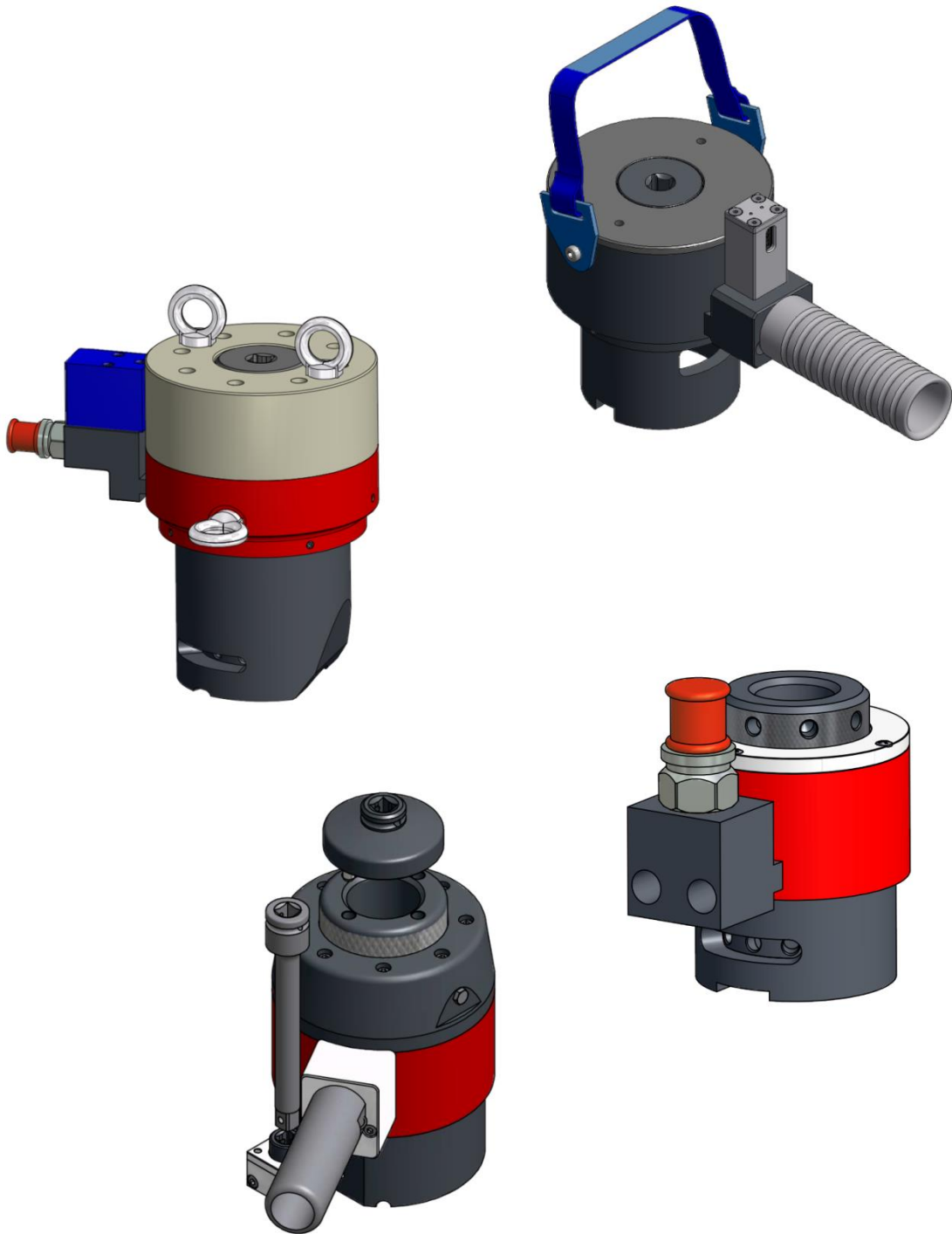


# Operating manual

## Tensioner SE / SHE



## Contents

Contents .....	2
1 Identification.....	4
1.1 Manufacturer.....	4
1.2 Product identification .....	4
1.3 Document identification .....	4
2 User instructions .....	5
2.1 Purpose of the document .....	5
2.2 Target groups .....	5
2.3 Re-orders and copyright .....	6
2.4 Liability and warranty .....	6
2.5 Mitgeltende Betriebsanleitungen .....	<b>Fehler! Textmarke nicht definiert.</b>
3 Product safety.....	6
3.1 Organisational measures.....	6
3.2 Proper technical condition .....	7
3.3 Safety at the workplace .....	7
3.4 Safety of persons.....	8
4 Training of personnel.....	8
4.1 Selection and qualification of personnel.....	8
4.2 Depiction of safety instructions .....	8
4.3 Symbols on the machine .....	8
4.4 Persönliche Schutzausrüstung (PSA) .....	9
5 Product informationen .....	9
5.1 Identification of the machine.....	9
5.2 Design and components of the machine .....	10
5.3 Intended use .....	10
5.4 Foreseeable misuse .....	10
5.5 Description of operation.....	11
5.6 Hazard areas .....	11
5.6.1 Hydraulics.....	11
5.6.2 Noise.....	11
5.7 Warning devices .....	11
5.8 Technical details .....	12
6 Scope of supply .....	12
7 Transport .....	13
7.1 Transport machine and machine parts .....	13
7.2 Handling.....	13
8 Installation and start-up .....	13
8.1 Design and installation .....	13
8.2 Initial operation .....	14
9 Operation.....	14
9.1 Operating the machine .....	14
9.2 Tensioning process .....	15
9.2.1 Setting behaviour.....	15

9.2.2	Piston return mechanism.....	16
9.2.3	Loosening process .....	16
10	Maintenance / Service .....	16
10.1	Service.....	16
10.2	Cleaning the machine.....	17
10.3	Auxiliary and operating materials .....	17
10.4	Maintenance schedule.....	18
10.5	Maintenance overview .....	18
10.6	Fault finding and troubleshooting .....	19
10.7	Spare and wear parts .....	20
11	Shutdown, storage and disposal .....	20
11.1	Shutdown.....	20
11.2	Storage condition.....	20
11.3	Disposal .....	21

