

STAR 10 - STAR 26J

MAINTENANCE BOOK

STAR 10 - STAR 26J

4001180330

E 10.22

USA / GB



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B - Safety

1 - General safety rules

1.1 - MAINTENANCE IMPLEMENTATION

Your safety and the safety of the people around are essential.

Make sure the work area is clean in order to not to pollute the system of the machine.

Before performing any maintenance interventions, place the machine in maintenance configuration.

1. Place the machine on firm, level ground.
2. Stow the machine completely.
3. Push the E-stop button to cut off the electricity supply.

Never leave the hydraulic cylinders fully extended before switching off the machine, or when stationary for an extended period of time. Keep the elements of the machine in configuration of maintenance thanks to mechanics devices.

Report that the machine is under maintenance by tagging the platform and ground control boxes.

Note :

- Using the machine during maintenance is strictly forbidden.
- Do not climb onto the covers.
- The handling of parts must be carried out using appropriate equipment (Chains, Lifting slings, Lifting anchors).
- Plug the end of any hoses removed, and cap any open ports to prevent contamination during maintenance.

1. Pull the E-stop button.

1.2 - UNCONTROLLED MOVEMENT HAZARD

Be aware of uncontrolled movement and always respect the following :

- Maintain clearance from high voltage lines.
- Maintain clearance from generators, radar, electromagnetic fields.
- Never expose the batteries or electrical components to water (high pressure washer, rain).
- Never tow the machine over extended distances.
- In case of a machine breakdown, it is possible to tow short distance to load it onto a trailer.
- Never leave the hydraulic cylinders fully extended before switching off the machine, or when stationary for an extended period of time.
- Fold the machine with the mast fully retracted and lowered and the jib aligned.
- Select a safe parking location, on a firm level surface, clear of obstruction and traffic.
- Ensure all compartments are closed and secured.
- Chock the wheels.

C - Familiarization

Controls and indicators


| Marking | Name | Description | Function |
|---------|-------|---|--|
| 15 | SB801 | E-stop button | Pulled out : E-stop activated |
| | | | Pushed in : E-stop deactivated |
| 92 | SA901 | Control box activation key switch | Move upwards : Platform control box energized |
| | | | Center : De-energizes control system |
| | | | Move downwards : Ground control box energized |
| 105 | | Beacon light ¹ | Move to the right : Flashing light is turned on |
| | | | Move to the left : Flashing light is turned off |
| 127 | SA520 | Mast telescoping selector | Move upwards : Mast lifting |
| | | | Move downwards : Mast retraction |
| 128 | SA250 | Turret rotation switch | Move to the left : Clockwise (CW) rotation |
| | | | Move to the right : Counter clockwise (CCW) rotation |
| 129 | SA620 | Jib raising / lowering switch | Move upwards : Jib raising |
| | | | Move downwards : Jib lowering |
| 253 | CN03 | Diagnostic tool socket | |
| 258 | | Brake release telecommand connection ² | |

1. For machines fitted with








2. For machines fitted with

D - Inspection and maintenance schedule

Preventive Maintenance Level 1 – Every 2 weeks

| Every 2 weeks | Page or associated procedure | Every 2 weeks | OK | NOK | Corrected | Comments |
|---|------------------------------|---|----|-----|-----------|----------|
| Chassis assembly : Wheel, reducer, steering, wheel pivot | | | | | | |
| Check the electrolyte level of the battery/ batteries | |  | | | | |

Preventive Maintenance Level 1 - Every 6 months or 250H

| Every 6 months or 250H | Page or associated procedure | Every 6 months or 250H | OK | NOK | Corrected | Comments |
|--|------------------------------|---|----|-----|-----------|----------|
| Chassis assembly : Wheel, reducer, steering, wheel pivot | | | | | | |
| Grease the steering system | |  | | | | |
| Control steering system | |  | | | | |
| Check that the ground strap is present and in good condition | |  | | | | |
| Slew ring | | | | | | |
| Grease the turntable slew ring | |  | | | | |
| Mast ; Boxes | | | | | | |
| Grease mast | |  | | | | |
| Hydraulic : oils, filters and hoses | | | | | | |
| Check the hydraulic oil level | |  | | | | |
| Platform | | | | | | |
| Tighten the mounting on the platform support, the platform floor and the platform access | |  | | | | |




1 - Warning



- Only an authorised and qualified technician is permitted to work on the machines HAULOTTE®.
- The use of this form implies that its user has been trained on this type of equipment.
- It is important that the person working on the machine is familiar with all of the safety information contained in the user manual.
- Generally speaking, the user must comply with regulatory obligations in force, particularly those relating specifically to working alone, co-activity and manual load handling...
- The user must have all the permits/authorizations required to work (fire permit, etc.) and comply with the specific safety instructions at the intervention site.
- Only risks linked specifically to activities relating to the disassembly and assembly of the machine HAULOTTE® are described in this sheet.

