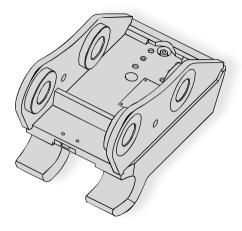
# rädlinger



# Rädlinger quick coupler HS 01EW HS 03EW

Optional with Rädlinger Tilt 90

Read the document before initial commissioning! Keep for future use!

This documentation is not subject to change management.

#### **IMPRINT**

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Maschinenbau GmbH Kammerdorfer Street 16 93413 Cham-Windischbergerdorf Germany

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# CONTEN TS

1	Information on the document	1
1.1	Structure of the warnings	2
1.1.1	Signal words and safety colours	2
1.1.2	Symbols	3
1.2	Text formatting and presentation	5
2	Identification and notes	6
2.1	General information	7
2.1.1	Warranty and liability	7
2.1.2	Aims of the operating instructions	8
2.1.3	Target group of the operating instructions	9
2.2	Intended use	10
2.2.1	Information on hammer operation	11
2.2.2	Operating conditions	12
2.2.3	Service life	12
2.3	Reasonably foreseeable misuse	13
3	General safety information	14
3.1	Duties	15
3.1.1	Obligations of the operator	16
3.1.2	Duties of the staff	17

Danger zone	19
Dangers from energies	19
Dangers due to mechanical energy	19
Dangers due to hydraulic energy	20
Dangers due to thermal energy	21
Hazards due to operating equipment	21
Residual risks	22
Additional information	26
Structure and function	27
Technical data	27
Quick coupler	27
Quick coupler with Rädlinger Tilt 90	28
Load capacity of the quick coupler	29
Compatibility of the quick coupler	30
Adapter frame	30
Labelling	32
Overall presentation	33
Assembly without Rädlinger Tilt 90	33
Assembly with Rädlinger Tilt 90	34
Locking mechanism	35
Function of the quick coupler	36
Locking status	37
	Dangers due to mechanical energy Dangers due to hydraulic energy Dangers due to thermal energy Hazards due to operating equipment Residual risks Additional information  Structure and function  Technical data Quick coupler Quick coupler with Rädlinger Tilt 90 Load capacity of the quick coupler Compatibility of the quick coupler Adapter frame Labelling Overall presentation Assembly without Rädlinger Tilt 90 Assembly with Rädlinger Tilt 90 Locking mechanism Function of the quick coupler

4.5.2	Unlocking status	38
4.6	Function of the rotary motor	39
4.7	Hydraulic components	40
5	Transport	41
6	Installation	43
6.1	Operating conditions	43
6.2	Setting up the work, service and protection area	44
6.3	Unpacking	44
6.4	Assembly	45
6.4.1	Information on hydraulics	45
6.4.2	Cultivation	50
6.4.3	Control	61
7	Commissioning	63
8	Service	66
8.1	Check before operation	68
8.2	Picking up and locking	71
8.2.1	Attachments	71
8.2.2	Hydraulic gripper	75
8.3	Control	80
8.3.1	Control outside the earth-moving machine	80

CONTEN TS

8.3.2	Control from the driver's cab	81
8.4	Unlocking and depositing	82
8.4.1	Attachments	82
8.4.2	Hydraulic gripper	86
8.5	Operation of the rotary motor	88
8.5.1	Setting the swivelling speed	88
8.5.2	Swivelling the quick coupler	89
8.6	Malfunctions	90
8.6.1	Information on troubleshooting	90
8.6.2	Causes of malfunction	91
9	Load hook	96
9.1	General information	97
9.2	Operating the load hook	97
10	Maintenance and servicing	98
10.1	General information	98
10.1.1	Maintenance by operating personnel	101
10.1.2	Maintenance by maintenance personnel	101
10.2	Maintenance schedule	102
10.3	Notes	105
10.4	Locking tolerances	106
10.5	Lubrication	107

10.6	Cleaning	110
10.7	Labelling	112
10.8	Information on components that are no longer required	113
10.8.1	Dismantling	113
10.8.2	Recycling	113
10.8.3	Waste disposal	113
11	Commissioning	114
11.1	Dismantling	114
11.1.1	Preparation for disassembly	115
11.1.2	Removing the hydraulic components	116
11.1.3	Removing the quick coupler	119
11.2	Storage	120
11.3	Waste disposal	121
11.4	Notes	122
12	Appendix	-1
12.1	Declaration of conformity	- 1 -
12.2	Spare parts list	- 2 -
12.2.1	HS 01EW	- 2 -
12.2.2	HS 01EW to Rädlinger Tilt 90	- 7 -
12.2.3	HS 03EW	- 12 -
12.2.4	HS 03EW to Rädlinger Tilt 90	- 17 -

12.2.5	Rädlinger Tilt 90	- 22
12.3	Screw tightening torques	- 24

CONTEN TS VI

#### 1 INFORMATION ON THE DOCUMENT

These operating instructions are part of the technical documentation for the product.

It complies with "Directive 2006/42/EC of the European Parliament and of the Council on the harmonisation of the laws, regulations and administrative provisions of the Member States relating to machinery" (Machinery Directive), Annex I, point 1.7.4.

These operating instructions are for the person responsible, who must hand them over to the personnel responsible for connecting, using and maintaining the machine. They must ensure that they have read and understood the information contained in the operating instructions and the accompanying documents. The operating instructions must be kept in a known and easily accessible place and must consulted even in the event of the slightest doubt.

The manufacturer accepts no liability for damage to persons, animals or property or to the product itself caused by improper use, failure to observe or inadequate observance of the safety criteria contained in these operating instructions or by modification of the quick-change system or the use of unsuitable spare parts.

# 1.1 Structure of the warnings

# SIGNAL WORD SIGNALLING THE EXTENT OF THE DANGER

 ${\sf Symbol}$ 

Type and source of potential hazard (the symbol varies depending on the type of hazard)

The consequences of not measures to avert danger. Hazard prevention measures.

# 1.1.1 Signal words and safety colours

Signal word	Use for	points to
<b>▲</b> DANGER	Warning	<pre> a dangerous situation, which, if not observed, will result in death or serious injury.</pre>
<b>⚠ WARNING</b>	Warning	a dangerous situation, which can lead to injuries and material damage if not observed.
<b>A</b> CAUTION	Warning	<pre> a dangerous situation, which can lead to minor injuries and material damage if not observed.</pre>
	Hint	Ease of use and cross-references. It excludes the risk of material damage or injury.
NOTE	Safety note	safety-relevant instructions or procedures.

# 1.1.2 Symbols

The following safety symbols in accordance with DIN EN ISO 7010: 2011 are used in these operating instructions and require special attention:

Danger sign			
<b>(!)</b>	General danger sign		Flammable
*	Hazard to the environment		Health hazard
	Cauterisation		Danger to life

Prohibition sign				
0	General prohibition sign		Eating and drinking prohibited	
<b>③</b>	Switching prohibited		Fire, naked flames and smoking are prohibited	
	No smoking		No access for unauthorised persons	

Warning signs			
	General warning sign		Warning of hot surfaces
	Warning of automatic start-up	<b>₽</b>	Warning of crushing hazard
	Warning of danger of slipping		Warning of falling objects
	Warning of hand injuries		Warning of suspended load
	Warning of explosive substances		Warning of obstacles in the head area
Command	sign		
0	General mandatory sign		Use protective clothing
	Use eye protection		Follow instructions
	Use hand protection		Use head protection
	Unlock before maintenance or repair	U	Keep locked
	Use foot protection		Wash your hands

# 1.2 Text formatting and presentation

Graphics	Illustrations may from your product variant.	
Enumerations	Enumerations are used to summarise content briefly and concisely.	
Instructions for action	The instructions provide step-by-step guidance for concrete actions:	
	Theme and aim of the plot	
	✓ Overview and requirements	
	1. Step-by-step calls to action	
	2. Step-by-step calls to action	
	> Result	

# 2 IDENTIFICATION AND NOTES

Machine designation	Rädlinger quick coupler HS 01EW  HS 03EW Optional with Rädlinger Tilt 390  490  590
Manufacturer	RÄDLINGER Maschinenbau GmbH Kammerdorfer Straße 16 93413 Cham-Windischbergerdorf Germany Phone: +49 (0) 99 71-80 88-0 Fax: +49 (0) 99 71-80 88-9999 E-mail: info@raedlinger.de Web: www.raedlinger.de

#### 2.1 General information

If you have any questions that go beyond the scope of these operating instructions, please do not hesitate to contact Raedlinger Maschinenbau GmbH.

The operating instructions are intended to familiarise the user with the handling of the machine and to provide information on details regarding function and maintenance.

# 2.1.1 Warranty and liability

The "General Terms and Conditions of Sale and Delivery" of Raedlinger Maschinenbau GmbH shall apply. The The "Terms and Conditions of Sale and Delivery" have been to the operator since the conclusion of the contract at the latest. Warranty and liability claims for personal injury and damage to property are excluded if they attributable to one or more of the following causes:

- " Improper use of the product
- " Improper installation, , operation and maintenance of the product
- " Disregarding the instructions and notes in the operating instructions and on the product
- " Disregarding the limits of the product, such as exceeding the maximum permissible load torque
- " Unauthorised structural modifications to the product
- " Use of accessories or spare parts that are not original spare parts from or approved by the manufacturer
- " Operating the product in the event of damage or malfunctions
- " Inadequate implementation of the specified maintenance measures
- " Disasters involving foreign bodies or force majeure.

" Attachments that are not buckets (e.g. mulchers, pruning shears, demolition sorting grabs, etc.) must be approved by Rädlinger Maschinenbau GmbH use with quick couplers with Rädlinger Tilt 90. Damage caused by the use of attachments that excessive force to the tilt motor due to high leverage will not be reimbursed by the manufacturer.

# 2.1.2 Aims of the operating instructions

These operating instructions serve as support and contain all the necessary information that must be observed for general safety, transport, installation, operation, maintenance, storage and disposal.

These operating instructions with all warning notices as well as all additional documents for the assemblies from external suppliers must be included:

- " To be observed, read and understood by all persons working with the product
- " Be freely accessible to every user
- Be consulted for all guestions.

#### Goals:

- " Prevent accidents
- Maximise the service life and reliability of the quick coupler
- " Minimise production downtime costs

# 2.1.3 Target group of the operating instructions

Expertise	Transport	Installation	Commissioning	Operation	Fault diagnosis	Maintenance	Repair	Set up	Decommissionin g	Waste disposal
Operating personnel				x						
Skilled labourer	X	X	x	X	X			X	X	x
Maintenance personnel					X	x	X			

### Instructed personnel

A person who been instructed by qualified personnel about the tasks assigned to them and the possible dangers of improper behaviour and, if necessary, trained and instructed about the necessary protective equipment and protective measures.

This includes operating personnel and semi-skilled personnel.

# Specialised personnel

A person who assess the work assigned to them and recognise potential hazards based on their professional training, knowledge and experience as well as knowledge of the relevant standards.

These include **skilled workers** and **maintenance personnel**.

#### **Qualification of competences**

Only persons who are authorised to work independently with the machine:

- " Have reached the age of 18
- " Are physically and mentally fit to do so.

Outside the Federal Republic of Germany, the relevant accident prevention regulations and safety regulations of the respective country apply.

#### 2.2 Intended use

The product is used to quickly and safely change various attachments on earth-moving machinery.

" The quick coupler and the attachment must matched to the earth-moving machine.

It is necessary for the intended use:

- " Observe all instructions in the operating instructions
- " Observe all warning notices
- " Observe the maintenance intervals.

Any other or extended use is considered improper and therefore inappropriate. In this case, safety and protective functions may be impaired.

Rädlinger Maschinenbau GmbH shall not be liable for any resulting damage.

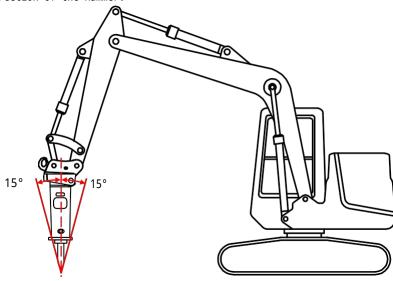
# 2.2.1 Information on hammer operation

Hammer use is only authorised to a limited extent:

- " There is no release for continuous operation.
  - " This means that direct cultivation is necessary for continuous operation.

#### Horizontal and overhead work is prohibited.

- " The hammer may only be used in a vertical direction  $(\pm 15^{\circ})$  (see illustration).
- " The force must be applied in the direction of the hammer.



# 2.2.2 Operating conditions

Ambient temperature	-20 °C to +40 °C Storage at 10 °C to 25 °C
Altitude	Restrictions correspond to the earth-moving machine.
Pollution	Normal soiling from soil, clay and other bulk materials. Regular cleaning necessary.  Avoid contact with acids or corrosive gases.
Special features	Only with sufficient lighting: at least 250 lx
Air humidity	For storage: up to 50%; otherwise no restriction
Place of use	On land. Not suitable for operation under water. General contact with water due to rain or splash water is unproblematic.

# 2.2.3 Service life

The service life depends on the factors:

- " Operating environment
- " Utilisation intensity
- " Compliance with the maintenance intervals specified by the manufacturer.

# 2.3 Reasonably foreseeable misuse

Reasonably foreseeable misuse that could pose a risk to the user, third parties or the machine is prohibited for all operating modes:

- ' Operating the quick coupler outside the physical limits of use
- " Modifications to the product as well as additions and conversions without prior consultation with Rädlinger GmbH
- " Improper installation, , operation and maintenance of the quick coupler
- " Operating the machine if the requirements for the operator's field of vision are not met
- " Use in hoist operation without authorised lifting gear
- " Lifting of persons or means of passenger transport
- " Impact work without attachment
- " Use of unauthorised spare parts
- Operating the product with or with obvious faults or defective safety devices
- " Repair, cleaning and maintenance work without complying with safety regulations
- Disregarding or not reading the operating instructions.

### 3 GENERAL SAFETY INFORMATION

The product is built according to the latest state of the art and recognised safety regulations. In order to prevent danger to life and limb of the user and third parties as well as damage to the machine during use, only use the product for its intended purpose and in an obviously safe condition.

The operator of the machine or the persons authorised by him are responsible for damage to property and personal injury resulting from failure observe the instructions given in the operating instructions.

#### **SAFETY NOTE**

The operating instructions must be readily available in the work area and accessible to personnel at all times

If the operating instructions are lost or cannot be used, you must order a replacement from Rädlinger Maschinenbau GmbH.

Any faults that may impair safety must be rectified immediately.

All safety and danger notices on the machine must be in a clearly legible condition at all times.

# 3.1 Duties

# Failure to do so will result in the loss of any warranty claims.

The following circumstances can increase the hazard potential of the product:

- " Neglecting maintenance and servicing
- " Malfunctions that may impair the safety of machine operation.

all warnings and safety instructions. Be aware of the potential dangers.

# 3.1.1 Obligations of the operator

A safe condition and use of the quick coupler is a prerequisite for safe operation of the machine. The operator is therefore obliged to ensure that the following points are observed:

- An operating instruction is required for occupational health and safety issues, which the operator must draw up.
- Only qualified and authorised personnel may operate the quick coupler.
- Prohibit hazardous working methods. Check the actions of staff.
- " Ask staff to confirm that they have read and understood the operating instructions.
- " A copy of the complete operating instructions can be found within easy reach in the work area.
- " Check the operating instructions regularly to ensure that they are complete and legible.
- ' The safety and danger notices attached to the quick coupler must be kept in an appropriate condition or renewed.
- " Prescribe the wearing of protective equipment (PPE) for activities with a risk of injury.
- " the responsibilities of the personnel according to the areas of responsibility.
- " Staff must report safety deficiencies to a supervisor immediately.
- " The guick coupler is only operated in one-man operation.

Failure to do so will result in the loss of any warranty claims.

#### 3.1.2 Duties of the staff

Persons working in the area of the quick coupler have a duty to co-operate to ensure health and safety in the workplace. They must instructed in the use and operating conditions of the quick coupler. Everyone is obliged to contribute to the prevention of accidents at work and their consequences through their personal behaviour:

- " Inform your supervisor if the quick coupler not in proper condition.
- "Keep unauthorised personnel away from the danger zone.
- " Authorised personnel are only permitted to enter the danger zone while carrying out an instruction.

# Tasks of the operating personnel

The operating personnel must carry out the following activities to ensure trouble-free operation:

- " Identify faults and notify specialised personnel if necessary
- " Commissioning of the quick coupler under the instruction of specialised personnel after a fault or after retrofitting
- " Carrying out maintenance and servicing measures according to the operator's specifications.

