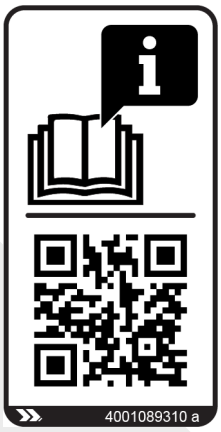
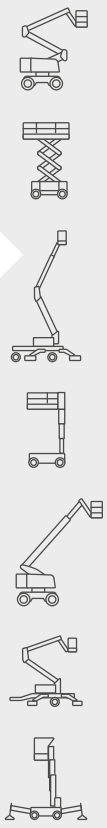
For online reference and to download the manuals for your machines , go to-:-

https://www.e-technical-information.com

or, scan the QR Code below





OPERATOR'S MANUAL

HA16 E - HA46 E - HA16 E PRO - HA46 E PRO

Touch screen display

4001290700 E 02.24 USA / GB

Contents

A-Foreword

B-Familiarization

C-Pre-operation inspection

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G-Other information

H-Records

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1 Foreword

You have just purchased a HAULOTTE® product and we would like to thank you for your business.

The aerial work platform is a device for lifting people designed and manufactured with the intent to enable users to access overhead elevated temporary workplaces with the necessary tools and equipment. All other uses or alterations/modifications to the aerial work platform must be approved by HAULOTTE®.

This manual shall be considered a permanent component of the machine and shall be kept with the aerial work platform in the designated Manual Holder, at all times.

Safe operation of this product can only be assured if you follow the operating instructions contained in this manual. To ensure the safe and appropriate use of this equipment, only trained personnel are authorised to use and carry out maintenance on the aerial work platform.

We would particularly like to draw your attention to 2 essential points:
- Comply with safety instructions.
- use this equipment within the performance limits specified by this user manual.

With regard to the designation of our equipment, we stress that this is purely for commercial purposes and not to be confused with the technical specifications. Only the specifications in this manual should be used to study the suitability of the equipment for the intended use.

This operator's manual is specific to the HAULOTTE® products listed on the cover page of this manual.

Original language and version: Manuals in English and French are the original instructions. Manuals in other languages are translations of the original instructions.

The user manual does not replace the necessary training that is required for all of this machine's operators. HAULOTTE® has compiled this manual to assist in safe and efficient operation of the products covered in the manual.

The manual must be available to all operators and must be kept in a legible condition. Additional copies can be ordered from HAULOTTE Services®.

Stay Safe and keep working with HAULOTTE®!

For online reference and to download the manuals for your machines HAULOTTE®, go to:

https://www.e-technical-information.com

or, scan the QR Code below:

2 User responsibility

2.1 Owner's responsibility

The owner (or hirer) has the obligation to:
- To inform operators of the instructions contained in the Operator's Manual.
- Follow local regulations regarding operation of the machine.
- Replace all manuals or labels that are missing or in poor condition. Additional copies can be ordered from HAULOTTE Services®.
- To establish a preventive maintenance program in accordance with the manufacturer's recommendations, taking into account the environment and severity of use of the machine.
- To perform periodic inspections in accordance with HAULOTTE® recommendations and local regulations.

All malfunctions and problems identified during the inspection shall be corrected before the aerial work platform is returned to service.

2.2 Employer's responsibility

The employer (or plant superintendent) is required:
- To train and check the training of users.
- To authorise the trained user(s) to use the machine.
- To inform and familiarize the operator with the local regulations.
- Forbid anyone from operating the machine if:
  - Under the influence of drugs, alcohol, etc.
  - Subject to fits, convulsions, dizziness, etc.

2.3 Trainer's responsibility

- The trainer must be qualified to provide training to operators in accordance with applicable local regulations.
- The training must include all of the instructions in this manual.
- The training must be given in an obstacle-free area until the trainee is considered competent as defined by the training program undertaken.

2.4 Operator's responsibility

The operator has the obligation to:
- Read and understand the contents of this manual and familiarize himself/herself with the decals affixed on the machine.
- To inspect the machine before use according to HAULOTTE®'s recommendations..
- Inform the owner (or hirer) if the manual or any decals are missing or are not legible.
- Inform the owner (or hirer) of any machine malfunction.

Operators must ensure that the inspections have been carried out by the owner and that they can use the machine for the purpose intended by the manufacturer.

All users (driver, passenger, maintainer, transporter, etc.) must familiarise themselves with the emergency controls and machine operation in case of an emergency.

The operator has the obligation to stop using the machine in the event of malfunction or safety problems on the machine or in the work area and report the problem immediately to his/her supervisor.

3 Safety

3.1 Safety instructions

3.1.1 Incorrect use

- Do not use the machine outside of the conditions specified in this manual.
- Do not use the machine as a crane, material lift or elevator.

- Do not use the work platform as a hoisting machine (crane) by suspending a load outside of the platform.
- Do not tie the boom or platform to an adjacent fixed or mobile structure.
- Do not use/operate the machine when alone. A survey person or immediate Supervisor must be present on the ground in case of emergency.
- Do not use a faulty or poorly maintained machine. Remove defective/damaged machine from service.
- Do not climb onto the compartment covers of the machine.
- Do not replace items critical to machine stability with items of different weight or specification.
- Do not replace the wheels installed in the factory with wheels with different characteristics
- Do not alter or disable machine components that in any way affect safety and stability.
- Do not disable the safety devices.
- Do not use the machine if a label is missing or illegible.
- Do not damage, modify or hide machine labels or inscriptions.

3.1.2 Falling Hazards

N.B.-:-THE GUARDRAIL IS THE MAIN PROTECTION SYSTEM AGAINST FALLS FROM THE MOBILE LIFTING PLATFORM (PEMP) .

Before commencing operation:

- Ensure that guard rails are correctly installed and secured.
- Ensure that gate or sliding bar is in its securely locked position.
- If using a machine that has a swing gate, check that the entry gate closes by itself and gate latches and locks.

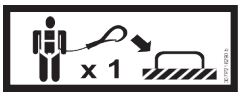
- Remove oil or grease from the steps, floor, handrail and the guardrails.
- Clean the floor of the platform (no debris).

To enter or exit from the platform:

- The machine must be completely stowed (Access configuration) .
- Face the machine to access the opening to the platform.
- Keep 3 points of contact (both hands and a foot) on the steps and the guardrail.
- Keep fingers away from moving parts near entry gate.

When in the platform:

- Where personal fall protection equipment (FPE) is required by the employer, a competent authority or local regulations, we recommend using a full harness with a safety line.
- Personal fall protection equipment must only be fastened to approved fall protection anchoring points on the platform provided for this purpose.
- Refer to this decal located on the platform.
- Safety lines must never be attached to an object or structure outside of the work platform.
- Hold on securely to the guardrails.



- Always keep your feet firmly on the floor of the platform.
- Do not sit, stand, or climb on the platform guard rails.
- Do not lean on the gate or sliding bar.
- Do not lean over the guard rails or climb over them. Only work in the platform area within the guard rails.
- Do not exit the platform until it is in the completely stowed position.
- Do not use the guardrail as a means of access to climb in or out of the platform.

3.1.3 Overturning / Tip-over Hazards

Before positioning and operating the machine:

- Ensure that the surface is capable of supporting the machine weight including the rated capacity. Check the load bearing capacity of the supporting ground.
- Remain vigilant of driving direction reversal at the platform. Check the driving direction with the help of the red or white arrows on the chassis and the platform control box.

- Do not exceed the maximum rated capacity that includes the weight of both material and allowed number of occupants. Do not exceed the allowable number of occupants.
- Do not increase the working height (using extensions, ladder, etc.).
- Do not place ladders or scaffolds in the platform or against any part of this machine.

- Position loads uniformly in the centre of the work platform.

- Do not use the machine at wind speeds that are above the permissible threshold. Refer to the display on the work platform to view the permissible wind speed.
- Do not increase the surface area of the platform exposed to wind. This includes adding panels, mesh, banners. Failure to follow this instruction may lead to a loss of stability and as a result, the machine could tip over.

- Do not raise the platform or move the machine with the platform raised on a slope with a gradient greater than the machine's permissible limit.

- Do not rotate the turret while on a slope greater than 25%.

- Do not drive the machine on slopes or grades exceeding the specified limits.

- Do not replace components critical to stability with components of different weight or specification.
- Do not use the machine with material or objects hanging from the guardrail or the boom.

- Do not pull or push towards any object outside of the platform. Do not exceed the maximum allowable side force stated in the performance specifications.
- Do not use the machine to support any external structure.
- Do not use the machine to tow other machines or to drag materials.

Using the machine on a slope:

Do not drive the machine on slopes with gradients exceeding the authorised transversal and lateral limits for the machine B 3.1 - Technical specifications.

WIND: the aerial work platform can be used up to the maximum wind speed indicated in the specifications in this manual. To identify the local wind speed, use the Beaufort scale below, a wind gauge or an anemometer.

N.B.-:-THE BEAUFORT SCALE OF WIND FORCE IS ACCEPTED INTERNATIONALLY AND IS USED WHEN COMMUNICATING WEATHER CONDITIONS. A WIND SPEED RANGE AT 10 M (32 FT 9 IN) ABOVE FLAT, CLEAR LAND IS ASSOCIATED WITH EACH DEGREE.

Beaufort scale

Force	Meteorological description	Observed effects	m/s	km/h	mph
0	Calm	Smoke rises vertically.	0 - 0,2	0 - 1	0 - 0,62
1	Very light breeze	Smoke indicates the wind direction.	0,3 - 1,5	1 - 5	0,62 - 3,11
2	Light breeze	Wind felt on the face. Leaves rustle. Weather vanes turn.	1,6 - 3,3	6 - 11	3,72 - 6,84
3	Slight breeze	Leaves and small twigs in constant motion. Flags move slightly.	3,4 - 5,4	12 - 19	7,46 - 11,8
4	Nice breeze	Raised dust and loose papers. Small branches are moved.	5,5 - 7,9	20 - 28	12,43 - 17,4

Force	Meteorological description	Observed effects	m/s	km/h	mph
5	Nice breeze	Small trees in leaf to sway. Crested wavelets form on inland waterways.	8,0 - 10,7	29 - 38	18,02 - 23,6
6	Cool wind	Large branches in motion. Power lines and chimneys 'sing'. Umbrellas used with difficulty.	10,8 - 13,8	39 - 49	24,23 - 30,45
7	Near gale	Whole trees in motion. Inconvenience felt when walking against wind.	13,9 - 17,1	50 - 61	31 - 37,9
8	Gale	Some branches break. Generally we cannot walk against the wind.	17,2 - 20,7	62 - 74	38,53 - 45,98
9	Strong gale	The wind causes slight damage to buildings. Tiles and chimney stacks are blown off.	20,8 - 24,4	75 - 88	46,60 - 54,68

3.1.4 Risk of electric shock (electrocution)

Risk of death or serious injuries.

The machine is not electrically insulated and does not provide protection from contact or proximity to electrically charged conductors.

Always position all parts of the aerial work platform, the occupants, accessories and tools at a reasonable distance from power lines to ensure that no part of the work platform accidentally comes into contact with a power line.

Apply local regulations pertaining to safety distances. If this is not possible, follow the distances in the table below at a minimum:

Minimum safe approach distances

Electric voltage	Minimum safety distance	
	Mètre	Feet
0 - 300 V	Avoid contact	
300 V - 50 kV	3	10
50 - 200 kV	5	15
200 - 350 kV	6	20
350 - 500 kV	8	25
500 - 750 kV	11	35
750 - 1000 kV	14	45

- Do not operate the machine when close to live power lines, consider the movement of the machine and the sway of the electric power lines particularly in windy conditions.
- Do not operate the machine during lightning, thunderstorms, snow/ice or any weather condition that could compromise operator safety.
- Do not use the machine as a ground for welding.
- Do not weld on the machine without first disconnecting the battery terminals.
- Always disconnect ground cable first.
- The machine must not be used while charging the batteries.
- When using the AC power supply, ensure it is protected with a circuit breaker and residual current device.




Keep away from the machine if it contacts energized power lines. Personnel on the ground or in the platform must not touch or operate the machine until energized power lines are shut off.

- Do not operate the machine or charge the batteries in hazardous environment (D 7 - Battery care and maintenance) .

Risk of electrification or electrocution:
- DC, for>60 voltsor a capacity>180 A.h ;
- AC for>25 volts.

Before any intervention on the electrical circuit, or for any work near a LIVE part, the machine bust be locked out by an authorised and properly trained person. After it is locked out, and before any intervention on the electrical power circuit, wait 5 minutes for the voltage to drop to 0 Volt. Using a voltage absence tester, make sure that the voltage is definitely at 0 Volt. MS0163 -Lock-out procedure.

Reminder of voltages and currents present on the machine:
- 12 volts DC / VDC (DC direct current version)
- 48 volts DC / VDC (DC direct current version)
- 53 volts AC / VAC (AC alternating current version)
- Capacities>180 Ah (For example, 6 Volts - 357 Ah semi-traction batteries in C5 or 435 Ah in C20) :

N.B.-:-NATIONAL REGULATIONS MAY REQUIRE TRAINING FOR OPERATORS FOR OPERATIONS ON THE ELECTRICAL PARTS.

3.1.5 Explosion / Fire Hazards

- Always wear protective clothing, glasses or a face protection shield and gloves when working on batteries or energy sources.

N.B.-:-ACID IS NEUTRALIZED WITH SODIUM BICARBONATE AND WATER.

- Do not start the engine if you smell or detect liquid propane gas (LPG), gasoline, diesel fuel or other explosive substances.
- Do not work on or operate a machine in an explosive or flammable atmosphere / environment.
- Do not touch hot components.
- Do not bridge the battery terminals with metallic objects.

- Do not service the battery in proximity of spark, open flame, lit cigarettes.
- Do not fill up the fuel tank, when the engine is running and/or near a flame.

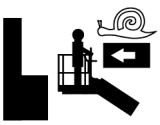
3.1.6 Crushing / Collision Hazards

Before using the machine, mark out the machine's work and circulation area using a marking system appropriate to the task at hand and the work environment.

When in the platform:

- Check the work area for overhead clearance, for any obstacles besides and below the platform when raising/lowering the platform and or before driving.

- During movement, keep all the parts of the body inside the platform. Hold onto the guardrails on the opposite side to any surrounding structures. Take care to avoid trapping hands whilst holding the guardrails.
- To position machine close to a building/structure, it is recommended using the upper boom and or arms movement control functions to position, rather than driving machine closer to structure.



- Warn personnel not to work, stand, or walk under a raised boom/platform.
- Be aware of the boom position and tail swing when rotating the turret (turntable).
- Always ensure that the chassis is never kept any closer than 1 m (3 ft 3 in) to holes, bumps, slopes, obstructions, debris and ground coverings that may hide holes and other dangers.
- Keep non-operating personnel at least 5 m (16 ft 5 in) away from the machine when driving and slewing.

- Be aware of driving direction.
- When turret is slewed/rotated 180°, the platform is now facing the rear of the machine.
- Check the driving direction with the help of the red or white arrows on the chassis and the platform control box.
- Also note that when changing the driving direction (Forward <> Reverse) the joysticks or switches must return to the neutral position before reversing the drive direction and for movement to occur.

- When driving, position the platform so as to provide the best possible visibility and to avoid any blind spots.
- Hold on securely to the guardrails.
- **Personal Protection Equipment (EPI)** :
  - The occupants of the aerial work platform must wear personal protection equipment and comply with local regulations in force.
  - Operators must comply with the safety standards of the job site and the employer, as well as the applicable state regulations relating to the use of personal protective equipment.
  - All personal fall protection equipment (PFPE) must comply with current regulations, must be inspected and used in accordance with the manufacturer's instructions.
- Avoid contact with fixed or mobile obstacles (other machines).
- Other machines (crane, aerial work platform, etc.) operating in the work area increase the risk of crushing or collision. Restrict the operation of machines moving within the aerial work platform work area.
- Take into consideration the stopping distance, reduced visibility and blind spots of the machine.
- Limit travel speed to suit the ground surface condition, slope (incline), and people in the vicinity.

3.1.7 Risk of involuntary movements

Never use a damaged or malfunctioning machine.

Always respect the following rules:

- Maintain clearance from high voltage lines.
- Maintain clearance from generators, radar, electromagnetic fields.
- Never expose the batteries or electrical components to water (high pressure washer, rain).

4 Safety inquiries

Inquiries relating to design criteria/specifications of a product, standards compliance, or overall machine safety should be sent to the HAULOTTE® PRODUCT SAFETY department.

Each inquiry or request should include all relevant information; including contact name, telephone number, mailing address, email address, plus the machine model and serial number.

The HAULOTTE® Product Safety department will evaluate each request/inquiry and will provide a written response.

5 Incident notification

Notify HAULOTTE® immediately when a HAULOTTE® product has been involved in an incident/accident leading to personal injury or death, or when there is a major property damage.

HAULOTTE Group - EUROPE Product Safety Department

Address: Rue Emile Zola - 42420 Lorette - France

Tel: +33 (0)4 77 29 24 24

Email: productsafety.europe@haulotte.com

HAULOTTE Group - Australia, India and Asia Product Safety Department

Address: No.26 Changi North Way - Singapore 498812 - Singapore

Tel: +65 6546 0123

Email: productysafety.apac@haulotte.com

HAULOTTE Group - North & South America Product Safety Department

Address: 3409 Chandler Creek Rd. - Virginia Beach, VA 23453 - United States

Tel: +1 757 689 2146

Email: productsafety.americas@haulotte.com

Connect to our website: www.haulotte.com

6 Compliance

6.1 Product modification

It is strictly forbidden to modify a HAULOTTE® product. Any modification may violate Haulotte design parameters, local regulations and industry standards.

Any requests for modification must be formulated in writing (form) and be approved by the manufacturer.

Do not hesitate to contact HAULOTTE Services®, should you have any questions relating to the issued bulletin(s) or with questions on the policy itself.

6.1.1 Implementing manufacturer safety campaigns

It is essential to implement the safety campaigns issued by the manufacturer. All of these campaigns are accessible on our website.

Connect to our website: www.haulotte.com

Never market (or sell) a machine without first having carried out all of the safety campaigns.

6.2 Product specifications

HAULOTTE® cannot be held liable for any changes to the technical characteristics/specifications contained in this manual. HAULOTTE® has a continuous improvement policy in place for its product range. Given this policy, the Company reserves the right to modify products technical characteristics / specifications without notice.

6.3 Change of Ownership Notification

It is important and necessary to keep HAULOTTE Services® updated with current ownership of the machine. This way, HAULOTTE® will be able to provide the necessary support for the product. If you have sold or transferred this machine(s); it is your responsibility to notify HAULOTTE Services®. It is not required to include Lessees/Renters of Leased/Rented machines on this form.

Connect to our website: www.haulotte.com

6.4 Declaration of conformity

The CE declarations of conformity only apply to machines that have been approved and commissioned within the European Community (EC).

6.4.1 Declaration of conformity - All machines

The UKCA declarations of conformity only apply to machines that have been approved and commissioned within the United Kingdom (UK).

Declaration of conformity - UKCA and CE standards

Haulotte

UKCA / EC DECLARATION OF CONFORMITY

HAULOTTE Factory

CE UKCA

Declares under our own responsability that the machine described below :

Mobile Elevating Work Platform

Commercial name
Type
Serial number

Commercial name of the concerned machine
Model type of concernend machine
Serail number of the machine

Conforms with provisions of the Regulations listed below :

CE

EC Machinery Directive 2006/42/CE
EC Directive electromagnetic compatibility 2014/30/EU
EU RED Directive on radio equipment (if machine equipped) 2014/53/UE

UKCA

Supply of Machinery (safety) 2008 SI2008/1597 amended SI2011/1043/2157 2019/696
Electromegnetic compatibility 2016 SI 2016/1091 amended SI 2017/1206, 2019/696
Radio equipment (if machinery equipped) 2017

This machine has been type examined by :

Name of the Authorized body :

Name of the Approved body :

Certificate number :

Certificate number :

Harmonized standard(s) used as reference(s) :
EN280:2013 +A1:2015

Designed standard(s) used as reference(s) :
BS EN280 : 2013 + A1 : 2015

Person authorised to compile the technical file :

HAULOTTE GROUP
Compliance Manager
RUE EMILE ZOLA
CS 30045 42420 LORETTE FRANCE

HAULOTTE UK ltd
General Manager UK and Ireland
Unit 1 Gravelly Way, Four Ashes
Wolverhampton, West Midlands WV10 7GW
ENGLAND

Name and Signature
Division Director

Date and place

MVZ5910H-CE-UKCA - V2.0.5

7773569301523400117*MVZ5910PF-02

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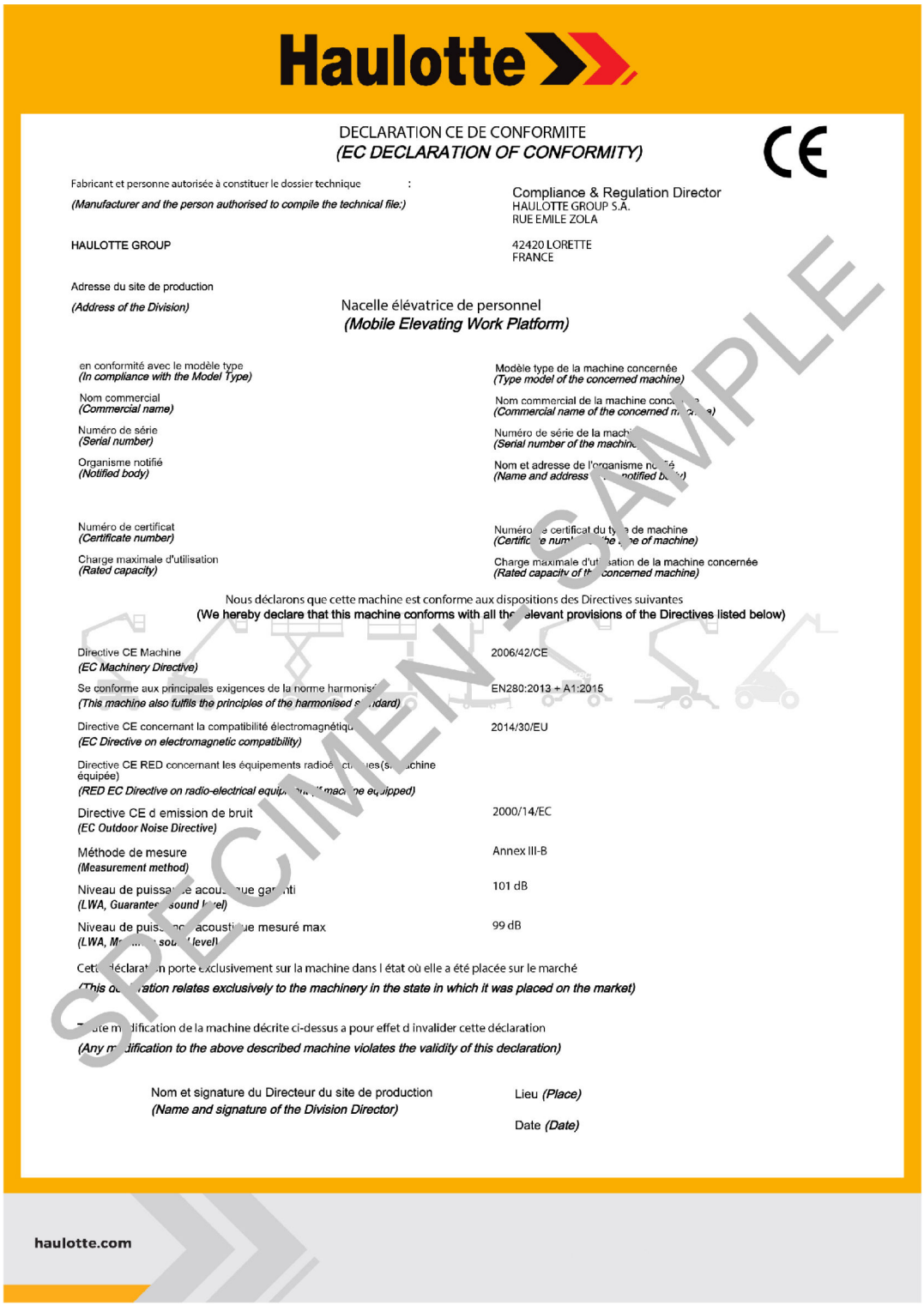
6.4.2 Declaration of conformity - Thermal platforms

Declaration of conformity - CE standard



Haulotte

DECLARATION CE DE CONFORMITE
(EC DECLARATION OF CONFORMITY)

CE

Fabricant et personne autorisée à constituer le dossier technique :
(Manufacturer and the person authorised to compile the technical file:)

Compliance & Regulation Director
HAULOTTE GROUP S.A.
RUE EMILE ZOLA

HAULOTTE GROUP

42420 LORETTE
FRANCE

Adresse du site de production
(Address of the Division)

Nacelle élévatrice de personnel
(Mobile Elevating Work Platform)

en conformité avec le modèle type *(In compliance with the Model Type)*	Modèle type de la machine concernée *(Type model of the concerned machine)*
Nom commercial *(Commercial name)*	Nom commercial de la machine conc... *(Commercial name of the concerned m...)*
Numéro de série *(Serial number)*	Numéro de série de la machi... *(Serial number of the machin...*
Organisme notifié *(Notified body)*	Nom et adresse de l'organisme n... *(Name and address ... notified b...)*
Numéro de certificat *(Certificate number)*	Numéro ... certificat du t... de machine *(Certific... nu... ...he ...e of machine)*
Charge maximale d'utilisation *(Rated capacity)*	Charge maximale d'ut...sation de la machine concernée *(Rated capacity of th... concerned machine)*

Nous déclarons que cette machine est conforme aux dispositions des Directives suivantes
(We hereby declare that this machine conforms with all the ...elevant provisions of the Directives listed below)

Directive CE Machine *(EC Machinery Directive)*	2006/42/CE
Se conforme aux principales exigences de la norme harmonis... *(This machine also fulfils the principles of the harmonised ...ndard)*	EN280:2013 + A1:2015
Directive CE concernant la compatibilité électromagnétiqu... *(EC Directive on electromagnetic compatibility)*	2014/30/EU
Directive CE RED concernant les équipements radioé...ques(s...chine équipée) *(RED EC Directive on radio-electrical equip... ...mac...e equipped)*	
Directive CE d emission de bruit *(EC Outdoor Noise Directive)*	2000/14/EC
Méthode de mesure *(Measurement method)*	Annex III-B
Niveau de puissa...e acou...ique ga...nti *(LWA, Guarante... sound l...vel)*	101 dB
Niveau de puis...n ...acousti...e mesuré max *(LWA, M... ... sou... level)*	99 dB

Cett... déclara...n porte exclusivement sur la machine dans l état où elle a été placée sur le marché
(This d... ...ation relates exclusively to the machinery in the state in which it was placed on the market)

...ute m...dification de la machine décrite ci-dessus a pour effet d invalider cette déclaration
(Any m...dification to the above described machine violates the validity of this declaration)

Nom et signature du Directeur du site de production
(Name and signature of the Division Director)

Lieu *(Place)*

Date *(Date)*

SPECIMEN - SAMPLE

haulotte.com

Notes

Notes

1 General safety

1.1 Intended use

The HAULOTTE® (PEMP) lifting platforms are machines designed to move people, tools and equipment to work stations located at height.

N.B.-:-USE THE MACHINE UNDER "NORMAL" CLIMATIC CONDITIONS. IF YOU NEED TO USE THE MACHINE IN CLIMATIC CONDITIONS LIKELY TO CAUSE DETERIORATION (EXTREME : HUMIDITY, TEMPERATURES, SALINITY, CORROSIVENESS, ATMOSPHERIC PRESSURE), CONTACT HAULOTTE SERVICES®. REDUCE INTERVALS BETWEEN SERVICING.

N.B.-:-IN HARSH ENVIRONMENTS (HIGH LEVELS OF SALINITY IN THE ATMOSPHERE: CLOSE TO THE SEA, INDUSTRIAL ENVIRONMENT WITH CHLORIDE EMISSIONS AND/OR HUMIDITY > 70%), WE RECOMMEND APPLYING SOLVENT-BASED OIL TO THE ENTIRE MACHINE.

N.B.-:-ENSURE THAT THE MACHINE IS LOCKED IN A SAFE PLACE AND THAT THE STARTER KEY HAS BEEN REMOVED TO PREVENT ANY UNAUTHORIZED USE OF THE MACHINE.

1.2 Decal content

The purpose of the labels on the machine is to alert the user to the conditions of use and risks related to aerial work platforms.

Decals provide the following information:

- The level of severity.
- The specific hazard.
- A method to avoid, suppress or reduce the hazard.
- Descriptive text (where required).

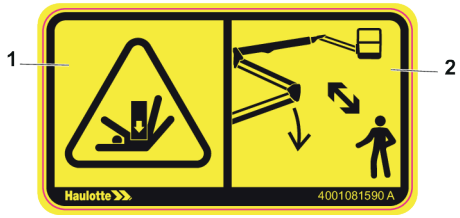
Familiarize yourself with the decals and the hazard severity levels.

The labels must be kept in good condition, otherwise they must be replaced.

Familiarize yourself with the decals and their respective color codes.

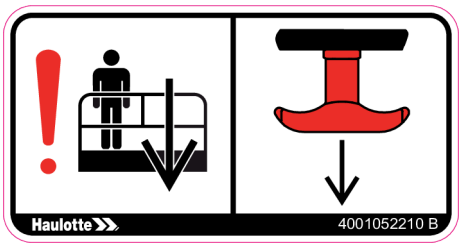
Additional decals can be ordered from HAULOTTE Services®.

CE, UKCA, AS and EAC standards - Label warning risk



Marking	Description
1	Risk identification symbol
2	Avoidance symbol pictorial

CE, UKCA, AS and EAC standards - Label informing about an important function of the machine



ANSI and CSA standards

Marking	Description
1	Risk identification symbol
2	Level of severity
3	Avoidance symbol pictorial
4	Avoidance text

1.3 Level of severity

Color	Title	Description
	DANGER	Danger: Indicates a hazardous situation which if not avoided, WILL result in death or serious injury.
	WARNING	Warning: Indicates a hazardous situation which if not avoided, COULD result in death or serious injury.
	CAUTION	Caution: Failure to comply could result in minor or moderate injury.
	NOTICE	Notice: Indicates recommended practices if not followed, may result in a malfunction or damage the machine or its components.
	PROCEDURE	Procedure: Indicates a maintenance operation.

1.4 Symbols legend and definitions

Symbols are used throughout this manual to depict hazards, avoidance measures and indicate when information is required.

Refer to the following table to familiarize yourself with these symbols.

Symbol	Description	Symbol	Description	Symbol	Description
	Body crushing hazard		Foot crushing hazard		High pressure fluid ejection hazard
			Hand crushing hazard		Entanglement hazard
			Health/safety hazards related to chemicals		Health-damaging effects from hot work environment
	Electrical contact or lightning strike		Burns and scalds from contact with flames, explosion or radiation from heat sources		Injury from Electric arcs - Energy supply disconnecting devices - Batteries fire, emissions, etc
	Risk of operator(s) falling		Tip over due to excessive loading / wind load and excessive ground slope		Relate and coordinate directional arrows on the chassis with those on the control box
	Do not put foot in this area		Do not put your hand in this area		Keep away from product working area
	Never expose batteries and electrical component to high pressure washer		Ensure entry drop rail is down		

Symbol	Description	Symbol	Description	Symbol	Description
	Flames prohibited		Maintain safe clearance from high voltage electrically charged conductors as described in manual - Do not use in thunderstorms		Overload
	Refer to operator manual		Safety belt		Use appropriate lanyard attached to dedicated anchor point.
	Wheel pressure		Enable switch		Use safety prop before attempting any maintenance work
	Tow point		Tie down point		Lift point
	Keep away from hot surfaces		Wear protective equipment		Recharge the batteries

1.5 Symbols and colors

Symbols and colors are used to alert the operator of safety precautions and/or to highlight important safety information.

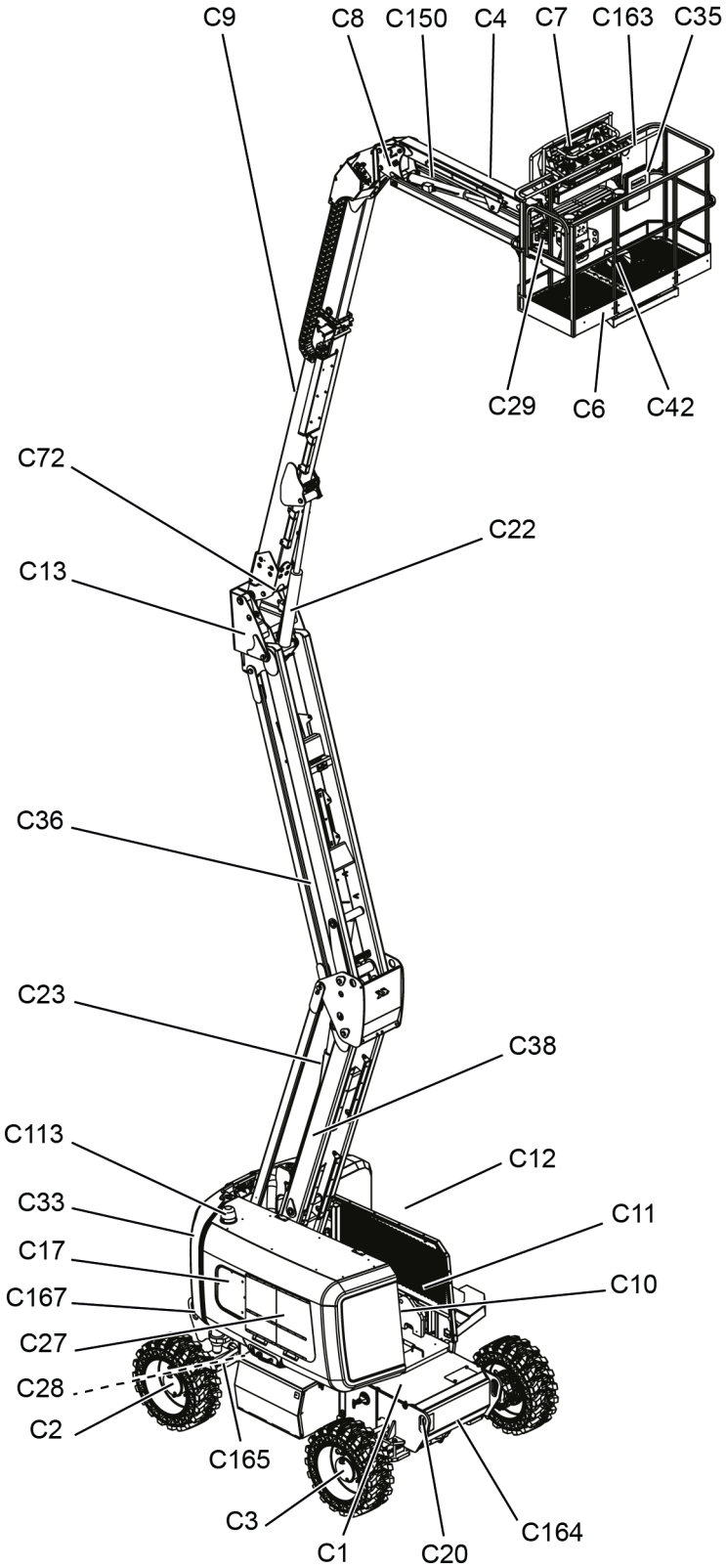
The following safety symbols are used throughout this manual to indicate specific hazards and the hazard severity level when operating or maintaining the Aerial Work Platform.

Symbol	Description
	Danger: Risk of injury or death
	Caution: Risk of material damage
	Prohibited action
	Reminder to use good practice or follow pre-operation checks
	Cross-reference to another part of the manual
	Cross-reference to another manual
	Cross-reference to repair (contact HAULOTTE Services®)
N.B.:	Additional technical information

2 Primary machine components

2.1 Layout

HA16 E - HA46 E - HA16 E PRO - HA46 E PRO



Marking	Description	Marking	Description
C1	Chassis	C27	Ground control box+Universal plug
C2	Steering wheel	C28	Tilt sensor
C3	Rear drive wheel (and steer wheel if 4WS)	C29	Platform rotation cylinder
C4	Jib	C33	Counterweight
C6	Platform	C35	Document holder
C7	Platform control box	C36	Top arm
C8	Input jib leveling cylinder	C38	Bottom arm
C9	Upper boom	C42	Foot Switch
C10	Slew ring	C72	Output jib compensation cylinder
C11	Turntable assembly	C113	Beacon light
C12	Range Extender (If equipped)	C150	Jib lifting cylinder
C13	Arm/Boom link piece	C163	Hand (grab) rail
C17	Left compartment (hydraulic tank, motor pump unit and electrical components)	C164	Non-steering fixed axle (For HA16 E - HA46 E only) Steering fixed axle (For HA16 E PRO - HA46 E PRO only)
C20	Tie-down (and/or lifting) points	C165	Non-oscillating steering axle (For HA16 E - HA46 E only) Oscillating steering axle (For HA16 E PRO - HA46 E PRO only)
C22	Boom lift cylinder	C167	Battery charger socket
C23	Arm lifting cylinder		

2.2 Ground control box

2.2.1 Layout - Touch screen display

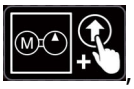
General view

Controls and indicators

Marking	Name	Description	Function
1	SA720U	Platform tilt control	By pressing on  : Tilt the platform towards the front of the machine
	SA720D		By pressing on  : Tilt the platform towards the back of the machine
2	SA620U	Jib raising / lowering control(1)	By pressing on  : Jib raising
	SA620D		By pressing on  : Jib lowering
3	SA530O	Boom telescoping switch	By pressing on  : Boom extending
	SA530I		By pressing on  : Boom retracting
4	SA520U	Boom raising / lowering control	By pressing on  : Boom raising
	SA520D		By pressing on  : Boom lowering
5	SA420U	Arm raising / lowering switch	By pressing on  : Arm raising
	SA420D		By pressing on  : Arm lowering
6	SB800	Enable Switch	Pressing  confirms the movement commands.
7	SA250L	Turntable rotation switch	By pressing on  : Counter clockwise (CCW) rotation
	SA250R		By pressing on  : Clockwise (CW) rotation

(1) For machines fitted with

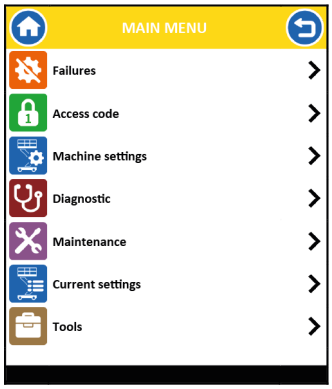
Marking	Name	Description	Function
8	SA750L	Platform rotation switch	By pressing on  : Counter clockwise (CCW) rotation
	SA750R		By pressing on  : Clockwise (CW) rotation
9	SB801	E-stop button	Pulled out: Ground control box energized
			Pushed in (activated): De-energizes control system
10	HL905	Indicator of the platform control box selection	indicator on: Platform control box selection
11	SA801	Overriding system control	By pressing on  : Authorize movements from the ground control box in case of overload (Use ONLY in case of emergency) .
12	SB807	Horn button	By pressing on  : Horn activation
13	HL906	Indicator, ground control box selected	indicator on: Turret control box selection
14	SA903	Beacon light on/off	By pressing on  : Beacon light ON / OFF
15	HL909	Overload indicator/Fault	Alarm icon  - Overload icon (15) and Engine warning icon (16) are lit, when power is switched ON. - Overload icon will be blinking: • If there is a fault, an error code will be displayed on the . • Or Hydraulic oil temperature icon is active on the . • Or Overload machine status is active on the .
16	HL908	Engine warning indicator/ Engine pre-heating	Warning icon  - Overload icon (15) and Engine warning icon (16) are lit, when power is switched ON. - Engine warning icon will be blinking: • Engine warning icon will be displayed on the . • Or Tilt machine status will be displayed on the . • Or Engine is pre-heating.

