ENGINE-POWERED ARTICULATED LIFTS, 12 - 26 M

Operator's manual

ENGINE-POWERED ARTICULATED LIFTS, 12 - 26 M

HA120PX - HA16X - HA16SPX (HA46SJRT) - HA16PX (HA46JRT) - HA18SPX (HA51SJRT) - HA18PX (HA51JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

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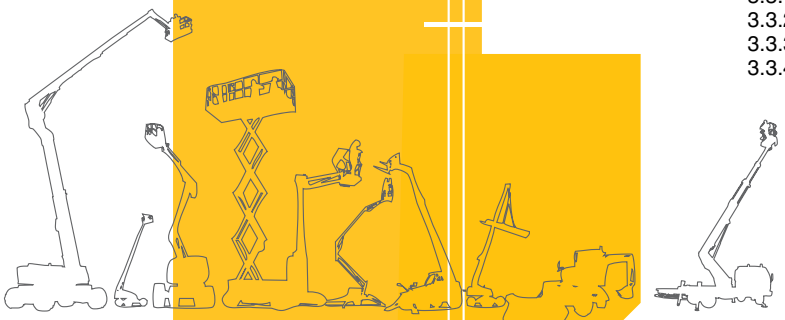
CONTENTS

D

OPERATING PRINCIPLE

E

DRIVING



CONTENTS

F

SPECIAL PROCEDURE

G

TECHNICAL CHARACTERISTICS

H

INTERVENTION REGISTER

You have just purchased a HAULOTTE® product

and we would like to thank you for your business.

1 - Operator's manual

As stated on the delivery slip, this manual is one of the documents in the on-board document holder provided upon delivery of your HAULOTTE® machine.

The operator manual is a translation of the original instructions.

Safe operation of this product can only be assured if you follow the operating instructions contained in this manual.

We would particularly like to draw your attention to 2 essential points :

- Compliance with safety instruction (machine, use, environment)
- Use of the equipment within the performance limits.

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

2 - After Sales Service

Our HAULOTTE Services® After Sales Service is at your disposal throughout your machine's service life to ensure optimal use of your HAULOTTE product..

- When contacting our After Sales Service, ensure that you provide the machine model and serial number.
- When ordering any consumables or spare parts, please use this manual and the Haulotte Essential catalogue to receive your genuine HAULOTTE spare parts, your only guarantee of parts interchangeability and correct machine operation..
- If there is an equipment malfunction involving a HAULOTTE® product, then contact HAULOTTE Services® immediately even if the malfunction does not involve material and/or bodily damage..
- HAULOTTE® must be informed in the event of an incident that either involves one of these products or has caused bodily injury or significant deterioration of property (personal property or the product); contact HAULOTTE Services® immediately (See : HAULOTTE Services® contact details)

3 - Compliance

We would like to remind you that HAULOTTE® complies with the provisions of any applicable directives applicable to this type of machine.

HAULOTTE advises you that NO modifications carried out without the written permission of HAULOTTE® will void the HAULOTTE warranty..

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

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

Certain options can modify the machine's operating characteristics and its associated safety. If your machine was originally delivered with options fitted, replacing a safety component associated with a particular options not require any particular precautions other than those associated with the installation itself (static test).

Otherwise, it is essential to follow the manufacturer's recommendations below :

- **Installation by authorised HAULOTTE® personnel only.**
- **Update the manufacturer's identification plate.**
- **Have stability tests carried out by a certified agency/competent person.**
- **Ensure label compliance.**

4 - HAULOTTE Services® contact details

HAULOTTE Services® contact details

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1 - Recommendations

1.1 - OPERATOR'S MANUAL

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

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

HAULOTTE® has compiled this manual to assist in safe and efficient operation of the products covered by the manual.

This manual must be kept on the machine (or in the cab in its storage case. The manual must be available to all operators and must be kept in good condition. Additional copies can be ordered from HAULOTTE Services®.

1.2 - SYMBOLS USED

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

Legend

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 the need for 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 COLORS

The potential dangers and any specific regulations are indicated around the product 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

• The employer has the obligation to issue a driving permit to the operator.

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

Do not operate the product in the following situations :

- On 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 3.2.4-Risk of uncontrolled movement and overturning).
- Close to power lines. Respect the safety distance (Section A 3.2.3-Risk of electrocution).
- At ambient 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 an explosive atmosphere.
- During storms (risk of lightning).
- In the presence of strong electromagnetic fields (radar, etc ...).

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

N.B.-:-WHILST THE MACHINE IS NOT IN USE, CARE MUST BE TAKEN TO ENSURE THAT IF THE MACHINE IS NOT LOCKED IN A SECURE LOCATION, THAT THE UNIT KEY SWITCH IS REMOVED TO PREVENT UNAUTHORISED USE OF THE MACHINE.

2.2 - SPECIFIC INSTRUCTIONS

Do not operate the product 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 slope is greater than the permissible limit. Check the maximum value in the technical characteristics (Section G 1-Main characteristics).
- In a non-ventilated area as the exhaust gases are toxic.
- At night unless the machine is equipped with the optional light.
- If the number of persons exceeds the permissible limit. Check the maximum value in the technical characteristics (Section G 1-Main characteristics).
- If the side force is greater than the permissible force. Check the maximum value in the technical characteristics (Section G 1-Main characteristics).

3 - Operation instructions

It is preferable to operate the machine on flat, consolidated ground (tarmac, concrete, etc.).

3.1 - PROHIBITIONS

- Never use a faulty machine (hydraulic leaks, worn tires, malfunction).
- Never operate the machine controls suddenly.
- Never place the machine against a structure to hold that structure in place.
- Never use the machine to tow other machines or to drag materials.
- Never expose the batteries or electrical components to water (pressure cleaner, rain).
- Never disable the safety devices.
- Do not make contact with a fixed or mobile obstacle. The contact can cause premature deterioration of the structure and lead to the corruption of certain safety elements.
- Do not climb onto the covers.
- Never use the machine with only an operator in the platform. It must be used by 2 operators.
- Never use the machine when the platform is cluttered.
- Never increase the surface area of the platform by using floor extensions or accessories not authorized by HAULOTTE®.
- Never leave the hydraulic cylinders fully extended or retracted before switching off the machine, 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 elements that can increase the wind force (panels).
- Never increase the working height by using attachments (ladder).
- Never use the guardrail as a means of access for climbing in or out of the platform. The basket can be easily accessed in its low position. For machines fitted with : Steps have been provided for this purpose where required.
- Never climb on the guardrail.
- Never use the machine without fully lowering the sliding midrail or without closing the platform entry gate.
- Never use the machine as a crane, material 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 cluttered areas. Keep speed under control in bends.
- Never tow the machine over extended distances (it must be transported on a trailer). In case of a machine failure, it is possible to tow it to load it onto a trailer (Section F 3Towing).

3.2 - POTENTIAL RISKS

3.2.1 - Risk of command system disturbance

Risk of disrupted movement. Maintain clearance from high voltage lines or magnetic fields.

3.2.2 - Risk of falling

When in the platform, respect the following instructions :

- Carry individual protection equipment adapted to the work conditions and local rules.
- Avoid contact with fixed or mobile obstacles (other machines).
- Ensure that the adjustable midrail is closed (low position and against the guardrails).
- Ensure that the gate is closed and locked (For machines fitted with).
- Hold on securely to the guardrails during elevation and driving.
- Do not sit, stand, or climb on the platform guard rails.
- Ensure that guard rails are correctly installed and locked.
- Always keep your feet firmly on the floor of the platform.
- Remove any trace of oil or grease from the steps, floor, handrail and the guardrails.
- Keep the floor of the platform free of debris.
- Do not leave the platform until it is fully in its stowed position.
- Do not climb on to the platform if the machine is not in the stowed position.

To climb up or climb down from the platform :

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

3.2.3 - Risk of electrocution

The machine is not electrically insulated and does not offer any insulation protection.

The risks of electrocution are high in the following situations :

- Close to live power lines, consider the movement of the machine and the sway of the electric power lines particularly in windy conditions.
- In the event that you were to make accidental contact with a high voltage line, wait for the power to the line to be switched off before operating the machine.
- During storms.

A - Safety precautions

Never use the machine as a welding earth.

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

Respect the local rules and the minimum safety distance from power lines..

Minimum safety distance

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

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

3.2.4 - Risk of uncontrolled movement and overturning

When in the platform, respect the following instructions :

- Before operating the machine on any indoor or outdoor surface (premises, bridge, truck, etc.), check that the surface is capable of supporting the combined machine weight and platform capacity. Check the maximum value in the technical characteristics (Section G 1-Main characteristics).

- Remain vigilant of driving direction reversal at the platform. Check the driving direction with the help of the red or green arrow on the chassis relative to the red and green arrows on the platform control box.
- Always ensure that the chassis is never driven any closer than 1 m(3 ft3 in) m to holes, bumps, tilts, obstructions, debris and ground coverings that may hide holes and other dangers.
- During motion direction reversal from the platform or ground control box, the joysticks or switches must be stopped in neutral position before reversing the direction of motion.
- Taking note of the overall load dimensions and weight, place the loads in the centre of the platform or distribute them it a uniform manner.

• Do not drive the machine on slopes or tilts beyond the design limits. Check the maximum value in the technical characteristics(Section G 1-Main characteristics).

• While driving, always place the arrow above the rear axle, in the direction of movement.

• While driving on a slope, always orient the machine in the direction of the slope.

- If the tilt alarm sounds when the platform is raised, lower platform completely, then reposition machine onto level ground before raising platform.

A - Safety precautions

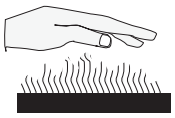
- **Do not travel down slopes at high speed.**
- **Do not use the machine (elevation and travel) on an incline greater than that permitted by the slope sensor.**
- **Do not drive in reverse (direction opposite the field of vision).**
- **Do not pull or push objects with the boom.**
- **Never use the machine in winds exceeding the permissible limit.**
- **Do not increase the surface area exposed to 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 ft9 in) above flat, clear land is associated with each degree.

Beaufort scale

Force	Meteorological description	Observed effects	m/s	km/h	mph
0	Calm	Smoke rises vertically.	0 - 0,2	0 - 1	0 - 0,62
1	Very light breeze	Smoke indicates the wind direction.	0,3 - 1,5	1 - 5	0,62 - 3,11
2	Light breeze	Wind felt on the face. Leaves rustle. Weather vanes turn.	1,6 - 3,3	6 - 11	3,72 - 6,84
3	Slight breeze	Leaves and small 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 - 24,4	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 flammable atmosphere (spark, flame, etc.).**
- **Do not touch the hot parts of the hydraulic power source (engine, filters, etc.).**
- **Do not bridge the battery terminals with metallic objects.**
- **Do not service the battery close to a spark, naked flame, glowing tobacco (emissions of gas).**

- **Do not fill up the fuel tank, when the engine is running and/or close to a naked (open) flame.**

3.2.6 - Risk of crushing and collision

When in the platform, respect the following instructions :

- During operation, keep all the parts of the body inside the platform.
- To position the machine close to obstacles, use the raise controls (arm, boom, etc.) instead of the drive controls.
- Ensure there are no obstacles (structure) in the work area.
- When driving, position the platform so as to provide the best visibility possible.
- Always use another person to guide machine movements in case of poor visibility.
- All the personnel in the platform or on the within the vicinity of the machine must wear Personal Protection Equipment (safety helmet, etc.).
- When lifting or lowering the basket and during driving, the operator must check that the area above, below and to each side of the machine are clear.
- When moving the machine, ensure that the machine operating areas is free of persons and obstacles.

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

Take account of the distance, reduced visibility and blind spots during use of the machine.

B - Intervenor's responsibility

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

The owner (or hirer) has the obligation to inform operators of the instructions contained in the Operator Manual.

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 of the machine.

2 - Employer's responsibility

. The employer has the obligation to issue a driving permit to the operator.

N.B.-:-IN ACCORDANCE WITH THE REGULATION IN THE COUNTRY WHERE THE MACHINE IS OPERATING, THE USER MUST BE AUTHORIZED TO DRIVE BY THE DOCTOR OF LABOUR MINISTRY.

Forbid anyone from operating the machine who is :
- **Under the influence of drugs, alcohol, etc..**
- **subject to fits, loss of motor skills, dizziness, etc..**

3 - Trainer's responsibility

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

4 - Operator's responsibility

The operator must read and understand the contents of 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 poor 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 become familiar with and fully understand the emergency controls and how to operate the machine in an emergency as a component of their formal operator training.

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

5 - Inspection and maintenance

The inspection and maintenance table below, identifies the role and the responsibilities of each party in periodical 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's manual
Pre-operation inspection	Before operation or when the operator changes	Operator	Operator	Operator's manual
Periodical preventive maintenance	At the specified intervals (250 hours or 1 year)	Owner (or hirer)	On-site technician or qualified HAULOTTE Services® technician	Maintenance book
Periodical visit	2 times a year or at the latest 6 months after the last periodic 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

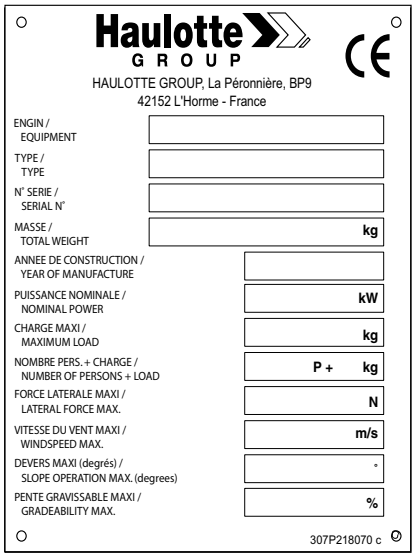
1 - Identification

The manufacturers identification plate fixed on the chassis bears all pertinent information to identify the machine (Please see machine configuration).

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

Identification plate CE - AS

A3



Identification plate ANSI - CSA

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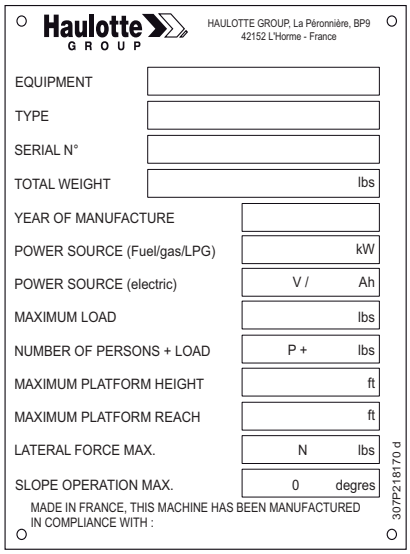
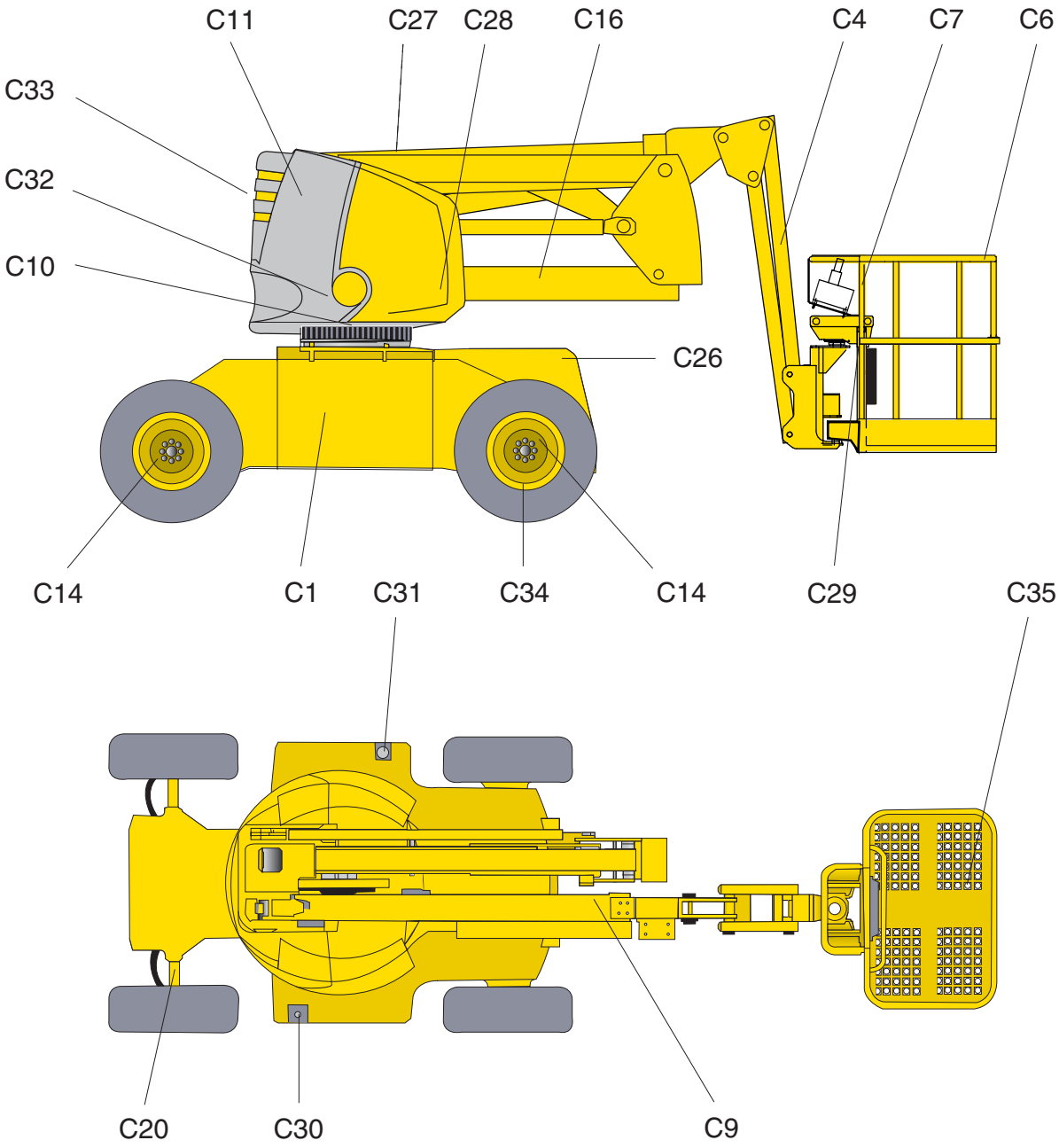


2 - Main components

HA120PX - Major Component Location Diagram



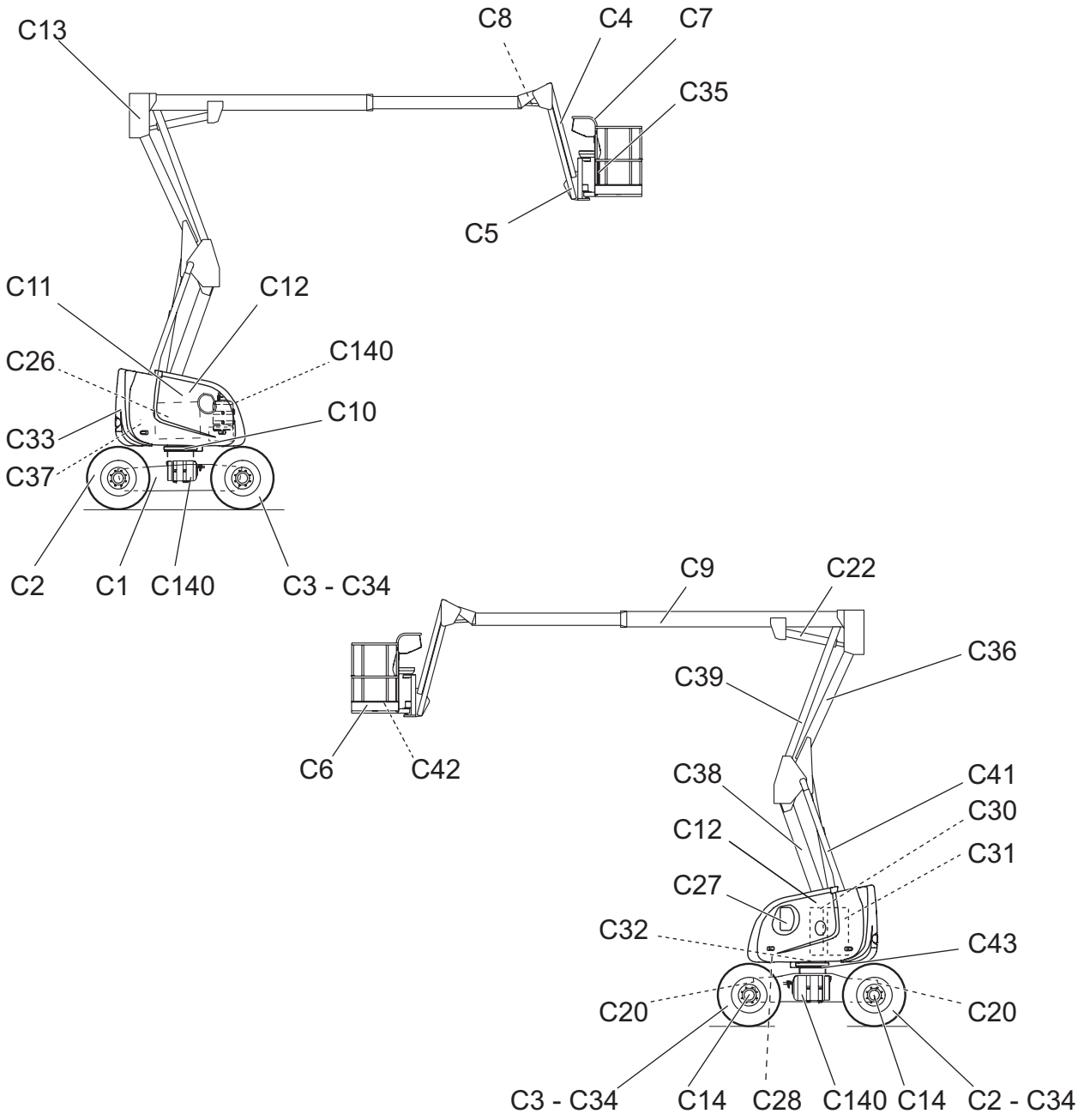
C - Machine layout

HA120PX - Description of the components

Marking	Description
C1	Chassis
C2	Front driven steering axle
C3	Rear drive and/or steer wheel
C4	Jib
C5	Platform support incorporating load limiter
C6	Platform
C7	Platform control box
C8	Level compensation cylinder
C9	Upper boom
C10	Slew ring
C11	Turntable assembly
C12	Side cover
C13	Arm/Boom link piece
C14	Hydraulic drive motor and reducer
C16	Lower arm
C20	Tie-down (and/or lifting) points
C22	Boom lift cylinder
C26	Engine and hydraulic pump
C27	Ground control box
C28	Slope sensor switch
C29	Platform rotation cylinder or Platform rotation motor(Depending on the machine)
C30	Hydraulic oil tank
C31	Fuel tank
C32	Turntable rotation gearbox
C33	Counterweight
C34	Drive wheels
C35	Document holder

C - Machine layout

HA16X - HA16SPX - HA16PX - HA18SPX - HA18PX - View of components for articulated arms under 20 m(65 ft7 in)



C - Machine layout

HA16X - HA16SPX - HA16PX - HA18SPX - HA18PX - Description of the components

Marking	Description
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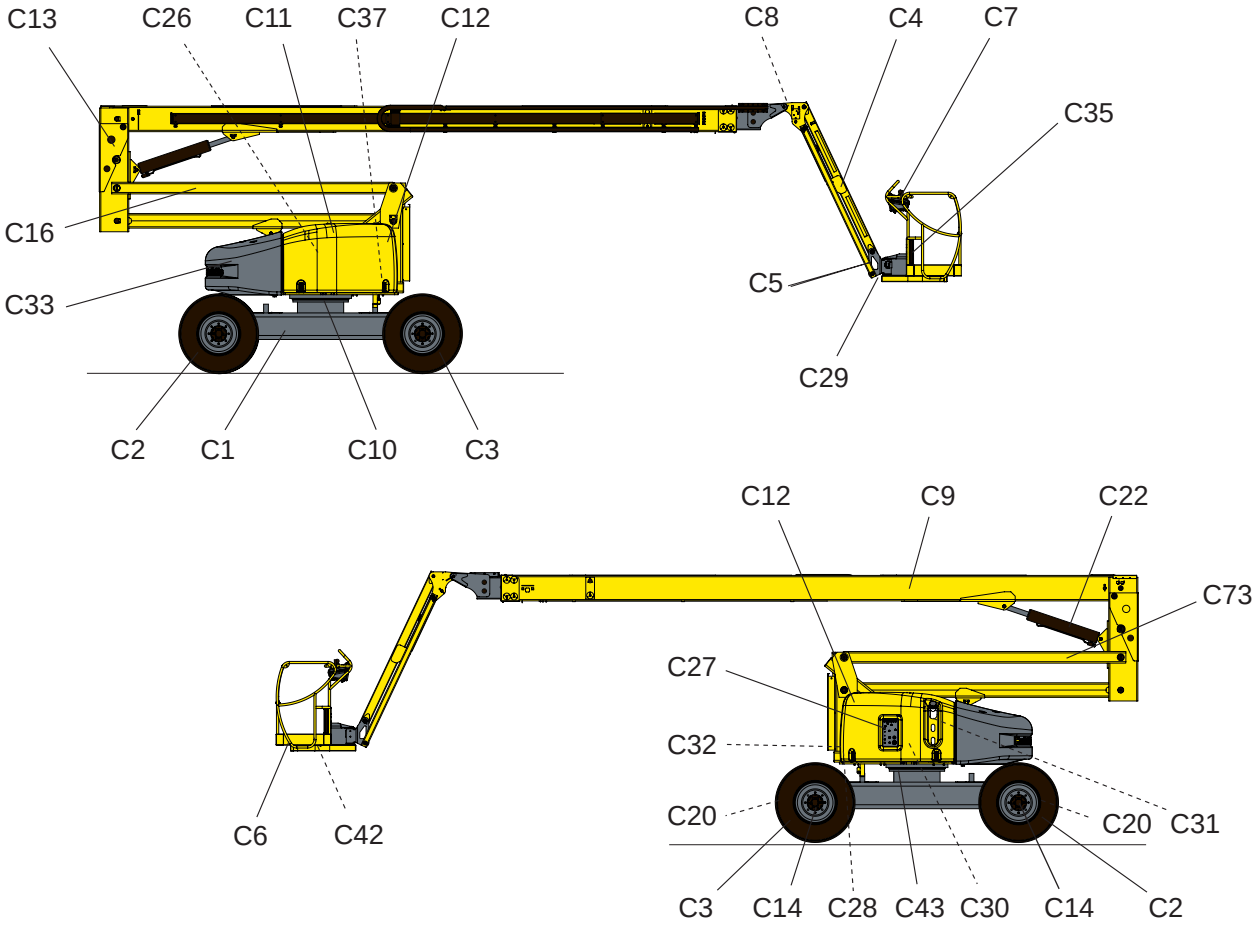
C3	Rear drive and/or steer wheel
C4	Jib
C5	Platform support incorporating load limiter
C6	Platform
C7	Platform control box
C8	Level compensation cylinder
C9	Upper boom (or boom tube)
C10	Slew ring
C11	Turntable assembly
C12	Side cover
C13	Arm/Boom link piece
C14	Hydraulic drive motor and reducer
C20	Tie-down (and/or lifting) points
C22	Boom lift cylinder
C26	Engine and hydraulic pump
C27	Ground control box
C28	Tilt sensor switch
C30	Hydraulic oil tank
C31	Fuel tank
C32	Turntable rotation gearbox
C33	Counterweight
C34	Drive wheels
C35	Document holder
C36	Top arm
C37	Operating batteries
C38	Bottom arm
C39	Top tie rod
C41	Bottom tie rod
C42	'Enable Switch' pedal
C43	Turntable rotation lock pin
C140	Gas bottles[1]

1. *For US only*

C - Machine layout

HA20PX - HA260PX - View of components for articulated arms of between 20 m(65 ft7 in) and 26 m(85 ft3 in)



C - Machine layout

HA20PX - HA260PX - Description of the components

Marking	Description
C1	Chassis
C2	Front driven steering axle
C3	Rear drive and/or steer wheel
C4	Jib
C5	Platform support incorporating load limiter
C6	Platform
C7	Platform control box
C8	Level compensation cylinder
C9	Upper boom
C10	Slew ring
C11	Turntable assembly
C12	Side cover
C13	Arm/Boom link piece
C14	Hydraulic drive motor and reducer
C16	Lower arm
C20	Tie-down (and/or lifting) points
C22	Boom lift cylinder
C26	Engine and hydraulic pump
C27	Ground control box
C28	Slope sensor switch
C29	Platform rotation cylinder or Platform rotation motor(Depending on the machine)
C30	Hydraulic oil tank
C31	Fuel tank
C32	Turntable rotation gearbox
C33	Counterweight
C35	Document holder
C37	Operating batteries
C42	'Enable Switch' pedal
C43	Turntable rotation lock pin
C73	Lower arm
C140	Gas bottles[1]

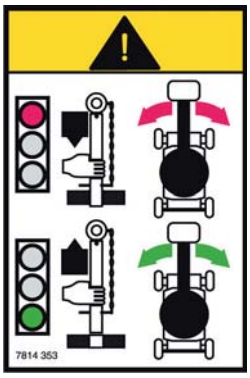
1. *For US only*

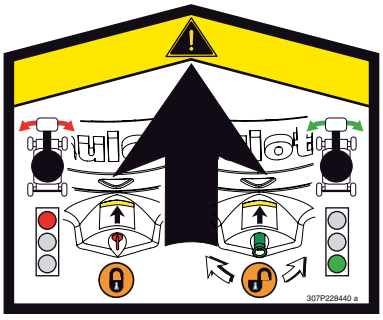
3 - Safety devices

3.1 - TURNTABLE ROTATION PIN

The turntable rotation pin allows turntable locking during machine transportation

After each transportation, remove the turntable rotation locking pin.





