ORIGINAL INSTRUCTIONS - *according to Directive 2006/42/EC, Annex I 1.7.4.1*

OPERATOR'S MANUAL

E485C

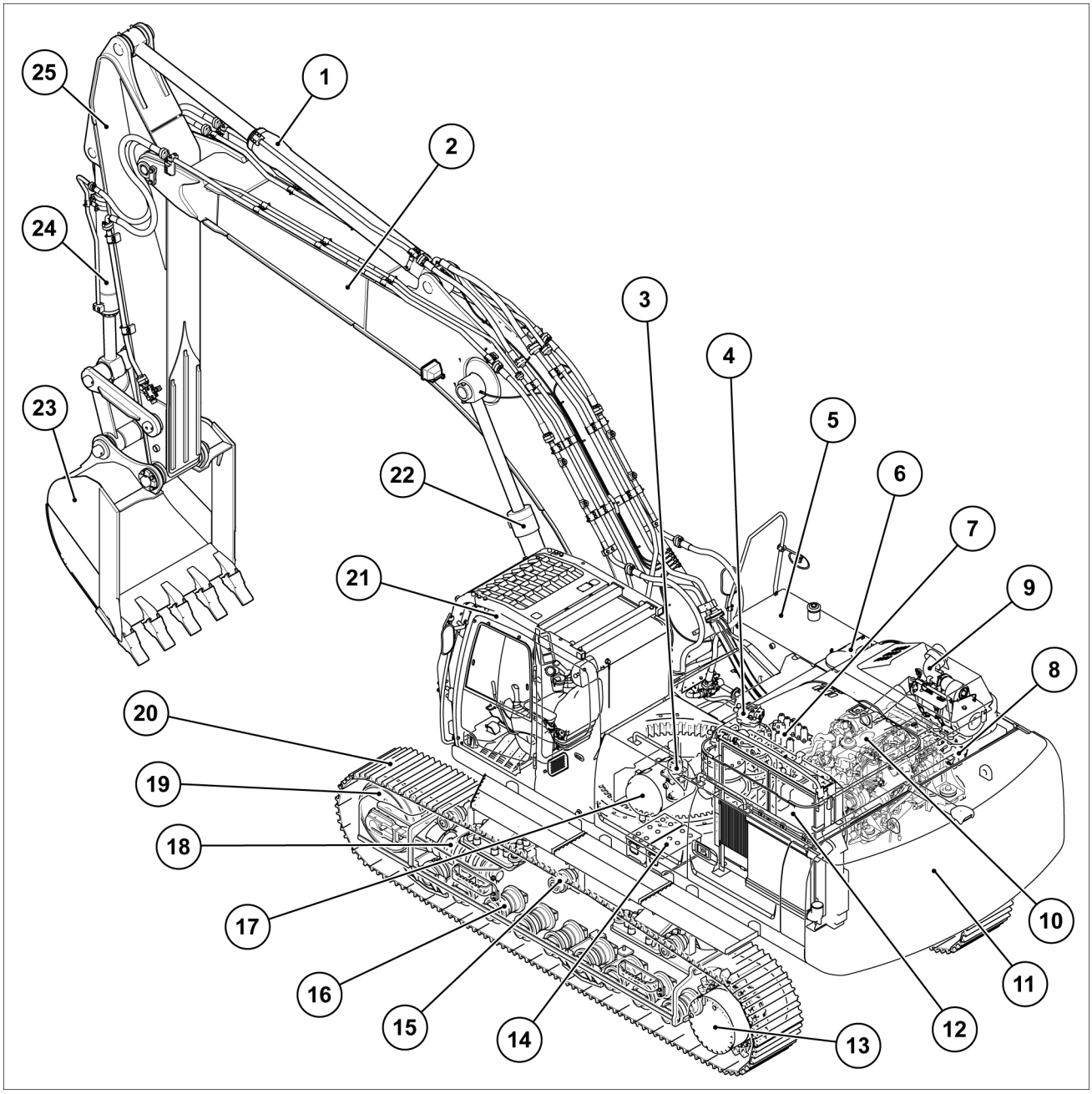
Crawler Excavator

Part number 84551502
1st edition English
January 2013

CE

NEW HOLLAND CONSTRUCTION

MACHINE MAIN COMPONENTS

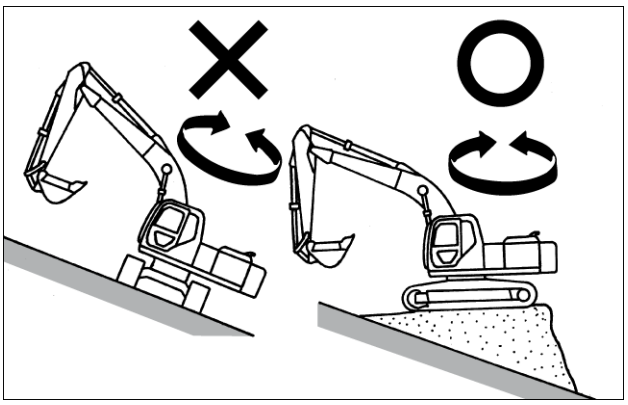


NHC0603 3

1 Arm cylinder
2 Boom
3 Center joint
4 Swing device
5 Fuel tank
6 Hydraulic oil tank
7 Control valve
8 Hydraulic pumps
9 Muffler
10 Diesel engine
11 Counterweight
12 Radiators
13 Travel device
14 Batteries
15 Upper roller
16 Lower roller
17 Air filter
18 Track adjuster
19 Track adjust wheel
20 Track shoe
21 Cab
22 Boom cylinder
23 Bucket
24 Bucket cylinder
25 Arm

lutely sure about your safety, do not stay or walk under a raised attachment.
Do not place head, body, limbs, hands, feet or fingers near articulated cutting edges deprived of the necessary guards, unless they are suitably and safely locked.
Never lubricate, repair or adjust the machine with the engine running, except when this is specifically required by the Operator's manual.
Do not wear loose clothing, jewelry near rotating parts.
When service or maintenance require access to areas that cannot be reached from the ground, use a ladder or step platform conforming to local or national regulations to reach the working area. If such means are not available, use machine grab rails and steps. Always perform all service or maintenance work with the greatest care and attention.
Shop and/or field service platforms or ladders should be manufactured and maintained in accordance with local or national safety regulations in force.
Disconnect batteries and label all controls to warn that service work is in progress, according to local and national safety regulation requirements.
Block the machine and all attachments to be raised according to local and national safety regulation requirements.
Do not check or fill fuel tanks or install batteries near burning or smoking materials and open flames due to the presence of flammable vapors.
The fuel filler pipe nozzle must be constantly kept in contact with the filler neck and this even before fuel starts flowing in. Keep this contact from the beginning to the end of the fuelling operation to avoid possible generation of sparks due to static electricity.
Use a truck or trailer to haul a failed machine. Should it be necessary to tow it, provide for suitable danger signals as required by the local norms and regulations and observe recommendations given in the Operator's manual. Load/unload the machine on firm level ground providing safe support to the wheels of the truck or trailer. Use strong access ramps, with adequate height and angle. Keep the trailer flatbed free of mud, oil or slippery materials. Tie the machine securely to the trailer and block carriages and upperstructure.
Never align holes or slots using your fingers; always use appropriate aligning tools.
Remove all sharp edges and burrs from re-worked parts.
Use only approved and effectively grounded auxiliary power sources for heaters, battery chargers, pumps and similar equipment to reduce electrical shock hazard.
Lift and handle heavy components using hoisting devices of appropriate capacity. Ensure the parts are supported by appropriate straps and hooks. Use lifting eyes provided to this aim. Pay attention to bystanders near the lifting area.
Never pour gasoline or diesel fuel into open containers.
Never use gasoline, solvents or other flammable fluids to clean parts. Use proprietary certified non-flammable, non-toxic solvents only.
When using compressed air to clean parts, wear safety glasses with side shields. Limit pressure to max **2 bar**, in accordance with local and national safety regulations in force.
Do not run the engine of this machine in closed buildings without proper forced ventilation capable to remove toxic exhaust gases concentrating in the air.
Do not use open flames as light sources to look for leaks or inspect anywhere on the machine.
Make sure that all mechanical tools provided are in good condition at all times. Never use tools with mushroomed or damaged heads. Always wear eye protections with side shields.
Move with extreme care when working under, on or near the machine or its attachments.
In case of attachment tests during which the engine should be kept running, a qualified operator must sit in the driver’s seat at all times while the mechanic is at work.
Keep hands and clothes far off moving parts.
Stop the engine and move the safety lever to the lock position before starting adjusting or repairing an assembly.
Do not carry out any work on the attachment without prior authorization. Observe maintenance and repair procedures.
In case of field service, move the machine to level ground and block it. If work on an incline cannot be avoided, securely block the machine and its attachments. Move the machine to level ground as soon as possible.
Do not twist chains and cables. Never use a twisted chain or cable for lifting or pulling. Always wear safety gloves to handle chains or cables.
Be sure chains and cables are firmly fastened and that the anchor point is strong enough to withstand the expected load.
Keep all bystanders clear of the anchor point, cables or chains. Do not pull or tow unless the operator’s compartments of the machines involved are fitted with proper guards against cable or chain backlash.
Keep the maintenance area clean and dry at all times.
Clean immediately all water and oil spillage.
Do not pile up oily or greasy rags as they represent a major fire hazard. Always store them in closed metal containers
Before starting the machine or its attachment, check, adjust and lock the operator’s seat. Also ensure that nobody is within the machine or attachment operating range before starting or operating the machine and/or its attachments. Sound the horn.
Rust inhibitors are volatile and flammable. Prepare parts in well ventilated areas. Keep open flames away. Do not smoke.
Store containers in a cool well ventilated place where they could not be reached by unauthorized people.
Do not carry loose objects in your pockets that might fall unnoticed into open compartments.
Wear appropriate safety clothing such as hard hat, safety shoes and gloves, safety glasses when splinters or other particles may be ejected.
Wear the appropriate welder’s equipment such as dark safety glasses or mask, hard hat, protective clothing, safety gloves and footwear always while welding or arc-cutting. Wear dark safety glasses when you are near a welding in progress.
Do not look the welding arc without proper eye protection.

