

OPERATING MANUAL

QC quick coupler



- QC01M / SHF / HF
- QC03M / SHF / Hp
- QC08M / Hp
- QC10M
- QC21/25M

IMPRINT

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1. GENERAL INFORMATION

1.1 Foreword

Keep this manual in the vehicle. If the operating manual gets lost: Please arrange for a replacement immediately. Before using the quick coupler, read the instructions carefully.

Observance of the operating manual:

- helps to avoid dangers.
- increases reliability during use.
- increases the service life of the product.
- reduces maintenance costs and downtime.

1.2 Information on the operating manual

This operating manual provides you with important information on handling the product. The prerequisite for safe working is compliance with all specified safety instructions and handling instructions. In addition, observe the local accident prevention regulations and general safety regulations applicable to the area of use of the product.

Therefore the following applies:

- Before you start working with the product, read this operating manual thoroughly!
- Make the operating manual accessible to staff at all times!
- Make the operating manual available when passing the product on to third parties!

In addition to this operating manual, the operating manuals for the installed components in the appendix also apply. Observe the instructions contained therein – especially the safety instructions!






To improve visualisation and explanation of the facts, the figures in this operating manual are not necessarily to scale and may differ slightly from the actual design of the product.

1.3 Explanation of symbols

Warnings are labelled with symbols in this operating manual. The instructions are introduced by signal words which express the extent of the hazard.

Always follow the instructions and act with caution to avoid accidents, personal injury and damage to property.

1. GENERAL INFORMATION

Signal word		Meaning
DANGER!		This combination of symbol and signal word indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING!		This combination of symbol and signal word indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.
CAUTION!		This combination of symbol and signal word indicates a potentially hazardous situation which, if not avoided, may result in minor or slight injuries.
NOTICE!		This combination of symbol and signal word indicates a potentially hazardous situation which, if not avoided, may result in damage to property and the environment.
ENVIRONMENT!		This combination of symbol and signal word indicates a potentially hazardous situation which, if not avoided, may result in damage to property and the environment.

1. GENERAL INFORMATION

1.4 Copyright protection

Treat this operating manual as confidential. It is intended exclusively for persons working with the product. It is not permitted to hand over the operating manual to third parties without the written authorisation of the manufacturer.



NOTICE!

The content, texts, drawings, images and other illustrations are protected by copyright and are subject to industrial property rights. Any misuse is a criminal offence.

Reproduction of any kind and in any form – even in extracts – as well as the utilisation and/or communication of the content is not permitted without a written declaration from the manufacturer. Infringements will be subject to compensation. We reserve the right to make further claims.

1.5 Scope of delivery

- Quick coupler
- Operating manual
- Opening key for mechanical quick couplers

1.6 Limitations of liability

All information and instructions have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience.

HENLE Baumaschinentechnik GmbH excludes warranty and liability claims for personal injury and damage to property if they can be attributed to one or more of the following causes:

- Improper use.
- Improper assembly, commissioning.
- Operation with improperly installed or non-functional safety devices.
- Failure to observe the safety instructions and notes in the operating manual.

1. GENERAL INFORMATION

- Repairs or manipulations carried out by persons who are neither authorised nor trained to do so.
- Unauthorised structural alterations or modifications.
- Maintenance and servicing work not carried out properly and on time.
- Accessories, spare parts and additives which are the cause of damage and which have not been approved by the manufacturer. The manufacturer accepts no liability for any consequential damage.
- The manufacturer is not liable for personal injury or damage to property resulting from unauthorised and improper use of the product.

1.6.1 Spare parts



WARNING!

Risk of injury due to incorrect spare parts!

Incorrect or faulty spare parts may result in damage, malfunctions or total failure and impair safety.

Therefore:

→ Only use original spare parts from the manufacturer!

When ordering spare parts, please always state the following details:

- Quick coupler type (see rating plate)
- Serial no. and year (see rating plate)
- Designation/type of spare part

When ordering in writing, please state these details exactly or, if ordering by telephone, have the details ready before calling. This will make things easier for us and yourself and avoid errors and incorrect orders or deliveries. Further information on spare parts can also be found on our homepage: <https://www.henle-baumaschinentechnik.de/>



INFORMATION

Obtain the spare parts directly from the manufacturer:
HENLE Baumaschinentechnik GmbH
info@henle-baumaschinentechnik.de
Telephone 07345 / 9677-0

1.7 Warranty conditions

The warranty conditions can be found in the manufacturer's general terms and conditions. The manufacturer is liable only for damage to the delivered product as described in Chapter 1.4 "Limitation of liability". Liability is excluded for damage and its consequences which occur during operation.

This includes e.g. damage as a result of

- improper installation/assembly,
- improper use,
- lack of maintenance,
- lack of visual inspection.

1.8 Customer service

Our customer service is available for technical information. Information can be obtained at any time from your contact by telephone, fax, email or via our website.

In addition, our employees are constantly interested in new information and experiences which result from the application and could be valuable for improving our products.

2. Safety

This section provides an overview of all the important safety aspects for optimum protection of personnel and for safe and trouble-free operation.

Failure to observe the handling instructions and safety instructions in this manual may result in serious hazards.

2.1 Responsibility of the owner

The product is designed exclusively for the commercial sector. The owner of the product is therefore subject to the statutory occupational safety obligations.

In addition to the safety instructions in this operating manual, observe the safety, accident prevention and environmental protection regulations applicable to the area of use of the product. The following applies in particular:

- The owner must inform himself about the applicable health and safety regulations and carry out a risk assessment to determine any additional dangers arising from the specific working conditions at the product's place of use. This risk assessment must be implemented in the form of operating instructions for the operation of the product.
- During the entire period of use of the product, the owner must check whether the operating instructions, which he/she has drawn up, correspond to the current status of the regulations and, if required, adjust them.
- The owner must clearly regulate and define the responsibilities for installation, operation, maintenance and cleaning.
- The owner must ensure that all employees who work with the product have read and understood this operating manual. In addition, the owner must train staff at regular intervals and inform them about the dangers.
- The owner must provide the personnel with the required protective equipment.

Furthermore, the owner is responsible for ensuring that the product is always in perfect technical condition. The following therefore applies:

- The owner must ensure that the maintenance intervals described in this operating manual are observed.
- The owner must have all safety devices checked regularly to ensure that they are functional and complete.

2.2 Personnel requirements

2.2.1 Qualifications



WARNING!

Risk of injury due to insufficient qualifications!

Improper handling may result in serious personal injury and damage to property.

Therefore:

- Have all work carried out by qualified personnel only.

The operating manual specifies the following qualifications for various areas of activity.

Specialist personnel

Specialist personnel are those who, on account of their specialist training, knowledge and experience as well as knowledge of the relevant regulations, are able to carry out the work assigned to them and to recognise and avoid potential hazards independently.

Instructed person

The person has been instructed by the owner about the tasks assigned to them and the potential dangers of improper behaviour.

- Only persons, who can be expected to carry out their work reliably, are authorised as personnel. Persons whose ability to react is affected, e.g. by drugs, alcohol or medication, are not permitted.

- When selecting personnel, observe the age and job-specific regulations applicable at the place of work.

2.2.2 Unauthorised persons



WARNING!

Danger to unauthorised persons!

Unauthorised persons, who do not meet the requirements described here, are not aware of the dangers in the work area.

Therefore:

- Keep unauthorised persons away from the work area.
- If in doubt, speak to people and instruct them to leave the work area.
- Stop work as long as there are unauthorised persons in the work area.

2.2.3 Instruction

Personnel must be regularly instructed by the owner. To improve follow-up, the instruction given must be logged.

Example of an instruction log:

Date	Name	Type of instruction	Instruction is given by	Signature

Fig. 1: Instruction log

2.3 Designated use

- The quick coupler is used exclusively for holding implements using a suitable quick-change holder.
- The attachments must be matched to the size of the carrier.
 - QC01M/SHF/HF: 0.5 – 2 tonnes
 - QC03M/SHF/HP: 2 – 6.5 tonnes
 - QC08M/HP: 6.5 – 12 tonnes
 - QC10M: 12 – 19 tonnes
 - QC21/25M: 19 – 40 tonnes



WARNING!

Danger due to improper use!

Any use of the device which goes beyond the designated use and/or any other use may result in hazardous situations.

Therefore:

- Use the device only as designated.
- Strictly observe all information in this operating manual.



NOTICE!

Quick-change systems with load hooks:

The load hook must not be used unless the following safety devices have been installed on the carrier:

- Lifting load table on the driver's seat
- Overload warning device
- Pipe rupture protection on the bucket arm cylinder
- Pipe rupture protection on the boom cylinder
- Lift and transport loads using suitable and authorised load handling equipment only.

2.4 Improper use

In particular, refrain from the following uses of the device. They are considered to be improper:

- Passenger transport
- A load hook must be fitted for use in load lifting operation (Chapter 6.1 "Lifting loads using the load hook").
- Hammering, ramming and chiselling objects

Claims of any kind due to damage resulting from improper use are excluded. The owner is solely liable for any damage resulting from improper use.

2.5 Reasonably foreseeable misuse

Reasonably foreseeable misuse includes all types of use which are not described under "Designated use". Any other use or use beyond this is considered to be improper. The manufacturer is not liable for any resulting damage.

In particular, the following is considered to be misuse:

- Use of untrained personnel
- Unauthorised conversion
- Use of unauthorised spare and wearing parts
- Passenger transport
- Failure to replace wearing parts
- Improper use
- Failure to carry out or incorrectly carried out maintenance or repair work

2.6 Personal protective equipment

Personal protective equipment must be worn at work in order to minimise health hazards.

