Content

☑ **Operating Instructions**

☐ **Maintenance Manual**

☐ **Additional documentation**

Condition of extradition:

Model:	830M (Mobile)
Driving engine:	Cummins QSB 6.7 - C203
Equipment:	K15, KA 8,5m ST 7,0m
Undercarriage:	MP 30D

Machine number: **830.0.1250 us**

How to contact us

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Note
The addresses of the SENNEBOGEN Sales and service partners can be found on our Homepage on the Internet.

Current when going to press

Ongoing development ensures the advanced technology and the high level of quality in our machines. This may result in deviations between these instructions and your machine. Errors can also not be ruled out. Please understand, that no legal claims can be derived from the specifications, illustrations and descriptions within these instructions.

Copyright

1.3 Potential instances of misuse

The following apply as potential instances of misuse:

- Exceeding the permitted load capacities.
- Using non-Sennebogen parts
- Use in inadmissible ambient conditions.
- Misuse by untrained and uninstructed personnel.
- Inadequate equipment for the application (e.g. protecting the cab against falling objects with guard grill).
- Operating on insufficiently firm base.
- Neglect of necessary inspection and maintenance work.
- Neglecting to lower suspended loads and boom if necessary when shutting the machine down (e.g. work stoppages - over night).
- etc.

1.7 Responsibilities of the operator

Routine checks

Specialist testing, required for crane or backhoe operation

The machine must be thoroughly checked by a specialist.

- before initial operation and before operating the machine after significant modifications
- at least once yearly
- intermediate depending to operating and company conditions.

A specialist in this context is a person who

- has extensive knowledge of this machine and the relevant regulations and guidelines thanks to specialist training and
- through special instructions of SENNEBOGEN

and can assess the safe working condition of the machine.

Specialist testing, only required for crane operation

The following cranes must be tested by a specialist every 4 years:

- Fuel driven mobile crane
- Location changing fuel driven derrick crane
- Lorry attachment cranes

The specialist inspection is to be performed in the 13th year of operation and annually thereafter.

Faults that are detected in recurring inspections must be eliminated within a suitable time-frame depending on how serious a threat they pose to safety.

Change coolant

WARNING

Scalding hazard!

Be careful when draining hot coolant!
Allow the motor to cool first. Catch the coolant in a suitable container when draining and dispose of according to the respective regulations.

- The cooling system is to be emptied completely before filling again.
- Rinse the cooling system several times with clear water to rid it of any residue.
- Fill the cooling system and check the level after a short waiting period.
- Start the motor and check the coolant levels

CAUTION

Adjusting to the correct coolant level must sometimes be checked more than once.

Check the following states when inspecting the coolant levels regularly, e.g.

- lubricant incursion,
- obvious opacity caused by corrosion residue or other particulate matter.

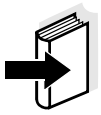
in which case, the coolant must be replaced as indicated above.

Coolant change intervals

Information on changing the coolant and the changing intervals is provided in the operating instructions of the motor manufacturer.

1.8.4 Fuel (not with electric motors)

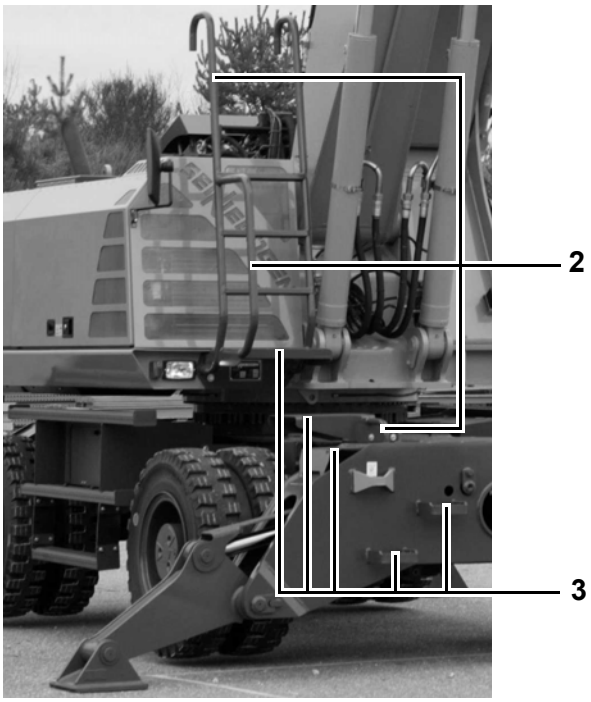
Fill the tank with the specified grade of fuel. Clean fuel is essential for trouble-free operation of the diesel engine.



Notes on quality and fuel selection

Observe the notes in the operating instructions of the engine manufacturer.

superstructure



2 Hand grips

3 Access steps

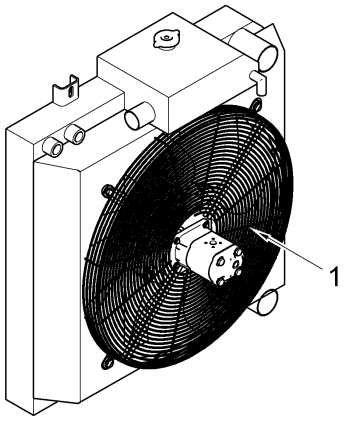
DANGER
Wear personal protection equipment (e.g. safety helmet, ear protection, protective gloves, safety boots) where working conditions require. At working heights of 2.00 m or more, SENNEBOGEN recommends the use of safety equipment to prevent falling. At working heights above 3.00 m, using a safety harness is required legally.
Suspension eyelets are marked.

1.10 Safety devices

DANGER

- Do not remove safety devices or covers.
- Always check that safety devices are complete and correctly secured before starting the machine.
  Safety devices include e.g. engine flaps, doors, protective screen, clothing, fire extinguisher and first aid box.
- Replace all safety devices and covers correctly on completion of assembly or maintenance work.
- Exchange damaged safety devices for new ones.

Example.-Fig.: Fan grille



Illustration

Overload warning device

Option

The overload warning device gives an acoustic warning signal if the permitted safe working load is exceeded. Ensure that the overload warning device is activated when working with lifting gear. The danger of tipping is not averted by the overload warning device!

DANGER

Tip-over danger of machine!
Decrease the load immediately (e.g. decrease reach, lower load).