AVOID OVERTURNING



SP0017 19

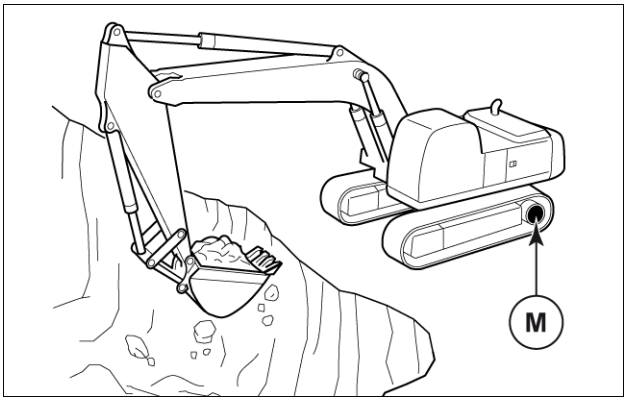
When working on a slope or on unstable terrain, the danger of tipping over is present with the possibility of subsequent serious damages or fatal injuries.

- Pay the utmost attention when working on a slope. If possible, level first the work area.
- Avoid swing or steering the machine on a slope.
- Decrease the operating speed and actuate the controls carefully, to prevent sudden movements that could result in slipping or tipping over.
- In case the engine is cut-off, lower the bucket to the ground, move the controls in neutral and restart the engine.

Pay the utmost attention when operating the machine on frozen ground or in snowy conditions.

- Frozen ground, when the ambient temperature increases, tends to be less firm jeopardizing the stability of the machine.
- Operate carefully when in snowy conditions. The snow could hide invisible dangerous spots.
- Actuate the controls slowly and carefully to prevent the machine from making unwanted slippery manoeuvres or movements.
- Even on minor slopes, when snow is present and on frozen ground, unwanted slippery manoeuvres or movements of the machine could occur.

INVESTIGATE JOB SITE BEFORE OPERATING THE MACHINE



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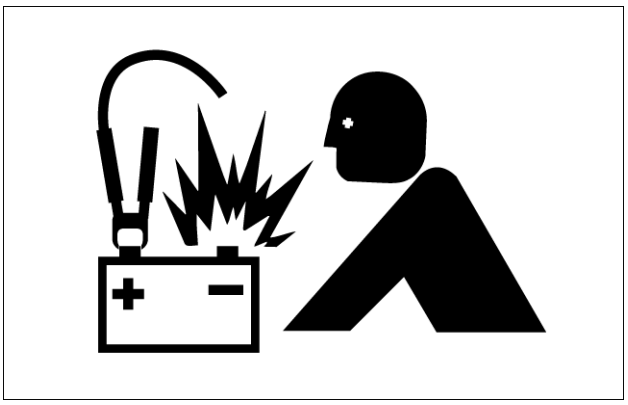
Explore the working area to identify potential risks before starting and operating the machine. Make sure that the structure and the conditions of the ground are safe before starting operations.

- Make sure that the digging area is sufficiently stable and firm to support the weight of the machine during the work operations.
- Working near edges and ditches presents a risk for the stability of the machine. Check first that edges and the walls of the digging are sufficiently strong. If necessary, prop the edges appropriately to prevent caving-ins.
- Do not dig too near the machine.
- Always position the tracks perpendicular to the edge of the digging with the travel motors on the rear side.
- When working on a slope or near the edge of the road, have a flagman available.

STARTING THE ENGINE WITH BOOSTER BATTERIES

- The operator should be sitting in the driver's seat to keep the machine under control when the engine starts. Starting the engine with booster batteries is a two man operation.
- Do not use batteries that have been stored in the cold for a long time.
- Mistakes in following procedures detailed for starting the engine with slave batteries may cause the batteries to explode or machine to move unexpectedly.



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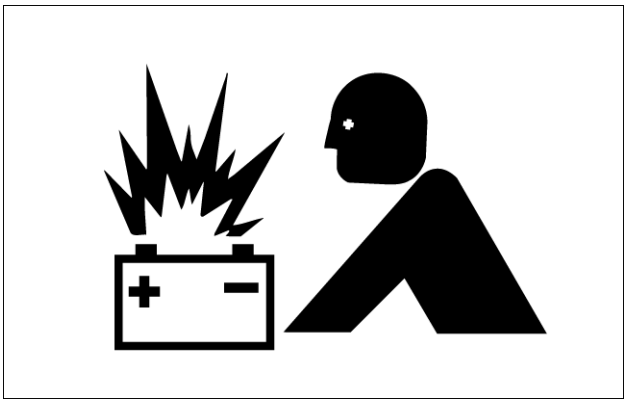
PREVENT BATTERY EXPLOSIONS

Battery gas can explode.

- Keep sparks, lighted matches, and flames away from the top of battery.
- Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.
- Do not charge a frozen battery; it may explode. Warm battery to **16 °C**.
- Battery electrolyte is poisonous. If the battery should explode, battery electrolyte may be splashed into eyes, possibly resulting in blindness. Be sure to wear eye protection.

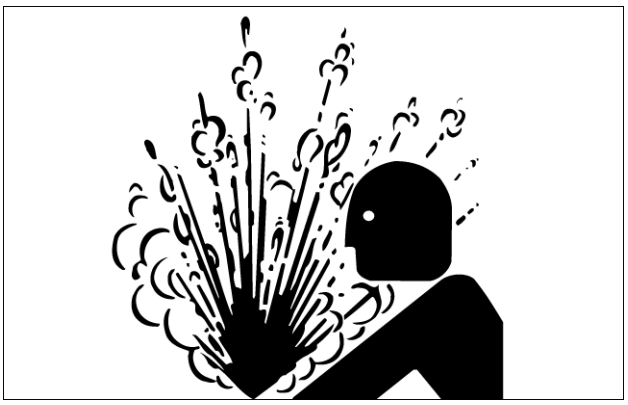


SP0052 51

PREVENT BURNS

After operation, engine coolant is hot and under pressure. Hot water or steam is contained in the engine, radiator and heater lines. Skin contact with escaping hot water or steam can cause severe burns.

- To prevent possible injury from hot spraying water. Do not remove the radiator cap until the engine is cool. When opening, turn the cap slowly to the stop. Allow all pressure to be released before removing the cap.
- The hydraulic oil tank is pressurized. Be sure to release all pressure before removing the cap.
- Engine oil, reduction gear oil and hydraulic oil also become hot during operation. The engine, hoses, lines and other parts become hot as well.
- Wait for the oil and components to cool down before starting any maintenance or inspection work.

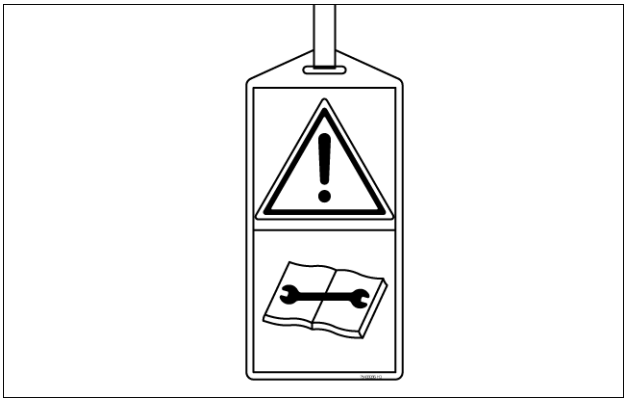


SP0048 52

SP0049 53

9 - Maintenance in progress tag

Maintenance staff is obliged to apply the tag that indicates that the machine is not fully efficient and warns about maintenance staff being located in not visible positions. This tag should be applied to the left-hand control lever, safety lever or cab door.



