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SHORING BOX GRAB

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OPERATING MANUAL

► Shoring box grab

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■ Preface

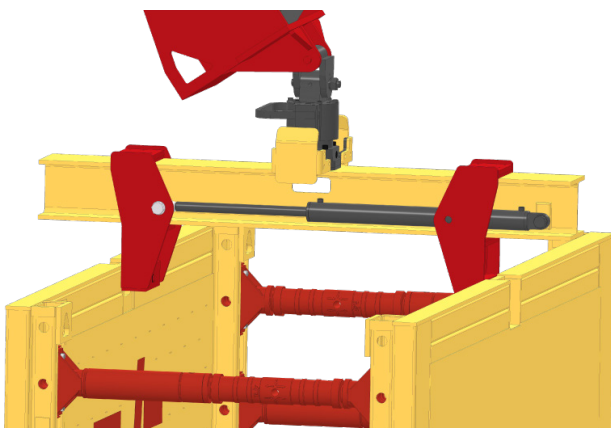
Please read this operating manual carefully before using the device for the first time as this will prevent its incorrect use.

Please ensure to pass on all safety instructions to other users as well.

The operating manual sets out the correct handling of the shoring box grab and the panel grab on the construction site, during transport, etc. It should thus be kept in the document compartment in the excavator cabin.

The manual also contains information on the mandatory annual inspections pursuant to the German Ordinance on Industrial Safety and Health (BetrSichV), ensuring high safety levels as well as increasing the resale value of the device.

■ 1. Intended use



Shoring box grab

The shoring box grab is designed exclusively as an attachment tool with quick coupling system for commercial use.

The shoring box grab is intended mainly to be used for lifting, moving, setting down as well as extracting shoring boxes in line with the exact procedures set out in this manual.

Please note: When used correctly, these devices reduce the risk of accidents and injuries to a minimum and speed up installation and extraction times.

Both shoring box grabs may only be used with the RSV R7-B13 rotary motor and the KG40 universal joint.

Any other use is considered as not as intended. The manufacturer cannot be held liable for damages resulting from such a use, and the user alone bears the risk.



1.1 Vorhersehbarer Fehlgebrauch

The maximum permissible tensile load of the attachment tool is 6.3 tonnes. When extracting shoring elements, the maximum tensile load of 6.3 tonnes must not be exceeded. The attachment tool must not be used to loosen shoring boxes that are stuck.

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1.2 Reading this can save lives!

Using the device as intended also requires adhering to the following points as specified by the manufacturer:

- Handover with initial instructions,
- Safety information and regulations,
- Operational, service and maintenance requirements.

The attachment tool may only be used and/or serviced by persons who are familiar with it and have been instructed about any potential associated risks.

Maintenance procedures are set out in this document.

However, repair work may only be carried out by the manufacturer!

The manufacturer cannot be held liable for any damage resulting from unauthorised modifications to the attachment tool.

All relevant and country-specific accident prevention regulations as well as other commonly recognised safety, occupational health, and road traffic regulations must be complied with.

Manufacturers, dealers, owners, and operators all bear responsibility for safety.

Please take into account that the life of the user and others may depend on correct and safety-conscious operation of the equipment.

■ 2. Safety information and accident prevention

Before commencing operation, users and machine operators must familiarise themselves with all control elements and their functions. Trying to do so during operation would be too late!



The **safety icon** indicates safety information in this operating manual.

Non-observation of safety instructions may put the health and lives of people at risk and result in damage to material.

2.1 General safety instructions

- In addition to the instructions provided in this operating manual, please adhere to general accident prevention and safety regulations.
- The attached warning and instruction signs provide important information for safe operation of the device; observing them serves your safety.
- When using public roads, the relevant rules of the road (StVO) must be observed.
- It is not permitted to enter the operating area or the slewing range of the machinery.
- The operating area must be secured accordingly before commencing operation!

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2.2 Operational safety instructions



- It is not permitted for any person to enter the area under a suspended load or the risk area of the **machinery!**

- Never allow anyone to guide the attachment tool by hand! **Risk of injury!**



- Take note of and observe all signs and labels displayed at dangerous areas and machines.

- The operator of the equipment must ensure to prevent any danger to others. (We recommend using CCTV technology for a 360-degree view and for areas that are not visible from the operator's cab.)

- Before starting to move and before commencing operation, the risk area must be checked.



- Avoid unnecessary and jerky movements when swivelling.

- Drive slowly and think and look ahead.



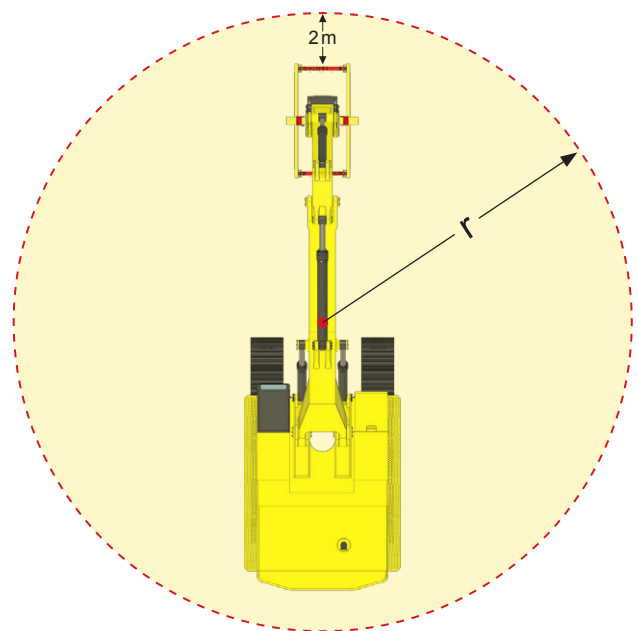
- Beware of crush and shear points on power operated (e.g. hydraulically) moving parts.

Observe DIN 4844-standard signs at the danger spots.

2.3 Risk area

It is strictly prohibited for any person to enter the risk area (r) during operation of the hydraulic excavator! Failure to observe this rule may result in severe injuries and damage.

The risk area (r) is the space around the lifting equipment where people may be hit by loads or equipment as a result of movements of the equipment or any attachments, or by swinging loads, falling loads, or falling equipment.



- Always ensure that nobody enters the risk area (r) around the equipment!

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2.4 Hydraulic system



The hydraulic system is highly pressurised.

Fluids escaping under high pressure (hydraulic oil) can penetrate the skin and cause serious injuries. In case of injury, seek medical attention immediately! Risk of infection!



