



Operating manual

powRgrip® Clamping Unit PGU 9500

Validity of this operating manual

powRgrip® Clamping Unit PGU 9500 E

powRgrip® Clamping Unit PGU 9500 A

powRgrip® Clamping Unit PGU 9500 J

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Introduction

This operating manual is to introduce the powRgrip® clamping unit PGU 9500 E, A + J and its accessories according to its intended purpose.

In this manual, important details about how to operate the system in a safe, appropriate and economical way are explained. This manual will help to avoid danger, reduce the cost of repair, as well as to reduce down-time and increase the functional time of the system. Furthermore, the manual contains instructions regarding accident prevention and ecology, in addition to those of the national regulations. The complete technical documentation should be kept within reach of the clamping unit.

This manual must be read, understood and adhered to in all points by the personnel responsible for the system, i.e.:

- // Operation including setup, trouble-shooting, service, disposal of operations- and accessories inclusive of hydraulic fluid
- // Maintenance (service, inspection, assembly) and/or
- // Transport and storage

In addition to this manual, the rules and regulations effective for accident prevention local regulations as well as special national safety regulations must be observed.

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- // powRgrip® is a registered trademark of REGO-FIX AG
- // The powRgrip® tool holding System is protected under international patents

The address below serves as future reference source.

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1. Safety

1.1 General Safety Advice

The safety representative of the company has to guarantee the following conditions:

- // Only qualified personnel are assigned to operate the machines and devices
- // The personnel should have the operating manual at their disposal inclusive of other product documents at any time when working with the machine. These documents should be regularly reviewed
- // Unskilled personnel is not to be allowed to operate the machines and devices
- // In addition, the rules and regulations for the prevention of accidents at the site of operation must be observed and inspection and maintenance work performed

Only qualified personnel, who, due to their professional training, experience, instructions as well as their knowledge of relevant standards, stipulations, rules for the prevention of accidents and operating conditions, are responsible for the safety of the plant and are allowed to do the necessary work and thereby to recognize and to avoid possible risks, may work on the machine.

The responsibilities of personnel are clearly defined for installation, commissioning, operating, setup, transport, storage, maintenance and repair.

Personnel to be trained must only work on the system under the supervision of a qualified operator.

The following pages describe the basic safety instructions and the safety regulations, with these safety instructions no claim is made to the completeness.

1.2 Danger when Operating the System or Subassemblies

The machine or subassembly is constructed according to the latest state-of-the-art and the recognised safety regulations. Danger to the operator or to others, or damage to the system or other material damage through improper handling or use can however arise during its operation. The system must only be operated:

- // for the intended purpose
- // in a safe condition
- // Faults which can affect safety must be eliminated immediately

1.3 Safety and Protective Devices

- // All protective devices must be properly mounted and be in working order each time before starting the system
- // Protective devices may only be removed after the system has been shut-down and secured against restart
- // The lever of the door and the operating elements must be freely accessible

1.4 Personal Protection and Organizational Measures

- // The operator is responsible for personal protection devices
- // All safety devices must be checked regularly

1.5 Appropriate Use

The system and components may only be used under the appropriate operating conditions. The system is to be used exclusively for clamping and unclamping of tools for machine tools according to the detailed specifications in the manual under section 2.1.

All other use is considered inappropriate. Consequently, the manufacturer does not take any responsibility for damaged caused by inappropriate use.

Appropriate use means, among other things:

- // To follow all recommendations mentioned in the Operating Instructions
- // To adhere to the inspection and maintenance requirements

1.6 Inappropriate Use

We do not take any responsibility for damages caused by inappropriate use.

Inappropriate use includes, but is not limited to:

- // Use of non-powRgrip® tooling systems or tools not meeting the required quality grades or types
- // Connection and operation of other applications
- // All intentions of using the powRgrip® clamping unit on live items
- // Clamping or unclamping without using an APG clamping insert or without powRgrip® tool holder, or powRgrip® collet without tool
- // Clamping or unclamping of the powRgrip® tool holder and powRgrip® collet without tool
- // The use of any products other than REGO-FIX, respectively powRgrip toolholders and/or collets

1.7 Danger and Information Symbols

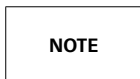
- // All information concerning safety is highlighted by warning symbols «DANGER», «CAUTION» to point out possible personal injury, or with «NOTE» symbols to point out possible mechanical damage



DANGER Danger symbol: contains information about a hazard which leads to death or serious personal injuries if not avoided.



Caution symbol: contains information about a situation which may lead to personal injuries if not avoided.



This recommendation symbol points at important notes for appropriate handling of the system. If these recommendations are not followed, damage of the system or its environment may be caused.



1.8 Danger by Hydraulic Energy

- // Only specially trained personnel with a good knowledge of and experience in hydraulics may only carry out working on the hydraulic equipment
- // The system works with a pressure of max. 155 bar. Parts of the system such as pressure hoses and valves have to be depressurised before the start of any repairs. It is not safe to have any pressure left in the system
- // Hydraulic flexible tubes should be replaced regularly, even if they show no obvious defects (see chapter 11)

1.9 Maintenance, Repair, Fault Elimination

- // The mandatory adjustment, maintenance and inspection work should be performed at the specified intervals
- // Operating personnel must be informed before starting maintenance and repair work
- // Remove the main plug from the main electrical supply and secure it against unintentional operation (place a warning sign to prevent operation)
- // Check all released screw- and fitting connections for firm seating
- // Check safety devices for proper functioning after completing maintenance work

