BRINKMANN
MASCHINENFABRIK GMBH & CO. KG

Compressed-air conveyors

DC 260/45
DC 260/45 B
DC 260/45 BS
DC 260/55
DC 260/55 B
DC 260/55 BS

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1 Introduction

2 Safety Regulations

4 Transport, installation and connection

1 Introduction

This chapter contains instructions and information to help you use this operating manual. If you have any queries, please contact:

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or your local branch or works agency.

Machine data

Before operating the machine, please enter the following data from the rating plate here:

1) Machine model:

2) Vehicle ID no.:

3) Year of manufacture:

1.1 Foreword

This operating manual is designed to familiarise the user with the machine and assist him in using the machine properly in all possible applications.

The operating manual contains important information on how to operate the machine safely, properly and economically. Observing these instructions helps to avoid danger, to reduce repair costs and downtimes, and to increase the reliability and service life of the machine.

The operating manual must be supplemented by the relevant national rules and regulations for accident prevention and environmental protection.

Always keep the operating manual with the machine.

The machine owner must make the location of this operating manual known to all personnel charged with performing jobs on the machine and ensure it is accessible at all times. This operating manual must be read and applied by any person who carries out work with or on the machine, e.g.

- Operation, including set-up, fault rectification in the course of work, removal of production waste, maintenance and disposal of fuels and consumables,
- Service (maintenance, inspection, repair) and/or
- Transportation.

Generally recognised rules of technology for safe and proper working must be observed in addition to the operating manual and mandatory rules and regulations for accident prevention and environmental protection in the country and place of use of the machine.

You will make it much easier for us to answer any questions or respond to orders if you can give us the details of the machine model and the machine number (vehicle ID no.). Send your questions to your local Brinkmann customer service partner or directly to Brinkmann Maschinenfabrik GmbH & Co. KG.

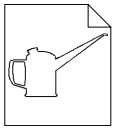
Modifications are made from time to time in the interests of constant improvement and may not have been taken into consideration when this operating manual was printed.

1.2 Signs and symbols

The following signs and symbols are used in these operating instructions:

▶ Action symbols
Text following this symbol describes tasks that you are required to work through, generally in the sequence shown from top to bottom.

⇨ Text after this icon describes the result or the effect of an action.



Reference to maintenance cards
This symbol is used to refer to required maintenance cards, possibly as a supplement to the maintenance cards you are currently reading.

The following special tools are required
This icon identifies the special tools required to carry out the work. Normal tools, i.e. standard tools or tools carried in the vehicle are not listed additionally.

Environmental protection
This symbol is used to identify tasks where particular attention must be paid to environmental protection. Accompanying text appears in italics and is underlined.

Note
Important specifications regarding economical use of the machine are highlighted with the word "Note" in bold and the pictogram illustrated. Accompanying text appears in italics and is underlined.

Caution
Particular specifications or instructions and prohibitions relating to damage prevention are highlighted with the word "Caution" in bold and the pictogram illustrated. Accompanying text appears in italics and is underlined.

Continued on next page

Danger

Particular specifications or instructions and prohibitions relating to the prevention of personal injury or extensive damage are highlighted with the word "Danger" in bold, the pictogram illustrated and a line. Accompanying text appears in italics and is underlined.

If the nature of the danger is known, the text is preceded by the corresponding warning pictogram.

Danger of crushing

This symbol is used for tasks that pose a risk of crushing to personnel or body parts.

Suspended loads

This pictogram is used for tasks where falling loads pose a serious risk.

High voltage

This symbol is used for tasks that pose a risk of electric shock with potential fatal consequences.

2 Safety regulations

This chapter summarises the most important safety regulations and is therefore particularly suitable for instructing new operators for the first time. Naturally, the various regulations also appear again at the appropriate points in the operating manual.

Note

Special safety regulations may be necessary for some tasks. These special safety regulations are only found in the description of the particular task. The following is a list of regulations and safety standards for further reference:

- *Machinery Directive 98/37/EC*
- *pr EN 12001, Delivery, spraying and distributing machines for concrete and mortar*
- *EN 292, Safety of machinery,*
- *pr EN 12151,*
- *EN 60204–1, Electrical equipment of machines,*
- *EN 50081–1,*
- *EN 50082–1,*
- *EMC Directives, 89/336/EEC*
- *Low-voltage Directives, 73/ 23/EEC*
- *Safety regulations for mortar delivery and spraying machines issued by the German Industrial Employers' Liability Insurance Association ZH 1/575.*

2.1 Principle

Use the machine only as specified and when in technically perfect condition; be aware of safety factors and dangers and observe the operating manual. Any faults, especially those affecting machine safety should be rectified immediately.

Make sure that
- safety equipment is not removed, rendered inoperable or modified (protective grille on the filling dome, etc.),
- safety equipment removed for the purposes of maintenance work is refitted immediately after the work is completed.

Check operational safety every time you start work. Any defects identified or suspected must be repaired immediately. If necessary, inform the supervisor. Stop work if you find any defects that may jeopardise operational safety.

Danger

Operate the machine only when all safety equipment is present and functioning correctly. There is a risk of serious injury.

Use only delivery lines, hoses, couplings etc. that are suitable for the delivery job, provided by the machine manufacturer and in perfect condition. Delivery lines are subject to wear which varies according to the pressure and composition of the medium, the material from which the delivery line is made, etc.

Onwards sale

Observe the following when selling the machine:

Pass all the accompanying documentation (operating manual, maintenance instructions, diagrams, machine charts, inspection certificates, etc.) you received with your machine on to the new operator. If necessary, you may have to order the documents from us, quoting the machine number. The machine should never be sold without the accompanying documentation.

Report an onwards sale or acquisition to Brinkmann to receive information relating to modifications or innovations relevant to safety and qualify for technical consultancy from our works.

Instruct the new operator and his operating personnel in the operation of the machine, just as you were instructed by us, and have them confirm that they have received instruction from you. Should you so require, we will be happy to instruct the new operator and the new operating personnel on your behalf.

2.2 Designated use

The machine has been built using state-of-the-art technology and in accordance with recognised safety regulations. Nevertheless, its use may constitute a serious or fatal risk to the operator or third parties, or cause damage to the machine and other property.

You must also observe the operating manual and comply with the conditions and intervals for maintenance and inspection to operate the machine within the limits of its designated use.

The machine is designed for mixing and delivering screed, mortar and concrete mixes with a maximum grain size of 16 mm. Other materials should only be processed after consultation with Brinkmann Maschinenfabrik GmbH & Co. KG.

The machine must be inspected for operational reliability by a technical expert once a year (in accordance with BetrSichV §10 of 27.09.2002). The operator is responsible for commissioning the inspection.

The maximum permissible gross weight must not be exceeded.

The definition specified outlines the designated use of the machine.

The machine generates compressed air for industrial use.
It compresses atmospheric air to operating overpressure and supplies a defined quantity of this air at this pressure.
Using this machine for other tasks, conveying suction media other than air, operating the compressed air in non-industrial applications and increasing or reducing operating data such as pressure range, speed, temperature, etc. outside of the factory settings constitutes improper use.

All protective devices must be installed and in perfect working order during operation. Never operate the machine without the safety devices installed.

Specified inspection work should be carried out.

Never make any modifications or conversions to the machine without first obtaining the manufacturer's permission.

Any work on the machine's electric or hydraulic circuits should be carried out only by qualified hydraulic and electrotechnical specialists that have trained to work on the machine.

2.3 Use contrary to the designated use

Use of the machine other than that described above, or which goes beyond such use, is considered contrary to the designated use. Brinkmann Maschinenfabrik GmbH accepts no liability for damage resulting from such use. The machine operator bears full responsibility.

Liability

The operator is obliged to act in accordance with the operating manual.

The safety and accident prevention regulations issued by the following institutions must be observed:
- Industrial Employers' Liability Insurance Association
- Commercial liability insurance company responsible
- National legal authorities

The following persons are liable by law for accidents resulting from the failure to comply with safety regulations and accident prevention regulations or the inadequate supervision of operating personnel:
- the operating personnel, or if deemed not responsible due to lack of training or basic knowledge in handling the machine,
- his supervisors,

Therefore always make sure that the necessary care is taken.

Exclusion of liability

We state here expressly that Brinkmann Maschinenfabrik accepts no liability for damage arising from incorrect or negligent operation, servicing or maintenance or as a result of use contrary to the designated use. This statement also applies to machine modifications, additions and conversions that may compromise safety. The guarantee will no longer be valid in such cases.

Modifications

Never make any modifications, additions or conversions to the machine which may affect safety without first obtaining permission from the manufacturer. This also applies to the installation and adjustment of safety equipment and valves as well as to welding work on load-bearing elements and pressure reservoirs.

In particular, this includes:
- adjustment of safety and control pressures, power outputs, speeds of rotation and other settings to values other than those set in the works.
- deactivation or modification of safety equipment. Operating the machine with faulty safety equipment.

Caution

Safety equipment should be repaired, adjusted or replaced by technically qualified experts only. All safety-relevant devices must be in place and fully functional.

2.4 Sources of danger

During work, never reach into the moving parts of the machine, whether the machine is running or switched off. Always stop and secure the machine prior to maintenance work, as described in *Chapter 7.6 Shutting down the machine*.
Always place chocks under the wheels and apply the handbrake to prevent the machine from rolling at the set-up site.
Before starting up the machine, make sure that nobody is placed at risk by the running machine.
Do not loosen or tighten threaded unions on hoses or delivery lines when these are pressurised.

Malfunctions

In the event of malfunctions, stop and secure the machine as described in *Chapter 7.6 Shutting down the machine*.
Have any faults rectified immediately.

Hot machine components

There is a risk of burns from hot machine components during and after machine operation (mainly on the engine, compressor, oil systems, including oil cooler and oil storage tank).

Delivery hoses and hose couplings

The delivery hoses and hose couplings are designed for a maximum pressure of 10 bar. The maximum pressure of 10 bar must not be exceeded.
Material discharged from split delivery hoses or cracked hose couplings can cause serious injuries, in particular to the eyes.
Never release the hose couplings while the mixing tank is pressurised. Even if the tank is depressurised, the delivery hoses may still be pressurised. Always proceed as described in *Chapter 5.14 Releasing hose couplings after a delivery cycle,* or *in the event of blockages, as described in Chapter 5.15 Material not delivered / Blockages*.

Discharge stand

The machine must not be operated without a discharge stand attached correctly at the delivery hose end.
The end of the hose will thrash around, posing a risk of fatal injury.

Mixing tank

The mixing tank must be depressurised before the cover is opened.
Inspect the ventilation lever and tank pressure gauge to see whether the mixing tank is actually depressurised.
Check the mixing tank at the intervals specified in accordance with *Chapter 2.7 Operating pressure reservoirs*.

Loader

The operator must make sure that other personnel are not standing within the slewing circle of the loader during operation.

2.5 Safety equipment

Never remove or modify safety devices on the machine.

Safety devices that are removed for maintenance work, machine set-up or repair must be refitted directly after the work is complete and checked to make sure they are fully functional.
Safety devices may only be checked, repaired or replaced by qualified personnel.

All signs that have a safety or accident prevention function must be attached to the machine. These signs must not be modified, removed or damaged. Illegible signs must be replaced.

2.6 Safety information for the pressure reservoir

Pressure reservoirs are subject to pressure reservoir regulations.
§8, Group IV for this particular reservoir.

Brinkmann Maschinenfabrik GmbH & Co. KG has already performed a pressure and product acceptance test. Regular checks are also necessary after initial operation. Before making any checks, you must possess a type approval and pressure test certificate. These are provided by Brinkmann Maschinenfabrik GmbH & Co. KG when the machine is delivered.

Danger
Welding work on pressure reservoirs or reservoir outlets is not permitted. Do not make any structural modifications.

2.7 Operating pressure reservoirs

The pressure reservoir operator is responsible for carrying out repeat checks at the intervals specified and documenting these checks.
Checks must be carried out in Germany by a technical expert (pressure reservoir regulations § 32)
e.g. at an approved TÜV or DEKRA centre.

Your Trans Mix is subject to the following inspection intervals in accordance with pressure reservoir regulations § 10:

Internal inspection	Every 5 years	Specialist inspection inside the reservoir performed at a certified testing centre.
Pressure test	Every 10 years	Pressure test on tank by an authorised inspector at a cetified testing centre.

Note

The operator is responsible for keeping reservoir documents safe.

2.8 Personnel selection and qualification

The machine may only be operated, maintained or serviced independently by persons (machine operators) who
- have reached the legally required age;
- are physically able (rested and not under the influence of alcohol, drugs or medication),
- have been instructed in the operation and maintenance of the machine,
- can be expected reliably to execute the tasks they are charged with.

Training

The machine may be operated, serviced or maintained only by persons who are trained to carry out such tasks and have been commissioned to do so. Areas of responsibility must be clearly defined.
Do not allow persons who have not yet completed training or instruction, or persons taking a general training course, to operate the machine unless under the constant supervision of a person experienced in operating the machine.
Couplings should be fitted only by persons possessing the necessary experience and equipment required for this task.

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Qualified electrician

Work on the electrical system and equipment of the machine should be carried out by a qualified electrician or by instructed persons under the supervision and guidance of a qualified electrician and in accordance with the electrical engineering rules and regulations.

Hydraulics engineer

Only personnel having special knowledge and experience in hydraulic systems may work on hydraulic equipment.

2.9 Workplace

The workplace refers to the area in which authorised personnel remain in order to carry out work.

Operator

While the machine is operating, the workplace of the operator is at the operating panel on the side of the machine. The operator must make sure that the machine poses no risk to other personnel and must cease operation if an unauthorised person approaches the machine.

Floor layer

While the machine is operating, the workplace of the floor layer is in the vicinity of the discharge stand.

2.10 Working area

The working area is the area where work is carried out with and at the machine, including delivery lines and the discharge stand. The working area may be classed as a danger zone, depending on the work performed.
The working area must be secured against unauthorised access while work is in progress. If necessary, erect warning plates and barriers.
The operator is responsible for safety in the working area when the machine is in use.

2.11 Procedure in an emergency

Proceed as described in *Chapter 5.1 Shutting down in an emergency*.

Caution

In the event of malfunctions, stop the machine immediately and secure it. Have any faults rectified immediately.
Pressing the EMERGENCY STOP button does not automatically depressurise the mixing tank. Carefully depressurise the mixing tank if still pressurised after an EMERGENCY STOP (automatic lever/air relief cock).
Before opening the cover or releasing a hose coupling, check the mixing tank pressure gauge to see whether the mixing tank is depressurised. Even if the tank is depressurised, the delivery lines may still be pressurised.

2.12 Protective equipment

If necessary or when specified, use the following protective equipment to limit the risk of injury to personnel.

Protective helmet
A protective helmet protects your head e.g. from falling objects.

Safety boots
Safety boots protect your feet e.g. from falling objects, crushing or protruding nails.

Protective gloves
Protective gloves protect your hands e.g. from burning, aggressive or toxic materials and cutting injuries.

Protective goggles
Protective goggles protect your eyes e.g. from sprayed material and other particles.

Respiratory protection and face mask
A face mask protects your face and respiratory protection prevents building material particles from entering your respiratory passage.

Ear defenders
Ear defenders protect your hearing against noise produced in the direct vicinity of the machine.

Safety harness
A safety harness prevents you from falling when working e.g. on scaffolding.

2.13 Injury risks / Other risks

The machine has been built using state-of-the-art technology and in accordance with recognised safety regulations. Nevertheless, its use may constitute a serious or fatal risk to the operator or third parties, or cause damage to the machine and other property.

The following is a list of injuries that may result from improper use of the machine.

- Risk of crushing and bumping when moving and setting up the machine.
- Risk of injury from falling loads, in particular when loading the machine incorrectly using a crane or winch.
- Risk of injury caused by a brake that releases itself or missing wheel chocks.
- Risk of crushing and bumping and risk of injury when slewing the loader.
- Risk of crushing and bumping from the discharge stand thrashing around at the delivery hose end. Particularly during blockages.
- Injuries (serious or fatal) caused by thrashing hose end not attached to discharge stand.
- Injuries, in particular to the eyes, caused by releasing/disconnecting a pressurised delivery hose. Particularly when a blockage forms.
- Risk of eye and skin injuries caused by hydraulic fluid discharging when connections on the compression system are opened and the machine is not shut down in accordance with regulations.
- Eye and skin injuries caused by concrete spatter, water glass or other chemical substances.
- Health damaged after breathing in dust particles, cleaning/preserving agent or solvent.
- Hearing damage when personnel work near the machine for long periods without ear defenders.
- Electrical contact (potentially dangerous electric shocks) with electrical equipment on the machine. If connections or electrical components are faulty.
- Risk of burns from hot machine components. These include: engine, engine oil system, engine oil cooler, compressor, compressor oil system, compressor oil cooler, compressed air tank, exhaust system.
- Risk of scalding from hot engine or compressor oil.
- Injuries caused by starting or operating the machine inadvertently or without authorisation.
- Injuries caused as a result of becoming caught/pulled in by the winch cable on the scraper.
- Injuries caused by tripping over hoses, operating equipment or other objects lying around.

2.14 Blockages

Blockages increase the risk of accidents so it is best to try and avoid them.
The most effective measures for preventing blockages include cleaning delivery hoses and hose couplings properly and replacing worn delivery hoses and hose couplings.

Note
Selecting delivery hoses with a nominal diameter suitable for the delivered material and connecting clean delivery hoses that are not worn contributes greatly to the prevention of blockages.

Risk of injury from bursting delivery hoses or material spraying from delivery hoses, hose couplings, the discharge stand and the mixing tank.

Danger
When clearing blockages, always proceed as described in Chapter 5.14 Material not delivered / Blockages.

Danger
Never attempt to blow out blockages from the delivery hoses using compressed air. Bursting delivery hoses pose a risk of fatal injury.

Danger
Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised. Even if the mixing tank is depressurised, the delivery hoses may still be pressurised and material could spray out when the hose coupling is released.
Always wear protective goggles/face mask and protective gloves, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

2.15 Hydraulic and pneumatic system

Work on the machine's hydraulic circuit may be carried out only by persons with special knowledge and experience of hydraulic systems, who can produce appropriate certification of competence (certificates of training).

Couplings should be fitted only by persons with the relevant experience and tools required for this task.

Always wear protective gloves in addition to eye and face protection when working on the hydraulic system. Escaping fluid is toxic and can penetrate the skin. Hot hydraulic fluid poses a risk of scalding.

Inspection

Check all lines, hoses and threaded unions regularly for leaks, wear and damage. Seal up any leaks and repair any damage immediately. Splashed fluid may cause injury and pose a fire hazard.

The hydraulic system must be inspected regularly, as specified in safety-related machine inspection regulations. Bursting lines pose a safety risk to personnel. The manufacturer shall not be held liable for damage resulting from the use of worn or faulty components.

Replace faulty hydraulic lines, do not repair them.

Hydraulic hoses and lines should be replaced every 6 years (including a maximum storage time of 2 years), even if there are no signs of external damage. See the manufacturing date printed on the hoses.

Danger

Before starting work on the compressor, compressor oil lines and compressed air tank, make sure that the machine has stopped and the compressor system is depressurised.

2.16 Noise

High sound levels can cause permanent hearing damage.

However, noise levels in the vicinity of the machine may exceed 85 dB(A) depending on operating conditions. A distance of less than 5 m from the machine is considered the vicinity.

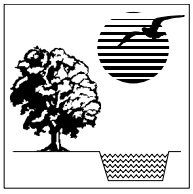
Wear the prescribed ear defenders.

Operator

Instruct your personnel to wear their personal ear defenders at all times. As the operating company, you are responsible for ensuring that your personnel comply with this regulation.

2.17 Environmental

Dispose of old materials such as oils, filters, batteries, replaced parts etc. in line with regulations. Used cleaning rags should also be disposed of properly.



2.18 Spare parts

Spare parts must comply with the technical requirements specified by the manufacturer. Spare parts from original equipment manufacturers guarantee this.

Use only original spare parts. Brinkmann Maschinenfabrik GmbH & Co. KG accepts no liability for damage caused as a result of using non-original spare parts.

2.19 Storing the machine

The machine should only be stored in a dry, clean and well-ventilated area. If the machine is stopped for longer periods, see *Chapter 5.20 Shutting down the machine for long periods.*

Danger

There is a risk of fuel vapours accumulating and igniting if the machine is stored in a poorly ventilated area.

2.20 Unauthorised / Inadvertent machine start-up

Always secure the machine against unauthorised or inadvertent operation by non-authorised personnel before leaving the working area. This means:

- ▶ Press the OFF button on the machine control panel.
  ⇨ This will switch off the engine.
- ▶ Open the hood and actuate the main switch on the control.
  ⇨ This will switch off the control.
- ▶ Close the hood and secure the clasp locks.
- ▶ Close the flap on the control panel and secure with a padlock.

Make sure that the mixing tank is depressurised. Check the tank pressure gauge and open the ventilation lever/air relief cock.

If you intend to stop machine operation for long periods, proceed as described in *Chapter 5.16 Finishing work*. Prevent material from hardening in the mixing tank or the delivery hoses.

The operator must always supervise machine operation or appoint a qualified person to monitor the machine in his absence.
If unauthorised persons approach the machine, the operator must stop work immediately. The operator is responsible for safety of all persons present in the working area. *Chapter 2.10 Working area.*

3 Technical description

This chapter describes the components and assemblies on this machine and how they function. Please note that all possible options are also described.

3.1 Designation

DC 260 / 45 B S

- S – Scraper (optional)
- B – Loader (optional)
- 45 – Compressor output (approx.)
- 260 – Mixing tank volume (total in l)
- DC – Diesel compressor

3.2 Equipment

The DC 260 is fitted with the following standard equipment:

- Automatic, electrically powered central lubrication system for sealing or storing the mixing tank
- Central lifting eye concealed in the hood
- Protective grille cut-out
- EMERGENCY STOP button
- Safety cover with automatic depressurisation
- Automatic pressure cut-out at pump end

3.3 Scope of supply

The following parts are included in the scope of supply:

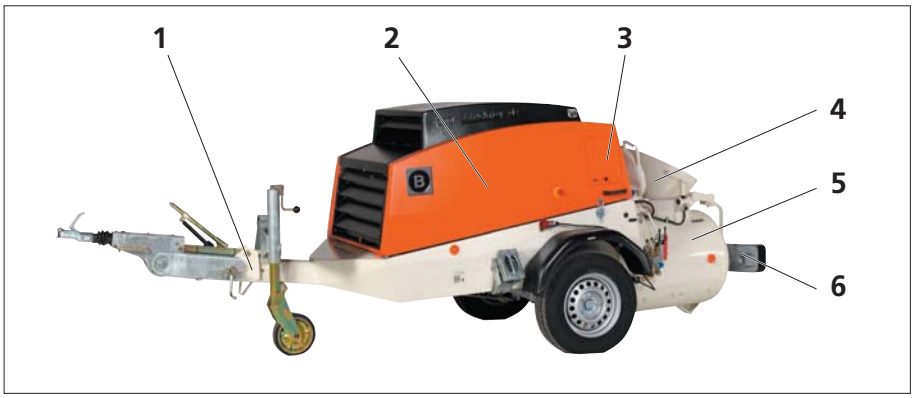
- Trans Mix DC 260
- Operating manual
- Tailgate bracket 12 V DC or 24 V DC
- Tank outlet (with connection NW 50 or NW 60/65)
- Ball head trailer coupling or DIN trailer coupling ring
- Tool set
- 2 batteries, charger, remote control cable (machine with scraper)

The specifications relate to the series machine. The scope of supply may deviate from these specifications if special equipment is fitted.

3.4 Overview

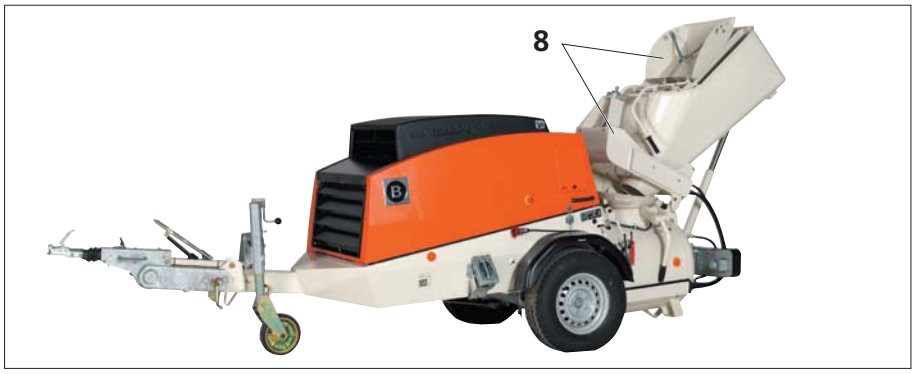
Below you will find an overview of the most important components; these will then be described in more detail on the following pages.

DC 260/45
DC 260/55
Standard



DC 260/45 B
DC 260/55 B
Loader

DC 260/45 BS
DC 260/55 BS
Loader
and scraper



1 Overrunning brake equipment/Chassis
2 Hood
3 Control panel
4 Filling hopper
5 Mixing tank
6 Tailgate bracket
7 Loader
8 Scraper

3.5 Technical data

The technical data and features listed below relate to the DC 260/45/55, B and BS.

	DC 260/45 DC 260/55	DC 260/45 B DC 260/55 B	DC 260/45 BS DC 260/55 BS
Dimensions			
Length	4470 mm	4850 mm	
Width	1495 mm		
Height	1540 mm	2120 mm	
Filling height	940 mm at hopper	420 mm at loader	
Weights			
Weight (full tank)	/ 45 = 1540 kg / 55 = 1550 kg	/ 45 = 1710 kg / 55 = 1720 kg	/ 45 = 1875 kg / 55 = 1885 kg
Tyres			
Tyre size	185 R14C		205 R14C
Wheel	5½ J x 14 H2		
Inflation pressure	4.5 bar		
Tightening torque of wheel bolts	Ball-collar screws 90 Nm		
Chassis			
Tow hitch (as ordered)	Trailer coupling ring as per DIN 74054 Part 1 (EC test code 00-0241) or ball head coupling (EC test code 00-0131)		
Permitted driving speed	In accordance with regulations in the country of use		

Caution

Do not exceed the statutory maximum speed in the country of use.

	DC 260/45 DC 260/55	DC 260/45 B DC 260/55 B	DC 260/45 BS DC 260/55 BS
Operating materials			
Engine oil / Fluid volume	BP Vanellus E6 15W-40 / with filter change 6.5 l		
Transmission fluid / Fluid volume	Texaco Meropa 680 (ISO VG 680) / 3 l		
Compressor oil / Fluid volume	BP Energol HLP-HM 46 (SHELL Corona AS 46 at -10°) / 6.5 l		
Fuel / Fluid volume	Diesel fuel (DIN EN 590) / 55 l		
Hydraulic fluid / Fluid volume	-	HLP 46 (ISO VG 46, DIN 51519) / 12 l	

Caution

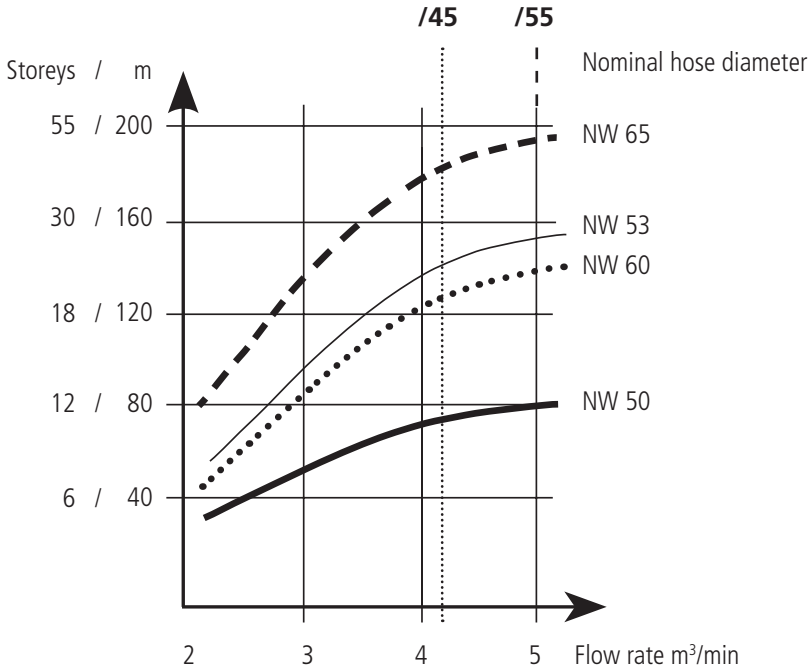
The fluid capacities are only approximate values. These may vary according to the design and depend on the quantity of oil remaining. Do not fill oil tanks beyond the max. mark on the level indicator.

Compressor/Engine

The compressor can be operated with two different types of engine. Refer to the following table for the data.

	DC 260/45 B + BS	DC 260/55 B + BS
Engine type	Diesel engine DEUTZ F3M2011	Turbo diesel engine DEUTZ BF3M2011
Power output	30.5 kW at 2200 rpm	46 kW at 2600 rpm
Compressor type	ATLAS COPCO Airtec C111	
Flow rate (in accordance with ISO 1217)	4.2 m³/min at delivery pressure of 6 bar	5 m³/min at delivery pressure of 6 bar

Delivery rate



Note

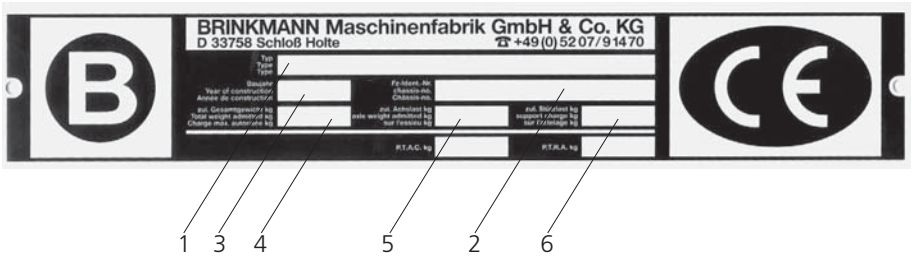
The flow rates stated are guide values only. The actual rates depend on the properties and consistency of the material being delivered.

Noise level

	DC 260/45 B + BS	DC 260/55 B + BS
Pressure level in accordance with ISO 2151 over 7 m	70 dB(A)	72 dB(A)
Power level in accordance with EU-RL 2000/14/EC	98 dB	100 dB

Rating plate

The most important machine data is summarised on the rating plate.



1 Machine model
2 Machine number
3 Year of manufacture
4 Permitted gross weight
5 Permitted axle load
6 Permitted drawbar load

3.6 Options

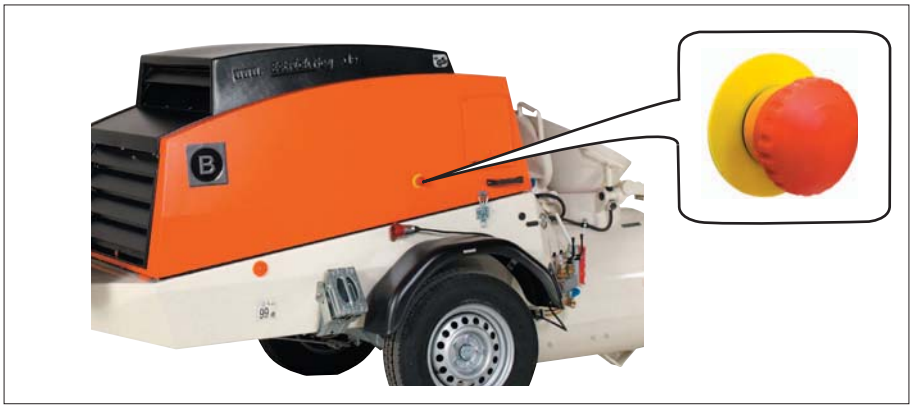
Consult your dealer or a local Brinkmann Maschinenfabrik GmbH & Co. KG representative as to how and whether you should upgrade your machines.
Please refer to the current Brinkmann Maschinenfabrik GmbH & Co.KG catalogue to view a list of optional extras and additional equipment, or visit our website at www.estrichboy.de

3.7 Safety equipment

The following is a list of safety devices installed on the machine.

