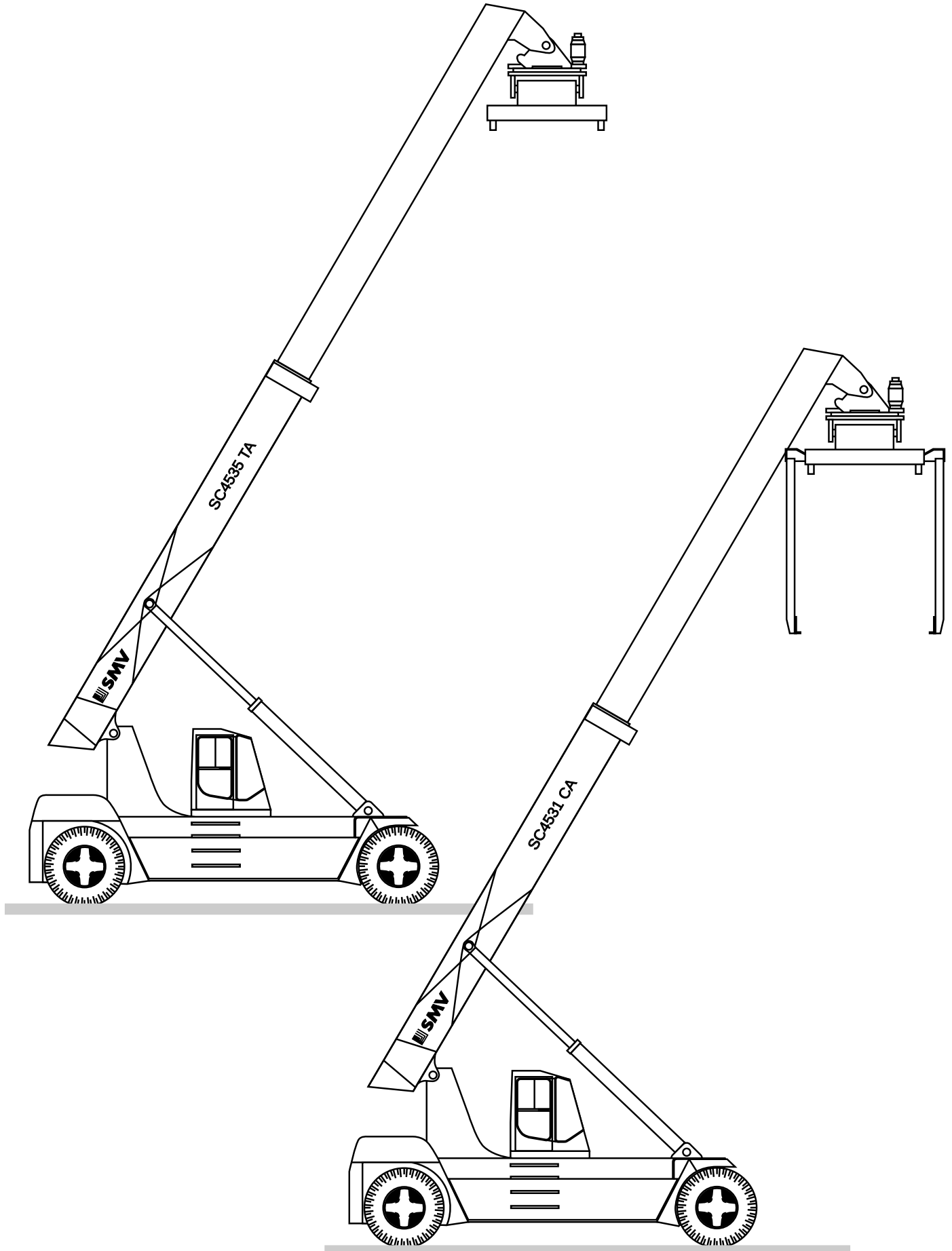


MODEL RANGE REACH STACKER SC 4127 - 4535 TA / SC 4023 - 4531 CA





This user manual provides you with the information you need to know about starting, driving, servicing and maintaining your SMV lift-machine.

Using and attending to the truck properly will preserve its qualities for a long and profitable working life, and will make full use of its applications.

The expressions "front", "back", "right" and "left" indicate the position in which the relevant component is installed in the truck as seen from the driving compartment.

Follow all instructions in the manual on using the machine and carry out maintenance and inspection as described in the maintenance table on a regular basis and at the correct time, using the specified lubricant.

Maintenance must be carried out only by qualified staff.

Above all, we would like to emphasise the importance of following both the general traffic regulations and the guidelines in force for the use of lift-machines and the prevention of accidents at work.

The regulations in force for normal and regular use of commercial lift-machines must be strictly adhered to by management, commercial operators and service staff.

The user, not SMV, is responsible for any dangers that may arise when the machine is being used for applications not approved by the manufacturer.

SMV lift-machines are designed for the transport and lifting of loads indicated on the load-bearing capacity plate.

No alterations and, above all, no additions or conversions may be made to the machine without the permission of the manufacturer.

The user instructions for additional parts issued by the manufacturer apply to those additional parts.

Technical remarks

SMV is constantly developing both the design and manufacture of its products. Illustrations and technical details concerning the design, parts and performance of the lift-machine are subject to alteration as a result of this technological development.

SMV therefore assumes no responsibility on the basis of those specifications, illustrations and descriptions found in the user manual.

If you have any questions concerning SMV lift-machine and ordering spares, contact your nearest authorised dealer. Take care to supply the correct address for delivery.

If any repairs are needed, use only SMV original spares. This is necessary in order for your SMV machine to retain its original technical standard.

When ordering spares, it is important to indicate the item number found in the spares list as well as the following information:

Model:
Serial number/year of manufacture:
Delivery date:

When ordering spares for the following units, you must indicate their individual manufacturing numbers:

Engine no.:
Boom no.:
The lift height of the boom:
Transmission no.:
Drive shaft no.:

When the lift-machine is delivered, the details on the type plate should be written in this user manual.

Delivery inspection

Every SMV lift-machine is carefully inspected before it leaves the factory to ensure that it is fully in order and is fully equipped in accordance with the order. Authorised SMV dealers are then required to reinspect the machine before it is delivered to the customer.

In order to avoid later complaints and problems, the customer should also check that the machine is in full working order and is fully equipped when it is delivered, with a receipt of the acceptance/handover of the machine from the dealer.

The following technical manuals accompany every lift-machine:

- 1 Spares catalogue for the lift-machine
- 1 User manual for the lift-machine
- 1 Machine card

When contacting your authorised dealer, always indicate:

- 1. Machine designation
- 2. Machine serial number
- 3. Year of manufacture.



Safety regulations

- * Follow national safety regulations.
- * The truck must only be driven by those trained to do so and who have the permission of the management.
- * Remember: The national law on driving licences and driving regulations always apply!
- * Before starting up: Ensure that no person(s) or other obstacles are in the way of the truck or its equipment.
- * The truck must not be used if it has faulty brakes, steering, lifting or other important functions.
- * Passengers are not allowed.
- * Lifting a person or persons is forbidden unless the truck is equipped with an approved lift cage for this purpose.
- * Never exceed the lifting capacity of the truck - see type plate and load diagram.
- * The load should always be transported in a lowered position.
- * Always report damage and wear and tear affecting the safety/function and life of the truck.
- * The hydraulics of the truck is equipped with a high-pressure hydraulic accumulator. Take great care when working with the hydraulic system. Only service staff with knowledge of the hydraulics may intervene here.

BEFORE OPERATION

Persons responsible, particularly machine drivers and service staff, must be instructed on the regulations for normal and safe use of commercial lift-machine which accompany this manual. Follow the guidelines and safety regulations applicable to:

- use of commercial machine
- roads and work places
- drivers (rights, obligations and regulations for implementation)
- any extra equipment
- different types of vehicle
- service (maintenance and inspection)
- annual inspection for the prevention of accidents.

The driver /(owner) or other persons in positions of responsibility must ensure that the above guidelines and safety regulations are adhered to. When a trained driver is about to operate the truck, instruct him on:

- special functions of the SMV machine extra equipment
- special operating applications.

Driving, manoeuvring and steering should be practised until the driver is fully acquainted with all these operations.

Only after that stage can training in stacking manoeuvres begin. The stability of the machine in the working area can only be guaranteed if the correct procedures are followed. Should the machine start to roll due to unapproved manoeuvres or incorrect driving, the full instructions supplied must be followed.

Prevention of accidents

In some countries, lift-machines must be inspected once a year by trained staff in accordance with the prevention of accidents regulations. Authorised SMV dealers can supply information on these.