- While working, always wear the protective equipment required for the work in question.
- Follow the instructions on personal protective equipment posted in the work area.

Basic protective equipment

Always wear PPE for all work:

- Protective clothing
- Safety boots

For particular work

Special protective equipment is required when carrying out particular work. This special protective equipment is referred to separately in the individual chapters of this manual.

- Hard hat
- Safety goggles
- Protective gloves



Protective clothing

For all activities on the carrier, wear close-fitting work clothing with low tear resistance, tight sleeves and no protruding parts.



Hard hat

Hard hats protect the head against falling objects, swinging loads and impact with stationary objects.



Safety goggles

Wear safety goggles tested in accordance with DIN EN 166.



Protective gloves

Wear protective gloves when carrying out all activities to protect your hands from friction, abrasions, punctures or deeper injuries, as well as from contact with hot surfaces.



Safety boots

Wear safety boots when carrying out all activities. Safety boots protect feet from crushing, falling parts and slipping on slippery surfaces.

2.7 Safety instructions

The system, in particular the hydraulic lines, must be checked for defects before each use.

Please also note the storage times and the permissible period of use of the hydraulic lines.

Hose lines must be replaced at appropriate intervals even if there are no recognisable defects.

In the event of defects such as chafing, cuts, embrittlement of the outer layer or blistering and leaks, the hydraulic hoses and screw connections must be replaced immediately.

It is mandatory to check that hydraulic quick couplers are properly locked. After locking the quick coupler with the implement/bucket, carry out a back pressure test to check that it is properly locked. Please note that released catch claws and locking bolts must be checked for deformation before they are next used and replaced if required.

Ensure that there are no persons in the danger area.

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

2.8 Secure locking

To ensure secure locking, observe the following locking tolerances. For sizes QC10 - 25, also ensure that the quick coupler is braced in the holder, i.e. the quick coupler must not lift upwards during locking. For hydraulic versions, observe the pressure settings as described in Chapter 3.

High-low holders (HL)

Valid for quick couplers QC01, QC03 and QC08.

The QC01 and QC03 quick couplers are secured with a tightening torque of 65 Nm.

QC01

Nominal dimension: A=15.5mm; B=15.5mm

Tolerance +/- 4mm

QC03

Nominal dimension: A=17.5mm; B=17.5mm

Tolerance +/- 5mm

QC08

Nominal dimension: A=26.5mm; B=26.5mm

Tolerance +/- 5mm

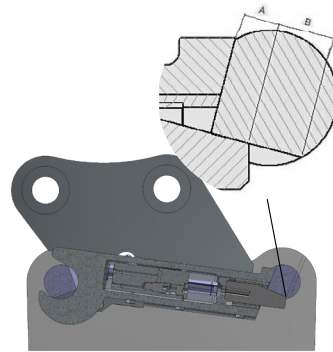


Fig. 2: Locking tolerances for HL holders

QuickChange holders

Valid for quick couplers QC01, QC03 and QC08.

The QC01 and QC03 quick couplers are secured with a tightening torque of 65 Nm.

Position of the locking bolts Minimum
(5mm inside the locking plate)

Position of the locking bolts Minimum
(5mm protruding towards the locking plate)

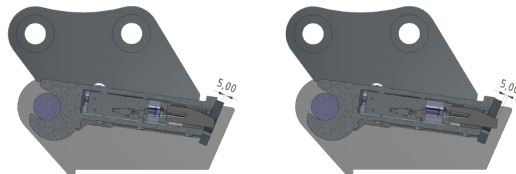


Fig. 3: Locking tolerances for QuickChange holders

The quick couplers QC08 to QC25 are secured by a dead centre locking mechanism.

QC08

The lever must be turned at least 120° to ensure that the locking mechanism is secure.

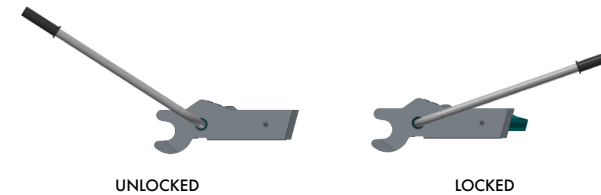


Fig. 4: Locking mechanism QC08

QC10

The lever must be turned at least 119° to ensure that the locking mechanism is secure.

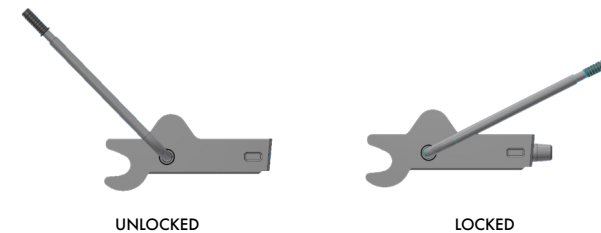


Fig. 5: Locking mechanism QC10

QC25

The lever must be turned at least 133° to ensure that the locking mechanism is secure.

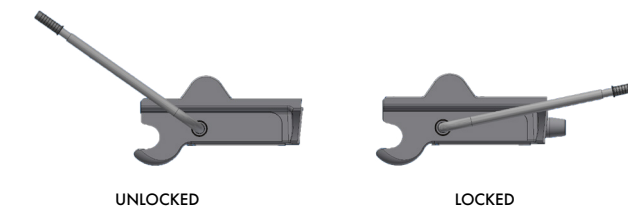


Fig. 6: Locking mechanism QC25

2.9 Work and danger areas



DANGER!

Danger of death!

Physical contact with operating or uncontrolled moving device components may result in serious injury or even death!

Therefore:

- Before commissioning the entire device, ensure that there are no persons in the danger and work areas!
- Switch off the entire device before assembly and disassembly work as well as maintenance and testing work and secure it against being switched on again!



WARNING!

Risk of injury due to improper operation!

Improper operation may result in serious personal injury or damage to property.

Therefore:

- Carry out all operating steps as described in this operating manual.
- Before starting work, ensure that all covers and safety devices have been installed and are functioning properly.
- Never disable safety devices during operation.
- Keep the work area tidy and clean! Loose components and tools lying on top of each other or lying around are sources of accidents.

2.10 Specific dangers

The following section identifies residual risks which have been determined with the help of a risk assessment.

- To reduce health hazards and avoid dangerous situations, follow the safety instructions listed here and observe the warnings in the other chapters of this manual.

Suspended loads



DANGER!

Danger of death due to suspended loads!

Falling loads may result in serious injury or even death.

Therefore:

- Never stand under suspended loads.
- Move loads only under supervision.
- Set loads down when leaving the workstation.



WARNING!

Danger due to falling loads!

Therefore:

- Check the locking mechanism of the quick coupler after each change process.



WARNING!

Danger due to falling loads!

The values specified in the lifting load tables for the carrier refer to the load without attachment. When using attachments, the weight of the attachment and quick coupler must be deducted from the lifting load values of the carrier. Also observe the maximum load torque of the quick coupler.

The maximum load torque can be found on the rating plate of the quick coupler.

Hydraulics



WARNING!

Danger of death due to hydraulic energy!

The hydraulic energy may cause serious or even fatal injuries. Hydraulically driven parts can move unexpectedly. If individual components are damaged, hydraulic fluid may escape under high pressure.

Therefore:

- Have work on the hydraulics carried out by trained specialist personnel only.
- Before starting work on the hydraulic system, switch it off and depressurise it.
Fully depressurise the pressure accumulator.
- Check that there is no pressure.
- Do not change the pressure settings beyond the maximum values.

Liquid jet



WARNING!

Danger of death due to liquid jet!

If lines or machine parts are defective, a jet of liquid may escape under high pressure. The liquid jet may sever body parts and cause serious injury or death.

Therefore:

- Never touch the liquid jet.
- Immediately press the Emergency STOP button. If required, initiate further measures to reduce the pressure and stop the liquid jet.
- Collect and dispose of leaking liquids properly.
- Have the defective parts repaired by trained and qualified specialist personnel.

Sharp edges and pointed corners



CAUTION!

Risk of injury from edges and corners!

Sharp edges and pointed corners may cause abrasions and cuts to the skin.

Therefore:

- Be careful when working near sharp edges and pointed corners.
- If in doubt, wear protective gloves.

The quick-change system must be checked daily for defects and damage.

2.11 Securing the switch to prevent reactivation



DANGER!

Danger of death due to unauthorised reactivation!

When working in the danger area, there is a risk that the power supply may be switched on without authorisation. This means that there is a danger of death for people in the danger area.

Therefore:

- Follow the instructions on securing the switch to prevent reactivation in the chapters in this operating manual.
- Always observe the procedure described below for securing the switch to prevent reactivation.

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

Securing the switch to prevent reactivation:

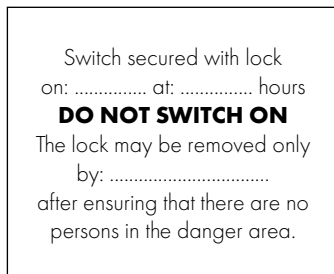


Fig. 7: "Lock secured" sign

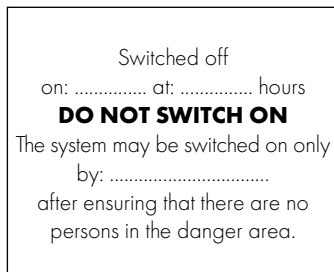


Fig. 8: "Switched off" sign

1. Switch off the power supply.
2. If possible, secure the switch with a lock and attach a clearly visible sign to the switch as shown in Fig. 7.
3. Have the employee named on the sign keep the key.

4. If it is not possible to secure a switch with a lock, affix a sign as shown in Fig. 8.
5. Ensure that no persons are in the danger area after all work has been completed.
6. Ensure that all protective devices have been installed and are functional.
7. Remove the sign only now.

