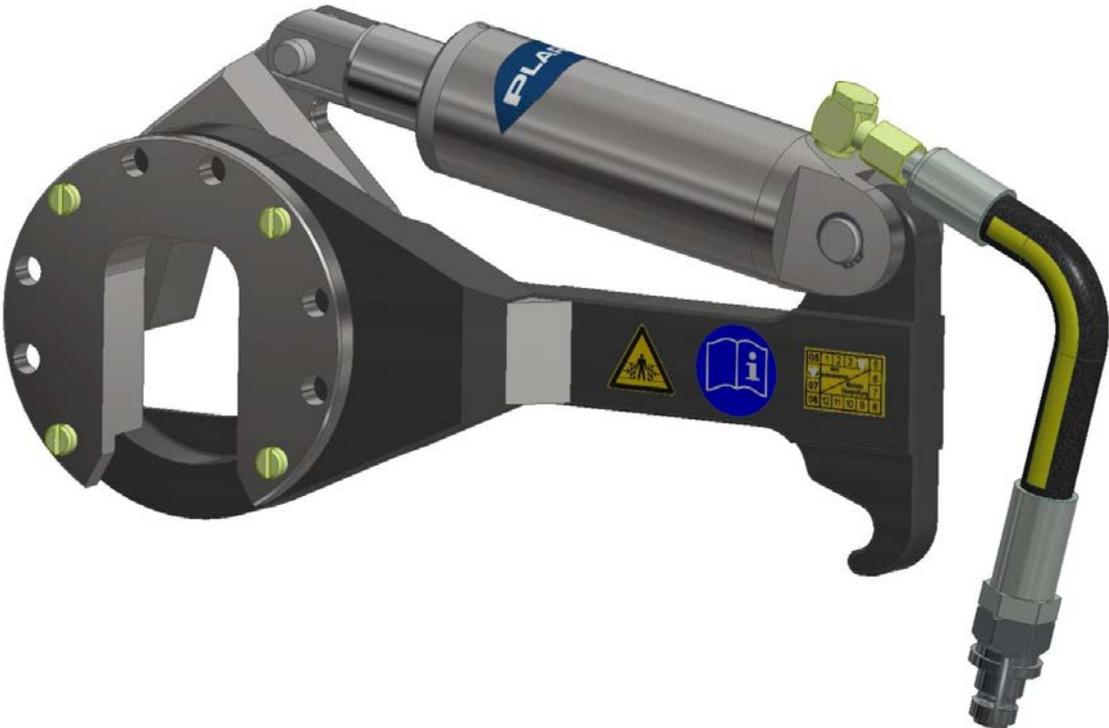




# Original operating manual

## Hydraulic counter support HPR 50 RM



Store for future reference



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# 1 Identification

## 1.1 Product identification

Manufacturer: Maschinenfabrik Wagner GmbH & Co. KG  
 Street: Birrenbachshöhe 17  
 Place: 53804 Much, Germany  
 Phone: +49 (2245) 62-0  
 Fax: +49 (2245) 62-66  
 Email: info@plarad.de  
 Internet: [www.plarad.de](http://www.plarad.de)

Machine designation: Hydraulic torque wrench / counter support  
 Type designation: HPR 50 RM

## 1.2 Document identification

PA No.	Version	Date	Reason for change / comments
77161	1.0	24/10/2019	Initial version / NTZ

File name: 1\_BA\_GBR\_V1.0\_77161.docx



## User instructions

### 1.3 Purpose of the document

This operating manual is intended to familiarise the owner/operator with the machine and provide information about its possible applications and intended use. The operating manual contains important information that allows the owner/operator to use the machine safely, correctly and efficiently. Observing this information helps avoid hazards, minimise repair costs and downtimes and increase the reliability and service life of the machine.

#### Information about precautions to be taken by the owner:

- Only entrust personnel who have the necessary qualification for the respective work with tasks on the machine.
- Clearly define the responsibilities and accountabilities of the operating and maintenance personnel.
- Supplement the operating manual by rules arising from national regulations regarding occupational health and safety and the environment (e.g. work organisation).
- Order and occasionally verify compliance with the operating manual and its supplements. Keep a copy of the operating manual at the place where the machine is used at all times!
- Only operate the machine when it is in technically faultless condition and maintain this.

In addition to the operating manual, the mandatory accident prevention regulations applicable in the country and the place where the machine is used must be observed. In addition, all recognised technical rules devised to ensure safe and correct working must be observed.