Limit switching equipment

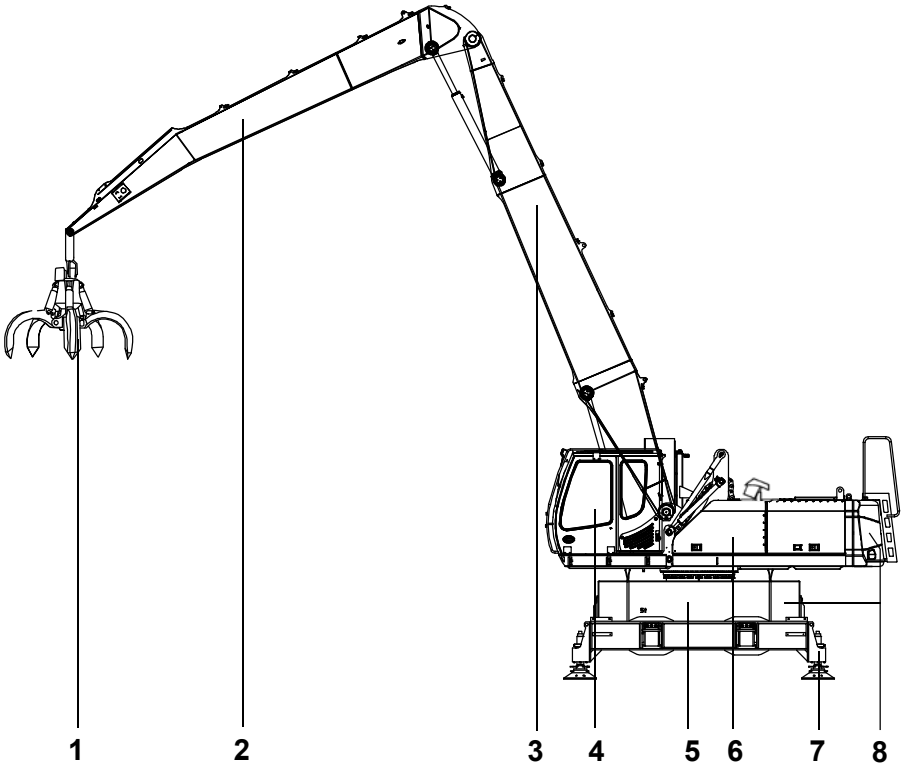
The following movements are limited by the limit switching equipment:

– stick retract

Option

– stick extend
– Hoist up
– Hoist down.

2.1.3 Structure (4-point sub-frame)



1 Attachment (Example: Grab.

2 Grabbing jib

3 Compact jib

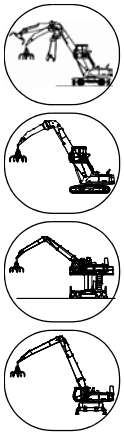
4 Driver's cab/cabin with gallery/platform, raising

5 Undercarriage, with counterweight

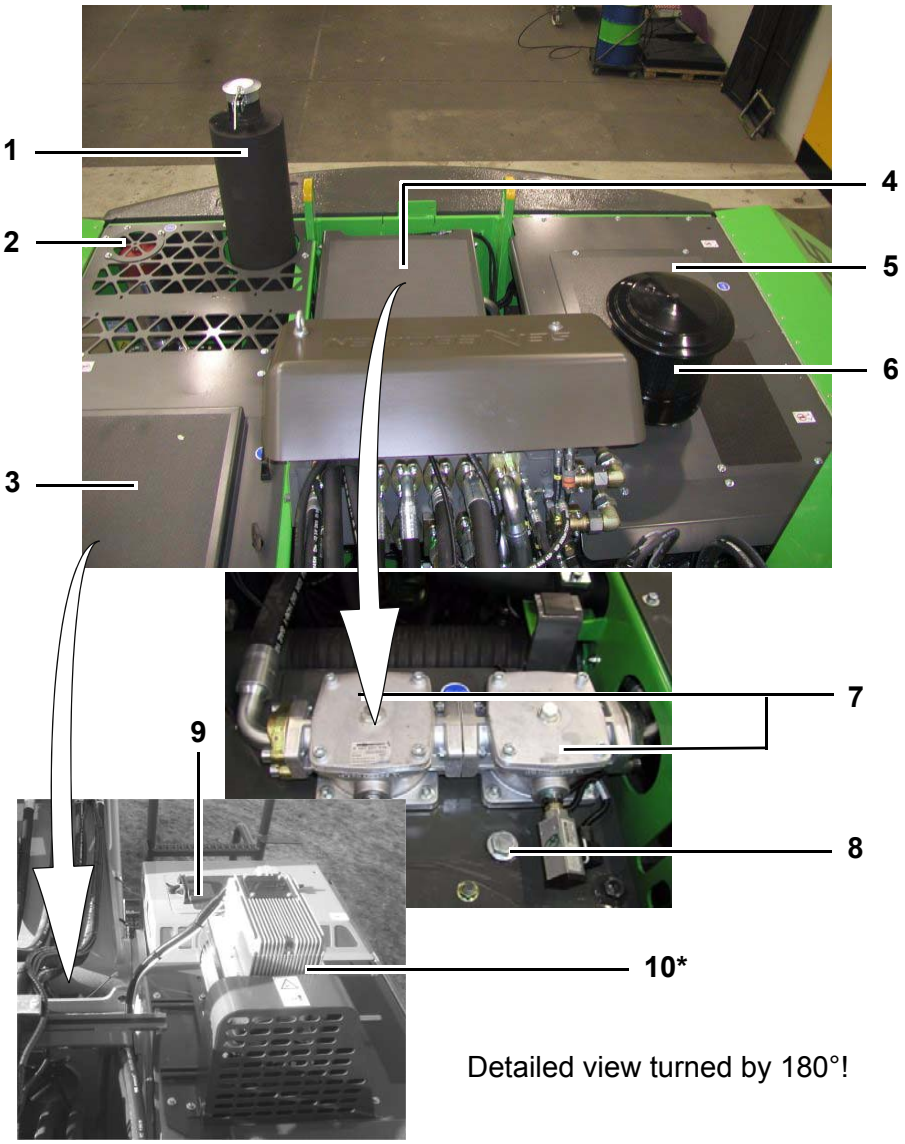
6 Superstructure

7 Sta bilizer

8 Counterweight



2.3.3 View from above



Detailed view turned by 180°!

