ELECTRIC ARTICULATED LIFTS



Operator manual

ELECTRIC ARTICULATED LIFTS

HA12IP(HA33JE) - HA15IP (HA43JE) - HA16PE

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CONTENTS

1 - Operator manual 7
2 - After Sales Service 7
3 - Conformity 8

A

SAFETY PRECAUTIONS

1 - Recommendations 9
1.1 - Operator manual 9
1.2 - Symbols used 9
1.3 - Label colours 10
2 - Pre-operation instructions 11
2.1 - General instructions 11
2.2 - Specific instructions 11
3 - Operation instructions 12
3.1 - Prohibitions 12
3.2 - Potential risks 13
3.2.1 - Risk of command system disturbance 13
3.2.2 - Risk of falling 13
3.2.3 - Risk of electrocution 14
3.2.4 - Risk of jerks and overturning 14
3.2.5 - Risk of burns and explosion 16
3.2.6 - Risk of crushing and collision 17

B

INTERVENOR'S RESPONSIBILITY

1 - Owner's (or hirer's) responsibility 19
2 - Employer's responsibility 19
3 - Trainer's responsibility 19
4 - Operator's responsibility 20
5 - Inspection and maintenance 21

C

MACHINE LAYOUT

1 - Identification 23
2 - Main components 25
2.1 - Electrical version 25
3 - Safety devices 29
3.1 - Turntable rotation pin 29
3.2 - Sliding mid-rail 29
3.3 - Anchorage point 29
4 - Labels 30
4.1 - Classification plan 30
4.1.1 - Red labels 30
4.1.2 - Orange labels 32



4.1.3 - Yellow labels . . . 35
4.1.4 - Other labels . . . 36
4.1.5 - Green labels . . . 37
4.2 - Identification . . . 38

5 - Consoles . . . 46

5.1 - Lower console . . . 46
5.2 - Upper console . . . 50

D

OPERATING PRINCIPLE

1 - Description . . . 55

2 - Safety devices . . . 55

2.1 - Activation of controls . . . 55
2.2 - Driving speed (minimum) . . . 56
2.3 - Controller HEAD . . . 56
2.4 - Electronic speed controller . . . 56
2.5 - Detection of internal fault . . . 56
2.6 - Automatic engine cut-out . . . 57
2.7 - Load in the platform . . . 57
2.8 - Machine tilt . . . 57
2.9 - Battery chargeEngine hour meter . . . 58
2.9.1 - Engine hour meter . . . 58
2.9.2 - Automatic reset . . . 58
2.10 - On-board charger . . . 58

E

DRIVING

1 - Recommendations . . . 59

2 - Checks before use . . . 59

2.1 - Visual inspections . . . 59
2.1.1 - General mechanical functions . . . 59
2.1.2 - Environment . . . 60
2.2 - Functional tests . . . 60
2.2.1 - Safety features . . . 60
2.2.2 - Lower console controls . . . 61
2.2.3 - Upper console controls . . . 62
2.3 - Regular checks . . . 63
2.4 - Repairs and adjustments . . . 63
2.5 - Checks when the machine is put back in service . . . 63

3 - Usage . . . 64

3.1 - Test procedure . . . 64
3.1.1 - Emergency stop push button function . . . 64
3.1.2 - Tilt control box function . . . 64
3.1.3 - Visual and audio alarms . . . 64
3.1.4 - Weighing system . . . 64
3.1.5 - Movement safety end of travel contactors . . . 65
3.2 - Ground operations . . . 65
3.2.1 - Machine start-up . . . 65
3.2.2 - Machine shutdown . . . 65
3.2.3 - Movement control . . . 66
3.2.4 - Other controls . . . 68
3.3 - Operations from the platform . . . 68
3.3.1 - Machine start-up . . . 68



CONTENTS

3.3.2 - Machine shutdown 68
3.3.3 - Movement control. 69
3.3.4 - Other controls. 73

F

SPECIAL PROCEDURE

1 - Emergency lowering 75
1.1 - Principle 75
1.2 - Procedure 75
2 - Lowering for repairs 76
2.1 - Principle 76
2.2 - Procedure 76
3 - Towing service 77
3.1 - Disconnecting the unit 77
3.2 - Reconnect unit. 78
4 - Loading and unloading 79
4.1 - Principle 79
4.1.1 - Loading by lifting 79
4.2 - Putting in transport position 80
4.3 - Unloading 81
4.4 - Warning. 81

G

TECHNICAL CHARACTERISTICS

1 - Main characteristics 83
2 - Overall dimensions 87
3 - Working area 91
3.1 - Machine HA12IP (HA33JE) 91
3.2 - Machine HA15IP (HA43JE) 92
3.3 - Machine HA16PE 93
4 - ANSI standard specificities 94
4.1 - Overload test 94
4.2 - Operational test 94
4.3 - Stability test 95

H

INTERVENTION LOG

1 - Intervention log. 99



You have just bought a HAULOTTE® telescopic handler and we would like to thank you for your trust.

1 - Operator manual

AS indicated on the delivery slip, this manual is one of the documents in the on-board case supplied upon delivery of your telescopic handler.

In order to guarantee you full satisfaction, you must scrupulously follow the operating instructions contained in this manual.

We would like to draw your attention in particular to 2 essential points :

- Compliance with the safety precautions (machine, operation, environment)
- Use within the equipment performance limits.

2 - After Sales Service

Our HAULOTTE Services® After Sales Service is completely at your disposal during and beyond the warranty period to provide the service you require.

- Contact our After Sales Service, specifying the exact machine type and its serial number.
- When ordering any consumables or spare parts, please use this manual and the Haulotte Essential catalogue to receive original spare parts, the only guarantee of interchangeability and perfect operation.
- In the event of malfunctions or incidents involving a HAULOTTE® machine, contact HAULOTTE Services® immediately even if no material or bodily damage is observed and we will intervene as soon as possible.

3 - Conformity

We remind you that HAULOTTE® machines comply with the provisions of the directives currently applicable to this type of machine.

Any modification without having obtained written authorization from HAULOTTE®, renders this conformity null..

HAULOTTE® cannot be held liable for the technical specifications contained in this manual.

HAULOTTE® reserves the right to make improvements or modifications to the machine without modifying this manual.

1 - Recommendations

1.1 - OPERATOR MANUAL

The operator manual is intended for HAULOTTE® machine operators.

The operator manual does not replace the basic training required for all worksite equipment operators.

This manual contains the operator instructions provided by HAULOTTE® for using the machines efficiently and safely.

The operator manual must be kept in the cab in its storage case. This manual must be made available to each operator and kept in good condition.

Additional copies can be ordered from HAULOTTE Services®.

1.2 - SYMBOLS USED

Symbols are used to alert the operator of the safety precautions or to highlight practical information.

Symbol meanings

Symbol	Meaning
	Danger : Risk of injury or death (work safety)
	Caution : Risk of material damage (work quality)
	Prohibition relating to work safety and quality
	Reminder : No identified risk but a reminder of common sense, good practice or pre-action prerequisites
	Cross-reference to another part of the manual (see section or sheet)
	Cross-reference to another manual (see manual)
	Cross-reference to repairs (contact HAULOTTE Services®)
N.B. :	Additional technical information

1.3 - LABEL COLOURS

The potential dangers and specific regulations are indicated on the machine by labels and identification plates.

The labels must be kept in good condition. Additional labels can be obtained from HAULOTTE Services®.

Familiarize yourself with the labels and their respective color codes.

Label color code CE - AS

Labels	Color	Meaning
	Red	Potentially fatal danger
	Orange	Risk of serious injury
	Yellow	Risk of material damage and/or minor injury
	Other	Additional technical information

Label color code ANSI - CSA

Labels	Color	Meaning
	Red	Potentially fatal danger
	Orange	Risk of serious injury
	Yellow	Risk of material damage and/or minor injury
	Other	Additional technical information
	Green	CSA maintenance operation or information

2 - Pre-operation instructions

2.1 - GENERAL INSTRUCTIONS

Never operate the machine in the following situations :

- On a soft, unstable or cluttered ground.
- With wind blowing faster than the permissible limit. Check the maximum value in the technical characteristics (Section G 1- Main characteristics). Consult the Beaufort scale (Section A 3.2.3- Risk of jerks and overturning).
- Close to power lines. Respect the safety distance (Section A 3.2.1- Risk of electrocution).
- At temperatures higher than 45 °C (113 °F) and lower than -15 °C (5 °F). Consult HAULOTTE® if it is necessary to work outside this range.
- In explosive atmosphere.
- During storms (risk of lightning).
- In the presence of strong electromagnetic field (radar ...).

2.2 - SPECIFIC INSTRUCTIONS

Never operate the machine in the following situations :

- If the load in the platform exceeds the maximum load authorized. Check the maximum value in the technical characteristics (Section G 1- Main characteristics).
- If the ground has more slope than the permissible limit.. Check the maximum value in the technical characteristics (Section G 1- Main characteristics).
- For HA16PE only : In a non-ventilated area, the exhaust gases being toxic.
- At night if not equipped with the optional light.
- If the number of persons is more than the number permissible. Check the maximum value in the technical characteristics (Section G 1- Main characteristics)
- If the side force in the platform is more than the permissible force. Check the maximum value in the technical characteristics (Section G 1- Main characteristics)

3 - Operation instructions



The operation of the machine is recommended on flat, developed ground (tarmac, concrete, etc.).

3.1 - PROHIBITIONS



- **Never use a defective machine (hydraulic leakage, worn out tyres, malfunction).**
- **Never operate the machine controls with sudden actions.**
- **Never place the machine against a structure to maintain this structure.**
- **Never use the machine to tow or drag.**
- **Never expose the batteries or electrical components to water (pressure cleaner, rain).**
- **Never neutralize the securities.**
- **Do not hit a fixed or mobile obstacle. The contact can cause premature deterioration of the structure and lead to the rupture of certain safety elements.**
- **Do not climb on the hoods.**
- **Never use the machine alone. It must be operated by pairs of operators.**
- **Never use the machine with a cluttered platform.**
- **Never increase the surface in the platform by using floor extensions or accessories not authorized by HAULOTTE®.**
- **Never leave the hydraulic cylinders entirely extended or retracted before switching the machine off, or during an extended stop period.**



- **Never use the machine with material or objects hanging from the guardrail or the boom.**
- **Never use the machine with the elements that can increase the load of the wind (board).**
- **Never increase the height of work by using attachments (ladder).**
- **Never use the guardrail as the means of access to climb up or down the platform. Steps have been provided to this effect on the platform.**
- **Never climb on the guardrail.**
- **Never use the machine without installing the sliding midrail or without closing the safety gate.**
- **Never use the machine as crane, goods lift or elevator.**
- **Never use the machine for any other purpose than to transport people, their tools and material to the desired place.**
- **Never drive fast in narrow or badly cleared areas. Keep speed under control on bends.**
- **Never tow the machine (it must be transported on a trailer).**
- The LPG bottle must be firmly attached in the correct position.

- Check the bottle and its connections regularly (every 250h) to detect any leaks. Never use matches. Always use a specially-designed leak detector product.
- The outside of the LPG bottle must always be kept free of rust by regularly applying specific paint protection.

3.2 - POTENTIAL RISKS

3.2.1 - Risk of command system disturbance

Risk of disrupted movement close to high voltage lines or magnetic fields.

3.2.2 - Risk of falling



On board the machine, respect the following instructions :

- Carry individual protection equipment adapted to the work conditions and local rules. Wearing of an approved helmet is strongly recommended.
- The occupants of the platform must wear a buckle or a safety harness (1 per person).
- Avoid hitting fixed or mobile obstacles (other machines).
- Ensure that the adjustable midrail is closed (low position and against the guardrails).
- During raising and driving, hold on tightly to the guardrails.
- Do not sit, stand, or climb on the guard rails of the platform.
- Constantly keep the feet firmly on the floor of the platform.
- Remove any trace of oil or grease on the steps, floor, handrail and the guardrails.
- Keep the floor of the platform free of debris.
- Do not leave the platform if the machine is not in stowed position.

To climb up or climb down from the platform : :

- The machine must be completely stowed.
- Face the machine to use the access hatch
- Keep 3 support points between the steps and the guardrail



3.2.3 - Risk of electrocution



This machine is not isolated and does not offer any protection.

The risks of electrocution are high in the following situations :

- Close to live power lines, consider the movement of the machine and the swaying of the electric power lines.
- In case of hitting a high voltage line, wait for the power cut of the high voltage line before using the machine (clearance, distancing of the machine).
- During storms.

Never use the machine as a solder mass.

Maintain a minimum safe distance with regard to lines and electrical devices.

Respect the local rules and the minimum safety distance.

Minimum safety distance

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

N.B.-:-THIS TABLE IS APPLICABLE, EXCEPT WHEN THE LOCAL REGULATIONS ARE MORE STRICT.

3.2.4 - Risk of jerks and overturning



On board the machine, respect the following instructions :

- Before engaging the machine on any internal or external surface (premises, bridge, truck, etc.), check that the ground is capable of supporting the load. Check the maximum value in the technical characteristics (Section G 1- Main characteristics).
- During movement reversal from the upper or lower console, the joysticks or switches must be stopped in the neutral position.
- According to the overall dimensions, place the loads in the centre of the platform or distribute them in a uniform manner.
- On platforms, footpaths, etc. remain vigilant of the reversal of driving direction. Check the driving direction with the help of the red or green arrow on the chassis and on the upper console.
- Make sure that the chassis is never closer than 1 m (3 ft 3 in) m to holes, bumps, steep slopes, obstructions, debris and ground covering which may hide holes and other dangers.

A - Safety precautions

- Do not drive the machine on slopes or tilts beyond limits. Check the maximum value in the technical characteristics(Section G 1- Main characteristics).
- Do not descend slopes at high speed.
- Do not raise the platform or drive with the platform raised on slopes or when the machine is tilted.
- Do not drive in reverse (direction opposite to the field of vision).
- Do not pull or push objects with the boom.
- Never use the machine in winds exceeding the authorized limit.
- Do not increase the surface area exposed to the wind. The greater the surface area exposed, the more unstable the machine becomes.

- Do not drive the machine on slopes or tilts beyond limits. Check the maximum value in the technical characteristics(Section G 1- Main characteristics).
- Do not descend slopes at high speed.
- Do not raise the platform or drive with the platform raised on slopes or when the machine is tilted.
- Do not drive in reverse (direction opposite to the field of vision).
- Never use the machine in winds exceeding the authorized limit.
- Do not increase the surface area exposed to the wind. The greater the surface area exposed, the more unstable the machine becomes.

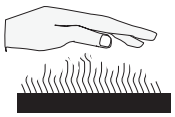
N.B.-:-THE BEAUFORT SCALE MEASURES THE WIND FORCE WITH A GRADUATION SYSTEM. A WIND SPEED RANGE AT 10 M (32 FT 9 IN) ABOVE FLAT, CLEAR LAND IS ASSOCIATED WITH EACH DEGREE.

A- Safety precautions

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. Weathervanes turn.	1,6 - 3,3	6 - 11	3,72 - 6,84
3	Slight breeze	Leaves and small branches in constant movement.. Flags move slightly.	3,4 - 5,4	12 - 19	7,46 - 11,8
4	Nice breeze	Dust and loose papers fly. Small branches bend.	5,5 - 7,9	20 - 28	12,43 - 17,4
5	Nice breeze	Small trees sway. Crested wavelets form on inland waters.	8,0 - 10,7	29 - 38	18,02 - 23,6
6	Cool wind	Large branches shake. Power lines and chimneys 'sing'. It is difficult to use an umbrella.	10,8 - 13,8	39 - 49	24,23 - 30,45
7	Strong cool wind	All trees shake. Walking against the wind becomes difficult.	13,9 - 17,1	50 - 61	31 - 37,9
8	Squall	Some branches break. Generally we cannot walk against the wind.	17,2 - 20,7	62 - 74	38,53 - 45,98
9	Strong squall	The wind causes slight damage to buildings. Tiles and chimney stacks are blown off.	20,8 - 14,4	75 - 88	46,60 - 54,68

3.2.5 - Risk of burns and explosion



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

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

- **Do not work in an explosive or inflammable ambience (spark, flame, etc.).**
- **Do not touch the hot parts of the motorization system (engine, filters, etc.).**
- **Do not use a tool to make contact between the battery terminals.**
- **Do not manipulate the battery close to a spark, flame, glowing tobacco (emission of gas).**
- For HA16PE only : Do not fill up the fuel tank, when the engine is running and/or close to a naked flame.

3.2.6 - Risk of crushing and collision



On board the machine, respect the following instructions :

- During operation, keep all the parts of the body inside the platform.
- Adapt the movement speed according to the ground conditions (traffic, slope, etc.).
- Respect stopping distances :
  - 3 m (9 ft 10 in) at fast speed.
  - 1 m (3 ft 3 in) at slow speed.
- To position the machine close to obstacles, use the lifting controls (arm, boom, etc.) instead of the drive controls.
- Make sure there are no obstacles (structure) in the work area.
- When moving, position the platform so as to have the best possible visibility.
- Always have someone to guide manoeuvres in case of low visibility.
- All personnel on the machine or on the ground must wear a safety helmet.
- When raising or lowering the machine, and during drive, the operator must check that the area above, below and on each side of the machine, is clear.
- When moving the machine, ensure that there are no people or obstacles in the way..



Do not operate other machines (crane, platform, etc.) in the work area.

Take into account the distance, reduced visibility and dead angles during the driving and/or use of the machine.

A- Safety precautions

B - Intervenor's responsibility

1 - Owner's (or hirer's) responsibility

The owner (or hirer) has the obligation to inform operators of the operator manual instructions.

The owner (or hirer) has the obligation to renew all manuals or labels that are either missing or in bad condition. Additional copies can be ordered from HAULOTTE Services®.

The owner (or hirer) is responsible for applying the local regulations regarding operation.

2 - Employer's responsibility

The employer is obliged to issue a driving permit to the operator.

The employer is obliged to inform the operator of the local regulations.



Forbid machine operation to anyone :
- **Under the influence of drugs, alcohol, etc..**
- **subject to fits, loss of motricity, dizziness, etc..**

3 - Trainer's responsibility

The trainer must be qualified to provide training to operators. The training must be given in an obstacle-free area until the trainee is able to drive and operate the machine safely.

4 - Operator's responsibility

The operator must read and understand this manual and the labels affixed on the machine.

The operator must inform the owner (or hirer) if the manual or any labels are missing or in bad condition, and of any malfunction of the machine.

The operator may only operate the machine for the purpose intended by the manufacturer.

Only authorized and qualified operators may operate HAULOTTE® machines.

All operators must be familiar with the emergency controls and how to operate the machine in an emergency.

The operator must stop using the machine in the event of malfunction or safety problems on the machine or in the work area.

5 - Inspection and maintenance

The inspection and maintenance table identifies the role and the responsibilities of each party in regular machine maintenance.

If the machine is operated in a hostile environment or intensively, increase the frequency of maintenance.

