

# OPERATING INSTRUCTIONS

**DINO 120T • 120TB**

**Manufacturer:**

**Dinolift Oy**

Raikkolantie 145

FI-32210 LOIMAA

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[www.dinolift.com](http://www.dinolift.com)

**Dealer:**

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**TRANSLATION OF THE ORIGINAL INSTRUCTIONS**

**Valid from serial number**

**120T      120328, 120330 -->**

**120TB     60001 -->**

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## 1. TO THE OPERATOR

Keep this manual on the work platform of the lift in the box reserved for it. If the instruction manual gets lost, damaged, or for some other reason becomes unreadable, order a new manual from the manufacturer.

This manual is intended to familiarise the user with the structure and functions of the work platform, as well as with its appropriate use. The manual provides guidance on the service measures that are the responsibility of the user of the work platform.

Other maintenance procedures on the work platform require special skills, special tools or accurate knowledge about measurements or adjusted values. Guidance for these measures is provided in a separate service manual. For situations that require service or repair measures, contact the authorised service provider, importer or manufacturer.



### **DANGER**

Read all the instructions in this manual before using the aerial work platform. Make sure that you have understood all the instructions. The instructions must absolutely be followed during operation and maintenance of the aerial work platform.

When handling the unit, in addition to the instructions in this manual, the user must also observe the local legislation, the guidelines stipulated by the employer, and regulations valid at the work site.

Dinolift Oy is constantly developing its products. For this reason, the contents of this manual might not always be in full compliance with the most recent version of the product. Dinolift Oy reserves the right to modify the product without prior notice. Dinolift Oy assumes no liability for any problems caused by changed or missing data or mistakes in this manual.

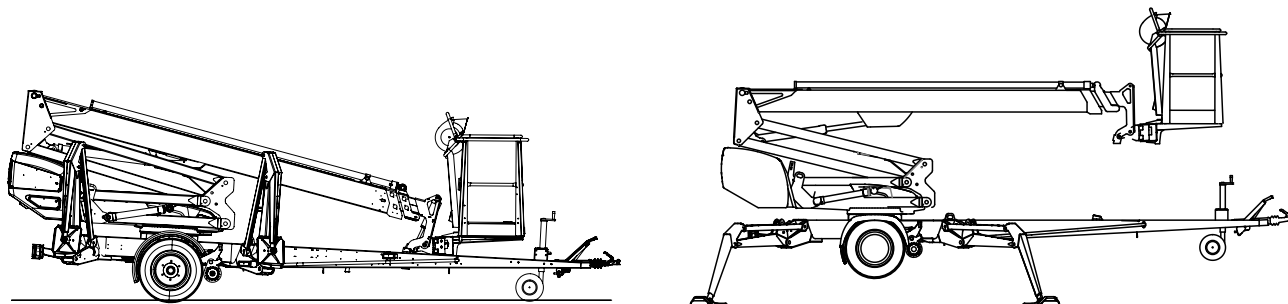
Please consult your dealer or the manufacturer for more information and detailed instructions.

### 1.1. OVERVIEW OF THE UNIT

This unit is a trailer mounted, towable aerial work platform.

It is an aerial work platform, which complies with the EN280 type 1, where travelling is only allowed with the platform in transport configuration.

For the operation the lift shall be supported by its hydraulic outriggers, extended so that the wheels of the trailer lift off the ground.



The primary power source of the lift is electric motor. The outriggers and the boom system are hydraulically powered.

As an option, the lifts can be equipped with a driving device that can be controlled from the ground.

Consult the chapters “Technical data” and “Structure and functions of the work platform” in this manual for more detailed information about the lift.

### 1.2. INTENDED USE OF THE WORK PLATFORM

The aerial work platform is exclusively intended for transferring people and tools and acting as a work platform within its permissible load-bearing capacity and reach (refer to the “Technical Specifications” table and the “Reach Diagram”).

The intended use also covers:

- Following all the instructions in the Operating Instructions
- Performance of the inspections and maintenance operations.

This aerial work platform is NOT insulated, and does not offer protection against contact with electric current. The aerial work platform must not be used for work on electric systems.

Observe the safety instructions concerning the operating environment, and the restrictions given in them,

## NOTICE

**The operator must receive instructions and consent from the manufacturer for all such specific work methods or conditions that the manufacturer has not explicitly defined in the unit's operation and maintenance instructions.**



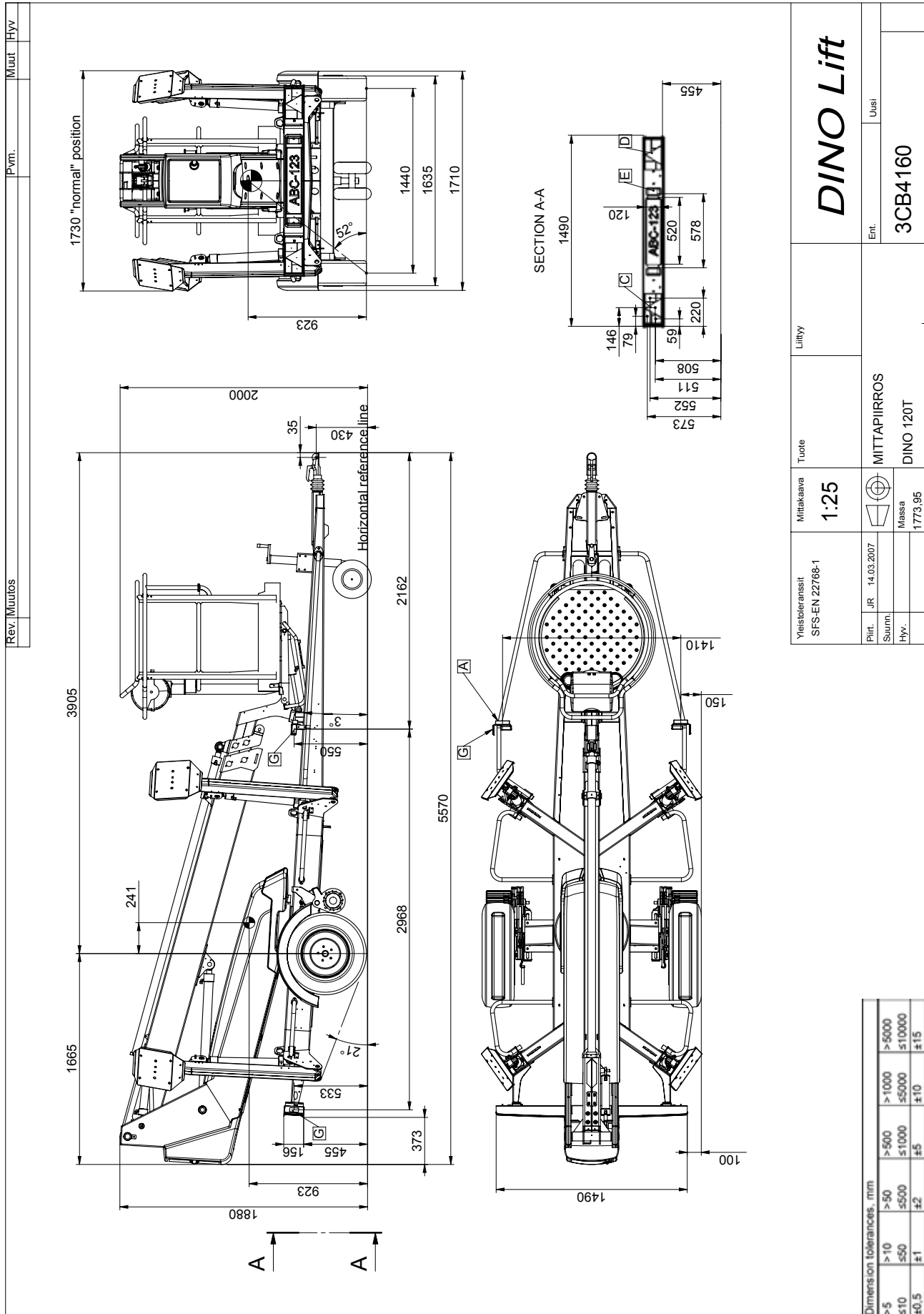
## 2. TECHNICAL SPECIFICATIONS

	120T	120TB
Max. working height	12,0 m	
Max. platform height	10,0 m	
Max. outreach	7,9 m	
Boom rotation	continuous	
Platform rotation	-	
Turn area	refer to the reach diagram	
Support width	3,15 / 3,55 m	
Transport width	1,72 m	
Transport length	5,56 m	
Transport height	1,95 m	
Weight	1285 kg	1360 kg
Max. allowed load on platform	120 kg	130 kg
Max. number of persons + additional load	1 person + 40 kg	1 person + 50 kg
Max. allowed sideways load (caused by persons)	200 N	
Max. lateral inclination (chassis)	±0,3°	
Max. allowed gradient of ground to the side	4,0°	
Max. allowed gradient of ground lengthwise	4,0°	
Max. wind speed during operation	12,5 m/s	
Min. ambient temperature when working	- 20 °C	
Max. support force on the outriggers	9500 N	
Platform size	0,7 x 0,8 m / Ø 0,85 m	
Gradeability	0,25	
Socket outlets on the platform	2 x 230V/50Hz/10A	
Power supply	Mains current	Battery powered
	230V/50Hz/10A	24V/2kW / 2x12V 140 Ah
Sound pressure level	< 70 dB	< 70 dB
Whole-body vibration	Not detectable	Not detectable
Battery charging, mains current	-	230V/50Hz/10A

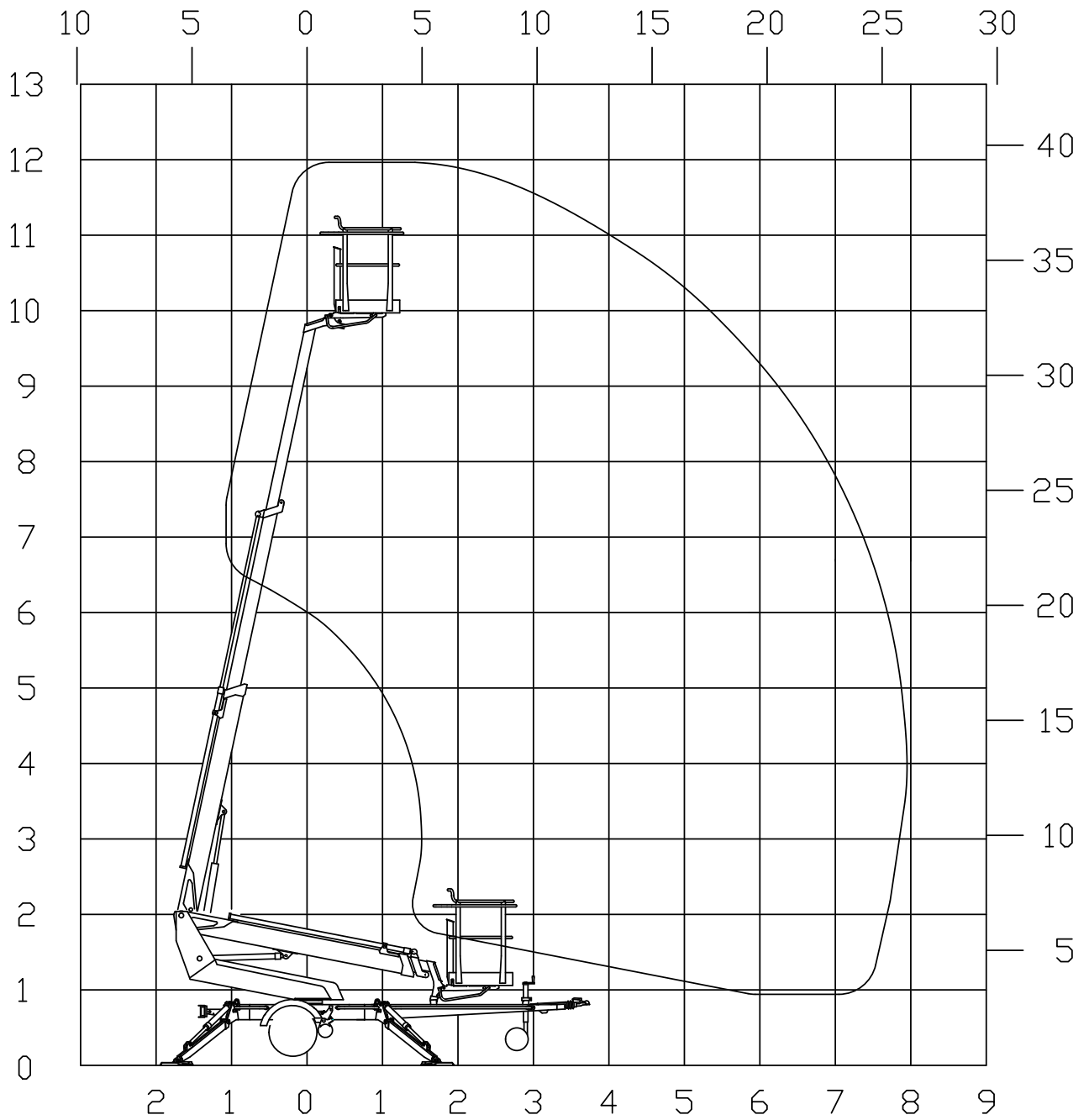
### Optional engines - 120T

Honda GX200SXE	
Fuel	Petrol
Net power	4.1 kW (5,5 hp)
Fuel tank volume	3,1 l
Oil volume	0,6 l
Fuel consumption	1,7 l/h
Sound pressure level	98 dB
Whole-body vibration	< 0,5 m/s <sup>2</sup>