1 Exha ust silencer/
Exhaust pipe end

2 Service panel - *Hydroclean* superfine filtration system

3 Service panel - engine

4 Service panel
Hydraulic oil tank

5 Service panel - battery

6 Air filter - moisture separator

7 Hydraulic oil filter

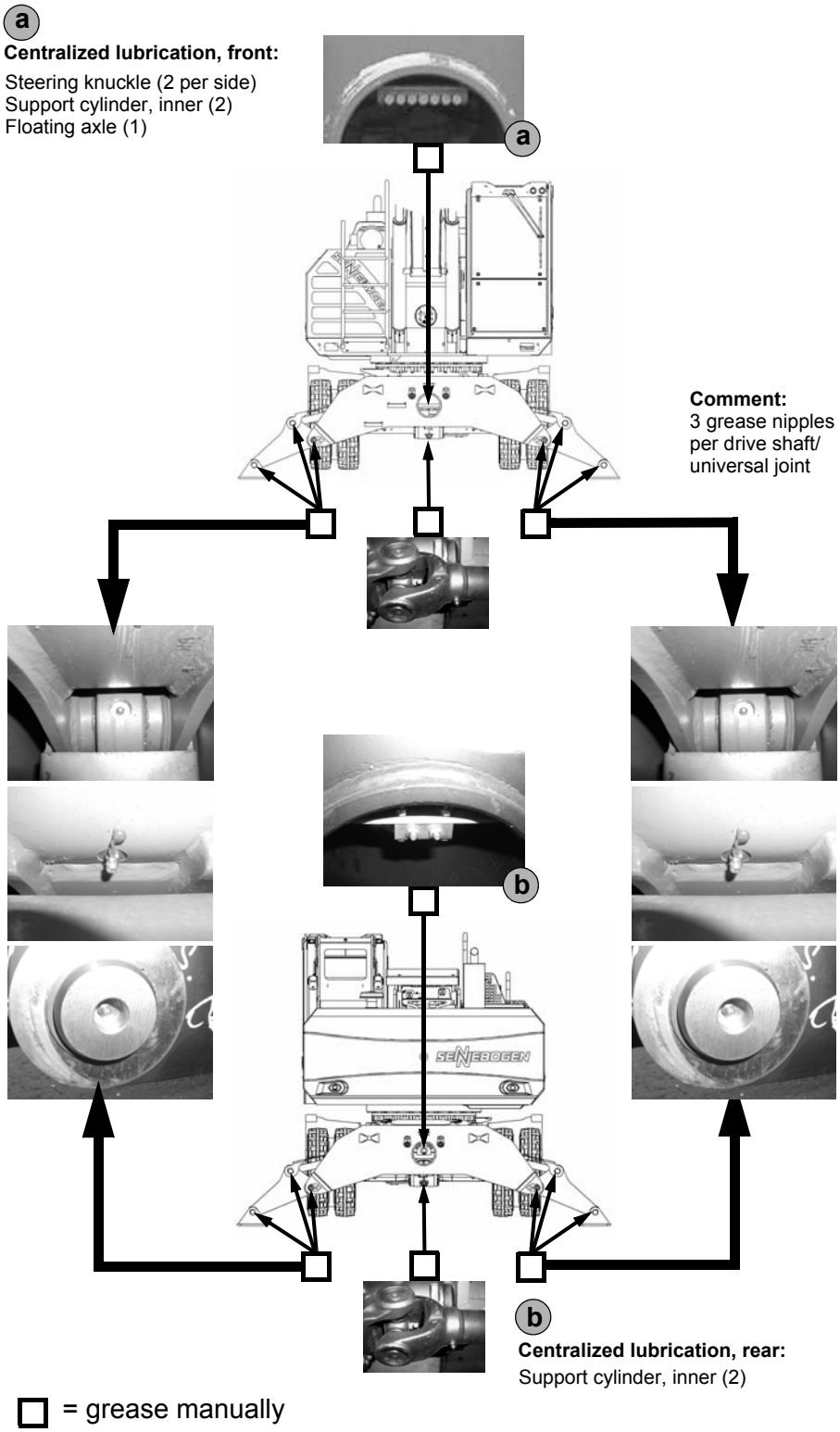
8 Cut-off flap
Hydraulic oil tank

9 Service panel - Radiator

10* Generator

*: Optional model / special function

Lubrication nipples overview



4.3 Machine

4.3.1 Mobile

Fuel tank - Middle view glass:	max. 490 l / max. 127 gal. (US) approx. 470 l/ approx. 124 gal. (US)
Hydraulic tank - Middle view glass:	max. 310 l / max. 82 gal. (US) approx. 245 l / approx. 64.6 gal. (US)
Hydraulic system, overall**(*)** ● Typ 825: ● Typ 830:	 ● approx. 380 l / appr. 100 gal. (US) ● approx. 440 l / appr. 116 gal. (US)
Axle distributor gear	approx. 3.0 l / approx. 0.8 gal. (US)
Differential ● front ● rear	 approx. 11.0 l / approx. 2.9 gal. (US) approx. 15.0 l / approx. 4 gal. (US)
Hub drive train ● front ● rear	 each approx. 2.5 l / approx. 0.7 gal. (US) each approx. 2.5 l / approx. 0.7 gal. (US)
Slewing ring lubrication - reservoir	approx. 3 kg / approx. 6.615 lb
Central lubrication system - reservoir (optional)	approx. 2.5 kg / approx. 5.5 lb
Fuel tank - Middle view glass:	max. 490 l / max. 127 gal. (US) approx. 470 l/ approx. 124 gal. (US)

***)**: On special pylon-equipped machines, note that an additional approximately 30 l (appr. 7,9 gal. (US)) of hydraulic oil is required per 0.5 m pylon length.

Tire air pressure (pneumatic tires)

Model	Tire size	Air pressure bar	Air pressure psi
825	10.00-20	9	130.53
830	12.00-20	9	130.53

5.3 Initial operation

The initial commissioning of the machine is carried out by SENNEBOGEN or by a trained and authorized specialist.

If the machine is shutdown for a prolonged period (> 6 months), contact SENNEBOGEN customer services immediately before recommissioning.

