12 TO 26M ENGINE-POWERED ARTICULATED LIFTS

Operator manual

12 TO 26M ENGINE-POWERED ARTICULATED LIFTS

HA12PX (HA33JRT) - HA16X - HA16SPX (HA46SJRT) - HA16PX (HA46JRT) - HA18SPX (HA51SJRT) - HA18PX (HA51JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

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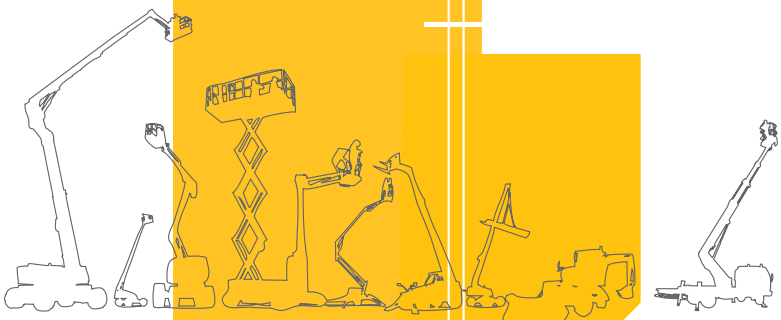


You have just bought a HAULOTTE® telescopic handler and we would like to thank you for your trust.

1 - Operator manual

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

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

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

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

2 - After Sales Service

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

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

3 - Conformity

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

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

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

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

1 - Recommendations

1.1 - OPERATOR MANUAL

The operator manual is intended for HAULOTTE® machine operators.

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

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

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

Additional copies can be ordered from HAULOTTE Services®.

1.2 - SYMBOLS USED

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

Symbol meanings

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

1.3 - LABEL COLOURS

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

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

Familiarize yourself with the labels and their respective color codes.

Label color code - CE - AS

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

Label color code - ANSI - CSA

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

2 - Pre-operation instructions

2.1 - GENERAL INSTRUCTIONS

Never operate the machine in the following situations :

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

2.2 - SPECIFIC INSTRUCTIONS

Never operate the machine in the following situations :

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

3 - Operation instructions

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

3.1 - PROHIBITIONS

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

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

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

3.2 - POTENTIAL RISKS

3.2.1 - Risk of command system disturbance

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

3.2.2 - Risk of falling

On board the machine, respect the following instructions :

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

To climb up or climb down from the platform : :

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

3.2.3 - Risk of electrocution

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

The risks of electrocution are high in the following situations :

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

Never use the machine as a solder mass.

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

Respect the local rules and the minimum safety distance.

Minimum safety distance

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

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

3.2.4 - Risk of jerks and overturning

On board the machine, respect the following instructions :

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

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

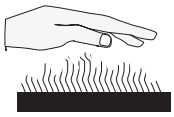
N.B.-:-THE BEAUFORT SCALE MEASURES THE WIND FORCE WITH A GRADUATION SYSTEM. A WIND SPEED RANGE AT 10 M (32 FT 9 IN) ABOVE FLAT, CLEAR LAND IS ASSOCIATED WITH EACH DEGREE.

A- Safety precautions

Beaufort scale

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

3.2.5 - Risk of burns and explosion



For any intervention on the power sources, wear glasses and protective clothes (acid sp

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

- **Do not work in an explosive or inflammable ambience (spark, flame, etc.).**
- **Do not touch the hot parts of the motorization system (engine, filters, etc.).**
- **Do not use a tool to make contact between the battery terminals.**
- **Do not manipulate the battery close to a spark, flame, glowing tobacco (emission of gas).**

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

- **LPG is inflammable and always under pressure.**
- **LPG can cause serious burns.**
- Do not store LPG bottles in a closed or poorly ventilated room.
- Do not store LPG bottles near naked flames or glowing embers.
- Never fill the bottle above the level (80% of the total capacity).
- Do not forget to drain the bottle before refilling it.
- Never use pliers or a spanner to open or close the bottle valve. If a tool is required, the valve is damaged. It must therefore be replaced. Consult your HAULOTTE Services® After Sales for this purpose.
- In order to maintain LPG vapourisation at the highest level in cold climates, the level of LPG above 50% of capacity.

3.2.6 - Risk of crushing and collision

On board the machine, respect the following instructions :

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

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

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

B - Intervenor's responsibility

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

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

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

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

2 - Employer's responsibility

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

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

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

3 - Trainer's responsibility

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

4 - Operator's responsibility

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

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

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

Only authorized and qualified operators may operate HAULOTTE® machines.

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

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

5 - Inspection and maintenance

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

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

Inspections and maintenance

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

B - Intervenor's responsibility

1 - Identification

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

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

Identification plate - CE

A3

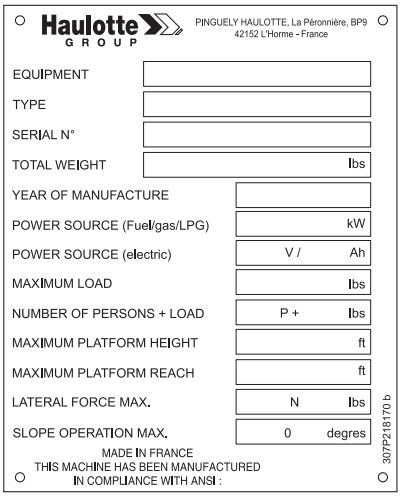
Identification plate - AS

A3

C - Machine layout

Identification plate - ANSI - CSA

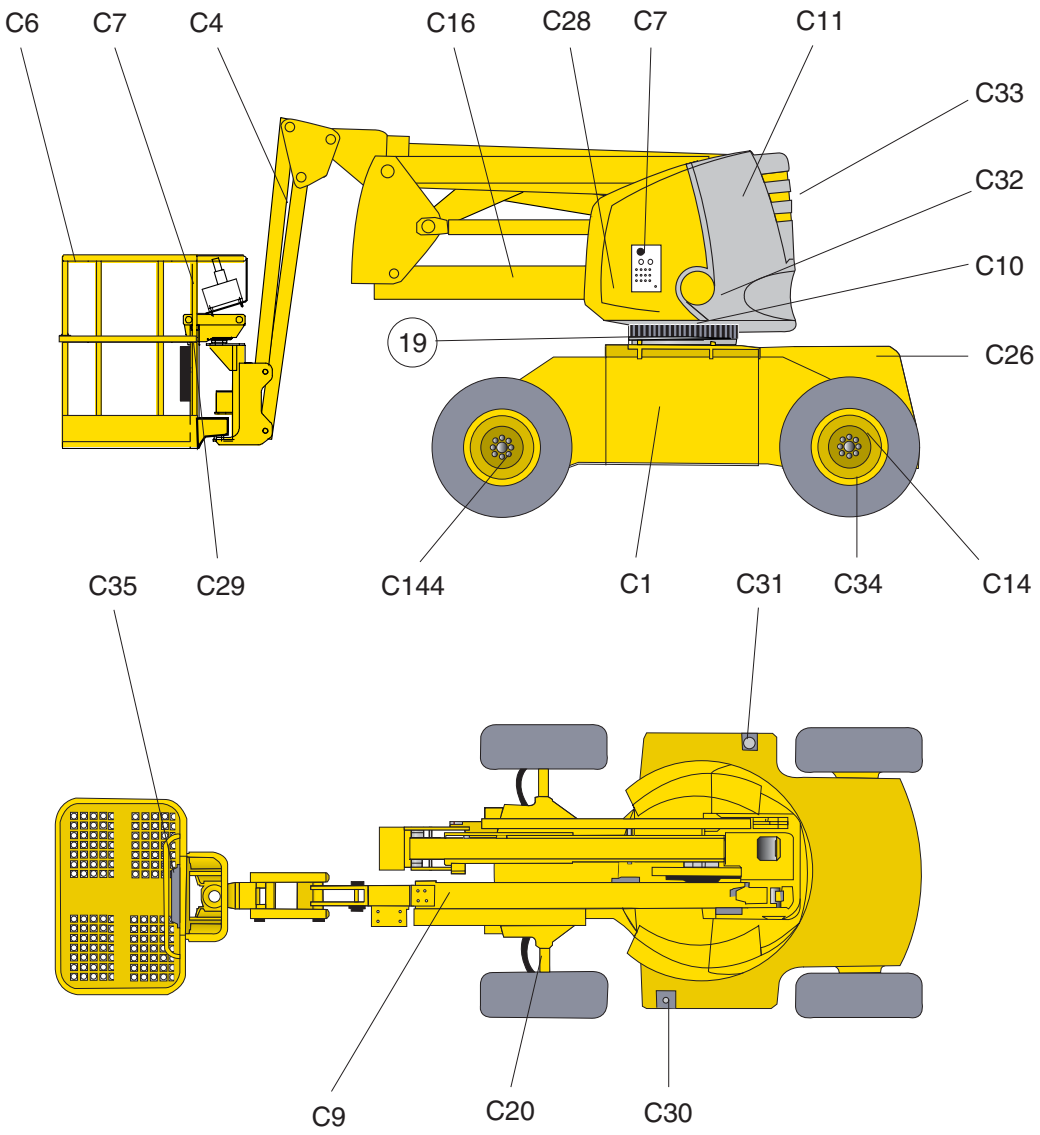
A3



2 - Main components

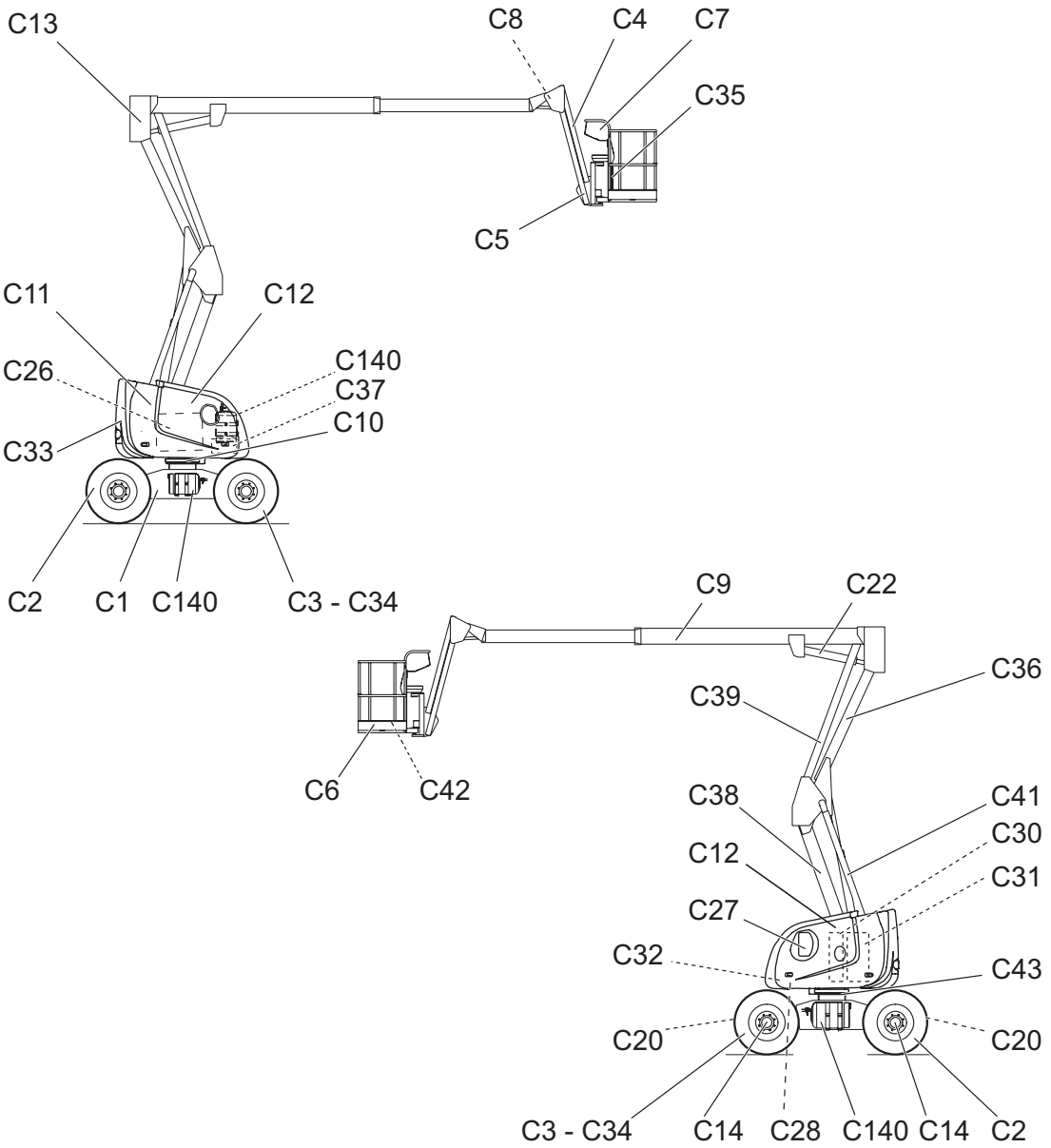
2.1 - THERMAL VERSION

View of the components HA12PX



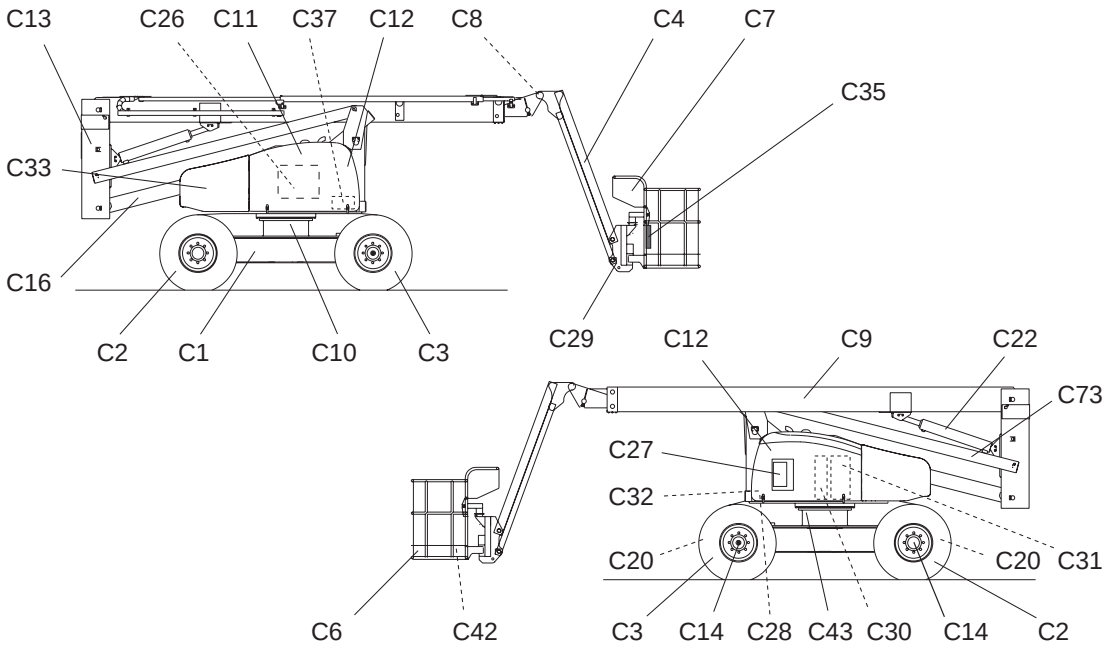
C - Machine layout

View of components for articulated arms under 20 m (65 ft 7 in)



C - Machine layout

View of components for articulated arms between 20 m (65 ft 7 in) and 26 m (85 ft 3 in)



Description of the components

Marking	Description
C1	Dolly
C2	Front driven steering axle
C3	Rear driven steering wheel
C4	Jib
C5	Platform support with load limiter
C6	Platform
C7	Upper console
C8	Compensation receiver cylinder
C9	Boom
C10	Rotation crown gear
C11	Turntable
C12	Hood
C13	Arm/boom link piece
C14	Hydraulic drive motor and gears
C16	Arm
C20	Tie-down and lift lug
C22	Boom lift cylinder
C26	Engine and hydraulic pump
C27	Lower console
C28	Tilt control box
C29	Platform rotation cylinder or Platform rotation motor(Depending on the machine)
C30	Hydraulic tank
C31	Fuel tank
C32	Direction reducer

C - Machine layout

Marking	Description
C33	Counterweight
C34	Drive wheel
C35	Document carrier
C36	Top arm
C37	Starter battery
C38	Bottom arm
C39	Top tie rod
C41	Bottom tie rod
C42	"Dead man" pedal
C43	Turntable rotation blocking pin
C73	Arm
C140	Gas bottles[1]

1. For US only

3 - Safety devices

3.1 - TURNTABLE ROTATION PIN

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

After each transportation, remove the turntable rotation pin.

3.2 - SLIDING MID-RAIL

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

Do not attach the sliding midrail to the guard rail.

3.3 - ANCHORAGE POINT

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

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

4 - Labels

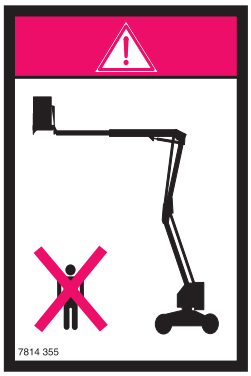
4.1 - CLASSIFICATION PLAN

4.1.1 - Red labels

The red labels indicate a potentially fatal danger.

Common labels

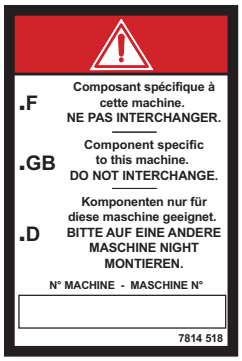
R7



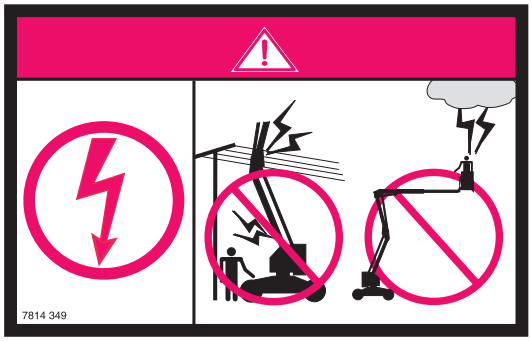
R3

R4

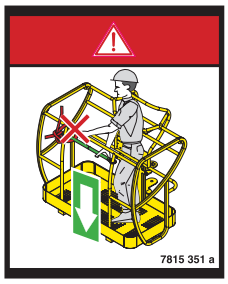
R6



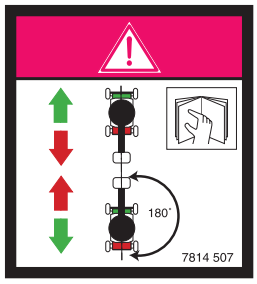
R5



R8

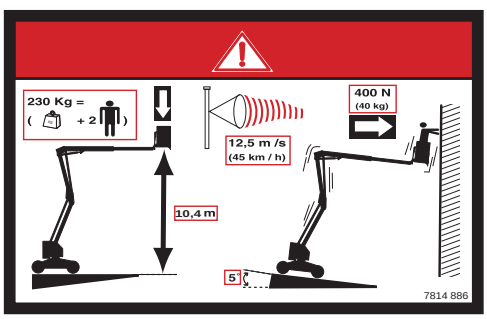


R2



Specific labels HA12PX (HA33JRT)

R1



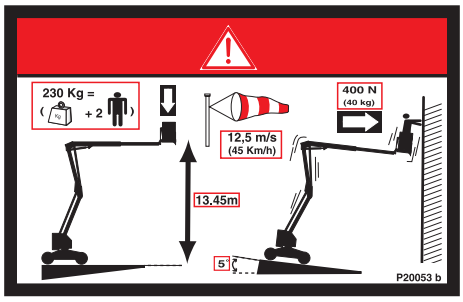
R9

R17

C - Machine layout

Specific labels HA16X

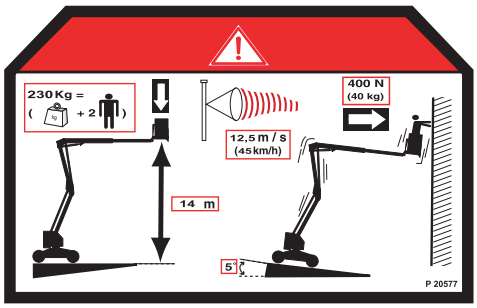
R1



R9

Specific labels HA16SPX (HA46SJRT)

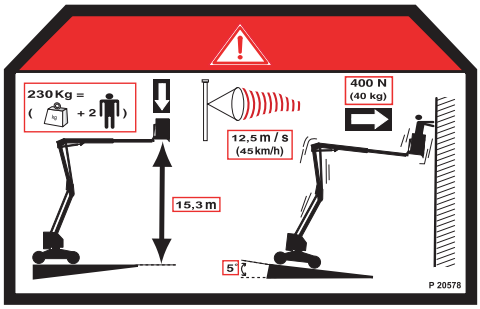
R1



R9

Specific labels HA18SPX (HA51SJRT)

R1

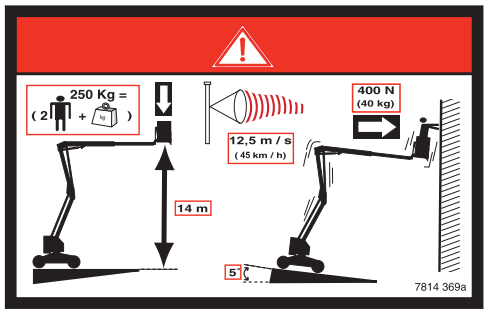


R9

C - Machine layout

Specific labels HA16PX (HA46JRT)

R1



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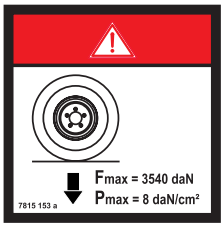
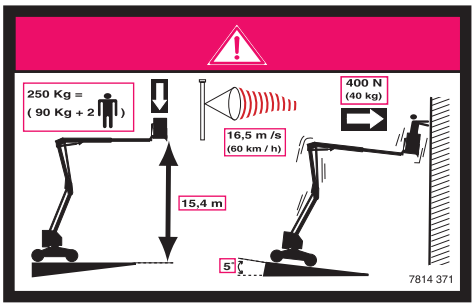


Specific labels HA18PX (HA51JRT)

R1



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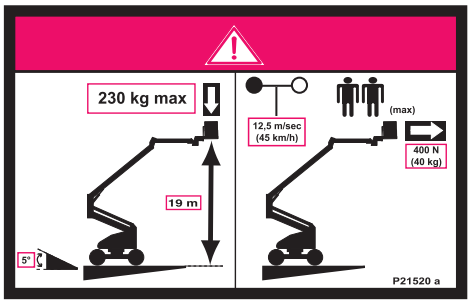
Specific labels HA20PX (HA61JRT)

R1

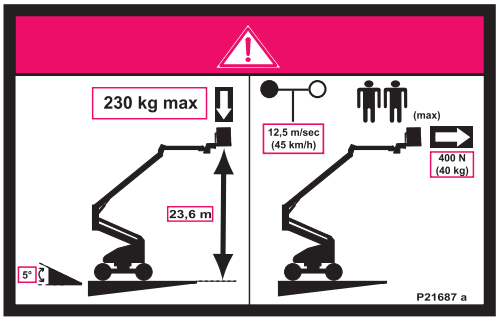


R9

C - Machine layout

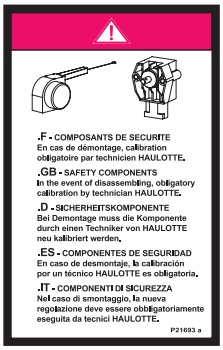
Specific labels HA260PX (HA80JRT)

R1



R9

R11

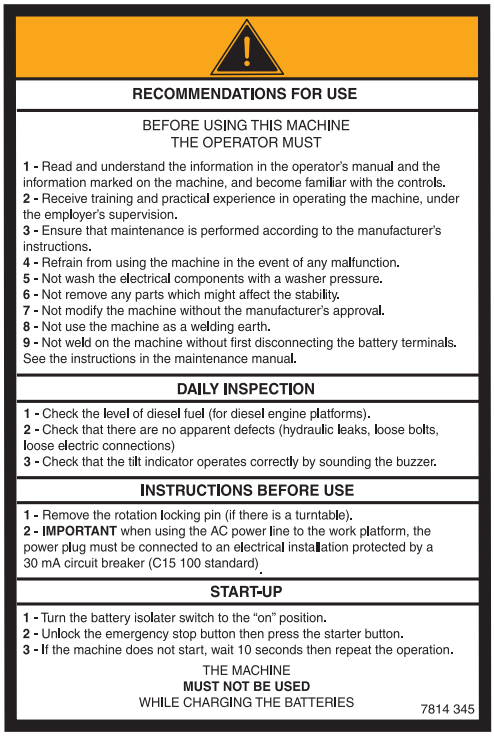


4.1.2 - Orange labels

The orange labels indicate a risk of serious injury.