# 1 Identification

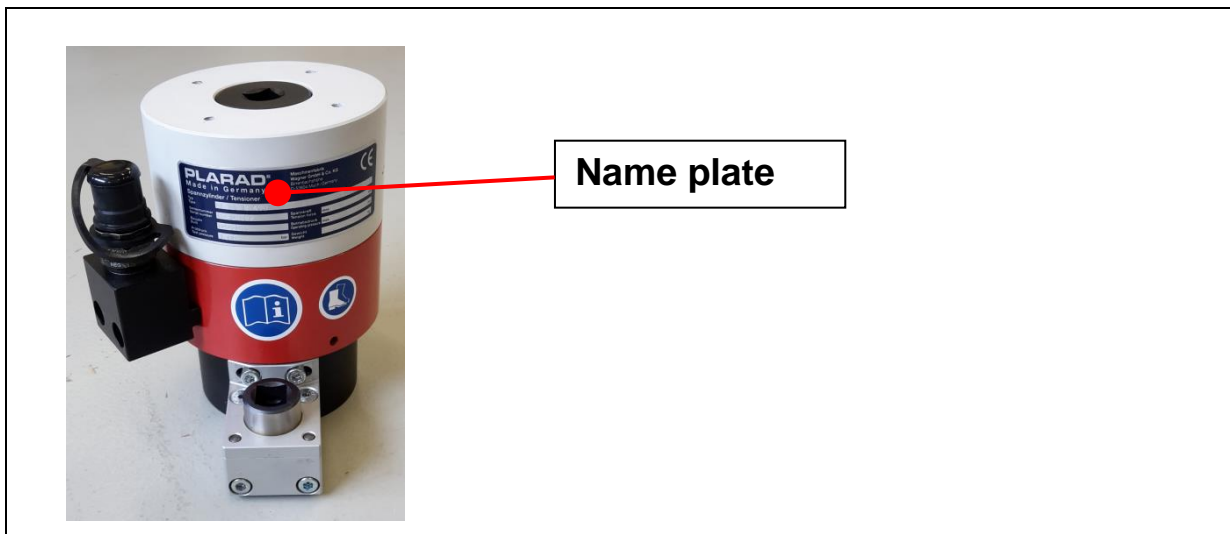
## 1.1 Manufacturer

Manufacturer: Maschinenfabrik Wagner GmbH & Co. KG  
 Street: Birrenbachshöhe 17  
 Place: 53804 Much, Deutschland  
 Phone.: +49 (2245) 62-0  
 Fax: +49 (2245) 62-22  
 E-Mail: info@plarad.de  
 Internet: [www.plarad.de](http://www.plarad.de)

Following named PLARAD“.

## 1.2 Product identification

Machine designation: : Hydraulic tensioner  
 Type designation: SE  
 SHE



## 1.3 Document identification

PA-Nr.	Version	Date	Reason for change / comments
18783	2.0	18.02.2017	Initial version from 18785 / JF
18783	3.0	07.12.2021	Revision layout & contents / PW

File path: 2\_BA\_SE\_GBR\_V3.0\_18785

## 2 User instructions

### 2.1 Purpose of the document

This operating manual is intended to familiarise the owner/operator with the tensioner and provide information on its possible applications and proper use. The operating manual contains important information that allows the owner/operator to use the tensioner in a safe, proper and efficient manner. Observing this information helps avoid risks, minimise repair costs and downtimes and increase the reliability and service life of the machine..

Information on precautions to be taken by the owner:

- Entrust only personnel who have the necessary qualification with tasks involving the tensioner.
- 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!
- Maintain the tensioner's proper technical condition and refrain from using the tensioner if its proper technical condition could not be established.

Apart from 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 professional work need to be observed.

### 2.2 Target groups

- a) The **owner** as the superior legal entity is responsible for the intended use of the tensioner and the training and use of the authorised personnel. He defines the mandatory responsibilities and authorities of the authorised personnel working at his company.
- b) A **specialist** is defined as a person who is capable of assessing the tasks assigned to him and of detecting any possible risks on account of his professional training, expertise and experience. This person is also familiar with all applicable regulations. Only trained experts 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 involved with improper conduct. This person has also been informed about the necessary safety devices and safety measures. Personnel to be qualified, trained, instructed or undergoing general job training may only act under the constant supervision of an experienced person.

## 2.3 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.

## 2.4 Liability and warranty

All information 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 appropriate national/contractual language was prepared by a certified translation agency. This operating manual was compiled with the greatest level care. If you, however, detect any portions 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.

## 2.5 Further applicable operating manuals

- Operation manual PLARAD power pack/manual pump

# 3 Product safety

The prerequisite for the safety-compliant handling and trouble-free operation of the tensioner is familiarity with the basic safety instructions.

## 3.1 Organisational measures

- a) The operating manual must be kept in legible condition and readily available at the place where the tensioner 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, fire alarm and fire fighting options, and the operation of fire extinguishers)
- c) The operating manual also needs to be supplemented by mandatory local regulations regarding accident prevent 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 ordered to observe the operating manual!

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



### 3.2 Proper technical condition

- e) Keep all safety and hazard warnings placed on/applied to the tensioner in complete and legible condition!
- f) Do not introduce any modifications, attachments and conversions to the machine that may impair safety without consulting/coordinating with us! This also applies to the installation and getting of safety devices and valves as well as any welding on load-bearing parts.

**Substantial changes to the tensioner may render the EC Declaration of Conformity invalid!**



- g) Observe all intervals for recurring checks/inspections and replacements of vital safety components that are required (by law) or set out in the operating manual!
- h) All spare parts used must correspond to the technical requirements stipulated by the manufacturer. This requirement is satisfied by the use of original spare parts.
- i) When having maintenance work performed independently, make sure to provide the appropriate workshop equipment necessary to complete the work!
- j) Apart from this operating manual, all information and instructions provided in the supplier documentations need to be observed (see appendix)!