Inspections and maintenance

Type of intervention	Frequency	Person-in-charge	Intervenor	Reference document
Pre-delivery inspection	Before each delivery of sold, hired or resold equipment	Owner (or hirer)	Qualified HAULOTTE Services® technician	Operator manual
Pre-operation inspection	Before operation or when the operator changes	Operator	Operator	Operator manual
Regular preventive maintenance	At the specified intervals (250h or 1 year)	Owner (or hirer)	On-site technician or qualified HAULOTTE Services® technician	Maintenance book
Regular visit	2 times a year or at the latest 6 months after the last regular visit, and according to the local regulations	Owner (or hirer)	Organization or technician approved by the employer or by the intermediary of HAULOTTE Services® in accordance with the HAULOTTE Services® contract	Maintenance book

B - Intervenor's responsibility

1 - Identification

The identification plate fixed to the rear right side of the chassis bears all the indications allowing machine identification.

For any request for information, intervention or spare parts, specify the type and serial number of the machine.

Identification plate CE

A3



Identification plate AS

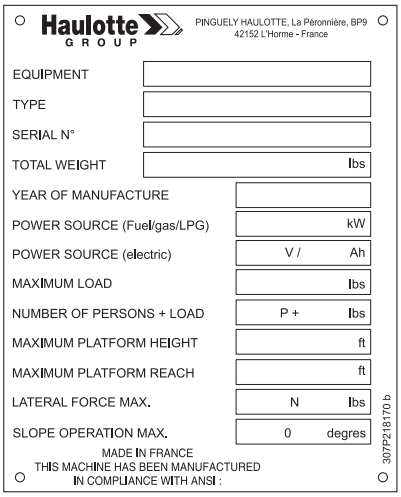
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C - Machine layout

Identification plate ASNI - CSA

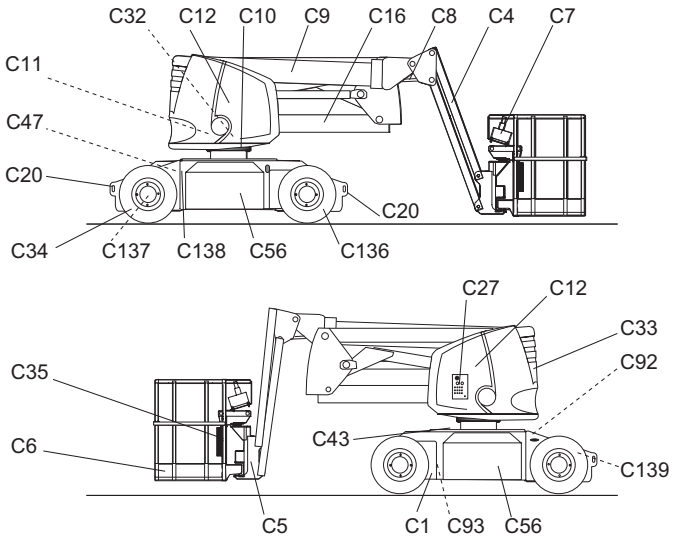
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2 - Main components

2.1 - ELECTRICAL VERSION

View of the components HA12IP (HA33JE)



Description of the components

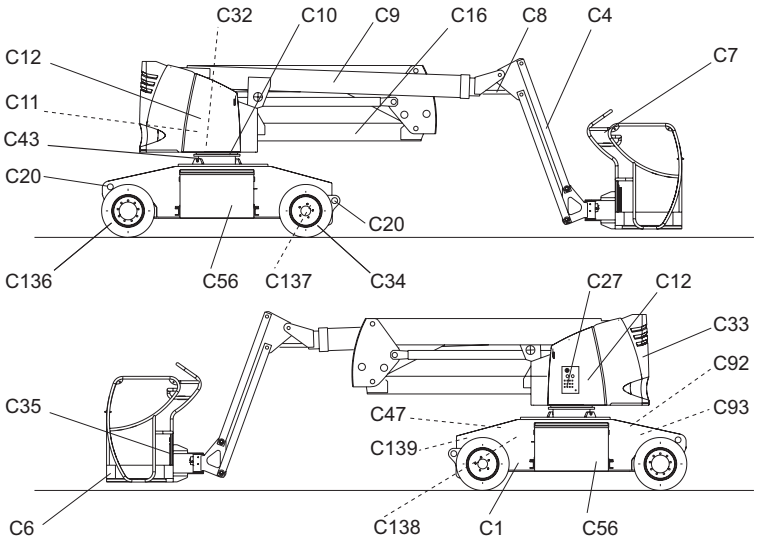
Marking	Description
C1	Dolly
C4	Jib
C5	Platform support with load limiter
C6	Platform
C7	Upper console
C8	Compensation receiver cylinder
C9	Boom
C10	Rotation crown gear
C11	Turntable
C12	Hood
C16	Arm
C20	Tie-down and lift lug
C27	Lower console
C32	Direction reducer
C33	Counterweight
C34	Drive wheel
C35	Document carrier
C43	Turntable rotation blocking pin
C47	Battery cut-off
C56	Battery bay
C92	Hydraulic filter
C93	Electropump unit

C - Machine layout

Marking	Description
C136	Steering wheels
C137	Electric drive motor
C138	Battery charger
C139	Electronic speed controller

C - Machine layout

View of the components HA15IP (HA43JE)

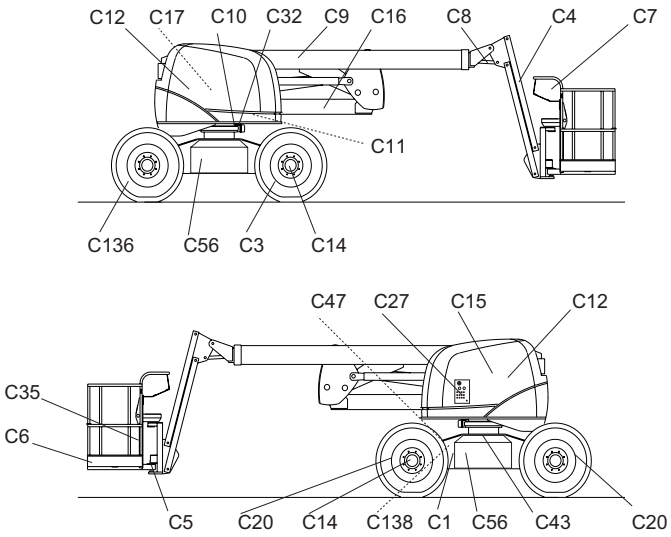


Description of the components

Marking	Description
C1	Dolly
C4	Jib
C6	Platform
C7	Upper console
C8	Compensation receiver cylinder
C9	Boom
C10	Rotation crown gear
C11	Turntable
C12	Hood
C16	Arm
C20	Tie-down and lift lug
C27	Lower console
C32	Direction reducer
C33	Counterweight
C34	Drive wheel
C35	Document carrier
C43	Turntable rotation blocking pin
C47	Battery cut-off
C56	Battery bay
C92	Hydraulic filter
C93	Electropump unit
C136	Steering wheels
C137	Electric drive motor
C138	Battery charger
C139	Electronic speed controller

C - Machine layout

View of the components HA16PE



Description of the components

Marking	Description
C1	Dolly
C3	Rear driven steering wheel
C4	Jib
C5	Platform support with load limiter
C6	Platform
C7	Upper console
C8	Compensation receiver cylinder
C9	Boom
C10	Rotation crown gear
C11	Turntable
C12	Hood
C14	Hydraulic drive motor and gears
C15	Right compartment (hydraulic tank and fuel tank)
C16	Arm
C17	Left compartment (engine, pump and starter battery)
C20	Tie-down and lift lug
C27	Lower console
C32	Direction reducer
C35	Document carrier
C43	Turntable rotation blocking pin
C47	Battery cut-off
C56	Battery bay
C136	Steering wheels
C138	Battery charger

3 - Safety devices

3.1 - TURNTABLE ROTATION PIN

Turntable rotation pin allows blocking the turntable during transportation of the machine.



After each transportation, remove the turntable rotation pin.

3.2 - SLIDING MID-RAIL

The platform is composed of guardrails and a sliding midrail facilitating access to the platform.



Do not attach the sliding midrail to the guard rail.

3.3 - ANCHORAGE POINT

The machine is equipped with approved anchorage points accepting a single harness per anchorage point. The anchorage points are identified by the presence of the Anchorage point label.



If the local regulation imposes the wearing of a harness, use the approved anchorage points.

4 - Labels

4.1 - CLASSIFICATION PLAN

4.1.1 - Red labels

The red labels indicate a potentially fatal danger.

Common labels

R7



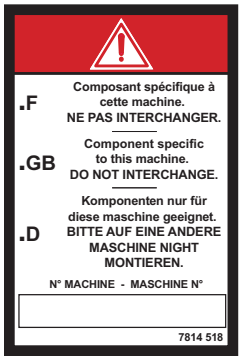
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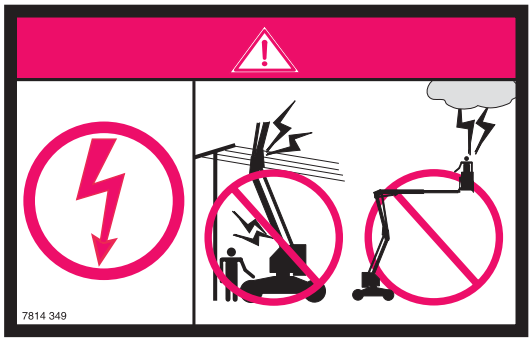
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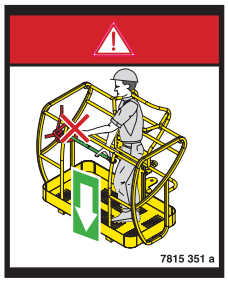
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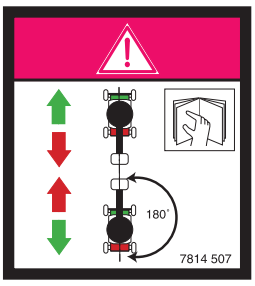
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R8



R2



R17



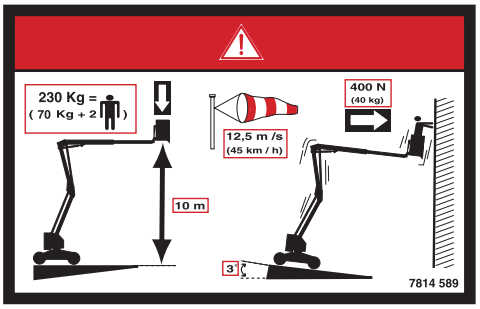
R21



C - Machine layout

Specific labels HA12IP (HA33JE)

R1

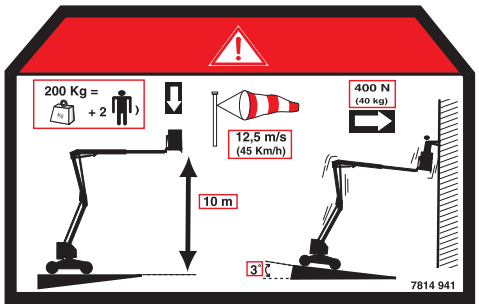


R9



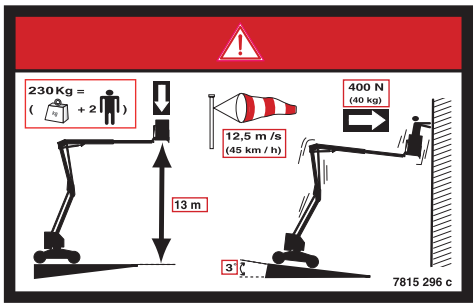
Specific labels HA12IP (HA33JE) Option Wide platform

R1



Specific labels HA15IP (HA43JE)

R1

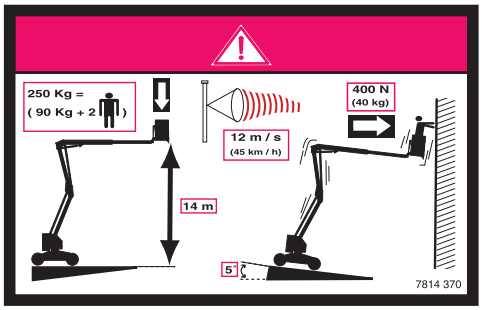


R9



Specific labels HA16PE

R1



R9

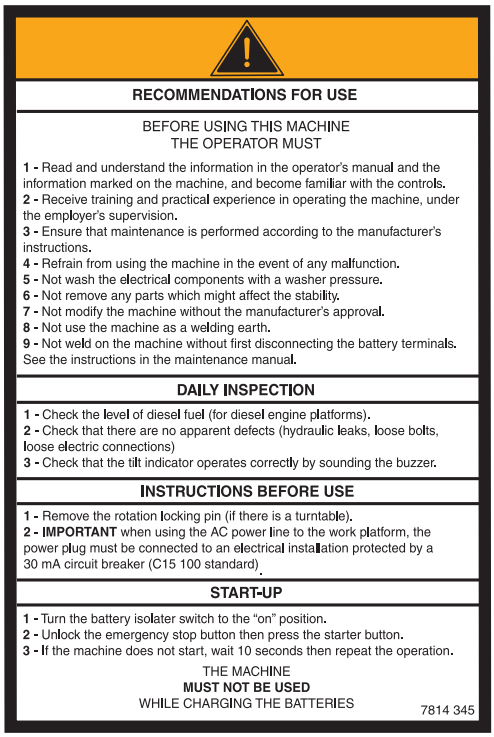


4.1.2 - Orange labels

The orange labels indicate a risk of serious injury.

Common labels CE

O1



RECOMMENDATIONS FOR USE

BEFORE USING THIS MACHINE
THE OPERATOR MUST

1 - Read and understand the information in the operator's manual and the information marked on the machine, and become familiar with the controls.
2 - Receive training and practical experience in operating the machine, under the employer's supervision.
3 - Ensure that maintenance is performed according to the manufacturer's instructions.
4 - Refrain from using the machine in the event of any malfunction.
5 - Not wash the electrical components with a washer pressure.
6 - Not remove any parts which might affect the stability.
7 - Not modify the machine without the manufacturer's approval.
8 - Not use the machine as a welding earth.
9 - Not weld on the machine without first disconnecting the battery terminals.
See the instructions in the maintenance manual.

DAILY INSPECTION

1 - Check the level of diesel fuel (for diesel engine platforms).
2 - Check that there are no apparent defects (hydraulic leaks, loose bolts, loose electric connections)
3 - Check that the tilt indicator operates correctly by sounding the buzzer.

INSTRUCTIONS BEFORE USE

1 - Remove the rotation locking pin (if there is a turntable).
2 - IMPORTANT when using the AC power line to the work platform, the power plug must be connected to an electrical installation protected by a 30 mA circuit breaker (C15 100 standard).

START-UP

1 - Turn the battery isolater switch to the "on" position.
2 - Unlock the emergency stop button then press the starter button.
3 - If the machine does not start, wait 10 seconds then repeat the operation.

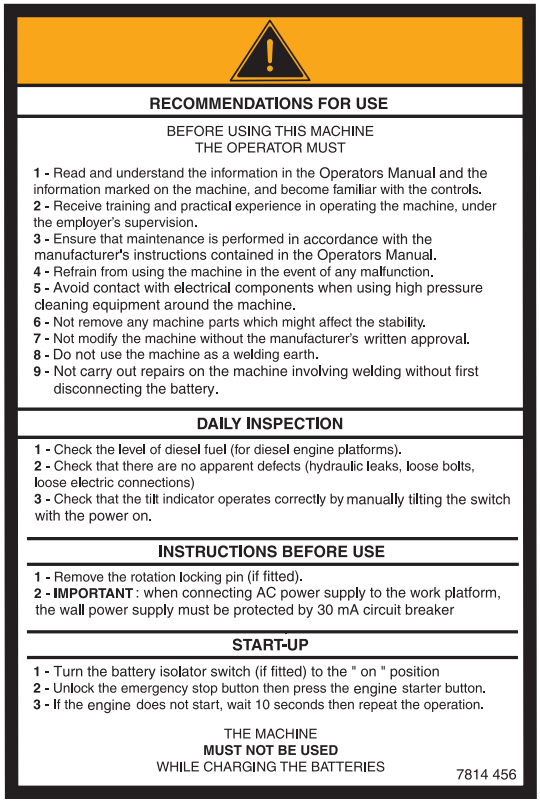
THE MACHINE
MUST NOT BE USED
WHILE CHARGING THE BATTERIES

7814 345

C - Machine layout

Common labels AS

O1



RECOMMENDATIONS FOR USE

BEFORE USING THIS MACHINE
THE OPERATOR MUST

1 - Read and understand the information in the Operators Manual and the information marked on the machine, and become familiar with the controls.
2 - Receive training and practical experience in operating the machine, under the employer's supervision.
3 - Ensure that maintenance is performed in accordance with the manufacturer's instructions contained in the Operators Manual.
4 - Refrain from using the machine in the event of any malfunction.
5 - Avoid contact with electrical components when using high pressure cleaning equipment around the machine.
6 - Not remove any machine parts which might affect the stability.
7 - Not modify the machine without the manufacturer's written approval.
8 - Do not use the machine as a welding earth.
9 - Not carry out repairs on the machine involving welding without first disconnecting the battery.

DAILY INSPECTION

1 - Check the level of diesel fuel (for diesel engine platforms).
2 - Check that there are no apparent defects (hydraulic leaks, loose bolts, loose electric connections)
3 - Check that the tilt indicator operates correctly by manually tilting the switch with the power on.

INSTRUCTIONS BEFORE USE

1 - Remove the rotation locking pin (if fitted).
2 - IMPORTANT : when connecting AC power supply to the work platform, the wall power supply must be protected by 30 mA circuit breaker

START-UP

1 - Turn the battery isolator switch (if fitted) to the " on " position
2 - Unlock the emergency stop button then press the engine starter button.
3 - If the engine does not start, wait 10 seconds then repeat the operation.

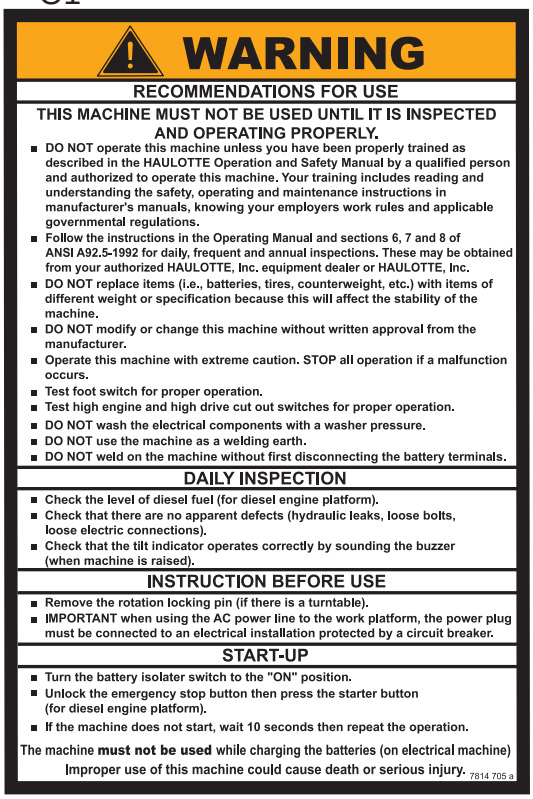
THE MACHINE
MUST NOT BE USED
WHILE CHARGING THE BATTERIES

7814 456

C - Machine layout

Common labels ANSI - CSA

O1



WARNING

RECOMMENDATIONS FOR USE

THIS MACHINE MUST NOT BE USED UNTIL IT IS INSPECTED AND OPERATING PROPERLY.