2.1. DIMENSION DRAWING

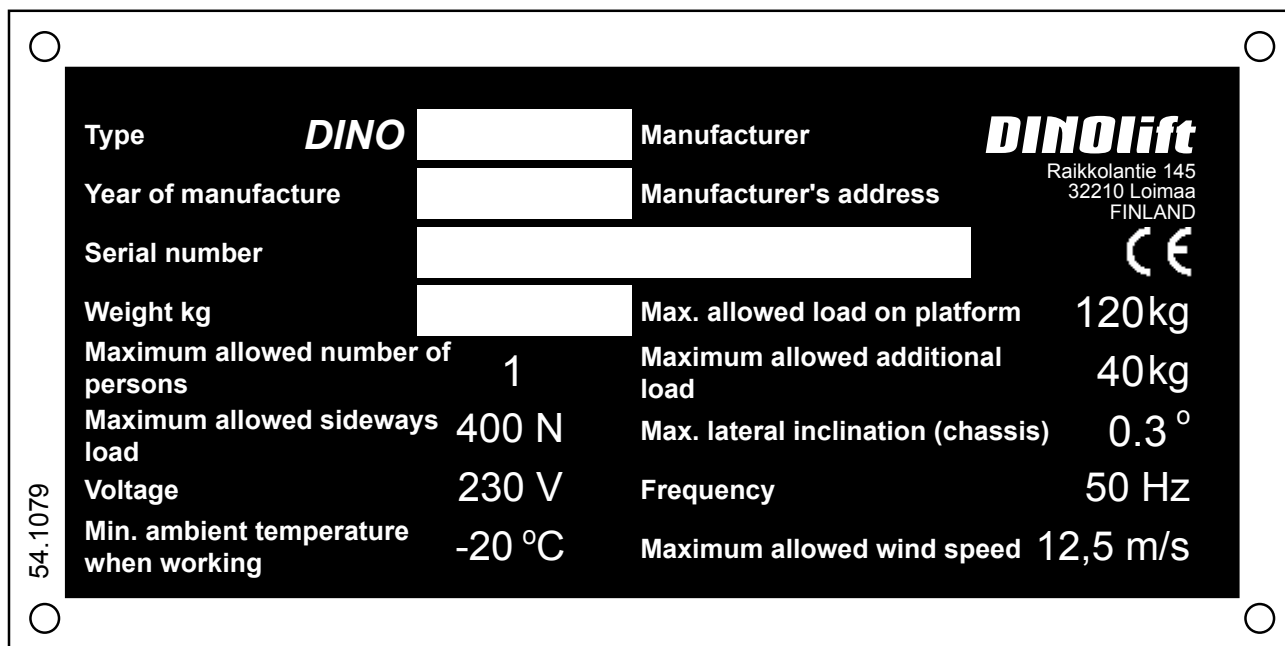


**2.2. REACH DIAGRAM**



### 2.3. EXAMPLE OF THE MACHINE'S NAMEPLATE

The name of the manufacturer, and the production number and serial number of the machine have been marked on the nameplate as shown in the picture below.



The nameplate of the lift is located on the right-hand side of the tow-bar, as shown in the picture.



The serial number is also engraved in the lift's chassis, on the upper surface of the right-hand tow-bar.



The nameplate of the trailer is located on the tow-bar, on the right-hand side of the nameplate of the lift, as shown in the picture.

Following data is written on the plate:

EU Type Approval Number (if available)		
Serial number		
	Total weight	kg
0	Maximum allowed weight on the towing hitch	kg
1	Maximum allowed axle weight	kg
2		kg

**2.4. EXAMPLE OF EU DECLARATION OF CONFORMITY****EU declaration of conformity for machine****Manufacturer**

Dinolift Oy  
Raikkolantie 145  
FI-32210 Loimaa, FINLAND

declares that

**DINO 120T Aerial Work Platform no YGC0D120TG0120312**

conforms to the provisions of the Machine Directive **2006/42/EC** as well as the national decree (**VNA 400/2008**), through which they have been brought into effect

The inspection in accordance with Annex IX to the directive 2006/42/EC has been carried out by the notified body no. 0044,

TÜV NORD CERT GmbH  
Langemarkstraße 20  
DE-45141 Essen

has granted the certificate no. **TÜV 44205 14 195 701**

In addition, the aerial work platform also complies with the provisions of the following European Directives:

**2006/95/EC, 2000/14/EC, 2004/108/EC**

Measured sound power level  $L_{wa}$  ( 99 + 1,5 ) 100,5 dB  
Guaranteed sound power level  $L_{wa}$  100,5 + 0,5 dB

To the assessment procedure of conformity has been applied: 2000/14/EC, Annex V:  
Internal control of production.

In designing the machine, the following harmonised standards have been applied:

**SFS-EN 280:2013, SFS-EN 60204-1/A1, SFS-EN-ISO 12100**

The person, who has compiled the technical construction file: Santtu Siivola

Chief Engineer  
Dinolift Oy, Raikkolantie 145,  
FI-32210 Loimaa, FINLAND

Loimaa 5.2.2016

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Antti Tuura  
Foreman

2.5. SAMPLE OF INSPECTION PROTOCOL FOR THE ACCESS PLATFORM



TEST CERTIFICATE

DATE: 28.1.2016

www.dinolift.com

START-UP TESTS:

Inspection place: Dinolift Oy

Inspector's signature:

Tuura Antti NT0657

BASIC KNOWLEDGE

Manufacturer: Dinolift OY

Place of manufacture: Finland

Address: Raikkolantie 145  
32210 LOIMAA

Importer:

- Type of lift:  Boom platform     Scissor platform     Mast platform
- Chassis:  Car     Self propelled     Trailer mounted
- Boom:  Articulated boom     Telescope boom     Articulated telescope boom
- Scissor     Fixed mast     Telescope mast
- Outriggers:  Hydraulic turning     Hydraulic pushing     Mechanical

TECHNICAL SPECIFICATIONS

Machine and type:	<u>DINO 120 T</u>	Max. platform height	<u>10,0 m</u>
Number of manufacture	<u>YGC0D120TG0120313</u>	Max. outreach:	<u>7,9 m</u>
Year of manufacture	<u>2016</u>		
Max. lifting capacity:	<u>120 kg</u>	Boom rotation:	<u>Continuous</u>
Max. person number:	<u>1</u>	Support width:	<u>3,9x3,6 m</u>
Max. additional load:	<u>40kg</u>	Transport width:	<u>1,71 m</u>
Power supply:	<u>230VAC</u>	Transport length:	<u>5,52 m</u>
Lowest temperature:	<u>-20 °C</u>	Transport height:	<u>1,96 m</u>
Weight:	<u>1285 kg</u>	Basket size: (ø)	<u>0,85 m</u>

Inspection points: (Y = meet standards N = do not meet standards)

	Y	N		Y	N
<b>A. STRENGTH</b>					
1. Certificate of material	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Plate for supports	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Certificate of strength	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Safety colours	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>B. STABILITY</b>					
1. Certificate of stability test	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>D. SAFETY REQUIREMENTS</b>		
2. Working space diagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Indicating device for horizontal position	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>C. GENERAL REQUIREMENTS</b>					
1. User's manual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Locking device and lockings	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Place for safekeeping for user's manual	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Stop device for lifting	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Machine plate - checking plate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Stop for opening of support	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Load plate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. Safety distances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Warning plate	<input type="checkbox"/>	<input type="checkbox"/>	6. Position of working face	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			7. Structure of working face	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			8. Emergency descent system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			9. Limit devices	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<p><b>E. ELECTRIC APPLIANCES</b></p> <p>1. Electric appliances <input checked="" type="checkbox"/> <input type="checkbox"/></p>	<p><b>G. SAFETY DEVICE</b></p> <p>1. Safety limit switch <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>2. Sound signal <input checked="" type="checkbox"/> <input type="checkbox"/></p>
<p><b>F. CONTROL DEVICES</b></p> <p>1. Protections <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>2. Symbols / directions <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>3. Placings <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>4. Emergency stop <input checked="" type="checkbox"/> <input type="checkbox"/></p>	<p><b>H. LOADING TEST</b></p> <p>1. Overload test = 180 kg (150%) <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>2. Funktional test = 132 kg (110%) <input checked="" type="checkbox"/> <input type="checkbox"/></p>
<p>FAILINGS AND NOTES _____</p>	
<p>Failings have been repaired.      Date: _____      Signature: _____</p>	

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The initial inspection and test loading of the Dino aerial work platforms is performed by the manufacturer. A protocol, drawn up during the inspection, will accompany the lift.

The protocols of the start-up and periodic inspections must be kept with the lift or its immediate proximity for at least five years.

### 3. SAFETY

All the essential safety instructions and warnings, relevant to transport, use and maintenance of the lift, are described in this chapter.



## DANGER

Failure to observe these instructions and safety regulations may cause a severe injury or even death. Familiarise yourself with all the safety regulations, operating instructions and signs affixed to the machine, and follow them.

Make sure that you understand all the safety instructions and regulations. Also make sure that others operating the machine or working on the work platform are familiar with these instructions.

#### 3.1. SAFETY INSTRUCTIONS

Only specially trained personnel with authorisation in writing, who are well familiarised with the device, and at least 18-years old, are allowed to operate the unit.

Keep the lift free of any dirt, which may impair safe operation, and impede the inspection of the structures.

The device must be serviced and inspected regularly.

Only skilled persons, familiar with the service and repair instructions for the lift, are allowed to carry out servicing and repair work.

It is strictly prohibited to use a lift which is out of order.

Never remove or disable any safety devices of the machine.



## WARNING

The device must neither be altered without the manufacturer's consent nor be used under conditions, which do not meet the manufacturer's requirements.

The operator must be given instructions and consent from the manufacturer for all such specific work methods or conditions that the manufacturer has not explicitly defined.



## **TRANSFERS**

Observe the maximum allowed gradient when transferring the lift. During transfer in rough terrain, always try to position yourself higher than the machine.

Beware of fixed or moving obstacles in the terrain or near the lift while driving. Make sure that you have a clear view of the driving path.

## **WORK AREA AND PREPARATIONS BEFORE LIFTING WORK**

When working in busy areas, the operating range of the lift must be clearly marked by using either warning lights or fencing.

Also observe the regulations of the Road Traffic Act.

Ensure the unobstructed range of movement before operating the outriggers.

The load-bearing capacity and the gradient of the base must be taken into account when supporting the chassis.

Ensure that the outriggers cannot slide while on a gradient.

Additional support plates of adequate size must be used under the outriggers, when working on soft ground. Only use such additional support plates, on which the metallic outriggers will not slide.

While in the support position, ensure that the wheels are off the ground.

Always verify the horizontal position of the machine.

Always ensure that the work area is clear of outsiders. Danger of getting squeezed between rotating and fixed structures.

**While operating the boom from the control centre on the turning device, beware of getting pressed against the outriggers or other structures that do not turn with the boom.**

## LIFTING AND WORKING ON THE PLATFORM

Never exceed the maximum number of persons, maximal loading or lateral force, allowed for the lift. Never add load onto the platform while in the upper position.

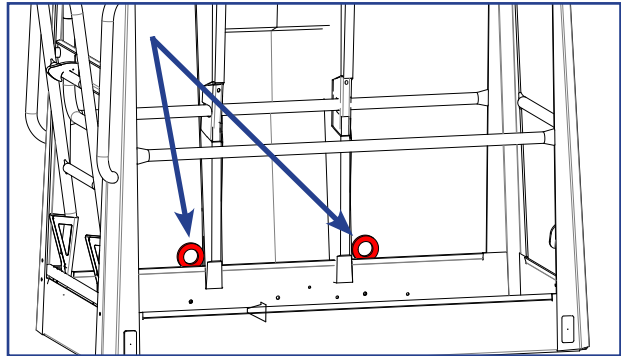
Before operating, always ensure that the safety devices and the emergency descent system are in working order.

Never use a lift alone. Make sure that there is always someone on the ground, who can call for help in case of an emergency.

**Use the safety harness!** Fix the safety harness to the fixing points, intended for the purpose.

Note! The platform is fitted with a fixing point for the safety harness of each user. Only one harness per fixing point.

Do not use ladders, steps or other similar equipment on the platform.



Never throw or drop any objects from the platform.

The lift must not be used as a crane.

The lift must not be used for transferring goods or persons between different floors or working levels. Stepping on or off the platform in motion is prohibited.

When the boom is in its lowest positions, make sure it cannot clash during rotation with structures that do not turn with the boom.

Always make sure, before lowering the platform, that the area under it is clear.

Avoid damaging the platform by lowering it on the ground, or bringing it in contact with any structures.

## OPERATING CONDITIONS

The weather conditions, such as wind, visibility and rain, must always be taken into account so that these will not adversely affect the safe performance of the lifting operations.



**The use of the lift is prohibited, if the temperature drops under -20 °C or the wind speed exceeds 12.5 m/s**

Wind speed ( m/s)		Conditions on land
0	Calm	Smoke rises vertically
1-3	Light breeze	Smoke moves with the wind and the wind feels on exposed skin. Leaves rustle.
4-7	Gentle breeze	Leaves and small branches of trees are moving. Flag is flying. Wind lifts dust and loose pieces of paper from the ground.
8-13	Strong breeze	Small broad-leaved trees and large branches sway. Wind whistles as it hits houses or other fixed objects. Umbrella is difficult to use.
14-16	Strong	All the trees are swaying. It is difficult. to walk against the wind.

Do not take tools/material of large surface area onto the platform. The increase in wind load may jeopardize the stability of the device.