2.12 Behaviour in the event of danger and accidents

Preventive measures

- Always be prepared for accidents or fire!
- Keep first aid equipment (first aid kit, blankets, etc.) within easy reach.
- Familiarise staff with accident reporting, first aid and rescue equipment.
- Keep access routes clear for emergency vehicles.

If the worst comes to the worst: Act correctly in the event of an accident

- Immediately activate the Emergency STOP.
- Initiate first aid measures.
- Rescue people from the danger zone.
- Inform the person in charge at the place of use.
- Alert the emergency services.
- Clear access routes for emergency vehicles.

Emergency shutdown

In hazardous situations, machine movements must be stopped as quickly as possible and the power supply switched off.

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

1. Immediately initiate an Emergency STOP.
2. Inform the person responsible on site.
3. Alert the doctor and fire brigade.
4. Rescue people from the danger zone. Initiate first aid measures.
5. Switch off the main switch and secure it to prevent reactivation.
6. Keep access routes clear for emergency vehicles.
7. If necessitated by the severity of the emergency, inform the relevant authorities.
8. Authorise specialist personnel to eliminate the malfunction.

After the rescue operations



WARNING!

Danger of death due to premature reactivation!

If the switch is reactivated, there is a danger of death for all persons in the danger area.

Therefore:

- Before reactivating the switch, ensure that there are no more people in the danger area.

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

Check the system before restarting it and ensure that all safety devices have been installed and are functional.

2.13 Environmental protection



ENVIRONMENT!

Environmental hazard due to incorrect handling!

Incorrect handling of environmentally hazardous substances, in particular incorrect disposal, may result in considerable damage to the environment.

Therefore:

- Always follow the instructions below.
- If environmentally hazardous substances are accidentally released into the environment, take appropriate measures immediately. If in doubt, inform the responsible local authority about the damage.

The following environmentally hazardous substances are used:

- Lubricants



ENVIRONMENT!

Lubricants, such as greases and oils, contain toxic substances. They must not be released into the environment. Disposal must be carried out by a specialist disposal company.



ENVIRONMENT!

Avoid releasing oil into the soil or water.

Use suitable containers to collect any oil which escapes during maintenance work. Observe the relevant safety regulations of the manufacturer.

3. TECHNICAL DATA

3. Technical data

The general technical data, dimensions and weight as well as the hydraulic connection values can be found on the delivery note, see Appendix A "Delivery note". Furthermore, all required technical data can be found on the rating plate on the device, see Chapter 3.2 "Rating plate".

3.1 Operating materials

Operating materials	Type
Lubricating grease	Commercially available resin and acid-free machine lubricating grease
Hydraulic oil (only for hydraulic quick couplers)	HLP 46 according to DIN 51524 T2: ISO VG 46

3.2 Rating plate

- 1) Designation (e.g. mechanical quick coupler)
- 2) Type
- 3) Operating weight [t]
- 4) Serial number
- 5) Width [mm]
- 6) Capacity [m³]
- 7) Weight [kg]
- 8) Max. load capacity of load hook [t]
- 9) Load holding torque [kNm]
- 10) Year of construction



Fig. 9: Rating plate

3. TECHNICAL DATA

3.3 Technical data of the quick coupler

QC01M

Specification	Value
Operating weight	0.5 to 2 tonnes
Load holding torque	14 kNm
Tightening torque/locking mechanism	60 Nm

QC01SHF

Specification	Value
Operating weight	0.5 to 2 tonnes
Load holding torque	14 kNm
Max. pressure	250 bar
Unlocking pressure	180 bar
Max. attachment weight	175 kg

QC01HF

Specification	Value
Operating weight	0.5 to 2 tonnes
Load holding torque	14 kNm
Max. pressure	250 bar
Locking pressure	60 bar
Unlocking pressure	150 bar
Control pressure of the integrated non-return valve	40 bar
Max. attachment weight	175 kg

3. TECHNICAL DATA

QC03M

Specification	Value
Operating weight	2 to 6.5 tonnes
Load holding torque	46 kNm
Tightening torque/locking mechanism	60 Nm

QC03SHF

Specification	Value
Operating weight	2 to 6.5 tonnes
Load holding torque	46 kNm
Max. pressure	250 bar
Unlocking pressure	180 bar
Max. attachment weight	400 kg

QC03Hp

Specification	Value
Operating weight	2 to 6.5 tonnes
Load holding torque	46 kNm
Max. pressure	250 bar
Locking pressure	min. 150 bar
Unlocking pressure	20 % more than was set for the locking mechanism! min. 180 bar
Max. attachment weight	400 kg

3. TECHNICAL DATA

QC08M

Specification	Value
Operating weight	6.5 to 12 tonnes
Load holding torque	79 kNm
Dead centre locking mechanism	

QC08Hp

Specification	Value
Operating weight	6.5 to 12 tonnes
Load holding torque	79 kNm
Max. pressure	250 bar
Locking pressure	min. 150 bar
Unlocking pressure	20% more than was set for the locking mechanism! Min. 180 bar
Max. attachment weight	750 kg

QC10M

Specification	Value
Operating weight	12 to 19 tonnes
Dead centre locking mechanism	

QC21/25M

Specification	Value
Operating weight	19 to 40 tonnes
Dead centre locking mechanism	

4. DESIGN AND FUNCTION

4.1 QC01M and QC03M

The quick coupler consists of one overall component which is divided into different sections.

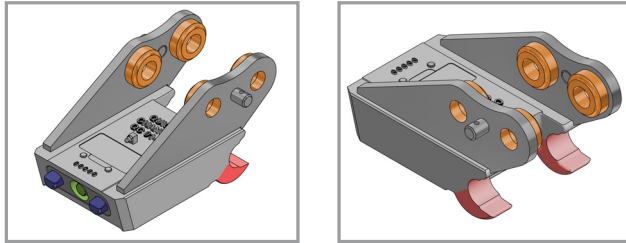


Fig. 10: Example changer QC01M

- ① Stem connection for mounting on the carrier using bolts
- ② Opening for inserting the opening key to open/close the locking mechanism
- ③ Pick-up claws
- ④ Locking bolts

4.2 QC08M, QC10M and QC21/25M

The quick coupler consists of one overall component which is divided into different sections.

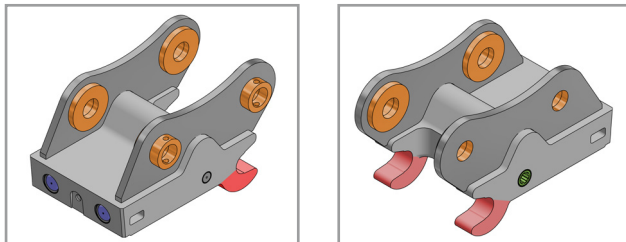


Fig. 11: Example changer QC10M

- ① Stem connection for mounting on the carrier using bolts
- ② Opening for inserting the opening key to open/close the locking mechanism
- ③ Pick-up claws
- ④ Locking bolts

4. DESIGN AND FUNCTION

4.3 QC01SHF and QC03SHF

The quick coupler consists of one overall component which is divided into different sections.

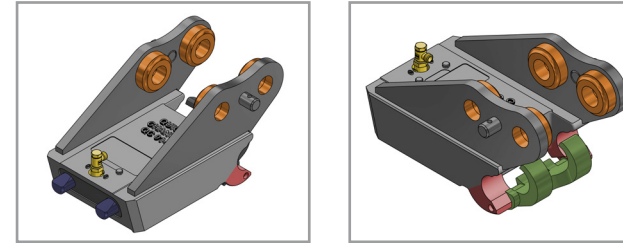


Fig. 12: Example changer QC01SHF

- ① Stem connection for mounting on the carrier using bolts
- ② Pick-up claws
- ③ Catch claw
- ④ Locking bolts
- ⑤ Hydraulic connection

4.4 QC01HF

The quick coupler consists of one overall component which is divided into different sections.

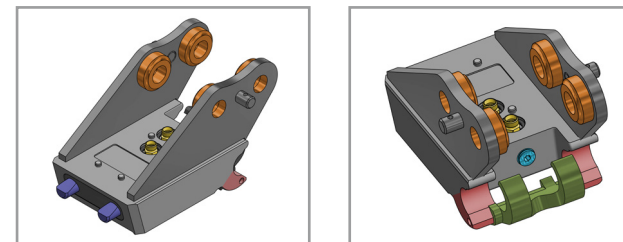


Fig. 13: Example changer QC01HF

- ① Stem connection for mounting on the carrier using bolts
- ② Pick-up claws
- ③ Catch claw
- ④ Locking bolts
- ⑤ Hydraulic connections
- ⑥ Emergency release

4. DESIGN AND FUNCTION

4.5 QC03Hp

The quick coupler consists of one overall component which is divided into different sections.

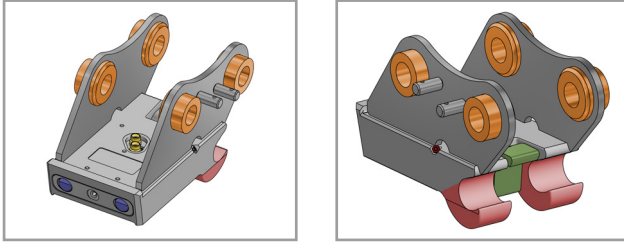


Fig. 14: Example changer QC03Hp

- 1 Stem connection for mounting on the carrier using bolts
- 2 Locking indicator
- 3 Catch claw
- 4 Pick-up claws
- 5 Locking bolts
- 6 Hydraulic connections
- 7 Emergency release

4. DESIGN AND FUNCTION

4.6 QC08Hp

The quick coupler consists of one overall component which is divided into different sections.