# Orientation values for lifting and carrying frequencies

Gender 1	Load weight	Lifting, setting down, moving	T protrude up to a carrying distance of (per layer)							
	(kg)	and holding (per <sub>shift2</sub> )	5 to< 10 m	10 to< 30 m	≥ 30m					
	< 10	generally without restriction								
	10 to< 15	up to 1000×	up to 500×	up to 250×	up to 100×					
Men	15 to< 20	up to 250×	up to 100×		up to 50×					
	20 to< 25	up to 100×	up to 50×							
	≥ 25	only in conjunction with	special preventive me	asures						
	< 5	generally without restriction								
Women -	5 to <10	up to 500×	up to 500×	up to 250×	up to 100×					
	10 to <15	up to 250×	up to 100×		up to 50×					
	≥ 15	only in conjunction with special preventive measures								

<sup>&</sup>lt;sup>1</sup> Experience has shown that a reduction in the guideline values is recommended for young people, older people and people with reduced physical capacity, as well as for unfavourable exercise conditions / postures.

₂ shift duration:≥ 7 hours

# 3.2 Danger zone

- " The working, service and protection area of the quick coupler forms the danger zone.
- Danger areas on the quick coupler that require special attention are labelled with warning notices and safety symbols. They must be clearly recognisable for persons working in this area.
- " Working with the quick coupler while persons are in the danger zone is not permitted.
- " Hazardous areas may only be entered during the necessary steps.

# 3.3 Dangers from energies

- " Mechanical energy: mechanical residual energy after locking and unlocking
- " Hydraulic energy: hydraulic residual energy after swivelling
- " Thermal energy: Danger from hot surfaces and hot equipment

# 3.3.1 Dangers due to mechanical energy



#### **↑** WARNING

# Risk of crushing and amputation due to moving machines and components



The movements of the earth-moving machine and the quick coupler create hazards. Removing the protective devices creates hazards.



Do not touch the quick coupler during operation. Do not open any protective devices.

Do not remove any connections or covers.

# 3.3.2 Dangers due to hydraulic energy



#### **▲** DANGER

# Danger to life due to hydraulic energy

If the pipes are defective, a jet of liquid may escape under high pressure. Do not

change the pressure settings beyond the maximum values.

Follow all maintenance instructions.

In the event of a hydraulic fluid leak: Do not touch the fluid jet.

**Stopping the fluid jet:** Switch off the earth-moving machine.

Depressurise the hydraulic system.

Put on your PPE.

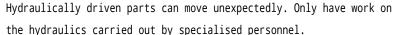
Wait until the liquid jet stops.

Collect any leaked liquids and dispose of them properly. Replace and repair defective parts.

# **▲ WARNING**



# Risk of injury due to hydraulic energy



Depressurise the hydraulic system before working on the quick coupler. Check that the system is depressurised.

# 3.3.3 Dangers due to thermal energy

#### **⚠ WARNING**

# Risk of burns from hot hydraulic fluid and hot surfaces

Contact with hot hydraulic fluid can cause severe burns.



Before working on the hydraulic system, depressurise it and allow oil-bearing components to cool down to ambient temperature.

Wear your PPE. Inspect all hydraulic hoses regularly for damage.

# 3.4 Hazards due to operating equipment



# NOTE

# Notes on safe handling

Eating, drinking and smoking are prohibited on the machine and when handling the operating equipment.



Read the manufacturer's instructions and the safety data sheet for the product before use.

Ensure that the machine is adequately ventilated. Do not vapours.



Avoid skin and eye contact.

Wear PPE (gloves, safety goggles, respiratory protection) when handling operating materials. Wash your hands after handling equipment.

#### 3.5 Residual risks

Despite all the precautions taken, there are residual risks that are not obvious.

You reduce the existing residual risks by observing and complying with the warning notices and the intended use of the quick coupler.



#### **▲** DANGER

#### Danger to life due to impaired perception

Limited perception during contact with the quick coupler or when using it can result in hazards.

Only work with the quick coupler when it is fully operational.

The lighting in the working environment must be at least 250 lx.

Stop working if, for example, you get headaches, your eyesight is impaired, you have problems with hearing or your ability to react is impaired.



#### **▲** DANGER

#### Danger to life due to falling quick coupler

If the connecting bolts are not secured, there is a risk of the quick coupler falling down.

Check the fuses on the connecting bolts after installation before commissioning, before daily operation and before any maintenance.



#### **A** DANGER

# Danger to life due to malfunctions

Malfunctions of the quick coupler can be dangerous.

At the start of your shift, check that the safety equipment, the supply lines and the overall condition of the quick coupler are in good working order.

If a fault occurs: Interrupt operation. Eliminate the fault.

Operation of the quick coupler is authorised again when all faults been rectified and

safe operation of the quick coupler is possible

and protective and safety devices of the quick coupler are fitted and intact.



#### **▲** DANGER

#### Danger to life due to exceeding the maximum load capacity

Disregarding the maximum load capacity of the earth-moving machine can cause the earth-moving machine to tip over. Disregarding the maximum load capacity of the quick coupler causes damage to the quick coupler. Load-bearing components can break.

Do not stand under raised loads.

The quick coupler must be added to the weight of the attachment.

The attachment with adapter frame must be matched to the earth-moving machine and the quick coupler and its components.



#### **A** DANGER

# Danger to life due to electric shock

Outside buildings, there is an increased risk of lightning strikes in the area of the quick coupler during thunderstorms.

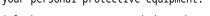
Never work on or with the quick coupler outdoors during thunderstorms.

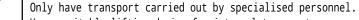
#### **A** DANGER



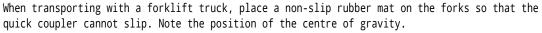
#### Danger to life due to falling loads

Inadequately or incorrectly secured transported goods can be dangerous. Wear your personal protective equipment.





Use a suitable lifting device for internal transport, e.g. a crane whose lifting capacity corresponds to the weight of the quick coupler.



Secure the quick coupler for lorry transport on the loading area using suitable means. Do not stand under raised loads.







# **⚠ WARNING**

# Danger of slipping

Work or malfunctions on the quick coupler can cause oil or lubricant contamination to get onto the ground in the area of the quick coupler.

Watch out for soiling in the danger zone.

In the event of a fault: Eliminate the cause or inform the relevant specialist personnel.

Remove the soiling.

#### 3.6 Additional information

The instruction of employees with regard to hazards and the necessary protective measures must be repeated at regular intervals, but at least once a year.

An operating instruction is required for occupational health and safety issues, which the operator must draw up.

These instructions must be followed in full in addition to the operating instructions.

The provisions of the accident prevention regulations of the employers' liability insurance association also apply to all work on the machine.

#### **SAFETY NOTE**

#### Danger due to missing instructions and labelling on the machine

Removing the instructions and labelling on the machine can be dangerous.

The instructions and labelling attached to the machine must be kept in a legible condition and must not removed. After replacing parts and operating equipment, all existing labelling plates that have been removed for this purpose must be reattached accordingly. Stickers and labels that are no longer legible can reordered from Rädlinger Maschinenbau GmbH.

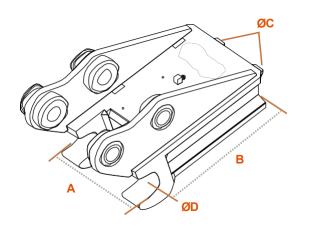
#### Please also note:

- " Applicable binding regulations on accident prevention
- " Binding regulations in force at the place of use
- " The recognised technical rules for safe and professional work
- Existing regulations on environmental protection
- " Other applicable regulations.

# 4 STRUCTURE AND FUNCTION

# 4.1 Technical data

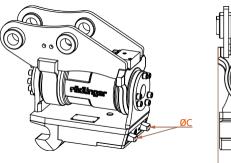
# 4.1.1 Quick coupler

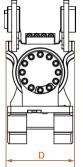


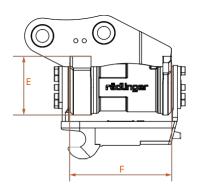
	HS 01EW	HS 03EW
Earth-moving machine class (tonnes)	0,7 - 2,0	1,5 - 4,8
A (mm)	180	200
B (mm)	224	282
ØC (mm)	25	30
ØD (mm)	40	50
Weight* (kg)	20	31

<sup>\*</sup> depending on the excavator suspension

# 4.1.2 Quick coupler with Rädlinger Tilt 90





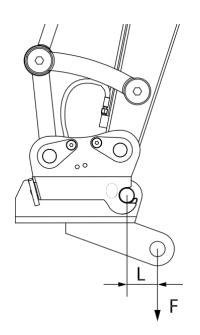


Rädlinger Tilt	390	490	590
Possible combination with	HS 01EW  HS 03EW	HS 03EW	HS 03EW
Earth-moving machine class (tonnes)	1.0 - 2.0  1.0 - 2.7	2,8 - 3,8	3,8 - 4,8
D (mm)	165	190	210
E (mm)	145	163	181
F (mm)	267	298	325
Weight (kg)	27	38	47
Total weight* (kg)	60 - 67	92	107

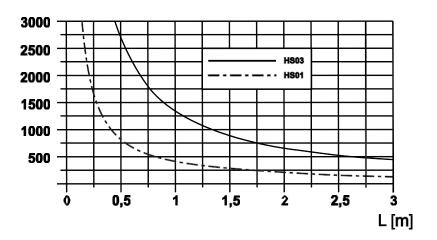
<sup>\*</sup> depending on the excavator suspension

# 4.1.3 Load capacity of the quick coupler

Max. Load torque (kgm)= Load capacity  $\mathbf{F}$  (kg)× Distance (between mounting shaft and load application point)  $\mathbf{L}$  (mm) The diagram shows the respective load capacity as a function of the distance to the load.



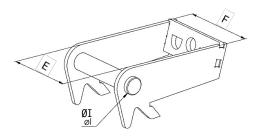


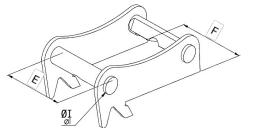


# 4.1.4 Compatibility of the quick coupler

The Rädlinger quick coupler is compatible with Rädlinger adapter frames and original Lehnhoff adapter frames. These support the quality standard with regard to accuracy of fit and dimensional accuracy of the tolerance range of the locking bolts.

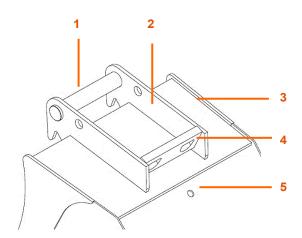
# 4.1.5 Adapter frame





Adapter type	SW 01	SW 03
E (mm)	185	205
F (mm)	205	229
Øl (mm)	40	50

Adapter type	SW 01 Radlog	SW 03 Radlog
E (mm)	185	206
F (mm)	205	230
Øl (mm)	40	50



1	Clutch shaft
2	Suspension bracket
3	Base plate
4	Locking plate (or coupling shaft)
5	Attachment

Fig. 1 Adapter frame on attachment

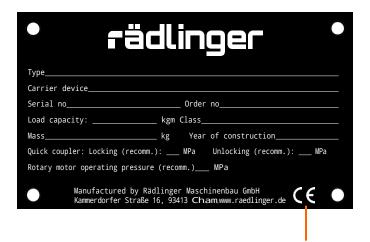
Attachments must converted using suitable adapter frames. Depending on the attachment, the adapter frame is welded on (e.g. backhoe bucket), bolted on (e.g. hydraulic hammer) or bolted (e.g. grapple). The swivelling range of the attachment depends on the positioning of the adapter frame on the attachment.

The earth-moving machine and attachments must be suitable for mounting the quick coupler and converted in consultation with the manufacturer.

Raedlinger Maschinenbau GmbH does not accept any warranty liability if there is a lack of coordination. Carry out the coordination with the specialised personnel of Rädlinger GmbH.

# 4.2 Labelling

The **type plate** is located on the top of the quick coupler. The CE marking (1) of the quick coupler is located on the type plate.



The warning sign for "Warning of suspended loads" is attached to the right and left of the quick coupler:



In combination with Rädlinger Tilt 90, the warning sign for "Warning of hand injuries" is attached to the right and left of the tilt motor unit:



# 4.3 Overall presentation

# 4.3.1 Assembly without Rädlinger Tilt 90

The quick coupler system consists of the quick coupler with locking mechanism using locking bolts. Locking is done mechanically via spring force. To unlock, the hydraulic cylinder is actuated, which acts against the spring locking force and retracts the locking bolts.

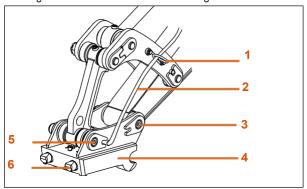


Fig. 2 Quick coupler on kinematics

1	Hose line routing
2	Hydraulic hose line
3	Receptacle dipper handle side
4	Quick coupler
5	Mounting pressure support side

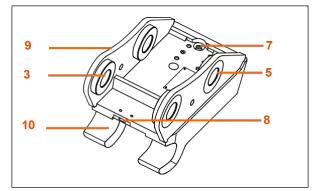


Fig. 3 Quick coupler

6	Locking bolt
7	Hydraulic connection
8	Hazard display
9	Suspension
10	Pick-up claws

# 4.3.2 Assembly with Rädlinger Tilt 90

The quick coupler system consists of the quick coupler with locking mechanism using locking bolts. The quick coupler can be swivelled using the built-in rotary motor.

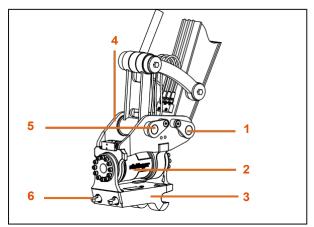


Fig. 4
Quick coupler with Rädlinger Tilt 90 on kinematics

1	Receptacle dipper handle side
2	Rotary motor
3	Quick coupler
4	Suspension
5	Mounting pressure support side

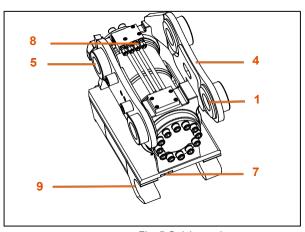


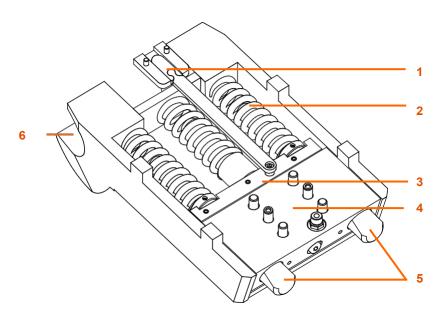
Fig. 5 Quick coupler with Rädlinger Tilt 90

6	Locking bolt
7	Hazard display
8	Collecting unit and hydraulic connections
9	Pick-up claws

# 4.4 Locking mechanism

Locking is mechanical via spring force.

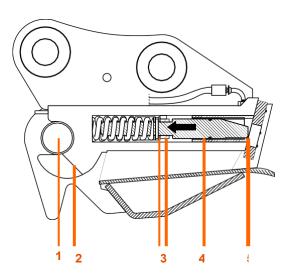
The hydraulic cylinder (4) is actuated to unlock. The bridge (3) uses it to compress the spring assembly (2) and the locking bolts (5) retract. The hazard warning indicator (1) is hooked into the bridge (3) and follows the movements. This means that the visual indicator (1) is extended when unlocked and disappears into the housing when locked.



1	Hazard display
2	Spring assembly
3	Bridge
4	Hydraulic cylinder
5	Locking bolt
6	Pick-up claws

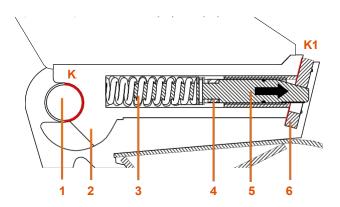
# 4.5 Function of the quick coupler

- ' The locking bolts are retracted.
- " The quick coupler is latched into the coupling shaft of the adapter frame with the mounting claws.
- " The quick coupler is swivelled up to the upper edge of the other coupling shaft/latch plate and raised until the attachment hangs freely above the ground.
- " This ensures that the quick coupler housing is flush with the coupling shaft/latch plate.



