

SAFETY MANUAL

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1 PREFACE

1.00 General



This safety manual is to be carefully read and adhered to by all persons who are involved in the application, operation, assembly and service of the machine.

Additional precautions may be necessary, depending on the machine used, conditions in the field or in the maintenance area.

Most accidents involving machinery are caused by disregarding basic safety regulations. Such accidents can be often avoided by recognizing possible dangerous situations in advance.


Incorrect startup and operation of the machine is dangerous and can result in serious injuries - or even fatal consequences!

Personnel must not be permitted to operate or service this STREUMASTER machine before they have received adequate training concerning its operation and handling. All personnel must carefully read and fully understand the instruction manual and the safety manual.



Persons under the influence of alcohol, prescription medication or drugs are prohibited from operating, servicing or repairing the machine!

This safety manual contains instructions identified as DANGER, WARNING and CAUTION; it is imperative these instructions are followed.

 This sign is used when compliance with certain instructions is of economical importance for the machine's operation.

DANGER !

Identifies immediate danger. If this danger is not avoided, fatality or very serious injuries will be caused.

WARNING !

Identifies a possibly dangerous situation. If this situation is not avoided, fatality or very serious injuries may be caused.

▲ CAUTION !

Identifies a possibly dangerous situation. If this situation is not avoided, minor injuries or damage may be caused.

1.01 Correct use



This machine may only be used for commercial purposes on cordoned-off fields.

Operation of the machine in public traffic is only permitted when the machine is additionally equipped with the required equipment and the necessary approval has been issued by the governing authorities.

1.02 Conversion / modification prohibition



Modification or conversions to the machine are prohibited without permission of the manufacturer.

Pressure relief valves or throttles must not be re-set or adjusted without the manufacturer's consent.

Without prior consent of the manufacturer, it is prohibited to weld on or bolt on any additional components, or to drill any holes in the machine.

The reliability of the machine could be adversely affected.

1.03 Legal note



The information and illustrations contained in this translation of the original safety manual must not be reproduced, distributed or used for competitive purposes!

The publisher reserves all rights thereof!

Translations are made to be the best of our knowledge. No liability can be accepted for translation errors or any resulting consequences; also not in the case that the translation was made by us or was commissioned by us. The original German text is binding for all warranty and liability claims.

This safety manual and the instruction manual must always be carried with the machine!

1.04 A word to the user

This safety manual is intended to point out some of the basic situations which may be encountered during the normal operation and maintenance of your machine and to suggest possible ways of dealing with these conditions.

The information provided in this manual supplements the specific information about your machine included in the instruction manual.

It is your responsibility to read and understand this safety manual and the instruction manual(s) before operating your machine.

This safety manual takes you step-by-step through your working day. Basic situations that may occur during normal operation as well as during service and maintenance work are described.

▲ CAUTION !

Carefully read and comply with all safety instructions in this safety manual and in the machine's instruction manual prior to starting-up the machine!

If you do not have the instruction manual(s) for your particular machine, get a replacement set of instruction manual from your employer or from your dealer.



STREUMASTER has no direct control over machine application, operation, inspection, or service. It is therefore your responsibility to use good safety practices and common sense to ensure your safety and that of your crew.

Additional information which may affect the safe operation of your machine is contained on safety signs attached to the machine, employer's safety programs, safety codes, laws, rules and regulations.

Keep this safety manual and the instruction manual(s) with your machine.

Also pass on the safety instructions to other people.

Remember that YOU are the key to safety.

Good safety practices not only protect you but also protect the people around you.

Make the procedures written in this safety manual and in the instruction manual(s) a working part of your safety program.

If you do not understand information in this safety manual or in your instruction manual, or if you find mistakes or contradictions, ask your superior, **BEFORE** you work on or with the machine.

Be careful

Human error is caused by many factors:

Carelessness, fatigue, overload, preoccupation, drugs, and alcohol to name a few. Damage to the machine can be fixed in a short period of time, but injury or death has a lasting effect.

For your safety and the safety of others:

- Encourage your fellow workers to act safely.
- Learn the operating and maintenance characteristics, capacities and limitations of your machine and its mounted equipment.
- Familiarise yourself with the safety devices and instructions on your machine.

1.05 Safety devices

Know what safety devices your machine is equipped with and see that each item is securely in place and is operating properly at the beginning of each shift.

Safety devices are e.g.:

- Roll-over protection
- Noise protection features
- Handles
- Horn
- EMERGENCY STOP devices
- Seat locking
- Control panel locking

You will find detailed information on this aspect in the instruction manual for your machine.



Ensure that all safety stickers / warning signs on the machine are intact and legible.

Replace missing or damaged safety stickers / warning signs.

All safety devices and safety stickers / warning signs are listed and explained in the safety manual of your machine.



Always follow the national and/or local road traffic regulations.
Always remember that you are a responsible traffic participant when operating the machine!

Check the operational (road) safety of the machine each time prior to starting work/start-up!

Ensure that the machine is operated only in a proper technical condition.

Never disable, bridge, or alter the function of safety devices, such as limit switches.



As the machine operator, you are permitted to refuse any orders that do not comply with the rules and regulations.

If you should receive instructions from your superiors, STREUMASTER employees or other authorised instruction personnel that are contrary to the machine's instruction manual, the safety manual, any relevant documentation published by STREUMASTER or the local rules and regulations, the published instructions must be adhered to at all times.

Only use the machine for the intended purpose.

Ensure that the intervals of any regular safety tests are always adhered to.

1.06 Personnel qualifications



Do not perform any work unless you are authorised and qualified to do so.

The authorised personnel must:

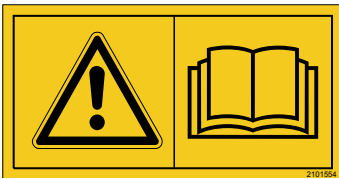
- be at least 18 years of age
- be trained in first aid and also be able to provide first aid
- have read and understood the safety manual
- be familiar with and able to apply accident prevention regulations and safety instructions on the machine
- have the physical and mental faculties to be able to perform his/her responsibilities, tasks and activities on the machine
- be appropriately trained and instructed for his/her responsibilities, tasks and activities on the machine
- have understood and be able to practically implement the technical documentation related to his/her responsibilities, tasks and activities on the machine.

People employed to operate the machine must also:

- Have been instructed on operating the machine
- Have a valid driving license for machines approved for use on public roads
- Have demonstrated their skills to the employer
- Can be expected to reliably tackle the tasks given to them.

They must be appointed by the employer / organisation to operate the machine.

1.07 Safety labels



Read documentation

Read operating instructions and safety manual before starting work with the machine or maintaining the machine. Ignoring this instructions can cause serious injuries or fatality.



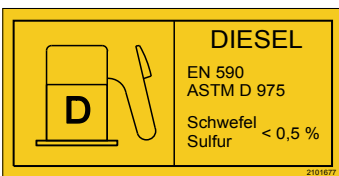
Dangerous noise level

May cause damage to the hearing. Wear personal protective equipment.