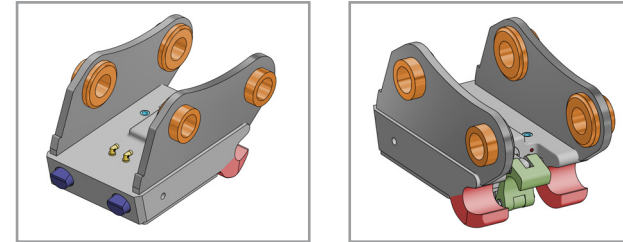


Fig. 15: Example changer QC08Hp

- 1 Stem connection for mounting on the carrier using bolts
- 2 Locking indicator
- 3 Catch claw
- 4 Pick-up claws
- 5 Locking bolts
- 6 Hydraulic connections
- 7 Emergency release

5. ASSEMBLY AND DISASSEMBLY

5.1 Assembly

Safety

Installation and initial commissioning may be carried out only by specially trained personnel.

The following protective equipment must be worn for all work:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves



INFORMATION!

Further protective equipment, which must be worn for certain work, is referred to separately in the warnings in this chapter.



WARNING!

Risk of injury due to improper installation and initial commissioning!

Improper installation and initial commissioning may result in serious personal injury or damage to property.

Therefore:

- Before starting work, ensure that there is sufficient space for installation.
- Handle open sharp-edged components with care.
- Keep the assembly area tidy and clean! Loose components and tools lying on top of each other or lying around are sources of accidents.
- Install components correctly. Observe the specified screw tightening torques.
- Secure components to prevent them from falling or overturning.

5. ASSEMBLY AND DISASSEMBLY

Securing the switch to prevent reactivation



DANGER!

Danger of death due to unauthorised reactivation!

During installation, there is a risk that the power supply may be switched on without authorisation. This means that there is a danger of death for people in the danger area.

Therefore:

- Before starting work, switch off all power supplies and secure them against being switched on again.



DANGER!

Danger of death!

Hydraulic lines bursting under pressure will result in damage to property and serious injuries or even death!

Therefore:

- Replace damaged hydraulic lines immediately.
- During installation, ensure that the hydraulic lines are not kinked, crushed or subjected to tensile stress during use.

5.1.1 Connecting the mechanical quick coupler to the carrier

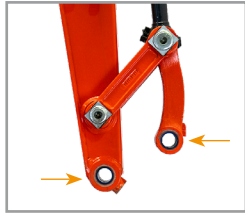
Personnel:

- Specialist personnel

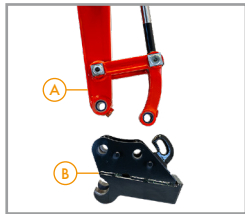
Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

5. ASSEMBLY AND DISASSEMBLY



1. Clean the bolt eyes (arrows) on both sides.
Wet them with a little lubricating grease, see Chapter 3.1 "Operating materials".



2. Align the boom (A) using the quick coupler (B).



3. Carefully insert the boom (A) into the quick coupler (B).
4. Check that the bolt eyes of the quick coupler are aligned with the mounting holes of the boom. Correct if required.

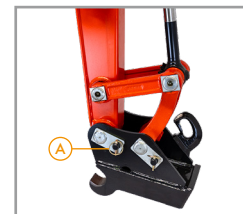


5. Slide the two bolts (A) in sideways.

5. ASSEMBLY AND DISASSEMBLY



6. If required, carefully drive in the bolts using a rubber mallet.
7. Check that the bolts are fully inserted.
8. Check that the bolt (A) is secured.



9. Check that the bolt lock (A) is correctly seated.



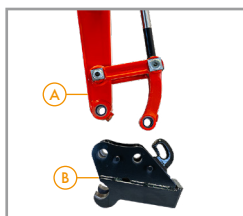
10. Check that the quick coupler moves freely.
To do this, carefully swivel the quick coupler all the way round.

5. ASSEMBLY AND DISASSEMBLY

5.1.2 Connecting the quick coupler to the carrier



1. Clean the bolt eyes (arrows) on both sides.
Wet them with a little lubricating grease, see Chapter 3.1 "Operating materials".



2. Align the boom (A) using the quick coupler (B).

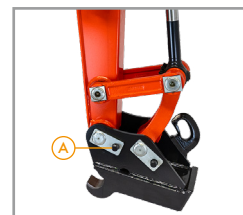


3. Carefully insert the boom (A) into the quick coupler (B).
4. Check that the bolt eyes of the quick coupler are aligned with the mounting holes of the boom. Correct if required.

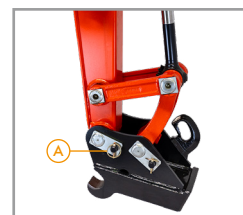


5. Slide the two bolts (A) in sideways.

5. ASSEMBLY AND DISASSEMBLY



6. If required, carefully drive in the bolts using a rubber mallet.
7. Check that the bolts are fully inserted.
8. Check that the bolt (A) is secured.



9. Check that the bolt lock (A) is correctly seated.



10. Connect the hydraulic lines to the quick coupler.



11. Check that the quick coupler moves freely.
To do this, carefully swivel the quick coupler all the way round.

5. ASSEMBLY AND DISASSEMBLY

5.2 Disassembly

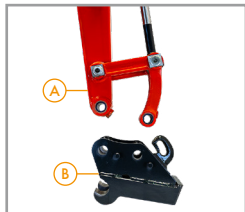
5.2.1 Disassembling the mechanical quick-change system on the carrier



1. Remove the bolt lock (A) from the bolt.



2. Pull out the two bolts (A).



3. Move the boom (A) out of the quick coupler (B).

5. ASSEMBLY AND DISASSEMBLY

5.2.2 Disassembling the hydraulic quick-change system on the carrier

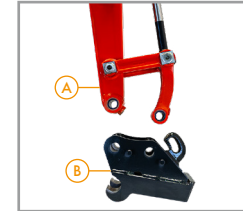


1. Remove the bolt lock (A) from the bolt.



2. Remove the hydraulic lines from the quick coupler.

3. Pull out the two bolts (A).



4. Move the boom (A) out of the quick coupler (B).

Mechanical quick couplers

When inserted into the quick-change holder, the pick-up claws grip the clutch shaft. The machine operator lowers the quick-change system completely into the quick-change holder until the locking bolts are aligned with the recesses in the locking plate. The locking mechanism is then closed using the opening key and a fixed connection is established between the quick-change system on the carrier and the quick-change holder on the work equipment.

Hydraulic quick couplers

When inserted into the quick-change holder, the pick-up claws grip the clutch shaft. The machine operator lowers the quick-change system completely into the quick-change holder until the locking bolts are aligned with the recesses in the locking plate. The locking mechanism is then closed using a switch in the cab and a fixed connection is established between the quick-change system on the carrier and the quick-change holder on the work equipment.

Function – double-acting quick coupler (QC01HF, QC03Hp and QC08Hp):

The hydraulically unlockable non-return valve integrated into the cylinder (hose rupture protection) ensures that the quick coupler cannot open unintentionally. In the hydraulic cylinder, the return line is only released when there is a pressure of 40 to 50 bar in the supply line. This prevents the quick coupler from opening unintentionally.

Installation – double-acting quick coupler (QC01HF, QC03Hp and QC08Hp):

The standard for carriers stipulates that hydraulic quick couplers with wedge-shaped locking systems must be permanently subjected to force (see DIN EN 471-1).

This means that a separate hydraulic circuit must be used for the "open & close quick coupler" functions. With continuous pressure on the "Close quick coupler" line and free return flow into the tank. If a separate hydraulic circuit is not available, it must be retrofitted to the carrier, e.g. using the Henle installation kit.



INFORMATION!

Observe the hydraulic diagrams in the appendix (Appendix B "Hydraulic circuit diagram").

6.1 Lifting loads using the load hook



CAUTION!

Danger from lifting loads using a load hook!

Improper use may result in personal injury and damage to property.

Therefore:

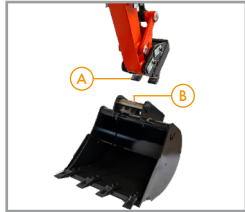
- Use the load hook only if the following safety devices are installed on the excavator:
 - Lifting load table on the driver's seat
 - Overload warning device
 - Pipe rupture protection on the bucket arm cylinder
 - Pipe rupture protection on the boom cylinder
- Observe the maximum load capacity of the quick coupler. This can be found on the rating plate of the quick coupler.
- Observe the maximum lifting load of the earth-moving machine. The weight of the quick coupler must be deducted from the lifting load of the earth-moving machine.
- Use the load hook only without work equipment on the excavator (such as a bucket).
- Use suitable and authorised load handling equipment.
- Lift the load slowly.
- Attach the load parallel to the weld seam of the load hook.



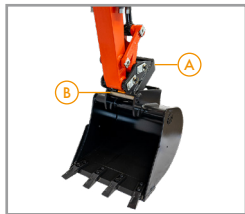
Fig. 16: Using the load hook

6.2 Changing the attachment using the quick coupler

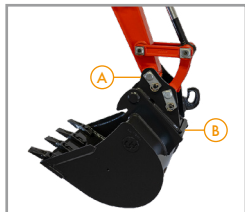
6.2.1 Changing the attachment using a mechanical quick coupler



1. Align the boom above the implement so that the pick-up claws (A) can grip the take-up shaft (B).



2. Lower the boom using the quick-change device (A) until the pick-up claws grip the take-up shaft (B).



3. Lower the quick-change device (A) completely into the quick-change holder (B).
4. Carefully raise the boom of the earth-moving machine slightly.
5. Tilt in the quick-change device (A) until it is completely in the quick-change holder (B) of the implement; see "Earth-moving machine" supplier documentation.
6. Check that the locking bolts of the quick-change device are aligned with the holes in the locking plate.