- DO NOT operate this machine unless you have been properly trained as described in the HAULOTTE Operation and Safety Manual by a qualified person and authorized to operate this machine. Your training includes reading and understanding the safety, operating and maintenance instructions in manufacturer's manuals, knowing your employers work rules and applicable governmental regulations.
- Follow the instructions in the Operating Manual and sections 6, 7 and 8 of ANSI A92.5-1992 for daily, frequent and annual inspections. These may be obtained from your authorized HAULOTTE, Inc. equipment dealer or HAULOTTE, Inc.
- DO NOT replace items (i.e., batteries, tires, counterweight, etc.) with items of different weight or specification because this will affect the stability of the machine.
- DO NOT modify or change this machine without written approval from the manufacturer.
- Operate this machine with extreme caution. STOP all operation if a malfunction occurs.
- Test foot switch for proper operation.
- Test high engine and high drive cut out switches for proper operation.
- DO NOT wash the electrical components with a washer pressure.
- DO NOT use the machine as a welding earth.
- DO NOT weld on the machine without first disconnecting the battery terminals.

DAILY INSPECTION

- Check the level of diesel fuel (for diesel engine platform).
- Check that there are no apparent defects (hydraulic leaks, loose bolts, loose electric connections).
- Check that the tilt indicator operates correctly by sounding the buzzer (when machine is raised).

INSTRUCTION BEFORE USE

- Remove the rotation locking pin (if there is a turntable).
- IMPORTANT when using the AC power line to the work platform, the power plug must be connected to an electrical installation protected by a circuit breaker.

START-UP

- Turn the battery isolater switch to the "ON" position.
- Unlock the emergency stop button then press the starter button (for diesel engine platform).
- If the machine does not start, wait 10 seconds then repeat the operation.

The machine **must not be used** while charging the batteries (on electrical machine)

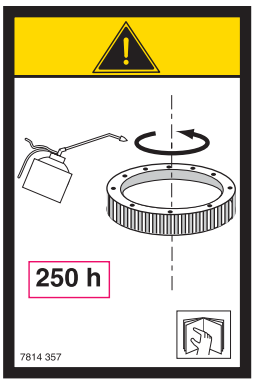
Improper use of this machine could cause death or serious injury. 7814 705 a

4.1.3 - Yellow labels

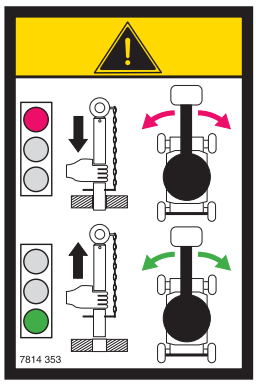
The yellow labels indicate a risk of material damage and/or minor injury.

Common labels

J1



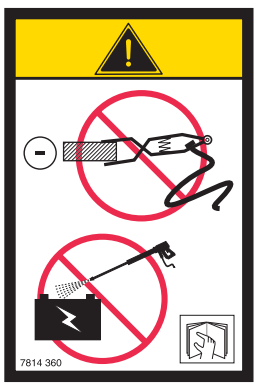
J2



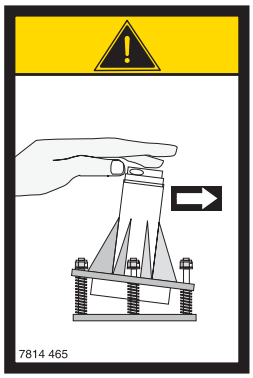
J3



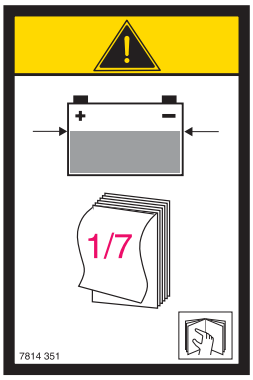
J4



J6



J13



J10



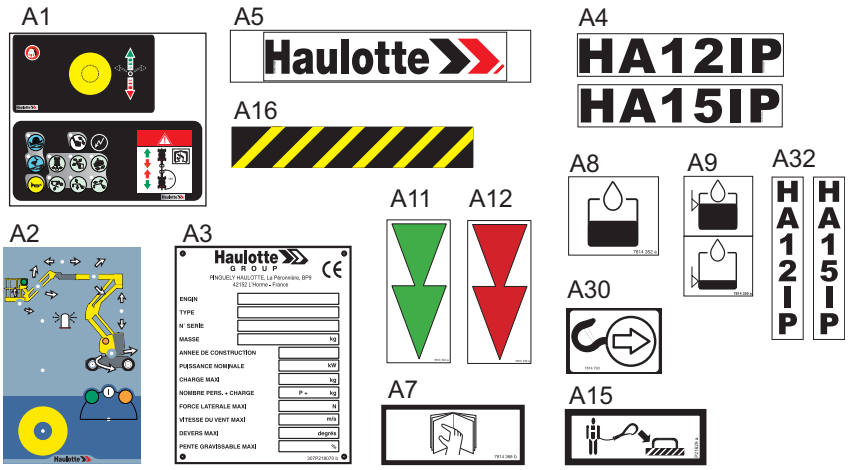
J14



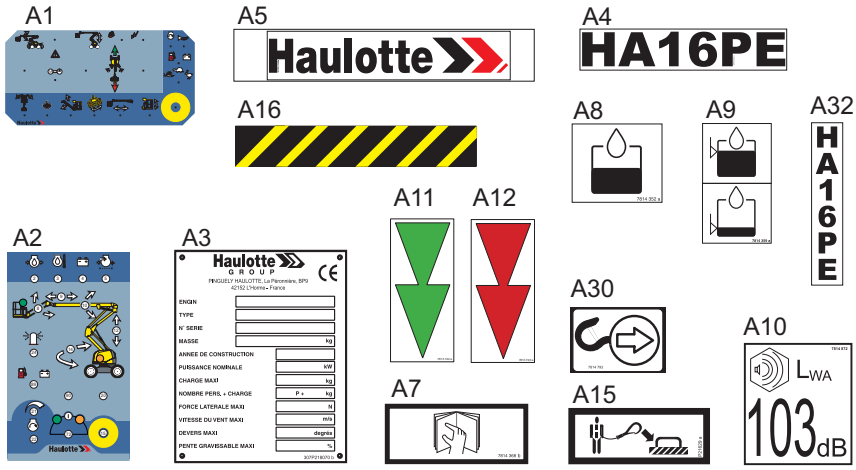
4.1.4 - Other labels

The other labels provide additional technical information.

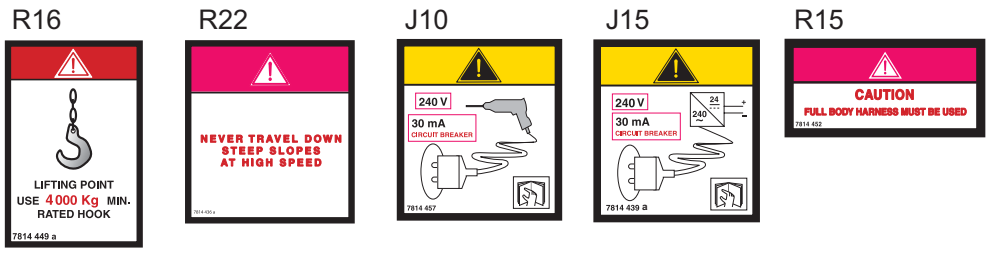
Specific labels HA12IP (HA33JE)- HA15IP (HA43JE)



Specific labels HA16PE



Specific labels AS



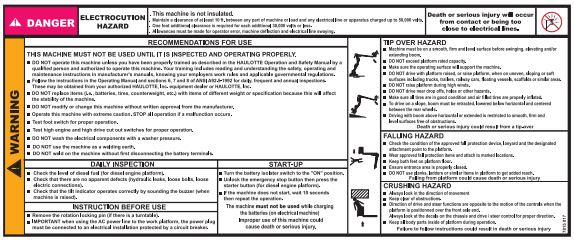
Specific labels AS : HA16PE

R14

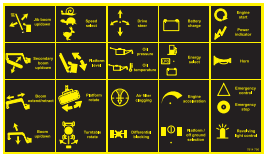


Specific labels ANSI

A29



A23



A22

Minimum safe approach distance (M.S.A.D) to energized (exposed or insulted) power lines

Voltage Range (Phase to phase)	Minimum safe approach distance	
	(Feet)	(Meters)
0 to 300 V	AVOID CONTACT	
Over 300 V to 50 kV	10	3.05
Over 50 kV to 200 kV	15	4.60
Over 200 kV to 350 kV	20	6.10
Over 350 kV to 500 kV	25	7.62
Over 500 kV to 750 kV	35	10.67
Over 750 kV to 1000 kV	45	13.72

O3



Specific labels option

A8

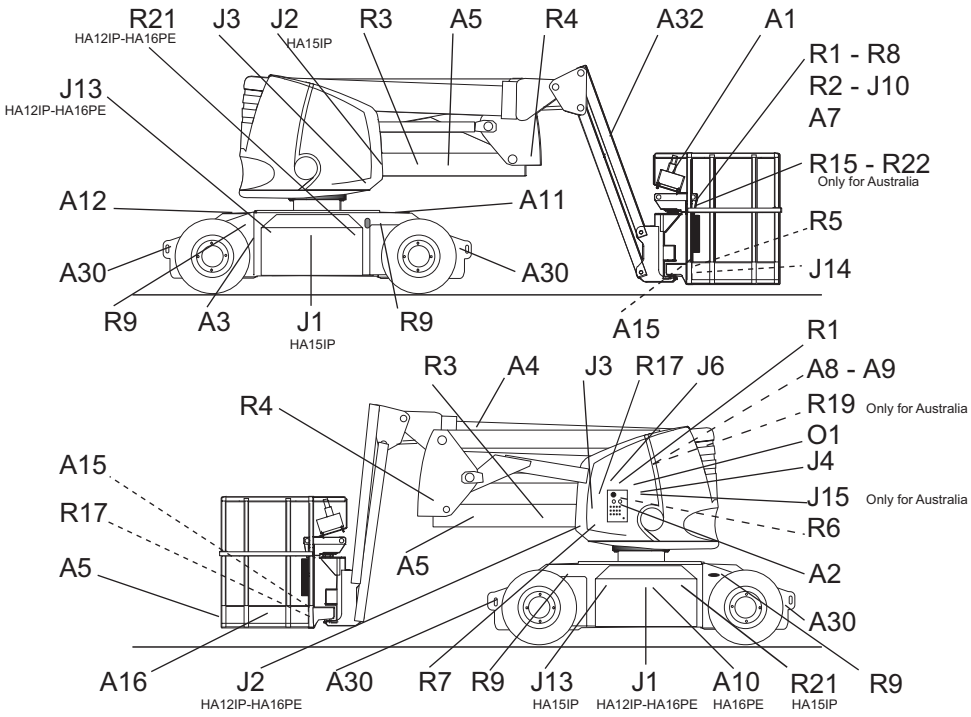


4.1.5 - Green labels

Green labels provide maintenance operation or information(CSA standard).

4.2 - IDENTIFICATION

Localization CE



C - Machine layout

Label descriptions CE

Color	Marking	Description	Quantity	HA12IP (HA33JE)	HA15IP (HA43JE)
Red	R1	Height of the floor and load	2	3078145890	3078152960
Red	R1	Height of the floor and load(Option)	2	3078149410	
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	1	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151550	3078152060
Red	R17	Do not descend slopes at high speed	1	3078143970	3078143970
Red	R21	Protective clothing required	1	3078143610	3078143610
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	1	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J10	Socket	1	3078143540	3078143540
Yellow	J13	Battery verification	1	3078143510	3078143510
Yellow	J14	Using the machine during battery charging is forbidden	1	3078143560	3078143560
Other	A1	Upper console	1	307P218040	307P218040
Other	A2	Lower console	1	307P218030	307p218030
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218260	307P218250
Other	A5	Small format HAULOTTE® logo	1	307P217080	307P217080
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078137440	3078137440
Other	A12	Rear red boom	1	3078137430	3078137430
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A32	Vertical machine name logo	1	3078148310	3078152050

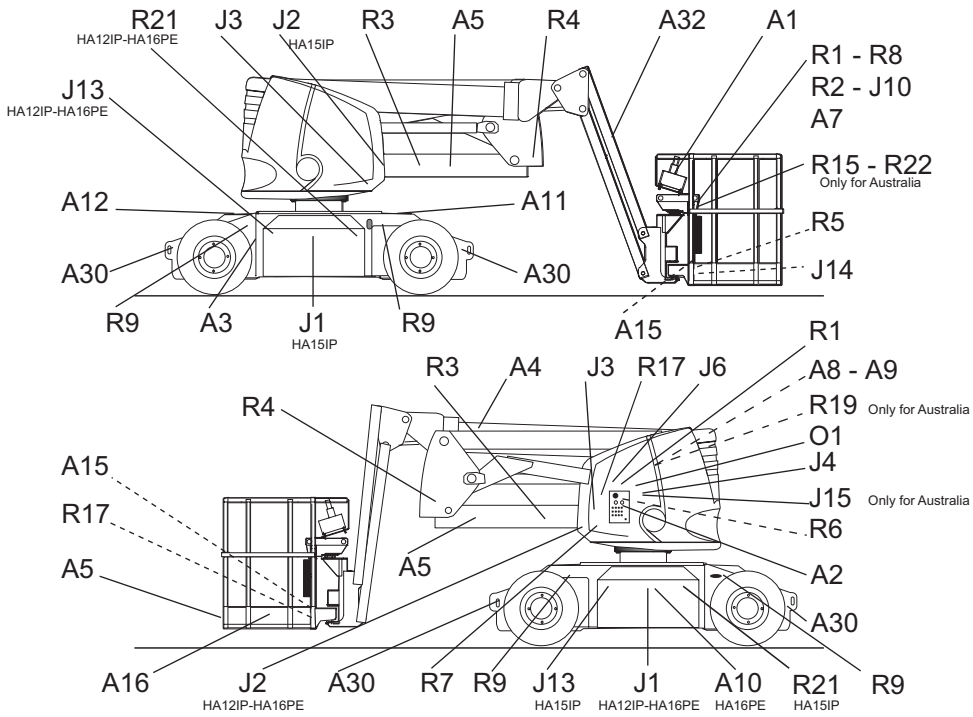
C - Machine layout

Label descriptions CE

Color	Marking	Description	Quantity	HA16PE
Red	R1	Height of the floor and load	2	3078143700
Red	R2	Driving direction	1	3078145070
Red	R3	Risk of crushed hands	2	3078143620
Red	R4	Risk of body crushing	2	3078143630
Red	R5	Danger of electrocution	1	3078143490
Red	R6	Do not interchange	1	3078145180
Red	R7	Do not park in the work area	1	3078143550
Red	R8	Close the removable midrail	1	3078153510
Red	R9	Wheel load	4	3078151600
Red	R17	Do not descend slopes at high speed	1	3078143970
Red	R21	Protective clothing required	1	3078143610
Orange	O1	Operation instructions	1	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600
Yellow	J10	Socket	1	3078143540
Yellow	J13	Battery verification	1	3078143510
Yellow	J14	Using the machine during battery charging is forbidden	1	3078143560
Other	A1	Upper console	1	307P217990
Other	A2	Lower console	1	3078143040
Other	A3	Identification plate	1	307P218080
Other	A4	Machine name logo	1	307P218270
Other	A5	Small format HAULOTTE® logo	3	307P217770
Other	A7	Read the operation manual	1	3078143680
Other	A8	Hydraulic oil	1	3078143520
Other	A8	Biodegradable oil	1	3078148890
Other	A9	Upper and lower oil level	1	3078143590
Other	A10	Sound power	1	3078148700
Other	A11	Front green boom	1	3078137440
Other	A12	Rear red boom	1	3078137430
Other	A15	Harness location	2	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660
Other	A30	Machine anchorage points	2	3078147930
Other	A32	Vertical machine name logo	1	3078148580

C - Machine layout

Localization AS



Label descriptions AS

Color	Marking	Description	Quantity	HA12IP (HA33JE)	HA15IP (HA43JE)
Red	R1	Height of the floor and load	2	3078145890	3078152960
Red	R1	Height of the floor and load(Option)	2	3078149410	
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	1	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151550	3078152060
Red	R15	Harness use	1	3078144520	3078144520
Red	R16	Load strength on each slings	4	3078144490	3078144490
Red	R17	Do not descend slopes at high speed	1	3078143970	3078143970
Red	R21	Protective clothing required	1	3078143610	3078143610
Red	R22	Do not descend slopes at high speed	1	3078144360	3078144360
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	1	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640

C - Machine layout

Color	Marking	Description	Quantity	HA12IP (HA33JE)	HA15IP (HA43JE)
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J10	Socket	1	3078144570	3078144570
Yellow	J13	Battery verification	1	3078143510	3078143510
Yellow	J14	Using the machine during battery charging is forbidden	1	3078143560	3078143560
Yellow	J15	Battery charger socket	2	3078144390	3078144390
Other	A1	Upper console	1	307P218040	307P218040
Other	A2	Lower console	1	307P218030	307P218030
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218260	307P218250
Other	A5	Small format HAULOTTE® logo	1	307P217080	307P217080
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078137440	3078137440
Other	A12	Rear red boom	1	3078137430	3078137430
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A32	Vertical machine name logo	1	3078148310	3078152050

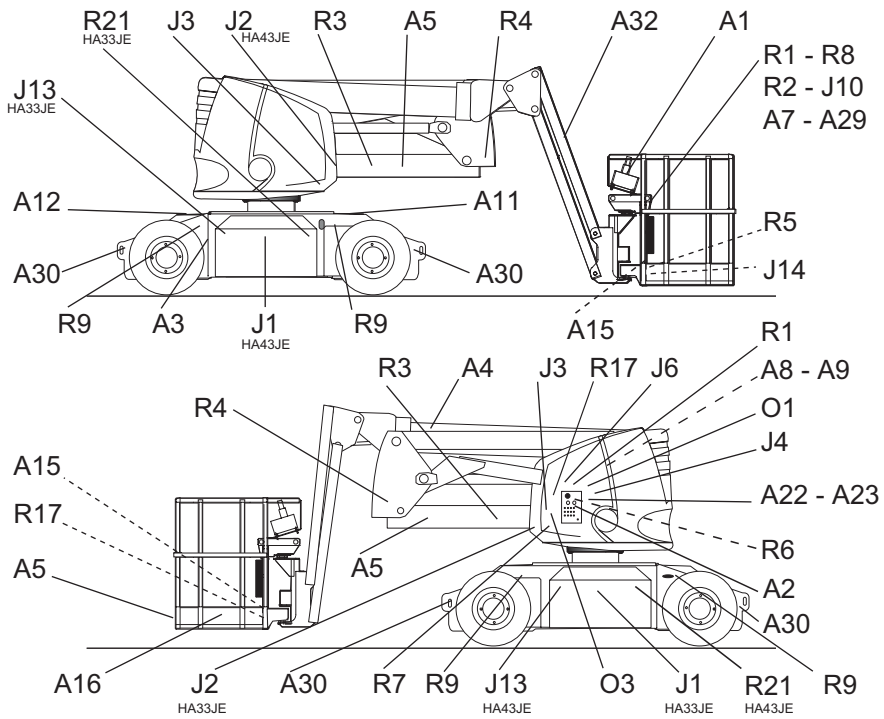
C - Machine layout

Label descriptions AS

Color	Marking	Description	Quantity	HA16PE
Red	R1	Height of the floor and load	2	3078143700
Red	R2	Driving direction	1	3078145070
Red	R3	Risk of crushed hands	2	3078143620
Red	R4	Risk of body crushing	2	3078143630
Red	R5	Danger of electrocution	1	3078143490
Red	R6	Do not interchange	1	3078145180
Red	R7	Do not park in the work area	1	3078143550
Red	R8	Close the removable midrail	1	3078153510
Red	R9	Wheel load	4	3078151600
Red	R14	Fuel filling up	1	3078144510
Red	R15	Harness use	1	3078144520
Red	R16	Load strength on each slings	4	3078144490
Red	R17	Do not descend slopes at high speed	1	3078143970
Red	R21	Protective clothing required	1	3078143610
Red	R22	Do not descend slopes at high speed	1	3078144360
Orange	O1	Operation instructions	1	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600
Yellow	J10	Socket	1	3078144570
Yellow	J13	Battery verification	1	3078143510
Yellow	J14	Using the machine during battery charging is forbidden	1	3078143560
Yellow	J15	Battery charger socket	1	3078144390
Other	A1	Upper console	1	307P217990
Other	A2	Lower console	1	3078143040
Other	A3	Identification plate	1	307P218080
Other	A4	Machine name logo	1	307P218270
Other	A5	Small format HAULOTTE® logo	3	307P217770
Other	A7	Read the operation manual	1	3078143680
Other	A8	Hydraulic oil	1	3078143520
Other	A8	Biodegradable oil	1	3078148890
Other	A9	Upper and lower oil level	1	3078143590
Other	A11	Front green boom	1	3078137440
Other	A12	Rear red boom	1	3078137430
Other	A15	Harness location	2	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660
Other	A30	Machine anchorage points	2	3078147930
Other	A32	Vertical machine name logo	1	3078148580