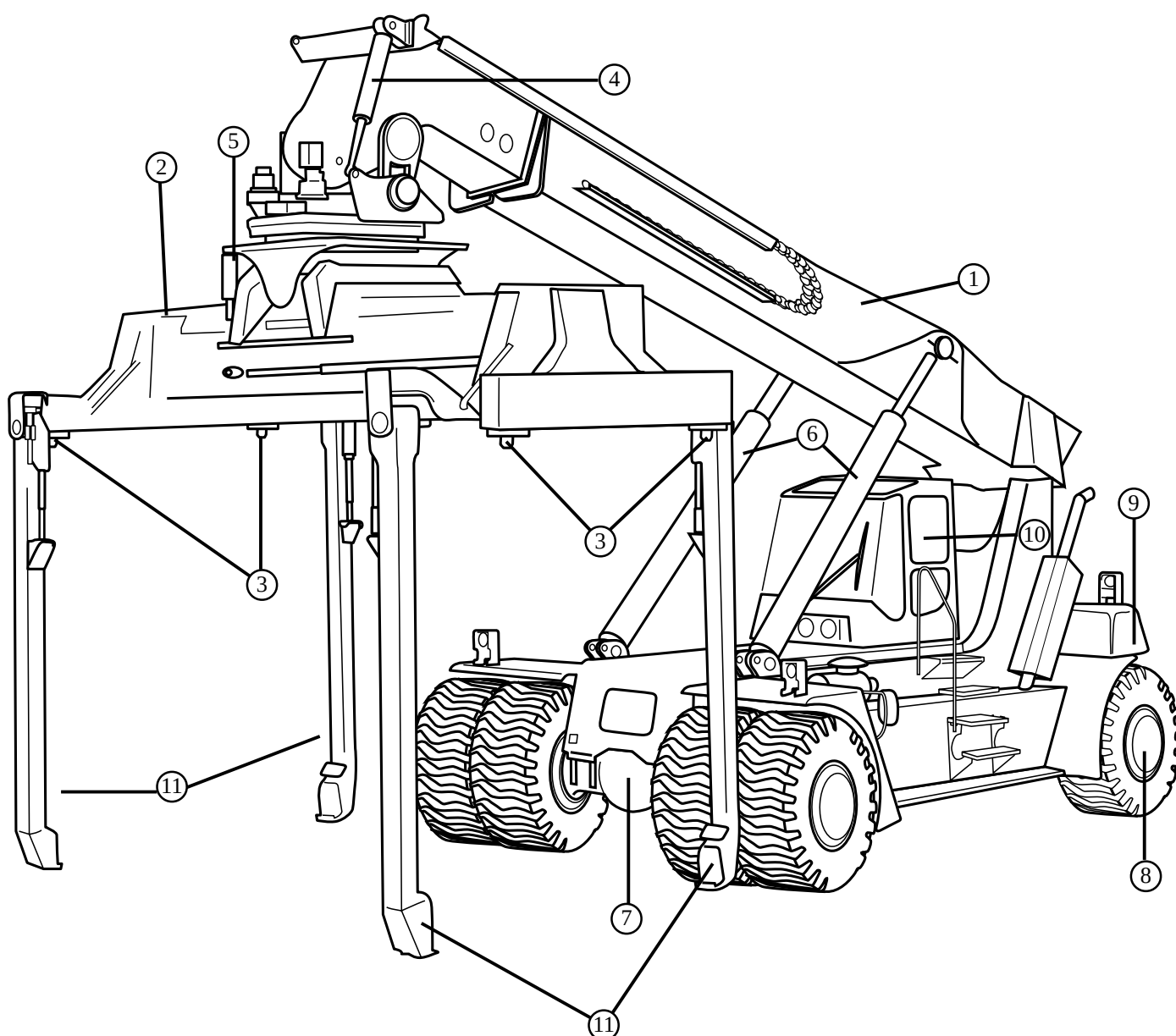
We reserve the right to modify our design and material specifications without prior notice.



OUTLINE PICTURE OF THE LIFT TRUCK

DESCRIPTION

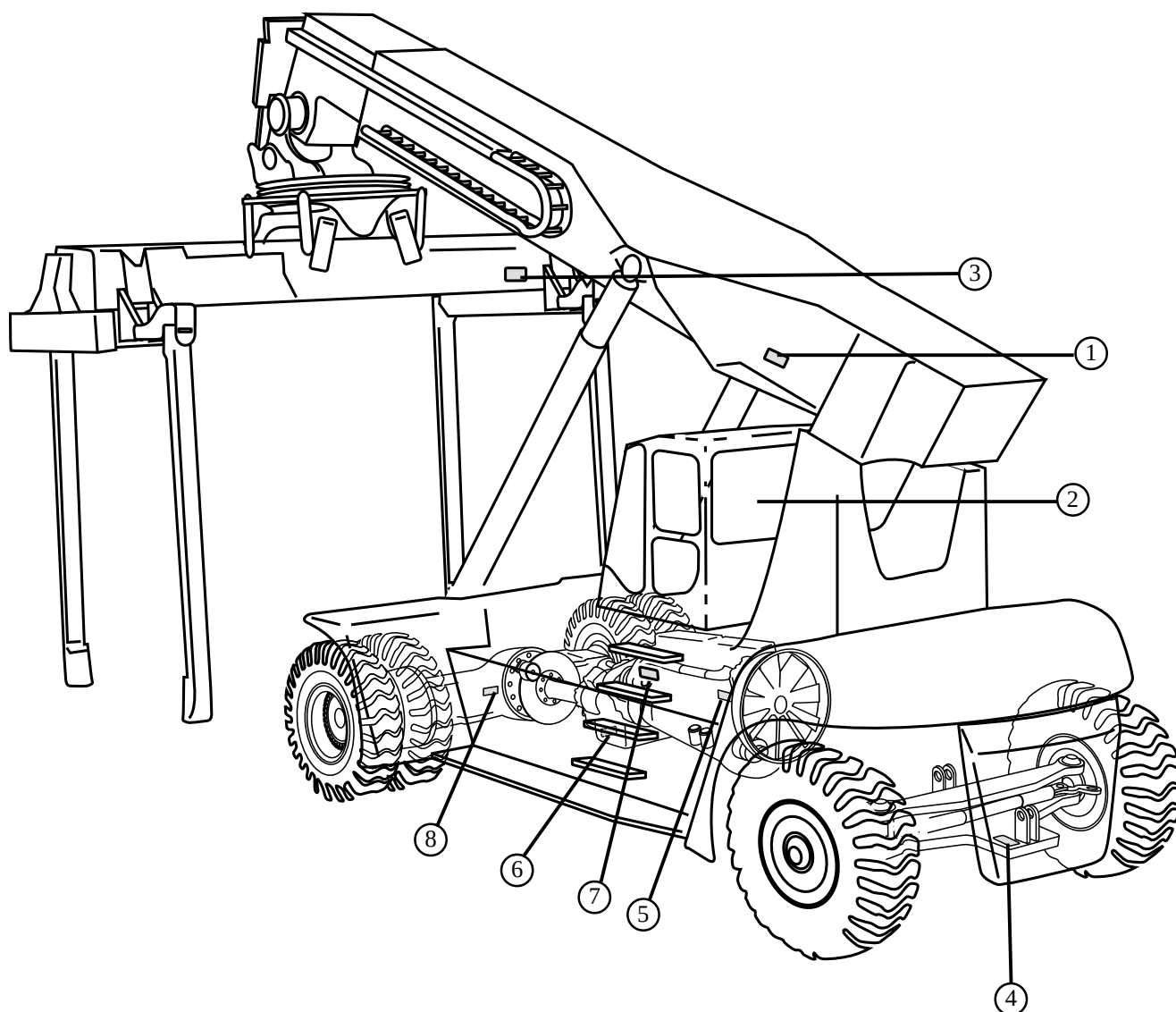
- | | | |
|---------------|------------------------------------|---------------------------------|
| 1. Lift boom | 4. Damping cylinders 2 pcs | 8. Steer axle |
| 2. Attachment | 5. Tilt cylinders attachment 4 pcs | 9. Counterweight |
| 3. Twistlocks | 6. Lifting cylinders | 10. Driver's cab |
| | 7. Drive axle | 11. Trailer lift legs. (CA mod) |





ID PLATES AND SERIAL NUMBERS

- | | | |
|------------------------|------------------------|----------------------|
| 1. Boom number | 4. Steer axle number | 7. Chassis number |
| 2. Load capacity plate | 5. Engine number | 8. Drive axle number |
| 3. Attachment | 6. Transmission number | |





TECHNICAL DESCRIPTION

Specification SC 4127 TA means:

- SC = Silver Container handler
- 41 = 41 tons lift capacity in first row
- 27 = 27 tons lift capacity in second row
- TA = Toplift attachment
- CA = Combi attachment

The engine is a water-cooled, turbo-charged 6-cylinder diesel engine. The engine drives a four speed transmission using a torque converter. The gear selection is electrical with three or four gears for driving front/back. The torque converter is equipped with an oil cooler which lies underneath the radiator. The gearbox has a dis-engaging valve controlled by the brake pedal in the cab. This valve disengages the gearbox so that the operator can control the brakes whilst maintaining a high engine speed during stacking manoeuvres.

The front axle is driven by the gearbox via an universally jointed drive shaft. The axle is of the heavy duty double reduction type. The primary reduction is through the hypoid crown wheel and pinion gear set, the differential gears are carried within the centre of the crown wheel. The secondary reduction is achieved by a planetary gear set within the wheel hub. The wheel hubs are carried on taper roller bearings, thus relieving the half shaft of any loading other than driving torque.

The steer axle is mounted in "spherelastic" bushes which allow sufficient wheel movements for stability on uneven ground. The parallel tierods are between the steering cylinder and the wheel axles.

The brakes are operated by an oil-cooled wet disc-braking system. The foot brakes are controlled by the foot brake valve which activates the drive axle. The parking brake is controlled electrically and activates a hydraulic cylinder on the drive shaft.

The double hydraulic pumps are mounted directly on the gearbox. The system is divided into four circuits - two for manoeuvring, one for servo functions and one for steering. The relief valves in the hydraulic circuits are installed to prevent the system from overloading.

The steering is fully servo-assisted. If the engine should stall, it is still possible to steer the truck without servo assistance, although it is heavy going.

Two control valves, mounted on the chassis, are controlled from the cab by a servo-assisted joystick control levers

to the right of the driver. The joystick regulates the functions for lifting, lowering, boom in/out and the spreader.

