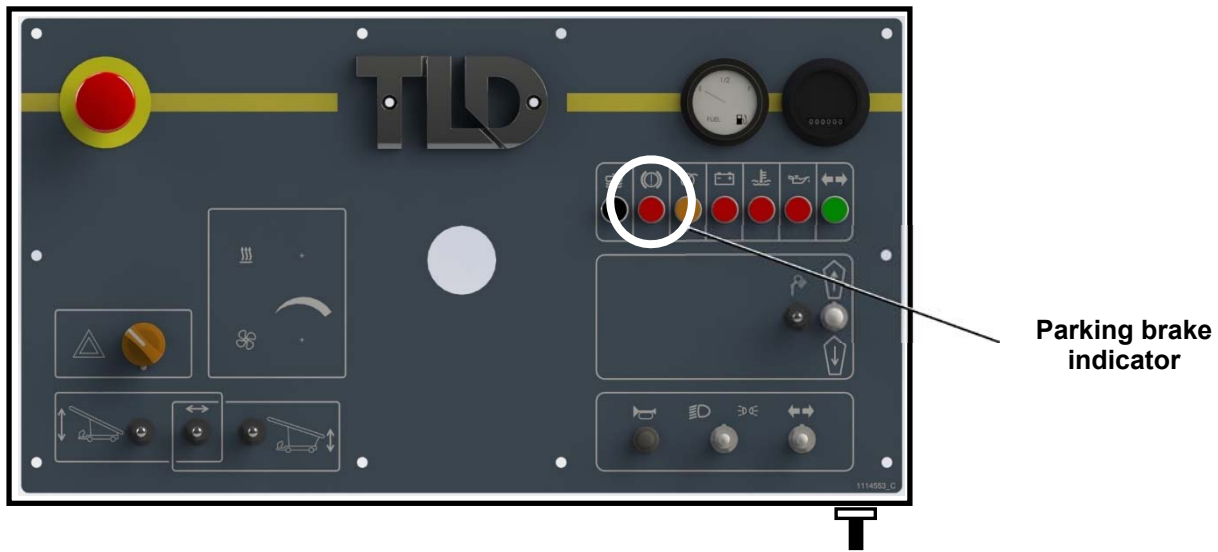
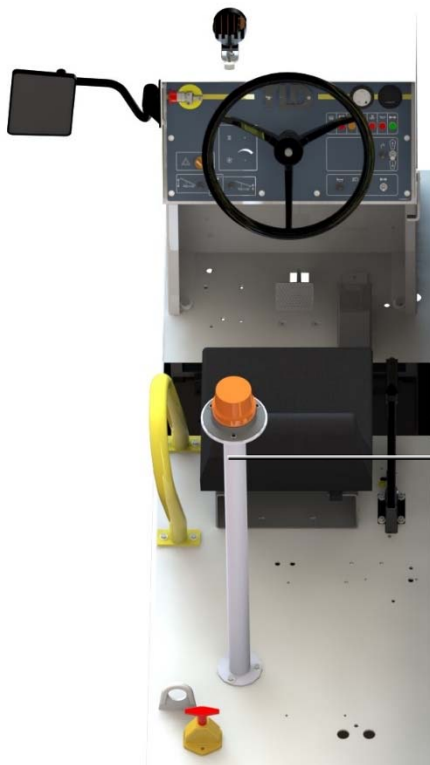


Fig. 2-6: Control panel



Parking brake: positive, works on the rear wheels.

The command works by pulling the handle on the parking brake (**5 fig. 1-3-1**), movement selector in neutral position and vehicle stopped.

A red light (**15 fig. 1-3-2**) comes on when the parking brake is activated.

5



**WARNING:**  
THE PARKING BRAKE IS DISENGAGED AS  
SOON AS THE HANDLE IS RELEASED.

Extract Fig 1-3-1: Driving position

## 2-7-PLACING IN SERVICE



**WARNING:**  
MAKE SURE THAT THERE IS NO-ONE ON THE VEHICLE AND THAT THE ENVIRONMENT IS SECURE.



**NOTE:**  
BEFORE COMMISSIONING, SEE THE START-UP PROCEDURES IN THE ENGINE BOOKLET.



**NOTE (DEPENDING ON VERSIONS) :**  
MAKE SURE THAT THE BELT ROTATION SPEED ADJUSTMENT IS IN MINIMUM SETTING.

- Check that there are no emergency stop buttons engaged.
- Establish the electrical circuit using the battery cut-off (**3 Fig 1-3-1**);
- Fasten the safety belt.
- Make sure that the movement direction selector (**19 Fig 1-3-2**) is in neutral;
- Check the level of fuel using the gauge (**9 Fig 1-3-2**);

### 2-7-1-SWITCHING ON

- If the vehicle has warm-up light 14 (**fig. 1-3-2**), wait until it goes out;
- Activate the starter (**key 3 fig. 1-3-2**) by accelerating;



**NOTE:**  
FOR DEUTZ ENGINE: IF YOU NEED TO RE-START, WAIT 2 SECONDS AT "OFF" THEN 6 SECONDS AT "ON" AND ONLY THEN RE-START.

**OFF 2 s. → ON 6 s. → START**



**NOTE:**  
IF THE VEHICLE HAS A PUSH BUTTON 2 (FIG. 1-3-4), INSTEAD OF USING THE KEY TO START, YOU MUST PRESS IT TO START THE MACHINE.



**NOTE:**  
FOR THE "ENGINE RUNNING" SAFETY TO BE ACTIVE, YOU MUST ACCELERATE TO START THE VEHICLE.



**NOTE:**  
AFTER START-UP, MAKE SURE THAT THE LIGHTS ITEM 11 AND 13 (FIG 1-3-2) ARE OFF.



**NOTE:**  
FOR PERKINS 404D-22 ENGINE: THE PERKINS 404D-22 DIESEL ENGINE IS EQUIPPED WITH A SELF-EXCITING ALTERNATOR WHICH RELIES ON THE RESIDUAL MAGNETISM IN THE FIELD COIL TO START THE ALTERNATOR CHARGING THE BATTERY. IF THE BATTERY CHARGE LIGHT (ITEM 13) IS NOT EXTINGUISHED WITHIN 20 SECONDS AFTER THE ENGINE HAS BEEN STARTED AND RUNNING, THE PROBLEM MAY BE CAUSED BY A WEAK RESIDUAL MAGNETISM IN THE FIELD COIL. PLEASE DEPRESS THE ACCELERATOR PEDAL A QUARTER OR HALF-WAY DOWN BRIEFLY TO REV UP THE ENGINE. THIS WILL HELP TO EXCITE THE ALTERNATOR FIELD COIL AND GET THE ALTERNATOR TO START PRODUCING VOLTAGE.