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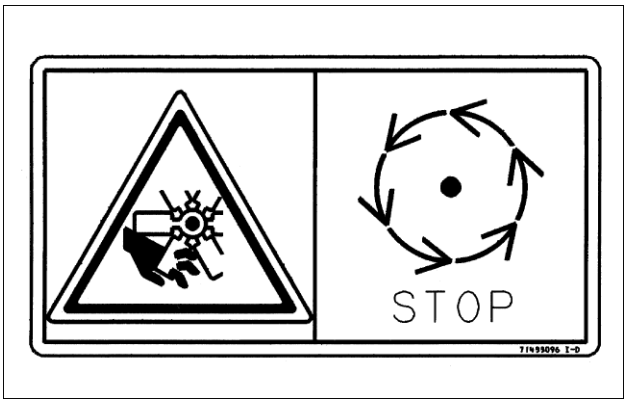
10 - Engine hood decal

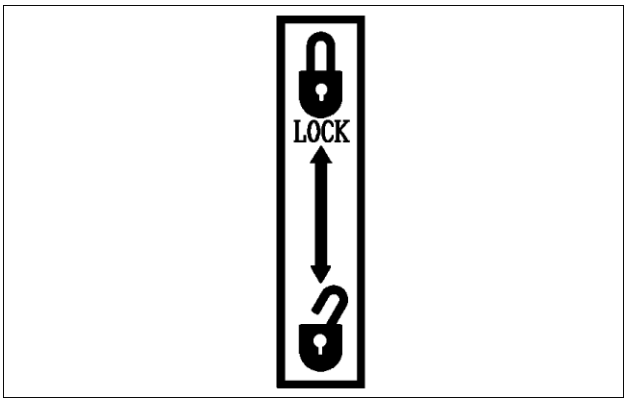
Stop the engine before opening the engine hood. Do not attempt any maintenance with engine running. Danger of severe injuries following the presence of rotating parts such as fan, pulleys and belts.



SP0080 12

11 - Controls lock/unlock decal

When the machine is parked or before leaving the operator's seat for whatever reason, always ensure that the safety lever is in **LOCK** position (vertical). Controls are disabled and therefore no accidental machine or attachment movement is possible.



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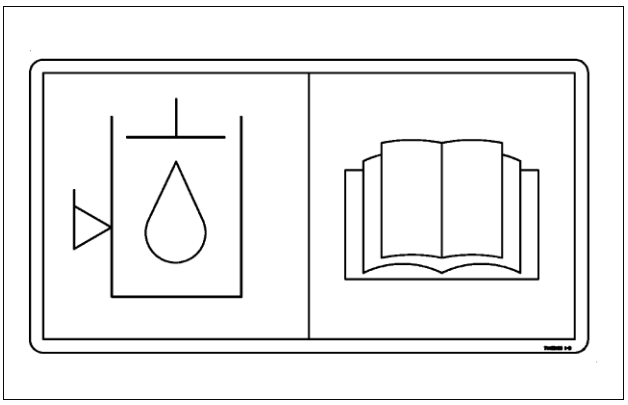
12 - Pressurized hydraulic oil tank decal

Prior to performing maintenance operations on the hydraulic oil tank, bleed the pressure by pressing the bleeding button located on the tank. The hydraulic oil, at operating temperature, can cause burns in case of contact with the skin.



SP0076 14

Right control lever

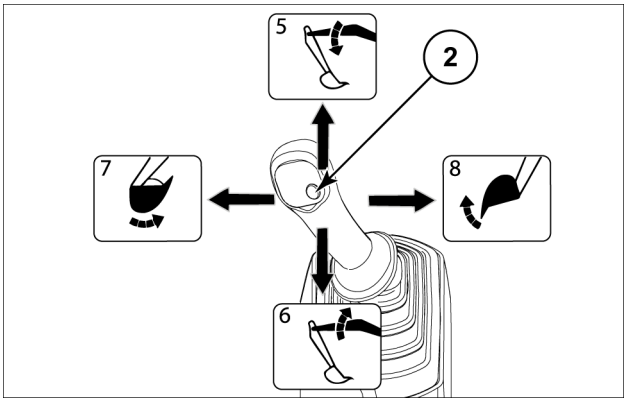
The right control lever activates the following operations:

5. Boom Lower
6. Boom Raise
7. Bucket Roll-In
8. Bucket Roll-Out

NOTE: *when the control lever is released, it returns automatically to the neutral position and the associated work function stops.*

The power boost button **(2)** is located on top of the right control lever handle. It provides a boosting of the power, thus to reach maximum force in digging operations.

NOTE: *the power boost control is effective during the arm retraction, bucket filling and boom raising operations.*

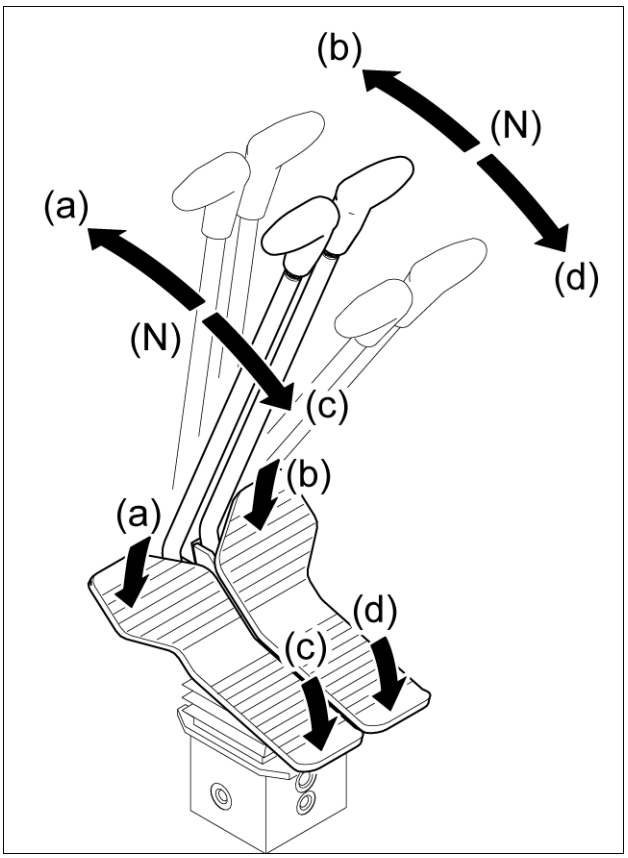


NHC0202A 5

Travel control pedals and levers

NOTE: *the words right, left, front, back, clockwise and anticlockwise are to be referred to the operator position properly sitting in the driver's seat.*

N	Neutral
(a) + (b)	Machine moves forward
(c) + (d)	Machine moves backward
(b) + (c)	Opposite simultaneous rotation of the tracks with consequent anticlockwise (leftwise) rotation of the machine around its centre axis.
(a) + (d)	Opposite simultaneous rotation of the tracks with consequent clockwise (rightwise) rotation of the machine around its centre axis.
(a), (b), (c), (d)	Positions to move one track only. Consequently the machine steers pivoting on the stationary track.



NH0159 6

Attachment mode buttons

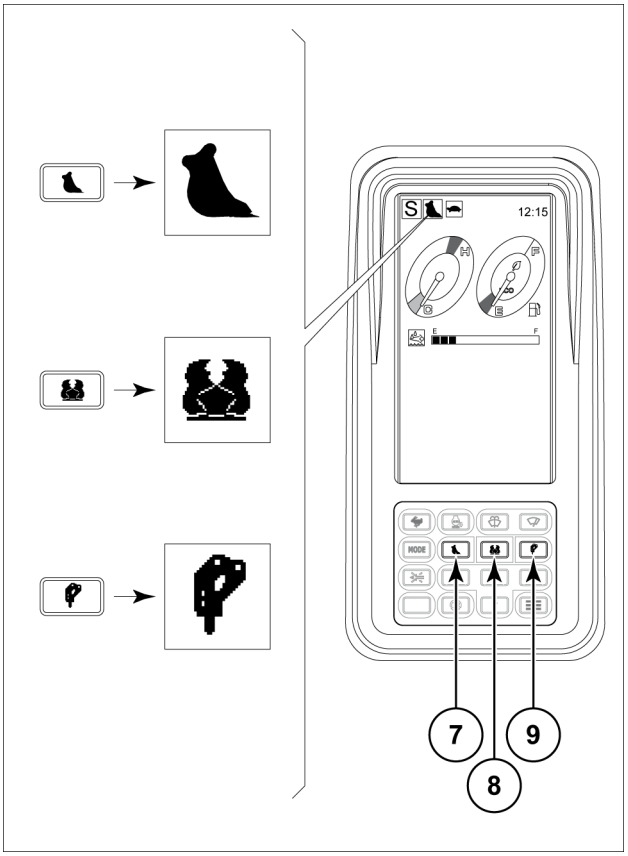
ATTENTION: *before starting operation, make sure to select the proper attachment mode.*

The attachment mode buttons enables to select three operating modes, depending on the attachment which has been installed.