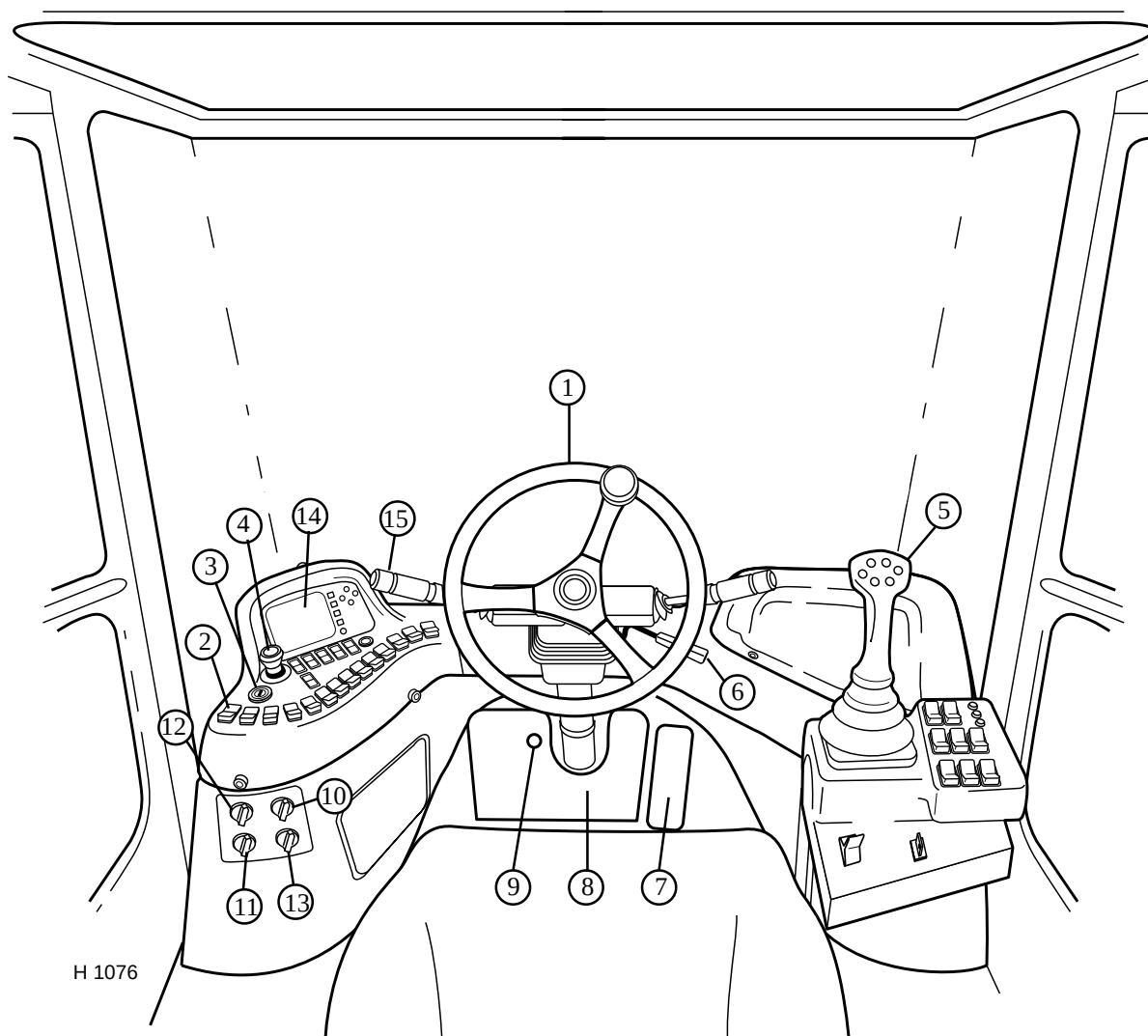
The driver's cab fulfils international safety standards, and is rubbermounted to protect the driver from vibrations. Entrance to the cab is on the left side via the steps on the machine. When the driver's seat is rotated through 90°, it is also possible to exit the cab from the right side.

All hydraulic controls for the lifting functions are grouped on the console to the right of the driver's seat. The parking brake and the switch for selecting additional electrical equipment instruments, gauges and warning lights together with the switches for the direction indicators and windscreen wipers are located on the front mounted instrument panel. Gear control lever on the steer shaft.

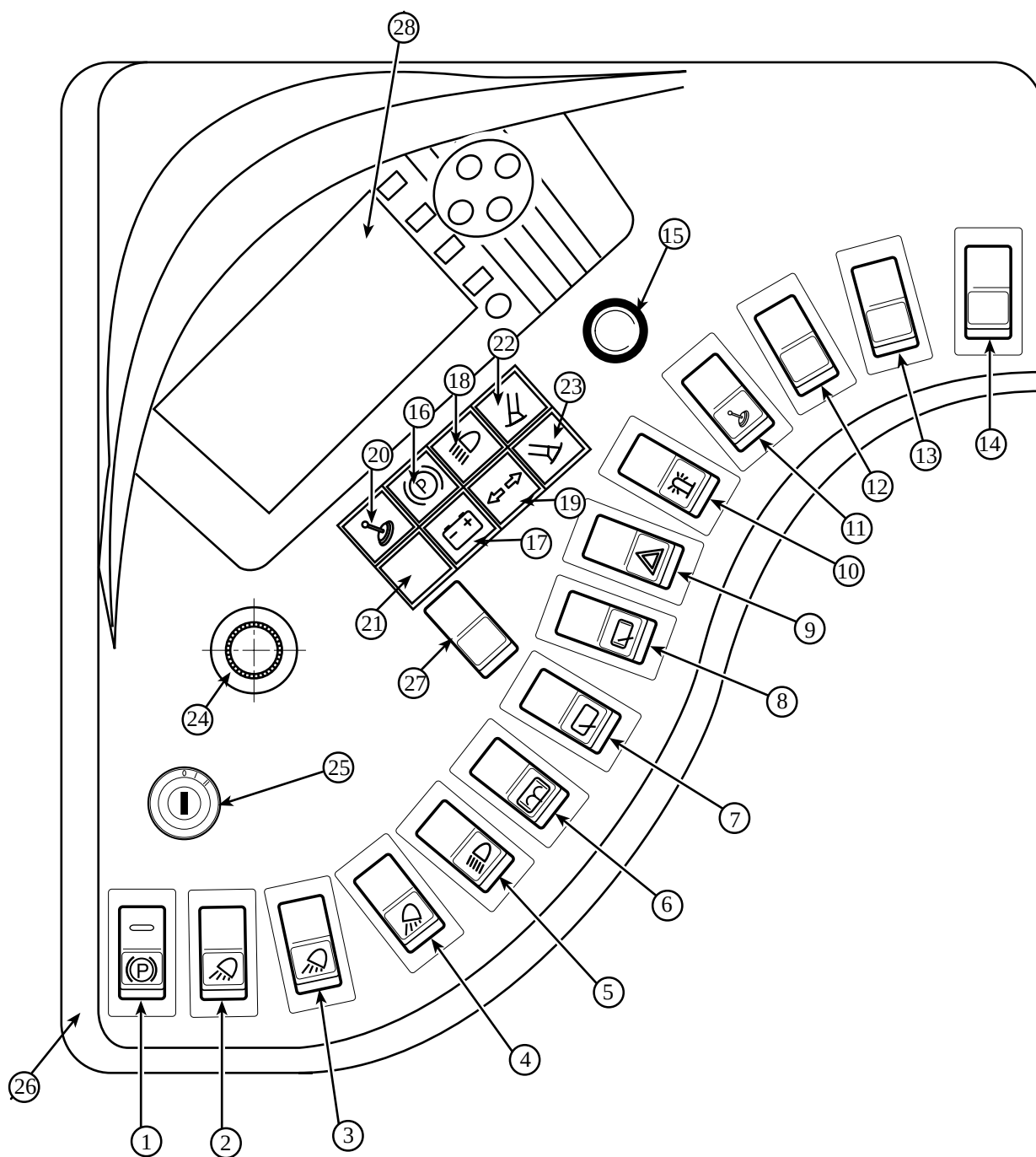
The electrical system is 24 V and has two serial-connected 140 Ah heavy duty batteries.



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**DESCRIPTION**

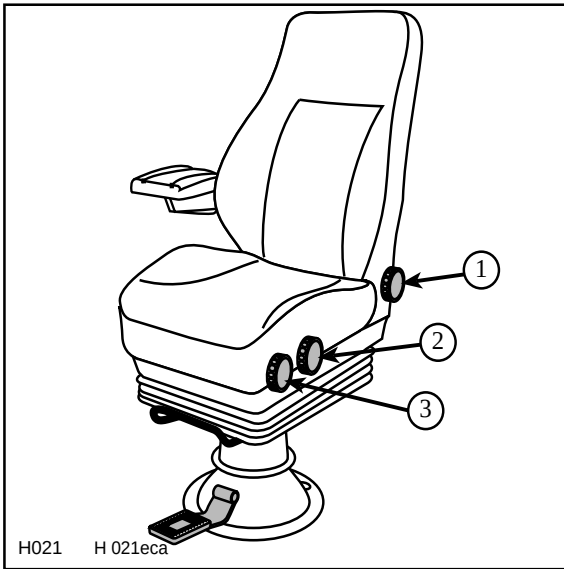
- | | | |
|-----------------------------------|--------------------|---------------------------------|
| 1. Steering wheel | 7. Accelerator | 13. Recirculation |
| 2. Instrument panel with switches | 8. Brake pedal | 14. Display for EMC |
| 3. Ignition switch | 9. Declutch switch | 15. Direction and gear selector |
| 4. Emergency stop | 10. Fan | |
| 5. Joystick | 11. Air condition | |
| 6. Adjustment steering wheel | 12. Heater | |