C - Machine layout

Localization ANSI - CSA



Label descriptions ANSI - CSA

Color	Marking	Description	Quantity	HA12IP (HA33JE)	HA15IP (HA43JE)
Red	R1	Height of the floor and load	2	3078148120	3078148120
Red	R2	Driving direction	1	3078147300	3078147300
Red	R3	Risk of crushed hands	2	3078147240	3078147240
Red	R4	Risk of body crushing	2	3078147260	3078147260
Red	R5	Danger of electrocution	1	3078147100	3078147100
Red	R6	Do not interchange	1	3078147320	3078147320
Red	R7	Do not park in the work area	1	3078147170	3078147170
Red	R8	Close the removable midrail	1	3078153630	3078153630
Red	R9	Wheel load	4	307P216650	307P215110
Red	R17	Do not descend slopes at high speed	1	3078148140	3078148140
Red	R21	Protective clothing required	1	3078147350	3078147350
Orange	O1	Operation instructions	1	3078147050	3078147050
Orange	O3	Risks of explosion	1	3078148030	3078148030
Yellow	J1	Greasing the rotation crown gear	1	3078147190	3078147190
Yellow	J2	Remove the blocking pin before rotation	1	3078147700	3078147700
Yellow	J3	Do not place your foot on the hood	2	3078147270	3078147270
Yellow	J4	Do not use the machine as a solder mass	1	3078147220	3078147220
Yellow	J10	Socket	1	3078147580	3078147580
Yellow	J13	Battery verification	1	3078147330	3078147330

C - Machine layout

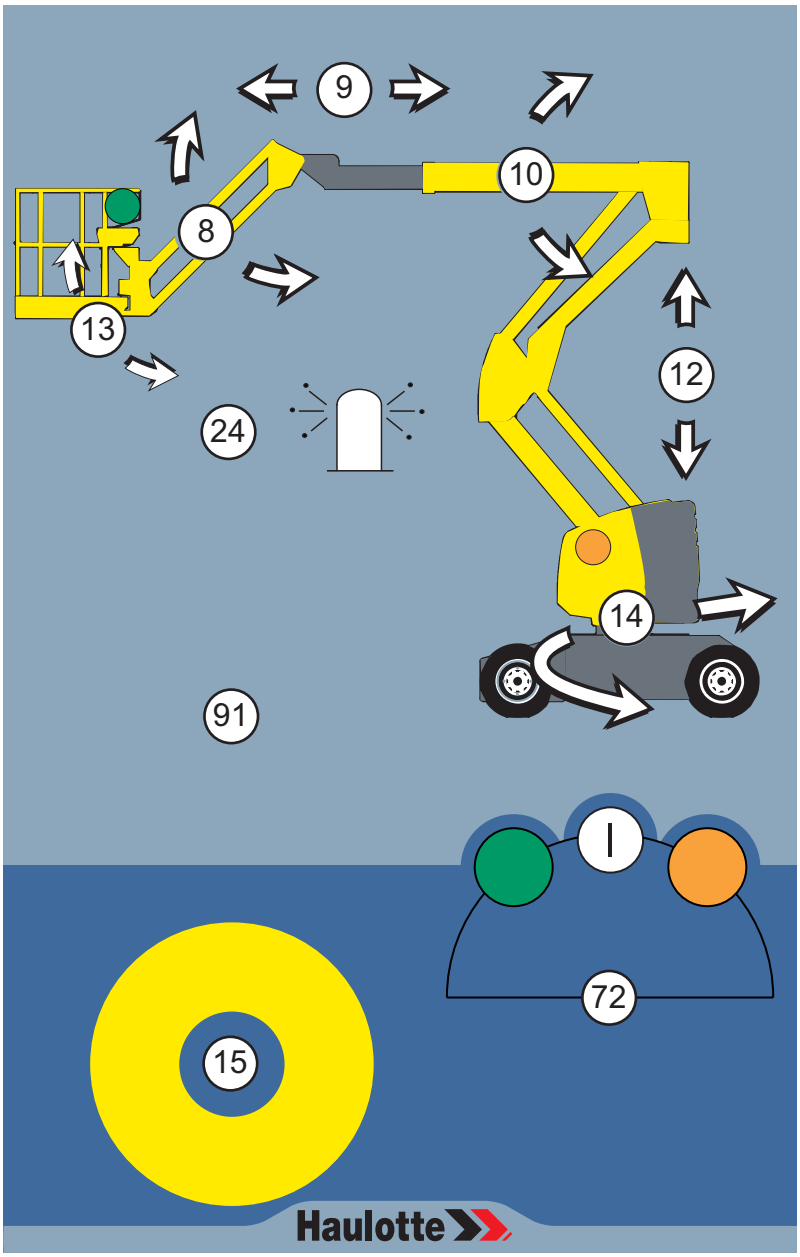
Color	Marking	Description	Quantity	HA12IP (HA33JE)	HA15IP (HA43JE)
Yellow	J14	Using the machine during battery charging is forbidden	1	3078147370	3078147370
Other	A1	Upper console	1	307P218040	307P218040
Other	A2	Lower console	1	307P218030	307P218030
Other	A3	Identification plate	1	307P218170	307P218170
Other	A4	Machine name logo	1	3078148150	3078153610
Other	A5	Small format HAULOTTE® logo	1	307P217080	307P217080
Other	A7	Read the operation manual	1	3078147290	3078147290
Other	A8	Hydraulic oil	1	3078147140	3078147140
Other	A8	Biodegradable oil	1	3078148920	3078148920
Other	A9	Upper and lower oil level	1	3078147210	3078147210
Other	A11	Front green boom	1	3078147980	3078147980
Other	A12	Rear red boom	1	3078147970	3078147970
Other	A15	Harness location	1	3078147950	3078147950
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A22	Voltage table	1	3078147890	3078147890
Other	A23	Symbols summary	1	3078147960	3078147960
Other	A27	Permissible load	1	307P200080	307P200080
Other	A29	Summary safety instructions	1	3078150170	3078150170
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A32	Vertical machine name logo	1	3078148320	3078153620

5 - Consoles

N.B.-:-THE FUNCTIONS ARE DESCRIBED FOR THE ENTIRE RANGE. REFER TO THE MACHINE CONFIGURATION TO IDENTIFY THE FUNCTIONAL CONTROLS AND INDICATORS.

5.1 - LOWER CONSOLE

General view HA12IP (HA33JE) - HA15IP (HA43JE)



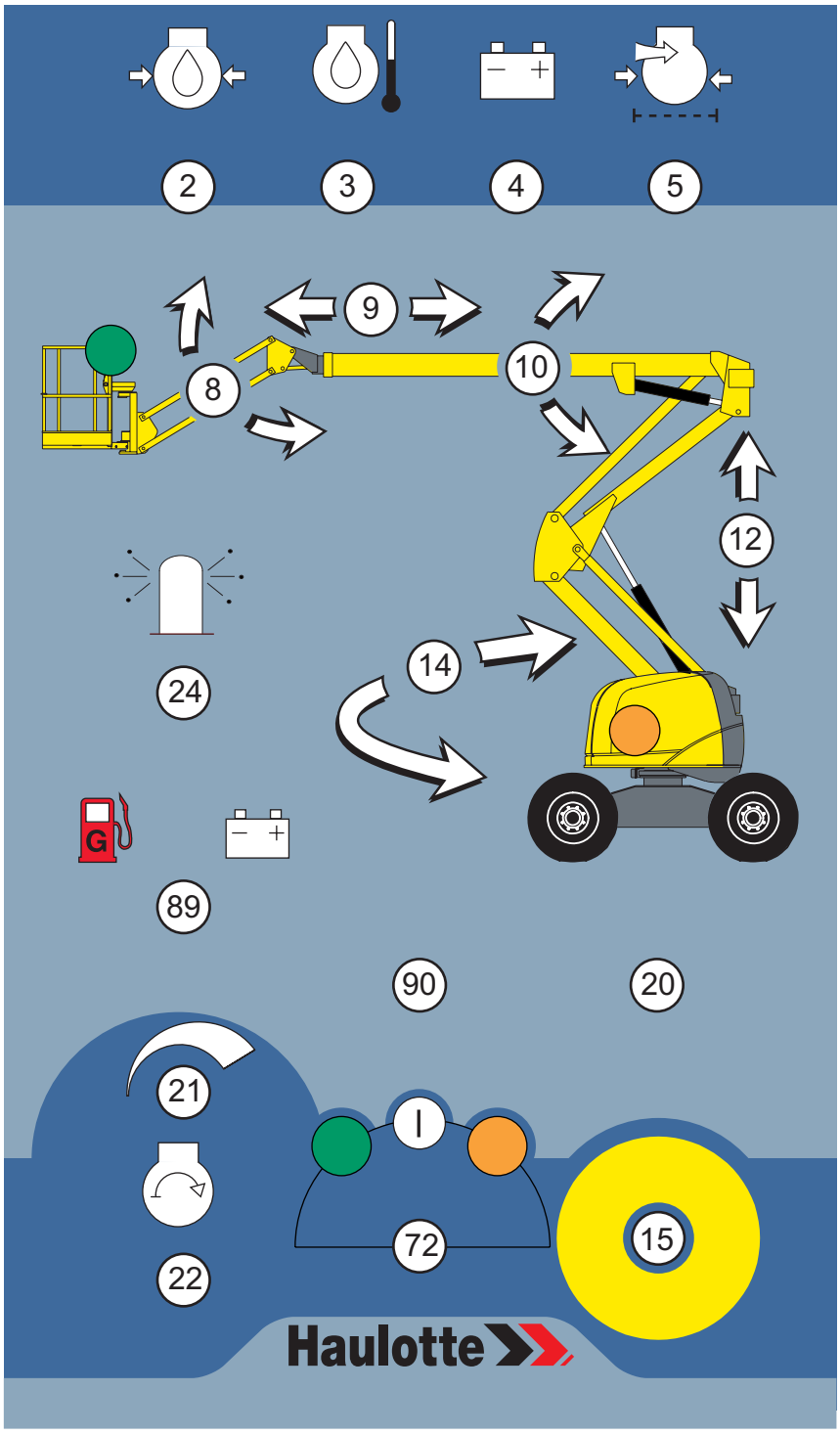
C - Machine layout

Controls and indicators HA12IP (HA33JE) - HA15IP (HA43JE)

Marking	Description	Function
P8	Jib selector	Upwards : Jib elevation
		Downwards : Jib lowering
P9	Boom telescoping selector	To the left : Telescope extension
		To the right : Telescope retraction
P10	Boom elevation selector	Upwards : Boom elevation
		Downwards : Boom lowering
P12	Arm elevation selector	Upwards : Arm elevation
		Downwards : Arm lowering
P13	Platform compensation or transport position selector	To the right : Platform compensation lowered or placed in transport position
		To the left : Platform compensation raised or placed in operating position
P14	Turntable rotation selector	To the left : Clockwise rotation
		To the right : Anti-clockwise rotation
P15	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P24	Beacon light selector	To the right : Switching on the beacon light
		To the left : Switching off the beacon light
P72	Console activation key selector	Left : Upper console activation
		Center : Switching off
		Right : Lower console activation
P91	Engine hour meter-Battery charge level LED	Number of hours of usage of the machine-Battery charge status

C - Machine layout

General view HA16PE



C - Machine layout

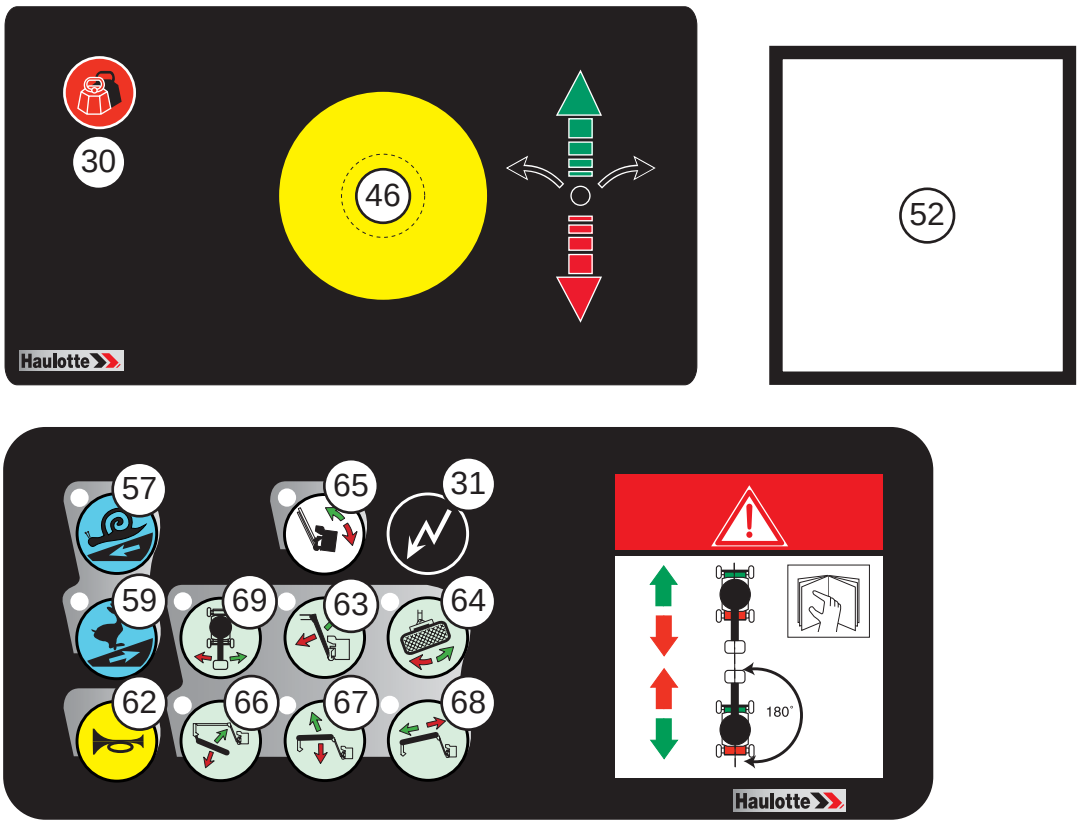
Controls and indicators HA16PE

Marking	Description	Function
P2	Engine oil pressure LED	Low engine oil pressure[1]
P3	Engine temperature LED	High engine oil temperature[1].
P4	Battery charge LED	Low battery charge[1].
P5	Air filter blockage LED	Blocked air filter[1].
P8	Jib selector	Upwards : Jib elevation
		Downwards : Jib lowering
P9	Boom telescoping selector	To the left : Telescope extension
		To the right : Telescope retraction
P10	Boom elevation selector	Upwards : Boom elevation
		Downwards : Boom lowering
P12	Arm elevation selector	Upwards : Arm elevation
		Downwards : Arm lowering
P14	Turntable rotation selector	To the left : Clockwise rotation
		To the right : Anti-clockwise rotation
P15	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P20	Engine hour meter	Number of hours of usage of the machine
P21	Engine acceleration selector	To the right : Engine rating acceleration
		To the left : Engine speed in idling
P22	Engine start-up selector	Engine start-up
P24	Beacon light selector	To the right : Switching on the beacon light
		To the left : Switching off the beacon light
P72	Console activation key selector	Left : Upper console activation
		Center : Switching off
		Right : Lower console activation
P89	Bi-energy selector	To the right : Electric power supply
		To the left : Petrol supply
P90	Battery charge level LED	Battery charge status

1. Perform the required maintenance (see the machine maintenance book)

5.2 - UPPER CONSOLE

General view HA12IP (HA33JE)-HA15IP (HA43JE)



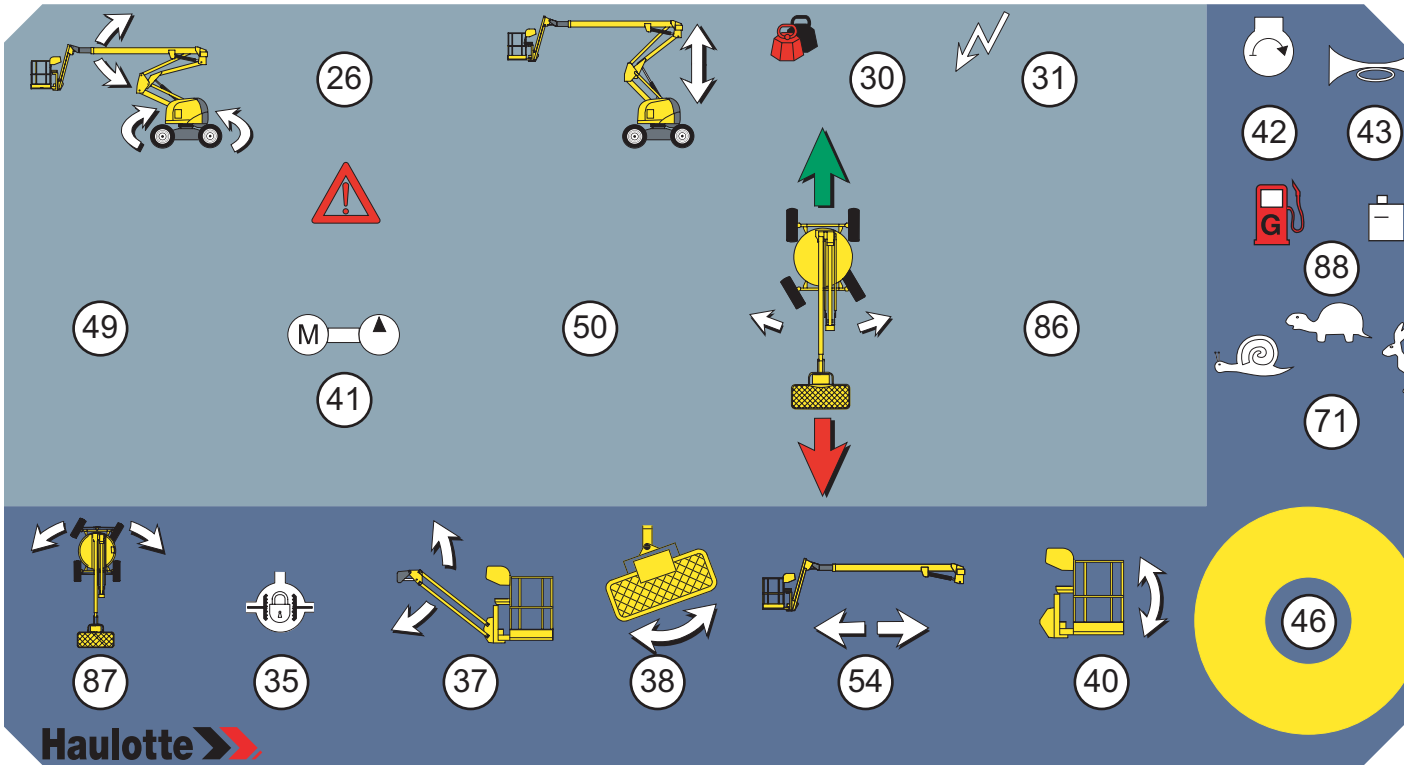
C - Machine layout

Controls and indicators HA12IP (HA33JE)-HA15IP (HA43JE)