1.10 Warranty and Liability

In principle, warranty and liability is based on our already signed written agreement. We do not accept any warranty or any liability for damages caused to either persons or machinery which can be attributed to one or several of the following causes:

- // The use of any products other than REGO-FIX, respectively powRgrip toolholders and/or collets
- // Inappropriate use of the system
- // Inappropriate repairs on the system, done by non-instructed personnel
- // Inappropriate transport, storage, assembly, commissioning, operation and maintenance of the system
- // Operating of the system in spite of broken safety equipment or insufficiently mounted or not functional Safety and protective equipment
- // No attention to recommendations stated in the operating instructions concerning safety, transport, storage, assembly, commissioning, maintenance and setup of the system
- // Constructive change of the system without permission
- // Change of the pressure ratio of the hydraulic pressure block without permission
- // Lack of control of the system parts, which may be subject to wear
- // Inappropriate repairs and use of spare parts from other suppliers
- // Catastrophic impacts, e.g. by external matters or force majeure risks

2. Overview of the System

2.1 Use

The system is to be used exclusively to clamp and unclamp tools of the powRgrip® Tool Holding System of the following trademark: **powRgrip® of REGO-FIX AG**



DANGER

The system works with a pressure of max. 155 bar. Use this system only for powRgrip® Tool Holding System which has been released by one of the following companies:

ABNOX AG – Switzerland
REGO-FIX AG – Switzerland

For any other application of this system there is a danger of serious personal injury as well as mechanical damage.

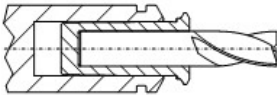
2.2 Functioning of powRgrip® Tool Holding System

The powRgrip® collet has a conical shank with a contact shoulder and a concentric bore for the tool shank.

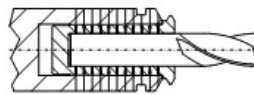
To be clamped, the collet and cutting tool are mounted and pressed in the powRgrip® tool holder and pulled out for unclamping.

The press fit, which occurs through the taper, produces a radial force, which is transmitted through the split collet to the tool shank. The tool is then gripped safely and concentrically.

Tool unclamped



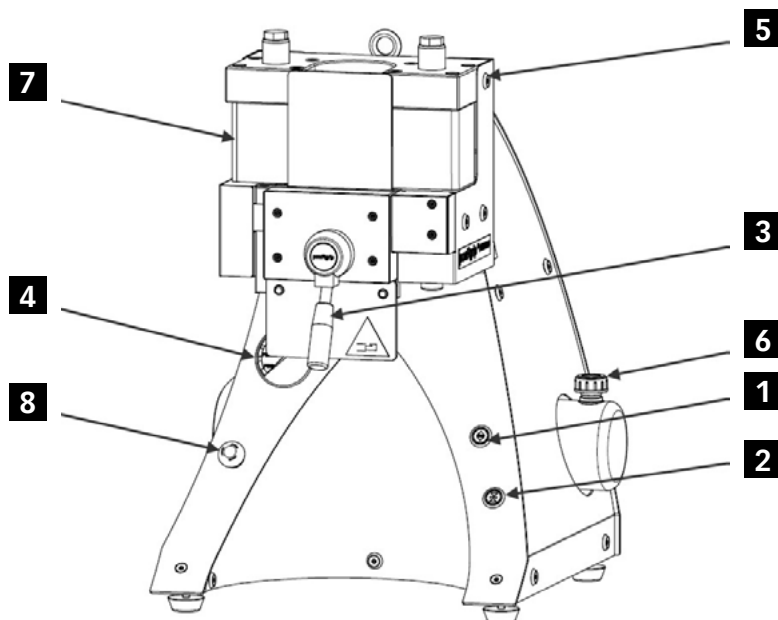
Tool clamped



<p>NOTE</p>		<p>Clamping a tool Clamping without a tool will result in damage of the collet!</p>
<p>NOTE</p>		<p>Take note of clamping length For min./ max. clamping length of tool shank please refer to technical data sheet.</p>



2.3 Overview Illustration / Components



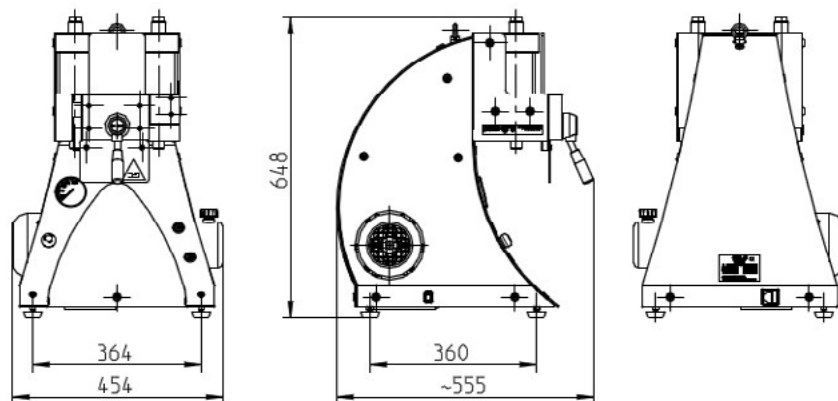
1. **Push button «OUT»**
With this push button, the process «unclamp» is activated and a light starts to flash. In the start position «OUT», the green light of the push button is steadily on.
2. **Push button «IN»**
With this push button, the process «clamp» is activated and the light will flash. In the start position «IN», the green light of the push button is steadily on.
3. **Door with lock lever**
4. **Pressure gauge for hydraulic pressure**

Clamping insert	Pressure gauge	Clamping pressure [bar]
APG 906	PG 06	21
APG 910	PG 10	51
APG 915	PG 15	76
APG 925	PG 25	100
APG 932	PG 32	143

5. **Air bleeding screw**
6. **Hydraulic oil container / oil filler neck**
The tank holds 1.0 liters of hydraulic oil. The filling is 1 liter (See chapter 10).
7. **Clamping module**
This part produces enough force to clamp or unclamp the powRgrip® Tool holding System.
8. **Emergency stop**
With this switch the machine can be stopped anytime.