Common labels - CE

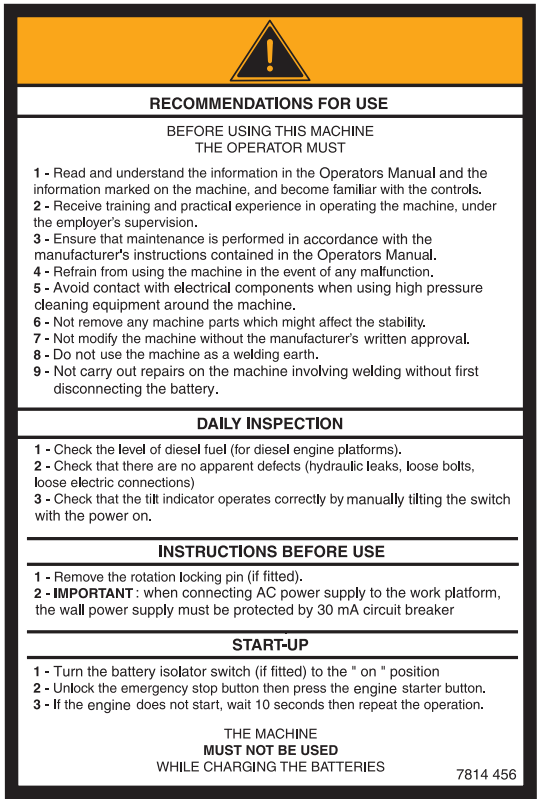
O1



C - Machine layout

Common labels - AS

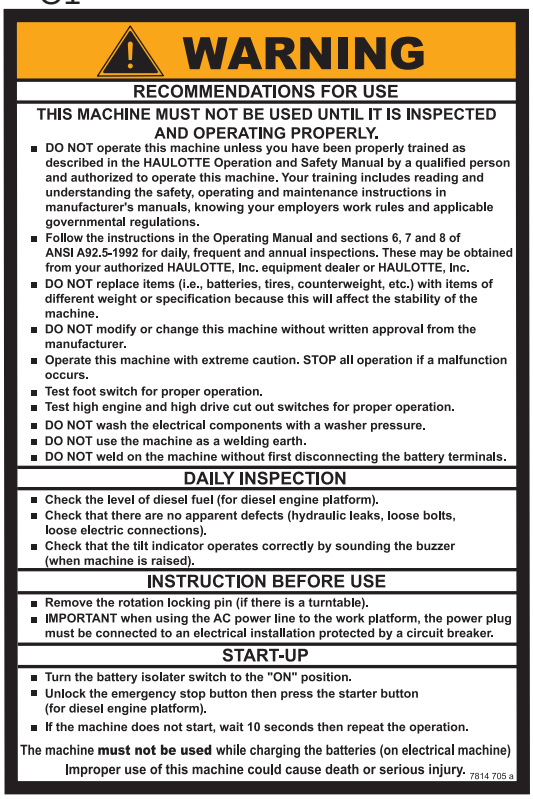
O1



C - Machine layout

Common labels ANSI - CSA

O1



WARNING

RECOMMENDATIONS FOR USE

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

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

DAILY INSPECTION

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

INSTRUCTION BEFORE USE

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

START-UP

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

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

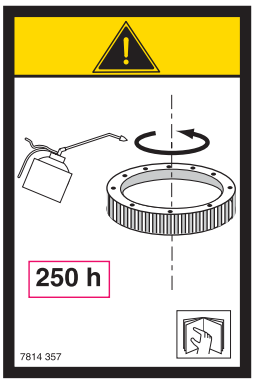
Improper use of this machine could cause death or serious injury. 7814 705 a

4.1.3 - Yellow labels

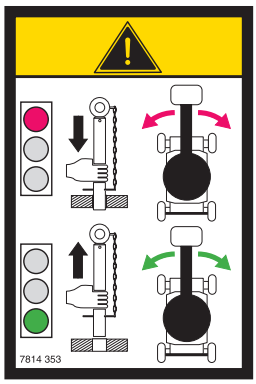
The yellow labels indicate a risk of material damage and/or minor injury.

Common labels

J1

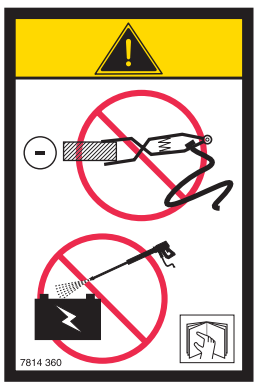


J2

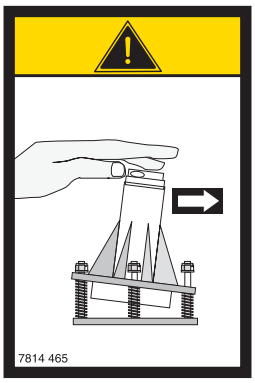


J3

J4



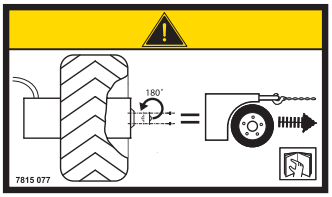
J6



J10

Specific HA20PX (HA61JRT) and HA260PX (HA80JRT) labels

J5



Specific labels for winter weather machines

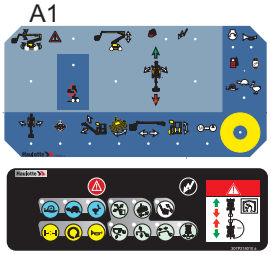
J26

4.1.4 - Other labels

The other labels provide additional technical information.

Common labels

A1



A5 - A6

A16

A4

A11

A12

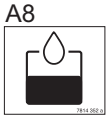
A2

A3

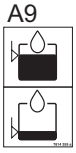
A15

A7

A8



A9



A32

A10

A30

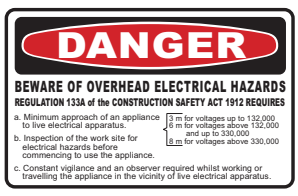
Specific labels AS

R14

R20

J10

A28



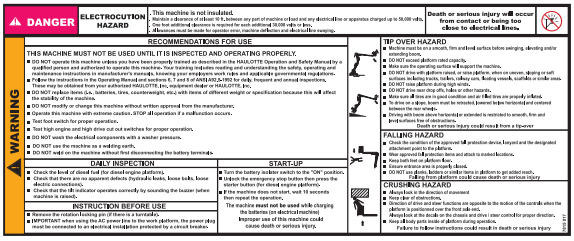
R16

R15

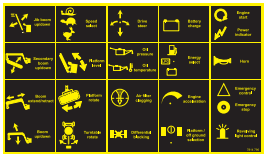
C - Machine layout

Specific labels ANSI

A29



A23

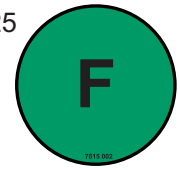


A22

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

Voltage Range (Phase to phase)	Minimum safe approach distance	
	(Feet)	(Meters)
0 to 300 V	AVOID CONTACT	
Over 300 V to 50 kV	10	3,05
Over 50 kV to 200 kV	15	4,60
Over 200 kV to 350 kV	20	6,10
Over 350 kV to 500 kV	25	7,62
Over 500 kV to 750 kV	35	10,67
Over 750 kV to 1000 kV	45	13,72

A25



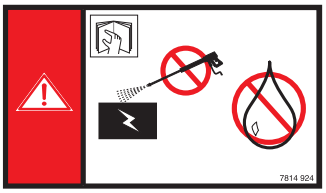
O3

A27

Specific labels option

A8

R18



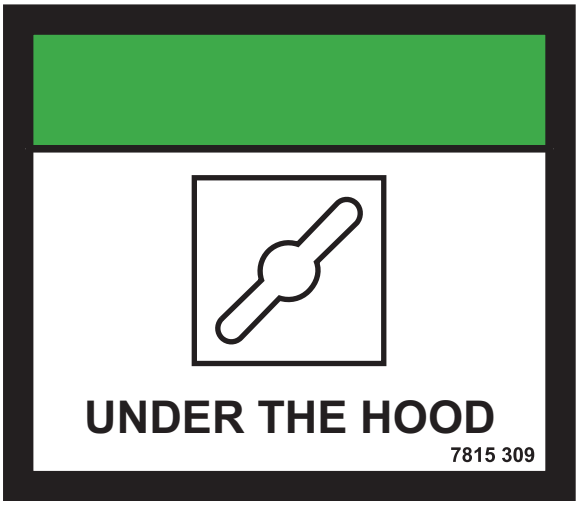
A31

4.1.5 - Green labels

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

Common labels

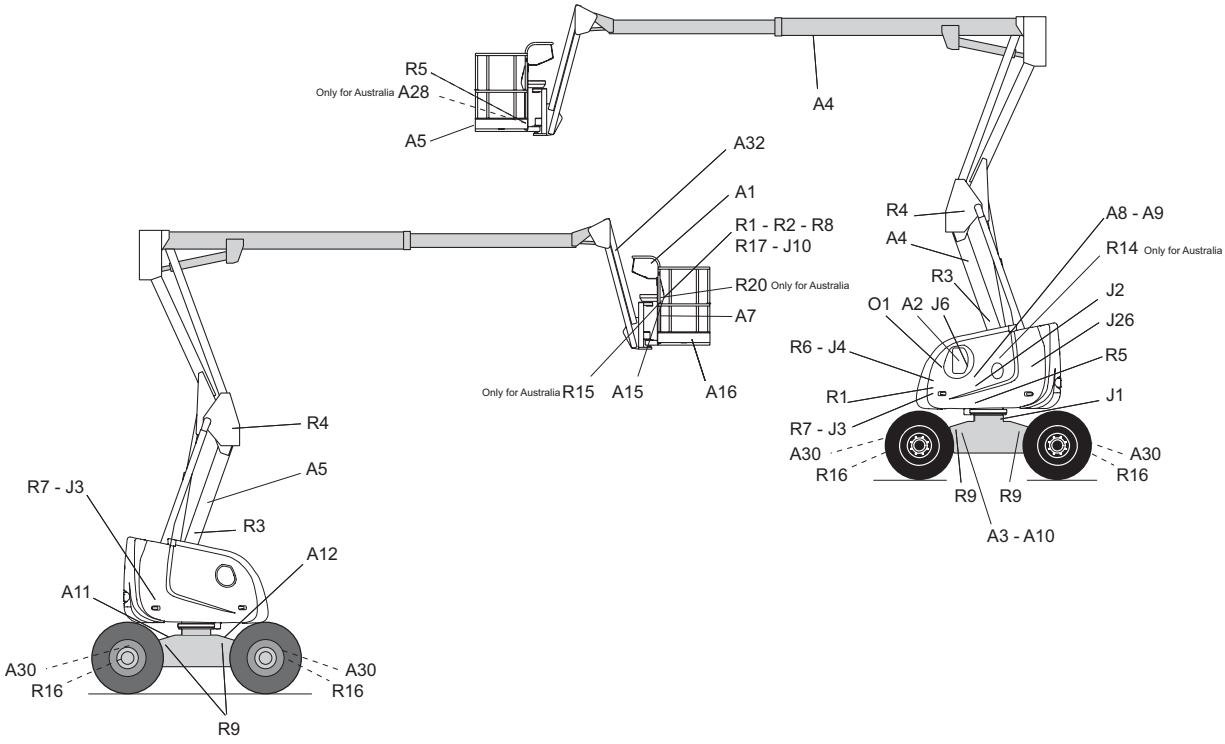
V2



V1

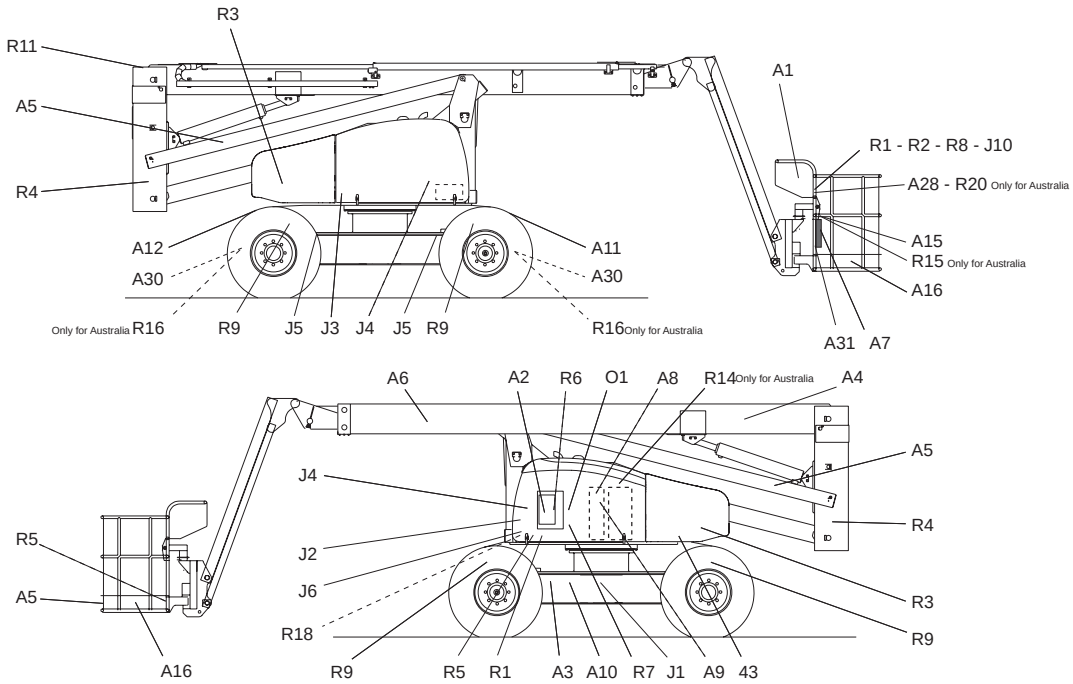
4.2 - IDENTIFICATION

Location of labels for articulated lifts of less than 20 m (65 ft 7 in) - CE



C - Machine layout

Location of labels for articulated lifts between 20 m (65 ft 7 in) and 26 m (85 ft 3 in) - CE



Label descriptions - CE

Color	Marking	Description	Quantity	HA12PX (HA33JRT)	HA16X
Red	R1	Height of the floor and load	2	3078148860	307P200530
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	1	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	2	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151560	3078151590
Red	R17	Do not descend slopes at high speed	1	3078143970	
Red	R18	On-board generator	1	3078149240	3078149240
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	1	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	1	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	2	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078143540	3078143540
Yellow	J26	Winter grade hydraulic oil	1		307P223700

C - Machine layout

Color	Marking	Description	Quantity	HA12PX (HA33JRT)	HA16X
Other	A1	Upper console	1	307P218010	307P217960
Other	A2	Lower console	1	3078149770	307P217970
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218240	307P218230
Other	A5	Small format HAULOTTE® logo	2	307P218180	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A10	Sound power	1	3078149740	307P202240
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	1	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1	3078148850	

C - Machine layout

Label descriptions - CE

Color	Marking	Description	Quantity	HA16PX (HA46JRT)	HA16SPX (HA46SJRT)
Red	R1	Height of the floor and load	2	3078143690	307P205770
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	1	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151530	3078152380
Red	R18	On-board generator	1	3078149240	3078149240
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078143540	3078143540
Yellow	J26	Winter grade hydraulic oil	1	307P223700	307P223700
Other	A1	Upper console	1	307P217930	307P217950
Other	A2	Lower console	1	307P217920	307P217940
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218190	307P218200
Other	A5	Small format HAULOTTE® logo	3	307P217770	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A10	Sound power	1	3078148700	3078148700
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1		3078152130

C - Machine layout

Label descriptions - CE

Color	Marking	Description	Quantity	HA18PX (HA51JRT)	HA18SPX (HA51SJRT)
Red	R1	Height of the floor and load	2	3078143710	307P205780
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	1	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151540	3078151540
Red	R18	On-board generator	1	3078149240	3078149240
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078143540	3078143540
Yellow	J26	Winter grade hydraulic oil	1	307P223700	307P223700
Other	A1	Upper console	1	307P217930	307P217950
Other	A2	Lower console	1	307P217920	307P217940
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218220	307P218210
Other	A5	Small format HAULOTTE® logo	3	307P217770	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A10	Sound power	1	3078148700	3078148700
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1		3078152170

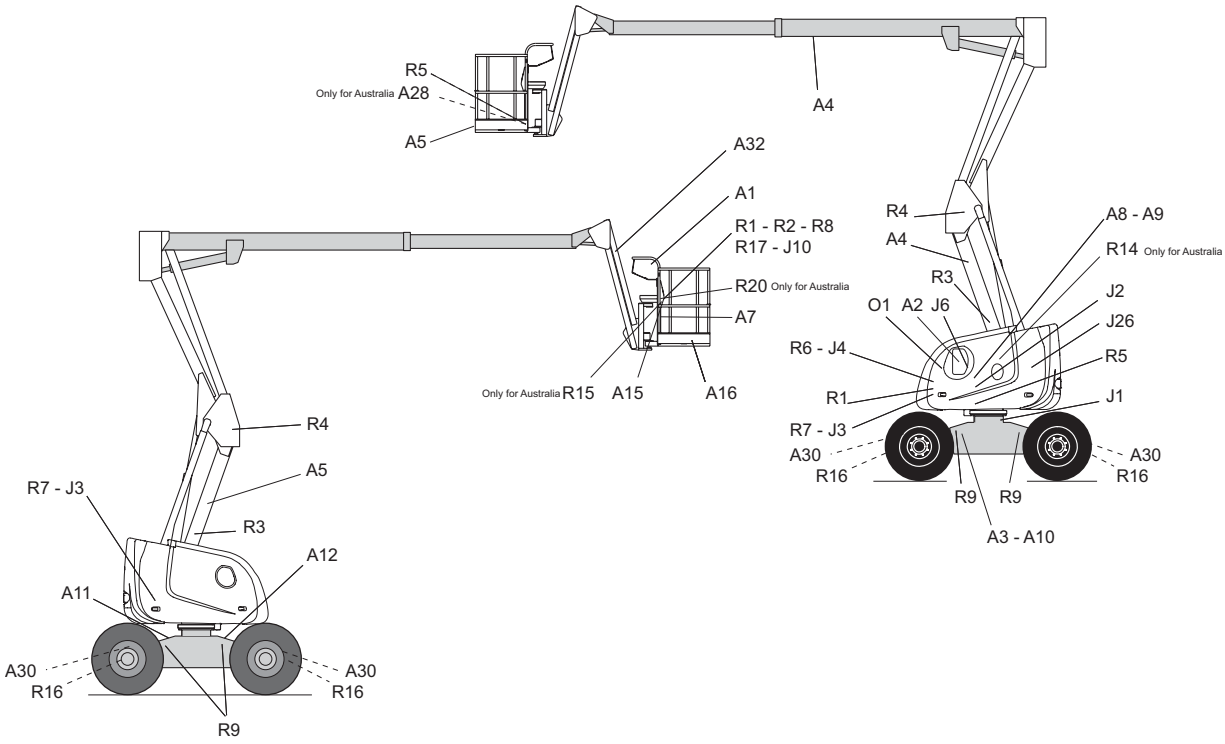
C - Machine layout

Label descriptions

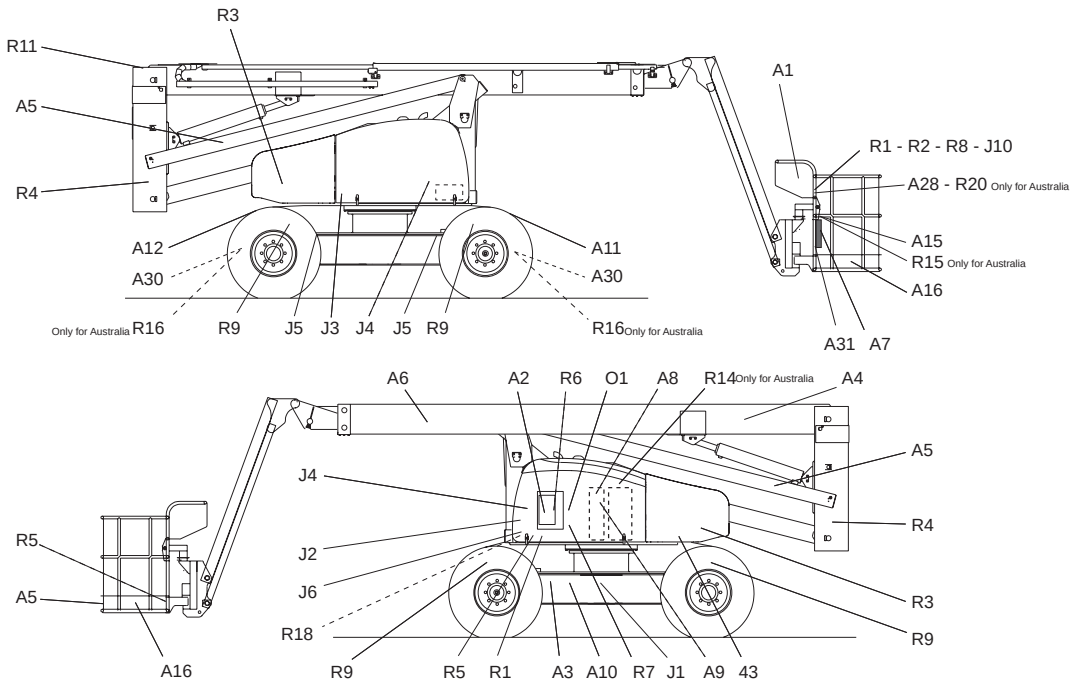
Color	Marking	Description	Quantity	HA20PX (HA61JRT)	HA260PX (HA80JRT)
Red	R1	Height of the floor and load	2	307P215200	307P216870
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R5	Danger of electrocution	2	3078143490	3078143490
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143880	3078143880
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	307P215210	307P216880
Red	R11	Calibration after dismantling	1		307P216930
Red	R18	On-board generator	1	3078149240	3078149240
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	1	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	2	3078143600	3078143600
Yellow	J5	Releasing of the brakes	1	3078150770	3078150770
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078143540	3078143540
Other	A1	Upper console	1	307P215720	307P215720
Other	A2	Lower console	1	307P216900	307P216900
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	3078137650	307P216920
Other	A5	Small format HAULOTTE® logo	3	307P217080	307P217080
Other	A6	Large format HAULOTTE® graphic	1	307P217770	307P217240
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A10	Sound power	1	3078148740	3078148740
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500

