



## 2.4 General conduct and safety instructions

### Organisational measures

- The machine has been designed and built in accordance with state-of-the-art standards and the recognised safety regulations. Nevertheless, its use can constitute a risk to life and limb of the user or of third parties, or cause damage to the machine and to other material property
- The machine must only be used in technically perfect condition in accordance with its designated use and the instructions set forth in the Operator's Manual, and only by safety-conscious persons who are fully aware of the risks involved in operating the machine. Any functional disorders, especially those affecting the safety of the machine, must therefore be rectified immediately!

**Basic rule:**

Before starting up the machine, inspect the machine for safety in work and road operation!

- Careful and prudent working is the best way to avoid accidents!
- The Operator's Manual must always be at hand at the place of use of the machine, and must therefore be kept in the storage compartment provided for in the cab. Immediately complete or replace an incomplete or illegible Operator's Manual
- In addition to the Operator's Manual, observe and instruct the operator in all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection. These compulsory regulations may also deal with handling hazardous substances, issuing and/or wearing personal protective equipment, or traffic regulations
- With regard to specific operational features, e.g. those relevant to job organisation, work sequences or the persons entrusted with the work, supplement the Operator's Manual by corresponding instructions, including those relevant to supervising and reporting duties
- Persons entrusted with work on the machine must have read and understood the Operator's Manual and in particular, chapter "Safety Instructions" before beginning work. This applies especially to persons working only occasionally on the machine, e.g. set-up or maintenance
- The user/owner must check – at least from time to time – whether the persons entrusted with operation or maintenance of the machine are working in compliance with the Operator's Manual and are aware of risks and safety factors
- The user/owner commits himself to operate and keep the machine in perfect condition, and, if necessary or required by law, to require the operating or servicing persons to wear protective clothing etc.
- In the event of safety-relevant modifications or changes on the machine or of its behaviour, stop the machine immediately and report the malfunction to the competent authority/person. Safety-relevant damage or malfunctions of the machine must be rectified immediately
- Never make any modifications, additions or conversions to the machine and its superstructures (e.g. cab etc.), as well as to the attachments, which might affect safety without the approval of Wacker Neuson GmbH! This also applies to the installation and the adjustment of safety devices and valves, as well as to welding work on load-bearing elements
- Spare parts must comply with the technical requirements specified by Wacker Neuson. Original spare parts can be relied to do so
- Replace hydraulic hoses within stipulated and appropriate intervals even if no safety-relevant defects have been detected.



- Before working on or with the machine, remove jewellery, such as rings, wristwatches, bracelets etc., and tie back long hair and do not wear loose-fitting garments, such as unbuttoned or unzipped jackets, ties or scarves.  
Injury can result from being caught up in the machinery or from rings catching on moving parts!
- Keep the machine clean. This reduces
  - Fire hazard, e.g. due to oil-soaked rags lying around
  - Danger of injury, e.g. due to dirt or debris on the footholds, and
  - Danger of accidents e.g. due to dirt pile-up on the drive pedals
- Observe all safety, warning and information signs and labels on the machine
- Adhere to prescribed intervals or those specified in the Operator's Manual for routine checks/inspections and maintenance work!
- For service, inspection, maintenance or repair work, tools and workshop equipment adapted to the task on hand are absolutely indispensable

### Selection and qualification of staff, basic responsibilities

- Any work on or with the machine must be carried out by reliable staff only. Do not let unauthorised persons drive or work with the machine! Observe statutory minimum age limits!
- Employ only trained or instructed staff on the machine, and clearly and unequivocally define the individual responsibilities of the staff for operation, set-up, maintenance and repair!
- Define the machine operator's responsibilities – also with regard to observing traffic regulations. Give the operator the authority to refuse instructions by third parties that are contrary to safety
- Do not allow persons to be trained or instructed or persons taking part in a general training course to work on or with the machine without being permanently supervised by an experienced person!
- Work on the electrical system and equipment, on the undercarriage and the steering and brake systems may be carried out only by skilled staff which has been specially trained for such work.  
Work on the hydraulic system of the machine must be carried out only by staff with special knowledge and experience in hydraulic equipment!
- Seal off the danger area should it not be possible to keep a safe distance.  
Stop work if persons do not leave the danger area in spite of warning! Keep out of the danger area!