Digging mode: press the button **(7)** for standard digging operations.

Nibbler mode: press the button **(8)** when using a nibbler. The flow rate and pressure screen appears and the icon changes to nibbler.

Breaker mode: press the button **(9)** when using a breaker. The flow rate and pressure screen appears and the icon changes to breaker.



NHC0224 15

Work mode button

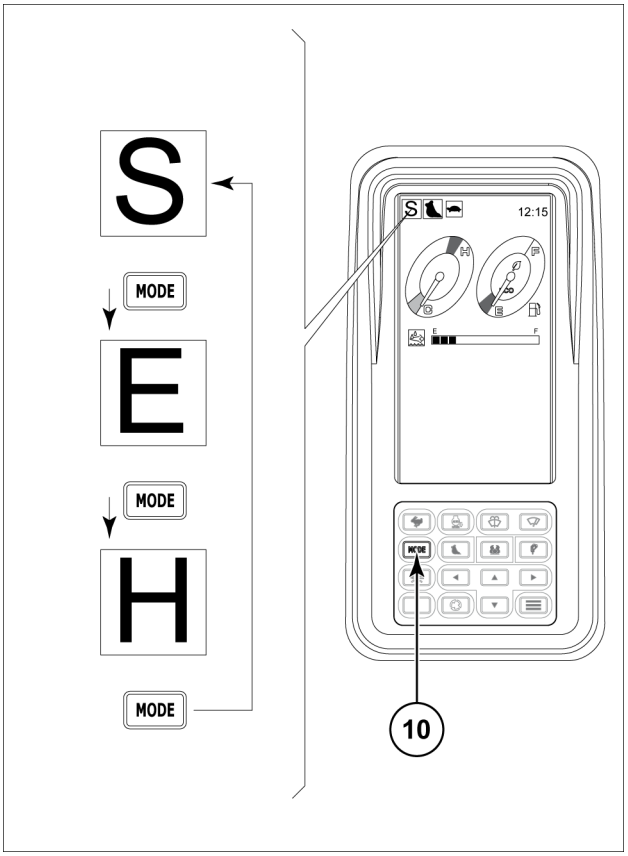
Work mode button **(10)** provides the selection of one of the three operational modes of the machine as a function of the work to be performed. By pressing the work mode button the display on the monitor shows in sequence icons **S**, **E** and **H**.

NOTE: *when starting the engine, work mode **S** is automatically selected.*

Mode **S**: select work mode **S** for standard work conditions. Work mode **S** provides optimized conditions in terms of performance/fuel consumption ratio.

Mode **H**: select work mode **H** for heavy-duty work conditions.

Mode **E**: **ECO** mode for lower fuel consumption digging work.



NHC0223A 16

Supplementary greasing button

The machine is equipped with a centralized lubrication system performing automatically, without intervention by the operator, the greasing of the front attachment at established intervals. When turning the starter key into **ON** position, the green indicator light **(2)** and red indicator light **(3)** on control panel **(1)** of the greasing pump activate simultaneously. After about **2 s**, indicator lights **(2)** and **(3)** turn off confirming the correct operation of the system and the indicator lights.

ATTENTION: *do not activate for any reason the controls of control panel **(1)** of the greasing pump. A careless activation of the same could cause a wrong setting of the lubrication system.*

When the automatic system starts a greasing cycle, green indicator light **(2)** turns on for the entire duration of the greasing cycle. Once the operation is over, indicator light turns off.

NOTICE: *should the engine be stopped during the lubrication cycle, the time is recorded and memorized. After the next start of the engine, lubrication starts from where it was interrupted.*

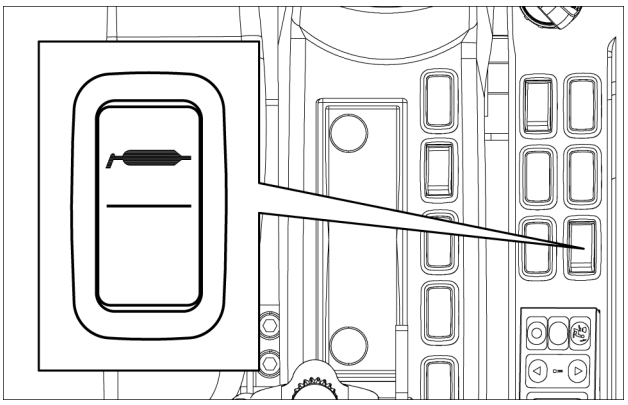
It is possible to perform manually, at any time, a supplementary greasing cycle by actuating the supplementary greasing button. Subsequently, the controller of the system shall set the next cycle, starting from the latter one.

NOTICE: *the same operation can be performed by pressing button **(4)** located on the greasing pump.*

Malfunctions in the system:

- the activation of red indicator light **(3)** on control panel **(1)** indicates a malfunction in the system.
- the spill of grease from safety valve **(5)** indicates a possible occlusion of the system.

Under both circumstances, please contact the Dealer.



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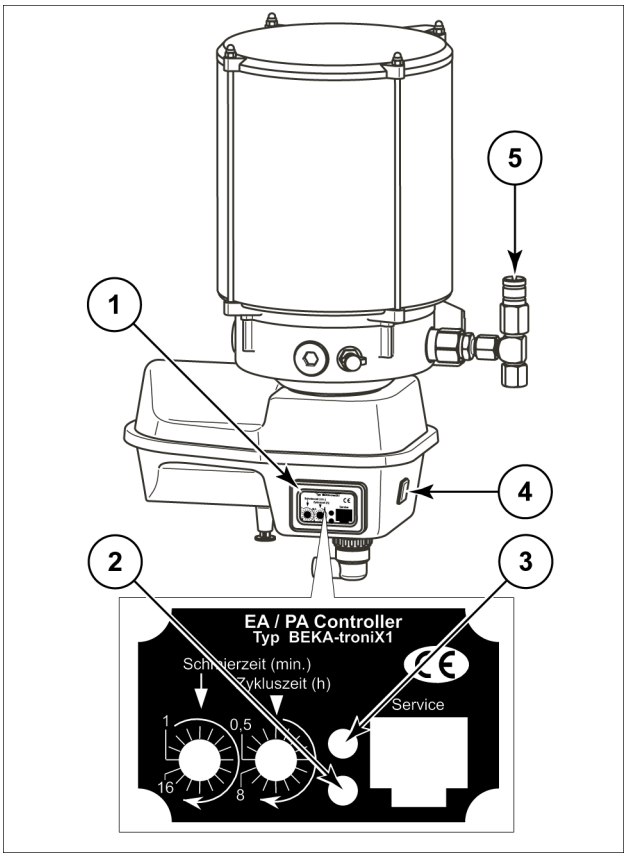


NHC0560 12

4 - OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

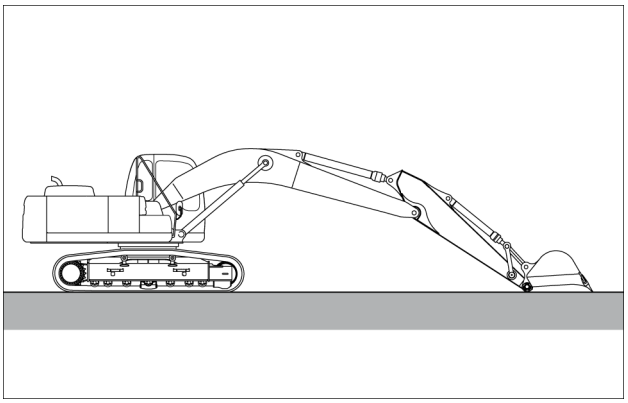
Hydraulic oil level

- Make sure that the machine is positioned on a flat surface and the attachment is positioned in the hydraulic oil level check position, as indicated in figure.
- Open the hydraulic pump compartment panel **(1)** then check the oil level through the level gauge **(2)** located on the hydraulic oil tank. Oil level should be between the **MIN** and **MAX** reference marks.
- In the event a low level of hydraulic oil is found, proceed with its topping up, operating as indicated on page **7-29**.