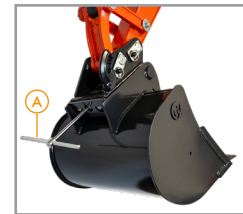
DANGER!

Danger of death!

Losing the attachments will result in severe damage to property and serious injuries or even death.

Therefore:

→ Before using the entire device, always check the locking mechanism.



7. Insert the opening key into the tool holder.
8. Close the locking mechanism of the quick-change device using the opening key (A). To do this, turn the opening key clockwise as far as it will go. Observe the locking tolerances in Chapter 2.8 "Secure locking".
9. Check that the locking bolts completely grip the locking plate.
10. Remove the opening key. Store it in the earth-moving machine and secure it against getting lost.



WARNING!

Avoid injuries and machine damage!

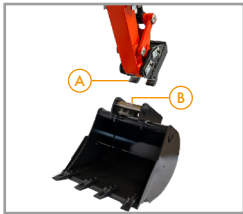
Improper operation can result in injuries and damage to the machine.

Therefore:

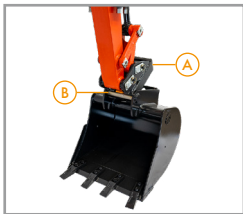
→ Ensure that the attachment or the quick coupler/tilt coupler does not come into contact with the boom, the boom cylinder and/or the operator's workplace. Take particular care when the attachment is fully retracted.

6. OPERATION

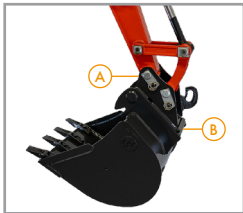
6.2.2 Changing the attachment using a hydraulic quick coupler



1. Align the boom above the implement so that the pick-up claws (A) can grip the take-up shaft (B).



2. Lower the boom using the quick-change device (A) until the pick-up claws grip the take-up shaft (B).



3. Lower the quick-change device (A) completely into the quick-change holder (B).

4. Carefully raise the boom of the earth-moving machine slightly; see "Earth-moving machine" supplier documents.

5. Tilt in the quick-change device (A) until it is completely in the quick-change holder (B) of the implement; see "Earth-moving machine" supplier documentation.

6. Check that the locking bolts of the quick-change device are aligned with the holes in the locking plate.

7. Close the locking mechanism of the quick-change device using the switch in the cab (A).

8. Check that the locking bolts completely grip the locking plate. Indicator wire/indicator pin must no longer be visible.



6. OPERATION



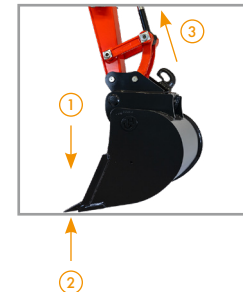
DANGER!

Danger of death!

Losing the attachments will result in severe damage to property and serious injuries or even death.

Therefore:

→ Before using the entire device, always check the locking mechanism.



9. Also carry out a back pressure test
 - Press the bucket teeth against the floor in a tilted back position.
 - Then retract the bucket cylinder (see figure)
 - If the quick coupler is not locked properly, it would then slip out of position. In such a case, the causes of the improperly locked quick coupler must be investigated.



WARNING!

Avoid injuries and machine damage!

Improper operation can result in injuries and damage to the machine.

Therefore:

→ Ensure that the attachment or the quick coupler/tilt coupler does not come into contact with the boom, the boom cylinder and/or the operator's workplace. Take particular care when the attachment is fully retracted.

7. TRANSPORT, PACKAGING AND STORAGE

7.1 Safety instructions for transport

Improper transport



CAUTION!

Damage due to improper transport!

Improper transport may result in considerable material damage.

Therefore:

- During delivery and internal transport, proceed carefully when unloading the packages and observe the symbols and instructions on the packaging.
- Use only the designated attachment points.
- Do not remove packaging until shortly before assembly.

Suspended loads



WARNING!

Danger of death due to suspended loads!

When lifting loads, there is a danger of death from falling or uncontrolled swivelling parts.

Therefore:

- Never stand under suspended loads.
- Observe the specifications for the designated attachment points.
- Do not strike protruding machine parts or eyelets on attached components and ensure that the slings are securely attached.
- Use only approved lifting gear and slings which have sufficient load capacity.
- Do not use torn or chafed ropes and belts.
- Do not place ropes and straps on sharp edges and corners.
Do not knot or twist them.

7. TRANSPORT, PACKAGING AND STORAGE

Eccentric centre of gravity



WARNING!

Danger of falling due to eccentric centre of gravity!

Packages may have an eccentric centre of gravity. If the package is not attached correctly, it may overturn and cause life-threatening injuries.

Therefore:

- Observe the markings on the packages.
- Position the crane hook so that it is above the centre of gravity.
- Lift carefully and observe whether the load tilts. If required, change the attachment.

7.2 Transport inspection

On receipt, check that the delivery is complete and that there is no transport damage.

In the event of externally recognisable transport damage, proceed as follows:

- Do not accept the delivery or accept it only with reservations.
- Note the extent of the damage on the transport documents or on the delivery note of the carrier.
- Initiate a complaint.



INFORMATION!

Complain about a defect as soon as it is identified. Claims for damages can be asserted only within the applicable complaint periods.

7. TRANSPORT, PACKAGING AND STORAGE

7.3 Packaging

About the packaging

The individual packages are packed according to the expected transport conditions. Only environmentally friendly materials have been used for the packaging.

The packaging should protect the individual components from transport damage, corrosion and other damage until they are assembled. Therefore, do not destroy the packaging and do not remove it until shortly before assembly.

Handling packaging materials

Dispose of packaging materials in accordance with the applicable statutory provisions and local regulations.



ENVIRONMENT!

Environmental damage due to incorrect disposal!

Packaging materials are valuable raw materials and in many cases can be reused or usefully processed and recycled.

Therefore:

- Dispose of packaging materials in an environmentally friendly manner.
- Observe the locally applicable disposal regulations.
If required, commission a specialist company to dispose of the packaging materials.

7.4 Transport

Transporting pallets by crane

Packages secured on pallets can be transported by crane under the following conditions:

7. TRANSPORT, PACKAGING AND STORAGE

- The crane and lifting gear must be designed for the weight of the packages.
- The operator must be authorised to operate the crane.

Personnel:

- Instructed person

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

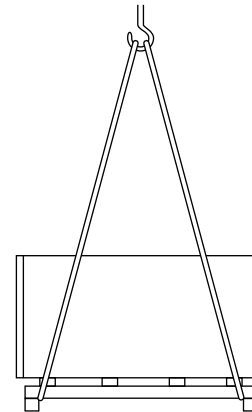


Fig. 17: Transporting pallets by crane

Attaching pallets:

1. Attach ropes, straps or multi-point hangers to the pallet as shown in Fig. 17.
2. Check that the packages are not damaged by the slings.
3. If required, use different slings.
4. Start the transport.

7. TRANSPORT, PACKAGING AND STORAGE

Transporting pallets using a forklift truck

Packages secured on pallets can be transported by forklift truck under the following conditions:

- The forklift truck must be designed according to the weight of the transport units.
- The driver must be authorised to drive the forklift truck.

Personnel

- Instructed person

Personal protective equipment:

- Protective clothing
- Safety boots
- Safety goggles
- Protective gloves

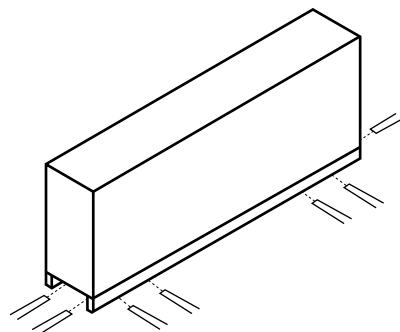


Fig. 18: Transporting pallets using a forklift truck

Attaching pallets:

1. Drive the forklift truck with the forks between or under the pallet boards.
2. Insert the forks until they protrude on the opposite side.
3. Ensure that the pallet cannot overturn if the centre of gravity is off-centre.
4. Lift the package.
5. Start the transport.

8. MAINTENANCE

8.1 Maintenance schedule

The following sections describe the maintenance work required for optimum and trouble-free operation. If regular inspections reveal increased wear, shorten the required maintenance intervals according to the actual signs of wear. If you have any questions about maintenance work and intervals, please contact the manufacturer; see address in the imprint.

Item	Work to be carried out	Regularly	Daily	Weekly	Monthly	At the latest every 6 years	Page
1	Clean the housing interior and inner workings and apply corrosion protection. If water ingress is suspected, adjust the maintenance interval as required	X					58
2	Check for paint damage – touch up if required	X					59
3	Carry out daily visual inspections		X				59
4	Remove soiling from contact surfaces, claws and rear contact surface		X				60
5	Using a suitable tool, check that all screws and bolts are tight			X			60
6	Check position of the hydraulic lines			X			61
7	Lubricate the quick-change device using suitable grease			X			61
8	Check all weld seams				X		61
9	Replace all hydraulic lines (see production date on the hydraulic hoses)					X	62

8. MAINTENANCE

8.2 Maintenance work

Safety

- The maintenance work described here can be carried out by the operator, unless otherwise indicated.
- Some maintenance work may be carried out only by specially trained personnel or exclusively by the manufacturer. This is indicated separately in the description of the individual maintenance tasks.



DANGER!

Danger of death due to falling components and uncontrolled movements!

Falling components and uncontrolled movements may result in serious injuries or even death!