## 2-8-DRIVING:



**WARNING:**

DO NOT TRY TO ADJUST THE SEAT POSITION WHILE DRIVING.



**WARNING:**

CHECK THAT THERE ARE NO PEOPLE OR OBJECTS NEAR THE MACHINE.



**WARNING:**

FOR SAFETY REASONS (TIPPING OVER, LACK OF VISIBILITY, ETC.) IT IS PROHIBITED TO DRIVE THE MACHINE WITH THE BOOM RAISED; THIS IS ONLY AUTHORISED AT SLOW SPEEDS TO APPROACH THE AEROPLANE.

- Check that there are no people or objects near the machine.
- Select the movement direction (**19 fig. 1-3-2**) forward or reverse;
- Release the parking brake;
- Gradually press the accelerator pedal (**1 fig. 1-3-1**).



**WARNING:**

WAIT UNTIL THE MACHINE HAS COME TO A COMPLETE STOP BEFORE SWITCHING TO NEUTRAL AND MOVING IN THE OPPOSITE DIRECTION.

## 2-9-BOOM ELEVATION / DESCENT:



**WARNING:**

MAKE SURE THAT THE VEHICLE IS SECURE (ENVIRONMENT, SAFETY, ETC.) BEFORE STARTING TO RAISE OR LOWER THE BOOM.

### 2-9-1-FRONT ELEVATION

- Lever **7 fig.1-3-2** to the left then lever **1 fig. 1-3-2** upwards.

### 2-9-2-FORWARD DESCENT

- Lever **7 fig.1-3-2** to the left then lever **1 fig. 1-3-2** downwards.

### 2-9-3-REAR ELEVATION

- Lever **7 fig.1-3-2** to the right then lever **2 fig. 1-3-2** upwards.

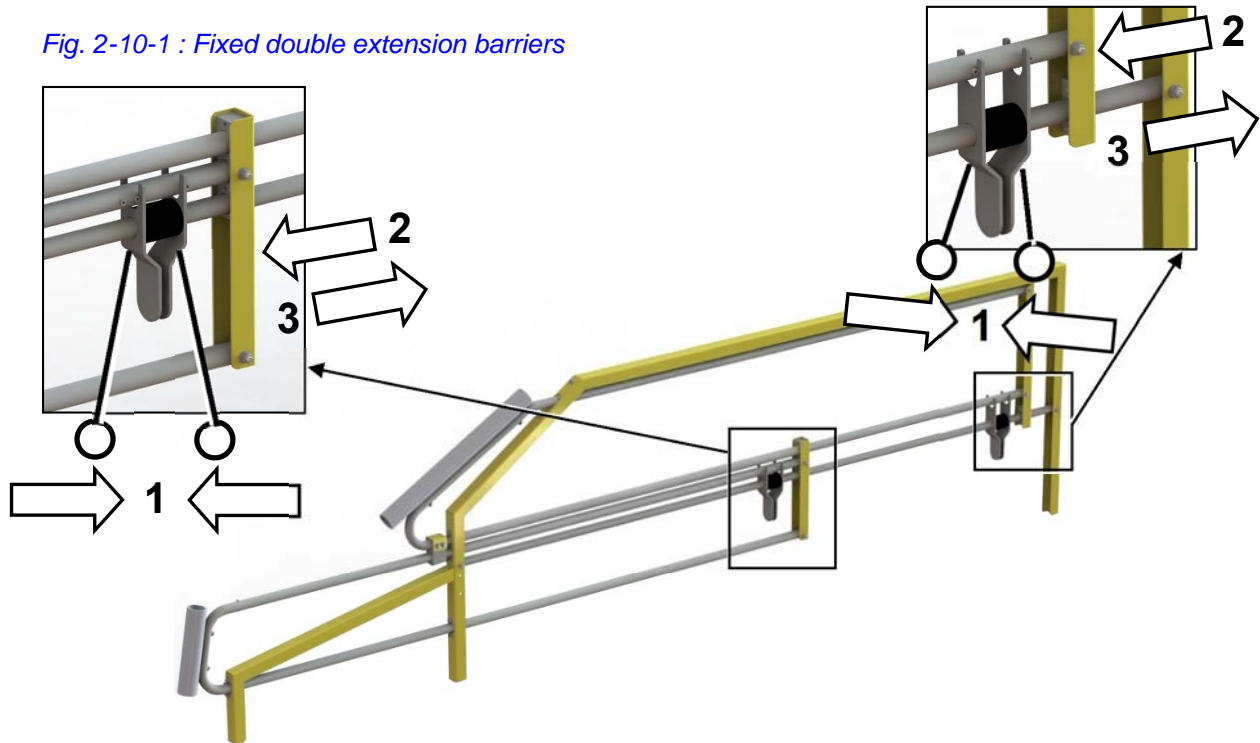
### 2-9-4-REAR DESCENT

- Lever **7 fig.1-3-2** to the right then lever **2 fig. 1-3-2** downwards.