C - Machine layout

Location of labels for articulated lifts of less than 20 m (65 ft 7 in) - AS



Location of labels for articulated lifts between 20 m (65 ft 7 in) and 26 m (85 ft 3 in) - AS



C - Machine layout

Label descriptions - AS

Color	Marking	Description	Quantity	HA12PX (HA33JRT)	HA16X
Red	R1	Height of the floor and load	2	3078148860	307P200530
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	1	3078151560	3078151590
Red	R14	Fuel filling up	1	3078144510	3078144510
Red	R15	Harness use	1	3078144520	3078144520
Red	R16	Load strength on each slings	4	3078144490	3078144490
Red	R17	Do not descend slopes at high speed	1	3078143970	
Red	R18	On-board generator	1	3078149240	3078149240
Red	R20	Danger driving direction	1	3078145230	3078145230
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078144570	3078144570
Yellow	J26	Winter grade hydraulic oil	1		307P223700
Other	A1	Upper console	1	307P218010	307P217960
Other	A2	Lower console	1	3078149770	307P217970
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218240	307P218230
Other	A5	Small format HAULOTTE® logo	3	307P218180	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A28	Danger of electrocution	1	3078144430	3078144430
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1	3078148850	

C - Machine layout

Label descriptions - AS

Color	Marking	Description	Quantity	HA16PX (HA46JRT)	HA16SPX (HA46SJRT)
Red	R1	Height of the floor and load	2	3078143690	307P205770
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151530	3078152380
Red	R14	Fuel filling up	1	3078144510	3078144510
Red	R15	Harness use	1	3078144520	3078144520
Red	R16	Load strength on each slings	4	3078144490	3078144490
Red	R18	On-board generator	1	3078149240	3078149240
Red	R20	Danger driving direction	1	3078145230	3078145230
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078144570	3078144570
Yellow	J26	Winter grade hydraulic oil	1	307P223700	307P223700
Other	A1	Upper console	1	307P217930	307P217950
Other	A2	Lower console	1	307P217920	307P217940
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218190	307P218200
Other	A5	Small format HAULOTTE® logo	3	307P217770	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A28	Danger of electrocution	1	3078144430	3078144430
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1		3078152130

C - Machine layout

Label descriptions - AS

Color	Marking	Description	Quantity	HA18PX (HA51JRT)	HA18SPX (HA51SJRT)
Red	R1	Height of the floor and load	2	3078143710	307P205780
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143550	3078143550
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	3078151540	3078151540
Red	R14	Fuel filling up	1	3078144510	3078144510
Red	R15	Harness use	1	3078144520	3078144520
Red	R16	Load strength on each slings	4	3078144490	3078144490
Red	R18	On-board generator	1	3078149240	3078149240
Red	R20	Danger driving direction	1	3078145230	3078145230
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078144570	3078144570
Yellow	J26	Winter grade hydraulic oil	1	307P223700	307P223700
Other	A1	Upper console	1	307P217930	307P217950
Other	A2	Lower console	1	307P217920	307P217940
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	307P218220	307P218210
Other	A5	Small format HAULOTTE® logo	3	307P217770	307P217770
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A28	Danger of electrocution	1	3078144430	3078144430
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500
Other	A32	Vertical machine name logo	1		3078152170

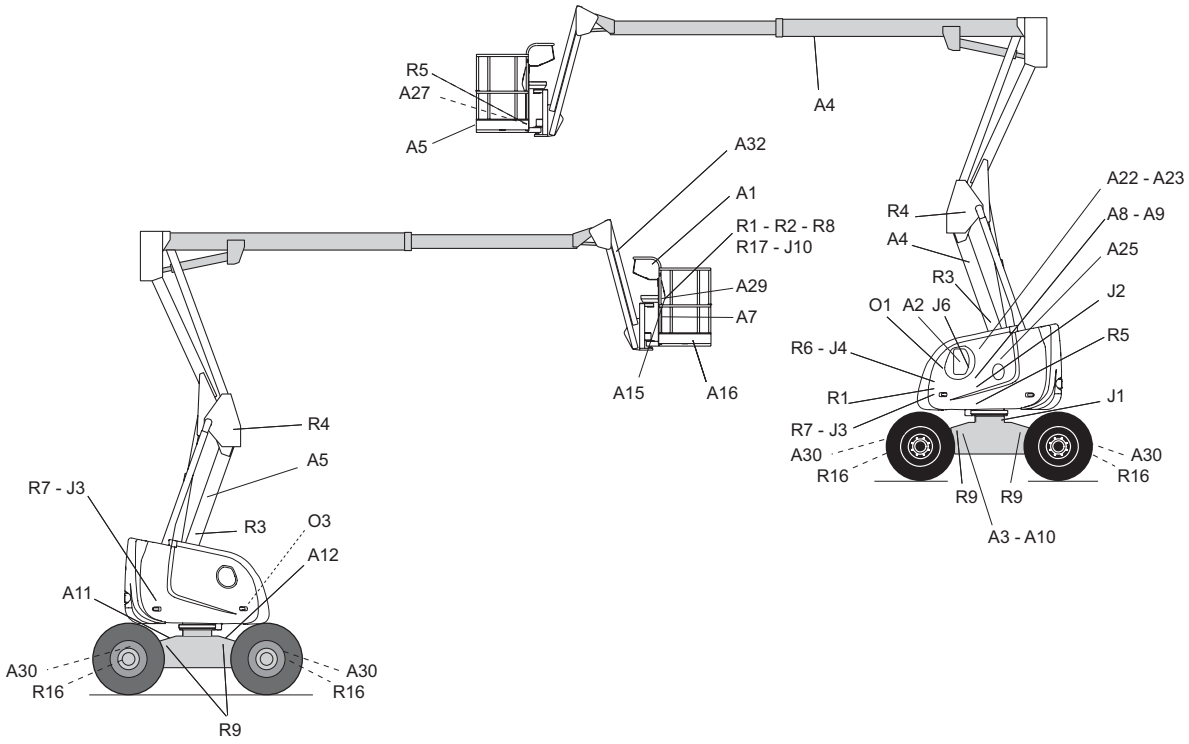
C - Machine layout

Label descriptions - AS

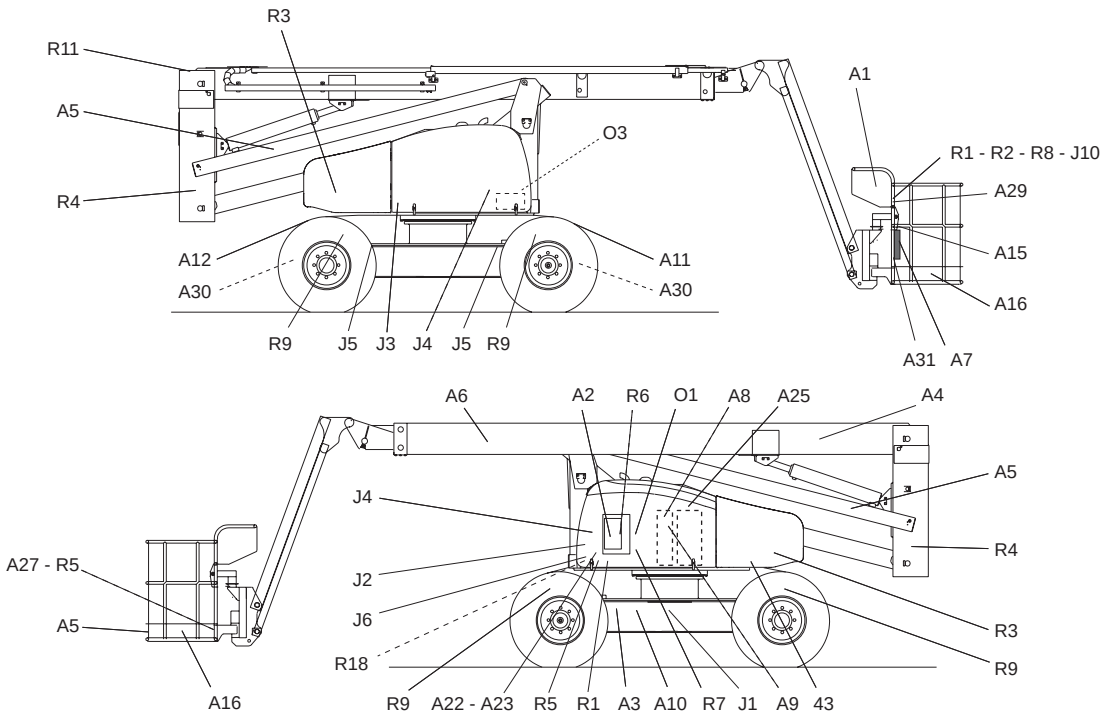
Color	Marking	Description	Quantity	HA20PX (HA61JRT)	HA260PX (HA80JRT)
Red	R1	Height of the floor and load	2	307P215200	307P216870
Red	R2	Driving direction	1	3078145070	3078145070
Red	R3	Risk of crushed hands	2	3078143620	3078143620
Red	R4	Risk of body crushing	2	3078143630	3078143630
Red	R6	Do not interchange	1	3078145180	3078145180
Red	R7	Do not park in the work area	1	3078143880	3078143880
Red	R8	Close the removable midrail	1	3078153510	3078153510
Red	R9	Wheel load	4	307P215210	307P216880
Red	R11	Calibration after dismantling	1		307P216930
Red	R14	Fuel filling up	1	3078144510	3078144510
Red	R15	Harness use	1	3078144520	3078144520
Red	R16	Load strength on each slings	4	3078144490	3078144490
Red	R18	On-board generator	1	3078149240	3078149240
Red	R20	Danger driving direction	1	3078145230	3078145230
Orange	O1	Operation instructions	1	3078143450	3078143450
Yellow	J1	Greasing the rotation crown gear	1	3078143570	3078143570
Yellow	J2	Remove the blocking pin before rotation	2	3078143530	3078143530
Yellow	J3	Do not place your foot on the hood	2	3078143640	3078143640
Yellow	J4	Do not use the machine as a solder mass	1	3078143600	3078143600
Yellow	J5	Releasing of the brakes	1	3078150770	3078150770
Yellow	J6	Tilt verification	1	3078144650	3078144650
Yellow	J10	Socket	1	3078144570	3078144570
Other	A1	Upper console	1	307P215720	307P215720
Other	A2	Lower console	1	307P216900	307P216900
Other	A3	Identification plate	1	307P218080	307P218080
Other	A4	Machine name logo	1	3078137650	307P216920
Other	A5	Small format HAULOTTE® logo	3	307P217080	307P217080
Other	A6	Large format HAULOTTE® graphic	1	307P217770	307P217240
Other	A7	Read the operation manual	1	3078143680	3078143680
Other	A8	Hydraulic oil	1	3078143520	3078143520
Other	A8	Biodegradable oil	1	3078148890	3078148890
Other	A9	Upper and lower oil level	1	3078143590	3078143590
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	307P216290	307P216290
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A28	Danger of electrocution	1	3078144430	3078144430
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	3078150500	3078150500

C - Machine layout

Location of labels for articulated lifts of less than 20 m (65 ft 7 in) - ANSI



Location of labels for articulated lifts between 20 m (65 ft 7 in) and 26 m (85 ft 3 in) - ANSI



C - Machine layout

Label descriptions - ANSI

Color	Marking	Description	Quantity	HA16PX (HA46JRT)	HA18PX (HA51JRT)
Red	R1	Height of the floor and load	2	307P203470	307P203470
Red	R2	Driving direction	1	3078147300	3078147300
Red	R3	Risk of crushed hands	2	3078147240	3078147240
Red	R4	Risk of body crushing	2	3078147260	3078147260
Red	R5	Danger of electrocution	1	3078147100	3078147100
Red	R6	Do not interchange	1	3078147320	3078147320
Red	R7	Do not park in the work area	1	3078147170	3078147170
Red	R8	Close the removable midrail	1	3078153630	3078153630
Red	R9	Wheel load	4		
Red	R18	On-board generator	1	307P203450	307P203450
Orange	O1	Operation instructions	1	3078147050	3078147050
Orange	O3	Risks of explosion	1	3078148030	3078148030
Yellow	J1	Greasing the rotation crown gear	1	3078147190	3078147190
Yellow	J2	Remove the blocking pin before rotation	2	3078147700	3078147700
Yellow	J3	Do not place your foot on the hood	2	3078147270	3078147270
Yellow	J4	Do not use the machine as a solder mass	1	3078147220	3078147220
Yellow	J6	Tilt verification	1	3078147090	3078147090
Yellow	J10	Socket	1	3078147580	3078147580
Yellow	J26	Winter grade hydraulic oil	1	307P223700	307P223700
Other	A1	Upper console	1		
Other	A2	Lower console	1		
Other	A3	Identification plate	1	307P218170	307P218170
Other	A4	Machine name logo	1	3078147660	3078147680
Other	A5	Small format HAULOTTE® logo	3	307P217770	307P217770
Other	A7	Read the operation manual	1	3078147290	3078147290
Other	A8	Hydraulic oil	1	3078147140	3078147140
Other	A8	Biodegradable oil	1	3078148920	3078148920
Other	A9	Upper and lower oil level	1	3078147210	3078147210
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	3078147950	3078147950
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A22	Voltage table	1	3078147890	3078147890
Other	A23	Symbols summary	1	3078147960	3078147960
Other	A25	Tank cap	1	3078150020	3078150020
Other	A27	Permissible load	1	307P200080	307P200080
Other	A29	Summary safety instructions	1	3078150170	3078150170
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	307P203440	307P203440
Other	A32	Vertical machine name logo	1	3078147640	3078147650

C - Machine layout

Label descriptions - ANSI

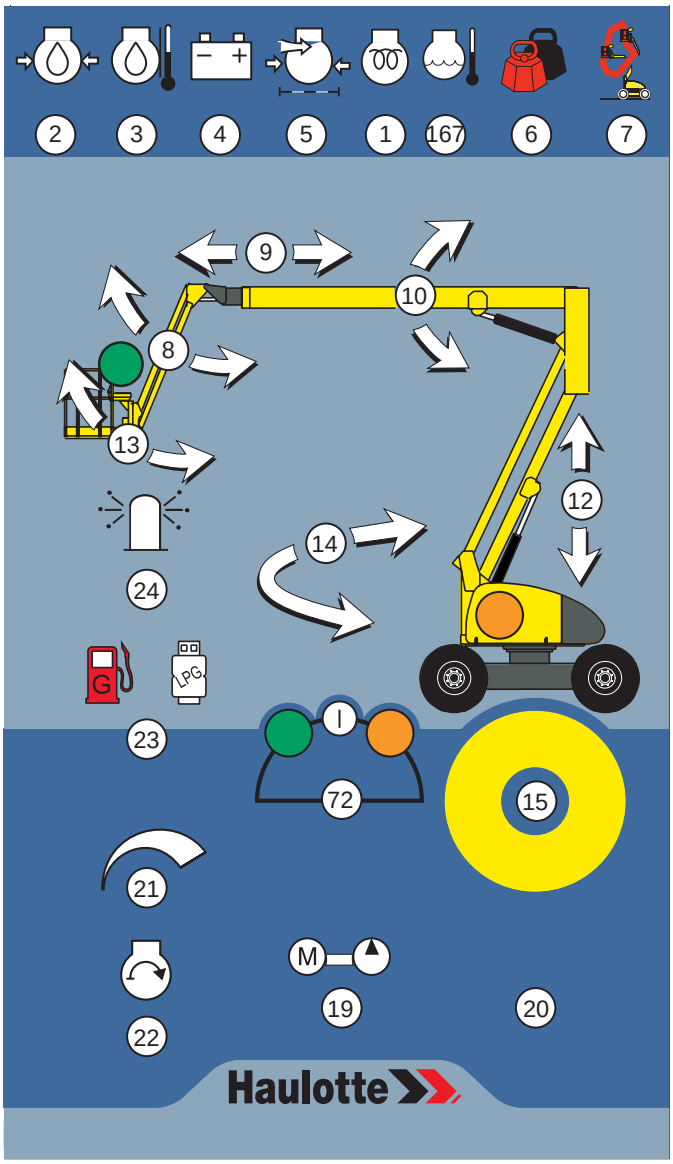
Color	Marking	Description	Quantity	HA20PX (HA61JRT)	HA260PX (HA80JRT)
Red	R1	Height of the floor and load	2	307P215740	307P215750
Red	R2	Driving direction	1	3078147300	3078147300
Red	R3	Risk of crushed hands	2	3078147240	3078147240
Red	R4	Risk of body crushing	2	3078147260	3078147260
Red	R5	Danger of electrocution	1	3078147100	3078147100
Red	R6	Do not interchange	1	3078147320	3078147320
Red	R7	Do not park in the work area	1	3078146960	3078146960
Red	R8	Close the removable midrail	2	3078153630	3078153630
Red	R9	Wheel load	2	307P215770	307P218890
Red	R11	Calibration after dismantling	1		307P218880
Red	R18	On-board generator	1	307P203450	307P203450
Orange	O1	Operation instructions	1	3078147050	3078147050
Orange	O3	Risks of explosion	1	3078148030	3078148030
Yellow	J1	Greasing the rotation crown gear	1	3078147190	3078147190
Yellow	J2	Remove the blocking pin before rotation	2	3078147700	3078147700
Yellow	J3	Do not place your foot on the hood	2	3078147270	3078147270
Yellow	J4	Do not use the machine as a solder mass	1	3078147220	3078147220
Yellow	J5	Releasing of the brakes	1	3078150780	3078150780
Yellow	J6	Tilt verification	1	3078147090	3078147090
Yellow	J10	Socket	1	3078147580	3078147580
Other	A1	Upper console	1	307P215720	307P215720
Other	A2	Lower console	1	307P216900	307P216900
Other	A3	Identification plate	1	307P218170	307P218170
Other	A4	Machine name logo	1	3078146940	3078147110
Other	A5	Small format HAULOTTE® logo	3	307P217080	307P217080
Other	A6	Large format HAULOTTE® graphic	3	307P217770	307P217240
Other	A7	Read the operation manual	1	3078147290	3078147290
Other	A8	Hydraulic oil	1	3078147140	3078147140
Other	A8	Biodegradable oil	1	3078148920	3078148920
Other	A9	Upper and lower oil level	1	3078147210	3078147210
Other	A11	Front green boom	1	3078143930	3078143930
Other	A12	Rear red boom	1	3078143940	3078143940
Other	A15	Harness location	2	3078147950	3078147950
Other	A16	Yellow and black adhesive tape	1	2421808660	2421808660
Other	A22	Voltage table	1	3078147890	3078147890
Other	A23	Symbols summary	1	3078147960	3078147960
Other	A25	Tank cap	1	3078150020	3078150020
Other	A27	Permissible load	1	307P216380	307P216380
Other	A29	Summary safety instructions	1	3078150170	3078150170
Other	A30	Machine anchorage points	2	3078147930	3078147930
Other	A31	On-board generator selector	1	307P203440	307P203440

5 - Consoles

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

5.1 - LOWER CONSOLE

General view



C - Machine layout

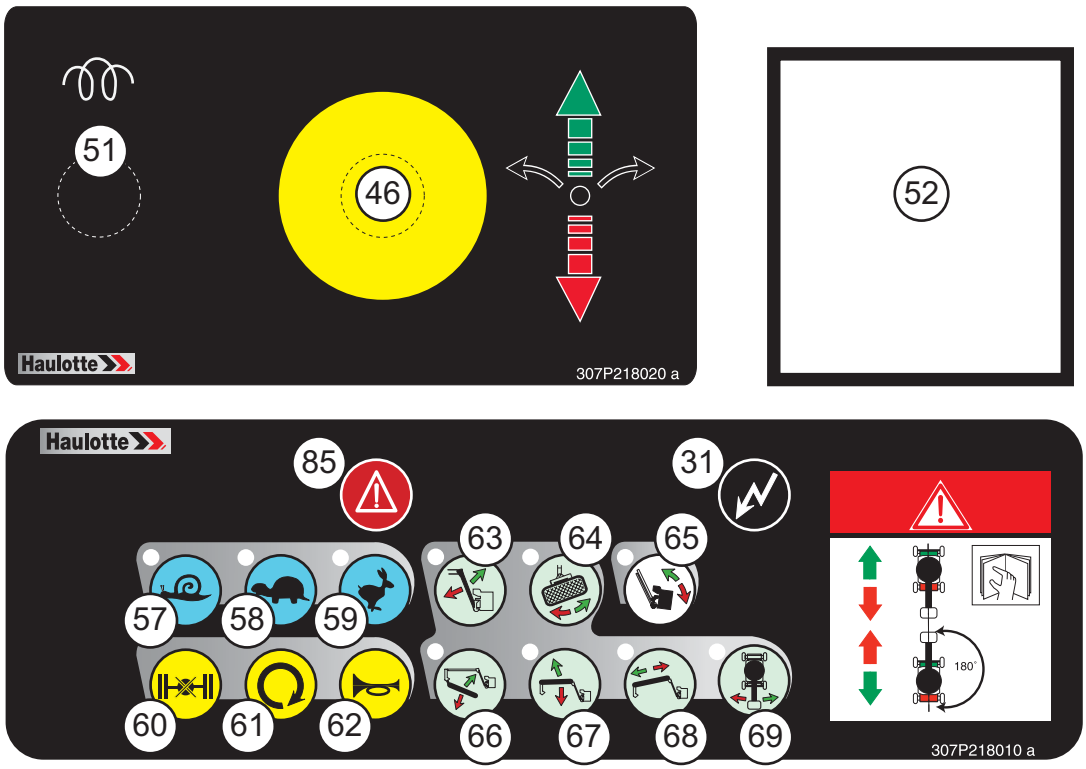
Controls and indicators

Marking	Description	Function
P1	Electric pre-heating LED	On : Engine in pre-heating
		Off : Engine pre-heated, starting possible
P2	Engine oil pressure LED	Low engine oil pressure[1]
P3	Engine temperature LED	High engine oil temperature[1.]
P4	Battery charge LED	Low battery charge[1.]
P5	Air filter blockage LED	Blocked air filter[1.]
P6	Platform overload LED	Platform overload
P7	Radius limitation LED	Close to radius limit : • The LED blinks • Movement is slowed down
		Radius limitation reached : • The LED blinks continuously • An automatic movement is launched to return within authorized radius limitation
P8	Jib selector	Upwards : Jib elevation
		Downwards : Jib lowering
P9	Boom telescoping selector	To the left : Telescope extension
		To the right : Telescope retraction
P10	Boom elevation selector	Upwards : Boom elevation
		Downwards : Boom lowering
P11	Arm telescoping or elevation selector	Upwards : Telescope extension or arm elevation
		Downwards : Telescope retraction or arm lowering
P12	Arm elevation selector	Upwards : Arm elevation
		Downwards : Arm lowering
P13	Platform compensation or transport position selector	To the right : Platform compensation lowered or placed in transport position
		To the left : Platform compensation raised or placed in operating position
P14	Turntable rotation selector	To the left : Clockwise rotation
		To the right : Anti-clockwise rotation
P15	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P19	Back-up generator selector	Maintained : Back-up generator activation
		Released : Back-up generator deactivation
P20	Engine hour meter	Number of hours of usage of the machine
P21	Engine acceleration selector	To the right : Engine rating acceleration
		To the left : Engine speed in idling
P22	Engine start-up selector	Engine start-up
P23	Petrol / gas selector[2]	LPG : Gas supply
		G : Petrol supply
P24	Beacon light selector	To the right : Switching on the beacon light
		To the left : Switching off the beacon light
P72	Console activation key selector	Left : Upper console activation
		Center : Switching off
		Right : Lower console activation
P167	Engine temperature LED[3]	High coolant temperature