Marking	Description	Function
P30	Platform overload LED	Platform overload
P31	LED switched on	On : Machine switched on
		Off : Machine switched off
P46	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P52	Movement lever	To the front : Forward driving, jib elevation, clockwise platform rotation, platform compensation elevation, arm elevation, boom elevation, boom telescope extension, clockwise turntable rotation
		To the rear : Reversing, jib lowering, anti-clockwise platform rotation, platform compensation lowering, arm lowering, boom lowering, boom telescope retraction, anti-clockwise turntable rotation
	Front axle direction selector	Press right : Right turn
		Press left : Left turn
P57	Sensitive selector and slow drive speed LED	Pressed (activated and LED on) : Slow drive speed selection (short distance and final approach)
P59	Sensitive selector and fast drive LED	Pressed (activated and LED on) : Fast drive selection (long distance)
P62	Horn sensitive selector	Pressed (activated) : Horn
P63	Sensitive selector and jib LED	Pressed (activated and LED on) : Jib selection
P64	Sensitive selector and platform rotation LED	Pressed (activated and LED on) : Platform rotation selection
P65	Sensitive selector and platform compensation LED	Pressed (activated and LED on) : Platform compensation selection
P66	Sensitive selector and arm elevation LED	Pressed (activated and LED on) : Arm elevation selection
P67	Sensitive selector and boom elevation LED	Pressed (activated and LED on) : Boom elevation selection
P68	Sensitive selector and boom telescoping LED	Pressed (activated and LED on) : Boom telescoping selection
P69	Sensitive selector and turntable rotation LED	Pressed (activated and LED on) : Turntable rotation selection

C - Machine layout

General view HA16PE



C - Machine layout

Controls and indicators HA16PE

Marking	Description	Function
P26	Default LED	Operation defect[1]
		Machine in tilted position
P30	Platform overload LED	Platform overload
P31	LED switched on	On : Machine switched on
		Off : Machine switched off
P35	Differential blocking selector	Maintained (activated) : Maximum torque (difficult ground or ground with a slope)
		Released (deactivated) : Standard torque
P37	Jib selector	Upwards : Jib elevation
		Downwards : Jib lowering
P38	Platform rotation selector	To the right : Anti-clockwise rotation
		To the left : Clockwise rotation
P40	Platform compensation selector	Upwards : Platform elevation
		Downwards : Platform lowering
P41	Back-up generator selector	Maintained : Back-up generator activation
		Released : Back-up generator deactivation
P42	Engine start-up selector	Engine start-up
P43	Horn selector	Horn
P46	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P49	Turntable rotation joystick	To the right : Anti-clockwise rotation
		To the left : Clockwise rotation
	Boom lift joystick	Upwards : Boom elevation
		Downwards : Boom lowering
P50	Arm elevation joystick	To the front : Arm elevation
		To the rear : Arm lowering
P54	Boom telescoping selector	To the right : Telescope retraction
		To the left : Telescope extension
P71	Driving speed selector	 Fast driving (long distance)
		 Medium speed drive difficult ground, slope)
		 Slow driving(short distance, final approach)
P86	Drive joystick	To the front : Driving forwards
		To the rear : Driving backwards
	Rear axle direction selector	Press right : Right turn
		Press left : Left turn
P87	Front axle direction selector	To the right : Right turn
		To the left : Left turn
P88	Bi-energy selector	To the right : Electric power supply
		To the left : Petrol supply

1. Perform the required maintenance (see the machine maintenance book)

C - Machine layout

D - Operating principle

1 - Description

For : HA12IP (HA33JE)-HA15IP (HA43JE)

Hydraulic energy to perform machine movements is provided by an electric pump.The operating speed of the pump is governed by a speed regulator.

For : HA16PE

Hydraulic energy for machine movement is provided by a pump unit.

The controls and start-up of the electric motor are powered by battery.

To protect the staff and the machine, safety systems forbid the use of the machine beyond its capacities.

These security systems immobilize the machine and neutralize the movements.



Poor knowledge of the characteristics and operation of the machine can lead the operator to think that a normal safety operation is a malfunction.

2 - Safety devices

2.1 - ACTIVATION OF CONTROLS

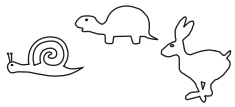
The controls must be validated by a 'Dead man' system to activate the different movements.

The 'Dead man' system depends on the machine configuration :

- Joystick handle.
- Pedal.
- Validation button.

D - Operating principle

2.2 - DRIVING SPEED (MINIMUM)



All driving speeds are authorised when the machine is stowed.

For : HA12IP (HA33JE)-HA15IP (HA43JE)

The electronic variable speed unit controls movement and driving speed.

It receives information from the control joystick concerning the movements to be performed. It also manages the safety systems status.

The variable speed unit regulates speed of revolution.

This device has the following functions :

- Prevention of engine racing.
- Triggering of reverse braking if necessary.

2.3 - CONTROLLER HEAD

For HA16PE only

The machines are equipped with a specific controller configured for the machine functionalities.

Do not interchange the controller between machines.

2.4 - ELECTRONIC SPEED CONTROLLER

The machines are equipped with an electronic speed regulator configured for machine functionalities.

Do not interchange the variable transmissions between machines.

2.5 - DETECTION OF INTERNAL FAULT



Except HA16PE () :

N.B.-:-THE PRESENCE OF THIS DEVICE DEPENDS ON THE MACHINE CONFIGURATION.

The defect LED blinks to indicate an internal malfunction.

The machine switches to downgraded mode.

Certain movements can be limited or forbidden to preserve the operator's safety.

2.6 - AUTOMATIC ENGINE CUT-OUT

The engine automatically cuts out in the following conditions(Please see machine configuration) :

- The alternator is not functioning.
- Engine temperature is too high.
- Oil pressure is too low.
- A machine malfunction is detected.

2.7 - LOAD IN THE PLATFORM



If the load in the platform is more than the maximum authorized load, no movement is possible from the upper console.

The platform overload LED and the buzzer warn the operator.

2 possibilities to restore normal configuration :

- Remove some weight from the platform to return to an acceptable load.
- Use the lower console to lower the platform.

N.B.-:-ALL THE MOVEMENTS ARE SLOWED DOWN.

2.8 - MACHINE TILT

If the machine is positioned on a slope exceeding authorized tilt, the tilt control unit alerts the operator

For HA16PE only

If the machine is on a slope exceeding the authorised tilt, the tilt control unit and the fault LED alert the operator.

Driving and certain movements are cut off(If the machine is unfolded).

To restore the driving function, only movements allowing the machine to be folded are permitted :

- Telescope retraction.
- Raising or lowering the boom to return to the horizontal position.
- Lowering the arm.
- Lowering the jib until it is below the horizontal position.

2.9 - BATTERY CHARGE-ENGINE HOUR METER

Display by % charge(10 bar = 100%) :
- 100% charge : Battery correctly charged.
- 20% charge : The batteries must be recharged. Elevation is cut.

2.9.1 - Engine hour meter

For : HA16PE () :

It adds up :
- Machine operating hours (the egg timer flashes).
- Electropump operating time (bi-energy mode).

For : HA12IP (HA33JE)-HA15IP (HA43JE) :

It displays :
- P = Pump operating time.
- T = Operating time in traction.
- Length of time the machine is powered up (even if not in use).

2.9.2 - Automatic reset

As soon as the battery is correctly charged the machine is automatically reset.

2.10 - ON-BOARD CHARGER

The on-board charger is used to charge the semi-drive batteries.

Battery charging starts as soon as the mains supply is connected.

The (P93) LED indicates charge status :
- Green LED : Battery 100% charged.
- Yellow LED : Battery 80% charged.
- Red LED : Battery in initial charging phase.

If a fault occurs, the LED flashes in different colours, depending on the type of fault (See machine maintenance book). The buzzer sounds.

1 - Recommendations

The manager of the company where the machine is commissioned must ensure that the machine is fit for function. i.e. that the machine is suitable to carry out the work in complete safety in compliance with the user manual. All operator managers must be familiar with the regulations currently applicable in the country of use and ensure that they are adhered to.



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

- **Safety precautions.**
- **Operator's responsibilities.**
- **Presentation and the operating principle of the machine.**

2 - Checks before use

Every day and before the beginning of a new work period and on each change of operator, the machine must be subjected to a visual inspection and a functional test.

Any repairs required must be performed before using the machine, its correct operation depends on it.

2.1 - VISUAL INSPECTIONS

2.1.1 - General mechanical functions

Check the following points :

- The presence of the identification plate, labels and operator manual.
- Visual state of the machine :
  - Absence of cracks, broken solders, chipped paint.
  - No missing or loose parts (bolts, nuts, connectors, cables, etc.).
  - Absence of leakage (battery acid, oil, etc.).
- The state of the cylinders (leakage, rust, traces of wear and tear, impact, scratch, foreign body, etc.).
- Condition of the wheels (loose or missing nut, etc.).
- Condition of the tyres (cut, wear, etc.).
- State of the limit sensors(foreign body, etc.).
- Gear attachments.
- The state and connection of the electric wires and cables.

- Hydraulic oil level.
- State of the hydraulic unit and pump (leakage, loose component, etc.).
- State of the consoles.
- State of the guard rail and the sliding midrail.
- Excessive mechanical clearance.
- Fuel level.
- State of the arm, boom, jib and platform (no visible damage, wear or distortion).

2.1.2 - Environment

Section A Safety precautions

Check the following points :

- Wind speed (Section G 1- Main characteristics).
- The pressure and the load permissible by the ground surface (Section G 1- Main characteristics).
- Maximum permissible load (Section G 1- Main characteristics).
- Manual lateral effort (Section G 1- Main characteristics).

2.2 - FUNCTIONAL TESTS

2.2.1 - Safety features

Elements to be tested :

- Operation of the upper and lower emergency stop push buttons.
- Operation of the tilt control box.
- Visual and audio alarms.
- Weighing system.
- Movement safety end of travel contactors.

Refer to the functional test procedures (Section E 3.1- Test procedure).

2.2.2 - Lower console controls

Refer to the corresponding operations to test the controls in the order mentioned (Section E 3.2- Ground operations).

Tests from the lower console

Step	Control
1	Switching on P72
2	Movements : • Lifting / lowering of jib P8 • Boom telescope extension/retraction P9 • Lifting / lowering of boom P10 • Lifting/lowering of arm P12 • Platform compensation P13 • Turntable rotation P14
3	Beacon light selector P24
4	Console activation key selector P72

Tests from the lower console - For HA16PE only

Step	Control
1	Engine start-up selector P22
2	Engine acceleration selector P21
3	Movements : • Lifting / lowering of jib P8 • Boom telescope extension/retraction P9 • Lifting / lowering of boom P10 • Lifting/lowering of arm P12 • Turntable rotation P14
4	Beacon light selector P24
5	Console activation key selector P72

2.2.3 - Upper console controls

Refer to the corresponding operations to test the controls in the order mentioned (Section E 3.3- Operations from the platform).

Tests from the upper console

Step	Control
1	Switching on P72
2	Front axle direction selector (P52) and movement joystick (P52)
3	Movements : • Jib elevation/lowering (P63) and movement joystick P52 • Platform rotation (P64) and movement joystick P52 • Platform compensation (P65) and movement joystick P52 • Arm elevation/lowering (P66) and movement joystick P52 • Boom elevation/lowering (P67) and movement joystick P52 • Boom telescope extention/retraction (P68) and movement joystick P52 • Turntable rotation (P69) and movement joystick P52
4	Driving speed selector : • Slow speed selector (P57) and movement joystick P52 • Fast speed selector (P59) and movement joystick P52
5	Horn selector P62

Tests from the upper console - For HA16PE only

Step	Control
1	Engine start-up selector P42
2	Driving and rear axle direction P86
3	Front axle direction selector P87
4	Platform rotation selector P38
5	Movements : • Lifting / lowering of jib P37 • Platform compensation P40 • Lifting / lowering of boom P49 • Turntable rotation P49 • Lifting/lowering of arm P50 • Boom telescope extension/retraction P54
6	Driving speed selector P71
7	Differential blocking selector P35
8	Horn selector P43

2.3 - REGULAR CHECKS

The machine must be inspected regularly (intervals according to the country of use)and at least once a year, in order to detect any defect which may lead to an accident.

The inspection is carried out by a company or person chosen by the manager and is under his responsibility (Company employee or other).

The result of inspections must be recorded in the safety register opened by the manager. This register and the list of designated persons must be available to the Work Inspector and company safety committee at all times.

N.B.-:- ***SECTION H INTERVENTION LOG***

2.4 - REPAIRS AND ADJUSTMENTS

Extensive repairs, interventions or adjustments on the safety systems or elements.

HAULOTTE Services® technicians are specially trained to the requirements of our machines and have genuine spare parts, all the necessary documentation and tools required.

If one of these safety instructions is not complied with, HAULOTTE Services® can in no way be held responsible for the consequences.

Any modification without having obtained written authorization from HAULOTTE®, renders this conformity null..

2.5 - CHECKS WHEN THE MACHINE IS PUT BACK IN SERVICE

Intervention to be made after :

- Extensive dismantling and remounting.
- Repairs involving essential elements of the machine.
- Any accident causing stress.

Perform a fitness for function inspection, condition inspection and static and dynamic tests (Consult the After Sales Service HAULOTTE Services®).

3 - Usage

N.B.-:-THE FUNCTIONS ARE DESCRIBED FOR THE ENTIRE RANGE. REFER TO THE MACHINE CONFIGURATION TO IDENTIFY THE FUNCTIONAL CONTROLS AND INDICATORS.

3.1 - TEST PROCEDURE

3.1.1 - Emergency stop push button function

Lower console emergency stop push button

Step	Action
1	Pull the emergency stop push buttons(P15, P46).
2	Switch the machine on(P72).
3	Turn the key of the console activation selector (P72) to the right to activate the lower console. The LEDs are switched on.
4	Push the emergency stop push button (P15). The LEDs switch off.

Upper console emergency stop push button

Step	Action
1	Pull the emergency stop push buttons(P15, P46).
2	Switch the machine on(P72).
3	Turn the console activation selector (P72) to the left to activate the upper console. The LEDs are switched on.
4	Push the emergency stop push button (P46). The LEDs switch off.

3.1.2 - Tilt control box function

1. Pull the emergency stop push buttons P15, P46.
2. Switch the machine on P72. All the LEDs of the bottom console are switched on, an audio signal(beep) sounds.
3. Manually tilt and maintain the tilt towards the front for a few seconds (Section C 2- Main components). The buzzer sounds.

3.1.3 - Visual and audio alarms

1. Pull the emergency stop push buttons P15, P46.
2. Switch the machine on P72. All the LEDs of the bottom console are switched on, an audio signal(beep) sounds.

3.1.4 - Weighing system

1. Pull the emergency stop push buttons P15, P46.
2. Switch the machine on P72. The platform overload indicator (P30) on the upper console and the buzzer alert the user.

3.1.5 - Movement safety end of travel contactors

1. Raise the jib to horizontal position and activate fast speed. The machine must be in micro-speed.
2. Unfold the jib completely and activate fast speed. The machine must be in micro-speed.
3. Raise the boom slightly above the horizontal position and then activate fast speed. The machine must be in micro-speed.
4. Unfold the boom completely and then activate fast speed. The machine must be in micro-speed.
5. Raise the arm slightly and then activate fast speed. The machine must be in micro-speed.
6. Unfold the arm completely. The machine must be in micro-speed.

3.2 - GROUND OPERATIONS

3.2.1 - Machine start-up

1. Pull the emergency stop push button P15.
2. Switch the machine on P72.
3. Turn the key of the console activation selector (P72) to the right to activate the lower console.

For HA16PE only

1. Pull the emergency stop push button P15.
2. Switch the machine on P72.
3. Turn the key of the console activation selector (P72) to the right to activate the lower console. The following LEDs are switched on :
   - Low engine oil pressure P2.
   - Engine temperature P3.
   - Battery charge P4.
4. The clogged air filter LED (P5) is switched off.
5. Press on the starter selector P22. The engine starts. The LEDs switch off.
6. Let the engine heat up.

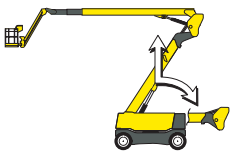
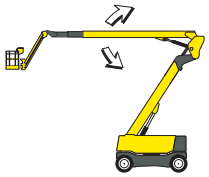
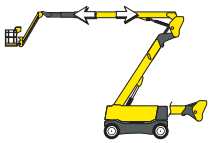
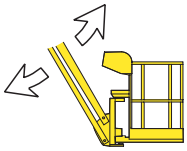
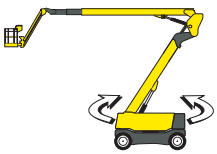
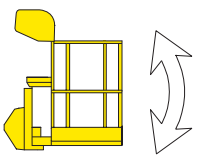
N.B.-:-IF THE ENGINE DOES NOT START, CUT THE CONTACT (EMERGENCY STOP PUSH BUTTON PRESSED). RESTART THE START-UP PROCEDURE. OTHER POSSIBILITY, USE THE KEY STARTER OF THE VEHICLE. THE BUTTON DOES NOT NEED TO BE KEPT PRESSED, AN IMPULSE IS ENOUGH TO START OR STOP THE ENGINE. A SLIGHT SHIFT ON STARTING CORRESPONDS TO THE PRE-HEATING OF THE ENGINE

3.2.2 - Machine shutdown

- Press the emergency stop push button (P15).
- Close the gas bottle valve.