**Beware of the live aerial power lines in the area – observe the minimum safety distances:**

Voltage	Min. distance below (m)	Min. distance at the side (m)
100-400 V hanging spiral cable	0.5	0.5
100400 V open-wire cable	2	2
6-45 kV	2	3
110 kV	3	5
220 kV	4	5
400 kV	5	5

### 3.2. SAFETY-RELATED NOTIFICATIONS

The following safety alert symbols and safety signal words are used in this manual and in safety labels.

Observe all the safety instructions that follow these symbols, in order to avoid dangerous situations and personal injuries.



This is a general safety alert symbol and it is used to alert you about a potential hazard. Observe the additional instructions given in form of text or symbols that follow this symbol.



**DANGER**

Red DANGER-message warns for an imminent or potential hazardous situation which, if not avoided, may result in death or serious injury.



**WARNING**

Orange WARNING -message is used in connection with potential risk factors, which if not avoided, under certain conditions, may result in death or serious injury.



**CAUTION**

Yellow CAUTION -message is used to warn about a hazardous situation which, if not avoided, could result in minor or moderate injury.

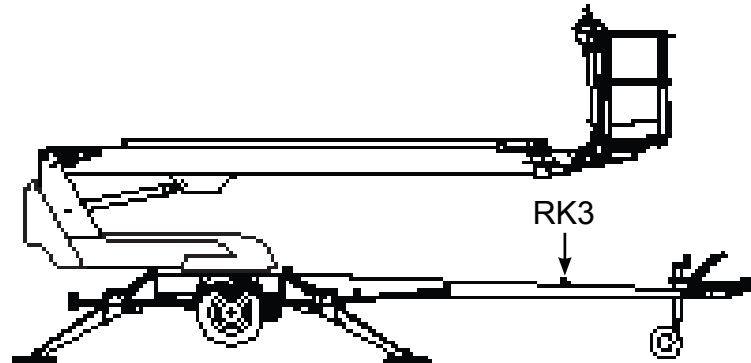
**NOTICE**

Blue notice-message is used to draw your attention to special notifications or instructions that are related to the operation or maintenance. Such messages include, for example, instructions that are related to reliability of the machine or aim to avoid material losses.

## 3.3. SAFETY DEVICES

### 1. Supervision of transport position of the boom

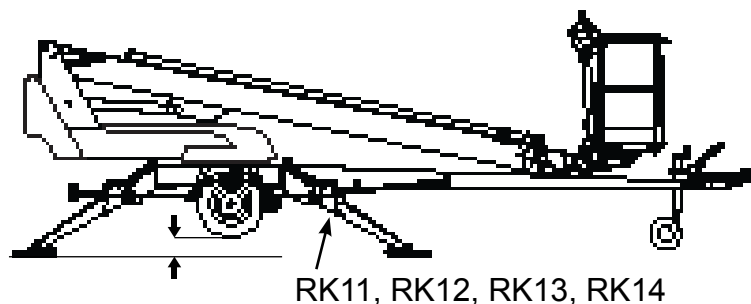
The safety limit switch RK3 prevents the operation of the outriggers and the driving device when the boom is not resting on the transport support. The switch is located on the tow-bar at the transport support.



### 2. Supervision of supporting

The lift's all support outriggers must be in the support position before the boom is lifted. Make sure that the wheels are off the ground.

The safety limit switches RK11, RK12, RK13 and RK14 are located on the support outriggers.

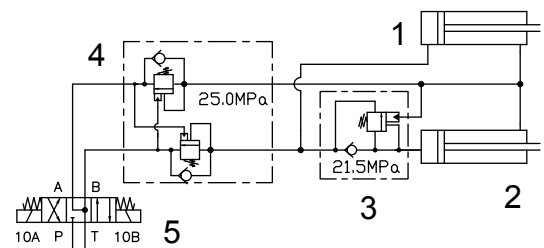


### 3. Preventing the inclination of the platform

The platform is levelled hydraulically by means of a so-called slave cylinder system, where the master cylinder controls the slave cylinder that inclines the work platform.

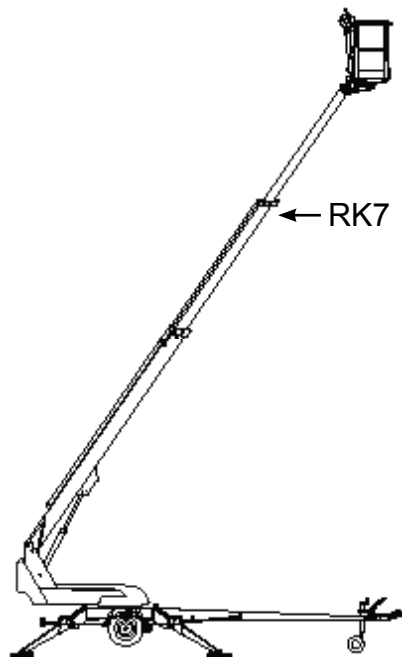
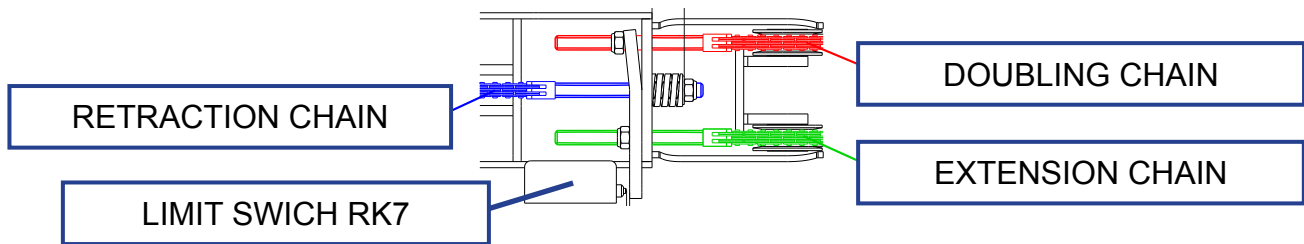
The levelling system comprises the following parts:

1. Master cylinder
2. Slave cylinder
3. Load regulation valve
4. Double load regulation valve
5. Electric directional valve



#### 4. Supervision of the telescope chain

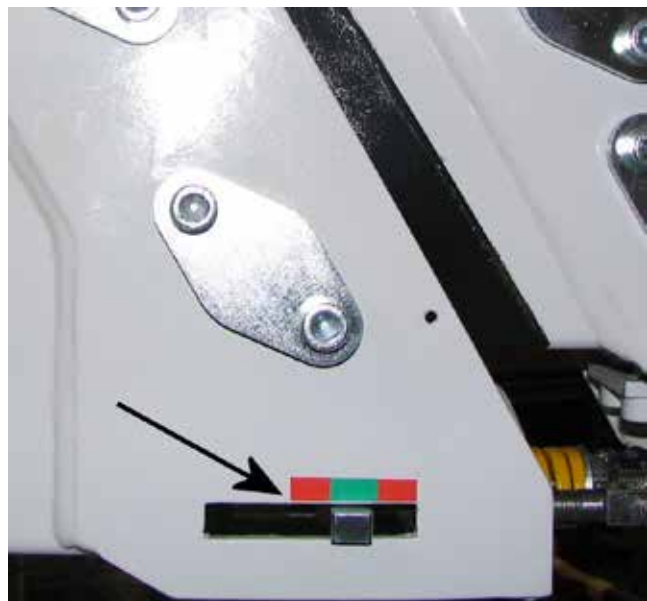
The extension chains for the telescope are doubled. If the load-bearing chain slackens or breaks, the doubling chain prevents the movements of the telescope, and the safety switch RK7 breaks the emergency stop circuit.



The lever at the top end of the outer boom indicates possible rupture of one of the retraction chains for the telescope.

If the lever is inside the green area, the retraction chains are intact (see adjacent illustration).

If the lever is inside the red area, one of the retraction chains has ruptured and the lift must not be used until the chains have been replaced and the required adjustments have been carried out.



## 6. Safety devices for hose rupture

All the load-bearing cylinders are equipped with valves for rupture or leak in the hydraulic system, which prevent the load from falling.

Outrigger cylinders	Lock valves	Prevent the inching of the outriggers in either direction.
Lifting cylinder of the boom	Load regulation valve	Prevents the load from falling down.
Telescope cylinder	Load regulation valve	Prevents the inching of the telescopic boom in either direction.
Levelling system	Load regulation valves	Prevents the inclination of the platform in either direction.

## 7. Emergency stop buttons

Depressing the emergency stop button, stops all the movements immediately and turns off the power unit. The button can be found at each control station. Once the button has been depressed, only the emergency descent functions remain operational.

The emergency stop button locks in the lower position, and it must be released before starting the power unit.

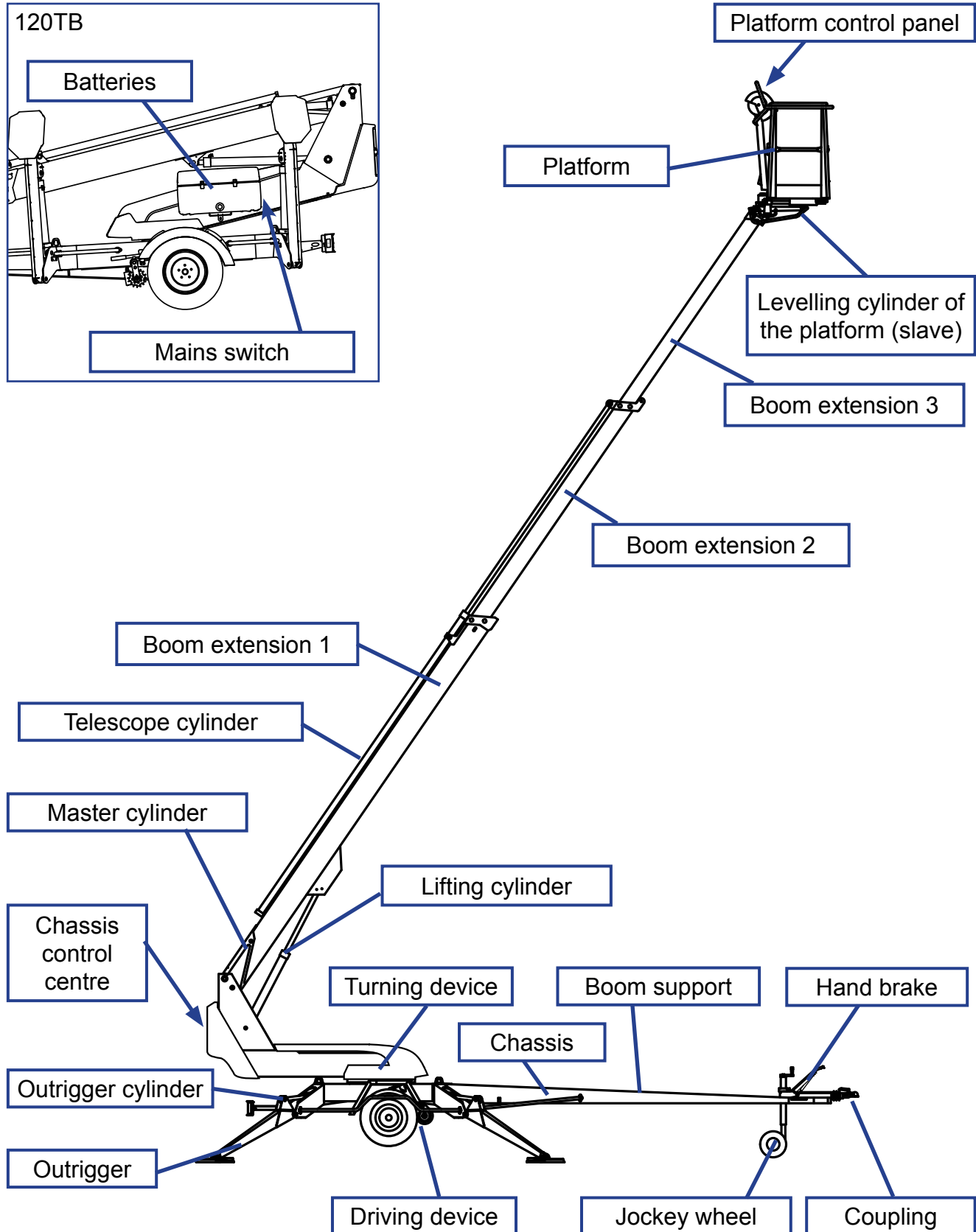
### **NOTICE**

If the unit does not start, make sure that the emergency descent button is not in the lower position at any of the control stations.