When connecting the hydraulic hoses to the excavator's hydraulic system, the hydraulic systems both on the excavator and the devices attachment

sides must be unpressurised and the excavator engine must be turned off.

Before working on the hydraulic system, uncouple the device, release the pressure from the system, and turn off the engine.

- Ensure that the connectors of the hoses and the hydraulic cylinders are compatible.
- The female and male connectors for functional connections between carrier vehicle and attachment should be marked in order to prevent incorrect operation. Accidentally mixing up the connections will result in a reversal of functionality (e.g., extend/retract). **Risk of accident!**
- The hydraulic hose pipes must be checked regularly and replaced if worn, damaged, or too old. The replacement pipes must comply with the specifications of the equipment manufacturer.

- Suitable equipment must be used for locating leaks due to the risk of injury.
- Do not inhale heat vapours!
- Only use nitrogen for recharging hydraulic accumulators – **risk of explosion!** Recharging must be carried out in a specialist workshop or directly by the manufacturer.
- In the case of loss of pressure in the membrane accumulator, the device must be checked in a workshop immediately!
- Before carrying out any work on the hydraulic system, set down the device, release the pressure from the system, and turn off the engine.
- The maximum operating pressure of the hydraulic system is 80 bar. In the case of loss of pressure, the system must be checked immediately.

2.5 Safe maintenance work

- Repair, maintenance, and cleaning work must only be carried out with the engine turned off. Ensure that all parts have stopped moving before commencing the work.
- If the device is lifted off the ground when work is carried out, it must be secured using suitable support elements (e.g. stand).

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- When protective elements need to be removed during maintenance work, the risk of accident increases. The protective elements must be correctly reattached after completion of the work to ensure their full functionality.
- Oils and greases must be disposed of properly and in an environmentally friendly manner.
- Check nuts and bolts after **ten operating hours** and tighten if necessary.
- Before starting the machine, it must be checked for worn and corroded parts. These must be replaced, otherwise there is a risk of failure and/or accidents due to insufficient mechanical strength.
- Please note: At the end of the season as well as after overload situations welding seams must be checked visually for cracks. Checking for cracks averts the need for more extensive repair work and prevents accidents.
- All maintenance and repair work that is not covered by this operating manual must only be carried out in specialist workshops, otherwise the manufacturer will not accept any warranty claims.
- Only original spare parts from **TWF Tiefbau-technik GmbH** may be used for the attachment, otherwise the warranty will become void.

■ 3. Ordering spare parts

Please provide the following information:

1. Device and type number (on identification plate). Photos of parts to be replaced are also helpful.
2. Shipping: By parcel service, shipping company Please provide a clear and exact address with post code.
3. Requests can also be sent by email to office@twf-tiefbautechnik.de.
Phone: +49 2452 / 15678-0

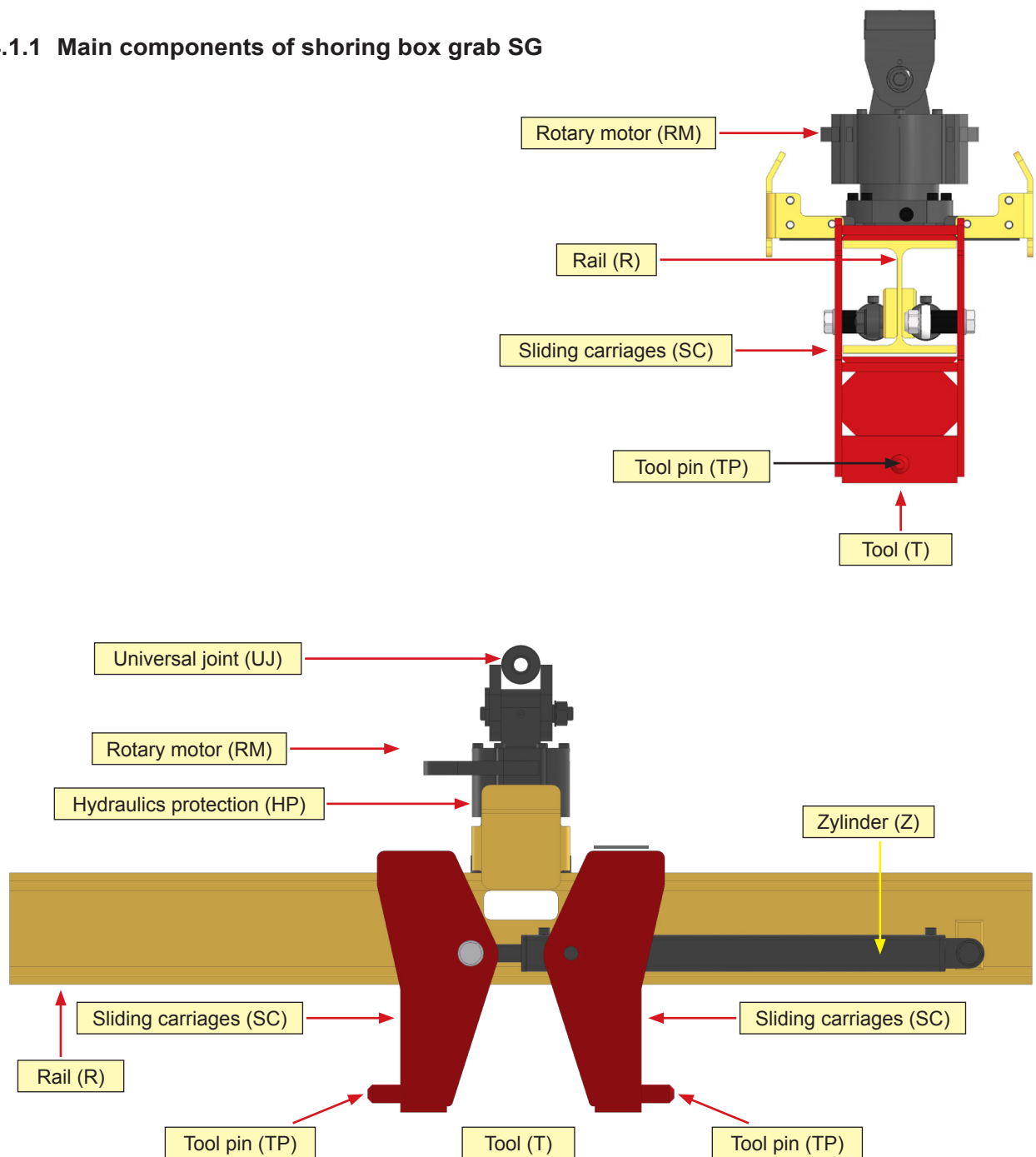
All repairs within the 12-month warranty period must be agreed with the manufacturer first. Repair work that has not been agreed in advance will be carried out on the owner's risk.