WARNING
Read CHAPTER 1 SICHERHEIT.
Before start-up, carry out checks according to Section5.4.

5.4 Checks before daily start-up

Read the safety notes before starting work.

DANGER

- Familiarize yourself with the machine and equipment. Read these operating instructions before starting operation, in particular Chapter 1 SAFETY.
- Only carry out work for which you have been trained and which is within your scope of employment.

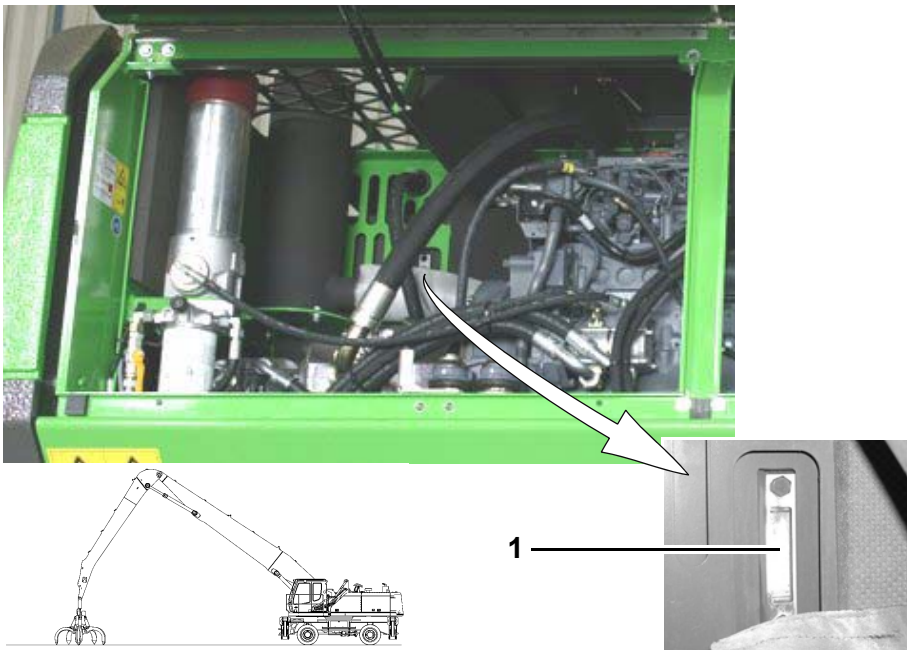
Note
The following pages contain the checklists that should be gone through before starting work with the machine every day. It is divided into:

- A general part (e.g. A1),
- a function part (e.g. F1) and
- a visual or sight check (e.g. S1).

DANGER
Report all irregularities to the person in charge before start-up. Only operate machine after remedying all faults.

Note
In the following checklist, a dash bullet point (-) in the chapter column indicates that there is not reference for the respective action and there are no instructions contained in the operating instructions.

5.5.6 Checking the hydraulic oil level



Machine in park position

1	Lower suspended loads and jib to the ground.
2	Position machine horizontally.
3	Fully retract all hydraulic cylinders.
4	Put the machine in park position. Retract support cylinders.
5	Shut down drive engine.
6	Open the service access door on the right.
7	Check oil level at the oil level indicator (1): The oil level must reach to the upper marking (MAX).
8	De-pressurizing hydraulic system.
9	Top up hydraulic oil, if required: – Open the cover plate. – Unscrew screw cap of oil filler strainer. – Top up hydraulic oil and re-check. – Re-tighten screw cap. Close the cover plate.
10	Close the service access door on the right.

Position Ignition key

Ignition key position	Meaning
P	Enable filling pump
0	Ignition OFF
I	Ignition ON
II	Start engine

Note
Release the safety lever if necessary to enable the hydraulic function (see also Section6.3.4 SICHERHEITSHEBEL).

Never let the machine unattended, while the engine is running!

5.12 Switching the machine off - Electric motor

5.12.1 Switching the motor off

1 Ignition lock

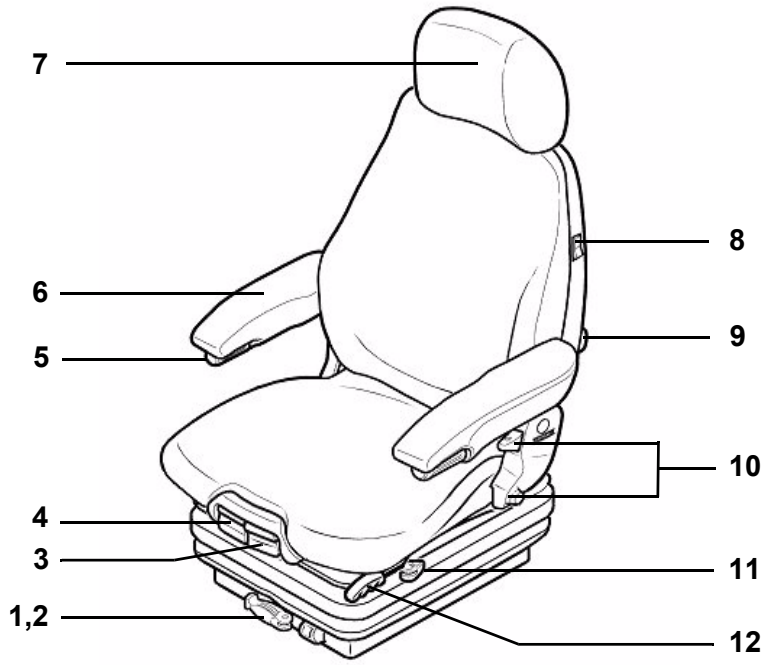
2 Engine "On"

3 Engine "Off"

1	Lower suspended loads and lower boom if necessary.
2	Switch off the engine with the pushbutton (2). The "green" indicator lamp (5) goes out.
3	Switch off main switch at the electric switch cabinet (see Section2.3.5).
4	Turn ignition key to position "0" and remove.
5	If necessary, pull back safety lever.
6	Secure the machine area (lights, warning triangle, etc.).