## 4. STRUCTURE AND FUNCTIONS OF THE WORK PLATFORM

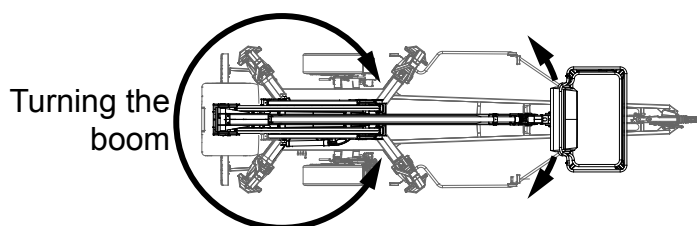
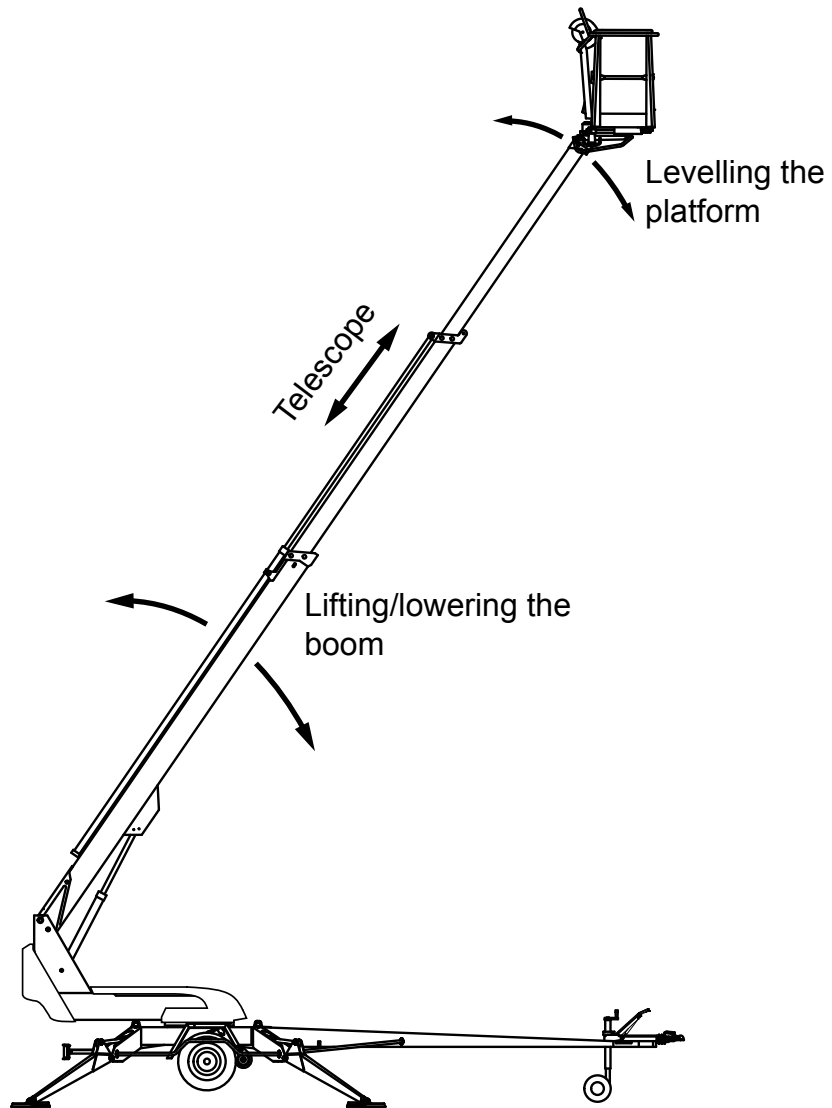
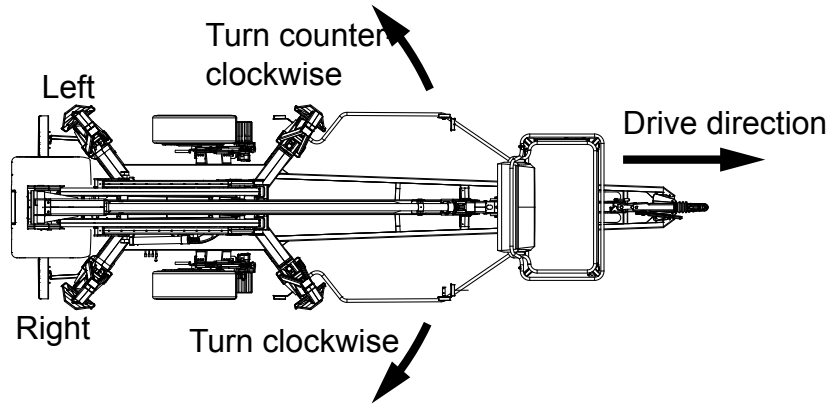
The denominations of the machine's essential parts and concepts, which are used later in these instructions, are described on the following pages.

### 4.1. STRUCTURE OF THE WORK PLATFORM







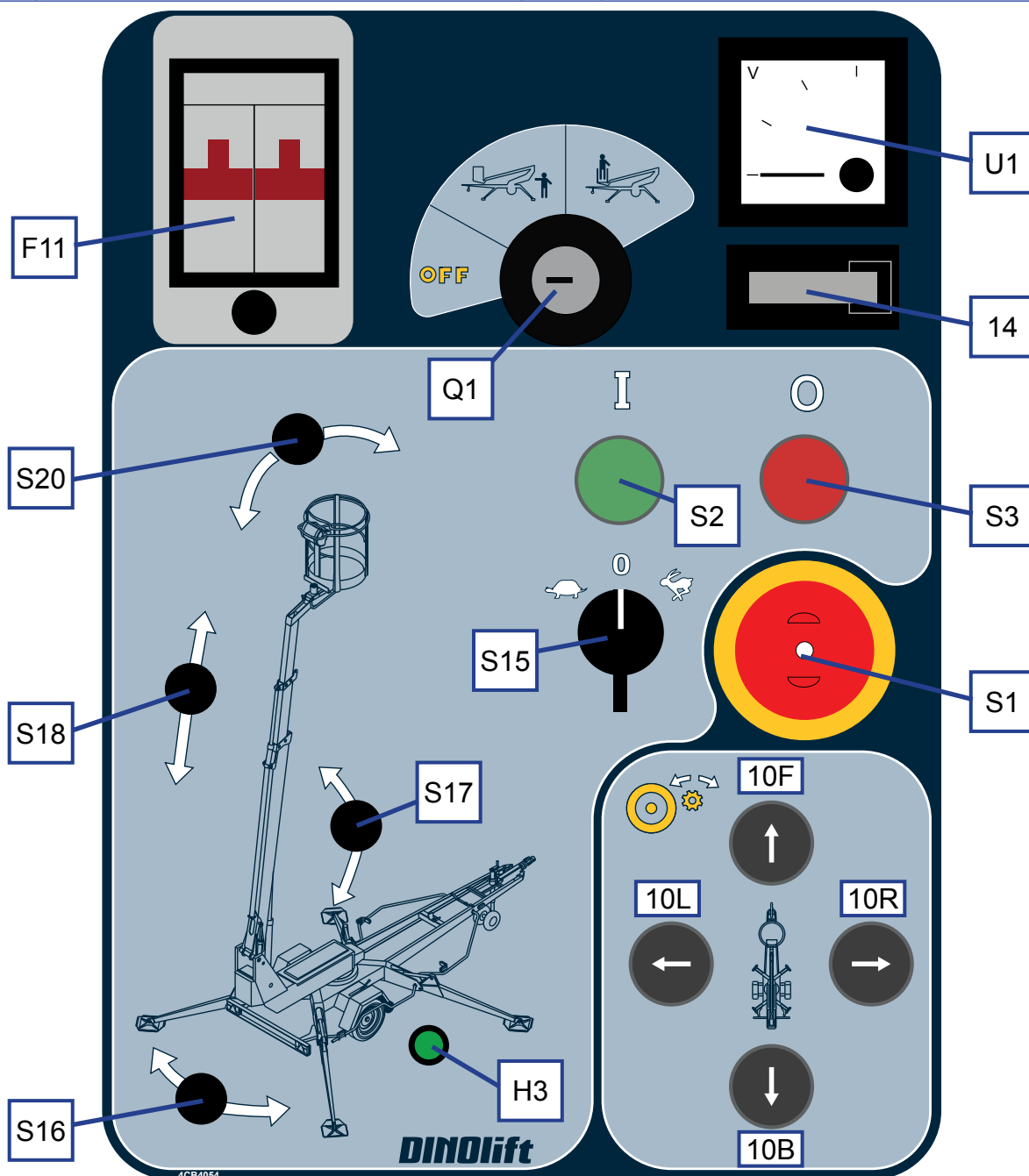
## 4.2. FUNCTIONS OF THE WORK PLATFORM





### 4.3. OPERATING CONTROLS FOR THE FUNCTIONS

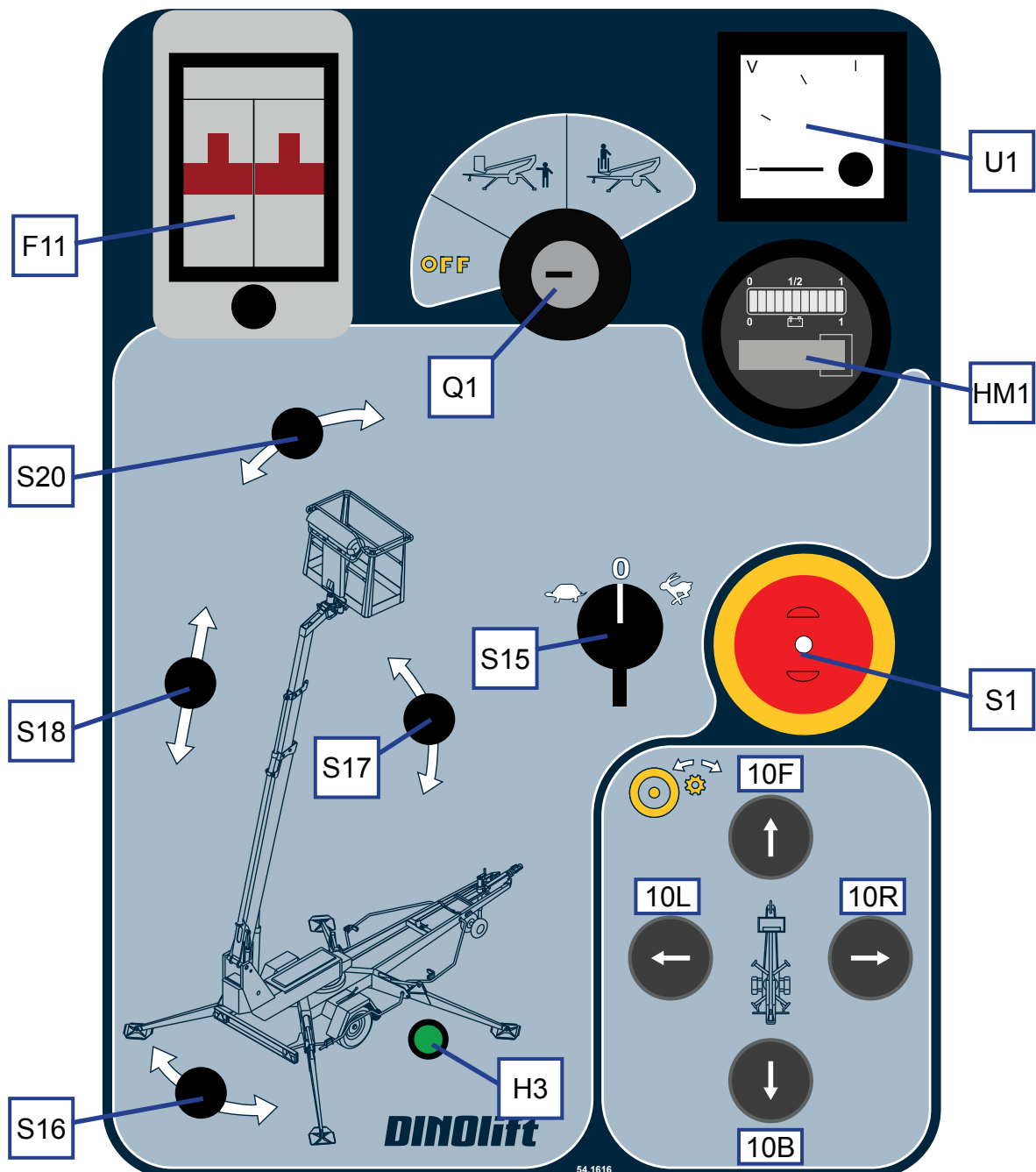
#### 4.3.1. 120T Operating controls in the chassis control centre

Q1	Selector switch	S15	Speed selector switch and activation switch for the movements (is used simultaneously with the control levers for the boom and the driving device)
OFF	Ignition off		
	Operating controls in the chassis control centre LCB.	S16	Lever switch for turning
	Operating the lift from the platform control centre UCB		
S1	Emergency stop	S17	Lever switch for boom system
S2	Start button	S18	Lever switch for telescope
S3	Stop button	S20	Lever switch for levelling the platform
H3	Signal light for outrigger limit switches	10F	Drive to the front
U1	Voltage meter	10B	Drive to the rear
HM1	Hour meter	10R	Turning to the right (10R + 10F or 10B)
F11	Automatic fuse for socket outlets	10L	Turning to the left (10L + 10F or 10B)