EMERGENCY STOP button

The EMERGENCY STOP button is located in the hood beside the control panel.



Caution

Familiarise yourself with the location of the EMERGENCY STOP button on your machine.

When the EMERGENCY STOP button is pressed, the following activities are triggered:

- Diesel engine and compressor are switched off.
- Compressed air tank is depressurised.
- Mixing mechanism is switched off.

Danger

Pressing the EMERGENCY STOP button does not automatically depressurise the mixing tank.
Carefully depressurise the mixing tank if still pressurised after an EMERGENCY STOP (automatic lever/air relief cock). Before opening the cover or releasing a hose coupling, check the tank pressure gauge to see whether the mixing tank is depressurised. Even if the tank is depressurised, the delivery lines may still be pressurised.

Reset the EMERGENCY STOP button

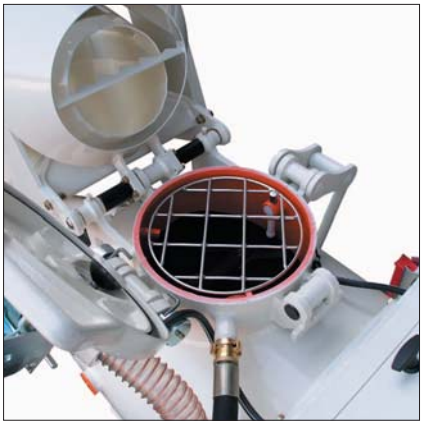
▶ Unlock the depressed EMERGENCY STOP button by turning anticlockwise and then pulling out.

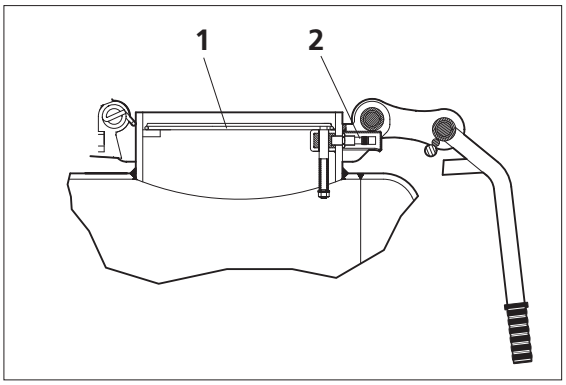
▶ Turn the main switch on the control off and back on to operate the machine again.

Protective grille

The mixing tank filling dome on your machine is fitted with a protective grille. The mesh size allows material to fall into the tank, yet guarantees protection for the operator. If the protective grille is opened while the machine is operating, a circuit breaker shuts off the engine. This circuit breaker also prevents the engine from starting when the machine is switched off.

To clean the mixing tank or perform maintenance work, the protective grille can be raised and swivelled to one side.





1 Protective grille
2 Circuit breaker

Danger

Do not operate the machine without the protective grille. Do not modify the protective grille. Never reach inside the mixing tank without first disconnecting the battery on the machine. Read also Chapter 7.6 Shutting down the machine.

The protective grille may be removed only for set-up, maintenance, repair or cleaning work and must be refitted immediately after the work is complete and function correctly.

Protective guard (V-belt)

The V-belt on the dynamo is covered by a protective guard (**1**), to prevent personnel from reaching into the moving V-belt while the machine is operating (e.g. during brief visual inspections). Always attach the protective guard (**1**) correctly before starting the machine.

Danger

Always attach the protective guard correctly before starting the machine's engine. In addition, refit the protective guard correctly before starting the engine for function checks. Never remove the protective guard without first disconnecting the battery on the machine.
See Chapter 7.6 Shutting down the machine. Ignoring this instruction may cause serious injuries.
The protective grille may be removed only for maintenance or cleaning work and must be refitted correctly immediately after the work is complete.

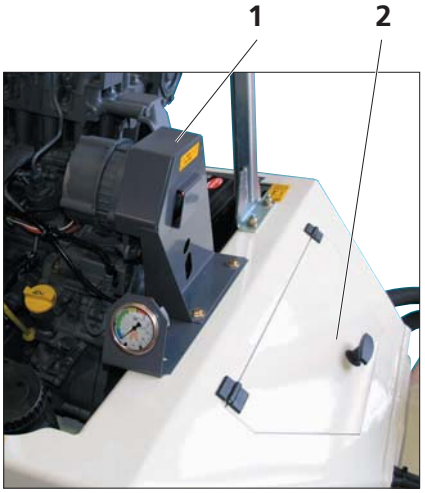
Maintenance flap (power belt)

The automatic V-belt release and the power belt (**3**) on the mixer drive are located behind the maintenance flap (**2**) above the mixing tank together with the check valves (**4**) on the header and flotation air lines.

Danger

Do not operate the machine while the maintenance flap is open. Do not open the maintenance flap without first disconnecting the battery on the machine. See Chapter 7.6 Shutting down the machine. Ignoring this instruction may cause serious injuries.

The maintenance flap may be opened only for maintenance, cleaning or repair work and must be closed immediately after the work is complete.

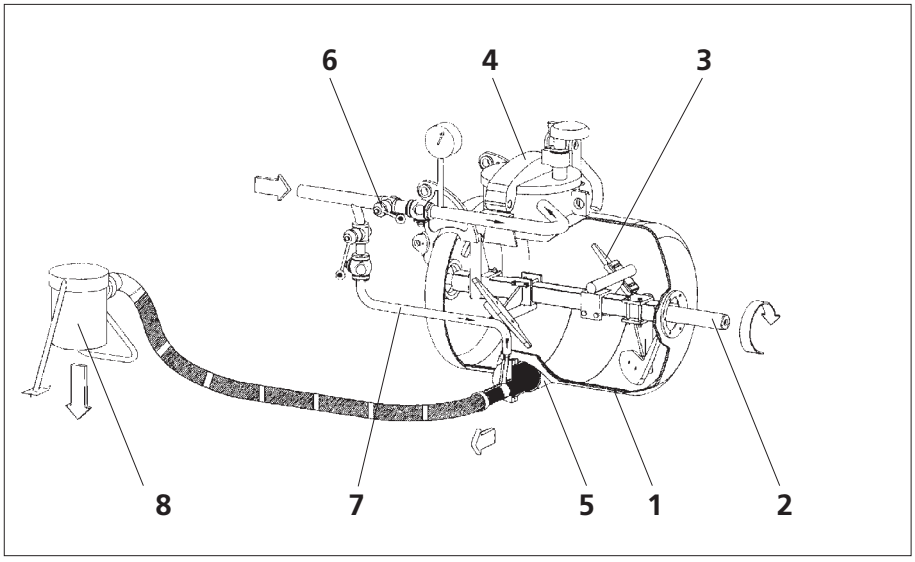


3.8 Description of function

This chapter is designed to help you understand the functions of the machine so that you can limit the field of the machine's applications to suitable areas and avoid errors in operation.

General

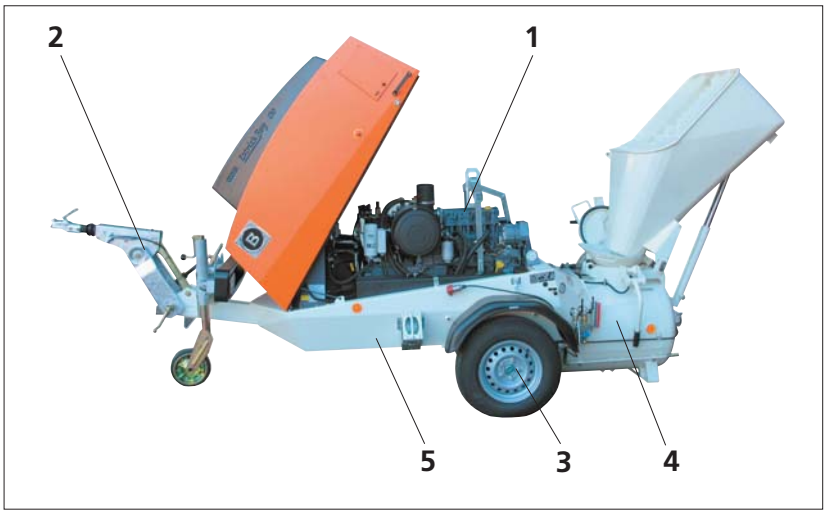
Compressed air conveyors belong to the discontinuous flow conveyor category.
The pumping medium is initially mixed in a mixing and pumping tank as in an enforced mixer. Once the mixing process is complete, the **mixing tank** (designed as a pressure reservoir) is connected to a compressed air supply.
The compressed air is typically produced using a screw compressor and partly enters the mixing tank as **header air** or tank air. The compressed air also enters the pressure line as **flotation air** or hose air, which breaks the material up into plugs and pushes these through the hose like in a pneumatic tube conveyor.



1 Mixing tank
2 Mixing shaft
3 Mixing paddle
4 Cover
5 Tank outlet
6 Header air line
7 Flotation air line
8 Discharge stand

Description of the unit

The DC 260 consists of a diesel engine/compressor unit, a chassis and a mixing tank.
The compressor and mixing tank are mounted to a frame.
The frame is protected underneath from water and dirt and together with the axle and the overrunning brake equipment, forms the chassis.



1 Diesel engine/Compressor unit
2 Drawbar (chassis)
3 Axle (chassis)
4 Mixing tank
5 Frame

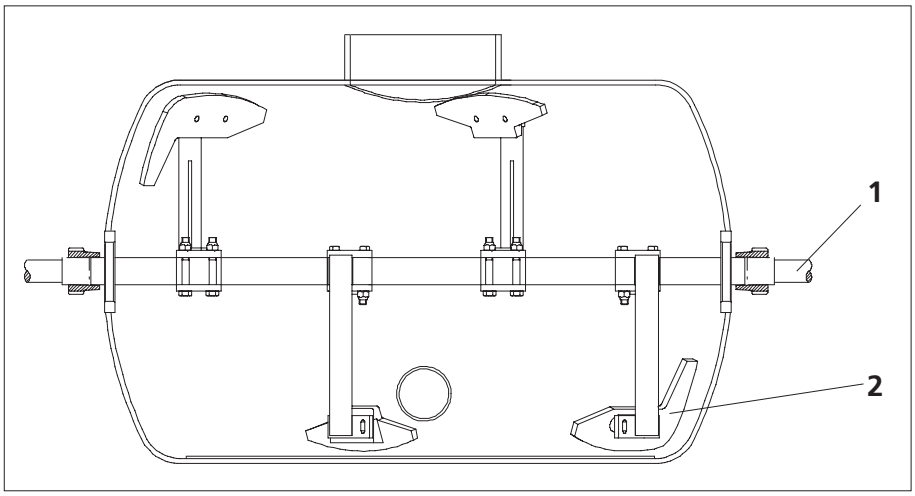
Compressor

The compressor is powered by an oil-cooled diesel engine via a high-performance coupling and supplies a steady flow of compressed air. The diesel engine (DC 260/45) operates at a constant speed. The speed of the turbo engine (DC 260/55) increases automatically to maximum while the compressor is generating pressure and decreases to minimum when pressure is not being generated.
The compressor uses a full load control system with 5 operating modes:

Start	Pressure begins to build up in the compressed air tank when the engine starts. The compressor runs at idling speed when the pressure in the compressed air tank reaches 2 bar.
Loading	Maximum pressure generated in the compressed air tank.
Unloading	The system controls the air consumption according to the air flow (100% or 0%).
Idling	The compressed air tank keeps the air pressure at 2 bar. The compressor runs under no load.
Stop	The engine switches off and the compressed air tank is de-pressurised via a relief valve.

Mixing tank

The mixing shaft in the mixing tank is powered by the diesel engine via a gearbox and automatically tensioned V-belt.
Mixing paddles fitted to the mixing shaft mix the material in the mixing tank.



1 Mixing shaft
2 Mixing paddle

To make it easier to start the engine at low temperatures or when the mixing tank is full, the mixing shaft (mechanism) can be disengaged by pressing a button. See also *Chapter 5.11 Delivering material - mixing mechanism button*.

Danger

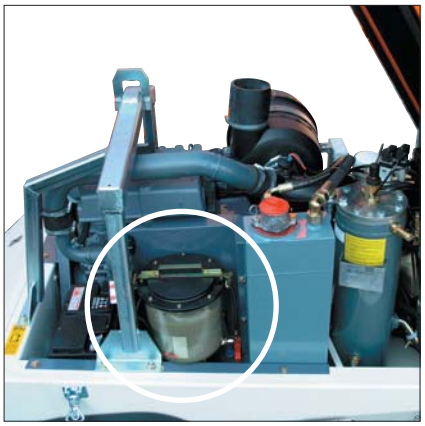
Do not reach into the mixing tank unless the machine has been shut down and secured against unauthorised/inadvertent start-up. Disconnect both battery terminals as well. See Chapter 7.6 Shutting down the machine.
Ignoring this instruction may cause serious or fatal injuries.

Automatic central lubricating system

A piston pump assembly lubricates the following important mixing shaft components automatically:
– Front and rear mixing shaft seals
– Rear mixing shaft bearing

The central lubrication system can be operated from the control panel if necessary, e.g. after repairs or after inserting a new grease cartridge. Check the quantity of grease in the distributor on a daily basis. Top up the distributor when the grease reaches the min. mark.
The grease in one cartridge should be sufficient for approx. one year of normal operation.
Maintenance card 03-001 Central lubrication system

Note
The front mixing shaft bearing must be lubricated every three months. The lubricating point is located next to the grease distributor for the central lubricating system. MC Central lubrication system.



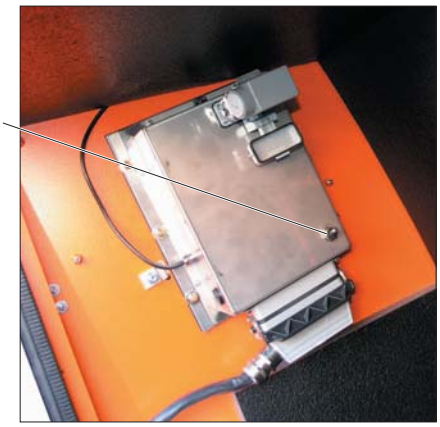
Automatic pressure cut-out

The compressor is switched off via a pressure monitor before the mixing tank is depressurised. The standard setting for the automatic pressure cut-out is 2 bar. *Chapter 5.13 Setting the ventilation pressure*.

Advantages:
– The operator can leave the machine once the delivery cycle has started.
– The delivery lines are not emptied, which prevents the mixture from segregating.
– The delivery cycle finishes in good time.
The speed of the turbo engine on the DC 260/55 decreases by 30%, which reduces noise emissions, fuel consumption and tank wear.

Operating elements

Analogue control



Digital control

1 Control panel
2 EMERGENCY STOP button
3 Pressure gauge for the mixing tank pressure
4 Header air valve
5 Flotation air valve
6 Air extraction cock
7 Lever for the hydraulic system (loader only)
8 Main switch
9 Operating hours meter (with digital control, shown on display)

Loader

The loader is a hydraulic loading device for the mixing tank and offers the following advantages:

– The low filling height makes the work of the machine operator easier.
– A new mixture can be prepared in the loader while a delivery cycle is in progress.

Scraper

The scraper is a shovel that is drawn towards the machine by a cable winch. It is used to draw sand from flat, separated piles easily and conveniently into the loader.

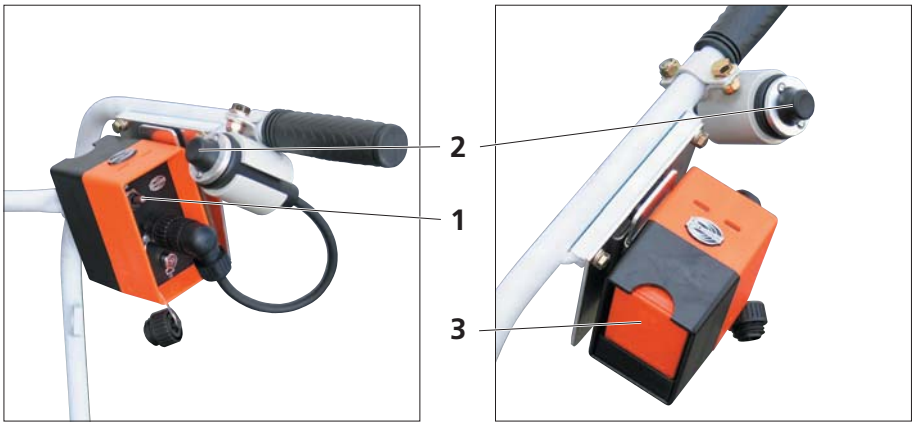
The scraper is operated via a radio remote control system. The transmitter attached to the scraper shovel is impact and water-resistant.
The receiver is located in the engine control box under the hood. In the event of radio interference or a flat battery, the scraper can be operated using the remote control cable.

Remote control on the scraper

The scraper is operated via a radio remote control system. The transmitter attached to the scraper shovel is impact and water-resistant. The remote control is switched on/off at the main switch (**1**). Press the pushbutton (**2**) to actuate the scraper.
The transmitter must be removed during transportation.

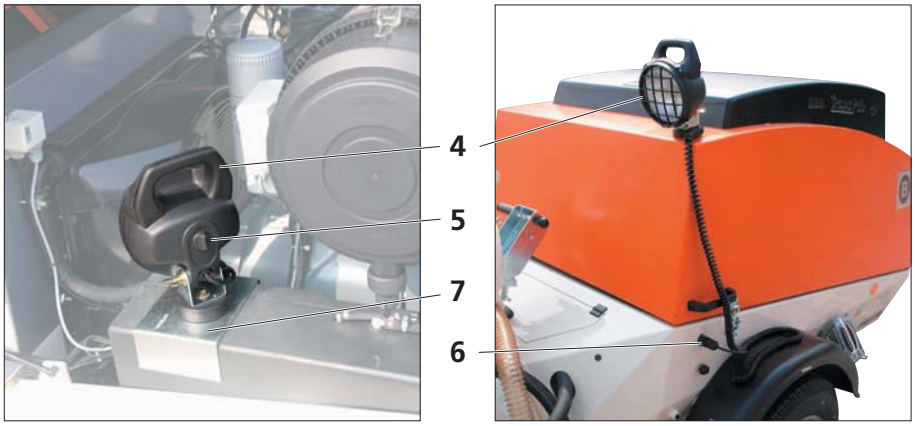
The receiver and the battery charging socket are located on the engine control under the hood.
Two batteries are included in the scope of supply. While operating with one battery, you can the charge the other by connecting it to the charging socket on the control. Only charge the batteries when they are completely flat. *Chapter 5.6 Operating the scraper - charging batteries.*

In the event of radio interference or a flat battery (**3**), the scraper can be operated using the remote control cable. Proceed as described in *Chapter 5.6 Operating the scraper - cable operation*.



Working light with magnet foot

The working light (**4**) has a magnet foot and can be fixed to magnetic metal surfaces (e.g. the hood of the machine) to illuminate the work-place when the light is poor. The lamp can be swivelled and turned on and off via a switch (**5**) on the back. The connector socket (**6**) is located on the right side of the machine. Before driving off, secure the light to the support plate (**7**) on the fuel tank. Do not leave the lamp attached to the hood while driving.

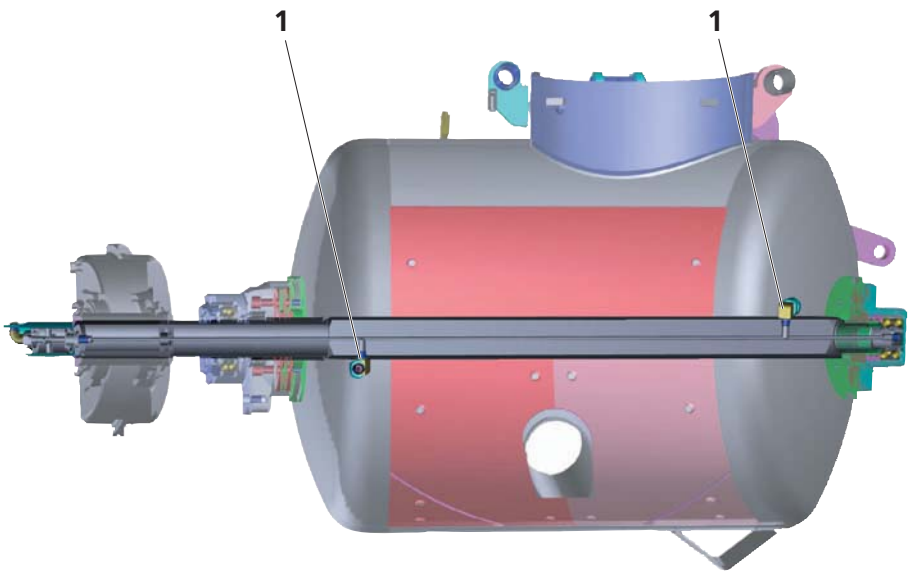


Automatic mixing tank cleaner

The automatic mixing tank cleaner makes the daily task of cleaning the tank easier and prevents material from setting and deposits from forming in the mixing tank.
The mixing shaft is fitted with two cleaning nozzles (**1**). Compressed air keeps the nozzles free of deposits during a delivery cycle. During the cleaning cycle, pressurised water is injected through the nozzles while the mixing shaft rotates and cleans the inside of the mixing tank with the same efficiency as a high-pressure cleaner. Wear-resistant material, a series-connected water filter and stabilising pressure valves ensure maximum safety.

Simply connect the automatic mixing tank cleaner to the mains water supply and switch on the water pump.
The machine operator can now quickly clean the mixing tank, even between 2 delivery cycles. This facility is extremely useful, especially when mixing quick-setting material, because it prevents deposits from forming inside the mixing tank, which you would otherwise have to laboriously scrape off to ensure correct functioning of the machine. A cleaning lance can also be connected to clean the outside of the machine.
Water injected to clean the mixing tank can be
– used for subsequent material mixtures,
– pumped through the delivery hoses for cleaning,
– or drained via the mixing tank outlet.

Advantages:
– Increased safety for the machine operator because machine downtimes (e.g. caused by deposits blocking the mixing shaft) and manual cleaning of the mixing tank interior are largely eliminated.
– Simplified cleaning
– Significant decrease in cleaning time (approx. 30 minutes per day)
– Reduced maintenance costs because the removal of material from the mixing tank prevents potential damage.

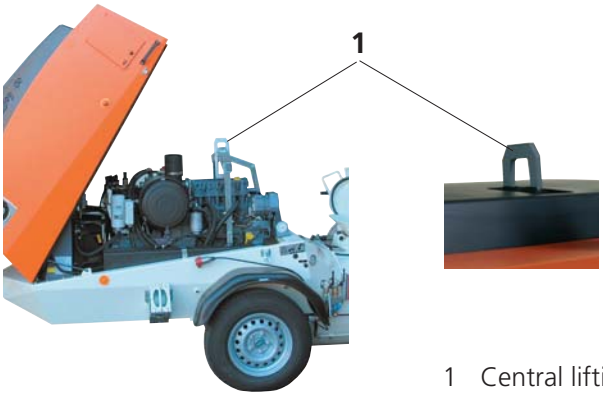


4 Transport, installation and connection

This chapter contains information concerning safe transportation of the machine as well as a description of work necessary for the installation and connection of the machine. Steps required to start the machine will not be described until the chapter "Starting up". Always observe the general safety regulations included in this operating manual when handling the machine (*see Chapter 2 Safety regulations*).
Outside Germany, separate permission may have to be obtained depending on the country and its regulations. The registration regulations applicable in the country of use shall always apply.

4.1 Loading

When loading the machine with a crane, use the central lifting eye provided. This will ensure that the machine remains horizontal, secure in the hook and will not tip when suspended.



1 Central lifting eye

Danger of crushing

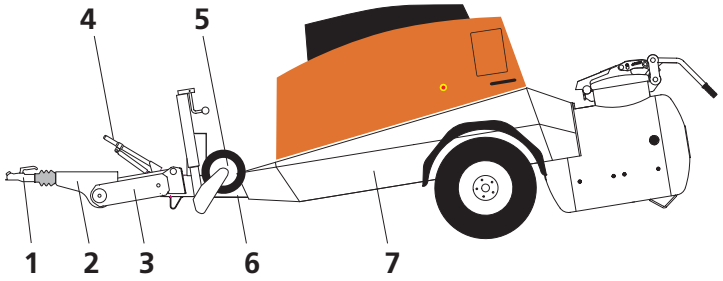
Hoists, lifting equipment, support trestles and other auxiliary devices must be reliable and safe in operation. Make sure that the load-bearing capacity is sufficient. The machine must only be loaded onto a suitable transport vehicle and must be secured against rolling, sliding and overturning during transport.

Suspended loads

Attach a crane hook or shackle to the lifting eye. Never lift the machine with a cable threaded directly through the lifting eye because the cable could fray and break. Suspended loads may fall if they are not attached properly or if the auxiliary loading device is damaged. You should therefore never walk under suspended loads.

4.2 Chassis

The chassis consists of the following components:



1 Trailer coupling
2 Overrunning brake equipment
3 Parallel adjuster
4 Handbrake
5 Support wheel
6 Drawbar
7 Frame

Trailer coupling (1)

The trailer coupling can be fitted either with a trailer coupling ring as per DIN 74054 or a ball head coupling.

Overrunning brake equipment (2)

When the towing vehicle brakes or travels downhill, the tension bar on the overrunning brake equipment retracts depending on the magnitude of the drawbar force and the machine brakes accordingly.

Parallel adjuster (3)

The parallel adjuster makes sure that the overrunning brake equipment and the drawbar always remain parallel to one another. As a result, the trailer coupling on the machine can be adapted to the height of the towing vehicle.

Handbrake (4)

The handbrake prevents the machine from moving. If the chassis rolls back, the handbrake tightens automatically.

Danger
The machine may roll until the braking force takes full effect.

Drawbar (5)

The drawbar must always be parallel with the ground during the journey (*see Chapter 4.3 Before moving off - ground clearance*).

Support wheel (6)

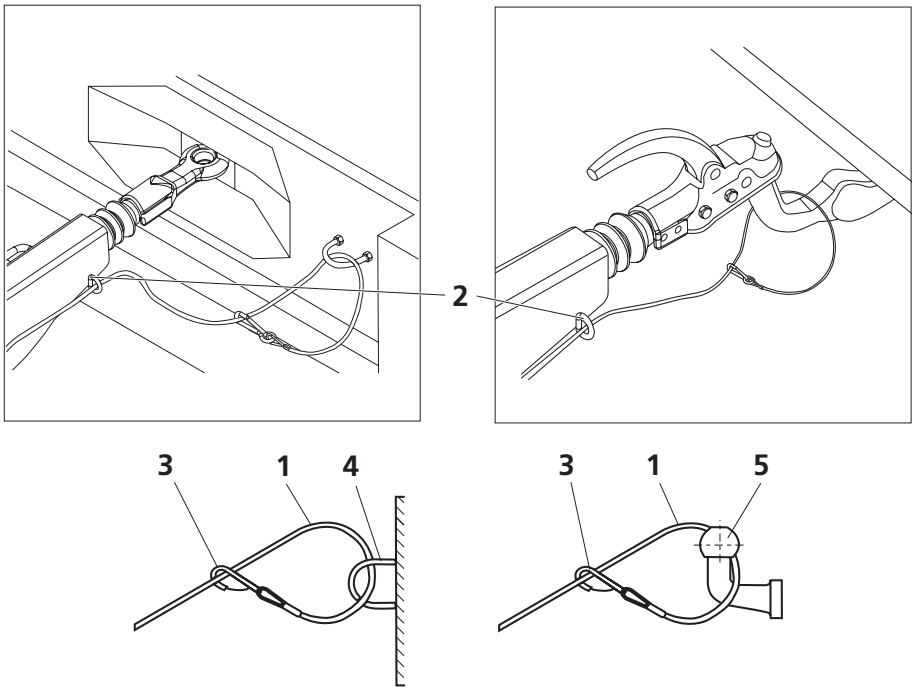
The support wheel moves the machine into a horizontal position at the place of work. Wind up, fold up and secure the support wheel in this position before driving off.

Frame (7)

The frame is made from a special torsion-resistant, high-grade steel that gives the machine stable roadholding.

Breakaway cable

The breakaway cable actuates the handbrake (emergency brake) if the trailer detaches itself from the towing vehicle by accident.



1 Breakaway cable
2 Breakaway cable guide
3 Snap hook
4 Eye (trucks)
5 Ball neck (passenger vehicles)

Attaching the breakaway cable (DIN trailer coupling ring):
Thread the breakaway cable (**1**) through the cable guide welded on the side (**2**), insert the snap hook (**3**) through the eye provided (**4**) and clip the snap hook (**3**) onto the cable (**1**).

Attaching the breakaway cable (ball head coupling):
Thread the breakaway cable (**1**) through the cable guide welded on the side (**2**), wind around the ball neck (**5**) and clip the snap hook (**3**) onto the cable (**1**).

Caution

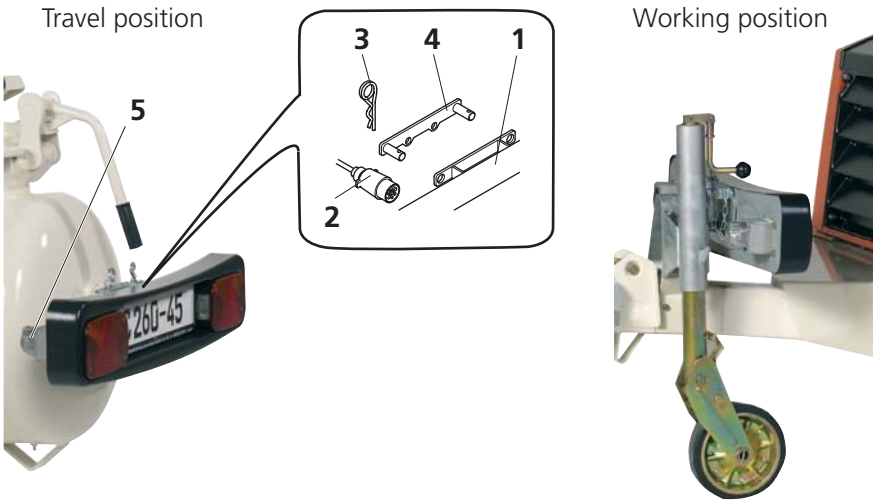
Make sure that the breakaway cable is long enough so that the towing vehicle does not pull it taut when travelling around corners. Otherwise the emergency brake may trigger unintentionally during the journey.

Danger

*The breakaway cable (**1**) must be threaded through the cable guide (**2**) for the emergency brake to function correctly.*
For ball head couplings, attach the breakaway cable to the vehicle coupling before connecting up the machine.

Tailgate bracket

The lights and the vehicle licence plate are fitted to the tailgate bracket.

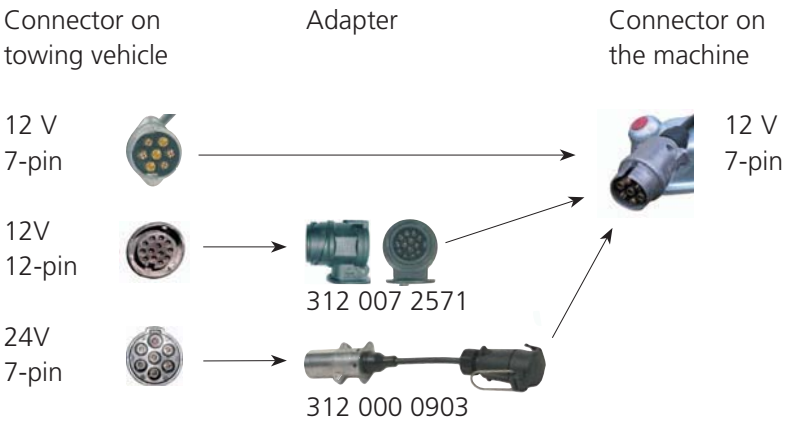


Before starting off on a journey, attach the tailgate bracket to the holder (4) on the end of the mixing tank and secure with spring pins (3).
Remove the power cable (2) from the holder and insert in the socket (5) on the lighting bracket.
Before starting work, attach the tailgate bracket to the holder on the support wheel.

Note

The cabling of the tailgate bracket is designed for 12 V and 7-pin connectors as standard.
If the towing vehicle has a 24 V or 12-pin connector, you will need to use an adapter.
Refer to the towing vehicle user manual for information on the operating voltage (12 V or 24 V) or consult the vehicle manufacturer.