## 2-10-BARRIER ADJUSTMENT (DEPENDING ON VERSIONS):

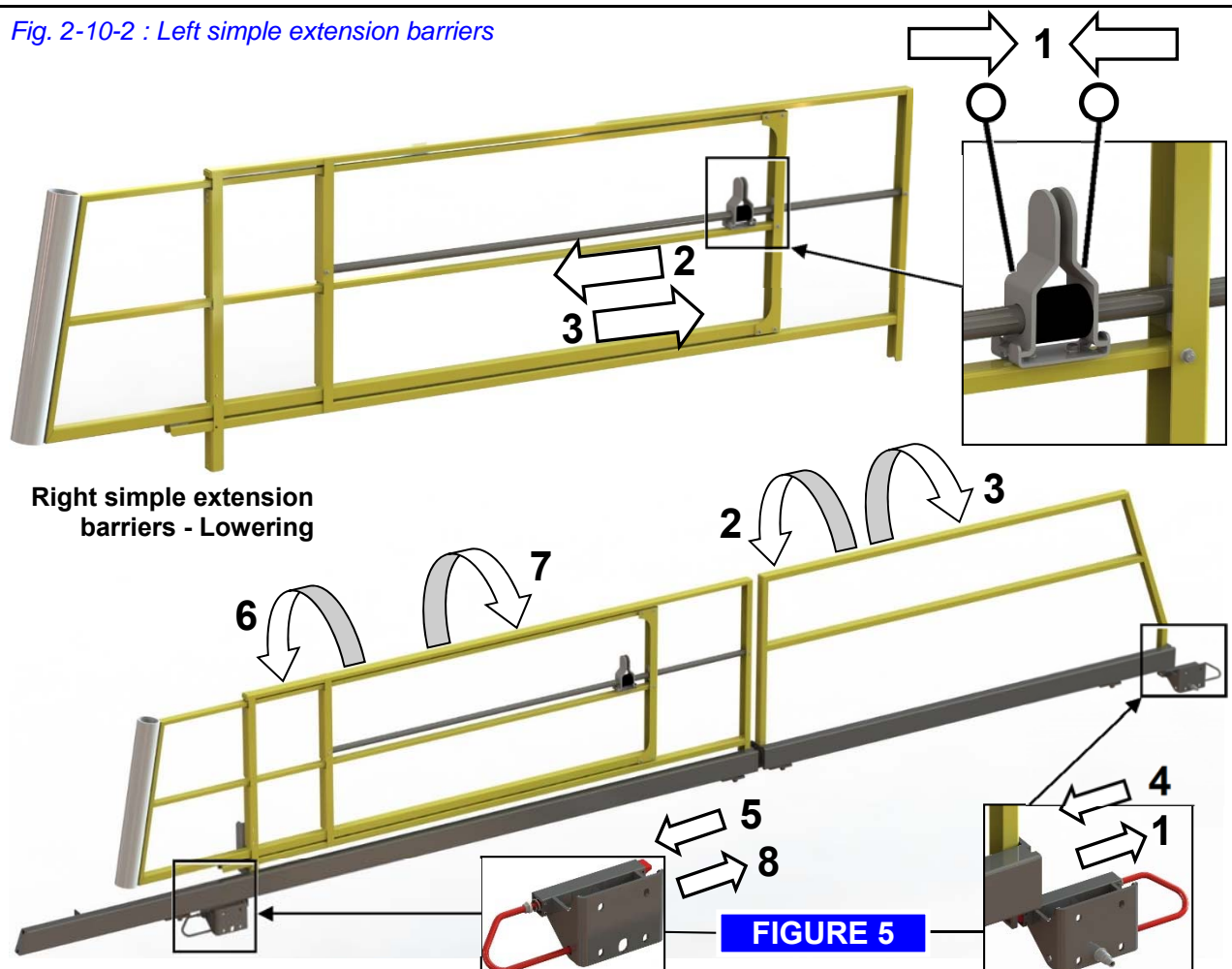
### 2-10-1-FIXED DOUBLE EXTENSION GUARD RAILS

Fig. 2-10-1 : Fixed double extension barriers



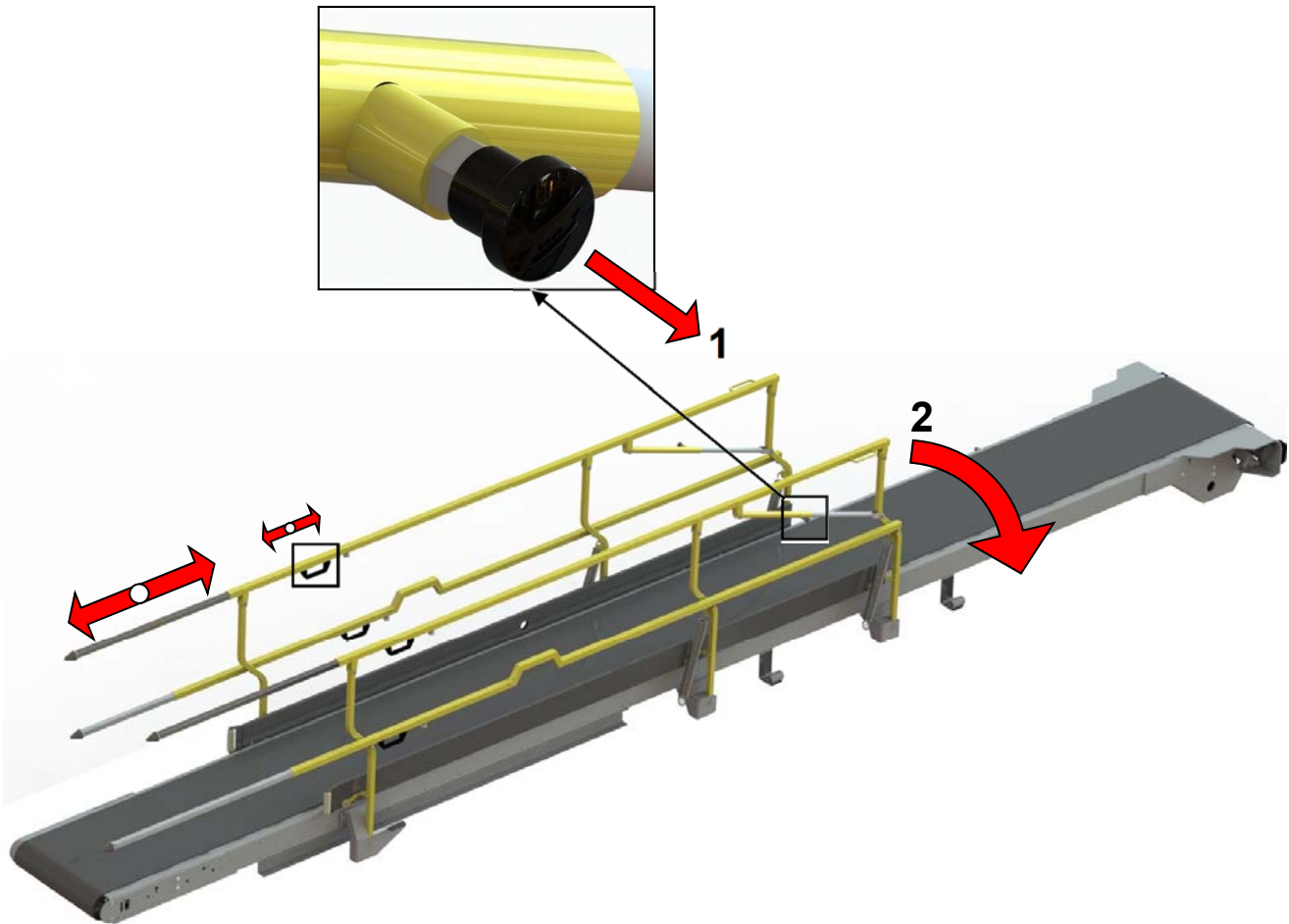
### 2-10-2-LEFT SIMPLE EXTENSION GUARD RAILS