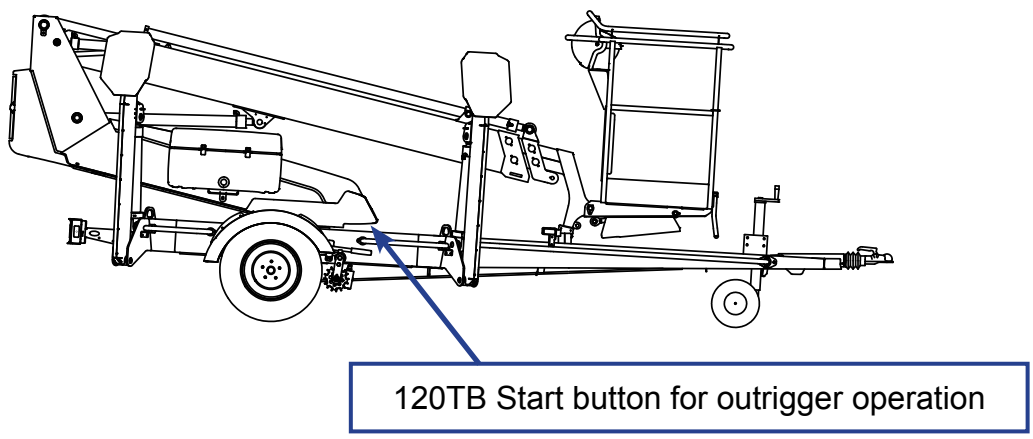
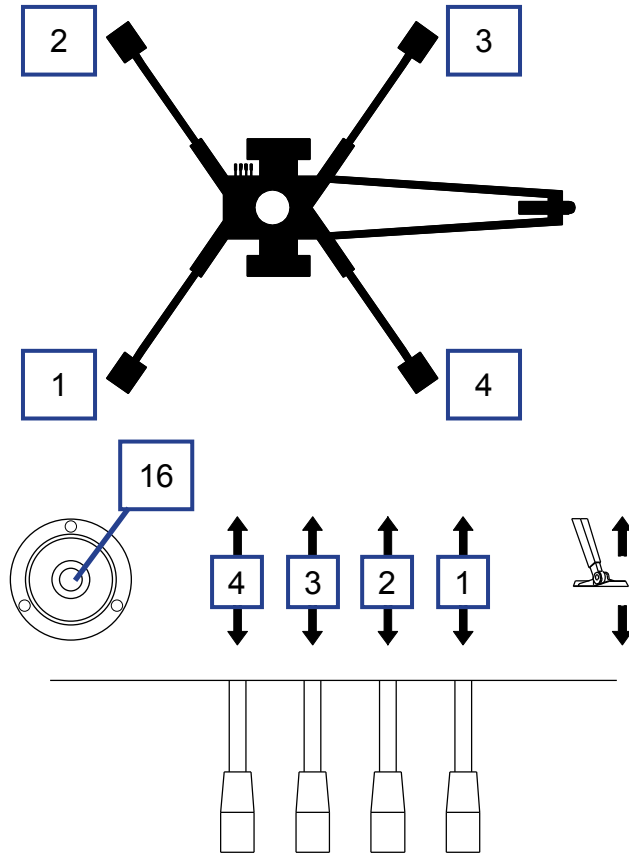
## 4.3.2. 120TB Operating controls in the chassis control centre

Q1	Selector switch	S15	Speed selector switch and activation switch for the movements (is used simultaneously with the control levers for the boom and the driving device)
OFF	Ignition off		
	Operating controls in the chassis control centre LCB.		
	Operating the lift from the platform control centre UCB	S16	Lever switch for turning
S1	Emergency stop	S17	Lever switch for boom system
H3	Signal light for outrigger limit switches	S18	Lever switch for telescope
U1	Voltage meter	S20	Lever switch for levelling the platform
HM1	Battery voltage / Hour meter	10F	Drive to the front
F11	Automatic fuse for socket outlets	10B	Drive to the rear
		10R	Turning to the right (10R + 10F or 10B)
		10L	Turning to the left (10L + 10F or 10B)



4.3.3. Operating controls for the outriggers

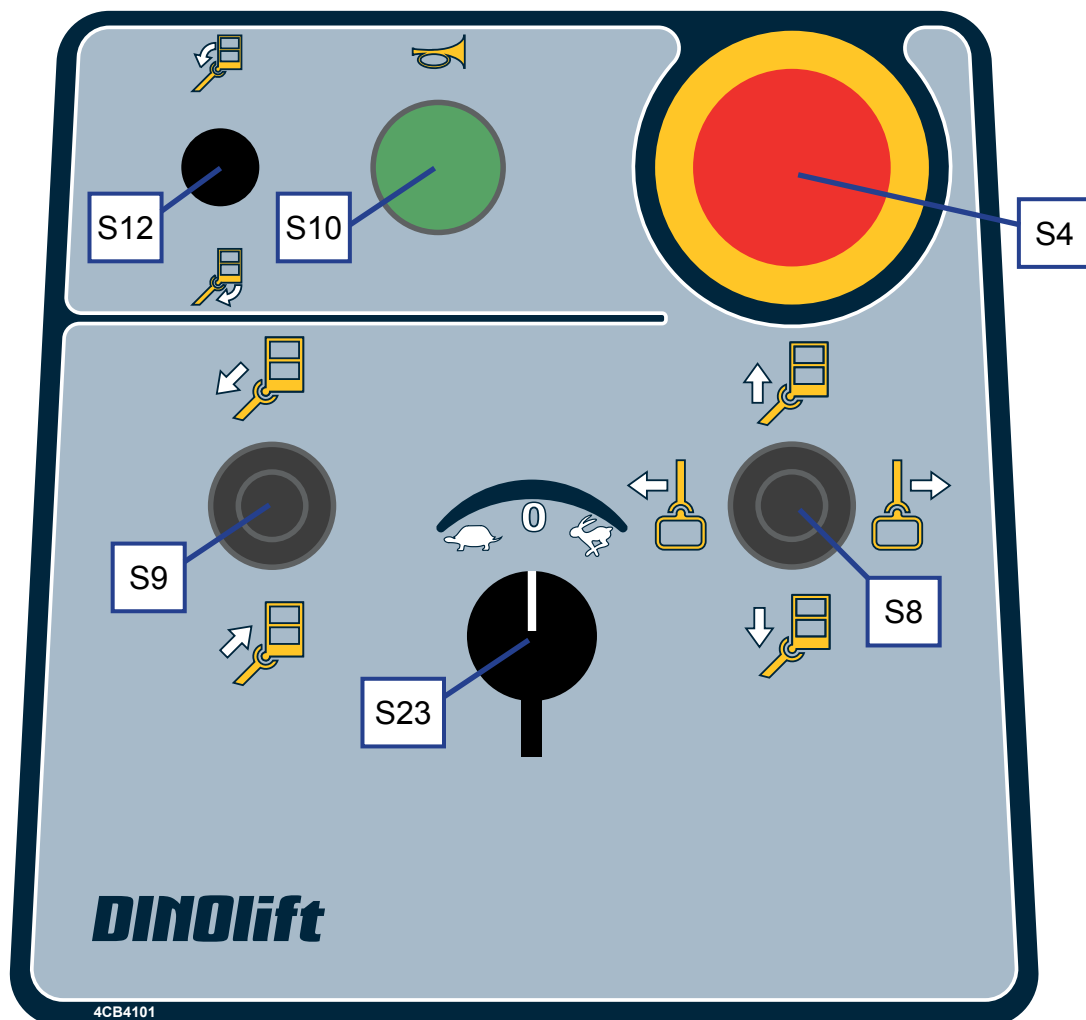
1	Rear outrigger, right
2	Rear outrigger, left
3	Front outrigger, left
4	Front outrigger, right
16	Position indicator of chassis



## 4.3.4. Operating controls in the platform control centre

Close the cover of the chassis control centre before operating the controls on the platform. The cover must not be locked while the lift is in operation.

S4	Emergency stop	S23	Speed selector switch and activation switch for the movements (is used simultaneously with the control levers for the boom and the driving device)
S10	Sound signal button		
S12	Lever switch for levelling the platform		
<b>S9</b>	<b>Control lever for telescope movement</b>	<b>S8</b>	<b>Control lever for the boom</b>
↑	Retracting the telescope	↑	Boom up
↓	Extending the telescope	↓	Boom down
		→	Turning the boom to the right
		←	Turning the boom to the left



## 5. OPERATING INSTRUCTIONS

### 5.1. START-UP

#### **NOTICE**

Before operating the lift, perform all daily maintenance measures listed in the maintenance schedule.

The operator must do a worksite inspection and daily maintenance:

- at the beginning of each workday
- before operating the lift at a new worksite
- when the operator changes in the middle of a workday

#### 5.1.1. Worksite inspection

##### 1. General information

- Is the lift suited for the intended job?
- Is the performance of the lift sufficient for the job? (reach, loadability etc.)
- Is the position of the lift safe?
- Is the lighting on the worksite sufficient?

##### 2. Documents

- Are the Operation and Service Instructions for this lift present? (Manufacturer's instructions)
- Are inspections and servicing carried out in accordance with the instructions and have the defects affecting the safety been checked as repaired?
- (Inspection protocols)

##### 3. Structure (Visual inspection and operational test)

- General condition of the lift
- Operation and protection of the controls
- Emergency stop, signal horn and limit switches
- Electrical appliances and wiring
- Oil leaks
- Load markings and signs

##### 4. Operator

- Is the operator old enough?
- Has the operator received the required training?

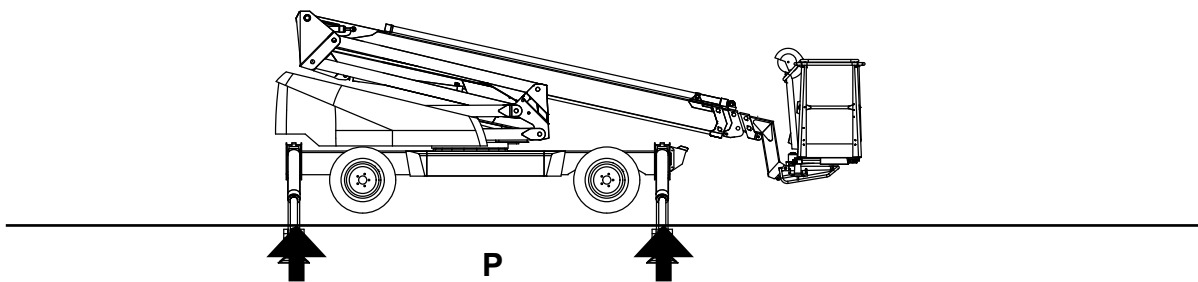
##### 5. Special issues on the worksite

- Are there any additional regulations relevant to the worksite or the work?

## 5.1.2. Positioning the lift

1. make sure that the ground is even and hard enough to support the lift in a steady, level position.

Soil material	Density	Max. ground pressure	
		P	kg/cm <sup>2</sup> (N/cm <sup>2</sup> )
Gravel	High density		6 (59)
	Medium density		4 (39)
	Loose		2 (20)
Sand	High density		5 (49)
	Medium density		3 (29)
	Loose		1,5 (15)
Fine sand	High density		4 (39)
	Medium density		2 (20)
	Loose		1 (10)
Sand / mud	High density (very hard to work)		1,00 (10)
	Medium density (hard to work)		0,50 (5)
	Loose (easily worked)		0,25 (3)



DANGER

If the ground is soft, use sufficiently large and sturdy additional plates under the support outriggers.

2. Drive the lift to the inspected lifting site
3. Engage the parking brake
4. Disconnect the lift from the towing vehicle

### 5.1.3. Starting up

#### POWERED BY AC-SUPPLY 120T

While the mains voltage is plugged in, the operating voltage of 12 VDC is supplied by a power source.

- connect the mains cable to the power supply
- with the electric motor at maximum load, the voltage must be 230 VAC (-10%/ +6%), the frequency 50 Hz, and rating of the fuse 10A (the length of the connecting cable has some effect)

To access the operating controls, open the cover of LCB centre on the turning device.

1. Turn the selector switch Q1 to position LCB – chassis control centre.
2. Start the engine by depressing the button 2 (green).



#### POWERED BY BATTERY 120TB

1. Switch on the main switch.
  2. Turn the selector switch Q1 to position LCB – chassis control centre.
  3. Depress the start switch at the outrigger control unit.
- OR
4. Start the operation. Selecting the movement speed will start the engine automatically.





POWERED BY POWER PACK (OPTIONAL IN 120T)



Starting the power pack:

1. Open the engine's petrol cock HA.
2. Activate the key switch in the chassis control centre of the lift.
3. Depress the choke button S40 in the electric centre of the power pack, and start the engine by turning the start switch S6.
4. Release the choke as soon as the engine starts.

To switch off the engine, turn the same turn switch to the opposite direction. There are corresponding switches also in the platform control centre. After the start, the lift's movements can be operated using the standard operating controls of the lift.

## NOTICE

The operation of the power pack is impeded, while the mains current of 230 VAC is connected. The power pack will not start, if the level of lubrication oil is low. The oil level is monitored by a level switch.

If the battery is flat, start the power pack by pulling the starter grip, and at the same time, keeping the button S37 depressed. After the start, keep the button depressed for a while in order to recharge the battery a little so that the relays will remain active.

Keep the maximum engine revolutions, because in certain situations, the hydraulic system will require almost all the power output available. Adjust the revolutions, using the lever HB.



**When you stop using the combustion engine, close the fuel cock.  
The fuel cock must be kept closed during towing and long-term storing of the lift.**

#### 5.1.4. Supporting the lift

1. Lower the front support outriggers (on the tow-bar side).
2. Lower the support outriggers in the rear. (do not damage the tow-bar jockey wheel).
3. Level the chassis with the outriggers with the help of the level gauge (16). The air bubble must be located inside the inner ring.
4. The green signal light in the chassis control centre LCB is illuminated, when all the outriggers are in the support position and the limit switch circuit of the outriggers is closed.

#### **Always check, before using the lift that:**

- the chassis is level, using the position indicator
- the wheels are off the ground
- the outriggers are firmly supported on the ground, and the limit switch circuit of the outriggers is closed (green LED in the chassis control centre is illuminated)



**DANGER**

**The operation is prohibited, if the lift is not properly supported and on a level position.**

**Observe the effect of ice, possible rain and inclination of the surface on the support (the support outriggers must not slip on the surface).**

## 5.2. OPERATION

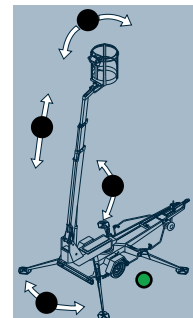


### WARNING

Carry out all the daily maintenance routines and inspections in accordance with the maintenance instructions before operating the lift. **Failure to check the safety devices may cause a serious injury or make the consequences of an accident worse.**

#### 5.2.1. Operating the lift from the chassis control centre

1. Turn the selector switch Q1 to the position LCB – chassis control centre.
2. Select the movement speed using the speed selector switch. Drive the boom and the platform using the control levers in the chassis control centre:
  - extending and retracting the telescope
  - lifting and lowering the boom
  - turning the boom



The movement will stop as soon as the speed selector switch or the selector switch for the movement is released.