### 1.4 Target groups

- a) The **owner** as the superior legal person is responsible for the intended use of the machine and the training and deployment of authorised persons. He defines the mandatory competences and authorisations of the authorised personnel for his company.
- b) A **specialist** is defined as a person who is capable of assessing the tasks assigned to him and recognising possible hazards due to his professional training, knowledge and experience. This person is also familiar with all applicable regulations. Only trained specialist personnel or such personnel who have been selected and found capable by the owner are qualified to work with the machine.
- c) A **trained/instructed person** is a person who has been instructed and, if necessary, trained in the assigned tasks and the possible risks for incorrect behaviour. This person has also been informed about the necessary safety devices and protective measures. Personnel to be qualified, trained, instructed or undergoing general job training may only act under the constant supervision of an experienced person.

### 1.5 Re-orders and copyright

Additional copies of this operating manual can be ordered at the address specified in chapter 1 "Identification". Please note that all re-orders are subject to a charge. All rights expressly reserved. Copying or disclosing the content of this operating manual to third parties - in which form whatsoever - is not permitted without our written approval



## 1.6 Liability and warranty

All tasks and instructions provided in this operating manual are based on our previous experience and findings and given to the best of our knowledge. The original version of this operating manual was prepared in German and reviewed by us for technical accuracy. The translation into the respective national/contractual language has been prepared by a certified translation agency.

This operating manual has been compiled with the greatest level of care. However, if you discover any parts that are incomplete and/or incorrect, please notify us in writing. Your suggested improvements help us create an operating manual that is more user-friendly.

## 2 Product safety

The prerequisite for the safety-compliant handling and trouble-free operation of this machine is knowledge of the basic safety instructions.

### 2.1 Organisational measures

- a) The operating manual must always be kept in legible condition and readily available at the place where the machine is used!
- b) The operating manual needs to be supplemented by rules that incorporate the specific conditions present on site  
(e.g. duty of supervision and obligation to notify the authorities, work organisation, operational procedures, assigned personnel)
- c) The operating manual also needs to be supplemented by mandatory local regulations regarding accident prevention and environmental protection (e.g. handling hazardous materials, disposal of auxiliary and/or operating materials, and the provision/requirement to wear personal protective equipment)!
- d) Personnel must be instructed to observe the operating manual!

Personnel are required to notify the owner or his agent of any defects or hazards they have discovered.



## 2.2 Technically faultless condition

- a) All safety instructions and warnings at / on the machine must be maintained in complete and legible condition!
- b) Do not make any modifications, attachments and conversions to the machine that could impair safety without consultation/agreement with the manufacturer/supplier!

<b>Substantial changes to the machine can also invalidate the EC Declaration of Conformity!</b>	
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- c) Observe all intervals for recurring checks/inspections that are required (by law) or set out in the operating manual!
- d) All spare parts used must comply with the technical requirements specified by the manufacturer. This requirement is always satisfied by the use of original spare parts.
- e) When having maintenance work performed independently, make sure to provide the appropriate workshop equipment necessary to complete the work!
- f) Apart from this operating manual, all information and instructions provided in the supplier documentations need to be observed (see appendix)!

## 2.3 General safety information

<b>Read all safety information and instructions. Failure to observe the safety information and instructions can result in serious injuries.</b>	
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### 2.3.1 Safety at the workplace

- a) Keep your work area clean and sufficiently illuminated. Working in untidy or unlit work areas can result in accidents.
- b) Do not use your hydraulic torque wrench to work in explosive atmospheres that contain inflammable liquids, gases or dust. Hydraulic torque wrenches can generate sparks that may ignite dust or vapours.
- c) Keep children and other persons away from the hydraulic torque wrench while using it. Any distractions can cause you to lose control of your machine

### 2.3.2 Safety of persons

- a) When working with a hydraulic torque wrench, stay alert, pay attention to what you are doing and apply common sense. Never operate it when you are tired or under the influence of drugs, alcohol or medication. Even a brief moment of carelessness during the use of a bolting tool may lead to serious injury.
- b) Always wear personal protective equipment and safety goggles. Wearing personal protective equipment such as a dust mask, non-slip safety shoes, hard hat or hearing protection - depending on the type and use of the tool - reduces the risk of injury.
- c) Remove all adjusting tools or spanners before operating the hydraulic torque wrench. Any tool or spanner located in a rotating machine part can result in injuries.
- d) Refrain from assuming an abnormal body posture. Assume a firm stand and keep your balance at all times. This will help you retain better control over the bolting tool if faced with unexpected situations.