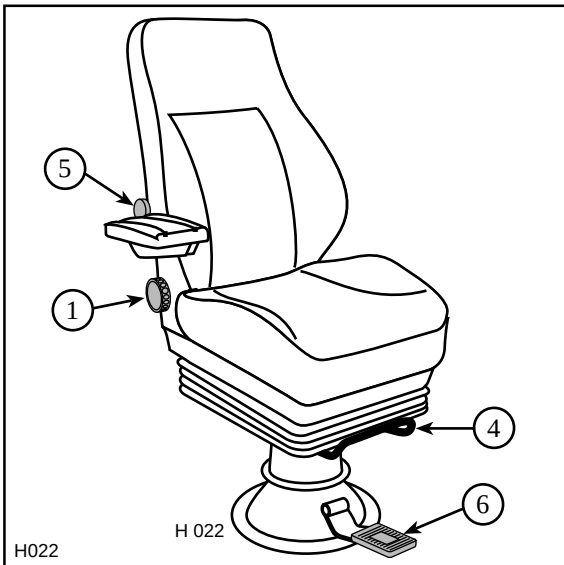
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DESCRIPTION

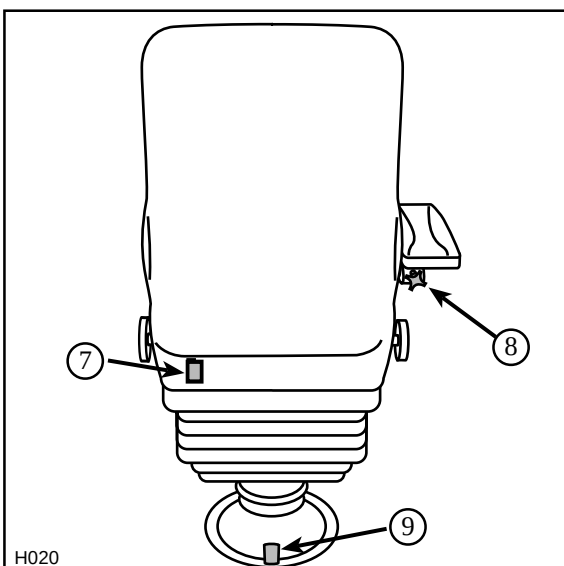
- | | | |
|--------------------------------|------------------------------------|--|
| 1. Parking brake | 11. Joystick steering (optional) | 21. Enginge electronic system (DSI 12) |
| 2. Working lights boom | 12. Central lubrication (optional) | 22. Support legs up (optiona) |
| 3. Working lights attachment | 13. Central lubrication (optional) | 23. Support legs down (optiona) |
| 4. Working lights optional | 14. Emergency lowering | 24. Emergency switch |
| 5. Road lights | 15. Warning light EMC | 25. Ignition switch |
| 6. Screen washer | 16. Parking brake | 26. Buzzer EMC (internally) |
| 7. Rear windscreen wiper | 17. Alternator | 27. Additional engine stop (DSI 12) |
| 8. Roof wiper | 18. High beam | 28. Display EMC |
| 9. Hazard | 19. Directionals | |
| 10. Rotating beacon (optional) | 20. Joystick steering (optional) | |

**Adjusting the driver's seat**

- To elevate the seat, turn the hand wheel (3) clockwise. Weight adjustment is automatic.
- Adjust tilting of the seat cushion, by the hand wheel (2).
- Adjust tilting of the backrest with hand wheel (1).



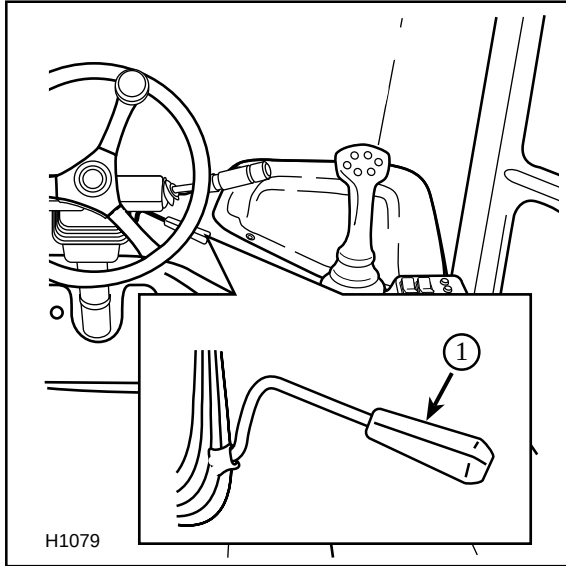
- Lift the clamp (4), to adjust the seat forward/backwards
- Adjust the lumbar support with hand wheel (5)
- Rotate the seat by pressing pedal (6) Option



- Adjust the height stroke limiter with handle (7)
Lever to the right - full stroke
Lever one step to left - stroke limited partially
Lever to the left - stroke fully limited
- Adjust the armrest with the hand wheel (8)
- To remove seat press pedal (9) Option

**WARNING**

Never drive the truck unless the seat is locked in position.

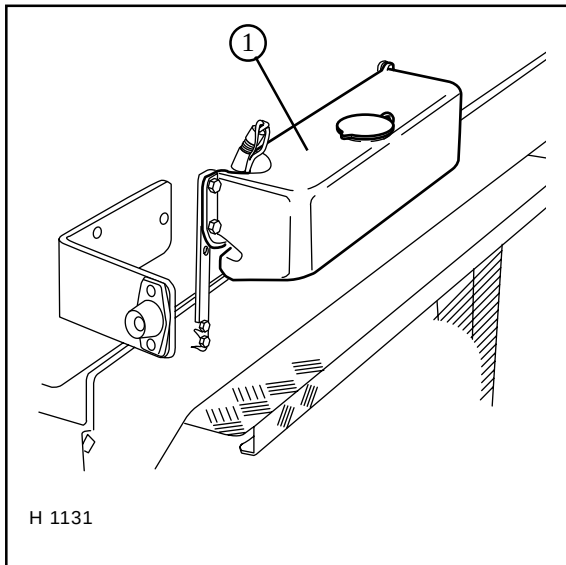
**Adjustment lever of steering wheel**

When positioning the steering wheel:

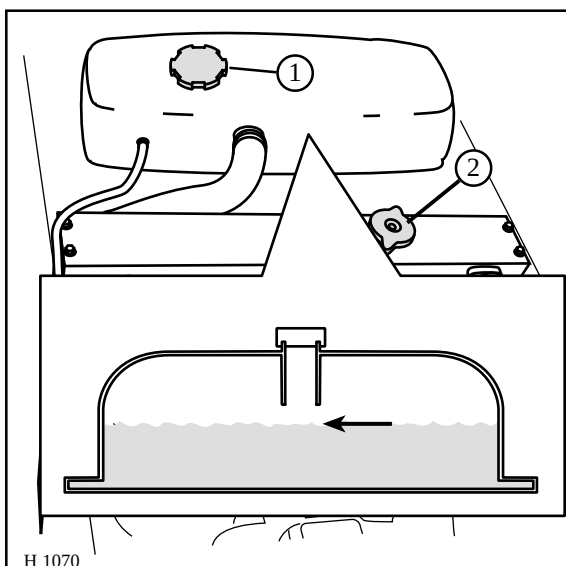
- Pull lever (1) upwards adjust the tilt.
- Push lever (1) downward to adjust the height.

Daily maintenance and service before operation
Points to check:

- Water level of the radiator page 11.
- Washer level page 11
- The level of the engine oil page 12.
- The air filter indicator (the engine's air filter) page 12.
- The gear box oil level page 12.
- Hydraulic oil level page 13.
- The fuel level page 14.
- Tyre pressure and condition page 14.
- Brake operation.
- Steering operation.

**Screen washer tank**

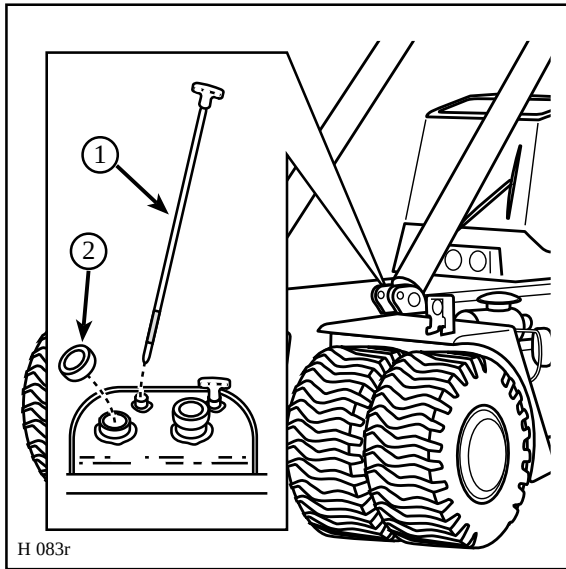
Washer tank (1) is placed behind the cab.
Fill when necessary.

**Check the coolant of the radiator**

- Open the cap of the expansion tank (1).
First a quarter of a turn to ensure that the system is under no pressure.
- The level should be up to the lower edge of the filling tube (3).