1	Clutch shaft
2	Pick-up claws
3	Bridge
4	Locking bolt
5	Transom plate

# 4.5.1 Locking status



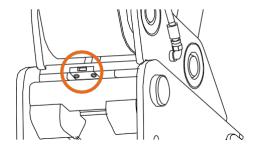


Fig. 6 Locking status with retracted visual indicator

1	Clutch shaft
2	Pick-up claws
3	Spring assembly
4	Bridge
5	Locking bolt
6	Transom plate

The locking bolts (5) are connected to the pridge (4). The spring assembly (3) moves the locking bolts (5) via the bridge (4). By pushing the locking bolts (5) into the locking plate (6), the sloping rear surfaces of the quick coupler are clamped against the locking plate (6) (K1) and the mounting claws (2) are pressed against the coupling shaft (1) (K2).

# After locking (Fig. 6):

If the locking bolts been successfully extended, the hazard indicator moves completely into the interior of the nousing at the same time and must no longer be /isible.

# 4.5.2 Unlocking status

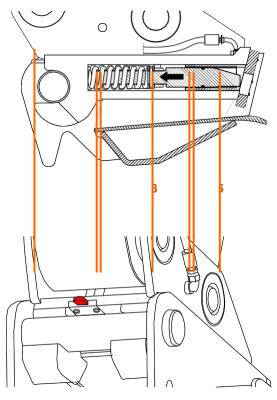


Fig. 7 Unlocking status with visual indicator extended

1	Hazard display
2	Spring assembly
3	Bridge
4	Locking bolt
5	Hydraulic cylinder

The locking bolts (4) are connected to the pridge (3).

The hydraulic cylinder (5) moves the locking polts (4). The spring assembly (2) is compressed.

The unlocking process is complete when the nazard warning indicator (1) is visible.

## After unlocking (Fig. 7):

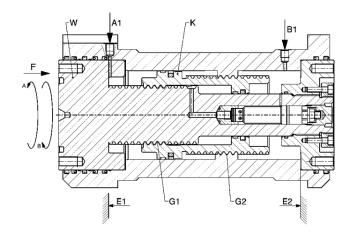
The hazard display is visible from the driver's cab of the earth-moving machine in the normal seated position.

The quick coupler can be disengaged from the attachment.

# 4.6 Function of the rotary motor

The rotary motor is for swivelling payloads with a limited angle of rotation. The payload is mounted on the output shaft W. As in a hydraulic cylinder, the piston K is moved linearly between the two mechanical end positions E1 and E2 by hydraulic force. This linear movement is converted into a rotary movement by the multi-start helical threads G1 and G2 and transmitted to the output shaft W.

The drive is powered by pressurised fluid, which is fed into the rotary motor via connections A1 and B1.

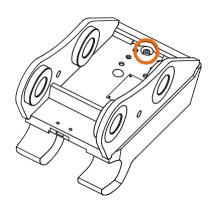


The function of a hydraulic rotary union is integrated into the rotary motor.

This means that the oil is channelled or transferred directly to the quick coupler via internal connections in the rotary motor. The internal hydraulic connections in the rotary motor thus ensure the oil supply to the quick coupler and create a hose-free control of the hydraulic quick coupler.

The corresponding connections on the rotary motor are DD1 and DD2.

# 4.7 Hydraulic components



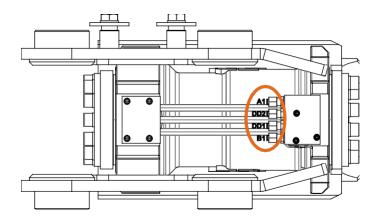


Fig. 8 Hydraulic connection on the quick coupler

Fig. 9 Rädlinger Tilt 90 with Collecting Unit

- The fittings have an M12× 1.5 connection thread for a 6L connection.
- " The connection for the quick-change function (DD1) is connected to the additional hydraulic connections of the earth-moving machine via hydraulic hoses.
- " Rotary union 2 (DD2) is not used with single-acting quick couplers.
- " The rotary motor connections for the swivelling function are connected via The hydraulic hoses are connected to the existing hydraulic connections of the earth-moving machine for the auxiliary control circuit.

Swivelling connections: A1 & B1

#### 5 TRANSPORT

Transport is carried out by instructed personnel or specialised personnel.

#### **A** DANGER



#### Danger to life due to falling loads



Inadequately or incorrectly secured transported goods can be dangerous. Wear

your personal protective equipment.



Only have transport carried out by specialised personnel.

Use a suitable lifting device for internal transport, e.g. a crane whose lifting capacity corresponds to the weight of the quick coupler.



When transporting with a forklift truck, place a non-slip rubber mat on the forks so that the quick coupler cannot slip. Note the position of the centre of gravity.

Secure the quick coupler for lorry transport on the loading area using suitable means. Do not stand under raised loads.

#### SAFETY INSTRUCTIONS

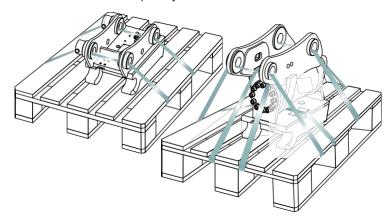
#### Risk of injury due to tripping or slipping

When transporting the quick coupler, there is a risk of tripping and slipping due to unsecured transport routes.

Paths, ramps and steps over which loads are moved must be sure-footed, without obstacles and well lit.

The following points must be observed when transporting and unloading the quick coupler:

- " Note the machine centre of gravity of the quick coupler.
- " Only transport the quick coupler using suitable lifting gear with sufficient load-bearing capacity.
- " The quick coupler must be moved with a suitable unloading aid.
- " Use suitable ropes, chains or belts for unloading or loading in accordance with the load of the quick coupler.
- " Check the lifting gear for damage.
- " If necessary, use rubber mats to prevent the quick coupler or transport pallet from slipping.
- Prevent chafing of ropes and lifting straps on sharp edges and corners.
- " Check the delivered parts for completeness, damage or other anomalies.
- " Observe the applicable safety and accident prevention regulations (BGV D6, D8) during transport.
- " Ensure that the installation site is adequately ventilated.



#### 6 INSTALLATION

#### The installation is carried out by specialised personnel:

In order to attach the quick coupler and its components safely, experience with the detailed assembly various earthmoving machines is required. Due to the great variance, some instructions can only roughly describe the simplest, safest and quickest way to proceed. Consult the documentation for the earth-moving machine and contact the manufacturer if you have any doubts or questions.

# 6.1 Operating conditions

Ambient temperature	-20 °C to +40 °C Storage at 10 °C to 25 °C
Altitude	Restrictions correspond to the earth-moving machine.
Pollution	Normal soiling from soil, clay and other bulk materials. Regular cleaning necessary.  Avoid contact with acids or corrosive gases.
Special features	Only with sufficient lighting: at least 250 lx
Air humidity	For storage: up to 50%; otherwise no restriction
Place of use	On land. Not suitable for operation under water. General contact with water due to rain or splash water is unproblematic.

The type plate on the top of the quick coupler housing shows which carrier device your quick coupler is designed for.

# 6.2 Setting up the work, service and protection area

Set up the future work, service and safety areas when the machine is delivered and the installation is started. The working, service and protection areas of the machine form the danger zone.

- Cordon off the installation area extensively.
- Use warning notices and safety symbols to mark hazardous areas at the installation site that require special attention.
  - " The warning notices and safety symbols must clearly recognisable for persons working in this area.

# 6.3 Unpacking

- 1. Check that the delivery is complete. Use the delivery notes and the manufacturer's packing lists.
- 2. Put on PPE gloves.

#### **↑** CAUTION

#### The fastening straps are under tension

Unpack the product with care and caution. If the fastening straps are cut, they may strike out with great force when the tension is released.

When cutting, ensure that there are no other people in the immediate vicinity. Only stand to the side of the metal straps to avoid injury.

3. Use metal shears to cut the fastening straps.

#### Disposal of transport and storage packaging

Disposal of the transport and storage packaging is governed by the local disposal regulations and the environmental protection laws applicable in the country of operation.

# 6.4 Assembly

The dipper arm and the pressure support of the earth-moving machine are connected to the mounts of the quick coupler suspension.

The quick coupler suspension corresponds to the original suspension of the respective earth-moving machine.

The original connecting bolts and bolt locks of the earth-moving machine are used for connecting and securing.



Further information can be found in the operating instructions for the earth-moving machine. (e.g. possible installation of the O-ring seal, in the chapter on attachment mounting).

### 6.4.1 Information on hydraulics

The warranty and the EC Declaration of Conformity for the "Rädlinger quick coupler" is only valid a suitable hydraulic attachment kit is used for the necessary adaptation measures in accordance with the current quick coupler safety requirements and the Machinery Directive and the installation is carried out by qualified specialists.

The connections on the rotary motor are connected to the existing hydraulic connections on the earth-moving machine for the auxiliary control circuit via hydraulic hose lines.

- " Connections: 6L M12×15
- " Hydraulic hose lines and suitable press nipples are required for installation.
- " Heat-resistant, UV-resistant and frost-resistant disposable cable ties are required for installation.

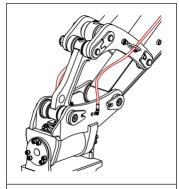


Fig. 10 External tubing



You need suitable connection attachments to connect the cables to the earth-moving machine.

Consult the operating instructions for the earth-moving machine.

Depending on the positioning of the hydraulic connections, the hoses are routed inside or outside the quick coupler suspension.

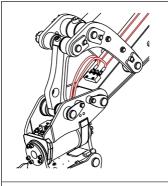


Fig. 11 Inner tubing

You need hoses of sufficient length and thickness.

The use of abrasion-resistant hoses or additional protective coils is also recommended. Pay:

- " for sufficient bending radii.
- " make sure not to squeeze, kink or pull the hose during the entire swivelling range.
- " to the burst pressure of at least a factor of "four" above the maximum operating pressure.

#### **SAFETY NOTE**

#### Danger from bursting hydraulic lines

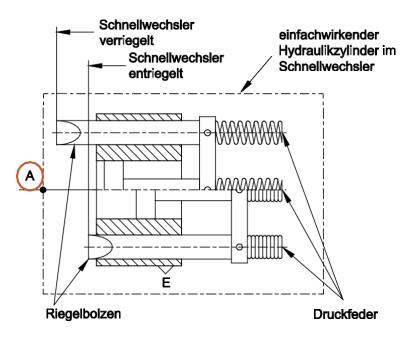
The use of inadequate hydraulic hose lines can be dangerous.

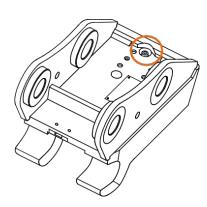
Lay out hydraulic hose lines with a burst pressure of at least a factor of "four" above the maximum operating pressure.

" Before installation, ensure that the pressures can be maintained.

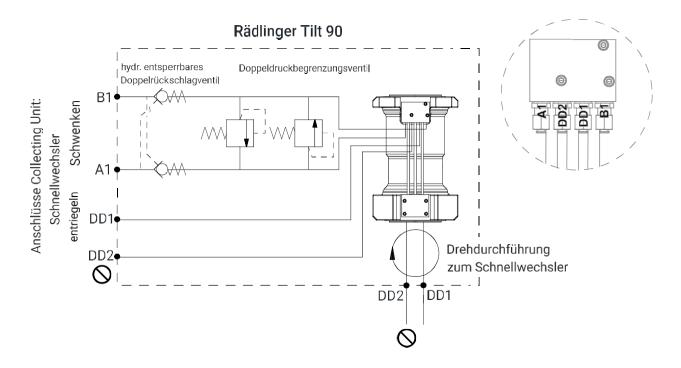
	HS 01EW	HS 03EW	Rädlinger Tilt 90		
			390	490	590
Unlocking  Swivelling (recommended)	16 MPa	18 MPa		18 - 21 MPa	
Max. Operating pressure	24 MPa	26 MPa		21 MPa	
Volume flow [l/min]	0,5	- 1,0	2,0 - 2,5	3,0 - 5,5	4,5 - 7,0

# Hydraulic circuit diagram quick coupler



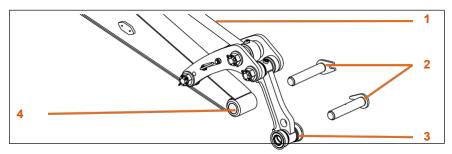


# Hydraulic circuit diagram Rädlinger Tilt 90



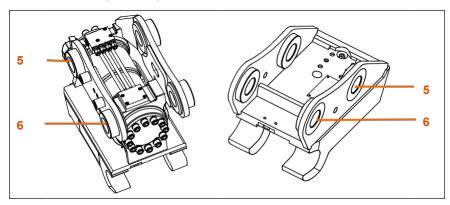
# 6.4.2 Cultivation

# Design of the dipper arm kinematics



1	Bucket cylinder
2	Connecting bolt
3	Pressure support
4	Spoon handle

# Structure of the quick coupler



5	Pressure support side
6	Dipper handle side

#### Aligning the quick coupler and dipper arm kinematics



#### ⚠ WARNING

### Risk of injury due to hydraulic energy

Hydraulically driven parts can move unexpectedly. Only have work on

the hydraulics carried out by specialised personnel.

Depressurise the hydraulic system before working on the quick coupler. Check that the system is depressurised.

#### **⚠ WARNING**



#### Risk of injury due to uncontrolled start-up of the earth-moving machine

Automatic start-up of the earth-moving machine creates hazards.



Secure the earth-moving machine against uncontrolled start-up. No unauthorised person may access to the earth-moving machine. Third parties are prohibited from entering the danger zone.

- $\checkmark$  The earth-moving machine is in the ready-to-use position, switched off and secured.
- ✓ Working with a second person (B) who is authorised to operate the earth-moving machine. Ensure that it is possible to communicate unambiguously over the greater distance.
- 1. Put on PPE.







- 2. Place the quick coupler on firm, level ground within reach of the dipper arm.
- 3. Remove the transport lock from the quick coupler (see section 6.3).
- 4. Align the quick coupler with the dipper arm side towards the earth-moving machine.
- 5. Person A moves away from the danger zone.

#### **⚠** WARNING



#### Risk of crushing and amputation due to moving machines

The movements of the earth-moving machine create hazards. Maintain a safe distance.

- 6. Person B swivels the dipper arm kinematics to the quick coupler.
- 7. Person B deactivates the earth-moving machine
- ✓ The danger zone is secured and may be entered.
- 8. Person A checks that the dipper handle and pressure support correctly positioned.
- 9. Person A informs person B whether corrections need to be made.

Follow the steps from step 4 until the position of the dipper arm and the pressure support to the quick coupler is correct.

> The mounting holes of the dipper arm kinematics are aligned with the mounting holes of the quick coupler suspension.

## Fastening the quick coupler



Refer to the original operating instructions for the earth-moving machine for further information on attaching implements.

#### **⚠ WARNING**



#### Risk of injury due to uncontrolled start-up of the earth-moving machine

Automatic start-up of the earth-moving machine creates hazards.



Secure the earth-moving machine against uncontrolled start-up. No unauthorised person may access to the earth-moving machine. Third parties are prohibited from entering the danger zone.

- ✓ The dipper arm kinematics are attached to the quick coupler.
- ✓ The earth-moving machine is switched off and secured.
- ✓ The original connecting bolts and the bolt locks of the earth-moving machine are required.
- 1. Align the mounting holes of the dipper arm and the quick coupler.
- 2. Insert the connecting bolt into the mounting hole.
- 3. Secure the connecting bolt with the bolt lock.
- Align the mounting hole of the pressure support and the quick coupler.
- 5. the connecting bolt into the mounting hole.
- 6. Secure the connecting bolt with the bolt lock.
- The quick coupler is attached to the dipper arm kinematics.



#### Connecting the quick coupler

Skip this sub-chapter if you are installing a version with Rädlinger Tilt 90.



### **⚠** WARNING

## Risk of injury due to consumables



Hazards arise when handling harmful, irritating consumables.

When working with consumables such as oils, cleaning agents, etc., observe the special operating and work instructions or safety data sheets for the safe handling of the respective substances.



#### **⚠ WARNING**

## Danger of slipping

Work or malfunctions on the quick coupler can cause oil or lubricant contamination to get onto the ground in the area of the quick coupler.

Watch out for soiling in the danger zone.

In the event of a fault: Eliminate the cause or inform the relevant specialist personnel.

Remove the soiling.

- ✓ The quick coupler is attached to the dipper arm kinematics.
- ✓ The hydraulic lines of the earth-moving machine are depressurised.
- ✓ The earth-moving machine is switched off.



#### **▲** DANGER

# Danger to life due to hydraulic energy

If the pipes are defective, a jet of liquid can escape under high pressure.

In the event of a hydraulic fluid leak: Do not touch the fluid jet.

**Stopping the fluid jet**: Switch off the earth-moving machine. Depressurise the hydraulic system. Put your PPE. Wait until the liquid jet stops.