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■ 4. Getting to know the device, practicing its safe handling

4.1 Main components

4.1.1 Main components of shoring box grab SG



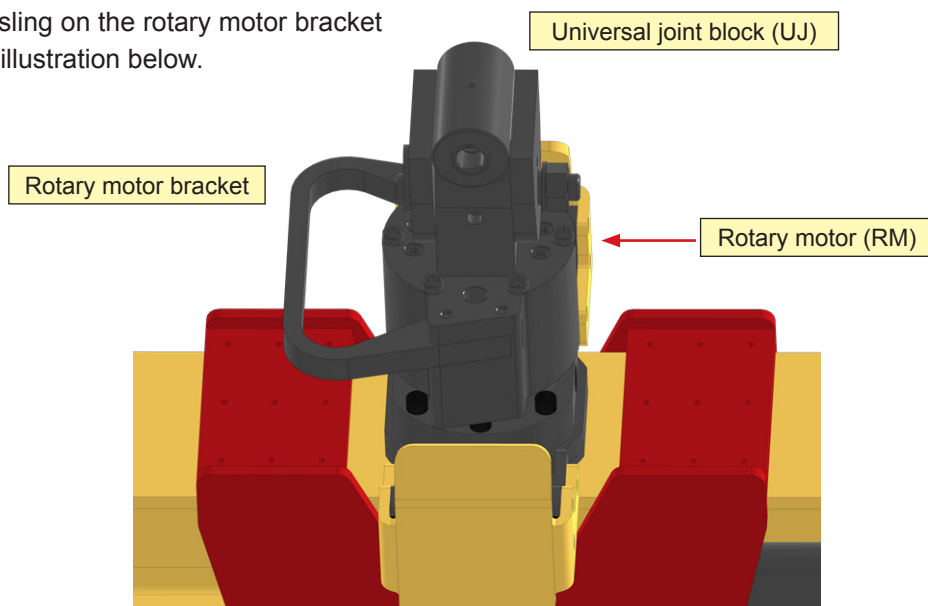
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4.2 Transport and storage

- When disconnecting the attachment tool from the carrier machine's quick coupling system, place it on a level, solid surface. Before setting down the tool, the shoring box grab must be positioned in such a way that the rubber buffer of the quick-change plate can rest against the hydraulics protection of the shoring box grab.
- For transporting the tool, the shoring box grab should be placed and securely fastened in the transport box. The empty transport racks are stackable. Load capacity: static and dynamic only one rack including shoring box grab with quick-change plate.
- When moving the device using a forklift, please ensure that it rests securely on the means of transport. Only lift the attachment tool as much off the ground as is absolutely necessary for its transport.
- If the attachment tool cannot be coupled to a carrier device using the quick coupling system, the attachment tool must be securely attached for transport with a sling on the rotary motor bracket as shown in the illustration below.

4.3 Commissioning

- The attachment tool may only be commissioned by trained and qualified technicians.
- We recommend to get the tool commissioned by the manufacturer or at a specialist workshop.
- Any work on the device must be carried out with the engine, drive, and hydraulic system turned off.
- Carefully selecting quality hydraulic oil prolongs the machine's life and ensures flawless functioning of the tool and operational safety. For normal operating conditions, we recommend DIN 51524 Part 1-standard HL hydraulic oil and for heavy operating conditions we recommend DIN 51524 Part 2-standard HLP hydraulic oil.



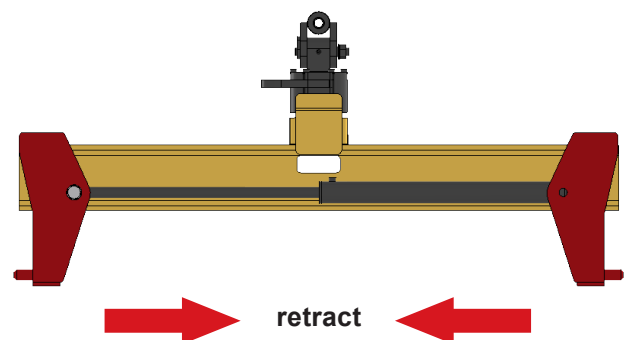
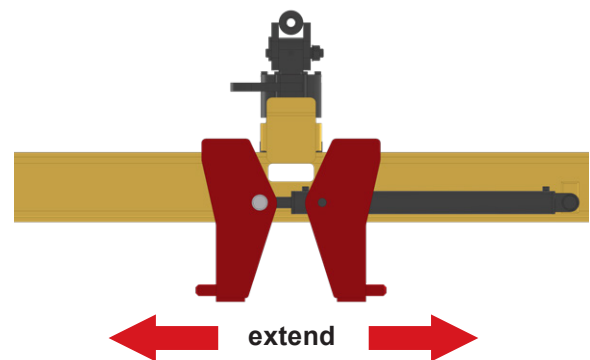
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- Never mix mineral oil systems and bio-oil (requires laborious rinsing/cleaning).
- To fit the quick coupling adapter (CA), attachment tool and adapter must be placed on an even and solid surface.
- The attachment tool has a hydraulically controlled function for extending and retracting the sliding carriages as well as a rotary function (left-right movement).

Testing functionality

If controlling the attachment tool working functions does not work as described in the operating manual for the carrier machine,

- check the settings for controlling hydraulic attachment tools as set out in the carrier machine's operating manual.
- If the two sliding carriages (SC) "retract" instead of "extend" or "extend" instead of "retract", check the relevant hydraulic control settings on the carrier machine and reset them to default. Then repeat the functionality check.

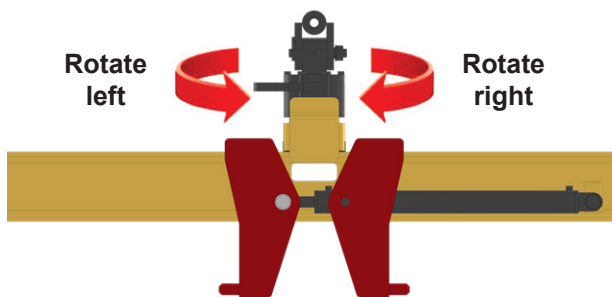


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Testing the rotary function

If the controls of the attachment tool rotary function (left-right turn) do not work as described in the operating manual of the carrier machine,

- check the settings for controlling hydraulic attachment tools as set out in the carrier machine's operating manual.
- „If the attachment tool turns “right” instead of “left” or “left” instead of “right”, check the relevant hydraulic control settings on the carrier machine and reset them to default.
Then repeat the functionality check.