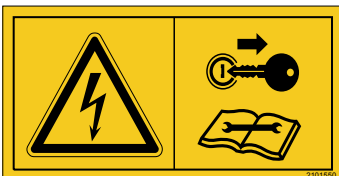
Risk of falling

A fall can cause serious injuries or fatality. Increased caution, do not climb up.



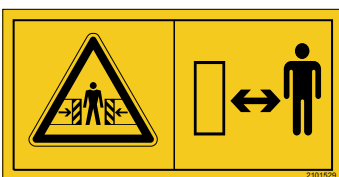
Diesel tank

Use diesel with a sulphur content of less than 0,5%. Pay attention to standards.



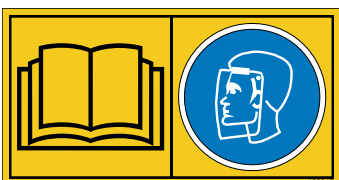
Dangerous voltage

Cables and components are live, there is a risk of serious injuries or fatality. Prior to maintenance work, shut down engine and remove ignition key.



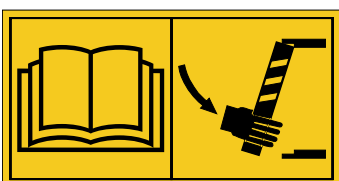
Risk of crushing

Pinch point can cause serious injuries or fatality. Keep away.



Dangerous situation

Parts or fluids thrown out can cause serious injuries. Wear personal protective equipment.



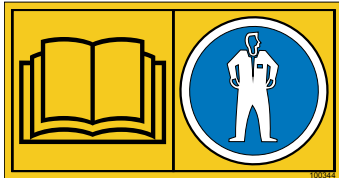
Dangerous situation

Presence under the unsecured machine can cause serious injuries. Use safety supports.



Risk of burns

Keep away sources of ignition, naked flames and fire can cause fire and explosion. Do not smoke, do not use naked flames or fire.



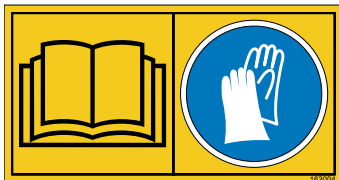
Dangerous situation

The consequences can be serious injuries or lasting harm. Wear personal protective equipment.



Risk of burns

Fluid can be very hot, there is a risk of injury. Avoid contact. Wear personal protective equipment.



Dangerous situation

The consequences can be serious injuries or lasting harm. Wear personal protective equipment.



Risk of burns

Surface can be very hot, there is a risk of injury. Do not touch surface. Keep away.



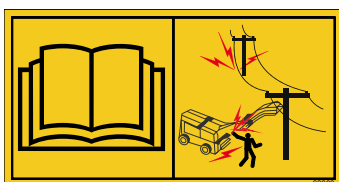
Dangerous situation

Tipping machine can cause serious injuries. Do not drive across inclines. Pay attention to permitted machine tilt.



Running over hazard

Tracks and wheels can cause serious injuries or fatality. Keep away.



Dangerous voltage

Contact with high voltage cables can cause serious injuries or fatality. Keep away.



Dangerous situation

Machine can suddenly move back and cause serious injuries or fatality. Keep away.



Keep out

Access to the machine components is not allowed. Moving machine components can cause serious injuries or fatality. Keep away.



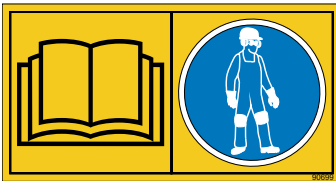
Entanglement hazard

The running machine causes serious injuries or fatality. Keep away.



Running over hazard

Travel movements can cause serious injuries or fatality. Pay attention to all people in the danger zone. Keep away.



Dangerous situation

The consequences otherwise can be serious injuries or lasting harm. Wear personal protective equipment.



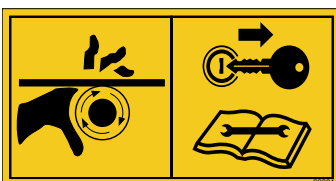
Dangerous situation

Boarding and alighting from the machine while it is moving can cause serious injuries. Never board or alight from a moving machine.



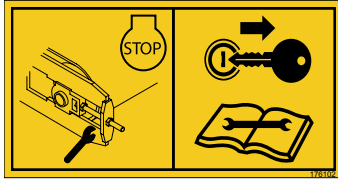
Risk of illness

Contaminated water can place the health at risk. Do not drink.



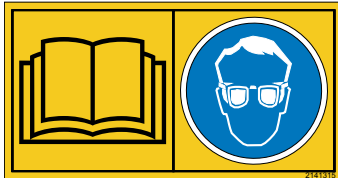
Risk of crushing

Conveyor belts can cause serious injuries or fatality. Prior to maintenance work, shut down engine, remove ignition key. Keep away.



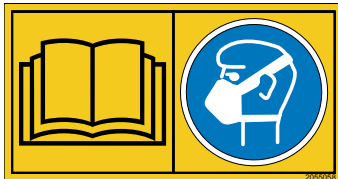
Risk of crushing

Conveyor belts can cause serious injuries. Prior to maintenance and adjustments, shut down machine, remove ignition key.



Dangerous situation

The consequences can be serious injuries or lasting harm. Wear personal protective equipment.



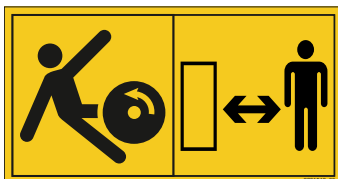
Dangerous situation

The consequences otherwise can be serious injuries or lasting harm. Wear personal protective equipment.



Risk of crushing

Moving machine components can cause serious injuries or fatality. Prior to maintenance and adjustments, shut down machine, remove ignition key.



Running over hazard

Travel movements can cause serious injuries or fatality. Keep away.



Risk of crushing

Pinch point can cause serious injuries. Keep away.



No access

Keep out. It is not allowed to enter this area. Machine parts can be heavily damaged or destroyed

2 WORK ZONE PROTECTION

2.00 General



4003

The operation site must be cordoned-off to public traffic or level-crossings in use!

Always follow the national and/or local requirements.

Check the working area for entrances and exits and pay attention to curb stones, pavements and drives.

Move all obstacles away from the machine's direction of travel and area of operation.



4004

Always ensure that no-one is within the danger zone prior to starting-up and while operating the machine!

Clear the area of all people by sounding horn and/or other means prior to starting the engine or moving the machine.

Keep all unauthorised people away from the machine / working area.

2.01 Night operation



1107

Night operations are different to daylight operations. Be alert, pay attention to people on the field or who are crossing the field. They may not be alert.

Ensure visibility of gauges and controls.

Wear appropriate reflective apparel at all times. This applies to operators and crew on night operations.



4110

Ensure adequate lighting to illuminate the work zone in compliance with state and local regulations.

Ensure adequate hazard lights (strobe or flashing/rotating lights) in compliance with state and local regulations.

Plan the work site. Inform those working on the work site about the work site plan and inspect the working area in daylight.

Mark obstacles ahead of time with reflective material.

3 SITE ORGANIZATION



Develop safe work procedures based on the hazards specific conditions on the field, and make sure they are enforced.