Therefore:

- Before starting maintenance work, place all the work equipment on firm ground and secure it against overturning and uncontrolled movements!
- Switch off the entire device and secure it to prevent reactivation!

The following protective equipment must be worn for all work:

- Protective clothing
- Hard hat
- Safety boots
- Safety goggles
- Protective gloves



INFORMATION!

Further protective equipment, which must be worn for certain work, is referred to separately in the warnings in this chapter.

8. MAINTENANCE

Fundamentals



WARNING!

Risk of injury due to improperly performed maintenance work!

Improper maintenance may result in serious personal injury or damage to property.

Therefore:

- Before starting work, ensure that there is sufficient space for installation.
- Keep the assembly area tidy and clean! Loose components and tools lying on top of each other or lying around are sources of accidents.
- If components have been removed, ensure that they are assembled correctly, reinstall all fastening elements and observe the screw tightening torques.

Securing the switch to prevent reactivation



DANGER!

Danger of death due to unauthorised reactivation!

During maintenance work, there is a risk that the power supply may be switched on without authorisation. This means that there is a danger of death for people in the danger area.

Therefore:

- Before starting work, switch off all power supplies and secure them against being switched on again.

Environmental protection

Observe the following information on environmental protection during maintenance work:

- Remove the leaking, used or excess grease from all lubrication points which are manually supplied with lubricant and dispose of it in accordance with the applicable local regulations.
- Collect replaced hydraulic fluid in suitable containers and dispose of it in accordance with the applicable local regulations.

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Hard hat
- Safety boots
- Safety goggles
- Protective gloves

1. Clean the housing interior and inner workings and apply corrosion protection. If water ingress is suspected, adjust the maintenance interval as required

Maintenance interval(s): Regularly

Quick couplers QC01 to QC03

1. For hydraulic quick couplers, depressurise the carrier and the hydraulic lines, disconnect the hoses and remove the screw-in sockets.
2. Loosen the locking screws for the cylinder unit or, if fitted, the screws for the catch claw.
3. Pull out the locking mechanism and clean it.
4. Grease the locking mechanism.

Quick couplers QC08 to QC25

1. For hydraulic quick couplers, depressurise the carrier and the hydraulic lines, disconnect the hoses and remove the screw-in sockets.
2. Loosen the cover screws and remove the cover.
3. Remove any ingressed water and soiling from the interior.
4. Grease the locking mechanism. (Pictures)
5. Seal the cover with silicone and close it again using the screws.

2. Check for paint damage – touch up if required

Maintenance interval(s): Regularly

Paint damage must be touched up, particularly in the area of the weld seams, to prevent possible corrosion.

1. Identify possible damage to the paintwork.
2. Check whether only the paint or the component itself is damaged (cracks).
3. Clean the affected area extensively and sand it down.
4. Touch up the affected area with paint.

3. Carry out daily visual inspections

Maintenance interval(s): Daily

1. In particular, visually check the claws, bearing eyes, weld seams and bolt locks for damage and deformation.
2. Visually check that all screws and bolts are complete and tight.
3. Check that locking bolts function and are actuated correctly
4. Check that the load hook, if fitted, is complete, is not deformed or damaged and that the weld seams are in good condition

8. MAINTENANCE

5. If fitted, check that all hydraulic lines and cylinders are tight, leak-proof and not damaged

4. Remove soiling from contact surfaces, claws and rear contact surface

Maintenance interval(s): Daily

1. Check the contact surfaces ❶, the key holder ❷ for locking and unlocking and the locking bolts ❸ for soiling at regular intervals. Clean if required. Then relubricate.

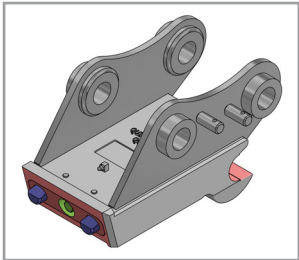


Fig. 19: Example changer QC03M



INFORMATION

The manufacturer recommends regular cleaning to prevent premature wear.

5. Using a suitable tool, check that all screws and bolts are tight

Maintenance interval(s): Weekly

8. MAINTENANCE

1. Check that the bolts are properly secured to the carrier.
2. Check that all screws are tight. (See tightening torques in the appendix)

6. Check position of the hydraulic lines

Maintenance interval(s): Weekly

1. Lines must not be crushed, kinked or under tension.
2. Before working on the hydraulics, switch off the carrier and depressurise the lines.
3. Work on the hydraulics may be carried out only by trained specialist personnel.

7. Lubricate the quick-change device using suitable grease

Maintenance interval(s): Weekly

1. Lubricate all grease nipples on the quick coupler, see Chapter 3.1 "Operating materials"

8. Check all weld seams

Maintenance interval(s): Monthly

1. Check all weld seams, especially for cracks.

8. MAINTENANCE

9. Replace all hydraulic lines (see production date on the hydraulic hoses)

Maintenance interval(s): At the latest every 6 years

1. If the hydraulic hoses are subject to normal stress, they must be replaced every 6 years at the latest, see also DGUV-R 113-020.
2. Please note that new hydraulic hoses must at least fulfil the requirements of the replaced hoses.



NOTICE!

Contact surfaces must not be painted!



DANGER!

Danger of death due to unauthorised reactivation!

Opening highly pressurised hydraulic lines may result in serious injuries or even death!

Therefore:

- Switch off the entire device and secure it to prevent reactivation.
- Depressurise the hydraulic lines by actuating the valve levers in the carrier with the hydraulic unit switched off.
- Carry out work on the hydraulic system if you are a trained specialist

8. MAINTENANCE



DANGER!

Danger of death due to hydraulic lines bursting under high pressure!

Hydraulic lines bursting under high pressure may result in serious injuries or even death!

Therefore:

- It is prohibited to repair hydraulic lines!



CAUTION!

Risk of injury due to skin contact with hot operating materials!

Skin contact with hot operating materials will result in severe burns!

Therefore:

- Before starting work on the hydraulic system, allow all oil-carrying components and the hydraulic oil to cool down to ambient temperature!

8.3 Measures to be taken after maintenance

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Hard hat
- Safety boots
- Safety goggles
- Protective gloves

8. MAINTENANCE

After completing the maintenance work, carry out the following steps before switching on:

1. Check that all previously loosened screw, bolt and cotter pin connections are tight.
2. Check that all previously removed protective devices and covers have been properly reinstalled.
3. Ensure that all tools, materials and other equipment used have been removed from the work area.
4. Clean the work area and remove any spilled substances such as liquids, processing materials or similar.
5. Ensure that all safety devices on the system are functioning properly

9. MALFUNCTIONS

9.1 Eliminating malfunctions

Safety

The following chapter describes possible causes of malfunctions and the work required to eliminate them. If malfunctions occur more frequently, shorten the maintenance intervals according to the actual load. In the event of malfunctions which cannot be eliminated by the following instructions, please contact the manufacturer; see address in the imprint.

- The troubleshooting work described here can be carried out by the operator, unless otherwise indicated.
- Some work may be carried out only by specially trained personnel or exclusively by the manufacturer. This is indicated separately in the description of the individual malfunctions.
- Work on the electrical system may be carried out only by qualified electricians.

Wear the following protective equipment for all work:

- Protective clothing
- Hard hat
- Safety boots
- Safety goggles
- Protective gloves



INFORMATION

Further protective equipment, which must be worn for certain work, is referred to separately in the warnings in this chapter.

Fundamentals



DANGER!

Danger of death due to unauthorised reactivation!

During troubleshooting work, there is a risk that the power supply may be switched on without authorisation. This means that there is a danger of death for people in the danger area.

Therefore:

→ Before starting work, switch off all power supplies and secure them against being switched on again.



WARNING!

Risk of injury due to improper troubleshooting!

Improper troubleshooting may result in serious personal injury or damage to property.

Therefore:

- Before starting work, ensure that there is sufficient space for installation.
- Keep the assembly area tidy and clean! Loose components and tools lying on top of each other or lying around are sources of accidents.
- If components have been removed, ensure that they are assembled correctly, reinstall all fastening elements and observe the screw tightening torques.

Behaviour in the event of malfunctions

Personnel:

- Specialist personnel

Personal protective equipment:

- Protective clothing
- Hard hat
- Safety boots
- Safety goggles
- Protective gloves

In principle, the following applies:

1. In the event of malfunctions which pose an immediate danger to persons or property, immediately activate the Emergency STOP function.
2. Determine the cause of the malfunction.
3. If troubleshooting requires work in the danger area, switch off and secure against reactivation.
4. Immediately inform the person responsible on site about the malfunction.
5. Depending on the type of malfunction, have it eliminated by authorised specialist personnel or eliminate it yourself if you are a specialist.
6. Contact the manufacturer directly for technical assistance.



INFORMATION

The table of malfunctions listed below provides information on who is authorised to eliminate the malfunction.

9. MALFUNCTIONS

9.2 Table of malfunctions

The tasks described must be carried out by specialist personnel.