1. Familiarise yourself with the control of the working and rotary functions of the attachment tool from the carrier machine as set out in 5.
2. Carry out a functionality test with a suspended load, taking into account the following chapters of this operating manual.



Never allow anyone to enter the risk area of the carrier machine during this process!

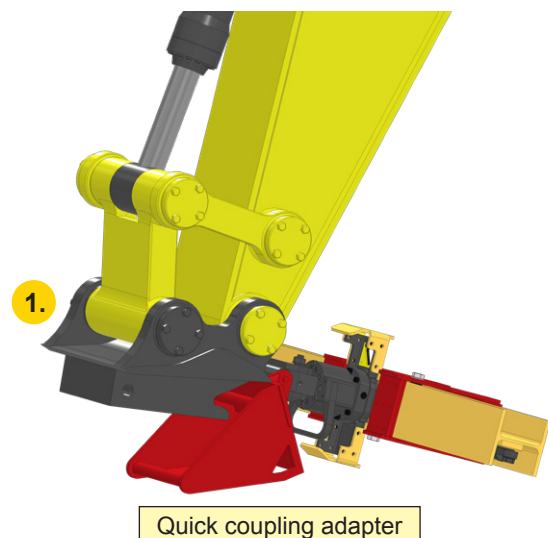


- Lift the shoring box no more than 50 cm off the ground for this test.
 - Upon completion of the test, visually check all hydraulic components for leaks.
3. The bolts on the rotary motor must be re-tightened after ten operating hours observing the permissible maximum tightening torque for this bolt.

4.4 Coupling and testing of the attachment tool

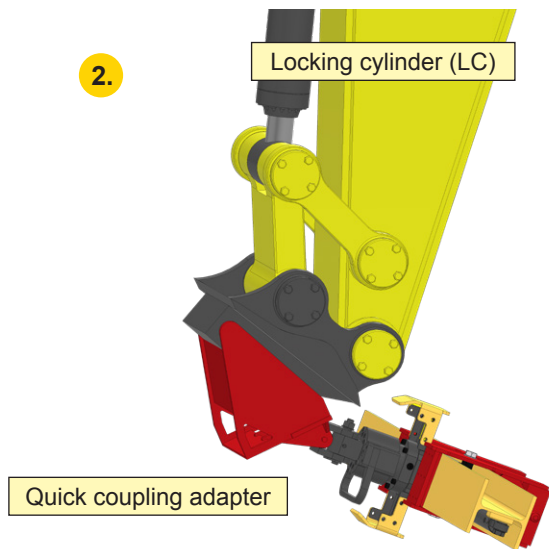
Before each use, the attachment tool must be attached to the carrier machine via the hydraulic quick coupling system. Follow the operating instructions for the quick coupling system and the carrier machine.

1. Set down the attachment tool with fitted quick coupling adapter (CA) within reach of the excavator arm as shown in the illustration. Select an operating pressure for controlling attachment tools of 80 bar and a flow rate of 80 litres/minute on the carrier machine. Part 2.

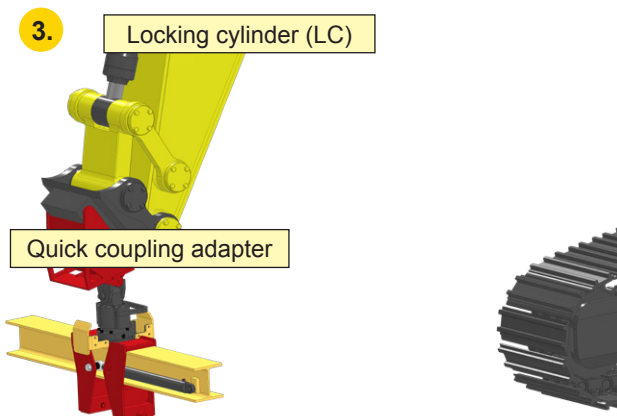


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- After attaching the tool, the quick coupling adapter must be brought into the position shown in the illustration by the carrier machine operator engaging the locking cylinder (LC). Follow the instructions in the operating manual of the carrier machine.



- The attachment tool can then be lifted up further.

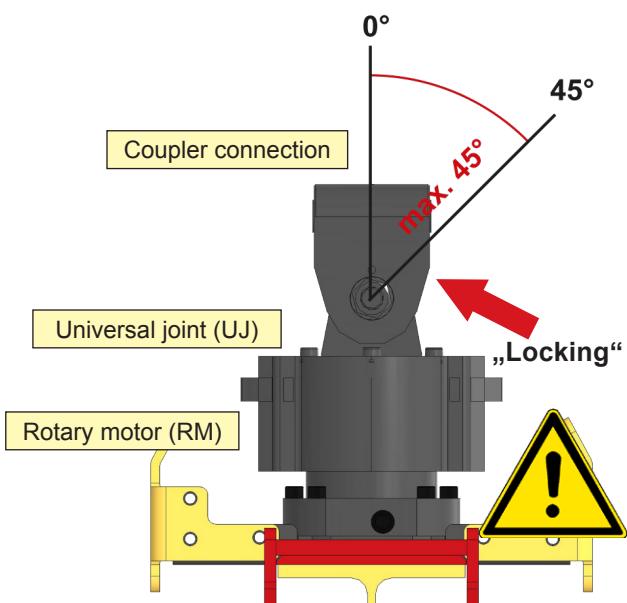


4.5 Constant stretching of the universal joint

There must never be any pressure exerted to the coupler from the top. This can be ensured by monitoring the universal joint and the top edge of the rotary motor and is practiced during induction.

It is important that the universal joint (UJ) can always swing freely. A “locking situation”, i.e., the connection elements for connection with the coupler hitting the rotary motor, must be prevented by all means as this may result in damage to pins and coupler connection.

After a “locking situation” has occurred, the coupler must be detached from the universal joint block and the connection must be inspected. If in doubt (even when there is no visible damage), it is recommended to replace the pins as a preventative measure.