2 - Risk prevention

Means of protection to be used when implementing the range

| | | | |
|---|----------------------|---|--------|
|  | Appropriate workwear |  | Gloves |
|  | Safety shoes | | |

3 - You will need

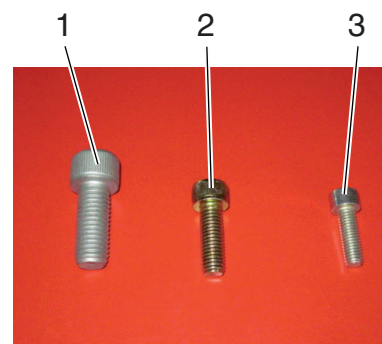
| | | | |
|--|---------------------|---|--|
|  | • Standard tool kit |  | • Place barriers around the perimeter of the work area |
|--|---------------------|---|--|

MS0005

1 - Metric torque chart

For screws HAULOTTE®, use columns (A), (B) and (C) :

- Screw (1) grey dull dry, use colums (A)
- Screw (1) grey dull greasy, use column (B)
- Screw (2) yellow dry, use column (C)
- Screw (2) yellow greasy, use column (B)
- Screw (3) grey bright dry, use column C
- Screw (3) grey bright greasy, use column (B)



| Metric fastener torque chart | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|------|-----------|------|----------------|------|--------------|------|-----------|------|----------------|------|--------------|------|-----------|------|----------------|------|------------|------|--------|------|------------|------|
| This charts is to be used as a guide only unless noted elsewhere in this manual | | | | | | | | | | | | | | | | | | | | | | | | |
| Size (mm) | Class 4.6 | | | | | | Class 8.8 | | | | | | | | | | | | Class 12.9 | | | | | |
| | Dull dry (A) | | Lubed (B) | | Yellow dry (C) | | Dull dry (A) | | Lubed (B) | | Yellow dry (C) | | Dull dry (A) | | Lubed (B) | | Yellow dry (C) | | Dull dry | | Lubed | | Yellow dry | |
| | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm | in-lbs | Nm |
| 5 | 17.7 | 2 | 16 | 1.8 | 21 | 2.4 | 44 | 5 | 41 | 4.63 | 54 | 6.18 | 68 | 7.7 | 58 | 6.63 | 78 | 8.84 | 79 | 9 | 68 | 7.75 | 91 | 10.3 |
| 6 | 30 | 3.4 | 19 | 3.05 | 36 | 4.07 | 80 | 9.1 | 69 | 7.87 | 93 | 10.5 | 118 | 13.4 | 100 | 11.3 | 132 | 15 | 139 | 15.7 | 116 | 13.2 | 155 | 17.6 |
| Size (mm) | Dull dry | | Lubed | | Yellow dry | | Dull dry | | Lubed | | Dry | | Dull dry | | Lubed | | Dry | | Dull dry | | Lubed | | Dry | |
| | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm |
| | 8 | 5.9 | 8 | 5.4 | 7.41 | 7.2 | 9.88 | 16.2 | 22 | 14 | 19.1 | 18.8 | 25.5 | 23.6 | 32 | 20.1 | 27.3 | 26.9 | 36.5 | 28 | 38 | 23.6 | 32 | 31.4 |
| 10 | 12.17 | 16.5 | 10.8 | 14.7 | 14.4 | 19.6 | 32.45 | 44 | 27.9 | 37.8 | 37.2 | 50.5 | 47.2 | 64 | 39.9 | 54.1 | 53.2 | 72.2 | 55 | 75 | 46.7 | 63.3 | 62.3 | 84.4 |
| 12 | 20.65 | 28 | 19.8 | 25.6 | 25.1 | 34.1 | 56 | 76 | 48.6 | 66 | 64.9 | 88 | 81.8 | 111 | 69.7 | 94.5 | 92.2 | 125 | 95.9 | 130 | 81 | 110 | 108 | 147 |
| 14 | 33.19 | 45 | 30.1 | 40.8 | 40 | 54.3 | 89.24 | 121 | 77.4 | 105 | 103 | 140 | 131.28 | 178 | 110 | 150 | 147 | 200 | 154.15 | 209 | 129 | 175 | 172 | 234 |
| 16 | 52.37 | 71 | 46.9 | 63.6 | 62.5 | 84.8 | 139.4 | 189 | 125 | 170 | 166 | 226 | 205.04 | 278 | 173 | 235 | 230 | 313 | 239.7 | 325 | 202 | 274 | 269 | 365 |
| 18 | 72.28 | 98 | 64.5 | 87.5 | 86.2 | 117 | 192.5 | 261 | 171 | 233 | 229 | 311 | 283.2 | 384 | 238 | 323 | 317 | 430 | 331 | 449 | 278 | 377 | 371 | 503 |
| 20 | 102.5 | 139 | 91 | 124 | 121 | 165 | 272.9 | 370 | 243 | 330 | 325 | 441 | 401.2 | 544 | 337 | 458 | 450 | 610 | 469.8 | 637 | 394 | 535 | 525 | 713 |
| 22 | 140.87 | 191 | 124 | 169 | 166 | 225 | 345.4 | 509 | 331 | 450 | 442 | 600 | 551.7 | 748 | 458 | 622 | 612 | 830 | 645.3 | 875 | 536 | 727 | 715 | 970 |
| 24 | 176.27 | 239 | 157 | 214 | 210 | 285 | 469.8 | 637 | 420 | 570 | 562 | 762 | 690.3 | 936 | 583 | 791 | 778 | 1055 | 807.6 | 1095 | 682 | 925 | 909 | 1233 |