Marking	Name	Description	Function
17	SA310	Emergency back-up power	By pressing on  , when there is no normal power available, this switch works as an enable switch that must be pressed simultaneously with a desired function to activate movement.
18	SA308	Full Electric mode (If equipped with the Range Extender option) Refer to operator manual-  D 1.5 - Mode operation	In Full Electric mode, the combustion engine never starts. Energy comes from the batteries. This mode  is activated by default when starting the machine.
19	SA309	Auto mode (If equipped with the Range Extender option) Refer to operator manual-  D 1.5 - Mode operation	In Auto Mode  , the combustion engine starts and stops depending on the machine's use and traction battery charge level. The combustion engine recharges the batteries.
20	SA905ST	Manual mode (Forced charging) (If equipped with the Range Extender option) Refer to operator manual-  D 1.5 - Mode operation	In Manual Mode  , the user starts and stops the combustion engine. The combustion engine recharges the batteries. The combustion engine stops automatically when the batteries are charged and if no movement is initiated.
21	SA900	Control box activation key switch	 : De-energizes control system
			 : Platform control box energized
			 : Ground control box energized
22	—	Touch screen display	

2.2.2 Touch screen display

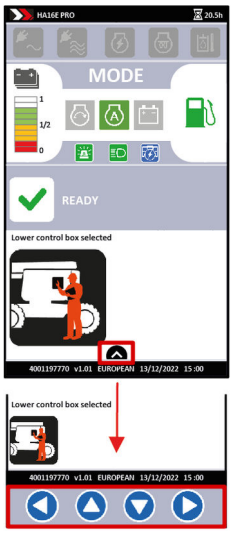
Upon starting and during operation of the machine, the touch screen display located on the ground control box displays in real time the machine operating status.

Touch screen display

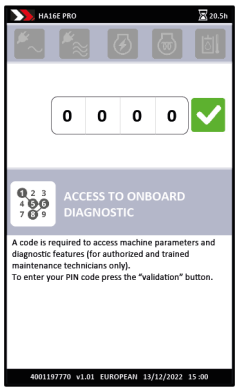
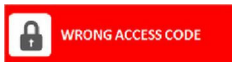
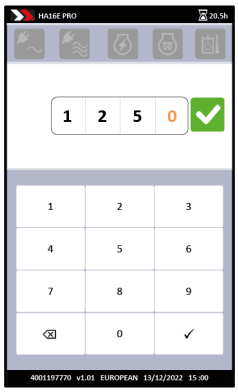
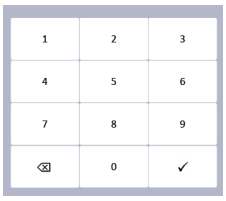
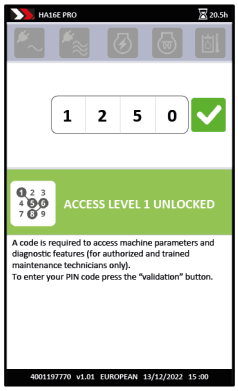


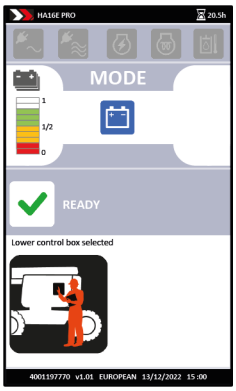
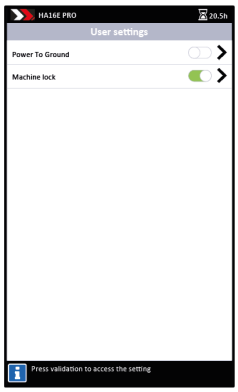
	Home Button
	Back button
	Access menu button
	Failures
	Access code
	Machine settings
	Diagnostic
	Maintenance
	Current settings
	Tools

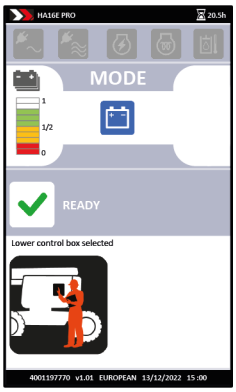
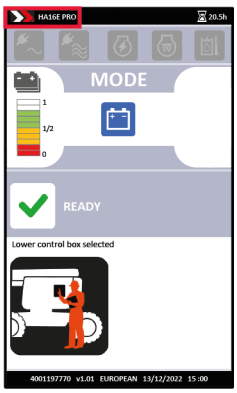
N.B.-:-PRESS YOUR FINGER ON THE TOUCH SCREEN TO NAVIGATE THROUGH THE DIFFERENT MENUS.

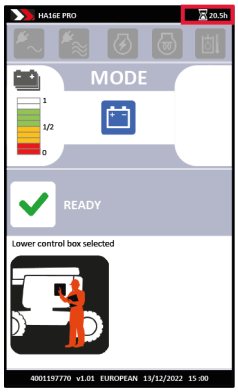


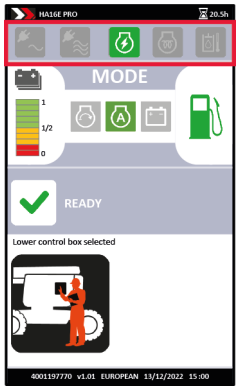
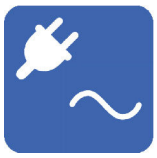
	Pressing the icon displays the navigation arrows
	Scroll left button
	Scroll up button (Scrolling is possible by sliding your finger vertically on the screen)
	Scroll down screen button (Scrolling is possible by sliding your finger vertically on the screen)
	Scroll right button

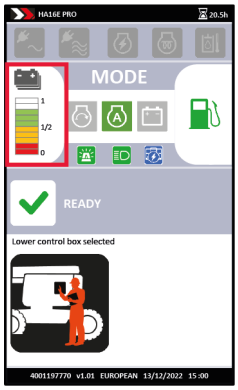
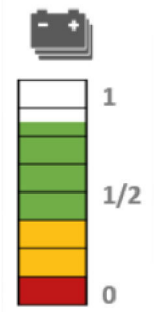
<table>
<tr><th>Icon</th><th>Description</th><th>Icon</th><th>Description</th></tr>
<tr><td rowspan="3"> 
</td><td rowspan="3">Access code
(Will be visible - depending on the machine)</td><td> 
</td><td>Access code not yet entered</td></tr>
<tr><td> 
</td><td>Access code entered is correct (Level 1, 2 or 3 depending on authorization of technician)</td></tr>
<tr><td> 
</td><td>Access code entered is incorrect</td></tr>
<tr><td rowspan="2"> 
</td><td rowspan="2">Enter access code
(Will be visible - depending on the machine)</td><td> 
</td><td>Enter the access code using the keypad (Press the touch screen)</td></tr>
<tr><td>  </td><td>Validation of the access code (Press the touch screen)</td></tr>
<tr><td rowspan="4"> 
</td><td rowspan="4">Access code NIV 1
(Will be visible - depending on the machine)</td><td colspan="2">The machine can be personalized with a user identification code. Personalization is only possible with NIV 1 : 1250 access.
Machine properties display: Soft version, machine serial number, adjustment parameters.
Possible change of parameters: Language, fault display format, brightness setting, time, and some options availables.</td></tr>
<tr><td> 
</td><td>Operator PIN code not yet entered</td></tr>
<tr><td> 
</td><td>Operator PIN code entered is correct</td></tr>
<tr><td> 
</td><td>Operator PIN code entered is incorrect</td></tr>
</table>

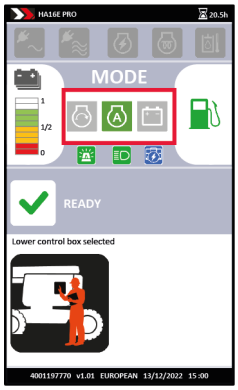
Icon	Description	Icon	Function
			
	User settings		Machine movements locked by code
			Activates or deactivates the ground control box power supply

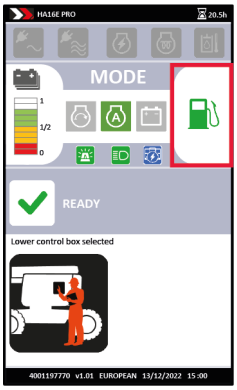
Icon	Description	Icon	Description	Function
Home screen (dashboard)				
				
	Machine model zone		Machine Model	Machine model display

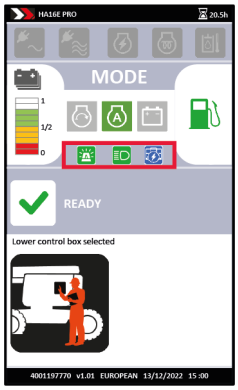
Icon	Description	Icon	Description	Function
	Hour meter/next maintenance zone		Hourmeter	The hourglass will flash if there is movement or motion of the machine.
			Maintenance use	The Maintenance Tool icon and the number of hours remaining until the next maintenance are displayed for 5 seconds when the machine is started up. Maintenance Tool icon blinks; if maintenance is due.
				The maintenance tool icon turns RED when the next scheduled maintenance must be carried out in under 25 hours

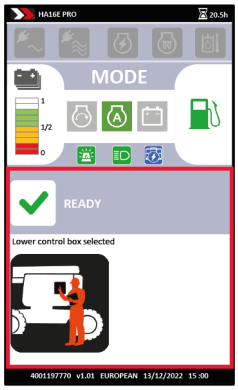
Icon	Description	Function
Home screen (dashboard)		
	Charging icons zone	
	Single-phase	The single-phase charge socket is connected to an electricity network
	Three-phase	The three-phase charge socket is connected to an electricity network
	Range Extender connection	The Range Extender is connected to the machine
	Engine preheating	Engine preheating in progress. Please wait a few seconds.
	Hydraulic oil overheating	Hydraulic oil overheating detection

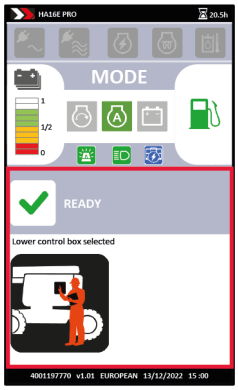
Icon	Description	Function
Home screen (dashboard)		
	Functional information zone	
	Battery charge status	Battery charge status gauge
	Charging	The machine recharges itself
	Battery accelerated recharge	The machine recharges itself
	Battery charge complete	Charge finished and complete

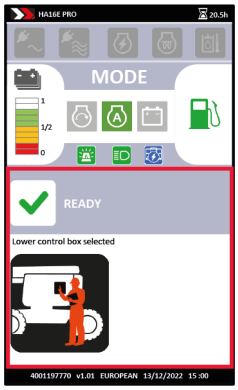
Icon	Description	Function
Home screen (dashboard)		
	Functional information zone	
	Electric mode	In electric mode, the machine will operate under battery power only. No emission
	Auto mode	In mode ECO the machine will automatically manage engine and electric inputs
	Forced mode	In FORCE mode the machine will operate using the engine and battery will keep charging

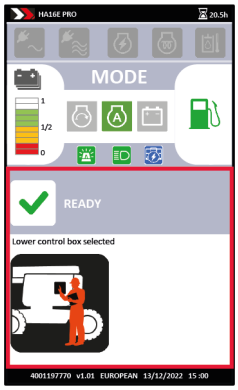
Icon	Description	Function
Home screen (dashboard)		
	Functional information zone	
	High fuel level	Sufficient fuel level
	Low fuel level	Fuel level is low. Refill the fuel tank to the marked level

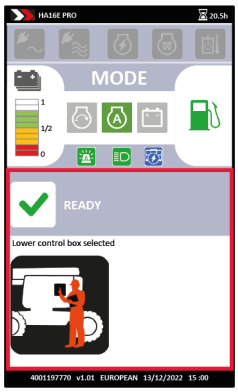
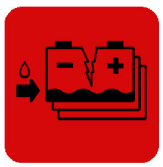
Icon	Description	Function
Home screen (dashboard)		
	Additional functions	
	Beacon	The icon is ON when the flashing light is switched on
	Activ' Lighting System	The icon is ON when the Activ' Lighting System is switched on in auto or manual mode
	Platform supply	The platform power supply is on

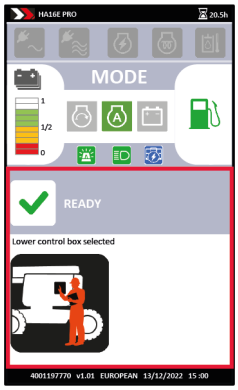
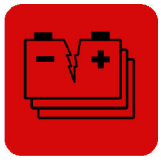
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Pictogram and title	Displays the pictogram and machine status
	Ready	Machine ready, displayed when no failures and no other machine state icons is active
	Alarm	The alarm icon blinks in case of: - Machine failure - Failure detected - Machine overloaded - Machine on excessive slope Another icon will be displayed to show the machine's status, the failure or the malfunction

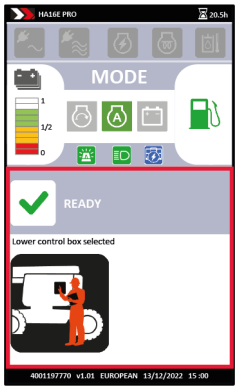
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Platform control box selected	Selector switch is in platform control box position.
	Ground control selected	Selector switch is in ground control box position.
	Tilt	The machine is elevated , and is on a slope greater than the permitted slope. Depending on the machine configuration, the lifting and extension functions are slowed or stopped.
	Overload	The platform is overloaded. Remove the excessive load to or below the rated capacity, to restore functions. In case of an emergency, to rescue the operator in platform, use the Overriding system.
	Machine is charging	Battery recharge (From the mains) .

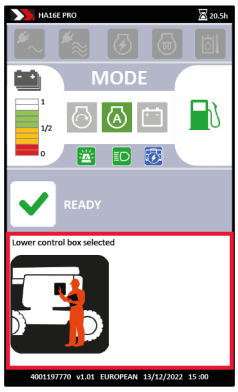
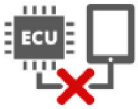
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Platform control box E-stop button	E-Stop at platform control box has been pushed in (de-energized). The machine will switch off after several seconds if the key selector (21) on the ground control box is in the  position.
	Emergency mode inactive	The Overriding system (11) command is inactive because the machine is not in overload. Use the activation command to rescue an operator who is stuck or unable to get out.
	Emergency mode active	Emergency Mode, use only to rescue trapped or incapacited operator. Press and hold this Emergency Button AND the movement button required.

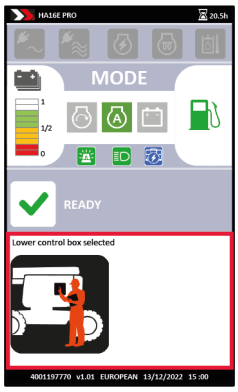
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Battery level low	Use the engine mode or ECO mode to recharge the battery or connect the machine to a power outlet.
	Maximum charging time reached	 Refer to the Service Manual

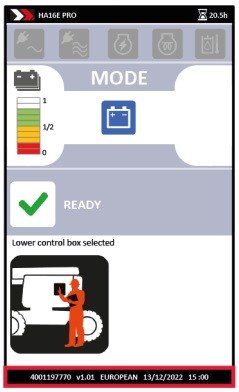
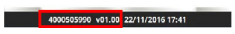
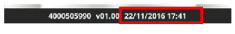
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Low Water level battery	Low water level in the battery, yrefill the tank with demineralized water. Make a full recharge. If the level of water is not correct, high risk of batteries damage. Lifting movements are prohibited.
	Low water level tank	Low water level in the battery, yrefill the tank with demineralized water. Make a full recharge. If the level of water is not correct, high risk of batteries damage. Lifting movements are prohibited.

Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Battery standard recharge (35 h hours without full recharge)	Warning next recharge must be a full recharge by plugging the machine electrical socket to external source of power. If not, high risk of batteries damage and the machine will be blocked.
	Battery standard recharge (45 h hours without full recharge)	Warning next recharge must be a full recharge by plugging the machine electrical socket to external source of power to prevent damage on the batteries

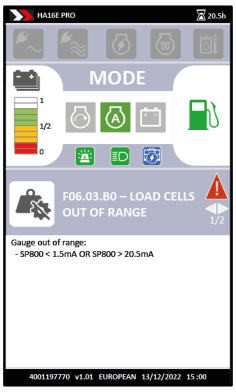
Icon	Description	Function
Home screen (dashboard)		
	Machine status zone	
	Schedule maintenance	 Refer to the Service Manual
	Drive disabled by charger	To avoid damaging the charger, all drive fonctions are disabled.
	Too hot to charge	The battery temperature is too high. Charging them now would cause damage.
	Too cold to charge	The battery temperature is too low. Charging them now would cause damage.
	Movement restricted due to critical battery level	The battery level is critical. Battery recharge is mandatory. To keep working, use the Engine mode or ECO mode to recharge the battery.
	Range Extender disconnected	The Range Extender is disconnected. AUTO and FORCE modes are not available.
	Circuit breaker open	The machine can only be used with the emergency pump. Turn on the circuit breaker for normal operation or battery charging.

Icon	Description	Function
Home screen (dashboard) - Will be visible - depending on the machine		
	Description	
	F12.01 Bus CAN fault	CAN network fault between the screen and the rest of the machine.
	Diagnostic in progress	The HAULOTTE Diag console is connected to the machine.
	Screen software obsolete	Screen software update essential. Contact Haulotte Service®.

Icon	Description	Function
Home screen (dashboard) - Will be visible - depending on the machine		
	Description	
	Activ' Shield Bar disable	The secondary safety system is switched off (If fitted) .
	Activ' Shield Bar triggered	The secondary safety system is triggered. An operator may be trapped on the platform-:- - In this situation, supervisor(s) at ground level must turn the control box key selector (22) to the ground control box  position to take control. - The platform box controls are de-energized. - Check that the E-Stop button (9) at ground is not pressed in. - To safely activate movements from the ground control box, the Enable Switch (6)  must be pressed and held.

Icon	Description	Function
Home screen (dashboard) - Will be visible - depending on the machine		
	General information zone	
	Machine software version and code	Displays the reference and version of the software installed on the machine.
	Machine date and time	Displays the date and time of the machine ECU.

Icon	Function	Description	Icon	Function	Description
Machine fault - Will be visible - depending on the machine					



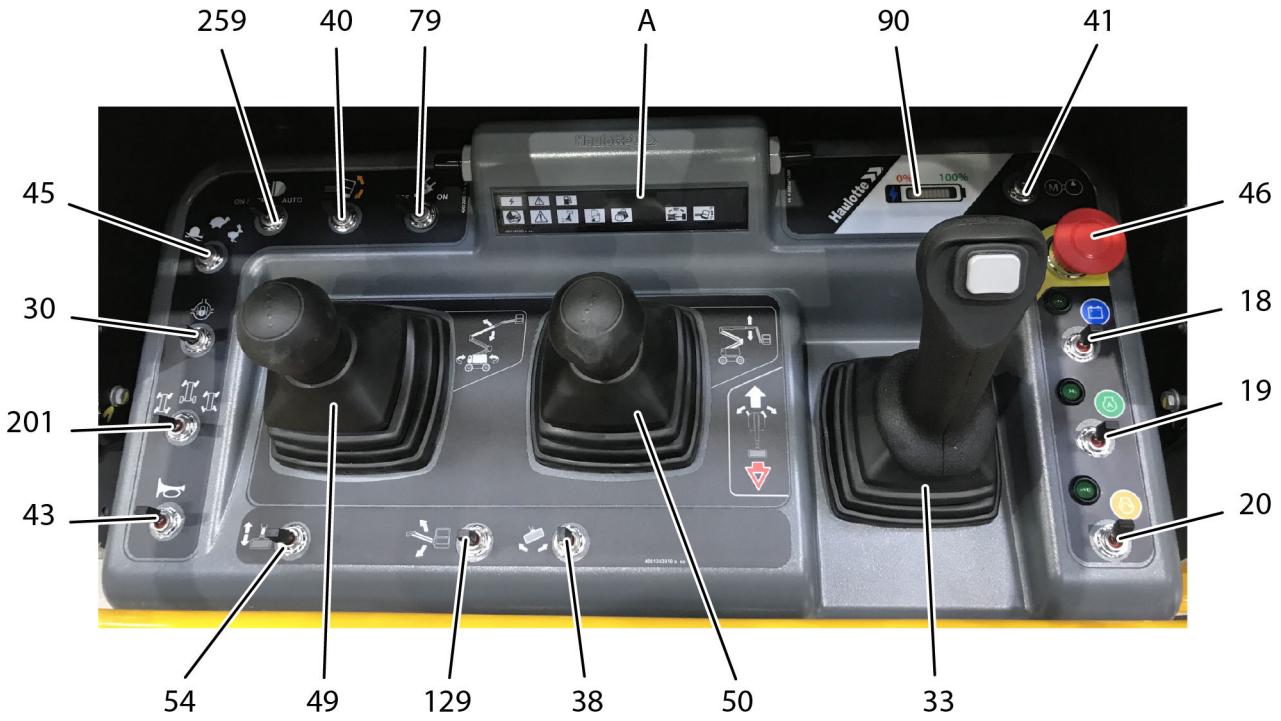
Machine fault icons (Please see machine configuration)					
	Failure code F01.xx	Fault-:-Variable speed calculator		Failure code F09.xx	Fault-:-Internal combustion engine
	Failure code F02.xx	Fault-:-Power contactor		Failure code F10.xx	Fault-:-Functions
	Failure code F03.xx	Fault-:-Command relay		Failure code F11.xx	Fault-:-Machine safety
	Failure code F04.xx	Fault-:-Solenoid valve		Failure code F12.xx	Fault-:-ECU console
	Failure code F05.xx	Fault-:-Joystick		Failure code F13.xx	Fault-:-Switchs

Icon	Function	Description	Icon	Function	Description
Machine fault - Will be visible - depending on the machine					
	Failure code F06.xx	Fault-:-Weighing system		Failure code F14.xx	Fault-:-Driving pump
	Failure code F07.xx	Fault-:-Limit switch or sensor		Failure code F15.xx	Fault-:-CAN circuit
	Failure code F08.xx	Fault-:-Electric circuit		Failure code F16.xx	Fault-:-Electric motor
	Failure code F17.xx	Fault-:-Pump motor		Failure code F18.xx	Fault-:-Generator
	Failure code F19.xx	Fault-:-Telematics			

2.3 Platform control box

2.3.1 Layout

General view



Controls and indicators

Marking	Name	Description	Function
18	SA306	Full Electric mode (If equipped with the Range Extender option) Refer to operator manual- D 1.5 - Mode operation	In Full Electric mode, the combustion engine never starts. Energy comes from the batteries. This mode is activated by default when starting the machine.
19	SA307	Auto mode (If equipped with the Range Extender option) Refer to operator manual- D 1.5 - Mode operation	In Auto Mode , the combustion engine starts and stops depending on the machine's use and traction battery charge level. The combustion engine recharges the batteries.
20	SA303	Manual mode (If equipped with the Range Extender option) (Forced charging) Refer to operator manual- D 1.5 - Mode operation	In Manual Mode , the user starts and stops the combustion engine. The combustion engine recharges the batteries. The combustion engine stops automatically when the batteries are charged and if no movement is initiated.
30	SA100	Differential lock selector	Press in and hold: Differential blocking selection
33	SM902F	Drive joystick	Move forward: Push towards white arrow
	SM902B		Move backwards: Push towards red arrow
	SM902R	Steering button (Steering thumb / rocker switch)	Press right side of button: Steer right-According to selected mode (201)
	SM902L		Press left side of button: Steer left-According to selected mode (201)
38	SA751R	Platform rotation switch	Move to the right: Counter clockwise (CCW) rotation
	SA751L		Move to the left: Clockwise (CW) rotation
40	SA721U	Platform leveling switch	Move upwards: Raise platform
	SA721D		Move downwards: Platform lowers
41	SA800	Emergency back-up unit	Toggle and hold: Back-up unit activated
			Release: Back-up unit deactivated
43	SA907	Horn button	Push the horn selector to the right to sound the horn
			The horn stops when the selector switch is released

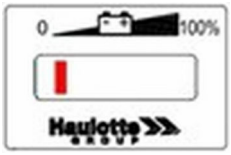
Marking	Name	Description	Function
45	SA110HS	Drive speed selector	 High-speed drive
	SA110MS		 Medium speed drive
	SA110LS		 Drive low speed, Going up and down a ramp
46	SB802	E-stop button	Pulled out: Platform control box energized
			Pressed in: De-energizes control system
49	SM900X	Turntable rotation joystick	Move to the right: Counter clockwise (CCW) rotation
	SM900N		Move to the left: Clockwise (CW) rotation
	SM900Y	Boom lift joystick	Move forward: Boom raising
	SM900N		Move backwards: Lower boom
50	SM901Y	Arm raising/lowering joystick	Move forward: Booms raising
	SM901N		Move backwards: Arm lowers
54	SA531I	Boom telescoping switch	Move forward: Boom retracts
	SA531O		Move backwards: Boom extends
79	SA906L	Generator selector (1)	Move to the left: Generator deactivated
	SA906R		Move to the right: Generator activated
90	LBB02	Battery charging indicator	Battery charge status.
129	SA621U	Jib raising / lowering control	Move forward: Jib raise
	SA621D		Move backwards: Lower jib

(1) For machines fitted with

Marking	Name	Description	Function
201	SA101SY	Steering mode selector (1)	Right: Synchronised axle: 4 wheel steering mode (Only for PRO model)
	SA101 2WS		Center: 2 front steering wheels from axle
	SA101CR		Left: Crab mode axle (Only for PRO model)
259	SA910 ONOFF	Activ' Lighting System selector	 ON / OFF
	SA910 AUTO		 Automatic lighting
A		Upper control box display (LED 101 - 116)	

2.3.2 Battery charging indicator(90)

Battery charge status

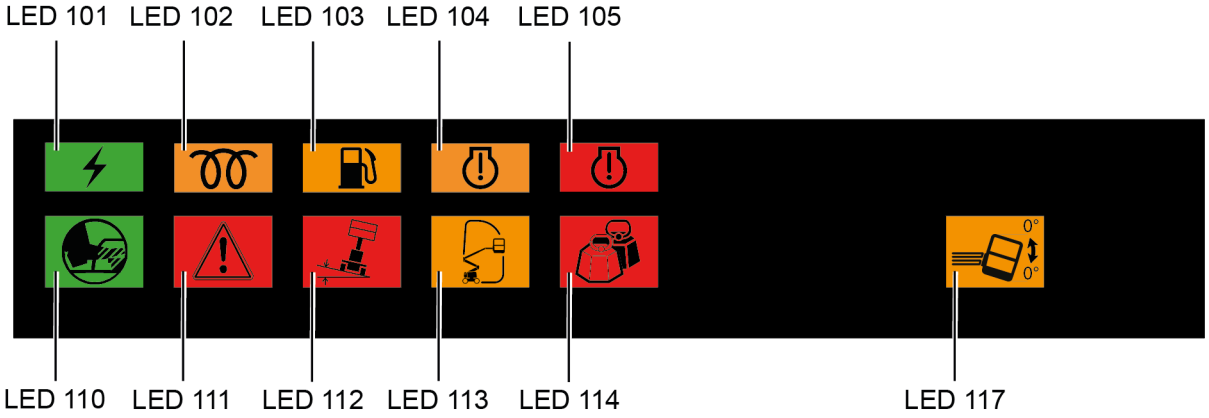
Icon	Function
	From 100% to 50%, the LED is green with the battery charge level displayed
	From 50% to 20%, the LED is orange with the battery charge level displayed
	- From 10% to 20%, the second LED is red with the battery charge level displayed
	- From 0% to 10%, the first 2 LEDs are alternately red with the battery charge level displayed

After 45 hours of machine movement without fully recharging the batteries and whatever the battery charge status, the first 2 LEDs are alternately red with the battery charge level displayed.

On the screen (22) of the ground control box, the current charge status of the battery will be displayed as well as the message that recharging is complete after 45 hours.

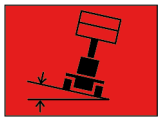
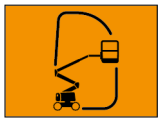
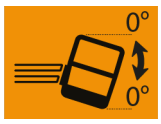
2.3.3 Display Panel (LED'S 101 - 117)

Upper control box display



Marking	Name	Symbol	Function
LED 101	HL900		Machine switched on: - Slow flashing: The machine is on, the platform control box is inactive but the ground control box is selected - Illuminated: The machine is on and the platform control box is selected
LED 102	HL300		Preheating : - Illuminated: Preheating Range Extender(1)
LED 103	HL307		Low fuel level(1)
LED 104			Not used
LED 105	HL305		Range Extender Stop: Constantly lit in the event of an operation malfunction(1)
LED 110	HL807		Foot Switch: - Lit if the foot switch is on

(1) If equipped with the Range Extender option

Marking	Name	Symbol	Function
LED 111	HL801		Faults: - Rapid flashing: If a fault is active (current fault)
LED 112	HL800		Tilt sensor: - Illuminated when in tilt, machine stowed or unfolded
LED 113			Not used
LED 114	HL802		Overload: - Illuminated when overloaded - Rapid flashing: Faulty weighing / overload system
LED 117	HL720		Basket levelling +/- 10°: - Steadily lit if the angle of the basket reaches +/- 10° in relation to the horizontal and compensation movement control

3 Performance Specifications

3.1 Technical characteristics

Use the table to select the right Haulotte machine for the job.

Do not replace parts that are essential to the stability of the machine, such as batteries or tyres, with parts that have a different weight or different specifications. The stability of the machine could be affected.

CE, UKCA, AS, EAC, CSA and ANSI A92.20 standards

Machine	HA16 E / HA46 E	
Characteristics - Dimensions	**SI**	**Imp.**
Maximum working height	16 m	52 ft 6 in
Maximum platform height	14 m	46 ft 0 in
Maximum horizontal reach	7,93 m	26 ft 0 in
Maximum outreach above the ground	7,43 m	24 ft 5 in
Maximum platform height before driving speed restriction	4,5 m	14 ft 9 in
Maximum boom articulation point height	7,86 m	25 ft 9 in
Maximum load capacity	300 kg	661 lbs
Jib working range	68°	
Basket rotation angle	90°	
Boom rotation angle	75°	
Turntable rotation	355° non continuous	
Maximum number of occupants	2	
Maximum wind speed	45 km/h (12,5 m/s)	28 mph (41 ft/s)
Gradeability	40%	
Maximum rated slope allowed	5°	
Manual force	400 N - 90 lbf	
Maximum load on wheel	3830 kg	8444 lb
Outside turning radius	5,05 m	16 ft 6 in
Inside turning radius	2,68 m	8 ft 8 in
Maximum ground pressure of wheel on paved ground	14,5 kgf/cm²	206 psi
Total weight (Without option)	7 030kg	15,498 lbs

Machine	HA16 E / HA46 E	
Drive speed - Slow speed (Machine elevated) - Medium speed (Machine elevated) - High speed (Machine folded/stowed)	1,2 km/h 2,1 km/h 4,9 km/h	0.75 mph 1.3 mph 3.04 mph
Maximum freewheel speed during towed operation	1,7 km/h	1.06 mph
Specifications - Performance		
Operating temperature	- 20° C/ + 50° C (- 68° F / + 122° F)	
Operating temperature For EAC only - If machine equipped with the option	- 30° C / + 50° C (- 22° F / + 122° F)	
Storage temperature	- 40° C / + 70° C (- 104° F / + 158° F)	
Energy storage (Standard machine)		
Type of battery	8x6V	
Battery amperage	250 A	
Battery voltage	48 V	
Battery capacity	390 Ah (C20)	
Hydraulic tank capacity	76 L	20 gal US

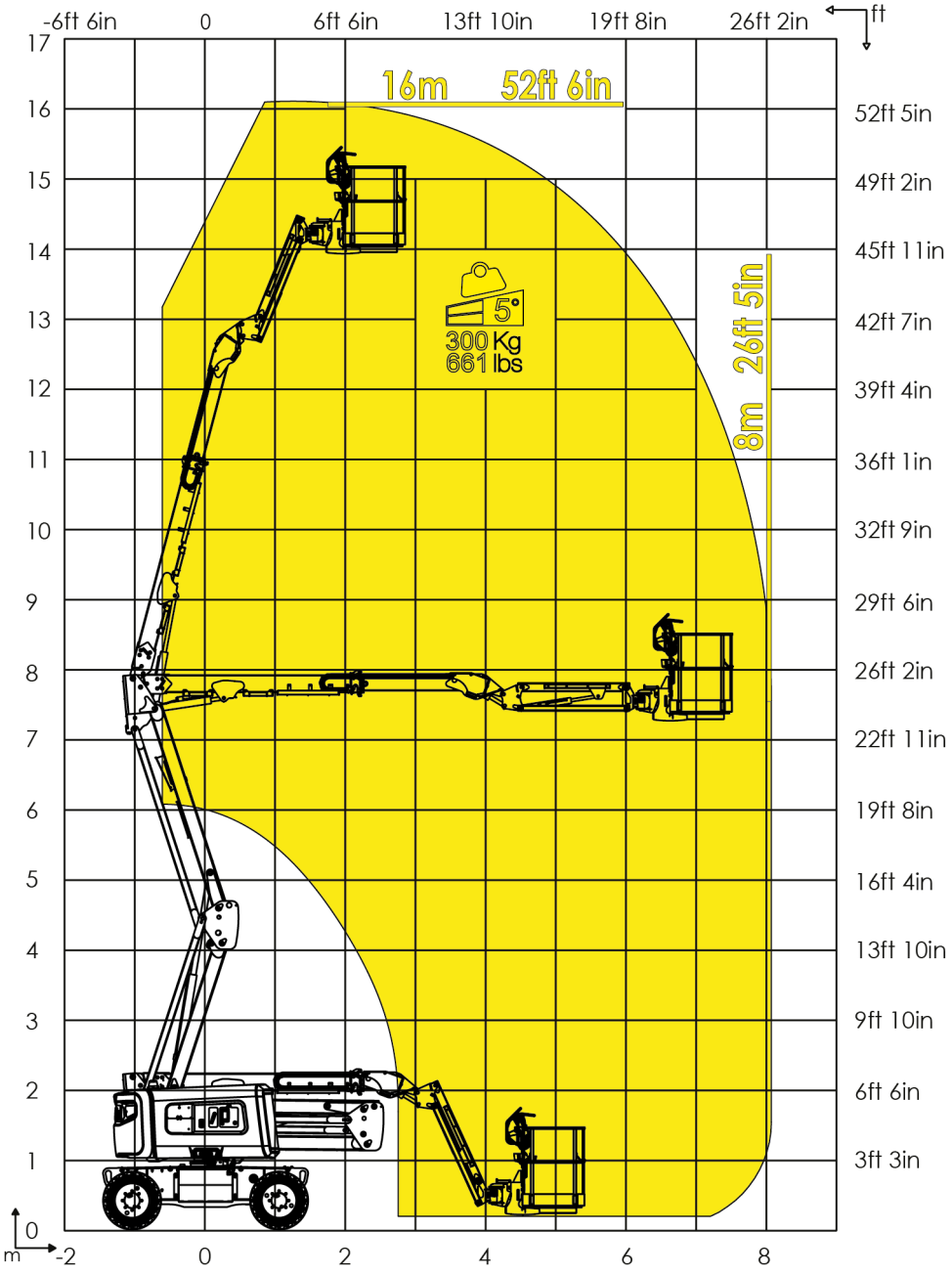
CE, UKCA, AS, EAC, CSA and ANSI A92.20 standards

Machine	HA16 E PRO / HA46 E PRO	
Characteristics - Dimensions	**SI**	**Imp.**
Maximum working height	16 m	52 ft 6 in
Maximum platform height	14 m	46 ft 0 in
Maximum horizontal reach	7,93 m	26 ft 0 in
Maximum outreach above the ground	7,43 m	24 ft 5 in
Maximum platform height before driving speed restriction	4,5 m	14 ft 9 in
Maximum boom articulation point height	7,86 m	25 ft 9 in
Maximum load capacity	300 kg	661 lbs
Jib working range	68°	
Basket rotation angle	90°	
Boom rotation angle	75°	
Turntable rotation	355° non continuous	
Maximum number of occupants	2	
Maximum wind speed	45 km/h (12,5 m/s)	28 mph (41 ft/s)
Gradeability	40%	
Maximum rated slope allowed	5°	
Manual force	400 N - 90 lbf	
Maximum load on wheel	3830 kg	8444 lb
Outside turning radius	3,30 m	10 ft 8 in
Inside turning radius	1,20 m	3 ft 9 in
Maximum ground pressure of wheel on paved ground	14,5 kgf/cm²	206 psi
Total weight (Without option)	7 120 kg	15,697 lbs
Drive speed - Slow speed (Machine elevated) - Medium speed (Machine elevated) - High speed (Machine folded/stowed)	1,2 km/h 2,1 km/h 4,9 km/h	0.75 mph 1.3 mph 3.04 mph
Maximum freewheel speed during towed operation	1,7 km/h	1.06 mph
Specifications - Performance		
Operating temperature	- 20° C/ + 50° C (- 68° F / + 122° F)	

Machine	HA16 E PRO / HA46 E PRO	
Operating temperature For EAC only - If machine equipped with the option	- 30° C / + 50° C (- 22° F / + 122° F)	
Storage temperature	- 40° C / + 70° C (- 104° F / + 158° F)	
Energy storage (Standard machine)		
Type of battery	8x6V	
Battery amperage	250 A	
Battery voltage	48 V	
Battery capacity	390 Ah (C20)	
Hydraulic tank capacity	76 L	20 gal US