3. Before starting the operation, lift the platform from the tow-bar and turn it to the side so that you can lower the boom.
4. Extend the telescope as much as is necessary to ensure that stepping onto the platform is safe.

### NOTICE

Do not damage the tow-bar jockey wheel!

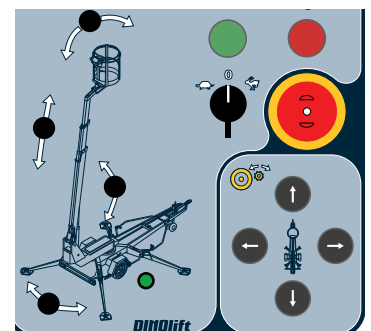
The boom movements are noticeably slower when operated using the emergency descent system.

If the lift is operated from the chassis control centre, the speed of the boom movements cannot be adjusted continually using the control levers.

#### Adjusting the position of the platform from the chassis control centre:

The levelling system of the platform will automatically keep the platform level during the movements. As necessary, the position can be corrected.

Carry out the levelling of the platform while the lift is in the support position (the outriggers down). Adjust the platform position with the boom on a level. No persons allowed on the platform during adjustment.

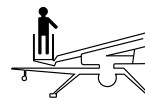


The position of the platform may be adjusted from the chassis control panel:

1. Turn the selector switch Q1 to the position LCB.
2. Turn the speed selector switch.
3. Select the direction of the correction movement using the control lever (9).

### 5.2.2. Operating the lift from the platform control centre

1. Turn the selector switch to the position "Platform control centre UCB", and remove the key. Do not lock the protective cover for the chassis control centre.



The engine is stopped by turning the switch Q1 to the position UCB. When operating from the platform control centre, the engine will start and stop automatically.

2. Step onto the platform and fix the safety harness to the intended attachment point.
3. Start using the lift normally. Operate the movements of the boom and the platform as follows:

	Select the movement speed using the speed selector switch. Selecting the movement speed will start the engine automatically.
	Operate the boom using the control levers. Whenever possible, keep the boom short while lifting and lowering the platform.
	Operate the telescope using the control lever.
	As necessary, correct the position of the work platform using the lever switch.

Note! The movements of the boom and the platform will stop as soon as the speed selector switch or the selector switch for the movement is released. Once the speed selector switch is released, the engine will stop after a delay of 4 seconds. Selecting the movement speed will start the engine automatically.

4. With the boom slightly lifted and the telescope extended, make sure that the platform does not lower by itself while the operating controls are not being used.
5. Drive the platform to the work object.

<b>CAUTION</b>	The lift itself, the buildings around it and other obstructions constitute a risk of getting squeezed. Hands and legs must be kept inside the work platform while the platform is moving. Also beware of any obstacles above the platform.
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**IF THE SAFETY DEVICES OR THE EMERGENCY DESCENT SYSTEM ARE NOT WORKING, HAVE THEM REPAIRED BEFORE OPERATING THE LIFT.**

If several control levers are operated simultaneously, only the movement with the least resistance will operate.

## Working a long time in the same position

- There are pushbuttons for both stopping and starting the engine on the chassis control panel. When the weather is warm, and the platform is kept for a longer period in the same position, it is not necessary to let the engine run continuously.
- During cold weather, the engine must be left running to keep the hydraulic oil warm.
- Check the stability and condition of the base regularly during the operation, taking into account the weather and ground conditions.

## When moving the platform, remember the following

- beware of high voltage power lines
- do not touch open electric wires
- do not throw objects from the platform
- do not damage the lift
- do not damage other devices



## DANGER

**It is strictly prohibited to take additional load in the upper position.**

Do not exceed the lateral force (200N), or load the platform in the vertical direction more than allowed.

Lowering the platform to transport position:

Always retract the telescope completely and turn the platform perpendicular to the boom before lowering the boom onto the transport support.

## NOTICE

Do not damage the tow-bar jockey wheel while lowering the platform to the transport position!

## When leaving the lift

- drive the lift to a safe position, preferably to the transport position
- switch off the power unit
- prevent unauthorized use of the lift by locking the control centre cover

### 5.2.3. Special instructions for winter use

**The lowest allowed operating temperature of the lift is -20 °C**

In cold conditions, carry out the following special actions in addition to the normal start-up procedure:

1. Let the power pack run for a few minutes before starting the movements.
2. To ensure the proper operation of the valves, do first a few warm-up movements to change warm oil in the cylinders.
3. Check that the limit switches and the emergency descent devices are operational and clean (from dirt, snow, ice, etc.).
4. Protect the control centre and the platform from snow and ice whenever they are not in use.



**Always keep the lift free from dirt, snow etc.**

### 5.2.4. Ending the work

At the end of the workday:

1. Retract the telescopic boom fully.
2. Check that the platform is perpendicular to the boom.
3. Lower the boom/platform onto the support on the tow-bar. The limit switch on the transport support prevents the operation of the support outriggers if the platform is not down.
4. Close the control centre cover on the work platform.
5. Turn the selector switch to position OFF, and turn off the main switch.
6. Disconnect the lift from the power supply.
7. Make sure that the covers are locked.

## **NOTICE**

To ensure proper operation and long service life of the batteries, it is recommended to always recharge them at the end of each workday, even though there was still plenty of charge left. Storing the batteries flat shortens their service life, and flat batteries also freeze easily.

### 5.3. TRANSFERRING THE LIFT

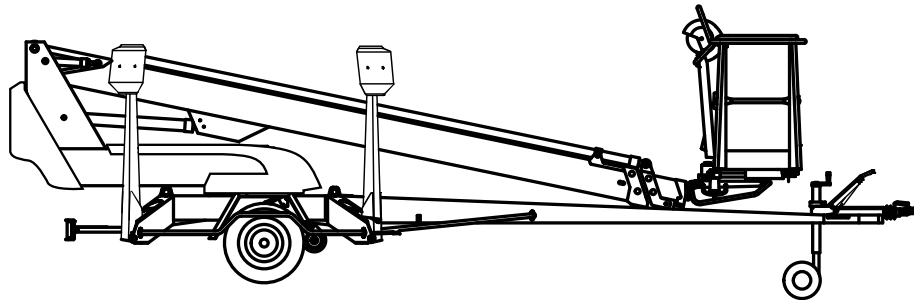
The lift can be transferred by towing or using its own driving device.



**The lift may only be moved in the transport position. No persons or load are allowed on the platform during the transportation.**

#### 5.3.1. Preparing the lift for transport

During transfer, the lift must always be in the transport position.



Prepare the lift for the transfer as follows:

1. Retract the telescopic boom fully.
2. Check that the platform is perpendicular to the boom.
3. Lower the boom/platform onto the support on the tow-bar. The limit switch on the transport support prevents the operation of the support outriggers if the platform is not down.
4. Close the control centre cover on the work platform.
5. Lift the support outriggers.  
Lift first the rear support outriggers (do not damage the rear lights), and then the front support outriggers (do not damage the jockey wheel).
6. Make sure that the covers are locked.

If you intend to tow the lift:

7. Apply the parking brake.
8. Make sure that the driving device is disconnected.
9. Turn the selector switch to position OFF and disconnect the lift from the power supply.

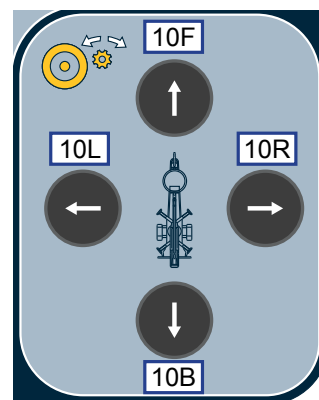
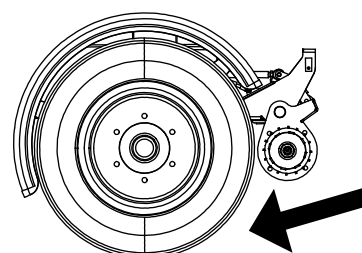
### 5.3.2. Using the driving device

The hydraulic driving device is intended for moving the lift within the work area if the towing vehicle cannot be used.



**During transfer in rough terrain, always try to position yourself higher than the machine.**

1. Turn the selector switch 1 to position “LCB”.
2. 120T: Start the electric motor.  
In 120TB, selecting the movement speed will start the engine automatically.
3. Make sure that the platform is in the transport position and the outriggers are lifted in the upper position
4. Make sure that the mains cable is long enough to cover the whole travel distance – or that the cable has been disconnected.
5. Switch the driving device to the drive position.
6. Release the parking brake
7. Turn the speed selector switch, and drive the unit using the controls for the driving device.



10F	Drive to the front
10B	Drive to the rear
10F + 10R	Driving forward to the right
10F + 10L	Driving forward to the left
10B + 10R	Driving backward to the right
10B + 10L	Driving backward to the left

Note! The movements of the boom and the platform will stop as soon as the speed selector switch or the selector switch for the movement is released.

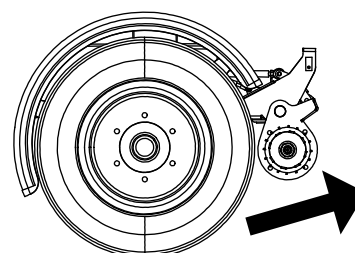


## CAUTION

**Do not drive the jockey wheel into obstacles or potholes.** If one of the wheels bumps into an obstacle, the lift may turn abruptly.

After the driving:

- Apply the parking brake.
- Disengage the transmission.
- Disconnect the driving device from the tyre.





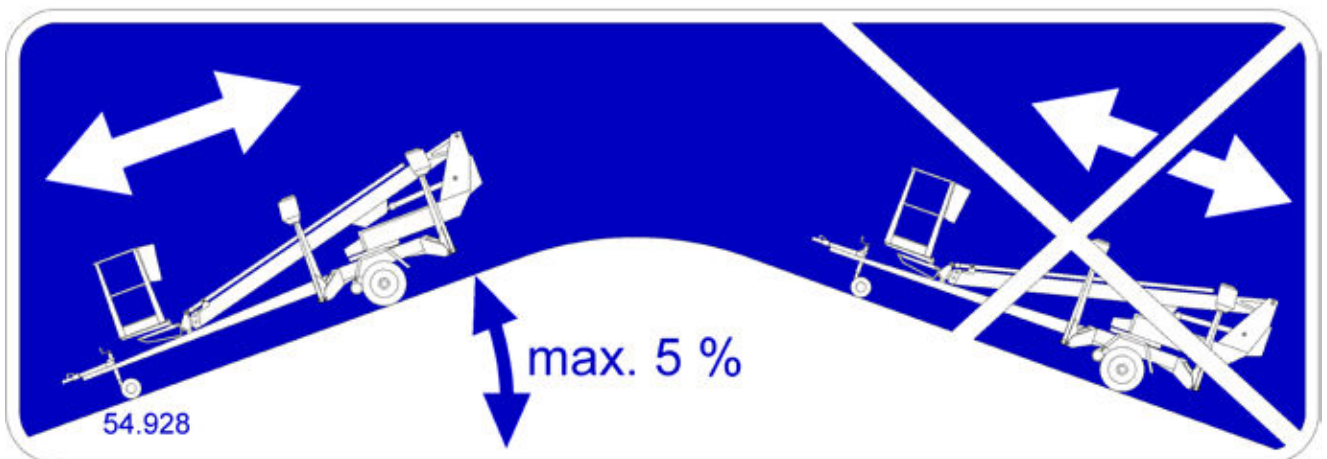
## NOTICE

**Be careful not to damage the jockey wheel tube by extending it too much.**

When moving the lift using the driving device, a suitable length for the jockey wheel's stem can be achieved by adjusting the gap between the lower surface of the tow-bar/brake rod and the wheel to 1-3 cm. Then the wheel may turn freely.

### On a slope:

1. When driving on a slope, the tow-bar must always point towards the descent. Never drive with the driving device with the tow-bar pointing towards the ascent.
2. Always place chocks under the wheels before disconnecting the device from the towing vehicle.
3. Always apply the handbrake before disconnecting the lift from the towing vehicle.
4. Only use the handbrake as a parking brake or for emergency stopping.
5. When transferring the lift using the driving device:
  - take care not to allow the wheel to roll over your foot
  - look out for sudden sideways movements of the tow-bar
  - be careful not to cause danger to other people and the environment
6. Do not move the device on a slope using only hand-power. You may lose control over it and cause an injury.
7. Never park a vehicle combination on a slope.  
Never leave the lift on a slope being supported only by the self-braking action of the driving device.



**Do not drive downhill with the driving device, if the inclination of the surface is more than 5 per cent, (corresponding to a descent of 0.5 m over a distance of 10 m). If the gradient of the surface is greater than this, you may lose control of the device.**

### 5.3.3. Towing the lift

Connecting to the towing vehicle

1. Lift up and push forward (in the driving direction) the handle of the ball-coupling. Now the ball-coupling is released.
2. Press the ball-coupling onto the towball using only a little force. The connection and locking take place automatically.



**Always make sure, after the connection, that the ball-coupling is properly locked.**

3. Connect the emergency stop wires and light plug to the vehicle. Check the cable for chafing and proper operation of the wires.
4. Check the operation of the lights.
5. Carefully release the parking brake and make sure that its locking is in order and that its handle stays in the lower position.
6. Lift up the jockey wheel to the transport position.