Turntable rotation locking pin (Please see machine configuration)

Turntable rotation locking pin (Please see machine configuration)

Turntable rotation locking pin (Please see machine configuration)

C - Machine layout

Turntable rotation locking pin (Please see machine configuration)

Turntable rotation locking pin (Please see machine configuration)

3.2 - SLIDING (OR SWINGING) INTERMEDIATE GUARDRAIL

The illustrations in this paragraph do not necessarily correspond to the range of products designated in the manual.

The platform is comprised of guardrails and a sliding mid-rail facilitating platform access.

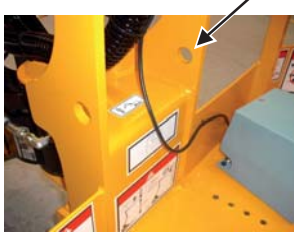
Do not restrain the sliding midrail to the guard rail.

3.3 - ANCHORAGE POINT (PLEASE SEE MACHINE CONFIGURATION)

The illustrations in this paragraph do not necessarily correspond to the range of products designated in the manual.

The machine is equipped with harness anchorage points points which accept 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

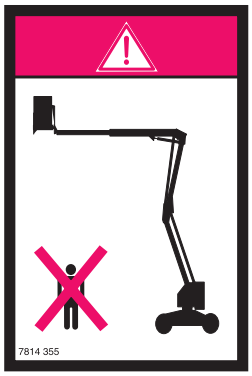
4.1 - CLASSIFICATION PLAN

4.1.1 - Red labels

The red labels indicate a potentially fatal danger.

Common labels

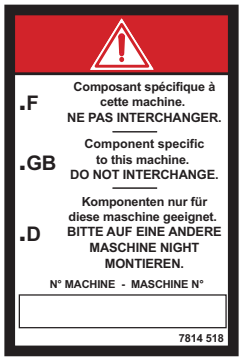
R7



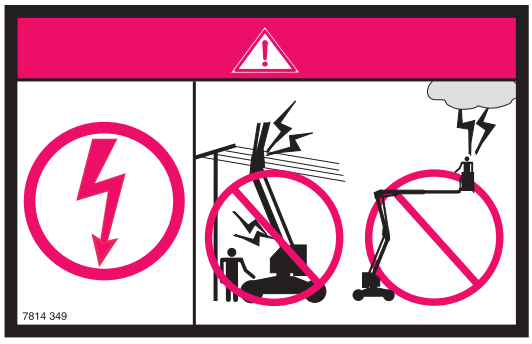
R3

R4

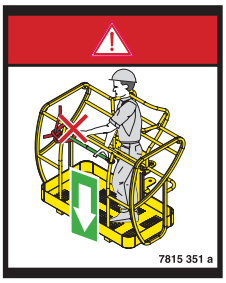
R6



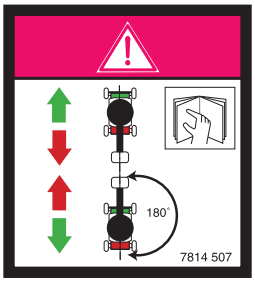
R5



R8

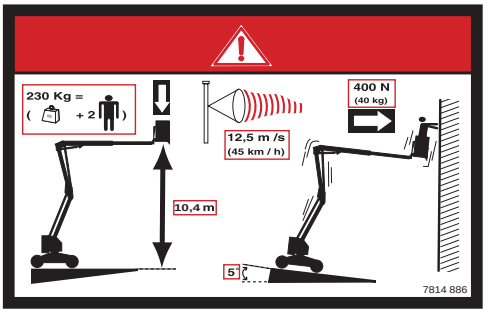


R2



Specific labels HA120PX

R1



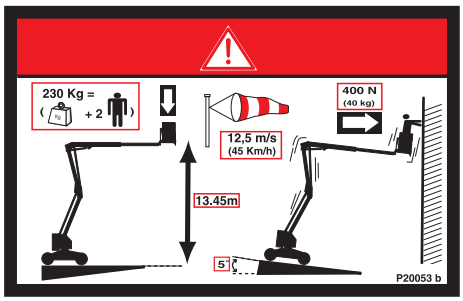
R9

R17

C - Machine layout

Specific labels HA16X

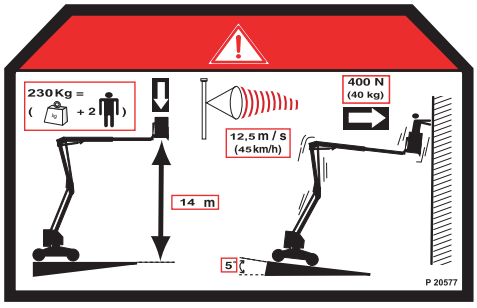
R1



R9

Specific labels HA16SPX

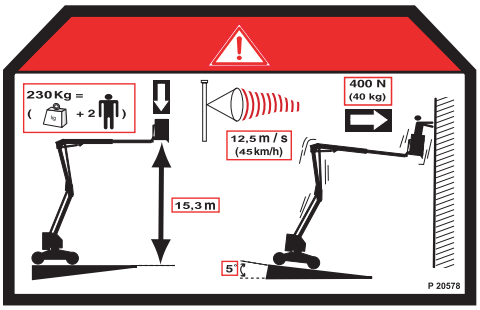
R1



R9

Specific labels HA18SPX

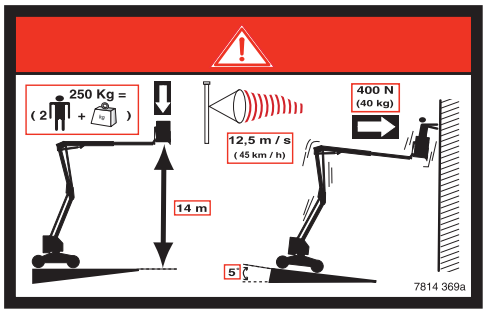
R1



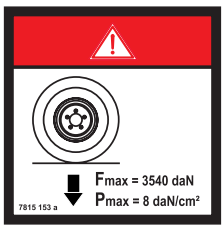
R9

Specific labels HA16PX

R1



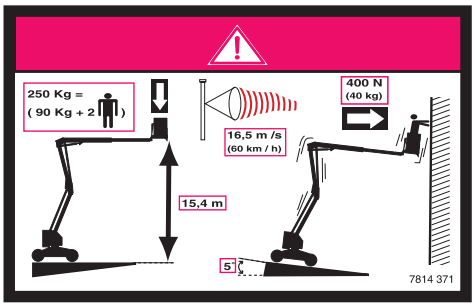
R9



C - Machine layout

Specific labels HA18PX

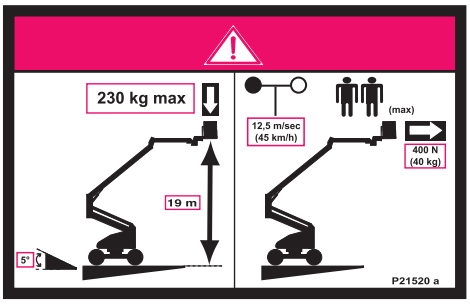
R1



R9

Specific labels HA20PX

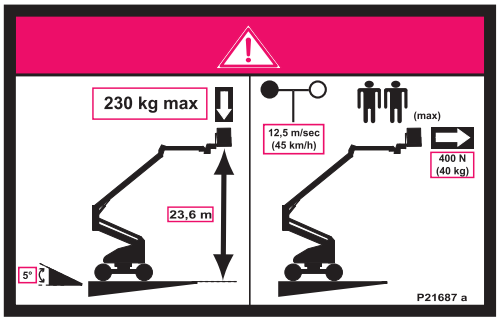
R1



R9

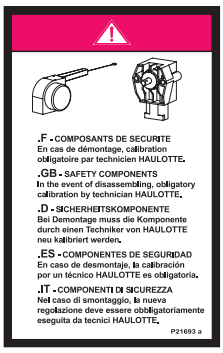
Specific labels HA260PX

R1



R9

R11



R22

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

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.

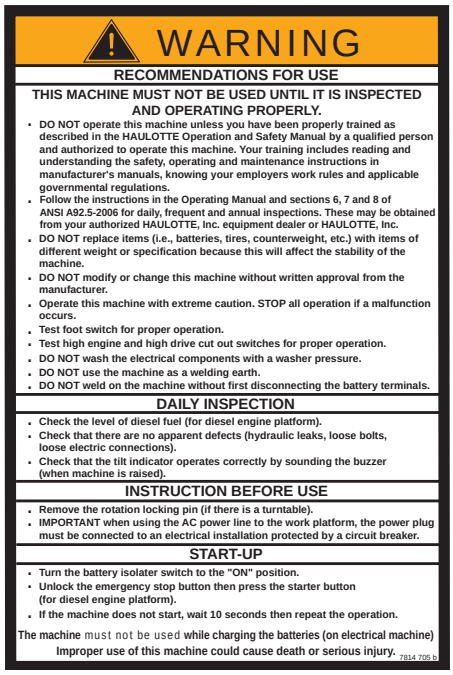
THE MACHINE
MUST NOT BE USED
WHILE CHARGING THE BATTERIES

7814 456

C - Machine layout

Common labels - ANSI - CSA

O1

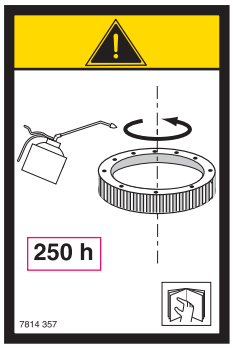


4.1.3 - Yellow labels

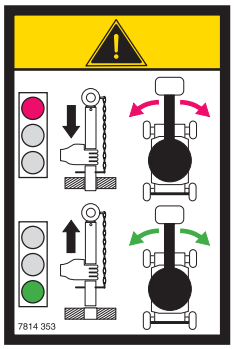
The yellow labels indicate a risk of material damage and/or minor injury.

Common labels

J1

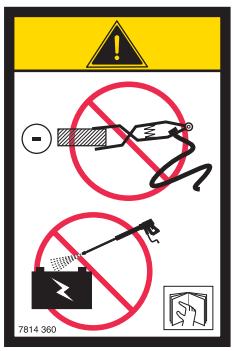


J2

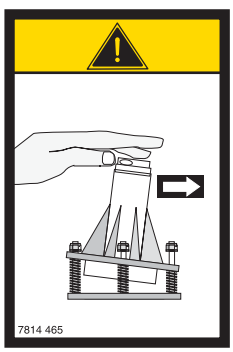


J3

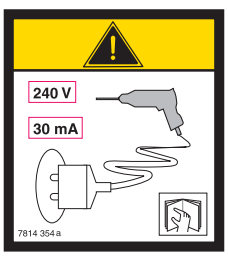
J4



J6

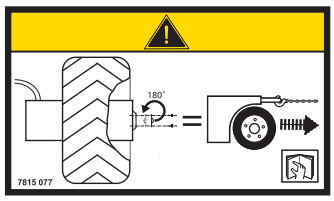


J10



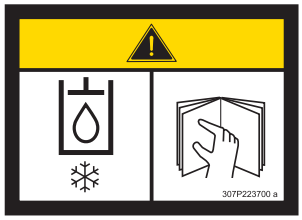
Specific HA20PX and HA260PX labels

J5



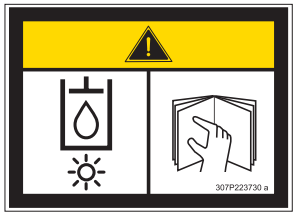
Specific labels for winter weather machines

J26



Specific labels for hot countries

J29

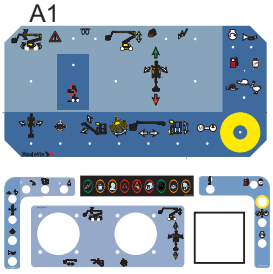


4.1.4 - Other labels

The other labels provide additional technical information.

Common labels

A1



A5 - A6

A16

A11

A12

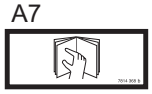
A4

A2

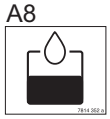
A3

A15

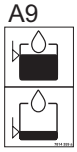
A7



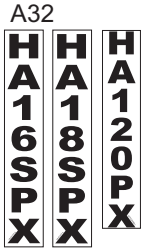
A8



A9



A32



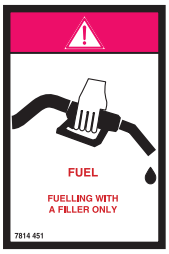
A10

A30

C - Machine layout

Specific labels AS

R14

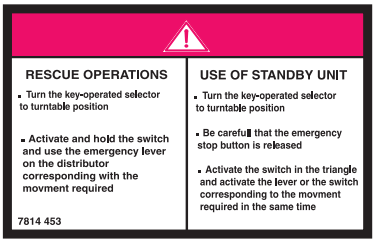


R16

R20

R53

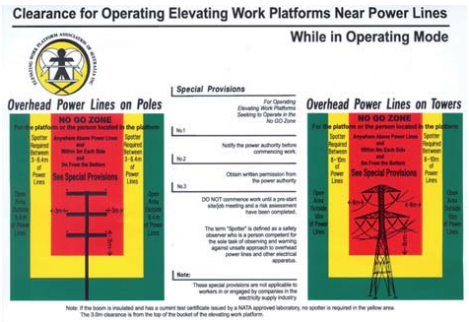
R54



R15

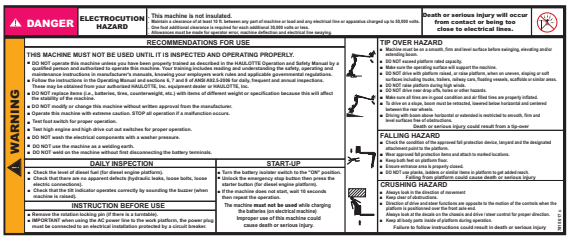
J10

A28

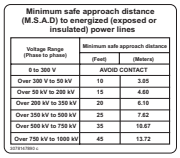


Specific labels ANSI

A29



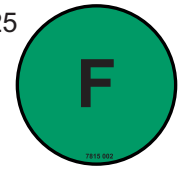
A22



O3

A27

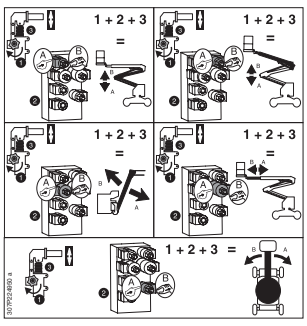
A25



J32

Specific labels HA120PX

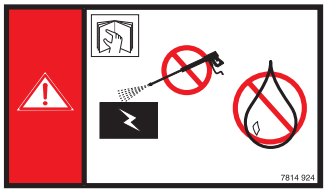
A74



Specific labels, optional

A8

R18



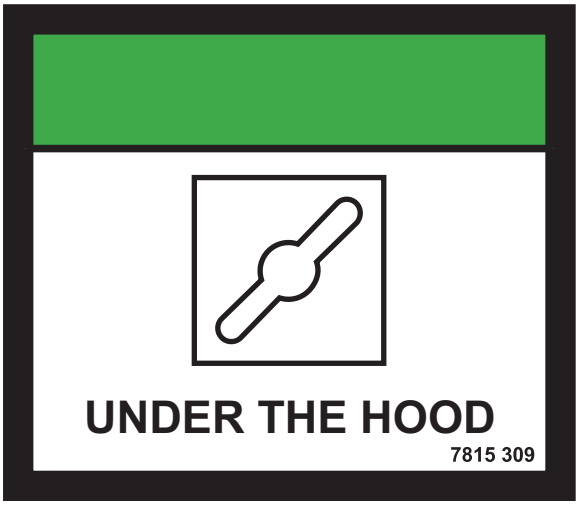
A31

4.1.5 - Green labels

Green labels indicate maintenance, operations or information(CSA standard).

Common labels

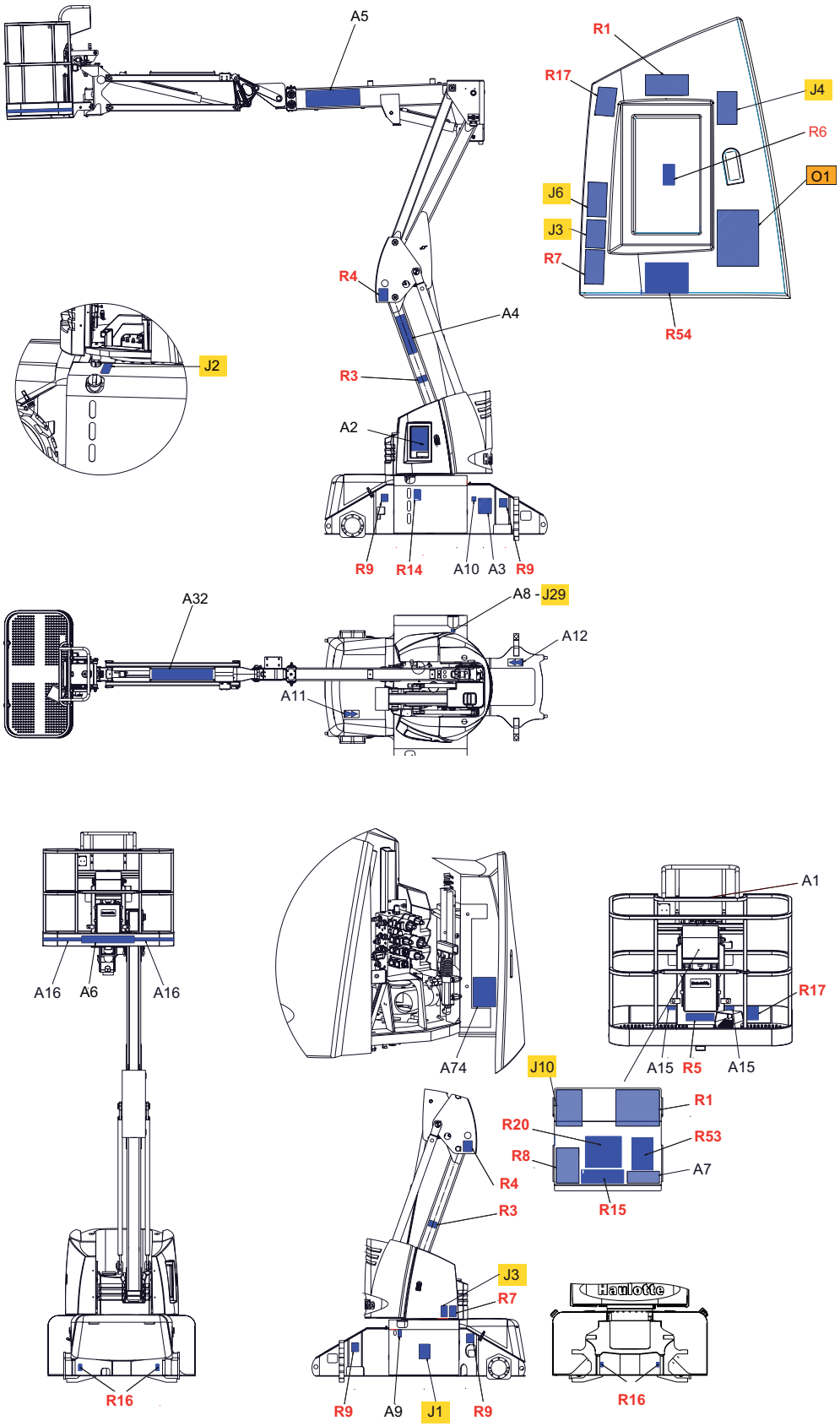
V2



V1

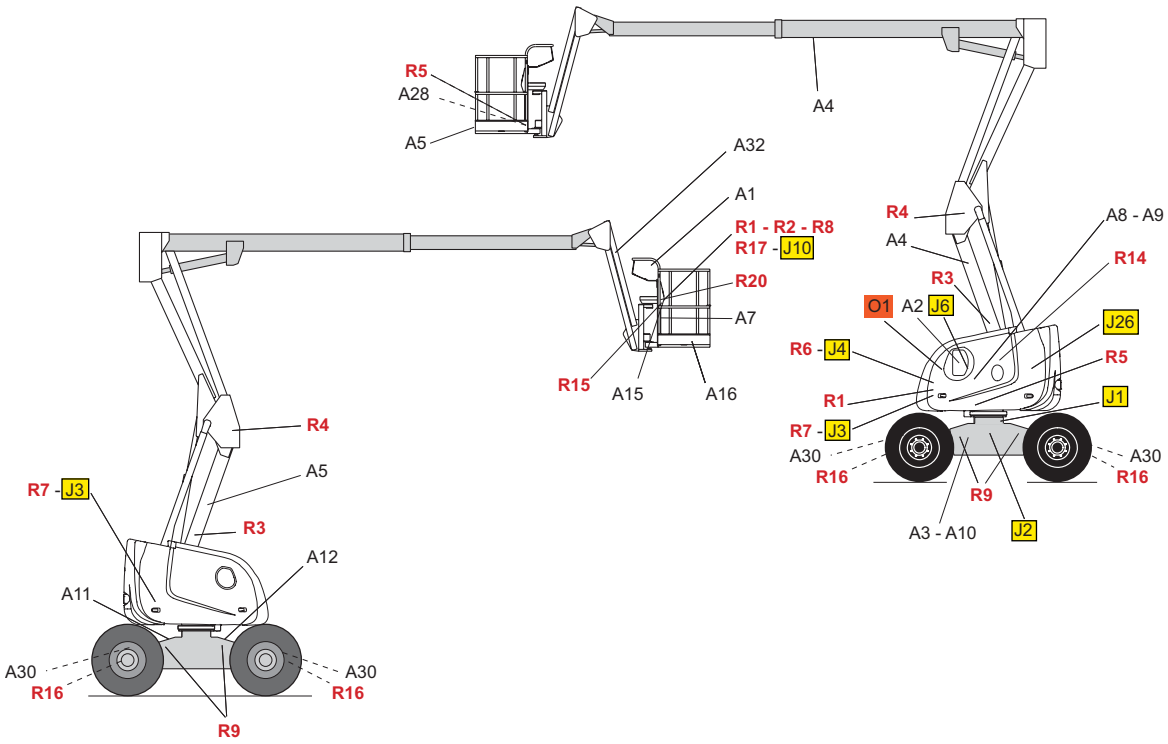
4.2 - IDENTIFICATION

Location of the HA120PX labels-Standards CE and AS

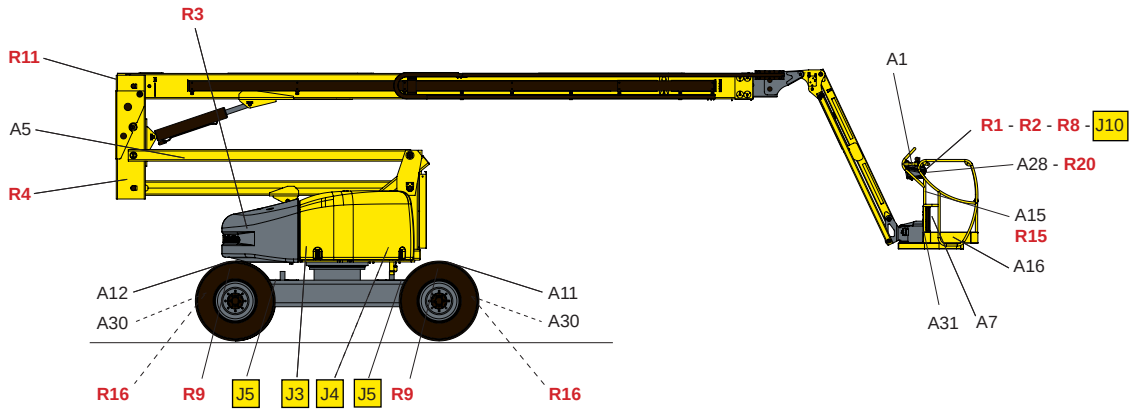


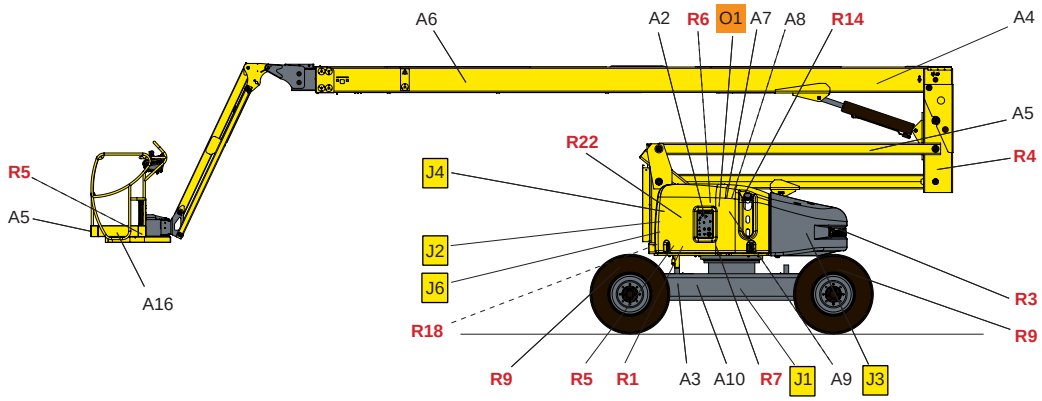
C - Machine layout

Location of labels for articulated lifts of less than 20 m(65 ft7 in)-Standards CE and AS



Location of labels for articulated lifts between 20 m(65 ft7 in) and 26 m(85 ft3 in)-Standards CE and AS





C - Machine layout

Label descriptions HA120PX - HA16X - HA16PX (HA46JRT) - HA16SPX (HA46SJRT) - HA18PX (HA51JRT) - HA18SPX (HA51SJRT)-Standards CE and AS

Color	Marking	Description	Quantity	
Red	R1	Height of the floor and load	2	For HA120PX : 3078148860 For HA16X : 307P200530 For HA16PX : 3078143690 For HA16SPX : 307P205770 For HA18PX : 3078143710 For HA18SPX : 307P205780
Red	R2	Travel 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	2	3078143550
Red	R8	Close the sliding mid-rail	1	3078153510
Red	R9	Wheel load	4	For HA120PX : 3078151560 For HA16X : 3078151590 For HA16PX : 3078151530 For HA16SPX : 3078152380 For HA18PX and HA18SPX : 3078151540
Red	R14	Fuel filling-up	1	For AS standard only : 3078144510
Red	R15	Harness use	1	For AS standard only : 3078144520
Red	R16	Load strength on each slings	1	For AS standard only : 3078144490
Red	R17	Do not travel down slopes at high speed	1	For HA120PX only : 3078143970
Red	R18	On-board generator	1	3078149240 Except HA120PX
Red	R20	Danger driving direction	1	For AS standard only : 3078145230
Red	R53	Basket in compliance with EN280 standard	1	on HA120PX and AS only : 3078144540
Red	R54	Emergency	1	on HA120PX and AS only : 3078144930
Orange	O1	Operation instructions	1	In french (CE standard) : 3078143420 In english (Standards CE and AS) : 3078144560 In spanish (CE standard) : 3078143430 In german (CE standard) : 3078143440 In italian (CE standard) : 3078143460 In danish (CE standard) : 3078144940 In portuguese (CE standard) : 3078145830 In finish (CE standard) : 30781745540 In swidish (CE standard) : 3078145940 In dutch (CE standard) : 3078143470
Yellow	J1	Greasing the turntable rotation gear	1	3078143570
Yellow	J2	Remove the blocking pin before rotating	1	3078143530
Yellow	J3	Do not place your foot on the cover	2	3078143640
Yellow	J4	Do not use the machine as a welding earth	2	3078143600
Yellow	J6	Verification of tilt operation	1	3078144650
Yellow	J10	Socket	1	CE standard : 3078143540 AS standard : 3078144570
Yellow	J26	Winter grade hydraulic oil	1	For HA16X , HA16(S)PX and HA18(S)PX : 307P223700
Yellow	J29	Hydraulic oil for hot countries	1	307P223730

C - Machine layout

Color	Marking	Description	Quantity	
Other	A1	Platform control box	1	For HA120PX : 307P224350 For HA16X : 307P217970 For HA16PX and HA18PX : 307P217930 For HA16SPX and HA18SPX : 307P217950
Other	A2	Ground control box	1	For HA120PX : 307P226170 For HA16X : 307P226210 For HA16(S)PX and HA18(S)PX : 307P225980
Other	A3	Identification plate	1	307P218070
Other	A4	Machine name logo	1	For HA120PX : 307P224960 For HA16X : 307P218230 For HA16PX : 307P218190 For HA16SPX : 307P2183200 For HA18PX : 307P218220 For HA18SPX : 307P218210
Other	A5	Small format HAULOTTE® logo	2	For HA120PX : 307P218180 For HA16X , HA16(S)PX and HA18(S)PX : 307P217080
Other	A6	Large format HAULOTTE® logo	1	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	Noise emission level	1	For HA120PX : 3078149740 For HA16X : 307P202240 For HA16(S)PX and HA18(S)PX : 3078148700
Other	A11	Front green drive direction arrow	1	For HA120PX : 3078137440 For HA16X , HA16(S)PX and HA18(S)PX : 3078143930
Other	A12	Rear red drive direction arrow	1	For HA120PX : 3078137430 For HA16X , HA16(S)PX and HA18(S)PX : 3078143940
Other	A15	Harness anchor point location	1	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660
Other	A28	Risks of electrocution	1	307P226440
Other	A30	Machine tie down points	4	3078147930
Other	A31	On-board generator selector	1	For HA16X , HA16(S)PX and HA18(S)PX : 3078150500
Other	A32	Vertical machine name logo	1	For HA120PX : 307P224980 For HA16SPX : 3078152130 For HA18SPX : 3078152170
Other	A74	Emergency lowering	1	For HA120PX : 307P224950