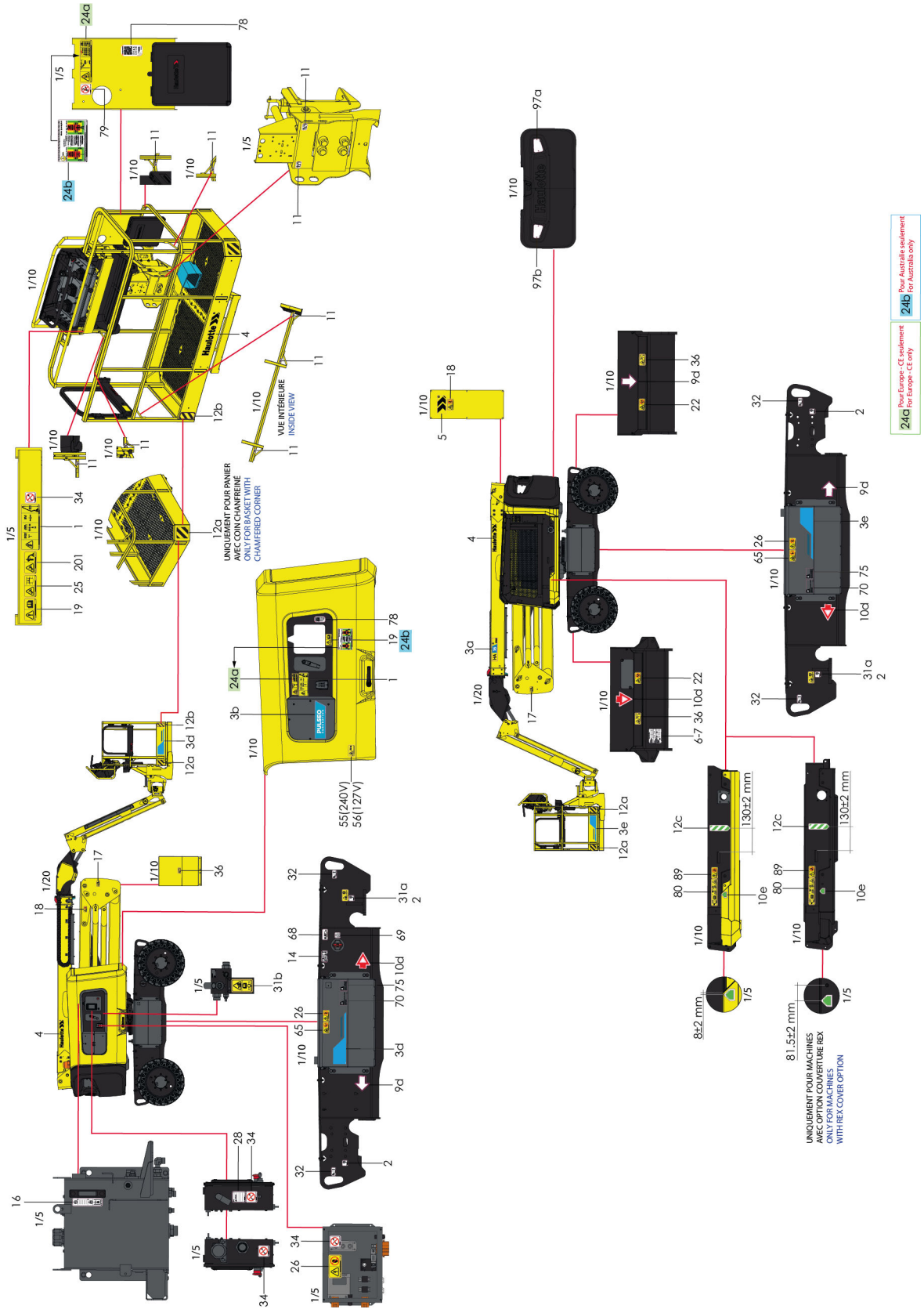
3.2 Working area / Range of motion

HA16 E - HA16 E PRO - HA46 E - HA46 E PRO

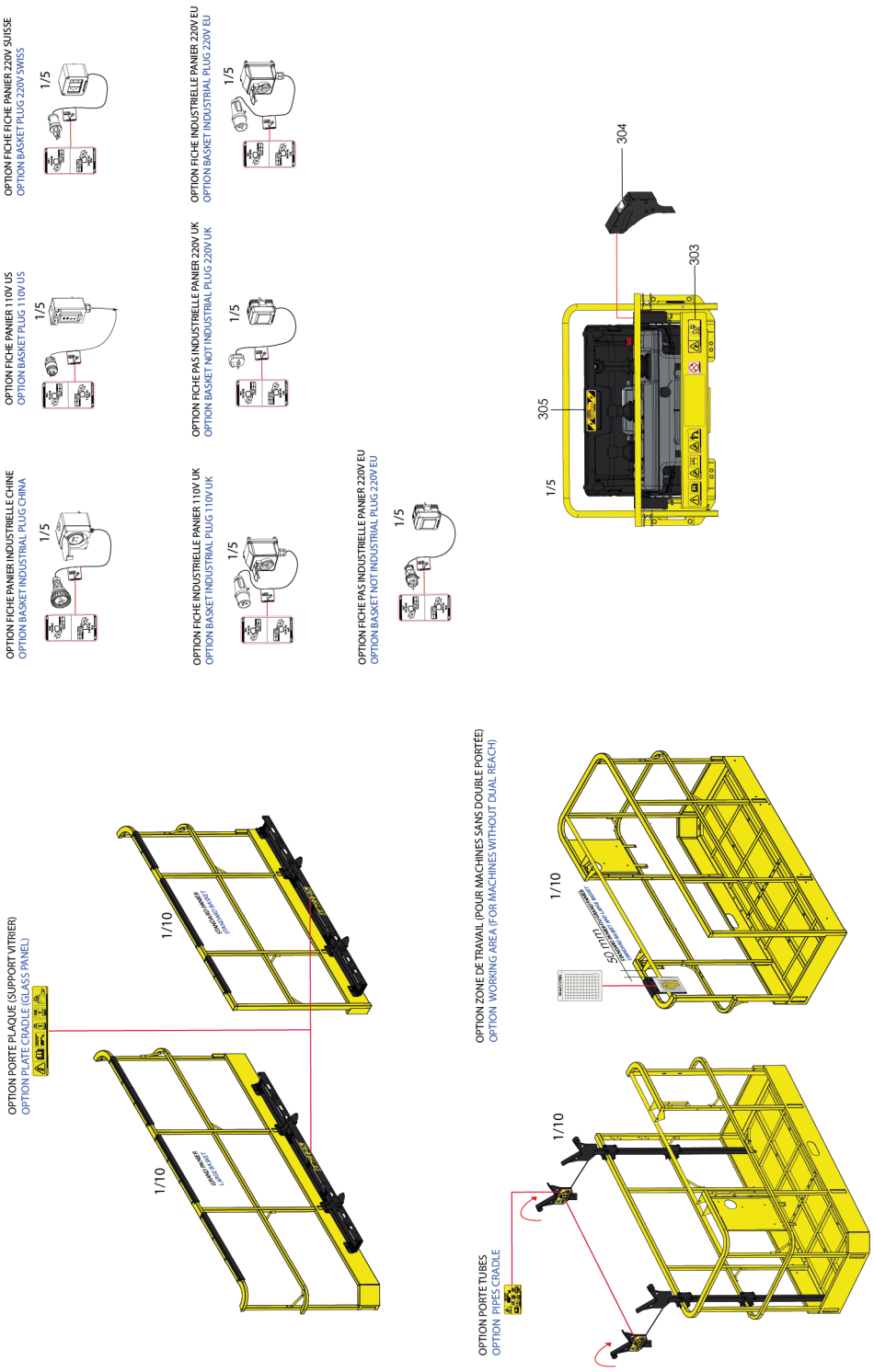


4 Decals and markings locations

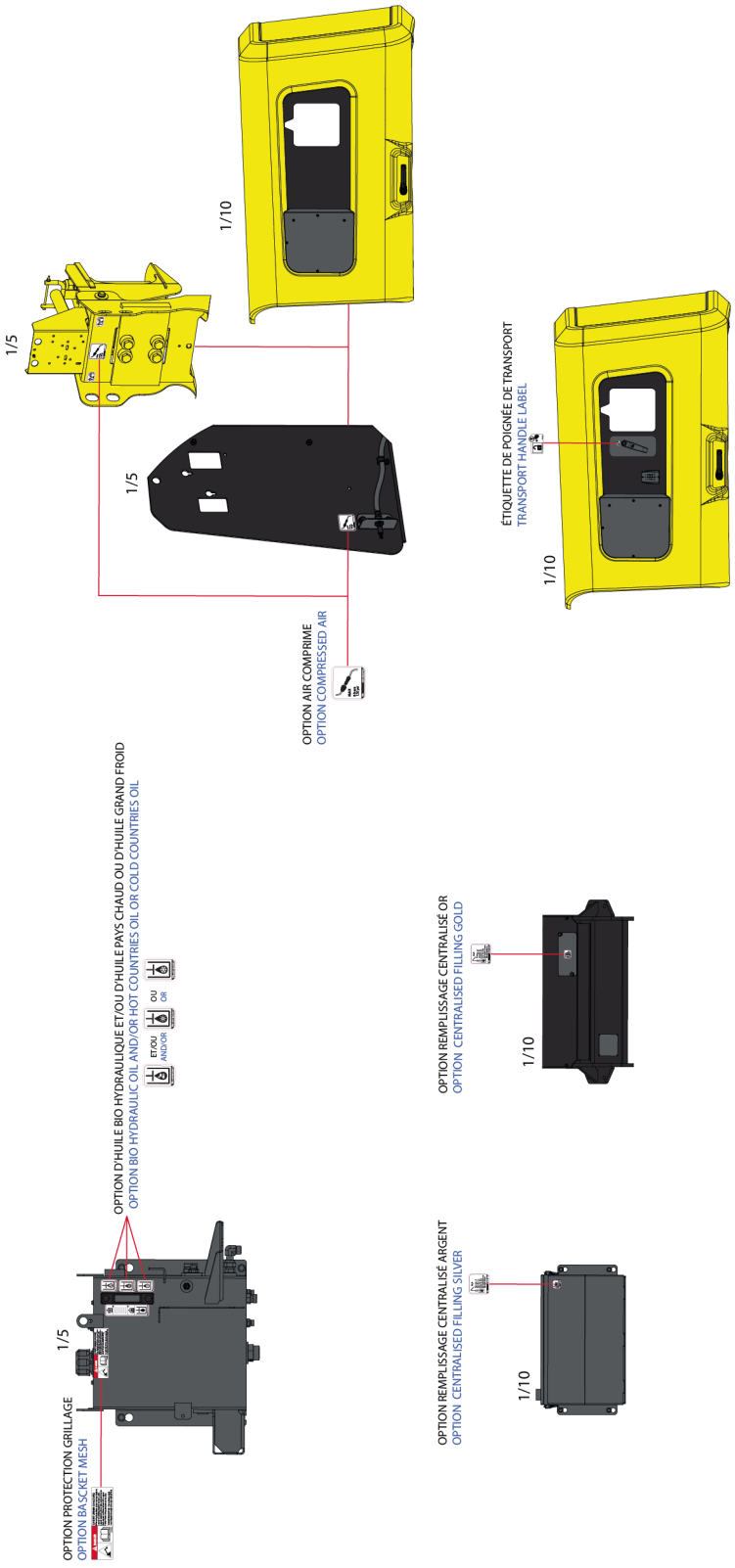
CE, UKCA, AS and EAC standards: HA16 E - HA16 E PRO



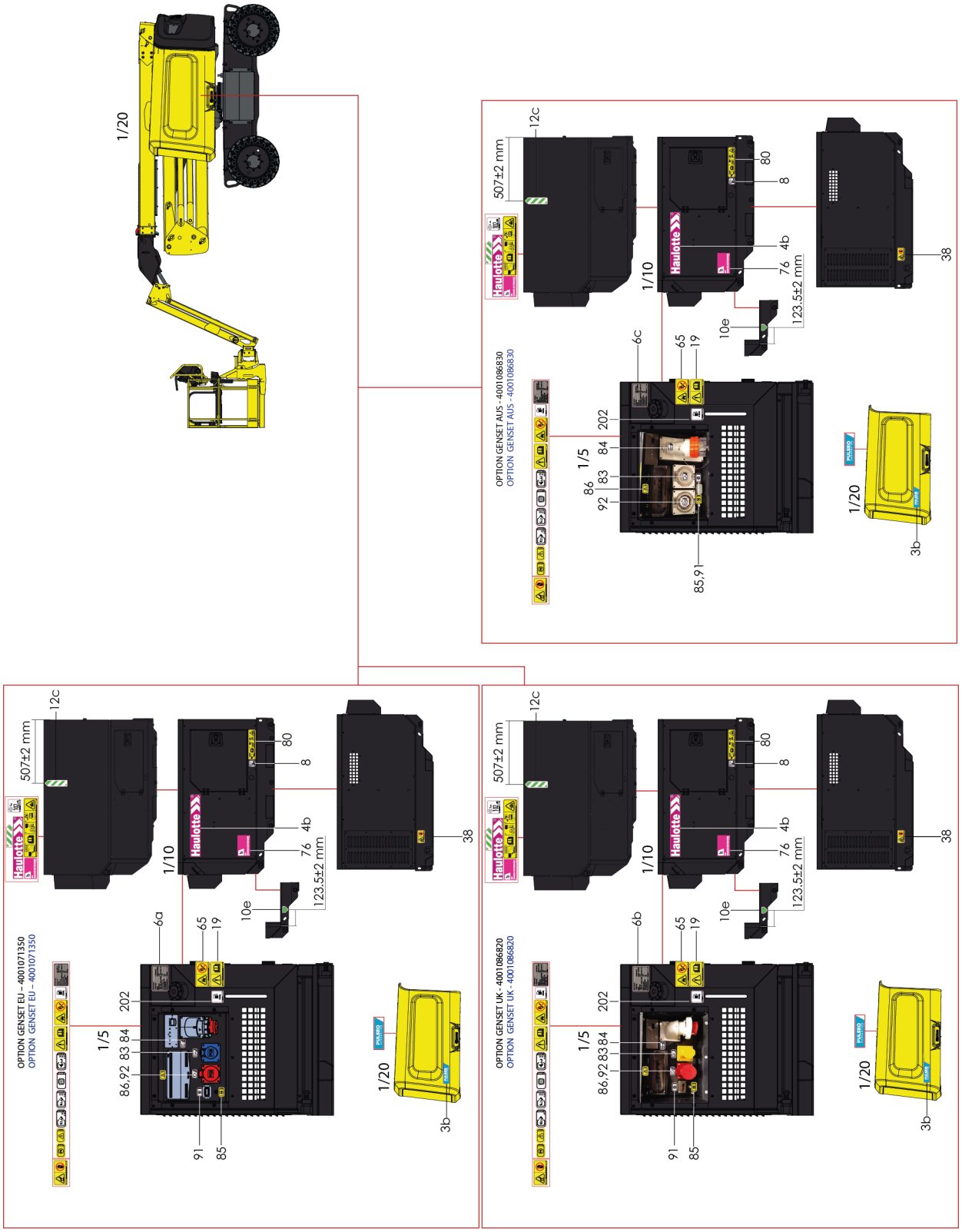
CE, UKCA, AS and EAC standards: HA16 E - HA16 E PRO



CE, UKCA, AS and EAC standards: HA16 E - HA16 E PRO



CE, UKCA, AS and EAC standards: HA16 E - HA16 E PRO



Marking	Description	Quantity	HA16 E	
			CE / UKCA / EAC	AS
1	Load height	2	4001269480	4001269480
2	Pressure - Stress on the floor	4	4001269500	4001269500
3a	Commercial name - HA16 E 336 x 100 - Bright machine	1	4001267190	4001267190
3a	Commercial name - HA16 E 336 x 100 - Dark machine	1	4001267210	4001267210
3b	Commercial name - HA16 E	2	4001275780	4001275780
3d	Commercial name - HA16 E 336 x 100	2	4000677570	4000677570
3e	Commercial name - HA16 E	2	4000677580	4000677580
4	HAULOTTE 495 x 80 - Bright machine	3	4001072210	4001072210
4	HAULOTTE 495 x 80 - Dark machine	3	4001072220	4001072220
5	HAULOTTE 165 x 80 - Bright machine	1	4001072250	4001072250
5	HAULOTTE 165 x 80 - Dark machine	1	4001072260	4001072260
9d	Control of movements	3	4001083270	4001083270
10d	Control of movements	3	4001083390	4001083390
10e	Control of movements	1	4001269540	4001269540
11	Anchorage point	9	4001052020	4001052020
12a	Material risk for basket with straight corner	3	4001083240	4001083240
12b	Material risk for basket with straight corner	2	4001083250	4001083250
12a	Material risk for basket only with chamfered corner	4	4001083240	4001083240
12c	Material risk	1	4001269520	4001269520
14	Collision hazard - locking pin	1	4001081530	4001081530
16	Max and min oil level	1	4001052060	4001052060
17	Risk of crushing	2	4001265480	4001265480
18	Hand crushing hazard	2	4001052080	4001052080
19	Read the operation manual	2	4001052090	4001052090
22	Wound foot	2	4001073700	4001073700
24a	Power lines	2	4001052120	N/A
24b	Power lines	2	N/A	4001052140
25	Closing drop rail	1	4001052150	4001052150

Marking	Description	Quantity	HA16 E	
			CE / UKCA / EAC	AS
26	Ground for welding	3	4001052160	4001052160
28	Software version	1	4000504670	4000504670
31a	Brake release	2	4001073710	4001073710
31b	Brake release	1	4001270040	4001270040
32	Towing anchorage point	4	4001052180	4001052180
34	Danger of electrocution - No high-pressure washing	4	4001052200	4001052200
36	Risk of crushing	3	4001081590	4001081590
55	Risk of electrocution - Charger - 240 V - 15 A	1	4001110960	4001110960
56	Risk of electrocution - Charger - 127 V - 16 A	1	4001110970	4001110970
65	Fire Hazard	2	4001052270	4001052270
68	Transport height	1	4001269510	4001269510
69	Battery isolation switch	1	4001140220	4001140220
70	Information - AC MAINTENANCE-FREE MOTORS - Bright machine	2	4001053450	4001053450
70	Information - AC MAINTENANCE-FREE MOTORS - Dark machine	2	4001053500	4001053500
75	Information - ACTIV' ENERGY MANAGEMENT - Bright machine	2	4001053460	4001053460
75	Information - ACTIV' ENERGY MANAGEMENT - Dark machine	2	4001053510	4001053510
78	QR Code - https://www.e-technical-information.com	2	4001089310	4001089310
79	Electrical connection	1	4001101260	4001101260
80	Assembly procedure – Range Extender	1	4001074890	4001074890
89	Do not store	1	4001074880	4001074880
97a	Reflective label - Left side	1	4001266050	4001266050
97b	Reflective label - Right-hand side	1	4001266060	4001266060
201	Wearing a harness	1	4001052300	4001052300
303	Activ'Shield Bar	1	4001081630	4001081630
304	Electrical box - Activ'Shield Bar	1	4001069620	4001069620
305	Do not lean on the Activ' Shield Bar bar	1	4001069640	4001069640

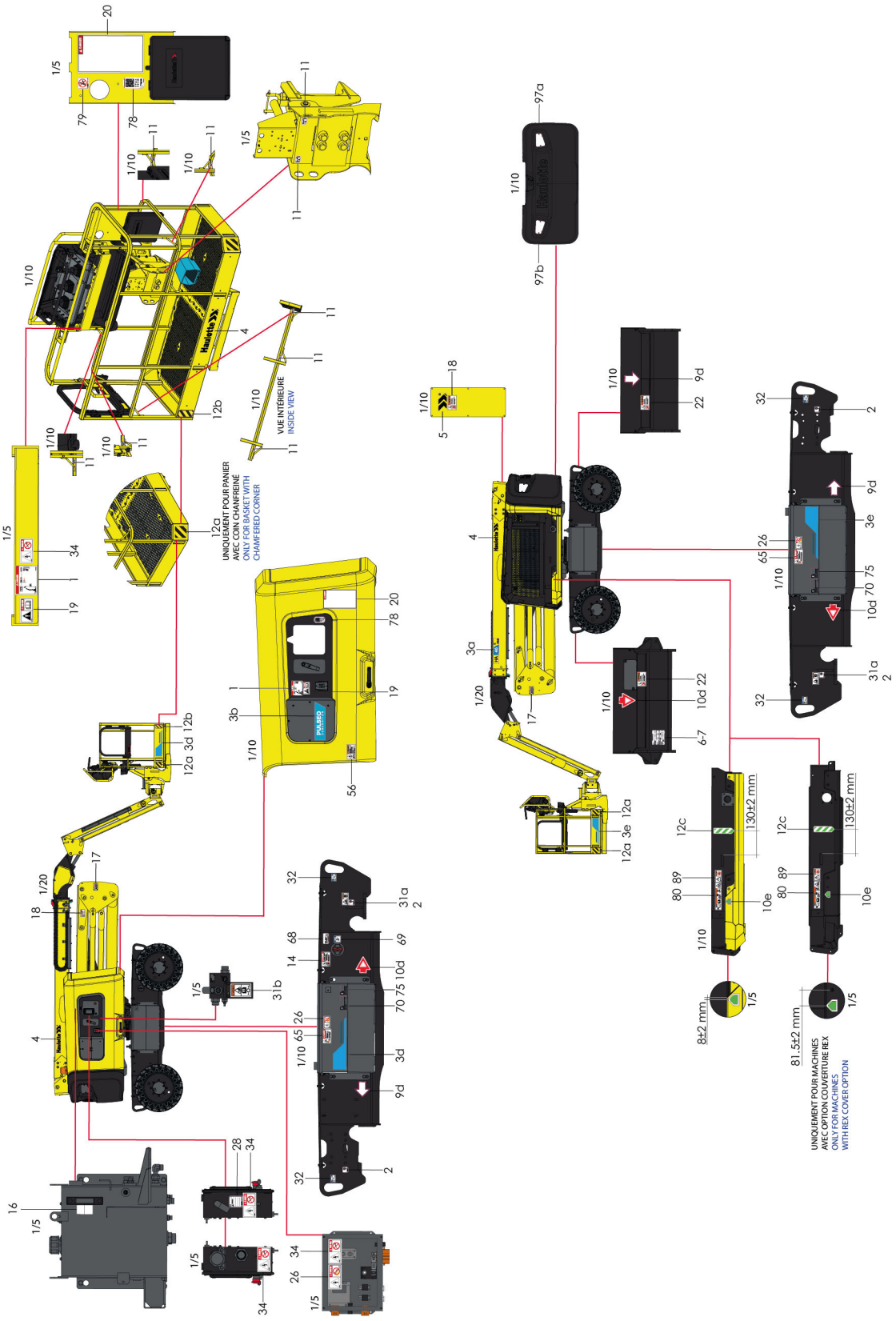
Marking	Description	Quantity	HA16 E	
			CE / UKCA / EAC	AS
3b	Range extender	1	4001275780	4001275780
4b	Range Extender	1	4001072220	4001072220
6	Range Extender	1	4001128580 / 4001128590 / 4001128600	4001128580 / 4001128590 / 4001128600
8	Range Extender	1	4001068990	4001068990
10e	Range Extender	1	4001269540	4001269540
12c	Range Extender	1	4001269520	4001269520
19	Range Extender	1	4001052090	4001052090
38	Range Extender	1	4001075820	4001075820
65	Range Extender	1	4001052270	4001052270
76	Range Extender	1	4001072970	4001072970
80	Range Extender	1	4001074890	4001074890
83	Range Extender	1	4001075850 / 4001075860	4001075850 / 4001075860
84	Range Extender	1	4001075870	4001075870
85	Range Extender	1	4001075880	4001075880
86	Range Extender	1	4001128990	4001128990
91	Range Extender	1	4001075830	4001075830
92	Range Extender	1	4001075840	4001075840
202	Range Extender	1	4001076200	4001076200
Not illustrated	Pipe holder option	2	4001267650	4001267650
Not illustrated	Plate holder option	1	4001267770	4001267770
Not illustrated	Biodegradable hydraulic oil option	1	4001052380	4001052380
Not illustrated	Biodegradable hydraulic oil option - Cold country	1	4001052390	4001052390
Not illustrated	Option Grill	1	4001095980	4001095980
Not illustrated	Option - Range of Motion	1	4001260130	4001260130
Not illustrated	Centralized filling option	1	4001052340	4001052340
Not illustrated	Compressed air option	1	4001052370	4001052370
Not illustrated	Transport handle	1	4001295050	4001295050
Not illustrated	Power plug option	1	4001052350 / 4001052360	4001052350 / 4001052360

Marking	Description	Quantity	HA16 E PRO	
			CE / UKCA / EAC	AS
1	Load height	2	4001269480	4001269480
2	Pressure - Stress on the floor	4	4001269500	4001269500
3a	Commercial name - HA16 E PRO 336 x 100 - Bright machine	1	4001267200	4001267200
3a	Commercial name - HA16 E PRO 336 x 100 - Dark machine	1	4001267220	4001267220
3b	Commercial name - HA16 E PRO	2	4001275780	4001275780
3d	Commercial name - HA16 E PRO	2	4000677570	4000677570
3e	Commercial name - HA16 E PRO	2	4000677580	4000677580
4	HAULOTTE 495 x 80 - Bright machine	3	4001072210	4001072210
4	HAULOTTE 495 x 80 - Dark machine	3	4001072220	4001072220
5	HAULOTTE 165 x 80 - Bright machine	1	4001072250	4001072250
5	HAULOTTE 165 x 80 - Dark machine	1	4001072260	4001072260
9d	Control of movements	3	4001083270	4001083270
10d	Control of movements	3	4001083390	4001083390
10e	Control of movements	1	4001269540	4001269540
11	Anchorage point	9	4001052020	4001052020
12a	Material risk for basket with straight corner	3	4001083240	4001083240
12b	Material risk for basket with straight corner	2	4001083250	4001083250
12a	Material risk for basket only with chamfered corner	4	4001083240	4001083240
12c	Material risk	1	4001269520	4001269520
14	Collision hazard - locking pin	1	4001081530	4001081530
16	Max and min oil level	1	4001052060	4001052060
17	Risk of crushing	2	4001265480	4001265480
18	Hand crushing hazard	2	4001052080	4001052080
19	Read the operation manual	2	4001052090	4001052090
22	Wound foot	2	4001073700	4001073700
24a	Power lines	2	4001052120	N/A
24b	Power lines	2	N/A	4001052140
25	Closing drop rail	1	4001052150	4001052150
26	Ground for welding	3	4001052160	4001052160

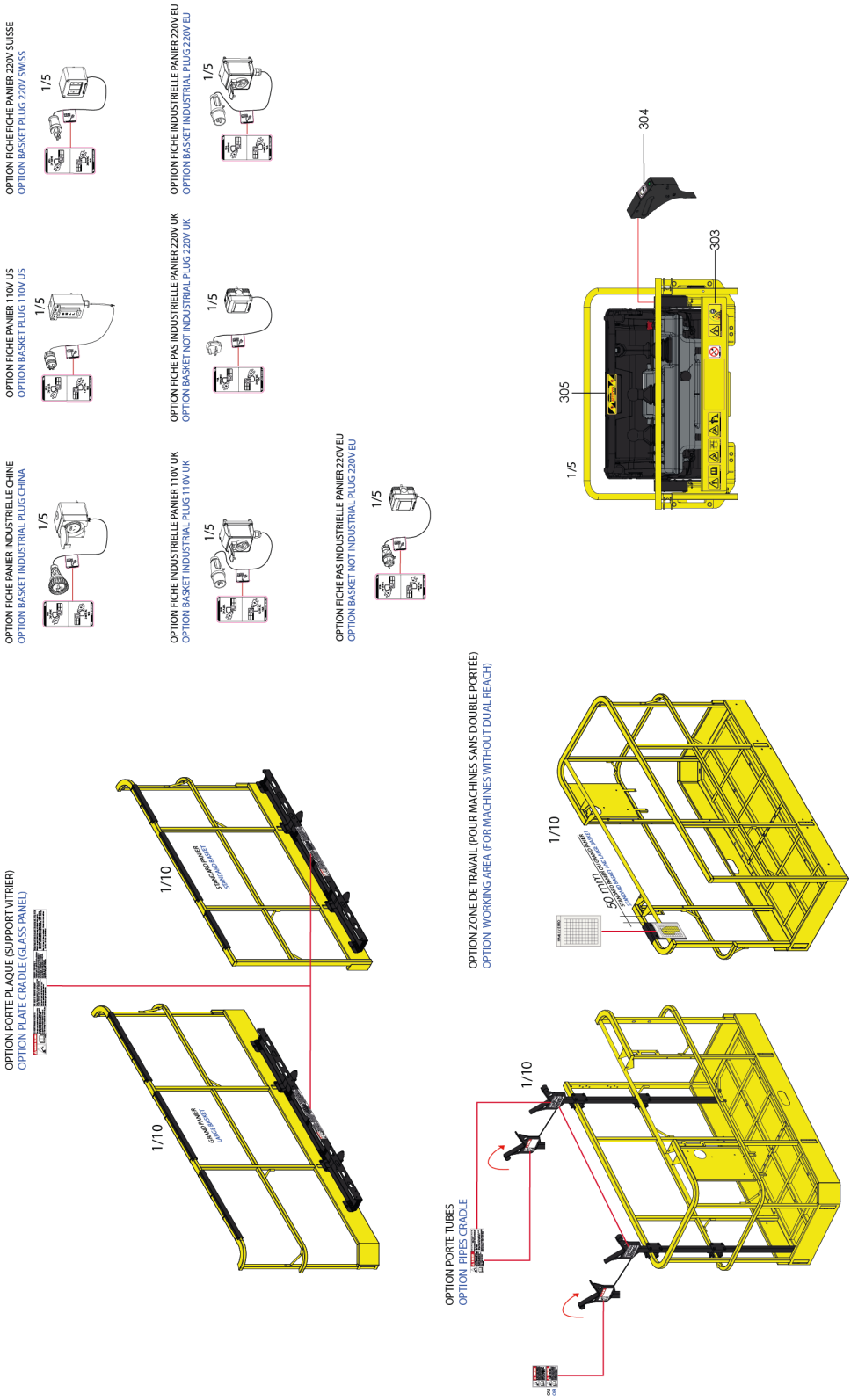
Marking	Description	Quantity	HA16 E PRO	
			CE / UKCA / EAC	AS
28	Software version	1	4000504670	4000504670
31a	Brake release	2	4001073710	4001073710
31b	Brake release	1	4001270040	4001270040
32	Towing anchorage point	4	4001052180	4001052180
34	Danger of electrocution - No high-pressure washing	4	4001052200	4001052200
36	Risk of crushing	3	4001081590	4001081590
55	Risk of electrocution - Charger - 240 V - 15 A	1	4001110960	4001110960
56	Risk of electrocution - Charger - 127 V - 16 A	1	4001110970	4001110970
65	Fire Hazard	2	4001052270	4001052270
68	Transport height	1	4001269510	4001269510
69	Battery isolation switch	1	4001140220	4001140220
70	Information - AC MAINTENANCE-FREE MOTORS - Bright machine	2	4001053450	4001053450
70	Information - AC MAINTENANCE-FREE MOTORS - Dark machine	2	4001053500	4001053500
75	Information - ACTIV' ENERGY MANAGEMENT - Bright machine	2	4001053460	4001053460
75	Information - ACTIV' ENERGY MANAGEMENT - Dark machine	2	4001053510	4001053510
78	QR Code - https://www.e-technical-information.com	2	4001089310	4001089310
79	Electrical connection	1	4001101260	4001101260
80	Assembly procedure – Range Extender	1	4001074890	4001074890
89	Do not store	1	4001074880	4001074880
97a	Reflective label - Left side	1	4001266050	4001266050
97b	Reflective label - Right-hand side	1	4001266060	4001266060
201	Wearing a harness	1	4001052300	4001052300
303	Activ'Shield Bar	1	4001081630	4001081630
304	Electrical box - Activ'Shield Bar	1	4001069620	4001069620
305	Do not lean on the Activ' Shield Bar bar	1	4001069640	4001069640
3b	Range extender	1	4001275780	4001275780

Marking	Description	Quantity	HA16 E PRO	
			CE / UKCA / EAC	AS
4b	Range Extender	1	4001072220	4001072220
6	Range Extender	1	4001128580 / 4001128590 / 4001128600	4001128580 / 4001128590 / 4001128600
8	Range Extender	1	4001068990	4001068990
10e	Range Extender	1	4001269540	4001269540
12c	Range Extender	1	4001269520	4001269520
19	Range Extender	1	4001052090	4001052090
38	Range Extender	1	4001075820	4001075820
65	Range Extender	1	4001052270	4001052270
76	Range Extender	1	4001072970	4001072970
80	Range Extender	1	4001074890	4001074890
83	Range Extender	1	4001075850 / 4001075860	4001075850 / 4001075860
84	Range Extender	1	4001075870	4001075870
85	Range Extender	1	4001075880	4001075880
86	Range Extender	1	4001128990	4001128990
91	Range Extender	1	4001075830	4001075830
92	Range Extender	1	4001075840	4001075840
202	Range Extender	1	4001076200	4001076200
Not illustrated	Pipe holder option	2	4001267650	4001267650
Not illustrated	Plate holder option	1	4001267770	4001267770
Not illustrated	Biodegradable hydraulic oil option	1	4001052380	4001052380
Not illustrated	Biodegradable hydraulic oil option - Cold country	1	4001052390	4001052390
Not illustrated	Option Grill	1	4001095980	4001095980
Not illustrated	Option - Range of Motion	1	4001260130	4001260130
Not illustrated	Centralized filling option	1	4001052340	4001052340
Not illustrated	Compressed air option	1	4001052370	4001052370
Not illustrated	Transport handle	1	4001295050	4001295050
Not illustrated	Power plug option	1	4001052350 / 4001052360	4001052350 / 4001052360

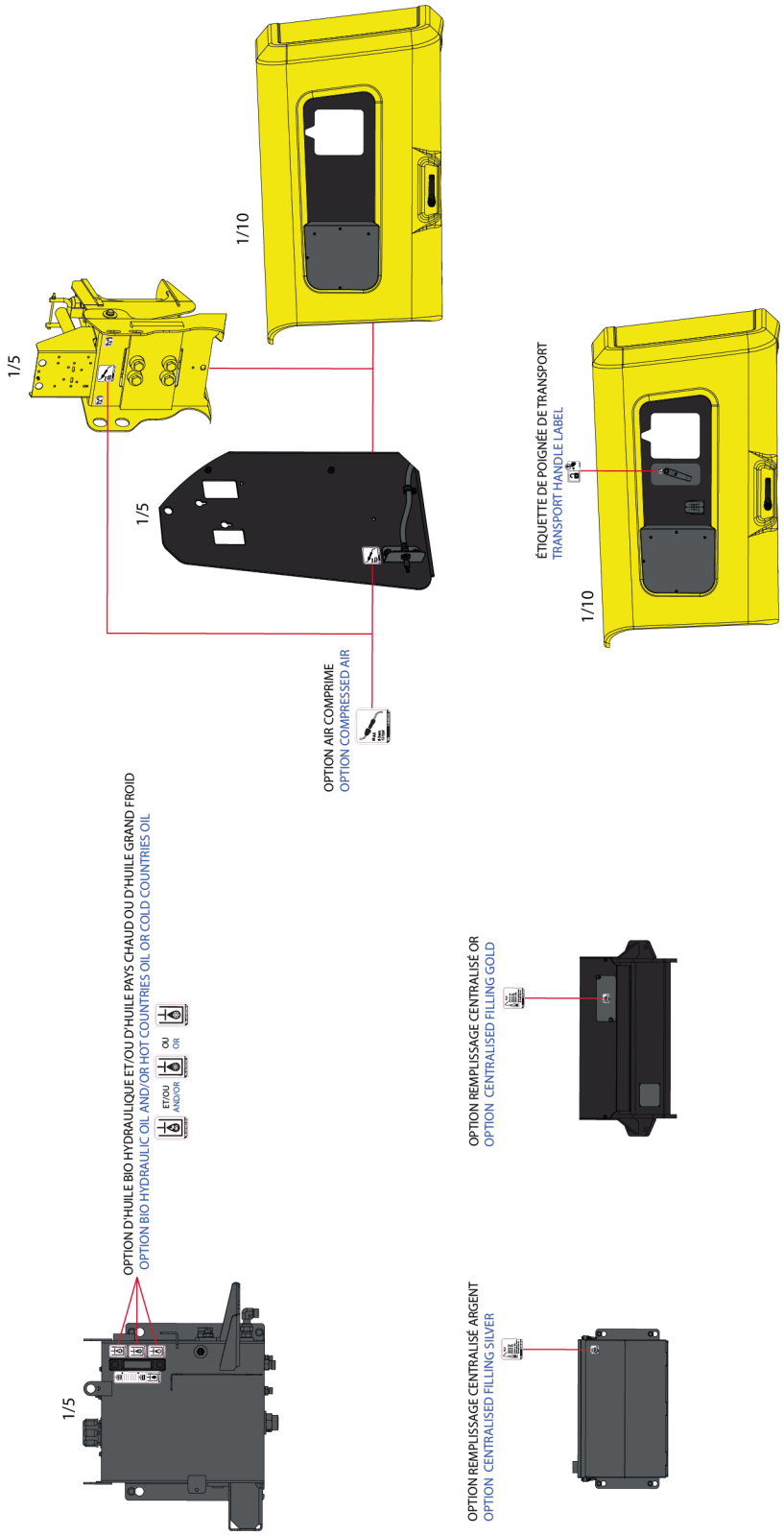
ANSI and CSA standards: H46 E - H46 E PRO