2.6 Technical Data



Indication	PGU 9500 E	PGU 9500 A	PGU 9500 J	Unit
Gear pump	External gear			
Delivery rate	1.2			cm ³ per rev.
Delivery rate	1.8			Litre / min.
Tank	1.0			Litre
Hydraulic Oil	HLP ISO VG 32			
PG size	Hydraulic operating pressure clamp and unclamp			
PG 6	21			bar
PG 10	51			bar
PG 15	76			bar
PG 25	100			bar
PG 32	143			bar
Max. pressure hydr. unit	155			bar
Electric motor	3 phase			
Power	0.55			kW
Revolutions per minute	1480			U / min
Mains supply	230V / 50 Hz	115V / 60 Hz	100V / 50–60 Hz	
Total weight net	87	91	91	kg
Dimension L x W x H	555x454x648			mm
Dimension package L x W x H	77x570x700			mm
Min. dimension working space L x W	800x800			mm
Type of connection	Schuko CEE 7/VII Type 12 (CH)	NEMA 5–15	NEMA 5–15	
Working temperature	10° bis + 40°			°C
Emission level LpA	<70			dB (A)
Earth leakage current	<10 *1			mA

*1 Machine according to DIN EN 60204-1. Earth leakage current <10 mA, additional dispositions, against leakage current, aren't necessary.

3. Packaging and Transport

The system will be prepared and packed by ABNOX Ltd. for transport to the customer «first destination». The packaging unit should not be exposed to any more loads. The packaging as well as its content should be protected against any influences of humidity. The transport as well as the storage temperature must be between -20°C to $+40^{\circ}\text{C}$.

The powRgrip® clamping unit PGU 9500 E, A + J will be mounted onto a wooden frame and covered with a cardboard box. The packaging, mainly made of wood, cardboard and a plastic wrapping, is included in the delivery.



powRgrip® clamping unit packed



powRgrip® clamping unit pallet-mounted

When transport damage is found when inspecting the system, the following procedure should be adopted:

- // Notify delivery service (forwarder, railway etc.)
- // Prepare damage report
- // Inform manufacturer

The storage of the system in an excessively damp surrounding or outdoors can lead to corrosion damage or other damages for which we can accept no liability. The transport as well as the storage temperature of -20°C to $+40^{\circ}\text{C}$ needs to be adhered to.

4. System Installation/Assembly

All rules and regulations valid for the system itself must be observed and respected. The place of installation should be inspected prior installation to be able to secure the operation for the personnel as well as for the system itself. The powRgrip® clamping unit must be placed and set in a way that a safe and durable operation is guaranteed. Only specially instructed and trained personnel are allowed to assemble, to commission and to store the system.

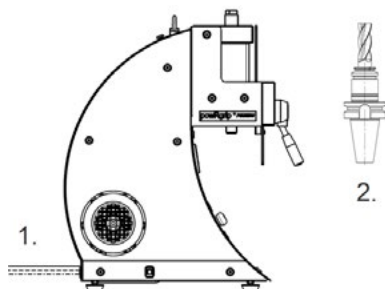
The system must be placed and operated on a horizontal floor /base. The system has been designed and built to be used in rooms, which are not exposed to the effects of the weather.

The storage of the system in an excessively moist surrounding or out of doors can lead to corrosion damage or other damages for which we can accept no liability.

With consideration of the terms above, the powRgrip® clamping unit has to be placed in a safe operating position. Connection specifications see chapter 5 and chapter 11.2.



5. Definition of Interface



Pos. 1 | Inlet

The gear pump is powered by an electric motor. The connection is placed on the back of the unit. The socket type KD 14.1101.151 with fuse and main switch is included in the scope of supply.

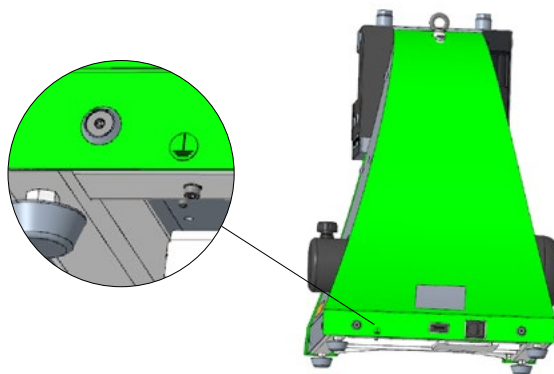
Connection power cord: Socket IEC 60320-1/C14 for appliance class 1 with safety connection (2P+E).
Nominal data IEC 10A/250VAC/50 Hz
Nominal data UL/CSA 10A/125VAC/60 Hz



It's not allowed to use the Machine without a safety connection.

If the local or national standard requires using a residual current device, a type B device according to the IEC-Instruction 60755 is recommended.

The machine fulfils the standard DIN EN 60204-1. Earth leakage current is under 10 mA. For higher demands of the earth leakage current, it is possible to connect a second protective earth conductor ($A > 1.5 \text{ mm}^2$) onto the machine.