C - Machine layout

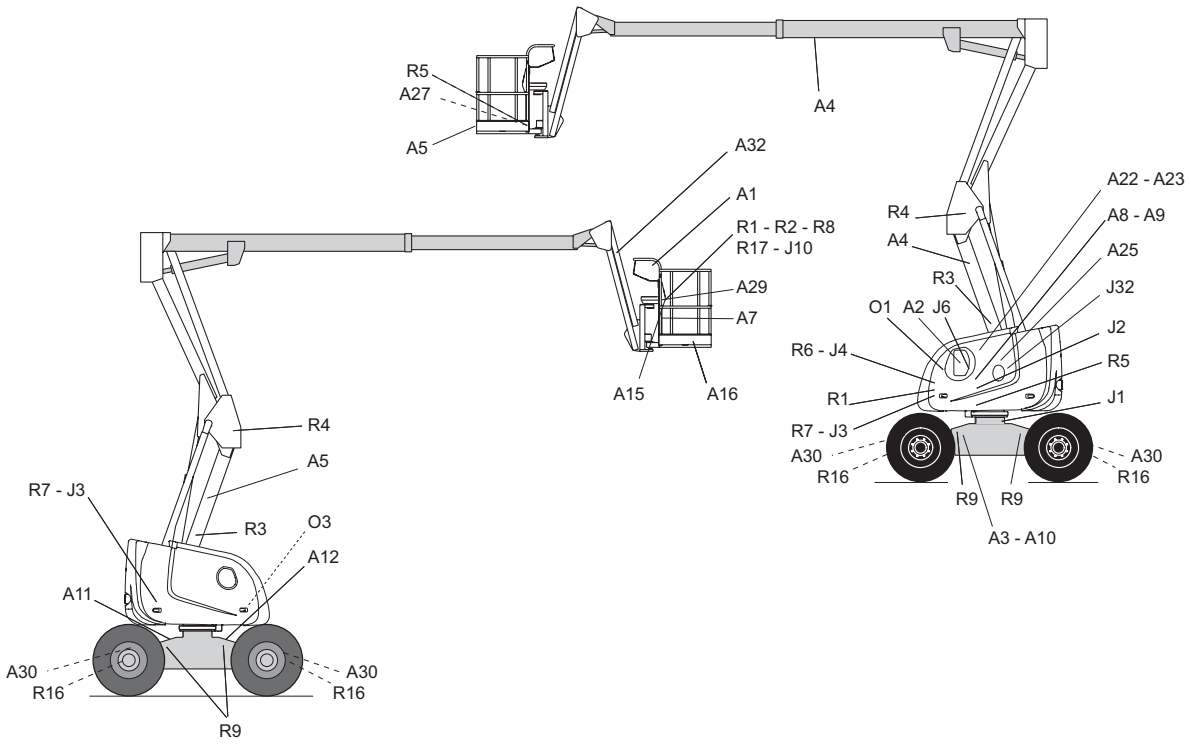
Label descriptions-Standards CE and AS

Color	Marking	Description	Quantity	HA20PX	HA260PX
Red	R1	Height of the floor and load	2	307P215200	307P216870
Red	R2	Travel direction	1	3078145070	
Red	R3	Risk of crushed hands	2	3078143620	
Red	R4	Risk of body crushing	2	3078143630	
Red	R5	Danger of electrocution	2	3078143490	
Red	R6	Do not interchange	1	3078145180	
Red	R7	Do not park in the work area	1	3078143880	
Red	R8	Close the sliding mid-rail	1	3078153510	
Red	R9	Wheel load	4	307P215210	307P216880
Red	R11	Calibration after dismantling	1		307P216930
Red	R14	Fuel filling-up	1	For AS standard only : 3078144510	
Red	R15	Harness use	1	For AS standard only : 3078144520	
Red	R16	Load strength on each slings	1	For AS standard only : 3078144490	
Red	R18	On-board generator	1	3078149240	
Red	R20	Danger driving direction	1	For AS standard only : 3078145230	
Red	R22	Prohibited use of the PVG	1		307P230040
Orange	O1	Operation instructions	1	In french (CE standard) : 3078143420 In english (Standards CE and AS) : 3078144560 In spanish (CE standard) : 3078143430 In german (CE standard) : 3078143440 In italian (CE standard) : 3078143460 In danish (CE standard) : 3078144940 In portuguese (CE standard) : 3078145830 In finish (CE standard) : 30781745540 In swidish (CE standard) : 3078145940 In dutch (CE standard) : 3078143470	
Yellow	J1	Greasing the turntable rotation gear	1	3078143570	
Yellow	J2	Remove the blocking pin before rotating	1	3078143530	
Yellow	J3	Do not place your foot on the cover	2	3078143640	
Yellow	J4	Do not use the machine as a welding earth	2	3078143600	
Yellow	J5	Brake release	1	3078150770	
Yellow	J6	Verification of tilt operation	1	3078144650	
Yellow	J10	Socket	1	CE standard : 3078143540 AS standard : 3078144570	
Other	A1-1	Central platform control box	1	307P227780	
Other	A1-2	Left platform control box	1	307P219920	
Other	A1-3	Right platform control box	1	307P219450	
Other	A1-4	Upper central platform control box	1	307P219470	
Other	A2	Ground control box	1	307P216900	
Other	A3	Identification plate	1	307P218070	
Other	A4	Machine name logo	1	3078137650	307P216920
Other	A5	Small format HAULOTTE® logo	3	307P217080	
Other	A6	Large format HAULOTTE® logo	1	307P217770	307P217240
Other	A7	Read the operation manual	2	3078143680	
Other	A8	Hydraulic oil	1	3078143520	
Other	A8	Biodegradable oil	1	3078148890	
Other	A9	Upper and lower oil level	1	3078143590	
Other	A10	Noise emission level	1	3078148740	
Other	A11	Front green drive direction arrow	1	3078143930	
Other	A12	Rear red drive direction arrow	1	3078143940	

C - Machine layout

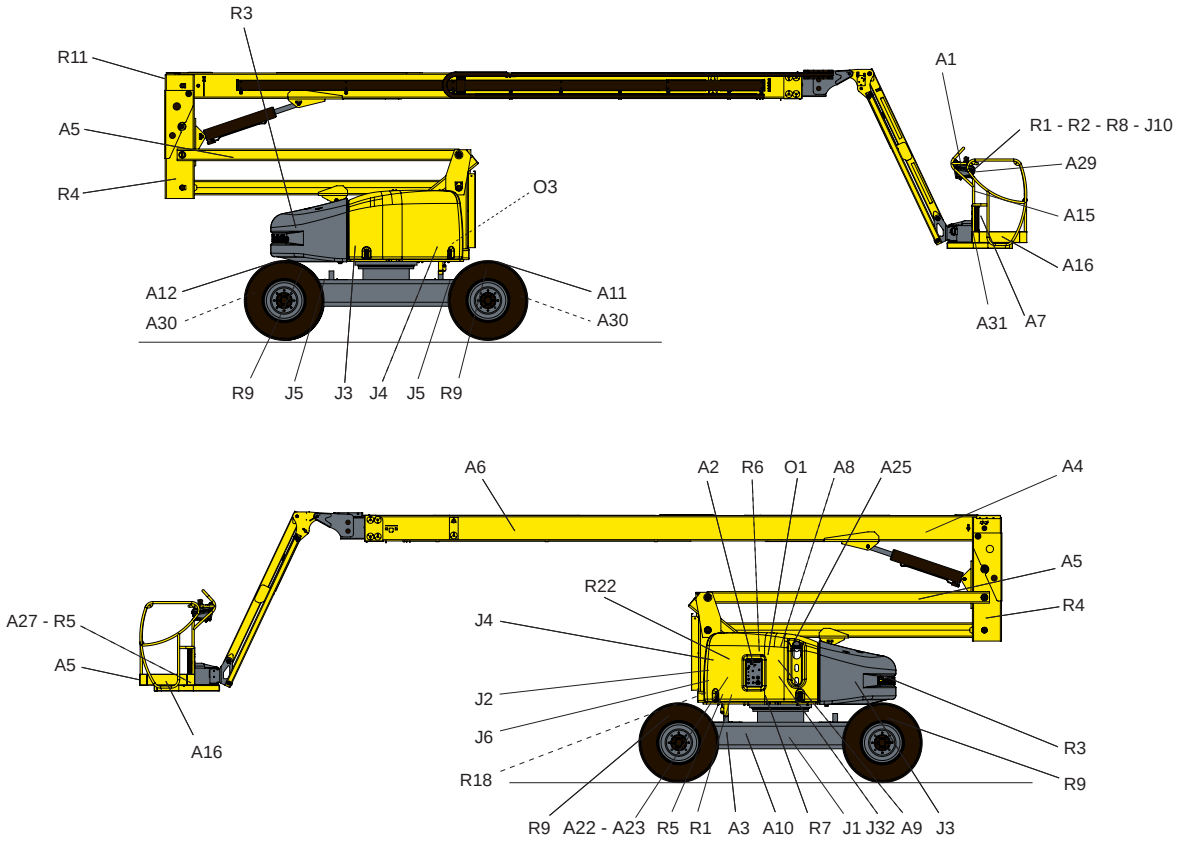
Color	Marking	Description	Quantity	HA20PX	HA260PX
Other	A15	Harness anchor point location	2	307P216290	
Other	A16	Yellow and black adhesive tape	1	2421808660	
Other	A28	Risks of electrocution	1	For AS standard only : 307P226440	
Other	A30	Machine anchorage point	4	3078147930	
Other	A31	On-board generator selector	1	3078150500	

Location of labels for articulated lifts of less than 20 m(65 ft7 in)-Standards ANSI and CSA



C - Machine layout

Location of labels for articulated lifts between 20 m(65 ft7 in) and 26 m(85 ft3 in)-Standards ANSI and CSA



Label descriptions-Standards ANSI and CSA

Color	Marking	Description	Quantity	HA16PX	HA18PX
Red	R1	Height of the floor and load	2	307P203470	
Red	R2	Travel direction	1	3078147300	
Red	R3	Risk of crushed hands	2	3078147240	
Red	R4	Risk of body crushing	2	3078147260	
Red	R5	Danger of electrocution	1	3078147100	
Red	R6	Do not interchange	1	3078147320	
Red	R7	Do not park in the work area	1	3078147170	
Red	R8	Close the sliding mid-rail	1	3078153630	
Red	R9	Wheel load	4	307P216620	307P216630
Red	R18	On-board generator	1	3078149240	
Red	R50	Socket - 110V	1	3078147580	
Orange	O1	Operation instructions	1	3078147050	
Orange	O3	Risks of explosion	1	3078148030	
Yellow	J1	Greasing the turntable rotation gear	1	3078147190	
Yellow	J2	Remove the blocking pin before rotating	2	3078147700	
Yellow	J3	Do not place your foot on the cover	2	3078147270	
Yellow	J4	Do not use the machine as a welding earth	1	3078147220	
Yellow	J6	Verification of tilt operation	1	3078147090	
Yellow	J10	Socket	1	3078147580	
Yellow	J26	Winter grade hydraulic oil	1	307P223700	
Yellow	J32	Low sulfur	1	307P225800	

C - Machine layout

Color	Marking	Description	Quantity	HA16PX	HA18PX
Other	A1	Platform control box	1	307P217930	
Other	A2	Ground control box	1	307P225980	
Other	A3	Identification plate	1	307P218170	
Other	A4	Machine name logo	1	307P219940	307P219960
Other	A5	Small format HAULOTTE® logo	3	307P217080	
Other	A7	Read the operation manual	1	3078147290	
Other	A8	Hydraulic oil	1	3078147140	
Other	A8	Biodegradable oil	1	3078148920	
Other	A9	Upper and lower oil level	1	3078147210	
Other	A10	Noise emission level	1	3078148700	
Other	A11	Front green drive direction arrow	1	3078143930	
Other	A12	Rear red drive direction arrow	1	3078143940	
Other	A15	Harness anchor point location	2	3078147950	
Other	A16	Yellow and black adhesive tape	1	2421808660	
Other	A22	Voltage table	1	3078147890	
Other	A25	Fuel tank cap	1	3078150020	
Other	A27	Permissible load	1	307P200080	
Other	A29	Summary safety instructions	1	3078150170	
Other	A30	Machine tie down points	4	3078147930	
Other	A31	On-board generator selector	1	307P203440	
Other	A32	Vertical machine name logo	1	3078147640	3078147650

Label descriptions-Standards ANSI and CSA

Color	Marking	Description	Quantity	HA20PX	HA260PX
Red	R1	Height of the floor and load	2	307P215740	307P215750
Red	R2	Travel direction	1	3078147300	
Red	R3	Risk of crushed hands	2	3078147240	
Red	R4	Risk of body crushing	2	3078147260	
Red	R5	Danger of electrocution	1	3078147100	
Red	R6	Do not interchange	1	3078147320	
Red	R7	Do not park in the work area	1	3078146960	
Red	R8	Close the sliding mid-rail	2	3078153630	
Red	R9	Wheel load	2	307P215770	307P218890
Red	R11	Calibration after dismantling	1		307P218880
Red	R18	On-board generator	1	3078149240	
Red	R22	Prohibited use of the PVG	1		307P230040
Orange	O1	Operation instructions	1	3078147050	
Orange	O3	Risks of explosion	1	3078148030	
Yellow	J1	Greasing the turntable rotation gear	1	3078147190	
Yellow	J2	Remove the blocking pin before rotating	2	3078147700	
Yellow	J3	Do not place your foot on the cover	2	3078147270	
Yellow	J4	Do not use the machine as a welding earth	1	3078147220	
Yellow	J5	Brake release	1	3078150780	
Yellow	J6	Verification of tilt operation	1	3078147090	
Yellow	J10	Socket	1	3078147580	
Yellow	J32	Low sulfur	1	307P225800	
Other	A1-1	Central platform control box	1	307P227780	
Other	A1-2	Left platform control box	1	307P219920	
Other	A1-3	Right platform control box	1	307P219450	

C - Machine layout

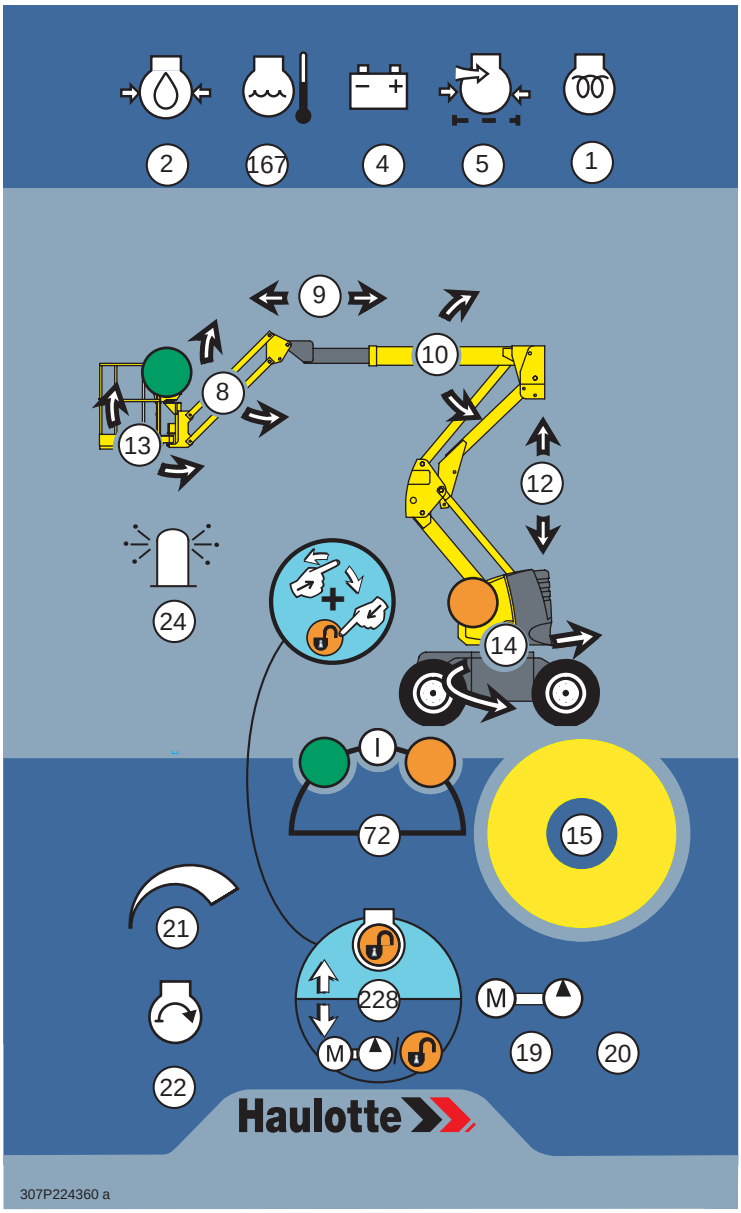
Color	Marking	Description	Quantity	HA20PX	HA260PX
Other	A1-4	Upper central platform control box	1	307P219470	
Other	A2	Ground control box	1	307P216900	
Other	A3	Identification plate	1	307P218170	
Other	A4	Machine name logo	1	3078146940	3078147110
Other	A5	Small format HAULOTTE® logo	3	307P217080	
Other	A6	Large format HAULOTTE® logo	3	307P217770	307P217240
Other	A7	Read the operation manual	2	3078147290	
Other	A8	Hydraulic oil	1	3078147140	
Other	A8	Biodegradable oil	1	3078148920	
Other	A9	Upper and lower oil level	1	3078147210	
Other	A10	Noise emission level	1	3078148740	
Other	A11	Front green drive direction arrow	1	3078143930	
Other	A12	Rear red drive direction arrow	1	3078143940	
Other	A15	Harness anchor point location	2	3078147950	
Other	A16	Yellow and black adhesive tape	1	2421808660	
Other	A22	Voltage table	1	3078147890	
Other	A25	Fuel tank cap	1	3078150020	
Other	A27	Permissible load	1	307P216380	
Other	A29	Summary safety instructions	1	3078150170	
Other	A30	Machine tie down points	4	3078147930	
Other	A31	On-board generator selector	1	307P203440	

5 - Control boxes

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

5.1 - GROUND CONTROL BOX - EMERGENCY CONTROL PANEL

HA120PX - General view



C - Machine layout

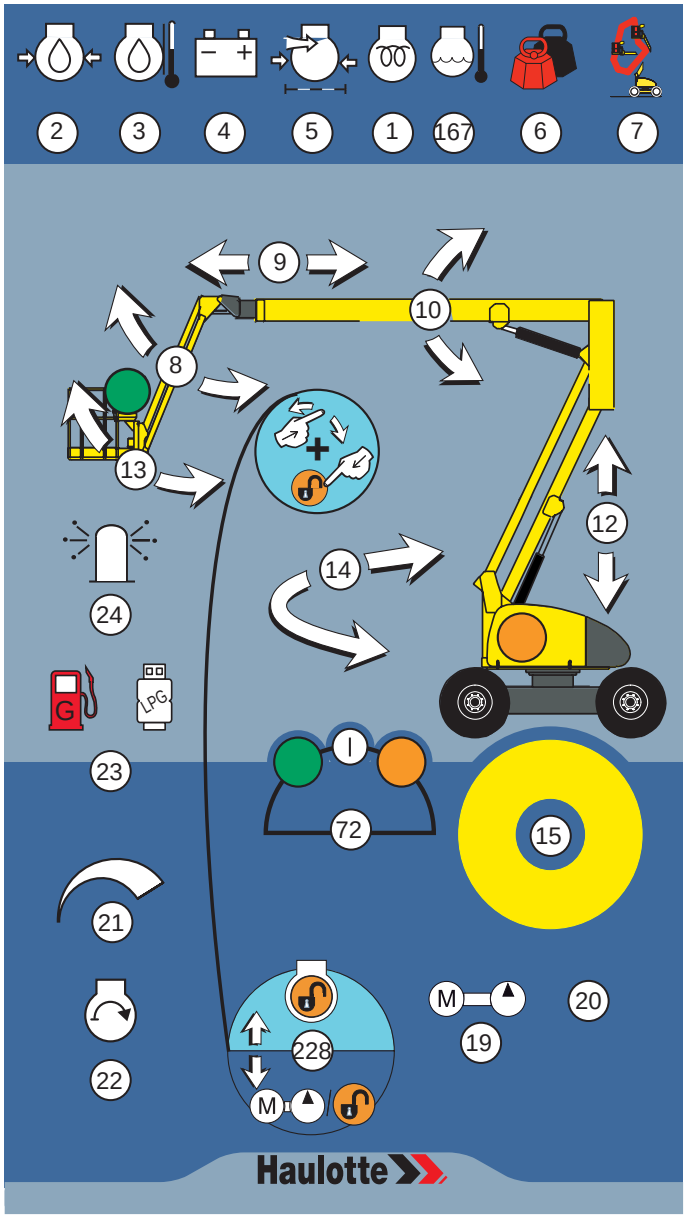
HA120PX - Controls and indicators

Marking	Description	Function
1	Electric pre-heating indicator	On : Engine in pre-heating mode
		Off : Engine pre-heated, starting possible
2	Engine oil pressure light	Low engine oil pressure[1]
3	Engine temperature indicator	High engine oil temperature(1.)
4	Battery charge indicator	Low battery charge(1.)
5	Air filter clogging indicator	Clogged air filter(1.)
6	Platform overload indicator	Platform overload
7	Radius limitation indicator	Close to radius limitation : • The indicator flashes • Movement is slowed down
		Radius limitation reached : • The indicator flashes continuously • An automatic movement is performed to return to the authorized radius limitation
8	Jib lifting / lowering selector	Move upwards : Jib lifting
		Move downwards : Jib lowering
9	Boom telescoping selector	Move to the left : To telescope out
		Move to the right : To telescope in
10	Boom raising selector	Move upwards : Boom raising
		Move downwards : Boom lowering
12	Arm lifting selector	Move upwards : Arm lifting
		Move downwards : Boom lowering
13	Platform levelling or transport position selector	Move to the right : Platform leveling lowered or placed in transport position
		Move to the left : Platform compensation lifted or placed in operating position
14	Turntable rotation selector	Move to the left : Counter clockwise (CCW) rotation
		Move to the right : Clockwise rotation
15	Emergency stop button	Pulled out (activated) : Ground control box energized
		Pushed down (deactivated) : De-energizes control system
19	Back-up unit selector	Press in and hold : Back-up unit activated
		Release : Back-up unit deactivated
20	Hour meter	Total machine running hours
21	Engine acceleration selector	Move to the right : Engine speed increases
		Move to the left : Engine idle speed
22	Engine start-up selector	Starting the engine
23	Petrol/Gas selector[2]	LPG : Gas supply
		G : Petrol or Optional diesel power supply
24	Beacon light on/off	Move upwards : Beacon light on
		Move downwards : Beacon light off
72	Control box energizing key selector	Left : Platform control box energized
		Center : De-energizes control system
		Right : Ground control box energized
167	Engine temperature indicator[3]	Coolant temperature
228	'Enable Switch' selector / Back-up unit selector[4]	Move upwards : Movement validation
		Move downwards : Back-up unit activatedMovement validation

1. *Perform the required maintenance (see the machine maintenance book)*
2. *For machines fitted with*
3. *For machines fitted with*
4. *For machines fitted with*

C - Machine layout

General view



C - Machine layout

Controls and indicators

Marking	Description	Function
1	Electric pre-heating indicator	On : Engine in pre-heating mode
		Off : Engine pre-heated, starting possible
2	Engine oil pressure light	Low engine oil pressure[1]
3	Engine temperature indicator	High engine oil temperature(1.)
4	Battery charge indicator	Low battery charge(1.)
5	Air filter clogging indicator	Clogged air filter(1.)
6	Platform overload indicator	Platform overload
7	Radius limitation indicator	Close to radius limitation : • The indicator flashes • Movement is slowed down
		Radius limitation reached : • The indicator flashes continuously • An automatic movement is performed to return to the authorized radius limitation
8	Jib lifting / lowering selector	Move upwards : Jib lifting
		Move downwards : Jib lowering
9	Boom telescoping selector	Move to the left : To telescope out
		Move to the right : To telescope in
10	Boom raising selector	Move upwards : Boom raising
		Move downwards : Boom lowering
12	Arm lifting selector	Move upwards : Arm lifting
		Move downwards : Boom lowering
13	Platform levelling or transport position selector	Move to the right : Platform leveling lowered or placed in transport position
		Move to the left : Platform compensation lifted or placed in operating position
14	Turntable rotation selector	Move to the left : Counter clockwise (CCW) rotation
		Move to the right : Clockwise rotation
15	Emergency stop button	Pulled out (activated) : Ground control box energized
		Pushed down (deactivated) : De-energizes control system
19	Back-up unit selector[2]	Press in and hold : Back-up unit activated
		Release : Back-up unit deactivated
20	Hour meter	Total machine running hours
21	Engine acceleration selector	Move to the right : Engine speed increases
		Move to the left : Engine idle speed
22	Engine start-up selector	Starting the engine
23	Petrol/Gas selector[3]	LPG : Gas supply
		G : Petrol or Optional diesel power supply
24	Beacon light on/off	Move upwards : Beacon light on
		Move downwards : Beacon light off
72	Control box energizing key selector	Left : Platform control box energized
		Center : De-energizes control system
		Right : Ground control box energized
167	Engine temperature indicator[4]	Coolant temperature
228	'Enable Switch' selector / Back-up unit selector[5]	Move upwards : Movement validation
		Move downwards : Back-up unit activatedMovement validation

1. *Perform the required maintenance (see the machine maintenance book)*
2. *For machines fitted with*
3. *For machines fitted with*
4. *For machines fitted with*
5. *For machines fitted with*

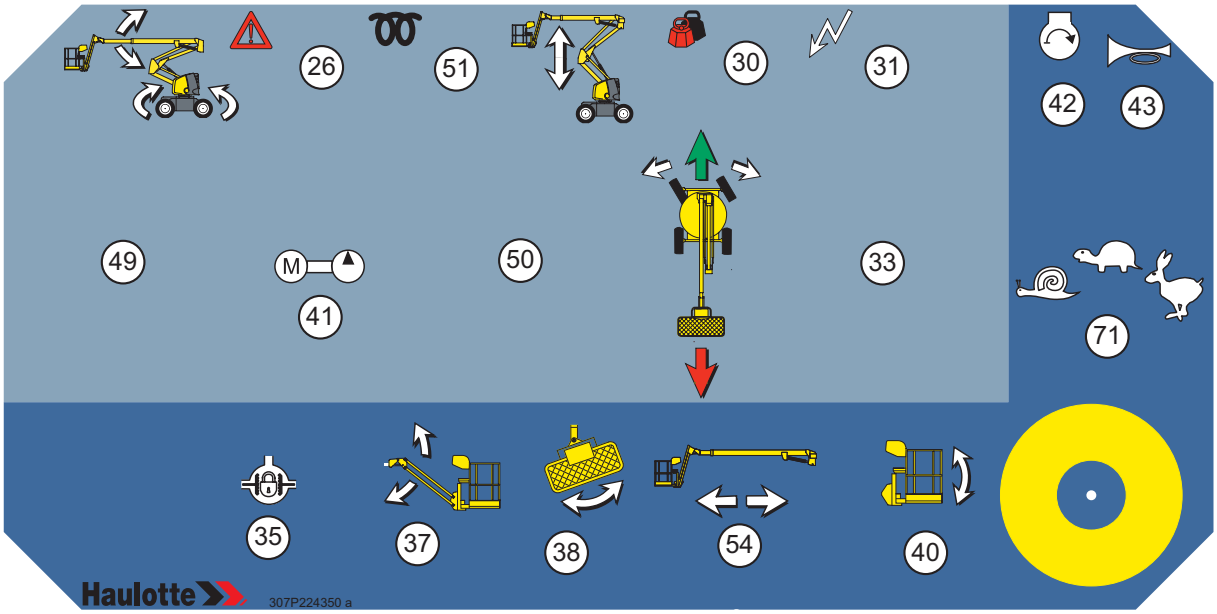
C - Machine layout

Photo

Photo HA260PX

5.2 - PLATFORM CONTROL BOX

HA120PX - General view



HA120PX - Controls and indicators

Marking	Description	Function
26	Fault indicator	Operation malfunction[1]
		Machine on excessive slope
30	Platform overload indicator	Platform overload
31	Power ON indicator	On : Machine switched on
		Off : Machine switched off
32	Radius limitation indicator	The indicator flashes : Close to radius limitation
		The indicator flashes continuously : Radius limitation reached
33	Drive joystick	Move forward : Forward drive
		Move backward : Reverse drive
	Front axle steering selector	Press right side of button : Right-hand steering
		Press left side of button : Left-hand steering
35	Differential lock selector	Press in and hold (activated) : Maximum drive torque (on difficult or sloping ground)
		Release (deactivated) : Standard torque
37	Jib lifting / lowering selector	Move upwards : Jib lifting
		Move downwards : Jib lowering
38	Platform rotation selector	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
40	Platform leveling selector	Move upwards : Lifting of platform
		Move downwards : Lowering of platform
41	Back-up unit selector	Press in and hold : Back-up unit activated
		Release : Back-up unit deactivated
42	Engine start-up selector	Starting the engine
43	Horn selector	Horn
44	Petrol/Gas selector[2]	LPG : Gas supply
		G : Petrol or Optional diesel power supply
46	Emergency stop button	Pulled out (activated) : Ground control box energized
		Pushed down (deactivated) : De-energizes control system