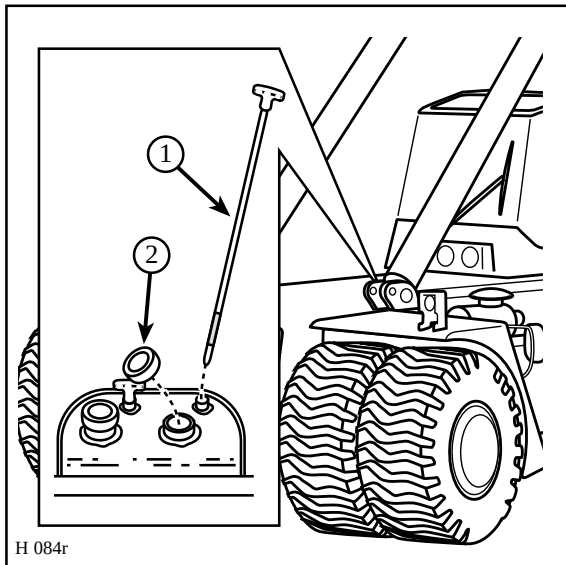
NOTE

- Do not refill through or open the cap of the radiator (2).



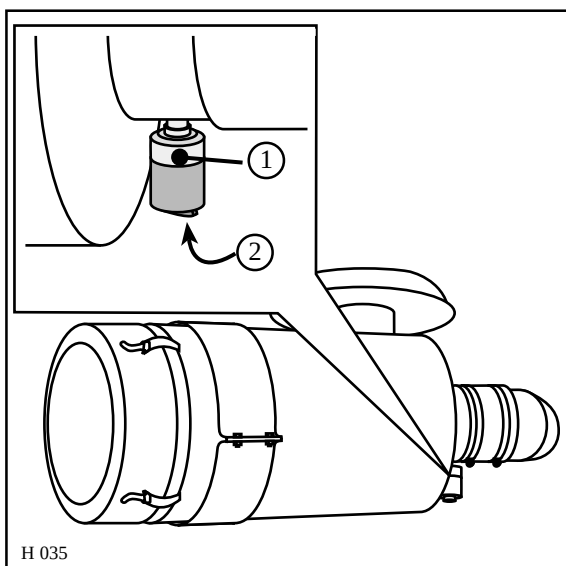
Checking the engine oil level

- Lift the engine casing.
 - The dip stick (1) is on the right-hand side of the engine.
 - Remove the dip stick (1) completely and dry it off with a clean cloth.
 - Dip the stick back in fully and remove again.
 - The oil level should be between the minimum and maximum level indicators.
 - If necessary, remove the fuel cap (2) and top up the oil.
 - Fill with oil to the maximum level indicator on the dip stick.
- See maintenance data for volume.



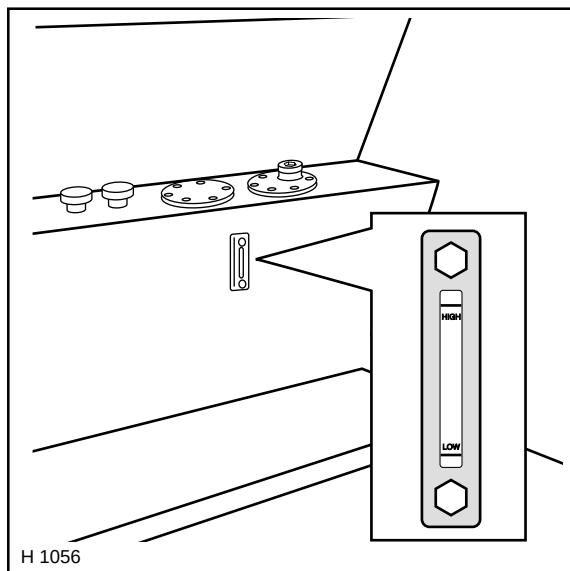
Checking the oil level in the gearbox

- Start the engine and run until the oil has reached operating temperature.
 - Remove the dip stick (1) and dry it off with a clean cloth.
 - Dip the stick back in fully and remove again.
 - The oil level should be between the minimum and maximum level indicators.
 - If necessary, remove the fuel cap (2) and top up the oil.
 - Fill with oil to the maximum level indicator on the dip stick.
 - Turn off the engine.
- See maintenance data for volume.



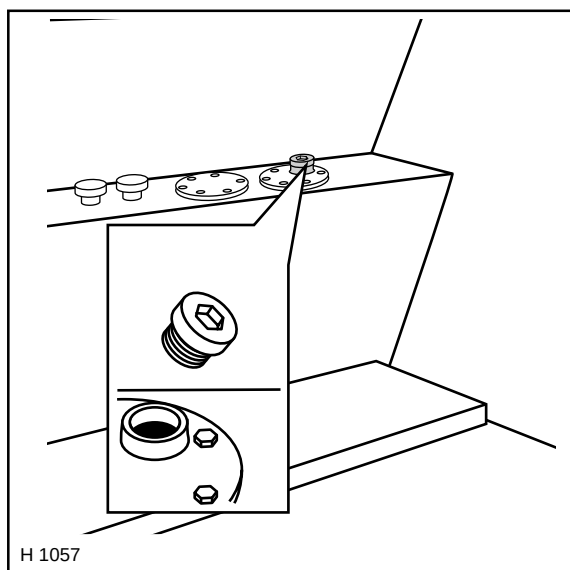
Air filter indicator

- Check the indicator (1).
- If the indicator shows RED, reset the indicator by pressing the knob (2) under the unit.
- Start the engine. If the indicator still shows red, stop the engine and clean or replace the air filter.



Hydraulic system Checking the hydraulic oil level

- Check that the oil level is between the MIN and MAX marks on the indicator at the side of the hydraulic oil tank (the boom should be lowered & fully retracted).



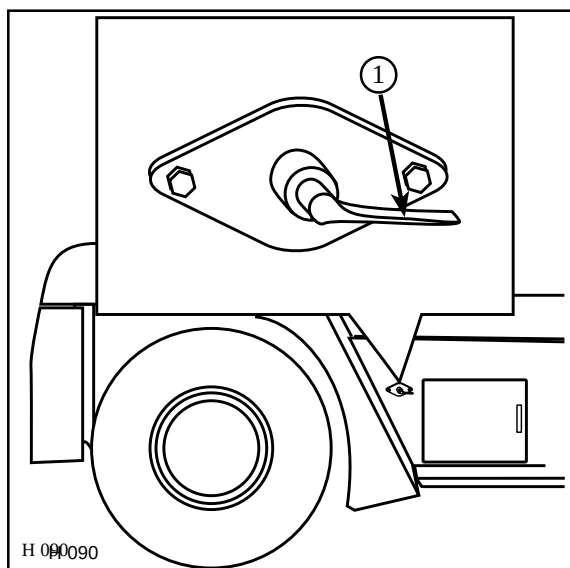
Topping up the hydraulic oil



WARNING

Do not open the oil cap whilst the engine is running

- Unscrew the oil cap (1).
- Fill with hydraulic oil up to the upper mark on the indicator.
- Screw the cap back on.



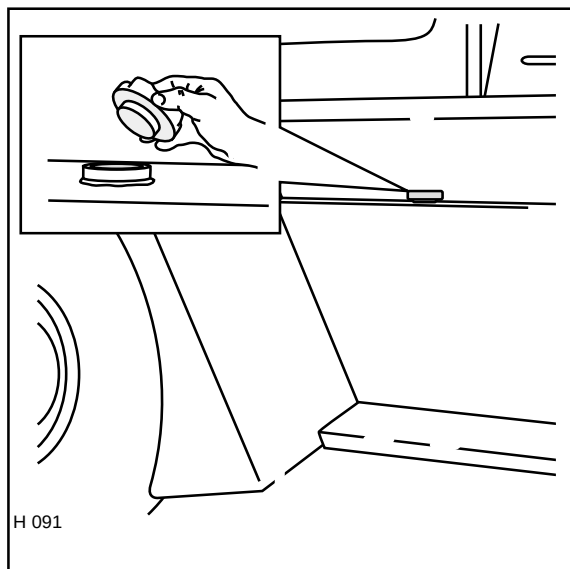
Main circuit switch

- The circuit switch is located on the right-hand side of the machine.
- Turn the cut-out switch clockwise to turn it on.
- Turn the switch anti-clockwise to turn it off and remove the key.



WARNING

The main disconnect do not cut the power to the alternator. Always disconnect the ground (minus) cable at the battery when working near or on the alternator.

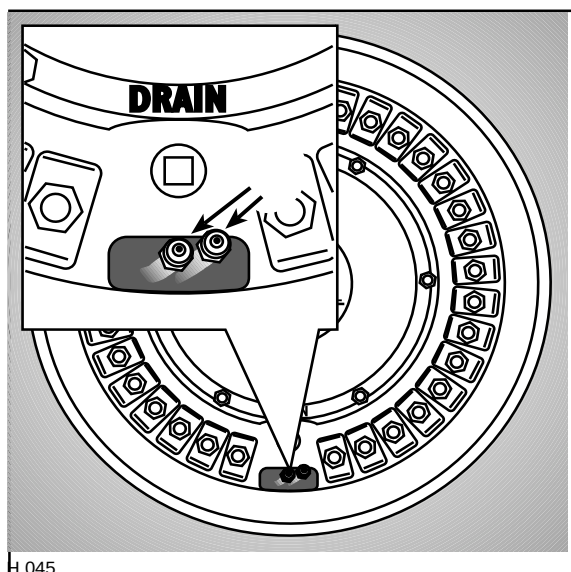
**Filling with fuel**

- Open the tank cap located on the left-hand side of the machine and fill with the recommended fuel. See page 84.
- Screw on the cap.