- e) Wear suitable clothing. Do not wear any loose-fitting clothes or jewellery. Keep hair, clothing and gloves out of reach of moving parts. Loose-fitting clothes, jewellery or long hair may become caught in moving components.

### 2.3.3 Service

- a) Only let your hydraulic torque wrench be repaired by qualified specialist personnel and only with original spare parts. This ensures that the safety of the power tool is maintained.
- b) Service your hydraulic torque wrench with care. Check if moving parts function properly and without sticking and whether parts are broken or damaged so that the power tool's function is impaired. Have damaged parts repaired before using the machine. Many accidents can be attributed to poorly maintained power tools.
- c) Use the hydraulic torque wrench, accessories, insertion tools, etc. in accordance with these instructions. During use, take into consideration the operating conditions and the task to be completed. The use of hydraulic torque wrenches for applications other than the ones specified can result in dangerous situations.



### 3 Training of personnel

#### 3.1 Selection and qualification of personnel

- a) Only reliable personnel are permitted to work on/with the machine. Observe the minimum age requirements stipulated by law!
- b) Only use trained or at least instructed personnel! Instruct and occasionally verify that only authorised personnel are used to work on/with the machine!
- c) Clearly define the responsibilities and accountabilities of the personnel with regard to operation, set-up, maintenance and repair!
- d) Only let personnel undergoing training, instruction or in the context of general training work on the machine while under constant supervision by an experienced person!

#### 3.2 Presentation of safety instructions

The operating manual uses the following illustrations to depict safety instructions:

<p><b>Danger:</b>  <b>Specifications / instructions and warnings intended to prevent personal injury</b></p>	 Danger
<p><b>Attention:</b>  <b>Particular specifications / instructions and warnings intended to prevent property damage</b></p>	 Attention
<p><b>Notice:</b>  <b>Particular specifications / instructions and warnings regarding the proper and efficient use of the machine</b></p>	



### 3.3 Symbols on the machine

<p><b>Crushing hazard warning</b></p>	
<p>Read all safety information and instructions. Failure to observe the safety information and instructions can result in electric shock, fire and/or serious injuries.</p>	
<p><b>This symbol indicates that the product must not be disposed of with regular household waste as specified in the WEEE directive (Waste Electrical and Electronic Equipment Directive, 2002/97/EC) and national laws.</b></p>	
<p><b>Service seal specifying the date of the next inspection.</b></p>	

### 3.4 Personal protective equipment (PPE)

<p><b>Use gloves</b></p>	
<p><b>Use protective footwear</b></p>	
<p><b>Wear hearing protection</b></p>	
<p><b>Wear protective headgear</b></p>	
<p><b>Use protective eye wear</b></p>	

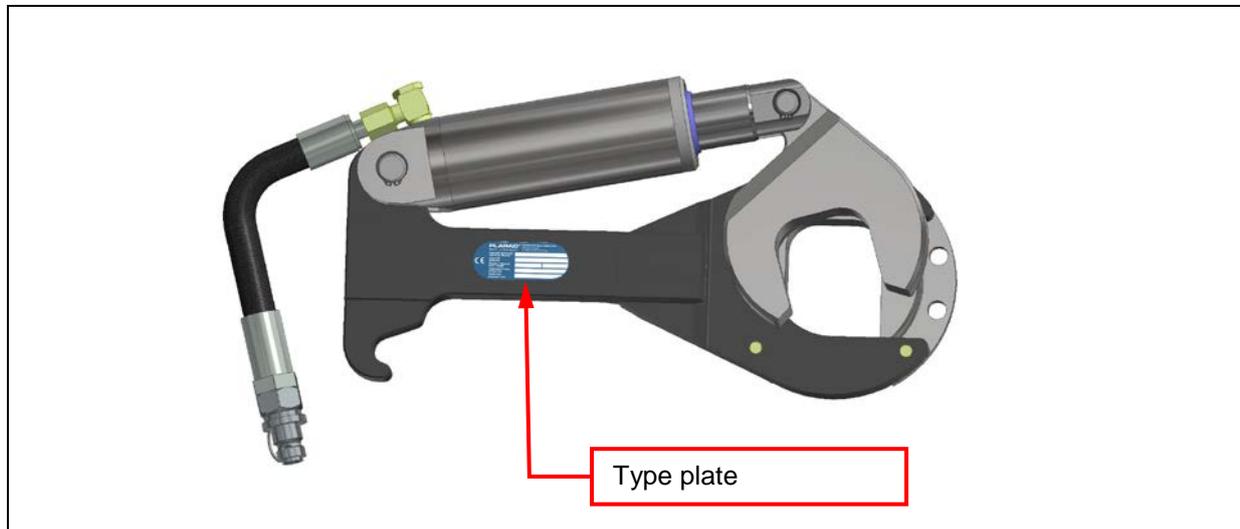


## 4 Description of the machine

Illustration and identification

The hydraulic torque wrench is identified by its type plate.