Collect any leaked liquids and dispose of them properly. Replace and repair defective parts.

1. Allow the hydraulic lines to cool down to ambient temperature.



#### ⚠ WARNING

#### Risk of burns from hot hydraulic fluid and hot surfaces

Contact with hot hydraulic fluid can cause severe burns.

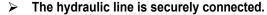


Before working on the hydraulic system, depressurise it and allow oil-bearing components to cool down to ambient temperature.

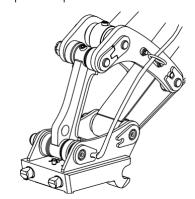
Wear your PPE.

Inspect all hydraulic hoses regularly for damage.

- Check which connections must be interconnected in accordance with chapter 6.4.1 and the operating instructions for the earth-moving machine.
- 3. Cut the hydraulic hose line to size and the compression nipple with the appropriate fitting or hydraulic coupling at one end of the hose.
- 4. Attach the appropriate connection attachment for the earth-moving machine on the other side.
- 5. Unscrew and loosen the union nut on the hydraulic connection point on the guick coupler.
- 6. Remove the sealing plug from the hydraulic connection point.
- Tighten the hydraulic hose line at the hydraulic connection point of the quick coupler to the required torque (see appendix).
- the hydraulic hose line to the connection of the earth-moving machine using appropriate hose line guides.
- Connect the other end of the hydraulic hose line to the corresponding connection or hydraulic coupling of the earthmoving machine.



10. Bleed the hydraulic system.



#### **⚠ WARNING**



#### Risk of injury due to residual energy

When bleeding the hydraulic system, unforeseen movement of actuators can cause hazards. Refer to the operating instructions for the earth-moving machine for further information.

#### Connect Rädlinger Tilt 90

Skip this sub-chapter if you have installed a version without Rädlinger Tilt 90.







Hazards arise when handling harmful, irritating consumables.

When working with consumables such as oils, cleaning agents, etc., observe the special operating and work instructions or safety data sheets for the safe handling of the respective substances.

#### Danger of slipping

Work or malfunctions on the quick coupler can cause oil or lubricant contamination to get onto the ground in the area of the quick coupler.

**⚠** WARNING

**⚠ WARNING** 

Watch out for soiling in the danger zone.

In the event of a fault: Eliminate the cause or inform the relevant specialist personnel.

Remove the soiling.

- ✓ The quick coupler is attached to the dipper arm kinematics.
- ✓ The hydraulic lines of the earth-moving machine are depressurised.
- ✓ The earth-moving machine is switched off.



#### **▲** DANGER

# Danger to life due to hydraulic energy

If the pipes are defective, a jet of liquid can escape under high pressure.

In the event of a hydraulic fluid leak: Do not touch the fluid jet.

**Stopping the fluid jet**: Switch off the earth-moving machine. Depressurise the hydraulic system. Put your PPE. Wait until the liquid jet stops.

Collect any leaked liquids and dispose of them properly. Replace and repair defective parts.

1. Allow the hydraulic lines to cool down to ambient temperature.



#### ⚠ WARNING

# Risk of burns from hot hydraulic fluid and hot surfaces



Contact with hot hydraulic fluid can cause severe burns.

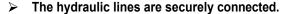


Before working on the hydraulic system, depressurise it and allow oil-bearing components to cool down to ambient temperature.

Wear your PPE.

Inspect all hydraulic hoses regularly for damage.

- Check which connections must be interconnected in accordance with chapter 6.4.1 and the operating instructions for the earth-moving machine.
- Cut the hydraulic hose lines to size and crimp compression nipple with the corresponding screw connection or hydraulic coupling to the hose ends.
- Attach the appropriate connection attachments for the earth-moving machine on one side.
- Unscrew and loosen the union nuts at the hydraulic connection points on the collecting unit.
- 6. Remove the plugs from the hydraulic connection points.
- Tighten the hydraulic hose lines at the hydraulic connection points on the collecting unit to the required torque (see appendix).
- the hydraulic hose lines to the connections of the earth-moving machine using appropriate hose line guides.
- Connect the other end of the hydraulic hose lines to the corresponding connections or hydraulic couplings of the earthmoving machine.



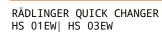
10. Bleed the hydraulic system.

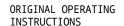




# Risk of injury due to residual energy

When bleeding the hydraulic system, unforeseen movement of actuators can cause hazards. Refer to the operating instructions for the earth-moving machine for further information.





#### 6.4.3 Control

A check is then carried out to ensure that the installation has been carried out correctly and the quick coupler is released for commissioning.

# Control outside the earth-moving machine



### **A** DANGER

# Danger to life due to falling quick coupler

If the connecting bolts are not secured, there is a risk of the quick coupler falling down.

Check the fuses on the connecting bolts after installation before commissioning, before daily operation and before any maintenance.

- 1. Check the securing of the connecting bolts.
- 2. Check hoses for damage.
- 3. Check that the hydraulic screw connections are firmly tightened.
- 4. Exclude leaks.

#### Control from the driver's cab

# The danger zone is secured and there are no people in it.

- 1. Putting the earth-moving machine into operation.
- 2. Check that the pressure regulating devices are set to the nominal pressure.
  - " The set pressures are documented by means of photos.
  - " The commissioning report is filled out and sent back to Raedlinger GmbH together with the photos of the print settings.
- 3. Perform complete movement cycle without attachment:
  - " Check the quick coupler for free movement.
  - " The hydraulic hoses must not be pulled taut or subjected to tension or kinking.

If a fault occurs, please refer to chapter "8.6 Faults".

# 7 COMMISSIONING

### Commissioning is carried out by specialised personnel.

Then check whether the quick coupler is functioning normally and is enabled for operation.



#### 

### Risk of injury due to disregard of one-man operation

If there are several people in the working area of the quick coupler, hazards may arise. The quick coupler may only operated by one person.



### **A** DANGER

# Danger to life due to falling quick coupler

If the connecting bolts are not secured, there is a risk of the quick coupler falling down. Check the fuses on the connecting bolts after installation before commissioning, before daily operation and before any maintenance.

1. Check the securing of the connecting bolts.



### **A** DANGER

# Danger to life due to malfunctions

Malfunctions of the quick coupler can be dangerous.

At the start of your shift, check that the safety equipment, the supply lines and the overall condition of the quick coupler are in good working order.

If a fault occurs: Interrupt operation. Eliminate the fault.

Operation of the quick coupler is authorised again:

when all faults been eliminated,

safe operation of the quick coupler is possible

and protective and safety devices of the quick coupler are fitted and intact.

- 2. Check hoses for damage.
- 3. Check that the hydraulic screw connections are firmly tightened.
- Exclude leaks.

#### **Function check**

### ✓ The danger zone is secured and there are no people in it.

- 1. Putting the earth-moving machine into operation.
- 2. Check that the pressure regulating devices are set to the nominal pressure.
  - " The set pressures must correspond to the values specified in chapter 6.4.1.
- Attach an attachment designed and intended for the quick coupler in order to check the operating function.
   Follow chapter 8.2.
- 4. Perform a complete movement game.
- 5. the implement to the operating function. Follow chapter 8.4.
- The quick coupler can be released for operation once the inspection process has been completed without any problems.

If a fault occurs, please refer to chapter "8.6 Faults".

# 8 OPERATION

# Operation is carried out by operating personnel.

The following positions are occupied by the operating personnel when handling the quick coupler:

- " in the driver's cab of the earth-moving machine
- " on the quick coupler (if an additional hydraulic connection needs to be attached or removed)



### **A** DANGER

# Danger to life due to entering the danger zone

Entering the danger zone creates hazards.

Do not enter the danger zone unless an action step requires it.



#### **▲** DANGER

# Danger to life due to exceeding the maximum load capacity

Disregarding the maximum load capacity of the earth-moving machine can cause the earth-moving machine to tip over. Disregarding the maximum load capacity of the quick coupler causes damage to the quick coupler. Load-bearing components can break.

Do not stand under raised loads.

The quick coupler must be added to the weight of the attachment.

The attachment with adapter frame must be matched to the earth-moving machine and the quick coupler and its components.



### **⚠** CAUTION

### Material damage due to neglected maintenance

If maintenance is neglected, there is a risk that the quick coupler will no longer function properly.

Check the maintenance schedule daily. Carry out all maintenance with care.

# 



# Danger of slipping

Work or malfunctions on the quick coupler or rotary motor can result in dirt from oil or lubricants getting onto the floor.

Watch out for soiling in the danger zone.

In the event of a fault: Eliminate the cause or inform the relevant specialist personnel.

Remove the soiling.

# 8.1 Check before operation

Carry out the check daily before the first operation, even before using an attachment that is already locked.



#### Reduced lifting capacity

The maximum lifting capacity and the breakaway or tear-out force of the earth-moving machine is reduced accordingly by the dead weight and the front attachment length of the quick coupler.

- ✓ The quick coupler or the attachment is lowered to the ground.
- ✓ The earth-moving machine is switched off.
- ✓ PPE is created
- Check the maintenance schedule.
- 2. Carry out due maintenance procedures or arrange for them to be carried out by notifying specialised personnel.
- 3. Check the quick coupler for damage or defects.
  - " If damage or defects are found: repair them or have them repaired.
- ✓ The danger zone is secured and there are no people in it
- ✓ The field of vision is not restricted in accordance with ISO 5006.

# $\triangle$

### **⚠ WARNING**

# Risk of injury due to disregard of one-man operation

If there are several people in the working area of the quick coupler, hazards arise. The quick coupler may only be operated by one person.

- 4. Check hydraulic lines.
- 5. If **no attachment** is connected: Check the contact surfaces of the quick coupler and adapter frame and clean if necessary.
  - " To ensure complete and secure locking, there must no obstructions in the form of dirt on the quick-change device.
  - " Do not remove soiling with your bare hands.

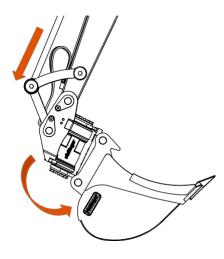
- 6. Tilt in the quick coupler or attachment.
- Retract and extend the locking bolt by actuating the hydraulic control.
  - " Check the movement of the locking bolts and hazard indicator.



### **IMPORTANT**

The hydraulic control for operating the quick coupler varies depending on the earthmoving machine.

Consult the operating instructions for the earthmoving machine.



# When an attachment is picked up and locked:

- 8. Check the locking tolerances in accordance with chapter 8.3.1 "Checking outside the earth-moving machine".
- 9. Perform a complete movement game.
- > The inspection is complete.

# 8.2 Picking up and locking

# 8.2.1 Attachments

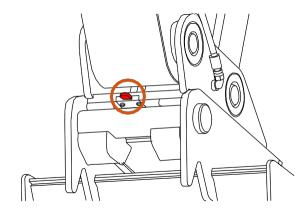
# **IMPORTANT**

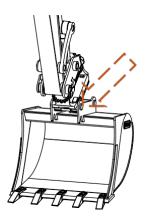


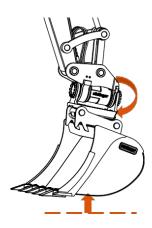
The hydraulic control for operating the quick coupler varies depending on the earthmoving machine.

Consult the operating instructions for the earth-moving machine.

- ✓ The danger zone is secured and there are no people in it.
- 1. Putting the earth-moving machine into operation.
- 2. Unlock the quick coupler.
  - " The locking bolts retract.
    (On the rear of the quick coupler, not visible from the driver's cab).
  - " The hazard visibility display extends. (On the front of the quick coupler, from the driver's cab).
  - " Does not extend the hazard warning indicator: Stop operation immediately and rectify the fault.







Insert the quick coupler with the mounting claws parallel into the adapter frame of the attachment.

### **⚠** CAUTION

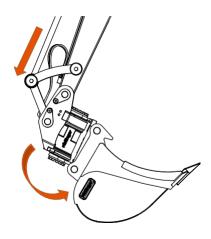


# Risk of material breakage

Incorrect or tilted engagement under the influence of force can lead to damage to the mounting claws and clutch shaft.

Ensure that the mounting claws are parallel to the clutch shaft.

- 4. Engage the locating claws in the clutch shaft.
- 5. Extend the bucket cylinder to swivel the quick coupler up to the upper edge of the locking plate/coupling shaft.
- 6. Raise the dipper arm kinematics until the attachment hangs freely above the ground (approx. 20 cm).
  - > By raising the attachment, the Quick coupler centred in the adapter frame.



- Extend the bucket cylinder further until the attachment is flush with the coupling shaft/latch plate on the quick coupler.
- The quick coupler and the attachment are tilted in.
- The attachment lies flush with the locking plate/coupling shaft on the quick coupler due to its own weight.

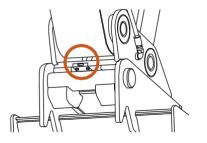


#### **▲** DANGER

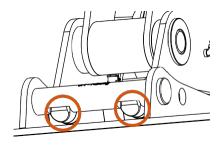
# Danger due to disregarding the position of the attachment

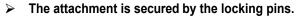
If the attachment not brought into the tilted position, it can come loose and fall down.

Pay attention to the tilted position. Keep the attachment as close to the ground as possible.



- Lock the quick coupler.
  - The locking bolts extend. (On the rear of the quick coupler, not visible from the driver's cab).
  - The hazard display retracts. (On the front of the quick coupler, from the driver's cab).
- The quick coupler is locked.





- " The mounting claws are clamped against the coupling shaft and the rear of the quick coupler against the coupling shaft/latch plate.
- " The hazard visibility indicator is fully retracted.



#### **A** DANGER

### Danger due to incomplete locking

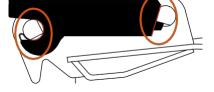
If the hazard warning indicator is not fully retracted, this is a sign that the locking bolts could not be fully extended due to an obstacle.

Keep the quick coupler and attachment in the tilted position.

Unlock the quick coupler. Put the attachment down.

In accordance with the maintenance schedule, check whether the quick coupler and adapter frame are dirty or deformed and take appropriate countermeasures.

Do not remove soiling with bare hands.



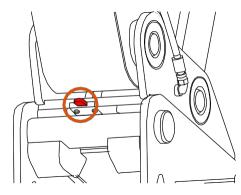
 Check and connect optional hydraulic components in accordance with chapter 8.3.

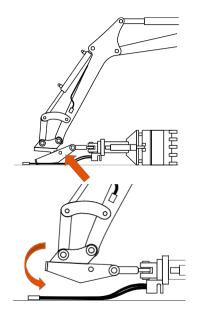
# 8.2.2 Hydraulic gripper

# NOTE

Hydraulic grabs must always be picked up in the horizontal position.

- ✓ The danger zone is secured and there are no people in it.
- 1. Putting the earth-moving machine into operation.
- 2. Unlock the quick coupler.
  - " The locking bolts retract. (On the rear of the quick coupler, not visible from the driver's cab).
  - The hazard visibility display extends. (On the front of the quick coupler, from the driver's cab).
  - " Does not extend the hazard warning indicator: Stop operation immediately and rectify the fault.







 Insert the quick coupler with the mounting claws parallel into the adapter frame of the attachment.



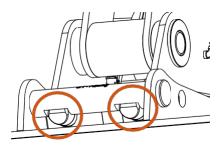


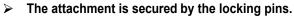
# Risk of material breakage

Incorrect or tilted engagement under the influence of force can lead to damage to the mounting claws and clutch shaft.

Ensure that the mounting claws are parallel to the clutch shaft.

- 4. Engage the locating claws in the clutch shaft.
- Extend the tilt cylinder until the quick coupler is in contact with the locking plate.
- 6. Lock the quick coupler.
  - " The locking bolts extend. (On the rear of the quick coupler, not visible from the driver's cab).
  - The hazard display retracts. (On the front of the quick coupler, from the driver's cab).
- The quick coupler is locked.





- " The mounting claws are clamped against the coupling shaft and the rear of the quick coupler against the coupling shaft/latch plate.
- " The hazard visibility indicator is fully retracted.



### **A** DANGER

# Danger due to incomplete locking

If the hazard warning indicator is not fully retracted, this is a sign that the locking bolts could not be fully extended due to an obstacle.

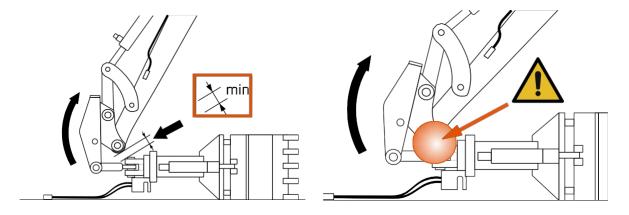
Keep the quick coupler and attachment in the tilted position.