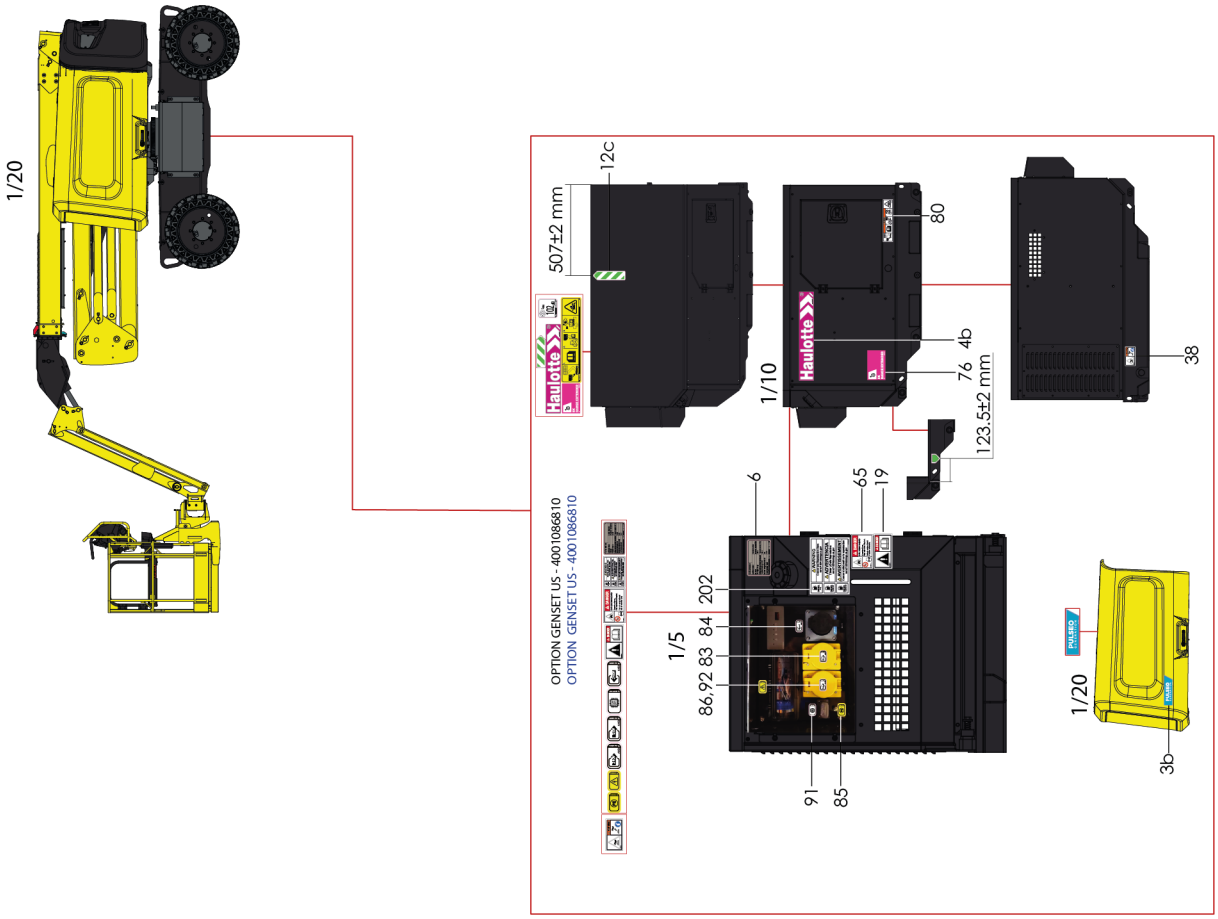
ANSI and CSA standards: H46 E - H46 E PRO



ANSI and CSA standards: H46 E - H46 E PRO



ANSI and CSA standards: H46 E - H46 E PRO



Marking	Description	Quantity	HA46 E		
			ANSI / CSA		
			English	French	Spanish
1	Load height	2	4001269490	4001269490	4001269490
2	Pressure - Stress on the floor	4	4001269500	4001269500	4001269500
3	Commercial name - HA46 E 362 x 100 - Bright machine	1	4001267230	4001267230	4001267230
3	Commercial name - HA46 E 362 x 100 - Bright machine	1	4001267250	4001267250	4001267250
4	HAULOTTE 495 x 80 - Bright machine	3	4001072210	4001072210	4001072210
4	HAULOTTE 495 x 80 - Dark machine	3	4001072220	4001072220	4001072220
5	HAULOTTE 165 x 80 - Bright machine	1	4001072250	4001072250	4001072250
5	HAULOTTE 165 x 80 - Dark machine	1	4001072260	4001072260	4001072260
8	Noise emission level - 97 dB	1	4001267460	4001267460	4001267460
9d	Control of movements	3	4001083270	4001083270	4001083270
10d	Control of movements	3	4001083390	4001083390	4001083390
10e	Control of movements	1	4001269540	4001269540	4001269540
11	Anchorage point	9	4001052020	4001052020	4001052020
12a	Material risk for basket with straight corner	3	4001083240	4001083240	4001083240
12b	Material risk for basket with straight corner	2	4001083250	4001083250	4001083250
12a	Material risk for basket only with chamfered corner	4	4001083240	4001083240	4001083240
12c	Material risk	1	4001269520	4001269520	4001269520
14	Collision hazard - locking pin	1	4000024830	4000068080	4000086510
16	Max and min oil level	1	307P221060	307P221060	307P221060
17	Risk of crushing	2	4000024640	4000067680	4000086460
18	Hand crushing hazard	2	4000024770	4000067710	4000086490
19	Read the operation manual	2	4000025140	4000025140	4000025140

Marking	Description	Quantity	HA46 E		
			ANSI / CSA		
			English	French	Spanish
20	Before operation	2	4000027570	4000068880	4000086640
22	Wound foot	2	4000024840	4000024840	4000024840
26	Ground for welding	3	4000027100	4000027100	4000027100
28	Software version	1	4000504670	4000504670	4000504670
31a	Brake release	2	4001133750	4001133750	4001133750
31b	Brake release	1	4001270050	4001270050	4001270050
32	Towing anchorage point	4	4000027310	4000027310	4000027310
34	Danger of electrocution - No high-pressure washing	4	4000025130	4000025130	4000025130
56	127 V charger socket	1	4001134690	4001134690	4001134690
65	Fire Hazard	2	4000025030	4000068120	4000086550
68	Transport height	1	4001269510	4001269510	4001269510
69	Battery isolation switch	1	4001167960	4001167960	4001167960
78	QR Code - https://www.e-technical-information.com	2	4001089310	4001089310	4001089310
79	Electrical connection	1	4001101260	4001101260	4001101260
80	Assembly procedure – Range Extender	1	4001128970	4001128970	4001128970
89	Do not store	1	4001134640	4001134640	4001134640
97a	Reflective label - Left side	1	4001266050	4001266050	4001266050
97b	Reflective label - Right-hand side	1	4001266060	4001266060	4001266060
303	Activ'Shield Bar	1	4000609540	4000609540	4000609540
304	Electrical box - Activ'Shield Bar	1	4000596720	4000596720	4000596720
305	Do not lean on the Activ' Shield Bar bar	1	4000206690	4000206690	4000206690
3b	Range extender	1	4001275780	4001275780	4001275780
4b	Range Extender	1	4001072220	4001072220	4001072220
6	Range Extender	1	4001128610	4001128610	4001128610
10e	Range Extender	1	4001269540	4001269540	4001269540
12c	Range Extender	1	4001269520	4001269520	4001269520

Marking	Description	Quantity	HA46 E		
			ANSI / CSA		
			English	French	Spanish
19	Range Extender	1	4000025140	4000025140	4000025140
38	Range Extender	1	4000027450	4000027450	4000027450
65	Range Extender	1	4000025010	4000025010	4000025010
76	Range Extender	1	4001072970	4001072970	4001072970
80	Range Extender	1	4001128970	4001128970	4001128970
83	Range Extender	1	4001129050	4001129050	4001129050
84	Range Extender	1	4001129060	4001129060	4001129060
85	Range Extender	1	4001075880	4001075880	4001075880
86	Range Extender	1	4001128990	4001128990	4001128990
91	Range Extender	1	4001075830	4001075830	4001075830
92	Range Extender	1	4001129040	4001129040	4001129040
202	Range Extender	1	4001126880	4001126880	4001126880
Not illustrated	Pipe holder option	2	4000131600 / 4000131610 / 4000131620 / 4000708570	4000131600 / 4000131610 / 4000131620 / 4000708570	4000131600 / 4000131610 / 4000131620 / 4000708570
Not illustrated	Plate holder option	1	4000131830 / 4000131730	4000131830 / 4000131730	4000131830 / 4000131730
Not illustrated	Biodegradable hydraulic oil option	1	4001052380	4001052380	4001052380
Not illustrated	Biodegradable hydraulic oil option - Cold country	1	4001052390	4001052390	4001052390
Not illustrated	Option Grill	1			
Not illustrated	Option - Range of Motion	1	4001260130	4001260130	4001260130
Not illustrated	Centralized filling option	1	4001052340	4001052340	4001052340
Not illustrated	Compressed air option	1	4001052370	4001052370	4001052370
Not illustrated	Transport handle	1	4001295050	4001295050	4001295050
Not illustrated	Power plug option	1	4001052350 / 4001052360	4001052350 / 4001052360	4001052350 / 4001052360

Marking	Description	Quantity	HA46 E PRO		
			ANSI / CSA		
			English	French	Spanish
1	Load height	2	4001269490	4001269490	4001269490
2	Pressure - Stress on the floor	4	4001269500	4001269500	4001269500
3	Commercial name - HA46 E PRO 362 x 100 - Bright machine	1	4001267240	4001267240	4001267240
3	Commercial name - HA46 E PRO 362 x 100 - Bright machine	1	4001267260	4001267260	4001267260
4	HAULOTTE 495 x 80 - Bright machine	3	4001072210	4001072210	4001072210
4	HAULOTTE 495 x 80 - Dark machine	3	4001072220	4001072220	4001072220
5	HAULOTTE 165 x 80 - Bright machine	1	4001072250	4001072250	4001072250
5	HAULOTTE 165 x 80 - Dark machine	1	4001072260	4001072260	4001072260
8	Noise emission level - 97 dB	1	4001267460	4001267460	4001267460
9d	Control of movements	3	4001083270	4001083270	4001083270
10d	Control of movements	3	4001083390	4001083390	4001083390
10e	Control of movements	1	4001269540	4001269540	4001269540
11	Anchorage point	9	4001052020	4001052020	4001052020
12a	Material risk for basket with straight corner	3	4001083240	4001083240	4001083240
12b	Material risk for basket with straight corner	2	4001083250	4001083250	4001083250
12a	Material risk for basket only with chamfered corner	4	4001083240	4001083240	4001083240
12c	Material risk	1	4001269520	4001269520	4001269520
14	Collision hazard - locking pin	1	4000024830	4000068080	4000086510
16	Max and min oil level	1	307P221060	307P221060	307P221060
17	Risk of crushing	2	4000024640	4000067680	4000086460
18	Hand crushing hazard	2	4000024770	4000067710	4000086490
19	Read the operation manual	2	4000025140	4000025140	4000025140

Marking	Description	Quantity	HA46 E PRO		
			ANSI / CSA		
			English	French	Spanish
20	Before operation	2	4000027570	4000068880	4000086640
22	Wound foot	2	4000024840	4000024840	4000024840
26	Ground for welding	3	4000027100	4000027100	4000027100
28	Software version	1	4000504670	4000504670	4000504670
31a	Brake release	2	4001133750	4001133750	4001133750
31b	Brake release	1	4001270050	4001270050	4001270050
32	Towing anchorage point	4	4000027310	4000027310	4000027310
34	Danger of electrocution - No high-pressure washing	4	4000025130	4000025130	4000025130
56	127 V charger socket	1	4001134690	4001134690	4001134690
65	Fire Hazard	2	4000025030	4000068120	4000086550
68	Transport height	1	4001269510	4001269510	4001269510
69	Battery isolation switch	1	4001167960	4001167960	4001167960
78	QR Code - https://www.e-technical-information.com	2	4001089310	4001089310	4001089310
79	Electrical connection	1	4001101260	4001101260	4001101260
80	Assembly procedure – Range Extender	1	4001128970	4001128970	4001128970
89	Do not store	1	4001134640	4001134640	4001134640
97a	Reflective label - Left side	1	4001266050	4001266050	4001266050
97b	Reflective label - Right-hand side	1	4001266060	4001266060	4001266060
303	Activ'Shield Bar	1	4000609540	4000609540	4000609540
304	Electrical box - Activ'Shield Bar	1	4000596720	4000596720	4000596720
305	Do not lean on the Activ' Shield Bar bar	1	4000206690	4000206690	4000206690
3b	Range extender	1	4001275780	4001275780	4001275780
4b	Range Extender	1	4001072220	4001072220	4001072220
6	Range Extender	1	4001128610	4001128610	4001128610
10e	Range Extender	1	4001269540	4001269540	4001269540
12c	Range Extender	1	4001269520	4001269520	4001269520

Marking	Description	Quantity	HA46 E PRO		
			ANSI / CSA		
			English	French	Spanish
19	Range Extender	1	4000025140	4000025140	4000025140
38	Range Extender	1	4000027450	4000027450	4000027450
65	Range Extender	1	4000025010	4000025010	4000025010
76	Range Extender	1	4001072970	4001072970	4001072970
80	Range Extender	1	4001128970	4001128970	4001128970
83	Range Extender	1	4001129050	4001129050	4001129050
84	Range Extender	1	4001129060	4001129060	4001129060
85	Range Extender	1	4001075880	4001075880	4001075880
86	Range Extender	1	4001128990	4001128990	4001128990
91	Range Extender	1	4001075830	4001075830	4001075830
92	Range Extender	1	4001129040	4001129040	4001129040
202	Range Extender	1	4001126880	4001126880	4001126880
Not illustrated	Pipe holder option	2	4000131600 / 4000131610 / 4000131620 / 4000708570	4000131600 / 4000131610 / 4000131620 / 4000708570	4000131600 / 4000131610 / 4000131620 / 4000708570
Not illustrated	Plate holder option	1	4000131830 / 4000131730	4000131830 / 4000131730	4000131830 / 4000131730
Not illustrated	Biodegradable hydraulic oil option	1	4001052380	4001052380	4001052380
Not illustrated	Biodegradable hydraulic oil option - Cold country	1	4001052390	4001052390	4001052390
Not illustrated	Option Grill	1			
Not illustrated	Option - Range of Motion	1	4001260130	4001260130	4001260130
Not illustrated	Centralized filling option	1	4001052340	4001052340	4001052340
Not illustrated	Compressed air option	1	4001052370	4001052370	4001052370
Not illustrated	Transport handle	1	4001295050	4001295050	4001295050
Not illustrated	Power plug option	1	4001052350 / 4001052360	4001052350 / 4001052360	4001052350 / 4001052360

C - Pre-operation inspection

Notes

1 Recommendations

The owner, the site manager, the supervisor and the operator are all responsible to ensure the machine is fit for the work it is to perform; i.e. that the machine is suitable to carry out the work in complete safety and in compliance with this Operator's Manual. All managers who are responsible for persons operating the machine must be familiar with the local regulations currently applicable in the country of use and ensure that they are adhered to.

Before using the machine, read the previous chapters in this manual. Ensure that you have understood the following points:

- Safety precautions.
- Operator's responsibilities.
- Conditions and the operating principles of the machine.

2 Working area assessment

Before carrying out any operations, ensure that the machine corresponds to the work to be done and the working environment:

- Carry out a thorough inspection of the site to identify any potential risks within the work zone.
- Take the necessary precautions to avoid collisions with other machinery or people within the work area.
- Mark out the work area.
- **Ensure that:**
  - The weather conditions (wind, rain, etc.) allowing the machine to be used.
  - The ground withstands the weight of the machine and has not been affected by the poor weather conditions.
- Check that the authorisations to work with the machine on the site in question have been obtained (.g. chemical product factories).
- Define a rescue plan for all the risks, including the risk of falls and crushing.

Extra care must be taken if aerial work platforms are used to manoeuvre up through several levels of steelwork. The user could be trapped if the basket hits the metal frame.

This risk increases with the number of steelwork levels and if material is piled up on lower level reducing the spacing between levels.

3 Inspection and Functional test

3.1 Daily inspection

Each day before the beginning of a new work session and with each change of operator, the machine must be subjected to a visual inspection and a complete functional test.

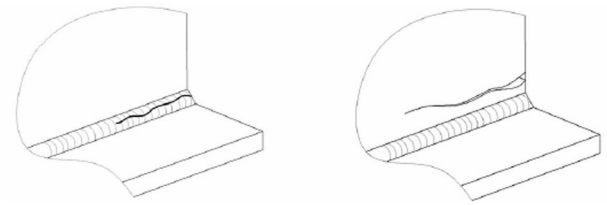
- Never use a defective or a malfunctioning aerial work platform.
- If any item on the check list is marked "No" during the inspection; machine must be tagged and placed out of service.
- Do not operate the machine until all identified items are corrected and it has been declared safe for operation.

In case of loose fasteners, refer to torque table value in maintenance book.

In case of leaks, replace the damaged part before use.

In case of structural part deformation (cracks, broken weld, paint chips) replace the part before use.

Sample of broken welds



We recommend these forms to be completed daily and stored to assist with your maintenance schedule.

Each action is depicted in the daily inspection sheet using the following symbols.

Use the detailed program below.

	Oil change		Lubrication-Lubrication		Tightening
	Levelling		Systematic replacement		Functional adjustments / Checks / Cleaning
	Visual inspection		To check by test		

Serial number:	
Hours of operation:	
HAULOTTE Services® contract reference:	Model:
Intervention record number:	Signature:
Date:	
Name:	

Haulotte	Page or associated procedure	Daily	OK	NOK	Corrected	Comments
Chassis assembly: Wheel, reducer, steering, wheel pivot						
Check state of tires/tyres and inflations						
Range extender (if equipped)						
Check engine fuel level (Top up the oil if necessary)						
Check engine oil level (Top up the oil if necessary)						
Check there are no leaks engine components						
Check the condition of the battery						
Batteries						
Check the condition of the battery						
Turntable						
Test the operation of the turntable locking system						
Hydraulic : oils, filters and hoses						
Check the hydraulic oil level (Top up the oil if necessary ; Machine stowed)						

C - Pre-operation inspection

Haulotte	Page or associated procedure	Daily	OK	NOK	Corrected	Comments
Check the clogging indicator on the hydraulic pressure filter (change if clogged)						
Check the hoses, blocks and pumps, fittings, cylinders and the tank for the absence of leaks, deformations and damage						
Platform						
Ensure that the sliding door or bar automatically returns to the closed and locked position						
Check that the harness anchor points are not cracked or damaged						

C - Pre-operation inspection

Haulotte	Page or associated procedure	Daily	OK	NOK	Corrected	Comments
General						
Check for the presence, cleanliness and readability of the manufacturer's plates, security labels, user manual and maintenance manual						
Check the cleanliness and readability of the control box						
Test the opening and closure of covers (chassis, turntable, upper control box)						
Check the condition of electrical harnesses, cables and connectors						
Check for the absence of abnormal noise and jerky movements						
Check for the absence of visible deterioration and damage						
Check for the absence of cracks, broken welds and chipped paintwork on the structure						
Check for the absence of missing or loose screws and bolts						
Check for the absence of deformation, cracking and breakage of axis stops, bushing and axes						
Check for the absence of foreign bodies in joints and sliding parts						
Safety devices						
Test the operation of the upper and lower control boxes: manipulators, switches, buttons, horn, emergency stops, screens and lights						
Test the operation of visual and audible alarms						

Haulotte	Page or associated procedure	Daily	OK	NOK	Corrected	Comments
Test the operation of the tilt system						
Test the operation of the emergency lowering system						
Test the operation of the axle locking system						
Test the operation of the loading control system (visual alarm on the control box)						
Test the operation of the Activ Shield Bar (If equipped)						

4 Safety functional checks

To protect the user and the machine, safety systems prevent the movement of the machine beyond its operating limits. These safety systems when activated immobilize the machine and prevent further movement.

The operator must be familiar with this technology and understand that is not a malfunction but an indication that the machine has reached an operation limit.

Aerial Work platforms are equipped with two control boxes which allow operators to safely use the machine. An emergency device is available on the ground control box should the machine become overloaded (Overriding system), in order to carry out the emergency rescue of people on the platform..

The following checks describe the operation of the machine and the specific controls required.

For the location and description of these controls:  refer to section B 2.2 and D 2 - Ground control box and B 2.3 and D 3 - Platform control box.

4.1 Lowering for repairs

Emergency pump

Step	Action
1	Pull both E-Stop buttons (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Hold the back-up unit activation button (6) and activate the arm lifting selector (5) until you observe a movement.
4	Reset the machine to its access configuration.

Overriding

Step	Action
1	Pull both E-Stop buttons (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Hold the OVERRIDING (11) pushbutton and check that the following message is displayed on the screen: Emergency mode inactive.

4.2 Emergency push buttons

4.2.1 Ground control box

Ground control box E-stop button

Step	Action
1	Pull both E-Stop buttons (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Press the emergency stop pushbutton (9). The indicator lights and screen switch off.
4	Check no movements are functional.

4.2.2 Platform control box

Platform control box E-stop button

Step	Action
1	Pull both E-Stop buttons (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Press the emergency stop pushbutton (46). The indicator lights and screen switch off.
4	Check no movements are functional.

4.3 Activation of controls

The enable foot pedal (enable switch) must be activated to allow any movement.

The "Enable Switch" system depends on the machine configuration and will consist of one of the following:
- Enable switch at ground box (6) .
- Foot pedal (enable switch) in the platform (C42) .

N.B.-:-THE ENABLE SWITCH MUST BE ACTIVATED FIRST BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

4.3.1 Ground control box

Step	Action
1	Pull both E-Stop buttons; (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Test a movement command without actuating the activation command (6).
4	Check that the movement is not performed.
5	Press and hold the activation command (6) then test each movement command.
6	Check that all the movements are performed. ***N.B.-:-IF THE ACTIVATION COMMAND (6) IS HELD DOWN WITHOUT SELECTING A MOVEMENT FOR SEVERAL SECONDS, THE ACTIVATION COMMAND IS AUTOMATICALLY DEACTIVATED. RELEASE THEN PRESS AND HOLD THE ACTIVATION COMMAND (6) TO REACTIVATE IT.***

4.3.2 Platform control box

Step	Action
1	Pull both E-Stop buttons; (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position. The indicator lights and the screen light up.
3	Test a movement command without pressing the foot switch (C42).
4	Check that the movement is not performed.
5	Press and hold the foot switch (C42) then test each movement command.
6	Check that all the movements are performed. ***N.B.-:-IF THE FOOT SWITCH IS HELD FOR SEVERAL SECONDS WITHOUT SELECTING A MOVEMENT, IT IS AUTOMATICALLY DEACTIVATED. RELEASE THEN PRESS AND HOLD THE FOOT SWITCH (C42) TO REACTIVATE IT.***

4.4 Fault detector

The machine is equipped with an on-board fault detection system, which indicates the type of fault to the operator.

The fault is identified by a default code.

The default code is displayed at the ground control box.

Depending on the type of fault, certain movements are blocked or slowed down to guarantee user safety.

Do not use the machine until the fault has been corrected.

4.5 Buzzers test

From the ground control box

Step	Action
1	Pull both E-Stop buttons (9) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the  position.
3	The buzzers on the ground and platform beep upon start-up.

4.6 Indicators/LED's test

From the ground control box

Step	Action
1	Pull the E-Stop button (46) at the platform control box.
2	Set the key switch (21) at ground box to the  position.
3	Check that the indicator lights (10, 13, 15, 16) light up briefly on start-up and that the touchscreen is lit up.

From the platform control box

Step	Action
1	Pull E-Stop button (9) at ground box.
2	Set the key switch (21) at ground box to the  position.
3	First push in the E-Stop button (46) at platform box, then pull out.
4	Check that the indicator lights (101 - 117) on the platform control panel display light up briefly on start-up.

4.7 Travel speed limitation

All driving speeds are authorised when the machine is folded, (machine in transport position).

The machine automatically adapts its speed when elevated.

Only micro speed is authorized in elevation.

Platform control box

Step	Action
1	Place the machine on flat and firm ground.
2	From the platform control box, ensure that the high, medium and low drive speeds are operational (45).
3	Extend the telescope by 30 cm / 12 in (54).
4	Ensure that only micro-speed is authorized (Selecting low, medium or high speed does not change the speed of the machine) .
5	Completely retract the boom (54).
6	Lift the arm 30 cm / 12 in (50).
7	Ensure that only micro-speed is authorized (Selecting low, medium or high speed does not change the speed of the machine) .
8	Stow the arm completely ((50)).
9	Lift the boom 30 cm / 12 in (49).
10	Ensure that only micro-speed is authorized (Selecting low, medium or high speed does not change the speed of the machine) .
11	Fully retract the boom (49).

4.8 Slope warning device

From each control box, a buzzer alerts the operator that the machine is not folded/stowed and is positioned on a slope exceeding the slope allowed.

N.B.-:-THE SLOPE SENSOR IS ONLY ACTIVE WHEN THE PLATFORM IS NOT IN THE STOWED POSITION.

When the machine is on a slope greater than the maximum authorized slope and if the machine is elevated:

- The DRIVE and LIFTING (RAISING) commands are deactivated.

The lowering speeds are reduced.

In this case, fully lower the platform and reposition the machine on level ground before raising the platform again.

Do not rotate the turret while on a slope greater than 25%. Ensure boom is positioned between the wheels.

To check the tilt sensor at ground level, perform the following steps:

To check the tilt sensor at ground level

Step	Action
1	Put the machine in stowed position.
2	Position the machine on an incline that is greater than the maximum permitted incline (B 3.1 - Technical specifications) .
3	Check that the "tilt" LED 112 indicator is lit up.
4	Unfold the machine. Ensure the movement is stopped.
5	Buzzers at ground and platform will beep.

4.9 Machine braking

Platform control box

Step	Action
1	Pull both E-Stop buttons; (15) at ground box and (46) at platform box.
2	Set the key switch (21) at ground box to the position.
3	Select low drive speed (45) , then slowly move the drive joystick.
4	Release joystick. Ensure that the machine stops immediately and does not drift.

Notes

D - Operation instructions

Notes

1 Operation

1.1 Introduction

Only trained and authorized personnel shall be permitted to operate this aerial work platform.

Prior to operation:
- Read, understand and obey all instructions and safety precautions in this manual and attached to the aerial work platform.
- Read, understand and obey all local regulations.
- Become familiar with the proper use of all controls and emergency systems.

1.2 Major description

All the machines are equipped with:
- Platform control box (Main station) .
- Ground control box (Auxiliary station and Overriding system) .
- Stop Emission System.

1.3 Operation from the ground control box (Auxiliary station)

The ground control box is designed for maintenance and emergency rescue operations only.

- The ground control box is energized and is active ONLY when:
  - The emergency stop on the ground control box is not pushed in.
  - Activation of ground control box is achieved by turning the control box activation key selector (21) to the  position.

N.B.-:-IF THERE IS NO AUDIBLE OR VISUAL SIGNAL ON START-UP, CHECK THE CONDITION OF THE STARTER BATTERY.

- An E-Stop button at each control box stops all movements when pressed in; including shutting off an engine (if equipped).

N.B.-:-DO NOT TURN OFF THE POWER SUPPLY OF THE MACHINE USING THE E-STOP BUTTON (USE ONLY IN CASE OF EMERGENCY) . TURN OFF THE POWER SUPPLY OF THE MACHINE USING THE CONTROL BOX ACTIVATION KEY SWITCH (21) TO  ***POSITION.***

- An Enable /Foot Switch (6) is present that should be activated and maintained to authorize one or more movements. If Enable Switch (6) is kept engaged without selecting a function movement for more than 8 seconds ; Enable Switch is automatically de-activated.

N.B.-:-THE ACTIVATION COMMAND (6) MUST BE ACTIVATED BEFORE ANY COMMANDS ARE GIVEN.

- Only movements to lift, lower and rotate the platform are possible from the ground control box.
- All controls operating a movement, return automatically to neutral when released.
- At power up, all controls must be in their neutral position (not activated).
- Overriding system: Refer to  D 4.2 - To rescue operator in platform.
- The status of the controls is tested automatically when the machine is switched on.
- Indicators (10), (15), and (16) are checked when the machine is powered on.
- If the control box activation selector key for the console (21) is positioned either on the ground control box or the platform control box, the machine is automatically switched on in Full Electric mode. However, there are 2 other modes that can be selected as necessary:
  - If Forced Engine Mode button (20) is activated, the engine will turn ON, regardless of the battery level.
  - If the Auto Mode button (19) is activated, the engine will automatically start or stop, depending on the battery charge level (Refer to :  D 1.5 - Mode operation.) .

- A buzzer beeps in the following conditions:
  - When power is switched on.
  - Overload.
  - Slope if machine is out of stowed position.
  - Hydraulic oil overheating.
  - Movement buzzer option.
  - Drive buzzer option.

1.4 Operation from the platform control box (Main station)

- The platform control box is energized only when:
  - The E-stop buttons on both ground and platform control boxes are not pressed in.
  - The machine is switched ON by turning the activation key selector from the ground control box (21) to the platform control box  .
  - Overriding system not activated.
- A joystick that is faulty or activated on power-up, is not taken into account to control a movement. If this fault disappears, the movement is authorised again.
- An E-Stop button at each control box stops all movements when pressed in; including shutting off an engine (if equipped).

N.B.-:-DO NOT TURN OFF THE POWER SUPPLY OF THE MACHINE USING THE E-STOP BUTTON (USE ONLY IN CASE OF EMERGENCY) . TURN OFF THE POWER SUPPLY OF THE MACHINE USING THE CONTROL BOX ACTIVATION KEY SWITCH (21) TO  ***POSITION.***

- A Foot Switch (C42) is present and should be activated and maintained to authorize one or more movements. If Foot Switch is kept engaged without selecting a function movement for more than 8 s seconds ; Enable switch is automatically de-activated.

N.B.-:-THE ENABLE SWITCH (C42) MUST BE ACTIVATED FIRST BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

N.B.-:-IT IS RECOMMENDED THAT OPERATOR REMOVES THE FOOT FROM THE FOOT SWITCH WHENEVER A MOVEMENT HAS CEASED.

- The release of 'Enable switch' foot pedal while performing a movement stops that function movement and all other movements are inactive. The stop of movements is progressive.
  - If the Foot Switch is pressed again quickly within 0,5 s the movement restarts.
- All switches and joystick operating a movement, return automatically to neutral when released.
- At power up, all switches and joysticks must be in their neutral position.
- The status of the switches is tested automatically when the machine is switched on and checked at every starting. A switch will be activated only after it has been detected in neutral position.
- A buzzer beeps in the following conditions:
  - When power is switched on.
  - Overload.
  - Machine elevated on a slope greater than the rated slope.
- Emergency pump (if the motor pump unit or traction batteries fail) ( D 4.1 - In case of power loss) .
- Indicators-All indicators (LEDs 101 - 117) are checked when the machine is powered on.

While driving on a slope:
- Always place the boom above the rear axle, in the direction of movement.
- Always orientate the machine in the direction of the slope.
- Always place the boom in fully retracted and in stowed position.
- Do not travel down slopes in high speed.

- Do not drive fast in narrow or cluttered areas. Keep the speed under control.

1.5 Mode operation

When the battery has less than 20% charge, the following movements are disabled:

- Boom raising
- Arm raising
- Telescope extended
- Drive if the machine is stowed.

If the batteries are discharged below 5%, no movement is available. Recharging the batteries, either connected to the mains or when starting the Range Extender, is mandatory (Refer to D 7 - Battery care and maintenance) .

To switch off the machine's main power supply, turn the control box activation key selector (21) to the position.

1.5.1 Full Electric mode (If machine equipped with the option Range Extender)

When the machine is powered up, it will be in Full Electric Mode by default (Powered by battery and Range Extender off (if equipped with Range Extender)) .

1.5.2 Auto mode (If machine equipped with the option Range Extender)

In this mode , the engine will automatically start or stop. The level of charge in the batteries is managed to optimize their life by minimizing energy consumption with the use of the thermal engine. Thereby, machine's performance level is maintained.

The thermal engine will start:

- If the battery's charge status is between 55 % and 80 %.

N.B.-:-RECHARGING THE BATTERIES, EITHER CONNECTED TO THE MAINS OR WHEN STARTING THE ENGINE, IS MANDATORY (REFER TO D 7 - BATTERY CARE AND MAINTENANCE) .

If there is a fault in the Range Extender, the machine switches automatically to Full Electric mode.

1.5.3 Forced engine mode (If machine equipped with the option Range Extender)

This mode can be selected any time.

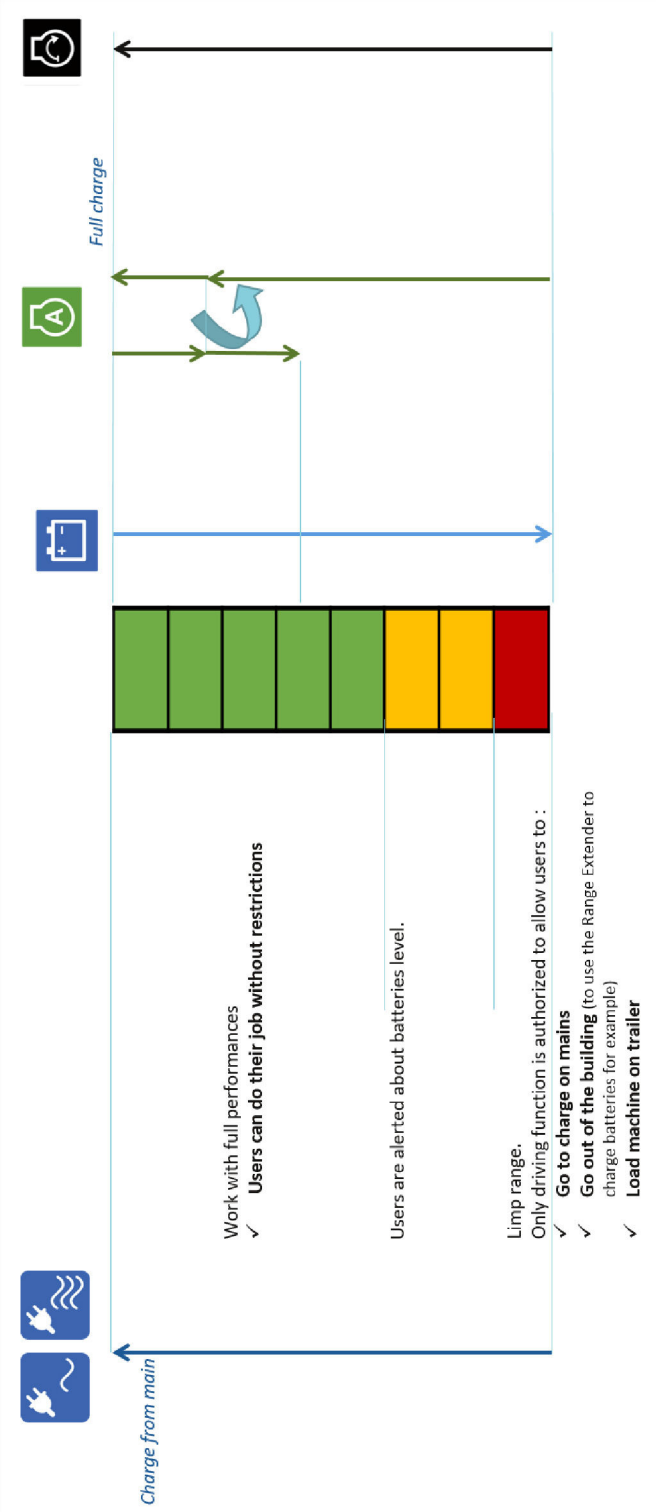
The Range Extender will produce current to recharge the batteries up to the 100%.

The motor stops automatically when battery recharging is complete.

If there is a fault in the Range Extender, the machine switches automatically to Full Electric mode.

1.5.4 Overview of mode operation

Energy management: use of batteries



2 Ground control box

2.1 To start and stop the machine

- Check that the E-stop buttons (9) at ground control box and (46) at platform control box are not pressed in.
- Turn the control box selector (21) to position  to energize the ground control box. Full Electric mode (18) is activated by default (the engine does not start) . Refer to : D 1.5 - Mode operation.

To shut-down the machine from the ground control box:

- Turn the activation selector key switch (21) to off position  .
- Power supply is now switched off.

N.B.-:-THIS OPERATION TURNS OFF THE POWER SUPPLY TO MACHINE AND IT IS REQUIRED TO PREVENT BATTERY DISCHARGE.

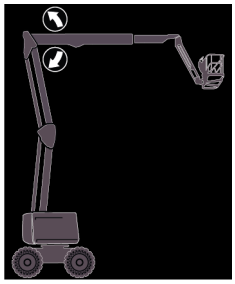
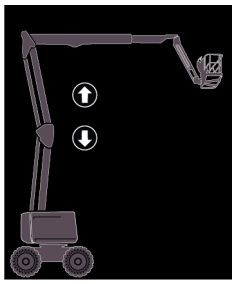
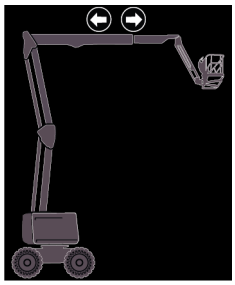
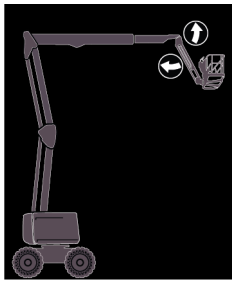
N.B.-:-THE TOUCHSCREEN AUTOMATICALLY GOES INTO STANDBY IF IT IS NOT USED FOR AN EXTENDED PERIOD. TO SWITCH THE TOUCHSCREEN BACK ON, TURN THE KEY SELECTOR TO THE OFF POSITION THEN FOLLOW THE START-UP PROCEDURE.

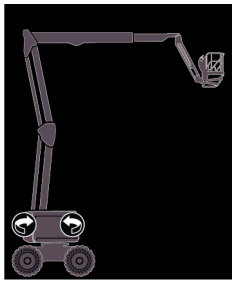
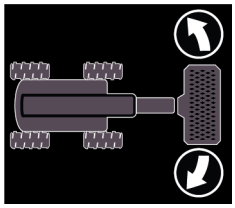
2.2 Movement control

N.B.-:-THE ENABLE SWITCH (6) MUST BE ACTIVATED FIRST BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

N.B.-:-RELEASING THE ENABLE SWITCH (6) WILL STOP ALL MOVEMENTS.

Ground box controls (emergency station)

Command		Action
Raising / lowering of boom		Press the boom raising control (4) to raise the boom.
		Press the boom lowering control (4) to lower the boom.
Lift/lower the arm		Press the arm raising control (5) upwards to raise the arm
		Press the arm lowering control (5) downwards to lower the arm
Boom telescoping extend / retract		Press the boom telescoping control (3) to extend the boom.
		Press the boom retracting control (3) to retract the boom.
Jib raising / lowering (If applicable)		Press the jib raising control (2) to raise the jib.
		Press the jib lowering control (2) to lower the jib.

Command		Action
Turntable rotation		Press the turntable rotation control (7) for an counterclockwise rotation .
		Press the turntable rotation control (7) for a clockwise rotation .
Platform rotation		Press the platform rotation control (8) for an counterclockwise rotation .
		Press the platform rotation control (8) for a clockwise rotation .
Platform leveling		Press the platform levelling control (1) to tilt the platform upwards.
		Press the platform levelling control (1) to tilt the platform downwards.

3 Platform control box

3.1 To start and stop the machine

3.1.1 To start the machine

At the ground control box:
- Check that the E-stop button (9) is not pressed in.
- Turn the control box activation key selector (21) to platform control box position  to switch on the platform control box.

At the platform control box:
- Check that the E-stop button (46) is not pressed in.
- The power on LED (101) at the platform display lights up.

If the activation key selector for the control box (21) is activated, the machine is in Full Electric mode by default. Refer to the section on operating modes:  D 1.5 - Mode operation.

3.1.2 To stop the engine

The engine stops and the machine returns to Full Electric mode if:
- In Manual mode, selector (20) on the ground control box is pressed or switch (20) on the platform control box is in the downwards position ;
- In Auto mode, the selector (19) on the ground control box is pressed or the switch (19) on the platform control box is in the downwards position.