The position of the type plate is found in the illustration below:



The following specifications are given on the type plate:

- Company name including complete address
- Type designation:
- Serial no.:
- Year of manufacture:
- Weight:
- Maximum torque:
- Pressure:
- CE mark

### 4.1 Intended use

Within the limits of supply, the hydraulic torque wrench has been manufactured in accordance with the state of the art and the recognised technical safety rules. Regardless, the use of the machine involves certain risks to the life and limb of the user or third parties as well as the risk of damage to the machine and other material assets.

The machine may only be used if in proper technical condition, in accordance with its intended use, with an awareness of safety and the risks involved and in observance of the operating manual!

It is of particular importance in this regard to have any faults that may affect safety eliminated without delay!

The hydraulic torque wrench is a hand-held tool that is designed exclusively for tightening and loosening bolted connections.

It may only be used for commercial purposes.

Any use deviating from or exceeding the scope of intended use is considered to be improper.

The manufacturer/supplier cannot be held liable for any damage resulting from such improper use.

The risk lies solely with the owner.



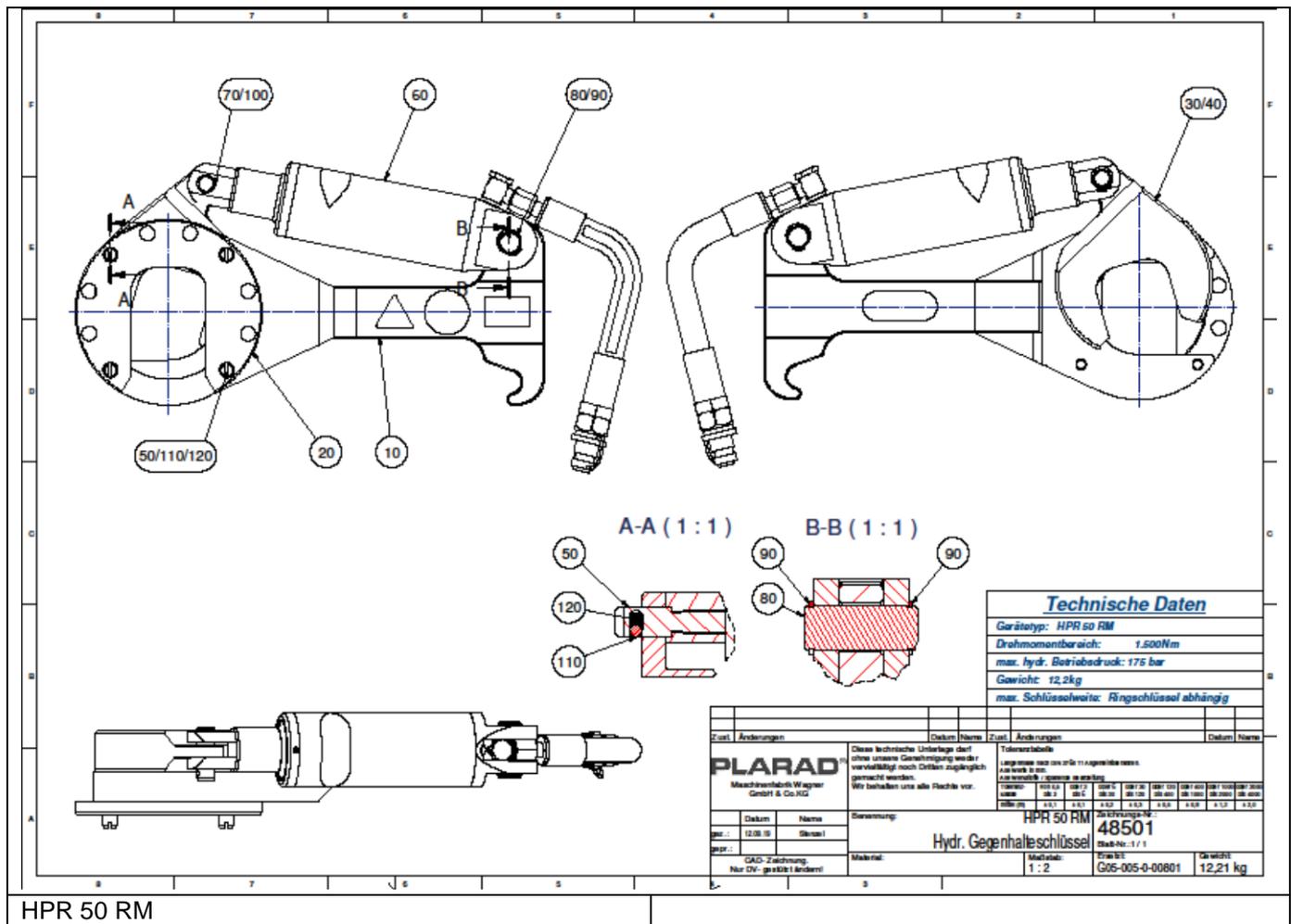
Intended use also includes observing the operating manual and the conditions specified for inspections and maintenance.