Ensure that

- all people receive a job briefing
- all people are trained about site-specific safe working procedures
- the implementation of site-specific working procedures is monitored

Ensure that mobile equipment operators are directed by a worker with an unobstructed view of the area that the vehicle is moving into.



Be alert!

Know where to get assistance.

Know how to use a first aid kit and fire extinguishers.

3.00 Danger zones



There are danger zones around all construction machines. A danger zone is any area where your safety is at risk or could be placed at risk.

Increased vigilance and common sense are necessary to prevent risks in this area. This situation means that the operator and all other people must observe the work with increased attention.

There must not be any people in the danger zone.

Depending on machine operation or your task (e.g. maintenance work) further danger zones can be present or develop.

3.01 Responsibilities when working with binding agent spreaders

3.01.01 Machine operator

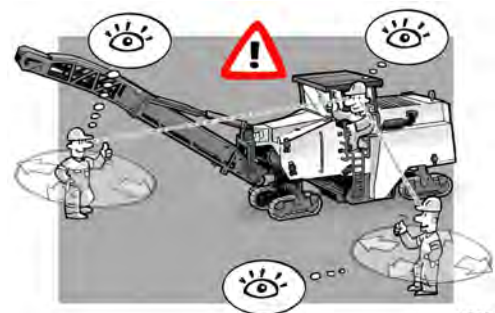
The machine operator controls the machine from the control stand and is responsible for keeping it on track.

3.01.02 Precautionary measures for machine operators



4009

Only operate the machine if you can see everyone in the vicinity of the machine and if these persons have signaled that the danger zone is clear.



4063

▲ WARNING !

RUN OVER HAZARD!

Wheels can cause severe injury or death!

There are areas around the machine which are hard or impossible for the operator to see.

Position lookout men to monitor these areas.

Do not operate the machine until these lookout men have signaled to you that the danger zone is free.

Acquaint yourself with the signals/signs used by the lookout men during the job briefing.

Stop the machine immediately if anyone enters the danger zone or if you approach anyone with the machine.

4 PERSONAL PROTECTIVE EQUIPMENT (PPE)

4.00 General



0011

Always wear warning clothing, safety shoes, hard hat, safety glasses, ear protection, gloves and other safety clothing in accordance with the working conditions!



0012

If necessary, wear hearing protection, as the noise level can exceed 80 dB (A).



0013

Never wear loose clothing or jewellery that could be caught in the controls or other parts of the machine!
Wear hair protection if necessary.

4.01 Working with hot bitumen / bitumen emulsion / binders / lime / cement / solvents

▲ WARNING !

RISK OF BURNS!

Working with hot bitumen, bitumen emulsion, binders, lime, cement, solvents can result in serious injuries, burns or fatality.

- Avoid skin contact - wear protective clothing (protective helmet with neck flap, safety shoes, heat-resistant gloves, etc.).
- Trouser legs are to be worn over the shoes; jacket arms are to be worn over the glove sleeves.
- Avoid eye contact - wear a face visor (goggles only protect eyes).
- Do not inhale vapours - wear a dust protection mask.
- Remove emulsion puddles immediately - danger of slipping.
- Apply any solvent so that it will not enter and contaminate the ground.
- Any pressure is to be released before disconnecting the rapid-action connectors.
- If the machine is not equipped with an operator's cabin, the operator must wear a dust protection mask under dusty operational conditions.
- Be careful of hot components - danger of burns.



Helmet with neck protection and visor to protect the face (goggles only protect eyes)



Heat-resistant gloves with cuffs worn inside coverall sleeves



Safety boots

▲ CAUTION !**CONTACT WITH CEMENT / LIME / SUSPENSION!**

- If inhaled, ensure sufficient fresh air.
- Immediately flush your eyes for at least 15 minutes with plenty of cold water. Never rub the eyes dry.
- Immediately flush the skin with sufficient cold water and soap. Remove any saturated clothing.
- If swallowed, immediately flush out the mouth with sufficient cold water (only when conscious) and then give sufficient cold water to drink. Do not induce vomiting. **If necessary, an ophthalmic specialist, other medical specialists or a hospital must be consulted immediately.**

▲ WARNING !**ILLNESS HAZARD DUE TO DUST!**

Inhalation of dust and fumes may cause severe illness.

Protect yourself against dust.

Spreading binders may generate dust, mist and fumes possibly containing crystalline silica known to potentially cause serious illness.

- Control dust, mist and fumes at the source where possible.
- In this regard use good work practices and follow the recommendations of the Wirtgen instruction manual.
- Never operate your milling machine without water continuously spraying and/or without the water system functioning.



If dust emission is detected that exceeds safe levels, as determined by government or industry, or if you are in doubt, then Wirtgen strongly recommends wearing dust protection masks which comply to EN 149, OSHA 1926.103, NIOSH 42 CFR 84 N95, or equivalent.

STREUMASTER strongly recommends monitoring the surrounding air for dust, using portable metering units.

- If you are in doubt or have any questions, ask your supervisor or contact STREUMASTER.

4.02 First aid

Burns due to hot bitumen

Immediately flush your eyes for at least 15 minutes with plenty of cold water. Never rub the eyes dry.

Immediately flush the skin with plenty of cold water for at least 10 minutes.

Do not remove bitumen from the skin after cooling. It serves as a sterile bandage. It will loosen after a few days.

Contact with bitumen emulsion

Immediately flush your eyes for at least 15 minutes with plenty of cold water. Never rub the eyes dry.

Immediately flush the skin with sufficient cold water and soap. Remove any saturated clothing.

5 OPERATIONAL PREPARATIONS

5.00 General



Be alert!

Always be informed about first aid facilities and ways to rescue injured persons (emergency doctor and ambulance services by road and air).

Ensure that a first aid kit with approved contents is always available.

Perform all recommended daily maintenance.

5.01 Visual inspection



Before starting each shift, walk around the machine and inspect for leaks, loose or missing parts, damaged parts, or parts out of adjustment.

Check the machine for visual faults / alterations - in particular the safety devices. They must all be complete, correctly installed, and in their correct places.

Loose or damaged fuel and oil lines, leaking pipes and hoses are a fire hazard and must be repaired or replaced immediately.

Check the electrical cables and connections for abrasion and damage. Renew any damaged components immediately.

Check that all important elements, such as trim panels, heat shields, etc. are correctly installed.

Check the wheel nuts daily for tightness.

Check that all pins, spring clips and other safety elements are correctly installed and in good condition.

Ensure that all safety guards and covers are correctly installed and functional.



Ensure that all safety stickers / warning signs on the machine are intact and legible.

Replace missing or damaged safety stickers / warning signs.

All safety devices and safety stickers / warning signs are listed and explained in the safety manual of your machine.



0017

Check that all safety ropes, bolts, spring-clips and other safety elements are correctly installed and in good condition.



4018

Make sure operator's area, steps and grab rails are clean.
Oil, grease, snow, ice or mud in these areas can cause you to slip and fall.



0019

Never carry flammable substances, such as starter fluids, ether or fuels in cans or canisters on the machine.



0020

Ensure that all accessories (tools, spare parts etc.) are safely stowed away.
Secure and lock all compartments, boxes and doors correctly.