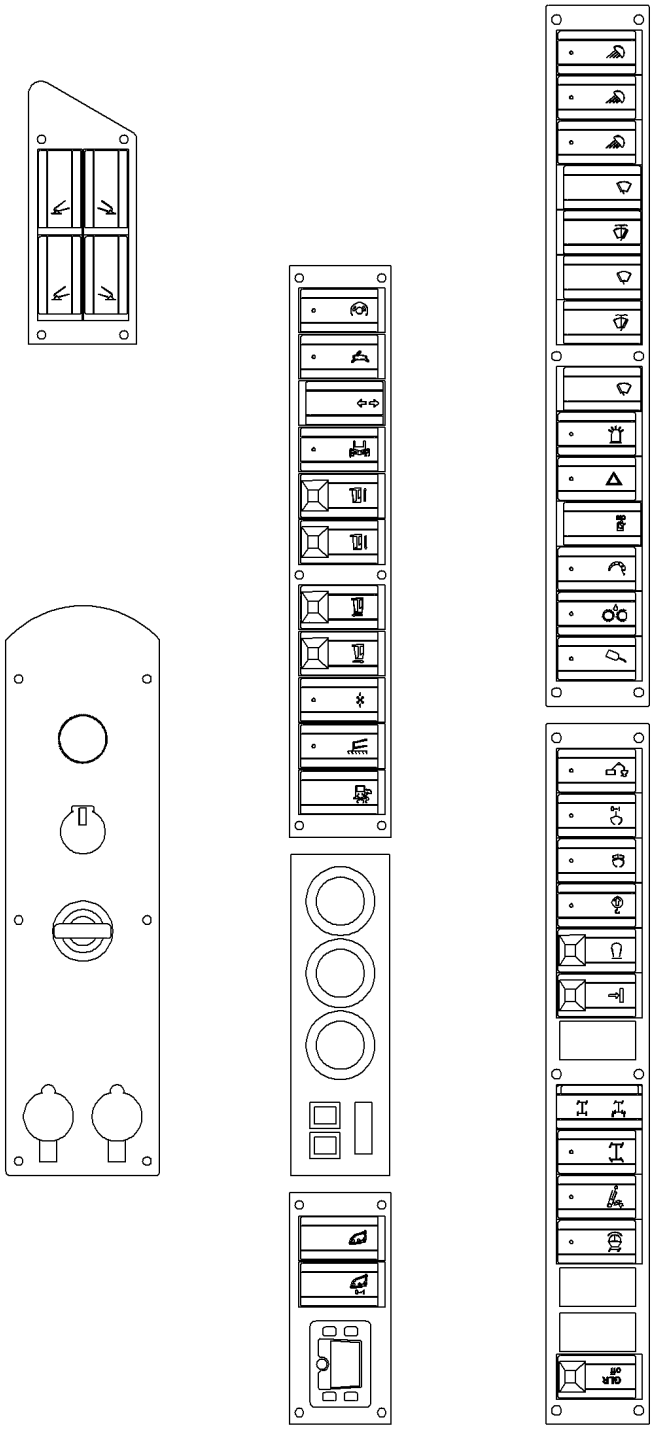
WARNING
Please read the accompanying safety and commissioning instructions of the engine manufacturer!

Standard driver's seat



1 Weight adjustment (optional)
2 Height adjustment
3 Seat tilt adjustment (optional)
4 Seat depth adjustment (optional)
5 Arm rest tilt (optional)
6 Arm rests (optional)
7 Head rest / back extension (optional)
8 Seat heating (optional)
9 Lumbar support (optional)
10 Backrest adjustment (optional)
11 Horizontal suspension (optional)
12 Length adjustment

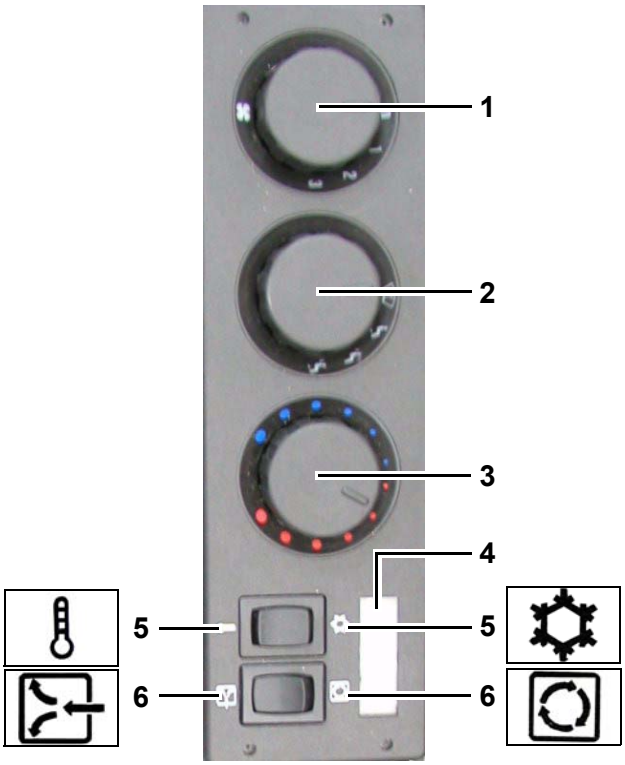
6.3.8 Overview of control panels



6.3.13 Air conditioning control panel

Note

The machine is equipped with an automatic climate control system that permits precise heating or cooling..



1 Fan speed selection switch

2 Air distribution selection switch

3 Temperature regulator

4 Temperature display (°C or °F)

5 Combination switch: Outside temperature display, Air conditioning on/off

6 Outside/recirculating air switch

Note

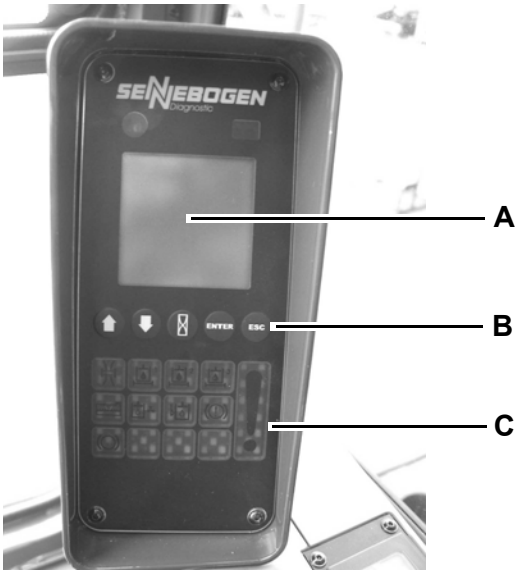
The air conditioning can be operated with outside air or circulating inside air.