Error description	Type	Possible cause	Problem identification/remedy
Quick coupler cannot be fully retracted into the holder	QC01 to QC25	Soiling or deformation of the contact surfaces	Clean the contact surfaces on the quick coupler and on the attachment
Mechanical locking mechanism stiff or not functioning	QC01 to QC03 Mechanical	Soiling	Disassemble, clean and test the function of the cassette, especially the spindle with trapezoidal thread. If no improvement > Send the cassette to the manufacturer for repair
		Mechanical damage to the locking mechanism	
Mechanical locking mechanism stiff or not functioning	QC08 to QC25 Mechanical	Soiling	Open the cover, remove soiling from the mechanism, check moving parts for wear and damage and lubricate. Test the function of the open mechanism and identify the problem if required.
		Mechanical damage to the locking mechanism	
Hydraulic locking mechanism stiff or not functioning	QC01 to QC03 hydraulic	No or too little pressure	Check pressure
		Soiling	Test detached quick coupler without attachment, remove cylinder unit, clean, lubricate, check moving parts for wear and damage and test. If no improvement > to the manufacturer
		Mechanical damage to the locking mechanism	
Hydraulic locking mechanism stiff or not functioning	QC08 hydraulic	No or too little pressure	Check pressure
		Soiling	Test quick coupler with detached attachment, open cover, clean locking mechanism, lubricate, check moving parts for wear and damage and test. If no improvement > to the manufacturer
		Mechanical damage to the locking mechanism	

9. MALFUNCTIONS

Error description	Type	Possible cause	Problem identification/remedy
Attachment cannot be detached from the hydraulic quick coupler	QC01 to QC08 hydraulic	No unlocking pressure can be built up. Defect in the locking unit	Open the emergency release to depressurise the cylinder unit. Drive the locking bolts inwards using a rubber mallet.
Locking bolts jam in the holder and cannot be released by the hydraulic pressure	QC01 to QC25 hydraulic	No differential pressure set between opening and closing	To release the bolts, gently tap the locking bolts using the rubber mallet. Check pressure settings
Oil leak	QC01 to QC25 hydraulic	Leaking pipes, fittings or cylinder unit.	Switch off and depressurise the carrier. Locate the leak, tighten the connections or replace the defective component if required.

Appendix A – Delivery note



Lieferschein

(Kopie 1)
Nummer : 00142173
Tour : 7
Auftrag : 00185915 / 20.12.2022
Ihre Kundennummer : 12179
Ihre Nummer / Ihr Datum : / 20.12.2022
Liefertermin : 05/2023
Besteller :
Lieferbedingung : frei Haus, unverpackt
Versandart : Spedition

Datum/Seite : 27.01.2023 / 001

Pos	Artikel	Menge	ME	Bezeichnung	Lagerplat	Best.mg.	Restmg.
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1	26200	1	Stck	Quick Change QC03 hydraulisch protect mit doppelwirkendem Zylinder bis 6,5t Einsatzgewicht Druck Verriegeln: mind. 150 bar Druck Entriegeln: 20% mehr als der Druck, der zum Verriegeln eingestellt wurde Maximaldruck: 250 bar inklusive integriertem hydraulischem Sperrventil und Notentriegelung passend Neuson EZ50	ZZ	1	0
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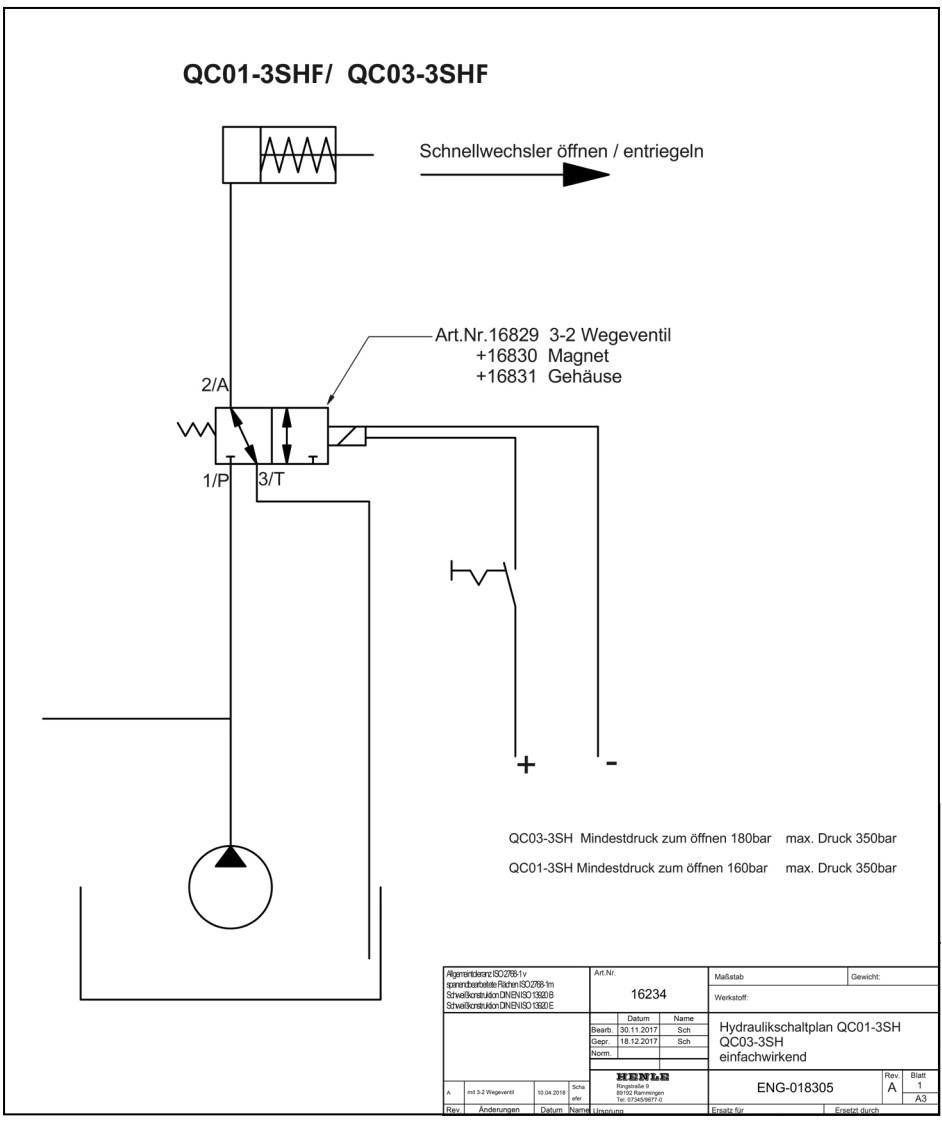
ACHTUNG: Schnellwechsler mit doppelwirkendem Zylinder, es werden zwingend zwei Steuerkreise benötigt.

Schnellwechsler: mit hydraulisch entsperbarem Rückschlagsventil und Notentriegelung

Hinweis: Der Gesetzgeber schreibt in der neusten Norm für Erdbaumaschinen vor, dass hydraulische Schnellwechsler mit keilförmigen Verriegelungssystemen permanent mit Kraft beaufschlagt sein müssen (siehe DIN EN 474-1).

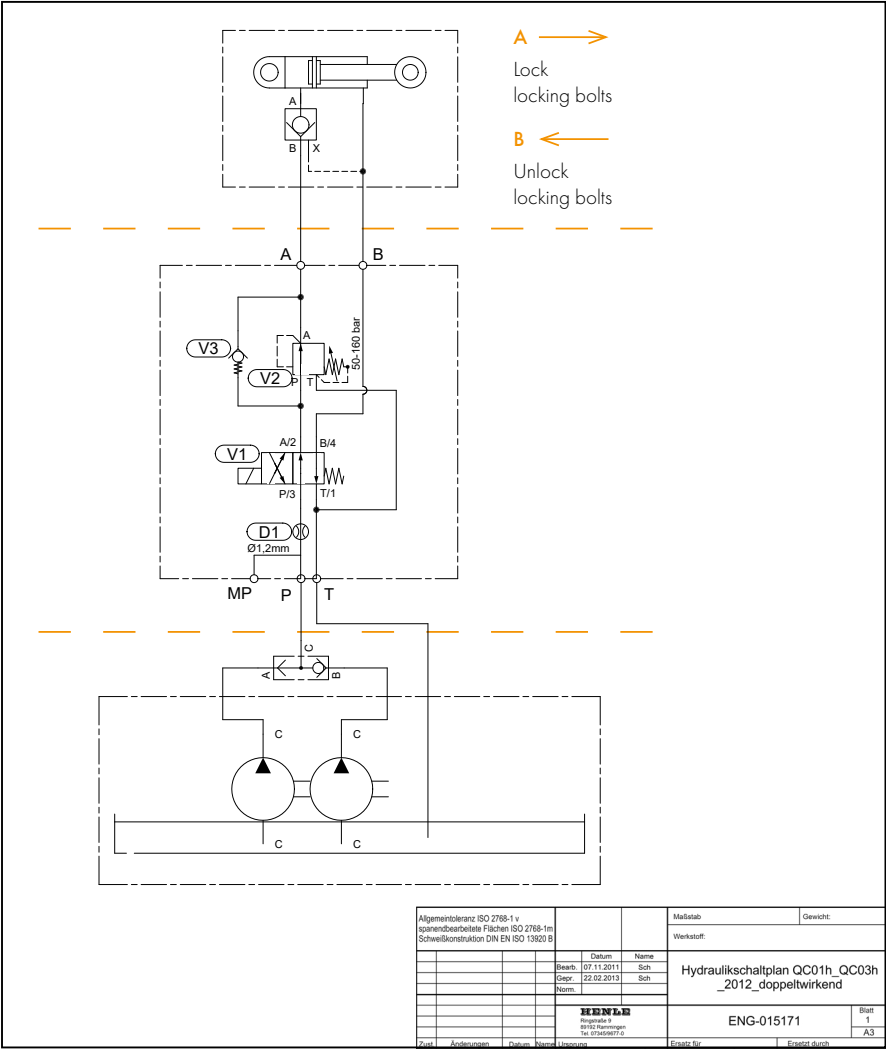
D.h., dass für die Funktionen "Schnellwechsler öffnen & schließen" ein separater Hydraulikkreis verwendet werden muss. Gegebenenfalls - und falls nicht vorhanden - muss dieser am Bagger nachgerüstet werden. Der von Henle angebotene Einbausatz bietet

Appendix B – Hydraulic circuit diagram QC01 SHF and QC03SHF



Appendix C – Hydraulic circuit diagram QC01HF, QC03Hp and QC08Hp

Schematic representation of the locking mechanism



Appendix D – Tightening torques

Tightening torques for straight male end fittings

Screw-in thread imperial	Screw-in thread metric	Tightening torque Sealing edge Nm – 10%
G 1/8	M 10x1.0	25
G 1/4	M 12x1.5	35
G 3/8	M 14x1.5	55
G 1/2	M 16x1.5	80
G 3/4	M 18x1.5	100



Tightening torques for sealing cone screw connection

Series	Pipe-AD [mm]	Tighten union nut by "hand" + value "X" turns		Tightening torque Nm ± 5%
		Path-dependent initial assembly turns	Path-dependent repeat assembly turns	
L	6	approx. 2/3	approx. 1/3	20
L	8	approx. 2/3	approx. 1/3	30
L	10	approx. 2/3	approx. 1/3	40
L	12	approx. 2/3	approx. 1/3	50
S	12	approx. 2/3	approx. 1/3	60

Appendix E – Screw tightening torques

Metric standard threads

The table shows the screw tightening torques for obtaining the maximum permissible preload for metric standard threads in Nm.