Pos. 2 | Outlet

The hydraulic pressure is transferred to the powRgrip® tool holding system by two hydraulic cylinders through a clamping insert.

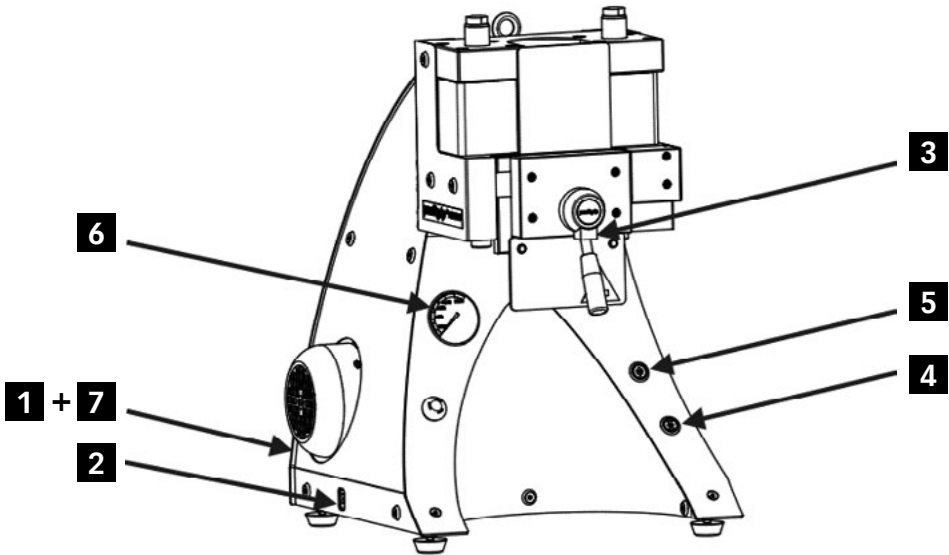
Clamping and unclamping force see (Chapter 2.6).

6. First Installation

- // The system has been tested for leaks and functions with hydraulic oil before delivery
- // Before the first installation can be started, the system must be unpacked completely

NOTE

Check if all hoses and screws are properly tightened (leak proof).



- // The enclosed power cord is needed to operate the system. The main supply is 230V / 50 Hz for PGU 9500 E, 115 V / 60 Hz for PGU 9500 A and 100 V / 50-60Hz for PGU 9500 J
- // Plug in the cable (1). When using a different cable, a three-pin plug is necessary
- // Turn on main switch (2)
- // Close and lock door (3). The door handle must be in the locked vertical position, if not, an error will occur
- // Both push buttons are blinking (4 & 5)
- // Push one of the buttons (4 or 5) to position the machine. This cycle is not a working cycle, no tool can be clamped or unclamped
- // The counter (7) on the back indicates the number of performed cycles

NOTE

The hydraulic pressure for the various clamping inserts is factory-set. Pressure for «unclamping» cannot be indicated by the pressure gauge!
The specifications are only valid for clamping.
If no clamping insert is fit in, this corresponds to **PG 10**.



6.1 Insert of the Clamping Inserts PG 06, PG 10, PG 15, PG 25 or PG 32



Close and lock door. The door handle must be in the locked vertical position, if not, an error will occur.



Press the push button «OUT». The clamping unit runs automatically to the start position «unclamp».



Open the door by turning the operating lever into horizontal position.



Put the clamping insert APG 906, APG 910, APG 915, APG 925 or APG 932 in the clamping unit by inserting the guide bolt (D) into the guide rail (B) on the door (A) and the clamping insert (C) in the clamping unit support. **Caution: Insert the clamping insert completely to the end stop!**





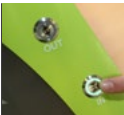


The system is now ready to be operated.

	<ul style="list-style-type: none"> 1 Clamping insert APG 906 Part No.: 7611.06900 2 Clamping insert APG 910 Part No.: 7611.10900 2.1 Clamping insert APG 910-A (only for PGA) Part No.: 7611.10909 3 Clamping insert APG 915 Part No.: 7611.15900 4 Clamping insert APG 925 Part No.: 7611.25900 5 Clamping insert APG 932 Part No.: 7611.32900
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// The identification of the respective clamping insert and the required clamping force is ensured by the differently positioned pins on the back

7. Operating

7.1 Clamping a Tool

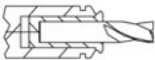
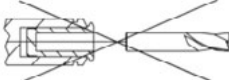
		<p>Press push button «IN». The clamping unit runs automatically to start position «IN».</p>
	<p>Open door of the powRgrip® clamping unit by turning locking lever into horizontal position.</p>	
	<p>Insert powRgrip® tool holder with collet and cutting tool into the powRgrip® clamping unit. Close door of the powRgrip® clamping unit by turning locking lever into vertical position.</p>	
		<p>Press push button «IN». Pump will operate until hydraulic pressure for PG 6, PG 10, PG 15, PG 25 or PG 32 is reached. Pump will stop operation automatically.</p>
	<p>As soon as the light of the push button is steadily on, the tool is clamped. The powRgrip® clamping unit returns automatically to its starting position «IN». Secure powRgrip® tool holder with collet and cutting tool by hand, open now the door and remove tool holder from the powRgrip® clamping unit. The cutting tool is now clamped in the Tool holding System and is ready to be used.</p>	





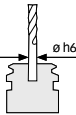
CAUTION

Caution: The hydraulic system has a pressure of maximum 155 bar during operation! Remove the Tool holder from the powRgrip® clamping unit only when the procedure «clamping» is finished, no oil pressure is indicated on the pressure gauge (0 bar) and the light of the push button does not flash anymore. The door must not be opened during the clamping procedure.