ATTENTION: *do not top up using oil with different specifications from the oil already in the hydraulic oil tank. If the machine was filled with biodegradable hydraulic oil* ***PANOLIN HLP SYNTH****, do not top up with mineral hydraulic oil, as they cannot be mixed.*

ATTENTION: *avoid overfilling. An excessive quantity of hydraulic oil could damage the hydraulic system and cause oil spills.*

- Close the hydraulic pump compartment panel.



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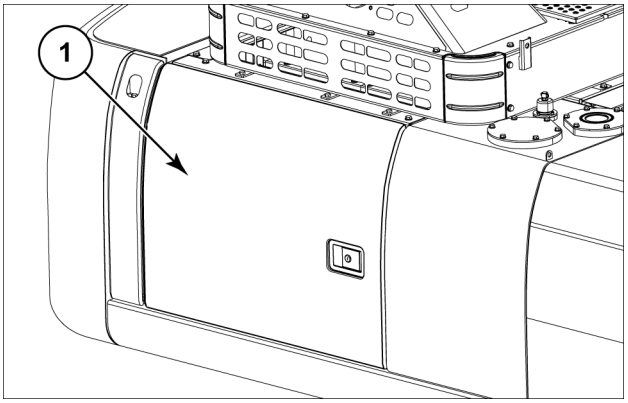

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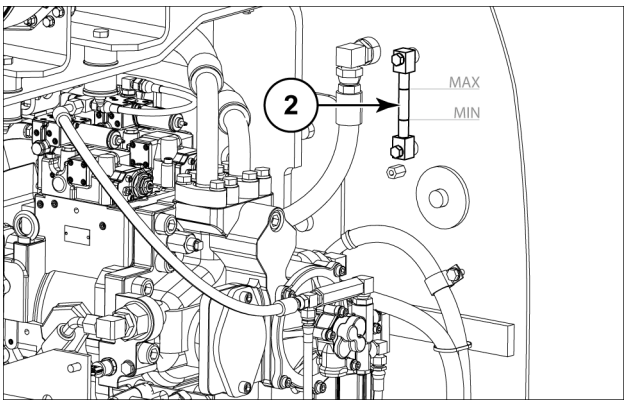


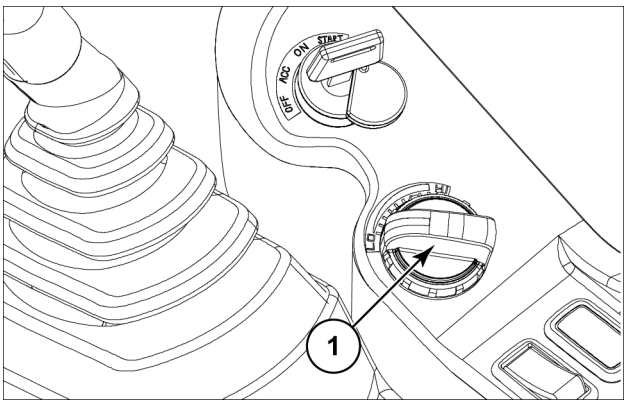
NHC0563 3

Hydraulic oil warm up

ATTENTION: *do not start working prior to completing a correct hydraulic oil warm up, since the hydraulic functions would be slowed down and unexpected movements of the machine could occur. Also, some hydraulic components could be damaged by insufficient lubrication.*

To warm up the hydraulic oil, proceed as follows:

- Make sure to perform the engine warm up.
- Place the safety lever in **UNLOCK** position and the engine speed throttle **(1)** in **HI** position.
- Operate the right control lever to stroke end and perform the bucket roll in and roll out for about **2 min**.
- Operate the right control lever to stroke end and perform the boom lowering and raising for about **2 min**.
- Operate the left control lever to stroke end and perform the arm roll in and roll out for about **2 min**.
- Operate the left control lever and slowly perform swing operations for about **2 min**.



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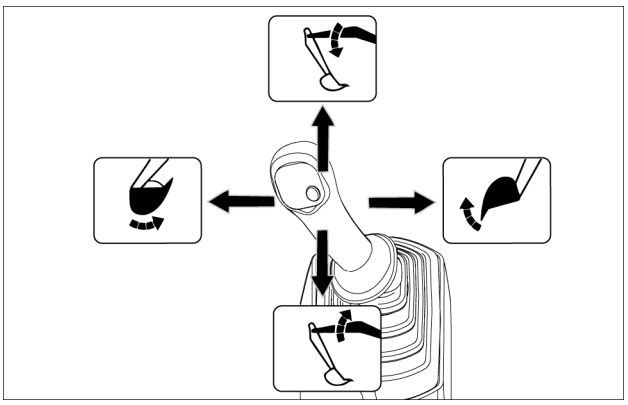
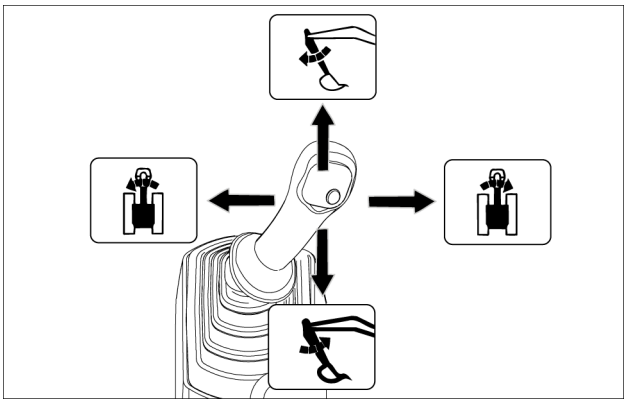


NHC0484 2



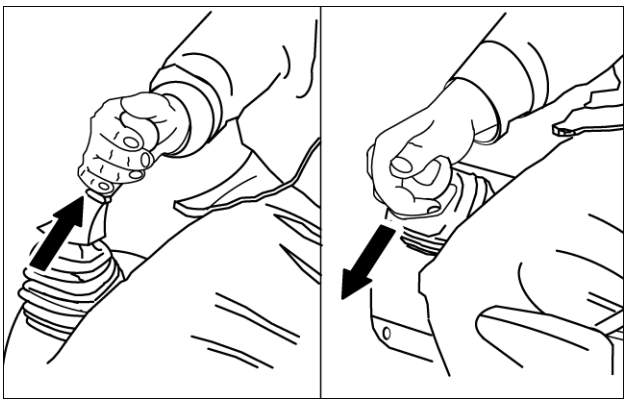
NHC0485 3

Attachment controls

Boom operation

The boom is actuated by pushing or pulling the right control lever forward or backward. The speed of the movement is determined by the stroke of the lever.

- When pulling the right control lever BACKWARD the boom is raised.
- When pushing the right control lever FORWARD the boom is lowered.
- When returning the right control lever centrally (neutral position) the boom stops moving.

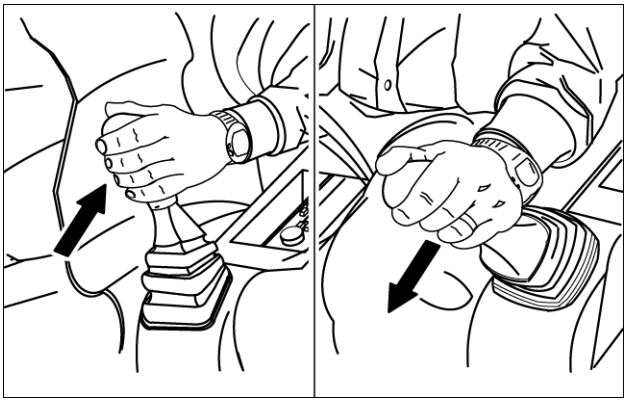


NH0113 1

Arm operation

The arm is actuated by pushing or pulling the left control lever forward or backward. The speed of the movement is determined by the stroke of the lever.

- When pushing the left control lever FORWARD the arm is extended.
- When pulling the left control lever BACKWARD the arm is retracted.
- When returning the left control lever centrally (neutral position) the arm stops moving.

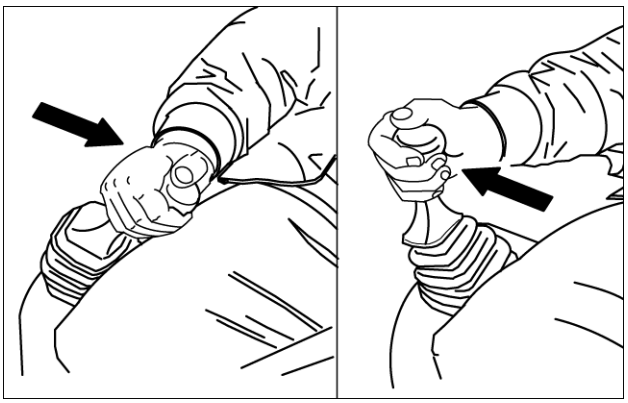


NH0114 2

Bucket operation

The bucket is actuated by moving the right control lever rightward or leftward. The speed of the movement is determined by the stroke of the lever.