3.2.3 - Movement control

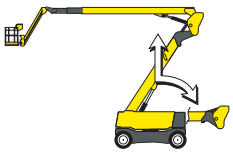
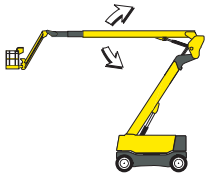
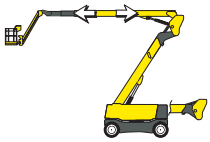
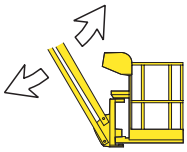
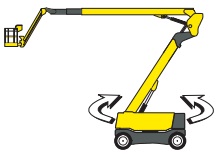
Lower console controls

Control		Action
Lifting/lowering of arm		Push the arm elevation selector (P12) upwards to raise the arm. Push the arm elevation selector (P12) downwards to lower the arm.
Lifting / lowering of boom		Push the boom lifting selector (P10) upwards to lift the boom. Push the boom lifting selector (P10) downwards to lower the boom.
Boom telescope extension/ retraction		Push the boom telescoping selector (P9) to the right to extend the telescope. Push the boom telescoping selector (P9) to the right to retract the telescope.
Lifting / lowering of jib		Push the jib selector (P8) upwards to lift the jib. Push the jib selector (P8) downwards to lower the jib.
Turntable rotation		Push the turntable rotation selector (P14) to the right for an anti-clockwise rotation. Push the turntable rotation selector (P14) to the left for a clockwise rotation.
Platform compensation		Push the platform compensation selector (P13) upwards to raise the platform. Push the platform compensation selector (P13) downwards to lower the platform.

E - Driving

N.B.-:-THE RELEASE OF THE SELECTOR CAUSES ALL MOVEMENT TO STOP.

Lower console controls - For HA16PE only

Control		Action
Lifting/lowering of arm		Push the arm elevation selector (P12) upwards to raise the arm. Push the arm elevation selector (P12) downwards to lower the arm.
Lifting / lowering of boom		Push the boom lifting selector (P10) upwards to lift the boom. Push the boom lifting selector (P10) downwards to lower the boom.
Boom telescope extension/ retraction		Push the boom telescoping selector (P9) to the right to extend the telescope. Push the boom telescoping selector (P9) to the right to retract the telescope.
Lifting / lowering of jib		Push the jib selector (P8) upwards to lift the jib. Push the jib selector (P8) downwards to lower the jib.
Turntable rotation		Push the turntable rotation selector (P14) to the left for a clockwise rotation. Push the turntable rotation selector (P14) to the right for an anti-clockwise rotation.

N.B.-:-THE RELEASE OF THE SELECTOR CAUSES ALL MOVEMENT TO STOP.

3.2.4 - Other controls

- Switching from the lower console to the upper console :



The emergency stop push button (P15) must be pulled.

• Turn the console activation selector (P72) to the left to activate the upper console. The controls of the lower console are de-activated.

- Switching from the upper console to the lower console :



The emergency stop push button (P15) must be pulled.

• Turn the key of the console activation selector (P72) to the right to activate the lower console. The controls of the upper console are de-activated.

For HA16PE only

- Engine rating acceleration :
  - Turn the engine acceleration selector (P21) to the right to switch to accelerated rating.
  - Turn the engine acceleration selector (P21) to the left to switch to idling speed.
- For the machines equipped with beacon lights :
  - Push the beacon light selector (P24) to the right to switch on the beacon light.
  - Push the beacon light selector (P24) to the left to switch off the beacon light.

3.3 - OPERATIONS FROM THE PLATFORM

3.3.1 - Machine start-up

For HA16PE (N/A)

1. Pull the emergency stop push button P46.
2. Press on the starter selector P42. The engine starts. The power-up LED (P31) lights up.
3. Let the engine heat up.

N.B.-:-IF THE ENGINE DOES NOT START, CUT THE CONTACT (EMERGENCY STOP PUSH BUTTON PRESSED). RESTART THE START-UP PROCEDURE.

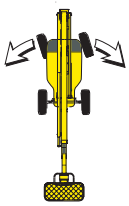
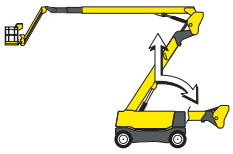
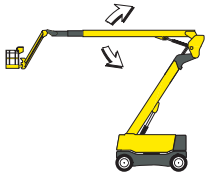
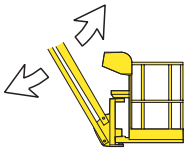
3.3.2 - Machine shutdown

Press the emergency stop push button (P46).

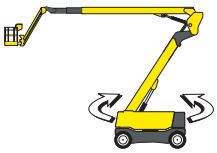
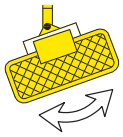
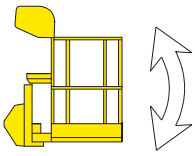
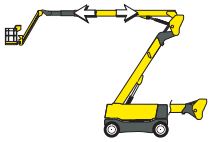
3.3.3 - Movement control

Activate the controls and the "Dead man" system simultaneously to execute the different movements.

Upper console controls

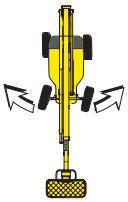
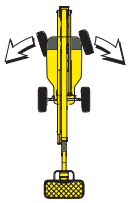
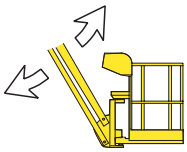
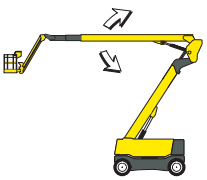
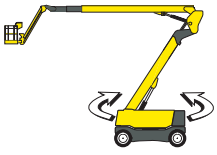
Control		Action
Driving		Push the slow or fast speed sensitive selector (P59) or (P57). Push the drive joystick (P52) forwards to move machine forwards.
		Push the slow or fast speed sensitive selector (P59) or (P57). Push the drive joystick (P52) backwards to reverse the machine.
Steering		Push the slow or fast speed sensitive selector (P59) or (P57). Push the drive joystick (P52) forwards to move machine forwards. Press to the right of the front axle steering selector (P52) to steer to the right.
		Push the slow or fast speed sensitive selector (P59) or (P57). Push the drive joystick (P52) forwards to move machine forwards. Press to the left of the front axle steering selector (P52) to steer to the left.
Lifting/lowering of arm		Push the arm elevation sensitive selector (P66). Push the arm elevation joystick (P52) forwards to raise the arm.
		Push the arm elevation joystick (P52) backwards to lower the arm.
Lifting / lowering of boom		Push the boom elevation sensitive selector (P67). Push the boom elevation joystick (P52) forwards to raise the boom.
		Push the boom elevation joystick (P52) backwards to lower the boom.
Lifting / lowering of jib		Push the jib elevation sensitive selector (P63). Push the jib joystick (P52) forwards to raise the jib.
		Push the jib joystick (P52) backwards to lower the jib.

E - Driving

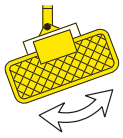
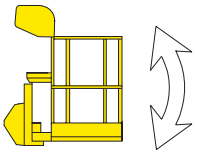
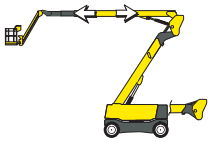
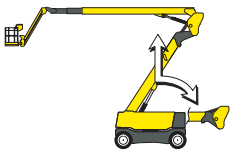
Control		Action
Turntable rotation		Push the turntable rotation sensitive selector (P69). Push the turntable rotation joystick (P52) backwards for anti-clockwise rotation. Push the turntable rotation joystick (P52) forwards for clockwise rotation.
Platform rotation		Push the platform rotation sensitive selector (P64). Push the platform rotation joystick (P52) backwards for anti-clockwise rotation. Push the platform rotation joystick (P52) forwards for clockwise rotation.
Platform compensation		Push the platform compensation sensitive selector (P65). Push the platform compensation joystick (P52) forwards to raise the platform. Push the platform compensation joystick (P52) backwards to lower the platform.
Driving speed (minimum)		Push the driving speed selector (P59) to  fast speed driving (long distance driving, tarmac, concrete). Push the driving speed selector (P57) to  for driving in slow speed (short distance, final approach, descending from the lorry).
Boom telescope extension/ retraction		Push the boom telescoping sensitive selector (P68). Push the boom telescope joystick (P52) forwards to extend the telescope. Push the boom telescope joystick (P52) backwards to retract the telescope.

E - Driving

Upper console controls - For HA16PE only

Control		Action
Driving		Push the drive joystick (P86) forwards to move machine forwards. Push the drive joystick (P86) backwards to reverse the machine.
Rear axle steering		Push the rear axle steering selector to the right (P86) to steer to the right Press to the left of the rear axle steering selector (P86) to steer to the left
Front axle steering		Press to the right of the front axle steering selector (P87) to steer to the right. Press to the left of the front axle steering selector (P87) to steer to the left.
Lifting / lowering of jib		Push the jib selector (P37) upwards to lift the jib. Push the jib selector (P37) downwards to lower the jib.
Lifting / lowering of boom		Push the boom lift joystick (P49) upwards to lift the boom. Engage the boom lift joystick (P49) to the bottom to lower the boom.
Turntable rotation		Push the turntable rotation selector (P49) to the left for a clockwise rotation. Push the turntable rotation selector (P49) to the right for an anti-clockwise rotation.

E - Driving

Control		Action
Platform rotation		Push the platform rotation selector (P38) to the right for an anti-clockwise rotation.
		Push the platform rotation selector (P38) to the left for a clockwise rotation.
Platform compensation		Raise the safety cover. Push the platform compensation selector (P40) upwards to raise the platform.
		Raise the safety cover. Push the platform compensation selector (P40) downwards to lower the platform.
Driving speed (minimum)		Position the driving speed selector (P71) on  for fast driving (long distance driving, tarmac, concrete).
		Position the driving speed selector (P71) on  for medium speed driving (crossing uneven ground, slope).
		Position the driving speed selector (P71) on  for slow driving (short distance, final approach).
Boom telescope extension/ retraction		Push the boom telescoping selector (P54) to the right to extend the telescope.
		Push the boom telescoping selector (P54) to the right to retract the telescope.
Lifting/lowering of arm		Push the arm elevation joystick (P50) forwards to raise the arm.
		Push the arm elevation joystick (P50) backwards to lower the arm.

N.B.-:-THE RELEASE OF THE SELECTORS AND (OR) JOYSTICKS CAUSES ALL MOVEMENT TO STOP.

3.3.4 - Other controls

For : HA16PE

- Horn : Push the horn selector (P43) to the right to honk.

N.B.-:-THE HORN STOPS WHEN THE SELECTOR IS RELEASED.

For : HA12IP (HA33JE)-HA15IP (HA43JE)

- Horn : Press the horn sensitive selector (P62) to sound the horn.

E - Driving

1 - Emergency lowering

1.1 - PRINCIPLE

Emergency lowering is required if the operator in the platform is no longer capable of controlling the movements even though the machine operates normally.

An operator on the ground, trained in using the emergency controls and in possession of the starter key, can use the lower console with the main power source to lower the operator in the platform.

1.2 - PROCEDURE

Section A 2- Pre-operation instructions

1. Turn the key of the console activation selector (P72) to the right to activate the lower console. The controls of the upper console are de-activated.
2. Lower the platform from the lower console.

If the machine is stuck or hooked in surrounding structures or equipment, it is essential to release the operators before intervening on the machine.

2 - Lowering for repairs

2.1 - PRINCIPLE

For HA16PE only

The lowering for repairs function allows the operator in the platform to descend again in case of failure of the main power source.

2.2 - PROCEDURE

For HA16PE only

Push and hold the backup unit selector (P41) while performing the movements required to lower the platform.

If the operator in the platform must exit the platform to go on a sturdy, safe structure, the transfer must respect the following recommendations :

- The operator must fasten himself by using 2 straps. One strap is attached to the platform, the other to the structure.
- The operator must exit the platform via the access hatch.
- The operator must not detach the strap connected to the platform until transfer is over or while it is still dangerous..

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

3 - Towing service

In case of a failure of the machine, it is possible to tow it..

3.1 - DISCONNECTING THE UNIT

To tow a broken down machine, disconnect the gears from the wheels.

Execute these operations on flat, horizontal ground. Failing that, block the wheels to immobilize the machine.

For : HA16PE

Unscrew the central nut (1) until the nut is at the limit.



For : HA12IP (HA33JE)-HA15IP (HA43JE)

Unscrew the central nut until the nut is at the limit.

As soon as there is resistance, do not force further to avoid breaking the central nut in the reducer.



3.2 - RECONNECT UNIT

After repairing the machine, reconnect the wheel gears.

Tighten the central reducer nut (1).

For : HA16PE

- Machine without chocks

1. Screw the central nut up again to engage the jaw clutch.
2. Engage the driving command in micro-speed in case of resistance.
3. Screw the central nut up completely when the jaw clutch is indexed.

N.B.-:-IN CASE OF JAW CLUTCH INTERLOCKING PROBLEMS IN MICRO-SPEED, MOVE THE STEERING WHILE SHIFTING THE GEARS TO REPOSITION THE TEETH CORRECTLY..

4 - Loading and unloading

N.B.-:-WHILE CROSSING THE RAMPS, DURING LOADING OR UNLOADING HAULOTTE® RECOMMENDS POSITIONING THE COUNTERWEIGHT AT THE REAR.

Lift the platform again to avoid contact with the ground.

To avoid any risk of tipping over, the boom must be maintained in the axis of the chassis.

4.1 - PRINCIPLE

To avoid any risk of sliding during loading, ensure that :

• The loading ramps can bear the load.

• The loading ramps are correctly fixed.

• The adhesion is sufficient.

As the slope of the ramp is usually greater than the authorised slope for driving, the arm and boom must be lowered to enable driving to take place.

In this case, the buzzer is operational but driving is authorized.

To climb up the slope, select the slow driving speed .

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

Never place yourself below or too close to the machines during loading.

A wrong move can lead to the falling of the machine and cause serious bodily and material accidents.

4.1.1 - Loading by lifting

Ensure that :

- The machine is completely stowed.
- The platform must not be loaded.
- The accessories are in good condition and of sufficient capacity.
- The personnel performing manoeuvres is authorised to use lifting material.

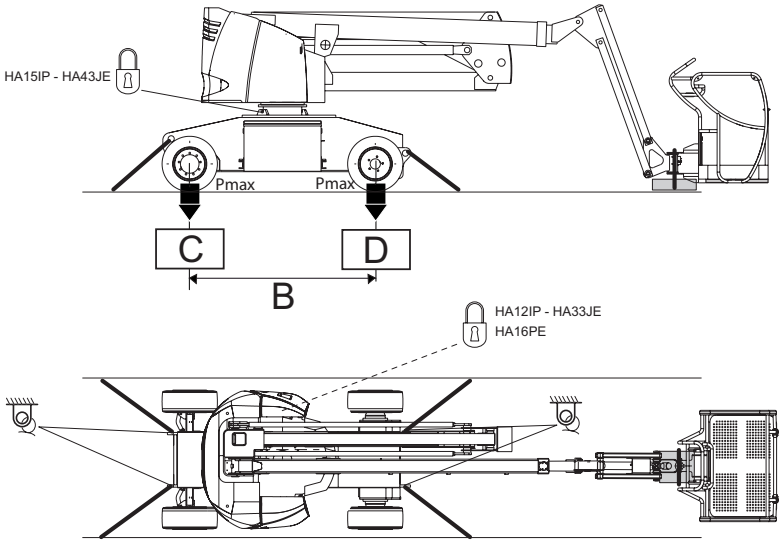
4.2 - PUTTING IN TRANSPORT POSITION

The machine must be completely stowed.

1. Check the absence of load in the platform.
2. Depending on the configuration of the machine, engage the transport position selector (P13) to the right.
3. Secure the machine to the anchorage points given to this effect.
4. Block the turntable with the help of the rotation stop pin located under the turntable.

Do not transport the machine if the turntable is not blocked.

For : HA12IP (HA33JE) - HA15IP (HA43JE) - HA16PE



Loading characteristics

Marking	Description	HA12IP (HA33JE)	HA15IP (HA43JE)
B	Lateral distance between the wheels	1,80 m (5 ft 10 in)	2,00 m (6 ft 6 in)
C	Front wheel pressure	10,4 bar (150,8 psi)	8,6 bar (124,7 psi)
D	Rear wheel pressure	10,4 bar (150,8 psi)	8,6 bar (124,7 psi)
	Anchorage point		
	Turntable rotation blocking		

Loading characteristics

Marking	Description	HA16PE
B	Lateral distance between the wheels	2,00 m (6 ft 6 in)
C	Front wheel pressure	7,6 bar (110,2 psi)
D	Rear wheel pressure	7,6 bar (110,2 psi)
	Anchorage point	
	Turntable rotation blocking	

4.3 - UNLOADING

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

If the machine has been damaged during transportation, contact the transporter in writing.

1. Unlock the turntable rotation pin.
2. Remove the straps.
3. Start the machine.

4.4 - WARNING

On starting a machine that has been secured then transported, the safety system can detect a false overload forbidding all movement from the upper console.

To reinitialize the system, lift the jib by a few centimetres from the lower console.

For : HA12IP (HA33JE)-HA15IP (HA43JE)

Push the transport position selector (P13) to the left to set the machine to operating position.

To unload the machine, select the slow driving speed .

Do not go down the ramp at a fast speed.