Important information for clamping a tool

<p>NOTE</p>		<p>Clamping a tool: Clamping without a tool will result in damage of the collet!</p>
<p>NOTE</p>		<p>Clamping length: For min. / max. clamping length of tool shanks please refer to the technical data sheet.</p>






NOTE		<p>Clean and degrease tool</p> <p>Before clamping, clean and degrease collet and cutting tool. Clean tool holder; dirt and grease reduce clamping force, accuracy and life of the system.</p>
NOTE		<p>Clamping check</p> <p>Please visually check that the collet sits tightly against the tool holder face. There must be no gap between collet and tool holder. A gap indicates that the tool is not properly clamped. Run-out failures and reduced clamping force may result from this condition.</p>
NOTE		<p>Only clamp tools with a shank tolerance of $\varnothing h6$ or more precisely. PG-TAP collets allow tolerances up to $\varnothing h9$. The clamping of undersized shanks can permanently damage the collets.</p>


7.2 Unclamping a Tool


		<p>Press push button «OUT». The clamping unit runs automatically to start position «OUT».</p>
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	<p>Open door of the powRgrip® clamping unit by turning locking lever into horizontal position.</p>
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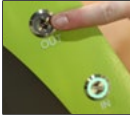
	<p>Insert the powRgrip® tool holder with the collet and cutting tool into the powRgrip® clamping unit. Close door of powRgrip® clamping unit by turning locking lever into vertical position.</p>
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		<p>Press push button «OUT». Pump will be run until hydraulic pressure for PG 6, PG 10, PG 15, PG 25 or PG 32 is reached. Pump will stop operation automatically.</p>
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	<p>As soon as light of push button is steadily on, tool is unclamped. powRgrip® clamping unit returns automatically to start position «OUT». Secure powRgrip® tool holder with collet and cutting tool by hand, open now the door and remove tool holder from the powRgrip® clamping unit. Cutting tool is now ready to be removed from tool holder and collet.</p>
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 CAUTION	<p>Caution: The hydraulic system has a pressure of maximum 155 bar during operation! Remove the Tool holder from the powRgrip® clamping unit only when the procedure is finished, no oil pressure is indicated on the pressure gauge (0 bar) and the light of the push button does not flash anymore. The door must not be opened during the clamping procedure.</p>
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7.3 Exchange of Clamping Insert



Press push button «OUT». Wait until starting position «OUT» is reached.



Open door. Turn locking lever into horizontal position.



Take hold of the clamping insert on the foldout part and pull it out of the clamping unit, if necessary with the help of the enclosed pull out tool.



Put the desired clamping insert APG 906, APG 910, APG 915, APG 925 or APG 932 into the clamping unit by inserting guide bolt into guide rail on the door and clamping insert into the machine support. Caution: Insert clamping insert all the way to the stop!

8. Shutting the System Down

8.1 Short Shut Down

If a short shut down (overnight, weekend) is planned, the main switch has to be turned off. The system uses no electricity and is not pressurised when not in operation (check the pressure gauge).

NOTE

Turn off main switch if the powRgrip® clamping unit is not to be used.

8.2 Long Duration Shut Down

The following points should be considered if a long shut down of the powRgrip® clamping unit is necessary:

- // Turn off main switch
- // Disconnect power cord from main supply
- // No hydraulic pressure is allowed in the system (check the pressure gauge)

8.3 Putting the System out of Operation

If the system is put out of operation and /or has to be transported, the following points must be observed:

- // Turn off main switch
- // Disconnect power cord from main supply
- // No hydraulic pressure is allowed in the system (check the pressure gauge)
- // For putting the system out of operation, the hydraulic oil has to be removed out of the container. Oil has to be removed out of the container. For transportation the oil can remain in the oil container



Danger of accident and ecological damage: No oil is to be spilled. Oil is industrial waste and must be professionally disposed.



9. Trouble Shooting, Fault Elimination

The PGU 9500 clamping unit detects and signals the following faults:

NOTE

Only **specialy instructed and trained personnel** are allowed to eliminate all below described faults.

NOTE

For constructions diagrams and drawings see chapter 16.

**Both buttons are blinking red:**

Faults	Possible cause / elimination	Comments
Emergency stop is pushed down.	Unlock emergency stop. Press any button to reset the error. Press any button again to reset the machine.	–
Door was opened during operation.	Close door correctly. Press any button to reset the error. Press any button again to reset the machine.	–
Door was not closed correctly.	Close door correctly. Turn off and on the machine to reset it.	Only one contact of the door was triggered.
Overvoltage of the machine.	Machine has to be within this range: 230V ±10% / 115V ±10% / 100V ± 10% Turn off and on the machine to reset.	In the 115V machine (Art.5680220 & 5680320) the voltage range can be adjusted.
Broken pressure sensor, machine doesn't reach the needed pressure.	Check connection to the pressure sensor. Exchange pressure sensor.	Cycle time is exceeded.
Not enough hydraulic oil in the tank. machine doesn't reach the needed pressure.	Fill in hydraulic oil. Fix possible leakage.	Cycle time is exceeded.