4021

Move all obstacles away from the machine's direction of travel and area of operation.

Clean the machine's wheels or track prior to traveling along a road!



4022

When you get on or leave the machine, always:

- Clean your boots before climbing onto the machine.
- Face the machine.
- Maintain a three point contact with the ladder/steps and railings.
- Never jump off the machine.
- Always use the ladders, platforms and handles when getting on or off the machine.
- Do not use the steering wheel or any controls as hand holds.



4023

Set all controls to OFF, 0 or NEUTRAL position.

Before starting the engine, be sure you know the EMERGENCY shutdown procedure.

Know the correct starting and operation procedure for your machine.

5.02 Lighting



0024

Ensure that the machine is equipped with the correct lights according to the operational requirements.

Clean all lights. Check all lights for function.

Adjust all lights to reduce glare to oncoming traffic.

5.03 Mirrors and cameras



Adjust rear view mirrors so that you can maneuver the machine properly.

Please note that mirrors must not be used as a safety device as they cannot detect all persons and obstacles.

Due to the spheric surface of the mirror, objects in the mirror are closer than they appear.



If your machine is equipped with a camera / monitor system, adjust the monitor correctly for easy and glare-free viewing.

Such a system may only be used for the intended purpose, i.e. the detection of obstacles right in front of the machine or monitoring the quality of the work.

The camera/monitor system must not be used as a safety feature to detect persons or obstacles.



▲ WARNING !

RUN OVER HAZARD!

Moving machines can cause severe injury or death!

There are areas around the machine which are hard or impossible for the operator to see.

Position lookout men to monitor these areas.

Do not operate the machine until these lookout men have signaled to you that the danger zone is free.

Acquaint yourself with the signals/signs used by the lookout men during the job briefing.

Stop the machine immediately if anyone enters the danger zone or if you approach anyone with the machine.

5.04 Fuelling



0027

⚠ DANGER !

FIRE HAZARD!

Fuels and fuel vapors are highly flammable and also toxic!

Only fill fuel outdoors, or if the room is sufficiently ventilated!
Stop the engine and any additional heaters prior to filling fuel.
Exposed flames in the area of refuelling are strictly prohibited.
Never overfill fuel tank or reservoirs.

Wipe up spilt fuel or oil.

Smoking is strictly prohibited!

Do not inhale vapours.

Always keep fire extinguishers readily available.

5.05 Re-fuelling from tankers



0026

The machine must be positioned on a surface where leaking fuel can be easily identified and cleaned up!

Always adhere to the local requirements.



The tank of construction machines may only be filled by tankers if it has:

- a closed hose system, an fuel nozzle which closes automatically and which is approved for this vehicle type,
- a maximum volume flow rate of 100 litres/min.

5.06 Starting the engine



4023

Start the engine and operate the machine only following the instruction manual.

Adjust your seating position.

Position yourself so that you can operate all controls properly.

Set all controls to OFF, 0 or NEUTRAL position.

Make sure the parking brake is applied.



Always ensure that no-one is within the danger zone prior to starting-up and while operating the machine!
Clear the area of all people by sounding horn and/or other means prior to starting the engine or moving the machine.
Keep all unauthorised people away from the machine / working area.

5.07 Starting aids



▲ WARNING !

When working with batteries do not expose them to fire, sparks and naked flames and do not smoke. Non-compliance can lead to an explosion!

Batteries contain caustic acid! Wear appropriate protective clothing, safety glasses and acid-proof rubber gloves.

If jumper cables are used, follow the instruction manual. A battery explosion or a run-away machine could result if proper procedures are not followed.



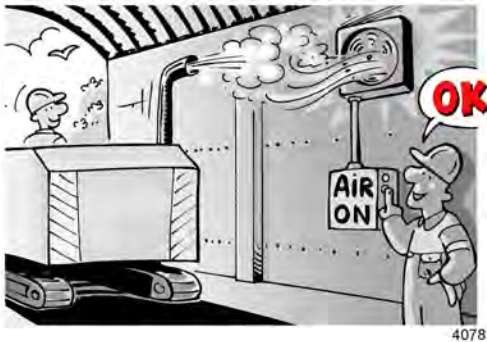
When ether cold start fluid is required, always read the instructions before using. Ether is highly flammable. Do not use ether if the engine is equipped with a glow plug type preheater.

No machine should be operated if any part is not in proper operating condition.

It is the OPERATOR'S RESPONSIBILITY to check the condition of all systems including safety interlocks.

6 STARTING UP

6.00 General



▲ DANGER !

SUFFOCATION HAZARD!

Exhaust fumes are toxic and there is a risk of suffocation!

If the machine is to be started and operated indoors, ensure sufficient ventilation.

6.01 When you get on or leave the machine



When you get on or leave the machine, always:

- Clean your boots before getting on the machine.
- Face the machine.
- Maintain a three point contact with the ladder/steps and railings.
- Never jump off the machine.
- Always use the ladders, platforms and handles when getting on or off the machine.
- Do not use the steering wheel or any controls as hand holds.



Start and operate the machine from the operator's station only. Prior to starting-up the machine, ensure that no people or obstacles are next to, in front of, behind, under or in the machine.

Sound the warning horn before starting the engine!

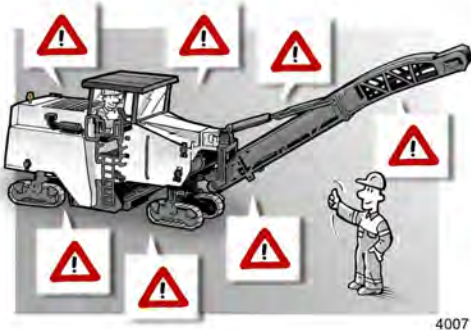


Keep all unauthorised people away from the machine / working area.

▲ WARNING !

RUN OVER HAZARD!

Wheels can cause severe injury or death!



There are areas around the machine which are hard or impossible for the operator to see.

Position lookout men to monitor these areas.

Do not operate the machine until these lookout men have signaled to you that the danger zone is free.

Stop the machine immediately if anyone enters the danger zone or if you approach anyone with the machine.



Never start the engine or operate the controls if there is a warning sign attached stating that they are not to be operated!
Start and operate the machine from the operator's station only.

6.02 After starting the engine



Check the functions.

Observe gauges, instruments, and warning lights to assure that they are functioning and their readings are within the operating range.

Actuate the controls carefully to ensure correct operation.



Make sure the engine is operating correctly.

Check propulsion drive, brakes and steering while moving slowly.

During operation, listen for any unusual noises and check for any unusual vibrations which could indicate trouble.

No machine should be operated if any part is not in proper operating condition.

It is the OPERATOR'S RESPONSIBILITY to check the condition of all systems including safety interlocks.

Before starting the engine, be sure you know the EMERGENCY shutdown procedure.

Operate the controls only when the engine is running; unless otherwise expressly stated in the instructions!

7 OPERATION

7.00 General operating instructions



4065

⚠ WARNING !

INCORRECT OPERATION OF THE MACHINE!

Machines can cause severe injury or death!