Note

Keep windows and cab door closed to ensure effective air conditioning.

The air conditioner regulates the temperature in relation to the outside temperature.

6.3.16 SENNEBOGEN Diagnosis System (SDS)



A Display

B Keypad

C Indicator and warning lights

Note

Additional information can be pulled up via the SDS, e.g. actual hydraulic oil temperature.

Sensors on the machine monitor the current operating state and transmit the measured data to the SDS. The measurement results are evaluated in the SDS and are shown on the display automatically or when a key is pressed. If irregularities occur on the machine, the indicator and warning lights are activated.

Self test

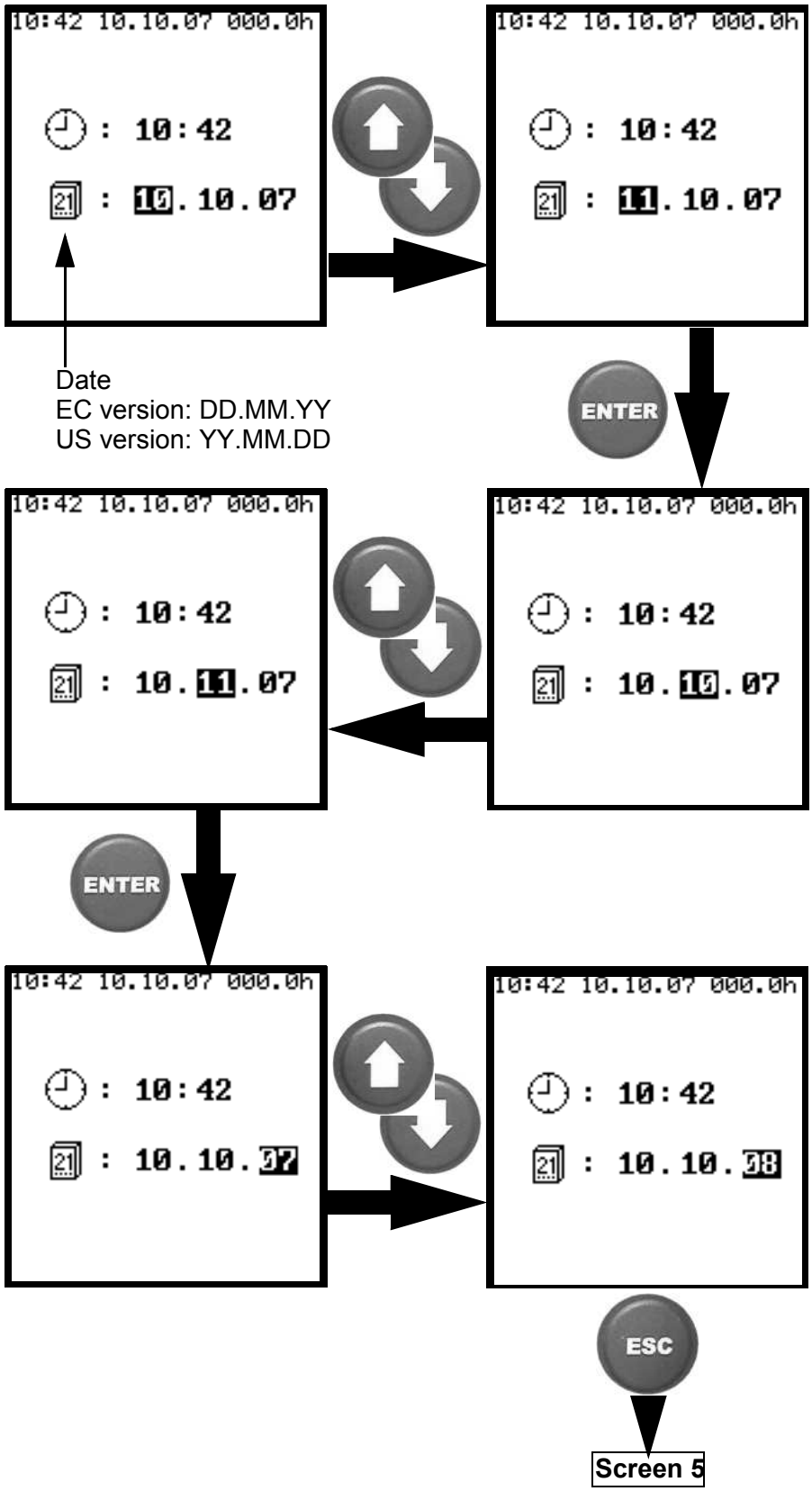
The SDS carries out a self-test after the ignition is switched on. All LEDs are illuminated. The sensors are checked. Following this, the SDS is ready to operate.

If the SDS detects a fault, the fault condition in indicated on the display and via LEDs. Arrange for immediate rectification of faults through SENNEBOGEN customer service.

Cleaning

Do not clean the SDS with alcohol or liquids containing solvents! These will corrode the plastic surface.

Setting the date



Warning and indicator lights

illuminate, warning buzzer sounds

Cause	Remedy
Coolant level too low	– Top up coolant.

Illuminates when engine is

Cause	Remedy
Accumulator pressure too low	– Have a hydraulic specialist check the hydraulic system.

illuminates, buzzer sounds

Cause	Remedy
Hydraulic oil level too low	– Top up hydraulic oil

lights up

Cause	Remedy
Slewing gear holder brake applied	– Deactivate slewing gear holding brake