### 4.2 Foreseeable misuse

- Impermissible support scenario
- Do not subject bolting system and accessories to more than the permissible torque
- Observe ring spanner installation position

### 4.3 Design and components of the machine



HPR 50 RM

### Components of the hydraulic torque wrench:

- Pos. 10 Reaction arm
- Pos. 20 Counter support
- Pos. 30/40 Open-ended spanner / ring spanner
- Pos. 60 Hydro cylinder



## 4.4 Hazard areas

### 4.4.1 Mechanical strength

<p>Only components and accessories that do not impair the function and safety of the tool are permitted to be used. Only use impact sockets</p>	 <b>Attention</b>
<p>Unsecured components or tools can be flung out! Secure reaction arm and impact socket before start-up! Follow the instructions and warnings provided on the tool and the accessories.</p>	 <b>Danger</b>
<p>When setting the torque, strictly ensure that the maximum permissible torque of the accessories is not exceeded.</p>	 <b>Danger</b>

## 4.5 Technical specifications

<p><b>Dimensions:</b></p>	<p>see technical data sheet</p>
<p><b>Weight:</b></p>	<p>see type plate</p>
<p><b>Range of capacity:</b></p>	<p>see included torque table</p>
<p><b>Accuracy of set torque:</b></p>	<p>±5% of the nominal value (max. torque)</p>
<p><b>Ambient temperature:</b></p>	<p>0°C ≤ T ≤ 50°C</p>
<p></p>	<p></p>

<p>The technical specifications of accessories and the safety data sheets must be observed as well!</p>	 <b>Attention</b>
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## 5 Scope of delivery

- Hydraulic torque wrench, ready for operation
- Reaction arm
- Ring spanner insert
- Circlip pliers for installing the retaining rings on the reaction arm / bolt
- Operating manual including EC Declaration of Conformity
- Torque table with (optional) test certificate
- Case



## 6 Control and operation

### 6.1 Operating principle

- a manual hydraulic pump is used to generate a hydraulic pressure which can be set using a pressure relief valve and read at a pressure gauge. This pressure is supplied to the hydraulic tool via the high-pressure hose. When the corresponding pressure is reached (refer to the enclosed pressure-torque table), a force generated in the cylinder will act on the ring insert via a lever system.

This causes the ring system to rotate around the lever axis at an angle of approx. 30° to 35°, transmitting the torque to the bolted connection.

Following the completion of the rotational movement, the tool is taken off the bolt / nut, the piston is pushed back manually and refit onto the bolted connection for the next bolting process.

- Connect the high-pressure hose line and make sure coupling and nipple lock properly into place.
- you can read the torque via the pressure indicated at the pressure gauge and using the pressure-torque table.
- to transmit the torque to the bolted connection, a ring spanner is fitted to the hydraulic torque wrench.
- The rotational movement for “Tensioning” / “Loosening” is controlled by positioning the hydraulic torque on the bolting application at the turnover position.
- 

### 6.2 Prior to operation

- Check the oil level in the tank of the hydraulic pump
- Fit the hydraulic torque with the matching ring insert.



### 6.3 Preparing the tool

Only components and accessories that do not impair the function and safety of the tool are permitted to be used.  
Use only PLARAD ring spanner inserts



Attention

1. Mount the ring spanner insert to the hydro cylinder



2. Pay attention to the correct installation position!
3. Secure the ring spanner insert using a pin with ball lock spring.