Always follow the instructions in the Instruction Manual.
The machine must not be used to transport people.



4066

Always select the operator's stand that does not face the traffic flow on the road or that on the construction site.

Only drive down a gradient at a low road speed and high engine speed.

If the machine operator is placed at risk by traffic driving past with the driver's seats pivoted outwards, special safety measures are to be taken.



4068

⚠ CAUTION !

INCORRECT OPERATION OF THE MACHINE!

Ignoring anomalies on the machine can result in damage or injuries.

Be aware of unusual noises, smoke development or other unusual circumstances!

Stop the machine immediately in case of such anomalies.

Have the defect rectified immediately.

Switch on the machine's functions during on-site operation only, and not when repositioning or moving the machine.

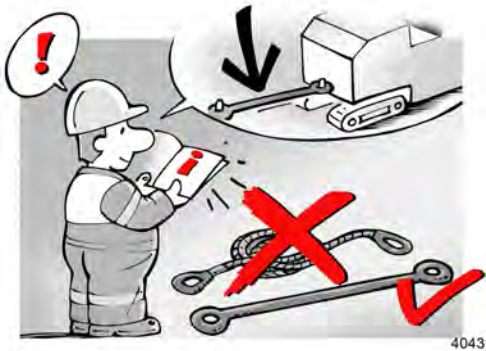


4042

Always select a suitable conveyor speed so that the spreading substance is ejected under control.



Always stop the engine prior to leaving the operator's station and always secure the machine against rolling away or unauthorized operation!



Adhere to the machine's instruction manual when towing the machine (e.g. away from a danger zone).
Use the stipulated towing equipment.
Pull away slowly when towing.
There must not be any people in the area of the towing equipment.
Pay attention that the weight, the tractive force and the braking force of the towing vehicle is sufficient.



⚠ WARNING !

ENTANGLEMENT HAZARD!

Conveyor belts and rollers can cause severe injury.

Never grasp inside a conveyor - even when cleaning - while it is operating.

Always ensure that all drive systems have been previously switched off before carrying out work on the conveyor system.



Become familiar with the machine's stopping distance, and always select a safe speed for operation and transport!

⚠ CAUTION !

HAZARDOUS CONDITION!

If the machine is overloaded or not used as intended, excessive oscillations and vibrations can be generated which could result in damage to health or dangerous operational conditions.

Always have complete control over the machine and never operate it beyond its capacity.

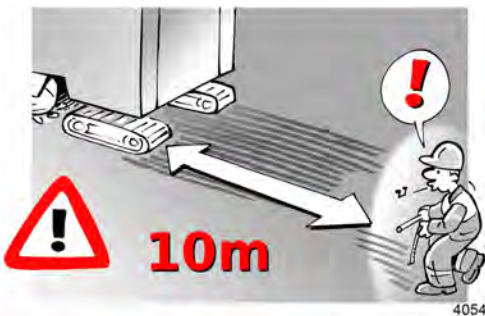


▲ WARNING !

ENTANGLEMENT HAZARD!

The spreading device may cause serious injuries or death.

Keep all covers closed during operation.



▲ WARNING !

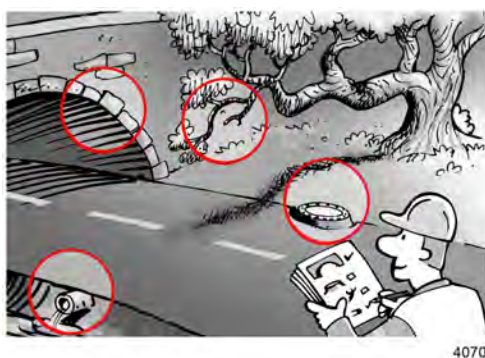
RUN OVER HAZARD!

When checking the spreading quantity, keep a distance of at least 10 m from the machine!



Never disable, bridge, or alter the function of safety devices, such as limit switches.

7.01 Working area



Learn - beforehand - as much as possible about the construction site:

- Condition of roads, bridges and other working areas.
- Working direction.
- Pot holes, obstacles, mud or ice.
- Traffic conditions.



4072

Always be aware of the load capacity of any bridge, cellar roof, arched structure or similar construction before moving the machine.

Eliminate the element of surprise - and you'll deal with fewer emergencies.



0062

Learn all signals used on the field, and who has the responsibility for signalling.

Learn thoroughly the "rules" that should be observed at the field.

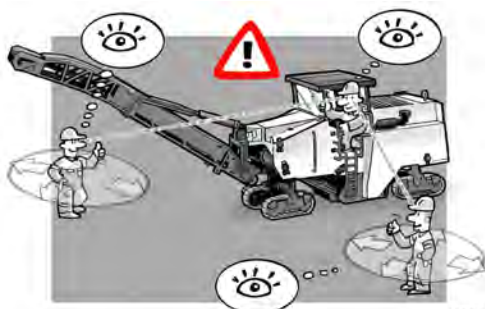


4005

Learn to tell, at a glance, the meaning of all flags, signs and markings.

Only operate the machine if you can see everyone in the vicinity of the machine and if these persons have signaled that the danger zone is clear.

Stop the machine immediately if anyone enters the danger zone or if you approach anyone with the machine.



4063

Make sure at all times that no-one is endangered.

Position look-out men who can monitor all danger zones.

Acquaint yourself with the signals/signs used by the look-out-men during the job briefing.

At all times keep an eye on all persons in the vicinity of the machine.



4007

▲ WARNING !

RUN OVER HAZARD!

Moving machines can cause severe injury or death!

There are areas around the machine which are hard or impossible for the operator to see.

Position lookout men to monitor these areas.

Acquaint yourself with the signals/signs used by the lookout-men during the job briefing.

Stop the machine immediately if anyone enters the danger zone or if you approach anyone with the machine.

7.02 Operation in the vicinity of power cables



4064

▲ DANGER !

HAZARDOUS VOLTAGE!

Physical contact with power cables will result in electric shock - DANGER TO LIFE!

Ensure that the machine/equipment does not touch power cables.

Be aware of required safety distances.

Check the distances above and beside the machine.

If the machine should touch high-voltage cables, observe the following:

- Do not attempt to get off the machine!
- If possible, move the machine away from the danger zone!
- Warn others not to come near or touch the machine.
- Ask someone to have the power supply switched off.
- Do not attempt to get off the machine before the touched / damaged cable is switched off and no longer carries electricity.

7.03 Working in thunderstorms



4061

▲ WARNING !

HAZARDOUS VOLTAGE!

The operation of the machine in thunderstorms represents a high risk and can result in serious injuries or death and damage.

In thunderstorms the machine may draw lightning that results in death due to electric shock.

Shut down the machine and keep well away from the machine until the thunderstorm has passed!

7.04 Water system



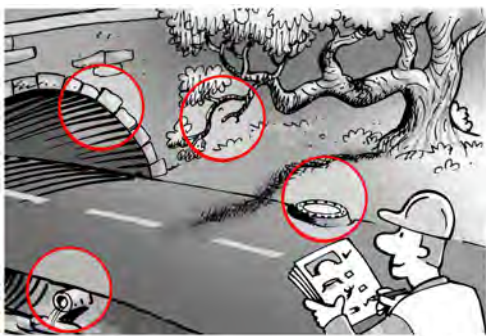
4047

Turn on water spray system.