1. Perform the required maintenance (see the machine maintenance book)
2. For equipped machines
3. For equipped machines

5.2 - UPPER CONSOLE

General view HA12PX (HA33JRT)



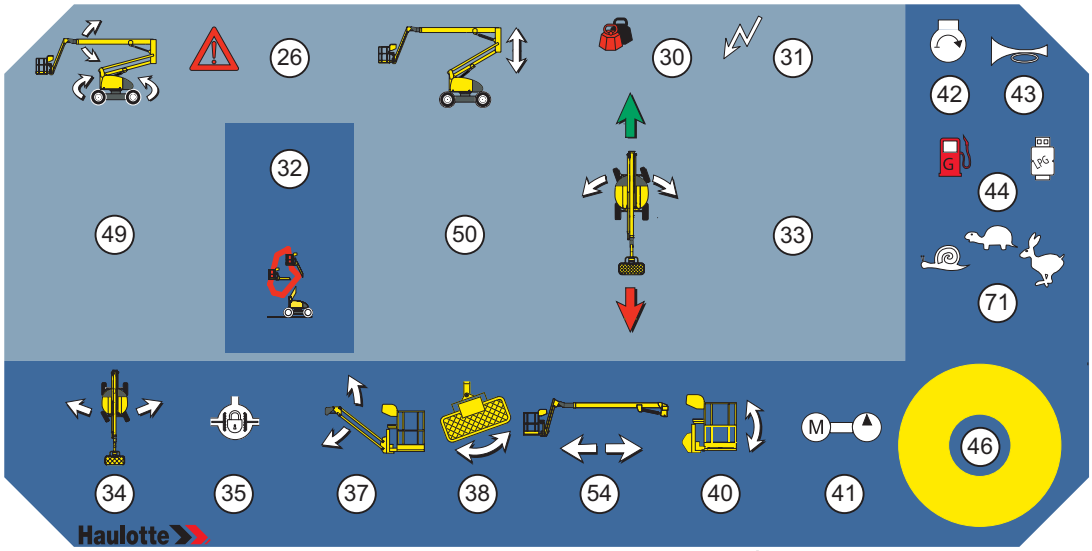
C - Machine layout

Controls and indicators HA12PX (HA33JRT)

Marking	Description	Function
P31	LED switched on	On : Machine switched on
		Off : Machine switched off
P46	Emergency stop push button	Pulled (activated) : Upper console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P51	Electric pre-heating LED	On : Engine in pre-heating
		Off : Engine pre-heated, starting possible
P52	Movement lever	To the front : Forward driving, jib elevation, anti-clockwise platform rotation, platform compensation elevation, arm elevation, boom elevation, boom telescope extension, anti-clockwise turntable rotation
		To the rear : Reversing, jib lowering, clockwise platform rotation, platform compensation lowering, arm lowering, boom lowering, boom telescope retraction, clockwise turntable rotation
	Front axle direction selector	Press right : Right turn
		Press left : Left turn
P57	Sensitive selector and slow drive speed LED	Pressed (activated and LED on) : Slow drive speed selection (short distance and final approach)
P58	Sensitive selector and medium drive speed LED	Pressed (activated and LED on) : Medium drive speed selection (difficult ground, slope)
P59	Sensitive selector and fast drive LED	Pressed (activated and LED on) : Fast drive selection (long distance)
P60	Differential blocking sensitive selector	Pressed (activated) : Differential blocking selection
P61	Engine start-up selector	Pressed (activated) : Engine start-up
P62	Horn sensitive selector	Pressed (activated) : Horn
P63	Sensitive selector and jib LED	Pressed (activated and LED on) : Jib selection
P64	Sensitive selector and platform rotation LED	Pressed (activated and LED on) : Platform rotation selection
P65	Sensitive selector and platform compensation LED	Pressed (activated and LED on) : Platform compensation selection
P66	Sensitive selector and arm elevation LED	Pressed (activated and LED on) : Arm elevation selection
P67	Sensitive selector and boom elevation LED	Pressed (activated and LED on) : Boom elevation selection
P68	Sensitive selector and boom telescoping LED	Pressed (activated and LED on) : Boom telescoping selection
P69	Sensitive selector and turntable rotation LED	Pressed (activated and LED on) : Turntable rotation selection
P85	Default LED	Platform overload

C - Machine layout

General view



Controls and indicators (Sauf HA12PX (NA))

Marking	Description	Function
P26	Default LED	Operation defect[1]
		Machine in tilted position
P30	Platform overload LED	Platform overload
P31	LED switched on	On : Machine switched on
		Off : Machine switched off
P32	Radius limitation LED	The LED blinks : Close to radius limit
		The LED blinks continuously : Radius limitation reached
P33	Drive joystick	To the front : Driving forwards
		To the rear : Driving backwards
	Front axle direction selector	Press right : Right turn
		Press left : Left turn
P34	Rear axle direction selector	To the right : Right turn
		To the left : Left turn
P35	Differential blocking selector	Maintained (activated) : Maximum torque (difficult ground or ground with a slope)
		Released (deactivated) : Standard torque
P37	Jib selector	Upwards : Jib elevation
		Downwards : Jib lowering
P38	Platform rotation selector	To the right : Anti-clockwise rotation
		To the left : Clockwise rotation
P40	Platform compensation selector	Upwards : Raising of platform
		Downwards : Lowering of platform
P41	Back-up generator selector	Maintained : Back-up generator activation
		Released : Back-up generator deactivation
P42	Engine start-up selector	Engine start-up
P43	Horn selector	Horn
P44	Petrol / gas selector[2]	LPG : Gas supply
		G : Petrol supply

C - Machine layout

Marking	Description	Function
P46	Emergency stop push button	Pulled (activated) : Lower console power supply
		Pushed in (deactivated) : Power supply cut off to upper and lower consoles
P49	Turntable rotation joystick	To the right : Anti-clockwise rotation
		To the left : Clockwise rotation
	Boom lift joystick	Upwards : Boom elevation
		Downwards : Boom lowering
P50	Arm elevation joystick	To the front : Arm elevation
		To the rear : Arm lowering
P54	Boom telescoping selector	To the right : Telescope retraction
		To the left : Telescope extension
P71	Driving speed selector	 Fast driving (long distance)
		 Medium speed drive difficult ground, slope)
		 Slow driving(short distance, final approach)

1. Perform the required maintenance (see the machine maintenance book)
2. For equipped machines

C - Machine layout

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

These security systems immobilize the machine and neutralize the movements.

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

2 - Safety devices

2.1 - ACTIVATION OF CONTROLS

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

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

- Joystick handle.
- Pedal.
- Validation button.

2.2 - DRIVING SPEED (MINIMUM)

All driving speeds are authorized when the machine is stowed (machine in lowered position).

The only speed allowed when not in stowed position is microspeed.

2.3 - MOVEMENT SPEED

Movement speed of the following elements is regulated by the movement speed selector :

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

Movement speed depends on the user's decisions according to the environment.

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

Except HA12PX (NA) :

Movement speed of the following elements is regulated by the movement speed selector :

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

Movement speed depends on the user's decisions according to the environment.

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

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 controller to manage the automatic operation of the combined movements.

Operating rules for HA260PX (HA80JRT)

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 telescoping.

2.5 - CONTROLLER HEAD

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

Do not interchange the controller between machines.

2.6 - DETECTION OF INTERNAL FAULT

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

The defect LED blinks to indicate an internal malfunction.

The machine switches to downgraded mode.

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

2.7 - 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 equipped machines(HA260PX (HA80JRT)) : :

- The platform has gone outside the work area.

2.8 - LOAD IN THE PLATFORM

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

The platform overload LED and the buzzer warn the operator.

2 possibilities to restore normal configuration :

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

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

2.9 - MACHINE TILT

For HA16X

If the machine is located on a slope with authorized tilt, the operator is warned by the tilt LED on the upper console and the buzzer.

Driving is cut.

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

- Telescope retraction.
- Raising or lowering the boom to return to the horizontal position.
- Lowering the arm.

For HA12PX (HA33JRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) -

If the machine is located on a slope with authorized tilt, the operator is warned by the tilt LED on the upper console and the buzzer.

Driving is cut.

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

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

For HA20PX (HA61JRT) - HA260PX (HA80JRT)

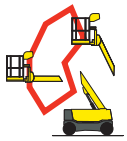
If the machine is located on a slope with authorized tilt, the operator is warned by the tilt LED on the upper console and the buzzer.

Driving is cut.

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

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

2.10 - RADIUS LIMITATION



For HA260PX (HA80JRT)

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

The radius limitation LED (orange) on the upper console is a visual indicator.

- This LED blinks to signal that the machine is performing an movement in addition to the requested movement in order to maintain the platform within the stability limits. 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 LED remains on when the operator requests a movement which would cause the platform to leave the work area.

D - Operating principle

1 - Recommendations

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

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

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

2 - Checks before use

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

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

2.1 - VISUAL INSPECTIONS

2.1.1 - General mechanical functions

Check the following points :

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

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

2.1.2 - Environment

Section A Safety precautions

Check the following points :

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

2.2 - FUNCTIONAL TESTS

2.2.1 - Safety features

Elements to be tested :

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

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

2.2.2 - Lower console controls

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

Tests from the lower console HA16X

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

Tests from the lower console HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA12PX (HA33JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

Step	Control
1	Engine start-up selector P22
2	Engine acceleration selector P21
3	Movements : • Lifting/lowering of arm P12 • Lifting / lowering of boom P10 • Boom telescope extension/retraction P9 • Lifting / lowering of jib P8 • Turntable rotation P14 • Platform compensation P13
4	Transport position selector P13
5	Beacon light selector P24
6	Console activation key selector P72

2.2.3 - Upper console controls

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

Tests from the upper console HA12PX (HA33JRT)

Step	Control
1	Engine start-up selector P61
2	Front axle direction selector (P52) and movement joystick (P52)
3	Movements : • Jib elevation/lowering (P63) and movement joystick P52 • Platform rotation (P64) and movement joystick P52 • Platform compensation (P65) and movement joystick P52 • Arm elevation/lowering (P66) and movement joystick P52 • Boom elevation/lowering (P67) and movement joystick P52 • Boom telescope extention/retraction (P68) and movement joystick P52 • Turntable rotation (P69) and movement joystick P52
4	Driving speed selector : • Slow speed selector (P57) and movement joystick P52 • Medium speed selector (P58) and movement joystick P52 • Fast speed selector (P59) and movement joystick P52
5	Differential blocking selector P60
6	Horn selector P62

Tests from the upper console HA16X

Step	Control
1	Engine start-up selector P42
2	Driving P33
3	Platform rotation selector P38
4	Movements : • Lifting/lowering of arm P50 • Lifting / lowering of boom P49 • Boom telescope extension/retraction P54 • Turntable rotation P49 • Platform compensation P40
5	Driving speed selector : • Slow speed selector (P71) and movement joystick P33 • Medium speed selector (P71) and movement joystick P33 • Fast speed selector (P71) and movement joystick P33
6	Differential blocking selector P35

Step	Control
7	Horn selector P43

Tests from the upper console HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

Step	Control
1	Engine start-up selector P42
2	Driving P33
3	Platform rotation selector P38
4	Movements : • Lifting/lowering of arm P50 • Lifting / lowering of boom P49 • Boom telescope extension/retraction P39 • Lifting / lowering of jib P37 • Turntable rotation P49 • Platform compensation P40
5	Driving speed selector : • Slow speed selector (P71) and movement joystick P33 • Medium speed selector (P71) and movement joystick P33 • Fast speed selector (P71) and movement joystick P33
6	Differential blocking selector P35
7	Horn selector P43

2.3 - REGULAR CHECKS

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

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

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

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

2.4 - REPAIRS AND ADJUSTMENTS

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

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

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

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

2.5 - CHECKS WHEN THE MACHINE IS PUT BACK IN SERVICE

Intervention to be made after :

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

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

3 - Usage

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

3.1 - TEST PROCEDURE

3.1.1 - Emergency stop push button function

Lower console emergency stop push button

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

Upper console emergency stop push button

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

3.1.2 - Tilt control box function

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

3.1.3 - Visual and audio alarms

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

3.1.4 - Weighing system

1. Pull the emergency stop push buttons P15, P46.
2. Switch the machine on P72. Upper console platform overload LED (P30) flashes.

3.2 - GROUND OPERATIONS

3.2.1 - Machine start-up

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

Petrol/gas For : HA16PX (HA46JRT)-HA18PX (HA51JRT)

Petrol/gas changeover While the engine is running :

- Open the gas bottle valve.
- Set the fuel selector (P23) to Gas.

Gas/petrol changeover While the engine is running :

- Set the fuel selector (P23) to petrol.
- Close the gas bottle valve.

You can switch between petrol and gas using the selector (P23) :

- The (LPG (P23)) indicator is on, showing that the machine is set to gas mode.
- The petrol indicator (P23) is on, the machine is in petrol mode.

N.B.-:-IF THE MACHINE STALLS WHEN YOU CHANGE FUEL SOURCE, PRESS THE PUSH BUTTON TO STOP THE ENGINE AND BEGIN THE START UP PROCEDURE AGAIN.

After several attempts have been made to start up, a bang can be heard inside the silencer, but this does not represent any danger. This bang is caused by a build-up of unburnt gas.

basic principles : While the engine is running : If the temperature is below 0 °C (0 °F), you are advised to start up the machine in LPG version

. To start up in petrol mode, you are advised to pull the starter half out to aid start up during first usage

S t a r t e r

For : HA12PX (HA33JRT) and for HA16X - HA16PX - HA18PX - HA16SPX - HA18SPX (N/A - HA46JRT - HA51JRT - HA46SJRT - HA51SJRT) Winter option

1. Pull the emergency stop push button P15.
2. Switch the machine on P72.
3. Turn the key of the console activation selector (P72) to the right to activate the lower console. The following LEDs are switched on :
   - Electrical pre-heating P1.
   - Engine oil pressure P2.
   - Engine temperature P3.
   - Battery charge P4.
4. The clogged air filter LED (P5) is switched off.
5. Press on the starter selector P22. The engine starts. The LEDs switch off.
6. Let the engine heat up.

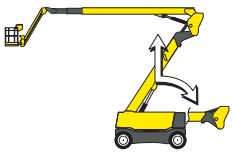
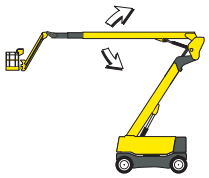
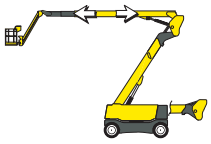
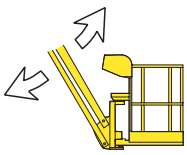
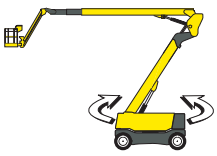
N.B.-:-IF THE ENGINE DOES NOT START, CUT THE CONTACT (EMERGENCY STOP PUSH BUTTON PRESSED). RESTART THE START-UP PROCEDURE. OTHER POSSIBILITY, USE THE KEY STARTER OF THE VEHICLE. THE BUTTON DOES NOT NEED TO BE KEPT PRESSED, AN IMPULSE IS ENOUGH TO START OR STOP THE ENGINE. A SLIGHT SHIFT ON STARTING CORRESPONDS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

3.2.2 - Machine shutdown

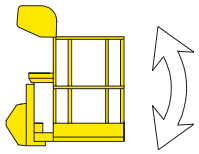
- Press the emergency stop push button (P15).
- Close the gas bottle valve.

3.2.3 - Movement control

Lower console controls HA12PX (HA33JRT) - HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

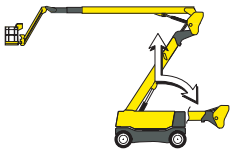
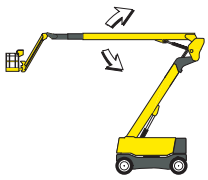
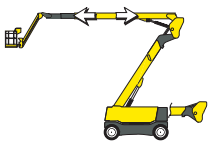
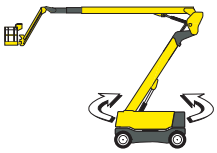
Control		Action
Lifting/lowering of arm		Push the arm elevation selector (P12) upwards to raise the arm. Push the arm elevation selector (P12) downwards to lower the arm.
Lifting / lowering of boom		Push the boom lifting selector (P10) upwards to lift the boom. Push the boom lifting selector (P10) downwards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

E - Driving

Control		Action
Platform compensation		Push the platform compensation selector (P13) upwards to raise the platform.
		Push the platform compensation selector (P13) downwards to lower the platform.

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

Lower console controls HA16X

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

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

3.2.4 - Other controls

- Switching from the lower console to the upper console :

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

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

- Switching from the upper console to the lower console :

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

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

- Putting in transport position :
  - Push the transport position selector (P13) to the right to set the machine in transport position.
  - Push the transport position selector (P13) to the left to set the machine in operating position.

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

- Engine rating acceleration :
  - Turn the engine acceleration selector (P21) to the right to switch to accelerated rating.
  - Turn the engine acceleration selector (P21) to the left to switch to idling speed.

N.B.-:-THE ACCELERATION OF THE ENGINE RATING ALLOWS INCREASING THE MOVEMENT SPEED FROM THE LOWER CONSOLE.

- For the machines equipped with beacon lights :
  - Push the beacon light selector (P24) to the right to switch on the beacon light.
  - Push the beacon light selector (P24) to the left to switch off the beacon light

- Petrol/gas :

For : HA16PX (HA46JRT)-HA18PX (HA51JRT)

Petrol/gas changeover

While the engine is running :

- Open the gas bottle valve.
- Set the fuel selector (P23) to Gas.

Gas/petrol changeover

While the engine is running :

- Set the fuel selector (P23) to petrol.
- Close the gas bottle valve.

You can switch between petrol and gas using the selector (P23) :

- LED switched off : Gas version.
- Indicator on : Petrol version.

N.B.-:-If the machine stalls when you change fuel source, press the push button to stop the engine and begin the start up procedure again.

After several attempts have been made to start up, a bang can be heard inside the silencer, but this does not represent any danger. This bang is caused by a build-up of unburnt gas.

3.3 - OPERATIONS FROM THE PLATFORM

3.3.1 - Machine start-up

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

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

Each time the upper console is started, the machine automatically selects the gas verison.

- Start-up in gas version :
  - On the chassis control console, set the console activation key selector (P72) to the : Upper console activation("green round" position).
  - Check that the two emergency stop buttons are unlocked.
  - Check that the gas bottle valve is open.
  - The indicator (P31) is lit up green, showing that the machine powered up and that the platform is selected.
  - The LPG (44) indicator is on, showing that the machine is set to gas mode.
  - Press on the starter selector(P42).
- Start up in petrol version :
  - On the chassis control console, set the console activation key selector (P72) to the : Upper console activation("green round" position).
  - Check that the two emergency stop buttons are unlocked.
  - The indicator (P31) is lit up green, showing that the machine powered up and that the platform is selected.
  - Press the selector (P44). The petrol indicator (P44) is on, the machine is in petrol mode.
  - Press on the starter selector(P42).

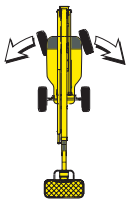
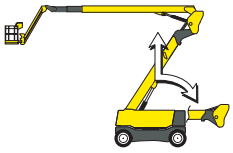
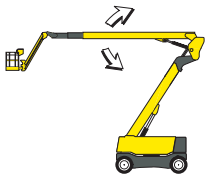
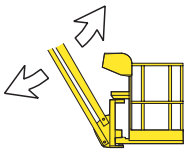
3.3.2 - Machine shutdown

Press the emergency stop push button (P46).

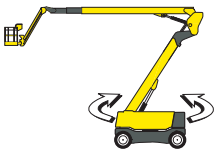
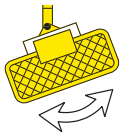
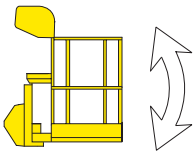
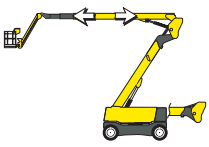
3.3.3 - Movement control

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

Upper console controls HA12PX (HA33JRT)

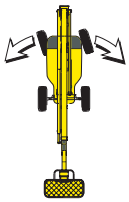
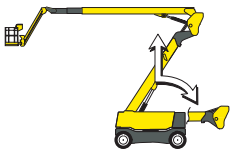
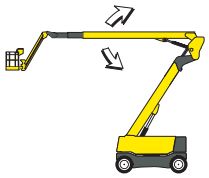
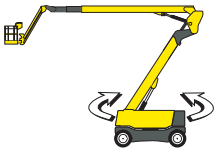
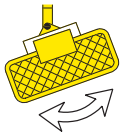
Control		Action
Driving		Push the driving joystick *1 backwards to reverse the machine : • Slow (P57) • Medium (P58) • Fast (P59) Push the drive joystick (P52) forwards to move machine forwards.
		Push the driving joystick *1 backwards to reverse the machine : • Slow (P57) • Medium (P58) • Fast (P59) Push the drive joystick (P52) backwards to reverse the machine.
Steering		Push the drive joystick (P52) forwards to move machine forwards. Press to the right of the front axle steering selector (P52) to steer to the right.
		Push the drive joystick (P52) forwards to move machine forwards. Press to the left of the front axle steering selector (P52) to steer to the left.
Lifting/lowering of arm		Push the arm elevation sensitive selector (P66). Push the arm elevation joystick (P52) forwards to raise the arm.
		Push the arm elevation joystick (P52) backwards to lower the arm.
Lifting / lowering of boom		Push the boom elevation sensitive selector (P67). Push the boom elevation joystick (P52) forwards to raise the boom.
		Push the boom elevation joystick (P52) backwards to lower the boom.
Lifting / lowering of jib		Push the jib elevation sensitive selector (P63). Push the jib joystick (P52) forwards to raise the jib.
		Push the jib joystick (P52) backwards to lower the jib.