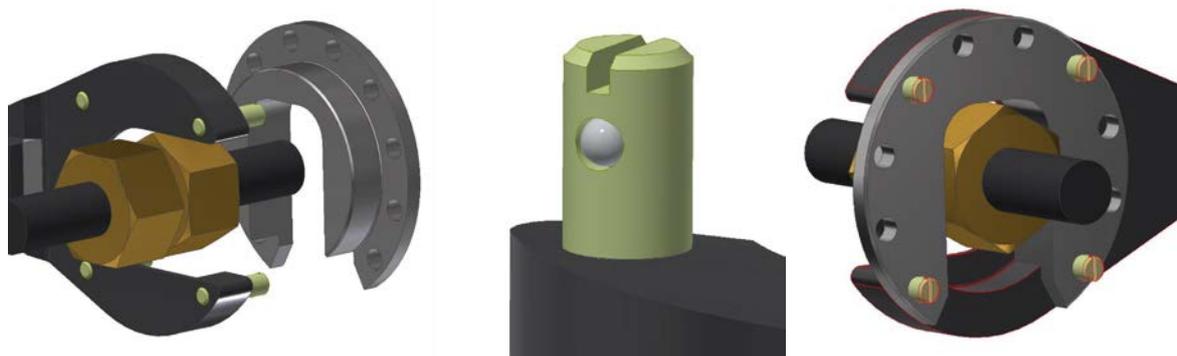


## 6.4 Operation

- Place the ring insert of the hydraulic torque wrench onto the bolt / nut. Choose a position that takes full advantage of the rotational movement.



- To absorb the reaction force, position the reaction arm at the bolted connection on the side and fix it in place using the adjustable locking plate.



- Connect the high-pressure hose.  
Attention: for technical reasons, you might want to connect the high-pressure hose before you put the device in position.
- Make sure the connected high-pressure hose is clear and untangled.



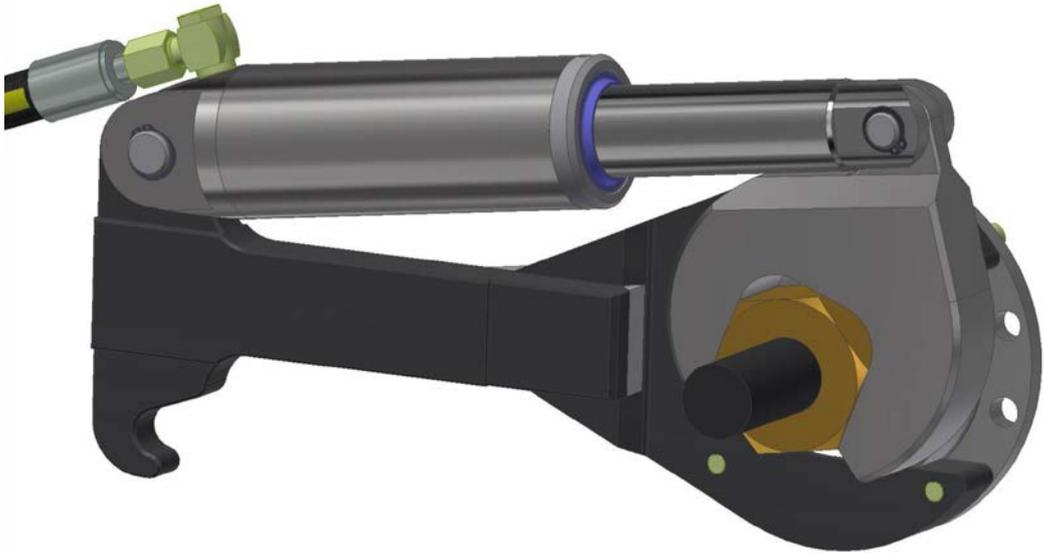
- Connect the relief valve to the manual hydraulic pump. (Fig. similar)