#### **Danger area:**

The danger area is the area in which persons are in danger due to the movements of the

- machine
- work equipment
- additional equipment or
- material
- This also includes the area affected by falling material, equipment or by parts which are thrown out.  
The danger area must be extended by 0.5 m in the immediate vicinity of
- buildings
- scaffolds or
- other elements of construction



## 2.5 Safety instructions regarding operation

### Normal operation

- Avoid any operational mode that might be prejudicial to safety!
- Before beginning work, familiarise yourself with the surroundings and circumstances of the work site. These are e.g. obstacles in the working and travelling area, the soil bearing capacity and any necessary barriers separating the work site from public roads
- Take the necessary precautions to ensure that the machine is used only when in a safe and reliable state!  
Operate the machine only if all protective and safety-oriented devices, e.g. removable safety-devices, soundproofing elements and exhausters etc., are in place and fully functional!
- Check the machine at least once a day/per work shift for visible damage and defects. Report any changes (incl. changes in the machine's working behaviour) to the competent organisation/person immediately! If necessary, stop the machine immediately and lock it!
- In the event of malfunctions, stop the machine immediately and lock it! Have any defects rectified immediately!
- Start and operate the machine from the seat only!
- Carry out start-up and shut-down procedures in accordance with the Operator's Manual, and observe the indicator lights!
- Before putting the machine/attachment into operation (start-up/moving), ensure that no one is at risk by putting the machine/attachment into operation!
- Before driving with the machine, and also after interrupting work, check whether the drive pedals, the signalling and the light systems are functional!
- Before moving the machine always check whether the supplementary equipment and the attachments have been safely stowed away or attached!
- When driving on public roads, ways and places, observe the valid traffic regulations and, if necessary, ensure beforehand that the machine is in a condition perfectly compatible with these regulations!
- Always switch on the lights in conditions of poor visibility and after dark!
- No lifting, lowering or carrying persons in the work equipment/attachments!
- Installing a man basket or a working platform is prohibited!
- When crossing underpasses, bridges and tunnels, or when passing under overhead lines always ensure that there is enough clearance!
- Always keep at a safe distance from the edges of building pits and slopes!
- When working in buildings or in enclosed areas, look out for:
  - Height of the ceiling/clearances
  - Width of entrances
  - Maximum load of ceilings and floors
  - Sufficient room ventilation – danger of poisoning!



- Avoid any operation that might be a risk to machine stability!
- During operation on slopes, drive or work uphill or downhill. If driving across a slope cannot be avoided, bear in mind the tilting limit of the machine!  
Always keep the attachments/work equipment close to the ground. This also applies to driving downhill!  
When driving or working across a slope, the load must be on the uphill side of the machine
- On sloping terrain always adapt your drive speed to the prevailing ground conditions!  
Never change to lower gear on a slope but always before reaching it!
- Before leaving the seat always secure the machine against unintentional movement and unauthorised use!  
Lower the work equipment/attachments to the ground
- Before starting work check whether
  - all safety devices are properly installed and functional
- Before moving the machine or before taking up work:
  - Ensure that visibility is sufficient (do not forget rearview mirrors!)
  - Adjust your correct seat position,  
never adjust the seat when driving or working!
  - Fasten your seat belt
  - Inspect the immediate area (children!)
  - In the work area the operator is responsible for third parties!
- Caution when handling fuel – increased danger of fire!
  - Ensure that fuel does not come into contact with hot parts!  
Do not smoke during refuelling, and avoid fire and sparks! Stop the engine during refuelling and do not smoke!
- Never get on or off a moving machine! Never jump off the machine!
- Should the lights of the machine not be sufficient for carrying out work safely, provide additional lighting of the work area
- Installed work lights must not be switched on for travel on public roads. They can be switched on in work operation if users of public roads are not dazzled.
- The drive pedals take time getting used to them. Therefore, adjust the drive speed to your abilities and the circumstances.

### Applications with lifting gear

#### Definition:

Applications with lifting gear are understood as procedures involving raising, transporting and lowering loads with the help of slings and load-securing devices (e.g. ropes, chains). In doing so, the help of persons is necessary for securing and detaching the load. This applies for example to lifting and lowering pipes, shaft rings or containers.

- No applications with lifting gear!