E - Driving

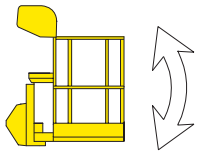
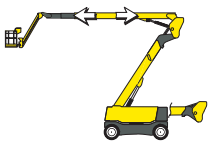
Control		Action
Turntable rotation		Push the turntable rotation sensitive selector (P69). Push the turntable rotation joystick (P52) forwards for clockwise rotation. Push the turntable rotation joystick (P52) backwards for anti-clockwise rotation.
Platform rotation		Push the platform rotation sensitive selector (P64). Push the platform rotation joystick (P52) forwards for clockwise rotation. Push the platform rotation joystick (P52) backwards for anti-clockwise rotation.
Platform compensation		Push the platform compensation sensitive selector (P65). Push the platform compensation joystick (P52) forwards to raise the platform. Push the platform compensation joystick (P52) backwards to lower the platform.
Driving speed (minimum)	  	Push the driving speed selector (P59) to  fast speed driving (long distance driving, tarmac, concrete). Push the driving speed selector (P58) to  for driving in medium speed (crossing uneven ground, slopes). Push the driving speed selector (P57) to  for driving in slow speed (short distance, final approach, descending from the lorry).
Boom telescope extension/ retraction		Push the boom telescoping sensitive selector (P68). Push the boom telescope joystick (P52) forwards to extend the telescope. Push the boom telescope joystick (P52) backwards to retract the telescope.

E - Driving

Upper console controls HA16X

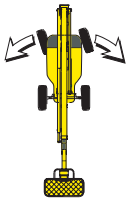
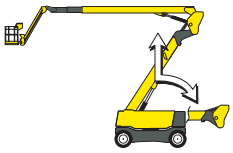
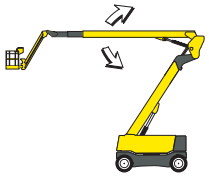
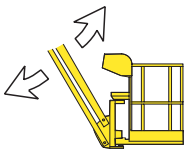
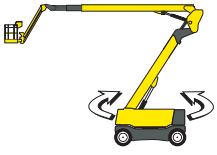
Control		Action
Driving		Push the drive joystick (P33) forwards to move machine forwards. Push the drive joystick (P33) backwards to reverse the machine.
Steering		Push the driving joystick (P34) forwards to move the machine forwards. Push the selector (P34) to the left to steer left.
Lifting/lowering of arm		Push the arm elevation joystick (P50) forwards to raise the arm. Push the arm elevation joystick (P50) backwards to lower the arm.
Lifting / lowering of boom		Push the boom lift joystick (P49) upwards to lift the boom. Engage the boom lift joystick (P49) to the bottom to lower the boom.
Turntable rotation		Push the turntable rotation joystick (P49) to the left for a clockwise rotation. Push the turntable rotation joystick (P49) to the right for an anti-clockwise rotation.
Platform rotation		Push the platform rotation selector (P38) to the right for an anti-clockwise rotation. Push the platform rotation selector (P38) to the left for a clockwise rotation.

E - Driving

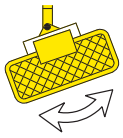
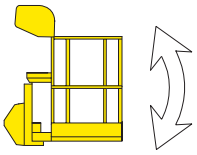
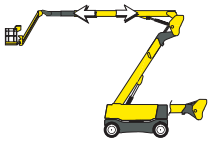
Control		Action
Platform compensation		Push the platform compensation selector (P40) upwards to raise the platform.
		Push the platform compensation selector (P40) downwards to lower the platform.
Driving speed (minimum)		Position the driving speed selector (P71) on  for fast driving (long distance driving, tarmac, concrete).
		Position the driving speed selector (P71) on  for medium speed driving (crossing uneven ground, slope).
		Position the driving speed selector (P71) on  for slow driving (short distance, final approach).
Boom telescope extension/ retraction		Push the boom telescoping selector (P54) to the right to extend the telescope.
		Push the boom telescoping selector (P54) to the right to retract the telescope.

E - Driving

Upper console controls HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)

Control		Action
Driving		Push the drive joystick (P33) forwards to move machine forwards. Push the drive joystick (P33) backwards to reverse the machine.
Steering		Push the driving joystick (P34) forwards to move the machine forwards. Push the selector (P34) to the left to steer left.
Lifting/lowering of arm		Push the arm elevation joystick (P50) forwards to raise the arm. Push the arm elevation joystick (P50) backwards to lower the arm.
Lifting / lowering of boom		Push the boom lift joystick (P49) upwards to lift the boom. Engage the boom lift joystick (P49) to the bottom to lower the boom.
Lifting / lowering of jib		Push the jib selector (P37) upwards to lift the jib. Push the jib selector (P37) downwards to lower the jib.
Turntable rotation		Push the turntable rotation selector (P49) to the left for a clockwise rotation. Push the turntable rotation selector (P49) to the right for an anti-clockwise rotation.

E - Driving

Control		Action
Platform rotation		Push the platform rotation selector (P38) to the right for an anti-clockwise rotation.
		Push the platform rotation selector (P38) to the left for a clockwise rotation.
Platform compensation		Push the platform compensation selector (P40) upwards to raise the platform.
		Push the platform compensation selector (P40) downwards to lower the platform.
Driving speed (minimum)		Position the driving speed selector (P71) on  for fast driving (long distance driving, tarmac, concrete).
		Position the driving speed selector (P71) on  for medium speed driving (crossing uneven ground, slope).
		Position the driving speed selector (P71) on  for slow driving (short distance, final approach).
Boom telescope extension/ retraction		Push the boom telescoping joystick (P54) to the left to extend the telescope.
		Push the boom telescoping joystick (P54) 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 (P43) to the right to honk.

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

1 - Emergency lowering

1.1 - PRINCIPLE

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

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

1.2 - PROCEDURE

Section A 2- Pre-operation instructions

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

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

2 - Towing service

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

2.1 - DISCONNECTING THE UNIT

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

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

For : HA12PX (HA33JRT) - HA16X - HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT)

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

For : HA16PX (HA46JRT) - HA18PX (HA51JRT)

Unscrew the 2 nuts with an 11 spanner.

Turn the part and screw it back on.

The gears are released.

For : HA20PX (HA61JRT) - HA260PX (HA80JRT)

1. Unscrew the cap (1) (Central nut).
2. Remove the spline pin (2) using a 6 x 50 screw.
3. Screw on the cap again (1).

2.2 - TOWING SERVICE

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) .

2.3 - RECONNECT UNIT

After repairing the machine, reconnect the wheel gears.

For HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA12PX (HA33JRT) - HA16X

- Machine without chocks

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

For HA20 PX (HA61JRT) - HA260PX (HA80JRT)

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.

For HA16PX (HA46JRT) - HA18PX (HA51JRT)

Perform in reverse order to the gear disengaging procedure.

3 - Loading and unloading

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

Lift the platform again to avoid contact with the ground.

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

3.1 - PRINCIPLE

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

- **The loading ramps can bear the load.**
- **The loading ramps are correctly fixed.**
- **The adhesion is sufficient.**

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

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

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

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

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

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

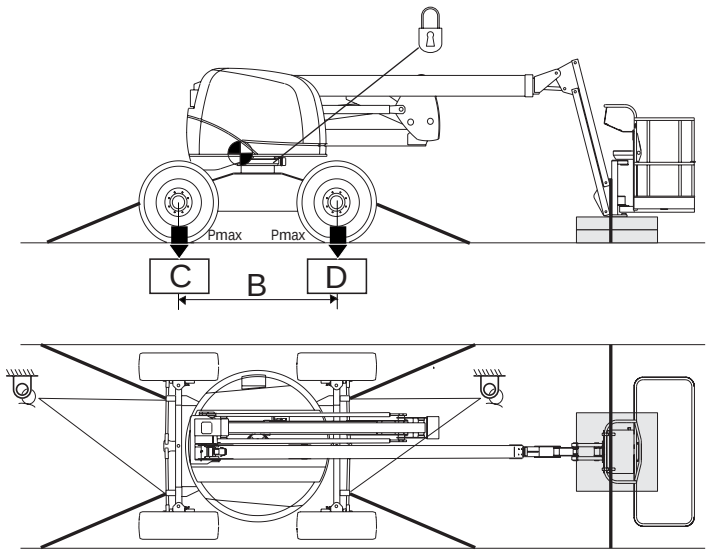
3.2 - PUTTING IN TRANSPORT POSITION

The machine must be completely stowed.

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

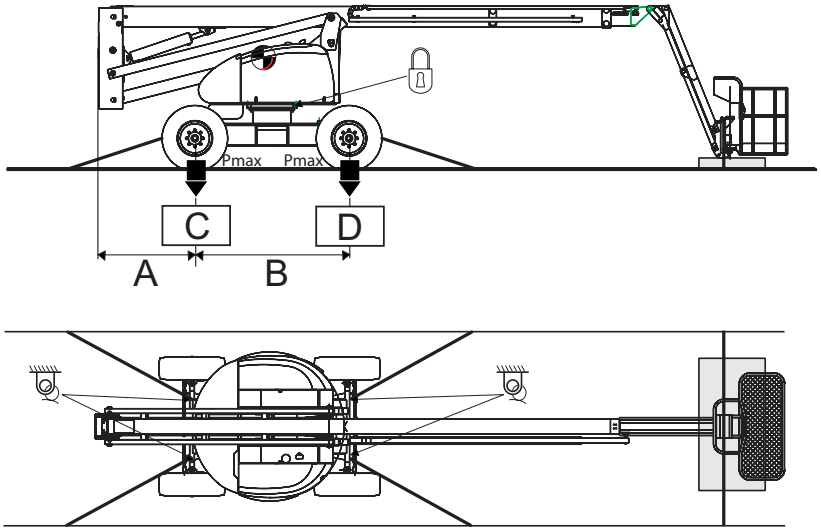
Do not transport the machine if the turntable is not blocked.

For HA12PX (HA33JRT) - HA16X - HA16SPX (HA46SJRT) - HA16PX (HA46JRT) - HA18SPX (HA51SJRT) - HA18PX (HA51JRT)



F - Special procedure

For HA20PX (HA61JRT) - HA260PX (HA80JRT)



Loading characteristics

Marking	Description	HA12PX (HA33JRT)	HA16X
B	Lateral distance between the wheels	1,64 m (5 ft 4 in)	2,00 m (6 ft 6 in)
C	Front wheel pressure	6.9 daN/cm2	9.2 daN/cm2
D	Rear wheel pressure	6.9 daN/cm2	9.2 daN/cm2
	Anchorage point		
	Turntable rotation blocking		

Loading characteristics

Marking	Description	HA16SPX (HA46SJRT)	HA16PX (HA46JRT)
B	Lateral distance between the wheels	2,00 m (6 ft 6 in)	2,00 m (6 ft 6 in)
C	Front wheel pressure	10.1daN/cm2	8 daN/cm2
D	Rear wheel pressure	10.1daN/cm2	8 daN/cm2
	Anchorage point		
	Turntable rotation blocking		

F - Special procedure

Loading characteristics

Marking	Description	HA18SPX (HA51SJRT)	HA18PX (HA51JRT)
B	Lateral distance between the wheels	2,00 m (6 ft 6 in)	2,00 m (6 ft 6 in)
C	Front wheel pressure	8.2 daN/cm2	8.2 daN/cm2
D	Rear wheel pressure	8.2 daN/cm2	8.2 daN/cm2
	Anchorage point		
	Turntable rotation blocking		

Loading characteristics

Marking	Description	HA20PX (HA61JRT)	HA260PX (HA80JRT)
B	Lateral distance between the wheels	2,80 m (9 ft 2 in)	2,80 m (9 ft 2 in)
C	Front wheel pressure	12 daN/cm2	13 daN/cm2
D	Rear wheel pressure	12 daN/cm2	13 daN/cm2
	Anchorage point		
	Turntable rotation blocking		

3.3 - UNLOADING

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

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

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

3.4 - WARNING

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

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

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

To unload the machine, select the slow driving speed .

Do not go down the ramp at a fast speed.

3.5 - STORAGE

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

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

The boom may be raised but it cannot be telescoped.

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

4 - Detection of internal fault

4.1 - PRINCIPLE

For equipped machines.

- The machine is equipped with an internal defect detection system.
- The number of times the defect LED 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.

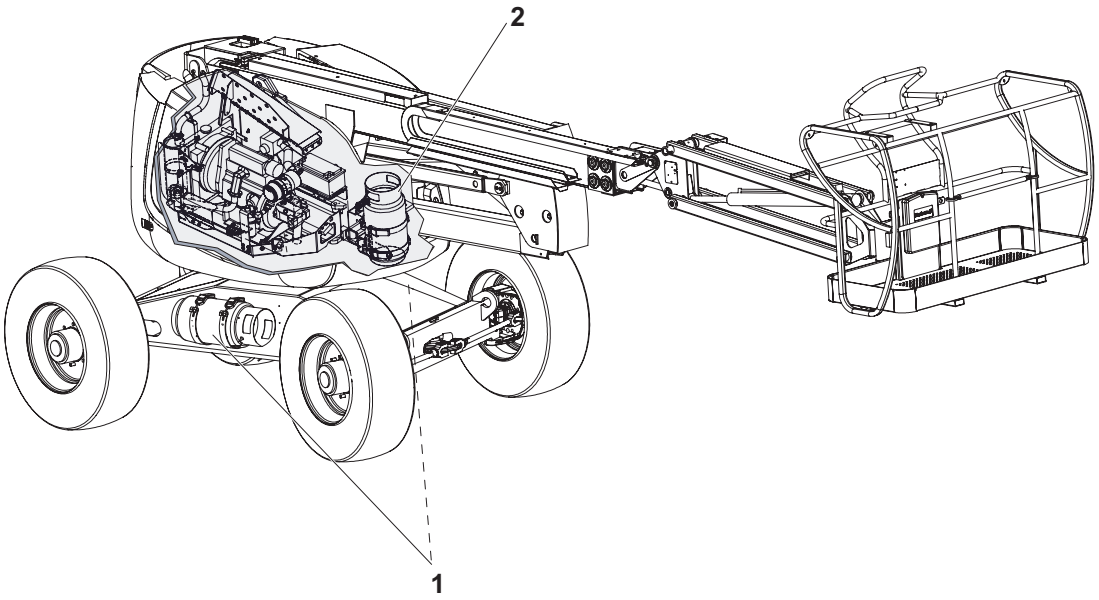
4.2 - PROCEDURE

Do not allow the machine to be used until the fault has been repaired.

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

5 - Gas bottle installation

For HA16PX (HA46JRT) - HA18PX (HA51JRT)



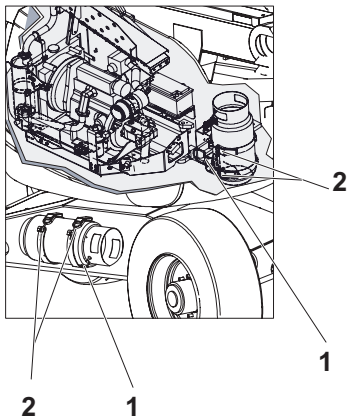
There are 2 bottles of gas, one on either side of the machine(1). These bottles are spares.

Only bottle 2, situated at the front of the machine, is connected to the supply system.

It is important to install the bottles correctly, so that they do not move during transport or operation.

Put the bottles into their holders (1).

Install the bottles correctly using the lock pins, and attach them firmly into position with the straps (2).



6 - Gas bottle connection

1. Place the gas bottle in its holder.
2. Connect pipe (3) to valve (1).
3. Tighten the coupling by hand(2)
4. Open the gas bottle valve.

Do not forget to shut off the valve when the machine is no longer running.

Pressure limitor

N.B.-:-Pipe (1) is fitted with a pressure limiter (2). A valve opens when the pressure in the bottle rises above 27,5 bar (400 psi) . This mechanism prevents the risk of explosion.

7 - Gas bottle removal

Make sure that there are no open flames or incandescent sources close to the machine.

1. Make sure that the emergency stop button on the lower console has been pressed.
2. Close the gas bottle valve(1).
3. Set the fuel selector (23) to petrol.
4. Loosen the coupling (2) by hand.
5. Remove the pipe (3) from the valve.
6. Open the straps to remove the gas bottle.

F - Special procedure

1 - Main characteristics

Technical characteristics - For HA12PX (HA33JRT) - HA16X

Machine	HA12PX (HA33JRT)		HA16X	
Characteristics	International system	Imperial system	International system	Imperial system
Length of machine in stowed position	5,50 m	(18 ft 0 in)	7,60 m	(24 ft 11 in)
Width of the machine in stowed position	1,85 m	(6 ft 0 in)	2,26 m	(7 ft 5 in)
Machine height	2,15 m	(7 ft 0 in)	2,08 m	(6 ft 9 in)
Maximum ground clearance	0,29 m	(0 ft 11 in)	0,35 m	(1 ft 1 in)
Transport height	. m	(. ft . in)	2,26 m	(7 ft 5 in)
Transport length	. m	(. ft . in)	6,70 m	(21 ft 11 in)
Maximum work height	12,40 m	(40 ft 8 in)	15,45 m	(50 ft 8 in)
Maximum platform height	10,40 m	(34 ft 1 in)	13,45 m	(44 ft 1 in)
Maximum shift	6,60 m	(21 ft 7 in)	8,45 m	(27 ft 8 in)
Maximum radius	6,10 m	(20 ft 0 in)	7,35 m	(24 ft 1 in)
Turntable rotation	180°		350°	
Boom rotation angle	+75° / -4°		+76° / -18°	
Vertical jib rotation	+70° / -70°			
Platform length	0,80 m	(2 ft 7 in)	0,80 m	(2 ft 7 in)
Platform width	1,20 m -1,50 m	(3 ft 11 in) - (4 ft 11 in)	1,80 m -2,30 m	(5 ft 10 in) - (7 ft 6 in)
Platform rotation angle	+90° / -90°			
Outside turning radius (without axle chocking retracted)	3,45 m	(11 ft 3 in)	9,30 m	(30 ft 6 in)
Inner turning radius (retracted axles)	1,55 m	(5 ft 1 in)	3,55 m	(11 ft 7 in)
Lateral distance between the wheels	1,64 m	(5 ft 4 in)	2,00 m	(6 ft 6 in)
Tilt	5°			
Maximum authorized wind speed	45 km/h	(28 mph)	45 km/h	(28 mph)
Front axle load	. kg	(. lb)	. kg	(. lb)
Rear axle load	. kg	(. lb)	. kg	(. lb)
Total weight	5640 kg	(12434 lb)	6500 kg	(14330 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Engine type	Diesel - Lombardini - LDW 1404		Diesel - Deutz F3L1011F	
Engine power	21 kW	(28,5 Hp)	28 kW	(38 Hp)
Engine power when idle	9,5 kW	(12,9 Hp)	15 kW	(20,3 Hp)
Fuel consumption when idle	2309 g/kWh			
Sound level at 10 m (32 ft 9 in)	67 dB (A)		75 dB (A)	
Vibration in the hands	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Vibration in the feet	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Capacity of the fuel tank	65 l	(17 gal US)	55 l	(14 gal US)

G - Technical characteristics

Machine	HA12PX (HA33JRT)		HA16X	
Characteristics	International system	Imperial system	International system	Imperial system
Capacity of the hydraulic tank	100 l	(26 gal US)	100 l	(26 gal US)
Starter battery	12 V-95 Ah			
Differential blocking	Yes			
Maximum slope which can be climbed	40%		50%	
Type of tyres	Foam-filled-10,5/80 - 18/10		Foam-filled-14 x 17,5	
Wheel nut torque	25 daN.m	(184 lbf.ft)	. daN.m	(. lbf.ft)
Slew ring torque	. daN.m	(. lbf.ft)	. daN.m	(. lbf.ft)
Maximum pressure on hard ground	6,9 bar	(100 psi)	10,1 bar	(146,4 psi)
Maximum pressure on soft ground	6,9 bar	(100 psi)	3 bar	(43,5 psi)
Micro-speed drive	. km/h	(. mph)	. km/h	(. mph)
Low-speed driving	0,7 km/h	(0,4 mph)	0,4 km/h	(0,2 mph)
Medium-speed driving	2,2 km/h	(1,3 mph)	1,5 km/h	(0,9 mph)
Fast driving	4,5 km/h	(2,7 mph)	6,0 km/h	(3,7 mph)

G - Technical characteristics

Technical characteristics - For HA16PX (HA46JRT) - HA18PX (HA51JRT)

Machine	HA16PX (HA46JRT)		HA18PX (HA51JRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Length of machine in stowed position	6,95 m	(22 ft 9 in)	7,60 m	(24 ft 11 in)
Width of the machine in stowed position	2,30 m	(7 ft 6 in)	2,30 m	(7 ft 6 in)
Machine height	2,20 m	(7 ft 2 in)	2,20 m	(7 ft 2 in)
Maximum ground clearance	0,40 m	(1 ft 3 in)	0,40 m	(1 ft 3 in)
Transport height	2,15 m	(7 ft 0 in)	2,15 m	(7 ft 0 in)
Transport length	5,25 m	(17 ft 2 in)	5,90 m	(19 ft 4 in)
Maximum work height	16,00 m	(52 ft 5 in)	17,30 m	(56 ft 9 in)
Maximum platform height	14,00 m	(45 ft 11 in)	15,30 m	(50 ft 2 in)
Maximum shift	9,10 m	(29 ft 10 in)	10,60 m	(34 ft 9 in)
Maximum radius	8,70 m	(28 ft 6 in)	10,07 m	(33 ft 0 in)
Turntable rotation	360°			
Boom rotation angle	+74° / -3°			
Vertical jib rotation	+70° / -70°			
Platform length	0,80 m	(2 ft 7 in)	0,80 m	(2 ft 7 in)
Platform width	1,80 m -2,30 m	(5 ft 10 in) - (7 ft 6 in)	1,80 m -2,30 m	(5 ft 10 in) - (7 ft 6 in)
Platform rotation angle	+90° / -90°			
Outside turning radius (without axle chocking retracted)	4,00 m	(13 ft 1 in)	4,00 m	(13 ft 1 in)
Inner turning radius (retracted axles)	1,90 m	(6 ft 2 in)	1,90 m	(6 ft 2 in)
Lateral distance between the wheels	2,00 m	(6 ft 6 in)	2,00 m	(6 ft 6 in)
Tilt	5°			
Maximum authorized wind speed	60-45 km/h	(37 - 28 mph)	60-45 km/h	(37 - 28 mph)
Front axle load	. kg	(. lb)	. kg	(. lb)
Rear axle load	. kg	(. lb)	. kg	(. lb)
Total weight	7240 kg	(15961 lb)	8120 kg	(17901 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
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	2309 g/kWh			
Sound level at 10 m (32 ft 9 in)	75 dB (A)			
Vibration in the hands	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Vibration in the feet	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Capacity of the fuel tank	72 l	(19 gal US)	72 l	(19 gal US)
Capacity of the hydraulic tank	100 l	(26 gal US)	100 l	(26 gal US)
Starter battery	12 V-95 Ah		12 V-95 Ah	
Differential blocking	Yes			
Maximum slope which can be climbed	50%			
Type of tyres	Foam-filled-385/65D22,5			
Wheel nut torque	32,5 daN.m	(236 lbf.ft)	32,5 daN.m	(236 lbf.ft)

G - Technical characteristics

Machine	HA16PX (HA46JRT)		HA18PX (HA51JRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Slew ring torque	21,5 daN.m	(158 lbf.ft)	21,5 daN.m	(158 lbf.ft)
Maximum pressure on hard ground	8 bar	(116 psi)	8,2 bar	(118 psi)
Maximum pressure on soft ground	3,2 bar	(46 psi)	3,6 bar	(52 psi)
Micro-speed drive	0,22 km/h	(0,1 mph)	0,22 km/h	(0,1 mph)
Low-speed driving	0,38 km/h	(0,2 mph)	0,38 km/h	(0,2 mph)
Medium-speed driving	0,77 km/h	(0,4 mph)	0,77 km/h	(0,4 mph)
Fast driving	1,52 km/h	(0,9 mph)	1,52 km/h	(0,9 mph)