Operate the water spray system in accordance with the instruction manual.

Remember: Water can be used to reduce the dust development.

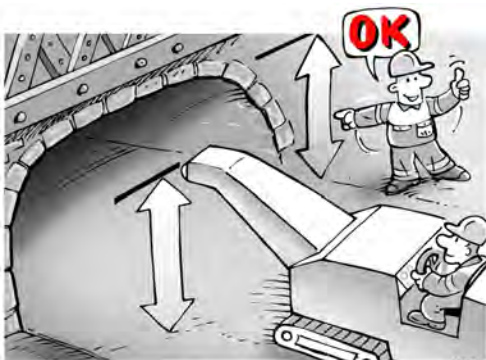
7.05 Obstacles



4070

Avoid spreading on obstacles – e.g. manhole covers, ditches etc.

When obstacles must be crossed, pay attention and be very careful. Reduce speed.



4071

Always keep well clear when travelling under or over bridges, through tunnels or past high-voltage pylons etc.

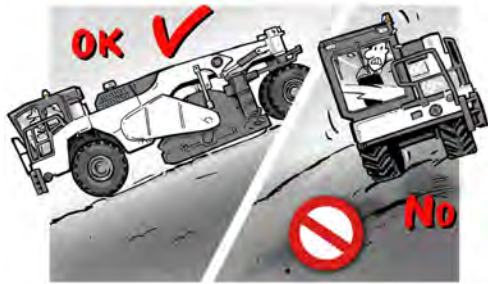


4037

Always be aware of the load capacity of any bridge, cellar roof, arched structure, parking floor or similar construction before moving the machine.

Only move over ground capable of supporting the machine!
Never endanger the stability of the machine. Never suddenly change the machine's direction or speed.

If underground gas or electrical lines or their protective covers are unexpectedly encountered or damaged, stop work immediately and inform your supervisor.



4050

▲ WARNING !

HAZARDOUS CONDITION!

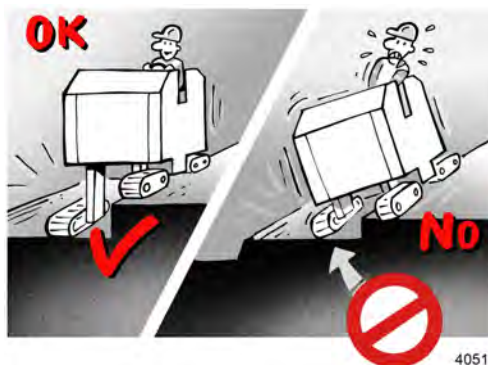
Tipping or uncontrollable machine can cause serious injury or death.

Always move and operate the machine carefully on steep gradients either directly uphill or directly downhill.

Never move and operate the machine across a slope.

Always operate the machine on slopes in the first gear and with support wheel folded outwards (if applicable).

Never exceed permitted gradients as specified in the instruction manual.



4051

Always keep the machine horizontally by means of the tilt adjustment system.

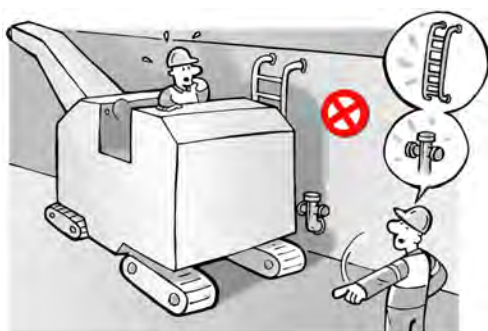
8 SHUTTING DOWN

8.00 General



4058

Allow the conveyor system and the spreader device to run empty.



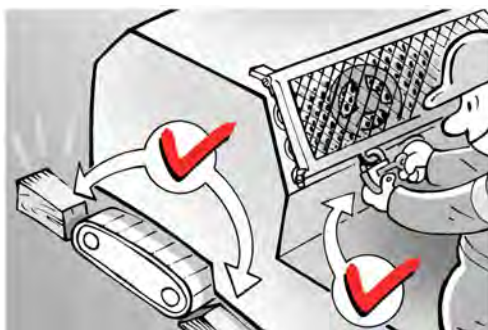
4056

Never park the machine in front of ladders, entrances or water hydrants that would prevent these from being used.
Lower any height-adjustable units and, if necessary, secure them.



0020

Secure and lock all compartments, boxes and doors correctly.



4089

Secure the machine against rolling away and unauthorized operation.
Use the ladders and handles to get down from the machine.

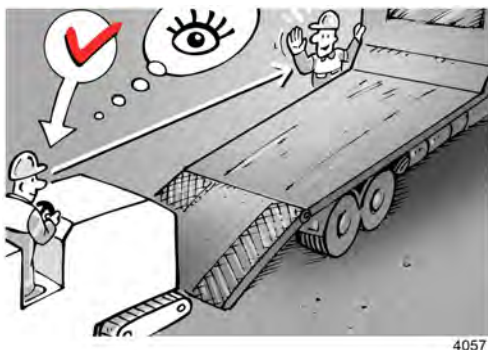


If the machine could interface with the normal flow of traffic, ensure that it is clearly cordoned-off (e.g. warning signs, lights, etc.).

If the machine is parked on a public road, the road traffic regulations are to be observed.

9 TRANSPORTATION

9.00 Loading



4057

⚠ WARNING !

HAZARDOUS CONDITION!

Hazardous situations can arise while loading the machine. Tipping or sliding of the machine can cause serious injury, death or damage.

Use sturdy, secure and sufficiently wide loading ramps when loading!

Ensure the vehicle (e. g. trailer, low-loader etc.) cannot tip when the load area is loaded.

The loading supervisor should be easily visible by the operator, and outside the danger zone!

Assistants must wear warning clothing so that they can be clearly seen.



4060

Ensure that the ramps are free of dirt, oil, snow, etc.!

The ramps must have an anti-slip surface!

Never drive metal over metal!

The angle of the ramp must not exceed 13°.

Ensure the load is correctly distributed on the transport vehicle.

Ensure that no-one can be endangered if the machine should slip or tip over!

Keep all unauthorized personnel away from the loading zone!



4033

Stop the engine after loading the machine!

Remove the ignition key!

Remove all loose items such as bottles, bags etc. from the control stand!



4034

⚠ WARNING !

HAZARDOUS CONDITION!

Never walk or stand under suspended loads. This action may result in serious injuries or death.

Ensure that lifting devices are strong enough before lifting the machine or any of its components.

Ensure that no-one is on the machine while work is being carried out underneath it.

Secure all raised machine components against falling down.



0020

Secure and lock all compartments, boxes and doors!



4035

Properly lash the machine to the transportation vehicle!

Secure machine against rolling away, sliding and tipping on the transporter.

Use suitable lashing equipment.

Observe the legal requirements for securing loads.

Use the lashing eyes or suitable features on the machine.

Pay attention to the labels.



4036

Check the overall transportation height / width (e.g. weather canopy, steps, ladders, etc.)!