The order number for the adapters are shown below.



Support wheel

Wind up, fold away and secure the support wheel on the machine before driving off. Likewise, fold down, secure and wind down the support wheel before setting up the machine. Proceed as follows:

Winding the support wheel up and down

▶ Fold out the crank (**1**).

▶ **Wind up the support wheel**: Turn the crank (**1**) clockwise
Wind down the support wheel: Turn the crank (**1**) anticlockwise

▶ Fold down the crank (**1**) again.

Folding in the support wheel

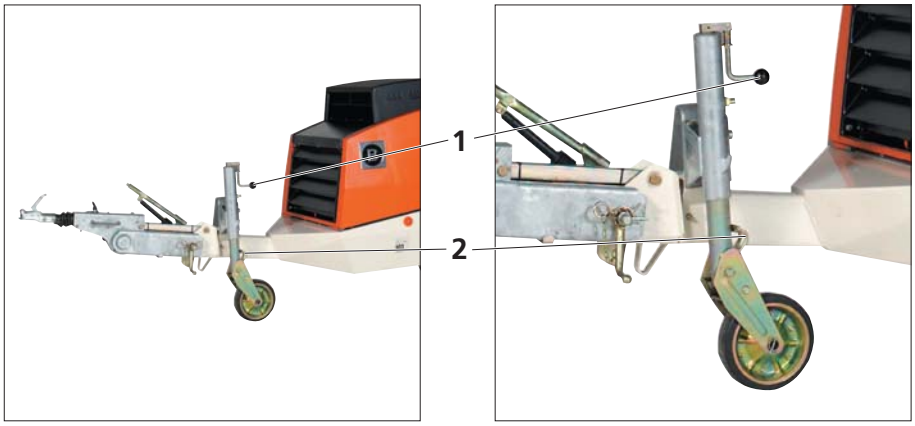
▶ Pull the safety clasp (**2**) to release and fold the support wheel upwards. The support wheel must audibly engage into position.

Folding out the support wheel

▶ Pull the safety clasp (**2**) to release and fold the support wheel downwards. The support wheel must audibly engage into position.

Caution

Wind up, fold away and secure the support wheel in this position before driving off.
Likewise, fold out, wind down and secure the support wheel in this position before starting work.



Handbrake

The handbrake secures the machine at the set-up site. When the automatic reversing device engages (the machine rolls backwards), the brake automatically clamps the wheel brake. The handbrake must be released to its zero point before the machine can be towed.

Applying the handbrake

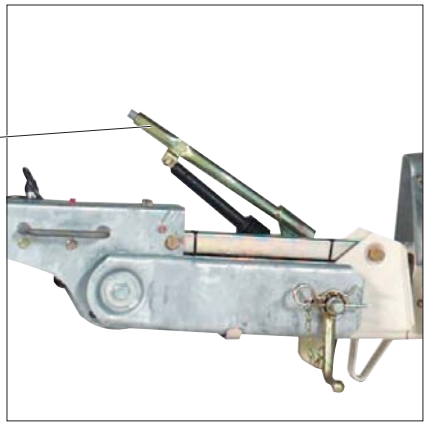
▶ Grasp the handle (**1**) on the handbrake and pull firmly over its dead centre position.

Releasing the handbrake

▶ Press the button on the handbrake handle (**1**) and release the handbrake to its zero point.

Caution

Do not secure the machine from rolling exclusively using the handbrake. Always use wheel chocks on both sides.



Chocks

The chocks prevent the machine from rolling at the set-up site and are part of the basic machine equipment. Place the chocks directly under the wheels on the machine.
Before the machine is towed, insert the chocks in their holders and secure.

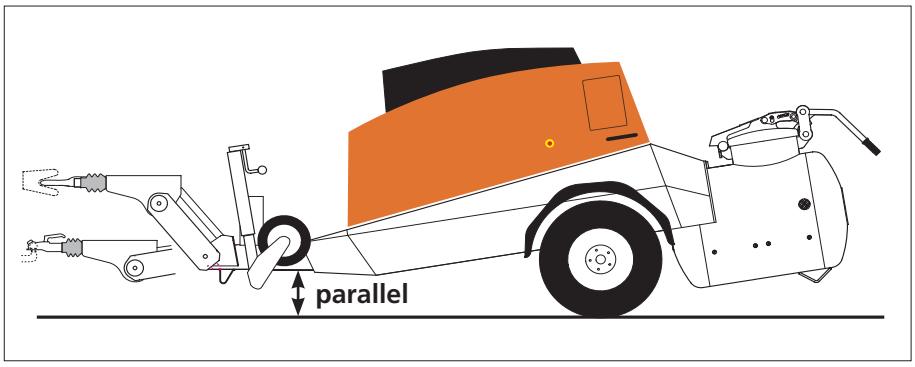
Setting the parallel adjuster

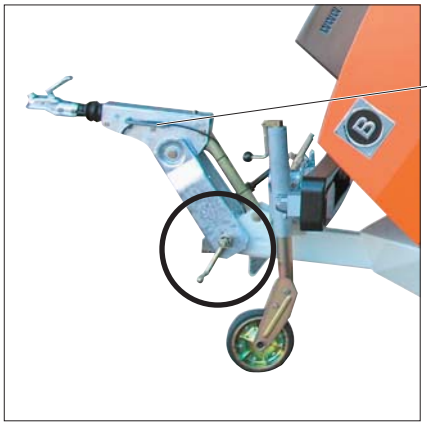
The drawbar on the machine must be parallel with the ground. The parallel adjuster is always parallel with the drawbar and must be adjusted to the same height as your trailer coupling so that the overrunning brake can function correctly. Adjust the parallel adjuster as follows:

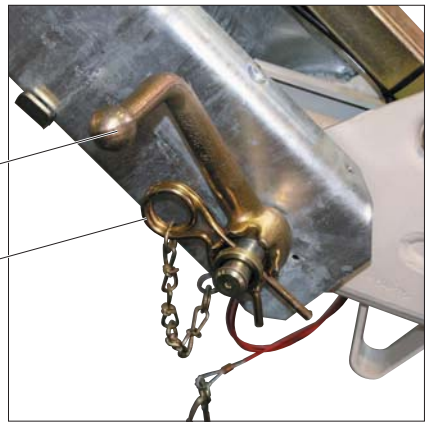
- ▶ Adjust the height of the support wheel so that the drawbar on the machine and therefore the parallel adjuster, are parallel with the ground.
- ▶ Pull the split pin (**1**) from the locking toggle (**3**) and turn the locking toggle (**3**) anticlockwise.
- ▶ Grasp the parallel adjuster by the handle only (**2**) and adjust to the same height as the vehicle coupling.
- ▶ Turn the locking toggle (**3**) clockwise as far as possible and then strike with a rubber or plastic hammer. Insert the split pin (**1**) again to secure the parallel adjuster.

Caution

Only tow the machine when the drawbar is parallel with the ground. This procedure guarantees maximum ground clearance during the journey and makes sure the overrunning brake can function correctly. Always adjust the parallel adjuster accordingly in relation to the drawbar.







Ball head coupling

The ball head coupling on the machine is fitted with a coupling indicator (**1**) and a wear indicator (**2**). Before towing, attach the coupling on the machine correctly to the trailer coupling on the towing vehicle and lock.

Coupling indicator (1)

The coupling indicator consists of a **red and green** cylinder on the ball head coupling. When the coupling is open, only the **red head** of the cylinder is visible. If the coupling is connected correctly, the cylinder pops out to reveal a **green edge**.

Danger

If the cylinder does not pop out when the machine is attached and only the red head of the cylinder is visible, the coupling is not connected correctly or is faulty and the machine should not be towed under any circumstances.
The ball head coupling could detach itself during the journey. Risk of accident.

Wear indicator (2)

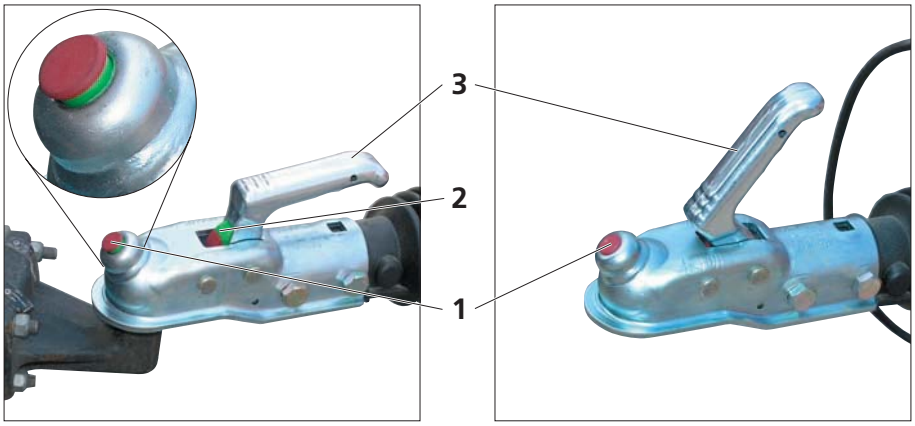
The wear indicator is located on the handle (**3**) of the ball head coupling and becomes visible when the handle is closed. It indicates the wear on the machine ball head coupling or on the towing vehicle ball. If the wear is within the permitted limits, the wear indicator is **green** but if the ball head coupling or ball are worn, the wear indicator is **red** (green area is no longer visible).

Note

Tow the machine approx. 500m before inspecting the wear indicator. The towing motion adjusts the coupling mechanism.

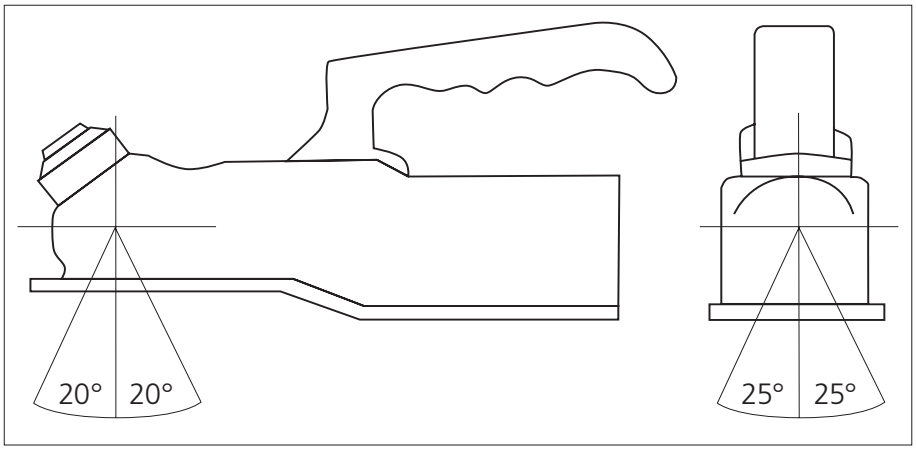
Danger

If the wear indicator is red, the machine has not been secured to the towing vehicle correctly and should not be towed. The ball head coupling could detach itself during the journey. Risk of accident.



Permitted slewing circle

The max. slewing circle around the vehicle longitudinal axis (angle of the machine in relation to the towing vehicle) is ± 25°.
The max. slewing circle around the vehicle transverse axis (e.g. when driving over small dips, railway lines or ramps) is ± 20°.



Caution

Exceeding the maximum slewing circle will overload the ball head coupling and may damage it. There is then no guarantee that the ball head coupling will function correctly.

Permitted drawbar load

The maximum drawbar load of the machine is imprinted in the ball head coupling.

Danger

Check whether the vehicle coupling is designed to withstand the drawbar load of the machine. Never tow the machine with a negative drawbar load as this will affect the stability of the trailer.

A negative drawbar load may result from poor cleaning or incorrect loading of the machine.
Clean the machine thoroughly before driving off.
The machine must be empty during transportation.

Coupling the machine

Before towing, attach the coupling on the machine correctly to the trailer coupling on the towing vehicle and lock. The parallel adjuster must be adjusted accordingly.

Attach machines with a DIN trailer coupling ring in accordance with the specifications provided by the manufacturer of the towing vehicle or the coupling.

Attach machines with a ball head coupling as follows:

▶ Attach the breakaway cable *(Chapter 4.2 Breakaway cable)*.

▶ The lever (**1**) must be in the top position prior to attachment.
⇨ The coupling indicator (**2**) must be **red**.

▶ Position the machine coupling over the ball head on the vehicle coupling (drive the vehicle close enough). Wind up the support wheel until the drawbar load of the machine causes the coupling to audibly engage. Then wind up the support wheel fully, fold in and secure.
⇨ The coupling indicator (**2**) must change from **red** to **green**.

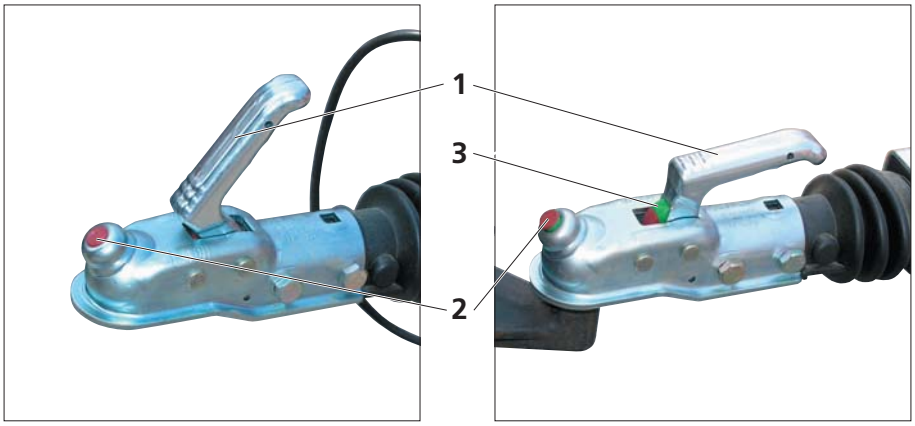
▶ Push down the lever (**1**)
⇨ Inspect the wear indicator (**3**) after driving approx. 500m. It must turn **green**.

▶ Connect the tailgate bracket cable to the towing vehicle.

Caution

Only tow the machine when the trailer coupling is attached and secured correctly.
The breakaway cable (Chapter 4.2 Breakaway cable) must be attached correctly.
Release the handbrake, remove the wheels chocks and wind up, fold in and secure the support wheel before towing the machine.

Never move a machine with a negative drawbar load.
Do not load the machine.



Disconnecting the machine

Tow the machine as close as possible to the set-up site. Pushing the machine increases the risk of accident so take extra care in such cases.

Disconnect machines with a DIN trailer coupling ring in accordance with the specifications provided by the manufacturer of the towing vehicle or the coupling.

At the set-up site, detach machines with a ball head coupling from the towing vehicle as follows:

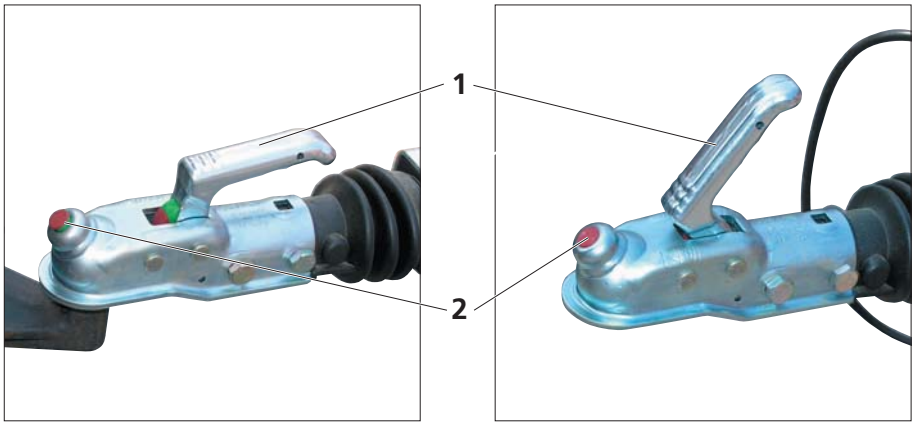
- ▶ Detach the tailgate bracket cable from the towing vehicle.
- ▶ Wind down the support wheel until the ball head coupling on the towing vehicle is no longer under load.
- ▶ Pull the lever (**1**) upwards.
  ⇨ The coupling indicator (**2**) must change from **green** to **red**.

Caution

*Do not use the towing vehicle to move the machine once the lever (**1**) is open.*

Never reach into the open spherical cap on the machine coupling. The closing mechanism is pretensioned by a spring and may trigger at the slightest touch, causing injuries.

- ▶ Detach the machine from the ball head on the vehicle coupling. Use the handle on the parallel adjuster.
- ▶ Detach the breakaway cable.



4.3 Transportation and towing

Brinkmann trailer-mounted machines may only use public roads if properly approved. When being towed in road traffic, they are subject to Road Traffic laws applicable in the respective country. These also stipulate the maximum permissible road speed for trailer-mounted machines.

Trailer-mounted machines must not be used for the transport of goods. The machine should be empty of material. Observe regulations governing the operation of trailers, in particular the permitted towed and drawbar load of the towing vehicle. Never move a machine with a negative drawbar load.

The General Operating Licence (GOL) is delivered with the machine and should accompany the machine during transportation.

You may have to obtain an additional licence depending on the country of use and the relevant regulations. The registration regulations applicable in the country of use shall always apply.

The trailer-mounted machine must display its own official licence plate and is therefore subject to a roadworthiness test. The plate can be obtained on production of the operating licence at the licensing office responsible.

4.4 Before moving off

Check the following points before towing the machine on the open road:

- The brake system/overrunning brake equipment has been checked.
- The tyre pressure has been checked.
- The breakaway cable is attached correctly to the towing vehicle.
- The tailgate bracket is attached in travel position, secured, connected and fully functional.
- The towing gear is fully functional and coupled correctly.
- After the machine is attached, the support wheel is wound to the top position, folded away and secured.
- The chocks have been removed and secured in the holder.
- The handbrake is released.
- The mixing tank is depressurised, empty and clean.
- The air extraction cock is closed.
- The hood has been closed properly and the clasp locks secured.
- The loader (if available) has been raised and secured with the chain.
- The scraper (if available) has been positioned in the holder on the loader and secured with the split pins.
- Stow away the working light with magnet foot (if available) before starting your journey.

4.5 Set-up site

The operator bears responsibility for setting up the machine safely. Inspect the proposed site carefully and reject the set-up site if you have any doubts in respect of safety.

The supporting ground must be such that the machine cannot sink under its own weight. Provide sufficient lighting at the set-up site.

Set-up site requirements

The set-up site must be:
- large enough to ensure that there is sufficient clearance around the whole machine. Keep away from walls.
- accessible from all sides for servicing and repairs on the machine.
- positioned on level, firm, preferably horizontal supporting ground.

Caution

The machine must be positioned outside the danger zone of elevated work sites, or protective roofing must be provided for the machine at the operating site.

Set-up site

Select a machine set-up site where:
- explosive, flammable or toxic gases or steam cannot be drawn into the machine.
- dust cannot be drawn in or blown towards the machine by the wind.
- the machine does not draw in its own exhaust gases.
- there is no need for any sharp delivery hose bends,
- hoses do not have to be laid across one another or rest against other objects (e.g. corner of walls).
  ⇨ Risk of chafing.
- the delivery line is as short as possible.

Note

Output depends on the delivery characteristics of the material as well as the thickness, the length and routing of the delivery line.

Danger

Engine exhaust gases contain constituents which can be fatal or pose a serious health hazard. Always set up the machine at a well-ventilated site.

Do not operate the machine in enclosed spaces.

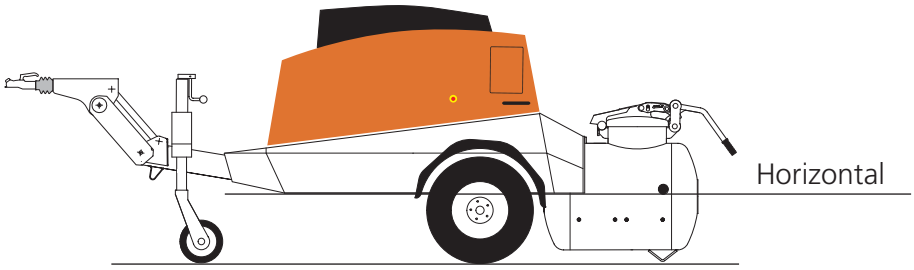
Set-up

Set up the machine so that it is absolutely stable and cannot roll.

- ▶ Detach the towing vehicle and secure the machine against rolling. Apply the handbrake and position both chocks under the wheels on the machine. *Chapter 4.2 Chassis - handbrake* and *wheel chocks*
- ▶ Remove the tailgate bracket and attach to the front holder on the support wheel. *Chapter 4.2 Chassis - tailgate bracket*
- ▶ Release the safety chain on the loader and swivel the loader downwards (DC 260 B and BS only). *Chapter 5.5 Operating the loader*

Angle of inclination

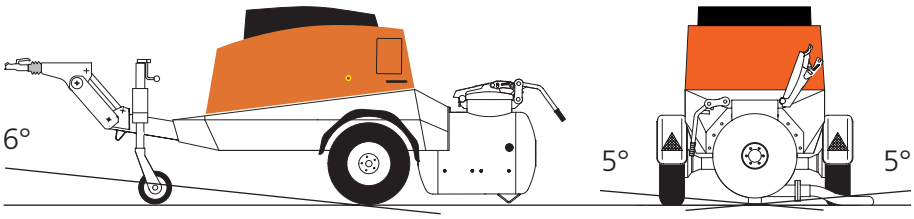
Set up the machine in a horizontal position before operating.



Remain within the following inclination angles to guarantee continual problem-free operation:

– Inclination angle in direction of travel: 6°

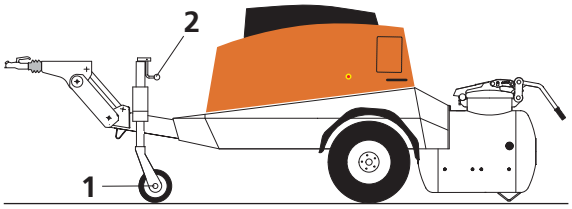
– Lateral inclination angle (both directions): 5°



Alignment

You can correct the longitudinal tilting angle using the support wheel.

▶ Use the crank (**2**) to wind the support wheel (**1**) up or down (*Chapter 4.2 Chassis - support wheel*) until the machine is in a horizontal position.



4.6 Laying the delivery line and setting up the discharge stand

Selecting the best route for the delivery line and using the discharge stand is important in ensuring problem-free, safe machine operation. Always attach the line to a discharge stand.

Danger

Check whether the delivery line is laid correctly and attached to the discharge stand before operating the machine.
Never work without attaching a discharge stand securely.
A thrashing hose end can be extremely dangerous.

Secure the delivery hoses, in particular on rising lines, in such a way that the forces generated are absorbed by the structure or other unit components. Secure rising lines with extreme care so that they do not break free as a result of the combined weight of hose and delivery material. We recommend using Brinkmann fabric or leather hose clamps to secure the delivery hoses. Secure the delivery hoses in the areas around the couplings to prevent the clamps from restricting the delivery hose.

Danger

Delivery lines that break free may thrash around and injure bystanders or damage property.

Selecting delivery hoses

Delivery hoses are available with different inner diameters (e.g. nominal width 50, 60, 65). Selecting a suitable delivery hose depends on the material you wish to pump.
A decisive factor in hose selection is the size of the aggregate grains. The larger the aggregate grains are (e.g. gravel), the larger the nominal width of the delivery hoses must be.

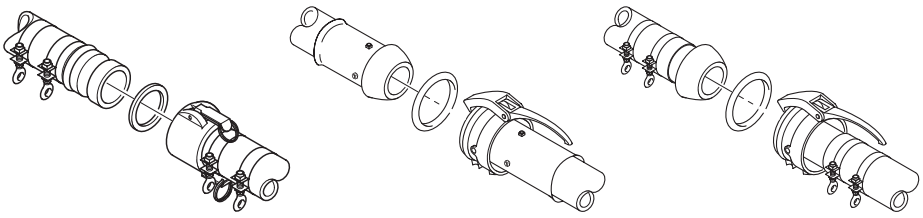
Delivery hoses and their couplings are subject to natural wear caused by abrasion and material ageing. Therefore, have a qualified specialist check the operational reliability of the delivery hoses every 3 months and record this inspection on the safety inspection sheet.

Never use damaged delivery hoses. Always use original Brinkmann delivery hoses and couplings (or hoses and couplings approved by Brinkmann). Consult your Brinkmann After Sales partner in this regard.

Selecting hose couplings

You will require different types of coupling connection that correspond with the nominal width of the delivery hose. Secure all connected hose couplings.

Nominal width 50 | Nominal width 53 | Nominal width 60+ (various types)

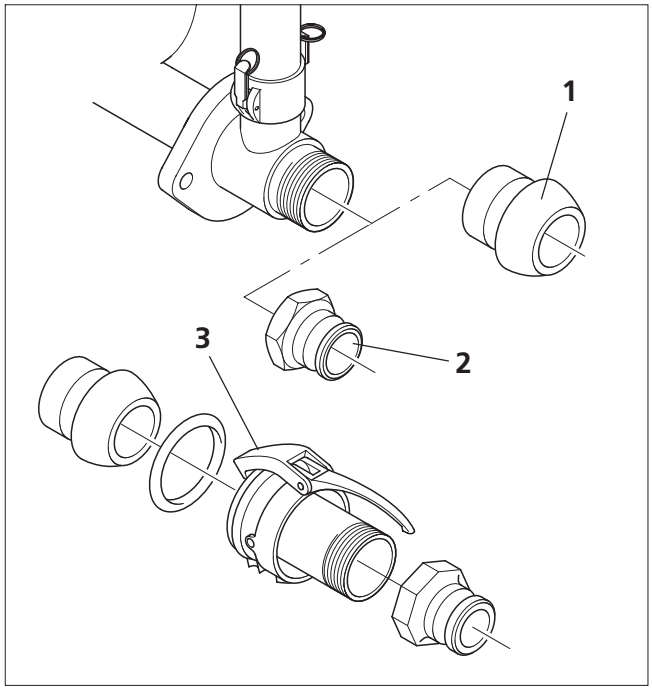


Note

Always connect delivery hoses with the same nominal width, otherwise the output of the machine will decrease and minor blockages may form in the delivery line.
Connect only clean hose couplings together. The seals on the hose couplings should not be damaged or dirty. Dirty couplings will not seal properly and allow water to leak out under pressure, which inevitably leads to blockages.

Selecting the connection for the mixing tank outlet

The mixing tank connection fitted to the mixing tank outlet must match the nominal width of the delivery hose selected (see illustrated example).



1 Mixing tank connection for nominal width 60 or larger
2 Mixing tank connection for nominal width 50
3 Mixing tank connection for nominal width 50 with stone trap

The stone trap on the connector is a special feature that catches and retains larger stones to prevent them from blocking the delivery line. If a mixing tank connection with nominal width 60/65 is fitted, the stone trap can also be used for quick reduction to nominal width 50. You can connect delivery hoses with different widths more easily using the stone trap.

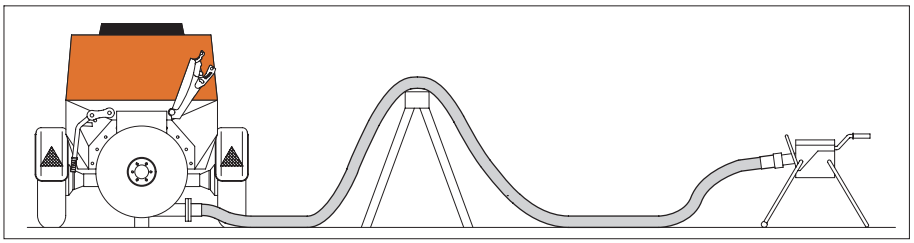
Laying delivery hoses

Keep the delivery hose line as short as possible. Do not connect more delivery hoses than necessary and do not kink delivery hoses. Lay the delivery line with a generous bending radius (whereby the curve radius should be no less than six times the external hose diameter).

Delivery hoses must be designed to withstand the delivery pressure and should be laid and secured professionally. Use faultless delivery hoses and couplings only.

Continued on next page

Lay the delivery hoses over a support trestle directly behind the machine. Position support trestles under longer delivery lines that run along a level surface at intervals of 15 to 20 metres.
This should allow the material to flow through long, flat delivery hoses without forming blockages.



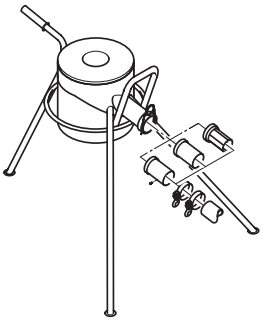
Danger

Always secure delivery hoses, especially in rising lines. Secure the delivery hoses so that the forces generated are absorbed by the structure or other unit components. Bear in mind that the clamps used to secure the delivery hoses must be able to withstand the weight of the delivery hoses as well as the weight of the material. There is a risk of injury from delivery hoses breaking free or thrashing around.

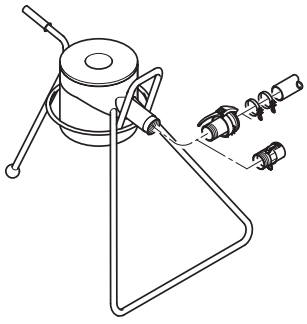
Connecting the discharge stand

Always attach the end of compressed-air conveyor hoses to a discharge stand. Brinkmann discharge stands (steel or aluminium) are available for different hose diameters. Two types of connection are available:

Fixed coupling connection



Rotary coupling connection



The rotary coupling sleeves can compensate for twisting delivery hoses.

Danger

Never work without attaching a discharge stand securely.
A thrashing hose end can be extremely dangerous.

4.7 Starting up

This chapter contains information on starting up the machine and includes instructions on how to check the condition of your machine and how to carry out a test run including function checks.

After receiving the machine, the operator must familiarise himself with the machine. This means:
- He must have read and understood this operating manual. In particular, *Chapter 2 Safety regulations*.
- In the event of an emergency, he must take the proper measures for shutting down and securing the machine, etc. *Chapter 5.1 Shutdown in an emergency.*

Every time the machine is used, the operator must assume full responsibility for the safety of personnel located in the working area around the machine. The machine operator is therefore obliged to ensure that the area surrounding the machine is completely safe. *Chapter 2.10 Working area*

The entire system should be monitored during the first few hours of operation to identify any potential malfunctions.

Preparing for start-up

Important inspections and checks must be performed before the machine can be started.

Check whether the machine has been set up correctly. *Chapter 4.5 Set-up site.*

Always inspect the machine thoroughly for obvious defects before starting work. Inspect under the hood as well. *Maintenance card 01-001 Visual inspection.*

Check the most important wear parts such as the V-belt, delivery line and mixing mechanism.

Check whether all lubrication points are lubricated sufficiently. Make sure that there is sufficient grease in the distributor on machines with automatic lubrication. *Maintenance card 03-001 Central lubrication system* and *maintenance card 02-001 Lubrication diagrams.*

Check whether all safety devices are attached and are functioning correctly.

Check that all fasteners on the machine are closed properly (including oil filler, air filter cover, battery cells).

Check delivery hoses, hose couplings and seals for damage, contamination and wear.

Observe the warning and information plates on the machine.

Checking oil levels

Inspect the engine oil level and the compressor oil level. Check the hydraulic fluid level on machines fitted with a loader. Top up oil or fluid as necessary. *Engine maintenance card, Compressor maintenance card* and *Maintenance card 10-001 Hydraulic system.*

Danger

Oils and other fluids and lubricants can be hazardous to health. Therefore, always wear personal protective clothing and equipment when handling toxic/caustic materials or other operating materials that are hazardous to health. Read and take note of the manufacturer's information.

Never mix oils or fluids with different characteristics as they may not be chemically compatible when mixed and the fluid mixture may e.g. harden.

Danger

Never open the compressor oil filler neck before the compressed air tank has been depressurised.
The compressed air tank depressurises automatically when the engine is switched off. Check the pressure gauge to see whether the compressed air tank is actually depressurised.

Checking the air filter

Check the compressor and engine air filter. Clean the filter if slightly dirty or dusty, otherwise replace with a new one. *Maintenance card 05-001 Air filter*

Caution

Always replace the filter before starting the engine because dirt could enter the oil systems and damage the compressor or engine.