Fig. 2-10-2 : Left simple extension barriers





### 2-10-3-RETRACTABLE GUARD RAILS

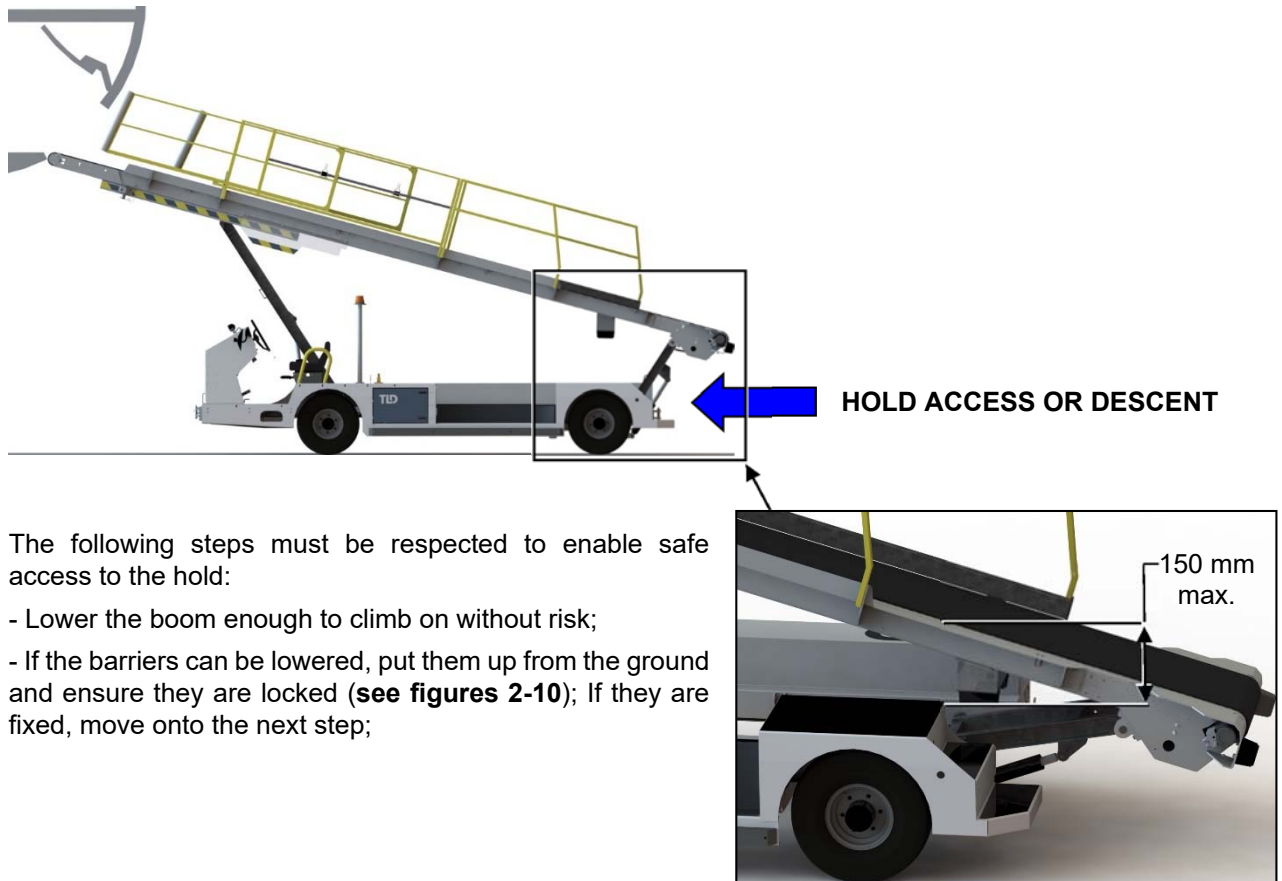


## 2-11-OPERATION



**WARNING:**  
NEVER START OR ACTIVATE THE VEHICLE'S LEVERS AND CONTROLS FROM OUTSIDE THE DRIVING POSITION.

### 2-11-1-OPERATOR PERSONNEL HOLD ACCESS



The following steps must be respected to enable safe access to the hold:

- Lower the boom enough to climb on without risk;
- If the barriers can be lowered, put them up from the ground and ensure they are locked (**see figures 2-10**); If they are fixed, move onto the next step;



**WARNING:**  
DO NOT USE THE CONVEYOR AS A WAY TO ACCESS THE HOLD WITHOUT TWO BARRIERS OR WHOSE BARRIERS ARE DEFECTIVE.

- Bring the vehicle close to the plane, place the plane flush with the end of the boom or bring it gently into the hold according to your company's own procedures (for this second case the hold must be open before making this manoeuvre to avoid any repositioning of the vehicle with personnel on the boom);
- Set the movement direction selector to "NEUTRAL" position;
- Engage the parking brake;



**WARNING:**  
ACCESS IS STRICTLY PROHIBITED WHEN THE BELT IS RUNNING.

- Access or lower the boom after positioning the rear of the boom as shown **figure 2-11** using steps and the first upright of the barriers;
- Adjust the sliding barrier extension to around 10 cm from the fuselage using the handle (**see figures 2-10**) to release it then lock it. Do not use if there is a locking fault.

## 2-11-2-FOR OVERFLOWING LOADS

- As the hold operator is in the plane, move the vehicle back and lower the boom;
- From the ground, and if the vehicle has one, lower the right hand barrier;
- Raise the boom and place it against the plane again.

After transferring the load, reverse the procedure:

- Move the vehicle back;
- Lower the boom;
- From the ground, put the barrier up;
- Raise the boom and place it against the plane;
- Set the movement direction selector to neutral then engage the parking brake.

The operator may now come down from the hold.

## 2-11-3-BAGGAGE LOADING/UNLOADING



**DANGER :**

**JAMMING RISK WHEN THE BELT IS RUNNING.**



After positioning the boom correctly to enable the baggage to be loaded safely, push one of the buttons (4 **fig.1-3-5, 1-3-6 or 1-3-7**) on one of the button units located on the boom.

Pressing one of the buttons (3 **fig.1-3-5, 1-3-6 or 1-3-7**) will stop the belt from rotating.

Proceed in the same way for unloading but with one of the buttons (2 **fig.1-3-5, 1-3-6 or 1-3-7**).

## 2-12-STOPPING



**WARNING:**

ALWAYS CHECK THAT THE PARKING BRAKE IS ENGAGED (GEAR SELECTOR IN NEUTRAL).



**WARNING:**

NEVER CUT THE CONTACT WHILE MOVING!!!

### 2-12-1-SWITCHING OFF

- Cut the contact using the key (3 fig. 1-3-2);
- The supply indicator lights go out;
- Disconnect the battery cut-off (3 fig. 1-3-1).