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4.6 Prerequisites and preparations for using the tool

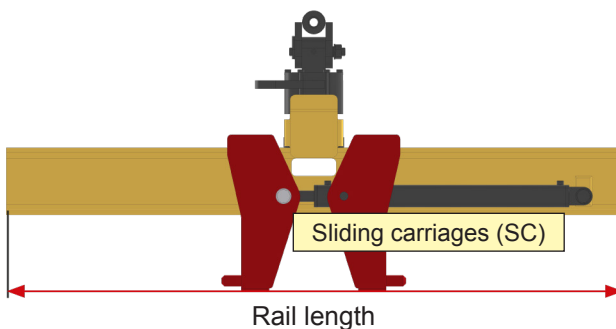
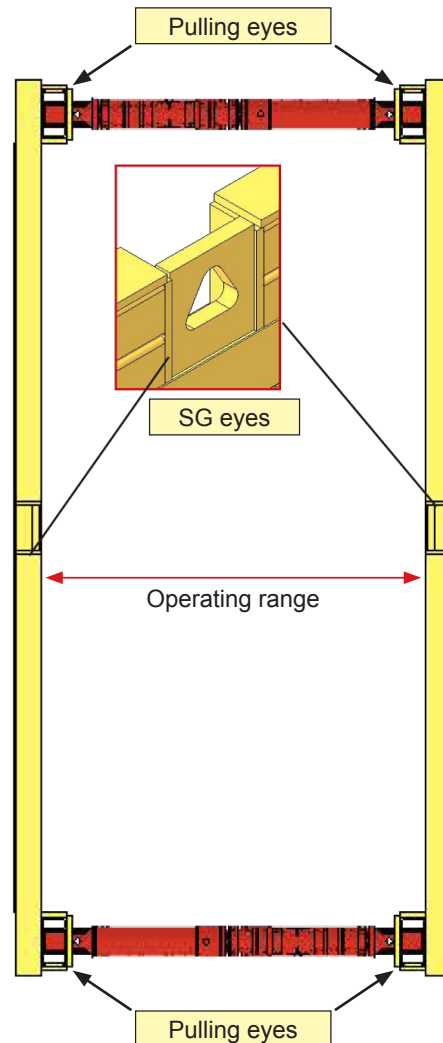
In order to move the shoring boxes, they must feature transport eyes in the centre, otherwise the shoring box grab cannot be used. In those instances, please contact our technical department. We are happy to advise you on how to retrofit shoring boxes of this type with suitable transport eyes.

Measure the width of the shoring box that is to be transported or moved. Use the table below to check if the shoring box grab can cover the required operating range.

4.6.1 SG eyes and rail length for selecting the shoring box grab

The shoring box grab's operating range is a function of rail length (R) and sliding carriage (SC) used with the tool.

Rail length	Operating range	
	from	to
2200 mm	650 mm	2100 mm
2600 mm	650 mm	2500 mm
3000 mm	650 mm	2900 mm
4500 mm	2140 mm	4400 mm



► Shoring box grab

4.7 Typical work with the shoring box

4.7.1 Lifting and setting down the shoring box

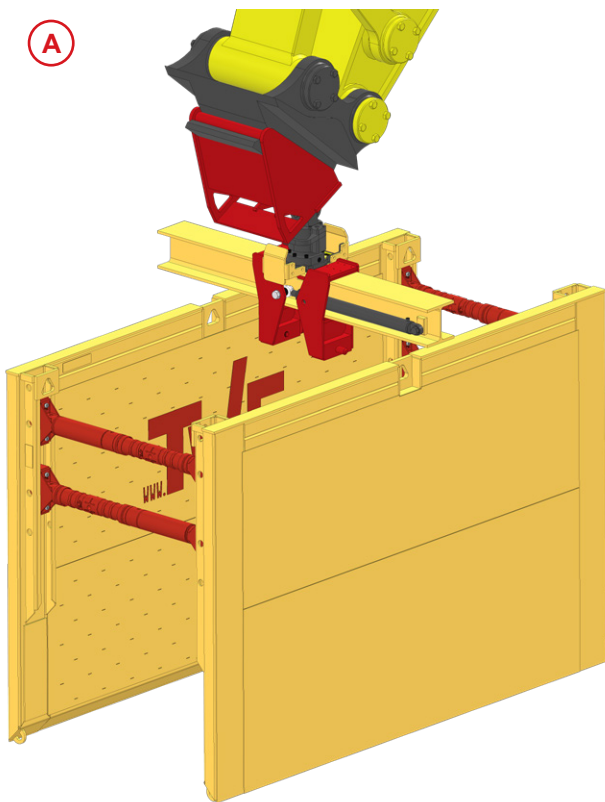
Place shoring grab in the centre of the shoring box (A). Lock the shoring box grab in place by extending the two sliding carriages (B). Both tool pins must be fully inserted into the transport eyes, i.e., the tools must make contact with the carrying plate (C).

Then slightly lift the shoring box. Check, with help from another person if necessary, if the tool pins are fully inserted into the lifting eyes of the shoring box and if it is held securely by the shoring grab.

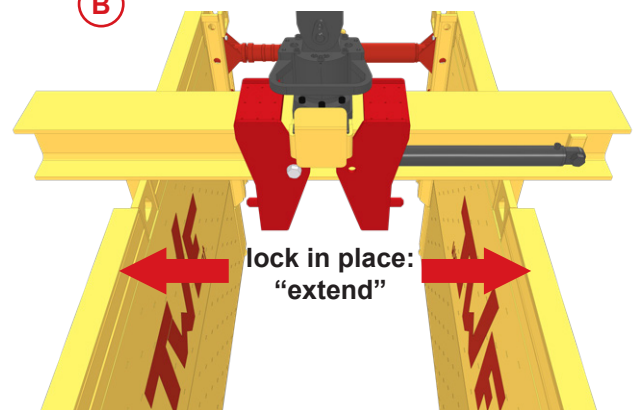
If the machine operator has no view of the pins and the two tools, the check must be carried out by the machine operator or another person (assistant) from outside the cabin!



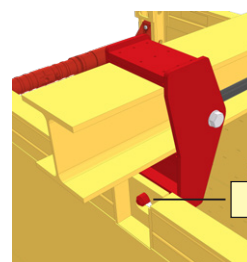
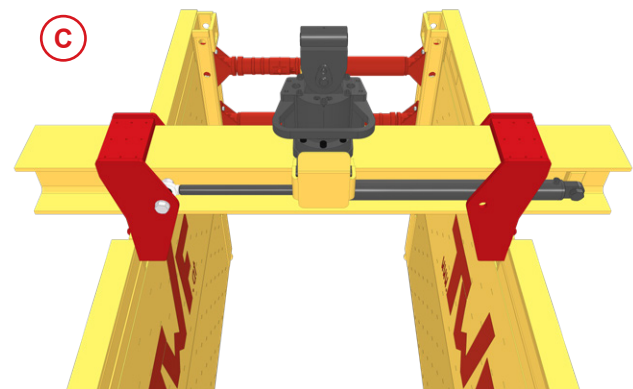
(A)



(B)



(C)