The machine's power supply can only be turned OFF from the ground control box by turning the control box activation key selector (21) to the OFF  position ( D 1.5 - Mode operation) .

The touchscreen automatically goes into standby if it is not used for an extended period. To switch the touchscreen back on, press the emergency stop button then follow the start-up procedure.

3.2 Drive and steer control

To activate drive and steer function, press the Foot Switch and simultaneously operate the joystick (33) for the desired function.

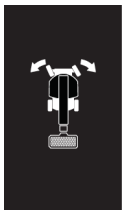
N.B.-:-THE FOOT SWITCH (C42) MUST BE ACTIVATED BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

Before moving, locate the white and red directional arrows on the chassis and the platform control box.

Move the drive control joystick (33) in the direction matching the directional arrows.

N.B.-:-ON UNEVEN TERRAIN, LOWER THE BOOM TO IMPROVE THE DRIVE PERFORMANCE.

Do not use simultaneously the differential lock control (35) and the steering control. Do not activate the differential lock control (35) in the event of strong grip (dry tar, etc.).

Command		Action
Steering		Press thumb/rocker switch on joystick (33 A) to the left to steer left.
		Press the joystick rocker switch (33) left or right with your thumb to steer the wheels.
Steering mode selection		Synchronized axle: 4 wheel steering mode
		2 front steering wheels from axle
		Crab mode axle
Driving		Push the joystick (33) forward to move the machine forward, in the direction of the WHITE arrow
		Pull the joystick (33) backwards to move the machine in the direction of the RED arrow
Drive speed		Set the speed selector to (35)  for low speed movements (short distance, final approach, drift and when crossing a slope).
		Position the drive speed selector switch (45) on  for medium speed driving.
		Set the speed selector to (45)  for low speed movements (short distance, final approach, drift and when crossing a slope).

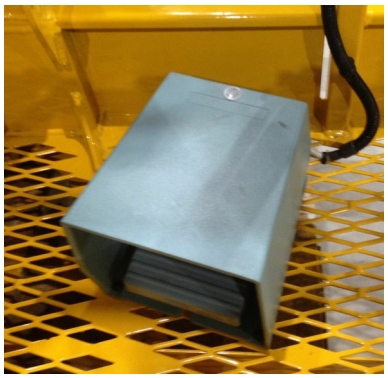
N.B.-:-STEERING MODE OPERATES BY OIL TRANSFER. TO REALIGN THE REAR AXLE, IT MAY BE NECESSARY TO SWITCH BACK TO 2 WHEEL DRIVE FIRST.

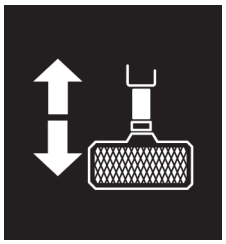
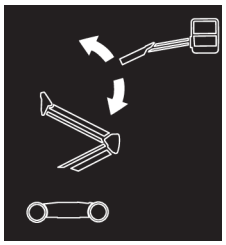
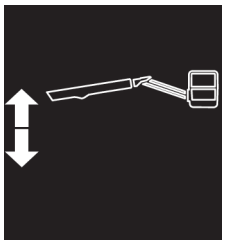
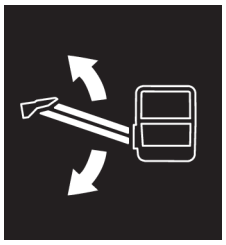
3.3 Movement control

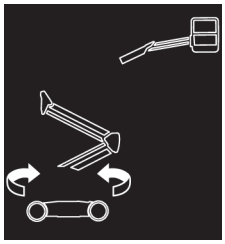
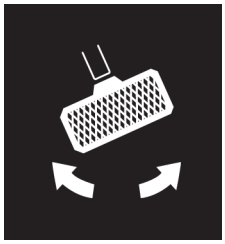
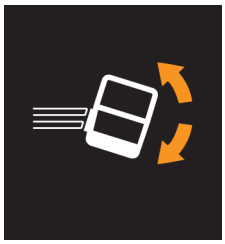
N.B.-:-THE ENABLE SWITCH (C42) MUST BE ACTIVATED FIRST BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

N.B.-:-RELEASING THE ENABLE SWITCH (C42) WILL STOP ALL MOVEMENTS.

Foot Switch(C42)



Command		Action
Boom telescoping extend / retract		Push the switch (54) forward to retract the boom. Move the switch (54) backwards to extend the boom.
Boom raising / lowering		Move the boom/turntable joystick (49) forward to raise the boom. Move the boom/turntable joystick (49) backwards to lower the boom.
Arm raising / lowering		Push the joystick (50) forward to raise the arm. Pull the joystick (50) backwards to lower the arm.
Jib raising / lowering		Push the pendulum selector (129) forwards to raise the pendulum. Push the jib switch (129) backwards to lower the jib.

Command		Action
Turntable rotation		Move the boom/turntable joystick (49) to the left for a clockwise (CW) rotation.
		Move the boom/turntable joystick (49) to the right for a counter clockwise (CCW) rotation.
Platform rotation		Move the platform rotation switch (38) to the left for a clockwise (CW) rotation.
		Move the platform rotation selector (38) to the right for a counter clockwise (CCW) rotation
Platform leveling		Push the platform leveling switch (40) forwards to tilt the platform to the front of the machine.
		Push the platform leveling switch (40) backwards to tilt the platform towards the rear of the machine.

3.4 Additional controls

- Horn: Push the horn selector (43) to the right to sound the horn. The horn stops when the switch is released.

3.4.1 Activ' Lighting System

Refer to B 3.3 - Platform control box.

This option means that the operator will be able to safely load (or unload) the machine onto the truck.

Located on the turntable, boom and platform, the Activ' Lighting System system lights up the controls and surrounding areas of the machine. Users can then safely move the machine.

4 Rescue and emergency procedures

4.1 In case of power loss

Should the main power source fail, the secondary emergency power supply, powered by the starter battery, enables movements to be controlled both from the ground control box (on the ground) or from the platform control box (in the platform).

As the electric pump has limited power, it is advisable to reach the ground in the most direct manner possible.

The use of the electric pump is exclusively reserved for lowering the boom in emergency situations only. You are advised to retract the telescope before lowing the boom.

N.B.-:-TEST THE OPERATION OF EMERGENCY SYSTEM ATLEAST ONCE A MONTH. REFER TO THE SERVICE MANUAL.

Depending on the control box in use, push and hold the back-up/auxiliary power switch (17) at ground box or switch (41) at platform box. Retract the boom and lower it by using switches (3) and (4) at ground box or switch (54) and joystick (49) at platform box.

In an emergency, if the operator has to exit the platform while it is elevated, the transfer of the operator must respect the following recommendations.

- Exit onto a sturdy and safe structure.
- Allowance must be made for the possibility of boom deflection when egressing from the platform.
- The occupant(s) must ensure that the 2 harness straps provided are used, for safety. One must be attached to the designated anchorage point on platform the occupant(s) is in and the other attached to the structure intended to get on.
- Do not leave the platform without taking into account the possibility that the machine might move when removing the load.
- Occupant(s) must exit the current platform through the normal access.

N.B.-:-DO NOT DETACH THE LANYARD FROM THE CURRENT PLATFORM IF THE TRANSFER TO THE NEW STRUCTURE POSES ANY DANGER OR UNTIL THE TRANSFER IS SAFELY COMPLETED. DO NOT ATTEMPT TO CLIMB DOWN THE BOOM. INSTEAD WAIT FOR ASSISTANCE FOR A SAFE EXIT.

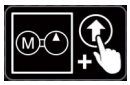
4.2 To rescue operator in platform

In a situation where an operator located in the platform needs to be rescued (for example in case of illness, injury or trapped against a structure making the control box inaccessible), the rescue personel at ground level needs to obtain rapid and direct access to operating functions.

HAULOTTE® has implemented a control system for safely lowering the operator to the ground in the event of an emergency to enable him to receive the neccessary treatment.

The system allows the occupants to be lowered to ground level, even is the emergency stop button is activated or an overload is detected.

Procedure:

- Turn the ground control box key control (21) to the ground control box  position.
- The platform box controls are now de-energized.
- Check that the E-Stop button (9) at ground is not pressed in.
- To lower the platform, hold down the Enable Switch (17)  and simultaneously activate the desired control function.

Refer to D 4.2 - To rescue operator in platform.

4.3 Operation of overriding system from ground control box

N.B.-:-IF THE SAFETY SYSTEMS DO NOT ALLOW NORMAL MOVEMENT FROM THE GROUND CONTROL BOX, OR IN THE EVENT OF OVERHEATING, USE THE OVERRIDING SYSTEM DESCRIBED BELOW.

Operation of the "overriding system" switch must be an exception and not a normal emergency operation.

Procedure:

- Press and hold the "overriding" system control (11)  .
- Press simultaneously the telescoping boom control (3) to retract the boom  .
- Press the boom raising control (4) to raise  or lower  the boom.
- Press the arm raising control (5) to raise  or lower  the arm.

N.B.-:-ONCE RESCUE OPERATIONS ARE COMPLETE, WRITE AN INCIDENT REPORT.

4.4 No power available

In case of loss of the main power and the secondary power unit not functioning, do not attempt to activate any function movement using hydraulic manifold unless trained and authorized by HAULOTTE Services®. All safety functions are no longer active and several hazards may occur. Improper use of the equipment will result in death or serious injuries.

If the operator cannot be lowered by any of the above mentioned methods, contact HAULOTTE Services® immediately.

5 Transportation

5.1 Transport configuration

During loading, ensure that:
- The loading ramp can support the machine weight.
- The loading ramp is correctly attached to transport vehicle.
- The loading ramp has sufficient grip surface.
- The transport vehicle must be parked on a level surface and must be secured to prevent rolling away while machine is being loaded or unloaded.

Do not place yourself below or too close to the machine during loading.

The machine must be completely in the stowed configuration:
- Check the platform is completely empty.

To climb the slope, select low driving speed.

If the slope is too steep, use a winch in addition to the low speed drive.

- Lower the boom.
- Ensure that the jib is raised as necessary to give ground clearance when driving the machine onto the loading ramp.
- Drive onto the truck bed slowly.
- Secure the machine to the tie down points provided (Section D-Machine layout) .
- Lock the turntable with the rotation stop pin located under the turntable before transporting (Section D-Machine layout) .
- The platform must be secured to avoid sudden movement, and to avoid material damage during transport.
- Do not use excessive downward force when securing the platform.

A wrong move can lead to machine tipping over and may cause serious injuries and material damage.

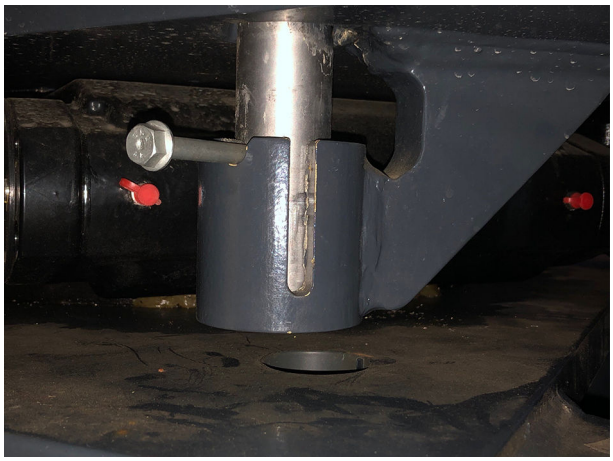
Always align the boom in the axis of the machine and climb slopes with the platform lowered and on the downhill side of the machine.

To enter or exit from the platform: Falling Hazards (A 2.1.2) .

5.2 Machine stowage for transport - HA16 E - HA46 E - HA16 E PRO - HA46 E PRO

Secure turntable with the turntable locking pin before traveling long distances or hauling machine on a truck.

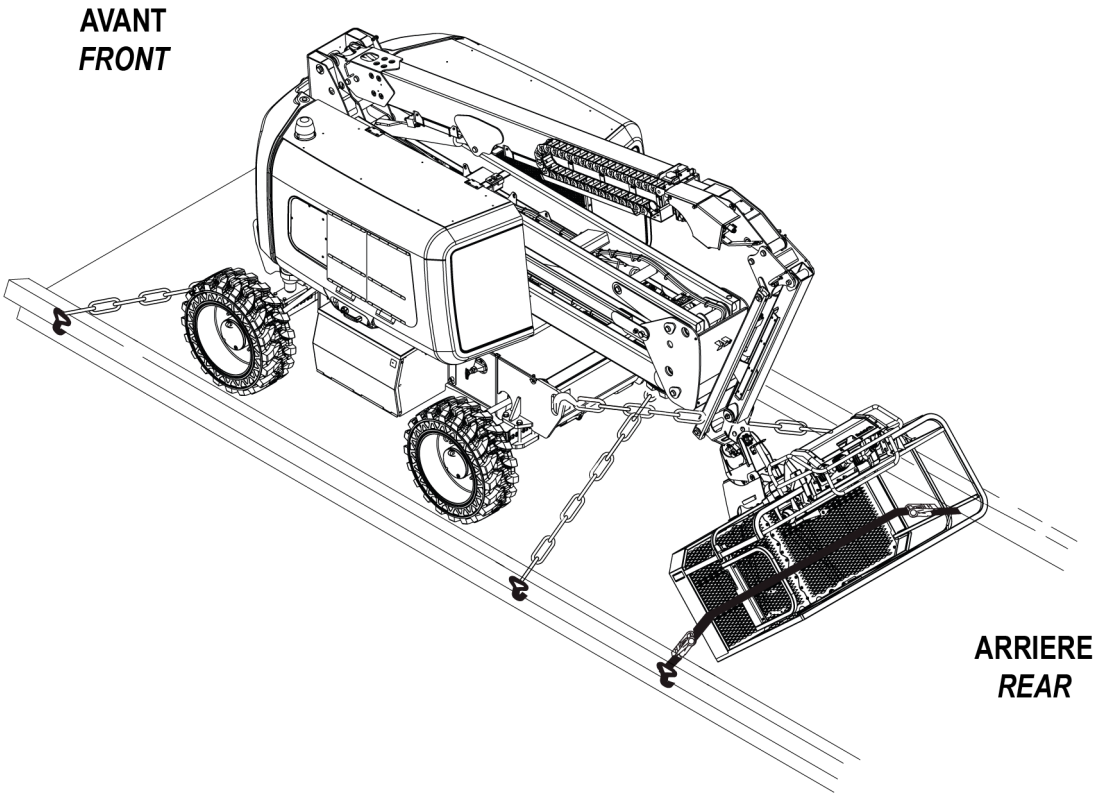
Turntable rotation

Turntable rotation enabled	Turntable rotation disabled
	

Transporting on to a truck bed

The machine must not be raised when it is positioned on a flatbed truck...

Machine stowing



Loading characteristics

Marking	Description	HA16 E - HA16 E PRO - HA46 E - HA46 E PRO
B	Lateral distance between the wheels	2,5 m (8 ft 2 in)
C	Front wheel ground pressure	14,1 daN/cm² (204.5 pounds/ inches²)
D	Rear wheel ground pressure	14,1 daN/cm² (204.5 pounds/ inches²)
	Anchorage point	

5.3 Unloading

Before unloading, check that the machine is in good condition.

- Remove the turntable rotation locking pin (Section D-Machine layout) .
- Remove the tie-down straps or chains.
- Select low drive speed at the platform control box.
- Start the machine from platform control box.

Upon starting a machine that has been secured and transported, the safety system may detect a false overload preventing all movement from the platform control box.

To reinstate the system, lift the jib a few centimetres (inches) using the ground control box.

5.4 Towing

In the event of a machine breakdown, the machine can be towed a short distance to load it onto a transport vehicle:

- Lock-out the machine (Refer to the Service Manual MS0163 - Lock-out procedure) .
- Ensure that no one is in the platform during towing.
- Before towing, ensure that the platform is fully lowered.
- The platform must be empty.
- ALWAYS keep personnel and obstructions clear of the aerial work platform when brakes are released.

To tow a broken-down machine, release brake (Refer to D 5.4.1 - Brake release) .

Perform this operation on flat ground with wheels chocked.

In the towing configuration, the machine braking system is inactive. Use a drawbar to avoid any risk of accident

- Do not exceed the maximum speed (machine unfolded) (Refer to B 4.1 - Technical specifications) .
- Do not use on a slope with a gradient greater than 40%.

To go up or down a slope, use the appropriate winch.

5.4.1 Brake release

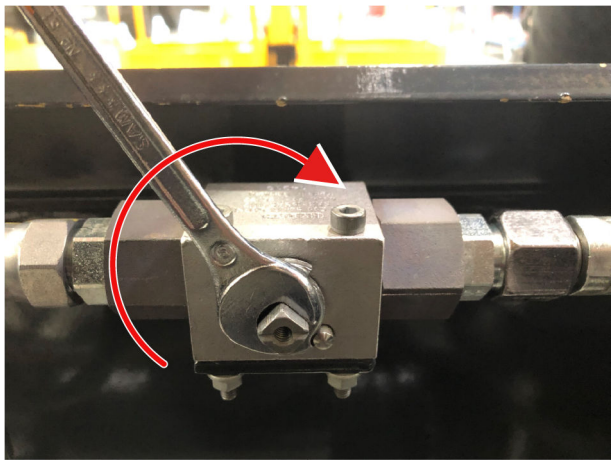
To tow a broken-down machine, perform manual brake release.

Perform these operations on flat, horizontal ground. Block the wheels to immobilize the machine. The machine is in free wheel mode, so the braking system is not active.

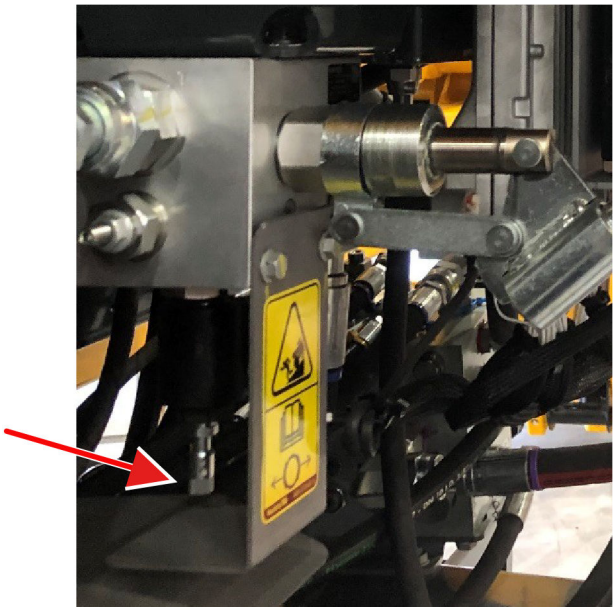
Use manual control ONLY to tow the machine.

The brake release block is located on the chassis above the rear axle:

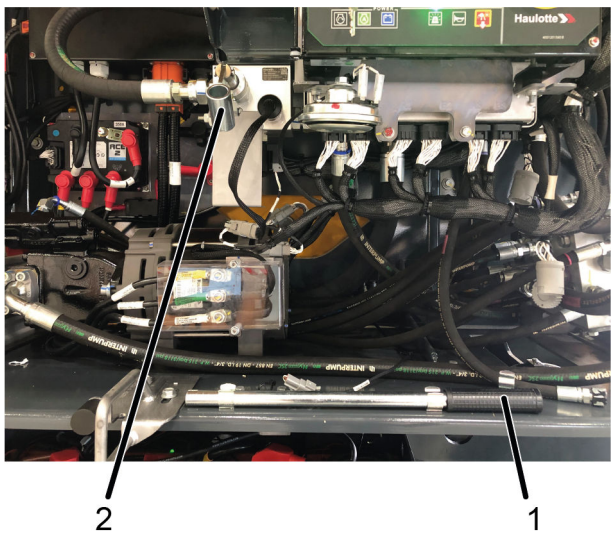
- Remove the housing.
- Using a 9 mm wrench, lock the valve by turning it 1/4 turn (clockwise).



- Open the cover above the ground control box.
- Lock the brake release valve YV105:
  - Push the end of the valve upwards and rotate it 1/4 turn at the same time (counter clockwise).



- Insert the lever (1) in the return bend of the pump (2).

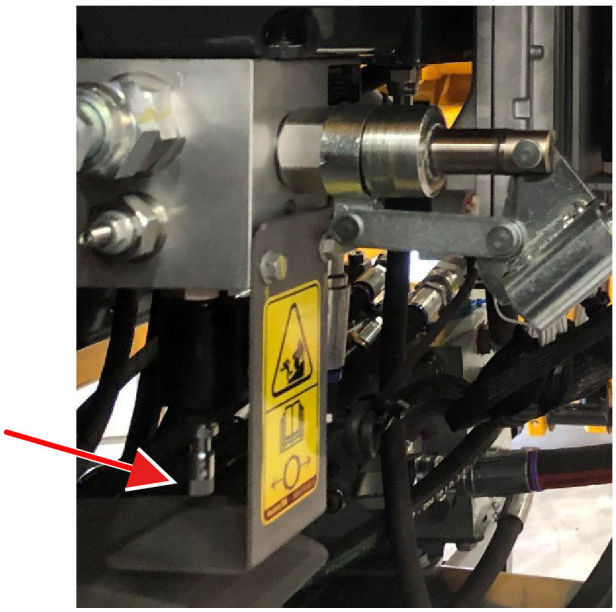


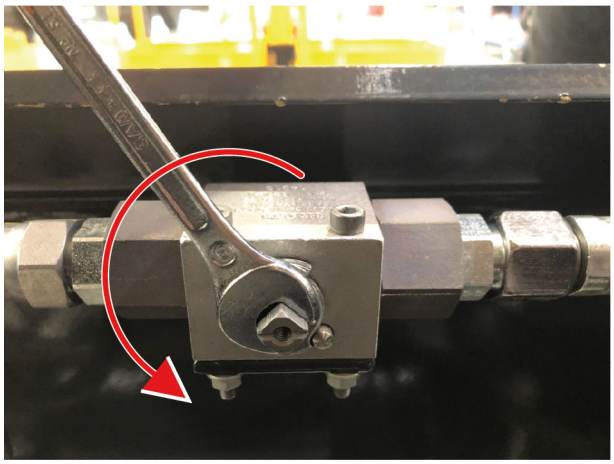
- Push the pump lever (1) until you feel resistance (15 to 20 actions on the lever (1) are usually required) .

The machine is unlocked.

As soon as the machine is towed to a safe, stable position, the parking brake must be immediately reactivated by unlocking the brake release valve:

- Remove the lever (1) from the return bend of the pump (2).
- Unlock the brake release valve by turning it 1/4 turn (clockwise).
- Using a 9 mm wrench, unlock the valve by turning 1/4 turn (counter clockwise).





In the towing configuration, the machine is no longer slowed down. Use a drawbar to avoid any risk of accident.

Do not exceed the maximum speed (machine unfolded) (Refer to B 4.1 - Technical specifications) .

5.5 Storage

The machine can be stored in a designated area when not in use. If it is stored for more than 3 months without being used, an inspection must be carried out before it is put back into service.

For engine storage condition follow engine supplier operator and maintenance manuals.

Keep the batteries charged D 7.4 - Optimise battery life.

Machine must be parked in a protected/designated area with the boom in a stowed configuration, however the boom can be raised but must not be extended. Make sure there is no load in the platform.

The batteries self-discharge. The higher the temperature, the quicker the batteries discharge. It is advisable to recharge the battery every month if the machine has been stored and not used.

If the machine is to be stored for more than 72 hours:

- Switch off the ignition and remove the ignition key.

- Turn off the circuit breaker (Opened position) .

Do not store or immobilise the machine when it is unfolded.

Ensure all access panels, doors and side compartment covers are shut and secured.

Turn the control box activation key switch (21) at the ground control box to the extreme left to shut OFF the power.

Ensure that the turntable rotation locking pin is shifted to the disabled position (Refer to D 5.2 - Machine layout) .

Remove the ignition key to prevent unauthorized operation of the machine.

Storing of the machine with an obstacle under the boom structure is forbidden.

To avoid any risk of corrosion on rods of cylinders during a storage period of more than 1 month:
- In a normal atmospheric environment: perform a complete cycle for the cylinders every 2 months while they are in storage.
- In harsh environments (high levels of salinity in the atmosphere: close to the sea, industrial environment with chloride emissions and/or humidity >70%), we recommend applying the following protection process:
  - Wash and rinse the entire machine with plenty of clean water.
  - Dry all the cylinder rods using an air gun.
  - Apply a solvent-based oil leaving an oily film after evaporation of the solvent directly to all rods left exposed when the machine is in storage position.
  - Re-apply the product every month.

After washing the machine, make sure it is fully air-dry and does not contain moisture on corrosive parts (cylinders rods for example). Do not wash electrical components with a high pressure washer. Wipe away dirt from around electrical components with a dry cloth.

5.6 Lifting operation

During loading / unloading operation with an overhead crane, it is important to respect the following:
- Put the machine in stowed position, boom and arm fully retracted and lowered.
- Platform must be empty.
- Rotate the turret and the jib to the configuration in the photos below.
- Lock the turret with turret locking pin.
- Verify that lifting attachments are in good operating condition and match the technical specifications. Lifting devices must be attached only to the designated lifting eyes.
- Each of the slings used for lifting the machine must be adjusted to keep the machine level and to minimize the risk of damage to the machine.
- Anchorage point for lifting are identified / labeled by the following symbol  .
- ONLY trained and authorized personnel should attempt to lift the machine.

Never lift the machine with slings attached to counterweight.

Without Range Extender

Without Range Extender

With Range Extender

With Range Extender

	Number of shackles	Number of slings	Length	Minimum sling and shackle resistance
A	4	4	5 m (16 ft 5 in)	3000 daN (6750 lbf)

6 Cold Weather Recommendations

In cold weather, do not store the machine with discharged batteries. It is recommended that, at a temperature below 0 °C(32 °F) , the machine not be stored with a battery charge of below 75 %. If you don't have a power outlet, start the engine in Forced Mode with the generator, to increases the battery's state of charge.

Set to Manual mode to start the engine to check that it is operating correctly. If the engine does not start, do not keep trying for a prolonged period of time. Allow the starter to cool down for a few minutes before trying again. If the engine still does not start after several attempts, consult the maintenance manual and switch to Full Electric mode.

In extreme cold conditions, machines should be equipped with optional cold start kits.

N.B.-:-INITIAL STARTING SHOULD ALWAYS BE PERFORMED FROM THE GROUND CONTROL BOX.

6.1 Engine oil

The correct SAE viscosity grade of oil is determined by the minimum ambient temperature during cold engine start-up, and the maximum ambient temperature during engine operation.

In general, use the oil with the lowest viscosity to meet starting temperature requirements.

Engine oil viscosity		
Viscosity index	**Ambient temperature**	
	Minimum	Maximum
SAE 0W20	-40°C (-40°F)	10°C (50°F)
SAE 0W30	-40°C (-40°F)	30°C (86°F)
SAE 0W40	-40°C (-40°F)	40°C (104°F)
SAE 5W30	-30°C (-22°F)	30°C (86°F)
SAE 5W40	-30°C (-22°F)	40°C (104°F)
SAE 10W30	-20°C (-4°F)	40°C (104°F)
SAE 15W40	-10°C (14°F)	50°C (122°F)

Classification API

Fuel type	Engine oil classification
Low sulfur fuel ≤ [0.05% (500 ppm)] Sulfur content < 0.50% (5000 ppm)	APICJ-4 or CK-4 (If fuel with a high sulfur content is used, change the engine oil more frequently (reduce the intervals between each oil change by approximately half))

N.B.-:-FOR ADDITIONAL ENGINE OIL RECOMMENDATIONS, REFER TO THE ENGINE MANUAL PROVIDED WITH THE MACHINE.

6.2 Hydraulic oil

External environmental conditions can reduce performance of the machine if the hydraulic oil temperature does not reach its optimum range.

It is recommended to use the hydraulic oil according to weather condition. Refer to the table below.

Environmental conditions	SAE Viscosity grade
Ambient temperature between - 35°C (- 31°F) and + 35°C (+ 95°F)	HV 32 ARTIC
Ambient temperature between - 15°C (5°F) and + 40°C (+ 104°F)	HV 32
Ambient temperature between 0°C (+ 32°F) and + 45°C (+ 113°F)	HV 68

N.B.-:-IT IS RECOMMENDED TO REPLACE LOW TEMPERATURE OIL AS THE AMBIENT TEMPERATURE REACHES + 15°C (59°F). IT IS NOT ADVISABLE TO MIX OILS OF DIFFERENT BRANDS OR TYPES.

7 Battery care and maintenance

7.1 Battery recharge

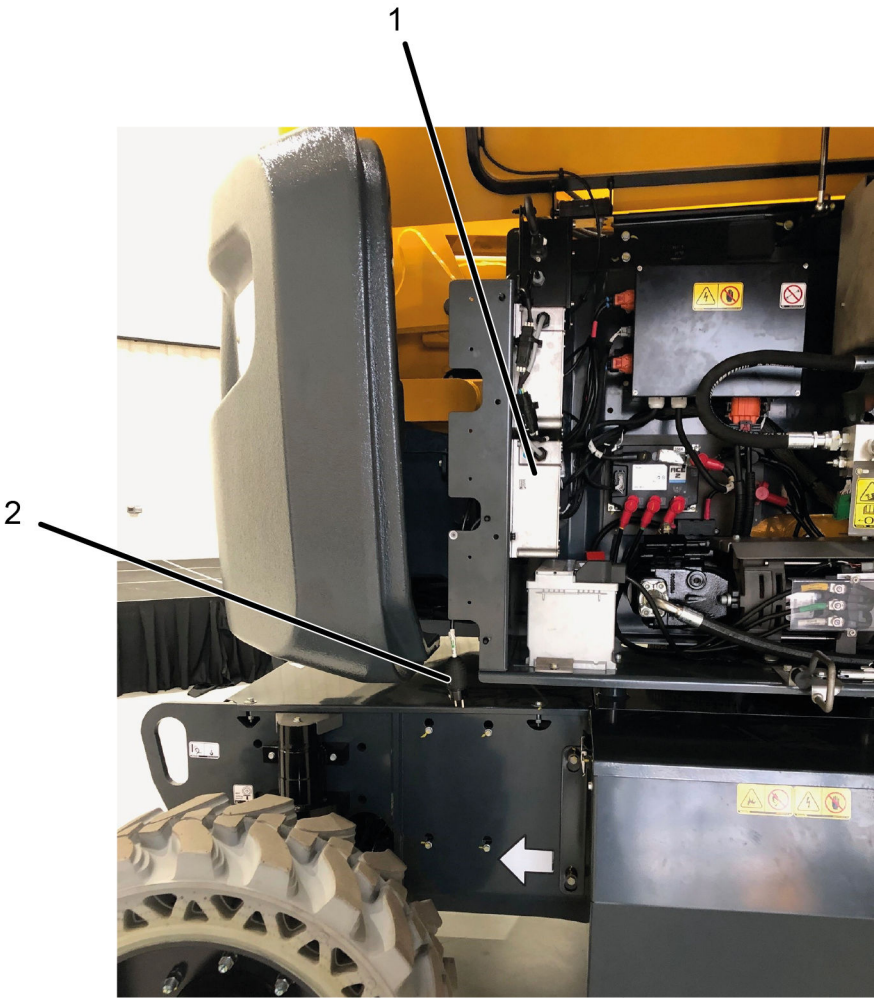
7.1.1 On-board charger

The on-board charger is used to charge the semi-drive batteries. The maximum current is 16A for 220V - 240V and 110V networks. Battery charging starts as soon as it is connected via the mains supply.

N.B.-:-NO MOVEMENTS ARE ALLOWED DURING BATTERIES CHARGING CYCLE AND WHILE CONNECTED TO AN EXTERNAL POWER OUTLET.

Description	Characteristics
Battery charger	48V / 60A
Electric power supply	265-85 Vac / 50-60hz / 16A
Battery voltage	48 V
Charging time	Between 12 h and 24 h (except option Range Extender)

Locations



Marking	Description
1	On-board charger
2	Battery charger mains cable

Never replace the charging cable without written permission from HAULOTTE®.

7.1.2 Battery charging

- Do not use an external charger or jump the batteries.
- Ensure that the mains power supply is adapted and equipped with circuit breakers ensuring it is safe:
  - If a "cable reel" type extension is used, the cable must be completely unwound before recharging.
  - The cable cross-section must be at least 2,5 mm² or more, depending on the length of the cable.
  - The socket must be able to deliver a current of 16 A.
  - If power of the supply is not great enough, a limited charge power can be selected from the (22) screen (Accessible with level 1 code) .

Procedure conditions

Step	Action
1	In the main menu select:
2	Machine settings 
3	Machine configuration 
4	Option setting
5	Battery charge configuration: - 220-240V / 16A - Single-phase - Three-phase

- Never charge a battery when the external temperature is below - 20° C.
- ALWAYS charge batteries in open, well-ventilated areas.
- You are advised to fully charge the battery at least 1 time every 7 days. If this is not done, a reminder will appear on the (22) screen of the ground control box.

Duration of charge cycle

- 12 hours approximately, on 220 - 240 V AC / 16A network.
- 20 hours approximately, on 110 V AC / 16A network.

The charge cycle stops automatically when charging is complete.

It can take up to 24 hours for a full charge if the battery levels are very low (Charge status less than 5 %) ; except option Range Extender.

7.2 Battery care and maintenance

7.2.1 Filling batteries

For any intervention on the power sources, wear glasses and protective clothes (acid spray).

The batteries must ONLY be filled after charging them fully. Failure to comply with these instructions may lead to the electrolyte overflowing, etc...

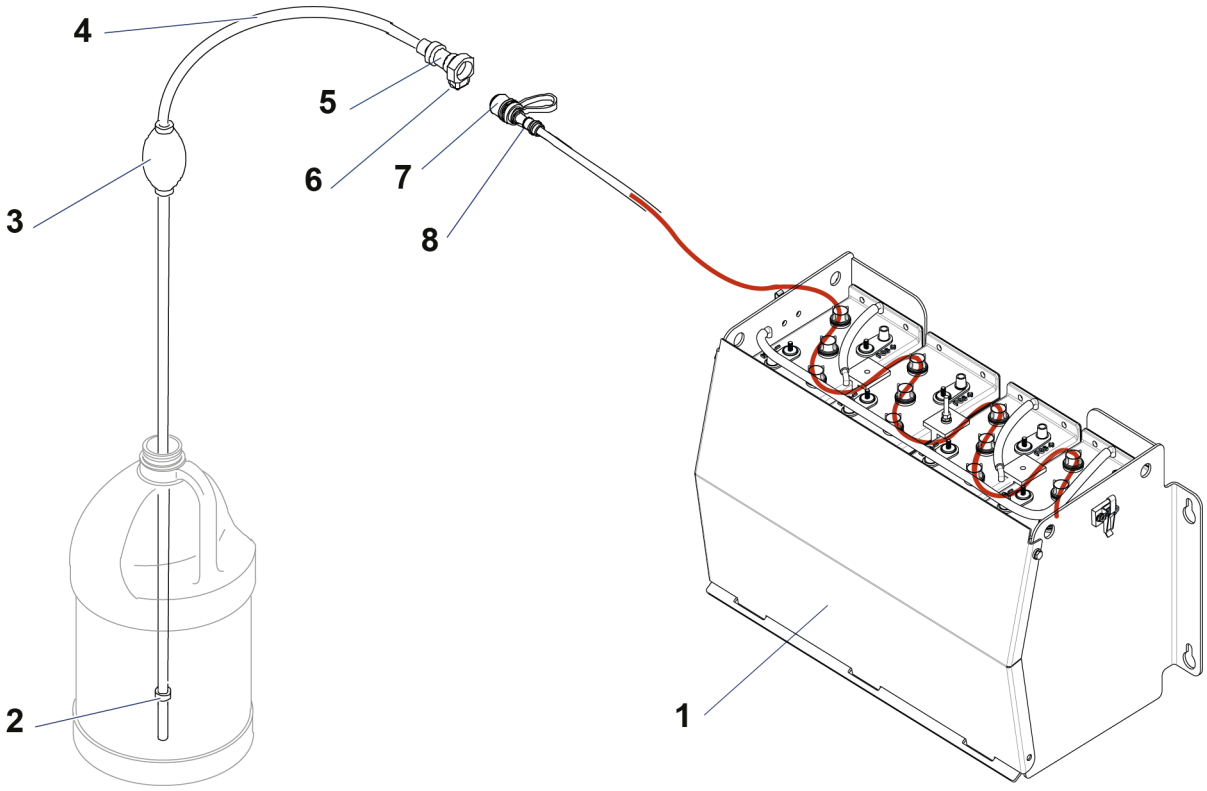
The batteries MUST be filled when necessary or the batteries may be irreparably damaged. The lead plates oxidize in the air. They must always be covered with electrolyte.

The water level in the batteries cannot be topped up if the temperature is lower than 0° as the distilled or deionized water freezes in the centralized filling system.

For machines equipped with the traction battery option: Refilling the batteries is not permitted until they have reached 10 complete charging cycles..

7.2.1.1 Procedure to fill the batteries manually

Single-Point Watering System



Marking	Description
1	Batteries
2	Filtered intake
3	Hand pomp
4	Hose
5	Female adapter
6	Push-button
7	Dust cover
8	Male adapter

Levelling of the elements should always be done after charging the batteries. Watering a battery before charge (or with a low charge level) can lead to boil-over, resulting in potential bodily injury and potential damage to the watering system and the battery.

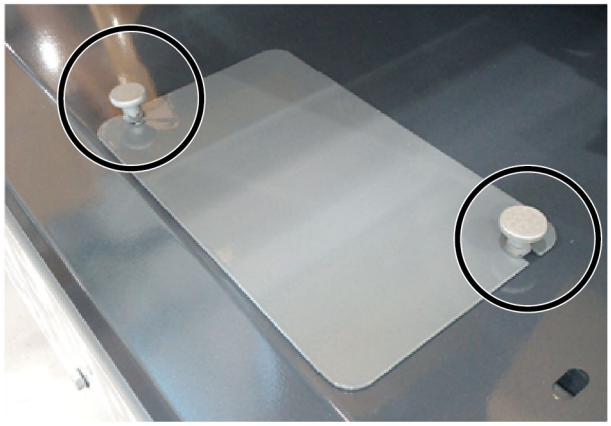
Completely charge the batteries before connecting the distilled-water-filling unit.