**BLANK PAGE**



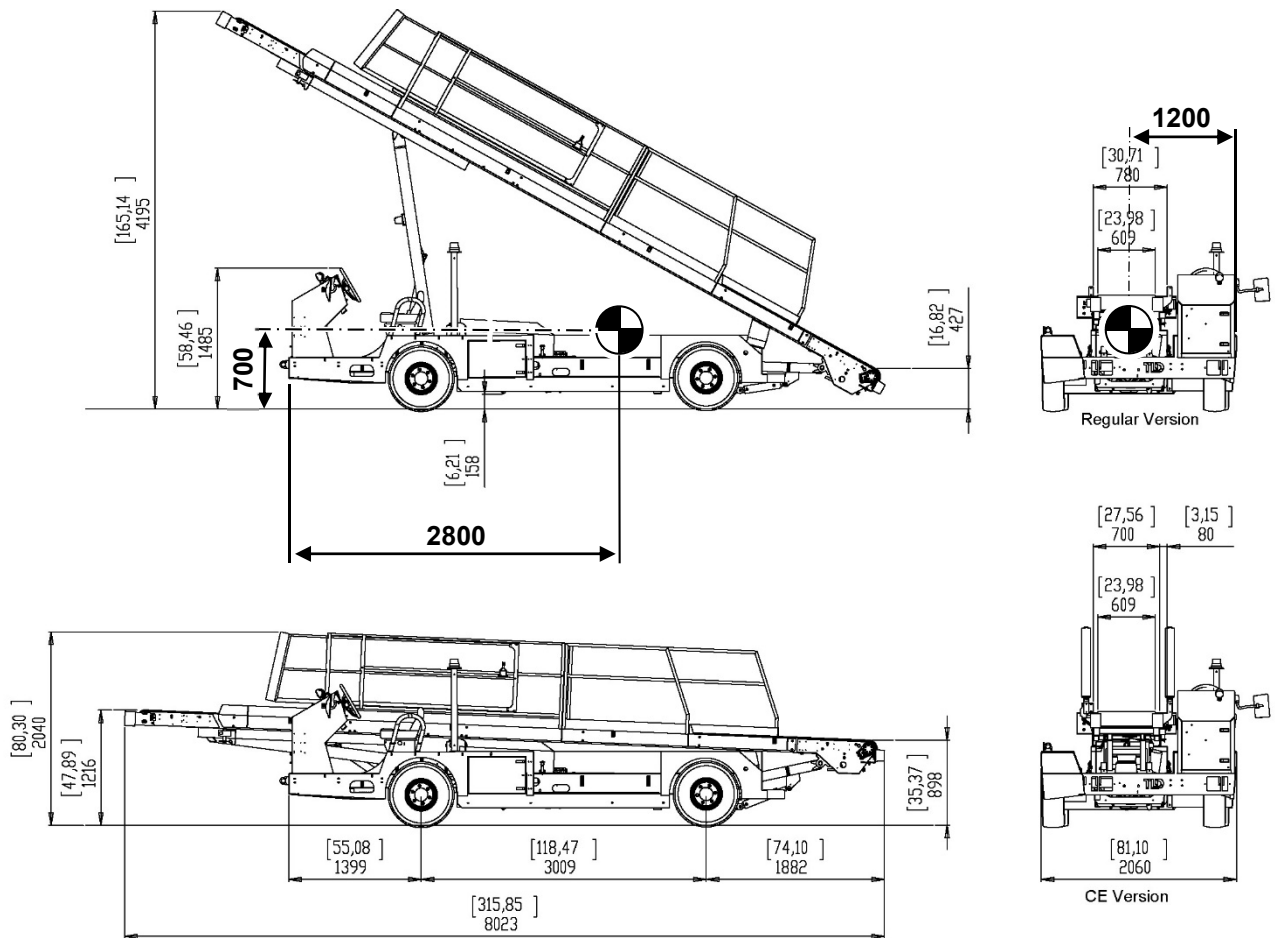
## 3-SPECIFICATIONS AND CAPACITIES

### 3-1- DIMENSIONS



**NOTE:**  
ALL THE CHARACTERISTICS WITH NO TOLERANCE IN THIS PARAGRAPH ARE PROVIDED FOR INFORMATION PURPOSES.

*Fig 3-1: dimensions*



### 3-2-TURNING CIRCLE

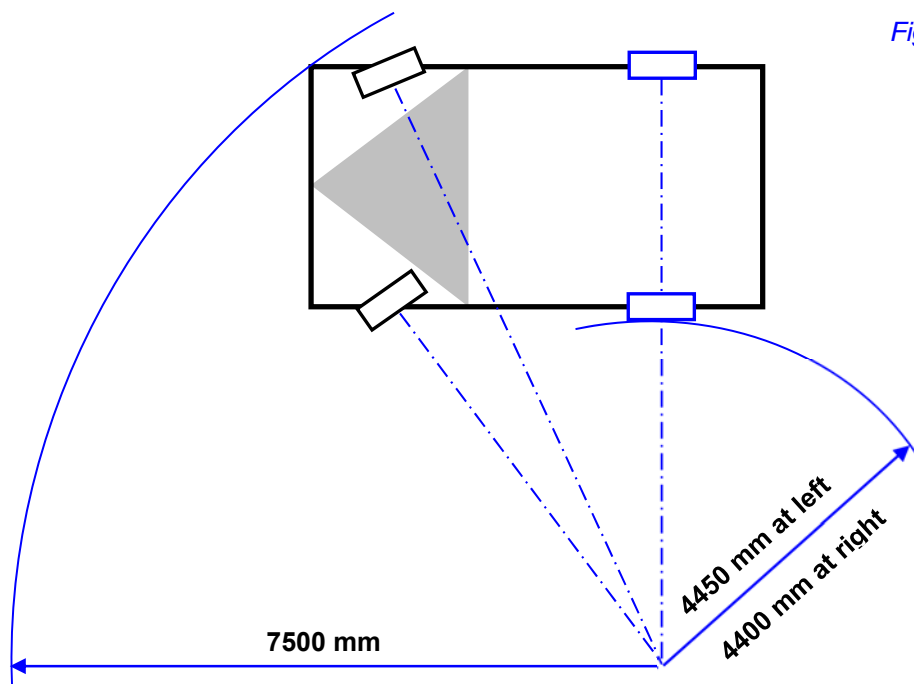


Fig 3-2: Turning circles

### 3-3- NON-LOADED WEIGHT

- Total non-loaded weight : see identification plate

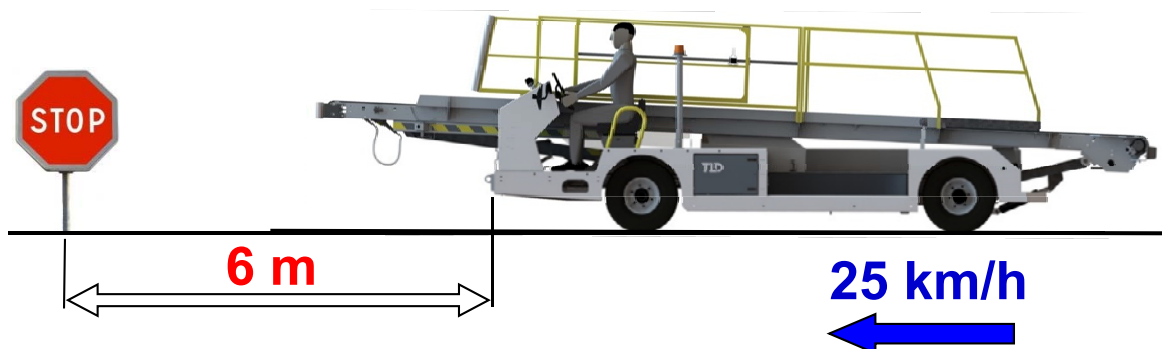
### 3-4-PERFORMANCE

- Maximum speed : 25 Km/h.
- Usage temperature : from -20°C to + 45°C.
- Load transfer speed : 18 m/mn or 23 m/mn (depending on versions)