Inspecting the mixing paddles

Inspect the mixing paddles on the mixing shaft as follows:

▶ Inspect the mixing paddles for damage or wear.
Have Brinkmann Maschinenbau GmbH replace worn or damaged mixing paddles.

▶ Measure the gap between the mixing paddles and the wear plates and adjust, if necessary. The distance should be 15 ± 2 mm.

Damaged mixing paddles are identified as follows.
– Sections of the mixing paddles bent or broken off
– Surface of the mixing paddles worn by 50% or more

Inspecting the wear plates

Inspect the wear plates in the mixing tank as follows:

▶ Inspect the wear plates for damage or wear.
Have Brinkmann Maschinenbau GmbH replace worn or damaged wear plates.

Damaged wear plates are identified as follows.
– Holes in the wear plates.
– Chunks missing from the edges of the wear plates.
– Wear plates twisted/bent.

Inspecting the mixing shaft bearings

Inspect the mixing shaft bearings as follows:

▶ Inspect the mixing shaft bearings for damage or wear.
Have Brinkmann Maschinenbau GmbH replace worn or damaged mixing shaft bearings.

Damaged mixing shaft bearings are identified as follows.
– Cracked sealing washers (visible in the mixing tank).
– Radial play caused by reduced diameter of mixing shaft pin.
– Cement deposits escaping from the bearings at the gearbox end during delivery.
– When the bearings are lubricated, cement deposits escape with the grease into the tank from the bearing at the gearbox end or between the gearbox and mixer tank.
– Compressed air escapes from the bearings
– The mixing shaft is difficult to turn by hand (when mixing tank is empty).

Danger

Never reach into moving machine components unless the machine has been shut down and secured against unauthorised/inadvertent starting. Always disconnect the battery before reaching into the mixing tank. See Chapter 7.6 Shutting down the machine.

Refuelling the machine

The Trans Mix is powered by a diesel engine. The filler neck (**2**) is located under the hood at the same height as the control. The level indicator (**1**) for the fuel tank is located next to the filler neck (**2**). Only fill up to the maximum mark.
Stop the engine before filling the machine with diesel fuel (*7.5 Operating materials - fuel*).

Note

Fill the machine with fuel before the level becomes too low; fill the tank up to the max. mark directly after finishing work, preferably in the evening. If you operate the machine until the diesel tank is empty, you may need to bleed the fuel line and fuel filter.

Fill the fuel tank only with commercial diesel fuel to avoid damaging the engine. Use summer or winter diesel depending on the outside temperature.

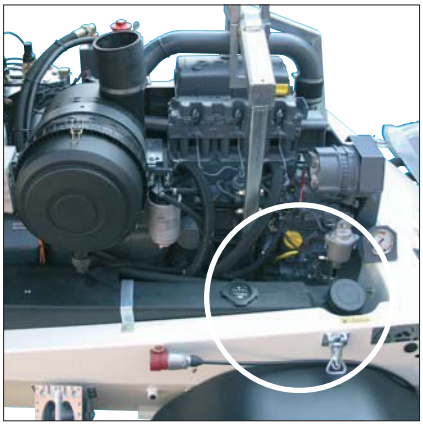
Danger

Do not smoke when you are filling the tank.

Stop the motor before filling the machine with fuel.

Never fill the machine near naked flames or ignitable sparks. Clean the area around the filler neck before refuelling.

Do not spill fuel onto hot machine parts. There is a risk of the fuel igniting.



Test run

After completing all inspection work and rectifying any defects, you will need to start the engine and perform a series of function checks while the machine is running.

Danger

Any defects identified during these inspections must be rectified immediately.
A fresh inspection is necessary after each repair. The machine may only be put into operation once all the inspections described below have been concluded satisfactorily.

▶ Start the machine. *Chapter 5.4 Starting the machine.*

Danger

The machine should only be operated with the hood closed.

Function checks

Before operating the machine, perform the following function checks while the engine is running.

Check the function of the safety equipment:
Check whether all safety devices are attached and are functioning correctly. Do not modify the safety devices.

Check
– whether the protective grille in the filling dome is attached correctly.
– whether the guard covering the V-belt is installed.
– the functional reliability of the protective grille cut-out on the machine.
– the functional reliability of the EMERGENCY STOP button.

Danger

Defective safety devices could appear to be safe, but in reality pose a danger.
The machine may continue to operate in an emergency or dangerous situation and cause serious injury to personnel.

If a safety device does not respond during the function check, it must be replaced or repaired by a qualified person. Never operate the machine if a safety device is defective.

Therefore, check the functional capability of all safety devices before starting work.

Continued on next page

Check the functional capability of the EMERGENCY STOP button:

▶ Start the machine. *Chapter 5.4 Starting the machine.*

▶ Press the EMERGENCY STOP button.
⇨ The motor switches off. The compressed air tank depressurises. The mixing mechanism stops.

Danger

Pressing the EMERGENCY STOP button does not automatically depressurise the mixing tank. Carefully depressurise the mixing tank if still pressurised after an EMERGENCY STOP (automatic lever/air relief cock).
Before opening the cover or releasing a hose coupling, check the pressure gauge to see whether the mixing tank is depressurised. Even if the tank is depressurised, the delivery lines may still be pressurised.
Only operate the machine when the EMERGENCY STOP button is fully functional.

▶ Unlock the EMERGENCY STOP button by pulling and turning. Switch the control on and off at the main switch to start the machine (restart protection after the EMERGENCY STOP button is pressed).

Check the functional capability of the protective grille cut-out:

▶ Start the machine. *Chapter 5.4 Starting the machine.*

▶ Lift the protective grille. This should trigger the circuit breaker.
⇨ The motor switches off. The compressed air tank depressurises. The mixing mechanism stops.

Danger

Do not reach into the mixing tank unless the machine has been shut down and the battery is disconnected (Chapter 7.6 Shutting down the machine). Ignoring this instruction may cause serious or fatal injuries.
Take great care when opening the protective grille to check the function of the protective grille cut-out.
Operate the machine only if the protective grille cut-out is fully functional.

▶ Switch the control on and off at the main switch to start the machine (restart protection after the protective grille cut-out is activated).

Shutting down the machine after operation

You can shut down the machine once all inspection work is complete. Always secure the machine against unauthorised/inadvertent starting.

- ▶ Switch off the engine by pressing the OFF button. The compressed air tank depressurises automatically.
- ▶ Switch off the control by pressing the main switch (under the hood).
- ▶ Close the hood and secure.
- ▶ Close the flap on the control panel and secure with a padlock.

4.8 Instructions for winter operation

During the cold winter months, work is hampered by low temperatures. Perform any maintenance and repair work during this period, if possible; bring the machine to an authorised specialist workshop for an annual check.
The machine can only function correctly above temperatures of 0° C. Observe the following points:

- Never use frozen material.
- Use winter diesel.
  Additives keep winter diesel fluid at low temperatures whereas summer diesel may thicken and block the fuel lines. *Chapter 7.5 Operating materials.*
- Use a compressor oil whose viscosity is adapted to the temperature. *Chapter 7.5 Operating materials - compressor oil.*
- In extremely low temperatures, remove the battery after completing work and store in a warm place. Only reinstall shortly before starting the machine.
- Check the acid level and acid concentration of batteries that are not maintenance-free. *Maintenance card 04-001 Battery.*

Caution

As electrolyte, batteries contain a sulphuric acid solution that may cause irritation when brought into contact with the eyes or skin. Always observe all safety regulations when handling batteries. Wear the necessary protective clothing.
If acid comes into contact with the skin, rinse off immediately with plenty of water.
If acid gets in your eyes, rinse immediately with clean water and then consult a doctor.

5 Operation

This chapter contains information and specific steps for operating and cleaning the machine properly.

5.1 Shutdown in an emergency

Make sure you are familiar with the procedures for shutting down the machine in an emergency situation before you start operating the machine. See also *Chapter 3.7 Safety equipment - EMERGENCY STOP button.*

Caution

Familiarise yourself with the location of the EMERGENCY STOP button so that you can press it quickly in an emergency or if the machine starts to make unusual noises.

Danger

Proceed immediately as described below if an emergency occurs while you are operating the machine.

- ▶ Press the EMERGENCY STOP button.
- ▶ Perform first aid / call the emergency services, if necessary.
- ▶ Note the incident and report in accordance with company procedures.
- ▶ Search for the cause of the fault on the machine and rectify completely. If necessary, shut down the machine and secure against unauthorised/inadvertent starting.

Danger

Pressing the EMERGENCY STOP button does not automatically depressurise the mixing tank. Carefully depressurise the mixing tank if still pressurised after an EMERGENCY STOP (automatic lever/air relief cock). Before opening the cover or releasing a hose coupling, check the pressure gauge to see whether the mixing tank is depressurised. Even if the tank is depressurised, the delivery hoses may still be pressurised.

5.2 Safety

This machine has been built using state-of-the-art technology and in line with recognised rules of safety engineering. However, this machine can pose a risk to personnel and property, as with all machines. When operating the machine, always observe the general safety regulations included in this operating manual (*see Chapter 2 Safety regulations*).

- Only use this machine for its designated purpose and when in perfect technical condition.
- Rectify immediately any faults that may affect safety.
- Under certain circumstances, it may be necessary to handle materials that pose a risk to your health. Therefore, always wear the necessary protective clothing in accordance with the information provided by the manufacturer (protective goggles, gloves, ear defenders, respiratory protection, etc.).
- Always observe the rules and specifications of trade associations, especially the accident prevention regulations.
- Only process and deliver materials that the machine was designed to process (see *Chapter 2.2 Designated use* and *Chapter 2.3 Use contrary to the designated use*)

If in any doubt, please contact your Brinkmann service partner.

Safety measures during normal operation

- Is the machine securely positioned? Is the machine secured against moving or rolling?
- Rectify immediately any faults that may affect safety.
- Operate the machine only when all protective devices are attached and fully functional.
- Before switching the machine on, make sure that no-one can be injured by the starting machine.
- Inspect the machine at least once every shift for visible external damage and check the function of the safety devices.

Checks before starting

Before starting, always check the following points:

- Are all the delivery hoses correctly in place?
- Are the delivery hoses and hose couplings undamaged and secured properly?
- Are all rising lines secured tightly?
- Is the end of the delivery hose attached to the discharge stand?
- Have all lubrication points been lubricated in accordance with *MC 02-001 Lubrication diagrams*?

Interrupting work

If work is interrupted for longer periods, the screed in the mixing tank may harden and will no longer discharge.
If you intend to stop work for longer periods, empty the mixing tank and the delivery hoses to prevent the screed from hardening there. Proceed as described in *Chapter 5.16 Stopping material delivery* or *Chapter 5.17 Finishing work*.

Binding agent in the eyes

Binder/Cement is aggressive and may damage your eyesight. If binder or sprayed material get in your eyes, proceed as follows immediately:

▶ Press the EMERGENCY STOP button on the machine *(Chapter 5.1 Shutting down the machine in an emergency)*.

▶ Rinse them thoroughly with cold flowing water.
Do not rub your eyes.

▶ Then consult a doctor immediately.

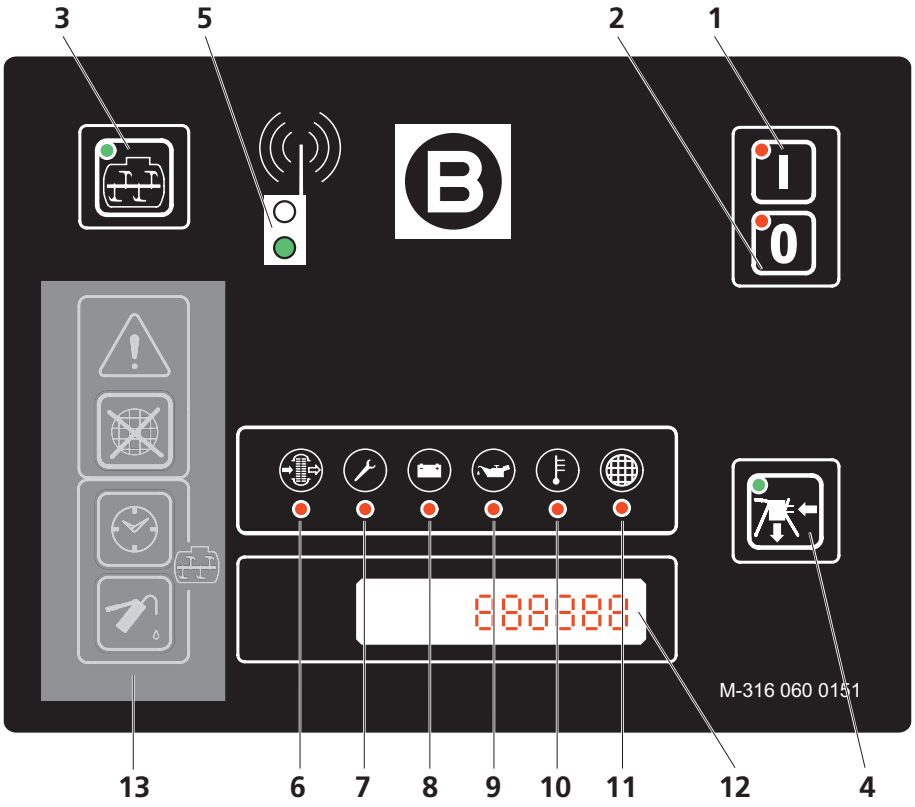
Danger

Pressing the EMERGENCY STOP button does not automatically depressurise the mixing tank. Carefully depressurise the mixing tank if still pressurised after an EMERGENCY STOP (automatic lever/air relief cock). Before opening the cover or releasing a hose coupling, check the pressure gauge to see whether the mixing tank is depressurised. Even if the tank is depressurised, the delivery hoses may still be pressurised!

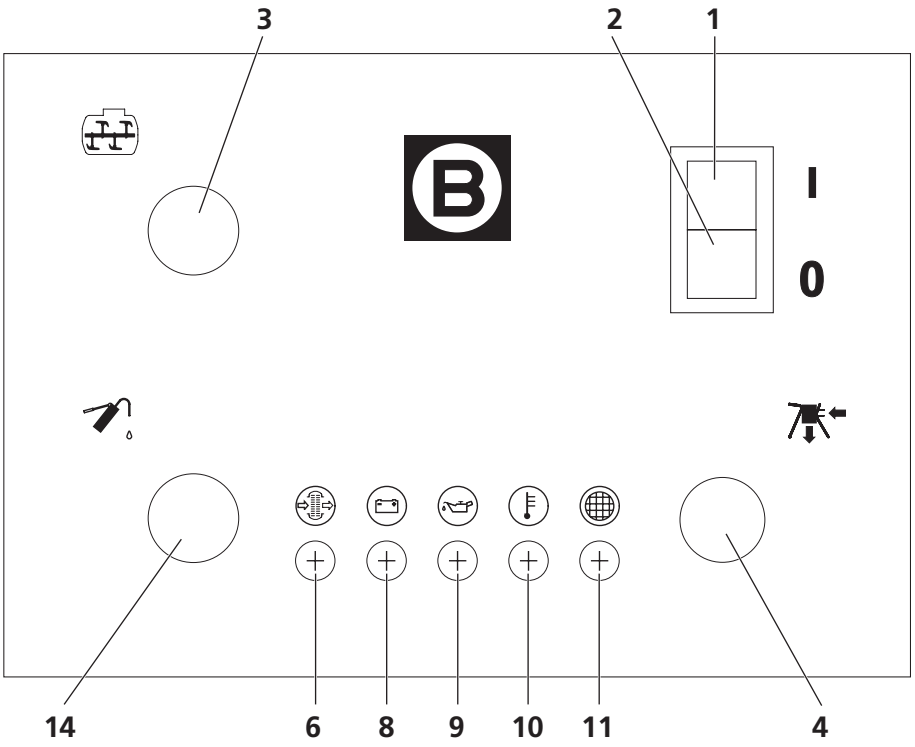
5.3 Control panel on the machine

The control panel is used to control and monitor the most important machine functions.

Digital control panel



Analogue control panel



Buttons on the control panel

1 ON button
Press this button to start the machine.

2 OFF button
Press this button to switch the machine off.

3 Mixing mechanism button (ON/OFF)
Press this button to switch the mixing mechanism on or off manually.

4 Flotation air button (ON/OFF)
Press this button to switch the flotation air supply on or off manually.

14 Central lubrication system button (analogue control)
The central lubrication system is actuated manually and lubricates the lubrication points until the button is released.

Indicator lamps on the control panel

5 Scraper remote control indicator lamp (digital control)
Lights up when the scraper remote control is actuated.

6 Air filter indicator lamp
Lights up when the air filter is clogged.

7 Maintenance indicator lamp (digital control)
Lights up every 500 operating hours.

8 Charge monitor indicator lamp
Lights up when the machine battery is not charging.

9 Engine indicator lamp
Lights up when the engine oil pressure or engine temperature are too high.

10 Compressor temperature indicator lamp
Lights up when the compressor overheats.

11 Protective grille indicator lamp
Lights up when the protective grille is open.

12 Display (digital control)

13 Cover (digital control)
Remove only when the covered buttons are required for maintenance work.
See also *Chapter 5.3 Control panel on the machine - covered buttons on digital control, special functions of digital control* and *fault display on digital control*.

Covered buttons (13) - digital control

Do not operate the machine without the cover. The cover should only be removed for maintenance purposes by authorised personnel. During normal operation, the buttons have the following functions:

Protective grille button
The protective grille button activates or deactivates the circuit breaker for the protective grille. "Error" appears on the display when it is deactivated. The machine should only be started with the protective grille open by qualified personnel for maintenance purposes. Make sure that the circuit breaker is activated again once the maintenance work is complete.

Danger
Never reach into moving machine parts. Never operate the machine without a protective grille or with the protective grille circuit breaker deactivated. There is a risk of serious injury.

Mixing time preset button
The mixing time preset button allows you to preset a delay interval in seconds, which specifies the time the machine continues to mix after the automatic lever is actuated and before delivery begins. The factory default setting is 0 seconds. The maximum setting is 120 seconds. The mixing time preset increases by 10 seconds every time the button is pressed. When the setting reaches 120 seconds and the button is pressed again, the display returns to 0.

Central lubrication system button
If the machine is fitted with a central lubrication system, this lubricates the mixing shaft seals and the front mixing shaft bearing automatically after each delivery cycle. It may be necessary to lubricate these seals after maintenance work. Press and hold the central lubrication system button until lubricating grease clearly escapes from the mixing shaft seals.

Continued on next page

Special functions of the digital control

Some buttons activate a special control function if pressed and held while the control is switched on. These buttons and their functions are described in the following section.

The maintenance indicator lamp lights up every 500 operating hours to indicate the imminent need for maintenance work. The indicator lamp remains lit until switched off by the operator.

The machine control must be switched off and the cover on the control panel removed.

▶ Press and hold the central lubrication system button and actuate the main switch. The maintenance indicator lamp switches off and the control then returns to normal operating mode.

Fault display of the digital control

The control saves a list of all faults that occur (even momentary faults that do not cause the machine to shut down). You can view the fault type and how many of them occur on the control. Switch off the control at the main switch to close the fault display.

Activating the fault display
The machine control must be switched off and the control panel cover removed.

▶ Press and hold the OFF button and actuate the main switch. The control activates the fault display. The first fault indicator lamp (air filter) lights up and the display shows the number of air filter faults.

Selecting the fault type and viewing the number of faults
The fault display must be active. You can identify the fault type from the lit indicator lamp and view the number of faults on the display.

▶ Press the OFF button again to switch to the next fault type. The number of faults appears on the display.

Continued on next page

Resetting the fault counter / Adjusting the number of operating hours

Reset the fault counter by entering a special code in the "Setting serial numbers" screen. The number of operating hours can then be adjusted to match the actual operating hours. You can enter a value smaller than the current value, but the system will not accept this value.
The machine control must be switched off and the cover on the control panel removed.

▶ Press and hold the ON button and actuate the control. The control displays the "Setting serial numbers" screen initially and the preset serial numbers appear on the display.


▶ While the serial numbers are displayed, press the protective grille or mixing time preset button. These buttons increase or decrease the preset value.

(+) 
(-) 

▶ Press the protective grille and mixing time preset buttons to enter the value "**33333**". This value is the special code for clearing the fault memory and adjusting the number of operating hours.

(ESC) 

▶ Press the mixing mechanism button to cancel code entry. The fault memory is not cleared and the control returns to normal operating mode.

(OK) 

▶ Press the central lubrication system button to confirm the entry. The fault memory is cleared. The number of operating hours is displayed and can now be modified.

(+) 
(-) 

▶ Press the protective grille and mixing time preset buttons to set the new number of operating hours.

(ESC) 

▶ Press the mixing mechanism button to cancel operating hour entry. The control returns to normal operating mode.

(OK) 

▶ Press the central lubrication system button to confirm the operating hours entry. The new operating hours entry is accepted and the control returns to normal operating mode.

5.4 Starting the machine

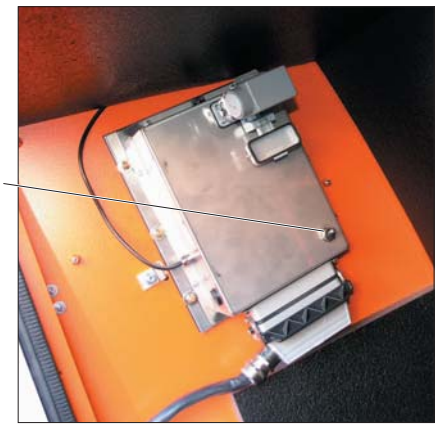
Before starting the machine, check that the machine is safe for operation and no-one can be injured when the machine starts.

Main switch

You must switch on the control at the main switch before you can start the engine. To do this, proceed as follows:

- ▶ Unlock the hood and lift up.
- ▶ Actuate the main switch (**1**).
- ▶ Close the hood and lock.
  On digital controls, the version of the control appears on the display (e.g. 63 for version number 6.3) followed by the operating hours.

Analogue control



Digital control

Note

If "OFF" appears on the display when the digital control is switched on, this means the EMERGENCY STOP button has been pressed.
Unlock the EMERGENCY STOP button. Switch the main switch on and off.

Danger

Noise can cause illness and seriously damage your hearing and nervous system.
Personnel required to stand in the vicinity of the machine must wear ear defenders while the machine is operating.

Starting the diesel engine

The machine should only be operated with the hood closed so that the cooling system functions more effectively. You can start the diesel engine once the control is switched on. Proceed as follows:

▶ Press the ON button on the control panel and hold down until the engine starts.
⇨ The engine starts. Pressure builds up.

The starter switches off automatically once the engine is running. The ON button is fitted with an anti-repeat device that prevents the starter from being actuated while the engine is running. The starter should not run for longer than 30 seconds.

The oil pressure indicator lamp and charge indicator lamp light up briefly and go out if the self test does not detect any faults.

Caution

If the engine oil pressure and temperature indicator lamps do not light up briefly when the engine is started, one of the engine sensors or sensor cables is defective. The engine will function normally but the cut-out protecting against excessive engine temperature or insufficient engine oil pressure is rendered inoperative. The engine could be damaged.

Note

If you release the ON button before the engine starts, the anti-repeat device prevents you from pressing the ON button again immediately. The LED on the start button flashes. You can attempt to start the engine again once the LED stops flashing.

Danger

All covers protecting personnel from moving parts must be in place before the engine is started. Make sure that the running machine does not pose a risk to personnel.

Switching off the diesel engine

To switch off the diesel engine, proceed as follows:

▶ Press the OFF button on the control panel.
⇨ This will switch off the engine.
The LED on the OFF button flashes, the button pad is blocked for 30 seconds. You can start the engine again once the LED stops flashing.

5.5 Operating the loader DC 260/45/55 B & BS

The loader is a hydraulic loading device for the mixing tank that assists with the loading process and allows the operator to prepare the next screed mixture during the current delivery cycle. The cover must be open when you swivel up the loader.

Danger

Make sure that there are no persons or objects in range of the loader. There is a risk of injury.

Caution

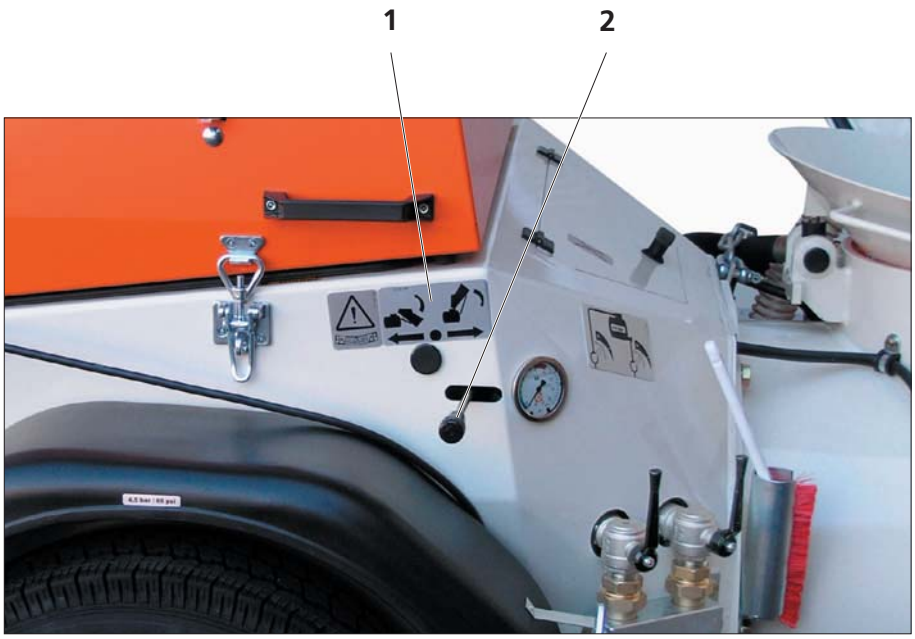
The cover on the mixing tank must be open when you swivel up the loader otherwise the cover and loader may collide and be damaged. Chapter 5.8 Opening the cover on the mixing tank.

Note

The loader can only be operated when the mixing mechanism is switched on.
*The sticker (**1**) shows you how to operate the loader.*

▶ Push the lever (**2**) to the left
⇨ The loader swivels upwards.

▶ Push the lever (**2**) to the right
⇨ The loader swivels downwards.

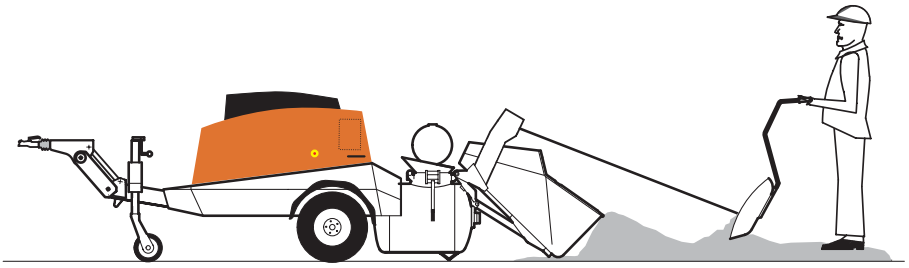


5.6 Operating the scraper DC 260/45/55 BS

The scraper is operated via a radio remote control system. The transmitter attached to the scraper shovel is impact and water-resistant.
The receiver is located in the control unit under the hood. In the event of radio interference, the scraper can also be operated via a cable.
Switch on the remote control at the toggle switch.

Note

The scraper can only be operated when the mixing mechanism is switched on.
Create a "ramp" of material in front of the loader so that the scraper can draw it directly into the loader (see illustration). The scraper cannot lift the material into the loader from the front.



The pile of sand behind the loader should be as central as possible. Use the scraper to draw the sand directly into the loader as close behind the machine as possible in the direction that the winch is pulling.
The further the scraper deviates from the normal pulling direction of the cable, the more the winching mechanism is put under stress, which can cause increased wear or damage the winching mechanism and the scraper cable.

Caution

Do not use the scraper to draw in material at the side of the loader as this will place the winching mechanism under excessive, inappropriate stress and could cause damage.

Unwinding the scraper cable:

The cable reel is fitted with a free wheel that can be used when the remote control switch is not activated.

▶ Pull the scraper to the required position.

Winding up the scraper cable:

▶ Actuate the remote control switch.
⇨ The cable reel winds up the cable and pulls the scraper towards the loader. On digital controls, the reception lamp lights up.

Cable operation

▶ Disconnect the plug from the socket (**4**) on the radio receiver.

▶ Connect the remote control to the socket (**4**) on the radio receiver using the remote control cable.
⇨ The remote control signals are now transmitted via the cable.

Charging the battery

You can charge flat batteries via the charger on the machine. The battery is charged quickly (2 minutes to 1 hour) providing its temperature remains between -10°C and +40°C. The battery is charged at normal speed outside of this temperature range. If the control is switched off, the battery can be charged if the EMERGENCY STOP button is unlocked. The machine must be connected to the mains power supply to charge the battery. A spare battery is included in the scope of supply.

▶ Disconnect the battery (**2**) from the scraper remote control and plug into the charging socket (**3**) on the charger.
⇨ The charging indicator lamp is lit continuously during the charging process and flashes when the battery is charged.

Caution

Only recharge the battery when flat, otherwise the capacity of the battery will decrease and the battery will become unusable.

Note

If the ambient temperature is too warm for rapid charging, the charging indicator lamp on the battery starts to flash when connected to the socket on the control.
However, the battery may also be faulty. Chapter 6 Troubleshooting guide - charging indicator on the battery flashes when connected to the socket on the control.

Scraper remote control with battery

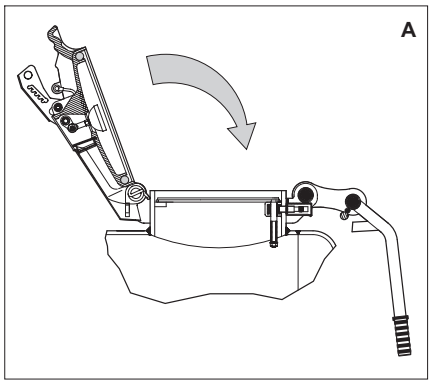
Charger

Radio receiver

5.7 Closing the cover on the mixing tank

▶ Use a hand brush to clean the edge of the filling dome and cover.

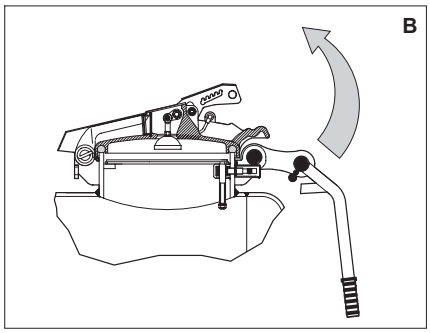
▶ Close the cover on the dome of the mixing tank (Fig. **A**).



Danger

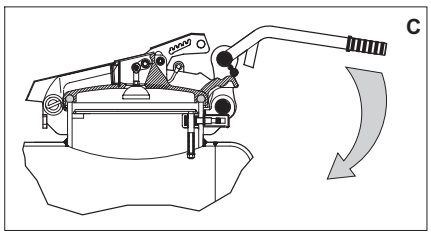
Replace the rubber seal on the cover immediately if larger cracks appear or if material is embedded in the seal.
There is the danger that the cover will not close properly and be thrown open violently by the pressure in the mixing tank.

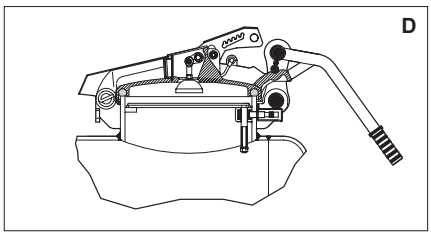
▶ Pull the locking latch over the sliding gate (Fig. **B**)



▶ Push the lever on the locking latch downwards as far as it will go (Fig. **C**).

⇨ The cover on the mixing tank is closed (Fig. **D**). Pressure required to pump the material has not yet started to build up in the mixing tank.





5.8 Opening the cover on the mixing tank

Should you need to open the cover on the mixing tank, you must first establish that the mixing tank is depressurised. The mixing tank depressurises automatically at the end of a delivery cycle. However, the mixing tank can be depressurised manually at any time (see 5.9 *Manual depressurisation*). The procedure for opening the cover is the same as the procedure for closing the cover, but in reverse.