## **Trailers and attachments**

- No trailer operation!
- Prior to driving on public roads remove all attachments which cannot be secured in compliance with the legal regulations of your country!
- Attachments and counterweights affect handling and the machine's steering capability!
- Fit the attachments with the specially required devices only!
- Before uncoupling or coupling hydraulic lines (hydraulic quick couplers)
  - Stop the engine
  - Release the pressure in the hydraulic system. In order to do so, move the control levers of the hydraulic control units back and forth a couple of times
- Coupling attachments requires special care!
- Secure the attachments against unintentional movement!
- Operate the machine only if all protective facilities have been installed and are functional, and if all brake, light and hydraulic connections have been connected!
- If optional equipment is installed, all lighting equipment, indicator lights etc. that are required in addition must be installed and functional
- Mount the attachments only if the engine and the drive have been switched off.
- Especially when driving or working with machines equipped with a quickhitch for the attachments, ensure that the attachment is securely locked in the quickhitch. The lock pin must be visible on either side of the bores on the attachment. Check before starting work.
- Prior to fitting attachments to the loader unit, secure the control lever of the hydraulic control unit against unintentional movement

## **Transport**

- The machine must be towed, loaded and transported only in accordance with the Operator's Manual!
- For towing the machine observe the prescribed transport position, admissible speed and itinerary
- Use only suitable means of transport of adequate capacity/payload!
- Safely secure the machine on means of transport! Use suitable mounting points and load-securing devices.
- The recommissioning procedure must be strictly in accordance with the Operator's Manual!



### 2.6 Safety instructions for maintenance

- Avoid any operational mode that might be prejudicial to safety!
- Observe the adjustment, maintenance and inspection activities and intervals set forth in the Operator's Manual, including information on the replacement of parts/partial equipment!  
These activities must be carried out by technical staff only
- The machine may not be serviced, repaired or test-driven by unauthorised staff
- Brief the staff/the driver before beginning special operations and maintenance work!  
Appoint a person to supervise the activities!
- In any work concerning the operation, conversion or adjustment of the machine and its safety-oriented devices, or any work related to maintenance, inspection and repair, observe the start-up and shut-down procedures set forth in the Operator's Manual, and the information on maintenance work
- If required, secure the maintenance area appropriately!
- Prior to carrying out service, maintenance and repair work, attach a warning label, such as "Repair work – do not start machine!", to the ignition lock or to the control elements. Remove the ignition key!
- Carry out service, maintenance and repair work only if the
  - machine is positioned on firm and level ground
  - control lever base is folded up
  - all hydraulically movable attachments and working equipment have been lowered to the ground
  - engine is at a standstill
  - ignition key is removed and
  - machine has been secured against unintentional movement
- Should maintenance or repair be inevitable with the engine running:
  - Only work in groups of two
  - Both persons must be authorised for the operation of the machine
  - One person must be seated on the seat and maintain visual contact with the other person
  - Observe the specific safety instructions in the work manual
  - Keep a safe distance from all rotating and moving parts, e.g. fan blades, V-belt drives, PTO shaft drives, fans etc.
- Prior to carrying out assembly work on the machine, ensure that no movable parts will roll away or start moving
- To avoid the risk of accidents, parts and large assemblies being moved for replacement purposes must be carefully attached and secured to lifting gear.  
Use only suitable lifting gear and suspension systems in a technically perfect state with adequate load-bearing capacity!  
Stay clear of suspended loads!



- Have loads fastened and crane operators instructed by experienced persons only!  
The person giving the instructions to the operator must be within sight or sound of him
- Always use specially designed or otherwise safety-oriented ladders and working platforms to carry out overhead assembly work.  
Never use machine parts or attachments/superstructures as a climbing aid!  
Wear a safety harness when carrying out maintenance work at greater heights!  
Keep all handles, steps, handrails, platforms, landings and ladders free from dirt, snow and ice!
- Clean the machine, especially connections and threaded unions, of any traces of oil, fuel or preservatives before carrying out maintenance/repair work!  
Do not use aggressive detergents!  
Use lint-free cleaning rags!
- Before cleaning the machine with water, steam jet (high-pressure cleaner) or detergents, cover or tape up all openings which – for safety and functional reasons – must be protected against water, steam or detergent penetration. Special care must be taken with the electrical system
- After cleaning, remove all covers and tapes applied for that purpose!
- After cleaning, examine all fuel, lubricant and hydraulic oil lines for leaks, chafe marks and damage!  
Rectify all defects without delay!
- Always tighten any screw connections that have been loosened during maintenance and repair!
- Any safety devices removed for set-up, maintenance or repair purposes must be refitted and checked immediately upon completion of the maintenance and repair work
- Ensure that all consumables and replaced parts are disposed of safely and with minimum environmental impact!
- Do not use the work equipment as lifting platforms for persons!
- Before taking up work on machine parts dangerous for life and limb (bruising, cutting), always ensure safe blocking/support of these areas
- Carry out maintenance and repair work beneath a raised machine, attachments or additional equipment only if a safe and secure support has been provided for (the sole use of hydraulic rams, jacks etc. does not sufficiently secure raised machines or equipment/attachments)
- Avoid contact with hot parts, such as the engine block or the exhaust system during the operation of the machine and for some time afterwards – danger of burns!
- Retainer pins can fly out or splinter when struck with force – danger of personal injury!
- Do not use starting fuel! This especially applies to those cases in which a heater plug (intake-air preheating) is used at the same time – danger of explosions!
- Apply special care when working on the fuel system – increased danger of fire!