Ensure that there is sufficient clearance to travel under bridges and overhead cables, and through tunnels!



Always be aware of the load capacity of any bridge, cellar roof, arched structure or similar construction before moving the machine.

Only move over ground capable of supporting the machine!

9.01 Unloading your machine

▲ WARNING !

HAZARDOUS CONDITION!

Tipping or slipping machine can cause serious injury or death.

Ensure that no-one can be endangered if the machine should slip or tip over!

Keep all unauthorized personnel away from the loading zone!

The loading supervisor should be easily visible by the operator, and outside the danger zone!



Familiarise yourself with the correct unloading procedure for your machine. Machines are not all unloaded the same way, the manufacturer's instructions must therefore always be followed.

Several precautions are applicable to all machines:

- Unload on a level surface.
- Block transport vehicle so it cannot move.
- Prior to unloading, completely remove all lashing and securing equipment.
- Use ramps of adequate size and strength, low angle, and proper height.
- Keep trailer bed and ramps clean of clay, oil and all materials which can become slippery.
- Keep all but essential personnel clear of the unloading area.

10 MAINTENANCE

10.00 General



4069

▲ WARNING !

HAZARDOUS CONDITION!

Incorrect maintenance is dangerous and can cause serious injuries - or even death!

Always follow the maintenance manual of your machine.

Only regularly serviced machines are safe for operation.

Thorough cleaning of the machine after every on-site operation is a part of regular service, in particular all components that are subject to extreme contamination by concrete, asphalt or similar materials.

All service and maintenance work on the machine must only be carried out by trained and qualified personnel while using the correct tools.

Only allow untrained personnel, or personnel who are presently undergoing training, to work on the machine when they are under continuous supervision of an experienced specialist.

If safety devices must be removed to carry out setup or maintenance work, these must be re-installed or re-fitted immediately on completion of the work.



0040

▲ WARNING !

RISK OF INJURY!

Service and/or maintenance on running equipment can cause severe injury or death.

If not otherwise explicitly described, all service and maintenance work is to be carried out when the machine's engine is switched off.



4038

We hereby explicitly inform you that spare parts not supplied by us have not been tested and approved. The installation/ application of such components can degrade the machine's performance and influence its active and/or passive operational safety.

The manufacturer rejects all liability for damage resulting from the application of non-original spare parts and special equipment.

The machine manufacturer disclaims all responsibility for damage or injuries resulting from conversions, modifications or alterations that are carried out without the consent of the manufacturer!



0077

Affix a warning sign on the operator's station prior to starting service and maintenance work to prevent unintended start-up.

Remove the ignition key.

Never start the engine or operate any controls when they bear a sign stating that they should not be operated!



4080

Keep all unauthorised people away from the machine / working area while carrying out service and maintenance work.

Always turn off the engine of the machine prior carrying out service and maintenance work; except when otherwise explicitly instructed.



4078

▲ DANGER !

SUFFOCATION HAZARD!

Exhaust fumes are toxic and there is a risk of suffocation!

Start the engine outdoors only. If the engine must be operated indoors, ensure that the exhaust fumes are directed outdoors.



4034

Ensure that lifting devices are strong enough before lifting the machine or any of its components.

The machine must be sufficiently supported.

Ensure that no-one is on the machine while work is being carried out underneath it.

Never trust alone in the hydraulic or electric system of the machine when performing maintenance works.

Secure all raised machine components against falling down.



Always use safe ladders and stands when carrying out overhead work.
Never climb on top of machine components.
Always wear fall protection when working at great height.



▲ WARNING !

RISK OF INJURY!
Tipping or slipping machine can cause serious injury or death.

Ensure that the machine is secured and prevented against rolling away when working on its wheels/crawler units!
Be careful when opening doors and flaps etc. (wear protective clothing).

10.01 Fluids



▲ WARNING !

PRESSURISED / HOT FLUIDS ESCAPING!
Hot and/or pressurised fluids, including hydraulic oil or coolant can be sprayed out and cause serious burns, injuries or death.
Wear protective clothing during maintenance work in the area of hot and/or pressurised fluids.
Let the system cool down and be sure the pressure is released.

Always switch off the engine and release pressure when handling operational fluids (e.g. coolant, oils, lubricants, etc.).
Oils, greases, etc. are only to be checked after they have cooled down sufficiently.



▲ WARNING !

BURN HAZARD!
Hot fluids can cause severe burns.
Never check, drain or change fuels or lubricants when they are hot.
Appropriate protective clothing must be worn when handling fuels / lubricants even after a sufficient cool down period!



0083

⚠ WARNING !

COOLANT!

Be careful when removing the cooler lid.
Coolant is under pressure.
Anti-freeze can be toxic and abrasive.



DISPOSAL OF COOLANT

The engine must be switched off prior to draining the coolant.
Collect the drained coolant in a suitable container and dispose of correctly!

10.02 Pressure systems, filters



4015

⚠ WARNING !

RISK OF INJURY!

Carry out service and maintenance work on a pressurized system only after all pressure has been released. Pressurized hydraulic oil can penetrate the skin and cause serious injuries. Damaged hoses can cause injuries.
In case of injury it is imperative you seek medical attention.

Replace hydraulic hoses according to their prescribed maintenance schedules.

Do not wait to replace hydraulic hoses alone when wear or a tear has been detected. Hydraulic hoses age over time and need to be changed regularly, even if they look intact.

Never hit or bend high-pressure hydraulic lines! Damaged pipes and connectors must not be re-used!

Check all hydraulic lines carefully for leaks. Tighten all connectors to the recommended torque.

The machine parts are to be secured against lowering / tipping when working on hydraulic cylinder.



0084

⚠ WARNING !

BURN HAZARD!

Hot fluids can cause severe burns.

Be careful when draining hot oil - wear protective clothing!



▲ WARNING !

BURN HAZARD!

Touching hot objects or hot fluids, including hydraulic oil or coolant can result in serious burns, injuries or death.

Wear protective clothing during work in the area of hot objects or hot fluids.

Prior to maintenance work, allow hot objects and systems to cool down, if these contain hot fluids.



When changing oil or oil filter, collect all waste oil/brake fluid in a suitable vessel!

Waste oil/brake fluid must not be allowed to enter and contaminate the ground!

Waste oil/brake fluid and engine oil filters or oil filter elements must be disposed of correctly.

10.03 Cleaning



Be careful with cleaning agents.

Never use petrol (gasoline) as a cleaning agent!

Never use abrasive cleaning agents!

Always follow the product's safety instructions when using oil, greases and other chemical substances.

All service and maintenance work on the machine must only be carried out by trained and qualified personnel while using the correct tools.

Only allow untrained personnel, or personnel who are presently undergoing training, to work on the machine when they are under continuous supervision of an experienced specialist.

If safety devices must be removed to carry out setup or maintenance work, these must be re-installed or re-fitted immediately on completion of the work.



⚠ WARNING !

ENTANGLEMENT AND CRUSHING HAZARD!

Never grasp inside a conveyor - even when cleaning - while it is operating.

Conveyor belts and rollers can cause severe injury.