C - Machine layout

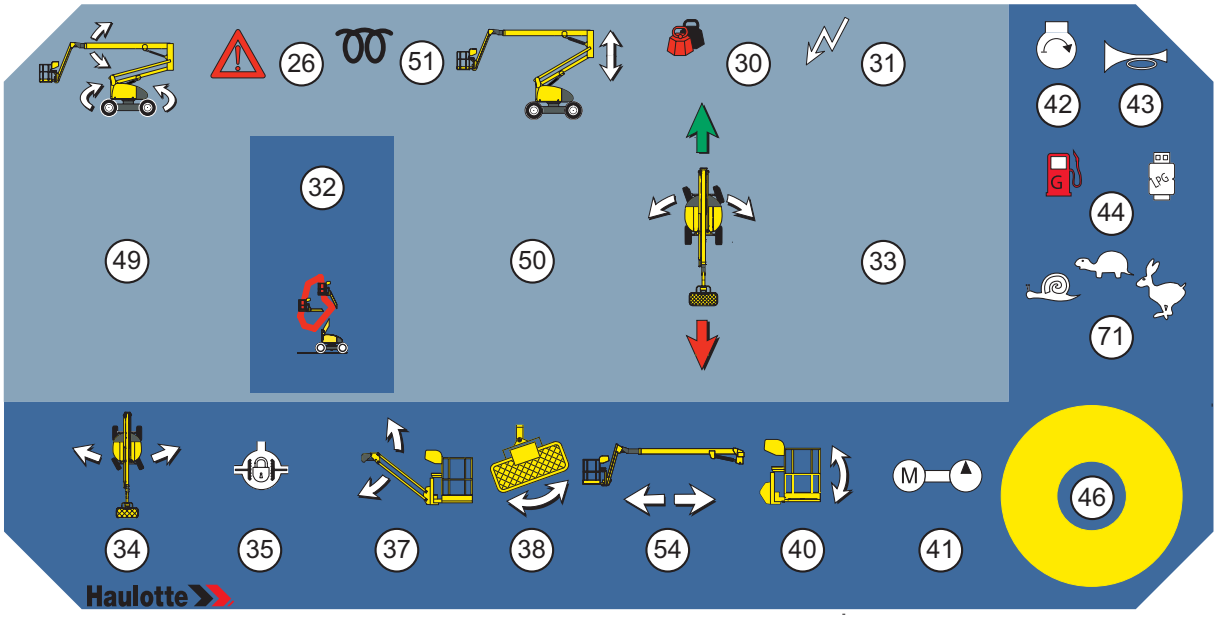
Marking	Description	Function
49	Turntable rotation joystick	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
	Boom lift joystick	Move upwards : Boom raising
		Move downwards : Boom lowering
50	Arm lifting/lowering joystick	Move forward : Arm lifting
		Move backward : Boom lowering
54	Boom telescoping selector	Move to the right : To telescope in
		Move to the left : To telescope out
71	Drive speed selector	High-speed driving
		Medium-speed drive (difficult ground, slope)
		Low-speed driving

1. *Perform the required maintenance (see the machine maintenance book)*
2. *For machines fitted with*

Photo HA120PX

C - Machine layout

General view



Controls and indicators

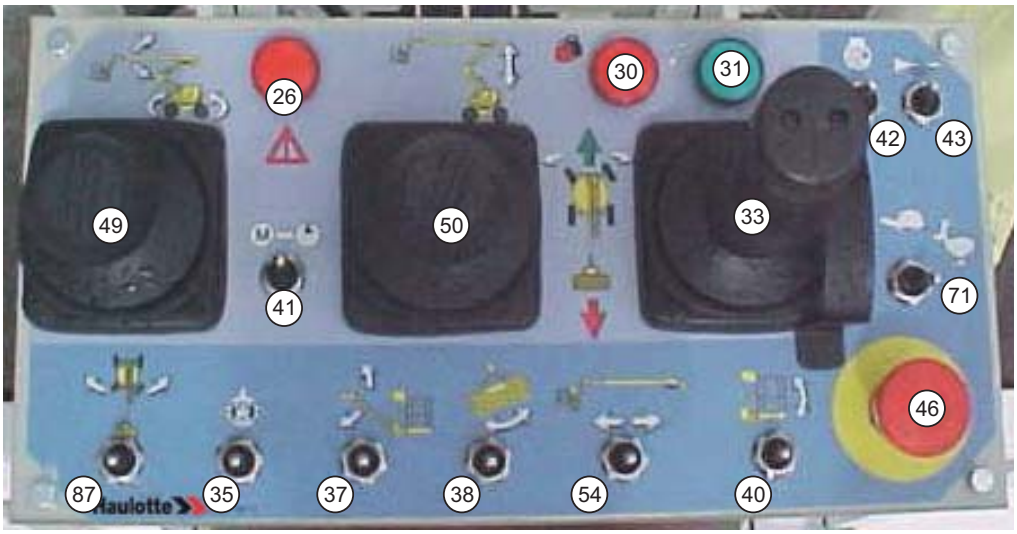
Marking	Description	Function
26	Fault indicator	Operation malfunction[1]
		Machine on excessive slope
30	Platform overload indicator	Platform overload
31	Power ON indicator	On : Machine switched on
		Off : Machine switched off
32	Radius limitation indicator	The indicator flashes : Close to radius limitation
		The indicator flashes continuously : Radius limitation reached
33	Drive joystick	Move forward : Forward drive
		Move backward : Reverse drive
	Front axle steering selector	Press right side of button : Right-hand steering
		Press left side of button : Left-hand steering
34	Rear axle steering selector	Move to the right : Right-hand steering
		Move to the left : Left-hand steering
35	Differential lock selector	Press in and hold (activated) : Maximum drive torque (on difficult or sloping ground)
		Release (deactivated) : Standard torque
37	Jib lifting / lowering selector	Move upwards : Jib lifting
		Move downwards : Jib lowering
38	Platform rotation selector	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
40	Platform leveling selector	Move upwards : Lifting of platform
		Move downwards : Lowering of platform
41	Back-up unit selector	Press in and hold : Back-up unit activated
		Release : Back-up unit deactivated
42	Engine start-up selector	Starting the engine
43	Horn selector	Horn
44	Petrol/Gas selector[2]	LPG : Gas supply
		G : Petrol or Optional diesel power supply
46	Emergency stop button	Pulled out (activated) : Ground control box energized
		Pushed down (deactivated) : De-energizes control system

C - Machine layout

Marking	Description	Function
49	Turntable rotation joystick	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
	Boom lift joystick	Move upwards : Boom raising
		Move downwards : Boom lowering
50	Arm lifting/lowering joystick	Move forward : Arm lifting
		Move backward : Boom lowering
51	Electric pre-heating indicator	On : Engine in pre-heating mode
		Off : Engine pre-heated, starting possible
54	Boom telescoping selector	Move to the right : To telescope in
		Move to the left : To telescope out
71	Drive speed selector	High-speed driving
		Medium-speed drive (difficult ground, slope)
		Low-speed driving

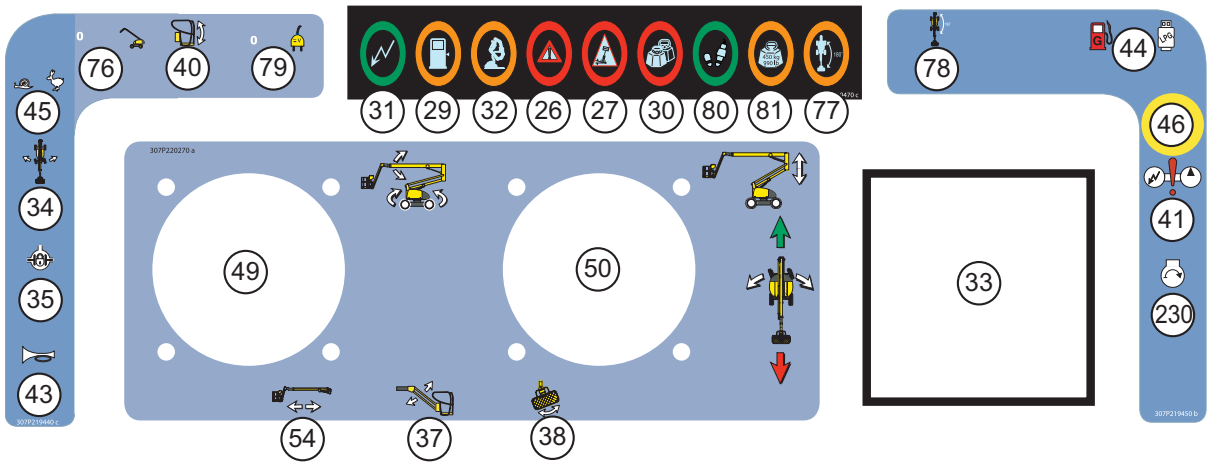
1. *Perform the required maintenance (see the machine maintenance book)*
2. *For machines fitted with*

Photo



C - Machine layout

General view



HA20PX - HA260PX - Controls and indicators

Marking	Description	Function
26	Fault indicator	Operation malfunction[1]
		Machine on excessive slope
27	Tilt indicator	Machine on excessive slope
29	Fuel level indicator	Low fuel level
30	Platform overload indicator	Platform overload
31	Power ON indicator	On : Machine switched on
		Off : Machine switched off
32	Radius limitation indicator	Close to radius limitation : • The indicator flashes • Movement is slowed down
		Radius limitation reached : • The indicator flashes continuously • Control of a movement ensuring that the machine is maintained within the stability limits
33	Drive joystick	Move forward : Forward drive
		Move backward : Reverse drive
	Front axle steering selector	Press right side of button : Right-hand steering
		Press left side of button : Left-hand steering
34	Rear axle steering selector	Move to the right : Right-hand steering
		Move to the left : Left-hand steering
35	Differential lock selector	Press in and hold (activated) : Maximum drive torque (on difficult or sloping ground)
		Release (deactivated) : Standard torque
37	Jib lifting / lowering selector	Move upwards : Jib lifting
		Move downwards : Jib lowering
38	Platform rotation selector	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
40	Platform leveling selector	Move upwards : Lifting of platform
		Move downwards : Lowering of platform
41	Back-up unit selector	Press in and hold : Back-up unit activated
		Release : Back-up unit deactivated
43	Horn selector	Horn
44	Petrol/Gas selector[2]	LPG : Gas supply
		G : Petrol or Optional diesel power supply

C - Machine layout

Marking	Description	Function
45	Drive speed selector	High-speed driving
		Low-speed driving
46	Emergency stop button	Pulled out (activated) : Ground control box energized
		Pushed down (deactivated) : De-energizes control system
49	Turntable rotation joystick	Move to the right : Counter clockwise (CCW) rotation
		Move to the left : Clockwise rotation
	Boom lift joystick	Move upwards : Boom raising
		Move downwards : Boom lowering
50	Arm lifting/lowering joystick	Move forward : Arm lifting
		Move backward : Boom lowering
54	Boom telescoping selector	Move to the right : To telescope in
		Move to the left : To telescope out
76	Not used	
77	Not used	
78	Not used	
79	Generator selector (option)	Move to the left : Generator deactivated
		Move to the right : Generator activated
80	'Enable Switch' pedal indicator	On : Pedal pressed
		Off : Pedal released
81	Not used	
230	Engine start/stop push-button	Start or stop the engine (depending on the machine's operating status) by pressing the push-button

1. *Perform the required maintenance (see the machine maintenance book)*
2. *For machines fitted with*

Photo

C - Machine layout

D - Operating principle

1 - Description

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

The controls and the starting of the thermal engine are powered by battery.

To protect the user and the machine, safety systems prevent the operation of the machine beyond its capacities. Section G Technical characteristics

These security systems if activated, 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 'Enable Switch' system to activate the different movements.

The 'Enable Switch' system depends on the machine configuration and will consist of one of the following :

- Joystick handle.
- Pedal.
- Validation button.

2.2 - DRIVE SPEED

All driving speed options are allowed when the machine is stowed (machine in fully lowered position).

The only speed allowed when not in stowed position is microspeed (This speed is a default speed programed into the machine).

2.3 - MOVEMENT SPEED

The movement speed of the following elements is regulated by the movement speed selector switch :

- Jib lifting/rotation.
- Platform rotation/compensation.

The movement speed depends on the user's choices and the environment.

N.B.-:-JOYSTICK PROPORTIONALITY MUST BE USED TO ADJUST THE SPEED OF THE OTHER MOVEMENTS.

2.4 - LENGTH AND ANGLE SENSORS

For reasons of stability and work area management, the boom is equipped with length and angle sensors.

These length and angle sensors transmit data allowing the calculator to manage automatic operation of combined movements.

Operating rules for HA260PX

In certain configurations :

- When a control is activated to lower the arm, the system organises the combination of movements required to lower the boom.
- When a control is activated to lower the boom, the system organises the combination of movements required for boom telescope.

2.5 - ON-BOARD ELECTRONICS

The machines are equipped with a specific calculator configured for the machine's functionalities.

Do not interchange the calculator between machines.

2.6 - DETECTION OF INTERNAL FAULT

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

The defect indicator flashs to indicate an internal malfunction.

The machine switches to downgraded mode.

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

2.7 - AUTOMATIC ENGINE CUT-OUT

The engine automatically cuts out in the following conditions :

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

For machines fitted with(HA260PX) :

- The platform has gone outside the work area.

2.8 - LOAD LIMITING IN THE PLATFORM (IF FITTED)

If the platform load exceeds the maximum authorized load, no movement is possible from the platform control box.

The platform overload indicator and the buzzer warn the operator that the overload condition exists..

To return the machine to normal operation remove some weight from the platform.

2.9 - CHASSIS TILT

For HA16X

If the machine is located on a slope exceeding the authorized limit, the operator is warned by the slope sensor indicator on the platform control box and the buzzer.

Driving is cut (If the machine is unfolded).

To restore the drive function, only movements allowing the machine to be stowed are permitted :

- Telescope in.
- Lowering the boom to return to a horizontal position.
- Lowering the arm.

For HA120PX - HA16PX - HA18PX - HA16SPX - HA18SPX -

If the machine is located on a slope exceeding the authorized limit, the operator is warned by the slope sensor indicator on the platform control box and the buzzer.

Driving is cut (If the machine is unfolded).

To restore the drive function, only movements allowing the machine to be stowed are permitted :

- Telescope in.
- Lowering the boom to return to a horizontal position.
- Lowering the arm.
- Lowering the jib until it is below horizontal position.

For HA20PX - HA260PX

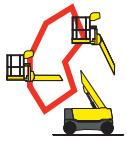
If the machine is located on a slope exceeding the authorized limit, the operator is warned by the slope sensor indicator on the platform control box and the buzzer.

Driving is cut (If the machine is unfolded).

To restore the drive function, only movements allowing the machine to be stowed are permitted :

- Telescope in.
- Boom lowering to return to a horizontal position.
- Lowering the arm.
- Lowering the jib until it is below horizontal position.

2.10 - RADIUS LIMITATION



For HA260PX

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

The radius limit indicator (orange) on the platform control box is a visual indicator.

- The radius limit indicator flashes to indicate that a controlled movement has occured to maintain the machine within the stability limit. For example : The machine retracts the telescope as and when you request the lowering of the boom. It is not possible to add other movements during these phases, for safety reasons. Driving is forbidden in this zone.
- This indicator remains on when the operator requests a movement which would cause the platform to leave the work area.

1 - Recommendations

The manager of the company responsible for the commissioning of the machine must ensure that the machine is fit for the work it is to perform. i.e. that the machine is suitable to carry out the work in complete safety in compliance with this Operator Manual. All managers who are responsible for persons operating the machine, 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 in this manual. 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

Each 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 complete functional test.

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

Find all the function indicators and controls in Section C 5 - Control boxes

2.1 - VISUAL INSPECTIONS

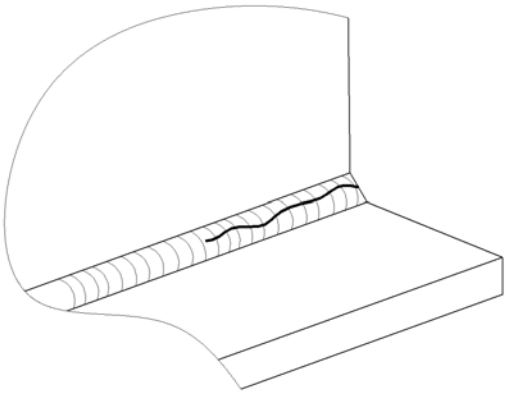
2.1.1 - General mechanical functions

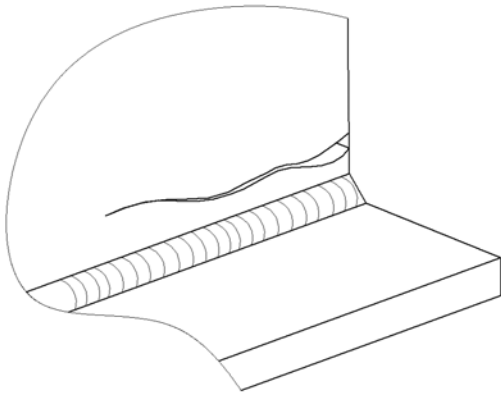
For all the following checks, ensure that the machine is switched off.

Check the following points :

- The presence of the identification plate, labels and operator manual :
- Their state of cleanliness and visibility.
- Clean or replace if necessary.
- Visual state of the machine :
- Absence of leaks (battery acid, hydraulic oil, etc.). Absence of foreign objects on all surfaces. Call the staff in charge of the maintenance if necessary.
- No missing or loose parts (bolts, nuts, connectors, cables, etc.). Refer to the "tightening torques" table quoted in the Maintenance Book.
- Absence of cracks, broken parts, damaged paint. No deformations or other anomalies on the structure's parts.

Example





- Cylinders' state :
- No leaks. Refer to the Maintenance book.
- No rust and abrasions on the cylinder rod.
- Absence of foreign objects on all surfaces.

- Steering system's state : wheels, reducers, brakes and tires :
- No cracks, distortions, damaged paint or other faults
- No missing or loose bolts. Refer to the "tightening torques" table quoted in the Maintenance Book.
- Condition of the tyres (cuts, excessive wear, etc.).
- Status of the control boxes :
- No damage.
- Back to neutral for all joysticks, selectors, etc..
- Presence and readablility of the control box labels.
- Movement, safety limit switches :
- No damage.
- No missing or loose bolts. Refer to the "tightening torques" table quoted in the Maintenance Book.
- Absence of foreign objects on all surfaces.
- The state and connection of the electric wires and cables :
- No damage, wear marks or other faults.
- No contact between connectors.
- State of the hydraulic unit and pump :
- No leaks.
- No missing or loose parts (bolts, nuts, connectors, cables, etc.).
- Hydraulic oil filter. Refer to the Maintenance book.

- State of the structure's parts : Arm, boom, jib, cage (or platform) :

- No cracks, damaged paint.
- No distortion in metal components or visible damage.
- No foreign objects at the ends of the booms, between arms and link parts.
- Presence and check the original position of the platform control box sliding bar.
- State of the rotation systems : Turntable rotation, Turntable rotation selector in platform, Jib orientation (For machines fitted with).
- No excessive clearance : Refer to the Maintenance book.
- No missing or loose bolts.
- Absence of foreign objects on all surfaces.
- Greasing the turntable rotation gear Turntable and Platform.
- State of the tanks :
- No leaks.
- No missing or loose parts (bolts, nuts, connectors, cables, etc.). Top up the oil level, if necessary (Machine in transport position).
- Sufficient fuel level.

2.1.2 - Environment

Section A -Safety precautions.

Check the following points :

- Wind speed (Section G 1-Main characteristics).
- The permissible ground pressure and loading on the machine supporting surface (Section G 1-Main characteristics).
- The maximum permissible load in the platform (Section G 1-Main characteristics).
- The maximum permissible lateral force allowed at the platform (Section G 1-Main characteristics).

2.2 - FUNCTIONAL TESTS

2.2.1 - Safety features

Features to be tested :

- Operation of the upper and lower emergency stop buttons.
- Operation of the tilt sensor.
- Visual and audible alarms.
- Platform load management system (Where fitted).

For functional test procedures refer to (Section E 3.1-Test procedure).

2.2.2 - Ground control box controls (emergency station)

Refer to the corresponding operations to test the controls in the order mentioned (Section E 3.2-Operation from ground position).

HA16X

Step	Control
1	Engine start-up selector 22
2	Engine acceleration selector 21
3	Movements : • Lifting/lowering of arm 12 • Lifting / lowering of boom 10 • Boom telescope out/in 9 • Turntable rotation 14
4	Beacon light on/off 24
5	Control box energizing key selector 72

HA16SPX - HA18SPX - HA16PX - HA18PX - HA120PX - HA20PX - HA260PX

Step	Control
1	Engine start-up selector 22
2	Engine acceleration selector 21
3	Movements : • Lifting/lowering of arm 12 • Lifting / lowering of boom 10 • Boom telescope out/in 9 • Jib lifting/lowering 8 • Turntable rotation 14 • Platform leveling 13
4	Transport position selector 13
5	Beacon light on/off 24
6	Control box energizing key selector 72

2.2.3 - Platform control box controls (driving station)

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

HA16X

Step	Control
1	Engine start-up selector 42
2	Driving 33
3	Platform rotation selector 38
4	Movements : • Lifting/lowering of arm 50 • Lifting / lowering of boom 49 • Boom telescope out/in 54 • Turntable rotation 49 • Platform leveling 40
5	Drive speed selector : • Low speed selector (71) and movement joystick 33 • Medium speed selector (71) and movement joystick 33 • High speed selector (71) and movement joystick 33
6	Differential lock selector 35
7	Horn selector 43

HA120PX -HA16SPX -HA18SPX - HA16PX - HA18PX -HA20PX - HA260PX

Step	Control
1	Engine start-up selector 42
2	Driving 33
3	Platform rotation selector 38
4	Movements : • Lifting/lowering of arm 50 • Lifting / lowering of boom 49 • Boom telescope out/in 54 • Jib lifting/lowering 37 • Turntable rotation 49 • Platform leveling 40
5	Drive speed selector : • Low speed selector (71) and movement joystick 33 • Medium speed selector (71) and movement joystick 33 • High speed selector (71) and movement joystick 33
6	Differential lock selector 35
7	Horn selector 43

2.3 - PERIODICAL CHECKS

The machine must be inspected on a regular basis at intervals in accordance with the requirements set forth in the Country of use but no less than once per year. The purpose of the inspection is to detect any defect which could lead to an accident during routine use of the machine.

These inspections must be carried out by a competent company or person whose selection is under the responsibility of the manager (Company employee or other).

The inspection results must be recorded in the safety register or machine log book controlled and overseen by the company manager. This register or machine log book and the list of competent repair persons must be made available to the Government Work Inspector and company safety commitee at all times.

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

2.4 - REPAIRS AND ADJUSTMENTS

Extensive repairs, interventions or adjustments on the safety systems or elements must be performed by a HAULOTTE Services® employee or a HAULOTTE Services®-approved employee with HAULOTTE Services® training, using original spare parts only.

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

HAULOTTE Services® will not take responsibility for any consequential outcomes resulting from inferior services/repairs carried out by others.

HAULOTTE advises you that NO modifications carried out without the written permission of HAULOTTE® will void the HAULOTTE warranty..

2.5 - INSPECTION / TESTING REQUIREMENTS

Intervention to be made after :

- Extensive dismantling and reassembly.
- Repairs involving the machine's essential components.
- Any accident causing stress to the machine.

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

3 - Operation

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

Find all the function indicators and controls in Section C 5 - Control boxes

3.1 - TEST PROCEDURE

3.1.1 - Emergency stop button operation

Ground control box emergency stop button

Step	Action
1	Pull the emergency stop buttons(15, 46).
2	Turn the key on the control box activation selector switch (72) to the right to energize the ground control box. The indicators light up.
3	Push the emergency stop button (15). The indicators go out.

Platform control box emergency stop button

Step	Action
1	Pull the emergency stop buttons(15, 46).
2	Turn the key on the control box activation selector switch (72) to the left to energize the platform control box. The indicators light up.
3	Push the emergency stop button (46). The indicators go out.

3.1.2 - Tilt sensor switch operation

For ANSI models only :

Machine unfolded, the slope sensor gives an audible signal telling the operator that the machine should not be deployed. In this case, fully lower the platform and reposition the machine on level ground before raising the platform again.

1. Pull the emergency stop push-buttons on the upper and lower control boxes (15, 46).
2. Switch on the machine from the lower control box (72, 230). All of the ground control box indicators light up and a sound signal (beep) is emitted.
3. Start the machine (22).
4. Lift the boom or jib above horizontal.
5. Locate the tilt sensor next to the ground control box.
6. Manually tilt and maintain the tilt sensor towards the front for a few seconds (Section C 2-Main components) :

- The audible beep sounds.
- For machines fitted with : The slope sensor prevents lifting and driving movements.

N.B.-:-MACHINE UNFOLDED, THE TILT SENSOR GIVES AN AUDIBLE SIGNAL INDICATING TO THE OPERATOR THAT THE BOOM COULD NOT RAISE. IN THIS CASE, LOWER THE MACHINE COMPLETELY, THEN REPOSITION THE MACHINE ON A LEVEL GROUND BEFORE PERFORMING ANY RAISING OPERATIONS.

3.1.3 - Visual and sound alarms

1. Pull the battery power (SB1) (Section C 5.3 - Control boxes).
2. Pull the emergency stop buttons (15, 46).
3. Select the turntable control box or the platform control box (72, 30,). The indicator (31) of the control box lights up, and there is audible signal (beep).

3.1.4 - Weighing system

1. Pull the emergency stop buttons (15, 46).
2. Select the platform control box 72. Platform control box overload indicator (30) flashes.

3.2 - OPERATION FROM GROUND POSITION

Ground control box is an auxiliary to be used only in case of emergency.

3.2.1 - Machine start-up

1. Pull the emergency stop button 15.
2. Turn the key on the control box activation selector switch (72) to the right to energize the ground control box. The following indicators light up :
   - Electrical pre-heating 1.
   - Low engine oil pressure 2.
   - Engine temperature 3.
   - Battery charge 4.
3. The clogged air filter indicator (5) is switched off.
4. Press on the starter selector 22. The engine starts. The indicators go out.
5. Let the engine heat up.

N.B.-:-USING UNSUITABLE FUEL MAY CAUSE DIMINISHED PERFORMANCE, DIFFICULTIES STARTING, EXCESSIVE POLLUTION AND PREMATURE WEAR. TO ESTABLISH THE TYPE OF FUEL SUITABLE FOR THE ENGINE FITTED ON YOUR HAULOTTE® MACHINE, PLEASE REFER TO THE ENGINE MANUFACTURER'S MANUAL. THE ENGINE MAY NOT BE COVERED BY THE WARRANTY IN CASE OF DAMAGE CAUSED BY USING UNSUITABLE FUEL.

For : HA120PX and for HA16X - HA16PX - HA18PX - HA16SPX - HA18SPX Winter option

1. Pull the emergency stop button 15.
2. Turn the key on the control box activation selector switch (72) to the right to energize the ground control box. The following indicators light up :
   - Electrical pre-heating 1.
   - Engine oil pressure 2.
   - Engine temperature 3.
   - Battery charge 4.
3. The clogged air filter indicator (5) is switched off.
4. Wait for the engine preheating phase to finish (the indicator (1) goes off) (For HA120PX only).
5. Press on the starter selector 22. The engine starts. The indicators go out.
6. Let the engine heat up.

3.2.2 - Machine shutdown

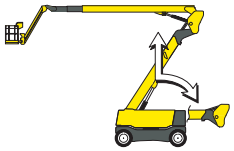
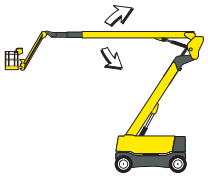
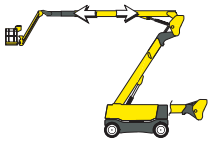
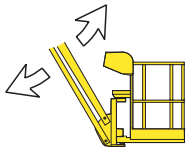
- Turn the key of the control box activation selector (72) to the center.
- The machine is shut down.

3.2.3 - Movement control

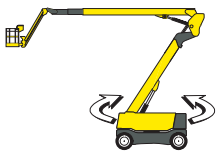
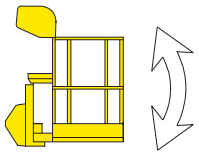
Bucket compensation is possible regardless of the work height. Even at low movement speeds, use the controls with caution.

N.B.-:-FOR MACHINES FITTED WITH : HOLD THE SELECTOR (228) UPWARDS TO VALIDATE MOVEMENT. THE RELEASE OF THE SELECTOR CAUSES ALL MOVEMENT TO STOP.

HA120PX - HA16SPX - HA18SPX - HA16PX - HA18PX -HA20PX -HA260PX - Ground control box controls (emergency station)

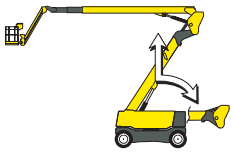
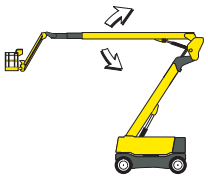
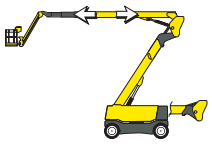
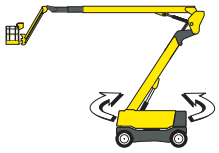
Control		Action
Lifting/lowering of arm		Push the arm lift/lower selector (12) upwards to raise the arm. Push the arm lift/lower selector (12) downwards to lower the arm.
Lifting / lowering of boom		Push the boom raising selector switch (10) upwards to lift the boom. Push the boom raising selector switch (10) downwards to lower the boom.
Boom telescope out/in		Push the boom telescoping selector switch (9) to the left to extend the telescope. Push the boom telescoping selector switch (9) to the right to retract the telescope.
Jib lifting/lowering		Push the jib selector switch (8) upwards to lift the jib. Push the jib selector switch (8) downwards to lower the jib.