G - Technical characteristics

Technical characteristics - For HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT)

Machine	HA16SPX (HA46SJRT)		HA18SPX (HA51SJRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Length of machine in stowed position	6,80 m	(22 ft 3 in)	7,50 m	(24 ft 7 in)
Width of the machine in stowed position	2,30 m	(7 ft 6 in)	2,30 m	(7 ft 6 in)
Machine height	2,20 m	(7 ft 2 in)	2,20 m	(7 ft 2 in)
Maximum ground clearance	0,35 m	(1 ft 1 in)	0,35 m	(1 ft 1 in)
Transport height	2,25 m	(7 ft 4 in)	2,25 m	(7 ft 4 in)
Transport length	5,30 m	(17 ft 4 in)	5,80 m	(19 ft 0 in)
Maximum work height	16,00 m	(52 ft 5 in)	17,30 m	(56 ft 9 in)
Maximum platform height	14,00 m	(45 ft 11 in)	15,30 m	(50 ft 2 in)
Maximum shift	9,10 m	(29 ft 10 in)	10,60 m	(34 ft 9 in)
Maximum radius	8,60 m	(28 ft 2 in)	10,00 m	(32 ft 9 in)
Turntable rotation	350°			
Boom rotation angle	+75° / -0°			
Vertical jib rotation	+70° / -70°			
Platform length	0,80 m	(2 ft 7 in)	0,80 m	(2 ft 7 in)
Platform width	1,80 m	(5 ft 10 in)	1,80 m	(5 ft 10 in)
Platform rotation angle	+90° / -90°			
Outside turning radius (without axle chocking retracted)	9,30 m	(30 ft 6 in)	9,30 m	(30 ft 6 in)
Inner turning radius (retracted axles)	3,55 m	(11 ft 7 in)	3,55 m	(11 ft 7 in)
Lateral distance between the wheels	2,00 m	(6 ft 6 in)	2,00 m	(6 ft 6 in)
Tilt	5°			
Maximum authorized wind speed	45 km/h	(28 mph)	45 km/h	(28 mph)
Front axle load	2700 kg	(5952 lb)	. kg	(. lb)
Rear axle load	3900 kg	(8598 lb)	. kg	(. lb)
Total weight	6600 kg	(14550 lb)	7500 kg	(16534 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
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	2309 g/kWh			
Sound level at 10 m (32 ft 9 in)	75 dB (A)			
Vibration in the hands	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Vibration in the feet	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Capacity of the fuel tank	55 l	(14 gal US)	55 l	(14 gal US)
Capacity of the hydraulic tank	100 l	(26 gal US)	100 l	(26 gal US)
Starter battery	12 V-95 Ah			
Differential blocking	Yes			
Maximum slope which can be climbed	40%			
Type of tyres	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)

G - Technical characteristics

Machine	HA16SPX (HA46SJRT)		HA18SPX (HA51SJRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Maximum pressure on hard ground	10,1 bar	(146 psi)	13 bar	(188 psi)
Maximum pressure on soft ground	3 bar	(43 psi)	3,5 bar	(50 psi)
Micro-speed drive	0,7 km/h	(0,4 mph)	0,7 km/h	(0,4 mph)
Low-speed driving	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)
Fast driving	5,5 km/h	(3,4 mph)	5,5 km/h	(3,4 mph)

G - Technical characteristics

Technical characteristics - For HA20PX (HA61JRT) - HA260PX (HA80JRT)

Machine	HA20PX (HA61JRT)		HA260PX (HA80JRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Length of machine in stowed position	8,92 m	(29 ft 3 in)	12,00 m	(39 ft 4 in)
Width of the machine in stowed position	2,38 m	(7 ft 9 in)	2,38 m	(7 ft 9 in)
Machine height	2,67 m	(8 ft 9 in)	2,67 m	(8 ft 9 in)
Maximum ground clearance	0,42 m	(1 ft 4 in)	0,42 m	(1 ft 4 in)
Transport height	3,10 m	(10 ft 2 in)	3,20 m	(10 ft 6 in)
Transport length	6,80 m	(22 ft 3 in)	9,50 m	(31 ft 2 in)
Maximum work height	20,65 m	(67 ft 9 in)	25,60 m	(83 ft 11 in)
Maximum platform height	18,65 m	(21 ft 2 in)	23,60 m	(77 ft 5 in)
Maximum shift	14,00 m	(45 ft 11 in)	15,70 m	(51 ft 6 in)
Maximum radius	13,50 m	(44 ft 3 in)	15,70 m	(51 ft 6 in)
Turntable rotation	360°Continue			
Boom rotation angle	+75° / -0°			
Vertical jib rotation	+70° / -70°			
Platform length	0,80 m	(2 ft 7 in)	0,80 m	(2 ft 7 in)
Platform width	1,80 m	(5 ft 10 in)	1,80 m	(5 ft 10 in)
Platform rotation angle	+90° / -90°			
Outside turning radius (without axle chocking retracted)	3,90 m	(12 ft 9 in)	3,90 m	(12 ft 9 in)
Inner turning radius (retracted axles)	. m	(. ft . in)	. m	(. ft . in)
Lateral distance between the wheels	2,80 m	(9 ft 2 in)	2,80 m	(9 ft 2 in)
Tilt	5°			
Maximum authorized wind speed	45 km/h	(28 mph)	45 km/h	(28 mph)
Front axle load	. kg	(. lb)	9110 kg	(20084 lb)
Rear axle load	. kg	(. lb)	6840 kg	(15079 lb)
Total weight	11710 kg	(25816 lb)	15950 kg	(35164 lb)
Maximum platform load	230 kg	(507 lb)	230 kg	(507 lb)
Engine type	Diesel - Deutz F4L2011			
Engine power	42 kW	(57,1 Hp)	42 kW	(57,1 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 ft 9 in)	73,9 dB (A)			
Vibration in the hands	<2,5 m/s²	(98,4 in/s²)	<2,5 m/s²	(98,4 in/s²)
Vibration in the feet	<0,5 m/s²	(19,6 in/s²)	<0,5 m/s²	(19,6 in/s²)
Capacity of the fuel tank	150 l	(33 gal US)	150 l	(33 gal US)
Capacity of the hydraulic tank	150 l	(33 gal US)	150 l	(33 gal US)
Starter battery	12 V-95 Ah			
Differential blocking	Yes			
Maximum slope which can be climbed	40%			
Type of tyres	Foam-filled-385/65D22,5			
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)

G - Technical characteristics

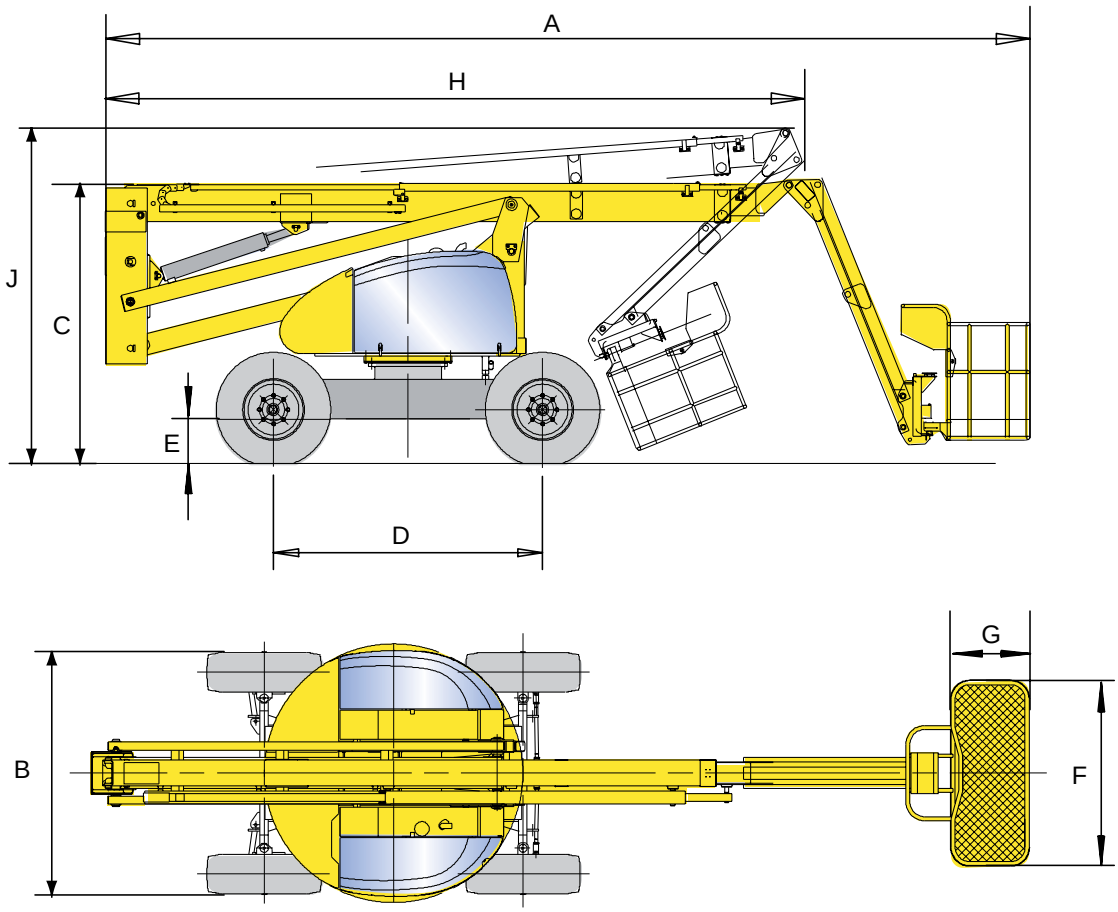
Machine	HA20PX (HA61JRT)		HA260PX (HA80JRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Maximum pressure on hard ground	12 bar	(174 psi)	13 bar	(188 psi)
Maximum pressure on soft ground	6 bar	(87 psi)	6,2 bar	(90 psi)
Micro-speed drive	0,5 km/h	(0,3 mph)	0,5 km/h	(0,3 mph)
Low-speed driving	4 km/h	(0,6 mph)	4 km/h	(0,6 mph)
Medium-speed driving	2 km/h	(1,2 mph)	2 km/h	(1,2 mph)
Fast driving	4,5 km/h	(2,7 mph)	4,5 km/h	(2,7 mph)

Technical characteristics - For LPG HA16PX (HA46JRT) - HA18PX (HA51JRT)

Machine	HA16PX (HA46JRT)		HA18PX (HA51JRT)	
Characteristics	International system	Imperial system	International system	Imperial system
Petrol / gas engine	PSI OPU-9T CPLG-PHSG-ZDFS			
Engine power	23 kW 2400 tr/mn	(31 Hp) 2400 rpm	23 kW 2400 tr/mn	(31 Hp) 2400 rpm
Engine power when idle	From 1200 tr/mn to 2400 tr/mn			
Sound level at 10 m (32 ft 9 in) Petrol supply	<104 dB (A)			
Capacity of the fuel tank	72 l	(19 gal US)	72 l	(19 gal US)

2 - Overall dimensions

General diagram HA12PX (HA33JRT) - HA16PX (HA46JRT) - HA18PX (HA51JRT) - HA16SPX (HA46SJRT) - HA18SPX (HA51SJRT) - HA20PX (HA61JRT) - HA260PX (HA80JRT)



G - Technical characteristics

Overall dimension specifications

Marking	HA12PX (HA33JRT)	
	Mètre	Feet inch
A	5,50	18-0
B	1,85	6-0
C	2,15	7-0
D	1,64	5-4
E	0,29	0-11
F x G	1,20/1,50 x 0,80	4-11 / 2-7 x 3-11
H	*	*
J	*	*

Overall dimension specifications

Marking	HA16PX (HA46JRT)		HA18PX (HA51JRT)	
	Mètre	Feet inch	Mètre	Feet inch
A	6,95	22-9	7,60	24-11
B	2,30	7-6	2,30	7-6
C	2,20	7-2	2,20	7-2
D	2,00	6-6	2,00	6-6
E	0,40	1-3	0,40	1-3
F x G	1,80/2,30 x 0,80	5-10/7-6 x 2-7	1,80/2,30 x 0,80	5-10/7-6 x 2-7
H	5,25	17-2	5,90	19-4
J	2,15	7-0	2,15	7-0

Overall dimension specifications

Marking	HA16SPX (HA46SJRT)		HA18SPX (HA51SJRT)	
	Mètre	Feet inch	Mètre	Feet inch
A	6,80	22-3	7,50	24-7
B	2,30	7-6	2,30	7-6
C	2,20	7-2	2,20	7-2
D	2,00	6-6	2,00	6-6
E	0,35	1-1	0,35	1-1
F x G	1,80 x 0,80	5-10 x 2-7	1,80 x 0,80	5-10 x 2-7
H	5,90	19-4	5,80	19-0
J	2,25	7-4	2,25	7-4

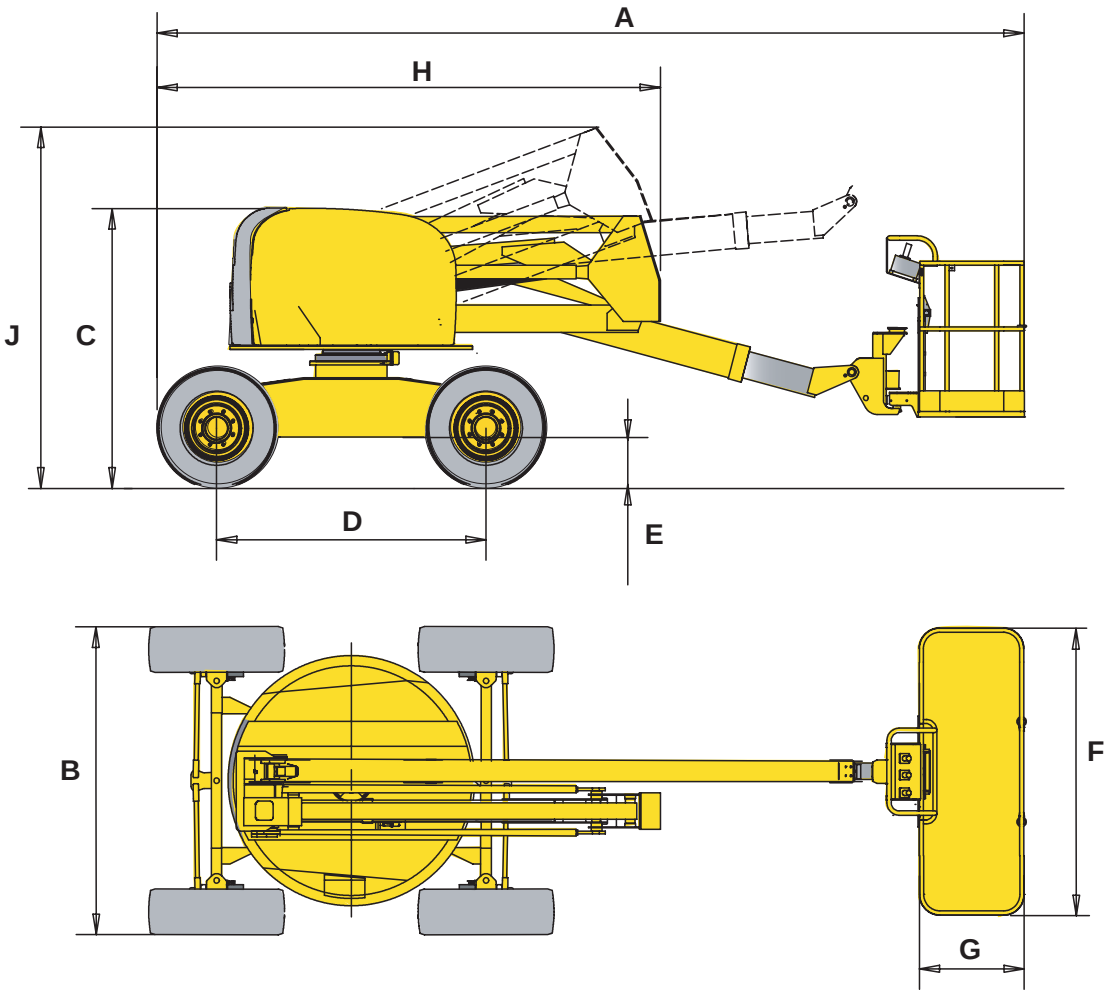
G - Technical characteristics

Overall dimension specifications

Marking	HA20PX (HA61JRT)		HA260PX (HA80JRT)	
	Mètre	Feet inch	Mètre	Feet inch
A	8,92	29-3	12,00	39-4
B	2,38	7-9	2,38	7-9
C	2,67	8-9	2,67	8-9
D	2,80	9-2	2,80	9-2
E	0,42	1-4	0,42	1-4
F x G	1,80 x 0,80	5-10 x 2-7	1,80 x 0,80	5-10 x 2-7
H	6,80	22-3	9,50	31-2
J	3,10	10-2	3,20	10-6

G - Technical characteristics

General diagram HA16X



G - Technical characteristics

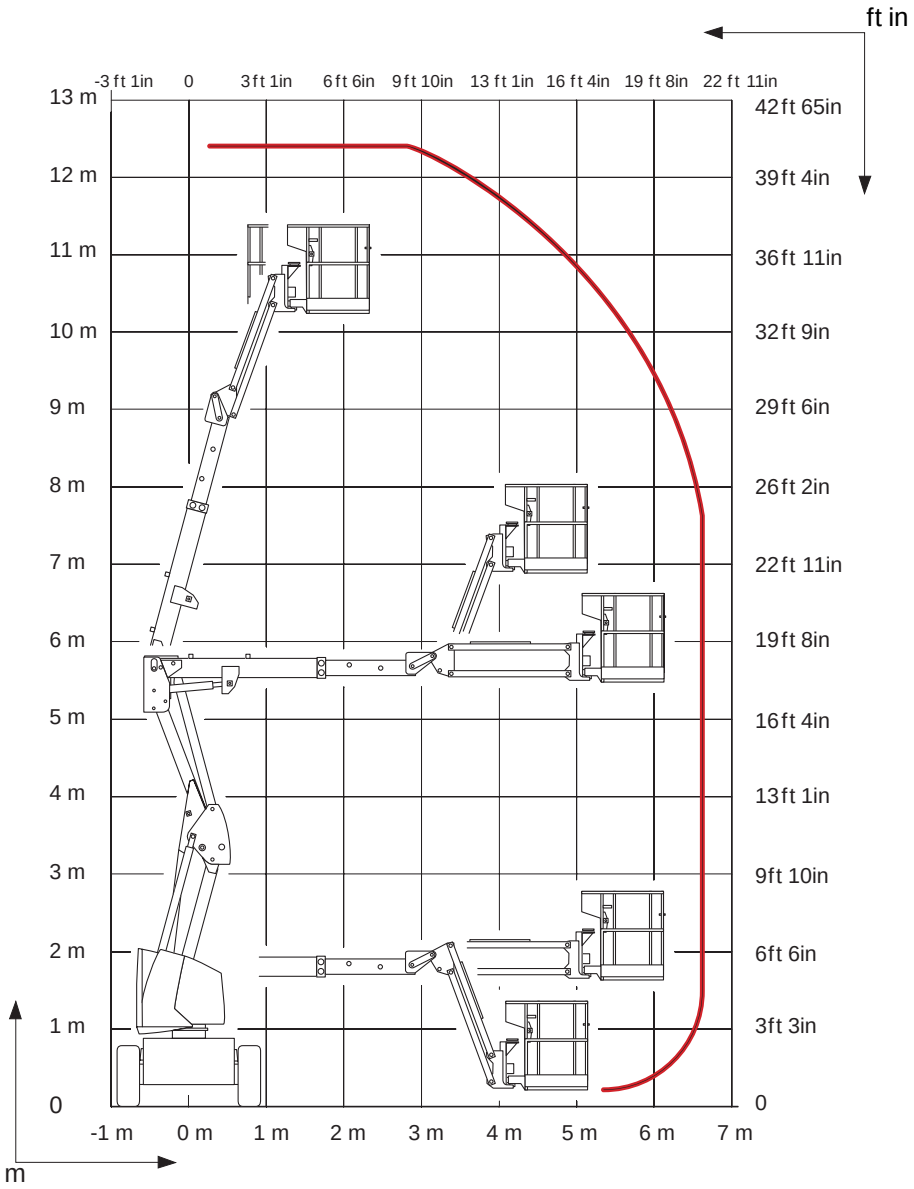
Overall dimension specifications

Marking	HA16X	
	Mètre	Feet inch
A	7,60	24-11
B	2,26	7-5
C	2,08	6-9
D	2,00	6-6
E	0,35	1-1
F x G	1,80/2,30 x 0,80	5-10/7-6 x 2-7
H	6,70	21-11
J	2,26	7-5

3 - Working area

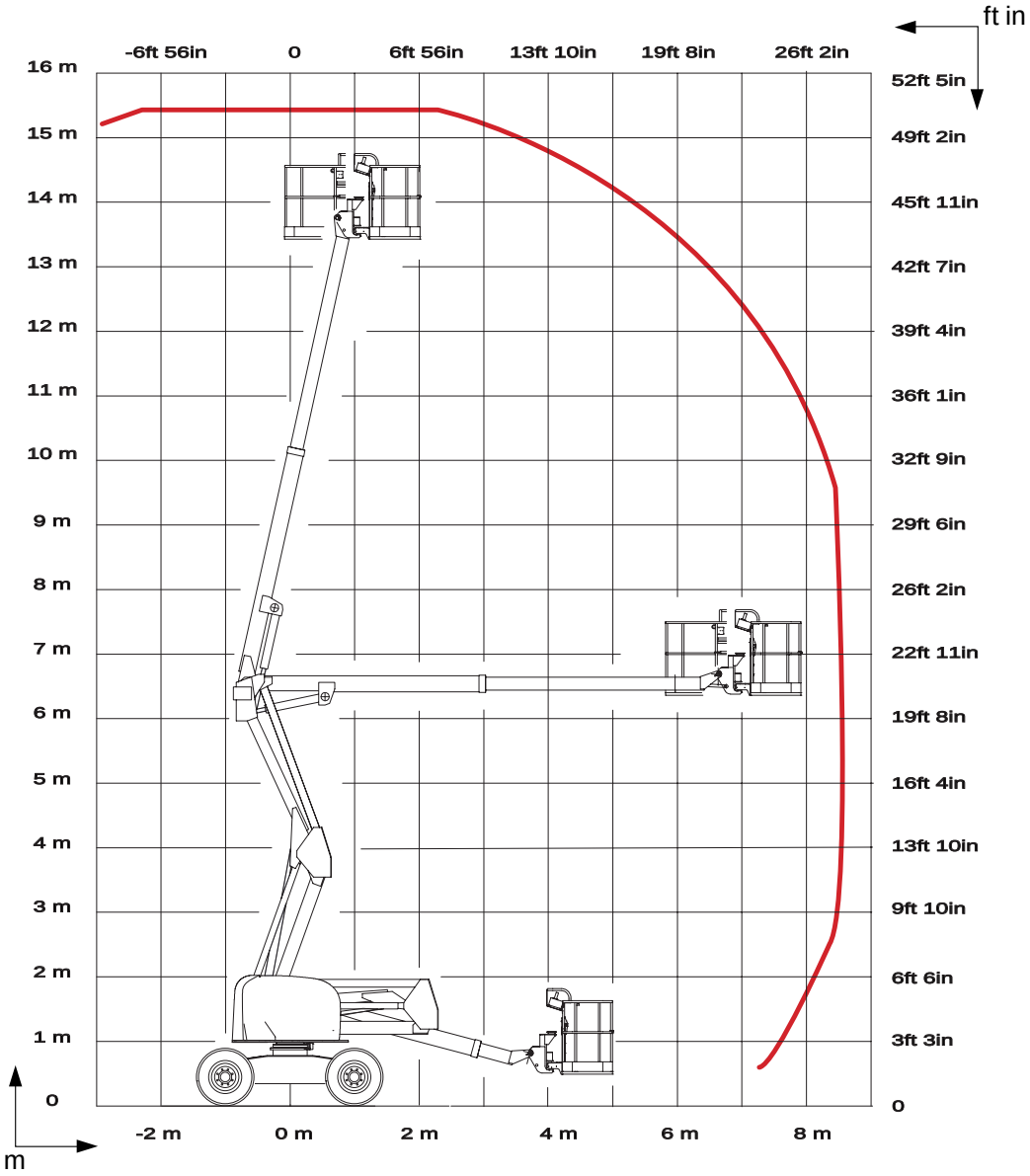
3.1 - MACHINE HA12PX (HA33JRT)