### 3.3 Safety at the workplace

Besides the worker it is not allowed for anybody to stay in the bolting area

- a) Keep your work area clean and sufficiently illuminated. Working in untidy or unlit work areas can result in accidents.
- b) Keep children and other persons away from the power tool while using it. Any distractions can cause you to lose control of your machine
- c) The worker is not allowed to stay in working direction of the tensioner.
- d) Keep distance of some meter to the pressure parts during the tensioning process, if possible.

**The required safety measures need to be observed at all times.**



**Danger!**

### 3.4 Safety of persons

- a) When working with a tensioner, stay alert, pay attention to what you are doing and apply common sense. Never operate a power tool when you are tired or under the influence of drugs, alcohol or medication. Even a brief moment of carelessness during the use of a power tool can result in serious injuries.
- 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 power tool) reduces the risk of injury.
- c) 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 power tool if faced with unexpected situations.
- d) 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..




## 4 Training of personnel

### 4.1 Selection and qualification of personnel


- a) Only reliable personnel may be entrusted with work on/with the tensioner. Observe the minimum age requirements stipulated by law!
- b) Use only trained or, at the least, instructed personnel! Order and, on occasion, verify that only authorised personnel are used to operate the machine!
- c) Clearly define the responsibilities and accountabilities of the personnel with regard to operation, set-up, maintenance and repairs!
- d) Do not allow personnel undergoing qualification, instructions or job training to operate the tensioner unless acting under the supervision of an experienced person
- e) Work on hydraulic/pneumatic equipment must be restricted to experienced and qualified experts!!

### 4.2 Depiction of safety instructions





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

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




### 4.3 Symbols on the machine

<p><b>Read all safety information and instructions. Failure to observe the safety information and instructions can result in serious injuries.</b></p>	
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Use protective footwear	
Stay out of the tensioner's axial force direction	
The axis of the bolt must be at a right angle to the supporting surface	
Service seal specifying the date of the next inspection.	

#### 4.4 Personal protective equipment (PPE)

Use gloves	
Use protective footwear	
Wear hearing protection	
Wear protective headgear	

### 5 Product informationen

#### 5.1 Identification of the machine

Illustration and identification

The tensioner is identified by its type plate.

The position of the type plate is found in 1.2 „Product identification“.

The following specifications are given on the type plate

- Company name including complete address
- Machine designation:
- Type designation:
- Item or Serial no.:
- Maximum tension force
- Maximum operating pressure
- Test pressure
- Year of manufacture:
- CE mark

**Note the tension force and maximum operating pressure mentioned on the type plate**



**Attention**

## 5.2 Design and components of the machine

The main components of the tensioner are two cylindrical tubes housing two pistons which use hydraulically applied pressure to pull at a bolt while propping themselves up on a supporting surface.

## 5.3 Intended use

Within the limits of supply, the tensioner 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 tensioner 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 tensioner is designed exclusively for tightening and loosening bolted connections (see ch. 9).

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.**



## 5.4 Foreseeable misuse

- The tensioner may only be used at operating pressure levels that do not exceed the permissible maximum.
- The axis of the bolt must be at a right angle to the supporting surface.
- Prior to tensioning, make sure not to subject any of the components to a load that exceeds their maximum load-bearing capacity.
- The thread engagement between the bolt to be tensioned and the draw bolt / draw nut usually needs to be at least 1xD.
- The maximum permissible stroke distance of the tensioner must be observed.



Allow only Maschinenfabrik Wagner or bodies authorised by Maschinenfabrik Wagner to install, readjust, modify, expand and repair the tensioner. Use the tensioner only as described in the operating manual. Operating the unit in a safe and reliable manner will otherwise not be possible. Unauthorised modifications may lead to unexpected hazards. The safety of the operator and the trouble-free operation of the unit are only guaranteed if you use original PLARAD components. This applies both to device components and spare parts.

If different components are used, Maschinenfabrik Wagner cannot guarantee safe and reliable operation.