**Clean and lubricate the ball-coupling regularly.**

In particular, if you are parking or disconnecting the lift from the towing vehicle on a slope, apply the parking brake as firmly as possible. After having applied the parking brake, push the lift backward to make the reverse automatics release the brake shoes. The spring cylinder pulls the parking brake tighter, and the brakes of the vehicle will again be properly engaged.

Adjust the brakes according to the service instructions.

Place chocks under the wheels as an additional precaution.

## NOTICE

Observe the national traffic regulations, the local and worksite-specific instructions, as well as the instructions concerning the towing vehicle.

### Always ensure before towing:

- transport position of the outriggers
- locking of the ball-coupling
- operation of the lights, connection of the cable
- that the parking brake is disengaged
- condition and pressure of the tyres
- rear axle 270 kPa (2.7 bar)
- jockey wheel 250 kPa (2.5 bar)
- attachment of the safety wire
- locking of the brakes after the transportation
- locking of the jockey wheel in its upper position
- that the driving device is disconnected from the wheel
- that there is no load on the platform



**Always use chocks under the wheels when disconnecting the lift from the car.**

### 5.3.4. Lifting the device

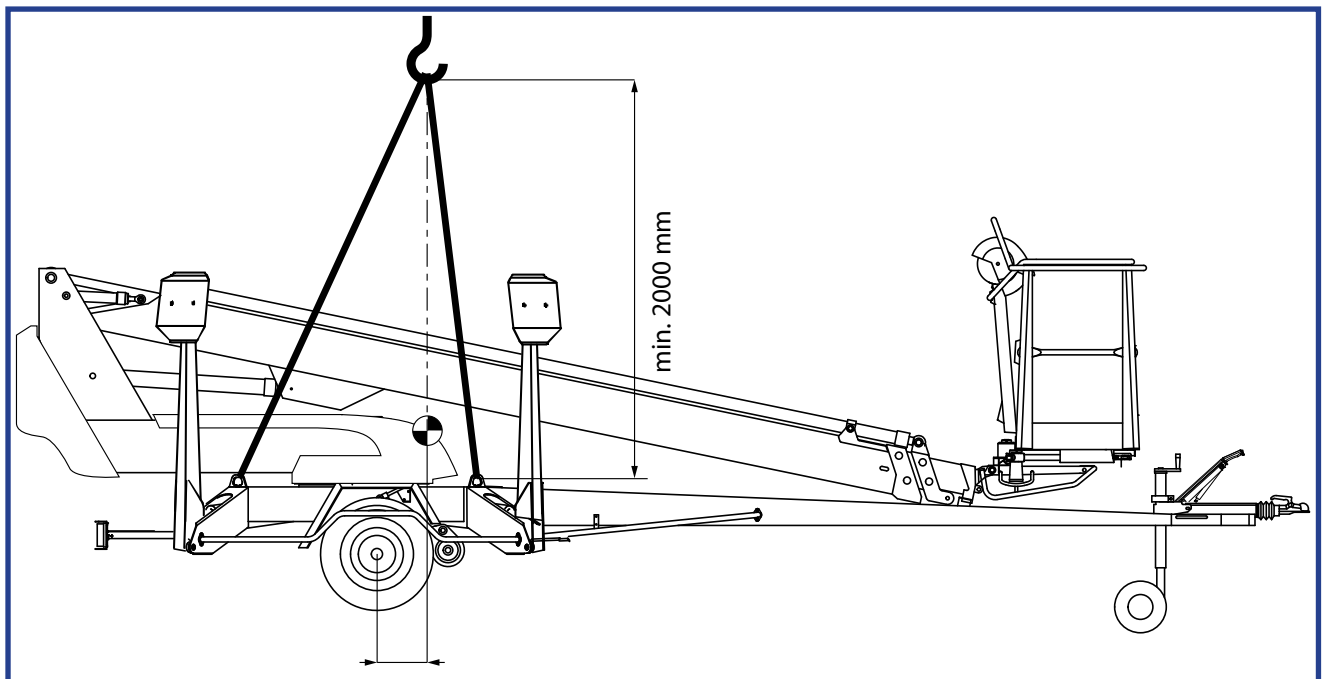
The device can be lifted using the lugs shown in the picture. The lifting lugs are located symmetrically on both sides of the lift.

During lifting the aerial work platform must be in the transport position. Remove all loose material from the top of the frame structures and the work platform before lifting.

Use for lifting a suitable crane with sufficient capacity and relevant accessories. Check the weight of the lift in the technical specifications.



**Be careful not to damage the device during the lifting operation.**



#### 5.4. LONG-TERM STORAGE

Clean the machine carefully, lubricate it and apply protective grease to it before putting it into storage for a longer period of time (see point “Lubrication plan”). Repeat the cleaning and lubrication procedures when you resume the operation.

### ***NOTICE***

If you leave the lift standing for a longer period of time, for example over the winter, we recommend propping it up to release any load from the wheels.

The periodic inspections must be executed following the steps described in the instructions.



**BLANK**



## 5.5. IN CASE OF EMERGENCY

### 5.5.1. When at risk of losing the stability

Reduced stability can be caused by a fault in the lift, the wind or other lateral force, collapse of the standing base or negligence in providing sufficient support. In most cases one sign of reduced stability is the inclination of the lift.



1. If there is time, try to find out the reason for the reduced stability and the direction of its effect. Warn other people on the worksite using the alarm signal.



2. If possible, reduce the load from the platform in a safe manner.

3. Reduce the outreach to the side by retracting the telescope. Avoid abrupt movements.

4. Turn the boom away from the danger zone, i.e. to a position where the stability of the lift is normal.

5. Lower the boom.

If the stability has been lost as a result of a fault in the lift, repair such a fault immediately.



**Do not use the lift until the fault has been repaired and the condition of the lift has been verified.**

### 5.5.2. In case of overloading



1. If there is time, try to find out the reason for the reduced stability and the direction of its effect. Warn other people on the worksite using the alarm signal.

2. If possible, reduce the load from the platform in a safe manner.



3. Reduce the outreach to the side by retracting the telescopic boom using the emergency descent system. Avoid abrupt movements.

### 5.5.3. In case the power supply is interrupted

As a precaution against power failure or other malfunction of energy supply, the lift is equipped with a manually operated emergency descent system.

Always check the condition of the emergency descent system before starting to use the lift.

**NOTE!** Using the emergency descent, retract first the telescope completely, then lower the articulated arms and the boom, and finally, turn the boom.

The lever for the hand pump (A) is located on the right-hand side of the chassis control centre. The crank for turning the boom (B) is located on the left-hand side of the chassis control centre.



The emergency descent system can only be operated from the ground. If you are on the platform, call for help to operate the system.

## Operation:

### 1. Retracting the telescope

Open the emergency descent valve for the telescope by turning the screw 27 clockwise and retract the telescope completely by pumping with the hand pump 28.

### 2. Lowering the boom

Open the emergency descent valve for the boom by turning the screw 27 counter-clockwise and lower the boom by pumping with the hand pump 28.

3. Close the emergency descent valve by turning the screw 27 to its centre position.

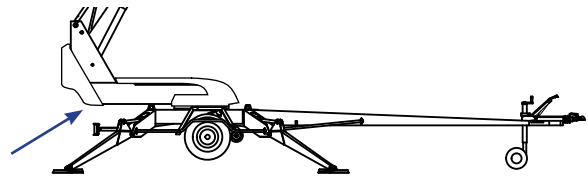
4. The boom can be turned by placing a crank on the worm gear shaft in the opening in the plastic cover of the turning device.

## 5.5.4. In case of malfunction, when even the emergency descent system is not operational

If not even the emergency system is working, try to warn other personnel present on the site or call for more help. When help arrives, try to

- restore the power supply required for normal operation of the lift
- resume the lift's normal operation by other means
- rescue the person on the platform by other means

Always check the condition of the emergency descent system battery before putting the lift into operation (see point "Operating from the chassis control centre").



## 6. INSTRUCTIONS FOR FAULT-FINDING

### 120T START

FAULT	REMEDY
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**1. The electric motor does not start from its start button although the selector switch 1 is in the position that enables operation from either the chassis or the platform control centre**

The emergency stop button has jammed in the lower position.	Pull up the button and re-start the motor from the start button.
Fuse F1 has blown.	Replace the fuse (10A).
No mains supply (230 VAC) to the selector switch.	Check the extension cords, possible distribution boards and fuses.
Fault current safety switch has tripped.	Reset the fault current safety switch.

**2. No power supply to the lift, although the main switch is on and the selector switch is in the position that enables operation from either the chassis or the platform control centre**

Power supply has not been activated.	Press the start button to activate the power supply.
--------------------------------------	------------------------------------------------------

### 120TB START

FAULT	REMEDY
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**1. The electric motor does not start when a movement is activated although the selector switch 1 is in the position that enables operation from either the chassis or the platform control centre**

The main switch is disengaged.	Switch on the main switch.
The emergency stop button has jammed in the lower position.	Pull up the button and re-start the motor from the start button.
The start switch has not been depressed at the outrigger control unit.	Start the electric motor using the start switch.
Fuse F1 has blown.	Replace the fuse (10A).
Power supply to the main centre is OK – reading in the battery gauge is 0 %.	Batteries are flat → recharge the batteries by connecting the mains cable.

**2. The electric motor does not start when either of the movements "boom up" or "telescope out" is activated but starts normally when any of the other movements is actuated**

Low battery voltage, lifting movements are impeded.	Recharge the batteries by connecting the mains cable.
-----------------------------------------------------	-------------------------------------------------------




FAULT	REMEDY
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**3. None of the boom movements is operational, although the electric motor is running and the selector switch stands in the correct position (operation either from the chassis control centre or the platform control centre)**

Green signal light for outriggers is not illuminated.	Make sure that the outriggers are steady supported on the ground, and the tyres are off the ground.
-------------------------------------------------------	-----------------------------------------------------------------------------------------------------

**4. Outriggers do not move**

The boom is not resting on the transport support.	Drive the boom onto the transport support.
The selector switch is in the wrong position.	Turn the selector switch to the correct position. 
The limit switch on the boom support has not closed.	Drive the boom onto the transport support.

**18. Driving device is not operational, although the selector switch is in the correct position**

Boom is not resting on the transport support.	Drive the boom onto the support.
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**24. Wheel brakes overheat**

Parking brake not completely released.	Release the parking brake completely.
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**25. Ball-coupling is not locked**

Inner parts of the ball-coupling dirty.	Clean and lubricate.
Tow-ball of the towing vehicle too large.	<p>Make sure that the towing ball of the towing vehicle is the right size for the lift's tow hitch.</p> <p>According to DIN74058, the diameter of the ball must be max. 50 mm and min. 49.5 mm.</p>

**In all other fault conditions, the lift must be submitted to a qualified DINO service provider.**

**To avoid malfunctions**

- Follow the operating instructions
- Beware of dangerous situations, which can damage the lift
- Keep the lift clean and protect it against moisture

**NOTES**

**NOTES**

## 7. MAINTENANCE SCHEDULE

Maint.	Schedule	Person responsible	Reference
A	Daily	Operator	Operating instructions
B	1 month / 100 hours*	Competent person who is familiar with the lift	Maintenance instructions
C	6 months / 400 hours*	Competent person who is familiar with the lift	Maintenance instructions
D	Annually / 800 hours*	Skilled technician who is well familiar with the structure and operation of the lift	Maintenance instructions
E	As needed	Skilled technician who is well familiar with the structure and operation of the lift	Maintenance instructions

\* Service must be performed every indicated month or operating hour interval, whichever comes first.

### NOTICE

In addition to the daily maintenance routines according to the maintenance schedule, every operator is obliged to perform a site-specific worksite inspection.

T = Check (general checking of condition).

P = Thorough Inspection. To be performed following the separate procedure described in the maintenance instructions.

V = Grease

S = Carry out replacements, repairs or other maintenance tasks described in the instructions

Maintenance item	A	B	C	D	E
1 Condition of chassis structures, boom and work platform	C	C	C	I	
2 Bearings of outriggers and outrigger cylinders		G	C/G	I/G	
3 Bearings of outrigger footplates and moving parts of outrigger limit switch system		G	C/G	I/G	
4 Bearings of boom		G	C/G	C/G	
5 Bearings of the platform		G	C/G	C/G	
6 Bearings of the levelling cylinders		G	C/G	C/G	
7 Bearings of the lifting cylinder		G	C/G	C/G	
8 Sliding surfaces / rolls of the telescope		C/G	C/G	C/G	
9 Bearings of the telescope cylinder			C/G	C/G	
10 Condition of cylinders				I	
11 Flyer-chain			G	I/G	
12 Slide pads and sliding pad clearances		C	C	C	
13 Turning device			G	I/G	
14 Electro-hydraulic rotating adaptor				C	
15 Tyres and tyre pressures	C	C	I	I	
16 Coupling / overrun device		C	G	I/G	
17 Jockey wheel slide and threads				I/G	
18 Brakes			C	C	
19 Axles and suspension				I	

Maintenance measures		A	B	C	D	E
20	Driving device		C	G	I	
21	Lights	C	C	C	I	
22	Hydraulic oil	C	C	C	D	
23	Hydraulic hoses, pipes and fittings	C	C	C	I	
24	Condition and attachment of battery, electrical devices and wiring		C	C	I	
25	Hydraulic pressure				I	
26	Condition of safety limit switches				C	
27	Operation of safety limit switches	C	C	C	I	
28	Load holding and load regulation valves			C	C	
29	Platform levelling system		C	C	C	
30	Platform control devices	C			I	
31	Emergency descend, emergency stop and sound signal	C	C	C	C	
32	Labels, machine plates and instruction manuals	C	C	C	C	
33	Test loading				I	
34	Corrosion protection				C	D
35	Special inspection					D

Always lubricate the lift and apply a protective grease film immediately after the washing.