Danger

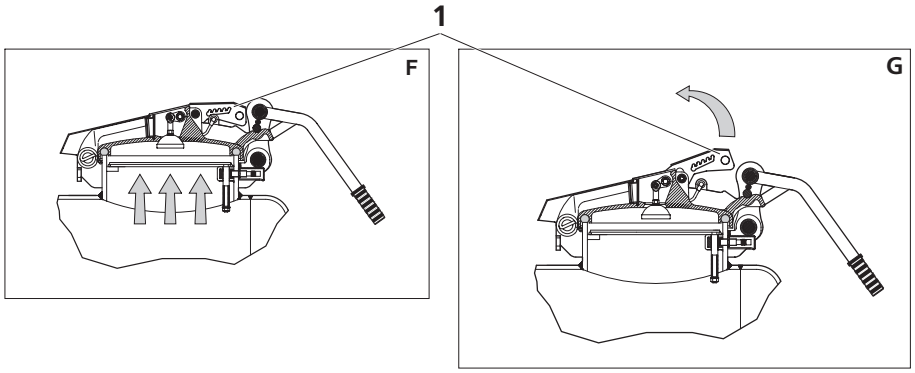
Never open the cover while the mixing tank is still pressurised. Always make sure that the mixing tank is depressurised before opening the cover.
The automatic lever must be in the top position. Check the pressure gauge to see whether the mixing tank is actually depressurised.

- ▶ Check the pressure gauge to see whether the mixing tank is depressurised.
- ▶ If the mixing tank is still pressurised, proceed as described in *Chapter 5.9 Manual depressurisation*.
- ▶ Pull the lever on the locking latch upwards.
- ▶ Pull the locking latch from the sliding gate and swivel downwards.
- ▶ Lift up the cover on the mixing tank.

5.9 Manual depressurisation (automatic cover)

The automatic cover depressurises automatically at the end of delivery. You can also depressurise the mixing tank manually at any time but current unfinished delivery cycles will be stopped prematurely. The noise of manual depressurisation is significantly louder because there is no pressure cut-out at the end of delivery.

- ▶ Pull the ventilation lever (**1**) on the automatic cover upwards.
  ⇨ The air supply to the mixing tank stops. The mixing tank is depressurised (Fig. **F+G**).
  Always check the pressure gauge to see whether the mixing tank is actually depressurised before opening the cover.

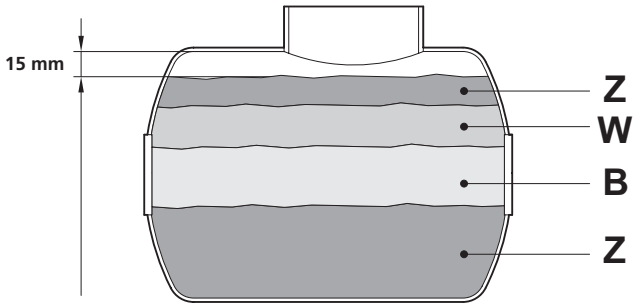


5.10 Loading the mixing tank

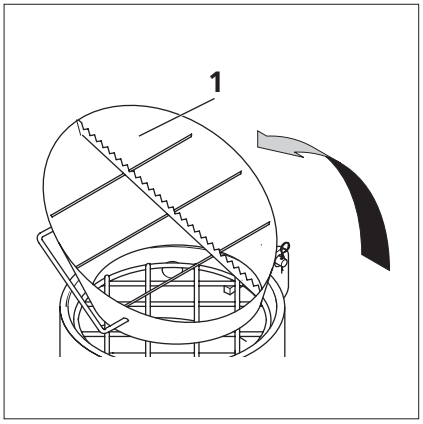
Aggregate, water and binder are mixed together in the mixing tank.

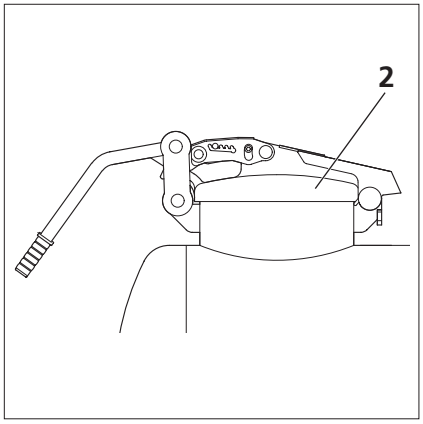
Caution

Load the mixing tank only when the mixing mechanism is switched on. Fill the mixing tank to no more than 15 mm below the lower edge of the filling dome.



- ▶ Swivel the hopper (**1**) onto the filling dome on the mixing tank.
- ▶ Fill the mixing tank (approx.100 l) with aggregate (**Z**) up to half way.
- ▶ Fill binder (**B**) directly into the mixing tank via the hopper (**1**) in accordance with the manufacturer's instructions.
- ▶ Fill the necessary quantity of water (**W**) into the mixing tank.
- ▶ Fill the mixing tank with aggregate (**Z**).
- ▶ Check whether sufficient water has been added. Top up with water if necessary.
- ▶ Swivel back the hopper (**1**), clean the edge of the dome and close the cover (**2**) on the mixing tank. Allow the machine to continue mixing with the cover closed for at least 2 minutes before starting the material delivery cycle.

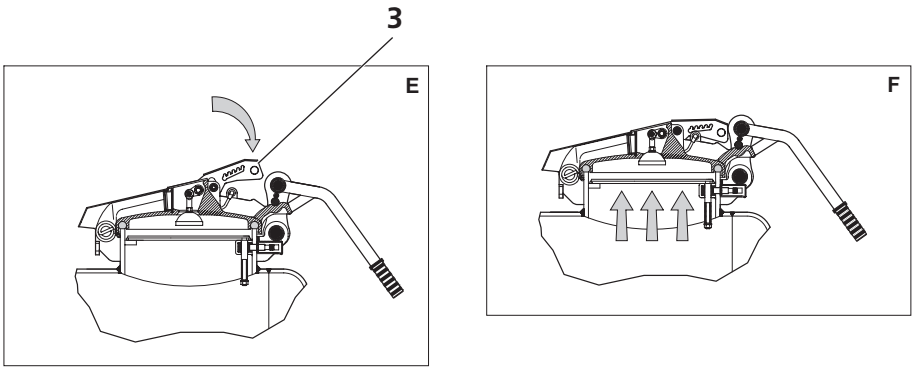




5.11 Delivering material/ Generating tank pressure

The cover on the mixing tank must be closed before material is delivered. The header air and flotation air must be set and readjusted in accordance with the line thickness, line length, type of delivery (upwards, downwards, along level surfaces) and composition of the material. Information to help you adjust the header and flotation air is included at the end of this chapter.

▶ Push the ventilation lever (**3**) downwards (Fig. **E**) and hold until the lever remains in that position by itself (Fig. **F**).
Pressure builds in the mixing tank. The increase in pressure locks the cover. Material delivery begins.



The material is now delivered to its destination. When the mixing tank is empty, the tank pressure escapes through the delivery hoses and the pressure in the tank decreases. The decreasing tank pressure unlocks the ventilation lever, the compressed air supply to the tank is interrupted and the tank depressurises automatically.
The mixing tank is ready to be loaded again.

Mixing mechanism button

Pressing the mixing mechanism button on the control panel allows you to access the automatic control and switch the mixing shaft on and off manually. The LED on the mixing mechanism button lights up when the mixing shaft rotates. The mixing shaft must be switched on during delivery and when the machine is being loaded.

Flotation air button

Pressing the flotation air button on the control panel allows you to access the automatic control and switch the flotation air supply on and off manually. The LED on the flotation air button lights up when the air supply is active.

5.12 Adjusting the header and flotation air

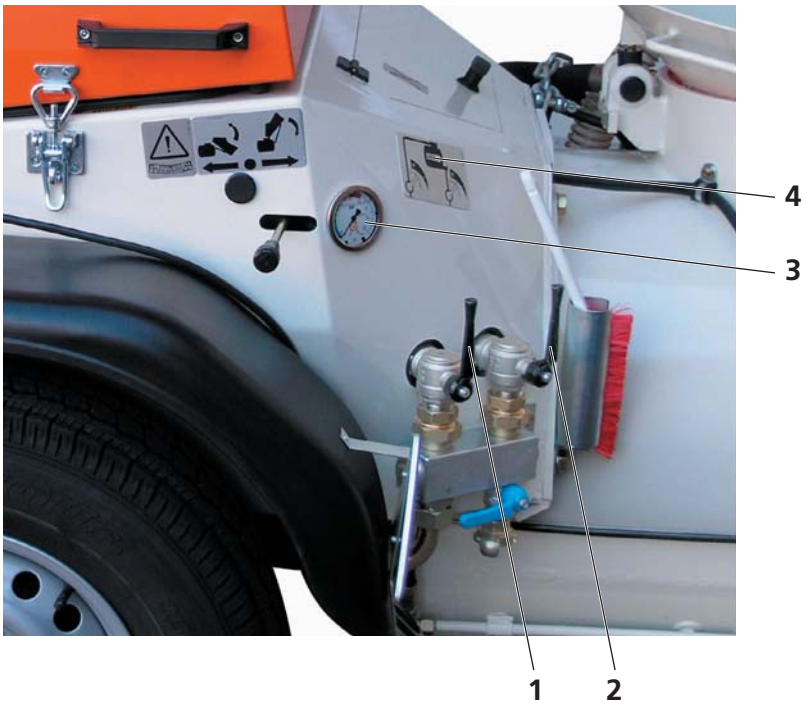
The header air and flotation air must be set in accordance with the delivery hose diameter and length, the type of delivery (upwards, downwards or along level surfaces) and composition of the material.

The air flow is adjusted via the flotation and header air valves.
The following applies for both valves:

Upright position = Valve fully open
Horizontal position = Valve closed

Basic setting for new delivery situation:

- ▶ Open the header air valve (**1**) and flotation air valve (**2**) half way to start off with. Adjust in accordance with delivery type.
- ▶ If the delivery cycle does not start, close the flotation air valve briefly until sufficient pressure builds up in the mixing tank, and then open again. This prevents compressed air from escaping directly via the empty delivery hoses.



Note
*The sticker (**4**) will give you a more accurate indication. The pictograms on the sticker illustrate more clearly how to operate the air valves.*

Delivery types / Correct delivery pressure

The delivery pressure is indicated on the pressure gauge (**3**) and must be set and adjusted in accordance with the delivery type.

Pumping upwards
If you need to pump material to upper floors, the ideal delivery pressure is 4-5.5 bar.

Pumping downwards
If you need to pump material e.g. into a cellar, the ideal delivery pressure is 2-3 bar.

Pumping along a level surface
If you need to pump material along level surfaces, the ideal delivery pressure is 3-4 bar.

Adjusting the air valves in line with the delivery type

If the pressure (**3**) exceeds the ideal delivery pressure:
▶ Close the header air valve (**1**) further and open the flotation air valve (**2**) more.

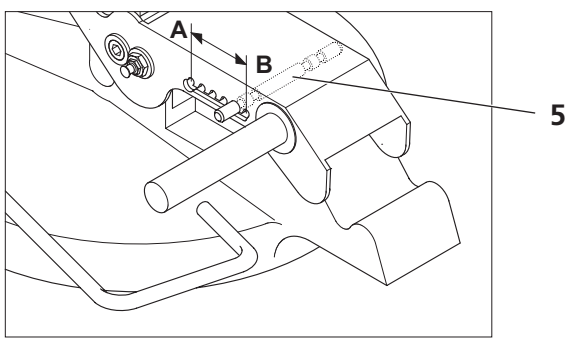
If the pressure (**3**) falls below the ideal delivery pressure:
▶ Open the header air valve (**1**) more and close the flotation air valve (**2**) further.

5.13 Adjusting the ventilation pressure

The tank pressure decreases when the mixing tank is empty. The ventilation lever unlocks, the compressed air supply to the tank is interrupted and the tank depressurises automatically. You can set the residual pressure at which the tank is automatically depressurised by adjusting the peg on the ventilation lever. Bear in mind that you can only adjust the ventilation pressure when the tank is empty (ventilation lever in top position).

Position A = Tank depressurisation begins at a pressure of approx. 2.5 bar
Position B = Tank depressurisation begins at a pressure of approx. 1.3 bar

Proceed as follows to adjust the ventilation pressure:
▶ Pull the adjusting peg (**5**) from the detent.
▶ Slide the adjusting peg (**5**) along to the desired detent (in accordance with the preset delivery pressure).

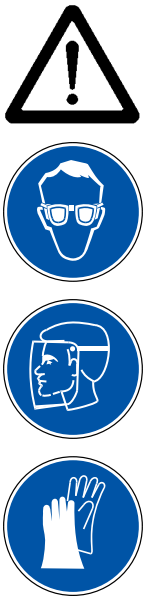


5.14 Detaching hose couplings after a delivery cycle

If you wish to detach delivery hoses after a delivery cycle or disconnect them from the tank outlet, always proceed as follows:

▶ Shut down the machine before starting work. *See Chapter 7.6 Shutting down the machine.*

▶ Make sure that the mixing tank is depressurised. The ventilation lever must be in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised.



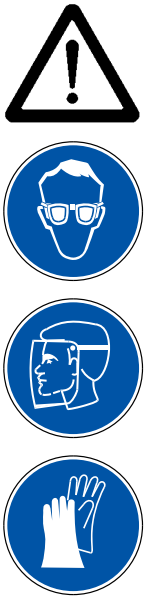
Danger

Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised. Even if the mixing tank is depressurised, the delivery hoses may still be pressurised and material could spray out when the hose coupling is released.
Always wear protective goggles/face mask and protective gloves, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

▶ Once all protection measures have been taken, detach the hose couplings carefully and remove the delivery hose.

5.15 Delivery stops / Blockages

There may be several reasons behind the formation of blockages in the delivery hoses, i.e. the material remains in the delivery hoses and cannot be delivered as far as the discharge stand. A list of the most frequent causes of blockages and instructions on how to eliminate the blockages are included in the following section.



Danger

Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised. Even if the mixing tank is depressurised, the delivery hoses may still be pressurised and material could spray out when the hose coupling is released.
Always wear protective goggles/face mask and protective gloves, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

Danger

Never attempt to blow out blockages from hoses using compressed air. The delivery hoses may burst.
Ignoring this instruction may cause serious or fatal injuries.

Locating and eliminating blockages

If the mixing tank is pressurised, the delivery hoses will also be pressurised up to the blockage. The hoses become hard and are difficult to deform. Downstream of the blockage, the delivery hoses are almost completely free of pressure and are easy to deform. If there is a blockage at the tank outlet, the entire delivery line is easy to deform.

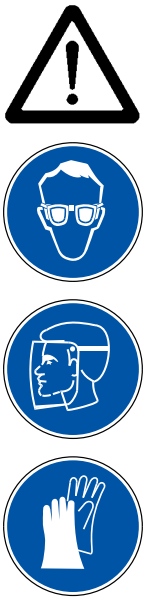
- ▶ Once all protective measures have been taken, detach the delivery hoses and tread on them lightly until they deform. The blockage is located at this point.
- ▶ Move or shake the hose vigourously back and forth at that point to eliminate the blockage. Sometimes you only need to ventilate the mixing tank and start the delivery cycle again to loosen the blockage. The material should begin to flow once again.

Stubborn blockages

Sometimes blockages cannot be removed just by moving the delivery hoses back and forth. Eliminating stubborn blockages poses a serious risk to operating personnel.

▶ Shut down the machine before starting work. *See Chapter 7.6 Shutting down the machine.*

▶ Make sure that the mixing tank is depressurised. The ventilation lever must be in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised.



Danger

Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised. Even if the mixing tank is depressurised, the delivery hoses may still be pressurised and material could spray out when the hose coupling is released.
Always wear protective goggles/face mask and protective gloves, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

▶ Once all protective measures have been taken (putting on protective clothing, coupling covered), detach the delivery hoses again and tread on them lightly. If another section of the delivery hose remains hard, there is a second blockage. This blockage prevents the pressure in the delivery hose from escaping safely into the mixing tank.

Danger

Never release the couplings on delivery hoses that are still pressurised. The ends of the hose may thrash around unpredictably, posing a risk of fatal injury.

▶ Before releasing a hose coupling, always eliminate the blockages at the mixing tank end by shaking, bending and tapping the line. Make sure you can deform the whole hose slightly before releasing the hose coupling.

Continued on next page

▶ Once the delivery hoses can be deformed slightly, carefully release the couplings on the delivery hose containing the blockage and remove the delivery hose.

▶ Eliminate the blockage by massaging, bending and shaking the delivery hose. If necessary, wash out the blockage with a water hose. If the blockage occurred as a direct result of a defect on the delivery hose or hose coupling, replace the faulty part or the delivery hose.

▶ Attach the delivery hose again.

▶ Start up the machine again. To do this, unlock the EMERGENCY STOP button, switch on the control and start the engine. The material should begin to flow once again.

Most frequent causes of blockages

Incorrect nominal width of delivery hoses
The width of the delivery hoses is too narrow for the material you are pumping.

– Use delivery hoses with a larger nominal width.

Insufficient water in the material
The material is too dry and does not flow or flows sluggishly.

– Add more water to the material.

Defective / Dirty hose couplings
Water is forced out of the material because of defective seals or leaking hose couplings. The material then becomes too stiff to be pumped any further.

– Replace defective seals or hose couplings.
Make sure that hose couplings are absolutely clean before connecting them.

5.16 Stopping material delivery

You can interrupt the delivery process at any time. Interruptions in delivery may be necessary in the event of machine malfunctions. Stop the delivery cycle for a short time only, otherwise blockages may form in the delivery hoses and the material may begin to set in the mixing tank. If the machine is stopped for longer periods, proceed as described in Chapter 5.17 Finishing work.

▶ Close the header and flotation air valves. Press the flotation air button. This will switch off the flotation air. The LED on the flotation air button goes out.

▶ Open the header and flotation air valves again. Press the flotation air button again to resume material delivery. This will switch on the flotation air again. The LED on the flotation air button lights up.

5.17 Finishing work

If you wish to stop the delivery process definitively, proceed as follows:

▶ Allow the machine to run until the mixing tank is empty. The tank depressurises automatically. The cover must remain closed.

▶ Activate the flotation air to empty the delivery hoses. Press the flotation air button to do this. Press the button again once the delivery hoses are empty.

▶ Clean the machine and delivery hoses. (*Chapter 5.18 Cleaning*).

▶ Close the header and flotation air valves.

▶ Switch off the diesel engine by pressing the OFF button.

▶ Switch off the control at the main switch. The battery may go flat if the control remains switched on.

▶ Close the flap on the control panel and attach a padlock to secure the machine against inadvertent/unauthorised starting.

5.18 Cleaning

Empty and clean the machine and the delivery hoses after completing work or when stopping operation for longer periods. Only a properly cleaned and maintained machine guarantees durable, problem-free, safe operation.

Environmental protection

When cleaning, always observe the waste disposal and environmental protection regulations applicable in your country or region.

General

Observe the following points when cleaning the machine:

– For reasons relating to safety and proper functioning of the machine, cover or seal all openings where water/cleaning agent must not enter before cleaning with water (especially using a steam jet or high-pressure cleaner) or other cleaning agents. The machine is splash-proof but not waterproof.

Caution

Do not clean electrical components on the machine with water, high-pressure cleaners or steam jets. These components may become damaged when electricity passes through them. Control cabinets, electric motors and electrical plug connectors are especially at risk.

– In the first six weeks of operation, clean all painted surfaces with cold water only at a maximum pressure of 5 bar.
Do not use any aggressive cleaning agents. The paintwork should have hardened completely after six weeks; you can then use e.g. steam jets to perform cleaning work.

– Do not use corrosive or flammable cleaning agents, in particular tetrachloromethane.

– Use lint-free cloths only.

– After cleaning, spray the machine with Brinkmann BC machine preservative agent. This prevents rust from forming and protects and preserves the machine without damaging rubber components, cables or seals. Brinkmann accepts no liability for the use of other agents, in particular diesel fuel.

– After cleaning, immediately remove any covers/adhesive tape that you attached for cleaning work. Forgetting to remove all the covers/adhesive tape may damage the machine.

– All lubrication points must be lubricated after cleaning.

Cleaning the mixing tank

- ▶ Shut down the machine and secure against unauthorised/inadvertent starting. See Chapter 7.6 Shutting down the machine.
- ▶ Raise the protective grille on the filling dome and move to one side.
- ▶ Thoroughly rinse the mixing tank with a liberal amount of water until all mortar residues have been removed. In particular, make sure that crusts of dirt do not form on the seals around the mixing shaft as these will damage the mixing shaft seals.

Danger

Before cleaning the mixing tank, switch off the engine and the main switch, press the EMERGENCY STOP button and secure the machine against unauthorised/inadvertent starting. Do not reach into the mixing tank. Serious or fatal injuries may be the consequence if the mixing mechanism starts up unexpectedly.

Disconnecting the battery is the only sure way of preventing the engine and mixing mechanism from starting. If you cannot avoid reaching into the mixing tank, always disconnect the battery first.

- ▶ Position the discharge stand in a location where dirty water can drain out without causing any damage. Make sure that the delivery hoses do not become kinked.
- ▶ Swivel the protective grille back onto the dome.
- ▶ Start up the machine again. To do this, unlock the EMERGENCY STOP button, switch on the control at the main switch and start the engine.
- ▶ Close the cover on the mixing tank.
- ▶ A second person should hold the discharge stand firmly while the waste water is pumped out.
  Push the ventilation lever downwards and hold. Pressure builds in the mixing tank and the dirty water is pumped out.

Danger

If a second person does not hold the discharge stand firmly, pressurised water escaping from the hose may cause the stand to thrash around violently. This poses a risk of serious injury.

- ▶ Repeat the process. The mixing tank should be filled with water half way.

Automatic mixing tank cleaner (optional)

The purpose of the automatic mixing tank cleaner is to clean the inside of the mixing tank at the end of the delivery cycle or when work is completed. This helps to prevent the formation of material deposits in the mixing tank, especially when mixing quick-setting material.

- ▶ Connect the water supply hose to the quick-release coupler (**1**) on the mixing tank cleaner and establish the water supply.
- ▶ Move the mixing tank cleaning/high-pressure cleaner valve (**2**) to the left position (mixing tank cleaning).
- ▶ At the end of the delivery cycle (after the mixing tank is depressurised), leave the cover on the mixing tank closed. The mixing shaft must be switched on.
- ▶ Wear protective goggles.

Caution

Do not run the water pump dry, as it will become damaged. Make sure the water supply is established before switching on the water pump. Always switch off the water pump at the ball valve (3) before cutting off the water supply!

- ▶ Move the ball valve (**3**) to the lower position to switch on the water pump and start mixing tank cleaning. Allow the tank cleaning cycle to run for a few minutes, depending on the amount of deposits.

Danger

Never open the mixing tank cover while the automatic mixing tank cleaning cycle is in progress. Water and material spraying out under pressure may cause serious injuries, in particular to the eyes. Wear protective goggles.

- ▶ Move the ball valve (**3**) to the upper position to switch off the water pump again. Always switch off the water pump before cutting off the water supply and disconnecting the supply hose.

High-pressure cleaner (optional)

The automatic mixing tank cleaner has a connector for attaching the cleaning lance from a high-pressure cleaner. This makes cleaning the outside of the machine much easier.

- ▶ Connect the water supply hose to the quick-release coupler (**1**) on the mixing tank cleaner and establish the water supply.
- ▶ Connect the hose on the cleaning lance to the connector (**4**) and tighten securely.
- ▶ Move the mixing tank cleaning/high-pressure cleaner valve (**2**) to the right position (high-pressure cleaner).
- ▶ Wear protective goggles.

Caution

Do not run the water pump dry, as it will become damaged. Make sure the water supply is established before switching on the water pump. Always switch off the water pump at the ball valve (3) before cutting off the water supply!

- ▶ Move the ball valve (**3**) to the lower position to switch on the water pump again. You can now use the cleaning lance.

Danger

Never direct the cleaning lance towards people. Water and material escaping under pressure may cause serious injuries, in particular to the eyes. Always wear protective goggles.

- ▶ Move the ball valve (**3**) to the upper position to switch off the water pump again. Always switch off the water pump before cutting off the water supply and disconnecting the supply hose. Detach the cleaning lance from the connector (**4**).

Cleaning the delivery hoses

Most of the coarse dirt is cleaned from the delivery hoses when the mixing tank is cleaned. You can remove any residual dirt from the delivery hoses using a sponge ball. Proceed as follows:

▶ The mixing tank must be depressurised.

Danger
Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised.

▶ Detach the hose coupling at the tank outlet.

▶ Insert a soaking wet sponge ball into the delivery hose.

▶ Secure the hose coupling back on the tank outlet.

▶ Push the ventilation lever downwards and hold. Pressure builds in the mixing tank. The sponge ball is blown through the delivery hoses, cleaning them as it goes.

▶ Clean the sponge ball with water.

▶ Repeat the procedure until all the delivery hoses are clean.

▶ Detach all the delivery hoses and clean the hose couplings thoroughly with water.
Residual mortar easily collects around the hose couplings. Dirty hose couplings increase delivery hose wear and cause blockages.

▶ Inspect the delivery hoses and hose couplings for damage. Damaged hoses, hose couplings or seals should be replaced immediately.

Cleaning the header and flotation air hoses

The header air and flotation air hoses are located under the maintenance flap on the mixing tank. The machine must be shut down before cleaning can begin.

- ▶ Shut down the machine and secure against unauthorised/inadvertent starting. *See Chapter 7.6 Shutting down the machine.*
- ▶ Close the header and flotation air valves.

Danger

Make sure that the machine has been shut down and the mixing tank is depressurised.
Check whether the ventilation lever is in the top position. Also check the pressure gauge to see whether the mixing tank is actually depressurised.

- ▶ Open the maintenance flap.
- ▶ Release the hose couplings and remove the hoses.
- ▶ Rinse the hoses thoroughly with water.
- ▶ Clean the check valves if necessary. *MC 11-001 Check valves.*
- ▶ Connect the hoses again.
- ▶ Then close the maintenance flap.

Caution

Do not cross over the hoses when reconnecting.
Secure the header air valve to the connection on the mixing tank and the flotation air valve to the connection on the tank outlet.

5.19 Connection for air tapping

The machine has a separate connection for tapping air. You can connect compressed air consumers (e.g. compressed air gun) to this connection. Proceed as follows to operate as a compressor:

▶ Close the header air (**1**) and flotation air (**2**) valves. Both valves must be in a vertical position.

▶ Switch off the mixing mechanism by pressing the mixing mechanism button on the control panel. The LED on the mixing mechanism button goes out.

▶ Connect the consuming device to the air tapping coupling (**4**).

▶ Open the air extraction cock (**3**). The valve (**3**) must be in a vertical position. You can now operate the connected consumer device.

Caution

Connect compressed air consumers only.
The air tapping coupling does not have a check valve. Connecting the lines to convey media other than air (e.g. water) may damage the compressor.

Danger

Never direct compressed air towards people.
Compressed air can cause serious injuries. Do not use compressed air from this machine as air for breathing. Do not use compressed air to clean your working clothes.

5.20 Longer machine downtimes

If you do not intend to use the machine for longer periods (e.g. over the winter), you should grease or preserve the machine, as required. Do not store the machine for longer than three months. If in any doubt, consult your local Brinkmann service partner. Proceed as follows:

Note

Preservation and greasing protect the machine against corrosion and premature ageing and are deemed necessary if the machine
– is not used for longer periods.
– is exposed to a corrosive atmosphere during transportation or storage.

- ▶ Empty the machine as described in *Chapter 5.17 Finishing work*, clean thoroughly and switch off.
- ▶ Lubricate all lubrication points on the machine. *Maintenance card 02-001 Lubrication diagrams.*
- ▶ Run the engine until warm and then shut down the machine.
- ▶ Drain the oil from the engine and fill with corrosion protection oil. *Maintenance card 08-001 Engine.*
- ▶ Drain the fuel tank and fill with a mixture of 90% diesel fuel and 10% corrosion protection oil. Start the engine and allow to run for approx. 10 minutes.
- ▶ Switch off the engine and shut down the machine. Then crank the engine by hand to preserve the cylinders and combustion chambers.
- ▶ Close/Seal off the intake and exhaust openings.
- ▶ Remove the V-belt, pack and place in storage. Spray the grooves on the V-belt pulleys with anti-corrosion agent.
- ▶ Preserve the machine with a suitable anti-corrosion agent. *Brinkmann BC machine preservative agent (item no. 605 000 0000).*
- ▶ Remove the battery, store in a dry, well-ventilated place and charge regularly. *MC 04-001 Battery.*
- ▶ Store the machine in a clean, dry location.

5.21 Final machine decommissioning, disposal

Final decommissioning and disposal require complete disassembly of the machine into its individual components.
When dismantling and disposing of the machine, make sure that there is no possibility of damaging the health of personnel or the environment.

Environmental protection

Final disposal of the machine should be carried out by a specialist company.

Danger

When the machine is dismantled, operating materials (e.g. compressor oil or hydraulic fluid) may escape and pose a risk. They may be harmful to health or burn the skin. Read the information provided by the operating material manufacturer and wear appropriate protective clothing. Risk of injury on sharp-edged machine components.

Continued on next page

Materials used

The following materials are mainly used in the machine:

Material	used for / in
Copper	Cable
Steel	Machine frame
	Hood
	Mixing tank components
	Compressor components
Plastic, rubber, PVC	Seals
	Hoses
	Air cowls on the hood
	Cables
	Wheels
Tin	Printed circuit boards
Polyester	Printed circuit boards

Parts requiring separate disposal

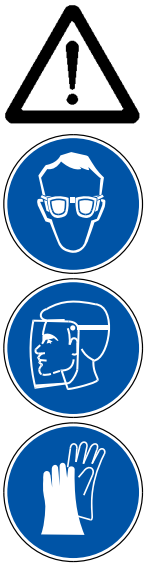
The following operating materials and machine components must be separated prior to disposal:

Material	used for / in
Electronic scrap	Switch cabinet
	Control unit
	Electric motor
	Scraper remote control / Batteries (on machines with scraper)
Oils and fluids	Compressor oil
	Hydraulic fluid (on machines with loader / scraper)

6 Troubleshooting guide

DC 260 general

This chapter contains an overview of faults, their possible causes and remedies for the Trans Mix DC 260. When troubleshooting, always observe the general safety regulations. *Chapter 2 Safety requirements*.



Danger

Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Check that the ventilation lever is in the top position. Do not rely entirely on the pressure gauge display as it may be faulty.
Even if the tank is depressurised, the delivery hoses may still be pressurised and material could spray out when the hose coupling is released. Therefore, always wear protective goggles, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

Danger

Do not reach into moving machine parts (e.g. the mixing mechanism) unless the machine has been shut down and the battery is disconnected. Ignoring this instruction may result in serious or fatal injuries.

Danger

Only suitably trained technicians may work on the hydraulic and electrical systems.

Note

If in any doubt, consult your local Brinkmann After Sales partner.

6.1 Machine general

Control does not function.	
Cause	**Remedy**
Main switch on the control is off	Switch on the control at the main switch located on the back of the control.
EMERGENCY STOP button pressed/display indicates "OFF"	Unlock the EMERGENCY STOP button. Pull and turn the button.
Safety switch active / Decimal point appears on the display	If the control is switched on and the machine is not operated within an hour, the safety switch is activated and the control no longer allows input. Switch the main switch on the back of the control off and on again.
Faulty fuse in the control	Replace the fuse for the control. If the fuse blows again, locate and remedy the fault.
Faulty control	Replace the control.

Charge monitor indicator lamp does not light up when the control is switched on. On digital controls, nothing appears on the display. Cannot start motor.	
Cause	**Remedy**
Flat or faulty battery	Check electrolyte level and charge battery. Replace faulty battery. *Maintenance card 04-001 Battery.*
Loose battery connection or oxidised battery terminals	Check and repair. *Maintenance card 04-001 Battery - battery maintenance.*
Loose cable connection or damaged wiring	Check the cable connections and wiring and repair if necessary.
Dynamo or V-belt faulty	Replace the dynamo or the V-belt.