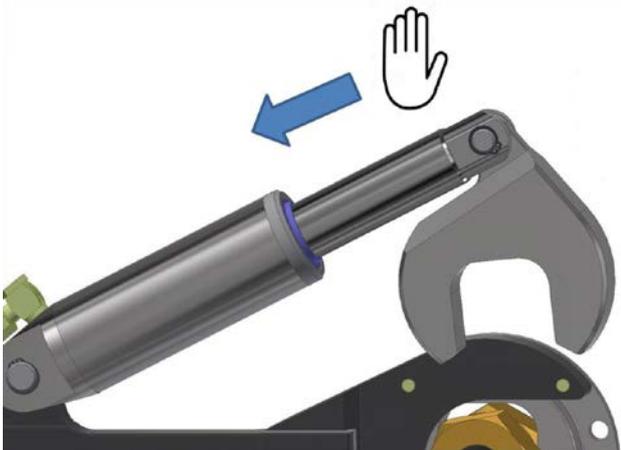
- You need to make sure that the hydraulic torque wrench is securely seated and that the support scenario is safe.
- Actuating the hand lever on the manual hydraulic pump will generate the desired amount of hydraulic pressure. While pressing the lever, watch the hydraulic pressure indicated by the pressure gauge found at the manual hydraulic pump.



- You need to stop pressing the hand lever when the piston of the hydraulic torque wrench has been fully extended.



- Open the relief valve on the manual hydraulic pump and push the piston of the hydraulic torque wrench back by hand. (Fig. similar)

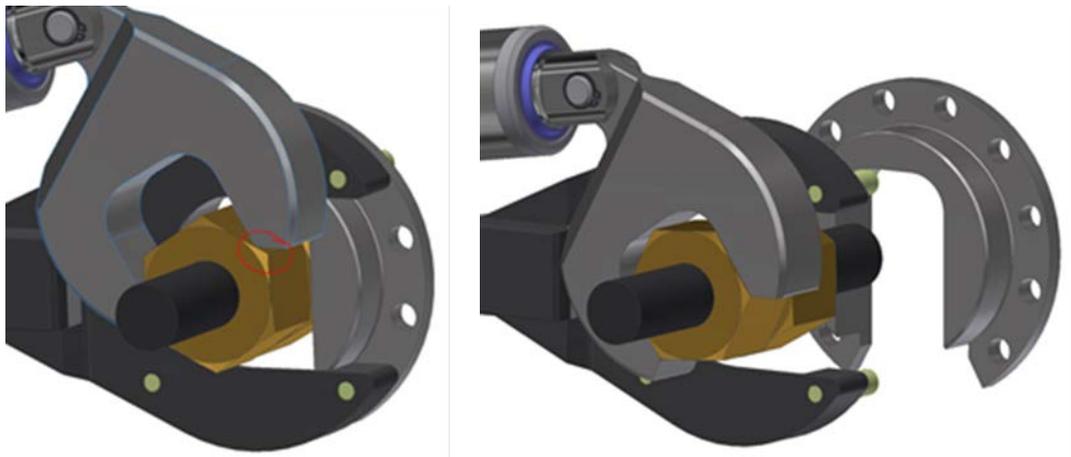




To do so, you can grab the hydraulic torque wrench by the reaction rod, mounted to which are the hydraulic cylinder and the reaction arm, and push the rod back in the operating direction.



- Place the ring insert onto the bolt/nut again. If the position of the wrench between ring spanner and bolt/nut is less than ideal, reposition the reaction arm with the locking plate if necessary.
- 



- Repeat the work steps described above until you have reached the desired torque. Pay attention to the end position of the piston. The desired torque must have been achieved before the piston reaches its end position. If necessary, push the piston back and reposition the ring spanner.

**Unsecured components or tools can be flung out!**  
**Secure reaction arm and impact socket before start-up!**  
**Follow the instructions and warnings provided on the tool and the accessories.**





## 7 Operation

### 7.1 Operation of the hydraulic torque wrench

<p><b>Do not work in a way that may endanger safety!</b>  <b>Tie back long hair and refrain from wearing loose clothing or jewellery</b>  <b>(there is a risk of injury from becoming entangled or drawn in)!</b></p>	 <b>Danger</b>
<p><b>Do not use the hydraulic torque wrench unless it operates in a reliable manner and is in proper condition!</b></p>	 <b>Danger</b>
<p><b>Before putting the hydraulic torque wrench into operation, make sure that no one is put at risk by the machine starting up!</b></p>	 <b>Danger</b>
<p><b>Only use reaction arms or ring spanners that have been approved by the manufacturer!</b></p>	 <b>Danger</b>
<p><b>Check the machine for visible external damage and defects at least once per shift!</b>  <b>Report any detected changes (including changes in performance) to the supervising staff without delay! If necessary, shut down and secure the machine immediately!</b></p>	 <b>Attention</b>
<p><b>Modifications to the reaction arm can invalidate the included original performance table.</b></p>	 <b>Attention</b>
<p><b>Operate the tool as specified in the operating manual;</b>  <b>follow control indicators!</b></p>	
<p><b>Suitable reaction arms - including custom models - are available on request.</b>  <b>Reaction arms must never be modified.</b></p>	



### 7.1.1 Loosening a bolted connection

- To loosen bolted connections, place the hydro cylinder with the ring spanner at the lower position of the reaction arm.