### 3-5-BRAKING DISTANCES



**WARNING:**  
THE BRAKING DISTANCES INDICATED ARE MINIMUM DISTANCES AND ARE INCREASED IF GRIP IS REDUCED (RAIN, SNOW, BLACK ICE, MUD, GREASY SURFACE, ETC.). DRIVING SPEED MUST BE REDUCED IN THIS CASE.



### 3-6-ACOUSTIC LEVEL

#### NBL

DECLARED DISASSOCIATED SOUND EMISSION VALUES  
According to ISO 4871 :1996

	Stopping, slow down,	Stopping, accelerated	Stopping, accelerated,
Acoustic power level weighted A, $L_{WA}$ (reference 1pW), in decibels	-	-	-
Uncertainty, $K_{WA}$ , in decibels	-	-	-
Emission acoustic pressure level weighted A measured, $L_{pA}$ (reference 20μPa) on the operator station, in decibels	on the driving position 66 dB(A)	on the driving position 75.3 dB(A)	on the boom rear. 71.7 dB(A)
Uncertainty, $K_{pA}$ , in decibels	4.1 dB(A)	4.1 dB(A)	4.1 dB(A)
Emission acoustic pressure level weighted A measured, $L_{pA}$ (reference 20μPa) at the following locations*,	65.5 dB(A) 1m away*	77.2 dB(A) 1m away*	-
Uncertainty, $K_{pA}$ , in decibels	4.1 dB(A)	4.1 dB(A)	-

Values determined according to the acoustic test code provided in NF EN 1915-4 with the use of basic standards NF EN ISO 4871 :1996, NF EN ISO 3744 :1995 and NF EN ISO 11201 : 1996.

NOTE - The sum of a value measured and the associated uncertainty represents an upper limit of the range which is likely to contain the values measured.

### 3-7-VIBRATION LEVEL

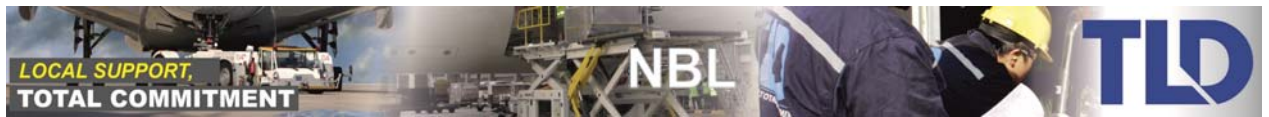
#### NBL

Vibration emission value declared according to NF EN 12096: 1997

	Body	Hands - arms
Vibration emission measured value: a	$a_{wz} = 1.14 \text{ m/s}^2$	$a_{wh}$ Less than $2.5 \text{ m/s}^2$
Uncertainty: K	$0.35 \text{ m/s}^2$	$1.25 \text{ m/s}^2$
Values determined according to:	NF EN 1915-3 : 2005	NF EN 1915-3 : 2005 for the operating conditions; NF EN 1032 : 2003 for the locations and calculations



**BLANK PAGE**



## 4-DESPATCH - TRANSPORT - HANDLING

### **PREPARATION**

- Store the manual in its housing;
- Place a dehydrating sachet in the electrical cabinets;
- Fill the fuel tank to a quarter of its capacity;
- Disconnect the electrical power supply with the battery cut-off;
- Close and lock the covers;
- Secure all moving components;

### **TRANSPORT**

- Engage the parking brake;
- To protect the machine against corrosion during transport, a paraffin-based temporary protection system can be applied. Take care not to cover optical cells. Remove the product on arrival using an appropriate solvent.
- Lock the doors;
  - Isolate the electrical circuit using the battery cut-off;