## 5.5 Description of operation

The tensioner is used to hydraulically pull at a bolt in axial direction ..


## 5.6 Hazard areas

<p>Efficient collaboration and exact coordination of their activities are required for several people to work on the machine.</p>	 <b>Attention!</b>
<p>Stay out of the pressurised tensioner's direction of pull.</p>	 <b>Dangerr!</b>

### 5.6.1 Hydraulics


<p>Work on this equipment must be restricted to personnel who have the specific expertise and experience necessary!</p>	 <b>Danger!</b>
<p>All lines, hoses, and bolted connection must be regularly checked for leaks and visible exterior damage! Remove any damage immediately! Oil spurting out from the machine may cause injury and fire.</p>	 <b>Danger!</b>
<p>Make sure that all hydraulic elements used (hoses, manifolds, pressure gauges, etc.) are designed to withstand the maximum operating pressure of the tensioner.</p>	 <b>Attention!</b>
<p>Before performing any repairs, depressurise the system sections to be opened and the pressure lines in</p>	
<p>Make sure to lay and install hydraulic lines in the proper manner! Do not confuse the connections. The valves, length and quality of the hose lines must satisfy the requirements.</p>	

### 5.6.2 Noise


<p>Hearing impairment by noise! Wear the required personal protective equipment (hearing protection)!</p>	 <b>Danger!</b>
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## 5.7 Warning devices




<p>A red marking on the draw bolt indicates that the maximum stroke distance has been reached. As soon as the marking is visible, the nut needs to be added, and the tensioning process needs to be repeated after the draw bolt has been retracted.</p>	 <p><b>Attention</b></p>
--	---


**Tensioners with hydraulic stroke limiter:**

<p>These tensioners are equipped with a safety valve that will trip if the maximum stroke is exceeded, allowing hydraulic fluid to escape through a drill hole on the side. <b>This does not represent a technical defect</b></p>	 <p><b>Attention</b></p>
---	---

When the piston has retracted, the tensioner can be used normally again. Please note that residual amounts of hydraulic oil may exit at the housing when operation resumes following a tripping of the stroke limiter..


<p>The set pressure can be checked regularly on the power pack / the hand lever pump</p>	 <p><b>Attention</b></p>
--	---

If the tensioner is equipped with a cycle counter, the operator can use this indicator to read the number of tensioning cycles already completed

<p>We recommend to change the draw bolt whenever the tensioner has reached the maximum permissible cycle count (see technical drawing).</p>	 <p><b>Attention</b></p>
---	--

**5.8 Technical details**

<b>Dimensions:</b>	Refer tot he attached drawing and the cover sheet for the technical specifications
<b>Weightt:</b>	Refer to type plate
<b>Leistungsspektrum:</b>	siehe mitgeliefertes Spannungsdiagramm
<b>Supply, interfaces and connections</b>	The maximum permissible operating pressure is given in the attached drawing
<b>Ambient conditions</b>	-20°C to 70°C


<p><b>The information provided in the technical data sheets of accessories must be observed also.</b></p>	 <p><b>Attention</b></p>
---	---

**6 Scope of supply**

- Hydraulic stud tensioner
- Operating manual
- Technical data sheet
- Drawing
- Tension diagramme
- Case



## 7 Transport

### 7.1 Transport machine and machine parts




<p>The tensioner must be depressurised prior to transport. The hydraulic hose must be removed..</p>	 <b>Danger!</b>
<p>Transport may only be performed by personnel capable of performing the necessary work on account of their expertise and experience in the field of transport.</p>	
<p>The machine and larger components must be carefully attached to and secured by lifting gear. Use only lifting gear and slings of sufficient load-bearing capacity that are suitable and in proper technical condition. Do not stay or work under suspended loads!</p>	
<p><b>Entrust only experienced personnel with attaching loads!</b>  <b>Attach / remove transport securing devices to and from the machine parts.</b></p>	

### 7.2 Handling


The tensioner should only be attached to and transported while suspended from the designated attachment points