The lift must always be subjected to a special inspection after an exceptional event. Special inspection is required if the lift has been damaged in a manner, which may affect its load-bearing capacity or safe operation. Consult the maintenance manual for more detailed instructions.

## NOTICE

Under demanding conditions where moist, corrosive substances or corrosive climate may speed up the deterioration of the structures and induce malfunctions, the maintenance intervals must be shortened, or the influence of corrosion and malfunctions must be reduced by using appropriate protective means.

## NOTICE

If the lift is equipped with a petrol-driven power pack, then carry out, in addition to the normal maintenance routines, also the service measures prescribed in the operating and service instructions for the power pack. Refer to the separate service manual for the power pack for instructions.

## 7.1. SCHEDULE FOR INSPECTIONS REQUIRED BY THE AUTHORITIES

**Inspections must be performed in accordance with local, state or federal regulations, legislation, directives, standards.** The manufacturer recommends following inspections, as required by local authorities in platforms country of origin.

A pre-use inspection must be done before taking the platform to use for the first time and before first start-up after major repairs and alterations.

A thorough inspection and a test loading of the lift must be carried out at least once every twelve (12) months.

The platform should undergo a major inspection within ten (10) years after having been originally put into service. A major inspection includes non-destructive testing and inspection while dis-assembled.

A special inspection should be done if the platform has been exposed to exceptional circumstances which may have affected the structural integrity of critical components.

The inspections should be carried out on regular basis throughout the service life of the lift. If the lift is used under extreme conditions, intervals between the inspections shall be reduced.

The overall operating condition of the lift as well as the condition of the safety-related control devices shall be established in the regular inspections. Particular attention shall be paid to changes which affect the operational safety.

During inspections the notifications given in previous inspections, practical experience from use and information on performed repairs should be taken into account and can be implemented for better safety.

Major and special inspections shall be carried out by a competent person or competent body, who is familiar with the operation and structure of the lift. The competent person should periodically update their knowledge and be able to demonstrate their competency if so required.

A report should be made of the inspections and the reports should be kept with the unit stored in the space reserved for it.

The report should include

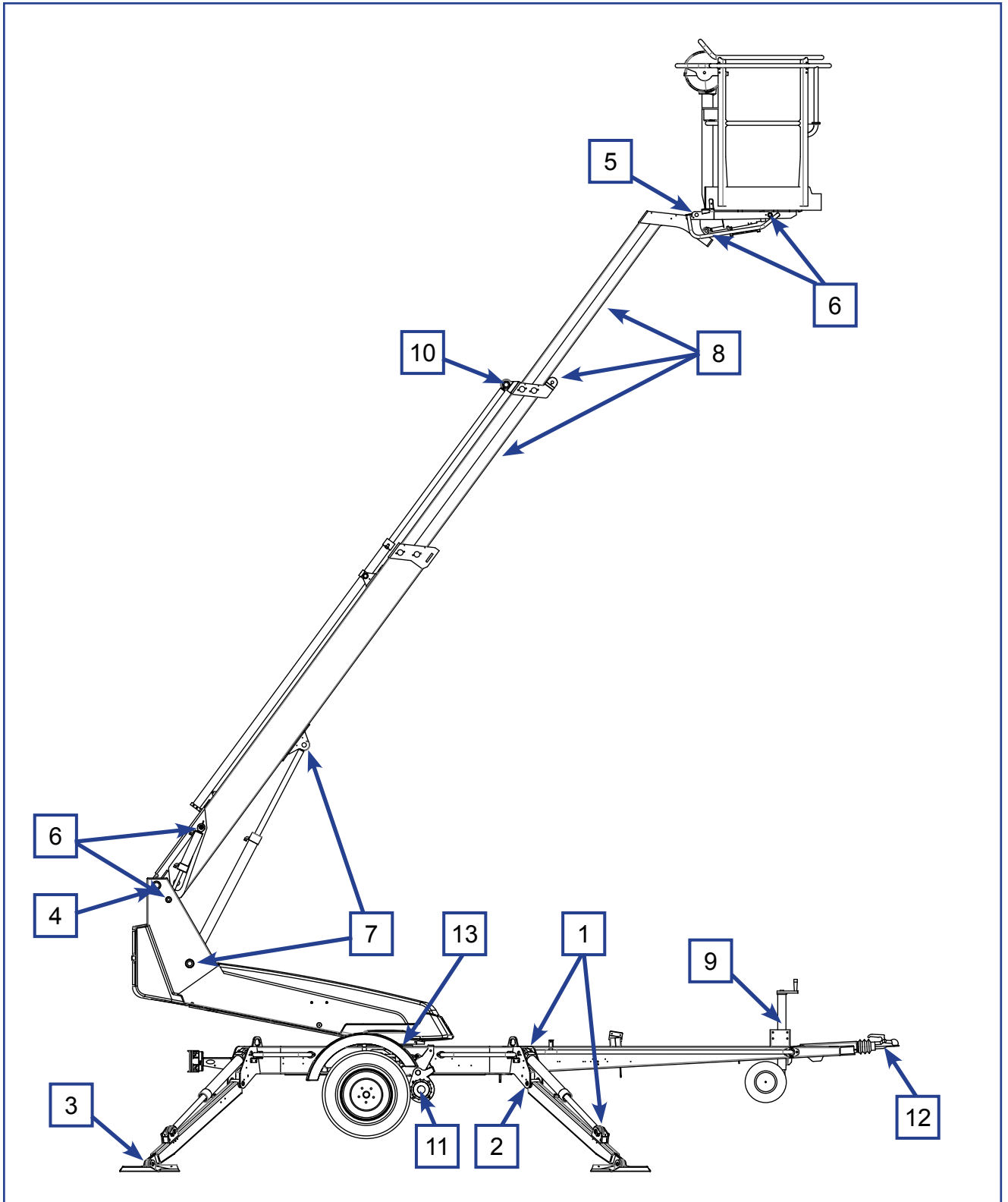
- information about the inspection
- data of repair welds (date, what was repaired and repaired by whom)

When the lift is ready for operation after annual inspection, the date of inspection shall be marked on the inspection plate affixed to the lift.

### **NOTICE**

**Check the regulations for the inspections and the competence of the inspector with the local authorities.**

## 7.2. LUBRICATION PLAN



## 8. ROUTINE MAINTENANCE DURING OPERATION

The maintenance operations, that are the responsibility of the operator, are described in this chapter.

The more demanding maintenance operations that require special skills, special tools or specific measurements and adjustment values are instructed in the separate Maintenance Instructions. In such maintenance and repair cases, the operator shall contact an authorized service provider, the distributor or the manufacturer.

Make sure that all the service and maintenance procedures of the lift are performed in time and according to the given instructions.



### WARNING

Any such faults, observed during operation or periodic service, which affect the operational safety of the unit, must be repaired before the lift is used next time.

Keep the lift clean. Clean the lift especially carefully before services and inspections. Impurities may cause serious problems, for example, in the hydraulic system.

Use original spare parts and consumables. Consult the spare parts list for more detailed information about the parts.

#### **The first service after 20 hours of operation**

- change the pressure filter element
- adjust the brakes according to the instructions (see point “Wheel brakes and bearings”)
- check the wheel bolts for tightness after about 100 km of driving
- Changing the power pack (option) oil.

**If the lift is operated under demanding conditions (in exceptionally humid or dusty environment, corrosive climate, etc.) the intervals between the oil changes and the other inspections shall be shortened to meet the prevailing conditions in order to maintain the operational safety and reliability of the lift.**

**The timely performance of the periodic servicing and the inspections is absolutely mandatory, because neglecting them may impair the operational safety of the lift.**

**The guarantee will not remain valid, if the servicing and the periodic inspections are not performed.**



## 8.1. INSTRUCTIONS FOR DAILY MAINTENANCE AND INSPECTIONS

### 8.1.1. Check the condition of chassis, the boom and the work platform

Check visually the condition of the access routes, the work platform, the platform gate and the handrails.

Check visually the condition of the boom and the frame structures.

### 8.1.2. Check the tyres and tyre pressure

Check visually that the tyres are duly inflated, and do not show any damage.

### 8.1.3. Check the lights

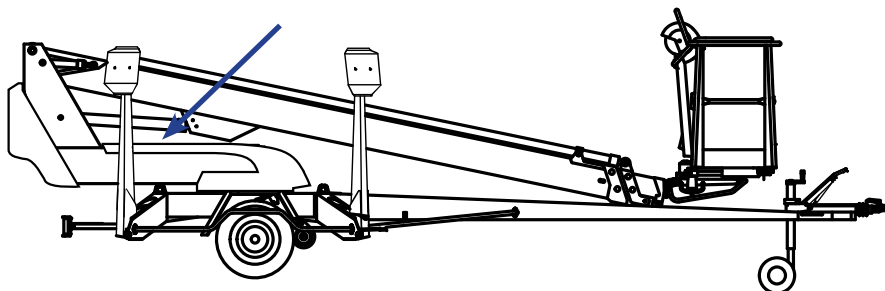
Check the condition of all the warning and signal lights as well as the road traffic lights of the trailer.

### 8.1.4. Check the hydraulic oil level

Check the hydraulic oil level with the platform in the transport position.

As required, top up hydraulic oil to the upper mark on the dipstick.

The hydraulic oil tank is located under a cover of the turning device as shown in the picture.



### 8.1.5. Check the hydraulic hoses, pipes and connectors

Check visually the hydraulic hoses, pipes and connections.

Make sure that there are no visible oil leaks.

Replace any externally damaged hoses and clashed pipes or fittings.

### 8.1.6. Check the operation of the safety limit switches

Test the operation of the safety limit switches that prevent the movements of the boom and the outriggers as follows:

1. The lift is in the transport position with the outriggers in the upper position, and the driving device connected.
2. Lift the boom via the controls in the chassis control centre.  
**The boom must not operate in any position of the selector switch.**
3. Lower the outriggers to the operating position of the lift
4. Using the controls in the chassis control centre, lift the boom so much that it raises from the support
5. Drive the outriggers.

**The outriggers must not operate in any position of the selector switch.**

### 8.1.7. Check the operation of the emergency descent, the emergency stop and the sound signal

Test the operation of the emergency stop and the emergency descent system from the chassis control centre LCB:

- lift the boom about 1–2 metres, and extend the telescope by 1–2 metres, keeping the emergency stop button depressed – the movement shall now stop
- using the emergency descent, retract first completely the telescope, then lower the boom
- pull up the emergency stop button

Test the operation of the emergency stop and the sound signal from the platform control centre.

### 8.1.8. Decals, plates and instructions

Check that all the signs, warning decals and pictorials on the control centres are in place, intact and clean.

If the labels have started to come off or tear apart, or if the symbols or texts are illegible, then the decals must be replaced.

Product numbers of the decals are visible on the decals or the product numbers of new decal sets can be found in the spare part list.

Check that the user manuals accompanying the lift are legible.

## 8.2. MAINTENANCE OF THE BATTERIES



### CAUTION

Electrolytic liquid is highly corrosive – always wear protective clothing and eye guards.  
**The batteries generate hydrogen gas during charging – naked flame prohibited, danger of explosion**

Always keep the batteries well charged

- Keeping batteries discharged is extremely harmful. Modern chargers do not charge batteries excessively.
- Make sure the user is aware that the batteries must be plugged in for charging every night, although they were not totally flat.
- Plug in a rental machine for charging over night immediately after it is returned.

### NOTICE

If the batteries are flat, using the charger for driving the machine is not recommended. The load may grow too high. Continue the charging for at least half an hour before starting the operation.

Do not allow the batteries to freeze

- A fully charged battery stands out for frost, a flat battery does not.
- Make sure the batteries are charged, if they are kept outdoors in the winter.

Make sure the level of electrolyte in the battery is correct

- Top up distilled water only after the charging is finished. Correct level of the electrolyte is 3 mm below the edge of the mark.
  - If the level is too high, the liquid will spume out from the plugs during charging.
  - If the level is too low, the upper edges of the elements will corrode.
- If the level of the electrolyte is so low, that the tops of the elements are not submerged, top up water as much as is required to cover the elements. After that, charge the batteries and recheck the electrolyte level after the charging is finished.
- Do not add into the battery acid, but only distilled water.



Check the batteries regularly

- Keep the batteries clean externally. You can wash the batteries with warm water and a brush. Make sure the plugs for the cells are closed so that washing water cannot enter the cells.
- Check the condition and attachment of the cables and the tightness of the connectors regularly.
- Check that the batteries do not show cracks or leaks.

Test the condition of the batteries regularly

- Specific weight of the liquid  
1.277 Battery 100 % charged

## **NOTICE**

If maintained well, the batteries will last 4-5 years of normal operation. Incorrect use shortens their service life rapidly.



**BLANK**





**BLANK**



## 9. CHANGE OF OWNER

For the owner of the lift:

If you have purchased a used DINO lift from some other than the manufacturer, please post your details to the manufacturer using the form on this page, and send it to:

info@dinolift.com

This information makes it possible for us to provide you with the safety bulletins and other campaigns relevant to your machine.

Note! It is not necessary to inform about a rented machine.

Machine model: DINO \_\_\_\_\_

Serial number: \_\_\_\_\_

Previous owner: \_\_\_\_\_

Country: \_\_\_\_\_

Date of purchase: \_\_\_\_\_

Current owner: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Country: \_\_\_\_\_

Contact person

Name and position in the company: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

**NOTES**



**NOTES**