PGU clamping unit cannot detect and signal the following faults:

Faults	Possible cause / elimination	Comments
Machine builds up wrong pressure.	Proximity switch for clamping insert is broken or in the wrong position.	Check pressure gauge if pressure is reached.
Tools cannot be unclamped nor clamped.	Defective or dirty tool holder.	
Machine has no function, even though the push buttons light green.	Low voltage in the machine. Machine has to be within this range: 230V \pm 10% / 115V \pm 10% / 100V \pm 10% Turn off and on the machine to reset.	In the 115V machine (Art.5680220 & 5680320) the voltage range can be adjusted.
While positioning, pressure is not or not correctly reached.	Fill in hydraulic oil. Fix possible leakage Check connection to the pressure sensor. Exchange pressure sensor.	Machine is running on a low pressure without stopping.

10. Operating- and working Material (EU Safety Data Sheet)

Oil: Hydraulic oil HLP ISO VG 32
(Safety data sheet: See chapter 18)

11. Maintenance and Service

In this chapter you will be informed about how to maintain this system. You will find an overview in which the maintenance and service plan is detailed.

NOTE

It is not mentioned in this chapter how to reassemble the system after any kind of error. These repairs should only be done by specially instructed and trained personnel or by our sales service.



11.1 Maintenance Plan

The indicated maintenance intervals refer to a single-shift operation. The maintenance intervals are shortened when the system is used at higher levels, i.e. by several-shift operation. Additional negative influences such as dusty and dirty work surroundings have to be considered.

When	What	How	Who
Weekly	Clean tool holder and machine.	With soft cloth and all-purpose cleaner.	Specially instructed and trained personnel.
Half-yearly	Check machine for oil leakage.	Visual check for oil leakage.	Specially instructed and trained personnel.
Every 2000 operating hours/yearly	Check oil level.	Visual check (s. chapter 11.3.3.) Refill oil if necessary.	Specially instructed and trained personnel.
	Check hose and armature for oil leak.	Visual check.	
All 5 years		Use hydraulic oil with fineness < 10 µm (data sheet in the attachment). Clean all hydraulic lines and components before initial operation (s. chapter 11.3.3).	Specially instructed and trained personnel.
	If necessary change hydraulic oil, hose and filter.		



All repairs on the system should only be carried out when the system is shut down. The main switch must be turned off and the main plug must be removed from the main supply. No pressure is allowed in the hydraulic system, i.e. the pressure gauge must indicate 0 bar.

11.2 Fuse

Socket
IEC 60320-1/C14



2 x Fuse T10 A
(Ø 5x20)

11.3 Service Instructions for powRgrip® Clamping Unit

11.3.1 Safety



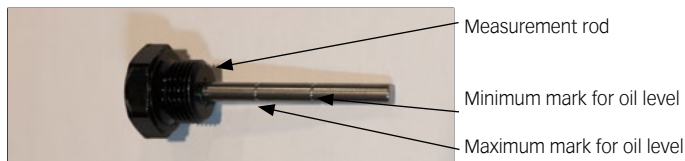
Danger of injury!
Before beginning the service, the powRgrip® clamping unit has to be turned off and has to be disconnected from the main electric supply!

11.3.2 General

Maintenance may only be done by qualified technicians or appropriately trained persons (responsible maintenance mechanic). Pay attention to cleanliness during assembling and disassembling! Particles and dirt must not get into the tool or into the system. For mounting the seals do not use assembling tools with sharp edges.

It is only allowed to use original spare parts and the original powRgrip® clamping insert.

11.3.3 Control of Oil Level



NOTE

The oil level has to within the two marks (min & max). If not: add or remove oil!



Insert oil measure stick in to filler neck and screw it on.

12. Recycling Management



All repairs on the system should be carried out when the system is shut down. Main switch must be turned off and mains plug must be removed from main supply. No pressure is allowed in the hydraulic system, i.e. the pressure gauge must indicate 0 bar.

The different materials and/or liquids have to be handled professionally and are to be separated according to the respective national regulations. After removal they should be disposed of using the proper means.

Product	Material	Disposal
Pump unit	Steel and aluminum, brass, bronze	Separation of metals, recycling.
Hydraulic clamping device Hoses and seals etc.	Rubber and plastic	Separation of material, recycling.
Lubricating mediums	Hydraulic oil	Recycling or disposal, according to national regulations.



Do not spill any oil. Take precautions in advance to be able to collect any spills of liquid.



13. powRgrip® Cleaning Instructions



1
Insert cleaning paper into the slot of the taper cleaner from the front. Allow enough paper to cover the whole width of the slot. Push down towards the flange until completely seated.



2
Bend paper over and wrap around the taper cleaner.



3
Hold paper with thumb.



4
Insert taper cleaner fully into the collet cavity of the tool holder. Turn to wipe clean.



5
Degreasing / cleaning powRgrip® collet. Dip in clean, oil soluble solvent, (e.g. alcohol, cold cleaner).




6
Clean tool shank by dipping in clean, oil soluble solvent, (e.g. alcohol, cold cleaner).



7
Dry off solvent with oil-free compressed air. Insert tool into collet.

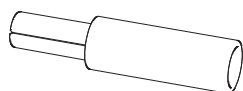


8
Insert tool into collet. Insert tool holder assembly into powRgrip® unit and press in collet.

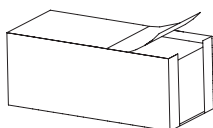


Only use this specially prepared, soft and absorbent cleaning paper. **For one time use only!**

Do not press in the collet without a tool. Pressing in collets without a tool will destroy the collet!