E - Driving

Control		Action
Turntable rotation		Push the turntable rotation selector switch (14) to the left for a clockwise rotation.
		Push the turntable rotation switch (14) to the right for an anticlockwise rotation.
Platform leveling		Push the platform levelling selector switch (13) upwards to lift the platform.
		Push the platform levelling selector switch (13) downwards to lower the platform.

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

HA16X - Ground control box controls (emergency station)

Control		Action
Lifting/lowering of arm		Push the arm lift/lower selector (12) upwards to raise the arm.
		Push the arm lift/lower selector (12) downwards to lower the arm.
Lifting / lowering of boom		Push the boom raising selector switch (10) upwards to lift the boom.
		Push the boom raising selector switch (10) downwards to lower the boom.
Boom telescope out/in		Push the boom telescoping selector switch (9) to the left to extend the telescope.
		Push the boom telescoping selector switch (9) to the right to retract the telescope.
Turntable rotation		Push the turntable rotation selector switch (14) to the left for a clockwise rotation.
		Push the turntable rotation switch (14) to the right for an anticlockwise rotation.

3.2.4 - Other controls

- Switching from the ground control box to the platform control box :

The emergency stop button (15, 46) must be pulled out.

• Turn the key on the control box activation selector switch (72) to the left to energize the platform control box. The ground control box controls are de-energized.

- Switching from the platform control box to the ground control box :

The emergency stop button (15, 46) must be pulled out.

• Turn the key on the control box activation selector switch (72) to the right to energize the ground control box. The platform control box controls are de-energized.

- Putting in transport position :
- Push the transport position selector (13) to the right to set the machine in transport position.
- Push the transport position selector (13) to the left to set the machine in operating position.

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

- Engine speed increases :
- Turn the engine speed selector switch (21) to the right to switch to increase speed.
- Turn the engine speed selector switch (21) to the left to switch to idling speed.

N.B.-:-ACCELERATING THE ENGINE SPEED INCREASES THE SPEED OF MOVEMENTS FROM THE GROUND CONTROL BOX.

- For the machines equipped with beacon lights :
- Push the beacon selector (24) upwards to switch on the beacon.
- Push the beacon selector (24) downwards to switch off the beacon.

3.3 - OPERATIONS FROM THE PLATFORM

3.3.1 - Machine start-up

1. Pull the emergency stop button 46. The power-up indicator (31) lights up.

N.B.-:-FOR HA120PX ONLY : WAIT FOR THE ENGINE PREHEATING PHASE TO FINISH (THE INDICATOR (1) GOES OFF).

2. Press on the starter selector 42. The engine starts.
3. Let the engine heat up.

N.B.-:-IF THE ENGINE DOES NOT START, SWITCH OFF THE IGNITION (EMERGENCY STOP BUTTON PUSHED IN). REPEAT THE START-UP PROCEDURE.

3.3.2 - Machine shutdown

Press the emergency stop button (46).

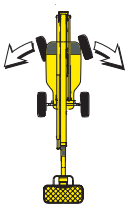
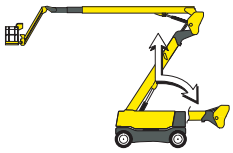
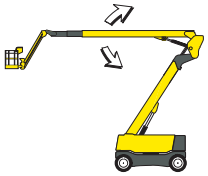
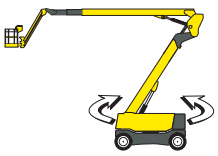
on HA20PX and HA260PX only :

There is option to stop the engine by press the start / stop engine press button 230.

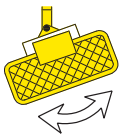
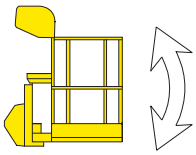
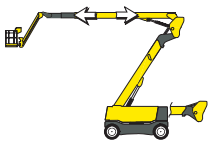
3.3.3 - Movement control

Activate the controls and the 'Enable Switch' system simultaneously to perform the various movements.

Platform control box controls (driving station) HA16X

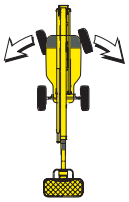
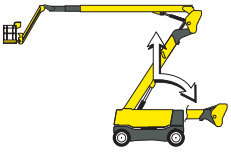
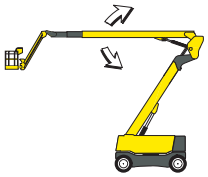
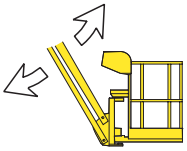
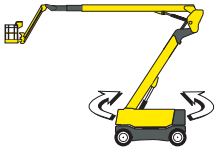
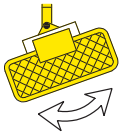
Control		Action
Driving		Push the drive joystick (33) forwards to move the machine forwards. Push the drive joystick (33) backwards to reverse the machine.
Steering		Push the driving joystick (33) forwards to move the machine forwards. Push the selector (33) to the left to steer left.
Lifting/lowering of arm		Push the arm lift/lower joystick (50) forwards to raise the arm. Push the arm lift/lower joystick (50) backwards to lower the arm.
Lifting / lowering of boom		Push the boom raising joystick (49) upwards to lift the boom. Push the boom raising joystick (49) downwards to lower the boom.
Turntable rotation		Push the turntable rotation joystick (49) to the left for a clockwise rotation. Push the turntable rotation joystick (49) to the right for an anticlockwise rotation.

E - Driving

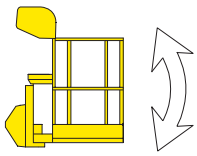
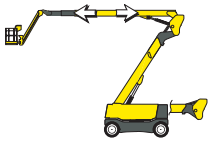
Control		Action
Platform rotation		Push the platform rotation selector (38) to the right for an anticlockwise rotation.
		Push the platform rotation selector (38) to the left for a clockwise rotation.
Platform leveling		Push the platform levelling selector switch (40) upwards to lift the platform.
		Push the platform levelling selector switch (40) downwards to lower the platform.
Drive speed (minimum)		Set the drive speed selector switch (71) to  for high-speed driving (long distance driving, tarmac, concrete).
		Position the driving speed selector (71) on  for medium speed driving (crossing uneven ground, slope).
		Set the driving speed selector (71) to  for low-speed driving (short distance, final approach, unloading from lorries).
Boom telescope out/in		Push the boom telescoping selector switch (54) to the left to extend the telescope.
		Push the boom telescoping selector switch (54) to the right to retract the telescope.

E - Driving

Platform control box controls (driving station) HA120PX - HA16SPX - HA18SPX - HA16PX -HA18PX

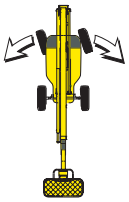
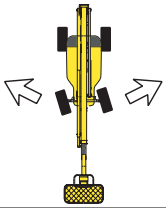
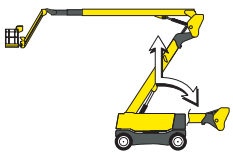
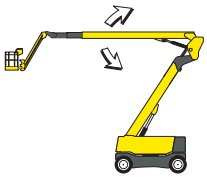
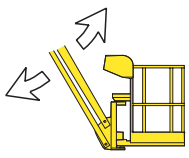
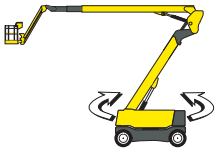
Control		Action
Driving		Push the drive joystick (33) forwards to move the machine forwards. Push the drive joystick (33) backwards to reverse the machine.
Steering		Push the driving joystick (33) forwards to move the machine forwards. Push the selector (33) to the left to steer left.
Lifting/lowering of arm		Push the arm lift/lower joystick (50) forwards to raise the arm. Push the arm lift/lower joystick (50) backwards to lower the arm.
Lifting / lowering of boom		Push the boom raising joystick (49) upwards to lift the boom. Push the boom raising joystick (49) downwards to lower the boom.
Jib lifting/lowering		Push the jib selector switch (37) upwards to lift the jib. Push the jib selector switch (37) downwards to lower the jib.
Turntable rotation		Push the turntable rotation selector switch (49) to the left for a clockwise rotation. Push the turntable rotation switch (49) to the right for an anticlockwise rotation.
Platform rotation		Push the platform rotation selector (38) to the right for an anticlockwise rotation. Push the platform rotation selector (38) to the left for a clockwise rotation.

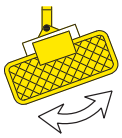
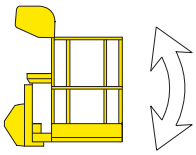
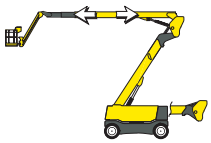
E - Driving

Control		Action
Platform leveling		Push the platform levelling selector switch (40) upwards to lift the platform.
		Push the platform levelling selector switch (40) downwards to lower the platform.
Drive speed (minimum)		Set the drive speed selector switch (71) to  for high-speed driving (long distance driving, tarmac, concrete).
		Position the driving speed selector (71) on  for medium speed driving (crossing uneven ground, slope).
		Set the driving speed selector (71) to  for low-speed driving (short distance, final approach, unloading from lorries).
Boom telescope out/in		Push the boom telescope joystick (54) to the left to extend the telescope.
		Push the boom telescope joystick (54) to the right to retract the telescope.

E - Driving

Platform control box controls (driving station) HA20PX - HA260PX

Control		Action
Driving		Push the drive joystick (33) forwards to move the machine forwards. Push the drive joystick (33) backwards to reverse the machine.
Front-axle steering		Push the front-axle steering selector switch (33) to the right to steer to the right. Push the front-axle steering selector switch (33) to the left to steer to the left.
Rear-axle steering		Push the driving joystick (34) forwards to move the machine forwards. Push the selector (34) to the left to steer left.
Lifting/lowering of arm		Push the arm lift/lower joystick (50) forwards to raise the arm. Push the arm lift/lower joystick (50) backwards to lower the arm.
Lifting / lowering of boom		Push the boom raising joystick (49) upwards to lift the boom. Push the boom raising joystick (49) downwards to lower the boom.
Jib lifting/lowering		Push the jib selector switch (37) upwards to lift the jib. Push the jib selector switch (37) downwards to lower the jib.
Turntable rotation		Push the turntable rotation selector switch (49) to the left for a clockwise rotation. Push the turntable rotation switch (49) to the right for an anticlockwise rotation.

Control		Action
Platform rotation		Push the platform rotation selector (38) to the right for an anticlockwise rotation.
		Push the platform rotation selector (38) to the left for a clockwise rotation.
Platform leveling		Push the platform levelling selector switch (40) upwards to lift the platform.
		Push the platform levelling selector switch (40) downwards to lower the platform.
Drive speed (minimum)	 	Set the drive speed selector switch (45) to  for high-speed driving (long distance driving, tarmac, concrete).
		Set the driving speed selector (45) to  for low-speed driving (short distance, final approach, unloading from lorries).
Boom telescope out/in		Push the boom telescope joystick (54) to the left to extend the telescope.
		Push the boom telescope joystick (54) to the right to retract the telescope.

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

3.3.4 - Other controls

- Horn : Push the horn selector (43) to the right to sound the horn. The horn stops when the selector switch is released.
- Differential lock : Press the differential blocking touch pads (35).

E - Driving

F - Special procedure

Find all the function indicators and controls in Section C 5 - Control boxes

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.

A ground operator trained in using the emergency controls and in possession of the starter key can use the ground control box with the main power source to lower the platform operator.

1.2 - PROCEDURE

Section A 2-Pre-operation instructions

1. Turn the key on the control box activation selector switch (72) to the right to energize the ground control box. The platform control box controls are de-energized.
2. Lower the platform from the ground control box.

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

The lowering for repairs function allows the operator to be lowered to the ground in case of failure of the main power source.

The electric pump, powered by the starting battery, allows movements to be controlled from both the ground and platform control boxes.

In the event of exit of abacus exceptional and important causing a cut engine, the emergency power unit in particular makes it possible to return in the working area authorized and to thus find all the functionalities of the machine, including the primary source of energy (thermal engine).

As the electric pump only has limited autonomy, it is advisable to come back to the ground in the most direct manner possible.

The use of the electric pump is exclusively reserved for the lowering for repairs function.

Performing other operations can lead to the deterioration of the electric pump.

2.2 - PROCEDURE

For : HA120PX (Back-up unit option) - HA16X - HA16SPX - HA16PX - HA18SPX - HA18PX - HA20PX - HA260PX :

Depending on the control box used, push and hold the back-up hydraulic power system selector switch ((19) downwards or (41) upwards) and lower the platform.

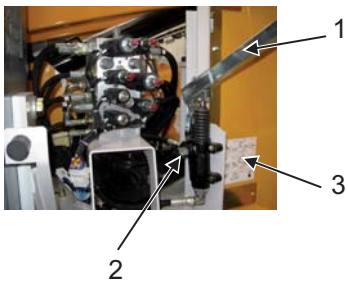
For HA120PX only :

There is a way of performing movements from the ground, when the main energy source malfunctions. It is a hand pump located next to the hydraulic distributors on the turntable.

This pump can be used in combination with a manual override multi bank electro-hydraulic valve, to perform the movement required to lower the platform :

- Boom lowering.
- Boom lowering.
- To telescope in
- Turntable rotation.
- Jib lowering.

1. Insert the lever (1) in the socket of the pump.
2. Check that the pump depressurizing valve (2) is in closed position.
3. Push the lever from top to bottom several times whilst keeping the manual electro-distributor control for the requirement movement shown on the plate pressed in and held in 3.



If the operator in the platform has to exit the platform when elevated, he must exit onto a sturdy, safe structure, the transfer must respect the following recommendations :

- The operator must secure himself by using 2 straps. One lanyard is attached to the platform, the other to the structure onto which he wishes to exit.
- The operator must exit the platform via the standard access point.
- The operator must not detach the strap connected to the platform until transfer is complete or while the transfer still presents a danger.

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

3 - Towing

In case of a machine failure, it is possible to tow it to load it onto a trailer.

3.1 - DISSENGAGING THE DRIVE HUBS

To tow a broken-down machine, disconnect the wheel drive hubs.

Perform these operations on flat, horizontal ground. Failing that, block the wheels to immobilize the machine. During an operation of disengaging the drive hubs, the machine is in free wheels, the brake system no longer functions.

For : HA120PX

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

For : HA16X - HA16SPX - HA18SPX - HA16PX - HA18PX - HA20PX

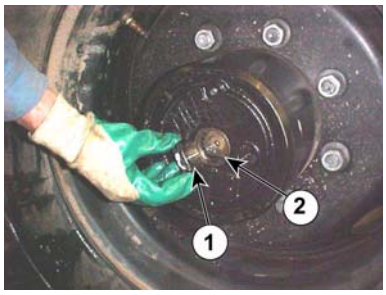
Unscrew the 2 nuts with an 11 mm spanner.

Turn the part and screw it back on.

The gears are released.

For : HA260PX

1. Loosen and remove plug (1) (Central nut).
2. Remove the spline pin (2) using a 6 x 50 screw.
3. Refit and tighten plug (1).



3.2 - TOWING

The machine can be towed.

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

Do not exceed 5 km/h (3,10 mph) .

3.3 - REENGAGING THE DRICE HUBS

After repairing the machine, reengage the wheel drive hubs.

For HA120PX

- Machine without stabilizers

1. Screw the central nut up again to engage the internal gear.
2. Engage the driving gear slowly in case of resistance(By turning the wheels).
3. Screw the central nut up completely when the once the drive gear has commenced to engage.

For : HA16X - HA16SPX - HA18SPX - HA16PX - HA18PX - HA20PX

Perform in reverse order to the drive hub disengaging procedure.

For HA260PX

Put the central plug back on each wheel.

N.B.-:-DURING REASSEMBLY, PLACE THE CENTRAL PLUG IN THE CORRECT POSITION ON EACH WHEEL AND TOP UP THE OIL LEVEL IN THE GEARS.

4 - Loading and unloading

N.B.-:-WHEN DRIVING UP AN INCLINE OR RAMP, DURING LOADING OR UNLOADING HAULOTTE® RECOMMENDS POSITIONING THE COUNTERWEIGHT AT THE REAR.

Raise the platform sufficiently to avoid contact with the ground.

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

Section F 4.2Putting in transport position.

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 attached.

• The loading ramp has sufficient grip.

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 not activated and driving is authorised.

To climb the slope, select low driving speed .

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

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

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

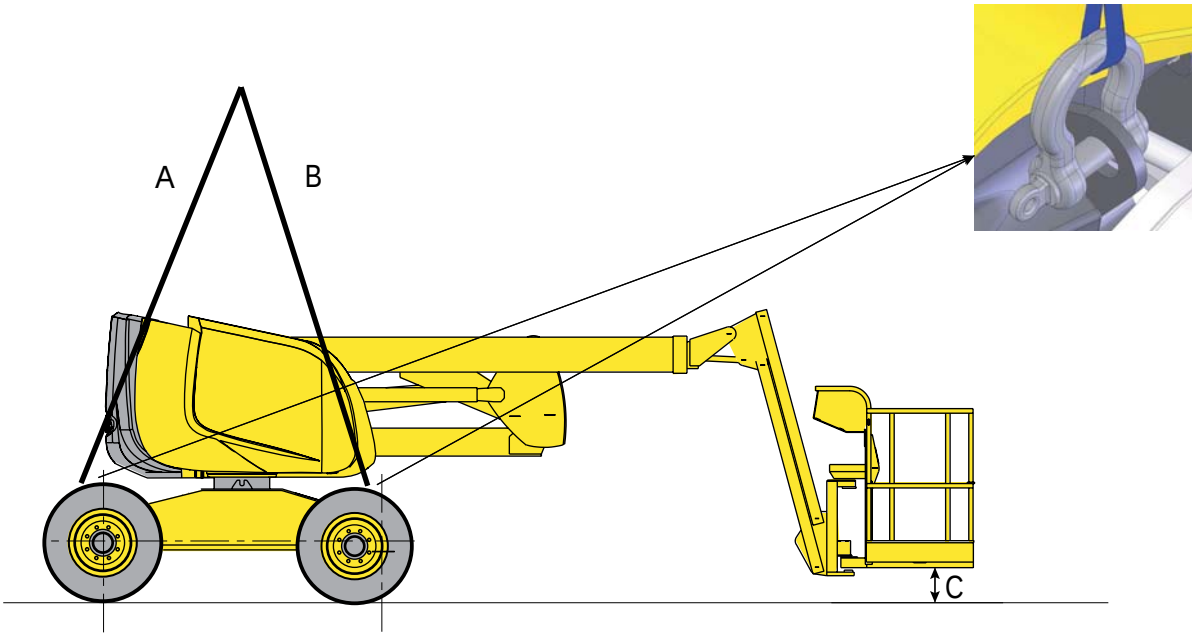
4.1.1 - Loading by lifting

Ensure that :

- The machine is completely stowed.
- The platform must be empty.
- The lifting equipment ie. slings, shackles, hooks, lifting beam etc. are in good condition and of sufficient capacity.
- The personnel performing the lift is authorised to complete the lift.

F - Special procedure

Procedure for the use of slings-HA12CJ/CJ+ - HA16(S)PX - HA18(S)PX



Machine	Distance C	Number of slings	Length A	Length B	Maximum load per sling and shackle
HA12CJ/CJ+ HA16(S)PX HA18(S)PX	20 cm (8 in)	4	5 m (16 ft 5 in)	5 m (16 ft 5 in)	5000 DaN (11241 lbf)

Before using slings, lift the jib to obtain a minimum 20 cm (8in) clearance between the ground and cage.

4.2 - PUTTING IN TRANSPORT POSITION

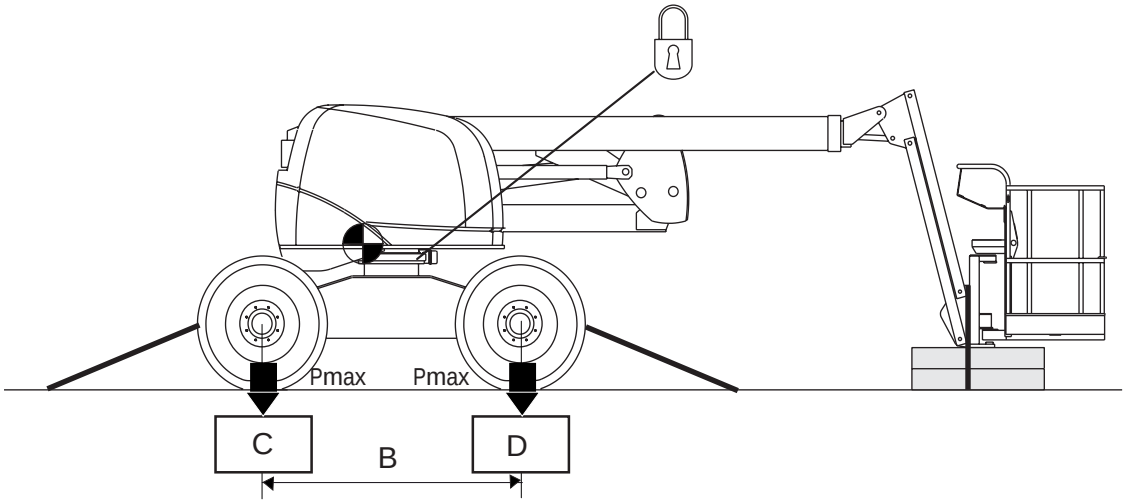
The machine must be completely stowed.

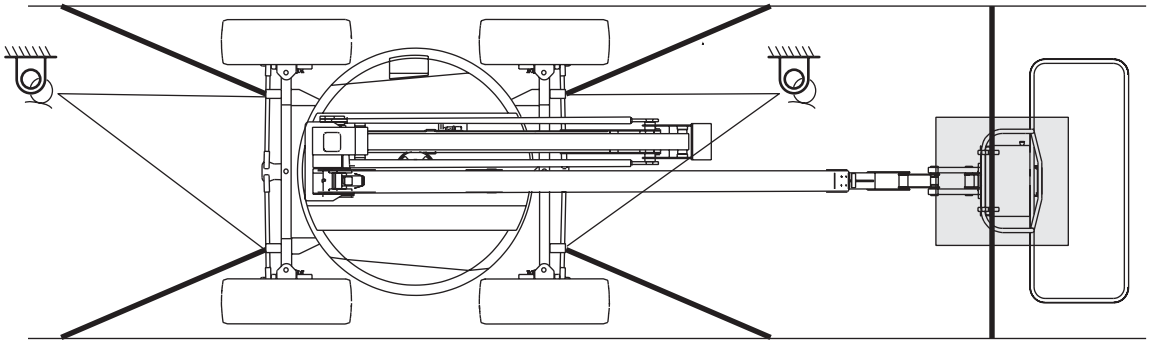
1. Check the platform is completely empty.
2. Depending on the configuration of the machine, lift the arm and boom slightly, extend boom slightly the telescope then push transport position selector (13) to the right.
3. Secure the machine to the anchorage points provided for this purpose.
4. Block the turntable with the rotation stop pin located under the turntable.

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

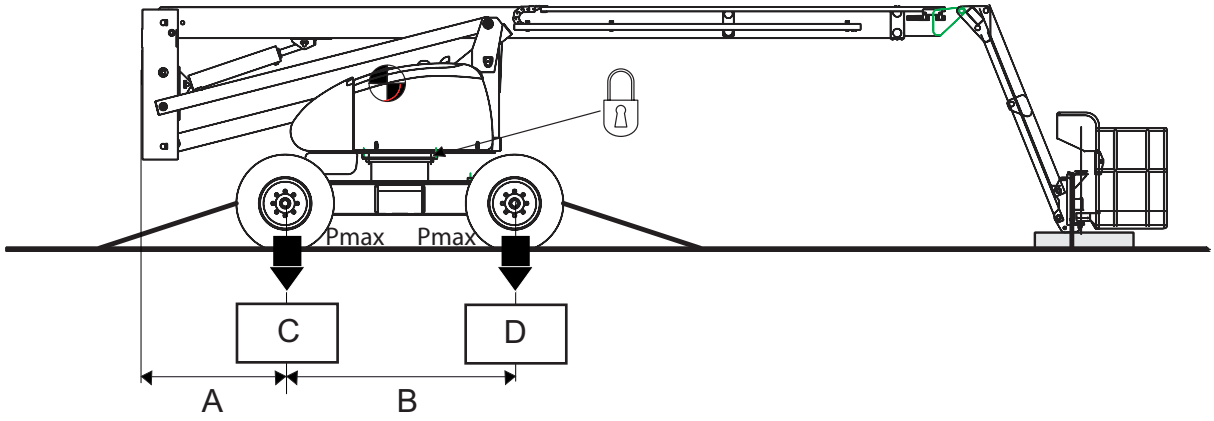
F - Special procedure

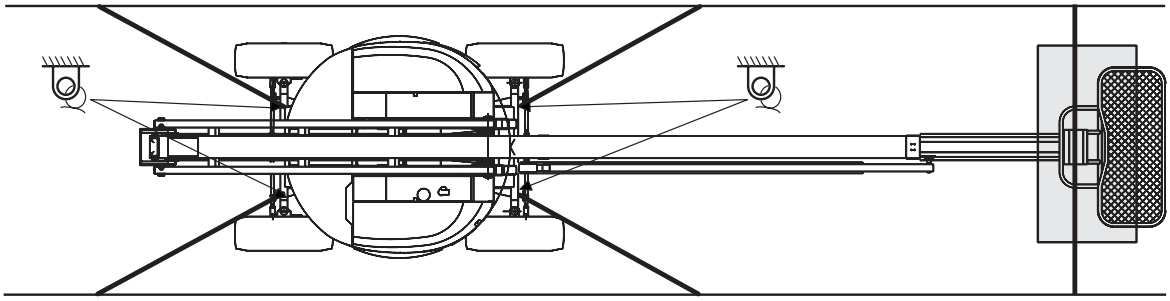
For HA120PX -HA16X- HA16SPX - HA16PX - HA18SPX - HA18PX





For HA20PX -HA260PX





F - Special procedure

Loading characteristics

Marking	Description	HA120PX	HA16X
B	Lateral distance between the wheels()	1,94 m(6 ft4 in)	2,00 m(6 ft6 in)
C	Front wheel ground pressure()	6,9 daN/cm² (1,41 lbf/sq.ft)	9,2 daN/cm² (1,88 lbf/sq.ft)
D	Rear wheel ground pressure()	6,9 daN/cm² (1,41 lbf/sq.ft)6.9 daN/cm2	9,2 daN/cm² (1,88 lbf/sq.ft)
	Anchorage point		
	Turntable rotation locking		

Loading characteristics

Marking	Description	HA16SPX	HA16PX
B	Lateral distance between the wheels()	2,00 m(6 ft6 in)	2,00 m(6 ft6 in)
C	Front wheel ground pressure()	10,1daN/cm² (2,07 lbf/sq.ft)	8 daN/cm² (1,639 lbf/sq.ft)
D	Rear wheel ground pressure()	10,1daN/cm² (2,07 lbf/sq.ft)	8 daN/cm² (1,639 lbf/sq.ft)
	Anchorage point		
	Turntable rotation locking		

Loading characteristics

Marking	Description	HA18SPX	HA18PX
B	Lateral distance between the wheels()	2,00 m(6 ft6 in)	2,00 m(6 ft6 in)
C	Front wheel ground pressure()	8,2 daN/cm² (1,68 lbf/sq.ft)	8,2 daN/cm² (1,68 lbf/sq.ft)
D	Rear wheel ground pressure()	8,2 daN/cm² (1,68 lbf/sq.ft)	8,2 daN/cm² (1,68 lbf/sq.ft)
	Anchorage point		
	Turntable rotation locking		

Loading characteristics

Marking	Description	HA20PX	HA260PX
B	Lateral distance between the wheels()	2,80 m(9 ft2 in)	2,80 m(9 ft2 in)
C	Front wheel ground pressure()	12 daN/cm² (2,46 lbf/sq.ft)	13 daN/cm² (2,66 lbf/sq.ft)
D	Rear wheel ground pressure()	12 daN/cm² (2,46 lbf/sq.ft)	13 daN/cm² (2,66 lbf/sq.ft)
	Anchorage point		
	Turntable rotation locking		

4.3 - UNLOADING

Before operating, 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 locking pin.
2. Remove the tie downs.
3. Start the machine.

4.4 - WARNING

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

To reinstate the system, lift the jib a few centimetres from the ground control box.

Push the transport position selector (13) to the left to set the machine to operating position.

To unload the machine, select low driving speed .

Do not travel down the ramp at a fast speed.

4.5 - STORAGE

The machine must always be powered up when it is unfolded so that the security systems are active.

This means that the machine must be parked in stowed position.

The boom may be raised but it cannot be telescoped.

We strongly advise you not to store or immobilize the machine unfolded to avoid jeopardising the safety of people and property.

5 - Detection of internal fault

5.1 - PRINCIPLE

For machines fitted with.

- The machine is equipped with an on-board defect detection system.
- The number of times the defect indicator flashes indicates the type of fault to the operator.
- According to the type of fault, the machine switches in DOWNGRADED MODE; certain movements can be limited or forbidden by the system to maintain the operator's safety.

N.B.-:-IF THE EMERGENCY STOP IS ACTIVATED DURING TELESCOPE RETRACTION AND BOOM LIFT CONTROLS, ON RESTARTING, THE MACHINE SWITCHES TO DOWNGRADED MODE. STOW THE MACHINE COMPLETELY. SWITCH THE MACHINE OFF.