Engine indicator lamp does not light up briefly when the engine starts. CAUTION: Engine can be operated, the sensors for the oil pressure and engine temperature are inoperative, however. Engine is not protected in the event of a fault.	
Cause	**Remedy**
Faulty sensors or wiring	Check the engine temperature sensor, engine oil pressure sensor and wiring, replace if necessary.

Charge monitor indicator lamp lights up when the engine is running. The battery on the machine does not charge. The machine can be operated until the battery is flat.	
Cause	**Remedy**
Faulty V-belt on dynamo	Check the V-belt and replace if faulty.
Faulty dynamo	Check dynamo and replace if necessary.

The starter does not turn the engine when the ON button is pressed.	
Cause	**Remedy**
EMERGENCY STOP button pressed/display indicates "OFF"	Unlock the EMERGENCY STOP button. Pull and turn the button.
Restart protection/ LED on the ON button flashes	Restart protection active. Wait until the LED stops flashing (30 sec.). Start the engine.
Protective grille open / Protective grille indicator lamp flashes	Close the protective grille. Check the circuit breaker and wiring, replace if necessary.
Low battery power	Check electrolyte level and charge battery. Replace faulty battery. *Maintenance card 04-001 Battery.*
ON button faulty	Check electrical system/control
Magnetic switch on the starter is faulty	Replace the magnetic switch on the starter.

Engine starts, but then switches off by itself.	
Cause	**Cause**
Fuel tank empty	Check the level in the fuel tank and fill up if necessary.
Engine indicator lamp flashes	The engine is monitored by engine oil pressure and engine temperature sensors. If these sensors send critical values to the control, the control switches off the engine as a precaution.
Faults indicated during the engine oil pressure or engine temperature test	Check the engine oil level, engine oil filter and engine oil pipes. Replace faulty lines and clogged filter, top up the engine oil if necessary. If the oil filter is clogged, the oil will most probably need changing. *Maintenance card 08-001 Engine.*
	Inspect cooler for dirt / defects. Check that the fan is functioning correctly. Remove dirt, replace faulty parts. *Maintenance card 07-001 Oil cooler.*

Continued on next page

Engine starts, but then switches off by itself.	
Cause	**Cause**
Sensors measuring incorrectly / faulty	Check that both sensors are attached and functioning correctly and check the wiring. Replace sensors if necessary.
Engine faulty	Repair the engine.
Engine indicator lamp lights up and compressor temperature lamp flashes	The compressor is monitored by a temperature sensor. If this sensor sends critical values to the control, the control switches off the engine to protect the compressor.
Fault during compressor temperature test	Inspect the compressor oil level, compressor oil filter, compressor oil lines and oil trap. Replace faulty lines, clogged filter or oil trap, top up the compressor oil if necessary. *Maintenance card 09-001 Compressor.*
	Inspect compressor cooler for dirt / defects. Check that the fan is functioning correctly. Remove dirt, replace faulty parts. *Maintenance card 07-001 Oil cooler.*
Sensor measuring incorrectly / faulty	Check that the sensor is attached and functioning correctly and check the wiring. Replace sensor if necessary.
Air filter indicator lamp lights up	The air filter is clogged. Clean the air filter and replace if necessary. *Maintenance card 05-001 Air filter.*
Faulty control	Control performs emergency shutdown even though the oil pressure, engine temperature and compressor oil temperature are correct. Replace the control.

Machine does not respond to the scraper remote control.	
Cause	**Remedy**
The reception indicator lamp does not light up.	If the reception indicator lamp does not light up when you actuate the scraper remote control, the receiver cannot receive signals from the remote control.
Remote control switched off	Switch on the remote control at the toggle switch.
Battery flat.	Charge the battery via the control. Use the spare battery or the remote control cable. *Chapter 5.6 Operating the scraper - cable operation* and *charging the battery*.
Serial number setting for remote control incorrect	Check the serial number and change if necessary. *Chapter 5.6 Calibrating the scraper remote control / control unit*.
No radio reception	A strong source of interference is blocking the signals from the remote control or the antenna is faulty. Check the antenna and replace if necessary. Use the remote control cable. *Chapter 5.6 Operating the scraper - cable operation*.
Remote control faulty	If operation is not possible via the cable, the remote control is faulty. Consult your local Brinkmann After Sales partner.

Machine does not respond to the scraper remote control.	
Cause	**Remedy**
 The reception indicator lamp lights up	If the reception indicator lamp lights up when you actuate the scraper remote control, the receiver is able to receive signals from the remote control. If the lamp flashes irregularly, there is a source of interference.
Machine cannot carry out remote control commands / reception indicator lamp lights up	The mixing mechanism must be switched on. If the mechanism is switched on, the LED on the mixing mechanism button lights up. If necessary, press the mixing mechanism button to switch on the mixing mechanism
	Check the wiring at the control output and the limit switch on the winch cable.
Low battery power / Reception indicator lamp flashes irregularly	The battery is almost flat and the transmitter is issuing irregular signals or the signal strength is too weak. The scraper jerks during operation. Charge the battery via the control. Use the spare battery or the remote control cable. *Chapter 5.6 Operating the scraper - cable operation / charging the battery.*
Interrupted radio reception / Reception indicator lamp flashes irregularly	A source of interference is blocking the signals from the remote control or the antenna is faulty. The scraper jerks during operation or delays in stopping. Check the antenna and wiring, replace if necessary. Use the remote control cable. *Chapter 5.6 Operating the scraper - cable operation.*

Charging indicator on the battery flashes when inserted in the charging socket.	
Cause	**Remedy**
Rapid charging switched off / Battery temperature too high or too low	Rapid charge mode is only active when the battery temperature is between -10 °C and +40 °C. The battery is charged as normal speed outside of this temperature range. If the engine is running while the battery is charging, it is normal for the charging indicator on the battery to flash because of the heat dissipated by the engine.
Battery faulty / Temperature of the battery normal	Connect the spare battery to the charging socket. If the spare battery is charged in rapid charge mode, the other battery is faulty.
Charging connection faulty / Temperature of the battery normal	Connect the spare battery to the charging socket. If the charging indicator on the spare battery also flashes, the charging connection is faulty.

Mixing shaft stops / does not start.	
Cause	**Remedy**
Mixing tank too full	Empty the mixing tank. Fill the mixing tank to no more than 15 mm below the lower edge of the dome.
Power belt faulty	Check power belt and replace if necessary.
Mixture too dry	Remove the material from the mixing tank and clean the tank, if necessary. Use the correct mixing ratio for the new mixture.
Material (e.g. stone) blocks the mixing shaft	Remove trapped material. Free the mixing shaft.

Machine does not deliver even though the ventilation lever is pressed down.	
Cause	**Remedy**
Mixing shaft does not function	The mixing shaft must function for material to be delivered normally. Press the mixing mechanism button to switch on the mixing shaft.
Proximity switch on the ventilation lever is faulty	Check the proximity switch on the ventilation lever and wiring, replace if necessary. If the proximity switch is faulty, flotation air can be controlled manually via the flotation air button .
Blockage in the tank outlet / delivery hoses Delivery pressure above 6 bar	The delivery material has blocked the tank outlet or the delivery hoses. *Chapter 5.15 Delivery stops / Blockages.*
Solenoid-operated valve faulty / Flotation air cannot be switched on	Check the solenoid-operated valve and wiring, replace if necessary.

Machine begins to deliver even though the ventilation lever is not pressed down.	
Cause	**Remedy**
Proximity switch on the ventilation lever is faulty	Check the proximity switch and wiring, replace if necessary. If the proximity switch is faulty, flotation air can be controlled manually via the flotation air button .

Compressor does not reduce power requirement, engine continues to run at maximum speed, relief valve opens to dump pressure.	
Cause	**Remedy**
Air loss in the control system	Have Brinkmann check and repair the control system.
Control valve faulty, dirty, set incorrectly	Have Brinkmann check/adjust/replace the valve.
Safety valve faulty / opens too soon	Have an authorised specialist workshop check/adjust/replace the safety valve.

Capacity or pressure of compressor lower than usual.	
Cause	**Remedy**
Air consumption exceeds the capacity of the compressor	Check the consumer system downstream of the compressor (air lines, mixing tank, tank outlet, connected air consumer)
Air filter element clogged	Clean or replace the air filter element. *Air filter maintenance card.*
Dump valve not fully open	Set the speed control cable correctly.
Air-oil separator element clogged	Have Brinkmann check/replace the element.
Blow-out valve releases air	Have Brinkmann check/adjust/replace the valve.
Engine runs slowly	Check/Adjust the engine speed regulator. Maintain fuel filter, replace if necessary. *Maintenance card 06-001 Fuel filter.*

Air flow rate from compressor minimal. Pressure excessive.	
Cause	**Remedy**
Air-oil separator element clogged	Have Brinkmann check/replace the air-oil separator.

Compressor oil consumption is excessive, oil mist escaping from discharge valves.	
Cause	**Remedy**
Compressor oil level too high	Drain oil until it reaches the max. mark on the compressor oil level gauge. *Maintenance card 09-001 Compressor.*
Incorrect compressor oil grade	Replace the compressor oil with the correct grade. *Chapter 7.5 Operating materials - compressor oil.*
Oil return line blocked / Check valve faulty	Clean the oil return line, replace the check valve if necessary.
Air-oil separator faulty	Have Brinkmann check/replace the separator.
Intake control valve faulty internally	Have Brinkmann check/replace the valve.

Compressor overheating.	
Cause	**Remedy**
Inadequate compressor cooling	Set up the machine in a well-ventilated location.
Oil filter clogged externally	Clean the oil cooler. *Maintenance card 07-001 Oil cooler.*
Compressor oil level too low	Check the compressor oil level. *Maintenance card 09-001 Compressor.*
Cooling fan faulty	Replace the cooling fan.
Fine oil trap blocked	Have Brinkmann check/replace the trap.
Compressor oil filter clogged	Replace the compressor oil filter. *Maintenance card 09-001 Compressor.*

Air and oil escape from the air filter after the machine is stopped.	
Cause	**Remedy**
Dump valve faulty	Repair the dump valve, replace if necessary.
Incorrect oil grade, no additives to prevent foam formation	Contact Brinkmann. *Chapter 7.5 Operating materials.*

Mixing tank pressure above 5 bar. Delivery is extremely slow or stops completely.	
Cause	**Remedy**
The delivery hoses are blocked by material deposits. Delivery is not possible, or only to a limited extent.	Clean the delivery hoses and remove the material deposits. Replace the delivery hoses if necessary. Restart the delivery process with a large quantity of header air and without flotation air. Then adjust the header and flotation air correspondingly.

Mixing tank pressure above 6 bar. Delivery stops / Blockages.	
Cause	**Remedy**
Blockages in the mixing tank outlet. The delivery hoses are soft. Blockages in the delivery line. Delivery hoses are hard up to the point of the blockage, after which they are soft.	When clearing blockages, proceed as described in *Chapter 5.15 Delivery stops / Blockages*. Locate and eliminate the cause of frequently occurring blockages as these can pose a serious risk to operating personnel. There are many possible causes for blockages occurring (e.g. composition of the material, nominal width of the delivery hoses, faulty coupling seals, etc.). Read also *Chapter 5.15 Common causes of blockages*.

6.2 Troubleshooting at the chassis

Overrunning brake ineffective.	
Cause	**Remedy**
Brake pads have not been worn in	The brake pads may not have been worn in before the machine was delivered. The problem disappears after the brakes are applied a few times. Carefully run in the brakes.
Wear on the brake pads / tension bar retracts fully during braking	Have an authorised specialist workshop check/adjust/replace the brake system.
Brake pads damaged	Have an authorised specialist workshop check/adjust/replace the brake system.
Sluggish brake mechanism / Corrosion on the tension bar	Have a specialist workshop overhaul the brake mechanism to ensure ease of movement.

Unsettled driving behaviour or jerky braking.	
Cause	**Remedy**
Shock absorbers defective / Machine brakes when vehicle accelerates	Have a specialist workshop check/repair/change the brakes.
Too much play in the brake system	Have an authorised specialist workshop check/adjust/replace the brake system.

Reversing sluggish or not possible.	
Cause	**Remedy**
Handbrake not released / completely released	Release handbrake completely.
Brake system adjusted too tightly	Have an authorised specialist workshop check/adjust the brake system.

Brakes overheat.	
Cause	**Remedy**
Handbrake not released / completely released	Release handbrake completely.
Brake system set incorrectly / defective	Have an authorised specialist workshop check/adjust/replace the brake system.

Handbrake ineffective.	
Cause	**Remedy**
Handbrake not applied fully	Apply handbrake fully.
Handbrake set incorrectly / pneumatic spring faulty	Have an authorised specialist workshop check/adjust the brake system.
Brake pads have not been worn in	The brake pads may not have been worn in before the machine was delivered. The problem disappears after the brakes are applied a few times. Carefully run in the brakes.
Significant friction losses	Grease/Ensure ease of movement of the handbrake including brake cable. Have an authorised specialist workshop check/adjust the brake system.

Difficult to adjust height of parallel adjuster.	
Cause	**Remedy**
Joints seized / Toothed discs corroded	Clean and grease.
Adjustable peg seized	Have a specialist workshop check/repair/replace the peg.

Ball head coupling does not engage when machine attached.	
Cause	**Remedy**
Inner parts of the clutch are dirty or have seized	Clean/Grease the ball head coupling and have repaired/replaced by a specialist workshop if necessary.
Ball on the vehicle coupling too large	Replace the ball on the vehicle coupling.

Too much play between the ball head coupling and the ball. Risk of detachment while towing.	
Cause	**Remedy**
Ball on the vehicle coupling worn or too small	Replace the ball on the vehicle coupling.
Ball head coupling worn, slewing circle exceeded, rivet bent	Have specialist workshop repair/replace.

7 Maintenance

This chapter contains information on the maintenance work necessary for safe and efficient operation of the machine.

You will find the maintenance cards necessary for the machine after the general maintenance information.

We would like to emphasise here that all specified checks, inspections and preventive maintenance work must be conscientiously carried out. Otherwise we will refuse any liability or warranty claim.
Our After Sales department would be glad to provide you with advice and help at any time should you be in doubt.

7.1 Safety instructions

When maintaining the machine, always observe the general safety regulations included in this operating manual. *Chapter 2 Safety requirements*.
For safety reasons, perform maintenance work on the machine only when shut down, depressurised and secured against unauthorised/inadvertent starting. Should you require a different operating status for the machine while maintenance work is performed (e.g. with the engine running), this is noted on the relevant maintenance card with a description of the exact procedure.

Also observe the following points:

– Always use undamaged tools that are suitable for the task.

– Use only original spare parts.

– Never clean machine components with flammable solvent or tetrachloromethane. Wear the necessary protective clothing.

Continued on next page

- Make sure your working environment is scrupulously clean during maintenance work. Dirt that e.g. enters the oil systems can damage the machine. Cover components and vacant openings with a clean cloth or paper, or mask off with adhesive tape.

- Never perform welding work or work that generates heat in the vicinity of fuel or oil systems. If this kind of work is absolutely necessary, empty the fuel or oil system completely and clean (e.g. using a steam jet). All fuel and oil must be removed completely.
  Disconnect the battery when arc welding.

- Never perform welding work on pressure reservoirs or make modifications.

- If you need to work under the machine or remove a wheel, always support the tension bar and axle securely. Do not rely solely on a vehicle jack.

- Under no circumstances should the soundproofing material be removed from the hood or modified. Soundproofing material should not come into contact with oil, fuel or cleaning agent as it may be damaged.

- Make sure that you do not leave tools, loose components or cleaning cloths in the machine.

- Make sure that covers or adhesive tape attached for maintenance work are removed.

- Check that the machine is functioning correctly before releasing for general use. Check all operating pressures, temperatures and speed settings. Test all control devices. All safety devices must be fitted and fully functional.

Danger

Before maintenance work can be performed, the engine and the main switch must be switched off, the EMERGENCY STOP button pressed and the machine secured against unauthorised/inadvertent starting. Serious or fatal injuries may be the consequence if the machine starts up unexpectedly.

Disconnecting the battery is the only sure way to prevent the engine from starting and machine parts from moving. Always disconnect the battery before performing maintenance work on moving parts.

7.2 Maintenance intervals

The following table shows the intervals for the various maintenance tasks. Refer to the relevant maintenance cards for a list of necessary tasks.

Note

Have the initial after sales service carried out by a Brinkmann Maschinenfabrik GmbH & Co. After Sales service engineer or by a dealer authorised by Brinkmann Maschinenfabrik GmbH. The operator responsible for the machine should be present to obtain a better insight into how to perform maintenance work on the machine.

Daily maintenance tasks		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Check the seal on the mixing tank cover.		The seal should not be perforated. Material should not be embedded in the seal. Replace seal if necessary.
Check that the delivery hoses and couplings are in perfect condition.		Replace at the first sign of damage. Replace the delivery hoses after using for a maximum of 3 months.
Check all safety devices.		Check whether all safety devices are installed and are functioning correctly.
Visual check of the whole machine for obvious defects.		***MC 01-001 Visual check*** Pay special attention to cabling, lines, seals and corrosion.
Lubricate all daily lubrication points.	Grease gun, multipurpose grease DIN 51502 KPF 2C	***MC 02-001 Lubrication diagrams***
Check the compressor oil level.	BP Energol HLP-HM 46, at -10 °C SHELL Corona AS 46	***MC 09-001 Compressor*** Fill up to the max. mark if necessary.
Check the engine oil level. Fill up to the max. mark if necessary.	15W40 for diesel engine 10W40 for turbo engine	***MC 08-001 Engine***
If an automatic central lubrication system is fitted, check the fluid level.	Multipurpose grease DIN 51502 KPF 2C	***MC 03-001 Central lubrication system*** Check whether the container is sufficiently full. Fill grease up to the max. mark if necessary.

Continued on next page

Daily maintenance tasks		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Check the air filter.		***MC 05-001 Air filter*** Clean/Replace if necessary.
Check the fuel level.	Level indicator on the fuel tank Diesel (DIN EN 590)	Fill fuel up to the max. mark if necessary.
Check that the hood is locked and secured properly before setting off.		
Check that the tailgate bracket is attached correctly and is fully functional before setting off.		Replace bulbs or the cable if necessary.
Secure the loader with the securing chain before starting your journey. Place the scraper in the holder on the loader and secure with split pins before setting off.		Machine with loader / scraper

Every 40 operating hours. Weekly maintenance tasks. (in addition to daily maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Check the tyre pressure, condition of the tyres and the tread depth.		
Check the brakes, breakaway cable, overrunning brake equipment and coupling.		
Check all power and V-belts.		Tighten/Replace if necessary.
Check the tapered nipple on the automatic cover.		Clean if necessary. Have Brinkmann readjust or replace the nipple.

Continued on next page

Every 40 operating hours. Weekly maintenance tasks. (in addition to daily maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Lubricate all weekly lubrication points.	Grease gun, multipurpose grease DIN 51502 KPF 2C	***MC 02-001 Lubrication diagrams***
Check that check valves are functioning correctly.		***MC 11-001 Check valves*** Clean if necessary and replace the sealing washers and springs of the valves or the entire check valve.
Check the header and flotation air lines.		***Chapter 5.15 Cleaning*** Clean if necessary.
Check the condition of wear parts and the mixing mechanism.		***Chapter 4.7 Checking the mixing paddles/wear plates/mixing shaft bearing***. Have Brinkmann replace these components.
Test the function of the central lubrication system.		***MC 03-001 Central lubrication system*** When automatic central lubrication system is fitted with additional equipment.

Every 500 operating hours. Six-monthly maintenance tasks. (in addition to daily and weekly maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Have the tapered nipple replaced now at the latest.		Have Brinkmann replace this component.
Have the wear plates in the mixing tank and the mixing mechanism replaced now at the latest.		Have Brinkmann replace this component.
Lubricate all six-monthly lubrication points.	Grease gun, multipurpose grease DIN 51502 KPF 2C	***MC 02-001 Lubrication diagrams***
Replace the engine oil filter and engine oil now at the latest.	15W-40 for diesel engine Filter wrench	***MC 08-001 Engine***
Replace the fuel filter and preliminary filter.	Filter wrench	***MC 06-001 Fuel filter***

Continued on next page

Every 500 operating hours. Six-monthly maintenance tasks. (in addition to daily and weekly maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Replace the air filter and safety cartridge now at the latest.		***MC 05-001 Air filter***
Measure the pressure drop at the air-oil separator.		If the drop in pressure exceeds 0.8 bar, have Brinkmann replace the air-oil separator.
Replace the sealing washer on the oil trap.		Have Brinkmann replace this component.
Check the axial clearance of the wheel hub bearing.		Specialist workshop
Change the gearbox oil for the first time after 500 operating hours.	Texaco Meropa 680	Specialist workshop
Have the power belt replaced now at the latest.		Specialist workshop
Check the electrical system/ wiring.		Have an electrician check/repair any faults/damage to the electrical system/wiring.
Replace the seal on the mixing tank cover now at the latest.		
Replace the sealing ring and spring on the check valves now at the latest.		***MC 11-001 Check valves***
Clean filter insert on the fuel tank.		

Every 1000 operating hours. Annual maintenance tasks. (in addition to daily, weekly and six-monthly maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Industrial safety inspection (Accident Prevention Regulations) by a qualified person.		Have Brinkmann perform this inspection.
Have the safety valve on the compressed air tank checked.		Authorised specialist workshop. Have adjusted/replaced if necessary
Change the hydraulic fluid filter and hydraulic fluid	Viscoclub HLP 46	***MC 10-001 Hydraulic system***
Replace the compressor oil filter and compressor oil now at the latest.	BP Energol HLP-HM 46, at -10 °C SHELL Corona AS 46	***MC 09-001 Compressor***
Have the hydraulic system (loader, scraper) checked.		Have Brinkmann check this component.
Have the air-oil separator on the oil trap replaced.		Have Brinkmann replace this component.
Replace all V-belts now at the latest.		Specialist workshop
Check engine valve play and have adjusted if necessary.		Specialist workshop See also Deutz operating manual
Have the toothed belt with tension roller for controlling the engine valves checked.		Specialist workshop Have replaced, if necessary.

More than 1000 operating hours. Maintenance intervals over several years. (in addition to daily, weekly, six-monthly and annual maintenance tasks)		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Every 18 months (or after 5000 operating hours), change the gearbox oil.	Texaco Meropa 680	Specialist workshop
Every 2 years, have the roadworthiness of the machine checked by an officially certified test centre.		TÜV, Dekra, etc.
Every 2 years. External inspection of the mixing tank by an officially certified test centre.		Pressure vessel regulation
Every 3 years, have the dampers on the overrunning brake equipment replaced.		Specialist workshop
Every 3 years (or after 3000 operating hours), have the toothed belt with tension roller for controlling the engine valves replaced.		Specialist workshop
Every 3 years (or after 3000 operating hours), have the injection valves checked and adjusted.		Specialist workshop
Every 5 years. Internal inspection of the mixing tank by an officially certified test centre.		Pressure vessel regulation
Every 10 years. Strength test on the mixing tank by an officially certified test centre.		Pressure vessel regulation

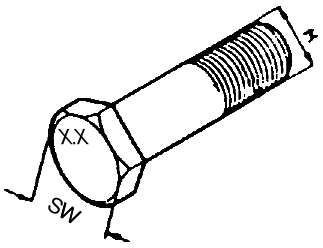
Maintenance work on the chassis.		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
After the first 50 km and ***after each wheel change***, check the tyre pressure and make sure the wheel nuts are seated securely.		***Chapter 7.4 Tightening torques*** Use a torque wrench. Tighten the wheel nuts evenly at diagonals, adjust the tyre pressure.
After the first 100-200 km, have the brake system adjusted.		Specialist workshop.
Every 10,000-15,000 km, check that the fastening bolts on the overrunning brake equipment are seated securely.		***Chapter 7.4 Tightening torques*** Use a torque wrench. Retighten if necessary.
Every 10,000-15,000 km, check the shock absorbers on the overrunning brake equipment for oil loss, power loss and air leaks.		Specialist workshop. Have repaired.
Every 10,000-15,000 km, check the pneumatic springs fitted to the adjusting aid on the overrunning brake equipment.		Specialist workshop. Have repaired.
Every 10,000-15,000 km, check the play around the tension bar on the overrunning brake equipment.		Specialist workshop. Maximum play: ± 1.5 mm Have repaired.
Every 10,000-15,000 km, check the brake system settings and the wear on the brake pads.		Specialist workshop. Have adjusted/replaced if necessary
Every 10,000-15,000 km, check that the handbrake functions correctly and the handbrake seals are tight.		Specialist workshop. Have repaired.

Continued on next page

Maintenance work on the chassis.		
Task	**Measurement and inspection equipment, operating and auxiliary materials**	**Comment**
Every 10,000-15,000 km, check that the guide for the breakaway cable is secure and that the breakaway cable functions correctly.		Specialist workshop Have repaired.
Every 10,000-15,000 km, check that the support wheel functions correctly (support wheel easy to move, attached correctly, locking toggle fully functional).		Specialist workshop. Have repaired.
Every 10,000-15,000 km, check the axial play on the wheel bearings and the play on the guide bearings.		Specialist workshop. Have repaired.
Every 10,000-15,000 km, check that the fastening bolts on the trailer coupling ring or ball head coupling are seated securely.		***Chapter 7.4 Tightening torques*** Use a torque wrench
Every 10,000-15,000 km, check that the ball head coupling is fully functional and easy to move, also inspect for wear.		Specialist workshop Have repaired.

Tightening torques of set screws

The tables below indicate the maximum tightening torques in Nm for a friction coefficient of mtotal = 0.14, with the thread lightly oiled or lightly greased.



SW = Width across flats
X.X = Grade 8.8, 10.9, 12.9

Triangular thread				
Dimensions [mm]		Tightening torque [Nm]		
M	SW	8.8	10.9	12.9
M 4	7	3.0	4.4	5.1
M 5	8	5.9	8.7	10
M 6	10	10	15	18
M 8	13	25	36	43
M 10	17	49	72	84
M 12	19	85	125	145
M 14	22	135	200	235
M 16	24	210	310	365
M 18	27	300	430	500
M 20	30	425	610	710
M 22	32	580	820	960
M 24	36	730	1050	1220
M 27	41	1100	1550	1800
M 30	46	1450	2100	2450

Precision thread				
Dimensions [mm]		Tightening torque [Nm]		
M	SW	8.8	10.9	12.9
M 8x1	13	27	39	46
M 10x1.25	17	52	76	90
M 12x1.25	19	93	135	160
M 12x1.5	19	89	130	155
M 14x1.5	22	145	215	255
M 16x1.5	24	225	330	390
M 18x1.5	27	340	485	570
M 20x1.5	30	475	680	790
M 22x1.5	32	630	900	1050
M 24x2	36	800	1150	1350
M 27x2	41	1150	1650	1950
M 30x2	46	1650	2350	2750

Note

All tightening torques x 1.1 apply for bolts with cement in the thread.

7.3 Welding work

During electrical welding work (e.g. arc welding), the external voltage may destroy electronic components on the machine. Therefore, always observe the following points before welding:

– Disconnect both battery cables.
– Detach the connector plug on the control.

Danger
Welding work on fuel and oil systems may only be carried out by trained welders observing the relevant safety regulations. Danger of explosion.

Danger
Never perform welding work on pressure reservoirs or make modifications.

7.4 Tightening torques

Tightening torques depend on bolt grade, thread friction and bolt head bearing area. The values specified in the following tables are guide values. These values are only valid if no other values are specified in this operating manual.

Caution
Bolts must always be replaced with bolts of the same size and grade.

Bolts with adhesive in the locking threads and self-locking nuts must always be replaced after removal.

Continued on next page

7.5 Operating materials

This chapter lists all the operating materials used in your machine.
Carry out oil changes with reference to the maintenance tables in Chapter *7.2 Maintenance intervals*.

Note

When replenishing or changing oil, use only oils included in the recommended lubricants list. Read the information provided by the manufacturer.

When hydraulic fluids of different viscosity grades are mixed, the new viscosity is determined by the mix ratio of the fluids.
Consult the manufacturer.

Danger

Never mix oils with different characteristics (e.g. biodegradable oil with mineral oil).

Environmental protection

You must carefully collect/store all operating fluids, e.g. used oil, filters, cleaning cloths or other auxiliary materials and dispose of them separately from other waste. Observe the national and regional waste-disposal regulations applicable to your area.
Store different used oils separately. Contact the relevant authorities or waste-disposal companies.

Drive motor

The engine requires a year-round high-pressure multigrade oil:

Viscosity:	SAE 15W40 for diesel engine 10W40 for turbo engine
Initial filling:	approx. 8 litres
Subsequent fillings:	approx. 6.5 litres with filter change (fill to max. mark)

Fuel:
Use summer diesel or winter diesel only (DIN EN 590).

Continued on next page

Compressor

Use only high-grade mineral oil for hydraulic systems, with oxydation protective agent, non-foaming and resistant to wear, in accordance with ISO VG 46:

Compressor oil:	BP Energol HLP-HM 46, at -10 °C SHELL Corona AS 46
Initial filling:	approx. 8 litres
Subsequent fillings:	approx. 6.5 litres with filter change (fill to max. mark)

Gearbox

Use the following for gearbox oil (ISO VG 680):

Gearbox oil:	Texaco Meropa 680
Volume:	approx. 3 litres

Hydraulic system

The hydraulic system for the loader / scraper requires fluid with the following specifications (SISO VG 46, DIN 51519)

Hydraulic fluid:	Viscoclub HLP 46
Volume:	approx. 12 litres

Machine preservative agent / Corrosion protection

Use the following as a machine preservative and corrosion protection agent:

Brinkmann BC machine preservative agent (item no. 605 000 0000)

Lubricating grease

Use lubricating grease with the following specification:

Multipurpose grease according to DIN 51502 KPF 2C

Lubricate all lubrication points on the machine in accordance with the maintenance tables in Chapter *7.2 Maintenance intervals* and the *lubrication diagrams maintenance card*.

Storing lubricants

Do not store oils and greases outdoors. Water could seep into the storage container and render the oil unusable without you realising.

7.6 Shutting down the machine

The greatest risk the machine poses is from moving parts (mixing shaft, engine, compressor, V-belt and power belts, loader) and material or oil that escapes under pressure.

- ▶ Switch off the machine engine by pressing the OFF button. The compressed air tank depressurises automatically. Also check the pressure gauge on the compressed air tank to see whether the compressed air tank is actually depressurised.
- ▶ The mixing tank must be depressurised before the cover is opened. The ventilation lever on the cover must be in the top position or the air vent cock open. Also check the pressure gauge on the tank to see whether the mixing tank is actually depressurised.
- ▶ Close the cover on the control panel and secure with a padlock.
- ▶ Close the header air valve and the flotation air valve.
- ▶ Switch off the control at the main switch.

- ▶ Press the EMERGENCY STOP button.
- ▶ Always disconnect the battery so that the machine cannot start or be started unintentionally, in particular when working on moving parts (e.g. working at or inside the mixing tank, changing V-belts or power belts).

Danger

Make sure that both the compressed air tank and the mixing tank are depressurised. (automatic lever/ventilation lever, compressed air tank/mixing tank pressure gauge displays)

Before maintenance work can be performed, the engine and the main switch must be switched off, the EMERGENCY STOP button pressed and the machine secured against unauthorised/inadvertent starting. Serious or fatal injuries may be the consequence if the machine starts up unexpectedly.

Disconnecting the battery is the only sure way to prevent the engine from starting and machine parts from moving. Always disconnect the battery before performing maintenance work on moving parts.

Operating the machine after an EMERGENCY STOP:

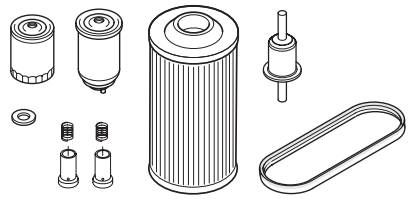
- ▶ Reconnect the battery.
- ▶ Unlock the EMERGENCY STOP button by pulling and turning.

7.7 Maintenance kits

Brinkmann has prepared maintenance kits for the Trans Mix DC 260/45. The maintenance kits include all the original Brinkmann spare parts required for the respective maintenance task. Maintenance kits are available for six-monthly (500 hrs) and annual (1000 hrs) maintenance tasks. Brinkmann accepts no liability for the use of non-original spare parts.