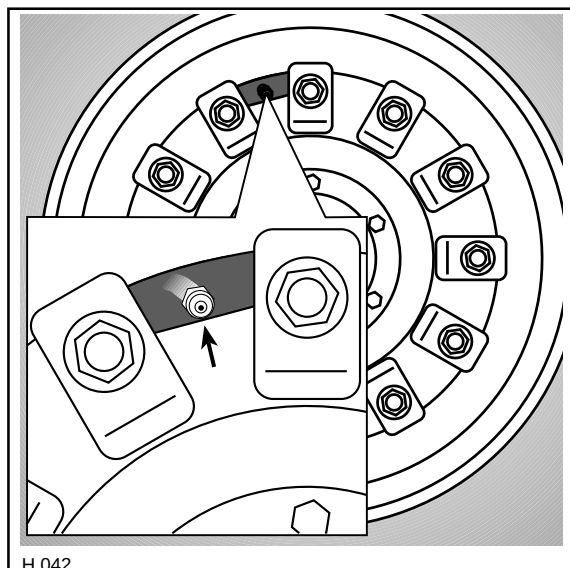
The fuel capacity of the tank is 770 liters.

NOTE

To avoid air being sucked into the fuel injection system, the fuel tank should never be run completely empty.

**Checking the condition and pressure of the tyres**

- Check that the tyres have not been damaged or become too worn.
- Remove any foreign objects from the tread.
- Check that the tyres have the correct pressure of 9 bar.
- Pump the tyres according to the relevant regulations.

**WARNING**

When changing tyres, use only tyres which are approved by the manufacturer.

Description of the drive monitor type IQAN

The drive monitor's purpose is to efficiently control the reach stacker's hydraulic system and drive line by utilising both analog and digital information from various sensors.

For example, prevent lowering, hoisting and extension in an overload situation. Prevent gear change from forward (F) to reverse (R) as long as the machine is not stationary. Prevent the parking brake from being activated at too high speed. Increase engine RPM when hoisting. Prevent full flow from the hydraulic pump at low engine RPM. Limit engine RPM in case of high engine or transmission temperature.

The following options are also offered - regenerative fast hoist, automatic transmission, and joystick steering with proportionally limited steering movement at higher speeds.

The monitor informs and warns the driver via a display, if any value happens to be abnormal eg. overload, abnormal pressure, or temperature.

The monitor can also be used for fault finding.

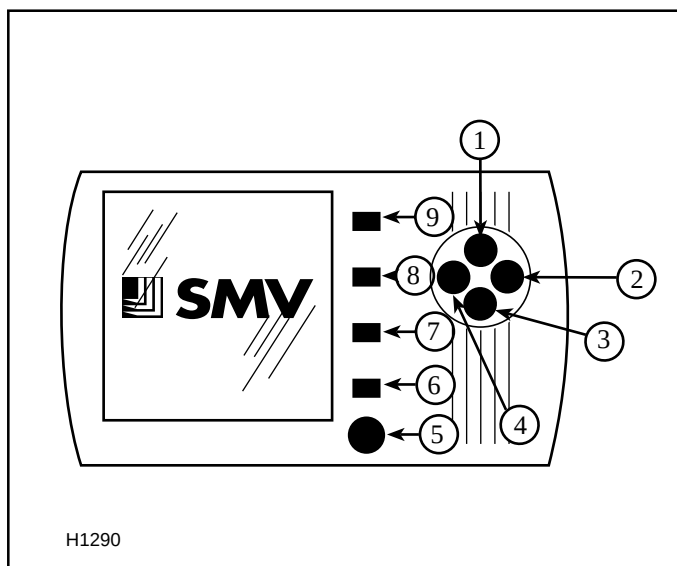
The monitor computes the following information:

- Position of the regulator motor on the fuel injection pump
- Position of the accelerator pedal
- Position of the joystick for boom hoist, lower, extend and retract
- Pressure in hoist cylinders
- Length and angle of the boom
- The engine, transmission and brake accumulator's pressure
- Temperature of the engine and transmission
- Fuel level
- Position of gearshift lever and declutch gear function
- Parking brake switch
- Position of twist locks, open or locked
- RPM of engine and drive train
- Steering wheel's angle and orbitrol pressure. Obs. joystick steering option

The monitor controls the following functions:

- Fuel pump regulator motor (engine RPM)
- The hydraulic valve for hoist and boom lower, extend and boom retract
- The transmission's valves for F&R, 1st, 2nd, 3rd and 4th gears
- Opening and closing of the hose burst valves on the hoist cylinders
- Parking brake valve
- Fast hoist valves on the lift and extension cylinders, optional
- Steering system when joystick type steering fitted, optional
- Automatic transmission, optional

The following information can be obtained by utilising the display's various keys

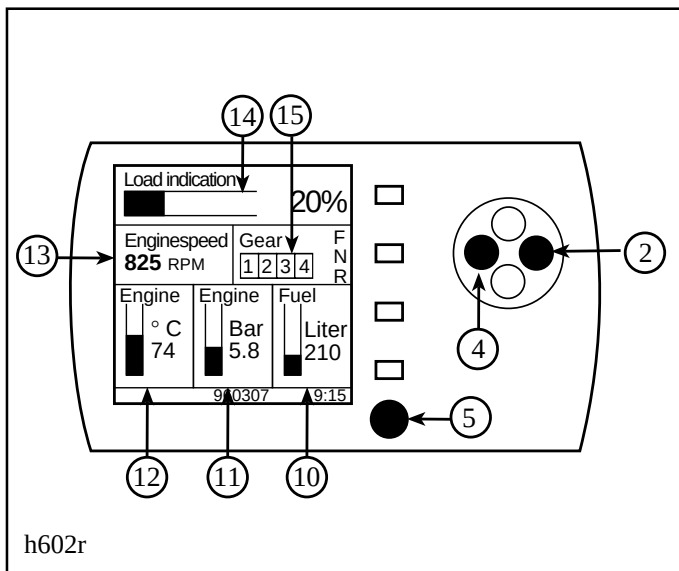
**Description of the keys**

Step keys (1) up, (2) forward, (3) down, and (4) back, pages through the menus.

Menu/enter key (5), change menus/endorse fault information.

Alternative keys (6,7,8 and 9)

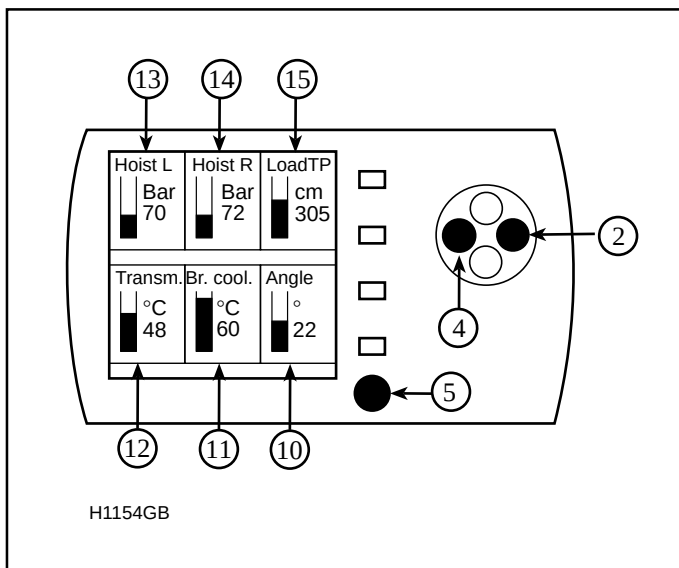
After starting turning on the ignition switch, this picture will be shown for approx. 1 second and will then be followed by the logo which will be visible for approx 2 to 3 seconds.



First page picture menu

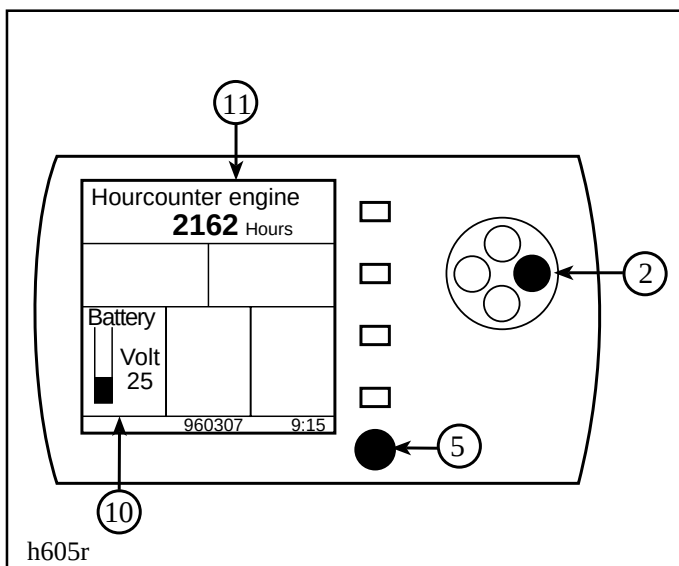
The picture menu contains three pages where various digital and analog values are shown.

- (2) forward.
- (4) backwards.
- (5) can be used to change between the picture and text menus.
- (14) indication of load as a % of max load.
- (15) chosen gear, forward, reverse, neutral, 1,2,3, and 4.
- (10) fuel level in liters.
- (11) engine's oil pressure in Bar.
- (12) engine's temperature in degrees centigrade.
- (13) engine RPM.
- (2) continue to page two of picture menu.
- (5) return to text menu.