1 - You will need



- Standard tool kit
- Protective goggles
- Gloves



- Place barriers around the perimeter of the work area

Exclusively use tools and auxiliary average adapted. Always wear necessary safety clothing.

2 - Preliminary operation

The operations of disassembling if they exist should be carried out only on the installations completely disconnected and must be entrusted only to people having the necessary technical training.

Respect, in addition to the instructions appearing in the present instructions, the legal tendencies generally applicable for safety accident prevention.

All the precautions must be done in work before intervening on and near the machine.

After completion of work, all the covers and safety devices must be positioned back completely and operational.

3 - Control wire rope system

To guarantee a full safety use of the machine , Haulotte recommends respecting the following inspections :

3.1 - DAILY CHECK

- To position the machine on a flat and firm ground.
- To put the machine under tension and select the ground control box.
- Carry out a lifting / lowering cycle.
- To check the synchronization and the symmetry of the movements and the absence of abnormal noises.

If these phenomena occur, carry out a reinforced control (see paragraph below).

1 - You will need

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> • Standard tool kit • Protective goggles • Gloves • Jack • Hoist • Torque wrench | | <ul style="list-style-type: none"> • Place barriers around the perimeter of the work area |
|--|---|--|--|

2 - Preliminary operation

For safety reasons, imperatively respect the following stages during the tests :

- To set up a beaconing of safety around the test area.
- Put the machine in stowed position.

The operations of disassembling if they exist should be carried out only on the installations completely disconnected and must be entrusted only to people having the necessary technical training.

Respect, in addition to the instructions appearing in the present instructions, the legal tendencies generally applicable for safety accident prevention.

All the precautions must be done in work before intervening on and near the machine.

After completion of work, all the covers and safety devices must be positioned back completely and operational.

3 - Technical specifications

| Component | Standard wheel |
|------------------|--------------------------------|
| Reference number | Solideal |
| Type | Solid tires/tyres |
| Drive wheel mass | 18,5 kg - 41 lb |
| Steer wheel mass | 20,6 kg - 45 lb |
| Size | 406 mm / 100 mm (16 in / 4 in) |
| Torque | 115 Nm (84.81 ft lbs) |

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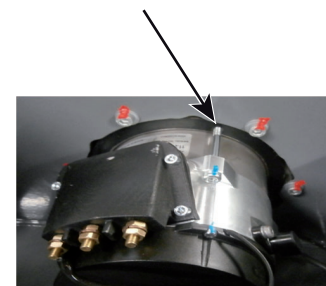
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MS0046

- Sling the gear motor assembly using a 500 kg(1100 lb) sling and a bridge crane.