Illustration "Loosening a bolted connection"



Illustration "Tightening a bolted connection"



Loosening a bolted connection often requires higher levels of torque than are necessary for tightening.  
 When faced with a situation like this, you will find that standard sockets and accessories often do not provide the necessary stability.  
 Also, the power of the tool is usually greater than the load capacity of the accessories.



Note that the accessories are only permitted to be loaded with the maximum permissible torque.





## 8 Maintenance / Service

<p>Performing regular maintenance and inspections on the machine is of great importance. This minimises the occurrence of faults and increases operational reliability.</p>	
<p>Auxiliary and operating materials as well as cleaning agents and replacement parts need to be disposed of in a safe and environmentally compliant manner! Follow the instructions of the manufacturer when dealing with hazardous materials!</p>	
<p>Service work may only be performed by the manufacturer. Only allow Maschinenfabrik Wagner or bodies authorised by Maschinenfabrik Wagner to install, readjust, modify, expand and repair the tool.</p>	 <b>Attention</b>

### 8.1 Maintenance overview

The tool must be serviced as specified in the maintenance schedule before and after use.

Maintenance schedule				
Component / check	Type of check	Process	Interval	Comment
Surfaces Warnings and pictograms	Visual inspection	Check/ clean	Before/after use	
Check hydro cylinder for: <ul style="list-style-type: none"> <li>• Proper fastening</li> <li>• Damage</li> <li>• Leaks</li> </ul>	Visual inspection	Check	Before/after use	
Check ring spanner for: <ul style="list-style-type: none"> <li>• Damage</li> </ul>	Visual inspection	Check	Before/after use	
Check the reaction arm for: <ul style="list-style-type: none"> <li>• Damage</li> <li>• Proper operation, safety pin</li> </ul>	Visual inspection	Check	Before/after use	



## 8.2 Service overview

**Service work may only be performed by the manufacturer. Only allow Maschinenfabrik Wagner or bodies authorised by Maschinenfabrik Wagner to install, readjust, modify, expand and repair the tool.**



**Attention**

Throughout the useful life of the machine, it is necessary to perform a variety of service operations.

The service intervals need to be shortened if the machine is used in particularly harsh and demanding work environments.

The following service intervals must be observed depending on the conditions of use (see also ch.8.1 Maintenance overview):

### **Every 3 months:**

- in extreme usage conditions
- if application frequency is high / multi-shift operation

### **Every 6 months:**

- in normal usage conditions
- if application frequency is medium
- if used for work in the medium torque range

### **Every 12 months:**

#### **If application frequency is low**

- if application frequency is low

### **Cleaning:**

- Clean the surface of the tool
- Remove flash rust as necessary

### **Visual inspection:**

- Damage
- Leaks

### **Function check:**

- all moving parts in order
- Ring spanner without damage
- Hydro cylinder and reaction arm without damage
- no leaks at the hydro cylinder
- no leaks at the coupling / nipple



### 8.3 Spare and wear parts

All spare parts used must correspond to the technical requirements stipulated by us. This requirement is satisfied by the use of original spare parts. We only grant a warranty on the original spare parts we supply. The installation and/or use of spare parts not supplied by PLARAD may have a negative impact on the specified design properties, thereby impairing active and/or passive safety.

We do not assume any liability and warranty for any damage that can be attributed to the use of spare parts / accessories other than those supplied by us.

We require the following information to process your order in an efficient and expedient manner:3

1. Client
2. Serial number of the device
3. Designation of the desired spare part
4. Desired units
5. Desired shipping method

Refer to chapter 1 "Identification" for our address

## 9 Disposal

<p><b>All materials used need to be disposed of in a safe and environmentally compatible way. Observe all applicable national regulations!</b></p>	 <b>Attention</b>
<p><b>Dispose of this product at an authorised waste collection facility. Return the product if, for instance, purchasing a similar product or take it to a waste collection facility that is authorised to recycle waste.</b></p>	 <b>Attention</b>
<p><b>Turn to your local administration office, your public waste disposal authority, a facility that is authorised to dispose of waste hydraulic equipment or your waste management company.</b></p>	 <b>Attention</b>