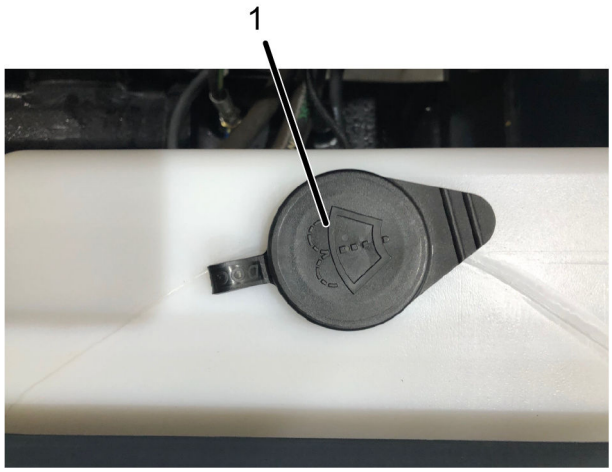
1. Launch a full charge of the battery and check the charge indicator.
2. Disconnect the batteries charger and put back the plug in its housing.
3. Unlock both locks.
4. Remove the covers.
5. Immerse the filtered inlet (2) of the transparent hose (4) fitted with a hand pump (3) in a demineralized water canister (Not supplied with the machine) .
6. Press the hand pump (3) to prime it until the water rises in the hose (4)
7. Once the hand pump (3) is primed, remove the male connector (8) cap (7) from the black supply tube assembly
8. Connect the female connector (5) quick-hitch from the centralized filling system, including the hand-pump, to the male connector (8).
9. Press firmly on the hand pump to bring the distilled water to the batteries (1).
10. When the bulb (3) becomes resistant, this means that all the battery cells are filled appropriately.
11. Then uncouple the female connector (5) from the male connector (8) filling tube by pressing on the yellow button (6), then replace the cap (7) on the machine hose.
12. Close the machine covers.
13. Do not let the can to connect after filling is finished because this could cause the batteries to overfill.

7.2.1.2 Procedure for filling the tank (With automatic centralized filling option)

To perform centralized battery refilling, the outside temperature must not be below 0 ° C.

1. Unscrew the screws retaining the protective cover.
2. Loosen the filling cap (1).
3. Fill the can with demineralized water.
4. Close the cap properly.
5. Fully recharge the batteries in order to restart automatic filling or activate automatic filling from the ground control box touchscreen.





Navigation in the menus

Step	Action
1	In the main menu select:
2	Machine settings 
3	Calibration 
4	Manual control of the pump used to fill the batteries with water: - Procedure to fill the batteries with water - Press "Validation" to activate battery filling for 20 s

7.2.2 Desulfation charge

Normal battery use leads to sulfatation of the lead plates during discharge (Formation of lead sulfate) . Recharging the battery dissolves the lead sulfate. The plates are desulfated.

Moreover, sulfatation also appears if the battery self-discharges during storage in a low state-of-charge (< 70%).

As the battery ages, the lead sulfate may become harder and harder and increasingly difficult to eliminate by normal charging. This leads to a loss of autonomy. The desulfation charge is a way of regenerating the battery.

To improve the efficiency of the desulfation charge, you are advised to launch it for a battery discharged to a state-of-charge less than 30%.

Procedure:
- Go to the machine set-up menu–>Option–>Desulfation request (Code HAULOTTE DIAG level 2) ;
- The option is active and will be implemented during the next mains charge ;
- Charging time is increased up to 30 h ;

7.3 Optimise battery life

To optimize battery performance and life-time, you are advised to follow the recommendations below:
- Carry out regular battery maintenance as described.
- Do no store the machine discharged (Duration greater than 72 hours) .
- Carry out full charges regularly.
- Do not keep a machine in a state-of-charge less than 70% for no useful purpose.

- A full battery recharge is OBLIGATORY every 35 hours of use of the machine.
- After 45 hours of use without a full recharge, there is a risk of damaging the batteries.

Keep the top of the batteries clean and dry. Incorrect connection or corrosion may cause a high loss of power.

	Full charge	Filling control	Desulfation charge
In use			
If state-of-charge < 50% at the end of a working day	X		
Every 35 hours of use	X		
Before placing in storage	X		
1 time a week	X	X	
1 time every 2 weeks		O	
1 time a month		O	
1 time every 6 months			X
In storage			
1 time a month	X		

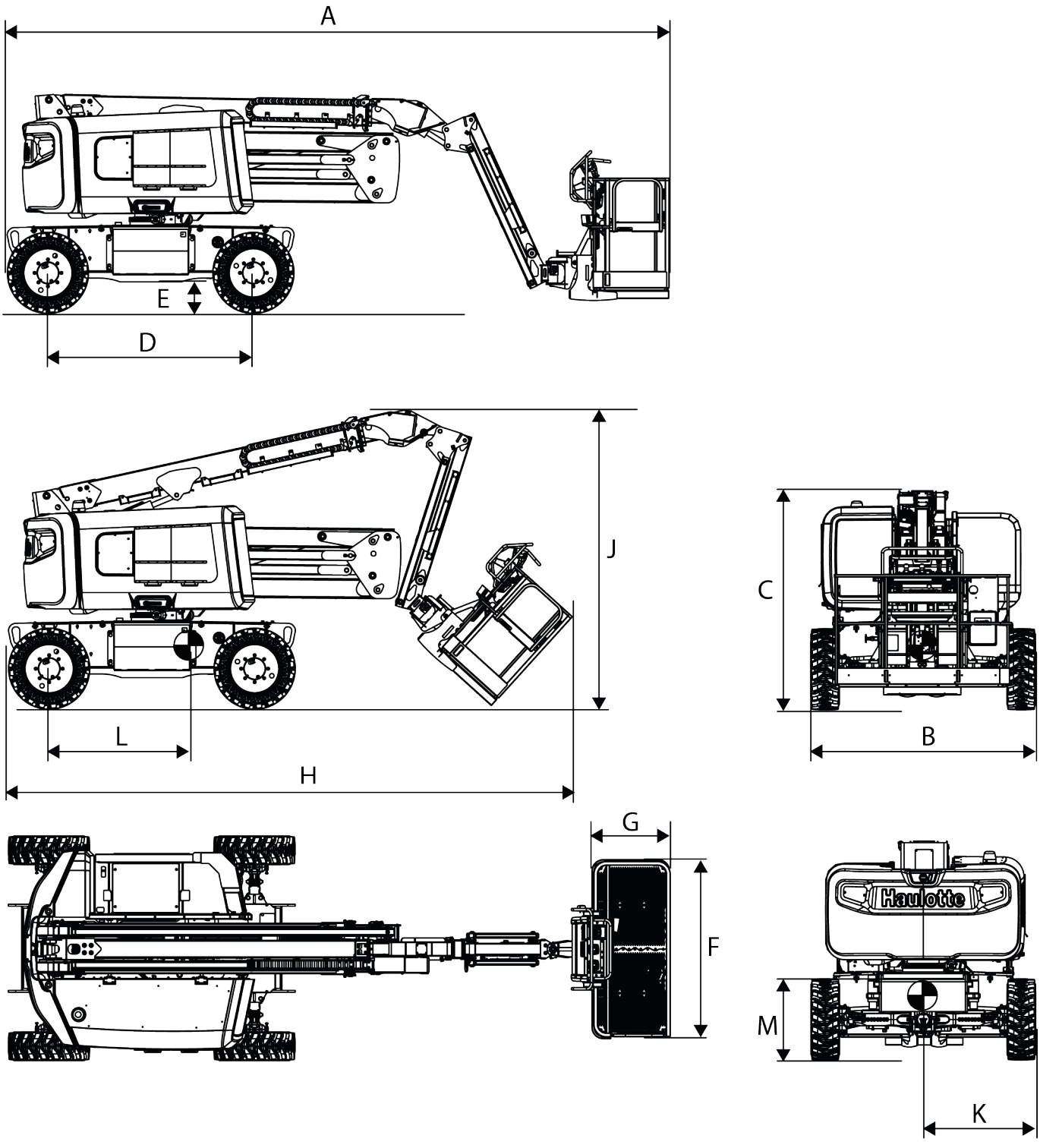
In case of extended storage, you are advised to fully charge the battery then disconnect the power circuit D 5.5 Storage. Charging the battery monthly is still recommended.

The battery's water consumption depends on its use. You are advised to check the water level 1 time a week.

Notes

1 Machine dimensions

Stowed / Transport position: Configuration that takes the minimum floor space necessary for storage and / or delivery of the machine-Access position.



E - General Specifications

Machine		HA16 E / HA46 E		HA16 E PRO / HA46 E PRO	
Marking	Specifications - Dimensions	SI	Imp.	SI	Imp.
A	Overall length of machine	6,165 m	20 ft 3 in	6,165 m	20 ft 3 in
B	Overall width of machine	2,43 m	8 ft 0 in	2,43 m	8 ft 0 in
C	Overall height of machine	2,985 m	9 ft 10 in	2,985 m	9 ft 10 in
D	Wheel base	2,5 m	8 ft 2 in	2,5 m	8 ft 2 in
E	Minimum ground clearance	30 cm	1 ft 0 in	30 cm	1 ft 0 in
E	Maximum ground clearance	36 cm	1 ft 2 in	36 cm	1 ft 2 in
F X G	Platform dimensions (Standard)	1,83 x 0,8 m	6 ft 0 in x 2 ft 7 in	1,83 x 0,8 m	6 ft 0 in x 2 ft 7 in
F X G	Platform dimensions (Option)	2,44 x 0,9 m	8 ft 0 in x 3 ft 0 in	2,44 x 0,9 m	8 ft 0 in x 3 ft 0 in
H	Storage length	6,165 m	20 ft 3 in	6,165 m	20 ft 3 in
J	Storage height	2,43 m	8 ft	2,43 m	8 ft
K	Center of gravity - X	- 7 mm	- 1 in	- 7 mm	- 1 in
L	Center of gravity - Y	1,335 m	4 ft 5 in	1,346 m	4 ft 5 in
M	Center of gravity - Z	1,272 m	4 ft 2 in	1,262 m	4 ft 0 in

2 Major component masses

N.B.-:-MASSES MEASURED WITH EMPTY TANKS.

	HA16 E - HA46 E		HA16 E PRO - HA46 E PRO	
	SI	Imp.	SI	Imp.
Mass of one wheel	145 kg	320 lb	145 kg	320 lb
Frame assembly mass	824 kg	1,817 lb	824 kg	1,817 lb
Counterweight mass	1300 kg	2,866 lb	1300 kg	2,866 lb
Battery mass	440 kg	970 lb	440 kg	970 lb
Turret assembly mass	1382 kg	3,047 lb	1382 kg	3,047 lb
Arm assembly mass	695 kg	1,532 lb	695 kg	1,532 lb
Boom assembly mass	550 kg	1,213 lb	550 kg	1,213 lb
Jib assembly mass	152 kg	335 lb	152 kg	335 lb
Basket assembly mass	155 kg	342 lb	155 kg	342 lb

3 Acoustics and vibrations

The acoustics and vibrations specifications are based upon the following conditions:

- The airborne noise emissions at workstation are determined per European Directive 2006/42/CE.
- The guaranteed sound power level LWA (displayed on the product) is determined per European Directive 2000/14/CE.
- The vibrations transmitted by the machinery to the hand/arm system and to the whole body are determined per European Directive 2006/42/CE.

Specifications		
	With Range Extender	Without Range Extender
Sound pressure level at workstation	80,2 dBA	< 70 dBA
Guaranteed sound power level	94,7 dBA	83,6 dBA
Vibrations hand/arm	Vibration transmitted by this MEWP to the hand-arm does not exceed 2,5 m/s² (98,4 in/s²)	
Vibrations whole body	Vibration transmitted by this MEWP to the whole body does not exceed 0,5 m/s² (19,6 in/s²)	

4 Wheel/Tire assembly

4.1 Technical specifications

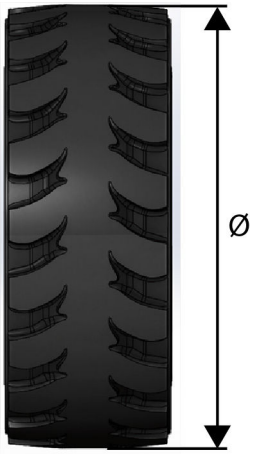
Component	Standard wheel
Reference number	Camso 830 x 285
Type	Solid Tyre (Curred - on)
Wheel mass	145 kg (320 lbs)
Size	830 mm x 285 mm (2 ft 9 in / 0 ft 11 in)
Torque	320 Nm (236 lbs ft)

4.2 Inspection and maintenance

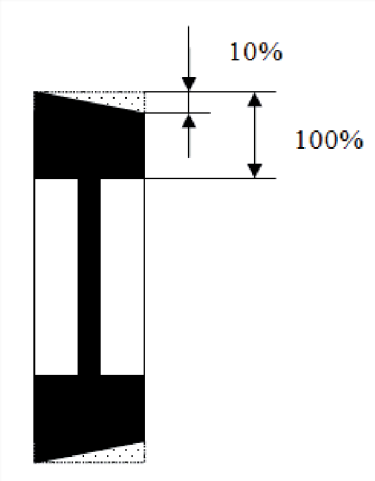
The tire and rim are bonded together, both must be replaced if either is damaged.

Wheels replacement must be made in the following cases

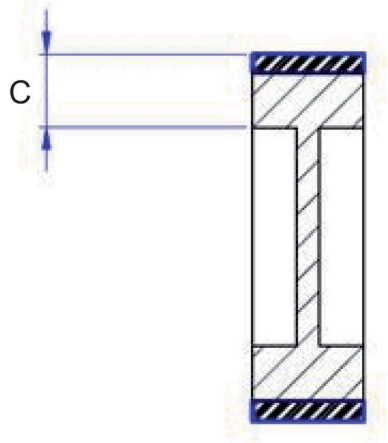
- Deformation or cracks on the rim.
- De-bonding between the interface of the steel and the rubber.
- Uniform wear to the wearing line:
  - 830 x 285 wheel: Ø 830 mm / 33 in



- Non-linear wearing of the tread profile (> 10%)



- Linear wear of the thread profile (> 25 %)



	Standard wheel
New tire	C = 140 mm / 6 in
Defective tire (Linear wear of the tread profile > 25 %)	C = 105 mm / 5 in

- 1 wheel stud is completely torn.
- 2 successive wheel studs are partially torn.
- 2 aperture holes are cut.

Tires and rims are critical components for the stability of the machine. For safety reasons
- Use only HAULOTTE® spare parts according to the technical characteristics of the machine. Refer to the spare parts catalog.
- Do not replace factory-installed tires with tires of different specifications or ply rating.
- Never replace a solid (rigid) tire with a foam-filled or a pneumatic (air-filled) tire.

Procedure of replacement
- Loosen the wheel nuts on the wheel to be removed.
- Raise the machine using a jack or a hoist.
- Remove the wheel nuts.
- Remove the wheel.
- Install the new wheel.
- Lower the machine to the ground.

- Tighten the wheel nuts evenly to the torque of 320 Nm (236 ft lbs).

Check the tightening torque of the wheel nuts every 200 h of operation.

N.B.-:-IF A WHEEL HAS BEEN REPLACED, LOOK AT THE DIRECTION OF THE CLAMPS (WHICH INDICATES ROTATION IN THE AV DIRECTION) TO MAKE SURE IT IS CORRECTLY INSTALLED.

5 Options

5.1 Access control and usage restriction

5.1.1 Description

Access control and usage restriction are options available on a machine equipped with the SHERPAL solution. These options enable the use of the machine to be limited.

These limitations are set and managed from the MyHaulotte platform by the fleet manager.

5.1.1.1 Access control

The purpose of the access control is to prohibit lifting by an unauthorised operator. Access to the machine is via the RFID code and/or RFID board on the keyboard of the remote RFID reader.

Access control also allows the machine owner to block access to the machine's diagnostic screens for users without the level 3 code (Code available to authorised technicians only) . The level 3 code must be entered on the machine's screen.

5.1.1.2 Usage restriction

The usage restriction is a machine-related limitation. The usage restriction restricts the use of the machine when it is outside of the conditions of use predefined by the manager.

This function can be set from the MyHaulotte platform by those with the appropriate roles and rights.

The configurable conditions of use are as follows:

- GEOFENCE-:-Authorisation for geolocalised use
- TIMEFENCE-:-Authorisation for use according to defined time slots
- Remote restriction-:-Forced activation of a usage restriction, regardless of the GEOFENCE and TIMEFENCE conditions
- Tracker fault-:-Activation of the restriction if tracker in default

When the machine is outside of its conditions of use, only movements allowing micro-speed movement and folding are authorized.

When the machine is subject to a restriction, a message indicates this on the screen of the ground control panel. The user in the basket is notified by the indicator light on the control panel  which flashes at a frequency of 1s ON - 1s OFF.

5.1.1.3 GEOFENCE

The manager can activate the GEOFENCING restrictions in order to limit the machine's use inside a so-called AUTHORIZED geographical zone or outside a so-called PROHIBITED geographical zone, which he has defined. If the machine leaves this perimeter, its functionality will be restricted..

5.1.1.4 TIMEFENCE

The manager can activate the TIMEFENCING restrictions in order to restrict the usage during the defined period (Day, Time slot, ...) . If the machine is used outside of the time slot defined by the manager, its functionalities will be restricted.

A GEOFENCING and/or TIMEFENCING restriction becomes active after the machine is folded.

5.1.1.5 Remote restriction

It is also possible for the fleet manager to set a restriction remotely.

This is equivalent to the forced activation of a restriction, independent of the temporary TIMEFENCING or geolocalized GEOFENCING conditions of use.

5.1.2 Additional functions

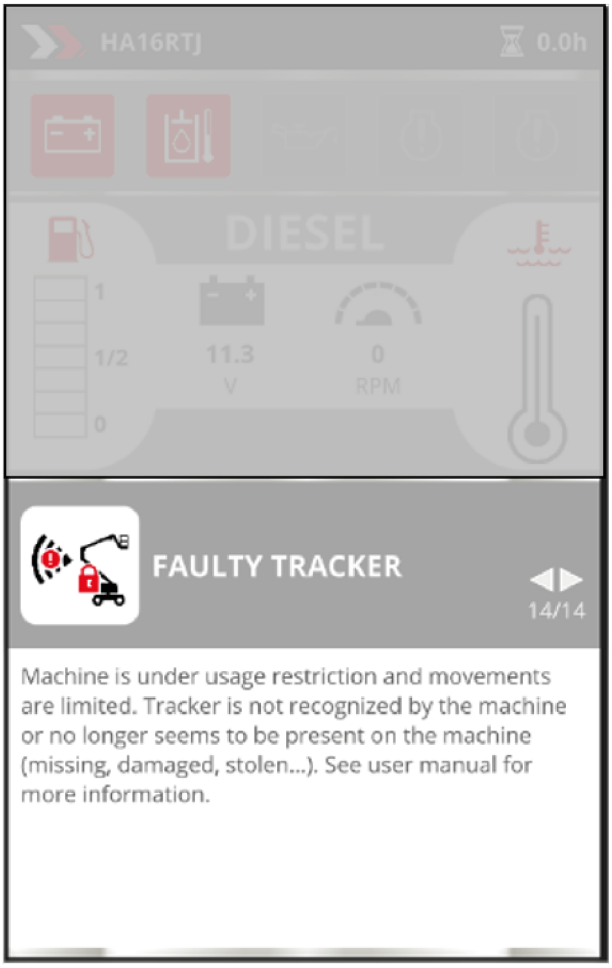
5.1.2.1 Access control and usage restriction combination

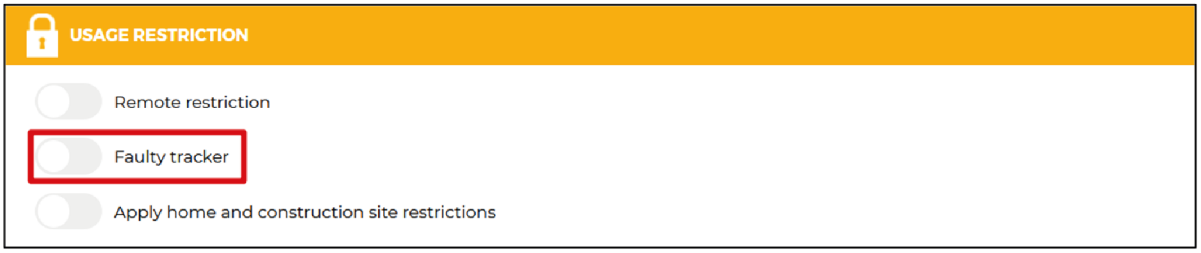
The access control can be combined with the machine's usage restriction. If access control and usage restriction are active, the combination of the two applies so that the user is subject to the constraints of the strongest restriction.

5.1.2.2 tracker default function

This function allows you to force activation of the restriction in the event of a problem (e.g. tracker removed, unplugged or defective)..

This function is deactivated by default. This function can be activated on the Machine Sheet from the MyHaulotte platform.





5.1.3 SUPER USER status

The fleet manager can add Super User status to a user from the MyHaulotte platform. The Super User profile enables the machine to be used, even if it is subject to a usage restriction.

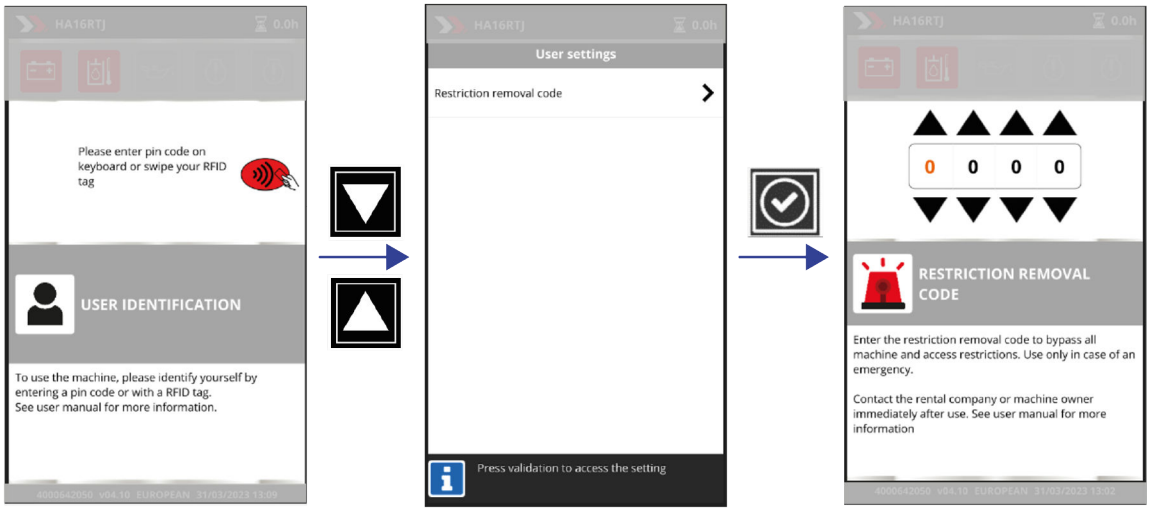
The Super User profile can be connected to one or more machines.

The Super User profile can then start these machines using the PIN code generated by the fleet manager on MyHaulotte or using the RFID card assigned to him.

5.1.4 Code for removing restrictions

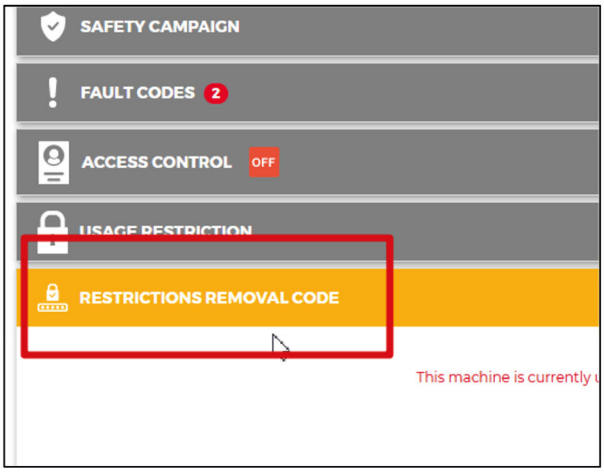
This code enables all restrictions to be permanently removed from a machine (Access control, usage restriction and remote restriction) .

The code for removing restrictions is generated by the fleet manager on MyHaulotte.This code must then be entered on the machine's Restrictions Removal Code screen to unlock it permanently.



Enter the restriction removal code.

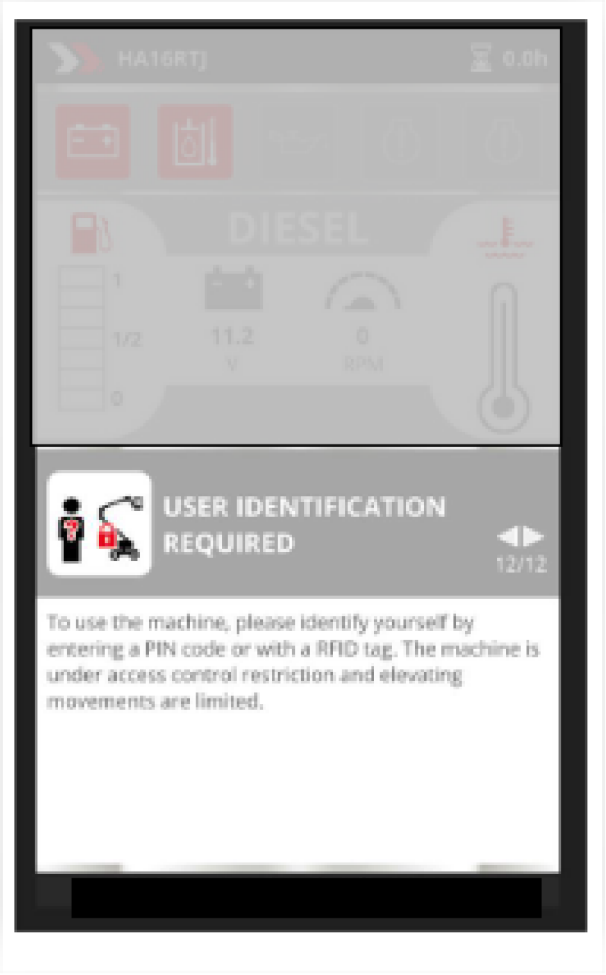
Permanently disable the restrictions and access control.



5.1.5 Operation

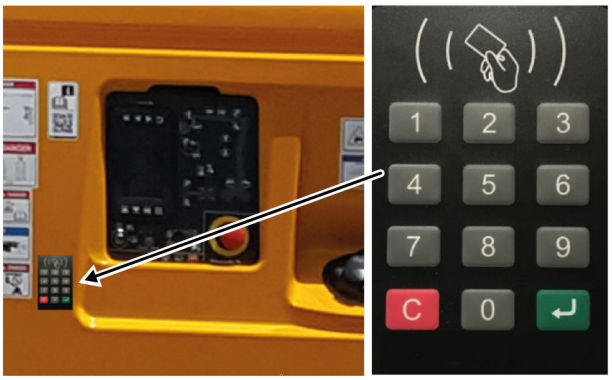
5.1.5.1 Using a machine with access control enabled

The following screen appears when starting up (energizing) the machine.



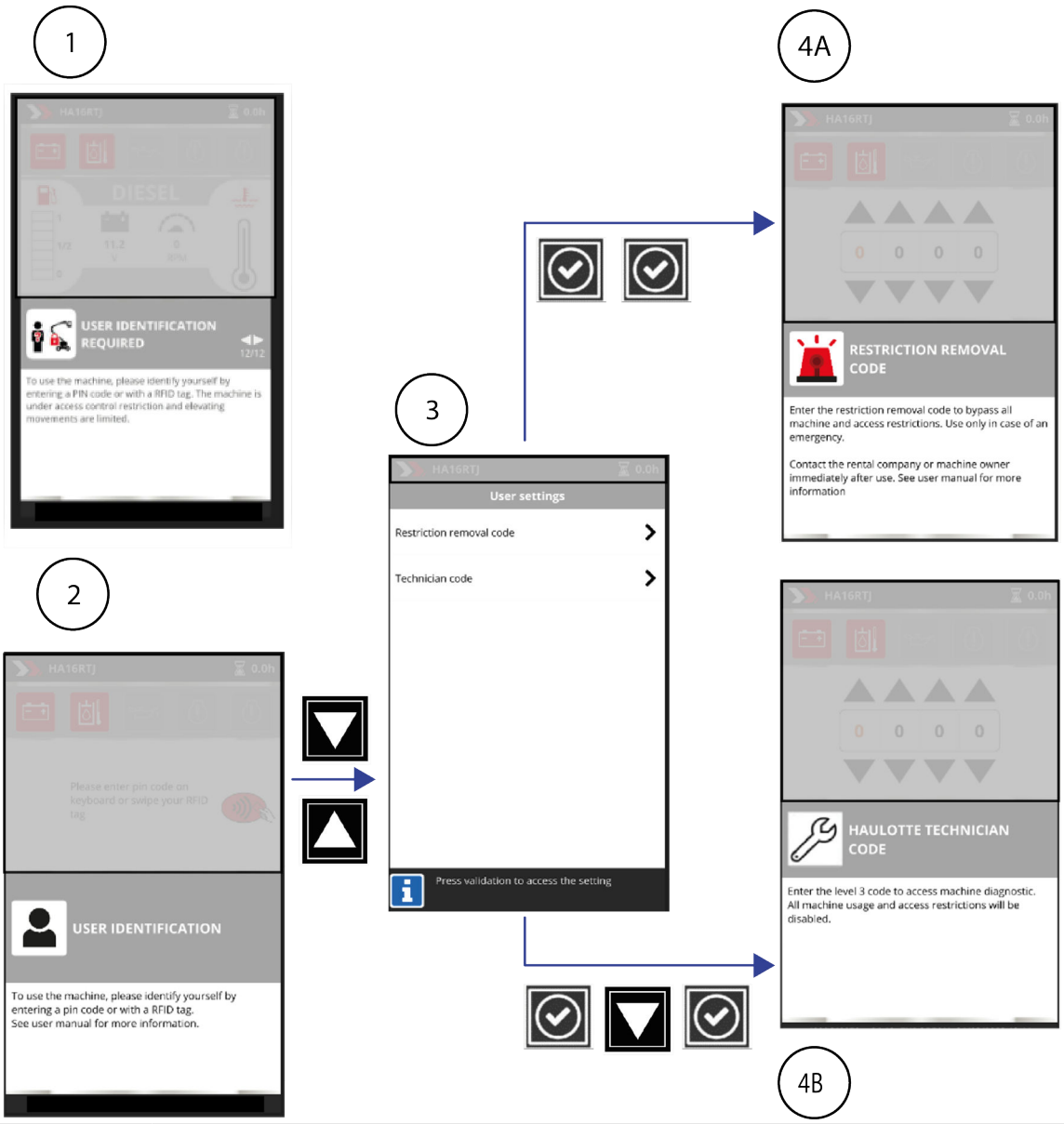
The machine can then be started by:

- A user with a User Identification start-up code. This code must be entered on the remote RFID keyboard.
- A Haulotte® technician with a Haulotte technicien Identification. The level 3 code must be entered on the machine's screen.
- A user with a Restrictions Removal Code. This code is owned by the fleet manager or machine owner. The code is generated on the MyHaulotte platform and must be entered on the machine's screen. This code cannot be provided by Haulotte®.



Start-up when access control is enabled:

- Enter the access code or use the RFID swipe card.
- Enter the Super User access code or use the Super User RFID swipe card.
- An authorized technician can use the level 3 code.
- Enter the restriction removal code on the machine's screen.



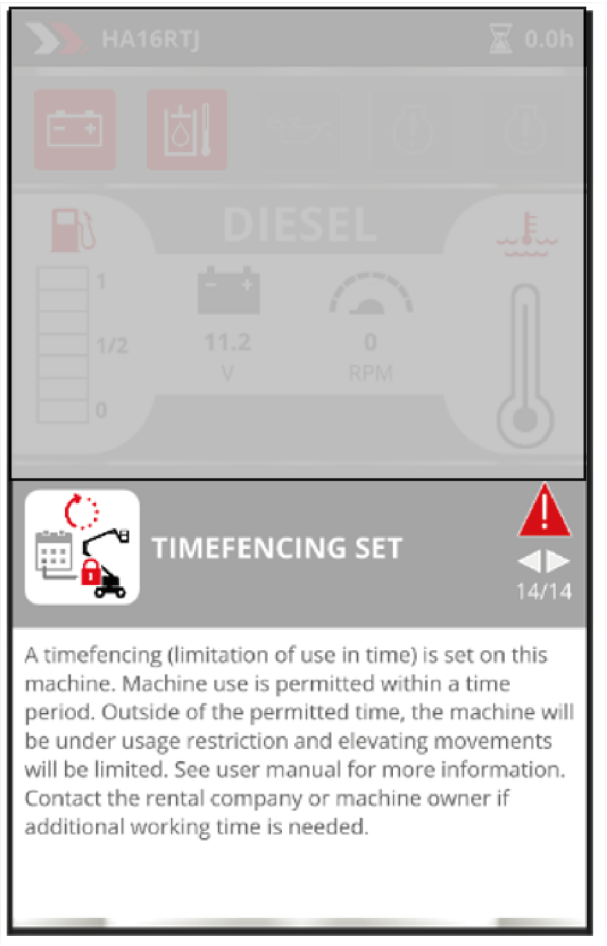
Marking	Actions
1	On the RFID keyboard, enter the PIN code or use an RFID card or enter the Super User code
2	/
3	/
4A	Enter the restriction removal code ⚠ Permanently disable the restrictions and access control.Return to normal operation.
4B	Enter the level 3 code ⚠ Temporary deactivation (until the machine is switched off) of the restrictions and access control.

5.1.5.2 Starting a machine with usage restriction enabled

Timefencing restriction activated and use within the time slot authorized

Conventional start-up without access code:

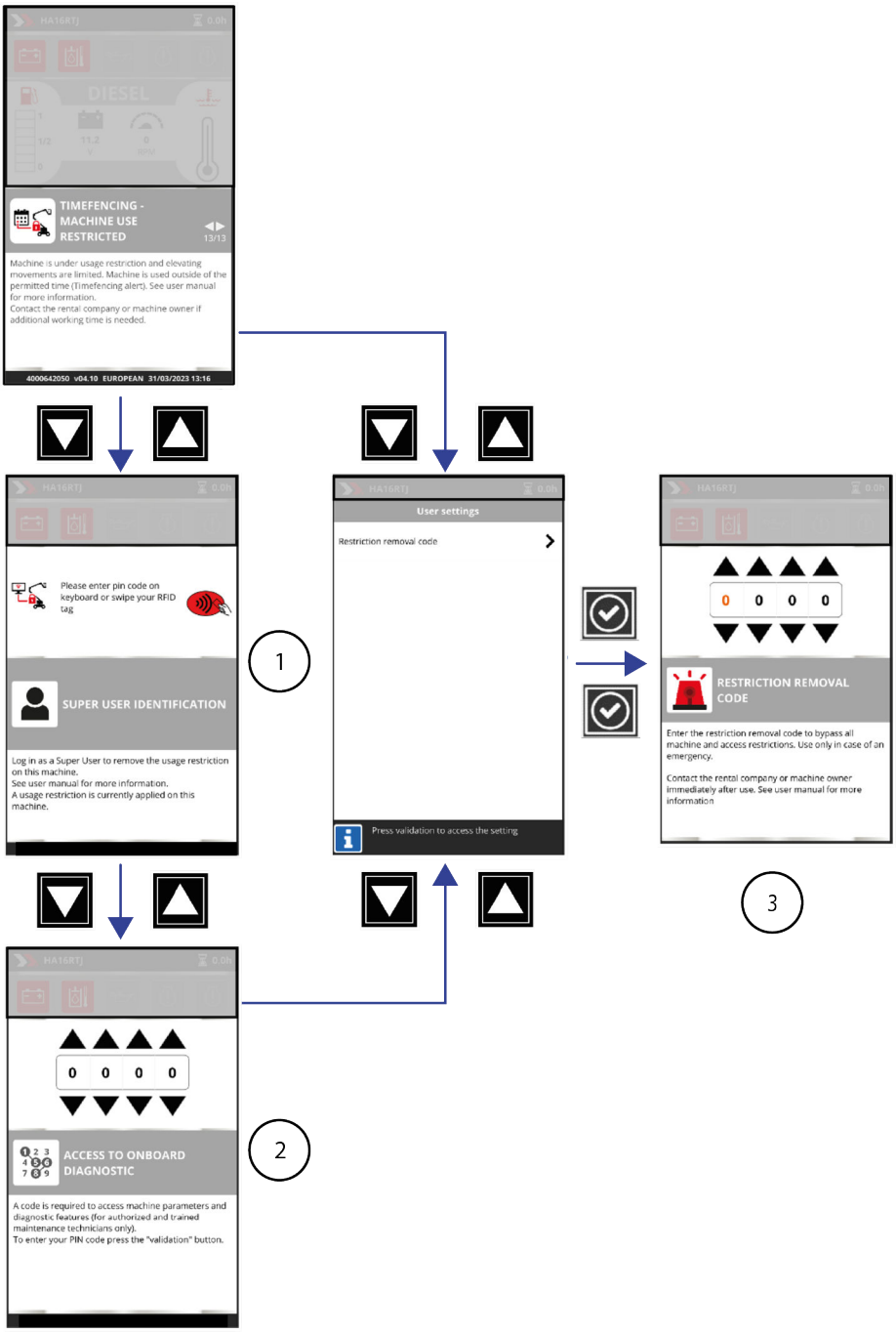
- The following screen indicates that a restriction is in place on the machine.



Timefencing restriction enabled and use outside range is permitted

Start-up when a TIMEFENCING usage restriction is programmed and enabled:

- A message on the screen indicates that a restriction is enabled.
- Enter a Super User access code or use the Super User RFID swipe card.
- An authorized technician can use the level 3 code.
- A user with a code can enter the restriction removal code on the machine's screen.



Marking	Actions
1	On the RFID keyboard, enter the PIN Super User code or use an RFID card or enter the Super User code
2	Enter the level 3 code ⚠ Temporary deactivation of restrictions and access control.
3	Enter the restriction removal code ⚠ Permanently disable the restrictions and access control.Return to normal operation.