5.2 - PROCEDURE

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

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

6 - On-board generator(Option)

6.1 - PRINCIPLE

The on-board generator supplies voltage (220 V or 110 V depending on the option) in the cage (or platform) able to connect a tool with the maximum power of 3 kW (4 Hp) .

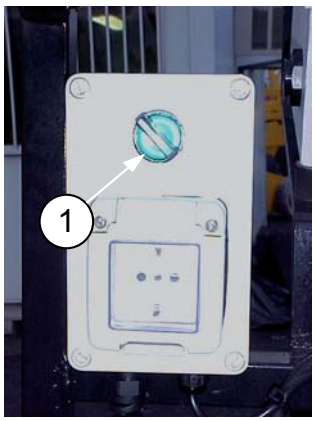
Do not expose the on-board generator to direct contact with a water beam or a high pressure cleaner.

6.2 - PROCEDURE

Put into service :

1. Start the machine. Heat the engine during 15 mn before any operation.
2. Set the switch selector, above the socket power, to ON 1. The green indicator comes on indicating the on-board generator start-up.
3. Connect the tool to the socket.
4. You can change the tool at any time.

N.B.-:-WHEN USING THE ON-BOARD GENERATOR, YOU CANNOT MAKE ANY MACHINE MOVEMENTS. TO MAKE A MOVEMENT, YOU MUST SWITCH OFF THE ON-BOARD GENERATOR.



Power off :

5. Disconnect the tool from the socket.
6. Set the switch selector, above the socket power, to OFF. The green indicator extinguish.
7. Machine movements are once again active.

1 - Main characteristics

Certain options can modify the machine's operating characteristics and its associated safety. If your machine was originally delivered with options fitted, replacing a safety component associated with a particular options not require any particular precautions other than those associated with the installation itself (static test).

Otherwise, it is essential to follow the manufacturer's recommendations below :

- **Installation by authorised HAULOTTE® personnel only.**
- **Update the manufacturer's identification plate.**
- **Have stability tests carried out by a certified agency/competent person.**
- **Ensure label compliance.**

HAULOTTE® has a continuous improvement policy in place for its product range ; Given this policy, The Company reserves the right to modify their product technical characteristics without notice.

The hand and feet vibration and noise level values indicated in the technical characteristics tables are obtained in the following conditions :

- **The maximum quadratic mean value weighted as an acceleration frequency and the total value of the vibrations to which the hand-arm system is exposed have been measured on the products by simulating a cycle representative of normal use. The values meet the requirements of the 2006/42/CE machine directive.**
- **For electric machines, the sound power level is measured at the drive station under the conditions described by the 2006/42/CE machine directive.**
- **For machines equipped with internal combustion engines, the noise level guarantees (LWA displayed on the product) and is measured in accordance with the method and the conditions described in Appendix III, Part B, Method 1 and 0 of the 2000/14/CE European directive.**

Maximum authorised tilt : Machine in transport position (Turntable pinned on the chassis, arm folded, boom retracted and lowered, jib below horizontal).

For HA120PX - Technical characteristics

Machine	HA120PX	
Characteristics	Metric	Imperial
Length of machine in stowed position	5,51 m	(18 ft1 in)
Overall width of machine	1,90 m	(6 ft3 in)
Machine height	2,27 m	(7 ft5 in)
Maximum ground clearance	0,26 m	(0 ft11 in)
Transport height	2,27 m	(7 ft5 in)
Transport length	5,51 m	(18 ft1 in)
Maximum work height	12,15 m	(39 ft10 in)
Maximum platform height	10,15 m	(33 ft4 in)
Maximum drift	6,60 m	(21 ft8 in)
Maximum work radius	6,10 m	(20 ft0 in)
Turntable rotation	350 °	
Boom rotation angle	+75° / - 4°	
Jib working range	140 °(+70° / - 70°)	
Platform length	1,50 m	(4 ft11 in)
Platform width	0,80 m	(2 ft7 in)
Platform rotation angle	180 °(+90° / -90°)	

G - Technical characteristics

Machine	HA120PX	
Characteristics	Metric	Imperial
Outer turning radius (without retracted axle adjustment)	3,825 m	(12 ft7 in)
Inner turning radius (with axles retracted)	1,40 m	(4 ft7 in)
Distance between centres of the wheels	1,92 m	(6 ft4 in)
Dumping	5 °	
Maximum wind speed allowed	45 km/h	(28 mph)
Front axle load	2430 kg	(5358 lb)
Rear axle load	3190 kg	(7034 lb)
Total weight	5620 kg	(12392 lb)
Maximum platform load	230 kg	(507 lb)
Maximum number of people on the platform	2	
Engine type	Diesel - Lombardini - LDW 1404	
Engine power	21 kW	(28,5 Hp)
Engine power when idle	9,5 kW	(12,9 Hp)
Fuel consumption when idle	230 g/kWh	
Sound level at 10 m	< 74 dB (A)	
Noise emission level	97 dB (A)	
Hand vibration	<0,5 m/s²	(19,6 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	65 l	(17 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)
Operating batteries	12 V-95 Ah	
Differential lock	Yes	
Maximum climbable slope	40 %	
Tyre type and/ or size	Foam-filled-10,5/80 - 18	
Wheel nut torque	32 daN.m	(236 lbf.ft)
Maximum ground pressure on hard ground	11,3 daN/cm²	2.31 lbf/sq.ft
Micro drive speed	0,7 km/h	(0,4 mph)
Low drive speed	1,3 km/h	(0,8 mph)
Medium-speed driving	2,6 km/h	(1,6 mph)
High drive speed	5 km/h	(3,1 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf	

G - Technical characteristics

For HA16X - Technical characteristics

Machine	HA16X	
Characteristics	Metric	Imperial
Length of machine in stowed position	6,70 m	(22 ft0 in)
Overall width of machine	2,25 m	(7 ft5 in)
Machine height	2,08 m	(6 ft9 in)
Maximum ground clearance	0,37 m	(1 ft3 in)
Transport height	2,08 m	(6 ft10 in)
Transport length	6,70 m	(22 ft0 in)
Maximum work height	15,45 m	(50 ft8 in)
Maximum platform height	13,45 m	(44 ft1 in)
Maximum drift	8,45 m	(27 ft8 in)
Maximum work radius	7,95 m	(26 ft1 in)
Turntable rotation	350 °	
Boom rotation angle	+76° / - 18°	
Jib working range	+70° / - 70°	
Platform length	0,80 m	(2 ft7 in)
Platform width	1,80 m-2,30 m	(5 ft10 in)-(7 ft6 in)
Platform rotation angle	+90° / - 90°	
Outer turning radius (without retracted axle adjustment)	4,65 m	(15 ft3 in)
Inner turning radius (with axles retracted)	1,78 m	(5 ft10 in)
Distance between centres of the wheels	2,00 m	(6 ft6 in)
Dumping	5 °	
Maximum wind speed allowed	45 km/h	(28 mph)
Total weight	6500 kg	(14330 lb)
Maximum platform load	230 kg	(507 lb)
Maximum number of people on the platform	2	
Engine type	Diesel - Deutz F3L1011F	
Engine power	28 kW	(38 Hp)
Engine power when idle	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh	
Sound level at 10 m	< 74 dB (A)	
Noise emission level	107 dB (A)	
Hand vibration	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	55 l	(14 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)
Operating batteries	12 V-95 Ah	
Differential lock	Yes	
Maximum climbable slope	45 %	
Tyre type and/ or size	Foam-filled-14 x 17,5	
Maximum ground pressure on hard ground	10, daN/cm²	2,07 lbf/sq.ft
Maximum ground pressure on soft ground	3 daN/cm²	0,61 lbf/sq.ft
Low drive speed	0,4 km/h	(0,2 mph)
Medium-speed driving	1,5 km/h	(0,9 mph)
High drive speed	6,0 km/h	(3,7 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf	

G - Technical characteristics

For HA16PX - Technical characteristics

Machine	HA16PX		HA46JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	6,95 m	(22 ft9 in)	6,95 m	(22 ft9 in)
Overall width of machine	2,30 m	(7 ft6 in)	2,30 m	(7 ft6 in)
Machine height	2,20 m	(7 ft2 in)	2,20 m	(7 ft2 in)
Maximum ground clearance	0,40 m	(1 ft3 in)	0,40 m	(1 ft3 in)
Transport height	2,30 m	(7 ft7 in)	2,30 m	(7 ft7 in)
Transport length	5,25 m	(17 ft2 in)	5,25 m	(17 ft2 in)
Maximum work height	16,00 m	(52 ft5 in)	16,00 m	(52 ft5 in)
Maximum platform height	14,00 m	(45 ft11 in)	14,00 m	(45 ft11 in)
Maximum drift	9,20 m	(30 ft2 in)	9,20 m	(30 ft2 in)
Maximum work radius	8,70 m	(28 ft6 in)	8,70 m	(28 ft6 in)
Turntable rotation	360 °			
Boom rotation angle	+74° / - 3°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m-2,30 m	(5 ft10 in)-(7 ft6 in)	1,80 m-2,30 m	(5 ft10 in)-(7 ft6 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	3,75 m	(12 ft4 in)	3,75 m	(12 ft4 in)
Inner turning radius (with axles retracted)	1,75 m	(5 ft9 in)	1,75 m	(5 ft9 in)
Distance between centres of the wheels	2,00 m	(6 ft6 in)	2,00 m	(6 ft6 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA			0 °	
Slope warning ANSI - CSA			5 °	
Maximum wind speed allowed	60-45 km/h	(37 - 28 mph)	60-45 km/h	(37 - 28 mph)
Total weight	6950 kg	(15325 lb)	6950 kg	(15325 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - Deutz F3L1011F			
Engine power	28 kW	(38 Hp)	28 kW	(38 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
Sound level at 10 m(32 ft9 in)	< 74 dB (A)			
Noise emission level	103 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	72 l	(19 gal US)	72 l	(19 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)	100 l	(26 gal US)
Operating batteries	12 V-95 Ah		12 V-95 Ah	
Differential lock	Yes			
Maximum climbable slope	50 %			
Tyre type and/ or size	Foam-filled-385/65-22,5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	8 daN/cm²	1,64 lbf/sq.ft	8 daN/cm²	1,64 lbf/sq.ft
Maximum ground pressure on soft ground	3,2 daN/cm²	0,65 lbf/sq.ft	3,2 daN/cm²	0,65 lbf/sq.ft
Micro drive speed	0,8 km/h	(0,5 mph)	0,8 km/h	(0,5 mph)

G - Technical characteristics

Machine	HA16PX		HA46JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Low drive speed	1,4 km/h	(0,9 mph)	1,4 km/h	(0,9 mph)
Medium-speed driving	2,8 km/h	(1,7 mph)	2,8 km/h	(1,7 mph)
High drive speed	5,5 km/h	(3,4 mph)	5,5 km/h	(3,4 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

G - Technical characteristics

For HA18PX - Technical characteristics

Machine	HA18PX		HA51JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	7,60 m	(24 ft11 in)	7,60 m	(24 ft11 in)
Overall width of machine	2,30 m	(7 ft6 in)	2,30 m	(7 ft6 in)
Machine height	2,20 m	(7 ft2 in)	2,20 m	(7 ft2 in)
Maximum ground clearance	0,40 m	(1 ft3 in)	0,40 m	(1 ft3 in)
Transport height	2,30 m	(7 ft7 in)	2,30 m	(7 ft7 in)
Transport length	5,90 m	(19 ft4 in)	5,90 m	(19 ft4 in)
Maximum work height	17,30 m	(56 ft9 in)	17,30 m	(56 ft9 in)
Maximum platform height	15,30 m	(50 ft2 in)	15,30 m	(50 ft2 in)
Maximum drift	10,60 m	(34 ft9 in)	10,60 m	(34 ft9 in)
Maximum work radius	10,10 m	(33 ft2 in)	10,07 m	(33 ft0 in)
Turntable rotation	360 °			
Boom rotation angle	+74° / - 3°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m-2,30 m	(5 ft10 in)-(7 ft6 in)	1,80 m-2,30 m	(5 ft10 in)-(7 ft6 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	3,75 m	(5 ft9 in)	3,75 m	(12 ft4 in)
Inner turning radius (with axles retracted)	1,75 m	(6 ft2 in)	1,90 m	(6 ft2 in)
Distance between centres of the wheels	2,00 m	(6 ft6 in)	2,00 m	(6 ft6 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA	0 °			
Slope warning ANSI - CSA	5 °			
Maximum wind speed allowed	60-45 km/h	(37 - 28 mph)	60-45 km/h	(37 - 28 mph)
Total weight	8050 kg	(17750 lb)	8120 kg	(17901 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - Deutz F3L1011F			
Engine power	28 kW	(38 Hp)	28 kW	(38 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
Sound level at 10 m(32 ft9 in)	< 74 dB (A)			
Noise emission level	103 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	72 l	(19 gal US)	72 l	(19 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)	100 l	(26 gal US)
Operating batteries	12 V-95 Ah		12 V-95 Ah	
Differential lock	Yes			
Maximum climbable slope	50 %			
Tyre type and/ or size	Foam-filled-385/65-22,5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	8,2 daN/cm²	1,68 lbf/sq.ft	8,2 daN/cm²	1,68 lbf/sq.ft
Maximum ground pressure on soft ground	3,6 daN/cm²	0,74 lbf/sq.ft	3,6 daN/cm²	0,74 lbf/sq.ft
Micro drive speed	0,8 km/h	(0,5 mph)	0,8 km/h	(0,5 mph)

G - Technical characteristics

Machine	HA18PX		HA51JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Low drive speed	1,4 km/h	(0,9 mph)	1,4 km/h	(0,9 mph)
Medium-speed driving	2,8 km/h	(1,7 mph)	2,8 km/h	(1,7 mph)
High drive speed	5,5 km/h	(3,4 mph)	5,5 km/h	(3,4 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

G - Technical characteristics

For HA16SPX - Technical characteristics

Machine	HA16SPX		HA46SJRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	6,80 m	(22 ft3 in)	6,80 m	(22 ft3 in)
Overall width of machine	2,30 m	(7 ft6 in)	2,30 m	(7 ft6 in)
Machine height	2,20 m	(7 ft2 in)	2,20 m	(7 ft2 in)
Maximum ground clearance	0,35 m	(1 ft1 in)	0,35 m	(1 ft1 in)
Transport height	2,30 m	(7 ft7 in)	2,30 m	(7 ft7 in)
Transport length	5,30 m	(17 ft4 in)	5,80 m	(19 ft0 in)
Maximum work height	16,00 m	(52 ft5 in)	16,00 m	(52 ft5 in)
Maximum platform height	14,00 m	(45 ft11 in)	14,00 m	(45 ft11 in)
Maximum drift	9,10 m	(29 ft10 in)	9,10 m	(29 ft10 in)
Maximum work radius	8,60 m	(28 ft2 in)	8,60 m	(28 ft2 in)
Turntable rotation	350 °			
Boom rotation angle	+75° / - 0°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m	(5 ft10 in)	1,80 m	(5 ft10 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	4,50 m	(14 ft9 in)	4,50 m	(14 ft9 in)
Inner turning radius (with axles retracted)	2,00 m	(6 ft7 in)	2,00 m	(6 ft7 in)
Distance between centres of the wheels	2,00 m	(6 ft6 in)	2,00 m	(6 ft6 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA			0 °	
Slope warning ANSI - CSA			5 °	
Maximum wind speed allowed	45 km/h	(28 mph)	45 km/h	(28 mph)
Front axle load	2800 kg	(6174 lb)	2800 kg	(6174 lb)
Rear axle load	3900 kg	(8598 lb)	3900 kg	(8598 lb)
Total weight	6700 kg	(14774 lb)	6700 kg	(14774 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - D2011 L03 I			
Engine power	30,9 kW	(42 Hp)	31,2 kW	(42 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
Sound level at 10 m(32 ft9 in)	< 74 dB (A)			
Noise emission level	103 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	55 l	(14 gal US)	55 l	(14 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)	100 l	(26 gal US)
Operating batteries	12 V-100 Ah			
Differential lock	Yes			
Maximum climbable slope	40 %			
Tyre type and/ or size	Foam-filled-14 x 17,5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	10,1daN/cm²	2,07 lbf/sq.ft	10,1daN/cm²	2,07 lbf/sq.ft
Maximum ground pressure on soft ground	3 daN/cm²	0,61 lbf/sq.ft	3 daN/cm²	0,61 lbf/sq.ft

G - Technical characteristics

Machine	HA16SPX		HA46SJRT	
Characteristics	Metric	Imperial	Metric	Imperial
Micro drive speed	0,7 km/h	(0,4 mph)	0,7 km/h	(0,4 mph)
Low drive speed	1,5 km/h	(0,9 mph)	1,5 km/h	(0,9 mph)
Medium-speed driving	2,3 km/h	(1,4 mph)	2.3 km/h	(1,4 mph)
High drive speed	5,5 km/h	(3,4 mph)	5,5 km/h	(3,4 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

G - Technical characteristics

For HA18SPX - Technical characteristics

Machine	HA18SPX		HA51SJRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	7,50 m	(24 ft7 in)	7,50 m	(24 ft7 in)
Overall width of machine	2,30 m	(7 ft6 in)	2,30 m	(7 ft6 in)
Machine height	2,20 m	(7 ft2 in)	2,20 m	(7 ft2 in)
Maximum ground clearance	0,35 m	(1 ft1 in)	0,35 m	(1 ft1 in)
Transport height	2,30 m	(7 ft7 in)	2,30 m	(7 ft7 in)
Transport length	5,80 m	(19 ft0 in)	5,80 m	(19 ft0 in)
Maximum work height	17,30 m	(56 ft9 in)	17,30 m	(56 ft9 in)
Maximum platform height	15,30 m	(50 ft2 in)	15,30 m	(50 ft2 in)
Maximum drift	10,50 m	(34 ft9 in)	10,50 m	(34 ft9 in)
Maximum work radius	10,00 m	(32 ft9 in)	10,00 m	(32 ft9 in)
Turntable rotation	350 °			
Boom rotation angle	+75° / - 0°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m	(5 ft10 in)	1,80 m	(5 ft10 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	4,50 m	(14 ft9 in)	4,50 m	(14 ft9 in)
Inner turning radius (with axles retracted)	2,00 m	(6 ft6 in)	2,00 m	(6 ft6 in)
Distance between centres of the wheels	2,00 m	(6 ft6 in)	2,00 m	(6 ft6 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA			0 °	
Slope warning ANSI - CSA			5 °	
Maximum wind speed allowed	45 km/h	(28 mph)	45 km/h	(28 mph)
Total weight	7660 kg	(16890 lb)	7660 kg	(16890 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - Deutz F3L2011F			
Engine power	30,9 kW	(42 Hp)	30,9 kW	(42 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
Sound level at 10 m(32 ft9 in)	< 74 dB (A)			
Noise emission level	103 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	55 l	(14 gal US)	55 l	(14 gal US)
Hydraulic oil tank capacity	100 l	(26 gal US)	100 l	(26 gal US)
Operating batteries	12 V-95 Ah			
Differential lock	Yes			
Maximum climbable slope	40 %			
Tyre type and/ or size	Foam-filled-14 x 17,5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	13 daN/cm²	2,66 lbf/sq.ft	13 daN/cm²	2,66 lbf/sq.ft
Maximum ground pressure on soft ground	3,5 daN/cm²	0,72 lbf/sq.ft	3,5 daN/cm²	0,72 lbf/sq.ft
Micro drive speed	0,7 km/h	(0,4 mph)	0,7 km/h	(0,4 mph)
Low drive speed	1,5 km/h	(0,9 mph)	1,5 km/h	(0,9 mph)
Medium-speed driving	2,3 km/h	(1,4 mph)	2.3 km/h	(1,4 mph)
High drive speed	5,5 km/h	(3,4 mph)	5,5 km/h	(3,4 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

G - Technical characteristics

For HA20PX - Technical characteristics

Machine	HA20PX		HA61JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	8,92 m	(29 ft3 in)	8,92 m	(29 ft3 in)
Overall width of machine	2,38 m	(7 ft9 in)	2,38 m	(7 ft9 in)
Machine height	2,67 m	(8 ft9 in)	2,67 m	(8 ft9 in)
Maximum ground clearance	0,42 m	(1 ft4 in)	0,42 m	(1 ft4 in)
Transport height	3,10 m	(10 ft2 in)	3,10 m	(10 ft2 in)
Transport length	6,80 m	(22 ft3 in)	6,80 m	(22 ft3 in)
Maximum work height	20,65 m	(67 ft9 in)	20,65 m	(67 ft9 in)
Maximum platform height	18,65 m	(21 ft2 in)	18,65 m	(21 ft2 in)
Maximum drift	14,00 m	(45 ft11 in)	14,00 m	(45 ft11 in)
Maximum work radius	13,50 m	(44 ft3 in)	13,50 m	(44 ft3 in)
Turntable rotation	360 °Continue			
Boom rotation angle	+75° / - 0°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m	(5 ft10 in)	1,80 m	(5 ft10 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	3,90 m	(12 ft9 in)	3,90 m	(12 ft9 in)
Distance between centres of the wheels	2,80 m	(9 ft2 in)	2,80 m	(9 ft2 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA			0 °	
Slope warning ANSI - CSA			5 °	
Maximum wind speed allowed	45 km/h	(28 mph)	45 km/h	(28 mph)
Total weight	11710 kg	(25816 lb)	11710 kg	(25816 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - Deutz D2011 - L03I			
Engine power	33.2 kW	(45.1 Hp)	33.2 kW	(45.1 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
High-speed consumption	252 g/kWh			
Sound level at 10 m(32 ft9 in)	73,9 dB (A)			
Noise emission level	108 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	150 l	(33 gal US)	150 l	(33 gal US)
Hydraulic oil tank capacity	150 l	(33 gal US)	150 l	(33 gal US)
Operating batteries	12 V-95 Ah			
Differential lock	Yes			
Maximum climbable slope	40 %			
Tyre type and/ or size	Foam-filled-385/65-22.5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	12 daN/cm²	2,46 lbf/sq.ft	12 daN/cm²	2,46 lbf/sq.ft
Maximum ground pressure on soft ground	6 daN/cm²	1,23 lbf/sq.ft	6 daN/cm²	1,23 lbf/sq.ft
Micro drive speed	0,5 km/h	(0,3 mph)	0,5 km/h	(0,3 mph)
Low drive speed	1,2 km/h	(0,75 mph)	1,2 km/h	(0,75 mph)
Medium-speed driving	2 km/h	(1,2 mph)	2 km/h	(1,2 mph)
High drive speed	4,5 km/h	(2,7 mph)	4,5 km/h	(2,7 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

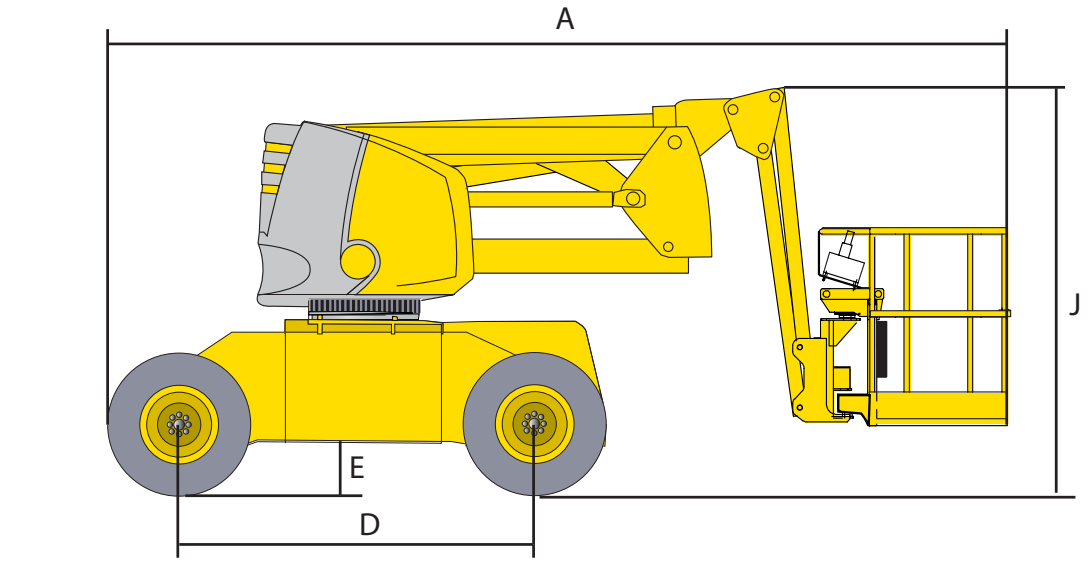
G - Technical characteristics

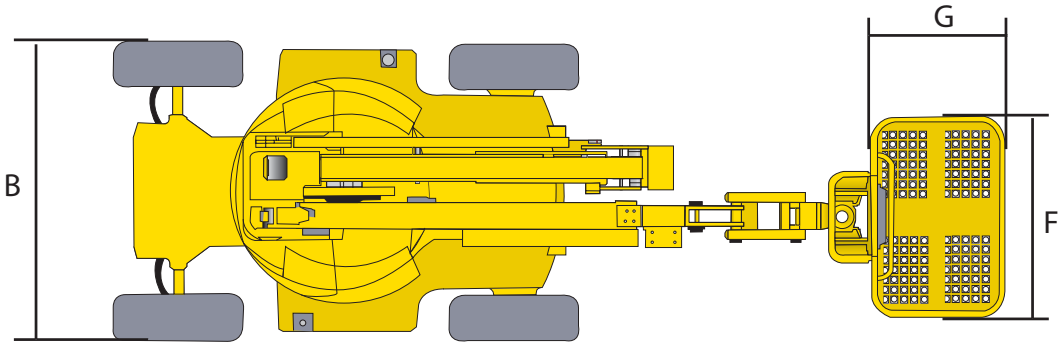
For HA260PX - Technical characteristics

Machine	HA260PX		HA80JRT	
Characteristics	Metric	Imperial	Metric	Imperial
Length of machine in stowed position	12,00 m	(39 ft4 in)	12,00 m	(39 ft4 in)
Overall width of machine	2,38 m	(7 ft9 in)	2,38 m	(7 ft9 in)
Machine height	2,67 m	(8 ft9 in)	2,67 m	(8 ft9 in)
Maximum ground clearance	0,42 m	(1 ft4 in)	0,42 m	(1 ft4 in)
Transport height	3,20 m	(10 ft6 in)	3,20 m	(10 ft6 in)
Transport length	9,50 m	(31 ft2 in)	9,50 m	(31 ft2 in)
Maximum work height	25,60 m	(83 ft11 in)	25,60 m	(83 ft11 in)
Maximum platform height	23,60 m	(77 ft5 in)	23,60 m	(77 ft5 in)
Maximum drift	16,20 m	(53 ft2 in)	16,20 m	(53 ft2 in)
Maximum work radius	15,70 m	(51 ft6 in)	15,70 m	(51 ft6 in)
Turntable rotation	360 °Continue			
Boom rotation angle	+75° / - 0°			
Jib working range	+70° / - 70°			
Platform length	0,80 m	(2 ft7 in)	0,80 m	(2 ft7 in)
Platform width	1,80 m	(5 ft10 in)	1,80 m	(5 ft10 in)
Platform rotation angle	+90° / - 90°			
Outer turning radius (without retracted axle adjustment)	3,90 m	(12 ft9 in)	3,90 m	(12 ft9 in)
Distance between centres of the wheels	2,80 m	(9 ft2 in)	2,80 m	(9 ft2 in)
Dumping CE - AS	5 °			
Rated slope ANSI - CSA			0 °	
Slope warning ANSI - CSA			5 °	
Maximum wind speed allowed	45 km/h	(28 mph)	45 km/h	(28 mph)
Total weight	15950 kg	(35164 lb)	15950 kg	(35164 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Maximum number of people on the platform	2			
Engine type	Diesel - Deutz D2011 - L03I			
Engine power	33.2 kW	(45.1 Hp)	33.2 kW	(45.1 Hp)
Engine power when idle	15 kW	(20,3 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	230 g/kWh			
High-speed consumption	252 g/kWh			
Sound level at 10 m(32 ft9 in)	73,9 dB (A)			
Noise emission level	108 dB (A)			
Hand vibration	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Feet vibration	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Fuel tank capacity	150 l	(33 gal US)	150 l	(33 gal US)
Hydraulic oil tank capacity	150 l	(33 gal US)	150 l	(33 gal US)
Operating batteries	12 V-95 Ah			
Differential lock	Yes			
Maximum climbable slope	40 %			
Tyre type and/ or size	Foam-filled-385/65-22.5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum ground pressure on hard ground	13 daN/cm²	2,66 lbf/sq.ft	13 daN/cm²	2,66 lbf/sq.ft
Maximum ground pressure on soft ground	6,2 daN/cm²	1,27 lbf/sq.ft	6,2 daN/cm²	1,27 lbf/sq.ft
Micro drive speed	0,5 km/h	(0,3 mph)	0,5 km/h	(0,3 mph)
Low drive speed	1,2 km/h	(0,75 mph)	1,2 km/h	(0,75 mph)
Medium-speed driving	2 km/h	(1,2 mph)	2 km/h	(1,2 mph)
High drive speed	4,5 km/h	(2,7 mph)	4,5 km/h	(2,7 mph)
Manual lateral force at platform	CE - AS : 400 N - 90 lbf		ANSI - CSA : 666 N / 150 lbf	