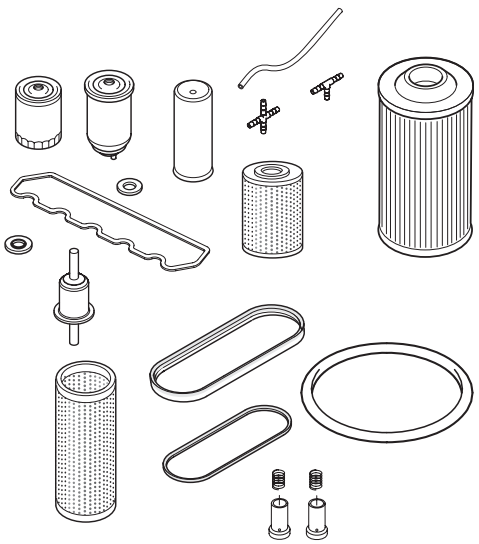
Maintenance kit, six-monthly / 500 operating hours

Brinkmann single part order no.	Kit consists of:	Brinkmann maintenance kit order no. Overview of maintenance kit components
200 117 4416	1 Engine oil filter	**800 010 51**
212 900 0687	1 Fuel filter	
530 318 2415	1 Copper ring	
212 914 9310	1 Air filter cartridge	
414 614 2200	1 Power belt	
350 121 0194	2 Sealing pistons, complete	
350 121 0196	2 Compression springs	
219 712 0104	1 Preliminary fuel filter	



Maintenance kit, annual / 1000 operating hours

Brinkmann single part order no.	Kit consists of:	Brinkmann maintenance kit order no. Overview of maintenance kit components
200 117 4416	1 Engine oil filter	**800 010 52**
212 900 0687	1 Fuel filter	
211 612 3980	1 Compressor oil filter	
530 318 2415	1 Copper ring	
200 417 9846	1 Valve cover seal	
210 661 1028	1 Sealing washer, oil trap	
200 601 5010	1 Fuel hose, 1.5 metres	
200 118 0149	1 Cross adapter	
200 117 9240	1 T-connector	
212 914 9310	1 Air filter cartridge	
414 614 2200	1 Power belt	
212 914 9311	1 Safety cartridge	
411 611 1200	1 Toothed V-belt	
422 210 3200	1 Rubber O-ring for cover	
212 911 0068	1 Air-oil separator, complete	
350 121 0194	2 Sealing pistons, complete	
350 121 0196	2 Compression springs	
219 712 0104	1 Preliminary fuel filter	

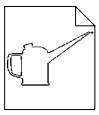


Brinkmann Maschinenfabrik GmbH & Co. KG
- Ersatzteilservice - An der Heller 4 - 12
33758 Schloß Holte Fax: 0 52 07 - 91 47 90

Use our fax order form at the end of this operation manual to place an order.

Visual inspection of the machine

This maintenance card describes particular aspects that should be observed closely during a visual inspection of the machine. Perform a visual inspection on a daily basis before starting work and immediately rectify obvious defects, damage or imminent damage from e.g. faulty oil lines. Also carry out brief visual inspections while the machine is operating. Have a brief look at the most important parts of the machine, for example, if you open the hood briefly to switch off the control. This will help you to identify imminent damage earlier, reduce downtimes and increase safety at work. To rectify faults, read the corresponding maintenance chapter or consult a suitable authorised workshop.



No further maintenance cards are required

No special tools required

Note

Safety at the workplace is paramount. Visual inspections are supposed to help identify obvious defects so you can rectify them before they cause any real damage.
Visual inspections are not a substitute for the prescribed maintenance tasks.

Preparation

Complete the following tasks before performing a visual inspection:

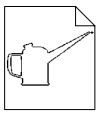
- ▶ Switch on the machine and start the engine to check that all lines, connections and seals are leak-light. Allow the machine to run for approx. 2 minutes.
- ▶ Open the hood.

Pay particular attention to the following points when performing a visual inspection:

Safety equipment	The protective grille must be attached to the filling dome and fully functional. The EMERGENCY STOP button must be functional. Guards must cover moving machine components.
Lines (oil/fluids, air, fuel) and cabling	All lines/cables must be laid unobstructed. Lines/Cables resting on machine components may be damaged during operation. Replace perforated, kinked or damaged lines/cable immediately. Pay attention to any dark, moist areas on the hoses and always check for escaping oil. Make sure that the hose connections or couplings are not leaking. *Maintenance card 13-001 Hoses*
Seals	Pay close attention to the seals on the filter, engine and compressor. Rectify any leaks immediately.
Fan/cooler	The fan must be running to ensure that the machine is cooled sufficiently. Clean the cooler, if dirty. An overheating machine will switch off automatically. See also *Maintenance card 07-001 Oil cooler*
Covers	All covers must be attached in the correct place (including filler caps, fan covers, dirt trap on the air filter, guards over moving machine parts e.g. V-belt on the dynamo)
Cleanliness	The machine must be cleaned thoroughly. Crusts of dirt place operating personnel at risk and can damage the machine. Clean the machine after each use before the screed residues set and deposits begin to form. Make sure the area under the hood is clean.
Rust	Look out for signs of rust. Repair rust damage as quickly as possible before the spread of rust affects the function and safety of the machine. Pay close attention to rust on the brake system because this may affect the function of the brake. Use a suitable machine preservative agent (*7.5 Operating materials - machine preservative agent*) after cleaning to prevent rust from forming. Never use diesel fuel for machine maintenance.
Operating pressures	Always keep an eye on the operating pressure gauges on the machine. If the any of the gauges shows an unusual reading (excessive / insufficient pressure), find out the cause. Stop machine operation until the cause has been identified and the problem solved.
Unusual machine noises	On hearing unusual machine noises, switch off the machine immediately and find out the cause of the noises. Repair any damage before continuing machine operation.

Lubrication diagrams

This maintenance card shows you the location of the lubrication nipples for lubricating with a grease gun. Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals.
The mixing shaft seals on machines fitted with a central grease lubrication system are lubricated automatically. If necessary, you can lubricate these manually by pressing the central lubrication system button under the cover on the control panel.
All moving machine components that are not listed separately should be lubricated every six months (e.g. toothed discs on the parallel adjuster).

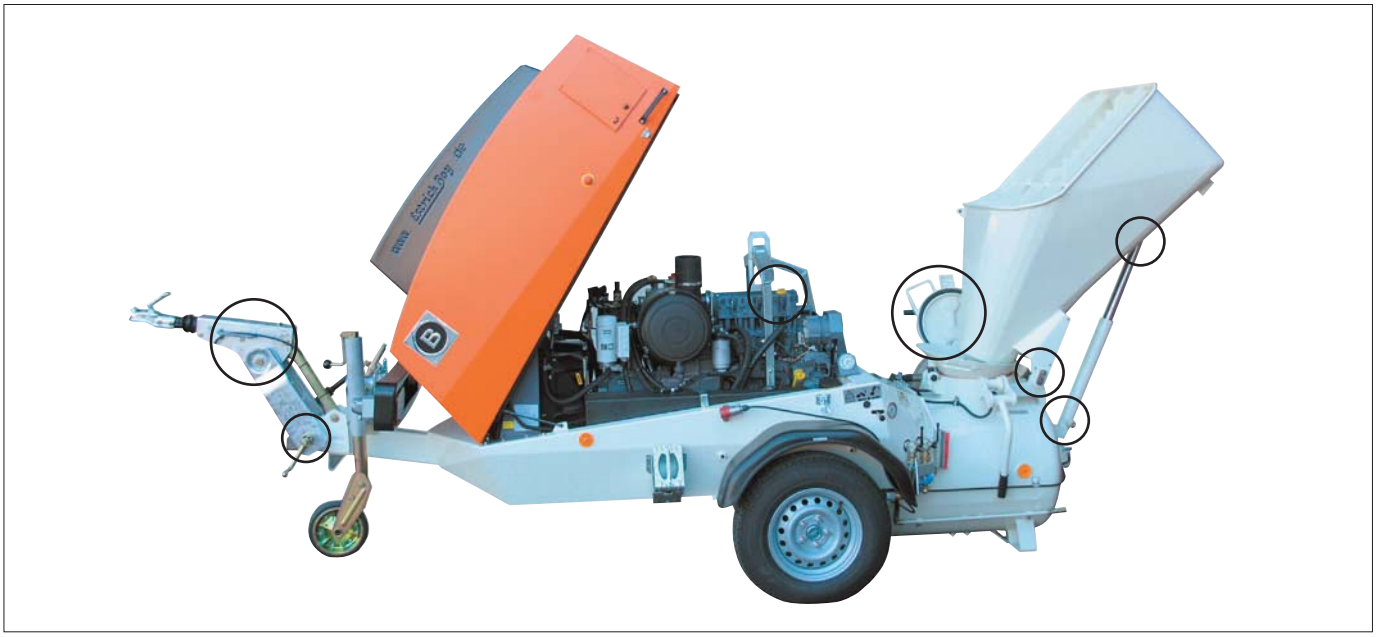


No further maintenance cards are required

The following special tools are required:
Grease gun

Caution

All lubrication nipples are covered by a red protective cap. Clean all lubricating nipples carefully before using the grease gun so that dirt does not enter the lubricating system and cause premature wear or damage the machine. Before placing the grease gun on the lubricating nipple, actuate the gun until grease escapes from the adapter. This will prevent air bubbles from entering the lubricating system. Lubricate all lubricating nipples until grease visibly escapes from the lubrication point. Make sure the red plastic caps are clean and replace them on the lubricating nipples to stop dirt from entering the lubricating system.



Daily lubrication points		
No.	**Detail**	**Designation**
1	A	Mixing shaft seal, lubricate at least twice a day, lubricating nipple located next to the battery, does not apply if central lubrication system fitted (no pipe connected to the nipple)
3	C	Cover bolt joint, lubricate once a day, only steel cover
4	C	Ventilation ball valve, lubricate once a day, only steel cover with manual ventilation

Weekly lubrication points		
No.	**Detail**	**Designation**
5	E	Loader unit (additional equipment), 4 lubrication points
6	D	Lever bearing, 2 lubrication points, only steel cover
7	B	Cover bearing, only automatic covers prior to 1997
8	B	Cover sliding gate, lightly lubricate contact surface on cover locking latch
9	B	Mixer depressuriser lever, only automatic covers prior to 1997

Quarterly lubrication points		
No.	**Detail**	**Designation**
10	G	Mixer depressuriser, only with manual V-belt release

6-monthly lubrication points		
No.	**Detail**	**Designation**
2	A	Mixing shaft bearing, lubricating nipples located next to battery
11	F	Overrunning brake equipment, 4 lubrication points, on the tension bar
12	F	Handbrake, on the tension bar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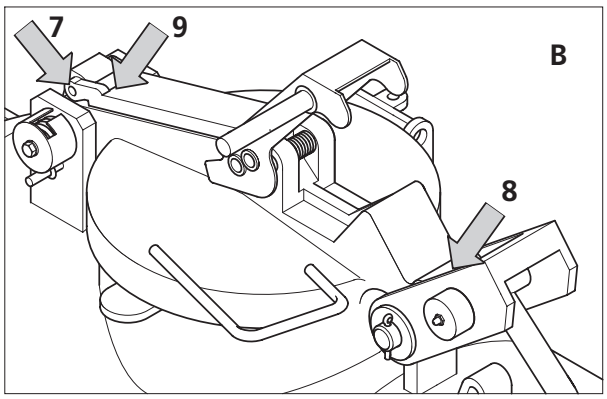
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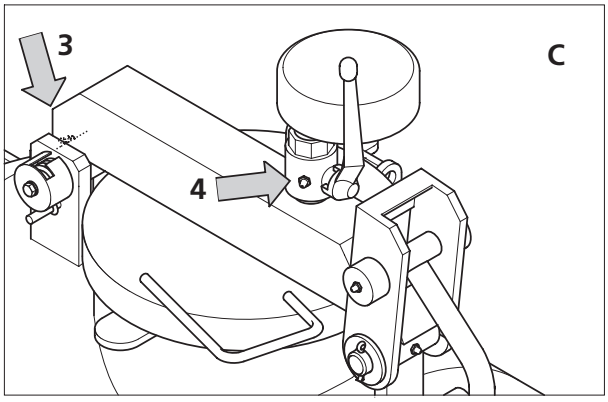
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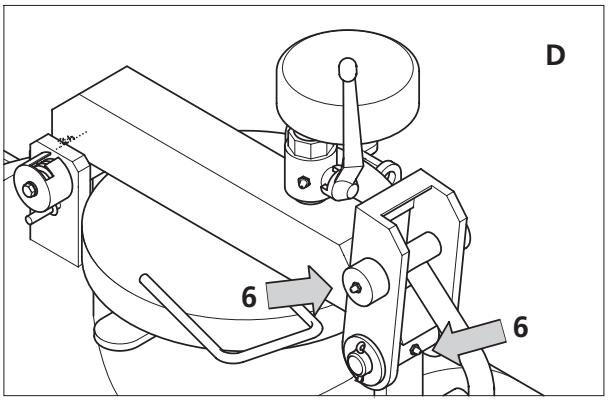
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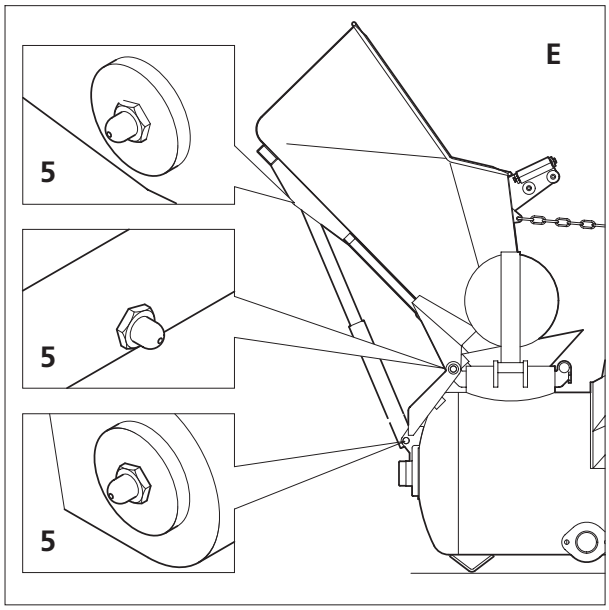
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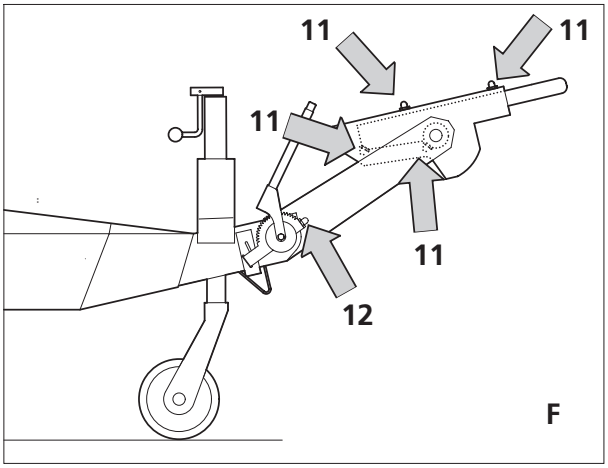
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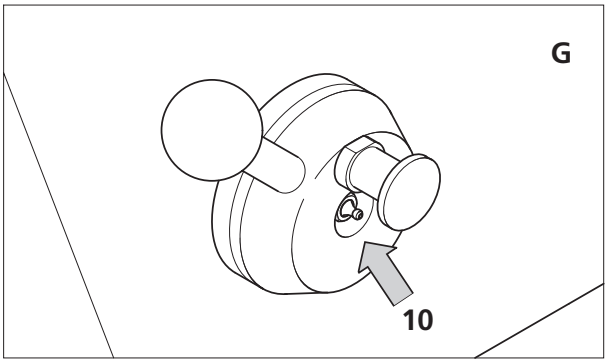
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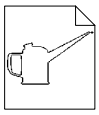
Central lubricating system

This maintenance chart describes how to refill the central lubrication system. Fill up the distributor when the level approaches the min. mark. One grease filling is sufficient for approx. one year. Use only the grease specified in *Chapter 7.5 Operating materials - lubricating grease*.



No further maintenance cards are required

No special tools required

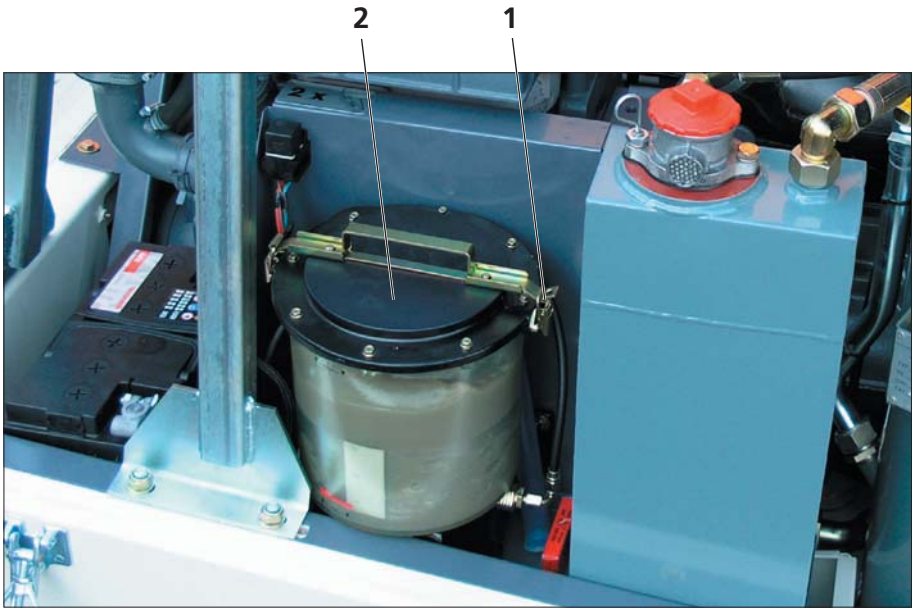
Caution

Cleanliness is of utmost importance when filling the central lubrication system. Prevent dirt or other impurities from entering the central lubrication system. Even small particles could damage the mixing shaft bearing. Try to avoid air pockets in the central grease distributor as this could have a negative influence on lubrication.

Preparation

Complete the following tasks before filling the central lubrication system:

▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*



Filling the grease distributor

Proceed as follows to fill the distributor on the central lubrication system:

- ▶ Open the fastening latch (**1**) on the distributor cover (**2**)
- ▶ Lift up the cover (**2**) on the distributor.
- ▶ Open the lid on the grease cartridge (**3**) and position upside down with the opening over the distributor.
- ▶ Pull the opening lug on the grease cartridge (**3**).
- ▶ Press the grease into the distributor using the handle on the grease cartridge (**3**) .
- ▶ Remove the empty grease cartridge (**3**).
- ▶ Close the cover (**2**) on the distributor again.
- ▶ Lock the cover (**2**) with the fastening latch (**1**).
- ▶ Perform a function check.

Function check

Proceed as follows to perform a function check on the central lubrication system:

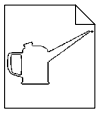
- ▶ Remove the cover on the machine control panel to make the central lubrication system accessible (digital control).

- ▶ Switch on the machine and start the engine. The mixing mechanism should start to rotate shortly afterwards. If not, press the mixing mechanism button to activate the mixing mechanism.

- ▶ Press and hold the central lubrication system button until grease visibly escapes from the mixing shaft bearings.
- ▶ Switch off the machine.
- ▶ Replace the cover on the machine control.

Battery

This maintenance card describes all maintenance work required for the battery. Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals.



No further maintenance cards are required

No special tools required

Danger

The gases emitted by the battery are explosive. Avoid lighting naked flames or producing sparks near the battery.

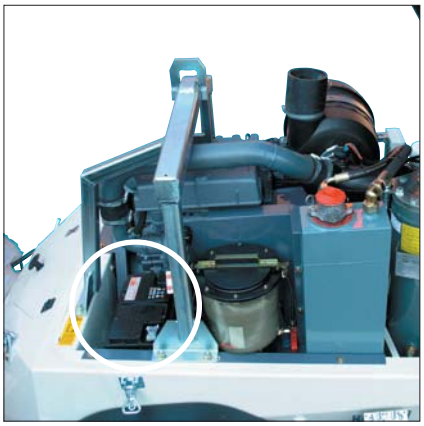
The electrolyte used in the battery is a caustic sulphuric acid solution. Do not allow acid to come into contact with your eyes, skin or clothing. If acid comes into contact with the skin, rinse off with plenty of water. If acid gets in your eyes, rinse immediately with cold, clear water and then consult a doctor.

Note

The battery is located at the bottom right under the machine hood

Protective equipment

Always wear protective goggles and suitable protective gloves when working with sulphuric acid or an open battery.
These will protect you from possible burns.



Preparation

Complete the following tasks before maintaining the battery:

- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Checking the acid level

Fill the battery with electrolyte up to the mark or approx. 10-15 mm above the lead plates. Proceed as follows to check the acid level:

- ▶ Put on protective equipment.
- ▶ Open all the cells in the battery and check the acid level visually.
- ▶ If required, fill the cells with distilled water up to the mark or approx. 10-15 mm above the lead plates.
- ▶ Close all the cells again; your protective equipment is no longer required.

Charging the battery

This section describes how to recharge the battery using a standard charger. Read the operating instructions accompanying the charger. Charge slowly, if possible. Calculate a safe charging current in A by dividing the battery capacity in Ah by 20.
Proceed as follows to charge the battery.

- ▶ Disconnect both battery cables.
- ▶ Put on protective equipment.
- ▶ Open all the cells in the battery, check the acid level visually and fill with distilled water, if necessary.
- ▶ Connect the charger to the battery and allow battery to charge (see operating instructions accompanying the charger).
- ▶ Disconnect the battery when charged.
- ▶ Check the acid level in each cell visually and fill with distilled water, if necessary.
- ▶ Close all the cells on the battery again. Your protective equipment is no longer required.
- ▶ Reconnect both battery cables.

Battery maintenance

This section describes how to maintain the battery for a long useful life.

- ▶ Keep the battery as clean and dry as possible.
- ▶ Do not place tools on the battery as they may short-circuit the terminals and damage the battery.
- ▶ Apply non-acidic terminal grease to the battery contacts.
- ▶ Connections and terminals must be tightened securely and lightly coated with paraffin.
- ▶ Maintain the electrolyte level to approx. 10-15 mm above the lead plates.

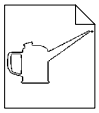
Longer machine downtimes

Observe the following points if you do not intend to operate the machine for longer periods:

- ▶ Remove the battery and store in a warm, dry place.
- ▶ Charge the removed battery at regular intervals.

Air filter on engine/compressor

This maintenance card describes how to clean and replace the collective air filter of the engine and compressor. The air filter is located centrally on the left side of the machine. Refer to the maintenance tables in *Chapter 7.2* Maintenance intervals for details of the maintenance intervals. The change intervals specified apply for normal machine use. When using the machine in an extremely dusty environment, we recommend performing changes more frequently; pay close attention to the air filter indicator lamp. Inspect new filter elements for damage/cracks. Never use damaged air filter elements.



No further maintenance cards are required

No special tools required

Caution

Never use the engine without an air filter. If you discover that the air filter is damaged, stop machine operation immediately.
Prevent dirt and other impurities from entering the oil system on the engine or compressor. Cover the air intake opening when the air filter is removed.
The compressor or engine could be damaged.

Environmental protection

Dispose of old air filters and safety cartridges in accordance with regulations.

Preparation

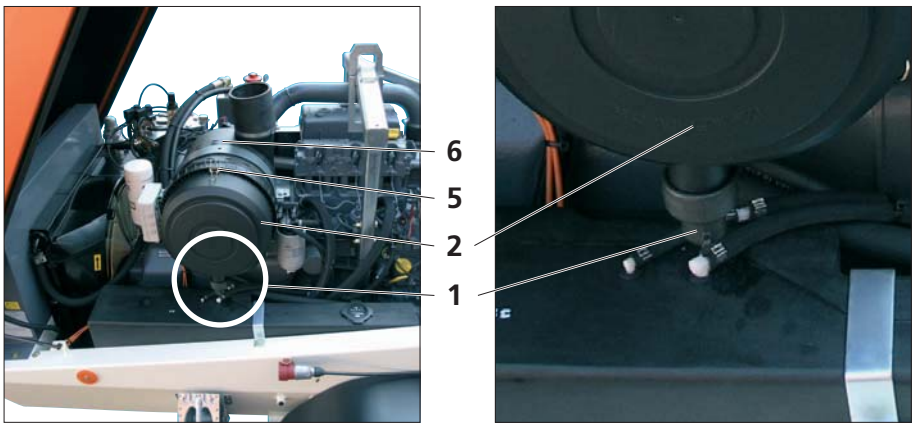
Complete the following tasks before changing the air filter:

- ▶ Align the machine horizontally.
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Cleaning the dust trap

Larger dust particles collect in the dust trap and do not therefore clog the air filter. Remove this dust as follows:

▶ Press in the dust discharge valve (**1**) on the dust trap (**2**) several times. The accumulated dust pours out. Massage the valve (**1**) slightly to dislodge any remaining dust.



Safety cartridges

A dirty safety cartridge (**3**) indicates that the air filter element is not functioning correctly. In this case, change the air filter element (**4**) and safety cartridge (**3**).

Cleaning the air filter element

The air filter element (**4**) (safety cartridge clean) can be cleaned with compressed air if only slightly dirty. The pressure should not exceed 5 bar. Keep the nozzle at a reasonable distance from the filter element (**4**) so as not to damage the element during cleaning.

▶ Release the three spring clips (**5**) on the filter casing (**6**).

▶ Remove the dust trap (**2**).

▶ Remove the air filter element (**4**) and cover the air intake opening to prevent dust from entering.

Continued on next page

▶ Use compressed air to blow the dust against the normal air flow direction and out of the filter element (**4**). Inspect the air filter element (**4**) for damage. Replace damaged filter elements immediately.

Caution

Wear respiratory protection and a face mask to protect against dust particles. Dust particles could get in your eyes or enter your respiratory passage.

▶ If necessary, clean the filter casing (**6**) and dust trap (**2**) with a slightly moist lint-free cloth. Make sure that the sealing surfaces are clean.

Caution

Never use flammable liquids or solvents to clean.
When cleaning the filter casing, make sure that dirt does not enter the air intake opening. Dirt could be drawn in, enter the compressor oil and engine oil system and cause damage.

▶ Remove the cover over the air intake opening. Insert the filter element (**4**) again.

▶ Insert the dust trap (**2**) and secure with the spring clips (**5**). The dust discharge valve (**1**) must point downwards.

Changing the air filter element

Replace the air filter element (**4**) and the safety cartridge (**3**) if the safety cartridge becomes dirty or during scheduled maintenance at the latest. Proceed as follows:

▶ Release the three spring clips (**5**) on the filter casing (**6**).

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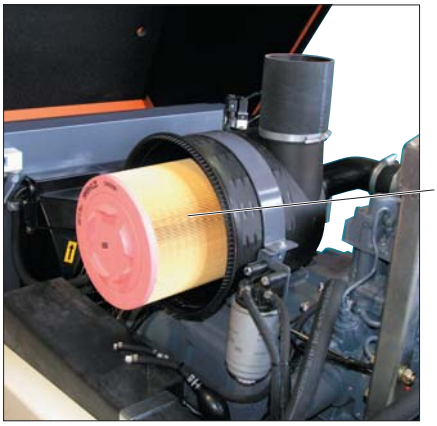


- ▶ Remove the dust trap (**2**).
- ▶ Remove the filter element (**4**) and the safety cartridge (**3**), and cover the air intake opening to prevent dust from entering.
- ▶ If necessary, clean the filter casing (**6**) and dust trap (**2**) with a slightly moist, lint-free cloth. Make sure that the sealing surfaces are clean.

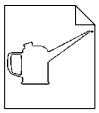
Caution

Never use flammable liquids or solvents to clean.
When cleaning the filter casing, make sure that dirt does not enter the air intake opening. Dirt could be drawn in, enter the compressor oil and engine oil system and cause damage.

- ▶ Check the new filter element (**4**) and the new safety cartridge (**3**) for damage. Never install damaged air filter elements and safety cartridges.
- ▶ Remove the cover over the air intake opening. Insert the new air filter element (**4**) and new safety cartridge (**3**).
- ▶ Insert the dust trap (**2**) and secure with the spring clips (**5**). The dust discharge valve (**1**) must point downwards.

Fuel filter

This maintenance chart describes how to change the fuel filter. The fuel filter is located centrally on the right side of the machine next to the air filter. Refer to the maintenance tables in *Chapter 7.2* Maintenance intervals for details of the maintenance intervals.



No further maintenance cards are required

The following special tools are required:
Suitable wrench for the fuel filter

Danger

Avoid naked flames, naked light or ignitable sparks when changing the fuel filter. Danger of fire.

Note

Prevent dirt and other impurities from entering the fuel system on the machine.

Environmental protection

Collect any escaping fuel. Avoid fuel spillages.

Preparation

Complete the following tasks before changing the fuel filter:

- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Changing the fuel filter

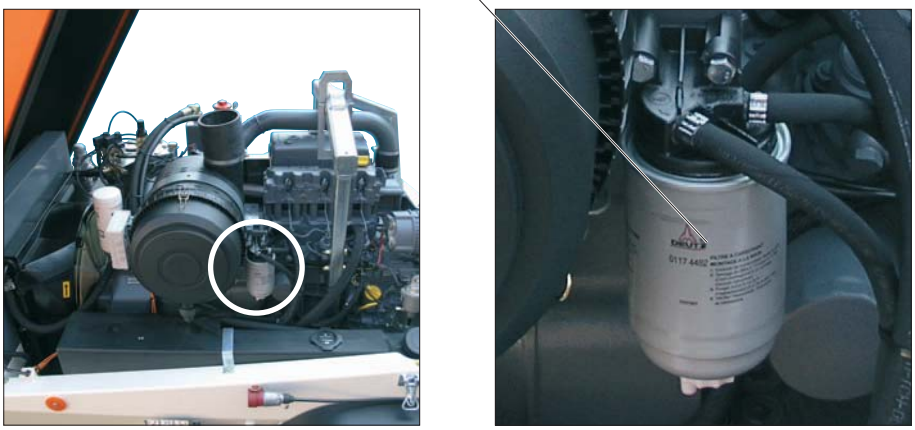
Proceed as follows to change the fuel filter:

- ▶ Have a suitable container ready.
- ▶ Unscrew the fuel filter (**1**) using the filter wrench and remove.
- ▶ Allow the fuel in the fuel filter (**1**) to collect in the container. Dispose of used fuel filters (**1**) in accordance with regulations.
- ▶ If required, clean the sealing surface on the filter seat with a clean, lint-free cloth.
- ▶ Apply a light coating of oil to the sealing surface and the seal on the new fuel filter (**1**) and fill the filter (**1**) with some diesel fuel.
- ▶ Screw on the fuel filter (**1**) by hand until the seal touches the filter seat.
- ▶ Then tighten the fuel filter (**1**) (read the information on the filter cartridge).

Check for leaks

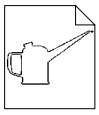
The following checks are necessary after changing the fuel filter:

- ▶ Start the machine and the engine, and allow to run for approx. 2 minutes.
- ▶ Inspect the fuel filter seal for leaks.
- ▶ Shut down the machine before starting work.*Chapter 7.6 Shutting down the machine.*
- ▶ Seal up any leaks that may occur.



Oil cooler

This maintenance card describes how to clean the engine oil cooler and the compressor oil cooler. Refer to the maintenance tables in *Chapter 7.2* Maintenance intervals for details of the maintenance intervals. Both cooling elements are fitted at the front of the machine next to one another and supplied with cooling air by the fan.



No further maintenance cards are required

No special tools required

Danger

The oil cooler may be extremely hot if the machine has just stopped operating.
Risk of burning.
Clean the oil cooler only when the machine is cold.

Caution

If you decide to clean the oil cooler using water, make sure that water does not enter the oil systems, the air system or the electronics. Cover or seal off all relevant openings and components on the machine beforehand to protect them from damage.

Do not set the air or water pressure too high and keep the nozzle on the cleaning equipment at a reasonable distance from the cooling elements. Do not spray the cooling fins on the oil cooler at an angle (only in the direction of air flow). The cooling fins may bend and the cooling elements will then be damaged.