N.B.-:-IF THE GEAR MOTOR NEEDS TO BE DISMANTLED, UNSCREW THE 4 FASTENING SCREWS.



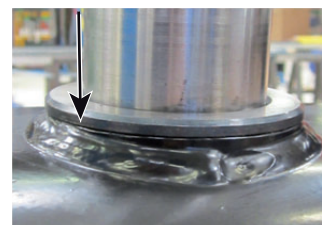
5 - Reinstall

- Reposition the assembly in the notch.
- Push the motor into the highest position.
- Attach the assembly using screws and washers.
- Tighten to the recommended torque : 57 Nm.
- Mark with a pen as shown.
- Reconnect all the U/V/W cables and the 3 connectors.



5.2 - WHEEL STEERING PIVOTS



- Lubricate the shaft of the pivot.
- Apply grease to the 2 sides of the washer.
- Position the washer at the stop.
- Position the chamfer on the top as shown.



- Lubricate the ring on the chassis.
- Lubricate the shaft of the pivot connecting to the steering tie-rod.
- Insert the pivot into its seating.
- Refit the washer and pin on the axle.



1 - You will need

| | | | |
|--|---|---|--|
|  | <ul style="list-style-type: none"> • PPE (Personal Protective Equipment: glove, safety shoes, glasses, etc ...) • Standard tool kit • Strap (Capacity : 500 kg / 1100 lb) • Bridge crane 1000 kg(2200 lb) (minimum) |  | <ul style="list-style-type: none"> • Place barriers around the perimeter of the work area |
|--|---|---|--|

Exclusively use tools and auxiliary average adapted. Always wear necessary safety clothing.

2 - Level of knowledge required

It is important that the person performing the work on the machine knows all the relative safety information contained in the instruction manual.



Only an authorized and qualified technician can work on HAULOTTE® machines.

3 - Safety instructions



- The technician should take all steps to protect themselves or others against all risks of injury related to this intervention.
- The technician should ensure that suitable PPE (personal protective equipment) for the job is used, and check the particular conditions of environment in which the material can be found (see safety information specific to the operation site).
- Position the machine on a flat ground, stabilized and in a released environment.
- Mark out the work area.
- Cut the contact, to remove the key, open the battery cut if fitted.
- Place a "DO NOT USE" decal near the start/stop contactor (key switch) to inform personnel that interventions are currently underway on the equipment.
- The pressure in the hydraulic system is very important. It can cause accidents. Relieve the pressure before any intervention and never search for oil leaks using your hands.
- Attention to the risks of burns, the hydraulic system works at high temperatures.
- The exhaust fumes of the engines contain harmful products of combustion. Only start and run the engine in a well ventilated area. In a closed room, you must use a suitable system to evacuate the exhaust to the outside.

- If not compliant :



Carry out the operations from the ground control box.

Before adjusting the chains, check that the return cables are not tight.

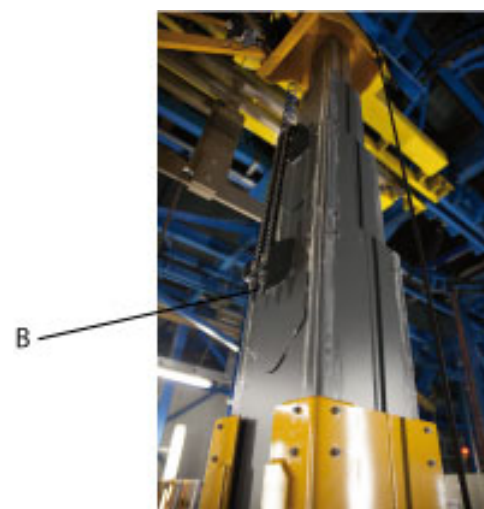
Adjust the chains on tube 1 to adjust the height of tube 2 :

- Screw or unscrew the nuts A located under the machine with a ratchet wrench and a long 24 socket
- Check via the inspection hatch at the foot of the mast located on tube 1 that the chains are not twisted.



Adjust the chains on tube 2 to adjust the height of tube 3 :

- Screw or unscrew the nuts B located on tube 1 with a ratchet wrench and a long 22 socket
- Hold the chain yolks with a 24 flat wrench.