F - Special procedure

1 - Main characteristics

Technical characteristics - For HA12IP (HA33JE) - HA15IP (HA43JE)

Machine	HA12IP (HA33JE)		HA15IP (HA43JE)	
Characteristics	International system	Imperial system	International system	Imperial system
Length of machine in stowed position	* m	(* ft * in)	* m	(* ft * in)
Width of the machine in stowed position	1,35 m	(4 ft 5 in)	1,50 m	(4 ft 11 in)
Machine height	* m	(* ft * in)	* m	(* ft * in)
Maximum ground clearance	0,15 m	(0 ft 5 in)	0,15 m	(0 ft 5 in)
Transport height	2,00 m	(6 ft 6 in)	2,00 m	(6 ft 6 in)
Transport length	5,45 m	(17 ft 10 in)	6,60 m	(21 ft 7 in)
Maximum work height	12,00 m	(39 ft 4 in)	15,00 m	(49 ft 2 in)
Maximum platform height	10,00 m	(32 ft 9 in)	13,00 m	(42 ft 7 in)
Maximum shift	0,00 m	(* ft * in)	0,00 m	(* ft * in)
Maximum radius	6,63 m	(21 ft 9 in)	8,45 m	(27 ft 8 in)
Turntable rotation	355°		350°	
Boom rotation angle	+*° / -*°		+*° / -*°	
Vertical jib rotation	+70° / -70°			
Platform length	0,80 m	(2 ft 7 in)	0,80 m	(2 ft 7 in)
Platform width	1,20 m	(3 ft 11 in)	1,20 m -1,50 m	(3 ft 11 in) - (4 ft 11 in)
Platform rotation angle	+*° / -*°		+*° / -*°	
Outside turning radius (without axle chocking retracted)	2,85 m	(9 ft 4 in)	3,70 m	(12 ft 1 in)
Inner turning radius (retracted axles)	2,50 m	(8 ft 2 in)	1,70 m	(5 ft 6 in)
Lateral distance between the wheels	0,00 m	(* ft * in)	0,00 m	(* ft * in)
Width of the machine, with extended axles				
Tilt	3°			
Maximum authorized wind speed	45 km/h	(28 mph)	45 km/h	(28 mph)
Front axle load	. kg	(. lb)	. kg	(. lb)
Rear axle load	. kg	(. lb)	. kg	(. lb)
Total weight	5900 kg	(* lb)	7300 kg	(* lb)
Maximum platform load	230 kg	(* lb)	230 kg	(* lb)
Engine type	Electric			
Engine power	* kW	(* Hp)	* kW	(* Hp)
Engine power when idle	* kW	(* Hp)	* kW	(* Hp)
Fuel consumption when idle	* g/kWh		* g/kWh	
Sound level at 10 m (32 ft 9 in)	* dB (A)		* dB (A)	
Vibration in the hands	<* m/s²	(* in/s²)	<* m/s²	(* in/s²)
Vibration in the feet	<* m/s²	(* in/s²)	<* m/s²	(* in/s²)

G - Technical characteristics

Machine	HA12IP (HA33JE)		HA15IP (HA43JE)	
Characteristics	International system	Imperial system	International system	Imperial system
Capacity of the fuel tank	* l	(. gal US)	* l	(. gal US)
Capacity of the hydraulic tank	30 l	(* gal US)	30 l	(* gal US)
Starter battery	48 V-360 Ah			
Differential blocking	Yes			
Maximum slope which can be climbed	25%			
Type of tyres	7.00" - 12"		23.10" - 12"	
Wheel nut torque		(* lbf.ft)		(* lbf.ft)
Slew ring torque	* daN.m	(. lbf.ft)	* daN.m	(. lbf.ft)
Maximum pressure on hard ground	10,4 bar	(* psi)	8,6 bar	(* psi)
Maximum pressure on soft ground	7,2 bar	(* psi)	6,3 bar	(* psi)
Micro-speed drive	0,7 km/h	(* mph)	* km/h	(* mph)
Low-speed driving	2,3 km/h	(* mph)	2,3 km/h	(* mph)
Medium-speed driving	* km/h	(* mph)	* km/h	(* mph)
Fast driving	5,0 km/h	(* mph)	4,5 km/h	(* mph)

G - Technical characteristics

Technical characteristics - For HA16PE

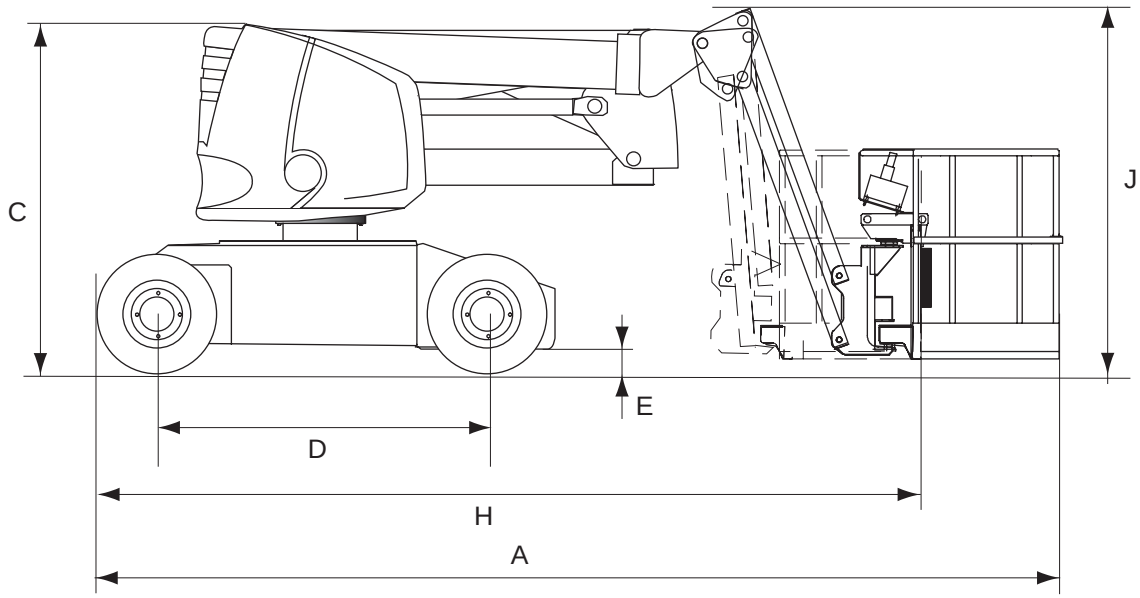
Machine	HA16PE	
Characteristics	International system	Imperial system
Length of machine in stowed position	6,65 m	(21 ft 9 in)
Width of the machine in stowed position	1,83 m	(6 ft 0 in)
Machine height	2,20 m	(7 ft 2 in)
Maximum ground clearance	0,265 m	(0 ft 10 in)
Transport height	0,00 m	(6 ft 6 in)
Transport length	0,00 m	(* ft * in)
Maximum work height	16,10 m	(52 ft 9 in)
Maximum platform height	14,10 m	(46 ft 3 in)
Maximum shift	0,00 m	(* ft * in)
Maximum radius	9,40 m	(30 ft 10 in)
Turntable rotation	355°	
Boom rotation angle	+75° / -0°	
Vertical jib rotation	+*° / -*°	
Platform length	* m	(* ft * in)
Platform width	* m	(* ft * in)
Platform rotation angle	+*° / -*°	
Outside turning radius (without axle chocking retracted)	3,50 m	(11 ft 5 in)
Inner turning radius (retracted axles)	* m	(* ft * in)
Lateral distance between the wheels	2,00 m	(6 ft 6 in)
Width of the machine, with extended axles		
Tilt	5°	
Maximum authorized wind speed	45 km/h	(28 mph)
Front axle load	. kg	(. lb)
Rear axle load	. kg	(. lb)
Total weight	7885 kg	(* lb)
Maximum platform load	250 kg	(* lb)
Engine type	Diesel - Deutz F3L1011F	
Engine power	28 kW	(28 Hp)
Engine power when idle	15 kW	(12 Hp)
Fuel consumption when idle	230 g/kWh	
Sound level at 10 m (32 ft 9 in)	* dB (A)	
Vibration in the hands	<2,5 m/s²	(98 in/s²)
Vibration in the feet	<0,5 m/s²	(19 in/s²)
Capacity of the fuel tank	65 l	(* gal US)
Capacity of the hydraulic tank	100 l	(* gal US)
Starter battery	12 V-95 Ah	
Differential blocking	Yes	
Maximum slope which can be climbed	25%	
Type of tyres	245/80 - R19,5	
Wheel nut torque		(* lbf.ft)

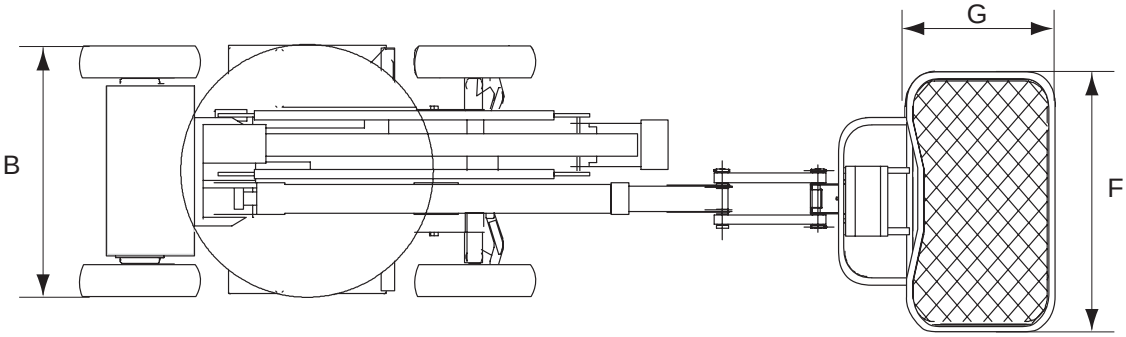
G - Technical characteristics

Machine	HA16PE	
Characteristics	International system	Imperial system
Slew ring torque	21,5 daN.m	(. lbf.ft)
Maximum pressure on hard ground	7,6 bar	(* psi)
Maximum pressure on soft ground	6,1 bar	(* psi)
Micro-speed drive	* km/h	(* mph)
Low-speed driving	1,5 km/h	(* mph)
Medium-speed driving	3,0 km/h	(* mph)
Fast driving	6,0 km/h	(* mph)

2 - Overall dimensions

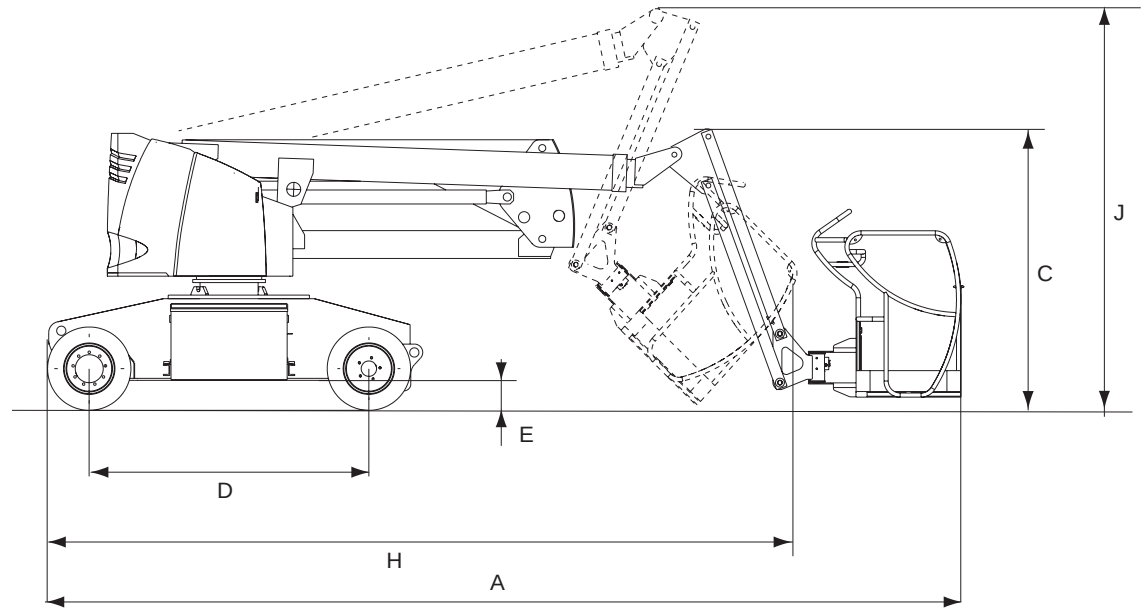
General diagram HA12IP (HA33JE)

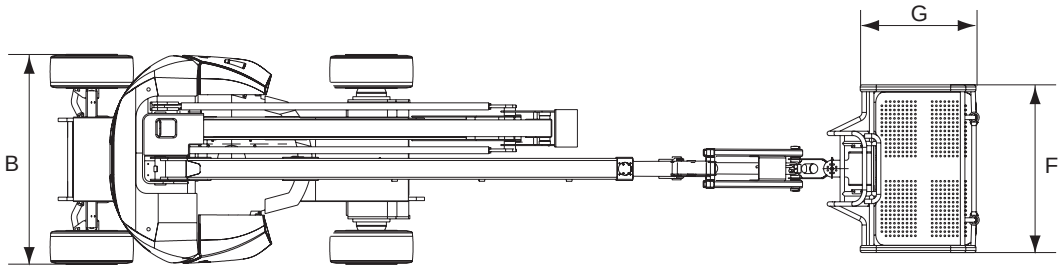




G - Technical characteristics

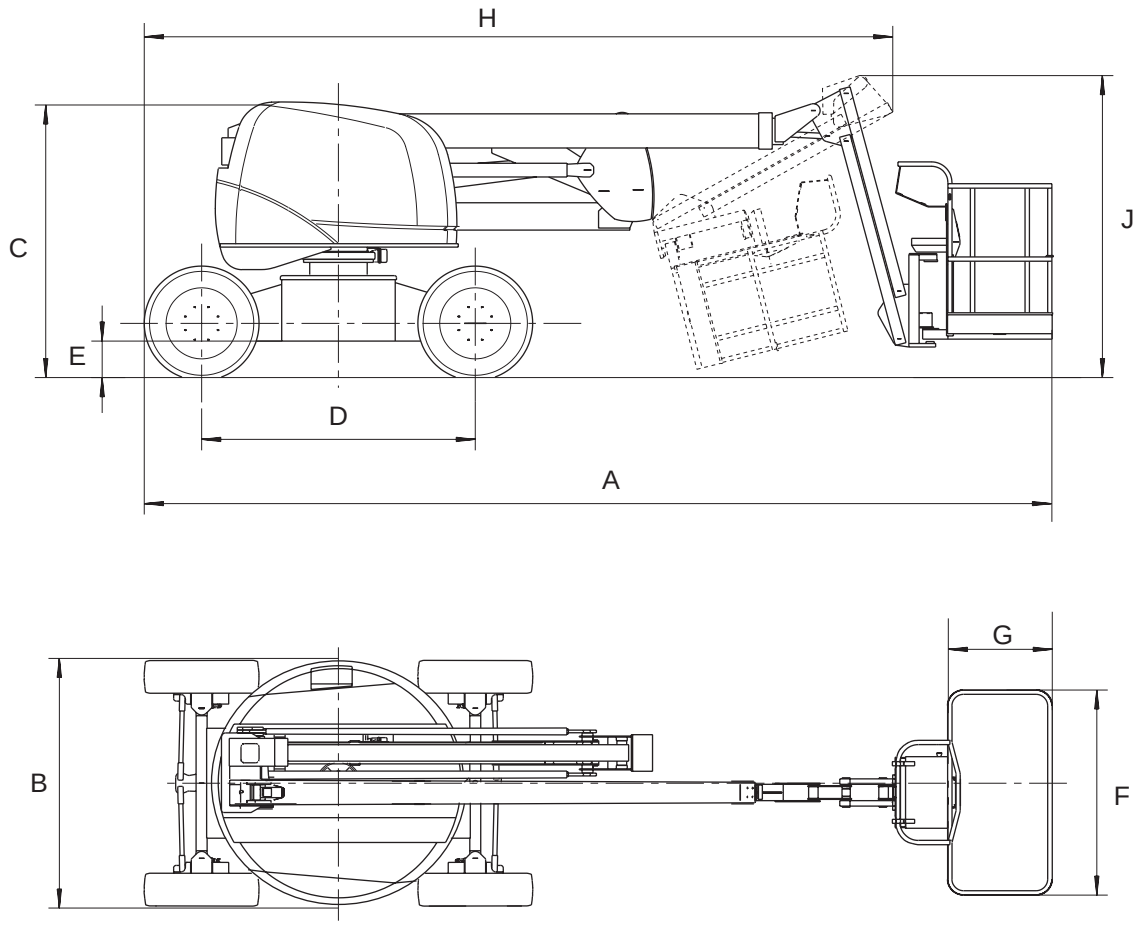
General diagram HA15IP (HA43JE)





G - Technical characteristics

General diagram HA16PE



G - Technical characteristics

Overall dimension specifications

Marking	HA12IP (HA33JE)		HA15IP (HA43JE)	
	Mètre	Feet inch	Mètre	Feet inch
A	5,45	17-10	6,60	21-7
B	1,35	4-5	1,50	4-11
C	*	*	*	*
D	1,80	5-10	*	*
E	0,15	0-5	0,15	0-5
F x G	1,20 x 0,80	3-11 x 2-7	1,20/1,50 x 0,80	3-11 / 4-11 x 2-7
H	*	*	*	*
J	2,00	6-6	2,00	6-6

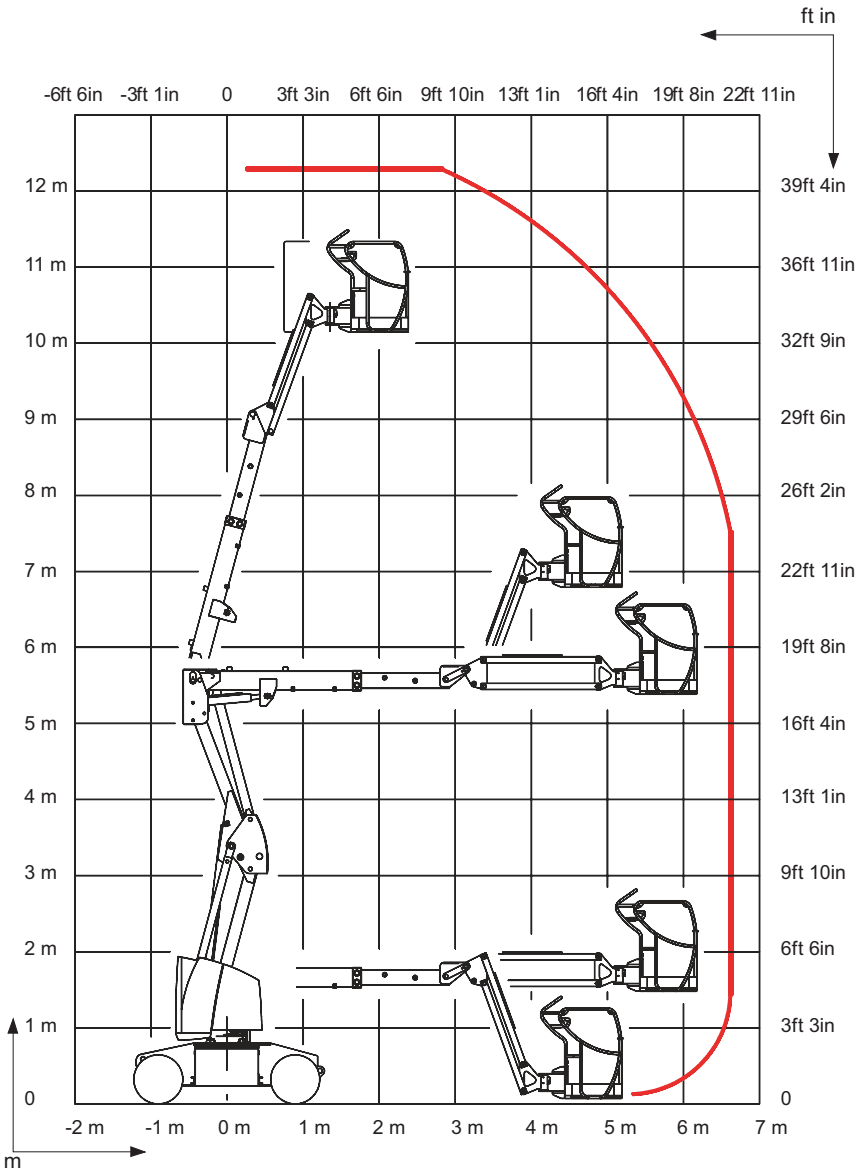
Overall dimension specifications

Marking	HA16PE	
	Mètre	Feet inch
A	6,65	21-9
B	1,83	6-0
C	*	*
D	2,00	6-6
E	0,265	0-10
F x G	1,50 x 0,80	4-11 x 2-7
H	*	*
J	*	*