<p>Always wear safety shoes and protective gloves.</p>	 
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## 8 Installation and start-up


<p>Set up the machine on a stable, low-vibration surface in a dry location</p>	 <b>Attention!</b>
<p>The surface supporting the tensioner must be at a right angle to the axis of the bolt</p>	
<p>The machine must be easily accessible at all times, allowing the operator to handle the machine in a safe and comfortable manner. Refer to the technical specifications for the dimensions and conditions to be met by the required space</p>	
<p>The machine may only be operated in an environment that offers the type of lighting conditions that are required by the applicable ergonomics regulations.</p>	

### 8.1 Design and installation

<p>Tensioner, pressure and power pack/hand pump need to be depressurised before they can be installed..</p>	 <b>Attention!</b>
<p>Make sure the hydraulic hose is routed in a safe and proper manner. Possible danger to the hose caused by dragging it over sharp edges, driving over it with vehicles, subjecting it to loads exerted by heavy objects, etc. must be avoided</p>	


<p>Coupling, nipple and hose must be checked prior to installation. Clean coupling and nipple if necessary.</p>	 <b>Attention!</b>
<p>Coupling and nipple are connected by pulling back the coupling ring. When released, the ring must engage with an audible and visible click. Once the coupling ring has locked into place, you need to screw the retaining ring onto the hose coupling.</p>	
<p>The components need to be depressurised before they can be removed.</p>	
<p>Make sure the media connections do not show any leakage following installation. If detecting a leak, you need to depressurise the system immediately!</p>	

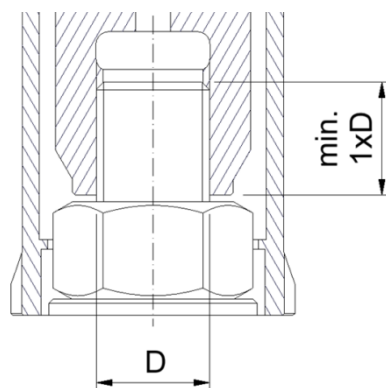
## 8.2 Initial operation



<p>Before putting the machine into operation, the owner is required to perform a visual inspection in order to ensure that there are no unauthorised persons in the vicinity of the machine.</p>	
<p>Set the desired pressure on the power pack before connecting the tensioner. Observe the maximum operating pressure!</p>	

## 9 Operation

### 9.1 Operating the machine

<p>Before using the tensioner, make sure that no one can be put at risk during the tensioning process! Perform a visual check of the tensioner to check for defects.</p>	 <b>Attention</b>
<p>Stay out of the tensioner's direction of pull!</p>	
<p>Always wear protective clothing when using the tensioner.</p>	
<p>Make sure the thread engagement between bolt and draw bolt is at least 1xD.</p>	



Observe the maximum operating pressure permissible for the bolting application at hand.	 <b>Attention!</b>
Observe the permissible stroke distance. Exceeding the permissible stroke distance may result in leakage and damage to the tensioner.	
Make sure the draw bolt is at its initial position prior to each tensioning process.	

## 9.2 Tensioning process

Clean the surface supporting the tensioner. Dirt, paint residue, etc. may lead to a more intense setting effect following the tensioning process.

Check if the supporting surface is vertical in relation to the axis of the bolt.

Clean, inspect and lubricate/oil the thread.

Position the tensioner carefully to prevent damage to the threads. Proceed by screwing on the tensioner until the reaction arm rests on the supporting surface.

For systems without a spring-loaded rotating sleeve:

When screwing on the tensioner, make sure the hexagon of the rotating sleeve lines up with the hexagon nut.


Check to verify that all hose connections are properly connected.

When the tensioner is pressurised, the bolt is elongated, and the draw bolt extends.

Pay attention to the maximum stroke distance! If reaching the maximum stroke distance, switch off the power pack immediately! Add the nut, relieve the tensioner, and repeat the tensioning process.

Add the nut upon reaching the desired pre-tensioning force.

To do so, use either the included pin (round nut or rotating sleeve with drill holes) or the gearbox..