## 2.7 Warning of special hazards

### Electrical energy

- Use only original fuses with the specified current rating!  
Switch off the machine immediately and rectify the malfunction if trouble occurs in the electrical system!
- When working with the machine, maintain a safe distance from overhead electric lines! If work must be carried out close to overhead lines, the equipment/attachments must be kept well away from them. Caution, danger! Get informed on the prescribed safety distances!
- If your machine comes into contact with a live wire
  - Do not leave the machine
  - Drive the machine out of the danger area
  - Warn others against approaching and touching the machine
  - Have the live wire de-energised
  - Do not leave the machine until the line that has been touched or damaged has been safely de-energised!
- Work on the electrical system may only be carried out by a technician with appropriate training, in accordance with the applicable electrical engineering rules
- Inspect and check the electric equipment of the machine at regular intervals. Defects such as loose connections or scorched cables must be rectified immediately
- Observe the operating voltage of the machine/attachments!
- Always remove the earthing strap from the battery when working on the electrical system or when carrying out welding work!
- Starting with a battery jump cable can be dangerous if carried out improperly. Observe the safety instructions regarding the battery!

### Gas, dust, steam, smoke

- Operate the machine only on adequately ventilated premises! Before starting internal combustion engines or operating fuel-operated heating systems on enclosed premises, ensure that there is sufficient ventilation!  
Observe the regulations in force at the respective site!
- Carry out welding, flame-cutting and grinding work on the machine only if this has been expressly authorised. There can be a risk of explosion and fire, for example!
- Before carrying out welding, flame-cutting and grinding work, clean the machine and its surroundings from dust and other inflammable substances, and ensure that the premises are adequately ventilated – danger of explosions!

### Hydraulics

- Work on the hydraulic equipment of the machine must be carried out only by persons having specific technical knowledge and experience in hydraulic systems!
- Check all lines, hoses and screw connections regularly for leaks and obvious damage! Repair any damage and leaks immediately! Splashed oil can cause injury and fire.
- In accordance with the Operator's Manual/instructions for the respective assembly, release the pressure in all system sections and pressure lines (hydraulic system) to be opened before carrying out any implementing/repair work!
- Hydraulic and compressed-air lines must be laid and fitted properly. Ensure that no connections are interchanged. The fittings, lengths and quality of the hoses must comply with the technical requirements






### **Noise**

- During operation all sound baffles must be closed
- Wear ear protectors if necessary!

### **Oil, grease and other chemical substances**

- When handling oil, grease and other chemical substances (e.g. battery electrolyte – sulphuric acid), observe the product-related safety regulations (safety data sheet)!
- Be careful when handling hot consumables – risk of burning or scalding!

### **Battery**

- When handling the battery observe the specific safety instructions and regulations relevant to accident prevention. Batteries contain sulphuric acid – caustic!
- Especially when charging batteries, as well as during normal operation of batteries, an oxyhydrogen mixture is formed in the battery cells – danger of explosion!
- In case of a frozen battery or of an insufficient electrolyte level, do not try start-up with a battery jump cable. The battery can burst or explode
-  Dispose of the battery immediately

### **Tyres**

- Repair work on tyres and rims must be carried out by technical staff or by an authorised workshop only!
- Damaged tyres and/or wrong tyre pressure reduce the operational safety of the machine. Therefore carry out regular checks of the tyres for
  - Prescribed tyre pressure and
  - Cracks, cuts or other damage
- Carry out regular checks of the wheel nuts for tightness, however after 300 service hours at the latest. Subsequent to changing tyres check the wheel nuts after 10 service hours – tighten if necessary!