Unlock the quick coupler. Put the attachment down.

In accordance with the maintenance schedule, check whether the quick coupler and adapter frame are dirty or deformed and take appropriate countermeasures.

Do not remove soiling with bare hands.





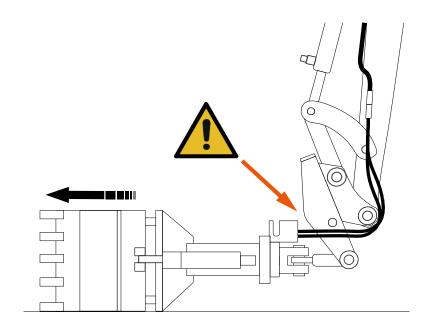
- 7. Fully retract the bucket cylinder and raise the dipper arm slightly.
  - " Maintain a safe distance (min) between the quick coupler and the gripper turning device.
- 8. Check and connect the hydraulic components in accordance with chapter 8.3.

# **⚠** CAUTION

# Risk of material breakage

When working in the direction of travel, the adapter frame can collide with components of the hydraulic gripper and cause damage.

Pay attention to the necessary distances at the joints.



# 8.3 Control

- ✓ The attachment is attached to the quick coupler and locked.
- ✓ The hazard visibility indicator is fully retracted. (On the front of the quick coupler, from the driver's cab).

# 8.3.1 Control outside the earth-moving machine

- " Steps 1 4 only need to be carried out if steps 5 or 6 need to be carried out. Otherwise, continue with the "Control from the driver's cab".
- 1. Park the locked attachment in a stable position on level ground.
- 2. Switch off the earth-moving machine.
- 3. Secure the earth-moving machine against unintentional switching on.
- 4. Wear PPE.
- 5. Measure locking bolt position according to chapter 10.4 if:
  - " An attachment has been picked up by you for the first time since purchase or takeover,
  - " Quick coupler and attachment were the last to be subjected to particularly heavy-duty use,
  - " The attachment not been in use for some time,
  - " The maintenance plan prescribes it.

If the results are outside the tolerances:

" Stop operation and rectify fault.

Optional hydraulic components of the attachment can be connected in accordance with their operating instructions.



Further information on "Connecting hydraulic attachments" can be found in the manufacturer's documentation.

Consult the operating instructions for the attachment and the earth-moving machine.

#### 8.3.2 Control from the driver's cab

### ✓ No-one is within the danger zone.

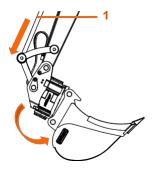
Each time a new attachment is picked up, it must be checked by moving it to the end positions and ensuring that there is no collision between the quick coupler, the attachment and the carrier's boom system. Always keep the quick coupler and attachment close to the ground (20 - 50 cm).

- 7. Tilt and turn the quick coupler to the end positions by moving the earth-moving machine kinematics.
- " Optional with Rädlinger Tilt 90: Swivel the quick coupler into the end positions using the tilt motor.
  - " The hydraulic lines must not be damaged.
  - " The attachment must not be loose.
  - " The attachment must not fall down.
- 8. Check hydraulic attachments for full function in accordance with their operating instructions.

# 8.4 Unlocking and depositing

Unlocking and depositing is identical for all corresponding attachments, except for hydraulic grabs.

#### 8.4.1 Attachments



- ✓ The danger zone is secured and there are no people in it
- 1. Putting the earth-moving machine into operation.
- Extend the bucket cylinder (1).
- > The attachment is tilted in.
- Position the attachment above firm, level ground.
- 4. Lower the implement to just before ground contact (approx. 20 cm).

#### **A** DANGER

# Danger due to disregarding the position of the attachment

If the attachment not brought into the tilted position before unlocking, it may come loose when unlocked and fall down in an uncontrolled manner.

Before unlocking, pay attention to the tilted position. Keep the attachment as close to the ground as possible.

# **Detach hydraulic components**

### Skip this page if no hydraulic attachment is connected.



Further information on "Removing hydraulic attachments" can be found in the manufacturer's documentation.

Consult the operating instructions for the attachment and the earth-moving machine.

- 1. Depressurise hydraulic hoses of the attachment.
- 2. Switch off the earth-moving machine.
- 3. Secure the earth-moving machine against unintentional switching on.
- 4. Allow the hydraulic components to cool down to ambient temperature.

#### ✓ PPE is created.

- 5. Enter the danger zone.
- 6. Loosen the hydraulic connections to the hydraulic attachment in accordance with its operating instructions.
- 7. Close the hydraulic connections.

# > The quick coupler may be unlocked.

- ✓ The danger zone is secured and there are no people in it.
- 8. Put the earth-moving machine back into operation.

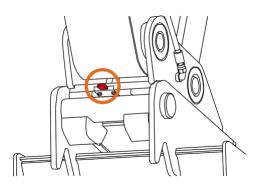
# Unlocking and putting down the attachment

#### **▲** DANGER

# Danger due to disregarding the position of the attachment

If the attachment not brought into the tilted position before unlocking, it may come loose when unlocked and fall down in an uncontrolled manner.

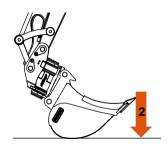
Before unlocking, pay attention to the tilted position. Keep the attachment as close to the ground as possible.

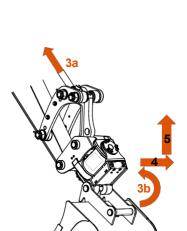


### ✓ The attachment is tilted in.

- Unlock the quick coupler.
  - The locking bolts retract.

    (On the rear of the quick coupler, not visible from the driver's cab).
  - " The hazard visibility display extends. (On the front of the quick coupler, from the driver's cab).
- The quick coupler is unlocked.
  - " If the quick coupler does not unlock, see chapter 8.6 Faults
- The attachment is no longer secured by the locking bolts.





### **A** DANGER

# Danger of the attachment tipping over

Placing the attachment on uneven ground can be dangerous.

Do not place the attachment anywhere where it can fall or tip over.

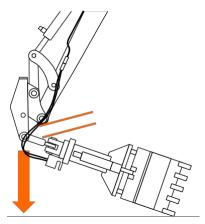
2. place the attachment in a stable position on level and firm  $\mbox{\ensuremath{\mbox{ground.}}}$ 

- Retract the bucket cylinder. (3a)
  This swivels the quick coupler out of the adapter frame.
  (3b)
- 4. Disengage the quick coupler.
- . Lift the dipper arm kinematics.
- The attachment is fully stored.

# 8.4.2 Hydraulic gripper

# NOTE

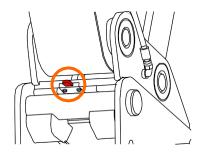
Hydraulic grabs **must always** be placed in a horizontal position.

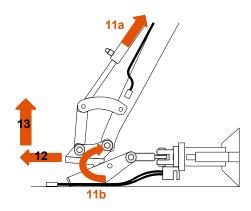


- $\checkmark$  The danger zone is secured and there are no people in
- 1. Putting the earth-moving machine into operation.
- Place the grapple in front of the earth-moving machine.
   Pay attention to the safety distance between the quick coupler and the gripper turning device.
- 3. Depressurise hydraulic hoses of the attachment.
- 4. Switch off the earth-moving machine.
- Secure the earth-moving machine against unintentional switching on.
- Allow the hydraulic components to cool down to ambient temperature.

#### ✓ PPE is created.

- 7. Enter the danger zone.
- Loosen the hydraulic connections to the hydraulically operated attachment.
  - > The quick coupler may be unlocked.





- ✓ The danger zone is secured and there are no people in it.
- 9. Put the earth-moving machine back into operation.
- 10. Unlock the quick coupler.
  - The locking bolts retract. (On the rear of the quick coupler, not visible from the driver's cab).
  - " The hazard visibility display extends. (On the front of the quick coupler, from the driver's cab).
- The quick coupler is unlocked.
  - " If the quick coupler does not unlock, see chapter 8.6 Faults
- The attachment is no longer secured by the locking bolts.
- Retract the bucket cylinder. (11a)
   This swivels the quick coupler out of the adapter frame. (11b)
- 2. Disengage the quick coupler.
- 13. Lift the dipper arm kinematics.
- > The hydraulic gripper is fully lowered.

# 8.5 Operating the rotary motor



Observe the documentation for the earth-moving machine. Further information can be found in the operating instructions for the earth-moving machine. The operation of the swivelling motor depends on the earth-moving machine.

# 8.5.1 Setting the swivelling speed

The swivelling speed can be regulated via the volume flow of the earth-moving machine/the additional control circuit connection.

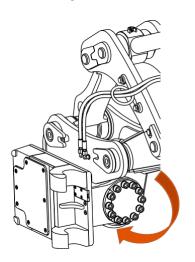
If the volume flow is throttled, the speed is throttled.

- Refer to the operating instructions for the earth-moving machine for details.
- " Have the settings made by specialised personnel for hydraulics. These can adjust the volume flow or install or remove a throttle.
- " In newer earth-moving machines, suitable attachment programmes can be activated on the display.

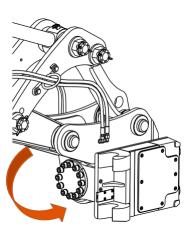
# 8.5.2 Swivelling the quick coupler

 $\checkmark$  The quick coupler with swivel motor was connected to the auxiliary control circuit connection of the earth-moving machine as recommended.

The quick coupler is swivelled by actuating the toggle switch of the auxiliary control circuit. The quick coupler can therefore be swivelled up to 90° to the right and left and is mechanically limited. The tilting direction of the switch corresponds to the tilting direction of the quick coupler.







# 8.6 Malfunctions

### Faults must be rectified by specialised personnel.

- " If a fault occurs, operation must be stopped immediately and the fault rectified.
- " Contact the manufacturer's customer service in the event of faults that are not:
  - " through a maintenance operation,
  - " replacement of a component with a spare part or
  - " can rectified by a new installation.

# 8.6.1 Information on troubleshooting

Search for and rectify the causes of faults after you:

- " Depressurise the earth-moving machine.
- " Switch off the earth-moving machine and secure it against unwanted restarting.
- " you wear your PPE.

# 8.6.2 Causes of malfunction

# Quick coupler

Malfunction	Possible cause	Notes	Troubleshooting
The locking bolts do not retract or do not hold the retracted position.	Load sensing is active.	Earth-moving machines with load sensing shut down the hydraulic pump as soon as the machine is idling or no load is applied.  excavator function is actuated. This means that the full hydraulic pressure is not applied for unlocking.	An excavator function, e.g. "Spoon tipping" or "Raise dozer blade" must be pressed to raise the pump, apply full hydraulic pressure and unlock the quick coupler.
The attachment wobbles.	The adapter frame, the mounting claws or the locking bolts are too worn.	The adapter frame, the mounting claws or the locking bolts are deformed.	Have it repaired by the manufacturer.
The locking bolts move too quickly or too slowly.	The volume flow is set too high or too low.		Volume flow according to chapter "8.5.1 Adjusting the swivelling speed".
	A pressure reduction has been installed or is required.		Have the pressure reduction installed or removed.

	Malfunction	Possible cause	Notes	Troubleshooting
		The hydraulic line to the quick coupler is leaking or defective.	Leakage.	Replace hydraulic lines or have them repaired.
		The coupling of the hydraulic line is not completely screwed or plugged together.	Possible leakage.	Screw and plug together the hydraulic couplings correctly.
bol <sup>1</sup> cha	The locking bolts do not change their position.	Mechanical defect in the locking mechanism (material damage, e.g. spring assembly or cylinder seal defective).	Other causes have been ruled out.	Have it repaired by the manufacturer.
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	The hydraulic screw connections are loose or leaking.	Leakage.	Replace the screw connection or seal if tightening is not sufficient.
		Defect on the earth- moving machine (hydraulic pump, control valve or electrical control (toggle switch)).	Other hydraulic (Add-on) devices do not work either.	Consult the operating instructions for the earth-moving machine. Contact the construction machinery dealer or service workshop.

Malfuncti on	Possible cause	Notes	Troubleshooting
	The spring assembly is defective.		Have it repaired by the manufacturer.
The lock .	The carrier or attachment is not matched to the quick coupler.	The permissible load torque is exceeded	Unsuitable devices must replaced. Carrier, quick coupler and attachment must be matched to each other.

# Rotary motor

Malfuncti on	Possible cause	Notes	Troubleshooting
	Integrated double pressure relief valve defective.	If the attachment gives way directly.	Have it repaired or replaced.
Gives way/does	Double pilot-operated non-return valve defective.	If the attachment unstable.	Have it repaired or replaced.
not hold position.	Angular play of the motor too large.		Contact manufacturer.
	Motor seal defective.	Leakage.	Repair or replace the seal.
Pivots in the wrong direction.	The hydraulic connections have been swapped.	Fault that only occurs directly after installation.	Replace/ reconnect hydraulic connections.

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Malfunction	Possible cause	Hints	Troubleshooting
	The volume flow is set too high or too low.		Volume flow according to chapter "8.5.1 Adjusting the swivelling speed".
Pans too quickly or too slowly.	A pressure reduction has been installed or is required.		Have the pressure reduction installed or removed.
	The cross-section of the hydraulic hose is too small		The hydraulic hose must replaced.5
	The tubing has too many bends.		Change / correct hose routing.6
	Pressure too low because the rotary union seal defective.		Repair the rotating union seal or have it repaired.
Does not swing far enough.	Attachment with quick coupler too large / heavy / unsuitable for Rädlinger Tilt 90 in combination with the earthmoving machine.	Can in combination occur.	Checking compatibility, dimensions and weights.

 $_{\rm 5}$  Raedlinger GmbH offers the service of fitting a hydraulic package or the hoses  $_{\rm 6}$  Raedlinger GmbH offers the service of fitting a hydraulic package or the hoses

Malfunction	Possible cause	Notes	Troubleshooting
Does not swivel.	A hydraulic coupling of the hydraulic line is not completely screwed or plugged together.	Leakage.	Screw and plug together the hydraulic couplings correctly.
	A hydraulic line to the swivelling motor is leaking or defective.	Leakage.	Replace or repair hydraulic lines.
	Hydraulic screw connections are loose or leaking.	Leakage.	Replace the screw connection or seal if tightening is not sufficient.
	Mechanical defect/ material damage in the swivelling motor.	Other causes have been ruled out.	Replace the defective part or send the product to the manufacturer for repair.
	Defect in earth-moving machine.	Other (add-on) devices do not work either.	Consult the operating instructions for the earth-moving machine. Contact the earthmoving machine manufacturer.

### **SAFETY NOTE**

Load safety devices of earth-moving machinery with a maximum permissible lifting capacity of ≥ 1000 kg or an overturning moment of40000 Nm in accordance with DIN EN 474-5

A load hook may only be used if a lifting load table is attached to the driver's seat, an overload warning device,

- a pipe rupture safety device on the bucket cylinder and
- a pipe rupture safety device installed on the boom cylinder.

Lifting and transporting loads is only permitted using hoist ropes and chains. Please note:

- ...the maximum load capacity of the load hook.
- ...the maximum lifting capacity of the earth-moving machine.
- ...the weight of the quick coupler must be deducted from the lifting capacity of the earth-moving machine.
- ...use only without attachment on the guick coupler.
- ...the operating instructions for the earth-moving machine.
- ...to lift the load slowly.
- ...to attach the load parallel to the weld seam of the load hook.

### **⚠** CAUTION

Unauthorised conversions and modifications to the quick coupler are prohibited

Only parts approved by the manufacturer may be used.

### 9.1 General information

- " Observe the general accident prevention regulations and the VDE guidelines.
- " Only certified specialist welding companies are authorised to carry out set-up and conversion work on the quick coupler.
- " Only use original spare parts authorised the manufacturer.
- " Observe the instructions attached to the quick coupler, e.g. type plates.
- " any protective devices that have been removed.
- " Check that the quick coupler and all safety devices are working properly.
- " The load capacity of the load hook is indicated on the load hook.

### 9.2 Operating the load hook

- Lifting and transporting loads is only permitted using hoist ropes and chains.
- Only use the load hook without an attachment on the quick coupler.
- " the load slowly.
- " Attach the load parallel to the weld seam of the load hook.
- " Do not strike the load on the safety catch of the load hook.

### 10 MAINTENANCE AND SERVICING

The personnel qualifications for certain maintenance and servicing work can found in the maintenance schedule.

Only carry out maintenance work that is not listed and described in the maintenance documents after consulting the manufacturer (this includes disassembly and assembly of drive and safety components).