5 - Slack chain detector adjustment procedure

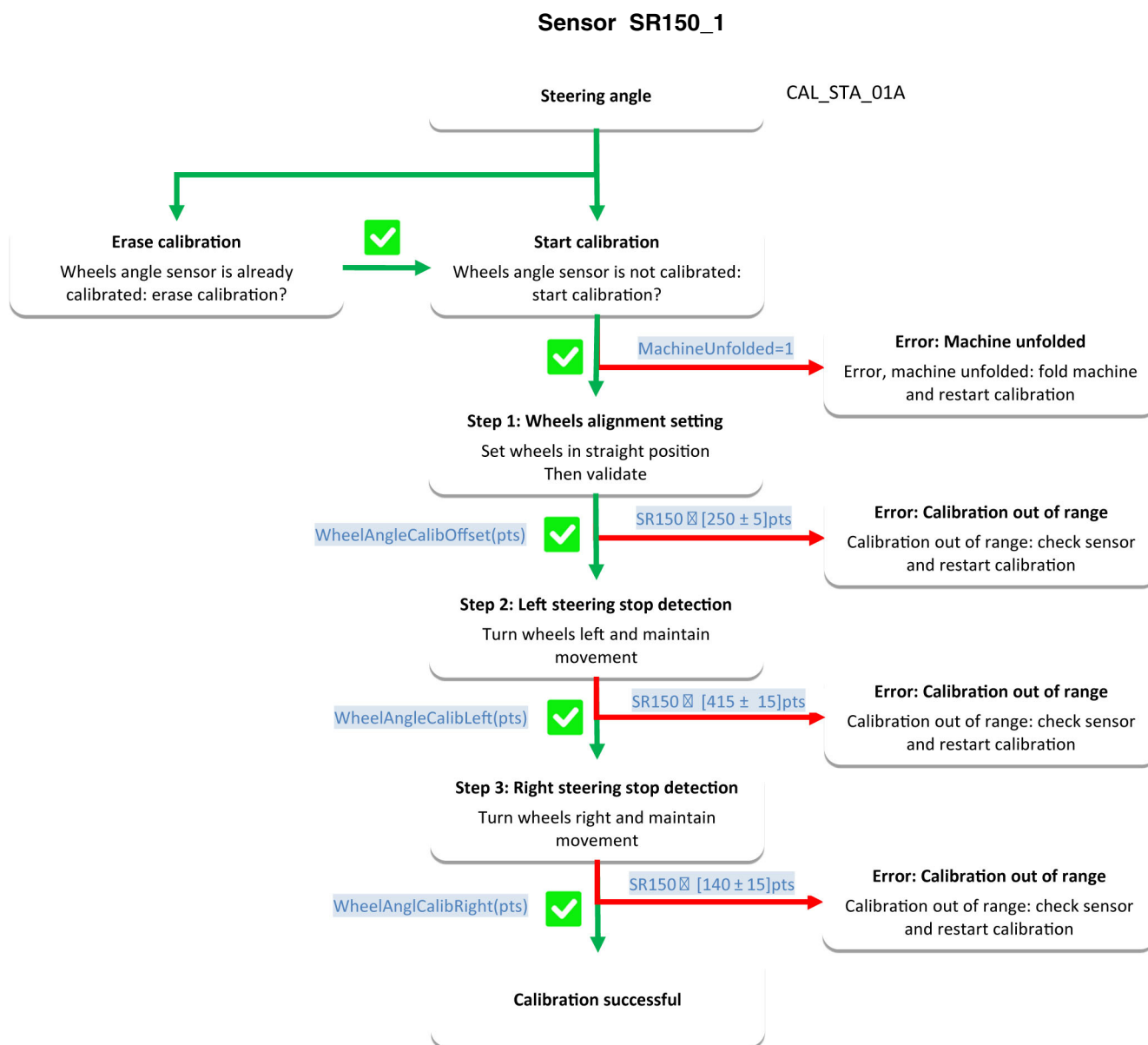
Installation of the SQ801 and SQ802 detectors

SQ801 (Left)



SQ802 (Right)





1 - Warning







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- Generally speaking, the user must comply with regulatory obligations in force, particularly those relating specifically to working alone, co-activity and manual load handling...
- The user must have all the permits/authorizations required to work (fire permit, etc.) and comply with the specific safety instructions at the intervention site.
- Only risks linked specifically to activities relating to the disassembly and assembly of the machine HAULOTTE® are described in this sheet.