Shoring grab eye

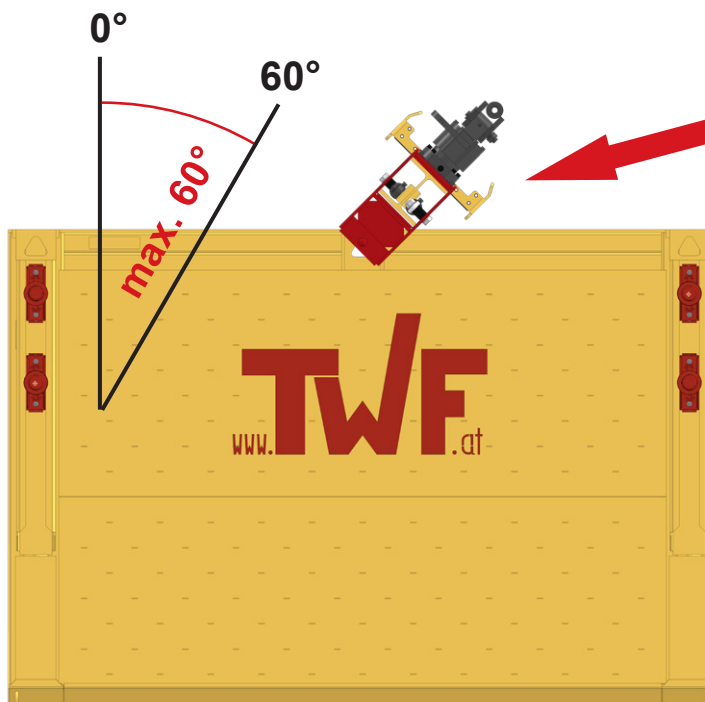
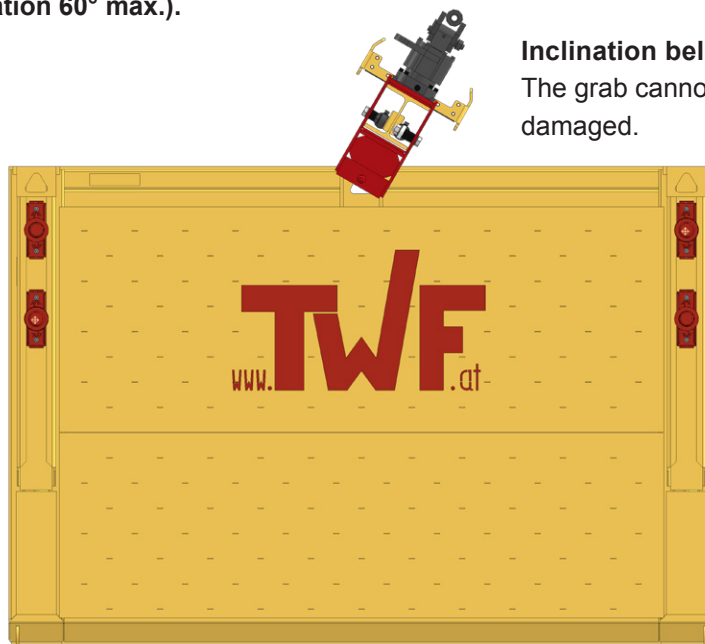
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4.7.2 Moving the shoring box

Prevent the box from swinging when lifting and moving it. The shoring grab tool must not get tilted or jammed (angle of inclination 60° max.).



Inclination below 60°
The grab cannot get damaged.



“Locking” situation



Shoring box grab tilted or jammed.
The grab gets damaged.

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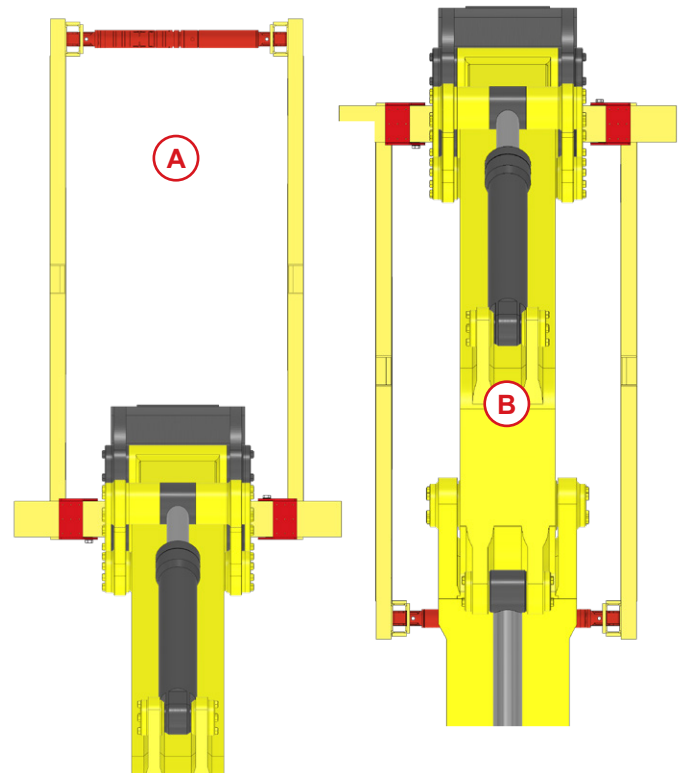
4.7.3 Extracting the shoring box

Move the excavator as close to the shoring box as possible. Position the shoring box grab on the side of the shoring box facing the excavator **(A)** first.

Then extend the sliding carriage until the tool pins are inserted into the lifting eyes. Lift the shoring box by approx. 50 cm.

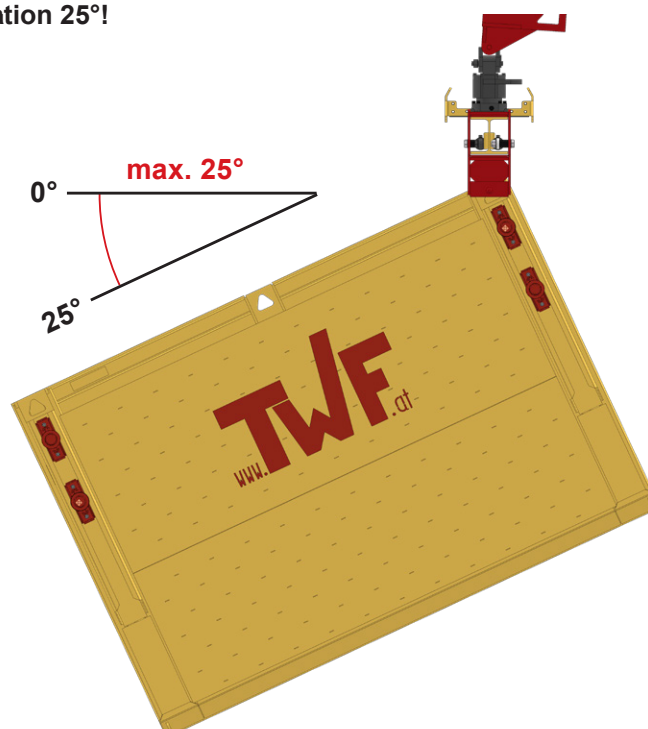
Open the shoring box grab by retracting the sliding carriages and position the shoring box grab on the side of the shoring box away from the excavator **(B)**.