TKCP Taper cleaner



CPS Cleaning paper set

14. Technical Data powRgrip®

14.1 Presetting Range of powRgrip® Collets

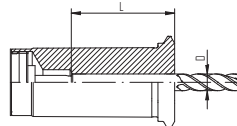
D	D	PG 6/-CF		PG 6-S		PG 10/-CF		PG 10-S		PG 15/-CF/TW		PG 15-S		PG 15-L**		PG 25/-CF	
		L [mm]		L [mm]		L [mm]		L [mm]		L [mm]		L [mm]		L [mm]		L [mm]	
[mm]	[inch]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
0,2-1,0	-	21.5	26.5*	-	-	20	24*	-	-	-	-	-	-	-	-	-	-
1,5	-	23.5	26.5*	-	-	16	20*	-	-	-	-	-	-	-	-	-	-
-	1/16"	23.5	26.5*	-	-	16	20*	-	-	-	-	-	-	-	-	-	-
2,0	-	24	26.5	-	-	25	30	-	-	-	-	-	-	-	-	-	-
2,5	-	24	26.5*	-	-	25	30	-	-	-	-	-	-	-	-	-	-
3,0	-	24	26.5	17	20	25	30	20.5	26	25	30	-	-	-	-	25	32.5
-	1/8"	24	26.5	17	20	25	30	20.5	26	25	30	18	25	-	-	25	32.5
3,5	-	-	-	-	-	25	30	-	-	25	30	-	-	-	-	25	32.5
4,0	-	23.5	26.5*	-	-	25	30	20.5	26	25	30	18	25	25	53	25	32.5
4,5	-	-	-	-	-	25	30	-	-	25	30	-	-	-	-	25	32.5
-	3/16"	-	-	-	-	25	30	20.5	26	25	30	18	25	-	-	25	32.5
5,0	-	-	-	-	-	25	30	-	-	25	30	18	25	25	53	25	32.5
5,5	-	-	-	-	-	25	30	-	-	25	30	-	-	-	-	25	32.5
6,0	-	-	-	-	-	30	35	23.5	29	33	38	26	33	33	53	33	40.5
-	1/4"	-	-	-	-	30	35	23.5	29	33	38	26	33	33	53	33	40.5
7,0	-	-	-	-	-	-	-	-	-	33	38	-	-	-	-	33	40.5
-	5/16"	-	-	-	-	-	-	-	-	33	38	26	33	33	53	33	40.5
8,0	-	-	-	-	-	-	-	-	-	33	38	26	33	33	53	33	40.5
9,0	-	-	-	-	-	-	-	-	-	33	38	-	-	-	-	33	40.5
-	3/8"	-	-	-	-	-	-	-	-	37	40.5	31	38	37	53	37	44.5
10,0	-	-	-	-	-	-	-	-	-	37	40.5	31	38	37	53	37	44.5
11,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	44.5
-	7/16"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	44.5
12,0	-	-	-	-	-	-	-	-	-	41.5*	45*	-	-	-	-	42	49.5
-	1/2"	-	-	-	-	-	-	-	-	41.5*	45*	-	-	-	-	42	49.5
13,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	49.5
14,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	49.5
-	9/16"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	49.5
15,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	49.5
-	5/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.5	50
16,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.5	50
18,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.5	50
-	3/4"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47.5	50
20,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47.5	50
22,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	7/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*CF not available **PG-L without stop screw



D	PG 25-S		PG 25-L**		PG 32-/CF-/CB		PG 32-S		PG 32-L**		
	D	L [mm]		L [mm]		L [mm]		L [mm]		L [mm]	
[mm]	[inch]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
0,2-1,0	-	-	-	-	-	-	-	-	-	-	-
1,5	-	-	-	-	-	-	-	-	-	-	-
-	1/16"	-	-	-	-	-	-	-	-	-	-
2,0	-	-	-	-	-	-	-	-	-	-	-
2,5	-	-	-	-	-	-	-	-	-	-	-
3,0	-	-	-	-	-	-	-	-	-	-	-
-	1/8"	18	25	-	-	-	-	-	-	-	-
3,5	-	-	-	-	-	-	-	-	-	-	-
4,0	-	18	25	-	-	-	-	-	-	-	-
4,5	-	-	-	-	-	-	-	-	-	-	-
-	3/16"	18	25	-	-	-	-	-	-	-	-
5,0	-	-	-	-	-	-	-	-	-	-	-
5,5	-	-	-	-	-	-	-	-	-	-	-
6,0	-	26	33	33	65	33,5	40,9	-	-	-	-
-	1/4"	26	33	33	65	33,5	40,9	-	-	-	-
7,0	-	-	-	-	-	33,5	40,9	-	-	-	-
-	5/16"	26	33	33	65	33,5	40,9	-	-	-	-
8,0	-	26	33	33	65	33,5	40,9	-	-	-	-
9,0	-	-	-	-	-	33,5	40,9	-	-	-	-
-	3/8"	30	38	37	65	35,5	44,9	-	-	-	-
10,0	-	30	38	37	65	35,5	44,9	-	-	-	-
11,0	-	-	-	-	-	35,5	44,9	-	-	-	-
-	7/16"	-	-	-	-	35,5	44,9	-	-	-	-
12,0	-	35	43	42	65	40,5	49,9	32	40,5	40,5	69
-	1/2"	35	43	42	65	40,5	49,9	32	40,5	40,5	69
13,0	-	-	-	-	-	40,5	49,9	-	-	-	-
14,0	-	35	43	42	65	40,5	49,9	35	43	40,5	69
-	9/16"	-	-	-	-	40,5	49,9	-	-	-	-
15,0	-	-	-	-	-	40,5	49,9	-	-	-	-
-	5/8"	38	46	45,5	65	43,5	52,9	38	46	-	-
16,0	-	38	46	45,5	65	43,5	52,9	35	43,5	43,5	69
18,0	-	-	-	-	-	43,5	52,9	-	-	-	-
-	3/4"	40	47,5	47,5	65	45,5	54,9	37	45,5	45,5	69
20,0	-	40	47,5	47,5	65	45,5	54,9	37	45,5	45,5	69
22,0	-	-	-	-	-	45,5	54,9	-	-	-	-
-	7/8"	-	-	-	-	45,5	54,9	-	-	-	-
25,0	-	-	-	-	-	49,5	58	41	49,5	49,5	69
-	1"	-	-	-	-	49,5	58	41	49,5	49,5	69