Working area



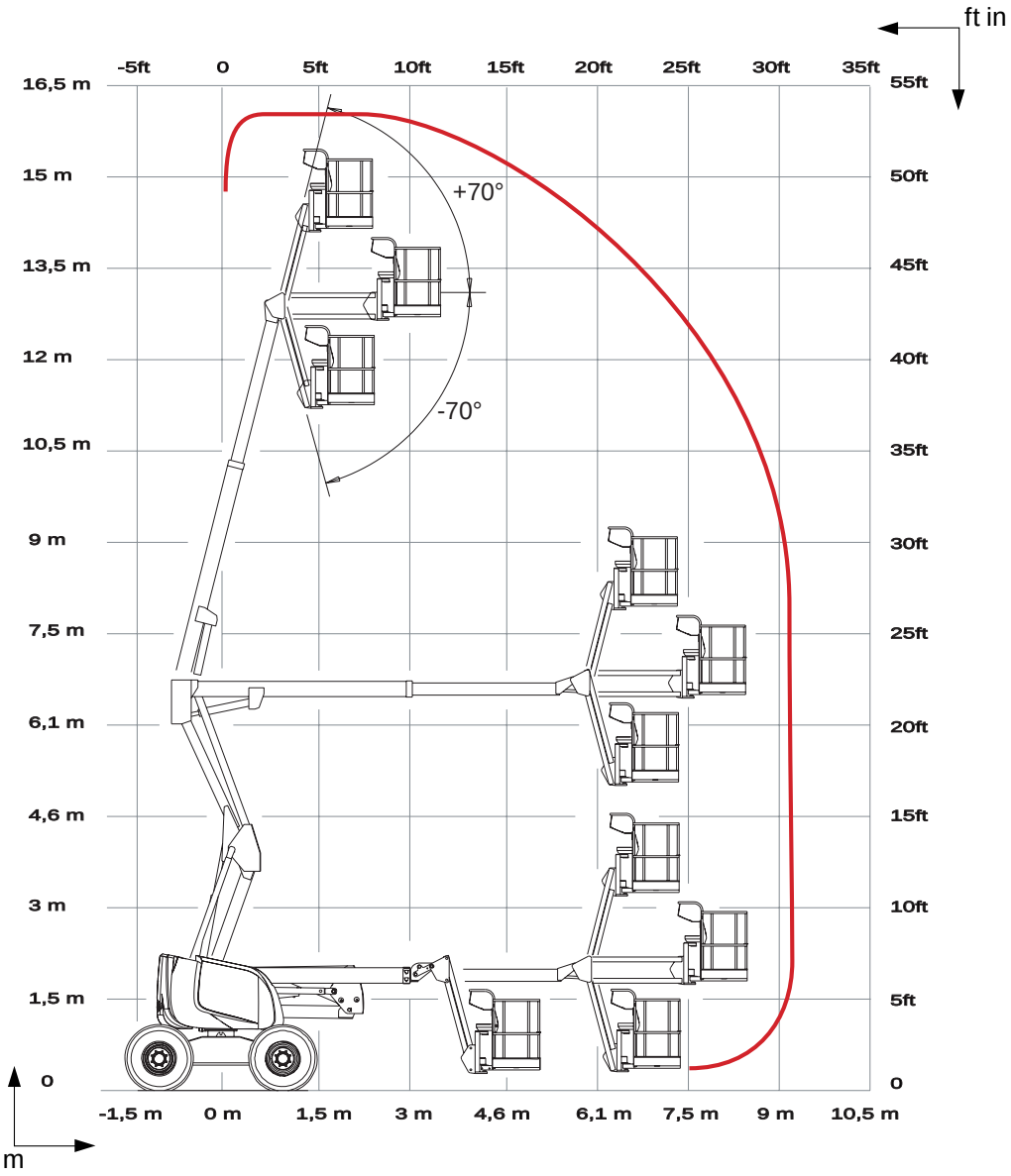
3.2 - MACHINE HA16X

Working area



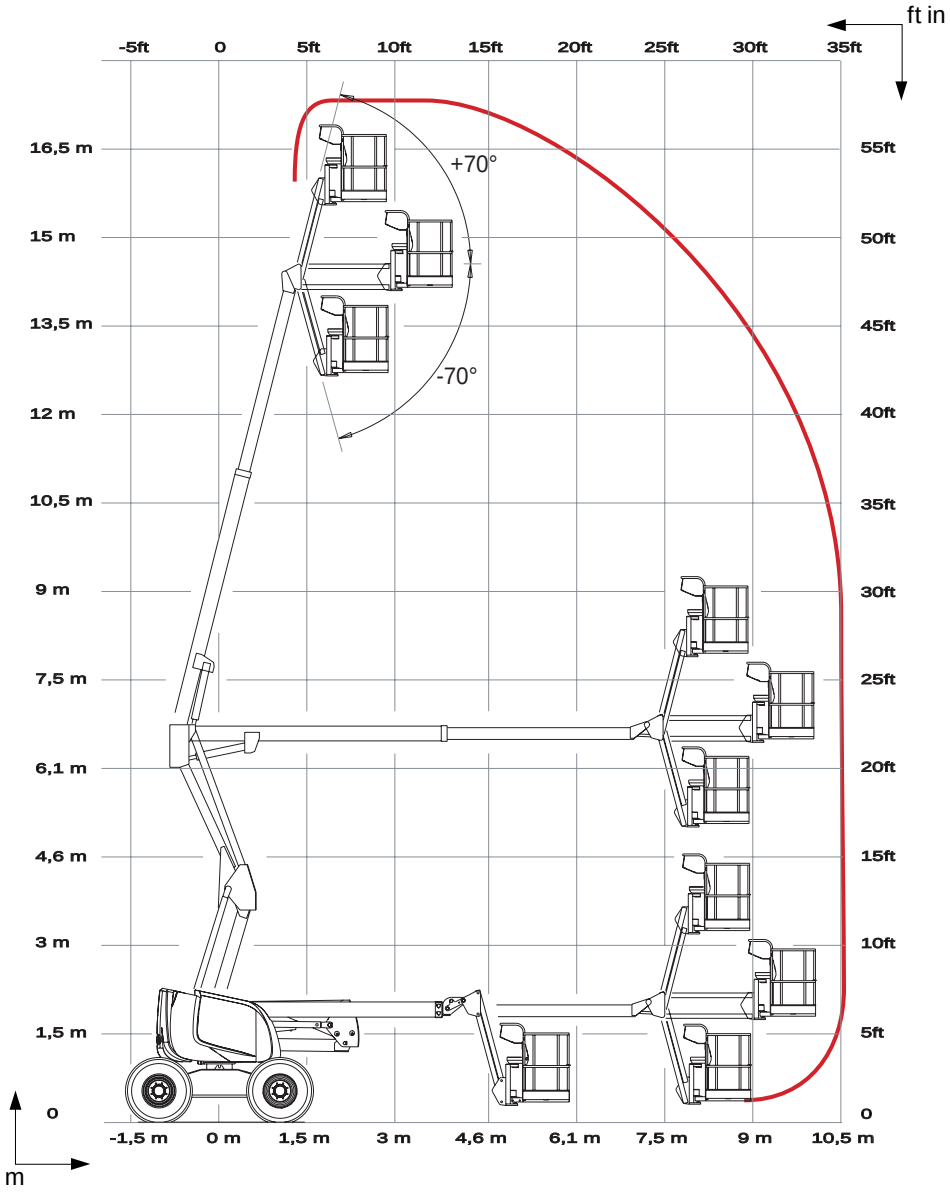
3.3 - MACHINE HA16PX (HA46JRT)

Working area



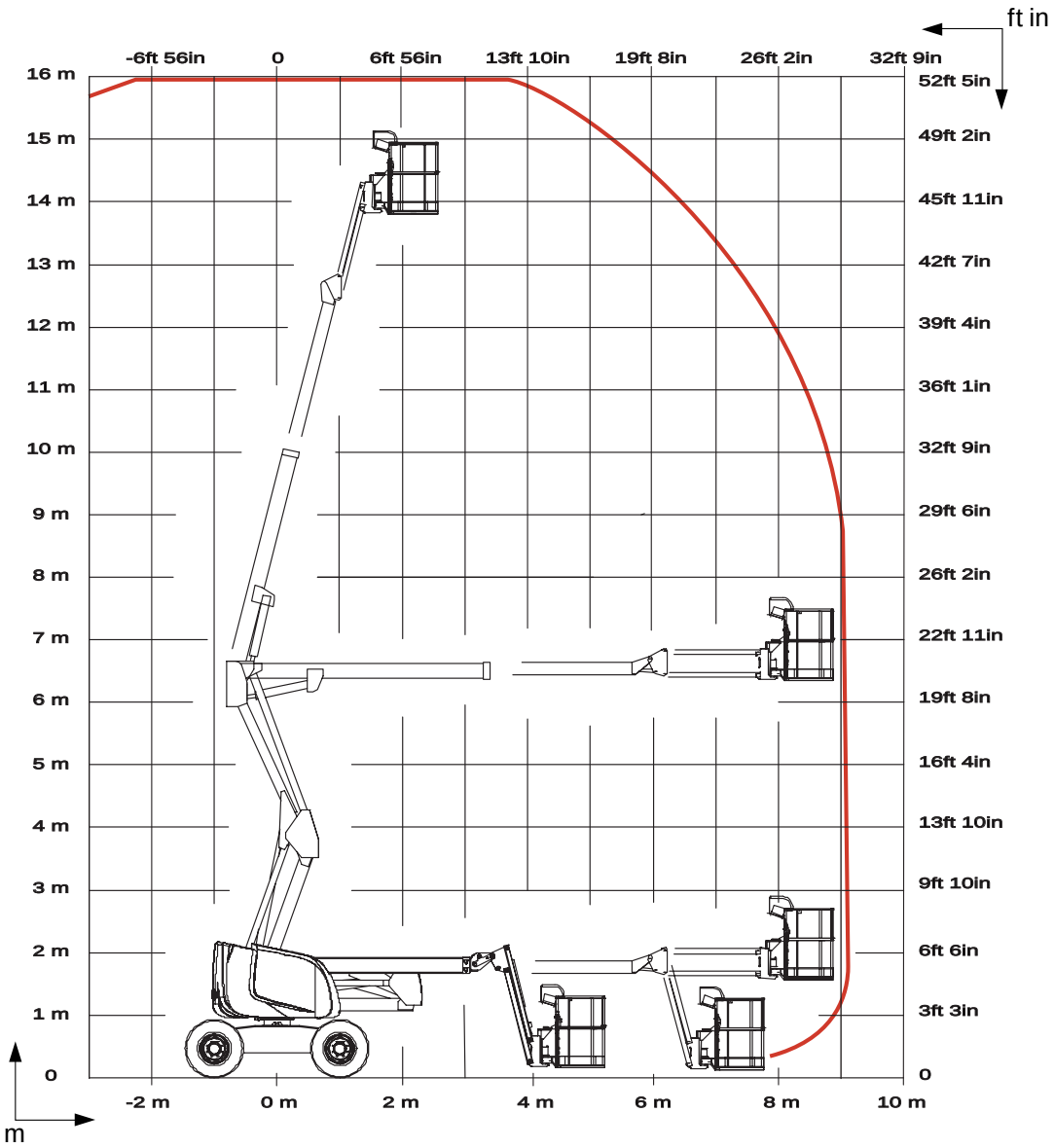
3.4 - MACHINE HA18PX (HA51JRT)

Working area



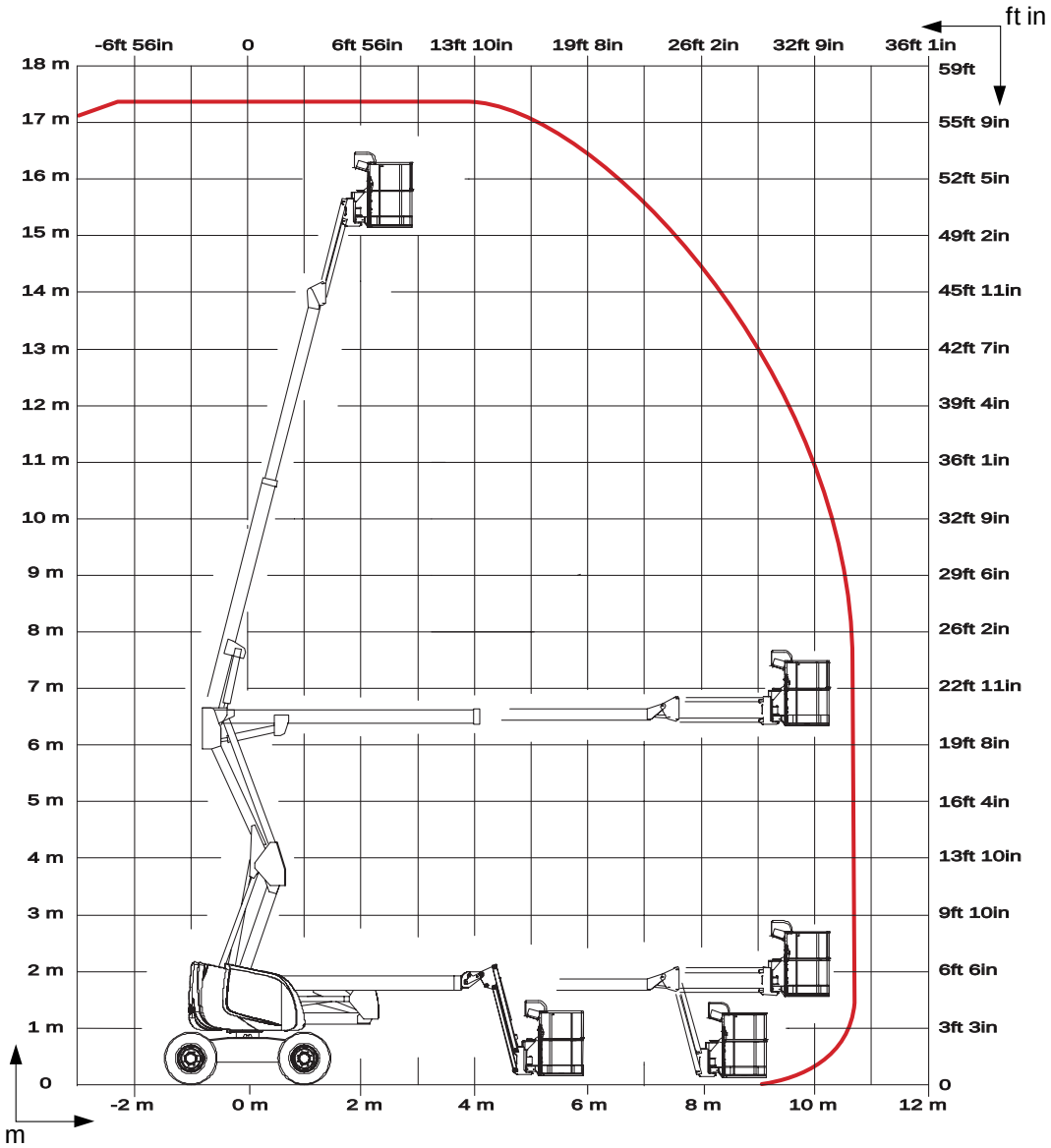
3.5 - MACHINE HA16SPX (HA46SJRT)

Working area



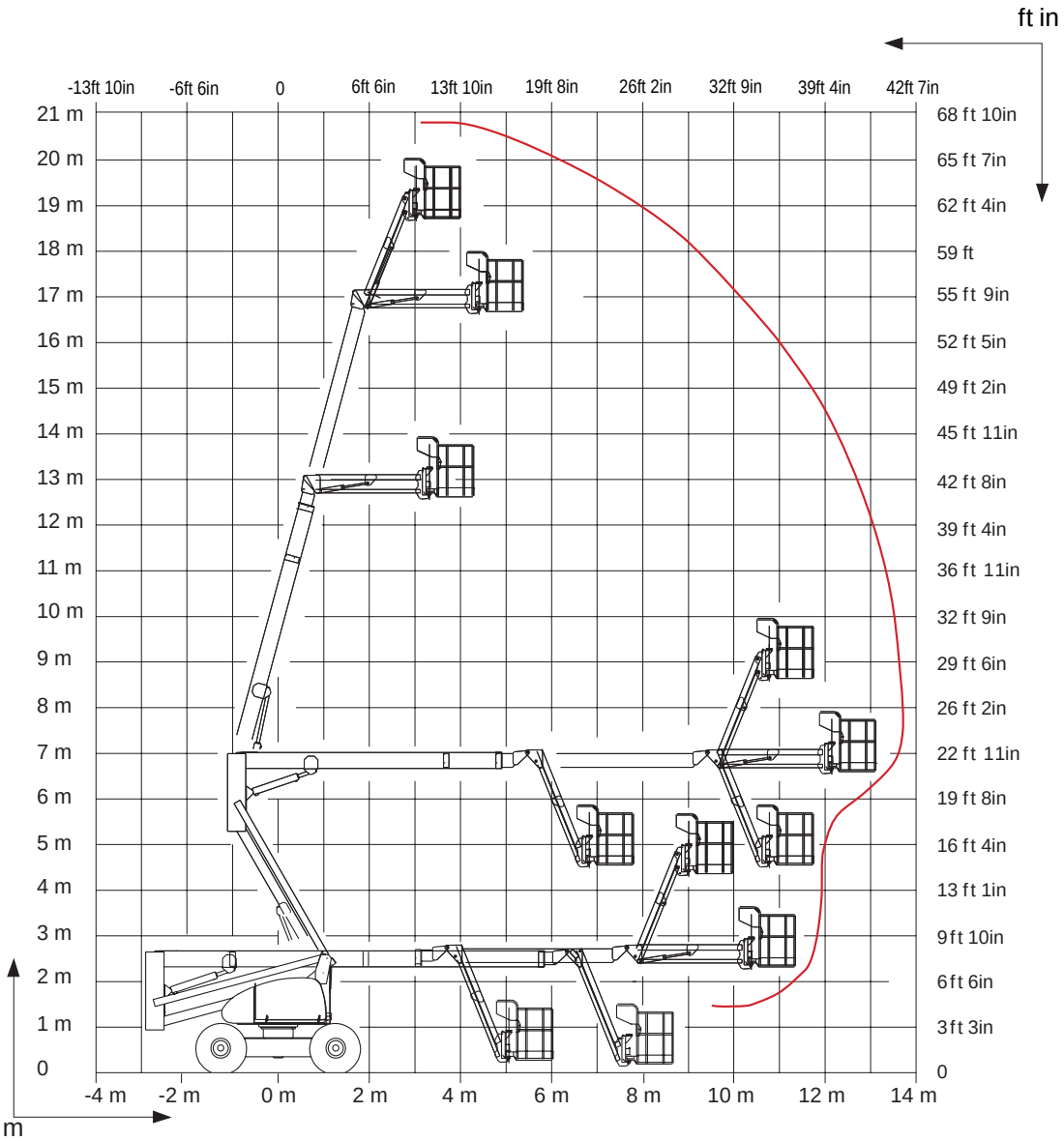
3.6 - MACHINE HA18SPX (HA51SJRT)

Working area



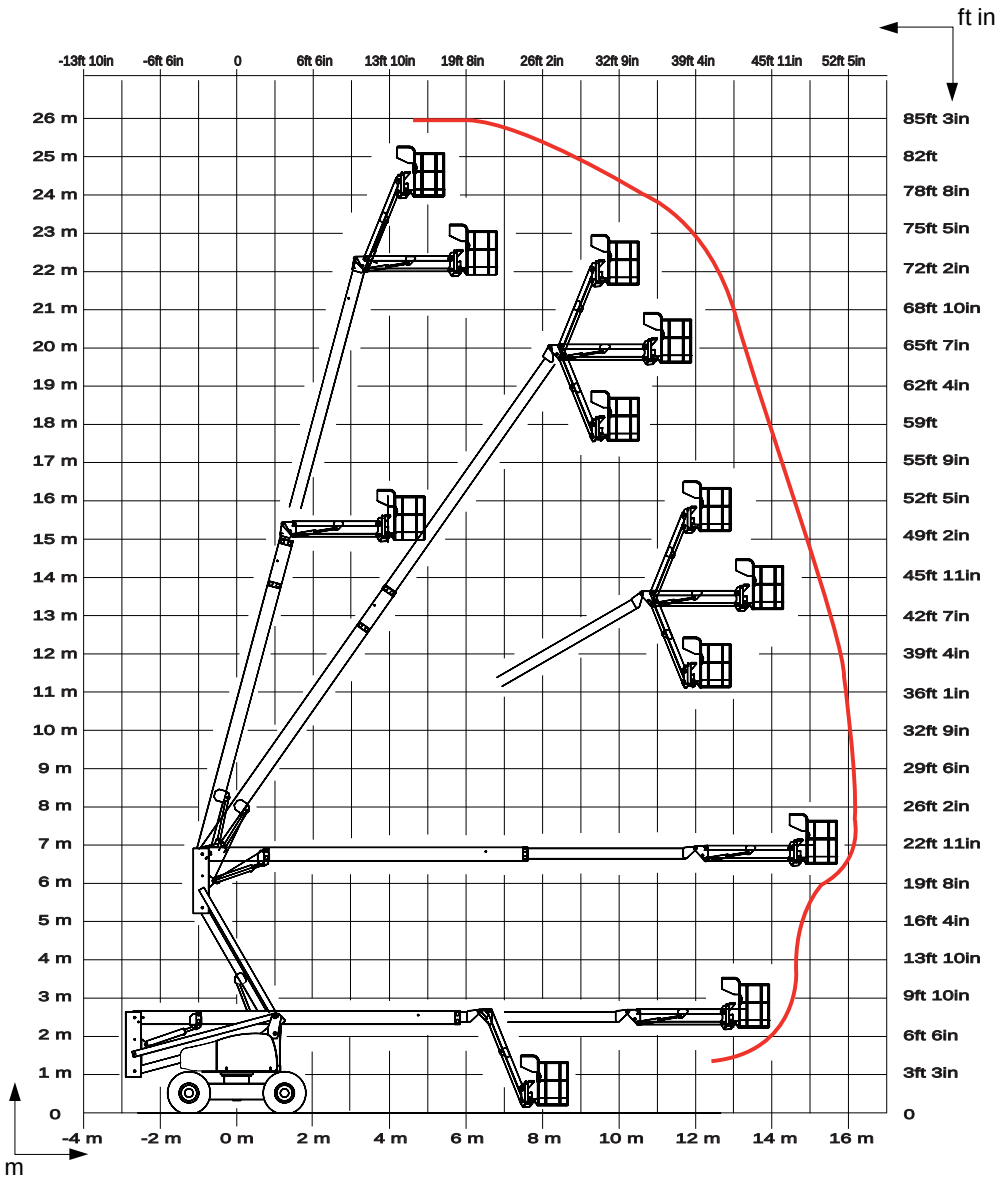
3.7 - MACHINE HA20PX (HA61JRT)

Working area



3.8 - MACHINE HA260PX (HA80JRT)

Working area



4 - ANSI standard specificities

The following tests must be performed after :

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

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

• The results must be fully recorded.