The gearbox is only designed for the purpose of adding the nut. Please observe the maximum permissible torque (40Nm or 80Nm).	 <b>Attention</b>
---	---

The system can be depressurised after the nut has been added.

### 9.2.1 Setting behaviour

To offset any setting effects, we recommend that you repeat the tensioning process at least twice. Oftentimes, compensation can already be achieved through an increase in the calculated pre-tensioning force - by multiplying this force with the appropriate factor.

### 9.2.2 Piston return mechanism

The piston in systems equipped with an automatic piston return mechanism moves back to its initial position after the pressure has been cut off. All other systems require that the piston be returned to its initial position by screwing on the draw nut.

In both cases, the hydraulic hose needs to remain connected to allow the oil to be pressed back from the cylinder into the tank.

Do not switch off the connected power pack immediately after the tensioning process is complete. Depending on the power pack used, the system may remain pressurised after being switched off!

### 9.2.3 Loosening process

Important for the loosening process is that the tensioner is not screwed onto the bolt all the way. There should be a minimum play of approx. 1-2 mm between reaction arm and supporting surface (the distance may have to be greater for bolts that are particularly long).

The nut can be released after the hydraulic pressure has been applied. When doing so, make sure not to screw the nut all the way up to the draw bolt / draw nut.





If the tensioner can no longer be moved after the nut has been released, the original elongation of the bolt was greater than the play present between reaction arm and supporting surface during the loosening process.

It will be necessary, in this case, to tighten the bolt again..

## 10 Maintenance / Service

### 10.1 Service

- a) Have your tool repaired only by qualified personnel and only with original spare parts to ensure the safety of the tool.
- b) Maintain tools with care. Control the proper function of moveable parts function, that they are not locked or any parts are damaged. Have damaged parts repaired before using the tool. Many accidents are caused by badly maintained tools.
- c) Use tensioner, accessories, application tools etc. according to these instructions. Consider the working conditions and job to be done. Use of tensioners for applications other than considered can lead to dangerous situations.

<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>If the removal of safety devices is required, the safety devices need to be refitted and checked immediately following the conclusion of maintenance or repairs.</p>	 <b>Danger!</b>
<p>Consider specified setting, maintenance and inspection activities including information for replacing parts or partial equipment! Meet appropriate deadlines. Only special trained and instructed qualified personnel may carry out these activities.</p>	
<p>To ensure safety during work on the tensioner, the hydraulic hose needs to be disconnected! Pressurised systems need to be relieved!</p>	 <b>Attention</b>
<p>Always firmly re-tighten bolted connections that have previously been loosened for the purpose of maintenance and repairs!</p>	



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



## 10.2 Cleaning the machine

To ensure safety during work on the tensioner, the hydraulic hose needs to be disconnected! Pressurised systems need to be relieved!

The machine needs to be constantly kept clean while operation is in progress. Cleaning also entails keeping the floor clean, clearing packaging materials etc., and preventing tools from lying about.

Refrain from using compressed air to clean the machine. The machine may, otherwise, experience increased wear and a greater number of faults. Use only soft cleaning cloths for cleaning

Remove any oil, fuel and care products from the machine and, in particular, the connectors and bolted connections before performing maintenance/repairs! Do not use any abrasive cleaning agents! Use lint-free cleaning cloths!

When finished cleaning, check all supply lines for leaks, loose connections, chafe marks and damage! Correct any detected defects immediately!

Also follow the instructions provided in the supplier documentation.



## 10.3 Auxiliary and operating materials



When handling auxiliary and operating materials (e.g. oils, greases and other chemical substances), observe the safety instructions applicable to the product you are using! The information provided in the manufacturer's material safety data sheets must be observed!



Operating material used in the tensioner: Hydraulic oil HVLP DIN 51524-3



## 10.4 Maintenance schedule

Work on the technical equipment of the machine (hydraulic system) may only be performed by qualified experts!	 <b>Danger!</b>
The spare and wear parts listed in the technical documentation must be replaced immediately if damaged.	 <b>Danger!</b>

## 10.5 Maintenance overview

Throughout the useful life of the machine, it is necessary to perform a variety of maintenance steps and inspections. The intervals at which these tasks need to be carried out are listed in the maintenance schedule. It is, furthermore, necessary to observe the maintenance intervals applicable to the purchased parts specified in the appendix.