### **IMPORTANT**

### **Customisation of maintenance work**

The operator of the earth-moving machine is required document maintenance-relevant observations and to independently expand and specify the maintenance plans in these operating instructions accordingly.

This applies in particular to maintenance instructions that have to be carried out more frequently than recommended due to individual circumstances.

The maintenance instructions of the manufacturers of purchased parts must also be observed!

### 10.1 General information

- " Observe the general accident prevention regulations and the VDE guidelines.
- " Carry the prescribed adjustment, maintenance and servicing work on time.
- " Replace defective parts immediately.
- " Inform the operating and supervisory personnel before starting maintenance and servicing work.
- " Observe the instructions attached to the machine, e.g. rating plates, direction of rotation arrows.

- Only use tools that are in perfect condition.
- " Always tighten loosened screw connections during maintenance and servicing work.
- " Carry out a function check after maintenance and repair work has been completed!
- " Only use original spare parts authorised the manufacturer.

### Before the maintenance work

- " Wear your PPE.
- " Secure the earth-moving machine against any movement. the operating instructions for the earth-moving machine for further information.



### **A** DANGER

### Danger to life due to falling quick coupler

If the connecting bolts are not secured, there is a risk of the quick coupler falling down.

Check the fuses on the connecting bolts after installation before commissioning, before daily operation and before any maintenance.

### **↑** WARNING

### Risk of burns from hot hydraulic fluid and hot surfaces

Contact with hot hydraulic fluid can cause severe burns.



Before working on the hydraulic system, depressurise it and allow oil-bearing components to cool down to ambient temperature.

Wear your PPE. Inspect all hydraulic hoses regularly for damage.

### **During maintenance work**

" Close all openings if work on the open hydraulic system is interrupted.

### **⚠ WARNING**



### Risk of crushing and amputation due to moving machines and components



The movements of the earth-moving machine and the quick coupler create hazards. Removing the protective devices creates hazards.



Only work on the quick coupler when the earth-moving machine is switched off and secured against unintentional switching on. Wear your PPE.

### **A** DANGER



### Danger to life due to hydraulic energy

If the pipes are defective, a jet of liquid may escape under high pressure. Do not

change the pressure settings beyond the maximum values.

Follow all maintenance instructions.

In the event of a hydraulic fluid leak: Do not touch the fluid jet.

Stopping the fluid jet: Switch off the earth-moving machine.

Depressurise the hydraulic system.

Put on your PPE.

Wait until the liquid jet stops.

Collect any leaked liquids and dispose of them properly. Replace and repair defective parts.

### After maintenance

- " Check your work.
- " Record all maintenance work carried out.
- " Make the earth-moving machine ready for use again.
- " Open the manual main valve of the hydraulic line.
- " Carry out a function check in accordance with chapter 7 "Commissioning".

### 10.1.1 Maintenance by operating personnel

Certain maintenance tasks can be carried out by operating personnel if they have been instructed to do so. It must be recorded in writing which interventions the operating personnel are authorised to carry out and when the responsible specialist must be informed or requested.

### 10.1.2 Maintenance by maintenance personnel

Have maintenance work carried out by maintenance personnel.

When repairing or replacing parts, ensure that the installation and operating instructions of the manufacturer of the relevant component or spare part are followed.

# 10.2 Maintenance schedule

Inspection and maintenance by operating personnel Consult with authorised specialist personnel if necessary	During commissioning	10 Bh/daily	50 hours/week	more frequently than recommended (add your own value in the form of Bh)
External inspection of the quick coupler				
Visual check of all screws for tightness and completeness	X	X		
Visual inspection of the locking mechanism	X	X		
Checking the legibility of the labelling on the quick coupler		X		
Testing the locking mechanism; testing the hazard visualisation; Check the ease of movement of the locking mechanism  " If is an attachment on the quick coupler, the kinematics must first be brought into the tilted position. (see chapter 8)		x		
Check all screws for tightness using a suitable tool			X	
Check the surface and mounting surfaces for severe deformation, cracking and wear			x	

Inspection and maintenance by operating personnel Consult with authorised specialist personnel if necessary	50 hours/week	more frequently than recommended (add your own value in the form of Bh)
Cleaning and maintaining the quick-change system		
Contact surface of the mounting claws	X	
Rear surface of the quick coupler	х	
Hazard display	x	
Contact surface of the locking bolts	x	
Grease the locking bolts with multi-purpose grease as corrosion protection	x	
Cleaning and maintaining the adapter frame		
Contact surface of the clutch shaft	X	
Contact surface of the locking plate/clutch shaft	X	
Drill holes in the transom plate	X	
Cleaning and maintaining the swivelling motor	·	
Remove coarse dirt	X	

Inspection and maintenance by maintenance personnel Consult authorised specialist personnel if necessary	during	commissioning e 10	hours/day	50 hours/week	250 Bh/ quarterly ch	2000 Bh/ every 2 years	more frequently than
Check hydraulic lines for damage/leakage		X					
Check hydraulic lines for tight fit		X					
Checking the locking bolt position (chapter 10.4 Locking tolerances)	X1		X				
Check the bearing play of the locking bolts with a blade gauge							
" In the event of conspicuous bearing play, consult authorised specialist personnel or the manufacturer.				X			
Add or replace white spray grease				X			
Check the O-ring seal on the locking bolts and replace if necessary Variant with Rädlinger Tilt 90: Also applies to the O-ring seal on the top of the hydraulic block.					x		
Replace all hydraulic lines					X2		

 $_{\rm 1}$  To check compatibility with the adapter frame  $_{\rm 2}$  Guide value in accordance with BGR 237:2008 and DIN 20066:2017-11 for increased requirements

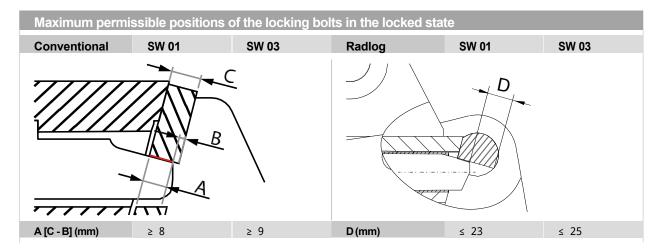
10.3	Notes		

### 10.4 Locking tolerances



The locking bolts can assume different positions when locked, depending on the condition of the quick coupler and the adapter frame.

Observe the locking tolerances.



If the tolerances are not met - due to fit inaccuracy or bucket roof wear - the quick coupler must not be put into operation.

" If in doubt, contact the manufacturer.

### 10.5 Lubrication



Only use greases and oils that approved for use on the quick coupler. Moisten all guides of the quick coupler only lightly.

### Grease the locking bolts with multi-purpose grease

- " Necessary before longer downtimes and weekly
- 1. Grease the locking bolt.
- 2. Extend and retract the locking bolt several times.

### Add or replace white spray grease

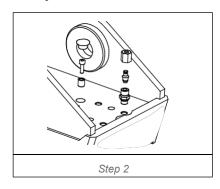
### Notes or photographs taken during disassembly will help with subsequent reassembly.

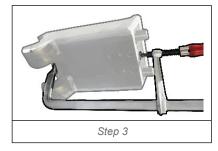
- Dismantle the quick coupler from the earth-moving machine. See chapter 11.1 "Dismantling".
- Remove the hydraulic screw connection, sealing plug and the driver screw of the hazard warning indicator.

### CAUTION

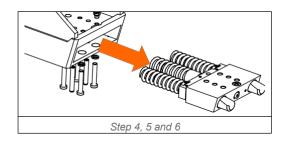
The cylinder is preloaded by the spring assembly.

 Use a screw clamp to hold the cylinder in position when loosening the screws.





- Remove the dowel pins on the underside of the quick coupler.
- Remove the cylinder screws on the underside of the quick coupler.
- 6. Slowly loosen the screw clamp to remove the inner workings from the housing.
- 7. Check components for damage and soiling.
  - " Replace or clean components if necessary.
  - " Use a rust remover if necessary.
- " Check whether the O-ring seals due for replacement according to the maintenance schedule, as this is the best time to carry out the procedure.
- Internal parts with white spray grease spray.
- Replace the components the quick coupler housing.
- 10. the quick coupler.



White spray grease					
Soap base	Lithium complex soap base				
Colour	White				
Shape	Aerosol				
Operating temperature	-30°C to +150°C				
Properties	Resistant to ageing Mechanically highly resilient Water- resistant Corrosion protection				

### 10.6 Cleaning

### **⚠ WARNING**

### Risk of injury due to disregarding the manufacturer's instructions

Failure to follow the manufacturer's cleaning instructions may the function of the quick coupler.

All applicable environmental protection regulations must be observed during cleaning.

### **⚠ WARNING**



### Risk of injury due to consumables



Hazards arise when handling harmful, irritating consumables.

Observe the special operating and work instructions or safety data sheets for all work with consumables such as oils, cleaning agents, etc.

- 1. Remove coarse dirt with a steel brush.
  - " Take care not to damage any hoses, cables or lines.
- 2. Keep contact surfaces and openings clean.



### **▲** DANGER

### Explosion hazard due to flammable cleaning agents

There is a risk of explosion if petroleum ether is used for cleaning. It is highly flammable, electrostatically chargeable and can produce an explosive gas-air mixture.

a halogen-free cold cleaner with a high flash point for cleaning.

### Clean the quick coupler:

- " Pick-up claws
- " Quick coupler rear side
- " Locking bolt
- Bottom and sides of the quick coupler

### Clean the adapter frame:

- " Clutch shaft
- " the contact surface of the locking plate
- " the openings of the transom plate
- " the base plate

### 10.7 Labelling

Check all instructions and labelling attached to the product daily.

In order to provide the operating personnel in the area of the quick-change system with important information and warnings, these are:

- " in a recognisable/legible condition,
- " to be renewed if necessary and
- " clearly visible all.

As the design of the quick-change system and the complexity of the production processes do not allow the use of persons with disabilities (e.g. visually impaired persons) for safety reasons, the manufacturer decided not to affix tactile symbols.

The requirements for the personnel and the technical qualifications required to operate the quick-change system are described in the chapter "Target group of the operating instructions".

### 10.8 Information on components that are no longer required

### 10.8.1 Dismantling

When dismantling components to be replaced, check the manufacturer's documentation to see whether the component in question can be returned to the manufacturer for reconditioning.

### 10.8.2 Recycling

To protect the environment, return recyclable components to the national recycling system. Check whether recycling of contaminated recyclable materials is possible or permitted.

### 10.8.3 Waste disposal

Use the substances and materials properly and dispose of them in accordance with local environmental protection regulations.

### **SAFETY NOTE**

### **Disposal of pollutants**

Ensure that oils, greases and other harmful substances do not enter the sewage system. Collect used oil and other environmentally harmful substances and dispose of them properly

### 11 DECOMMISSIONING

Decommissioning is carried out by specialised personnel.



### **⚠ WARNING**

### Risk of injury due to hydraulic energy

Hydraulically driven parts can move unexpectedly.

Only have work on the earth-moving machine carried out by specialised personnel. Depressurise the hydraulic system before working on the quick coupler. Check that it is depressurised.

### 11.1 Dismantling

Read chapter 11.1 "Dismantling" completely in order to:

- " prepare the workplace in the best possible way
- " Prepare tools
- " possibly be prepared for parallel processes
- " to call in a second person for support if necessary.



Refer to the original operating instructions for the earth-moving machine for further information on removing attachments.

### 11.1.1 Preparation for disassembly

- ✓ PPE is created.
- ✓ Have a transport pallet or similar aid ready for transporting the product. Consult chapter 5 "Transport".
- 1. Select a level, firm surface on which to place the quick coupler.
- 2. Secure the floor to prevent hydraulic oil from seeping in, e.g. using a tarpaulin or drip tray.
- 3. Optional: Place transport pallet or other aid.
- 4. Place the quick coupler on the prepared surface.
- 5. Depressurise the hydraulic lines of the earth-moving machine.
- 6. Switch off the earth-moving machine.

### ♠ WARNING



### Risk of injury due to uncontrolled start-up of the earth-moving machine

Automatic start-up of the earth-moving machine creates hazards.



Secure the earth-moving machine against uncontrolled start-up. No unauthorised person may access to the earth-moving machine. Third parties are prohibited from entering the danger zone.

- 7. Secure the earth-moving machine against unintentional switching on.
- 8. Allow the hydraulic components to cool down to ambient temperature.

### 11.1.2 Removing the hydraulic components

### **↑** WARNING

### Risk of burns from hot hydraulic fluid and hot surfaces

Contact with hot hydraulic fluid can cause serious burns.

Depressurise the hydraulic system before working on it.

Allow oil-bearing components to cool down to ambient temperature.

Wear your PPE.

Inspect all hydraulic hoses regularly for damage.



- ✓ Hydraulic components have cooled down to ambient temperature.
- ✓ Have the covers of the hydraulic couplings ready.
- ✓ Have the sealing plugs and union nuts of the collecting unit or the quick coupler ready.
- ✓ Have covers ready for the ends of the hydraulic hose lines.
- ✓ Have a container ready for the hydraulic hose lines.
- ✓ PPE is created.
- 1. Enter the danger zone.

2. Disconnect the hydraulic coupling of the earth-moving machine from the hydraulic coupling of the hydraulic hose line to the collecting unit or to the quick coupler.

### **⚠ WARNING**



### Risk of injury due to consumables

Hazards arise when handling harmful, irritating consumables.



When working with consumables such as oils, cleaning agents, etc., observe the special operating and work instructions or safety data sheets for the safe handling of the respective substances.

Collect escaping oil with suitable means.

### **↑ WARNING**



### Risk of slipping

Work or malfunctions on the quick coupler can cause oil or lubricant contamination to get onto the ground in the area of the quick coupler.

Pay attention to soiling in the danger zone. Remove the soiling.

- 4. Close the hydraulic coupling with the appropriate dust protection.
- 5. Close the loosened end of the hydraulic hose line.
- 6. Place the disconnected end of the hydraulic hose line in the container.
- 7. Disconnect the other end of the hydraulic hose line from the collecting unit or the quick coupler.
- Collect escaping oil with suitable means.

### **↑ WARNING**

### Risk of slipping

Work or malfunctions on the quick coupler can cause oil or lubricant contamination to get onto the ground in the area of the quick coupler.

Pay attention to soiling in the danger zone. Remove the soiling.

- 9. Fit the plugs to the hydraulic connection points.
- 10. Close the hydraulic connection points with the union nuts.
- 11. Close the end of the hydraulic hose line.
- 12. Place the hydraulic hose line completely into the container.
- 13. Repeat the process for the other hydraulic lines.
- 14. Clean hydraulic oil from the quick coupler.
- > The hydraulic connections were removed.

### 11.1.3 Removing the quick coupler

- ✓ Keep any fastening material ready for transport. Consult chapter 5 "Transport".
- ✓ Quick coupler is stably set down.
- ✓ Earth-moving machine is switched off and secured against unintentional switching on
- ✓ PPE is created.
- 1. Enter the danger zone.
- 2. Release both bolt locks.
- Remove the connecting bolt.
  - " Expect high weight.
  - " Store connecting bolts and bolt locking devices in accordance with internal operating instructions.
- 4. Leave the danger zone.
- 5. Putting the earth-moving machine into operation.
- 6. Remove the dipper arm kinematics from the quick coupler suspension.
- 7. Switch off the earth-moving machine.
- 8. Secure the earth-moving machine against unintentional switching on.
- 9. Prepare the quick coupler for transport as described in chapter "5 Transport".
- 10. Remove objects that have been laid out to protect the floor from soiling.

### 11.2 Store

The storage location must be cool and dry so as not to favour corrosion on individual parts of the quick-change system.

- " The room temperature of the storage facility must be constantly between 10 °C and 25 °C.
- " The humidity the storage room must not exceed 50 %.
- 1. Grease the contact surfaces against corrosion.
- Pack and store the quick coupler and its components in such a way that it is not damaged by external
  influences during storage.
- 3. Secure the quick coupler against unintentional tipping and instability.

### Shutdown for more than 4 weeks

Carry out the following additional storage measures if intend to take the quick coupler out of operation for longer than 4 weeks:

- 4. Cover the quick-change system to prevent soiling.
- 5. Store quick-change system on transport pallet.

### 11.3 Waste disposal

Disposal of the quick coupler (including parts or operating materials) is governed by the local disposal regulations and the environmental protection laws in the country of use.

When the quick coupler has reached the end of its life cycle, it must dismantled and disposed of safely and properly, in particular any parts or materials that are harmful to the environment. This includes including lubricants.