- When moving the right control lever leftward, the bucket is rolled back (digging).
- When moving the right control lever rightward, the bucket is extended (dumping).
- When returning the right control lever centrally (neutral position) the bucket stops moving.



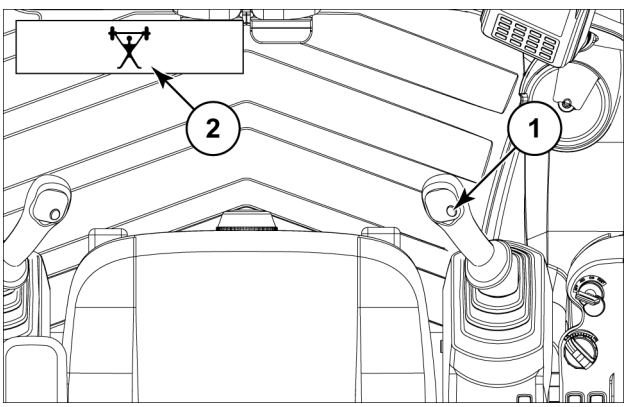
NH0115 3

Power boost

The Power boost control button **(1)** is a momentary button located on the right control lever. Use the Power Boost function during digging operations, when a higher "breakout force" is required to penetrate the bucket into the ground.

- Operate the bucket roll in control (digging). While the bucket is digging, keep pressed the Power boost button. In this manner, a higher digging force is obtained.

NOTE: *when the Power boost control button is pressed, the instrument cluster display shows icon* ***(2)****. If the Power boost control button is kept pressed while performing other operations, the operator could experience a slowing down of the other hydraulic functions.*



NHC0314 4

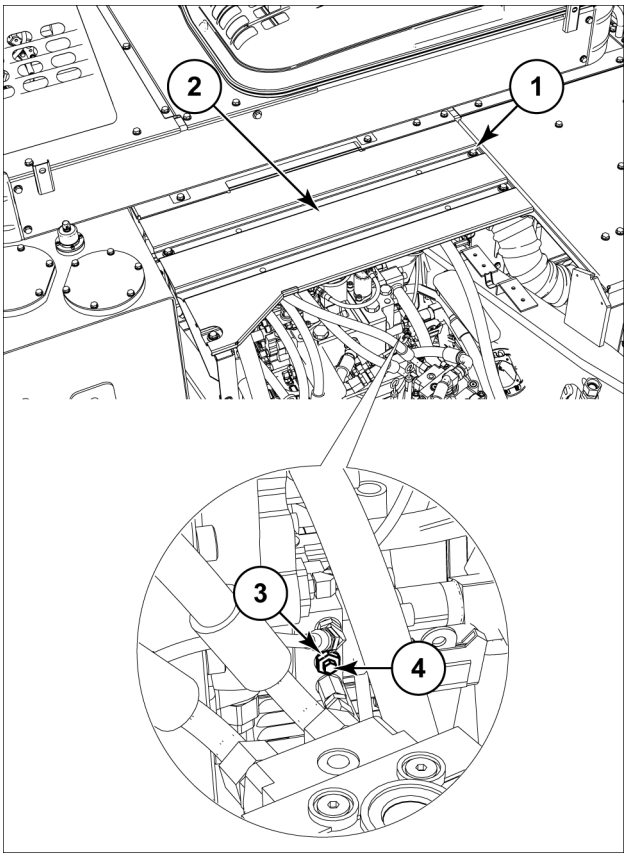
Emergency boom lowering

In the event the engine stops and it cannot be restarted, lower the boom and rest it on the ground, referring to the procedures listed here below:

Machine without anti-drop valves

- Remove the securing screws **(1)**, located in correspondence with the control valve by using a **19 mm**. Then, remove guard **(2)**.
- On the control valve, loosen locknut **(3)** and loosen discharge screw **(4)** to stroke end.
  Locknut wrench: **19 mm**
  Discharge screw wrench: **10 mm**
- Get into the cab and lower slowly the attachment to the ground, moving the right control lever forward. Reinstall guard **(2)** and contact the Dealer.

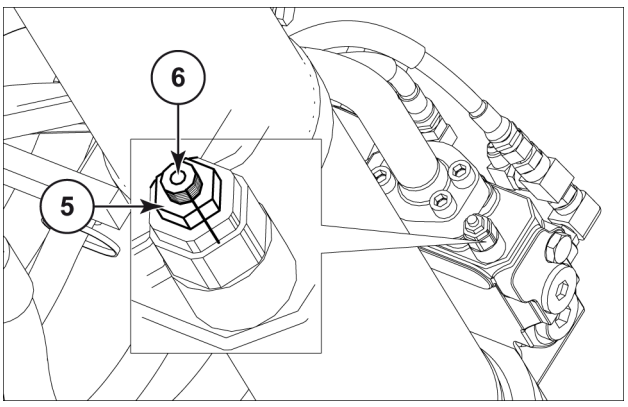
  NOTE: *the position of the starter key or the safety lever does not influence the procedure.*



NHC0610 1

Machine with anti-drop valves

- Make a reference mark between: the valve body, locknut **(5)** and setting screw **(6)**.
- Loosen locknut **(5)** then afterward, loosen slowly (from 3 to 3.5 turns) setting screw **(6)**. It is sufficient to perform the procedure on one anti-drop valve only.
  Locknut wrench: **13 mm**
  Setting screw wrench: **4 mm**
- Perform the operations previously described for the " Machine without anti-drop valves".
- Lower the attachment to the ground, return locknut **(5)** and setting screw **(6)** in their initial positions then contact the Dealer.



NHC0338 2

Fuel tank

Draining condensation

⚠ WARNING

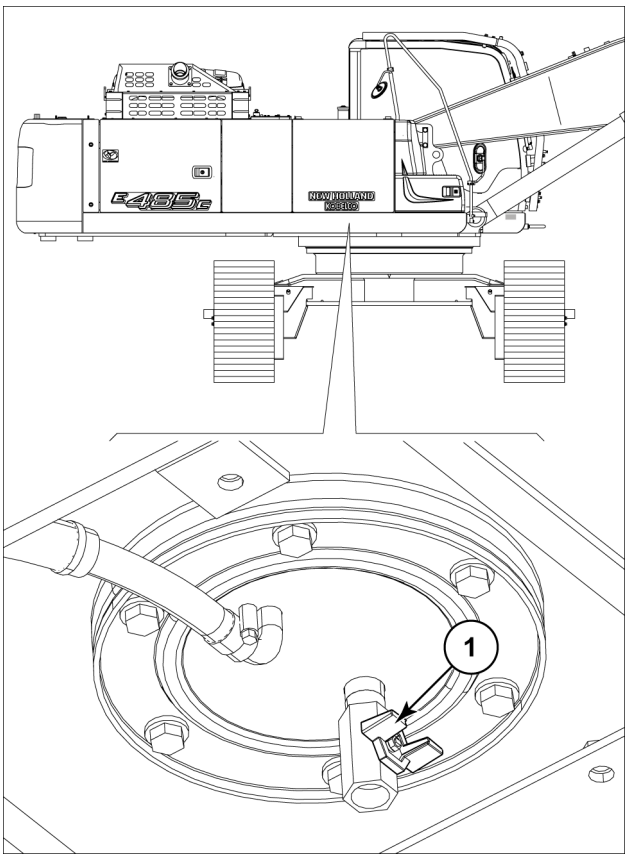
Fuel vapors are explosive and flammable. Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0904A

To drain the condensation inside the fuel tank, proceed as follows:

- Park the machine on a level surface and turn the upperstructure **90 °** to obtain easy access.
- Rest the bucket to the ground.
- Deactivate the Auto-Idle function, turn the engine speed throttle to **LO** position, stop the engine, extract the starter key and place the safety lever in **LOCK** position.
- Get under the turret in correspondence with the fuel tank and remove the guard.
- Slowly open the cock **(1)** and let condensation and deposits drain into a suitable container until only clean fuel comes out.
- Once the draining operation is over, close cock **(1)** and reinstall the guard.