**REITEM:**  
**DO NOT PLACE THE CHAINS ON THE DECKS OR THE VEHICLE ITSELF**

#### 4-1-LIFTING POINT FOR SLINGS

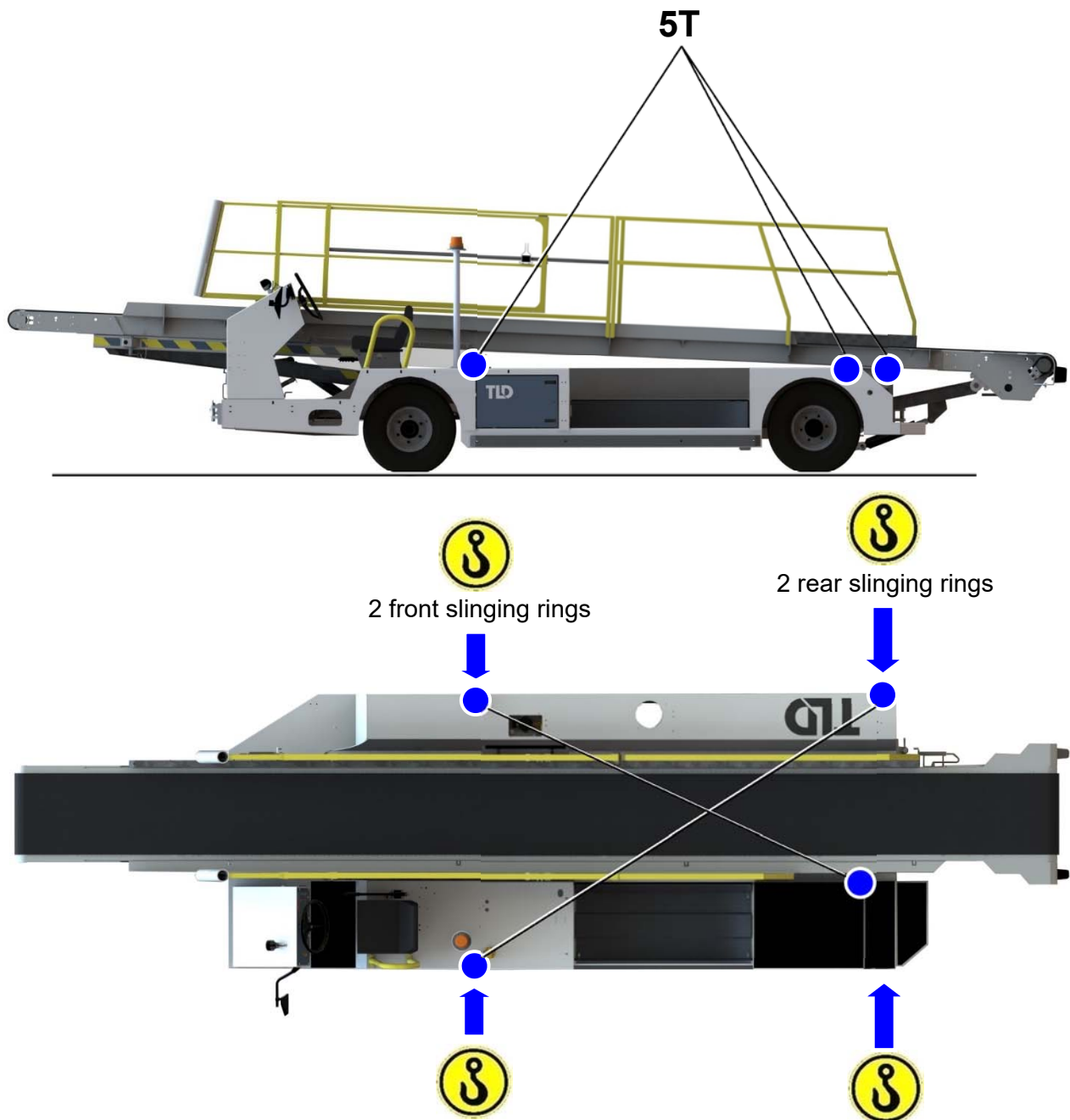


Fig 4-1: Slinging



4-2-LIFTING POINTS FOR JACKS

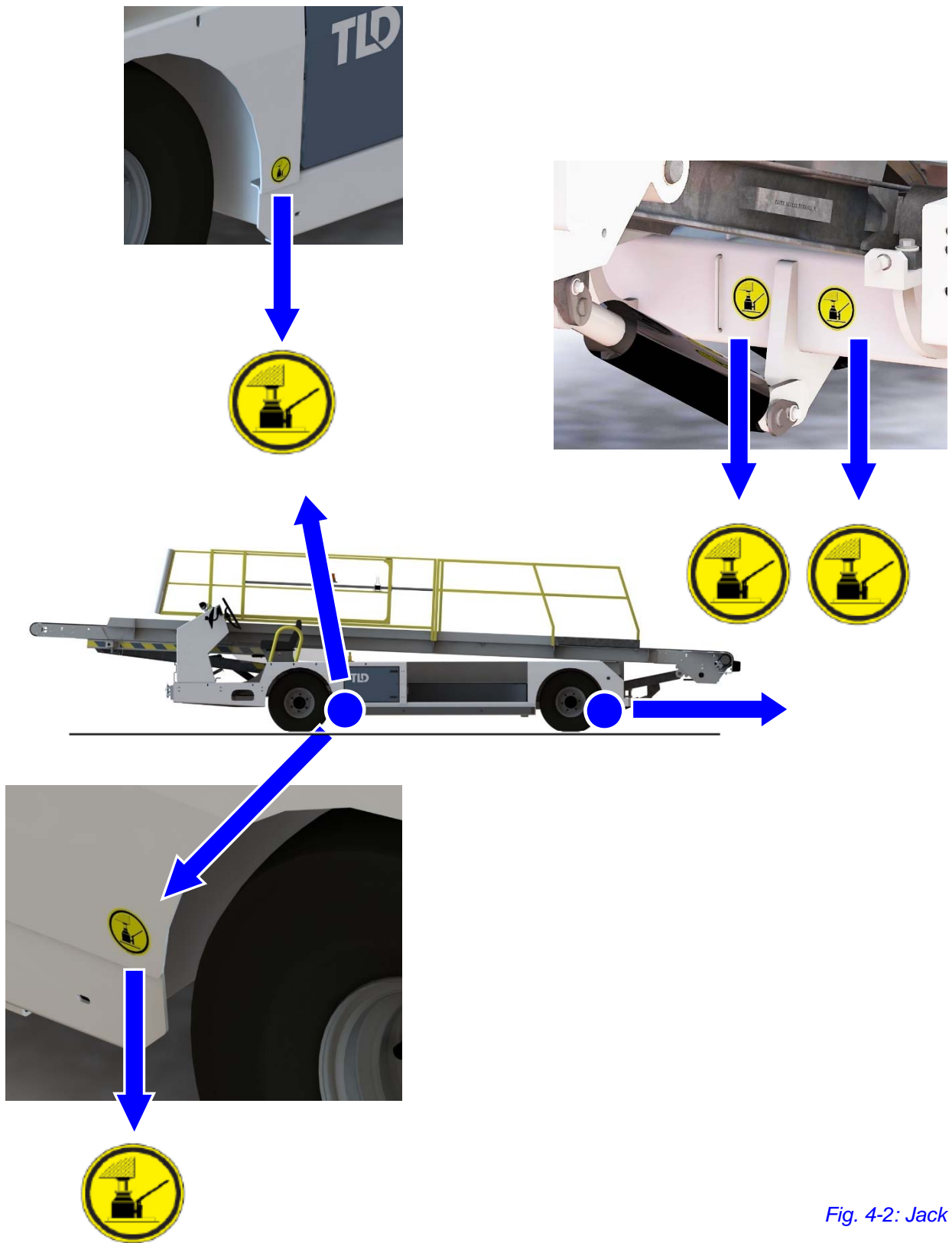

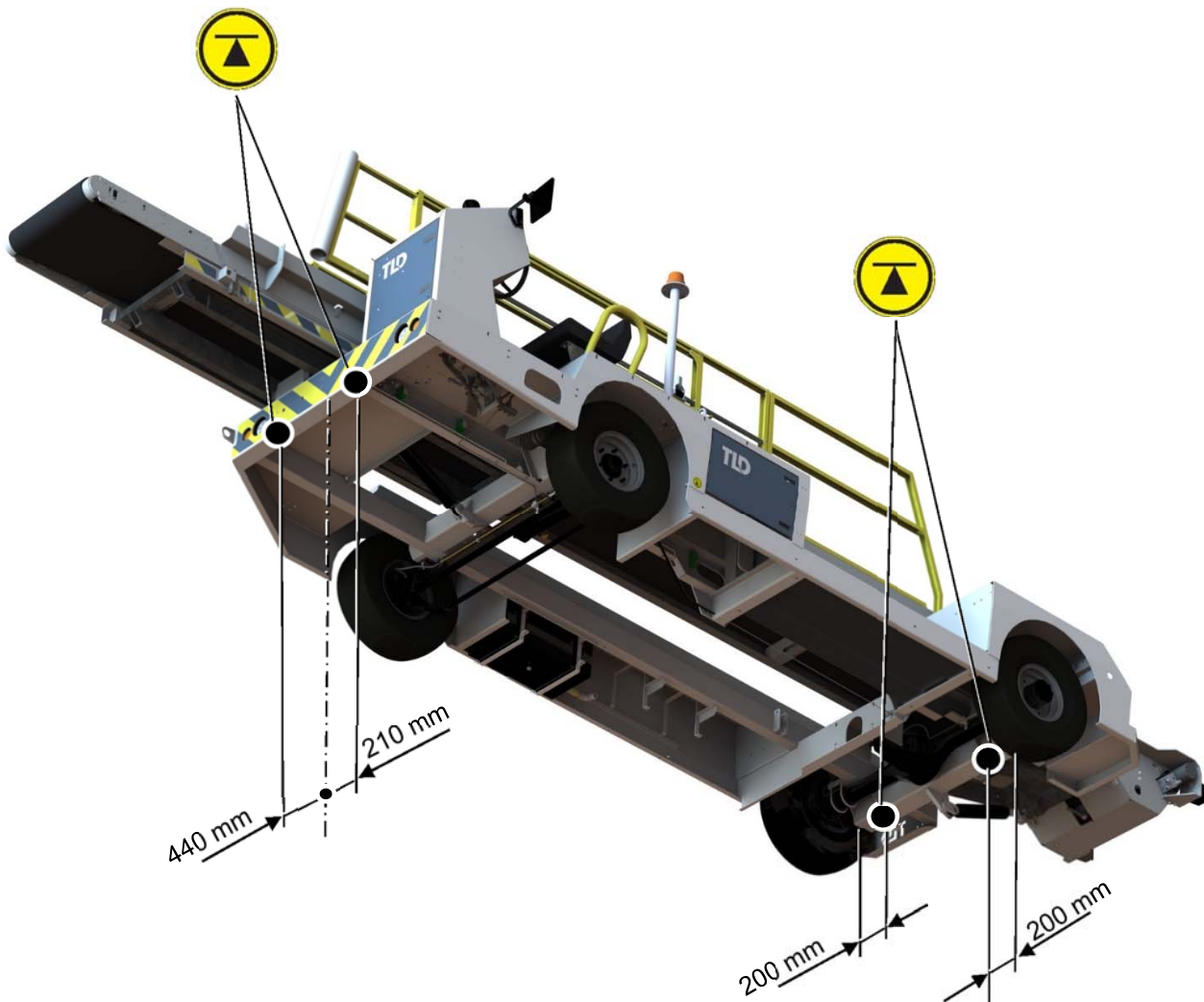


Fig. 4-2: Jack

To lift the vehicle, use a jack that is adpated to the vehicle's weight. Place it at the locations indicated by the logo  .

### 4-3-SUPPORT POINTS

Fig 4-2: Support points



#### CHOCKING

Once lifted, the vehicle must be chocked and supported with support props appropriate to the vehicle's weight.



**DANGER: CRUSHING**  
NEVER WORK BENEATH A VEHICLE IF IT IS NOT CORRECTLY SUPPORTED.  
LIFTING JACKS ARE NOT APPROPRIATE SUPPORTS.  
CHECK THAT THE SUPPORTS ARE OF APPROPRIATE CAPACITY AND  
DIMENSIONS BEFORE CARRYING OUT ANY INTERVENTION.



## 5-STORAGE

The tips given below are intended to prevent any damage to the vehicle when it is removed from service for a long period.

**Store the machine in a sheltered location, protected from sunlight, sand and dust, wind, rain and salty atmospheres.**

### 5-1-ELECTRICAL PARTS:

- Disconnect the machine from the electricity network ;
- Disconnect the machine's battery ;
- Insert moisture absorbing bags (silicate) inside the electrical cabinet ;
- Place the platform and the chassis control units in plastic bags with moisture absorbing bags (silicate). Check that the bags are correctly closed ;
- Close and lock the electricity cabinet ;

#### Battery:

- If the batteries are removed from service for a long period, they must be stored fully charged in a dry room away from frost. To ensure that the battery is always ready to be used, charge it up every month and check the water level; top up if necessary;
- Every three months check that there is no damage or corrosion present on the electrical connections; replace the moisture absorbing bags if necessary;
- At the end of the storage period, remove the plastic bags and the moisture absorbing bags and check the tightening on the electrical connections.

### 5-2-MECHANICAL PARTS:

- Clean the outside of the machine completely;