Then extend the sliding carriage until the tool pins are inserted into the lifting eyes. Lift the shoring box by approx. 50 cm.



When lifting the box, the pins on the tools must not get tilted or jammed.

Maximum permissible inclination 25°!



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4.7.4 Summary of how to use the system correctly (for induction briefing)

Extracting the shoring box (chapter 4.7.3)

- Move the excavator as close to the shoring box as possible.
- Grab the shoring box using the lifting eyes on the side facing the excavator first.
- Now lift the side of the shoring box facing the excavator by 50 cm.
- “Open” the shoring box grab.
- Grab the shoring box using the lifting eyes on the side away from the excavator.
- Lift the side of the shoring box away from the excavator by 50 cm as well.
- Keep lifting the shoring box by alternating the sides until it can be lifted by the lifting eyes in the centre as set out in chapter 4.7.

⚠ When lifting the box, the pins on the tool must not get tilted or jammed.

⚠ The maximum permissible tensile load is equal to the tensile load of the shoring box grab: 6.3 tonnes.

⚠ The shoring box may only be loosened by lifting it from alternating sides using the lifting eyes at the corners. The transport eyes in the centre must not be used for loosening the shoring box.

Moving and placing the shoring box (chapters 4.7.2 and 4.7.1)

- Grab the shoring box using the **transport eyes** in the centre.
- Slightly lift the box and check, with the help of another person if necessary, if the shoring box is held securely by the shoring box grab using the **transport eyes**.

⚠ When lifting the box, the pins on the tool must not get tilted or jammed.

⚠ The maximum permissible tensile load is equal to the tensile load of the shoring grab, which is 6.3 tonnes.

⚠ The shoring box may only be loosened by lifting it from alternating sides using the lifting eyes at the corners. The transport eyes in the centre must not be used for loosening the shoring box.

Failure to adhere to any of the aforementioned points may result in injury to people or damage to the equipment.

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■ 5. Troubleshooting

- In the event of malfunctions or accidents that prevent proper operation of the attachment tool, it must be taken out of operation immediately.
- Attach clear and visible signs (e.g., “Beware, malfunction!”) on or next to the attachment tool.
- Should the equipment leak hydraulic oil, lubricant, or similar, do not simply top up the fluid, but search for the cause of the leak.

■ 6. Service and maintenance

Please note: At the end of the season and after overload situations, welding seams must be checked visually for cracks.

Checking for cracks can avert the need for more extensive repair work and prevents accidents.

6.1 Universal joint and connecting pin

Universal joint and connecting pin must be visually inspected for damage daily. In case of damage, operation of the attachment tool must be ceased immediately.

6.2 Hydraulic system

The entire hydraulic system must be visually checked daily. Damaged, worn, or leaking hydraulic lines, connectors, and seals must be replaced by a qualified person immediately.

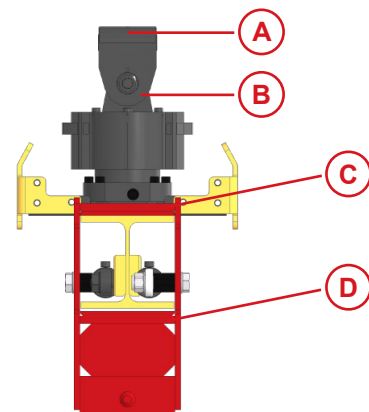
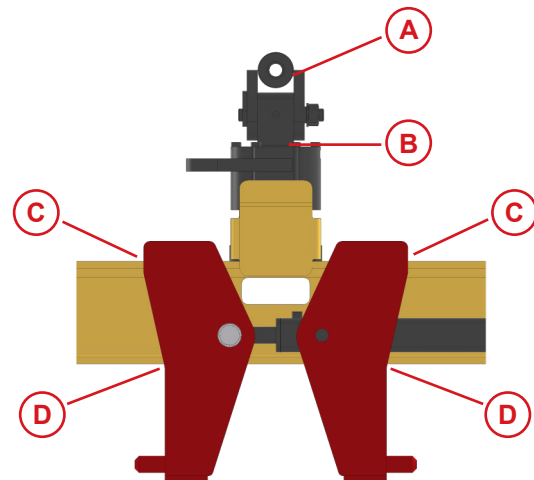
6.3 Cleaning

Clean the attachment tool daily, before and after each use. If a jet steam cleaner is used, the lubricating nipples must be covered first.

6.4 Lubrication schedule

The following parts and points must be lubricated weekly with one pump from the grease gun:

- (A) Lubricating nipple at the universal joint
- (B) Lubricating nipple at the rotary motor
- (C) Sliding plates brass, top
- (D) Sliding plates steel, bottom



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6.5 Longer periods of non-use

- Thoroughly clean the attachment tool and lubricate according to lubrication schedule.
- If the attachment tool is taken out of use for more than six months, remaining hydraulic oil must be drained off and disposed of in an environmentally-friendly manner.
- The tool must be stored in a dry place.
- Before putting the tool back into operation, it must be checked by a qualified person using the checklist as provided in chapter 7.

■ 7. Regular inspections pursuant to BetrSichV (German Ordinance on Industrial Safety and Health)

The attachment tool must be inspected regularly, **at least once per year**, by the manufacturer or by a **qualified person that has been instructed by the manufacturer**. This inspection must be documented.

To document the regular inspection in accordance with the German Ordinance on Industrial Safety and Health (BetrSichV), the checklist must be completely filled in.