Always ensure that all drive systems have been previously switched off before carrying out work on conveyor and spreader devices.



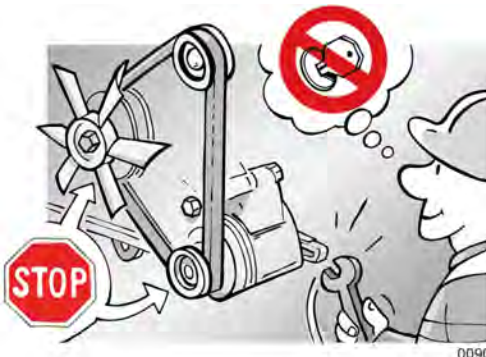
Ensure that all safety stickers / warning signs on the machine are intact and legible.

Replace missing or damaged safety stickers / warning signs.

All safety devices and safety stickers / warning signs are listed and explained in the instruction manual of your machine.

Always follow the national and/or local road traffic regulations.

10.04 Belt drives and cooling fans



⚠ WARNING !

ENTANGLEMENT HAZARD!

Belt drives and cooling fans can cause severe injury.

Keep away from rotating or moving parts and do not touch them.

Always stop the engine/drive unit before checking or tensioning V-belts!

10.05 Battery



▲ WARNING !

EXPLOSION HAZARD!

Batteries during charging may explode and cause severe injury.

Remove all covers when charging non maintenance-free batteries so that the explosive gases can disperse.

Avoid sparks and exposed flames near the batteries!

Smoking is strictly forbidden.

Never disconnect batteries while the engine is running.

Read the instructions from the manufacturer before you maintain the batteries, use jump starting cables or a battery charger.

▲ WARNING !

ELECTROLYTE IS TOXIC AND CAUSTIC!

Skin burns, blinding are possible consequences.

Always wear eye and face protection.

Dispose of old batteries in accordance with regulations.

10.06 Work on the spreading device



▲ DANGER !

ENTANGLEMENT HAZARD!

Contact with a running spreading device can cause severe injury or death.

Before starting service work in the vicinity of the spreading device, always make sure that no-one is within the danger zone.

Do not enter the range of spreading before it is absolutely stationary.

10.07 Pneumatic tyres



0045

▲ WARNING !

EXPLOSION HAZARD!

Explosive separation of a tyre and/or rim parts can cause serious injury or death.

Always follow the manufacturer's recommendations or see your tyre supplier if your machine is equipped with pneumatic tyres.

Always maintain the correct tyre pressure. Do not inflate the tyres above the recommended pressure.

Inspect tyres and wheels daily. Do not operate with low pressure, cuts, excessive wear, bubbles, damaged rims or missing lug bolts or nuts.

Ensure wheel nuts / wheel bolts are tightened as recommended.

When adjusting tyre pressure, do so from a distance. Use a long hose with self-attaching chuck. Always stand behind tread when adjusting tyre pressure.

Replace worn or damaged tyres.

Do not inflate tyres with flammable gases.

10.08 Electrical system



1096

▲ WARNING !

ELECTRIC SHOCK!

Touching live power cables can result in electric shock with serious injuries or death.

The necessary protection against hazards for the electrical equipment and systems is provided if the regulations applicable for setting up, placing in operation and maintenance are followed.

Devices which are not approved by the manufacturer must not be connected to the power network.

All troubleshooting and repair work is only allowed to be performed by qualified specialist personnel, when the machine is stationary and electrically isolated, and the machine is secured against switching back on.

Check if de-energized.

Blown fuses are indicative of overload or a fault in the system. Fit new fuses as per the instruction manual. Never mend or bridge fuses.

Check all electrical cables and connectors for chafing and damage! Renew any damaged components immediately.

10.09 High pressure cleaner



The fittings on all hoses must be screwed tight.

Hoses must be depressurized before they are taken apart.

Care should be taken not to damage the high pressure hose (danger of bursting).

If damaged the high-pressure hose must be replaced immediately.

Only use the hoses and screw couplings recommended by the manufacturer.

Check the high pressure cleaner and its accessories for correct working condition and safety before use.

If this is not the case, then the equipment may not be used.



▲ WARNING !

BURN, EXPLOSION AND / OR POISONING HAZARD!

The spray mist from cleaning agents containing solvents can cause serious injuries or death.

Never use fluids containing solvents.

This includes: petrol, paint thinner, diesel/heating oil, acetone, undiluted acids, solvents, etc.

Furthermore, these fluids can attack the materials used in the equipment.

Cover electrical parts, insulating materials and combustion air intakes, and do not direct the jet at such components.

Remove all covers again after cleaning.

The operating trigger on the spray gun must not be locked in position during operation.

If required, protective clothing should be worn in order to protect against anything which may splash back from the machine.

Never direct the jet of cleaning agent at people, animals, the high-pressure unit itself or electrical components.

▲ WARNING !

RISK OF INJURY!

Exploding damaged tyres and/or parts of wheels can cause serious injuries or death.

If a spray gun is used, vehicle tyres and tyre valves may only be cleaned from a distance of at least 30 cm otherwise the tyres/ tyre valves may get damaged by the high-pressure jet. The first sign of damage is a discoloration of the tyre. Materials which contain substances harmful to the health must not be sprayed. Only use solvents which are intended for this purpose and approved by the manufacturer. The operator must use the high pressure cleaner in accordance with the provisions specified for its use. He must take into account local conditions and watch out for other people in the area when operating the equipment. The high pressure hose should never be left unattended while it is in operation. The jet of cleaning agent emerging from the high-pressure nozzle exerts a recoiling force on the sprayer gun. Therefore, the gun and the steel tube must always be held tightly when the equipment is in operation.

10.10 Starting with jumper leads



0029

▲ CAUTION !

RISK OF INJURY!

When working with batteries do not expose them to fire, sparks and naked flames and do not smoke. Failure to comply places you at risk of explosion! Batteries contain caustic acid! Wear appropriate protective clothing, safety glasses and acid-proof rubber gloves.

Ensure that the batteries have the same nominal voltage. First connect the positive terminals together and then the negative terminals. Turn on the main switch and start the engine. After the engine has been running for approx. 15 minutes, first disconnect the negative cable and then the positive cable.

10.11 Welding work



0079

▲ CAUTION !

QUALIFIED PERSONNEL!

Welding work must only be carried out by qualified personnel. Welding work undertaken by unqualified personnel can cause damage.



Remove all flammable components near the welding area.
After welding, observe the welding area until all components have completely cooled down.
Always keep fire extinguishers readily available!

10.12 Air conditioner

▲ WARNING !

FLUID UNDER PRESSURE!

Risk of injuries due to fluids spurting out under high pressure.

- Perform maintenance works on the air conditioner only if it is depressurized and emptied.
- Wear personal protective equipment.

▲ WARNING !

HARMFUL REFRIGERANT!

Risk of injury due to frostbite and harmful vapours.

- Do not touch this parts of the air conditioner.
- Do not open the lines of the air conditioner.

If the machine is equipped with an air conditioner, you are required to maintain it in accordance with the information of the manufacturer. This tasks may only be performed by appropriately trained personnel with the correct equipment.