NOTE: *when the temperature is above **0 °C**, draining can be done before engine start-up. When working with temperatures below **0 °C**, the tank should be drained at the end of work, after engine stop, as water might freeze and not drain properly.*

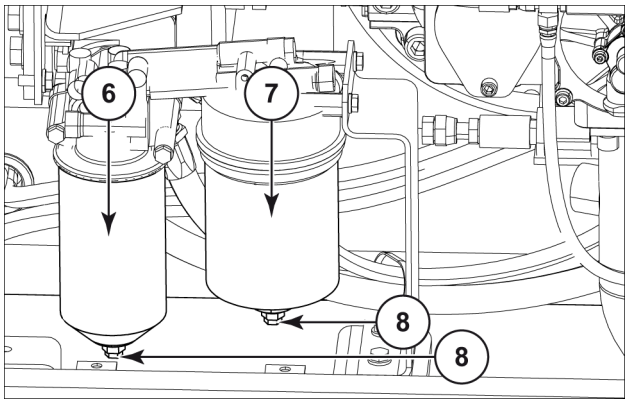


NHC0576 1

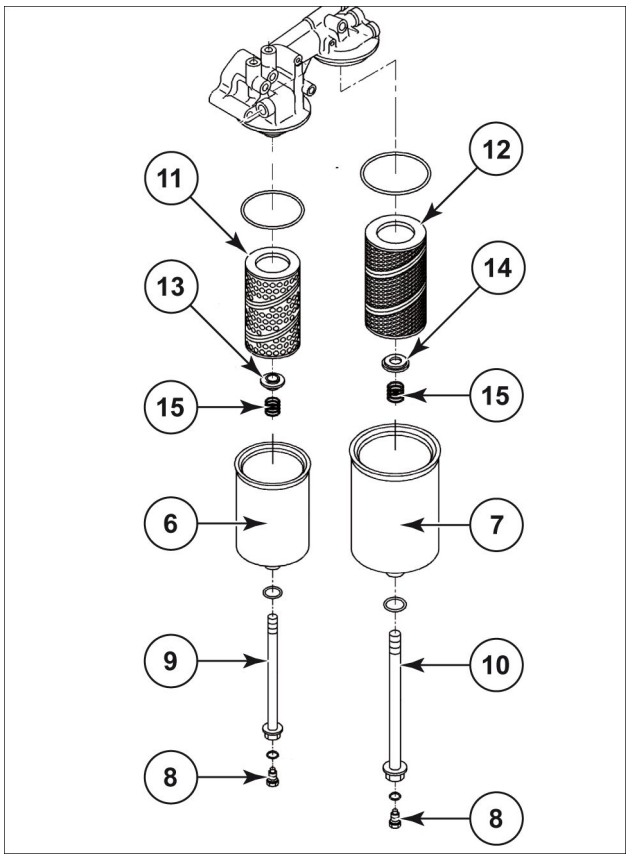
Replace filters inside cases **(6)** and **(7)** proceeding as follows:

- Open the hydraulic pump compartment panel and lock it in open position.
- Clean the area around the filter cases.
- Loosen the drain plugs **(8)** and let the oil drain into a container pan. To facilitate oil drainage, it is possible to loosen about one turn the fixing bolts **(9)** and **(10)**.
- Once the oil has been drained, tighten the drain plugs **(8)**.
- Unscrew the fixing bolts **(9)** and **(10)** then remove filters **(11)** and **(12)**, seats **(13)** and **(14)**, springs **(15)**.
- Clean cases **(6)** and **(7)**, springs **(15)**, fixing bolts **(9)** and **(10)** with light oil.
- Install new filters **(11)** and **(12)** with relevant seats **(13)**, **(14)** and springs **(15)** inside cases **(6)** and **(7)** then tighten the fixing bolts **(9)** and **(10)**.
  Tightening torque: **44 N·m**
- Close the hydraulic pump compartment panel.
- Pour oil into the engine through filler neck until the maximum level indicated on dipstick **(1)** is reached, then tighten the filler cap **(2)** and insert the dipstick.
- Start the engine, let it run a few minutes then stop it. Use dipstick **(1)** to check again the level and top up in the event it has changed with respect to the previous check.

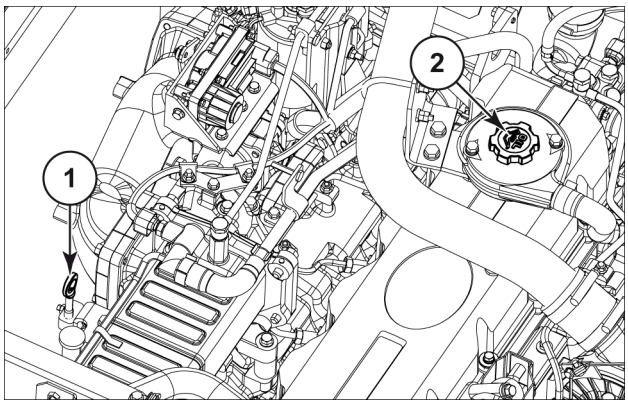
NOTE: *handle and dispose the exhausted engine oil and filters in accordance with current regulations. Use only authorized disposal procedures and, in case of doubts, contact the appropriate authorities.*



NHC0583 4



NHC0584 5



NHC0565 6

Engine coolant

Draining of coolant

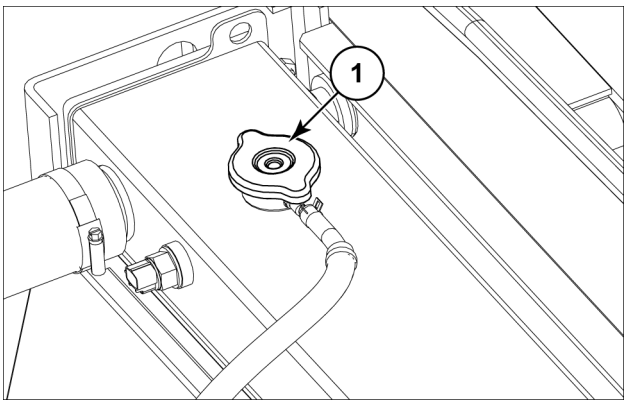
⚠ CAUTION

Burn hazard!
Hot coolant can spray out if you remove the filler cap while the system is hot. After the system has cooled, turn the filler cap to the first notch and wait for all pressure to release before proceeding.
Failure to comply could result in minor or moderate injury.

C0043A

Drain the engine coolant operating as follows:

- Position the machine on a flat surface with the turret swung **90 °** to facilitate the access.
- Deactivate the Auto-Idle function, turn the engine speed throttle to **LO** position, stop the engine, extract the starter key and place the safety lever in **LOCK** position.
- Wait for the machine to cool off then open the engine hood and the radiator and filter compartment doors, locking them in open position.
- Loosen slightly radiator cap **(1)** to bleed completely the pressure inside the radiator, then loosen the cap and remove it.
- Get under the turret and remove the panel **(2)** under the radiator.
- Open draining valve **(3)** and let the coolant drain into a container of appropriate capacity. Once the operation is over, retighten the valve.
- Inspect carefully the sleeves checking that they are trouble free (replace them if required) and tighten the clamps if slacken. Check the there are no leakages from the radiator, damages or accumulation of dirt.



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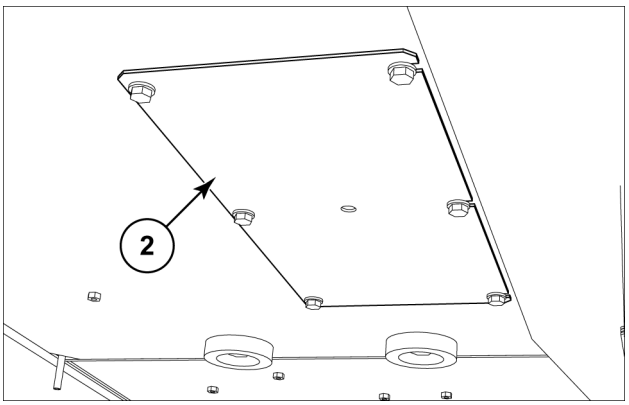
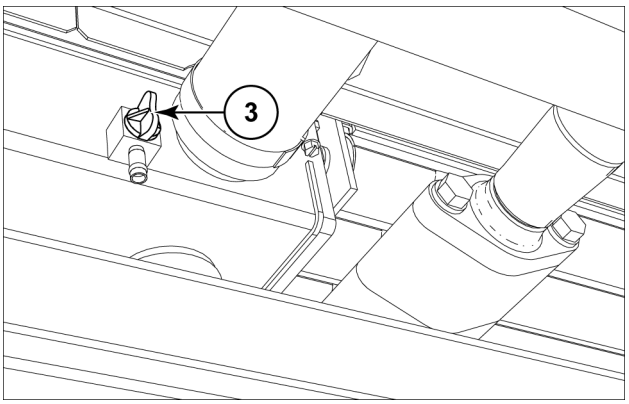