" Have the quick coupler disposed of by an authorised specialist company due to the risk of possible environmental pollution.

11.4	Notes	

### 12

### 12.1 Declaration of Conformity

# rädlinger

Konformitätserklärung gemäß EG-Maschinenrichtlinie (2006/42/EG)

# Original EG-Konformitätserklärung

Der Schneilwechsler dient zum schneil Anbaugeräten an darauf abgestimmte die Möglichkeit den Schneilwechsler s MABXXXXXXX/XX Rädlinger Maschinenbau GmbH Kammerdorfer Straße 16 93413 Cham-Windischbergerdorf Deutschland HS 01 | HS 03EW Rädlinger Tilt 90; Lasthaken

Harmit erklärt der Hersteller, dass die Maschine in der gelieferter des Europeisierher Parlament und des Brates vom 77. Mai 2006 is Gerfasseng sowie mit den nachtolgend aufgeführten harmonis stimmt, auf die sich diese Erklärung bezieht.

1. EN 190 7 2000, 2010
Sicherheit von Maschinen - Allgemeine Gestaltungsleitsätze

EN 474-1: 2022 Erdbaumaschinen - Siche

EN 474-5: 2022

EN ISO 4413: 2010 Fluidtechnik – Allge

EN ISO 13854:2019 Sicherheit von Maschinen - Mindestabstände

Die Genehmigung des QS-Systems erfolgte durch:

Thomas Bogner
Kammerdorfer Straße 16
83413 Cham-Windischberger
DEKRA-Certification GmbH
Handwerkstraße 15
70565 Stuttgart
Kennnummer: 2140

Www.verschen hiermt, dass das Bezebeilojungsverfahen gemäß der Richtline für Maschlen (2006/42/EG) durüngeführt und dass die Vorschriften der Korn DNR VSO/EC 17050-1.2010. Konformitätsbewertung - Konformitätserdisung von Anbieten - Teil "Aligemieh Ainfordeungen" he der Ausstellung diese Konformitätserkläung beachter warden.

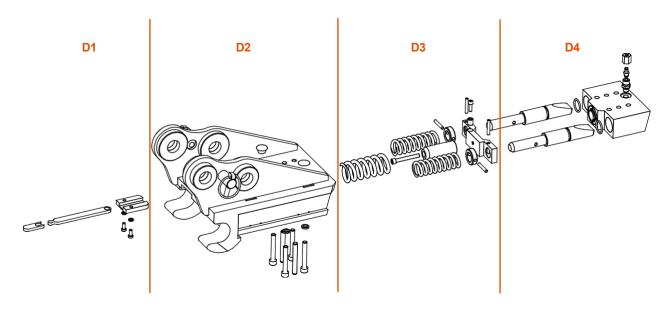
mit uns nicht abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigke

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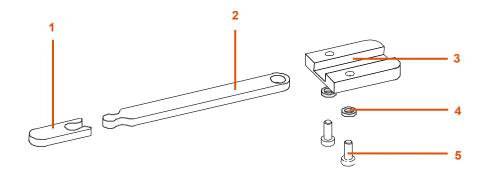
Append ix

# 12.2 Spare parts list

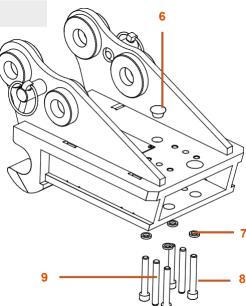
# 12.2.1 HS 01EW



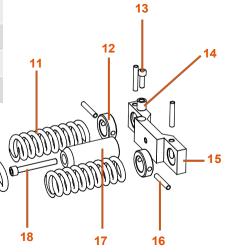
Pos.	pcs.	Drawing no.	Designation
1	1	5099/1535a	Visual display
2	1	5099/1534b	Visual display slider
3	1	5099/1557b	Visual display cover
4	2	644/5a	Nord Lock disc Ø5
5	2	1451/512a	Cheese head screw M5× 12.1ow head



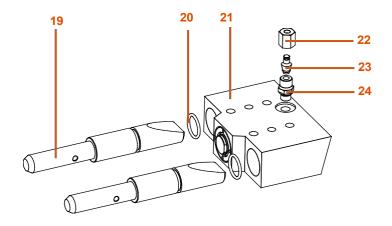
Pos.	pcs.	Drawing no.	Designation
6	1	1524/15a	Sealing plugs
7	4	644/8a	Nord Lock disc Ø8
8	4	3043/855a	Cheese head screw M8×55
9	2	4516/865a	Parallel pin Ø8×65



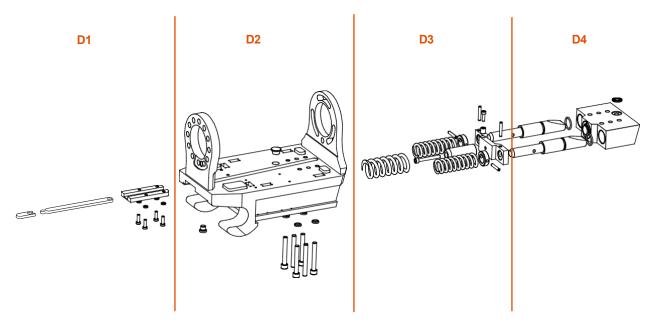
Pos.	pcs.	Drawing no.	Designation
10	1	930/18a	Pressure spring
11	2	930/5a	Spring
12	2	5099/1408a	Set collar
13	1	3042/516a	Cheese head screw M5×16
14	1	5099/1595c	Distance ring Visual display
15	1	5099/1531b	Bridge
16	4	1603/530a	Dowel pin Ø5×30
17	1	5099/1596a	Spring travel limiter
18	1	194/650a	Cheese head screw M6×50



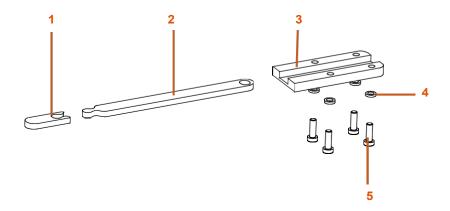
Pos.	pcs.	Drawing no.	Designation
19	2	5099/1409b	Locking bolt
20	2	604/235a	O-ring Ø20.3× 2.62
21	1	186/251d	Hydraulic cylinder
22	1	192/326a	Union nut
23	1	192/313a	Locking cone
24	1	192/307a	Screw-in fitting 6L; M10×1



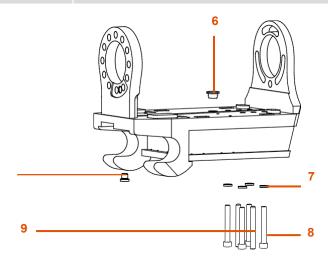
12.2.2 HS 01EW to Rädlinger Tilt 90



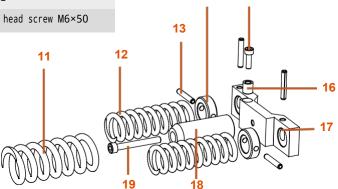
Pos.	pcs.	Drawing no.	Designation
1	1	5099/1535b	Visual display
2	1	5099/1542b	Visual display slider
3	1	5099/1543c	Visual display cover
4	4	644/5a	Nord Lock disc Ø5
5	4	1451/516a	Cheese head screw M5×16



Pos.	pcs.	Drawing no.	Designation
6	1	1524/15a	Sealing plugs
7	4	644/8a	Nord Lock disc Ø8
8	4	3043/860a	Cheese head screw M8×60
9	2	4516/870a	Parallel pin Ø8×70
10	1	7068/3a	M8×1 screw plug



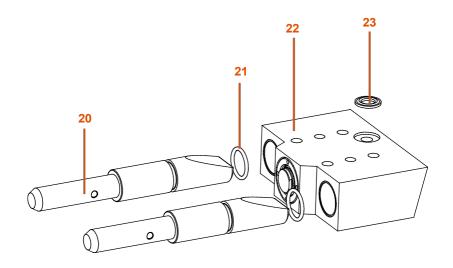
Pos.	pcs.	Drawing no.	Designation
11	1	930/18a	Pressure spring
12	2	930/5a	Compression spring
13	4	1603/530a	Dowel pin Ø5×30
14	2	5099/1408a	Set collar
15	1	3042/516a	Cheese head screw M5×16
16	1	5099/1595d	Distance ring Visual display
17	1	5099/1531b	Bridge
18	1	5099/1596a	Spring travel limiter
19	1	194/650a	Cheese head screw M6×50

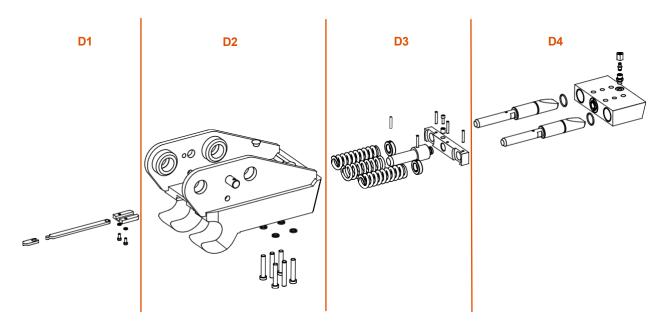


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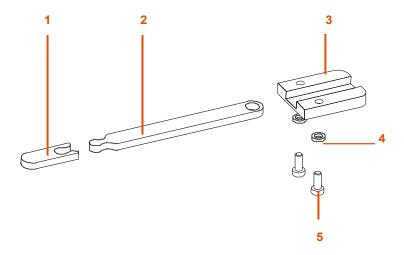
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Pos.	pcs.	Drawing no.	Designation
20	2	8116/19b	Locking bolt
21	2	604/235a	0-ring Ø20.3×2.62
22	1	186/251d	Hydraulic cylinder
23	1	604/301a	Gasket



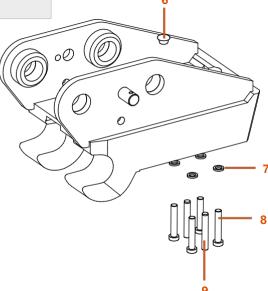


Pos.	pcs.	Drawing no.	Designation
1	1	5099/1535b	Visual display
2	1	5099/1551b	Visual display slider
3	1	5099/1557b	Visual display cover
4	2	644/5a	Nord Lock disc Ø5
5	2	1451/512a	Cheese head screw M5× 12,low head

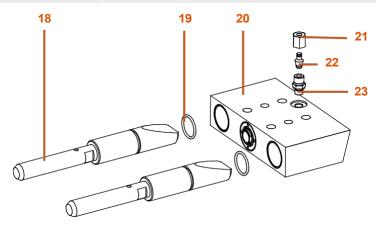


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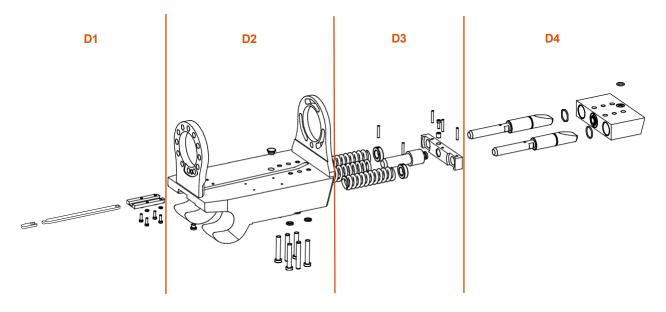
Pos.	pcs.	Drawing no.	Designation
6	1	1524/15a	Sealing plugs
7	4	644/10a	Nord Lock disc Ø10
8	4	4708/1055a	Cheese head screw M10×55
9	2	4516/1065a	Parallel pin Ø10×65



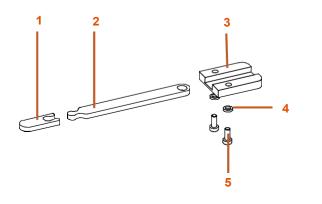
Pos.	pcs.	Drawing no.	Designation
18	2	5099/1313d	Locking bolt
19	2	604/20a	0-ring
20	1	186/252d	Hydraulic cylinder
21	1	192/326a	Union nut
22	1	192/313a	Locking cone
23	1	192/307a	Screw-in fitting 6L; M10×1

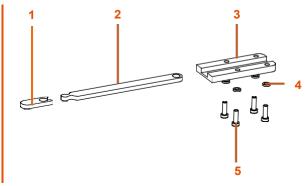


12.2.4 HS 03EW to Rädlinger Tilt 90

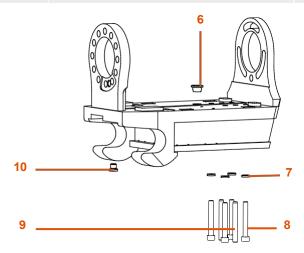


Pos	pcs.		Drawing			Designation
Pos.				Designation		
1	1			5099/1535b		Visual display
2	1		5099/1551b	5099/1957b	5099/1563b	Visual display slider
3	1		5099/1557c	8118/22a	5099/1564b	Visual display cover
4	2	4		644/5a		Nord Lock disc Ø5
5	2	4		1451/516a		Cheese head screw M5×16; low head

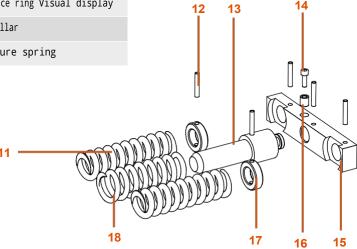




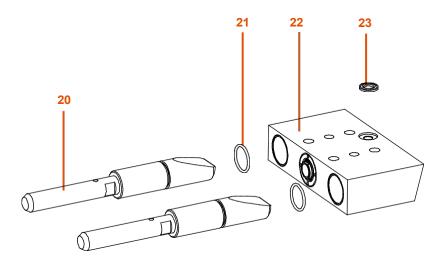
Pos		Drawing no.		Designation		
Pos.	pcs.	390  490	590	390  490	590	
6	1	1524/15a		Sealing plugs		
7	4	644/10a		Nord Lock disc Ø10		
8	4	4708/1060a		Cheese head screw M10× 60;low he	ead	
9	2	4516/1070a		Parallel pin Ø10×70		
10	1	7068/3a	7068/1a	M8×1 screw plug	M10×1 screw plug	

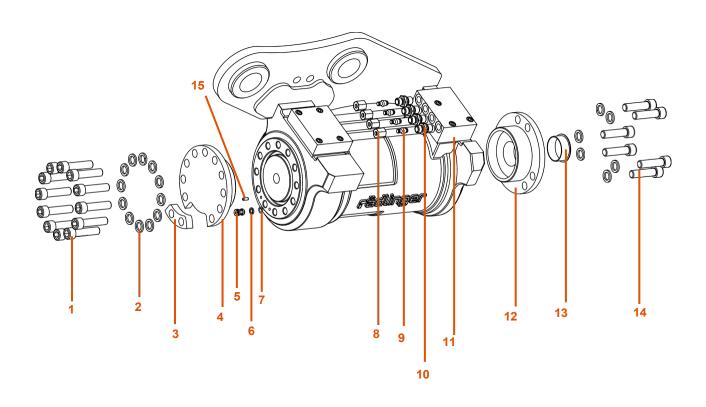


Pos.	pcs.	Drawing no.	Designation
11	2	930/17a	Compression spring
12	5	1603/530a	Dowel pin Ø5×30
13	1	5099/1594c	Spring travel limiter
14	1	3042/516a	Cheese head screw M5×16
15	1	5099/1593c	Bridge
16	1	5099/1595d	Distance ring Visual display
17	2	5099/1312c	Set collar
18	1	930/12a	Pressure spring



Pos.	pcs.	Drawing no.		-
		390	490  590	Designation
20	2	8116/22a	5099/1313d	Locking bolt
21	2	604/20a		O-ring Ø25×2.5
22	1	186/252e		Hydraulic cylinder
23	1	604/301a		Gasket





Pos.	pcs.	ref. no. 390	ref. no. 490	ref. no. 590	Designation		
1	12	638/1035a	638/1250a		Cheese head screws (M10×35  M12×50)		
2	18	644/10a	644/12a		Nord-Lock disc (M10  M12)		
3	1	5099/1544b 5099/1959a 5099/196		5099/1965b	Oil feed-through cover		
4	1	8201/390a	8201/490a	8201/590a	Front side cover		
5	1	5099/1566c			O-ring holder for oil feed-through		
6	1	604/310a			0-ring		
7	1		604/320a		0-ring		
8	4	192/326a			Union nut 6L M12x1.5		
9	4	192/313a			Locking cone		
10a	2	192/534a			Straight screw-in fitting M12x1.5 for DD1/DD2		
10b	2	192/540a 192/534a		534a	Screw-in fitting straight M12x1.5 for A/B		
11	1	784/211a	784/212a	784/213a	Collecting Unit		
12	1	8203/390a	8203/490a	8203/590a	Rear side cover		
13	1	1524/40a			Sealing plug Ø40		
14	6	638/1035a 638/1245a		1245a	Cheese head screws (M10×35  M12×45)		
15	1	192/537a			Sealing plug Ø3.5/Ø6.5×15		

## 12.3 Screw tightening torques

#### Metric standard thread

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

Diameter	Hexagon Hexagon socket		Screw quality			
Diameter	mm	mm	8.8	10.9	12.9	
M6	10	5	10	15	18	
M8	13	6	25	36	43	
M10	17	8	49	72	84	
M12	19	10	85	125	145	
M14	22	12	135	200	235	
M16	24	14	210	310	365	
M18	27	14	300	430	500	
M20	30	17	425	610	710	
M22	32	17	580	830	970	
M24	36	19	730	1050	1220	

# rädlinger



Read the document before initial commissioning! Keep for future use!