2 - Overall dimensions

General diagram HA120PX



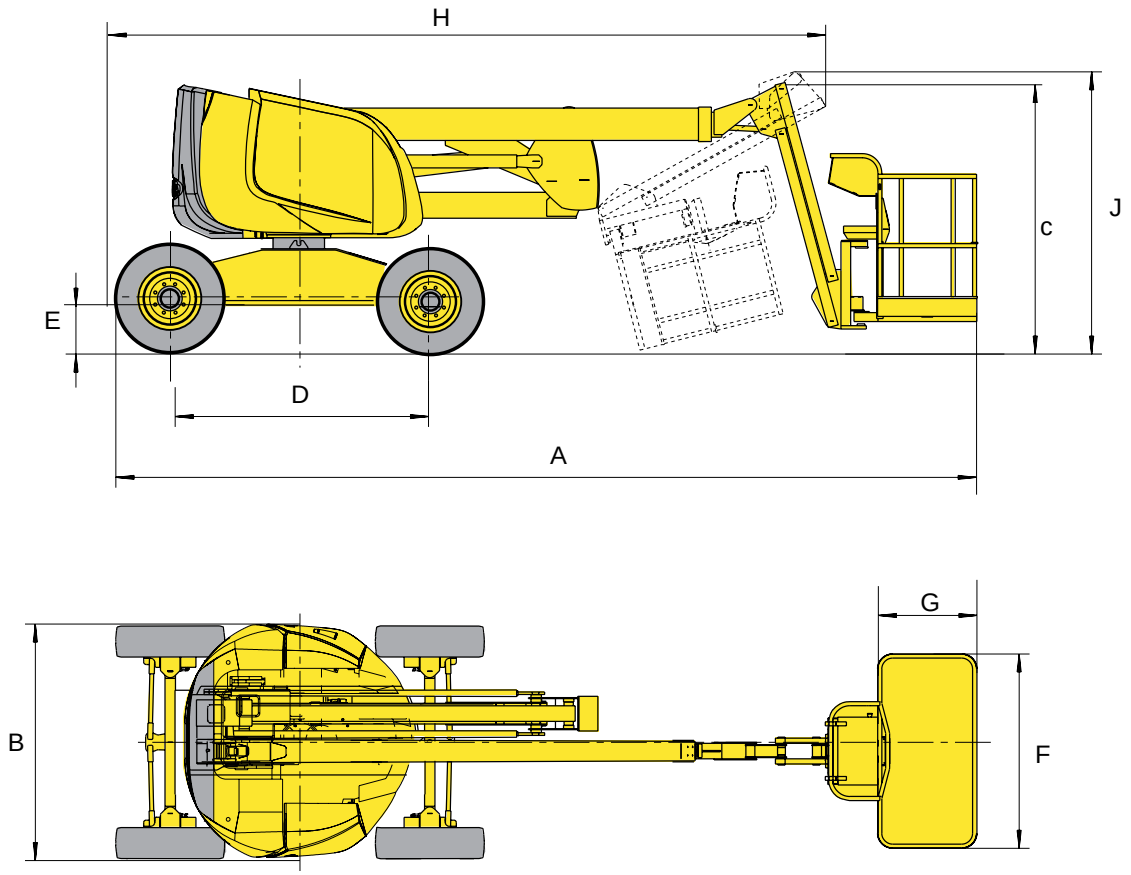


Overall dimension specifications

Marking	HA120PX	
	Mètre	Feet inch
A	5,51	18 ft 1 in
B	1,9	6 ft 0 in
D	1,92	6 ft 4 in
E	0,26	0 ft 11 in
F x G	1,20/1,50 x 0,80	4 ft 11 in / 2 ft 7 in x 3 ft 11 in
J	2,27	7 ft 5 in

G - Technical characteristics

General diagram HA16PX - HA18PX - HA16SPX - HA18SPX



Overall dimension specifications

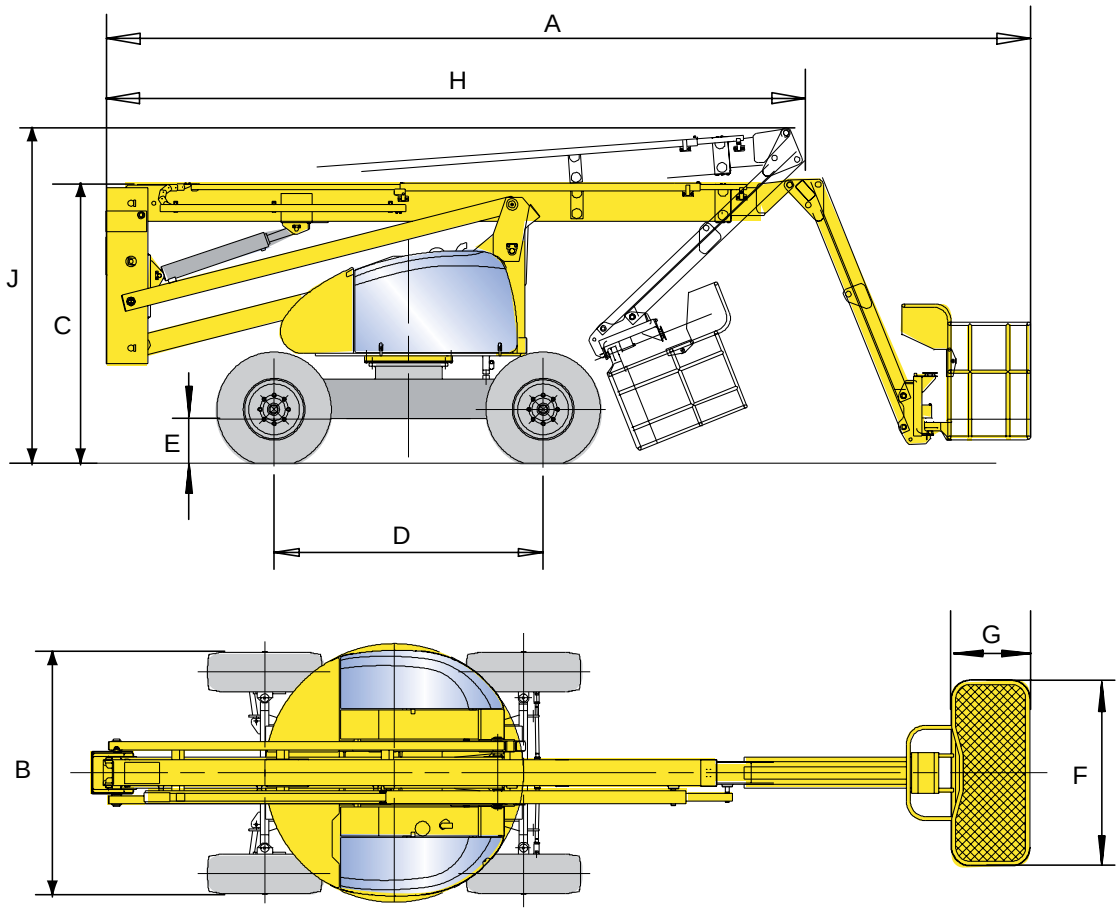
Marking	HA16PX		HA18PX	
	Mètre	Feet inch	Mètre	Feet inch
A	6,95	22 ft 9 in	7,60	24 ft 11 in
B	2,30	7 ft 6 in	2,30	7 ft 6 in
C	2,30	7 ft 7 in	2,30	7 ft 7 in
D	2,00	6 ft 7 in	2,00	6 ft 6 in
E	0,40	1 ft 3 in	0,40	1 ft 3 in
F x G	1,80/2,30 x 0,80	5 ft 10 in / 7 ft 6 in x 2 ft 7 in	1,80/2,30 x 0,80	5 ft 10 in / 7 ft 6 in x 2 ft 7 in
H	5,25	17 ft 2 in	5,90	19 ft 4 in
J	2,30	7 ft 7 in	2,30	7 ft 7 in

Overall dimension specifications

Marking	HA16SPX		HA18SPX	
	Mètre	Feet inch	Mètre	Feet inch
A	6,80	22 ft 3 in	7,50	24 ft 7 in
B	2,30	7 ft 6 in	2,30	7 ft 6 in
C	2,20	7 ft 2 in	2,20	7 ft 2 in
D	2,00	6 ft 7 in	2,00	6 ft 7 in
E	0,35	1 ft 1 in	0,35	1 ft 1 in
F x G	1,80 x 0,80	5 ft 10 in x 2 ft 7 in	1,80 x 0,80	5 ft 10 in x 2 ft 7 in
H	5,30	17 ft 4 in	5,80	19 ft 0 in
J	2,30	7 ft 6 in	2,30	7 ft 6 in

G - Technical characteristics

General diagram HA20PX - HA260PX

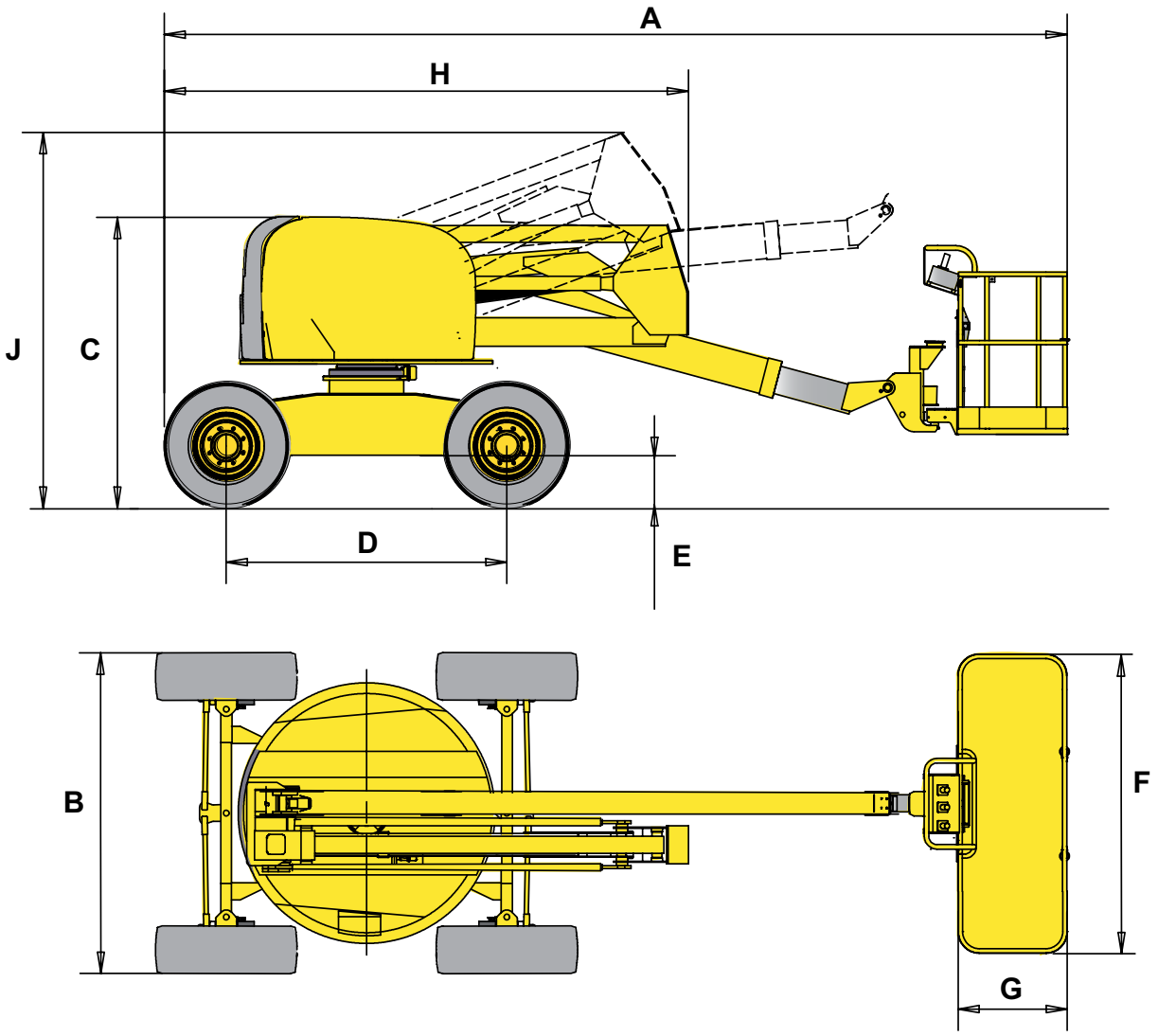


Overall dimension specifications

Marking	HA20PX		HA260PX	
	Mètre	Feet inch	Mètre	Feet inch
A	8,92	29 ft 3 in	12,00	39 ft 4 in
B	2,38	7 ft 9 in	2,38	7 ft 9 in
C	2,67	8 ft 9 in	2,67	8 ft 9 in
D	2,80	9 ft 2 in	2,80	9 ft 2 in
E	0,42	1 ft 4 in	0,42	1 ft 4 in
F x G	1,80 x 0,80	5 ft 10 in x 2 ft 7 in	1,80 x 0,80	5 ft 10 in x 2 ft 7 in
H	6,80	22 ft 3 in	9,50	31 ft 2 in
J	3,10	10 ft 2 in	3,20	10 ft 6 in

G - Technical characteristics

General diagram HA16X



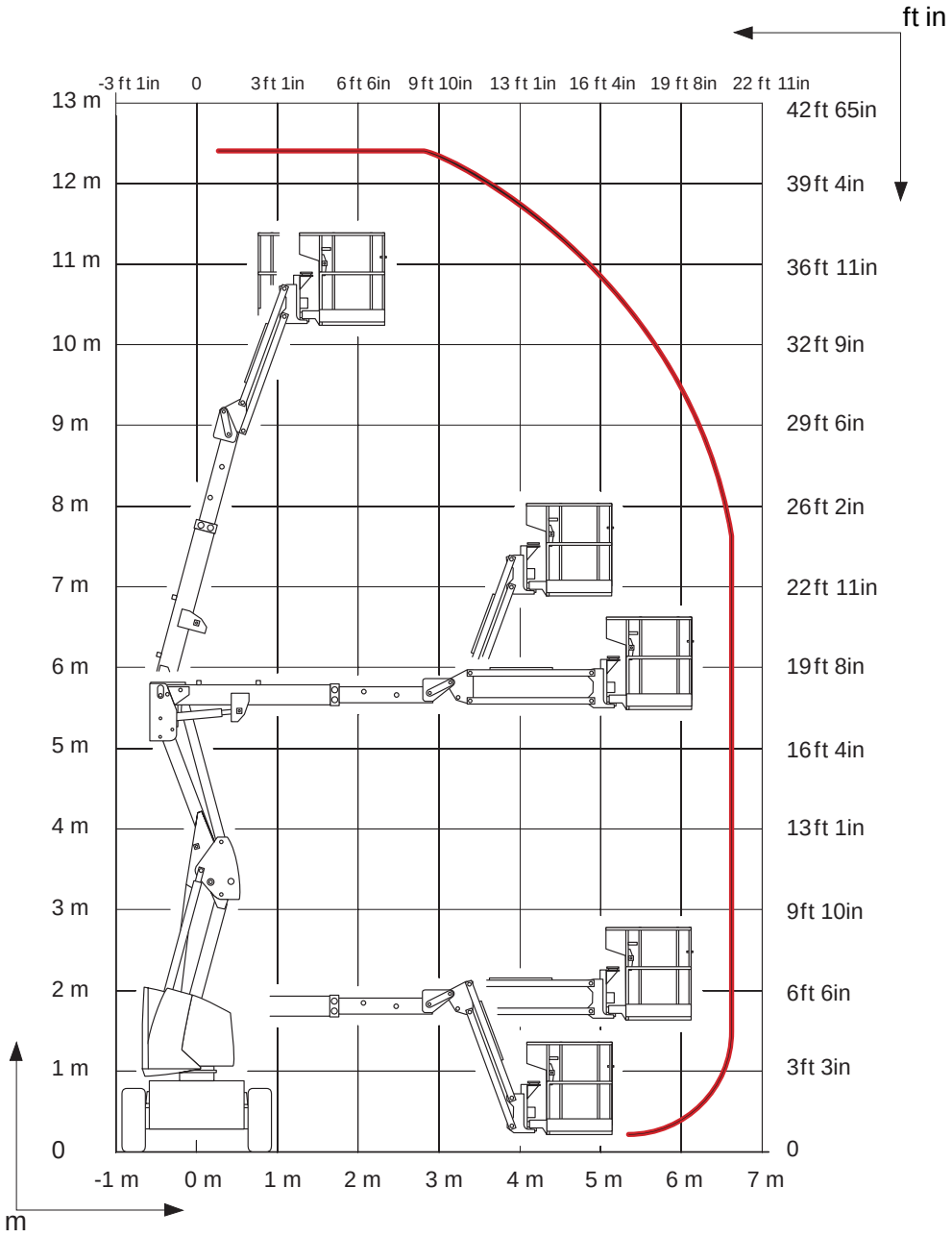
Overall dimension specifications

Marking	HA16X	
	Mètre	Feet inch
A	6,70	22 ft 0 in
B	2,25	7 ft 5 in
C	2,08	6 ft 9 in
D	2,00	6 ft 7 in
E	0,37	1 ft 3 in
F x G	1,80/2,30 x 0,80	5 ft 10 in / 7 ft 6 in x 2 ft 7 in
H	6,70	21 ft 11 in
J	2,25	7 ft 5 in