NHC0593 2



NHC0594 3

8 - SPECIFICATIONS

General specifications

Russian Federation, Africa, Middle East

ENGINE	
Make	**HINO Motors, Ltd.**
Model	**P11C-UU**
Rated output power at **1850 RPM** (**ISO 14396**)	**257 kW**
Number of cylinders	**6**
Total displacement	**10520 cm³**
Bore x Stroke	**122 mm** x **150 mm**

ELECTRICAL SYSTEM	
Voltage	**24 V**
Battery	2 x **12 V**
Battery capacity	**160 A**h
Alternator	**70 A**
Starter motor	**4 kW**

HYDRAULIC SYSTEM	
PUMP	
Maximum displacement	2 x **200 cm³**
Maximum flow rate	2 x **370 l/min**
Maximum input horsepower at **1850 RPM**	**257 kW**
MAXIMUM OPERATING PRESSURE	
Attachment	**34.3 MPa**
Travel	**34.3 MPa**
Swing	**25.8 MPa**
CYLINDERS (Bore x Stroke)	
Boom	**170 mm** x **1590 mm**
Arm	**190 mm** x **1970 mm**
Bucket	**170 mm** x **1300 mm**

TRAVEL	
Hydraulic motors	Axial piston type
Parking brake	Oil disk brake
Reduction unit	2 stage planetary gear unit
Maximum climbable gradient	**70 %**
TRAVEL SPEED	
Slow	**3.5 km/h**
Fast	**5.6 km/h**

SWING	
Hydraulic motor	Axial piston type
Parking brake	Oil disk brake
Reduction unit	2 stage planetary gear unit
Bullgear	Grease-bath
SWING SPEED	**7.8 RPM**

Proportional switch version

ATTENTION: *always make sure to press the nibbler mode button* ***(2)*** *located on the instrument cluster before using the nibbler.*

To operate the nibbler, proceed as follows:

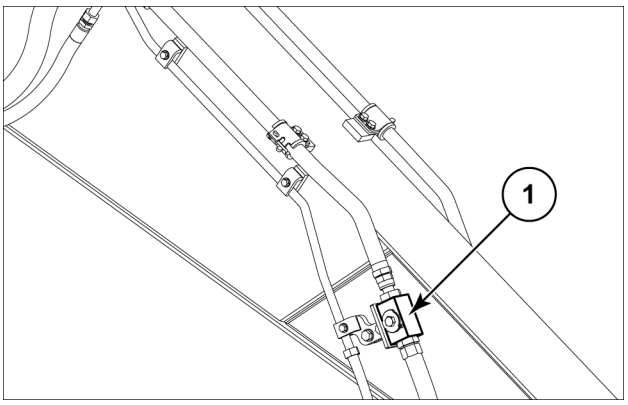
- Verify that valves **(1)** located on the arm are open (mark on the valve parallel with the arm). In case the valves are not open, use **24 mm** wrench to turn them.
- Start the engine and press the nibbler mode button **(2)**. The flow rate and pressure screen appears and the icon changes to nibbler.

NOTE: *depending upon the type of nibbler mounted, it is possible to select on of the ten preset flow/pressure settings.*

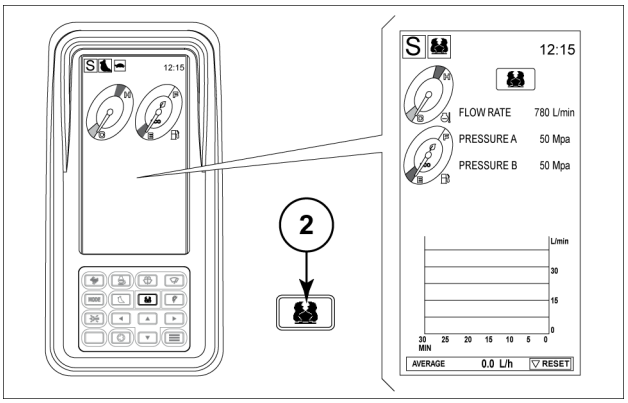
Operate the nibbler using the proportional switch **(3)** located on the right control lever:

- Slide right the proportional switch **(3)** to open the nibbler.
- Slide left the proportional switch **(3)** to close the nibbler.

NOTE: *the opening or closing speed is determined by the stroke of the proportional switch* ***(3)***.



NHC0313 5



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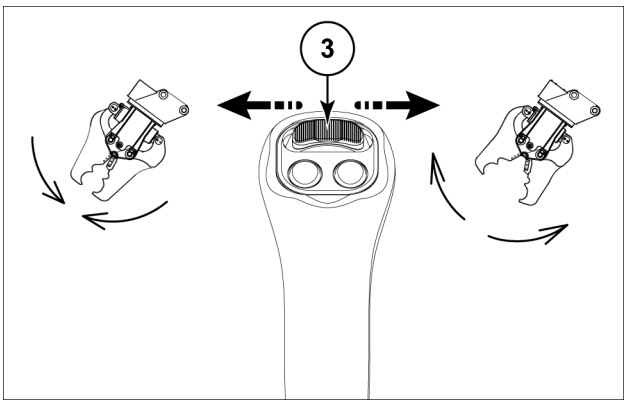
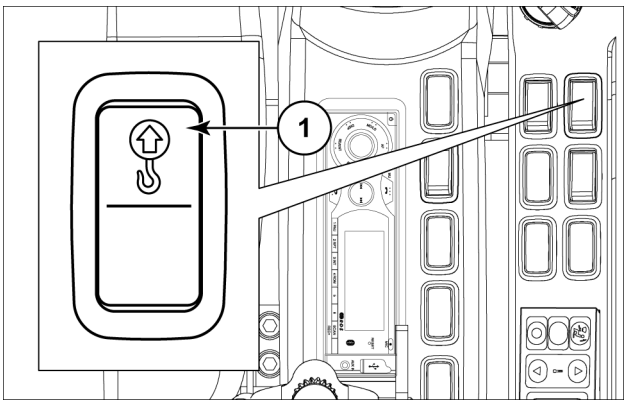


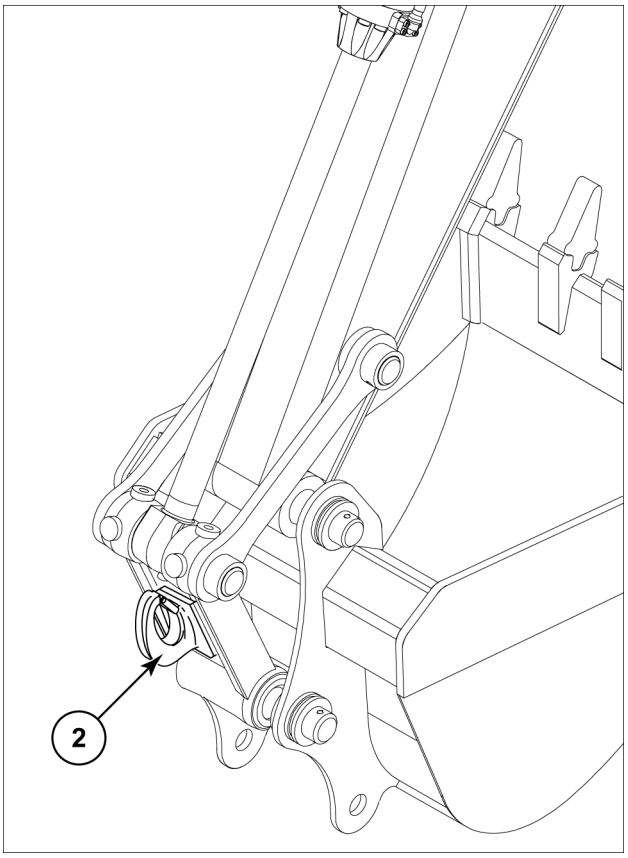
NHC0297 7

To handle suspended loads proceed as described below:

- Evaluate (if not known) the mass of the object to be handled and compare it with the data listed in the liftable loads chart located in the cab. Do not lift loads exceeding the maximum values prescribed by the table.
- Prior to performing lifting operations, press the over load alarm switch **(1)** to activate the load momentum sensor. This sensor, once the safety limit is reached, activates the sound warning device.
- Set an engine speed appropriate for the hydraulic load required.
- Extend the bucket cylinder to end stroke.
- Secure the load with the hook **(2)** located on the bucket linkage rod, using slinging devices and chains adequate for the load to be lifted. In order to limit the swinging of the load, avoid slinging it with cables and/or chains too long.
- Check the surrounding working area and make sure that the path to be travelled with the load is free from obstacles.
- Lift slowly the load, avoiding sharp movements which could cause swinging of the load. Keep the load near the machine, to improve the stability and operate, preferably, along its longitudinal axis, rather than crossways. Lift the load from the ground the minimum height required.
- Position and place the load where desired, making sure that it is resting on a solid base appropriate for its mass.
- Remove the chains.



NHC0310 2



NHC0314 3