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

4.1 - OVERLOAD TEST

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

Load table

Machine	Test load	
	Pound (lb)	Kilogramme (kg)
HA12PX (HA33JRT)	633,8	287,5
HA16X	633,8	287,5
HA16PX (HA46JRT)	633,8	287,5
HA18PX (HA51JRT)	633,8	287,5
HA16SPX (HA46SJRT)	633,8	287,5
HA18SPX (HA51SJRT)	633,8	287,5
HA20PX (HA61JRT)	633,8	287,5
HA20PX (HA61JRT)-Option	688,9	312,5
HA260PX (HA80JRT)	633,8	287,5

The machine must not show any signs of permanent distortion.

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

4.2 - OPERATIONAL TEST

Operational tests have proved the following facts :

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

4.3 - STABILITY TEST

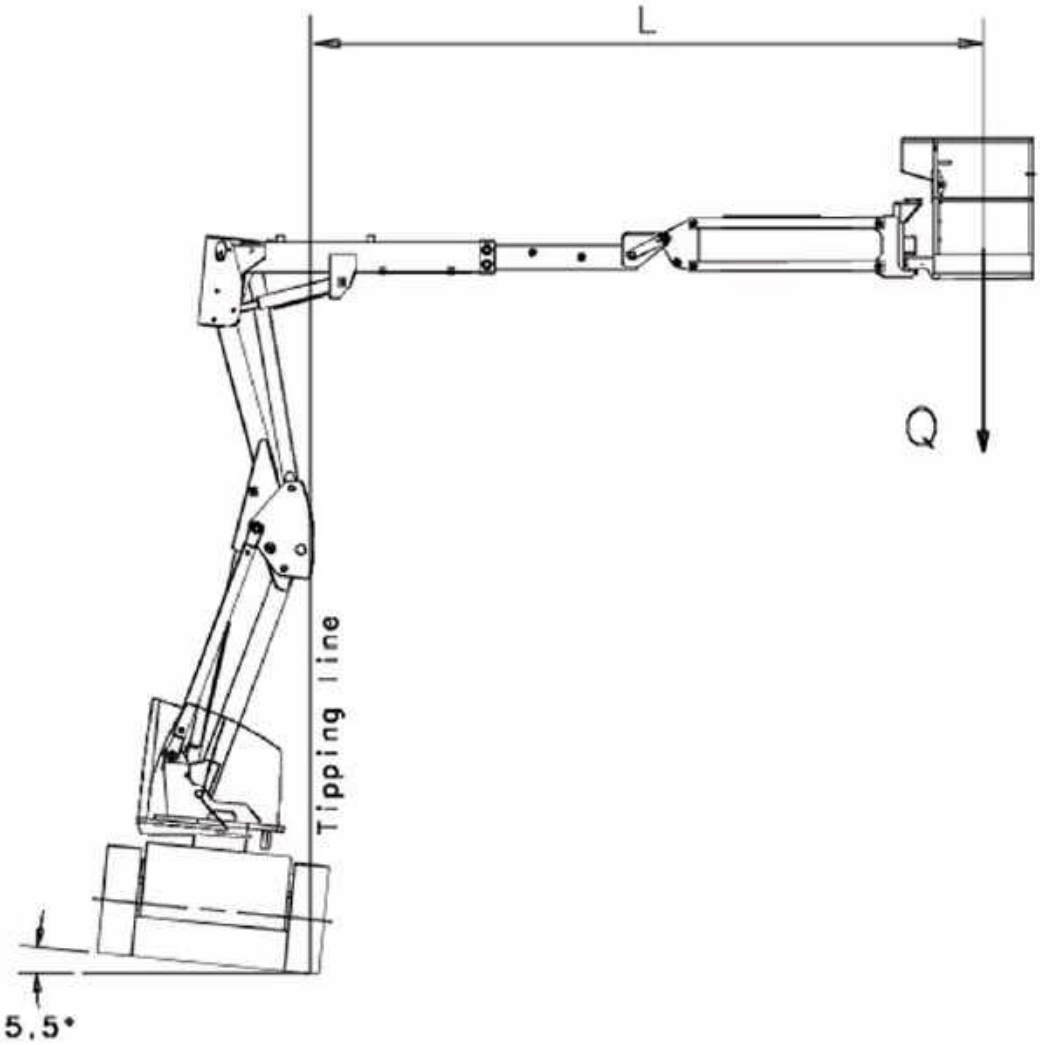
The stability test proves that the machine is stable in an unfavourable position. The moment when the machine tips is calculated by combining loads in the most unfavorable position for the machine (load W applied over distance L).

Stability table for HA12PX (HA33JRT)

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1) -2,30 m (7 ft 6 in) x 0,80 m (2 ft 7 in) -45 km/h (27,9 mph)	5,5	826,7	375	23-8	7,225	1993,6	2703
Horizontal (1) -1,20 m (3 ft 11 in) x 0,80 m (2 ft 7 in) -60 km/h (37,2 mph)	5,5	859,8	390	17-9	5,417	1557,7	2112

G - Technical characteristics

Stability for HA12PX (HA33JRT)

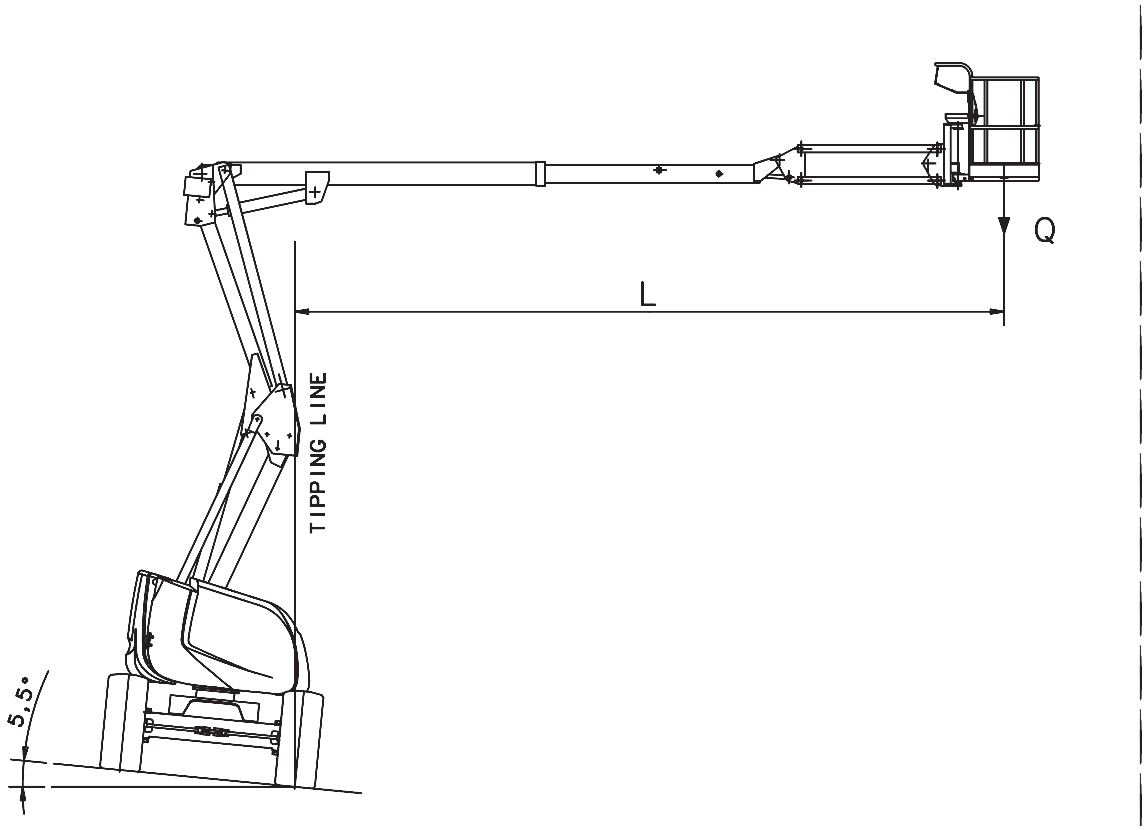


G - Technical characteristics

Stability table for HA16PX (HA46JRT)

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)- 1,80 m (5 ft 10 in) x 0,80 m (2 ft 7 in) -60 km/h (37,2 mph)	5,5	855,3	388	25-7	7,82	2238,5	3035
Horizontal (1)- 2,30 m (3 ft 11 in) x 0,80 m (2 ft 7 in) -45 km/h (27,9 mph)	5,5	782,6	355	25-7	7,82	2042,3	2769

Stability for HA16PX (HA46JRT)

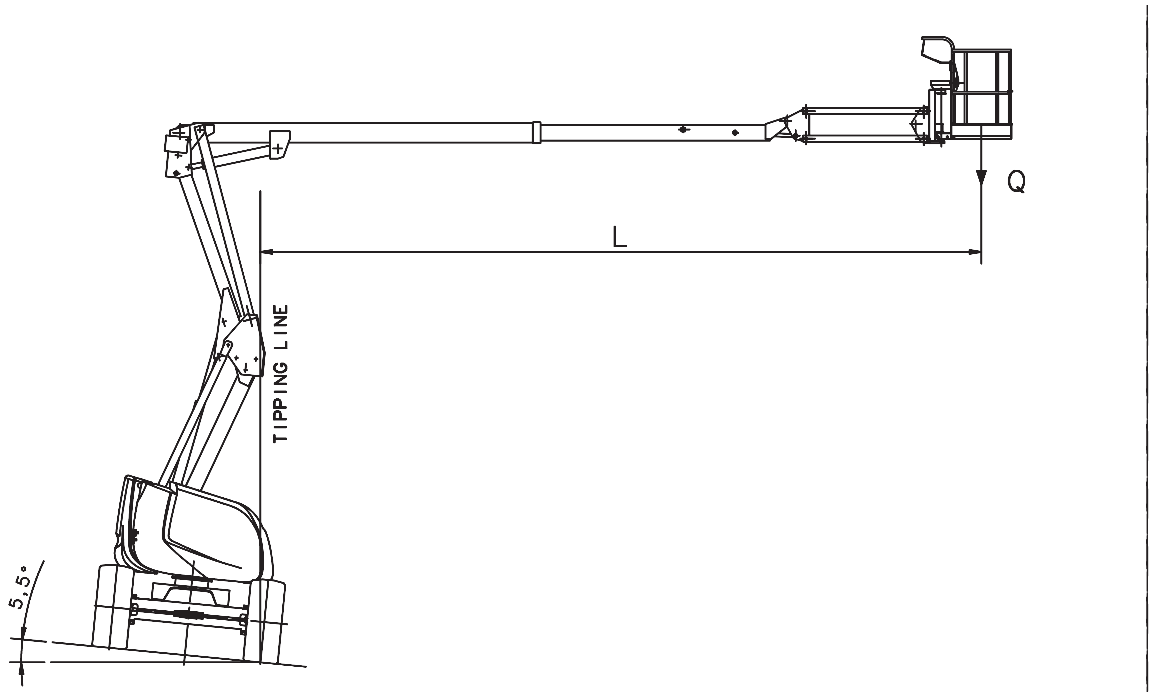


G - Technical characteristics

Stability table for HA18PX (HA51JRT)

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)-1,80 m (5 ft 10 in) x 0,80 m (2 ft 7 in) - 60 km/h (37,2 mph)	5,5	751,7	341	30-2	9,20	2310,7	3133
Horizontal (1)-2,30 m (3 ft 11 in) x 0,80 m (2 ft 7 in) - 45 km/h (27,9 mph)	5,5	815,7	370	30-2	9,20	2506,2	3398

Stability for HA18PX (HA51JRT)

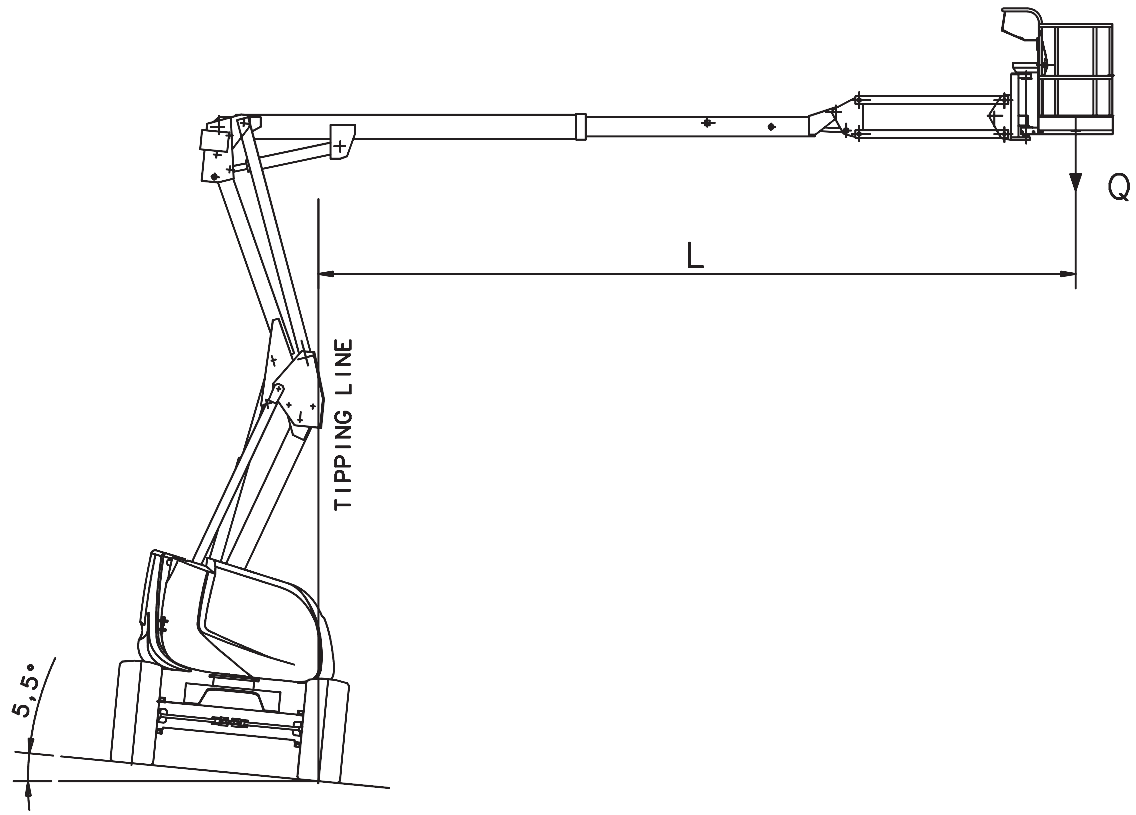


G - Technical characteristics

Stability table for HA20PX (HA61JRT)

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)	5,5	762,7	346	41-4	12,60	32218,1	43682
Horizontal (1)-250 kg (551 lb) -60 km/h (37,2 mph)	5,5	846,5	384	41-4	12,60	35004,6	47460

Stability for HA20PX (HA61JRT)

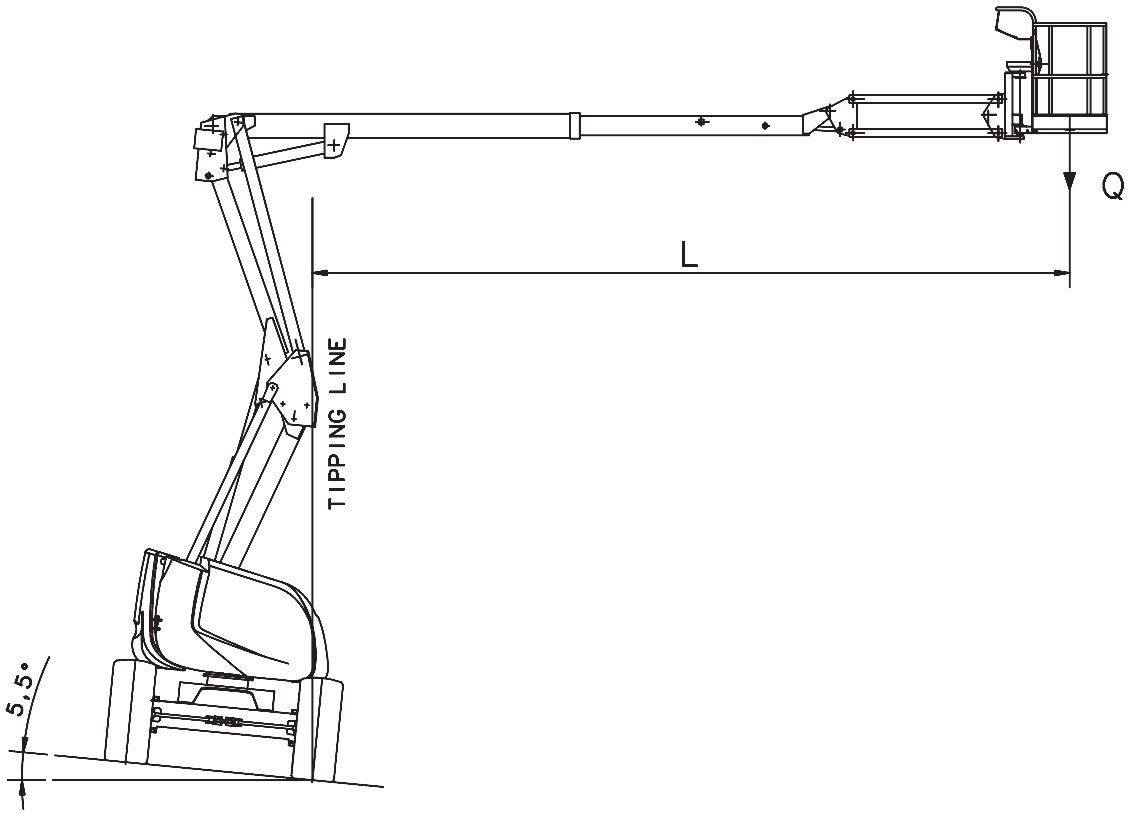


G - Technical characteristics

Stability table for HA260PX (HA80SJRT)

	T (°)	W		L		Moment of tipping over	
		Pound (lb)	Kilogramme (kg)	Feet inch (ft in)	Mètre (m)	Feet Pound (ft.lb)	Mètre Newton (mN)
Horizontal (1)	5,5	749,5	340	49-2	14,99	36773,3	49858

Stability for HA260PX (HA80SJRT)



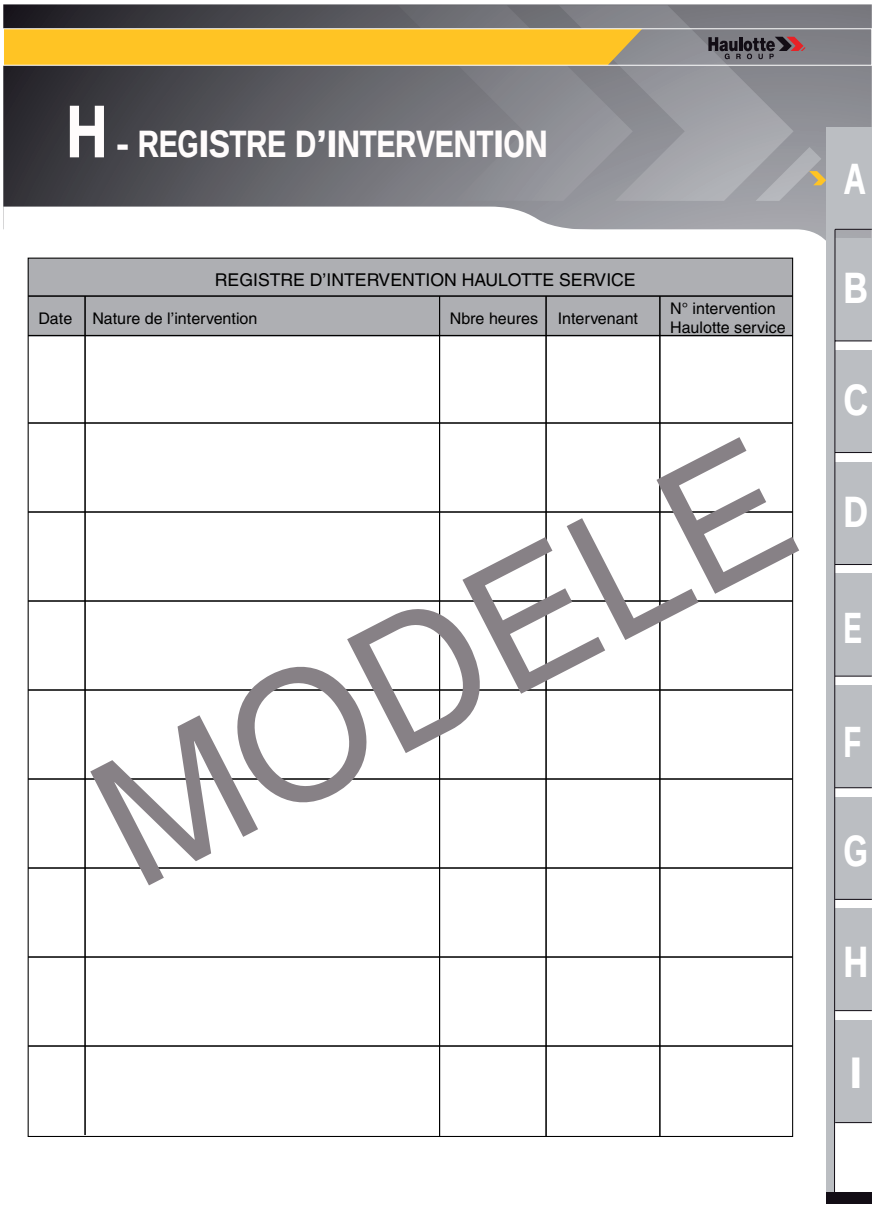
See paragraph 1.12.2 of standard AS1418.10-1996 for test details.

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

1 - Intervention log

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

Intervention log



H - REGISTRE D'INTERVENTION

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

H - Intervention log