3 - Working area

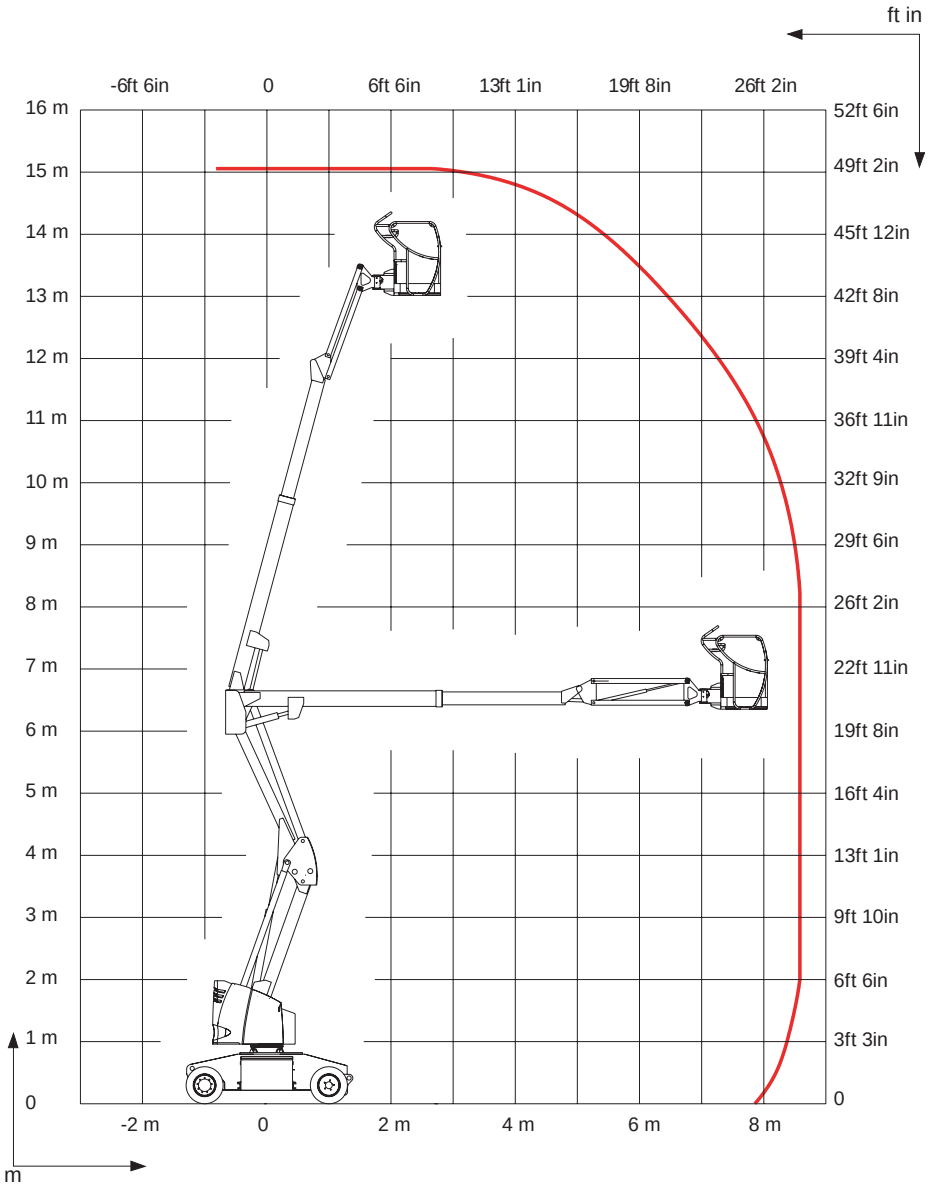
3.1 - MACHINE HA12IP (HA33JE)

Working area



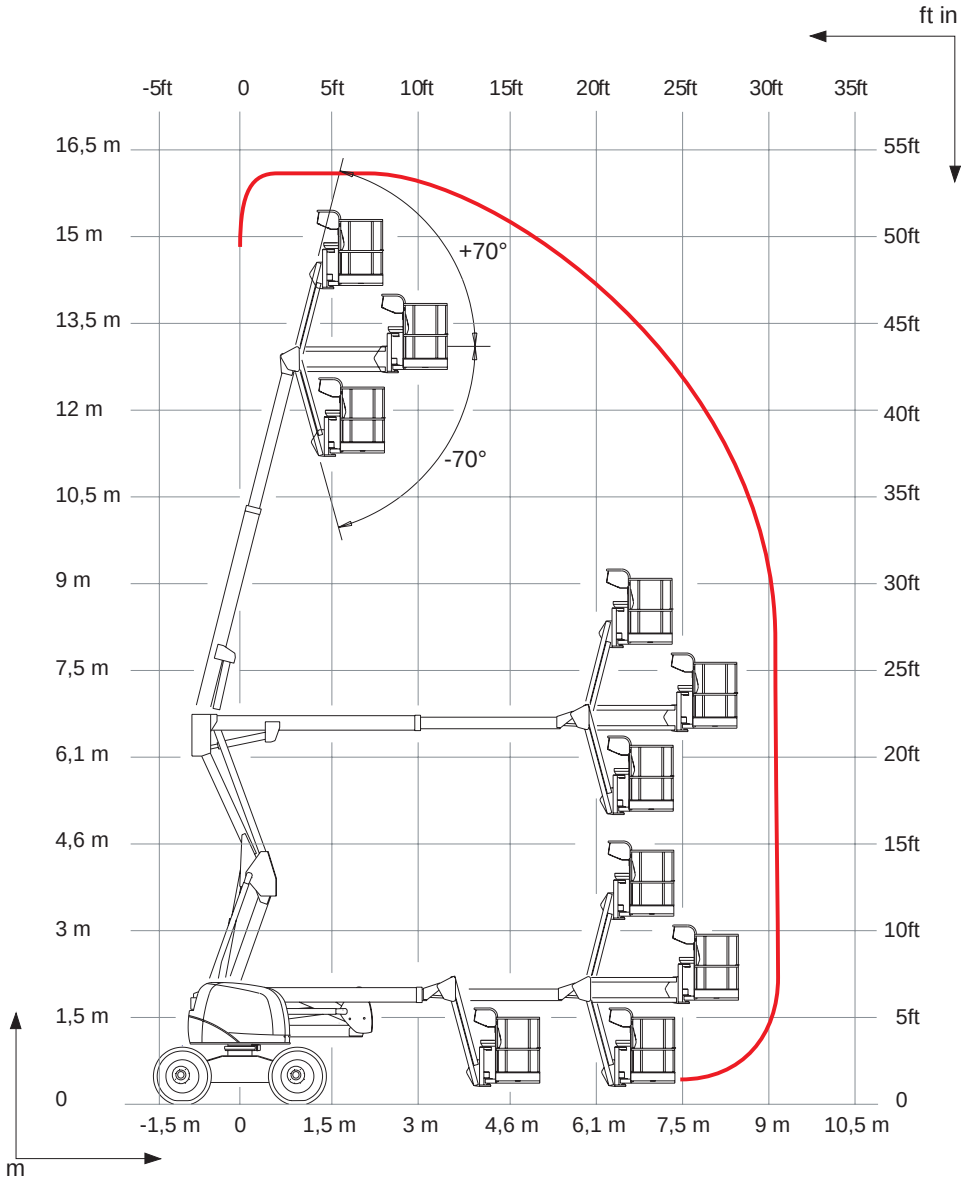
3.2 - MACHINE HA15IP (HA43JE)

Working area



3.3 - MACHINE HA16PE

Working area



4 - ANSI standard specificities

The following tests must be performed after :

- A major technical intervention.
- An accident due to major component failure on the machine.

• The following tests must be performed by a qualified person under safe conditions.

• The results must be fully recorded.

To avoid the machine tipping over, it must be attached during the test (chains, anchor point).

4.1 - OVERLOAD TEST

The overload test is at 125% of the nominal load. See paragraph 1.12.3 of standard AS1418.10-1996 for test details.

Load table

Machine	Test load	
	Pound (lb)	Kilogramme (kg)
HA12IP (HA33JE)	633,8	287,5
HA15IP (HA43JE)	633,8	287,5
HA16PE	689	312.5

The machine must not show any signs of permanent distortion.

Tests are performed by a qualified person under optimal conditions and results must be fully recorded.

4.2 - OPERATIONAL TEST

Operational tests have proved the following facts :

- The machine has performed all movements without jerking, while carrying the nominal load.
- All safety systems are operating correctly.
- Maximum authorised operating speeds are not exceeded.

4.3 - STABILITY TEST

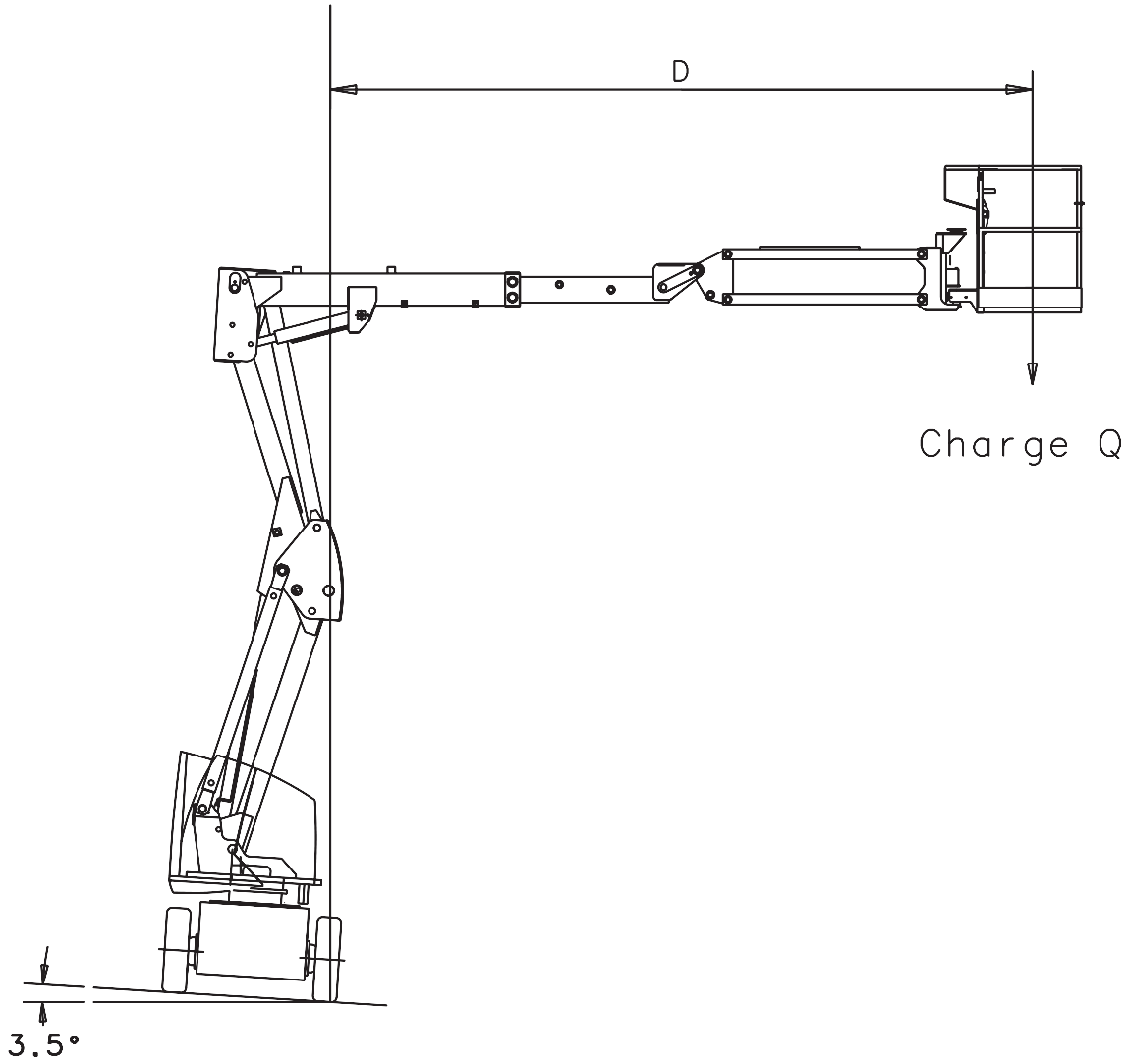
The stability test proves that the machine is stable in an unfavourable position. The moment when the machine tips is calculated by combining loads in the most unfavorable position for the machine (load W applied over distance L).

Stability table for HA12IP ( )

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)	3,5	799,1	362,5	18-2	5,543	*	1976

G - Technical characteristics

Stability for HA12IP ( )

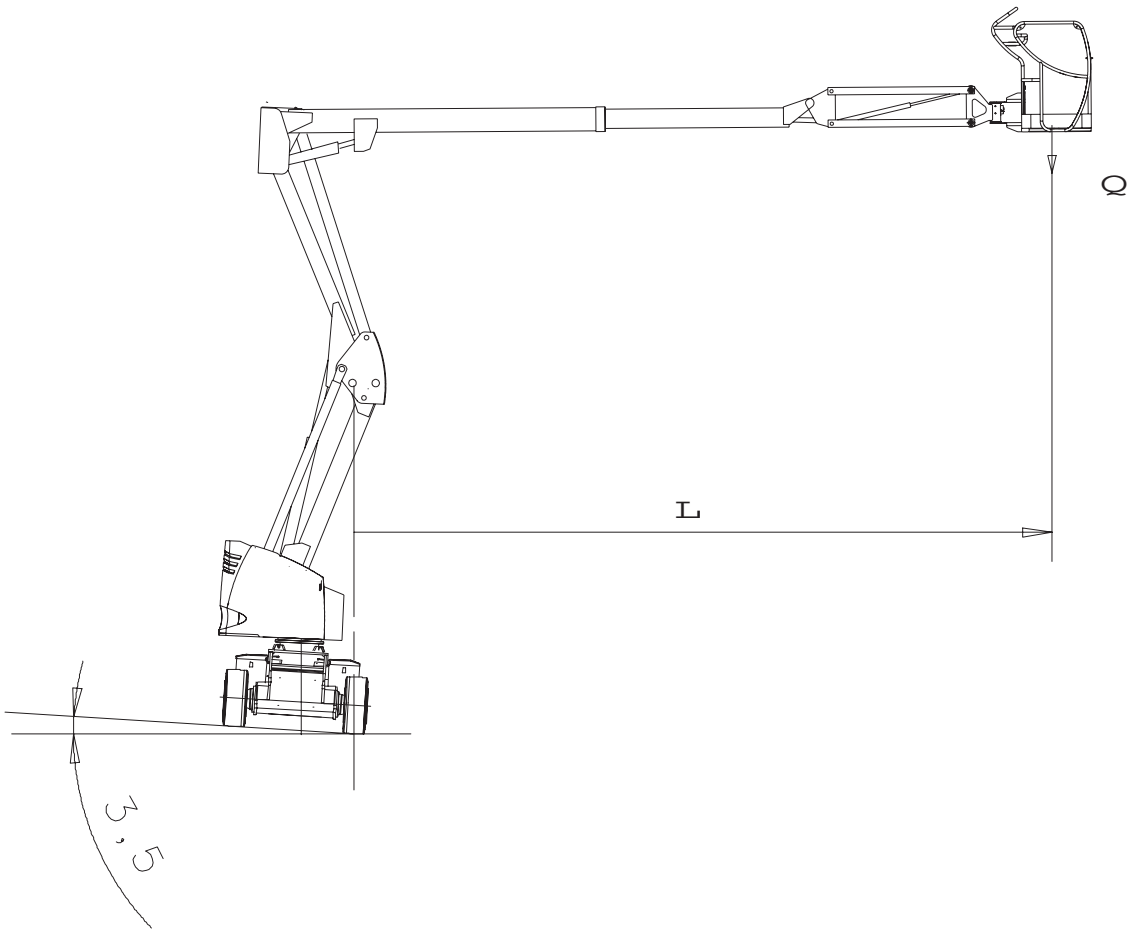


G - Technical characteristics

Stability table for HA15IP ( )

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)	3,5	760,5	345	23-11	7,30	*	2520

Stability for HA15IP ( )



See paragraph 1.12.2 of standard AS1418.10-1996 for test details.

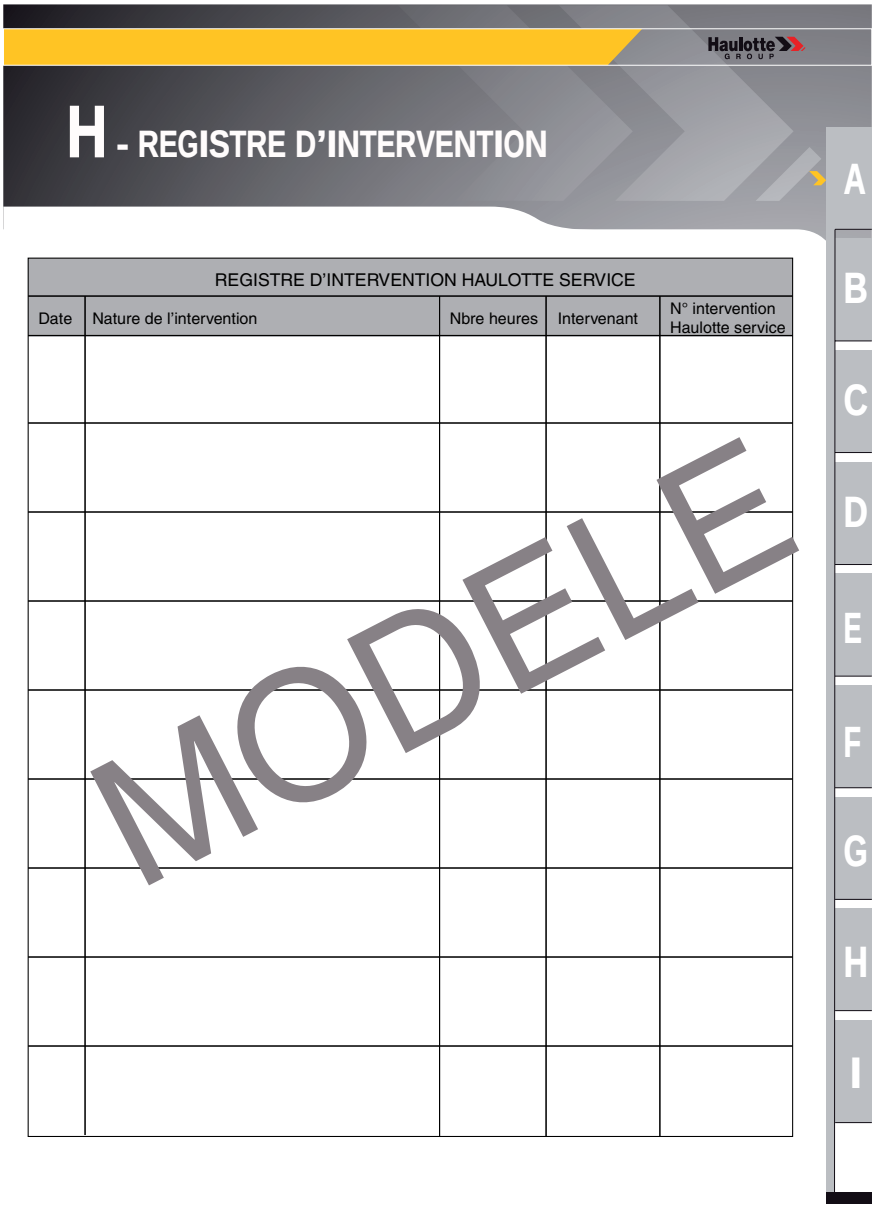
The machine must return to a stable state without tipping over.

G - Technical characteristics

1 - Intervention log

In order to benefit from the HAULOTTE® guarantee, each maintenance or repair operation must figure in the INTERVENTION LOG, which can be found at the end of the maintenance book delivered with your machine.

Intervention log



H - REGISTRE D'INTERVENTION

REGISTRE D'INTERVENTION HAULOTTE SERVICE				
Date	Nature de l'intervention	Nbre heures	Intervenant	N° intervention Haulotte service

H - Intervention log