3 - Working area

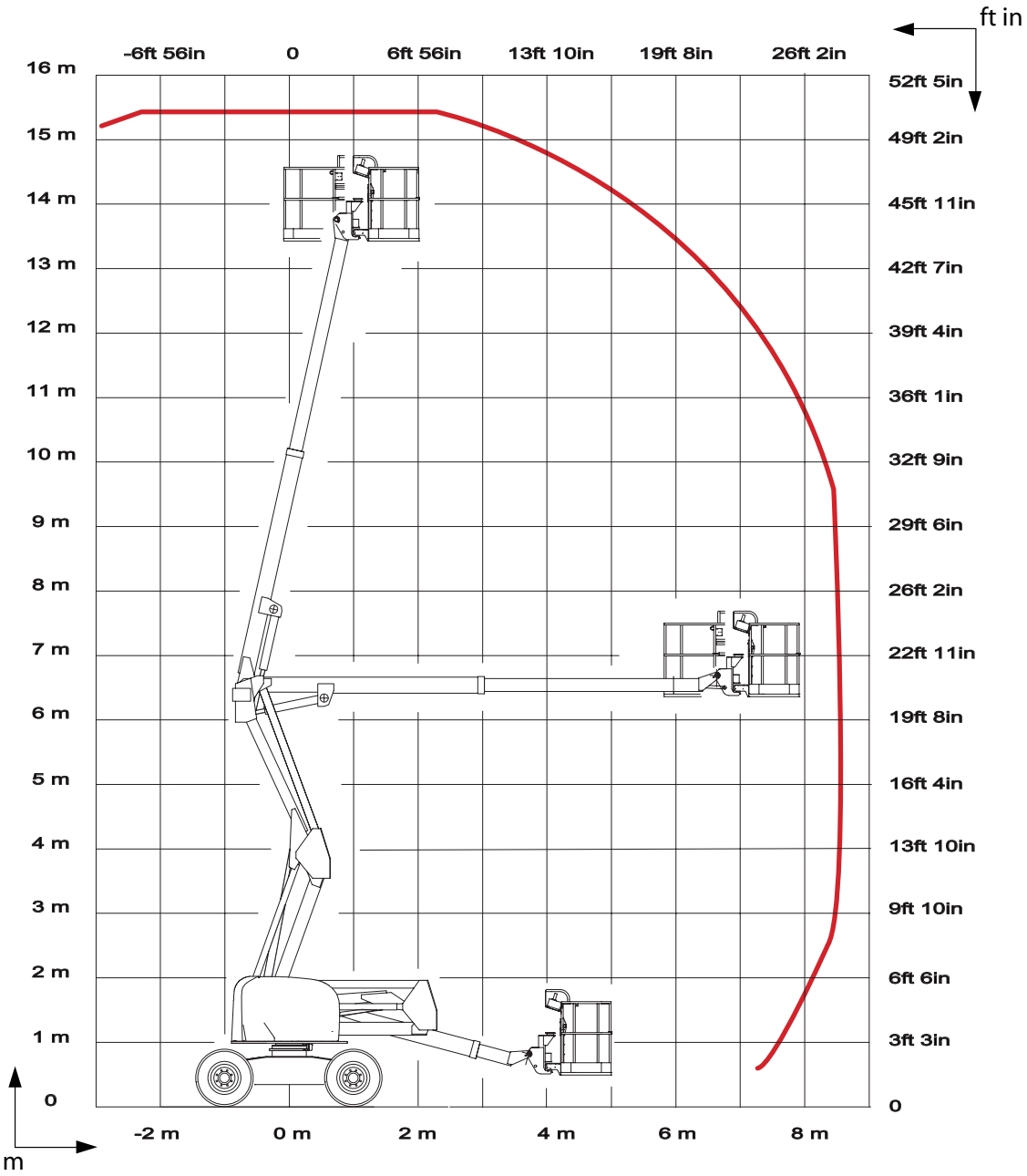
3.1 - MACHINE HA120PX

Working area



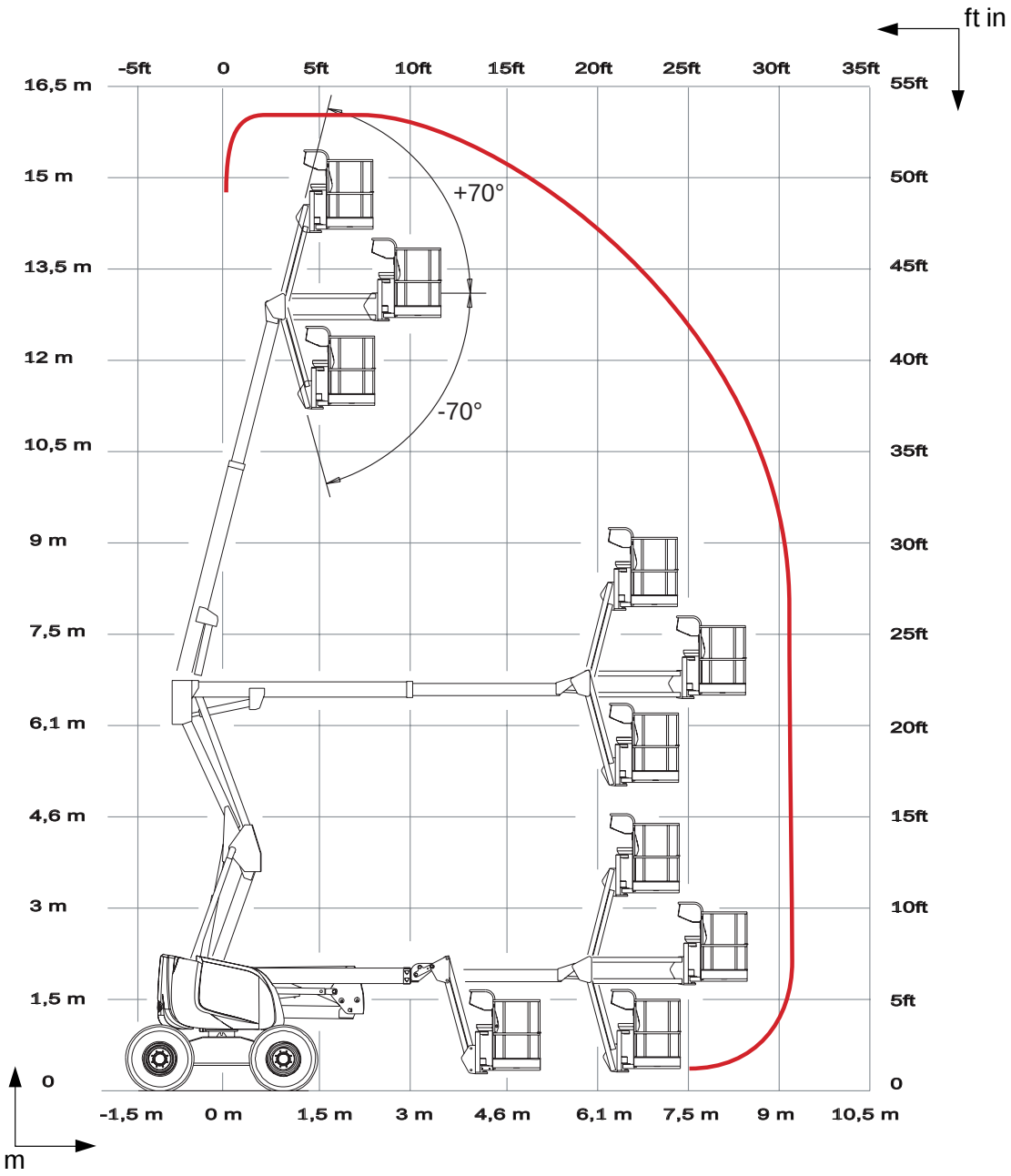
3.2 - MACHINE HA16X

Working area



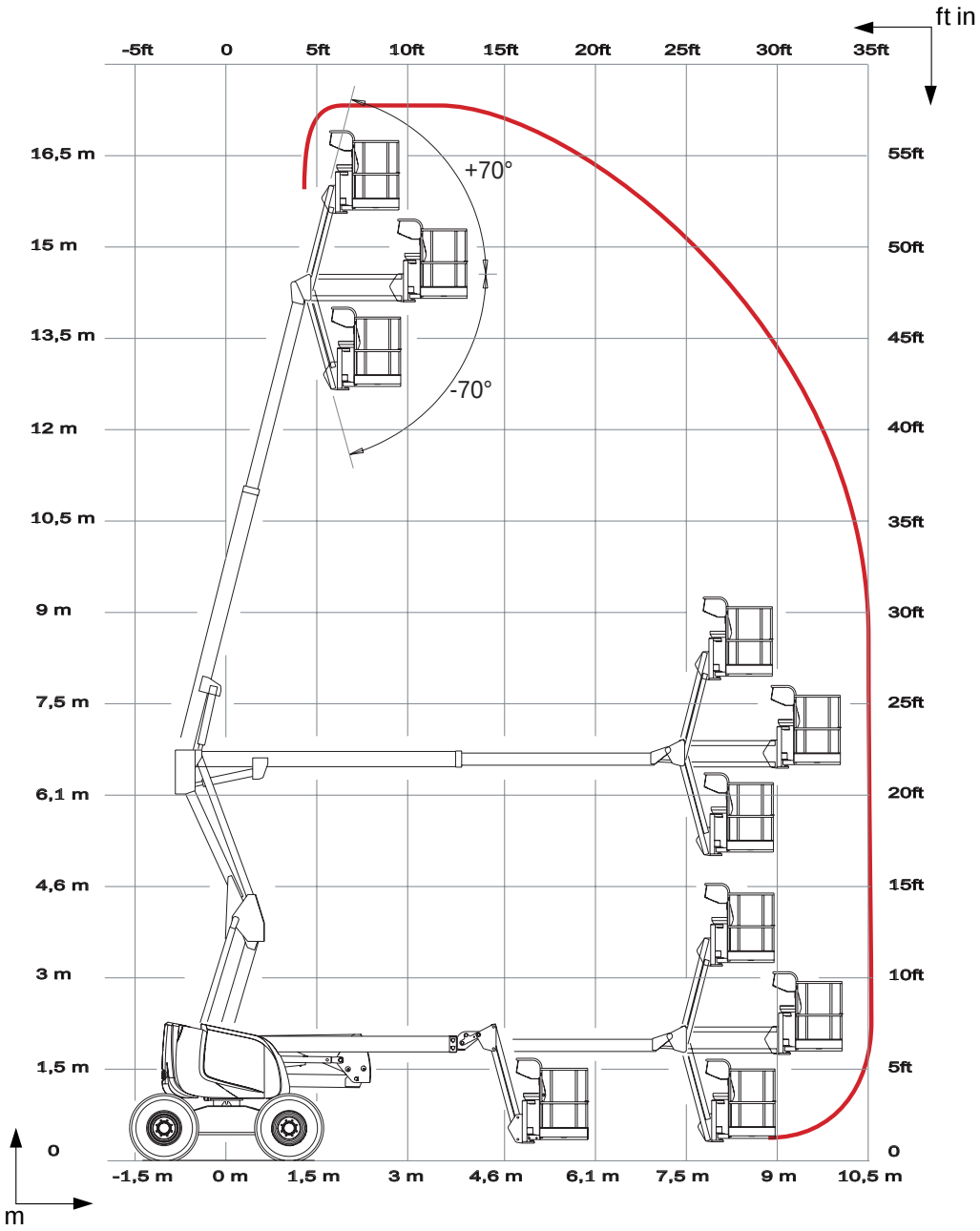
3.3 - MACHINE HA16PX

Working area



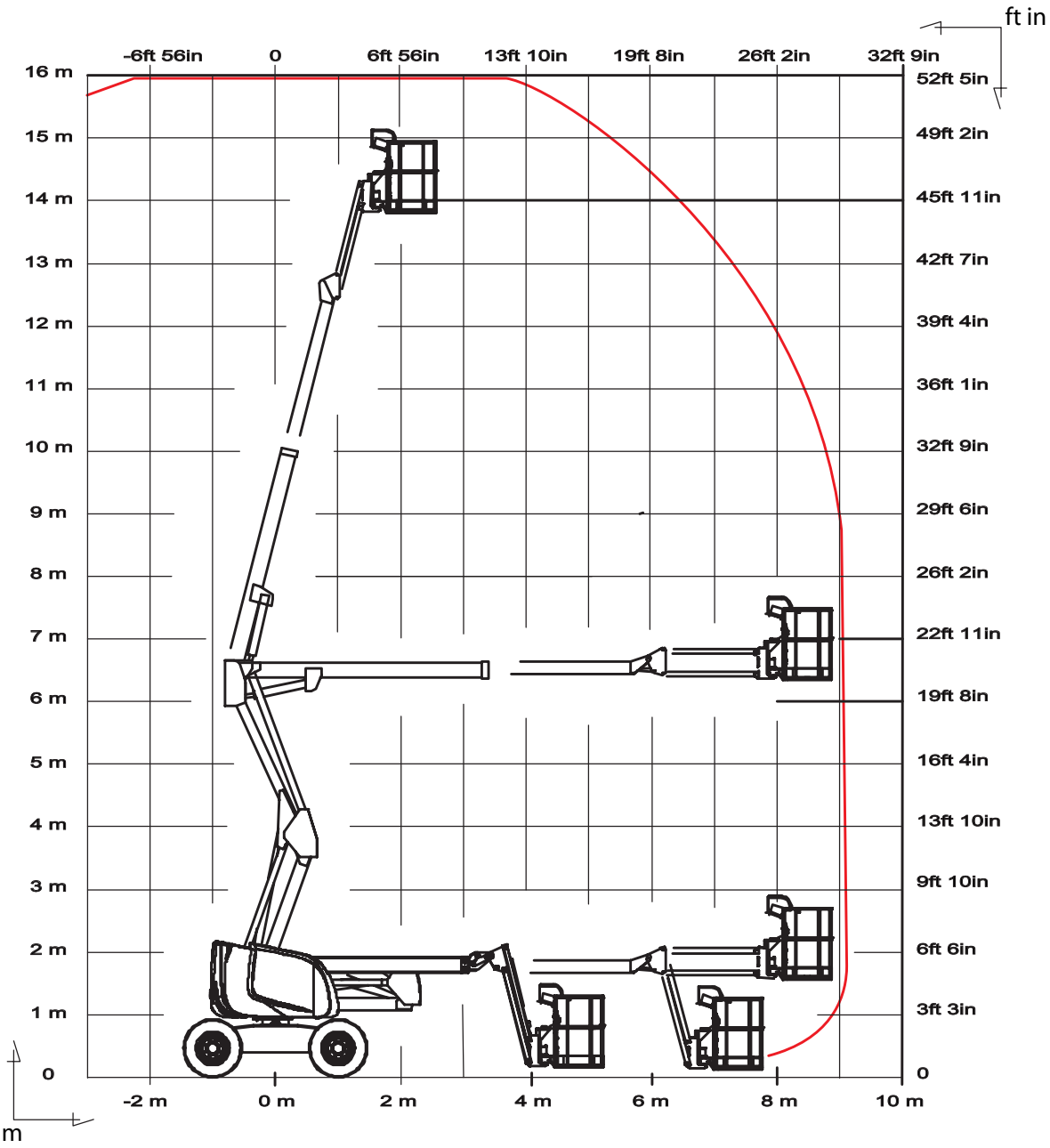
3.4 - MACHINE HA18PX

Working area



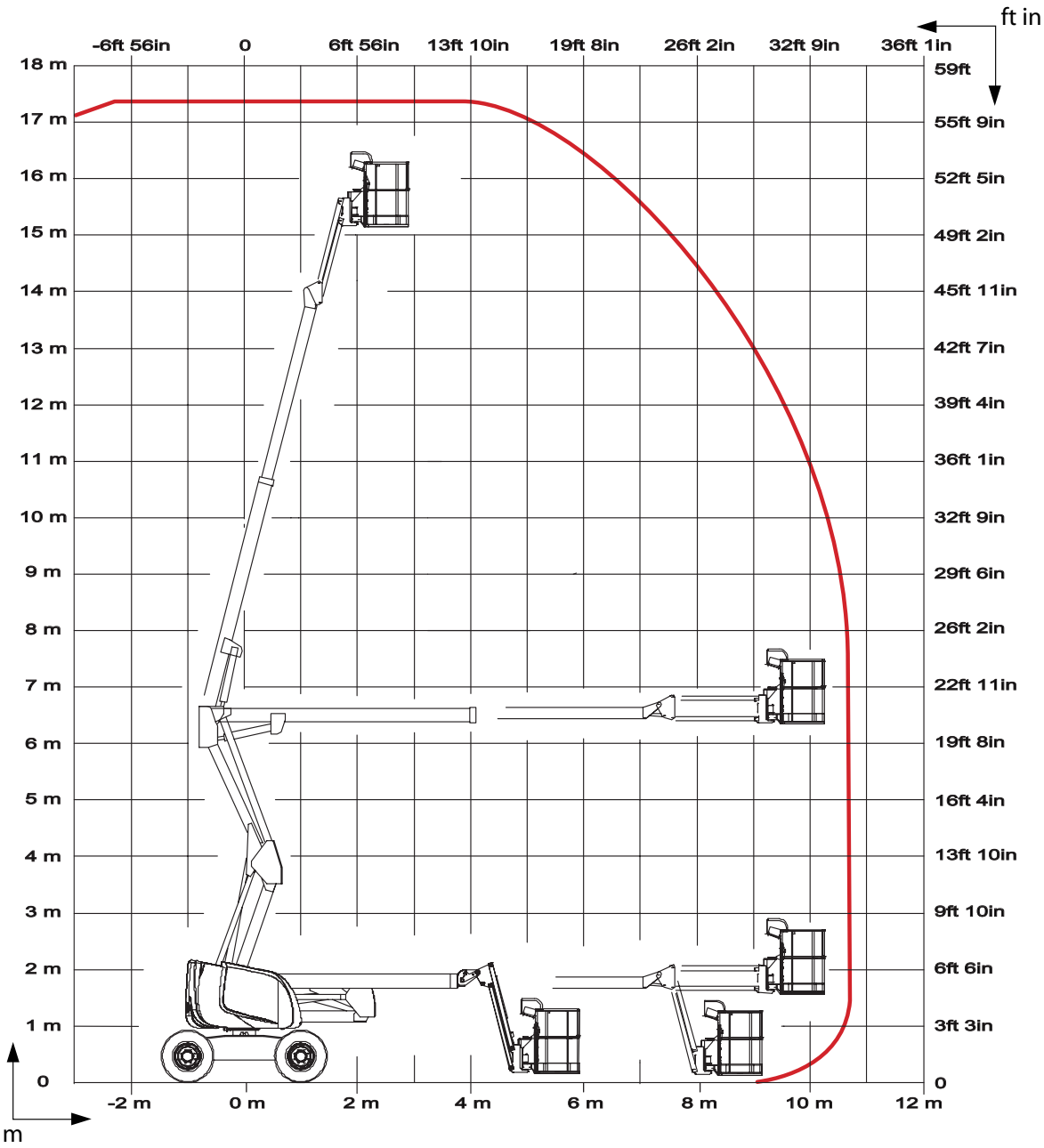
3.5 - MACHINE HA16SPX

Working area



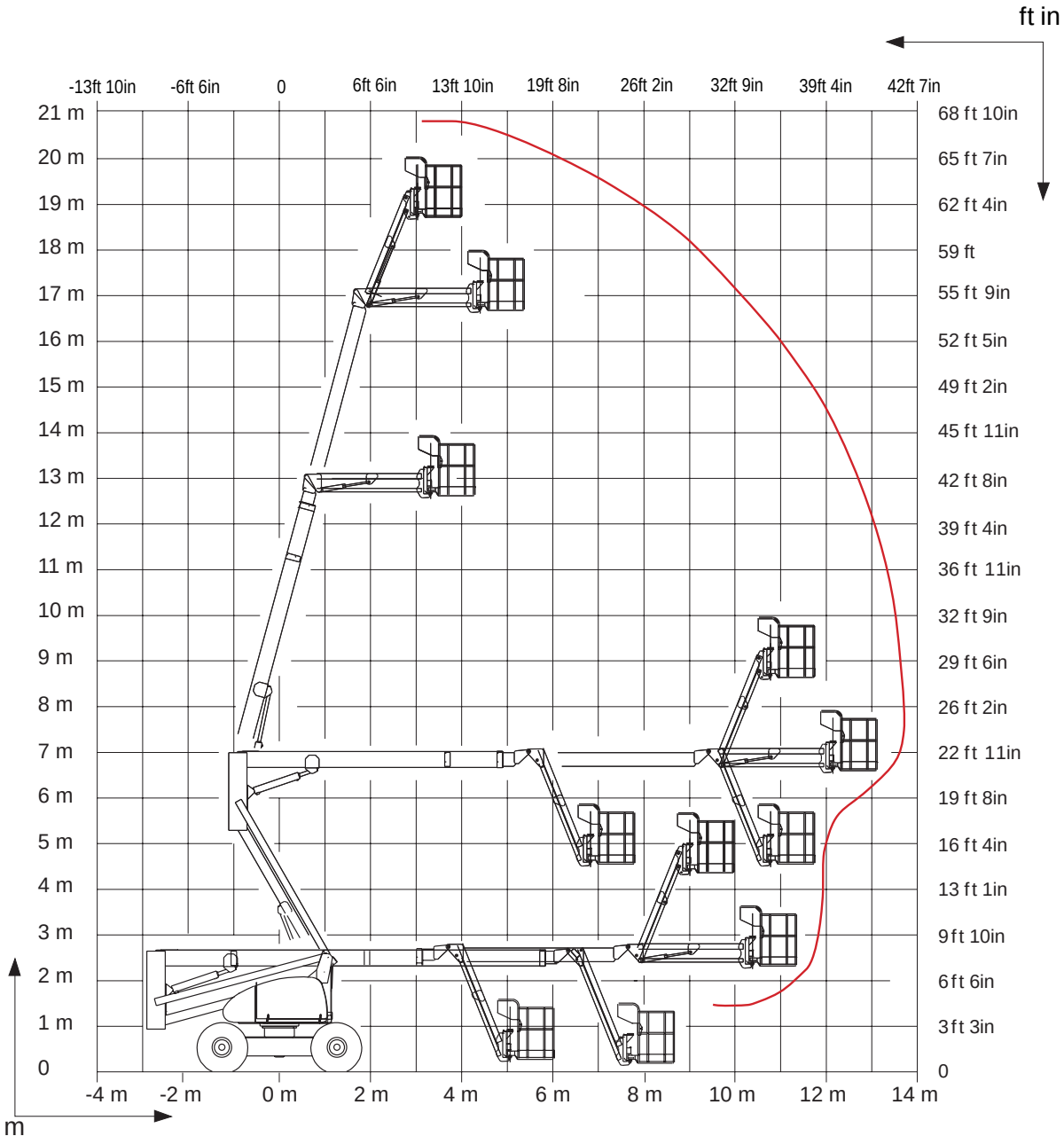
3.6 - MACHINE HA18SPX

Working area



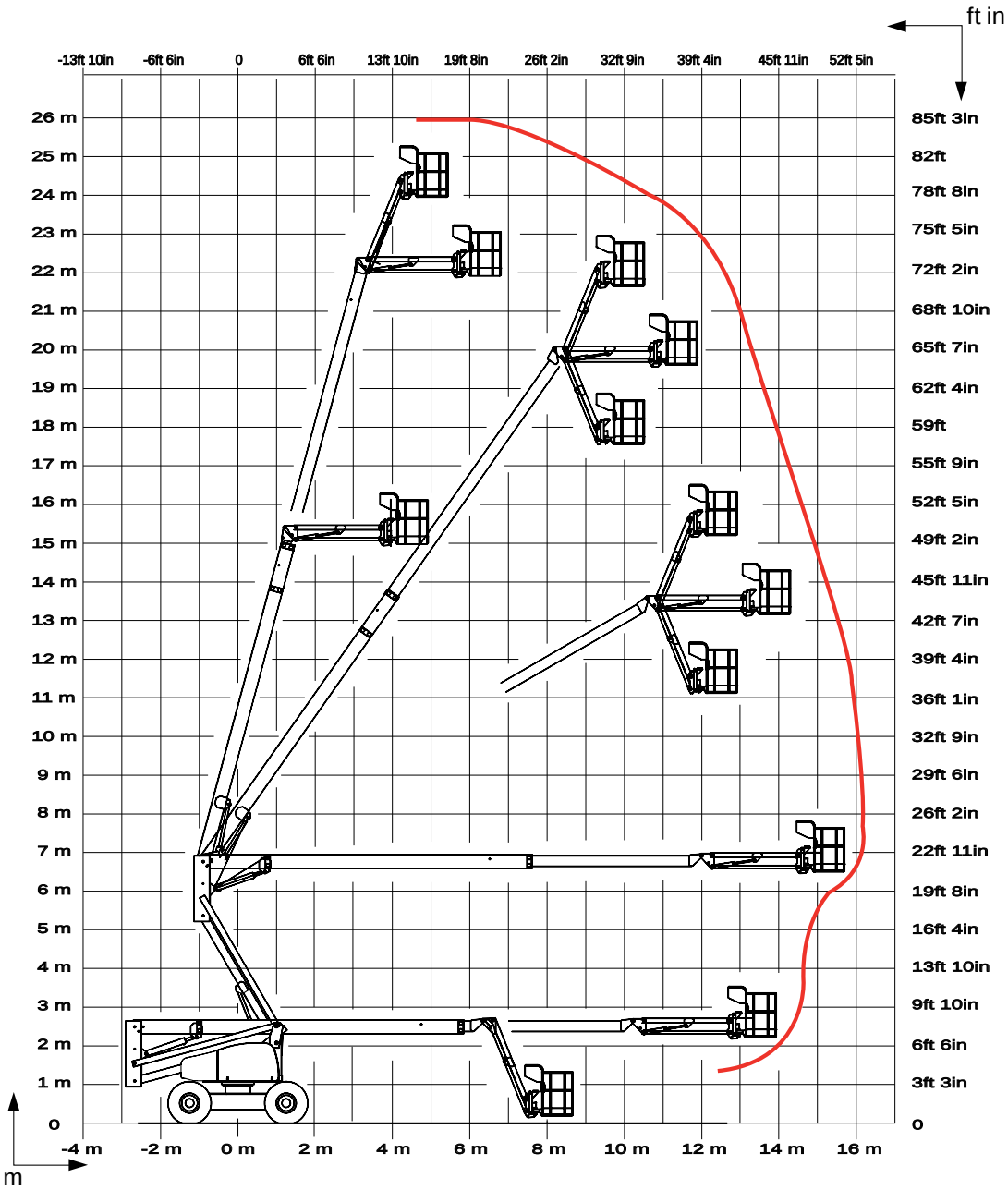
3.7 - MACHINE HA20PX

Working area



3.8 - MACHINE HA260PX

Working area



4 - AS - CE 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 in secure conditions.

• The results must be fully recorded.

To avoid the machine tipping over, it must be secured during the test (by a chain or anchorage point).

4.1 - OVERLOAD TEST

The overload test is performed with 125 % of the nominal load. See paragraph 1.12.3 of the AS1418.10 standard for test details.

Load table

Machine	Test load	
	Pound (lb)	Kilogramme (kg)
HA120PX HA16X HA16PX HA18PX HA16SPX - basket 1.80m HA18SPX - basket 1.80m HA20PX HA260PX	633,8	287,5
HA16SPX - HA18SPX basket 2.30m	551	250
HA20PX - Strong wind option	688,9	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 - FUNCTIONAL TEST

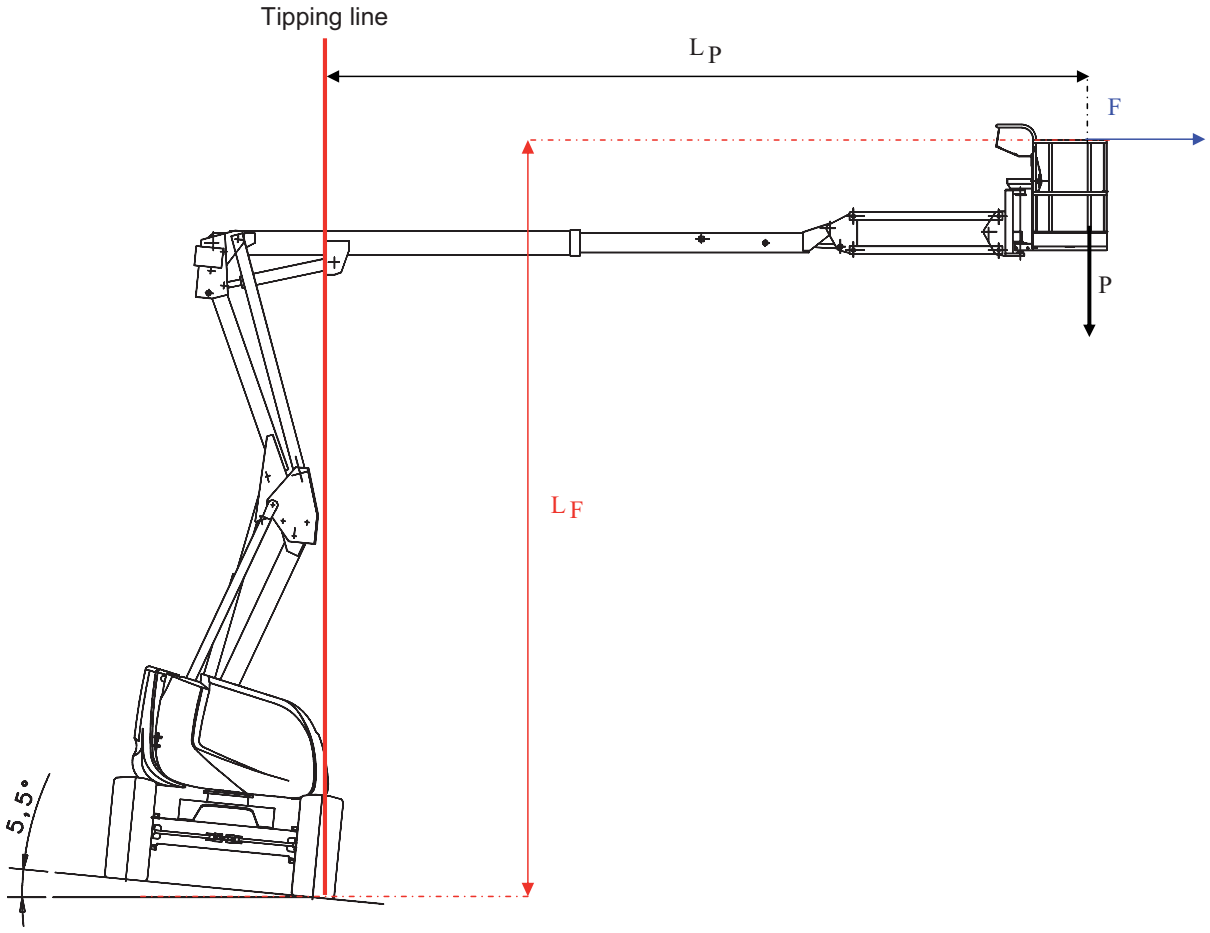
Functional tests have confirmed the following: :

- The machine has performed all movements without jerking, while carrying the nominal load.
- All security systems are operating correctly.
- Maximum authorized 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 machine's most unfavourable position (load W applied over distance L).

Stability for HA120PX - HA16X - HA16(S)PX (HA46(S)JRT) - HA18(S)PX (HA51(S)JRT)



Stability table for HA120PX

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	18 - 10	5.74	2036
F	5,5	121	55	23 - 4	7.109	

Stability table for HA16X

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	24 - 8	7.52	2611
F	5,5	119	54	27 - 4	8.338	

G - Technical characteristics

Stability table for HA16PX -basket 1.80m - 60km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	26 - 11	8.21	3121
F	5,5	198	90	27 - 9	8.446	

Stability table for HA16PX -basket 2.30m - 45km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	26 - 11	8.21	2978
F	5,5	161	73	27 - 9	8.446	

Stability table for HA18PX -basket 1.80m - 60km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	31 - 7	9.62	3505
F	5,5	190	86	28 - 2	8.578	

Stability table for HA18PX -basket 2.30m - 45km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	31 - 7	9.62	3422
F	5,5	168	76	28 - 2	8.446	

Stability table for HA16SPX -basket 1.80m - 60km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	26 - 11	8.21	2793
F	5,5	112	51	27 - 6	8.374	

G - Technical characteristics

Stability table for HA16SPX -basket 2.30m - 45km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	26 - 11	8.21	2833
F	5,5	123	56	27 - 6	8.374	

Stability table for HA18SPX -basket 1.80m - 60km/h

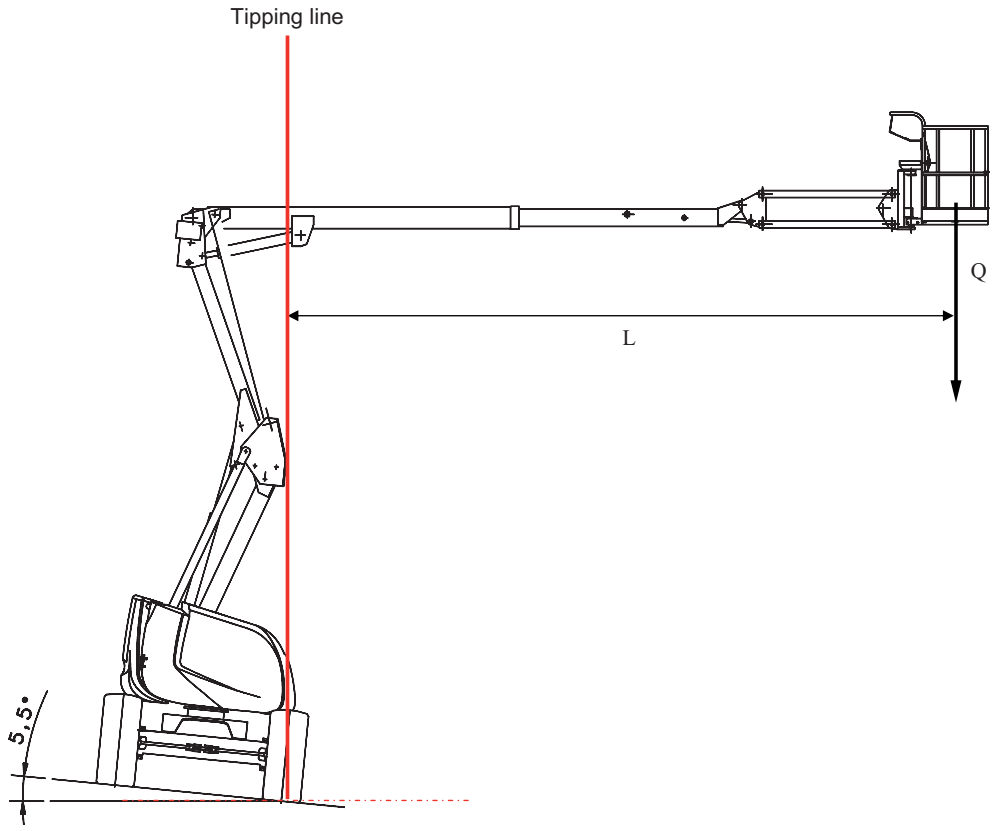
	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	31 - 7	9.62	3170
F	5,5	104	47	27 - 11	8.5	

Stability table for HA18SPX -basket 2.30m - 45km/h

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
P	5,5	635	288	31 - 7	9.62	3211
F	5,5	115	52	27 - 11	8.5	

G - Technical characteristics

Stability for HA20PX



Stability table for HA20PX

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
Horizontal	5,5	723	328	41 - 5	12.63	4135
Horizontal - 250 kg(551 lb) -60 km/h (37,2 mph)	5,5	833	378	41 - 5	12.63	4780

Stability table for HA260PX

	T (°)	W		L		Moment of tipping over
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Déca Newton Mètre (DaN.m)
Horizontal	5,5	750	340	49 - 2	14,99	4986

See paragraph 1.12.2 of the AS1418.10 standard for test details.

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

5 - Declaration of conformity

CE Declarations of Conformity only apply to machines that are certified for the European market.

Declaration of conformity - Thermal platforms

DECLARATION DE CONFORMITE CE

(certificate of conformity with EC directives)

Nom et adresse du constructeur ou son représentant autorisé dans la communauté :
Name and address of manufacturer or their authorised agents within the European Community

HAULOTTE Group Siège Social
La Péronnière
BP 09
42152 L'HORME Cedex
FRANCE

HAULOTTE GROUP
Usine de _____
_____
_____
_____

Déclare que la machine décrite ci-dessous :
(Declares that the technical installation described below)

Nacelle ou Plate-forme mobile élévatrice de personnes
(Elevating work Platform)

Machine au nom commercial *(Machine with the commercial name)* ____,
Conforme au type *(in compliance with the type)* ____
Numéro de série *(Serial number)*: ____

Se conforme aux dispositions de la directive machine 2006/42/CE.
(Conforms to the provisions set out in the EC Machinery Directive 2006/42/EC)

N° de certificat *(Certificate no)*: ____ ____ ___ __ __ ____

Cette machine est identique au modèle ayant fait l'objet d'un examen CE de type par l'organisme notifié :
(This machinery is identical to the model that was tested in an EC type-examination by the appointed body)

Organisme certifié (*Authorised certification body*) :

_____ **n°** ___
_____
_____

- Se conforme également aux dispositions de la directive 2000/14/CE concernant l'émission de bruit par l'équipement dans l'environnement en utilisation extérieure
  (is also in accordance with the clauses contained in the EC Outdoor Noise Directive (2000/14/EC))
  - Méthode de mesure (*Measuring methods*) — Annexe III-B
  - LwA, Niveau de puissance acoustique garantie (*LWA, sound level guaranteed*) — ___ dB
  - LwA, Niveau de puissance acoustique minimum/maximum (*LWA, maxi sound level*) — ___/___ dB
- Se conforme également aux dispositions de la directive 2004/108/CE concernant la compatibilité électromagnétique.
  (is in accordance with the provisions contained in EEC Directive no. 2004/108/CE on electromagnetic compatibility)
- Se conforme aux principales exigences des normes harmonisées suivantes : EN 280 et EN 954.
  (also fulfils the principal requirements of the following harmonised standards: EN 280 and EN 954)

Fait à L'Horme le : ……

_____
Directeur Division _____ */Managing Director, _____ Division*

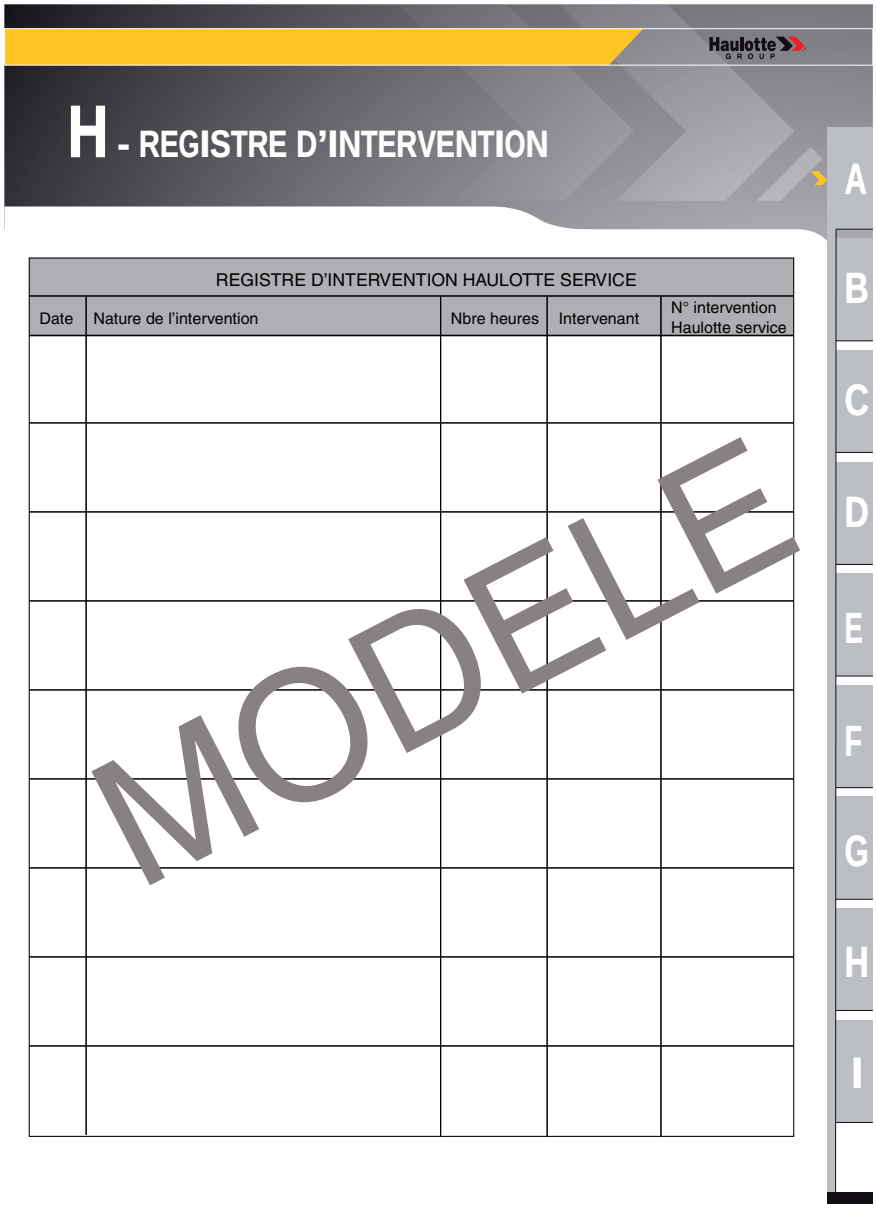
Signature

Cette déclaration est conforme aux exigences de l'annexe II-a de la directive 2006/42/CE. Toute modification de la machine décrite ci-dessus rendrait cette déclaration caduque.
This declaration conforms with the requirements of annex II-A of the directive 2006/42/EEC.Any modification to the above described machine violates the validity of this declaration.

1 - Intervention register

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

Intervention register



H - REGISTRE D'INTERVENTION

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

H - Intervention register