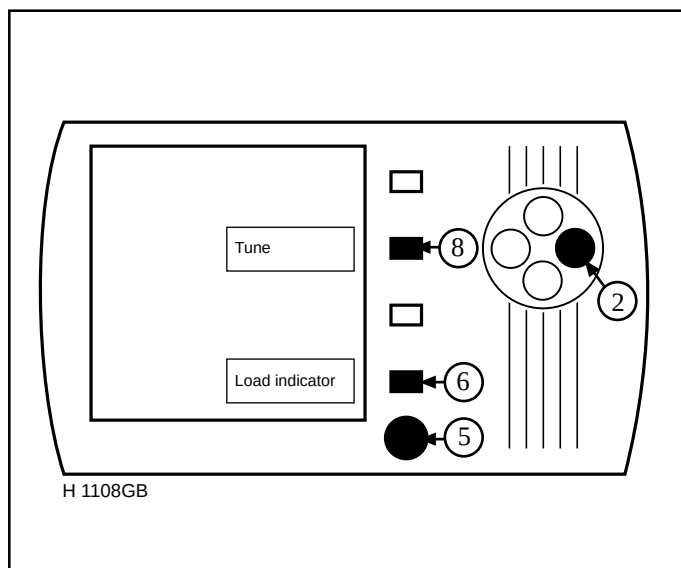
Second page picture menu

- (13) pressure in left hand hoist cylinder in Bar.
- (14) pressure in right hand hoist cylinder in Bar.
- (15) The load's center of gravity distance calculated from the front edge of the drive wheels.
- (10) boom angle in degrees (0 = horizontal).
- (12) temperature of transmission oil.
- (11) Brake temperature in degrees C.
- (4) return to first page of picture menu.
- (2) continue to third page of picture menu.
- (5) return to text menu.



Third page picture menu

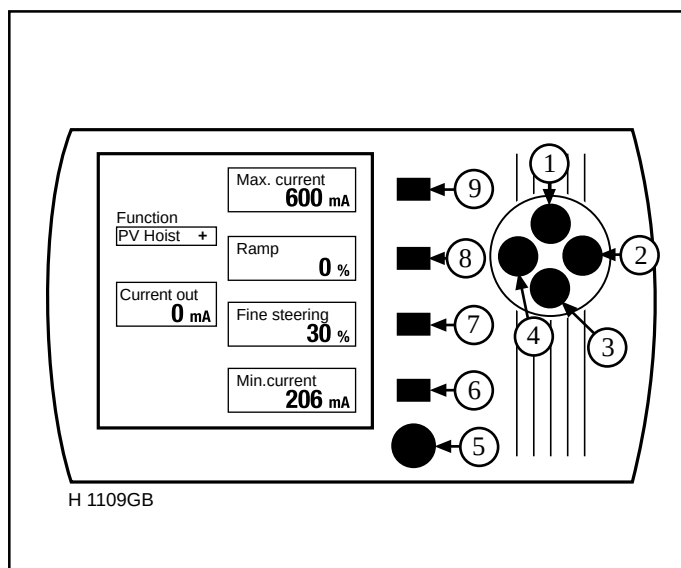
- (11) Hour meter reading.
- (10) Battery voltage.
- (2) to first page of picture menu.
- (5) to text page.



Text menu, first page

The text menu is obtained by pressing key (5) and includes two pages with sub menus.

- (8) tune menu.
- (6) load indicator.
- (2) text menu second page.
- (5) return to picture menu.



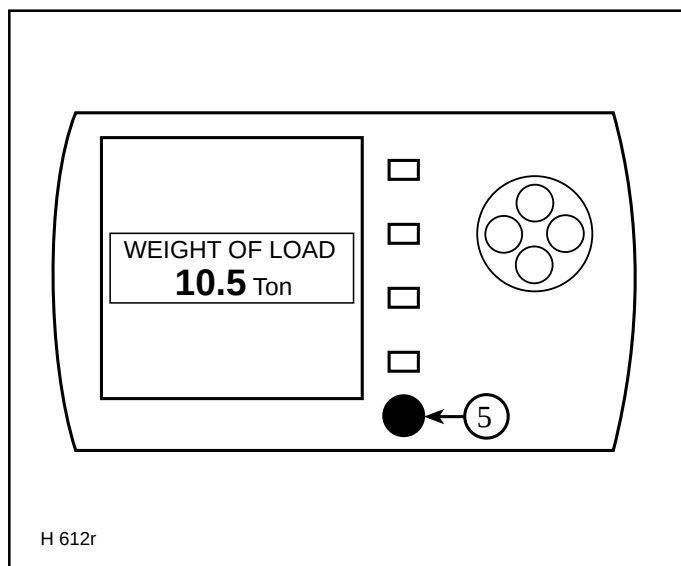
Tune menu

This sub menu gives access to tune certain functions, for example; Lift- and extension functions, start and maximum current. Joystick steering and start and maximum current. It's also possible to adjust ramp on these functions. Choose function by operating joystick. Chooosed function will be shown at the upper left corner. Press keys (6), (7), (8) or (9) depending what to be tuned. Headline will be lit up.

Press key (1) or (3) to increase or decrease the value. (Larger steps could be obtained by using keys (2) or (4).

The adjusted value is entered by key (5).

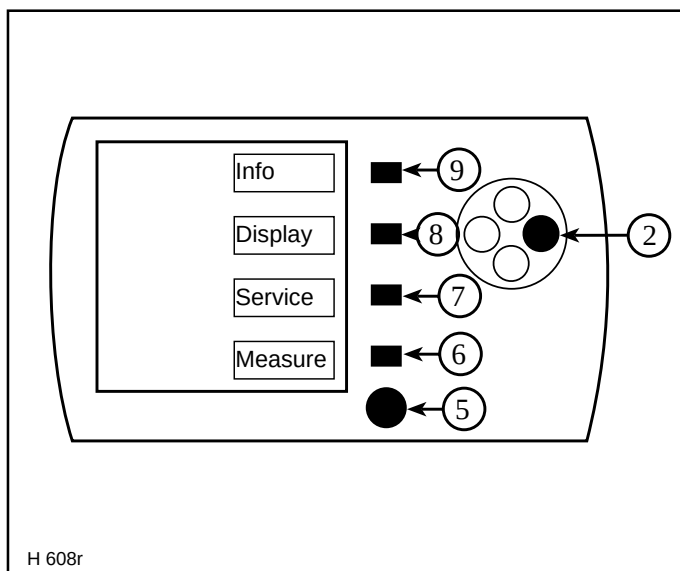
Key (5) will also return to picture menu.



Submenu load scale (option)

The value shown is the weight of the load in metric tons.

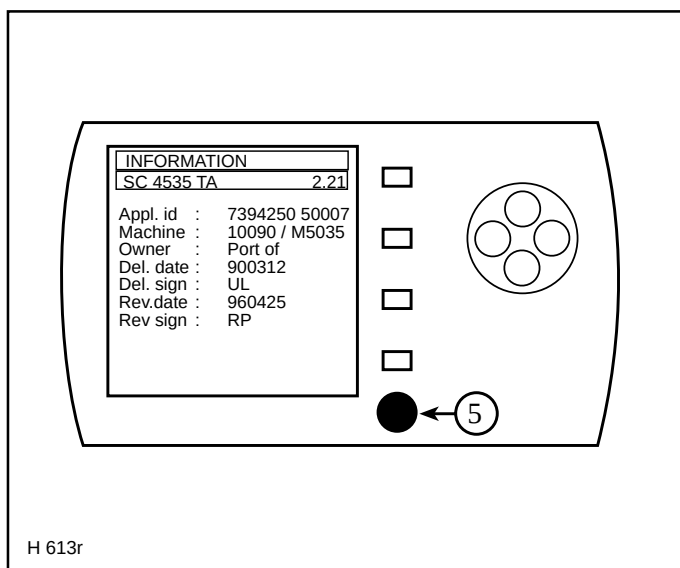
- (5) return to picture menu.



Text menu, second page

The second page is reached by pressing key (2) on the first text menu page and contains the following sub menus:

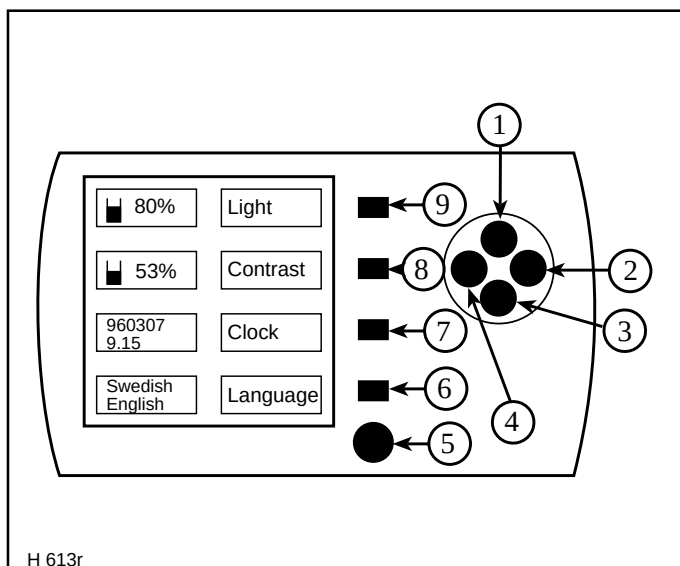
- (9) information
- (8) display
- (7) service
- (6) trouble shooting
- (5) return to picture menu



Submenu information

This menu contains important machine data

- (5) return to picture menu.



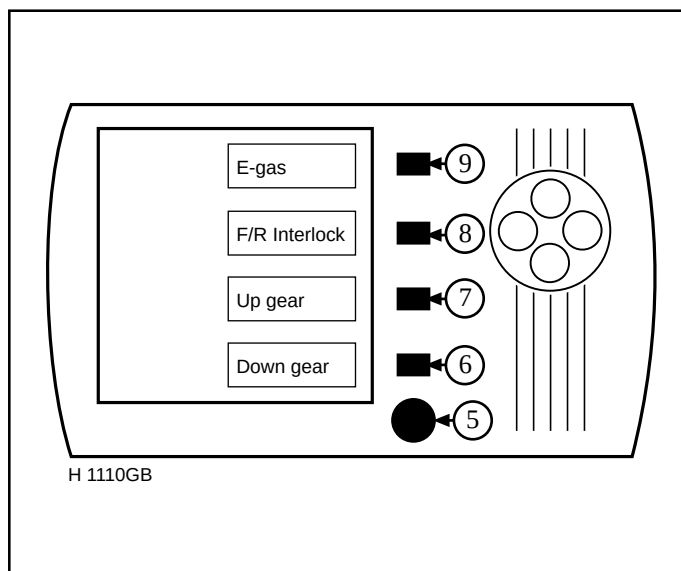
Submenu display

This menu gives the possibility of adjusting brilliance, contrast, time and language.