This documentation is not subject to change management.

## Double catch hook to Rädlinger quick couplers

## DEAR RÄDLINGER CUSTOMER.

On 14 October 2021, the new EU Official Journal was published, the content of which affects hydraulic quick couplers. This amendment prohibits the placing on the market of hydraulic quick couplers in their previous state of the art design.

In accordance with the expected new requirements, hydraulic quick couplers must be equipped with safety devices that prevent the effects of incorrect operation.

In order to this requirement for a preventive measure to prevent an incident in the event of incorrect operation, an additional double catch hook with a defined geometry was welded between the already existing pick-up claws on the hydraulically operated Rädlinger quick couplers.

To ensure the safe use of our quick couplers, the operating instructions must observed in combination with this document. We would also like to take this opportunity to remind you that it is strictly forbidden for persons to remain in the danger zone of the implement and the excavator during work.

Please keep this document together with the operating instructions for your quick coupler.

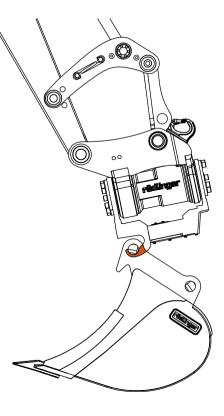
#### 1 FUNCTION

#### 1.1 Function of the double catch hook

- " The quick coupler has not been locked correctly.
- " The complete movement cycle is performed after the locking process.
- " The attachment comes loose.
- " The double catch hook catches the attachment.

#### Procedure after catching the attachment with the double catch hook

- $\checkmark$  The danger zone is secured and there are no people in it.
- Place the attachment on the nearest stable surface.
- Switch off the earth-moving machine and secure it against being switched on again.
- 3. Enter the danger zone.
- 4. Check the weld seams of the double catch hook (see chapter 2.2).
- > Further procedure according to chapter 2.3 Check for deformation by functional test.



## 1.2 Labelling

There is a **prohibition sign** on the quick coupler behind the double catch hook for "Lifting a load prohibited" is displayed.

#### 1.3 Intended use

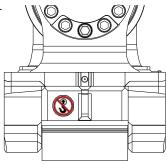
The double catch hook is intended exclusively as a safety device and for catching attachments that are not correctly locked.

## 1.4 Reasonably foreseeable misuse

The use of the double catch hook

- " as load hook
- for transport of any kind
- for scraping or scraping
- " for impact work
- " for pushing or pressing
- " as well as any other use that deviates from the "Intended use"

is expressly prohibited.





#### 2 MAINTENANCE AND SERVICING

#### 2.1 Maintenance of the double catch hook

Inspection and maintenance by operating personnel Consult with authorised specialist personnel if necessary	50 hours/week1	After picking up an attachment	In case of suspected deformation or failure to fulfil the function
Cleaning the double catch hook	X		
Checking the weld seams	X	X	
Check for deformation by functional test		X	X

## 2.2 Checking the weld seams

If cracks, deformations or damage of any kind are when checking the weld seams, operation must be stopped immediately and the manufacturer must be contacted.

3

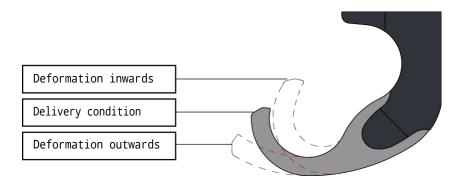
<sup>1</sup> more frequently if required

## 2.3 Check for deformation by functional test

Check the shape of the double catch hook

- " if an attachment has been caught by it
- " In case of suspected deformation
- " if the function is suspected of not being fulfilled.

#### Examples of deformations of the double catch hook



- " A backhoe bucket or similar compact attachment without hydraulic components is recommended for the function test (hereinafter: "test attachment").
- " Only out the function test in suitable locations with the softest possible surface so as not to damage the attachment.

#### ✓ The danger zone is secured and there are no persons n in it.

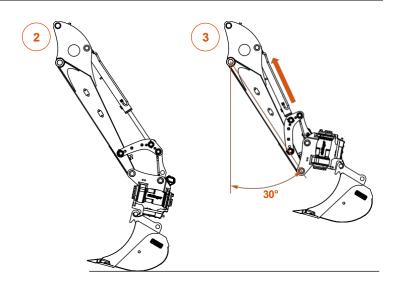
- 1. Put the machine into operation.
- Pick up the test attachment with the double catch hook2 (see diagram).
  - " Keep the test attachment as close to the ground as possible.
- Steer kinematics to 30° position and retract hydraulic cylinder at moderate speed (see chart).

## The double catch hook holds the test attachment.

- " Function of the double catch hook is not impaired.
- " The quick coupler may still used.

#### > The double catch hook does not hold the test attachment.

- " The quick coupler may **no longer** put **into operation**.
- " Stop operation and contact the manufacturer.



<sup>&</sup>lt;sub>2</sub> Contrary to the intended use. Only tolerated for the function test.

rädlinger

Phone: +49-9971-8088-0

Fax: +49-9971-8088-9999

e-mailinfo@raedlinger.de

Declaration of conformity in accordance with the EC Machinery Directive (2006/42/EC)

#### Original EC Declaration of Conformity

The manufacturer hereby declares

Rädlinger Maschinen- und Stahlbau GmbH Kammerdorferstraße 16

93413 Cham-Windischbergerdorf thatGERMAGNIGN of the machine

Machine designation: Rädlinger quick coupler hydraulic Type: HS 01EW | HS 03EW Optional equipment: Rädlinger Tilt 90

Load hook
The quick coupler is used to quickly and safely change various Intended use: attachments on matched excavators.

The optional Rädlinger Tilt 90 tilt motor offers the option of swivelling the quick coupler sideways.

in the version supplied complies with Directive 2006/42/EC of the European Parliament and of

17 May 2006 on machinery and amending Directive 95/16/EC (recast) and the harmonised standards Eand gormative decuments listed below to which this declaration refers:

- Safety of machinery General principles for design Risk assessment and risk minimisation 2.
- EN 474-1: 2006+A6: 2019
- 3. Earth-moving machinery - Safety - Part 1: General requirements EN 474-5: 2006+A3: 2013
- Earth-moving machinery Safety Part 5: Requirements for hydraulic excavators EN ISO 4413: 2010
- 5. Fluid power General rules and safety requirements for hydraulic systems and Technical નુભુદ્માનભુતાનુંભાનુંભ the "Rädlinger hydraulic quick

coupler" is Navaidable 54:2019 AuthorisedafeRyesfimathYAePf - Minimum distances to avoid crushing of body parts

Kammerdorferstraße Rädlinger Maschinen- und 16 984843 Cham-

Stahlbau GmbH The QS scheme was approved by

Wandischbergerdorf
We hereby declare that the certification procedure has been carried out in accordance with the Machinery Directive (2006/42/EC) and that the provisions of the standard DIN EN ISO/IEC 17050-1: 2010 "Conformity assessment - Declaration of conformity of suppliers - Part 1: General requirements" have been observed in issuing this declaration of conformity.

The use of additional components and/or attachments from the manufacturer and/or third parties for the purpose of integration into production lines may this declaration. Commissioning of the machine is prohibited until it has been established that all attachments and additional components that are not included in the scope of delivery of Rädlinger Maschinenund Stahlbau GmbH comply with the basic safety and health requirements of the EC Directive.

This declaration shall lose its validity if the machine is modified without our agreement.

ChamaWindischbengerdorf23th02020 date J. Stopfner Rädlinger Maschinen- und Management Stahlbau GmbH

Rädlinger quick coupler hydraulic HS 01EWI HS 03EW

2021

Declaration of conformity in accordance with the EC Machinery Directive (2006/42/EC)



#### Original EC Declaration of Conformity

The manufacturer hereby declares

Rädlinger Maschinen- und Stahlhau GmbH Kammerdorferstraße 16 93413 Cham-Windischbergerdorf thatGERMANY of the machine

Phone: +49 9971 8088-0 Fax: +49 9971 8088-9999 E-Mailinfo@raedlinger.de

Machine designation: Rädlinger quick coupler - hydraulic

Optional equipment:

HS 03DW Rädlinger Tilt 90 Load hook

Intended use: The quick coupler is used to quickly and safely change various attachments

on matched excavators.

The optional Rädlinger Tilt 90 tilt motor offers the option of swivelling the

quick coupler sideways.

in the version supplied conforms to Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery and amending Directive 95/16/EC (recast) and the harmonised standards and normative documents listed below to which this declaration refers:

EN ISO 12100: 2010

Safety of machinery - General principles for design - Risk assessment and risk minimisation

2

EN 474-1: 2006+A6: 2019

3. Earth-moving machinery - Safety - Part 1: General requirements

EN 474-5: 2006+A3: 2013

4. Earth-moving machinery - Safety - Part 5: Requirements for hydraulic excavators EN ISO 4413: 2010

5. Fluid power - General rules and safety requirements for hydraulic systems and their components

Technical decumentations for the "Rädlinger hydraulic quick coupler" is

available. Safety of machinery - Minimum distances to avoid crushing of body parts

Authorised representative of the Rädlinger Maschinen- und Stahlbau

Thomas Bogner Kammerdorferstraße 16 93413 Cham-Windischbergerdorf DEKRA-Certification

The QS scheme was approved by

We hereby declare that the certification procedure has been carried out in accordance with the Machinery Directive (2006/42/EC) and that the provisions of the standard DIN EN ISO/IEC 17050-1: 2010 "Conformity assessment - Declaration of conformity of suppliers - Part 1: General requirements" have been observed in issuing this declaration of conformity.

The use of additional components and/or attachments from the manufacturer and/or third parties for the purpose of integration into production lines may this declaration. Commissioning of the machine is prohibited until it has been established that all attachments and additional components that are not included in the scope of delivery of Rädlinger Maschinen- upd Stahlbau GmbH comply with the basic safety and health requirements of the EC Directive.

This declaration shall lose its validity if the maghine is modified without our agreement.

Any unauthorised change in this sense excl

Cham-Windischbergerdorf, The M. 2021

Rädlinger Maschinen- und Stahlbau

Management

Rädlinger quick coupler hvdraulio

HS 03DW

Declaration of conformity in accordance with the EC Machinery Directive (2006/42/EC)



#### Original EC Declaration of Conformity

The manufacturer hereby declares

Rädlinger Maschinen- und Stahlbau GmbH Kammerdorferstraße 16 93413 Cham-Windischbergerdorf GERMANY

that the design of the machine

Phone: +49 9971 8088-0 Fax: +49 9971 8088-9999 E-Mailinfo@raedlinger.de

Machine designation: Rädlinger quick coupler - hydraulic HS 08

Optional equipment: Rädlinger Tilt 90

Load hook

Intended use: The guick coupler is used to guickly and safely change various attachments

The optional Rädlinger Tilt 90 tilt motor offers the option of swivelling the

quick coupler sideways.

in the version supplied conforms to Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery and amending Directive 95/16/EC (recast) as well as the harmonised standards and normative documents listed below to which this declaration refers:

1. EN ISO 12100: 2010

Safety of machinery - General principles for design - Risk assessment and risk minimisation

EN 474-1: 2006+A6: 2019

Earth-moving machinery - Safety - Part 1: General requirements

EN 474-5: 2006+A3: 2013 4. Earth-moving machinery - Safety - Part 5: Requirements for hydraulic excavators

EN TSO 4413: 2010

5. Fluid power - General rules and safety requirements for hydraulic systems and their components

Technical denumentations 4020the "Rädlinger hydraulic quick coupler" is

available. Safety of machinery - Minimum distances to avoid crushing of body parts

Authorised representative of the Rädlinger Maschinen- und Stahlbau GmbH

Thomas Bogner Kammerdorferstraße 16 93413 Cham-Windischbergerdorf DEKRA-Certification

The QS scheme was approved by

We hereby declare that the certification procedure has been carried out in accordance with the Machinery Directive (2006/42/EC) and that the provisions of the standard DIN EN ISO/IEC 17050-1: 2010 "Conformity assessment - Declaration of conformity of suppliers - Part 1: General requirements" have been observed in issuing this declaration of conformity.

The use of additional components and/or attachments from the manufacturer and/or third parties for the purpose of integration into production lines may this declaration. Commissioning of the machine is prohibited until it has been established that all attachments and additional components that are not included in the scope of delivery of Rädlinger Maschinen- und Stahlbau GmbH comply with the basic safety and health requirements of the EC Directive.

This declaration shall lose its validity if the machine is modified without our agreement.

Any unauthorised change in this sense excludes

Cham-Windischbergerdorf, the 3.11.202

J. Stopfner

Rädlinger Maschinen- und Stahlbau

GmbH Management

Rädlinger quick coupler hydraulic HS 08

2021

Declaration of conformity in accordance with the EC Machinery Directive (2006/42/EC)



## Original EC Declaration of Conformity

The manufacturer hereby declares

Rädlinger Maschinen- und Stahlbau GmbH Kammerdorferstraße 16 93413 Cham-Windischbergerdorf that GERMANYsien of the machine Phone: +49 9971 8088-0 Fax: +49 9971 8088-9999 E-Mailinfo@raedlinger.de

Machine designation: Rädlinger quick coupler - hydraulic Type: HS 10, HS 21, HS 25

Type: Optional equipment:

Load hook

HS 10 with Rädlinger Tilt 90

Intended use: The quick coupler is used to quickly and safely change various attachments on matched excavators.

The optional Rädlinger Tilt 90 tilt motor offers the option of swivelling the

quick coupler sideways.
in the version supplied conforms to Directive 2006/42/EC of the European Parliament and of the Council of

17 May 2006 on machinery and amending Directive 95/16/EC (recast) and the harmonised standards and normative documents listed below to which this declaration refers:

. EN ISO 12100: 2010

Safety of machinery - General principles for design - Risk assessment and risk minimisation

minimisation

EN 474-1: 2006+A6: 2019

3. Earth-moving machinery - Safety - Part 1: General requirements

EN 474-5: 2006+A3: 2013

 Earth-moving machinery - Safety - Part 5: Requirements for hydraulic excavators EN ISO 4413: 2010

5. Fluid power - General rules and safety requirements for hydraulic systems and their components

Technical desumentations for the "Rädlinger hydraulic quick coupler" is

available. Safety of machinery - Minimum distances to avoid crushing of body parts

Authorised representative of the

Rädlinger Maschinen- und Stahlbau GmbH

Thomas Bogner Kammerdorferstraße 16 93413 Cham-Windischbergerdorf

The OS scheme was approved by We hereby declare that the certification procedure has been darfied out in a dcordance with the Machinery Directive (2006/42/EC) and that the provisions of the standard DIN EN ISO/IEC 17050-1: 2010 "Conformity assessment - Declaration of conformity of suppliers - Part 1: General requirements" have been observed in issuing this declaration of conformity.

The use of additional components and/or attachments from the manufacturer and/or third parties for the purpose of integration into production lines may this declaration. Commissioning of the machine is prohibited until it has been established that all attachments and additional components that are not included in the scope of delivery of Rādlinger Waschinen- und Stahlbau GmbH comply with the basic safety and health requirements of the EC Directive.

This declaration shall lose its validity if the machine is modified without our agreement.

Any unauthorised change in this sense excludes any liability

Cham-Windischbergerdorf, the M. 2021

date

J. Stopfner Management Rädlinger Maschinen- und Stahlbau

Rädlinger quick coupler -

Rädlinger quick coupler hydraulic

HS 10 - 25

Status 2021



#### **RÄDLINGER**

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