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

<b>Process</b> P = Check      E= Adjust R = Clean      N = Re-tighten S = Lubricate    A = Replace		<b>Interval</b> T= daily      H= semi-annually W= weekly    J = annually M = monthly		
Component/check	Type of check	Process	Interval	Comments
Draw bolt		A		Replacement after recommended permissible cycle count has been reached. See technical drawing of the tensioner
Warning pictograms Check for damage and completeness	Visual inspection	P	T	
Hydraulic equipment: Check piping/hose lines for: Firm seating, damage, proper marking	Visual inspection	P	T	
General condition of the tensioner: Cycle counter check, carrying handle, rotating sleeve, gearbox	Visual inspection	P	T	
Seals		A	4 years	Replace seals every 4 years regardless of their extent of usage

**All maintenance operations should only be performed by trained personnel**

## 10.6 Fault finding and troubleshooting

Fault	Cause	Correction
<p><b>Operating pressure is not being built up</b> (If no leak is detectable, the fault lies with the power pack / pump)</p>	<p>Component defective Seals worn Stroke limiter has tripped</p>	<p>Service by manufacturer Service by manufacturer Add nut and start another tensioning process</p>
<p><b>Sudden oil leakage</b></p>	<p>Permissible stroke exceeded in tensioners equipped with a hydraulic stroke limiter. Stroke limiter opens.</p>	<p>Return piston to initial position. Wipe up leaked oil. Attention! When operation resumes, it is possible that residual hydraulic oil will escape from the housing. This will not affect operation in any way.</p>
<p><b>Rotating sleeve not springing back</b></p>	<p>Reaction arm heavily soiled</p>	<p>Dismantle and clean</p>
<p><b>Gearbox cannot be turned</b></p>	<p>Reaction arm heavily soiled Gearbox damaged by excess torque</p>	<p>Dismantle and clean Service by manufacturer</p>
<p><b>Piston return incomplete</b></p>	<p>Hydraulic hose removed too fast Power pack cut off too fast Power pack not relieved Springs defective</p>	<p>Connect hydraulic hose Switch power pack back on Flip lever to relieve Service by manufacturer</p>
<p><b>Hydraulic hose cannot be connected</b></p>	<p>System is pressurised</p>	<p>Release pressure</p>
<p><b>Tensioner jammed following the loosening process</b></p>	<p>The bolt is still under tension</p>	<p>Re-tighten the bolt, add the nut again, and depressurise the tensioner. Slightly turn back the draw nut to increase the gap between the reaction arm and supporting surface. Repeat the loosening process</p>

## 10.7 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 us 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:

1. Client
2. Machine identification data
3. Designation of the desired spare part
4. Desired units
5. Desired shipping method

You will find the address and all other necessary information on the cover sheet.

## 11 Shutdown, storage and disposal

### 11.1 Shutdown

Make sure to avoid leaks after disconnecting the media supply connections which may endanger people and/or the environment!



**Attention!**

Observe the following:

1. Depressurise the hydraulic systems completely!
2. Use special care when removing springs or other parts under mechanical tension to prevent the mechanical energy stored in these parts from causing injury.
3. It is, furthermore, necessary to observe the maintenance intervals applicable to the purchased parts specified in the appendix.

### 11.2 Storage condition

Store the tensioner in such a way that any possible damage can be excluded.



**Attention!**

Store the tensioner together with all of its individual parts as essential parts may otherwise be missing when the machine is put back into operation.



Take the following aspects into account when storing the tensioner:

- Protection of parts susceptible to corrosion (blank metal)
- Store the machine in dry rooms only



**Attention!**

### 11.3 Disposal

All materials used need to be disposed of in a safe and environmentally compatible way. Observe all applicable national regulations!



**Attention!**

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!