Preparation

Complete the following tasks before cleaning the oil cooler:

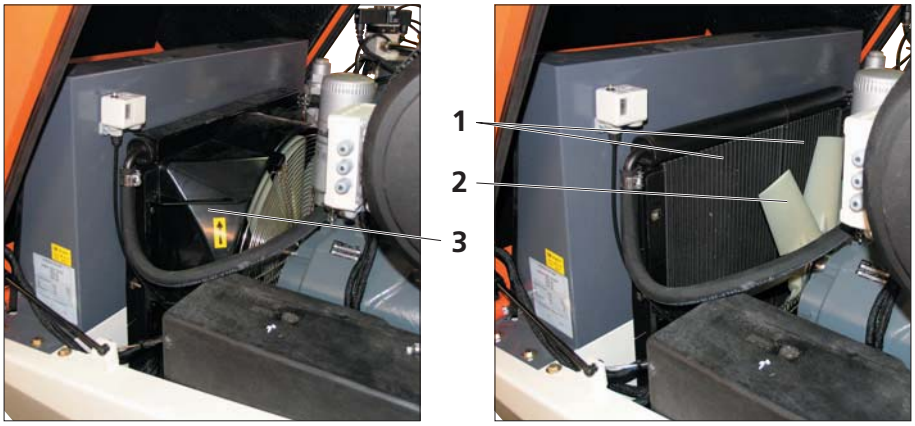
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*
- ▶ Unscrew the top cover (**3**) on the fan (**2**) to make both cooling elements (**1**) accessible (2 screws).

- ▶ Wear protective goggles. Dust or dirt particles may get in your eyes when cleaning with compressed air, high-pressure cleaners or steam jets.

Cleaning the oil cooler (external)

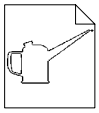
Clean the oil cooler (**1**) as follows:

- ▶ Blow any light dirt from the fins on the cooling elements (**1**) with compressed air (low pressure).
- ▶ Wash larger amounts of dirt off the fins on the oil cooler (**1**) with water. You may also use pressure washer and steam jets (low pressure).
- ▶ Clean the fan (**2**) and fan housing with a slightly moist lint-free cloth.
- ▶ After cleaning with the moist cloth, blow the oil cooler (**1**) with compressed air (low pressure).
- ▶ Fit the cover (**3**) back on the fan (**2**).



Engine oil / Engine oil filter

This maintenance card describes how to check the engine oil level and change the engine oil and the engine oil filter.
Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals. The intervals specified apply for normal machine use. When operating the machine at high ambient temperatures in very dusty or humid conditions, more frequent oil changes are recommended. Use only engine oils specified in *Chapter 7.5 Operating materials - engine*.



No further maintenance cards are required

The following special tools are required:
Oil filter wrench suitable for engine oil filters

Danger

Take care when draining the oil or changing the oil filter. Drained oil may be extremely hot. Risk of scalding. Use the drain hose.

Note

Prevent dirt and other impurities from entering the oil system on the engine. Change the oil once the engine has warmed up. It is appropriate to change the oil and oil filter at the same time.

Environmental protection

Always collect the old engine oil. Avoid oil spillages. Dispose of the collected oil and used oil filter in accordance with regulations.

Preparation

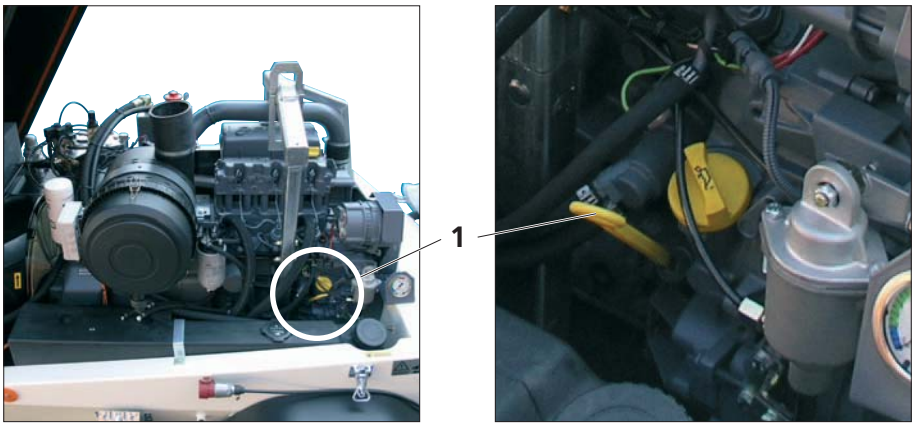
Complete the following tasks before changing the engine oil filter or engine oil:

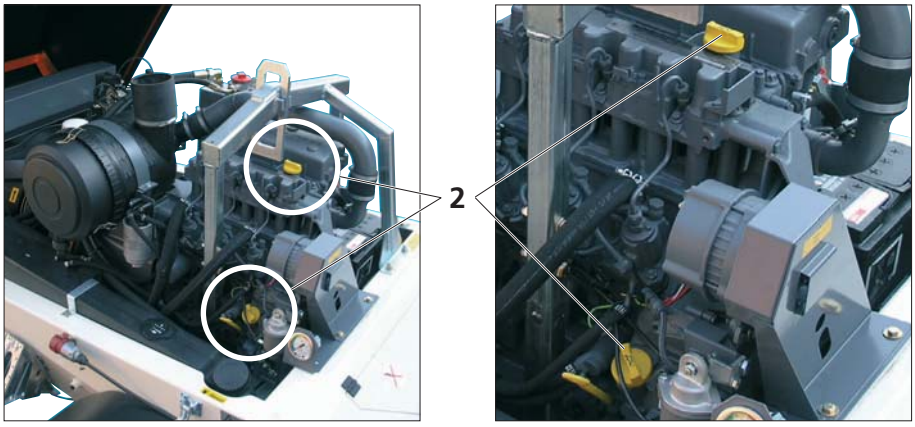
- ▶ Align the machine horizontally.
- ▶ Start the machine and allow the engine to warm up to operating temperature.
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Checking the engine oil level.

This section describes how to check the engine oil level. The oil level should be close to the maximum mark and should not be lower than the mark on the dipstick. Proceed as follows to check the oil level:

- ▶ Pull out the engine oil dipstick (**1**) and wipe with a clean, lint-free cloth.
- ▶ Insert the dipstick (**1**), push in as far as possible and pull out again.
- ▶ Check the oil level on the dipstick (**1**).





Topping up the engine oil

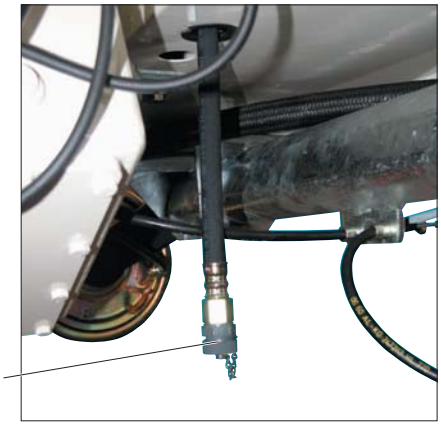
This section describes how to top up the engine oil. Proceed as follows:

- ▶ Open the engine oil filler neck (**2**).
- ▶ Fill with engine oil up to the maximum mark (*7.5 Operating materials - engine*). As a precaution, use the same engine oil that you are already using in the machine. Note down the exact oil grade.
- ▶ Check the oil level. Only fill up to the maximum mark.
- ▶ Close the filler neck (**2**) tightly.

Changing the engine oil

Proceed as follows to change the engine oil:

- ▶ Place a suitable container under the oil drain valve (**3**) on the engine.
- ▶ Open the protective cap on the oil drain valve (**3**) and screw on the oil drain hose. The oil will begin to flow as soon as the hose is attached. Open the oil filler (**2**) to accelerate the draining process.
- ▶ Unscrew the oil drain hose once the oil has drained completely. Screw the protective cap back onto the oil drain valve (**3**).
- ▶ Fill fresh engine oil into the filler neck (**2**). *7.5 Operating materials - engine*.
- ▶ Check the engine oil level.
- ▶ Close the filler neck (**2**) tightly.
- ▶ Inspect for leaks.

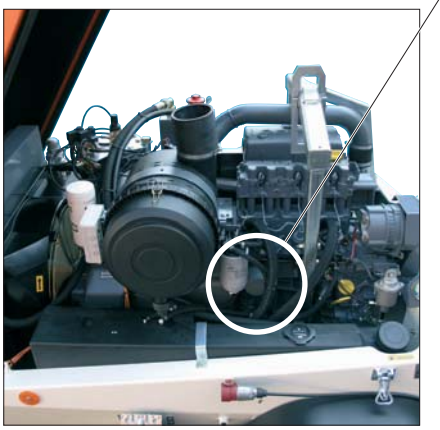


Changing the engine oil filter

Proceed as follows to change the engine oil filter:

- ▶ Have a suitable container ready to collect the used oil.
- ▶ Loosen the filter cartridge (**4**) using a suitable oil filter wrench and unscrew. Collect the escaping oil in the container.
- ▶ Dispose of the old filter cartridge (**4**) and collected oil in accordance with regulations.
- ▶ Clean any dirt from the sealing surface on the filter carrier. Make sure that dirt does not enter the oil system.
- ▶ Apply a light coating of oil to the seal on the new filter cartridge (**4**).
- ▶ Screw on the new filter cartridge (**4**) by hand until the seal rests on the sealing surface.
- ▶ Tighten the filter cartridge (**4**) another half a turn.
- ▶ Check the engine oil level, top up if necessary.
- ▶ Inspect for leaks.

4



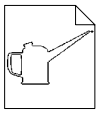
Check for leaks

The following checks are necessary after changing the engine oil or engine oil filter:

- ▶ Start the machine and allow to run for approx. 2 minutes.
- ▶ Inspect the oil drain plugs and oil filter seal for leaks.
- ▶ Shut down the machine again. *Chapter 7.6 Shutting down the machine.*
  Seal up any leaks that may occur.
- ▶ Check the engine oil level and top up, if necessary.

Compressor oil / Compressor oil filter

This maintenance card describes how to check the compressor oil level and change the compressor oil and the compressor oil filter. The compressed air tank and the compressor oil tank on the machine are one and the same. Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals. The intervals specified apply for normal machine use. When operating at high ambient temperatures in very dusty or humid conditions, more frequent oil changes are recommended. Use only compressor oils specified in *Chapter 7.5 Operating materials - compressor*.



No further maintenance cards are required

The following special tools are required:
Oil filter wrench suitable for compressor oil filters

Danger

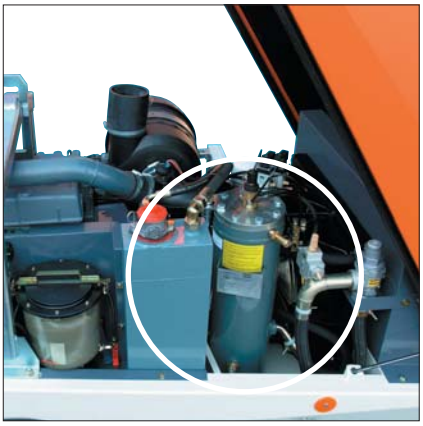
Take care when draining the oil or changing the oil filter. Drained oil may be extremely hot. Risk of scalding. Use the drain hose.
Never open the compressed air tank while still pressurised. Never work on the compressor or the compressor oil system before the compressed air tank has been depressurised.

Note

Prevent dirt and other impurities from entering the oil system on the compressor. Change the oil once the compressor has warmed up. It is appropriate to change the oil and oil filter at the same time.

Environmental protection

Always collect the old compressor oil. Avoid oil spillages. Dispose of the collected oil and used oil filter in accordance with regulations.



Preparation

Complete the following tasks before changing the compressor oil filter or compressor oil:

- ▶ Align the machine horizontally.
- ▶ Measure the compressor oil level, preferably when the machine is warm (approx. 40 °C). Start the machine and allow the engine to run for 20-30 minutes.
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

- ▶ Always wear a face mask and protective gloves when working with compressor oil. Compressor oil is toxic and can penetrate the skin.

Checking the compressor oil level

This section describes how to check the compressor oil level. The inspection glass with float should indicate an oil
level in the top green area. Do not allow the oil level to fall into the bottom red area. Proceed as follows to check the oil level:

- ▶ Check the compressor oil level at the inspection glass (**1**) on the compressed air tank. The inspection glass should indicate an oil level in the top green area.

Topping up compressor oil

This section describes how to top up the compressor oil. Proceed as follows:

- ▶ Make sure that the compressed air tank is depressurised.
- ▶ Open the compressor oil filler neck (**2**) on the compressed air tank one turn. This will allow any residual pressure to escape safely.
- ▶ Then open the filler neck (**2**) completely.

1

2

- ▶ Fill compressor oil up to the top green area on the inspection glass (*7.5 Operating materials - compressor*). As a precaution, use the same compressor oil that you are already using in the machine. Note down the exact oil grade.
- ▶ Check the compressor oil level. Do not fill above the green area. Excessive oil increases oil consumption.
- ▶ Close the filler neck (**2**) tightly.

Changing the compressor oil

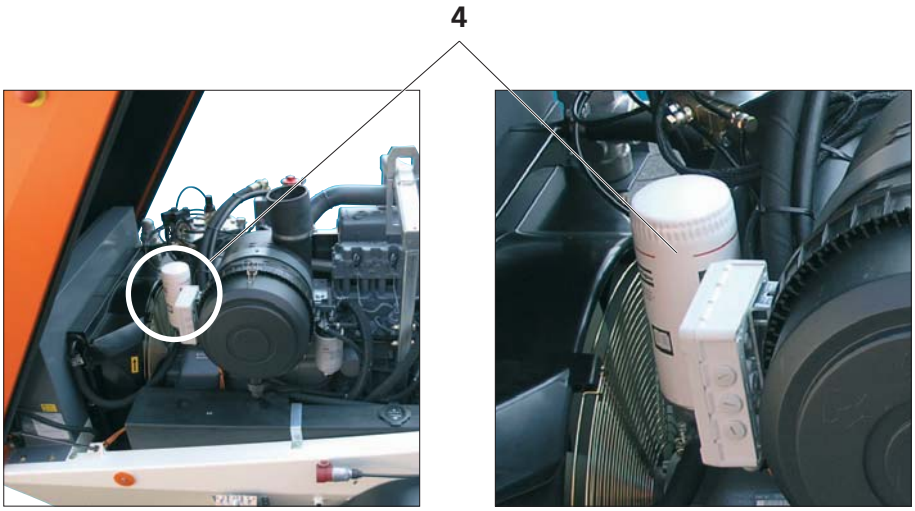
Proceed as follows to change the compressor oil:

- ▶ Start the engine and allow the compressor to heat to operating temperature. Shut down the machine before starting work.*Chapter 7.6 Shutting down the machine*.
- ▶ Make sure that the compressed air tank is depressurised.
- ▶ Place a suitable container under the oil drain plug (**3**) on the compressor and the compressor oil cooler.
- ▶ Unscrew the oil drain plug (**3**). The old compressor oil drains out. Open the oil filler (**2**) to accelerate the draining process.
- ▶ Once the oil has drained completely, screw in the oil drain plug (**3**) with a new sealing washer and tighten (torque 55 Nm).
- ▶ Fill fresh compressor oil into the filler neck (**2**) (*7.5 Operating materials - compressor*). Check the compressor oil level.
- ▶ Close the filler neck (**2**) tightly.
- ▶ Inspect for leaks.

Changing the compressor oil filter

Proceed as follows to change the compressor oil filter:

- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*
- ▶ Make sure that the compressed air tank is depressurised.
- ▶ Have a suitable container ready to collect the used oil.
- ▶ Loosen the filter cartridge (**4**) using a suitable oil filter wrench and unscrew. Collect any escaping oil in the container.
- ▶ Dispose of the old filter cartridge (**4**) and collected oil in accordance with regulations.
- ▶ Clean any dirt from the sealing surfaces on the filter carrier. Make sure that dirt does not enter the oil system.
- ▶ Apply a light coating of oil to the seal on the new filter cartridge (**4**).
- ▶ Screw on the new filter cartridge (**4**) by hand until the seal rests on the sealing surface.
- ▶ Tighten the filter cartridge (**4**) another half a turn.
- ▶ Check the oil level.
- ▶ Inspect for leaks.



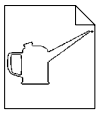
Check for leaks

The following checks are necessary after changing the compressor oil or compressor oil filter:

- ▶ Start the machine and allow the compressor to run for approx. 2 minutes under no load.
- ▶ Inspect the oil drain plugs and oil filter seal for leaks.
- ▶ Shut down the machine again. *Chapter 7.6 Shutting down the machine.*
- ▶ Make sure that the compressed air tank is depressurised.
- ▶ Seal up any leaks that may occur.
- ▶ Check the compressor oil level and top up, if necessary.

Loader/Scraper hydraulic system

This maintenance chart describes how to change the hydraulic fluid. Refer to the maintenance tables in *Chapter 7.2* Maintenance intervals for details of the maintenance intervals. Use only hydraulic fluids specified in *Chapter 7.5 Operating materials - hydraulic system*. The hydraulic fluid tank is located centrally on the right side of the machine.



No further maintenance cards are required

No special tools required

Note

When maintaining hydraulic systems, cleanliness is of the utmost importance. Prevent dirt or other impurities from entering the hydraulic system. Never leave the tank lid off for longer than necessary.
Small particles in the oil may scratch valves, cause pumps to seize and clog restrictors and control bores.

Environmental protection

Always collect the old hydraulic fluid. Avoid fluid spillages. Dispose of the collected fluid in accordance with regulations.

Protective equipment

Always wear protective gloves and protective goggles when performing work that may involve coming into contact with hydraulic fluid. Hydraulic fluid is toxic and can penetrate the skin.

Preparation

Complete the following tasks before changing the hydraulic fluid:

- ▶ Align the machine horizontally.
- ▶ If the machine is cold, start the engine and allow to run for a short time so that the hydraulic fluid warms up and becomes less viscous.
- ▶ Swivel down the loader on the machine so that all the hydraulic fluid flows back into the hydraulic fluid tank. *Chapter 5.5 Operating the loader*
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine*.

Checking the hydraulic fluid level

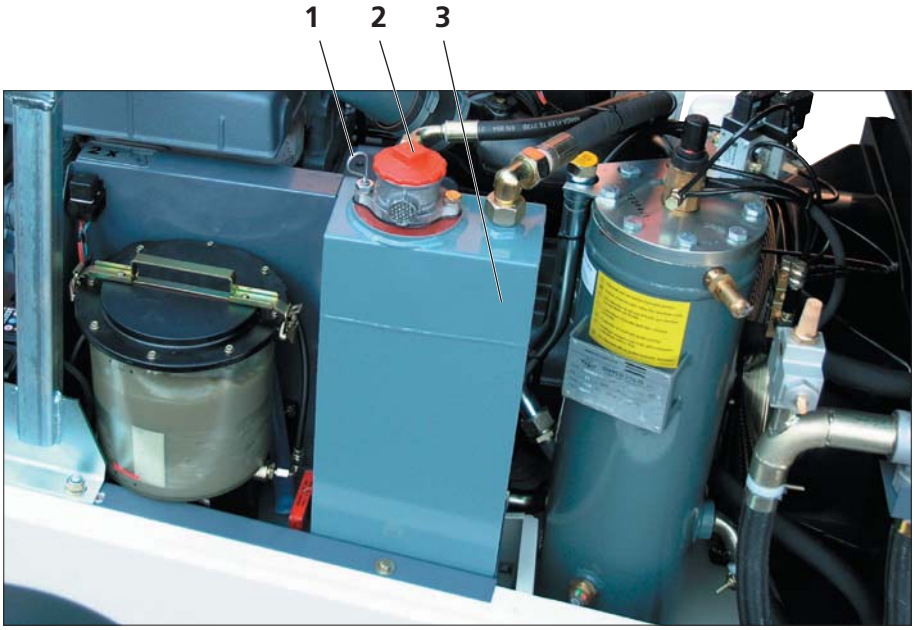
This section describes how to check the hydraulic fluid level. The fluid level should be close to the maximum mark and should not be lower than the mark on the dipstick.
Proceed as follows to check the fluid level:

- ▶ Pull the dipstick (**1**) from the hydraulic fluid tank (**3**) and clean with a clean, lint-free cloth.
- ▶ Reinsert the dipstick (**1**), pull out again and check the oil level. The oil level should be close to the maximum mark on the dipstick (**1**).
- ▶ Reinsert the dipstick (**1**)

Topping up hydraulic fluid

This section describes how to top up the hydraulic fluid. Proceed as follows:

- ▶ Put on protective equipment.
- ▶ Open the hydraulic fluid filler neck (**2**).
- ▶ Fill with hydraulic fluid up to the maximum mark (*7.5 Operating materials - hydraulic system*). As a precaution, use the same hydraulic fluid that you are already using in the machine. Note down the exact fluid grade.
- ▶ Check the fluid level. Only fill up to the maximum mark.
- ▶ Close the filler neck (**2**) tightly.



Changing the hydraulic fluid

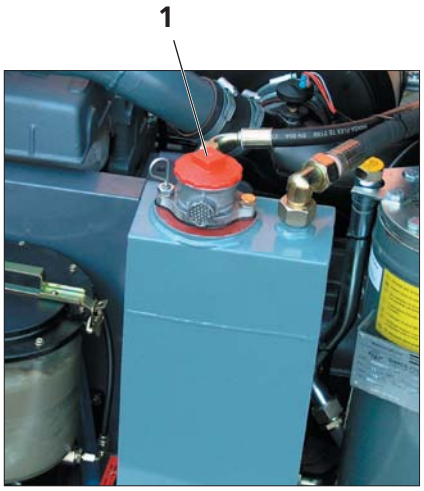
Proceed as follows to change the hydraulic fluid:

- ▶ Place a suitable collecting container under the drain plug on the hydraulic tank.
- ▶ Unscrew the drain plug. The old hydraulic fluid drains out. Open the filler neck (**2**) to accelerate the draining process.
- ▶ Once the fluid has drained completely, screw in the oil drain plugs with new sealing washers and tighten (torque 55 Nm).
- ▶ Fill fresh hydraulic fluid into the filler neck (*7.5 Operating materials - hydraulic system*). Only fill up to the maximum mark.
- ▶ Check the hydraulic fluid level.
- ▶ Close the filler neck tightly.

Changing the hydraulic fluid filter

Proceed as follows to change the hydraulic fluid filter:

- ▶ Have a suitable oil drip tray ready and put on all necessary protective equipment.
- ▶ Open the filler neck (**1**).
- ▶ Pull the hydraulic fluid filter out of the hydraulic fluid tank. Collect the escaping fluid in the container. Dispose of the fluid and used fluid filter in accordance with regulations.
- ▶ Insert the new hydraulic fluid filter into the hydraulic fluid tank.
- ▶ Close the filler neck (**1**) again.
- ▶ Perform a function check.



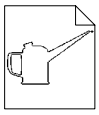
Function check

Proceed as follows to perform a function check:

- ▶ Switch on the machine and start the engine. Wait until the mixing mechanism begins to operate.
- ▶ Push the loader lever carefully to the right to swivel the loader up slowly.
- ▶ If you do not encounter any problems when doing this, swivel the loader up and down several times to ensure it will function correctly during normal operation.
- ▶ When the loader is down, pull the scraper out a few metres and wind up the cable again by actuating the scraper remote control (scraper winch is operated hydraulically).
- ▶ Check the hydraulic fluid level and top up the hydraulic fluid as required.

Check valves

This maintenance card describes how to clean the check valves in the air system on the machine. Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals.



No further maintenance cards are required

No special tools required

Caution

Shut down the machine and depressurise the compressed air tank before starting work on the air system.

Preparation

Complete the following tasks before starting maintenance work on the check valves:

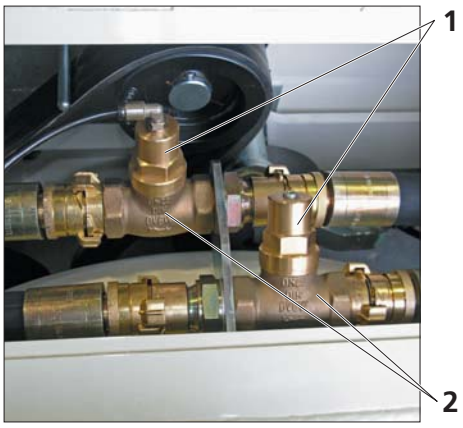
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Position of the check valves

The check valves are located under the maintenance flap on top of the mixing tank and prevent the material from reaching the shut-off valves on the header and flotation air lines.

Cleaning the check valves Proceed as follows to clean the check valves:

- ▶ Unscrew the cover connection (**1**) on the check valves (**2**) and remove the cover. Remove the sealing pistons and compression springs if necessary.
- ▶ Rub off soft dirt with a cloth.
- ▶ Scrape out any hard, solidified dirt.
- ▶ Insert the sealing pistons and compression springs again and screw the covers (**1**) back onto the check valves.



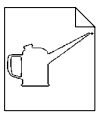
Replacing the sealing pistons and compression springs

Proceed as follows to change the sealing pistons and compression springs:

- ▶ Unscrew the cover connection (**1**) on the check valves (**2**) and remove the cover.
- ▶ Remove the old sealing pistons and compression springs.
- ▶ Insert the new sealing pistons and compression springs.
- ▶ Screw the cover (**1**) back on.

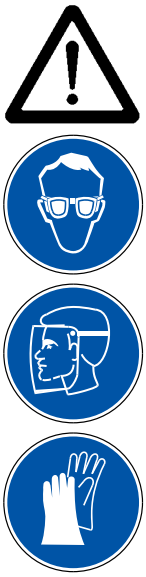
Tank outlet

The tank outlet is subject to natural wear. In a state of advanced wear, a blind hole will open up on the tank outlet and allow air to escape. The tank outlet must be replaced as soon as air starts to escape from a blind hole. Refer to the maintenance tables in *Chapter 7.2* Maintenance intervals for details of the maintenance intervals.



No further maintenance cards are required

No special tools required



Danger

Never release the hose couplings while the mixing tank is still operating and pressurised. Material could escape under pressure and cause serious injury, in particular to the eyes.
Make sure that the mixing tank is depressurised (automatic lever in top position or air vent cock open). Check the pressure gauge to see whether the mixing tank is actually depressurised.
Even if the tank is depressurised, the delivery line may still be pressurised and material could spray out when the hose coupling is released. Therefore, always wear protective goggles, cover the coupling before releasing and avert your eyes while disconnecting the hose coupling. Make sure that other personnel are not at risk.
If material gets in your eyes in spite of all precautionary measures, rinse them immediately under a tap and then consult a doctor.

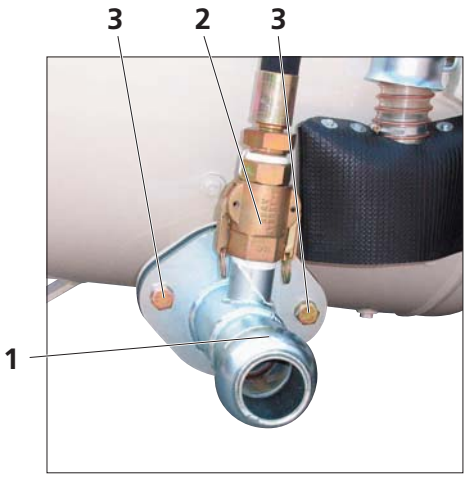
Preparation

Complete the following tasks before changing the tank outlet:

- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*
- ▶ Make sure that the mixing tank is depressurised. Always observe the danger warnings before disconnecting hose couplings.
- ▶ Clean the mixing tank.

Changing the tank outlet Proceed as follows to change the tank outlet:

- ▶ Unscrew the connecting piece (**1**) and check for wear. You can keep the connecting piece (**1**) for future use.
- ▶ Detach the bottom air hose (**2**) from the tank outlet.
- ▶ Unscrew the screws (**3**) and remove the old tank outlet.
- ▶ Check the seal. Faulty/perforated seals must be replaced.
- ▶ Insert the new tank outlet and secure with the screws (**3**). The flotation air connection must face upwards.
- ▶ Connect the bottom air hose (**2**) back to the tank outlet.
- ▶ Screw a connecting piece (**1**) to the tank outlet.
- ▶ When operating for the first time after the change, inspect the tank outlet, the flotation connection and the connection piece for leaks. If you identify a leak, shut down the machine and repair the leak.



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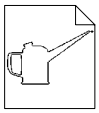
Hoses

This maintenance card describes how to check the hoses and replace faulty hoses. Refer to the maintenance tables in *Chapter 7.2 Maintenance intervals* for details of the maintenance intervals.



No further maintenance cards are required

No special tools required

Note

Replace the hoses, if damaged only slightly or at the smallest sign of imminent damage.
Consider the effect of strong sunlight, the action of heat and the effects of chemicals.

Caution

There is an increased risk of injury when the machine is operated with the hood open. There is a risk of burns from hot machine components. Make sure that machine does not pose any kind of danger when open.

Do not operate the machine with the hood open for longer than necessary. Machine cooling is at its most efficient when the hood is closed.

Preparation

Complete the following tasks before inspecting the hoses:

- ▶ Start the machine before inspecting the hoses. Leaks in the air lines can be detected only when the machine is running, leaks in the oil lines are easy to spot.
- ▶ When checking the hoses while the machine is running (e.g. the air lines), do not reach into moving machine parts and remember to avoid touching hot machine surfaces.
- ▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

Checking the hoses

Dark or moist areas on the hoses are the first sign of impending damage to oil system hoses. Watch out for oil escaping from the hoses or hose connections.
Never check hoses on the air system with your hands. Air could escape suddenly under pressure and cause serious injury; use a leak tester spray.

▶ Inspect all hose lines and their connections.
Check for the following:
– Escaping oil / air (hoses and connections)
– Moist or dark areas (oil systems, hoses)
– Kinks, cracks or perforated surface (hoses)
– Hoses must not rest against other components. Hoses resting against other components
could become damaged while the machine is running.

▶ Do not operate the machine with the hood open for longer than necessary. Close the hood or switch off the machine after the inspection.

Changing the hoses

Shut down and depressurise the machine before performing any work on it.

▶ Make sure that the compressed air tank is depressurised.

▶ If necessary, drain oil from the affected system. Replace faulty hoses. Collect any residual oil in the line in a suitable container.

▶ Install a new line. When installing new oil lines, check the oil level and top up with oil if necessary.

▶ Inspect for leaks.

Check for leaks

The following checks are necessary after changing hoses:

▶ Start the machine and the engine, and allow to run for approx. 2 minutes.

▶ Inspect the new hoses and their connections for leaks.

▶ Shut down the machine before starting work. *Chapter 7.6 Shutting down the machine.*

▶ Seal up any leaks that may occur.

CE

The **DC 260 45/55, B and BS** fulfil:

- 98/37/EC Machinery Directive
- 89/336/EEC Electromagnetic compatibility in version 93/31/EEC
- 73/23/EEC Low Voltage Directive

The Brinkmann **DC 260 45/55 machine, models B and BS** were developed, designed and built in full compliance with the above EC directive in the sole responsibility of:

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The following harmonised standards were applied:

- EN 292-1 Safety of machinery - Basic concepts, general principles for design; Part 1: Basic terminology, methodology
- EN 292-2 Safety of machinery - Basic concepts, general principles for design; Part 2: Technical principles and specifications
- DIN EN 809 Pumps and pump units for liquids - Common safety requirements
- DIN EN 12001 Delivery, spraying and distributing machines for concrete and mortar
- DIN EN 13445 Unfired pressure vessels
- EN 60204-1 Safety of machinery - Electrical equipment of machines; Part 1: General requirements

The technical documentation is available in full. The operating manual for the machine is available.

Schloss Holte,
Germany, 29.08.2005

(Qualified engineer, Stefan Brinkmann)
Managing Director

Order

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MASCHINENFABRIK GMBH & CO. KG

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- Ersatzteilservice -
An der Heller 4 – 12

33758 Schloß Holte

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Delivery type ☐ Complete delivery only* ☐ Part deliveries possible*

* Place a cross as applicable

Machine type _____ **Chassis no.** _____

We order in line with the Brinkmann conditions of sale and payment available to us:

Item no.	Designation	Quantity

Date _____ Signature _____

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