- Beware of the risk of burns; the hydraulic system operates at high temperatures.
- The pressure in the hydraulic system is very important. It can cause accidents. Relieve the pressure before beginning any work and never search for oil leaks using your hands.
- The engine exhaust gases contain harmful combustion products. Always start and run the engine in a well ventilated area. In a closed room, ensure the exhaust gases are evacuated to the outside.
- Do not wear any metal jewellery (rings, watches, chains, etc.) when working on the batteries.
- ONLY use insulated tools when working on or near batteries or electrical connections.
- Do not produce sparks or flames or smoke near the battery.

2 - Risk prevention

Means of protection to be used when implementing the range

| | | | |
|---|----------------------|---|----------------|
|  | Appropriate workwear |  | Gloves |
|  | Safety shoes |  | Safety goggles |

3 - You will need

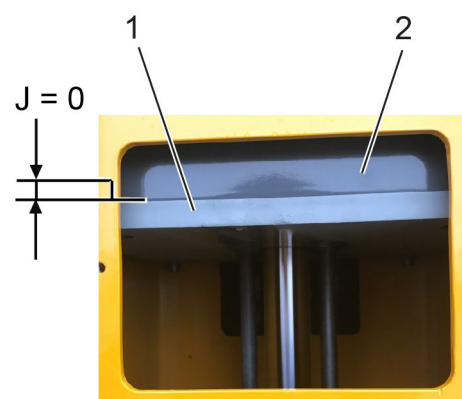
| | | | |
|--|--|---|--|
|  | <ul style="list-style-type: none"> • "DO NOT OPERATE" tag • Personal protective equipment • Standard tool kit • Electronic level |  | <ul style="list-style-type: none"> • Place barriers around the perimeter of the work area |
|  | 1 person | | |

MS0343

- Check that there is no clearance between the cylinder base (1) and the housing (2) (if necessary raise or lower the mast slightly)



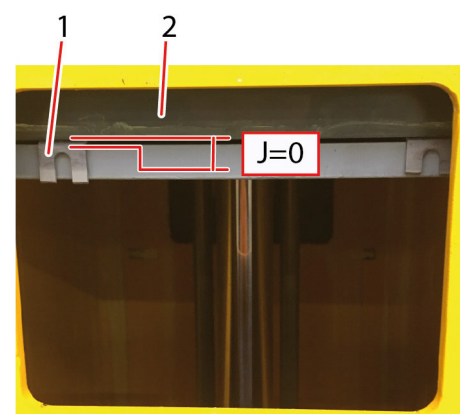
Visual inspection only, do not put your hands inside the housings (through the hatches)



Particular case :

- On some machines, at the factory the adjustment of the masts required the installation of adjustment wedges (1). In this case, check that there is no clearance ($J = 0$) between the housing (2) and the adjustment wedge (1).

N.B.-:-IF IN DOUBT OR ANY OTHER PARTICULAR SITUATION, PLEASE CONTACT HAULOTTE SERVICES®



E - Trouble shooting and diagram

| Failures | N | C | Description |
|--|---|---|---|
| Joysticks | | | |
| F05.01 Drive joystick SM901 | D | 1 | Analog signal SM901Y of main joystick SM901 out of range : --> SM901Y < 0,2V SM901Y > 4,8V |
| | | 2 | Incoherence between analog and out of neutral signals of main joystick SM901 : --> SM901N = 1 & (2,45V < SM901Y < 2,55V) --> or SM901N =0 & (SM901Y < 2V SM901Y > 3V) |
| F05.05 Turret Joystick SM902 | D | 1 | Analog signal SM902 of orientation joystick SM902 out of range : --> SM902 < 0,2V SM902 > 4,8V |
| | | 2 | Incoherence between analog and out of neutral signals of orientation joystick SM902 : --> SM902HN = 1 & (2,45V < SM902 < 2,55V) --> or SM902HN =0 & (SM902 < 2V SM902 > 3V) |
| F05.11 Joystick neutral SM901 | A | | Neutral position of main joystick SM901 not detected after power on : --> SM901 < 2.35V SM901 > 2.65V |
| F05.12 Joystick neutral SM902 | A | | Neutral position of orientation joystick SM902 not detected after power on : --> SM902 < 2.35V SM902 > 2.65V |

| Failures | N | C | Description |
|---|---|---|--|
| Overload | | | |
| F06.01 No Loading Cal Calibration required | A | | Angle/pressure weighting system missing or not calibrated and EU AU RUUK |

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