lights up

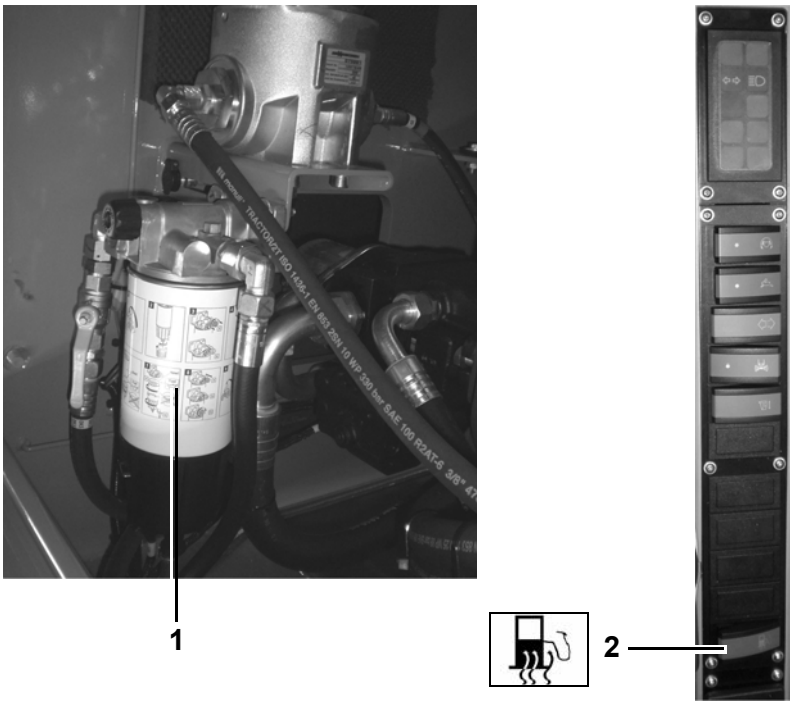
Cause	Remedy
Return filter is clogged	– Check return filter; if necessary, replace in accordance with maintenance instructions.

lights up

Cause	Remedy
HydroClean Superfine filter is plugged	– *HydroClean* Check micro-filter, replace if necessary.

Heater for Water separator

The machine is equipped with a heated water separator (1).



In order to activate the heater for the water separator (1), activate the switch (2) in the right-hand control panel.

1	Start engine acc. to Section5.7.3.
2	Switch on the heater for the water separator with switch (2). – The indicator lamp in switch (2) is illuminated until the fuel has achieved operating temperature (=Thermostat).

6.5.4 Driving machine - Mobile

DANGER
Risk of accident through incorrect use!
If the boom is positioned above the rear axle, the driving actions of the machine are reversed. Proceed with extreme caution whenever you wish to work or maneuver over the rear axle.

Driving with suspended load

Please note the following points when driving with a suspended load:

- Danger of tipping!
  Keep loads as close as possible to the ground when moving.
- Always position jib lengthwise to undercarriage.
- Only carry 50 % of the permitted safe working load.
- Only drive on even ground with sufficient load-bearing capacity.
- Reduce pendulum movements of load by sensitive driving.
- Negotiate corners with as wide a radius as possible.

DANGER
Risk of accident through incorrect use!
If the boom is positioned above the rear axle, the driving actions of the machine are reversed. Proceed with extreme caution whenever you wish to work or maneuver over the rear axle.

Note
A red indicator arrow (1) is located at the front of the undercarriage. This can be seen through the right-hand cab window. It indicates that the boom is over the front axle.

6.5.7 Changing the crawler trackwidth (hydraulic - optional)

General

You can alter the track width of the machine:

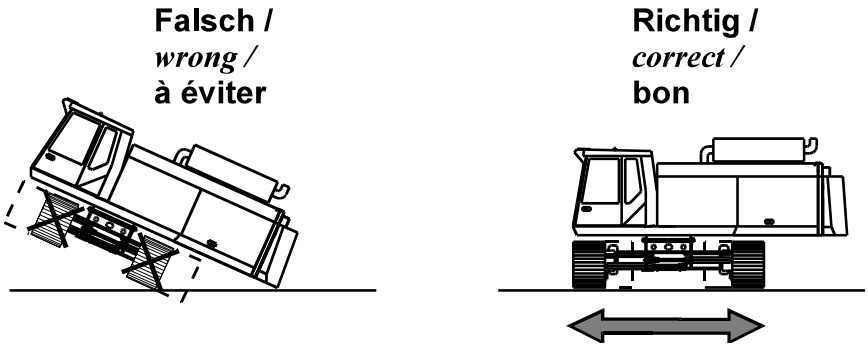
- When deployed and during maintenance and servicing, always extend the running gear to the maximum track width and secure.
- The undercarriage track width can be reduced in order to transport the machine on a flatbed trailer. If necessary, remove extension pieces.

Safety instructions

Observe the safety guidelines before starting to telescope the running gear.

DANGER

- Accident risk through tipping of machine!
  Never slew the upper structure when the undercarriage is retracted and the operating equipment has been removed.



- Before telescoping, position the upper structure parallel to the running gear and apply the swing bearing brake to prevent twisting.
- Do not rotate the upper structure during the telescoping procedure.
- The machine is ready to operate after the running gear has been extended, pinned and secured. Hydraulic cylinders offer no degree of security. The undercarriage may move in the event of leaks or seal failures.

6.5.11 End limit cut-out equipment

The end limit cut-out switch prevents the hydraulic cylinders from striking against the end stop.

DANGER
Under no circumstances should the settings for limit cut-out made in the factory (3) be changed!
This setting may only be adjusted by SENNEBOGEN Customer Service or an authorized SENNEBOGEN service partner!

The following damage can occur, if the operator adjusts the end limit cut-out on his own:

- Wear in the cylinder mounting bearings and boom.
- Damage to the hydraulic cylinder.
- Increased machine wear.

This damage is excluded from the terms of warranty issued by SENNEBOGEN Maschinenfabrik GmbH

The operator of the machine alone is liable for such damage as well as any consequential damage!

Safety limit position sensor for "Arm in"

The safety limit cut out “Retract jib” is set at the factory as follows:

- Arm in: Arm (without attachment) approx. 2.5 m in front of lowered cab

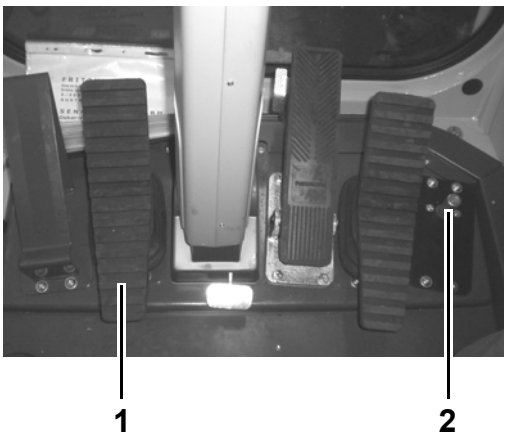
1 Compact boom
2 Sensor element
3 Grabbing jib

DANGER

6.5.16 Working with a hydraulic hammer (special function)

Note

The hydraulic hammer is tipped with the left pedal.