Geofencing restriction enabled and used in an authorized geographical zone

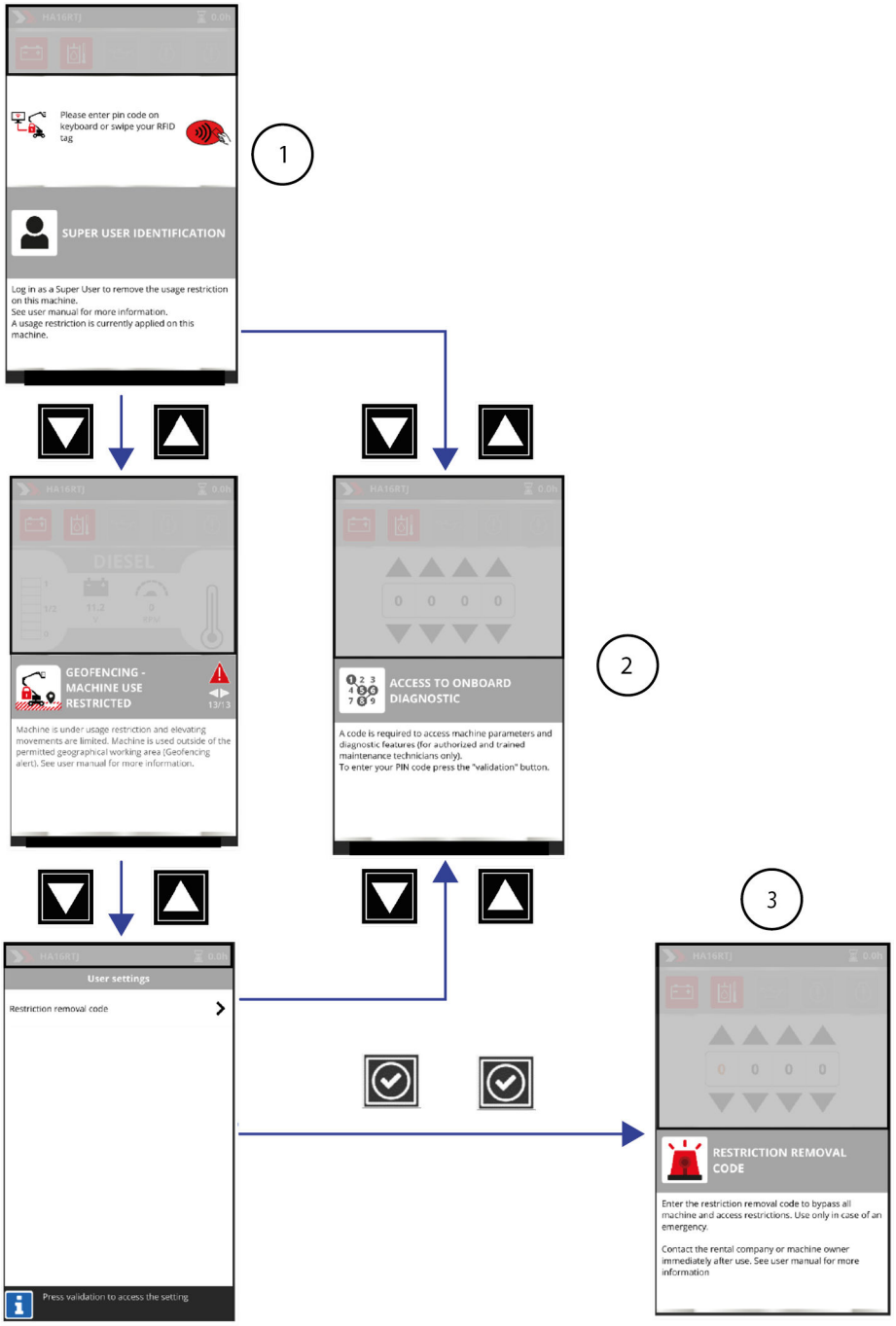
Conventional start-up without access code:

- The following screen indicates that a restriction is in place on the machine.

Geofencing restriction enabled and used outside of the authorized geographical zone

Start-up when a GEOFENCING usage restriction is programmed and enabled:

- A message on the screen indicates that a restriction is enabled.
- Enter a Super User access code or use the Super User RFID swipe card.
- An authorized technician can use the level 3 code.
- Enter the restriction removal code on the machine's screen.

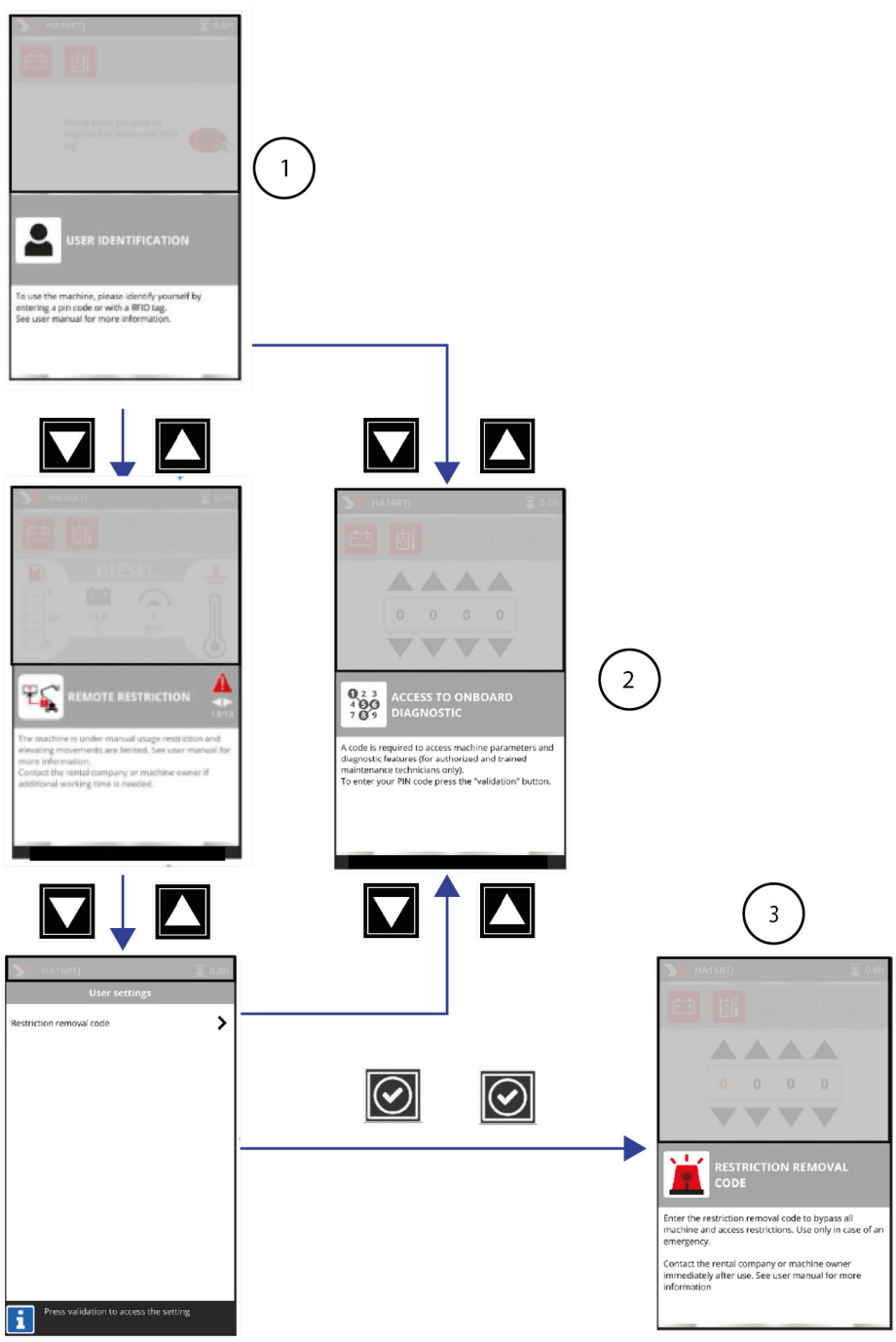


Marking	Actions
1	On the RFID keyboard, enter the PIN Super User code or use an RFID Super User card or enter the Super User code
2	Enter the level 3 code ⚠ Temporary deactivation of restrictions and access control.
3	Enter the restriction removal code ⚠ Permanently disable the restrictions and access control.Return to normal operation.

Remote restriction

Start-up when remote restriction is programmed and enabled:

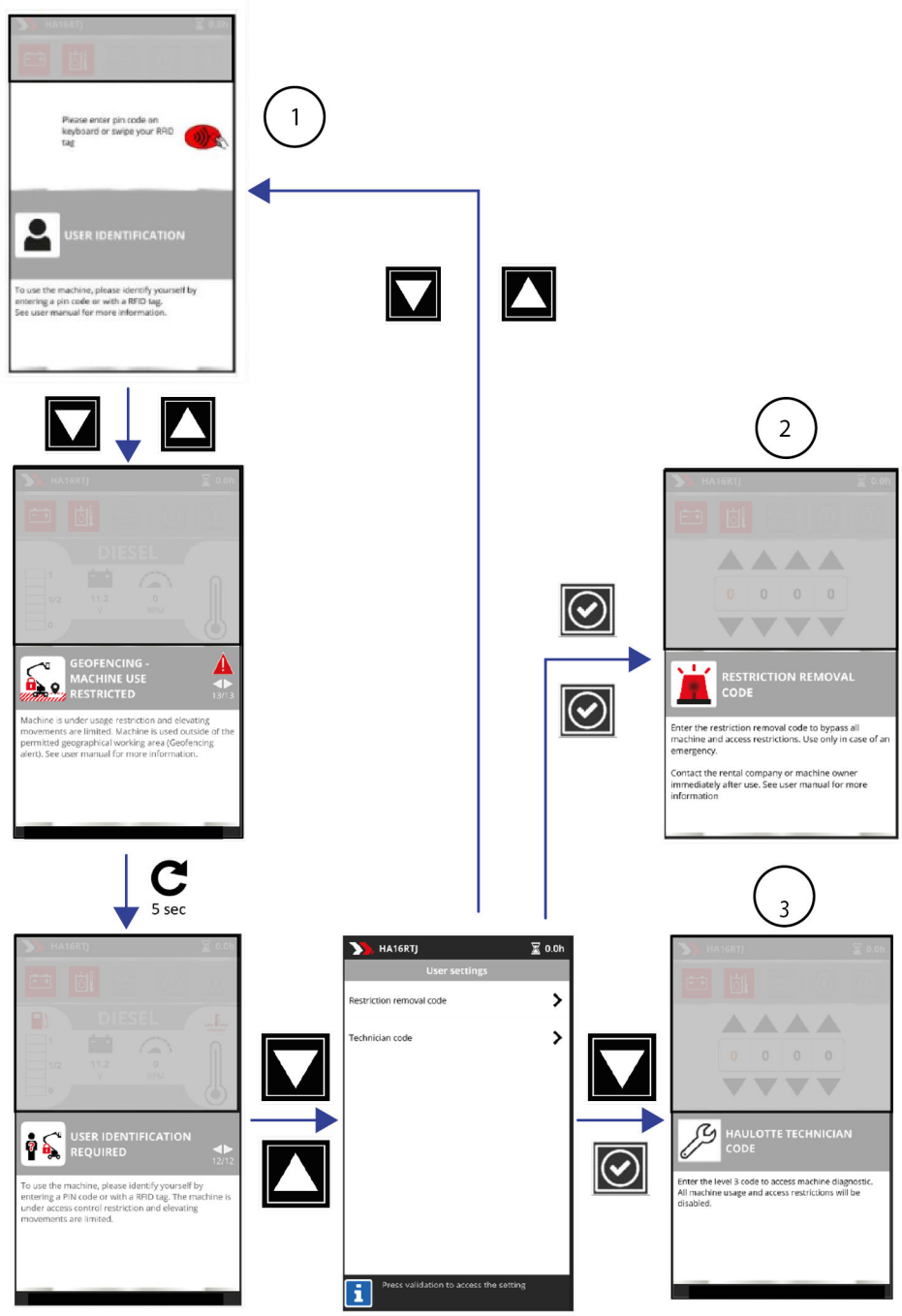
- A message on the screen indicates that a restriction is enabled.
- Enter a Super User access code or use the Super User RFID swipe card.
- An authorized technician can use the level 3 code.
- Enter the restriction removal code on the machine's screen.



Marking	Actions
1	On the RFID keyboard, enter the PIN Super User code or use an RFID Super User card or enter the Super User code
2	Enter the level 3 code Temporary deactivation of restrictions and access control.
3	Enter the restriction removal code Permanently disable the restrictions and access control.Return to normal operation.

Access control and usage restriction combination

- Enter the machine's access code or use the RFID swipe card (the machine remains under restricted use) or use the RFID Super User swipe card or use the Super User code.
- An authorized technician can use the level 3 code.
- Enter the restriction removal code on the machine's screen.



Marking	Actions
1	On the RFID keyboard, enter the PIN code or use an RFID card or enter the Super User code
2	Enter the restriction removal code ⚠ Permanently disable the restrictions and access control.Return to normal operation.
3	Enter the level 3 code ⚠ Temporary deactivation of restrictions and access control.

5.2 Transport handle

5.2.1 Description

This option is designed to facilitate the manipulation of the ground control box controls (auxiliary position).

This option helps reduce the risk of falling while loading and unloading the machine onto a tank carrier truck. The transport handle ensures that the operator maintains 3 points of support when the distance between the machine and the edge of the tank carrier platform is limited.

5.2.2 Characteristics

General overview

Controls and indicators

Marking	Description
1	Transport handle
6	Enable Switch
260	Auxiliary power supply control

5.2.3 Safety precautions

- Do not use the transport handle for hanging, attaching equipment or attaching a strap .

5.2.4 Pre-operation inspection

- Ensure that the transport handle is correctly fixed.
- Ensure that the transport handle is not damaged.
- Check that the information decal is present on the cradle and is legible.
- Test the operation of the transport handle before use. Refer to the following chapter: **Operation**.

5.2.5 Operation

N.B.-:-THE AUXILIARY ACTIVATION CONTROL (260) MUST BE ACTIVATED FIRST BEFORE ANY ACTION ON THE JOYSTICK OR SWITCHES.

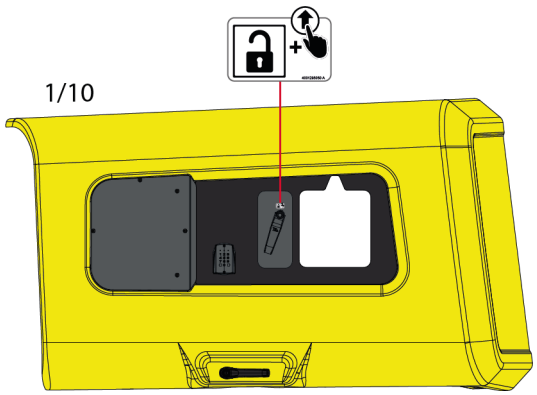
Step	Action
1	Hold the transport handle (1) firmly in the left hand.
2	Place your left thumb on the auxiliary activation control (260). Press and hold the auxiliary activation control (260).
3	Operate the motion controls on the ground control box with your right hand.
4	Release the controls. The movements stop.

N.B.-:-RELEASING THE AUXILIARY ACTIVATION CONTROL (260) WILL CAUSE ALL MOVEMENT TO STOP.

N.B.-:-THE ACTIVATION CONTROL (6) ON THE GROUND CONTROL BOX CAN BE USED IF THE AUXILIARY ACTIVATION CONTROL (260) MALFUNCTIONS.

5.2.6 Specific decals, optional

Location of the decals



Marking	Description	Quantity	Part number
1	Transport handle	1	4001295050

5.3 Platform

Technical specifications

Type			Platform entry
Small platform	Platform width	0,8 m - 2 ft 7 in	Sliding bar
	Platform length	1,8 m - 5 ft 11 in	Swing gate
Large platform	Platform width	0,91 m - 3 ft	Sliding bar
	Platform length	2,44 m - 8 ft	Swing gate

Sliding bar

Swing gate

5.4 Swing gate

5.4.1 Description

SWING GATE consists of a laterally mounted pivoting ½ gate with closing latch, which enables a better access to platform. Spring loaded hinges and a latching mechanism allows the gate to swing inwards only.

Swing gate

5.4.2 Characteristics

Width of the gate: 500 mm / 19.68 in

5.4.3 Safety precautions

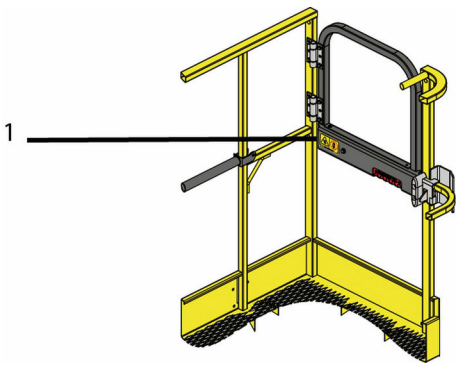
- The door forms part of the guardrail system and must be closed after entering the platform.

5.4.4 Pre-operation instructions

- Check that the locking mechanism is correctly fastened.
- Check the hinges and latch operate correctly and are not deformed.
- Ensure that the gate returns automatically to the closed and fastened position after entering or exiting the platform.

5.4.5 Specific decals, optional

Location of the decals



Marking	Description	Quantity	Part number
1	Hand crushing hazard	1	4001052080

5.5 Glazier's kit

5.5.1 Description

This attachment is an assembly designed to transport panels. This accessory comprises a tray that extends along the floor outside the platform. The panel(s) should be placed in the tray and secured to the guard rail with a strap (not supplied).

N.B.-:-THIS TRAY CAN BE USED ONLY WITH A SIDE ENTRY PLATFORM.

5.5.2 Characteristics

Component	Characteristics
Maximum capacity	115 kg (220 lbs)
Weight of attachment	10 kg (22 lbs)
Maximum load surface	3 m² (32 sq.ft)
Maximum allowable height of the panel	1,20 m (3 ft 11 in)
Maximum allowed wind	CE / UKCA / AS : 12,5 ms - 45 km/h - 28 mph ANSI / CSA: 7 ms - 25 km/h - 15 mph

5.5.3 Safety precautions

- Please read and assimilate the instructions before using the attachment.
- This attachment is designed for transporting panels. Do not use this attachment for transporting other types of load.
- Do not suspend loads.
- Do not overload the attachment and ensure that the equipment is correctly attached by means of a strap (not supplied).
- Do not exceed the maximum allowable platform capacity. The combined weight of the attachment, the panel(s) , the occupants, the tools and any other equipment must not exceed the maximum allowable platform capacity.
- Do not load panels whose surface area exceeds the maximum authorized surface area. Exposing an additional surface area to the wind reduces machine stability. Do not install any other attachments that increase the surface area exposed to the wind.
- Check that the position of the panel is not reducing visibility during maneuvers in the work environment. Do not transport panels whose height exceeds the authorized limit.
- When maneuvering, ensure that a safe distance is maintained between the panel and the obstacles in the work environment.
- Do not use the machine if the wind speed exceeds the allowable limit with the attachment.

5.5.4 Pre-operation inspection

- Check that the tray has no cracks or other damage.
- Check that the cradle is correctly installed and secured to the platform.
- Check that the information decal is present on the cradle and is legible.
- Check that the strap is not twisted or torn.

5.5.5 Operation

- Load the panel onto the tray on platform.

- Secure the panel tray on the guardrail by means of a strap (not supplied) with the correct strength and dimensions.

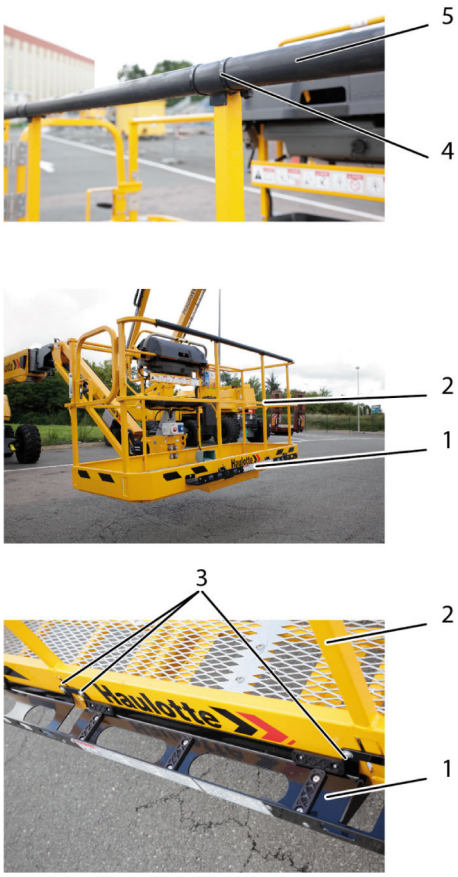
Strapping example(s)-Large panel


Strapping example(s)-Small panel



5.5.6 Assembly/Dis-assembly

Tray



Marking	Description
1	Tray (Panel carrier)
2	Platform
3	Screws and nuts
4	Collars COLSON
5	Plastic protection

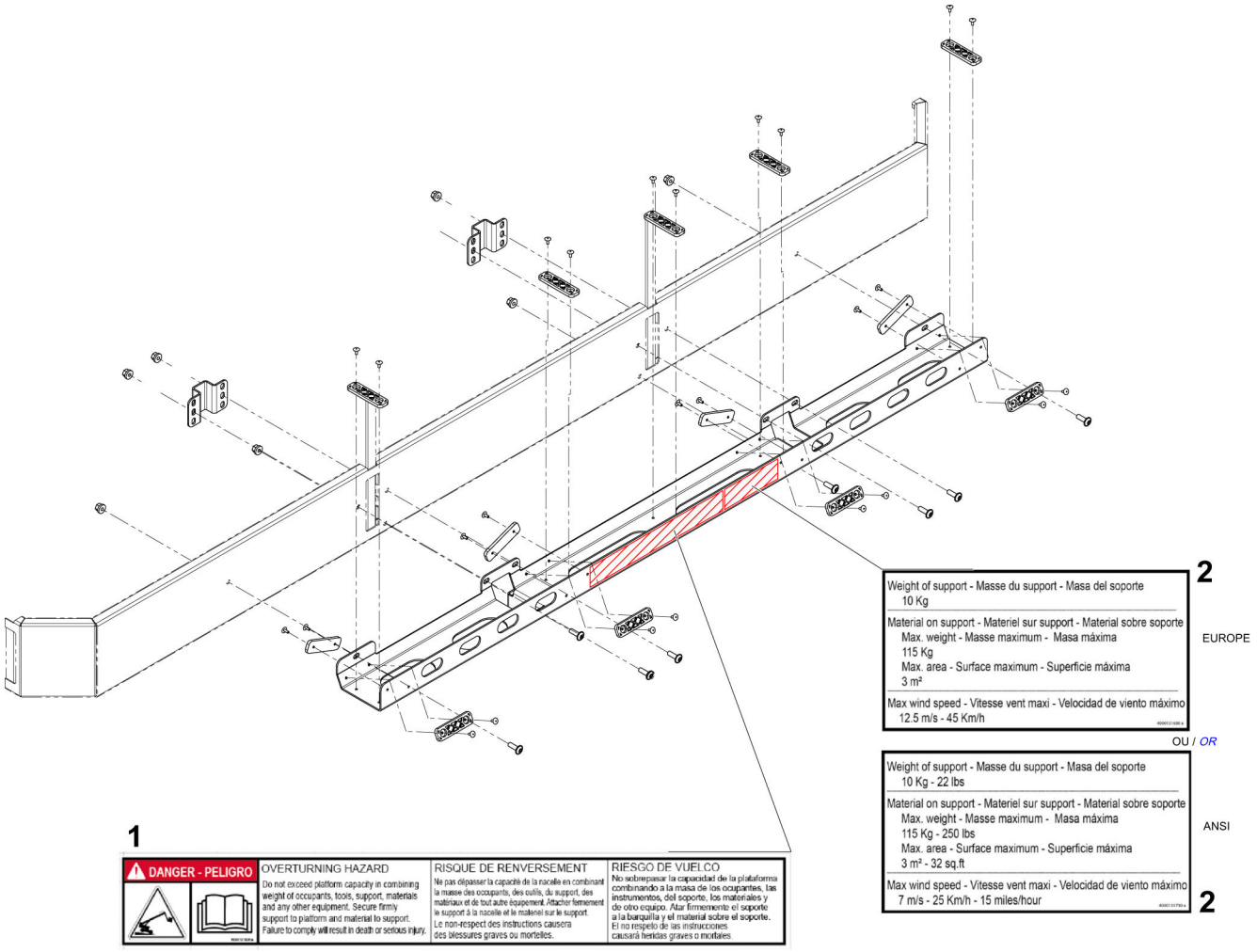
- Fix the tray (1) to the platform (2) using screws and bolts (3)
- Install plastic protection (5) on the handrail and attach it using collars (4)

N.B.-:-TORQUE REQUIREMENTS: 16 NM

- Pre-operation test: Place a load of 176 kg (390 lbs) on the carrier and carry out an inspection. Refer to the chapter on pre-operation inspection.

5.5.7 Specific decals

Location of the decals



Marking	Description	Quantity	Part number
1	Risk of overturning	1	40000131830
2	Equipment characteristics	1	CE / UKCA / AS : 4001267770 ANSI / CSA: 4000131730

5.6 Plumber's kit

5.6.1 Description

This attachment is an assembly designed to transport pipes and tubes. It comprises 2 cradles fixed to the rear side inside the platform. The load (material) should be placed in both the cradles and secured with a strap (not supplied).

5.6.2 Characteristics

Component	Characteristics
Weight of the carrier	8 kg (20 lbs)
Weight of the equipment on the carrier	80 kg (175 lbs)
Maximum load surface	0,8 m² (Ø 0,32 m x 2,5 m) / 8.6 sq.ft (Ø 1 ft x 8.6 ft)
Maximum wind speed allowed	12,5 m/s - 45 km/h - 28 mph

5.6.3 Safety precautions

- Please read and assimilate the instructions before using the attachment.
- This attachment is designed for transporting pipes and tubes. Do not use this attachment for transporting other types of load.
- Do not suspend loads.
- Do not overload the attachment and ensure that the equipment is correctly attached by means of a strap (not supplied).
- Do not exceed the maximum allowable platform capacity. The combined weight of the attachment, load, the occupants, the tools and any other equipment must not exceed the maximum allowable platform capacity.
- Do not load tubes whose surface area exceeds the maximum authorized surface area. Exposing an additional surface area to the wind reduces machine stability. Do not install any other attachments that increase the surface area exposed to the wind.
- Do not use the machine if the wind speed exceeds the authorized limit of the attachment.
- The cradles should always be positioned such that they are within the platform. Position the bottom end of the cradles such that they are resting on the platform floor.
- When maneuvring, ensure you maintain a safe distance between the load and the obstacles in the work environment.

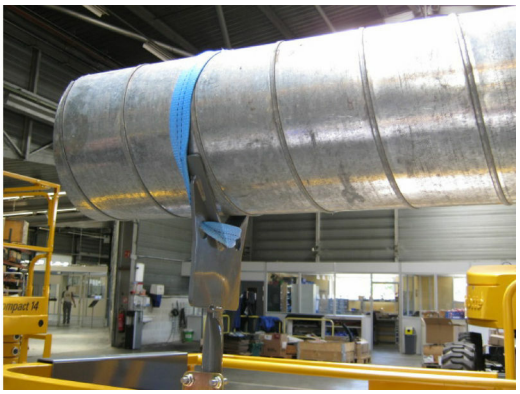
5.6.4 Pre-operation inspection

- Check that the cradle has no cracks or other damage.
- Check that the cradle is correctly installed and secured to the platform.
- Check that the information decal is present on the cradle and is legible.
- Check that the strap is not twisted or torn.
- Check that the position of the load and attachment is not obstructing access to the platform or the controls.
- Check that the position of the attachment and the load is not reducing visibility during maneuvers in the work environment.

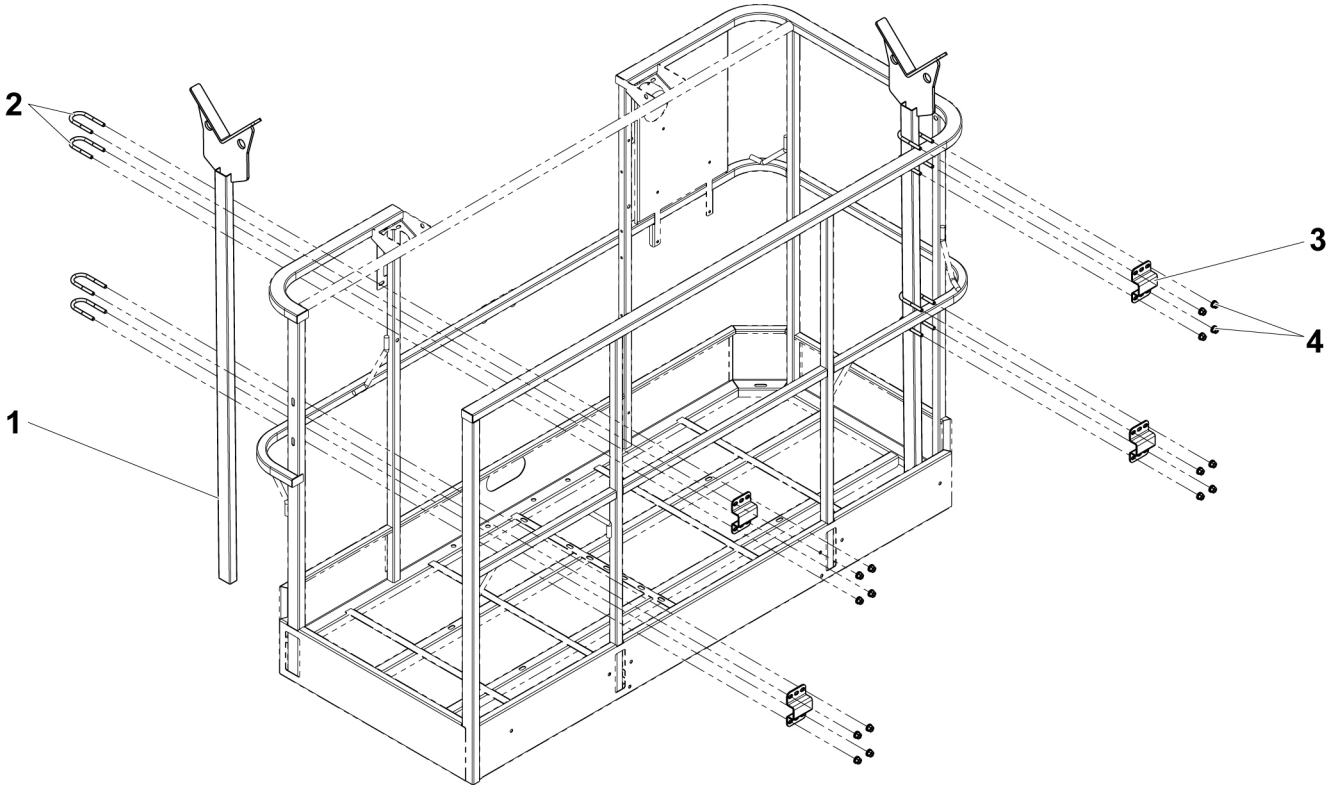
5.6.5 Operation

- Position the load to rest on the 2 cradles.
- Center the load on the cradles.
- Securely attach the load to each cradle with strap of adequate strength and dimensions.

Strapping example(s)



5.6.6 Assembly-Dis-assembly



Marking	Description
1	Cradle
2	Fastening screw U bolt
3	Flange
4	Nuts

- Locate the cradles such that the load will be parallel to the length of the platform.
- Install two cradles (1) to the guardrails using 4 supplied flanges (3).

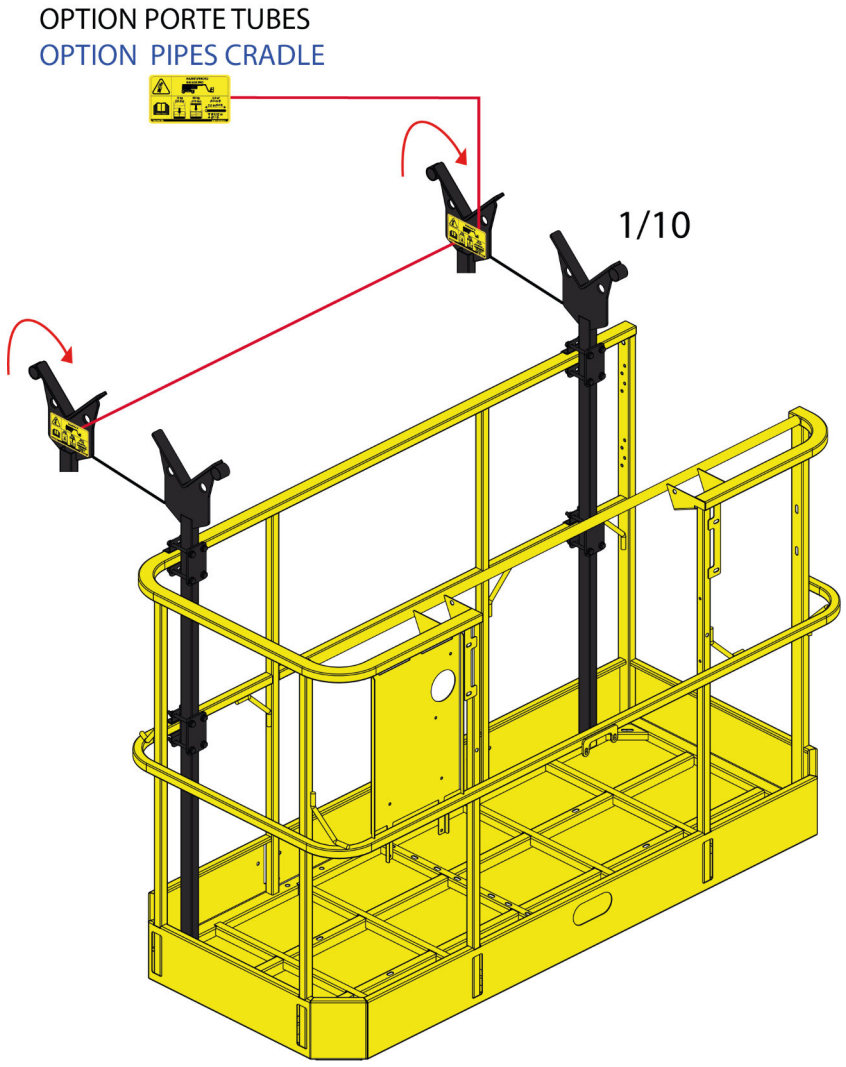
- Tighten up the flange using 2 supplied screw U bolts (2) and 4 nuts (4), wherever a cradle and the horizontal guardrail tubes intersect.

N.B.-:-TORQUE REQUIREMENTS: 16 NM

- Ensure that the bottom of cradle is resting on the platform floor.
- Ensure that the distance between the 2 cradles support and center the load.
- Pre-operation test: Place and secure the load of 120 kg (265 lbs) on the cradles. Ensure that the cradles can support the load and that there is no visual structural damage.

5.6.7 Specific decals, optional

Location of the decals



Marking	Description	Quantity	Part number
1	Risk of overturning	1	CE / UKCA / AS / EAC : 4001267650 In german: 4000708570 ANSI / CSA : - In english: 4000131600 - In french: 4000131610 - In spanish: 4000131620

5.7 Range Extender

5.7.1 Description

This option is designed to charge the machine independently if a power network is not available nearby.

This option is used to power tools in the sockets on the RANGE EXTENDER control panel or to power the platform supply option (if present on the machine).

N.B.-:-THE RANGE EXTENDER CAN ONLY FUNCTION IF THE FAST CHARGE OPTION IS AVAILABLE ON THE MACHINE.

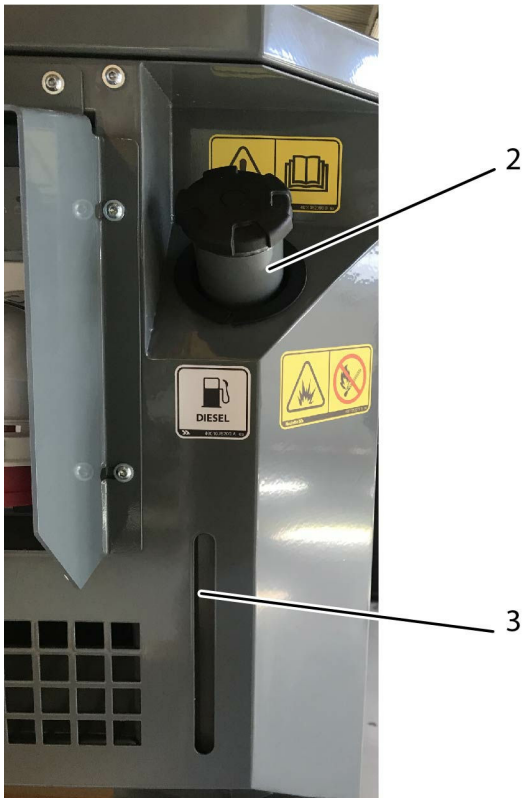
All lifting and forward movements are possible with a machine equipped with the Range Extender system, as long as the batteries have a sufficient charge level.