Diameter	 [mm]	 [mm]	Screw quality		
			8G / 8.8	10K / 10.9	12K / 12.9
M 8	13	6	25	34	43
M 10	17	8	47	65	83
M 12	19	10	78	100	120
M 14	22	12	120	175	215
M 16	24	14	180	260	310
M 18	27	14	250	360	430
M 20	30	17	340	470	560
M 22	32	17	430	600	700
M 24	36	19	560	790	950

Appendix F – Screw tightening torques

Metric fine pitch threads

The table shows the screw tightening torques for obtaining the maximum permissible preload for metric fine pitch threads in Nm.

Diameter	 [mm]	 [mm]	Screw quality		
			8G / 8.8	10K / 10.9	12K / 12.9
M 8 x 1	13	6	30	41	50
M 10 x 1	17	8	55	78	95
M 12 x 1.5	19	10	95	107	128
M 14 x 1.5	22	12	140	200	240
M 16 x 1.5	24	14	200	290	350
M 18 x 1.5	27	14	270	390	470
M 20 x 1.5	30	17	350	500	600
M 22 x 1.5	32	17	450	630	740
M 24 x 1.5	36	19	590	830	1000

Appendix G – Declaration of Conformity QC01



EG-Konformitätserklärung nach Maschinenrichtlinie 2006/42/CE Anhang IIA

Hersteller: **HENLE Baumaschinentechnik GmbH**
Ringstraße 9, 89192 Rammingen

Dokumentbevollmächtigter: **HENLE Baumaschinentechnik GmbH**
Abt. Konstruktion
Tobias Gnann

Der Hersteller bescheinigt, dass die auswechselbare Ausrüstung gemäß MRL 2006/42/EG,

Art: mechanischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC01M**

Art: hydraulischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC01SHF**

Art: hydraulischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC01HF**

Art: mechanischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC01M Schwenkeinrichtung**

Art: hydraulischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC01SHF Schwenkeinrichtung**

Art: hydraulischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC01HF Schwenkeinrichtung**

zum Anbau an Minibaggern bis 2 Tonnen Einsatzgewicht bestimmt ist und folgende Bestimmungen, Normen und Sicherheitsvorschriften entspricht:

1. EG Richtlinien:
MRL 2006/42/CE
2. Angewandte europäische Normen :
DIN EN ISO 12100 :2011-03
EN474-1 :2022 Erdbaumaschinen Sicherheit
EN474-5 :2022 + AC :2022 Anforderungen für Hydraulikbagger
3. Angewandte nationale technische Sicherheitsvorschriften :
BGR500 – Betreiben von Erdbaumaschinen

Rammingen, 23. November 2024

Gerhard Henle
Geschäftsführer

Appendix H – Declaration of Conformity QC03



EG-Konformitätserklärung nach Maschinenrichtlinie 2006/42/CE Anhang IIA

Hersteller: **HENLE Baumaschinentechnik GmbH**
Ringstraße 9, 89192 Rammingen

Dokumentbevollmächtigter: **HENLE Baumaschinentechnik GmbH**
Abt. Konstruktion
Tobias Gnann

Der Hersteller bescheinigt, dass die auswechselbare Ausrüstung gemäß MRL 2006/42/EG,

Art: mechanischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC03M**

Art: hydraulischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC03SHF**

Art: hydraulischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: **QC03Hp**

Art: mechanischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC03M Schwenkeinrichtung**

Art: hydraulischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC03SHF Schwenkeinrichtung**

Art: hydraulischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: **QC03Hp Schwenkeinrichtung**

zum Anbau an Minibaggern bis 6,5 Tonnen Einsatzgewicht bestimmt ist und folgende Bestimmungen, Normen und Sicherheitsvorschriften entspricht:

1. EG Richtlinien:
MRL 2006/42/CE
2. Angewandte europäische Normen :
DIN EN ISO 12100 :2011-03
EN474-1 :2022 Erdbaumaschinen Sicherheit
EN474-5 :2022 + AC :2022 Anforderungen für Hydraulikbagger
3. Angewandte nationale technische Sicherheitsvorschriften :
BGR500 – Betreiben von Erdbaumaschinen

Rammingen, 23. November 2024

Gerhard Henle
Geschäftsführer

Appendix I – Declaration of Conformity QC08



EG-Konformitätserklärung nach Maschinenrichtlinie 2006/42/CE Anhang IIA

Hersteller: HENLE Baumaschinentechnik GmbH
Ringstraße 9, 89192 Rammingen

Dokumentbevollmächtigter: HENLE Baumaschinentechnik GmbH
Abt. Konstruktion
Tobias Gnann

Der Hersteller bescheinigt, dass die austauschbare Ausrüstung gemäß MRL 2006/42/EG,

Art: mechanischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: QC 08M

Art: hydraulischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: QC 08Hp

Art: mechanischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: QC 08M Schwenkeinrichtung

Art: hydraulischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: QC 08Hp Schwenkeinrichtung

zum Anbau an Minibaggern bis 12 Tonnen Einsatzgewicht bestimmt ist und folgende Bestimmungen, Normen und Sicherheitsvorschriften entspricht:

1. EG Richtlinien:
MRL 2006/42/CE
2. Angewandte europäische Normen :
DIN EN ISO 12100:2011-03
EN474-1:2022 Erdbaumaschinen Sicherheit
EN474-5:2022 + AC:2022 Anforderungen für Hydraulikbagger
3. Angewandte nationale technische Sicherheitsvorschriften :
BGR500 – Betreiben von Erdbaumaschinen

Rammingen, 23. November 2023

Gerhard Henle
Geschäftsführer

Appendix J – Declaration of Conformity QC10



EG-Konformitätserklärung nach Maschinenrichtlinie 2006/42/CE Anhang IIA

Hersteller: HENLE Baumaschinentechnik GmbH
Ringstraße 9, 89192 Rammingen

Dokumentbevollmächtigter: HENLE Baumaschinentechnik GmbH
Abt. Konstruktion
Tobias Gnann

Der Hersteller bescheinigt, dass die austauschbare Ausrüstung gemäß MRL 2006/42/EG,

Art: mechanischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: QC 10M

Art: mechanischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: QC 10M Schwenkeinrichtung

zum Anbau an Minibaggern bis 19 Tonnen Einsatzgewicht bestimmt ist und folgende Bestimmungen, Normen und Sicherheitsvorschriften entspricht:

1. EG Richtlinien:
MRL 2006/42/CE
2. Angewandte europäische Normen :
DIN EN ISO 12100:2011-03
EN474-1:2022 Erdbaumaschinen Sicherheit
EN474-5:2022 + AC:2022 Anforderungen für Hydraulikbagger
3. Angewandte nationale technische Sicherheitsvorschriften :
BGR500 – Betreiben von Erdbaumaschinen

Rammingen, 23. November 2023

Gerhard Henle
Geschäftsführer

Appendix K – Declaration of Conformity QC21/25



EG-Konformitätserklärung nach Maschinenrichtlinie 2006/42/CE Anhang IIA

Hersteller: HENLE Baumaschinentechnik GmbH
Ringstraße 9, 89192 Rammingen

Dokumentbevollmächtigter: HENLE Baumaschinentechnik GmbH
Abt. Konstruktion
Tobias Gnann

Der Hersteller bescheinigt, dass die auswechselbare Ausrüstung gemäß MRL 2006/42/EG,

Art: mechanischer Schnellwechsler mit Adaptern für Hydraulikbagger.
Typ: QC 21/25M

Art: mechanischer Schnellwechsler mit Schwenkeinrichtung und Adaptern für Hydraulikbagger.
Typ: QC 21/25M Schwenkeinrichtung

zum Anbau an Minibaggern bis 40 Tonnen Einsatzgewicht bestimmt ist und folgende Bestimmungen, Normen und Sicherheitsvorschriften entspricht:

1. EG Richtlinien:
MRL 2006/42/CE
2. Angewandte europäische Normen :
DIN EN ISO 12100 :2011-03
EN474-1 :2022 Erdbaumaschinen Sicherheit
EN474-5 :2022 + AC :2022 Anforderungen für Hydraulikbagger
3. Angewandte nationale technische Sicherheitsvorschriften :
BGR500 – Betreiben von Erdbaumaschinen

Rammingen, 23. November 2023

Gerhard Henle
Geschäftsführer

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