CAUTION

Select the correct operating mode in *SENNEBOGEN Tool Control* (see Section6.4.1).

1	Press button (2) and hold pressed to activate the hydraulic hammer.
2	Push pedal (1) forward. The turning cylinder is retracted, the hydraulic hammer tips upward
3	Push pedal (1) back. The turning cylinder is extended, the hydraulic hammer tips downward

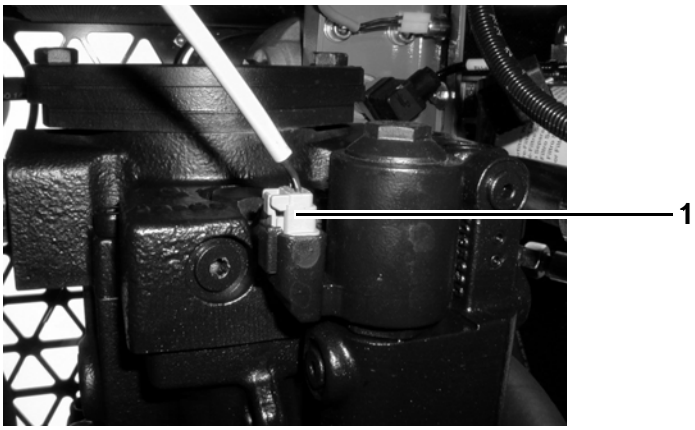
Note

Preselecting function *floating position* (see Section6.3.15). The full weight of the boom affects the hammer.

6.8 Actions to take if the electronics fail

Note
An electronic failure is indicated only if the corresponding function can no longer be performed.

6.8.1 Reverse airflow -insufficient cooling capacity-



1 Plug for hydraulic cooling pump

1	Pull the plug (1). – Fan goes to maximum speed, 100% cooling capacity.

7.2.3 Structure (4-point sub-frame)

Note
More information on the dimensions can be found in .

7.2.4 Rails

Note
More information on the dimensions can be found in Chapter 3.6.2 ABMESSUNGEN MASCHINE (SCHIENE / 4-PUNKT UNTERGESTELL).

7.3 Machine weight

				
Undercarriage	Mobile	Crawler	Structure	Rails
Weight	approx. 36.0 t	approx. 43.0 t	Customer-specific	Customer-specific

Note
The machine weight may deviate from these figures due to optional attachments. The information on the weight of the engine, the undercarriage and the compact loading equipment may also vary.

Note
More information can be found in Chapter 3.5 SUPPLEMENTAL INFORMATION.

8.4 tires and undercarriage

Oil leaks on differential, hubs or Axle distributor gear

Cause	Remedy
Sealing plug loose	– Tighten sealing plug.
Seals damaged	– Replace seals.

Oil leaks from slewing gear

Cause	Remedy
Loose connections	– Tighten connections.

Rotary transmission leaking

Cause	Remedy
Seals damaged	– Replace seals.
Lines loose	– Tighten locking bolts.

Noises in slewing gear

Cause	Remedy
Insufficient lubrication on slewing ring gearing	– Lubricate spur ring according to lubrication plan.

8.5 Cab

Cab moves or swings drastically

Cause	Remedy
Cab mounting or cab fastening damaged	– Check all connection elements, bolts and pins of cab mounting and fastening for damage, cracks or deformation. – Have damaged components exchanged immediately by trained and instructed specialist personnel.

9.3.1 Dismantling the counterweight

1	Place the upper structure in the direction of travel. Place the working tools/equipment on the ground.
2	Unscrew the taillight mounting screws (5); withdraw the taillights slightly. Carefully unplug the connector (4) from each taillight.
3	Screw the two lifting eyes included with the on-board accessories into the threaded attachment points (1) for the counterweight completely.
4	Attach suitable slinging gear (6) to the assisting crane and the lifting eyes on the counterweight (7).

DANGER
Bracket “a“ between the machine and the suspension equipment must always be 90°.
If the angle is greater or less, the counterweight can tip away from the machine or injure persons or damage parts of the machine.

5	Unscrew the lower hex-head bolt (3) from the counterweight.
6	Carefully unscrew the rear hex-head bolt (2).

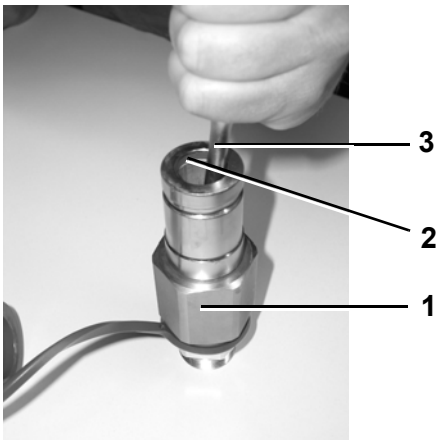
DANGER
Squashing and crushing can occur.
Occupying the space under a suspended load is prohibited.

7	Swing the counterweight (7) to the rear slightly and lift away. Deposit the counterweight in a safe location and secure against tipping.
8	Remove both spacer packs (8) and retain for use when re-installing in the future. ATTENTION! Do not interchange the left and right sides.

9.5.3 Check/change sealing ring

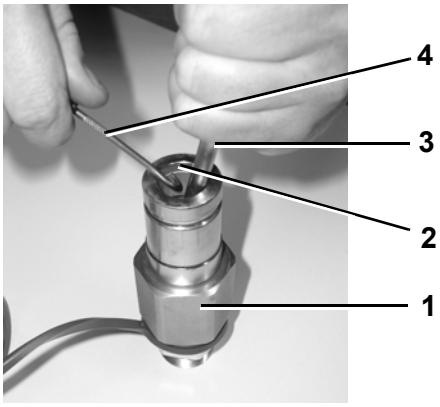
Check the sealing ring in the coupling insert at regular intervals for wear. Replace if necessary.

Check sealing ring



To check the sealing ring (2), push down on the sealing disc of the coupling insert (1) with a suitable tool ((3) e.g. drift).

Change the sealing ring



1	Push down on the sealing disc of the coupling insert (1) with a suitable tool ((3) e.g. drift).
2	Lever out the sealing ring (2) with special tool (4).

Note
The special tool (4) is supplied by SENNEBOGEN (serial No.: 078581).