5.7.2 Characteristics

Range Extender - 1

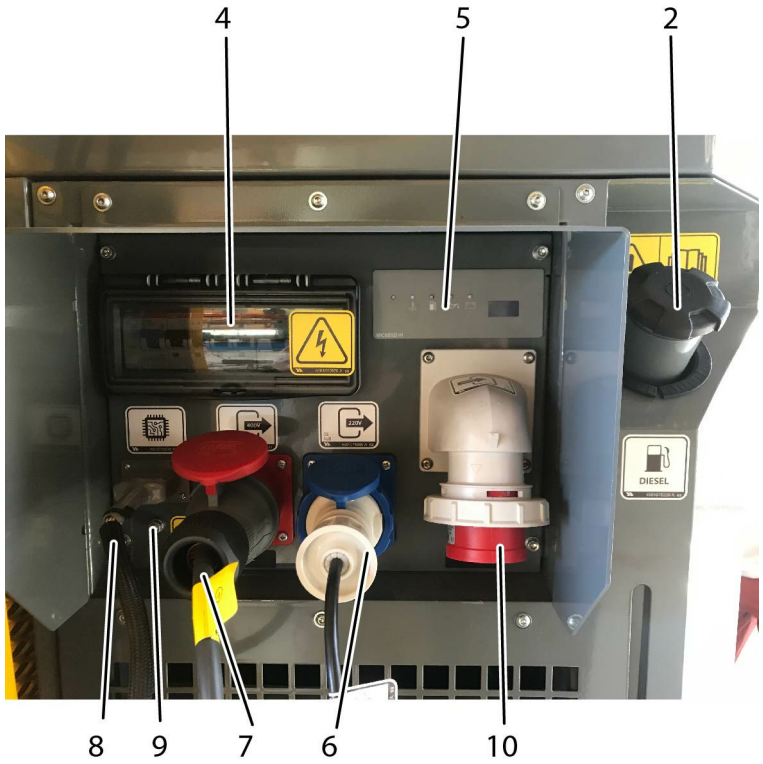
Marking	Description
1	Engine maintenance hatch

Range Extender - 2



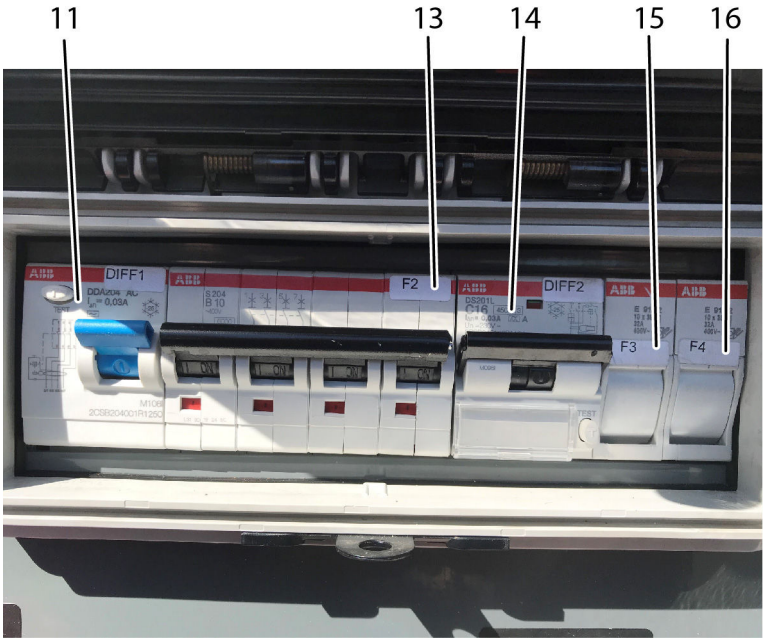
Marking	Description
2	Remplissage carburant
3	Fuel gauge

Range Extender - 3



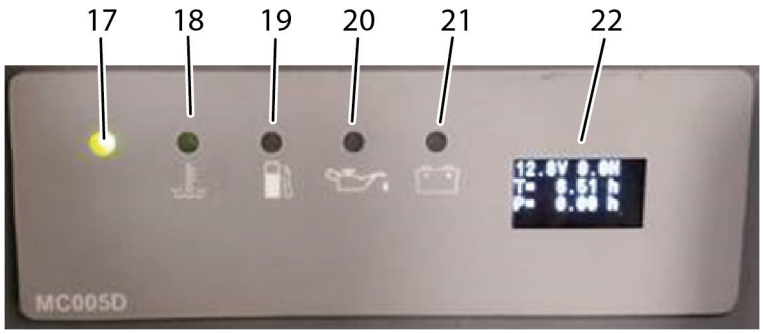
Marking	Description
2	Remplissage carburant
4	Circuit breaker panel
5	Display
6	Platform supply socket
7	Fast charge socket
8	Control socket
9	Earth connection
10	Socket for extension if charged from a 400 V mains

Range Extender - 4



Marking	Description
11	Q3 - Differential circuit breaker
13	Q2 - Differential circuit breaker
14	Q1 - Single-phase thermal magnetic and differential circuit breaker
15	F3 - Range Extender + 12V fuse
16	F4 - Range Extender preheating fuse

Range Extender - 5



Marking	Description
17	Power supply/Ready to start - Green
18	Engine oil overheat - Red
19	Fuel reserve indicator - Red
20	Low oil pressure - Red
21	Starting battery recharge fault - Red
22	Starting battery voltage, hour meter, voltage display

	CE, EAC and AS standards	For UKCA only	ANSI and CSA standards
Dimensions (Length / Width/Height)	1250 mm x 622 mm x 812 mm / 4 ft 6 in x 25 in x 32 in	1250 mm x 622 mm x 812 mm / 4 ft 6 in x 25 in x 32 in	1250 mm x 622 mm x 812 mm / 4 ft 6 in x 25 in x 32 in
Weight	254 kg / 560 lb		
Fuel type	Diesel		
Fuel tank capacity	20 l / 5 gal		
Power	4,7 kW		4,9 kW
Noise emission level	102 dBA		
Frequency	50 Hz		60 Hz
Voltage	230 / 400 V	110 / 400 V	110 / 240 V
Frequency	16 A		15 A / 25 A

5.7.3 Safety precautions

Refer to the manufacturer's manual for more information (supplied with the Range Extender).

- Please read and assimilate the instructions before using the attachment.
- Do not operate the Range Extender in enclosed areas.
- The Range Extender must only be operated on the machine.
- During storage, protect the Range Extender in a safe and stable place.
- In wet weather, protect the Range Extender in a safe and stable place.
- There is a risk of burns if contact is made with the Range Extender, whether in operation or switched off, due to contact with hot parts.
- Do not fill the fuel tank or carry out maintenance operations when the engine is running.
- Do not smoke when working around the battery or when refueling.
- Do not touch hot components. By touching a functioning engine, there is a risk of burns from contact with hot parts, and injuries by the rotating parts. Do not allow children to approach the machine while the engine is running.
- Be sure to conduct daily checks, periodic maintenanc, refueling or cleaning on a level surface with the engine shut off and remove the key.
- Whilst the machine is not in use, care must be taken to ensure that if the machine is not locked in a secure location, that the unit key switch is removed to prevent unauthorised use of the machine.
- Reinstall safeguards and shields securely and clear all maintenance tools when starting the engine after maintenence.
- Do not work in an explosive or flammable atmosphere (spark, flame, etc.).
- Do not use water to extinguish a fire. Use the specific systems in place (Powder extinguishers etc.) .
- The technician should ensure that suitable PPE (personal protective equipment) for the job is used, and check the particular conditions of environment in which the material can be found (see safety information specific to the operation site). Avoid direct bodily contact with fuel, engine oil and battery acid. In the event of contact with the skin, wash with water and soap, and rinse thoroughly. Do not use organic solvents. In the event of inhalation or ingestion, seek medical attention.

5.7.4 Pre-operation inspection

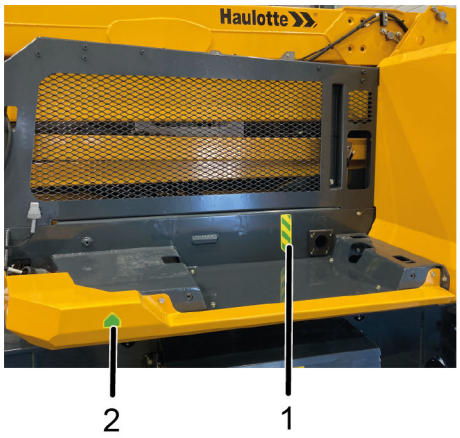
- Ensure that the Range Extender is correctly affixed to the machine.
- Check engine fuel level.
- Check that there are no objects obstructing the Range Extender air vents and preventing air from passing through.

5.7.5 Installing / Removing the Range Extender

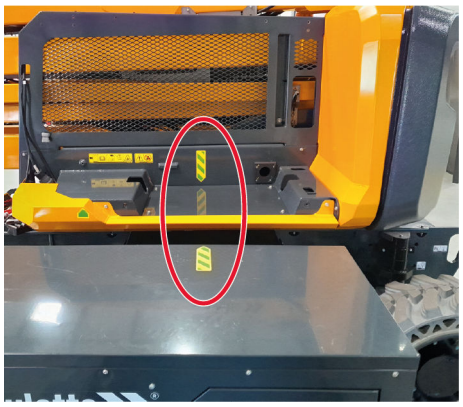
- Position the machine on a flat and firm surface, clear of obstructions (beware of power lines).
- Stow the machine.
- Mark out the work area.
- Switch off the ignition and remove the ignition key.
- Place a do not operate tag at the start/stop switch location to inform personnel that the equipment is being worked on.

Maneuver assistance:

- Marks are placed on the machine and the Range Extender to guide the forklift truck as it approaches and enable the correct positioning and installation of the Range Extender in its seating.

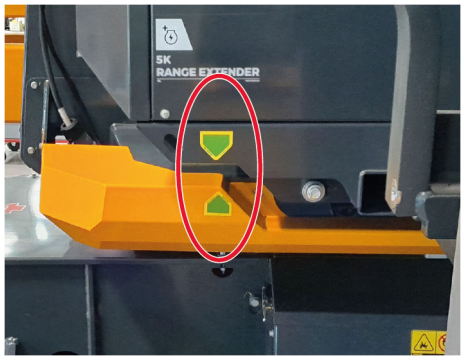


- Using a forklift truck, place the Range Extender in front of the machine.
- Line up the marking on top of the Range Extender with the marking (1).



- Position the Range Extender above its support.

- Place the Range Extender on its support, lining up the markings (2) and (3).



For machines with a cover: Handle the Range Extender with care to avoid any risk of collision.

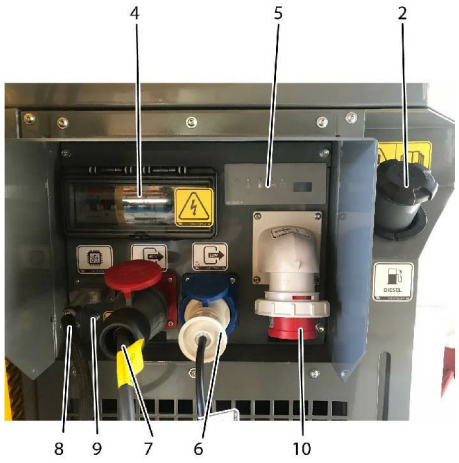
Do not slide the Range Extender into its support but set it in.

- Tighten the 3 fastening screws to a torque of 76 Nm.

Do not tighten the screws, which can cause the Range Extender to tip over.

Fast charge connection

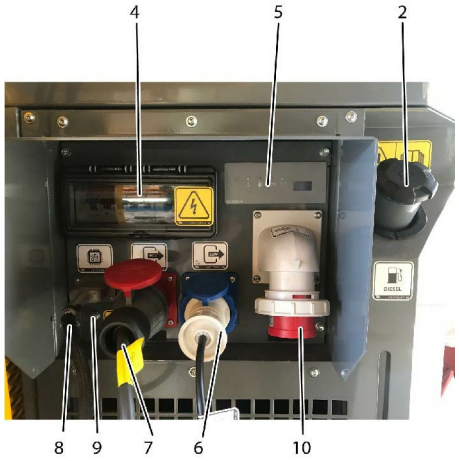
Connect in the order indicated:
- (8) - Control socket
- (7) - Fast charge socket
- (6) - Platform supply socket (If this option is available)



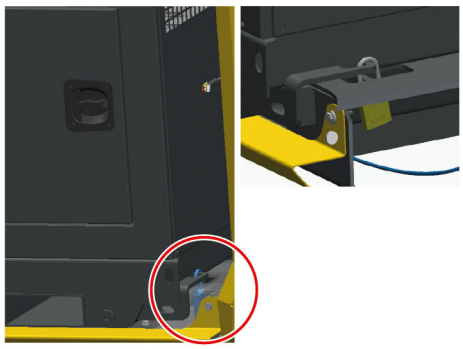
Fast charge connection - From the mains:

- With the Range Extender off, connect the 400 V extension to the socket (10) to enable charging from the mains.

N.B.-:-ONLY RAISING IS POSSIBLE IN THIS CASE.

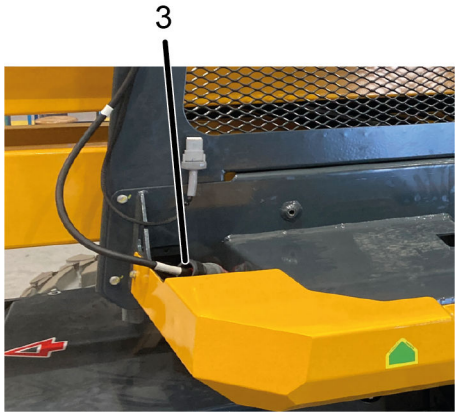


Anti-theft system:
- A padlock can be installed to prevent the Range Extender from being stolen. Not supplied with the machine.



Removal:
- Switch off the ignition and remove the ignition key.
- Carry out the operations in the reverse order.

N.B.-:-STOW THE SOCKETS (3) IN THEIR HOUSINGS.



5.7.6 Specific decals

B 5 - Decals and markings locations.

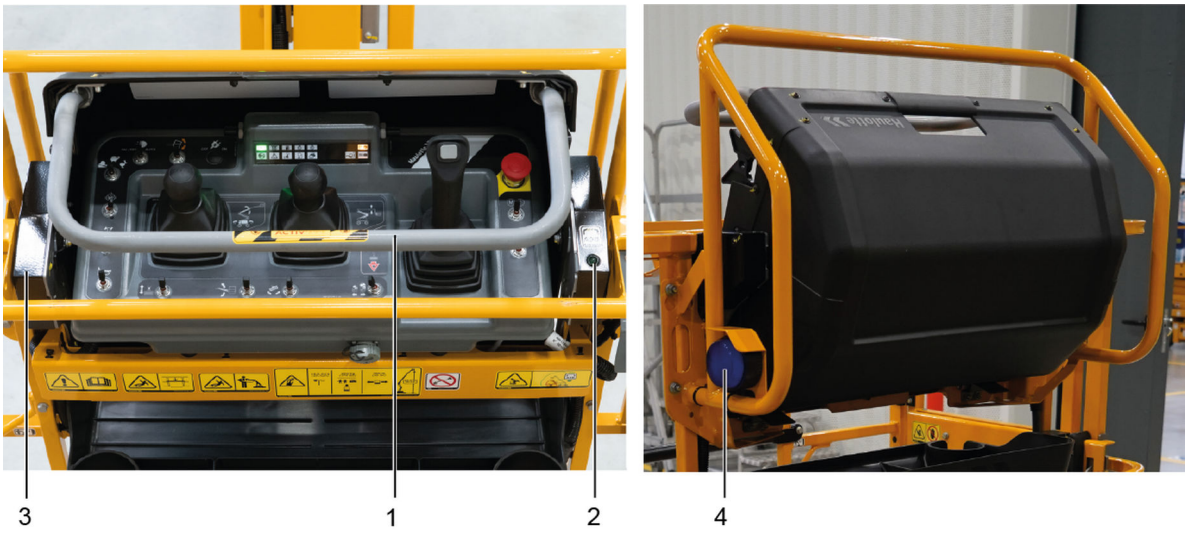
5.8 Activ' Shield Bar - Secondary guarding system (If fitted)

5.8.1 Description

General Specification Activ' Shield Bar
- The Activ' Shield Bar is a device designed to reduce the risk of entrapment against the control panel when the platform is in confined spaces.
- This device completes the existing means of protecting the user, including the activation commands on the platform control box.
- The Activ' Shield Bar is active when the platform is elevated (boom or arm) and creep speed is automatically engaged. It is not active when the machine is in a stationary position (machine folded) when rotating the turret or raising the pendulum.
- The green indicator light of the Activ' Shield Bar is illuminated indicating the device is active:
  - Flashing green indicator: Machine stationary in Activ' Shield Bar zone (The platform is elevated and the Activ' Shield Bar will be active during movements) .
  - Green indicator light off: The Activ' Shield Bar system is inactive.

This system does not relieve the operator from the responsibilities of learning and practicing the principles of safe use and operation of the machine as provided by the manufacturer's instructions, employer's safety rules and worksite regulations

5.8.2 Characteristics



Marking	Description
1	Activation bar
2	Green indicator light
3	Sensor
4	Blue flashing light

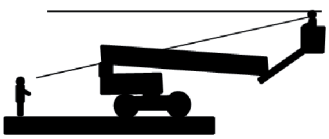
5.8.3 Safety precautions

It is mandatory to ensure that the Activ' Shield Bar is functional at each start-up of the machine

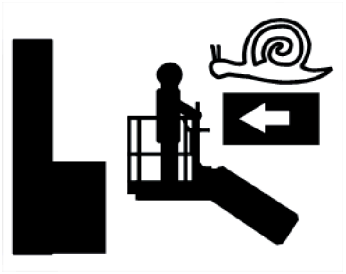
Do not use the Activ' Shield Bar as a handhold. This could result in an inadvertent triggering of the Activ' Shield Bar.

- Check the work area for overhead clearances, obstructions or other possible hazards.

- When driving, position the platform so as to provide the best visibility possible and avoid any blind spots.



- Always ensure that the chassis is never driven any closer than 1 m (3 ft3 in) from holes, bumps, tilts, obstructions, debris and ground coverings that may hide dangers.
- During operation, keep all the parts of the body inside the platform.
- To position the machine close to obstacles, you are advised to use the movements of the boom (arm, boom, etc.) instead of the drive movements.
- Do not drive fast in narrow or cluttered areas. Keep speed under control while making turns or sharp bends.



5.8.4 Pre-operation inspection

- If any item on the checklist is marked NO during the inspection; machine must be tagged and locked out and placed out of service.
- DO NOT operate the machine until all identified items are corrected and it has been declared safe for operation.

Description	Yes	No
Perform all specified machine functional tests		
- All machine functional tests result positive		
Start the machine from platform control box		
Switch off (push in) all the emergency stop buttons		
- Check absence of warning signal		
- Check that the blue indicator (4) is not activated when the machine is in stowed position		
To ensure Activ' Shield Bar device is functioning correctly, perform the following:		
When stowed: - Check that the green indicator light (2) is not illuminated		
When the boom, arm or telescope is unfolded and the machine is in micro-speed mode: - Check that the green indicator light (2) is blinking-With platform stationary. - Check that the green indicator light (2) is illuminated-With platform in motion.		
Simultaneously make a movement and push forward the activation bar to trigger the system: - Check that all movements stop. - Check that the horn and the blue flashing light (4) are activated.		

N.B.-:-PRESS THE FOOT SWITCH TO RESET THE SYSTEM (ONCE THE BAR IS RELEASED)

5.8.5 Operation

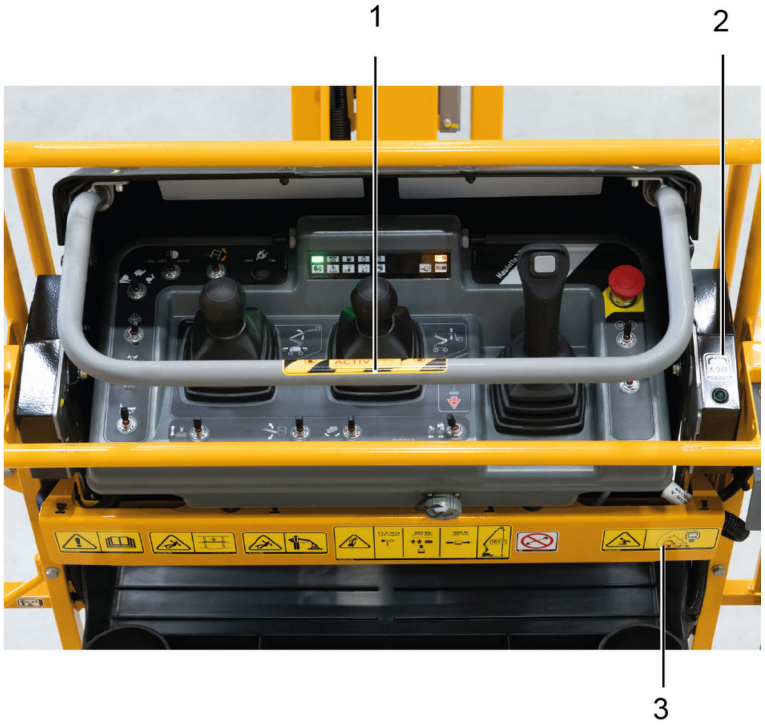
If the Activ' Shield Bar is pushed forward, all movements are stopped. The horn sounds and the warning blue light flashes. Only movements to move away from the entrapment are authorised.

To re-set the Activ' Shield Bar, release the activation bar, the Foot Switch and controls. Then, re-press the Foot Switch.

Care must be taken during all operations to prevent collision and entrapment against structures.

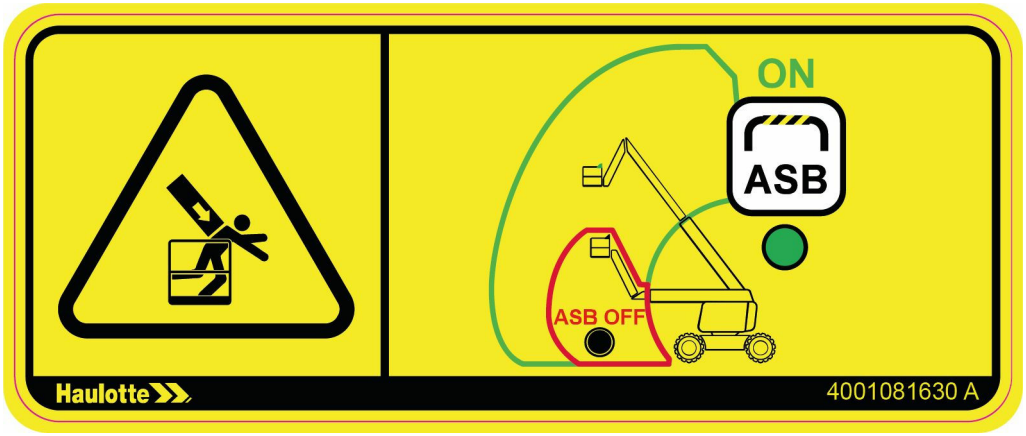
5.8.6 Specific decals

Location of the decals

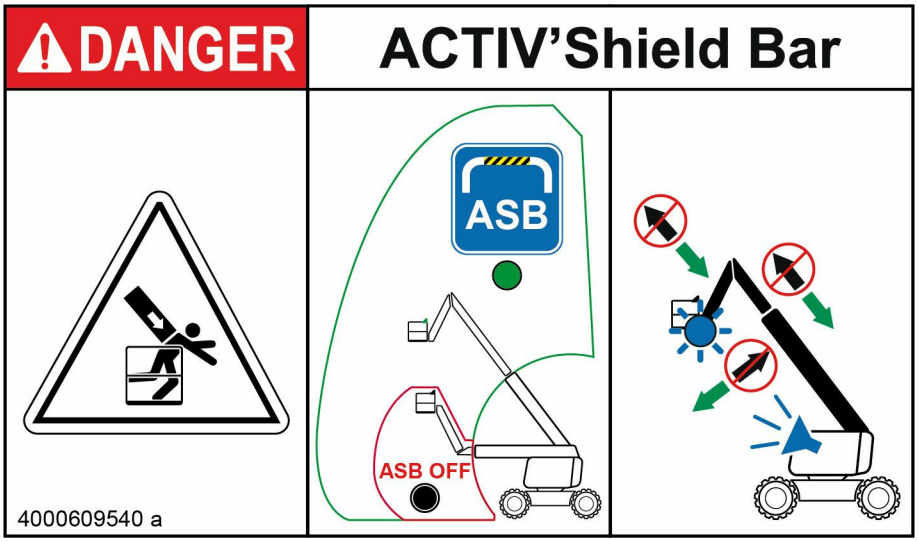


Marking	Description	Quantity	Part number - CE, UKCA, AS and EAC standards	Part number - ANSI and CSA standards
1	Do not lean on the bar	1	4001069640	4000206690
2	Activ' Shield Bar controls	1	4001069620	4000596720
3	Activ' Shield Bar instructions	1	4001081630	4000609540

Activ' Shield Bar instructions - CE, UKCA, AS and EAC standards



Activ' Shield Bar instructions - ANSI and CSA standards



Notes

1 General

As an owner and/or operator of Haulotte equipment, your Safety is of utmost importance to HAULOTTE® , which is why HAULOTTE® places such a high priority on product safety.

INSPECTIONS are not only required by HAULOTTE®, but may also be required by industry standards and/or local regulations.

To ensure your equipment continues to achieve the level of performance set in the factory, it is important to maintain it regularly. We remind you that it is strictly forbidden to make any modifications. Regular and timely inspections will reduce equipment down time as well as prevent possible injury.

N.B.-:-DO NOT OPERATE UNLESS YOU ARE FAMILIAR AND TRAINED IN THE PRINCIPLES OF SAFE MACHINE OPERATION.

Overview:
- Walk-around inspections take only a few minutes at the beginning and end of each shift – one of the best ways to prevent mechanical problems and safety hazards.

What to Do:
- Use your senses: sight, smell, hearing and touch.

Frequency:
- Check your machine periodically during your entire workday.
- Make sure to do your inspection the same way every time.
- Complete one of these inspections at the start and end of each shift.

N.B.-:-IF DAMAGE OR UNAUTHORIZED MODIFICATIONS ARE DISCOVERED, THE MACHINE MUST BE REMOVED FROM SERVICE UNTIL REPAIRS ARE MADE BY A QUALIFIED SERVICE TECHNICIAN.

It is the owner's responsibility to ensure the required maintenance as recommended by Haulotte is completed prior to the operation of the machine.

If regular maintenance is not carried out, this may:
- Void the warranty.
- Cause machine malfunction.
- Reduce machine reliability and shorten its service life.
- Jeopardize operator safety.

HAULOTTE Services® technicians are specially trained to carry out extensive repairs, interventions or adjustments on the safety systems or elements of HAULOTTE® machines. They carry genuine HAULOTTE spare parts and tools as required, and also provide fully documented reports on all work completed.

The inspection and maintenance table, identifies the role and the responsibilities of each party in periodical machine maintenance. C 3 - Inspection and Functional test.

2 Maintenance Schedule

This section provides the necessary information needed to place the machine in safe operation. In accordance with the regulations that are currently applicable, this machine is deisgned to have a 10 year life span in normal usage conditions. The life may be extended or reduced dependent on the severity of operating conditions, the machine condition itself and by conducting effective inspections and maintenance in addition to other external factors. There are a number of factors which can affect the design life including but not limited to, severity of operating conditions/routine maintenance which should be carried out in accordance with this manual.

Severity of operating conditions may require a reduction in time between maintenance periods. Machines that have been out of service or have not been in use for more than 3 months must undergo a periodic inspection before the machine is put back into service.

Maintenance must be carried out by a competent company or person familiar with mechanical procedures.

Maintenance operations performed must be recorded in a register / log book of the machine.

3 Inspection program

3.1 General program

The machine must be inspected on a regular basis at intervals of no less than once 1 per year. The purpose of the inspection is to detect any defect which could lead to an accident during routine use of the machine. Local standards and regulations may require more frequent inspections.

HAULOTTE® requires Reinforced and Major Inspections to be carried out on the product to extend its service life.

Inspections must be carried out by a competent company or person.

The inspection results must be recorded in the safety register or machine log book controlled and overseen by the company manager. This register or machine log book and the list of competent repair persons must be made available to the government work inspector and HAULOTTE Services®.

When	Person-in-charge	Stakeholder	What
Before sale	Owner (or renter)	Competent technician or qualified technician HAULOTTE Service®	Periodic inspection
Before rent	Owner (or renter)	Competent technician or qualified technician HAULOTTE Service®	Daily inspection
Before use or every change of user	Operator	Operator	Daily inspection
Annually (1 year)	Owner (or renter)	Competent technician or qualified technician HAULOTTE Service®	Periodic inspection
5 years	Owner (or renter)	Competent technician or qualified technician HAULOTTE Service®	Reinforced inspection
10 years	Owner (or renter)	Competent technician or qualified technician HAULOTTE Service®	Major inspection

3.2 Daily inspection

The Daily inspection includes a visual inspection, operational checks and testing of the safety systems. This must be conducted by the operator before using the machine.

This inspection is the responsibility of the user. Refer to  C 3.1 - Daily inspection.

3.3 Periodic inspection

The Periodic inspection is a thorough evaluation of the operation and safety features of the machine.

It must be conducted before the sale / resale of the machine and/or at least once every year.

Local regulations may have specific requirements on frequency, and content of inspections.

The severity of operating conditions may require frequent inspections.

This inspection is the responsibility of the owner, and inspections must be carried out by a competent company or person.

This inspection is in addition to the daily inspection.

This inspection should also be conducted after:
- Extensive dismantling and reassembly of major components.
- Repairs involving the machine's essential components.
- Any accident causing stress to the machine.

3.4 Reinforced inspection

The Reinforced inspection is a thorough evaluation of the machine's structural components, to ensure proper functionality of the machine.

This evaluation must occur at a frequency of 5000 hours or every 5 years.

This inspection is the responsibility of the owner, and it must be conducted by a HAULOTTE Services® technician or by a competent company or person.

This inspection includes:
- Daily inspection
- Periodic inspection

N.B.-:-REFER TO THE MAINTENANCE MANUAL FOR DETAILS.

3.5 Major inspection

The Major inspection is a thorough evaluation of the machine's integrity and proper functioning; after a normal service life of 10 years.

This evaluation must take place after 10 years of operation and then repeated every 5 years thereafter.

The severity of operating conditions may require frequent inspections.

This inspection is the responsibility of the owner, and it must be conducted by a HAULOTTE Services® technician or by a competent company or person.

This inspection includes:
- Daily inspection
- Periodic inspection
- Reinforced inspection

N.B.-:-REFER TO THE MAINTENANCE MANUAL FOR DETAILS.

4 Repairs and adjustments

Extensive repairs, interventions or adjustments on the safety systems or components must be performed by a HAULOTTE Services® technician. Use original spare parts and components only.

N.B.-:-HAULOTTE SERVICES® TECHNICIANS ARE TRAINED PROFESSIONALS TO PERFORM EXTENSIVE REPAIRS, INTERVENTIONS AND ADJUSTMENTS ON THE SAFETY SYSTEMS OR COMPONENTS OF HAULOTTE® MACHINES. THE TECHNICIAN CARRIES GENUINE HAULOTTE® SPARE PARTS AND TOOLS AS REQUIRED, AND ALSO PROVIDES FULLY DOCUMENTED REPORTS ON ALL WORK COMPLETED.

HAULOTTE Services® will not take responsibility for any outcomes resulting from inferior services or repairs performed by other unauthorised personnel.

HAULOTTE® reminds that NO modifications SHALL be carried out without the written permission of HAULOTTE®.

Any unauthorised repairs/modifications will void HAULOTTE® warranty.

To check for safety campaigns, consult our website: www.haulotte.com

N.B.-:-WHEN DISPOSING OR SCRAPPING THIS MACHINE, PLEASE CONSIDER APPROPRIATE METHODS OF RECYCLING. ANY ITEMS THAT REQUIRE SPECIFIC DISPOSAL ARE LISTED WITH INSTRUCTIONS IN THE MAINTENANCE MANUAL.

Notes

G - Other information

Notes

1 Conditions of warranty

Our warranty conditions and extension contracts are now available on the websites of our sales network: **www.haulotte.com**

2 Subsidiary contact information

	HAULOTTE FRANCE PARC DES LUMIERES 601 RUE NICEPHORE NIEPCE 69800 SAINT-PRIEST **TECHNICAL Department:** **+33 (0)820 200 089** **SPARE PARTS : +33 (0)820 205 344** FAX : +33 (0)4 72 88 01 43 E-mail : haulottefrance@haulotte.com www.haulotte.fr		HAULOTTE ITALIA VIA LOMBARDIA 15 20098 SAN GIULIANO MILANESE (MI) **TEL: +39 02 98 97 01** FAX: +39 02 9897 01 25 E-mail : haulotteitalia@haulotte.com www.haulotte.it		HAULOTTE INDIA Unit No. 1205, 12th foor,Bhumiraj Costarica, Plot No. 1&2, Sector 18, Palm Beach Road, Sanpada, Navi Mumbai- 400 705 Maharashtra, INDIA **Tel. : +91 22 66739531 to 35** E-mail : hlgindia@haulotte.com www.haulotte.in
	HAULOTTE HUBARBEITSBÜHNEN GmbH Ehrenkirchener Strasse 2 D-79427 ESCHBACH **TEL : +49 (0) 7634 50 67 - 0** FAX : +49 (0) 7634 50 67 - 119 E-mail : adv-gmbh@haulotte.com www.haulotte.de		HAULOTTE VOSTOK 61A, bld.1, RYABINOVAYA STREET 121471 MOSCOW RUSSIA **TEL/FAX : +7 495 221 53 02 / 03** E-mail : salesrus@haulotte.com www.haulottevostok.ru		HAULOTTE DO BRASIL Av. Alameda Caiapós, 589 CEP: 06460-110 – TAMBORE BARUERI – SAO PAULO – BRASIL **TEL : +55 11 4196 4300** FAX : +55 11 4196 4316 E-mail : haulottebrasil@haulotte.com www.haulotte.com.br
	HAULOTTE IBERICA C/ARGENTINA N° 13 - P.I. LA GARENA 28806 ALCALA DE HENARES MADRID **TEL : +34 902 886 455** TEL SAT : +34 902 886 444 FAX : +34 911 341 844 E-mail : iberica@haulotte.com www.haulotte.es		HAULOTTE POLSKA Sp. Z.o.o. UL. GRANICZNA 22 05-090 RASZYN - JANKI **TEL : +48 22 720 08 80** FAX : +48 22 720 35 06 E-mail : E-mail : haulottepolska@haulotte.com www.haulotte.pl		HAULOTTE MÉXICO, S.A. de C.V. Calle 40 SUR ESQUINA 13 ESTE No. S/N Colonia CIVAC, JIUTEPEC, MORELOS CP 62578 México **TEL : +52 77 7321 7923** FAX : +52 77 7516 8234 E-mail : haulotte.mexico@haulotte.com www.haulotte.com.mx
	HAULOTTE in JAPAN SBJ ShinOsaka BLDG 3F 4-6-5 Nishinakajima Yodogawa-ku, Osaka, JAPAN, Post Code: 532-0011 **TEL : +81 6 6795 9008** FAX : +81 6 6795 9009 www.haulotte.com		HAULOTTE SINGAPORE Pte Ltd. No.26 CHANGI NORTH WAY, SINGAPORE 498812 **Parts and service Hotline:** **+65 6546 6150** FAX : +65 6536 3969 E-mail: haulotteasia@haulotte.com www.haulotte.sg		HAULOTTE MIDDLE EAST FZE PO BOX 293881 Dubaï Airport Free Zone DUBAÏ United Arab Emirates **TEL : +971 (0)4 299 77 35** FAX : +971 (0) 4 299 60 28 E-mail : haulottemiddle- east@haulotte.com www.haulotte.ae
	HAULOTTE SCANDINAVIA AB Taljegårdsgatan 12 431 53 Mölndal SWEDEN **TEL : +46 31 744 32 90** **FAX : +46 31 744 32 99** E-mail : info@se.haulotte.com spares@se.haulotte.com www.haulotte.se		HAULOTTE TRADING (SHANGHAI) Co. Ltd. Room 606A, Tower 3, Ronshine Sunkwan Center Lane 77, Sunkun Road MINHANG DISTRICT SHANGHAI 201105 CHINA **TEL : +86 21 6442 6607** FAX : +86 21 6442 6619 E-mail : haulotteshanghai@haulotte.com www.haulotte.cn		HAULOTTE ARGENTINA Ruta Panamericana Km. 34,300 (Ramal A Escobar) 1615 Gran Bourg (Provincia de Buenos Aires) Argentina **TEL : +54 33 27 445991** FAX : +54 33 27 452191 E-mail : haulotteargentina@haulotte.com www.haulotte.com.ar
	HAULOTTE UK Ltd 1 Gravely Way Four Ashes Wolverhampton WV10 7GW ENGLAND **TEL : +44 (0)1216 199753** FAX : + 44 (0)1952 292758 E-mail : salesuk@haulotte.com www.haulotte.co.uk		HAULOTTE GROUP / BILJAX 125 TAYLOR PARKWAY ARCHBOLD, OH 43502 – USA **TEL : +1 419 445 8915** FAX :+1 419 445 0367 Toll free : +1 800 537 0540 E-mail : sales@us.haulotte.com www.haulotte-usa.com		HAULOTTE NORTH AMERICA 3409 Chandler Creek Rd. VIRGINIA BEACH, VA 23453 – USA **TEL : +1 757 689 2146** FAX :+1 757 689 2175 Toll free : +1 800 537 0540 E-mail : sales@us.haulotte.com www.haulotte-usa.com
	HAULOTTE NETHERLANDS BV Koopvaardijweg 26 4906 CV OOSTERHOUT - Nederland **TEL : +31 (0) 162 670 707** FAX : +31 (0) 162 670 710 E-mail info@haulotte.nl www.haulotte.nl		HAULOTTE AUSTRALIA PTY Ltd 51 Port Link Drive DANDENONG – VIC – 3175 **TEL : 1 300 207 683** FAX : +61 (0)3 9792 1011 E-mail : sales@haulotte.com.au www.haulotte.com.au		HAULOTTE CHILE Panamerica Norte Altura Km 21,5 Colina (Cruce c/Lo Pinto) Santiago (RM) **TEL : + 562 2 3727630** E-mail : haulotte-chile@haulotte.com www.haulotte-chile.com

2.1 California warning

For the US destined machines (ANSI and CSA standards)

CALIFORNIA

Proposition 65 Warning

Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

For more information go to www.P65Warnings.ca.gov/passenger-vehicle

CALIFORNIE

Avertissement de la Proposition 65

L'exploitation, l'entretien et la maintenance d'un véhicule de tourisme ou d'un véhicule tout-terrain peuvent vous exposer à des produits chimiques, y compris les gaz d'échappement, le monoxyde de carbone, les phthalates et le plomb, identifiés par l'État de Californie comme pouvant causer le cancer et des malformations congénitales ou autres effets nocifs sur la reproduction. Pour limiter toute exposition: évitez de respirer les gaz d'échappement, ne laissez pas tourner le moteur au ralenti sauf si nécessaire, faites l'entretien du véhicule dans une zone bien aérée et portez des gants ou lavez vous fréquemment les mains lors de cette opération.

Pour de plus amples informations, consulter www.P65Warnings.ca.gov/passenger-vehicle

CALIFORNIA

Advertencia de la Proposición 65

Operar, dar servicio y mantenimiento a un vehículo de pasajeros o vehículo todo terreno puede exponerle a químicos incluyendo gases del escape, monóxido de carbono, ftalatos y plomo, los cuales son conocidos por el Estado de California como causantes de cáncer y defectos de nacimiento u otros daños reproductivos. Para minimizar la exposición, evite respirar los gases del escape, no encienda el motor excepto si es necesario, dé servicio a su vehículo en un área bien ventilada y utilice guantes o lave sus manos frecuentemente cuando dé servicio a su vehículo.

Para mayor información visite www.P65Warnings.ca.gov/passenger-vehicle

For electric (battery operated) machines

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING.

For more information go to www.P65Warnings.ca.gov

CALIFORNIE

Avertissement de la Proposition 65

Les batteries, les bornes et autres accessoires contiennent du plomb et des composés à base de plomb, agents chimiques identifiés par l'État de Californie comme pouvant provoquer le cancer et des effets nocifs sur la reproduction. Les batteries contiennent également d'autres agents chimiques identifiés par l'Etat de Californie comme pouvant provoquer le cancer. SE LAVER LES MAINS APRES MANIPULATION.

Pour de plus amples informations, consulter www.P65Warnings.ca.gov

CALIFORNIA

Advertencia de la Proposición 65

Los bornes, los terminales y los accesorios de las baterías contienen plomo y compuestos de plomo, químicos conocidos por el Estado de California como causantes de cáncer y daños reproductivos. Las baterías también contienen otros químicos conocidos por el Estado de California como causantes de cáncer.
LAVESE LAS MANOS DESPUES DE MANIPULARLOS.

Para mayor información visite www.P65Warnings.ca.gov

Notes

1 Intervention register

The intervention register keeps a record of maintenance and repair work carried out inside or outside the maintenance programme.

N.B.-:-IN THE CASE OF A HAULOTTE SERVICES® INTERVENTION, THE QUALIFIED TECHNICIAN MUST INDICATE THE HAULOTTE SERVICES® INTERVENTION NUMBER.

Date	Type of intervention	Number of hours	Intervenor	intervention number

H - Records

Date	Type of intervention	Number of hours	Intervenor	intervention number