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Shoring box grab – inspection log

Type	Shoring box grab SG
Serial number	
Year of production	

Quick coupling system	
Type	Shoring box grab SG
Serial number	
Year of production	

1. General	OK	Defects	Notes
• Cleaning completed	<input type="radio"/>	<input type="radio"/>	
• Bolts and nuts checked	<input type="radio"/>	<input type="radio"/>	
• Lubrication completed	<input type="radio"/>	<input type="radio"/>	

2. Hydraulics	OK	Defects	Notes
• No damage	<input type="radio"/>	<input type="radio"/>	
• No loss of hydraulic oil	<input type="radio"/>	<input type="radio"/>	
• Hydraulic hose pipes	<input type="radio"/>	<input type="radio"/>	
• Hydraulics safety signs in place	<input type="radio"/>	<input type="radio"/>	

3. Quick coupling system	OK	Defects	Notes
• Visual inspection: no damage, no deformations	<input type="radio"/>	<input type="radio"/>	
• Visual inspection: no cracks in welding seams	<input type="radio"/>	<input type="radio"/>	

4. Universal joint	OK	Defects	Notes
• Visual inspection: not deformed or damaged	<input type="radio"/>	<input type="radio"/>	
• Visual inspection: no cracks in welding seams	<input type="radio"/>	<input type="radio"/>	
• Moves freely	<input type="radio"/>	<input type="radio"/>	
• Pin inspection: not ground in	<input type="radio"/>	<input type="radio"/>	

5. Rotary motor	OK	Defects	Notes
• Visual inspection: no damage	<input type="radio"/>	<input type="radio"/>	
• Visual inspection: no hydraulic oil leaks	<input type="radio"/>	<input type="radio"/>	
• Screws/bolts/nuts tightened to the correct torque value	<input type="radio"/>	<input type="radio"/>	

6. Rails, sliding carriages with grabbing pins	OK	Defects	Notes
• Visual inspection: no damage, no deformations	<input type="radio"/>	<input type="radio"/>	
• Visual inspection: no cracks in welding seams	<input type="radio"/>	<input type="radio"/>	
• Slide guides: undamaged, wear thickness ≥ 8 mm	<input type="radio"/>	<input type="radio"/>	
• Cylinder mounting checked	<input type="radio"/>	<input type="radio"/>	
• Grabbing pins securely in place	<input type="radio"/>	<input type="radio"/>	

7. Identification plate, safety and test labels	OK	Defects	Notes
• In place, clearly readable	<input type="radio"/>	<input type="radio"/>	

Inspection passed	<input type="radio"/>
-------------------	-----------------------

Defects/comments/information:

Date: _____

Inspected by: _____



► **Operating manual**

■ **8. Disposal**

- Drain oil and dispose of it in an environmentally-friendly manner.
- Rough cleaning
- Dispose of metal scrap

■ **9. Technical details**


Rail length	Tool weight
2200 mm	460 kg
2600 mm	520 kg
3000 mm	560 kg
4500 mm	760 kg


Dynamic lift load: 6,300 kg

Rail length	Shoring box width	
	from	to
2200 mm	650 mm	2100 mm
2600 mm	650 mm	2500 mm
3000 mm	650 mm	2900 mm
4500 mm	2140 mm	4400 mm

Operating temperature: -10 °C to +40 °C

Identification plate

 Metall- und Maschinenbau		Gewerbegebiet Waldfeucht-Bocket Im Hagenkamp 6 & 18 52525 Waldfeucht Telefon: +49 (0) 2455 / 1323 E-Mail: info@metallbau-otten.de Web: www.metallbau-otten.de	
Typ	<input type="text" value="Verbaugreifer VG"/>	Baujahr	<input type="text" value="20"/>
Maschinen Nr.	<input type="text"/>	Gewicht	<input type="text" value="kg"/>
maximaler Öldruck	<input type="text" value="80 bar"/>	Nutzlast	<input type="text" value="6,4 ton"/>
Der Aufenthalt unter schwebender Last ist verboten.		Bedienungsanleitung beachten.	



► Shoring box grab

■ 10. EU declaration of conformity



EU-/EG-Konformitätserklärung

Hersteller:

Otten Metall- und Maschinenbau GmbH
Im Hagenkamp 18 & 6
52525 Waldfeucht

Bevollmächtigter:

Daniel Otten
Im Hagenkamp 18 & 6
52525 Waldfeucht

Produktbeschreibung:

Verbaugreifer

Angewandte EU-/EG-Richtlinie(n):

2006/42/EG EG-Maschinen Richtlinie

Hinweis

Unvollständige Maschine! Anbaugerät
Inbetriebnahme erst nach Montage in der Hauptmaschine gestattet.
Die Hauptmaschine muss geprüft und den Richtlinien entsprechen.



Waldfeucht, 03.11.2025
Ort, Datum

Jens Otten
Geschäftsführer
Metallbaumeister / Schweißfachmann

Daniel Otten
Geschäftsführer
CE-Beauftragter / staatl. gepr. Techniker Mechatronik

www.metallbau-otten.de

Metallbau Otten
Im Hagenkamp 18 & 6
52525 Waldfeucht

info@metallbau-otten.de
Tel: 0 24 55 / 13 23
Fax: 0 24 55 / 93 03 83

Ust.IdNr. DE 203 599 679
Steuer-Nr. 210/5119/0669

Bankverbindung
Volksbank Haaren eG
IBAN: DE53 3706 9330 4100 0950 20
BIC: GENODE33HAN

► **Operating manual**

■ **11. Commissioning checklist**

The checklist must be completely filled in in legible writing and returned to the manufacturer to validate the manufacturer's warranty.

Machine type + serial no.:	
2200 mm	400 kg
Owner and owner's address, incl. e-mail:	
Date:	
Instructed person(s):	
Instructor/trainer:	
Commissioning checklist	
<input type="checkbox"/> Handover of operating manual	<input type="checkbox"/>
<input type="checkbox"/> Serial no. check	<input type="checkbox"/>
<input type="checkbox"/> Instruction based on the operating manual	<input type="checkbox"/>
<input type="checkbox"/> Final functionality test carried out	<input type="checkbox"/>
<input type="checkbox"/> Safety instructions delivered	<input type="checkbox"/>
<input type="checkbox"/> Accident prevention measures	<input type="checkbox"/>
<input type="checkbox"/> Obligation to hand over all documents (incl. to resellers)	<input type="checkbox"/>
<input type="checkbox"/> Instructions delivered	<input type="checkbox"/>
..... Signatures of instructed persons	

TWF TIEFBAUTECHNIK

Sales | Rental | Leasing



SHORING BOX GRAB

TWF Tiefbautechnik GmbH

Düsseldorfer Strasse 2, 52525 Heinsberg, Germany

T: +49 2452 15678-0

office@twf-tiefbautechnik.de

www.twf-tiefbautechnik.de

TWF International GmbH

Klingerstrasse 8, 1230 Vienna, Austria

T: +43 1 8653333

office@twf.at

www.twf.at

OPERATING MANUAL