- The unpainted surfaces must be protected with polishing grease and an anti-corrosion spray for the exterior metallic parts;
- Every 3 months check that there is no corrosion on the machine. If corrosion appears, clean and replace the protection immediately;
- Check the chassis structure to distance the wheels from the ground.

### 5-3-HYDRAULIC CIRCUIT:

Use this procedure once the hydraulic circuit has been removed from service.

- Before shutting down, retract the cylinders completely when possible;
- When the cylinders cannot be retracted (steering cylinder), roll strips impregnated with grease around the axis;
- Fully clean the outside of the hydraulic tank, the hydraulic components and the pipes;
- Repair any hydraulic fluid leaks;
- Block the hydraulic tank vent;
- Check that the hydraulic tank is sealed;
- Check that all the hydraulic valve setting mechanisms are fully protected against corrosion using grease;
- To prevent corrosion, spray all the hydraulic components, the pipes, the flanges and the connectors with an anti-corrosion fluid for the external metallic parts;
- Drain and replace the hydraulic oil in the tank, the hydraulic pump and the engine casing every year;



- Every 3 months check that there is no corrosion on the hydraulic components, in particular on the non-retracted cylinders and the hydraulic connectors. Clean and spray with anti-corrosion fluids for the exterior metal parts or replace the strips impregnated with grease if necessary;

At the end of the storage period:

- Remove the cap and replace the tank's vent cartridge;
- Remove the strips impregnated with grease from the hydraulic circuits;
- Drain, clean and fill the hydraulic tank with new, clean hydraulic oil;
- Drain and fill the hydraulic pump and engine units;
- Change the return filter cartridge;
- After the first 50 hours' use, add a new return filter cartridge.



**REITEM:**

**IF THE MACHINE IS TO BE STORED FOR OVER 6 MONTHS, IT IS IMPORTANT TO CARRY OUT A COMPLETE MAINTENANCE OPERATION CORRESPONDING TO THIS TIME IN THE MAINTENANCE TABLES (MAINTENANCE CHAPTER)**