- (6) language
- (7) time
- (8) contrast
- (9) brilliance

The present settings are shown and it is possible to adjust them by using keys (2, 3, 4 and 5).

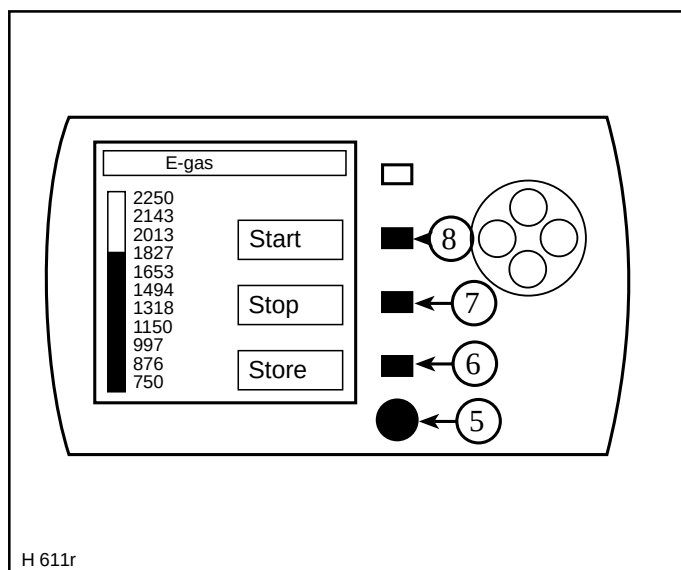
- (5) return to picture menu.



Submenu Service

This menu gives further sub menus.

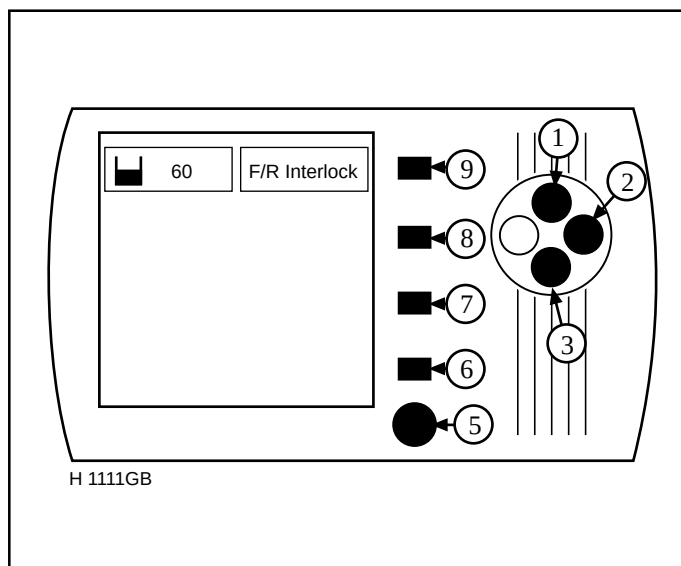
- (9) E-gas is an automatic setup for electric foot throttle. (Only Scania DSI 9).
- (8) adjustment of forward/reverse interlock.
- (7) adjustment of upgear.
- (6) adjustment of downgear.
- (6) and (7) automatic gearshift option.
- (5) return to picture menu.



Submenu E-gas

E-GAS is an automatic adjustment of the accelerator system's adjustment motor in relation to engine RPM.

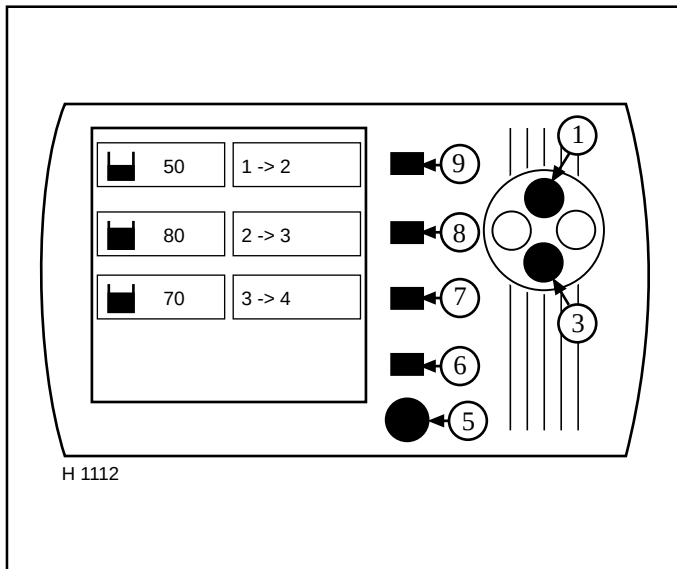
- (8) start the adjustment program. The program is automatically run. The adjustment takes a few minutes and the engine must be running.
- (7) switch off adjustment if program has not succeeded.
- (6) stores the new adjustment.
- (5) return to picture menu.



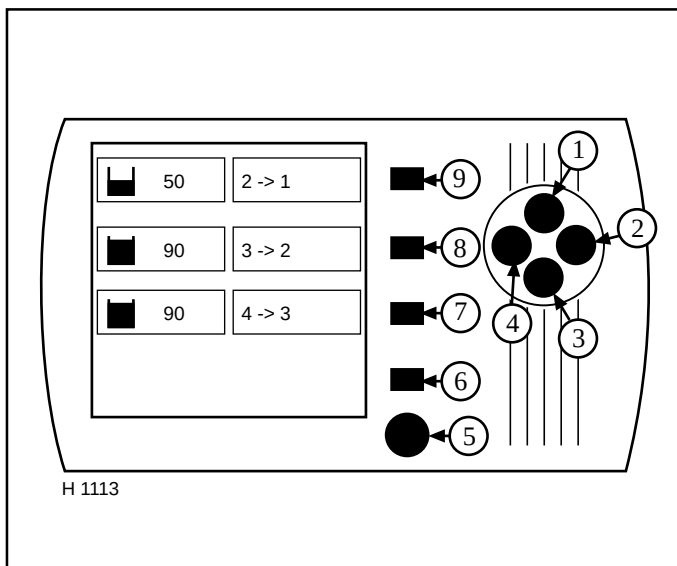
Sub menu F/R interlock

Key (9) activates F/R interlock level. By pressing key (1) increases and key (3) decreases the value and by that the speed that allow change of direction. This is adjustable only within limits from 0 km/h - 3 km/h.

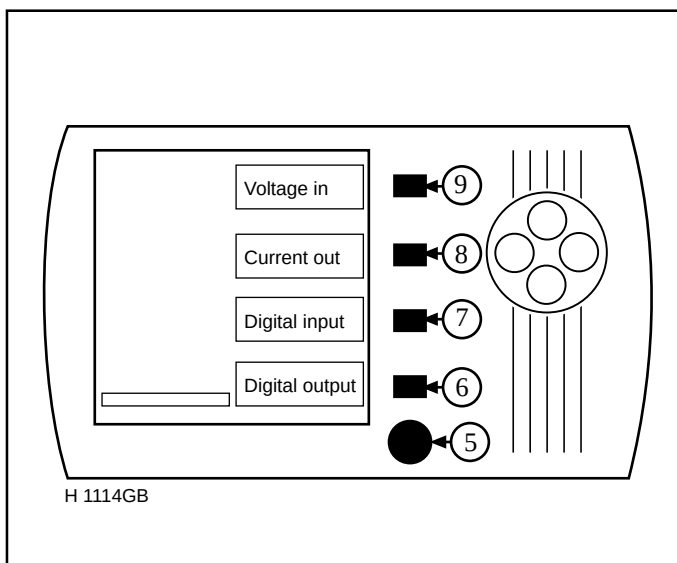
- (5) return to sub menu Service.

**Sub menu up gear.**

- Press key (9) to activate the function for shifting from 1st to 2nd.
Box will light up.
- Adjust by keys (1) and (3) to in/decrease the value and by that change the speed when shift take place between 1st and 2nd
- Press key (8) to activate the function for shifting from 2nd to 3rd.
- Adjust by key (1) and (3) to in/decrease the value.
- Press key (7) to activate the function for shifting from 3rd to 4th.
- Adjust by key (1) and (3) to in/decrease the value.
Speeds can be set only within limits that acceptable for the drive train.

**Sub menu down gear.**

- Press key (9) to activate the function for shifting from 2nd to 1st.
- Box will light up.
- Adjust by keys (1) and (3) to in/decrease the value and by that change the speed when shift take place between 2nd and 1st
- Press key (8) to activate the function for shifting from 3rd to 2nd.
- Adjust by key (1) and (3) to in/decrease the value.
- Press key (7) to activate the function for shifting from 4th to 3rd.
- Adjust by key (1) and (3) to in/decrease the value.
Speeds can be set only within limits that acceptable for the drive train.

**Sub menu Measure**

This menu is obtained from the text menu's second page gives six different submenus.

Page one

- (6) Digital output
- (7) Digital input
- (8) Current out.
- (9) Voltage in,

Go to page two (not shown) by pressing key (4) or (2)

- (9) frequency 6 two pages.
- (8) internal