**PG-L without stop screw



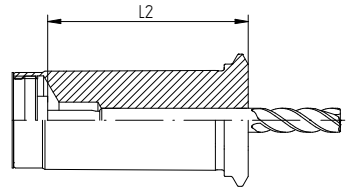
14.2 Maximum presetting Range for powRgrip® Standard Collets and PG-CF Collets

Sizes	PG 6	PG 10	PG 15	PG 25	PG 32
L2 max.	26,5	35	40,5	50	58

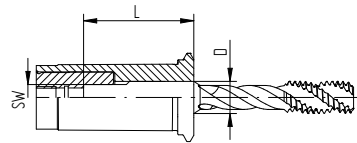
L2: maximum depth (without stop screw)

14.3 Presetting Range of PG-TAP Collets with Internal Square

Dimensions [mm/inch]		PG 15-TAP [mm]		PG 25-TAP [mm]	
D	□	L min.	L max.	L min.	L max.
3.5	2.7	27	29	–	–
0.141"	0.110"	27	29	–	–
0.168"	0.131"	27	29	–	–
4.5	3.4	27	29	–	–
0.194"	0.152"	29	31	–	–
0.220"	0.165"	29	31	–	–
6	4.9	29	31	29	31
0.255"	0.191"	29	31	–	–
7	5.5	29	31	29	31
8	6.2	33.5	36	33.5	36
0.318"	0.238"	–	–	33.5	36
9	7	34.5	37	34.5	37
0.367"	0.275"	–	–	34.5	37
0.381"	0.286"	–	–	34.5	37
10	8	35.5	38	38.5	41
11	9	–	–	39.5	42
12	9	–	–	39.5	42
14	11	–	–	41.5	44
16	12	–	–	42.5	45



PG/PG-CF



PG-TAP

14.4 Recommended Tightening Torque for secuRgrip® Safety Nuts

Safety nut type	Nut Ø [mm]	Recommended torque	Fewheel wrench head	TORCO-FIX
PG 15/SGN 15	28,00	50 Nm	A-FLS Ø 28,0/SG 15	II
PG 25/SGN 25	46,00	70 Nm	A-FLS Ø 46,0/SG 25	II
PG 32/SGN 32	55,00	80 Nm	A-FLS Ø 55,0/SG 32	II



CAUTION

Clamping without a tool will result in damage of the collet!



15. Spare Parts

1 2 3 4 5 6 7 8

A B C D E F

18 19

10 11 12 13 14 15 16

17

9 8 7 6

20 21 22

2 1 4 3

Ersetztezeichnung fuer Endbenutzer
Spare part drawing for end user

	Headabmessung z. - mm	Ansicht	Version	Index	Material	Arzt. - Nr. :	Massstab:
	Recht: 17/03/20	S.E. (S.E.B. Abnox)	C	3	(A000054)	Blatt Nr. : Anzahl Bl. :	~1:10
Modell: 56800-02, NEUTRAL, ASSIN, E5 Urspr. -		Zustand:		Freigegeben			

3D-modelliert (PRO/ENGINEER)

Pos.	Description	Pcs.	Part No.	
			Serial No. ≤1130	Serial No. ≥1131
1	manometer PGU 9500	1	0004260	0004260
2	door lever	1	8771200	8771200
3	push-button «OUT»	1	0005301	0008635
	push-button «IN»	1	0005302	0008634
4	emergency stop switch	1	0004125	0008633
5	safety switch	1	0004120	0004120
6	rocker switch	1	0004124	0004124
7	hydraulic hose to manometer	1	0004443	0004443
8	hydraulic hose	2	0004442	0004442
9	ring bolt	1	8447100	8447100
10	proximity switch NO	2	0004281	0004281
11	proximity switch NC	1	0004122	0004122
12	hydraulic unit PGU 9500	1	0004117	0004117
13	connector	1	0004123	0004123
	fuse PGU 9500	2	4569402	4569402
14	frequency converter	1	0004118	0009508
15	choke 230 V (for 5680120 / 56804200)	1	0004458	0004458
	transformer 115 V for 5680220 / 100 V for 5680320	1	0007226	0007226
16	impulse counter	1	0004119	0004119
17	cover left	1	0004115	0004115
18	cover right	1	0004116	0004116
19	machine mounting	4	8608801	8608801
20	cover	1	5688100	5688100
21	protection top	1	5688004	5688004
22	protection base	1	5688005	5688005



16. Drawings and Diagrams

16.1 Diagram powRgrip® Clamping Unit PGU 9500 E, A and J

1 Schutzzeichn. nach ISO 80016
2 Schutzzeichn. nach ISO 80016
3 Schutzzeichn. nach ISO 80016
4 Schutzzeichn. nach ISO 80016
5 Schutzzeichn. nach ISO 80016
6 Schutzzeichn. nach ISO 80016
7 Schutzzeichn. nach ISO 80016
8 Schutzzeichn. nach ISO 80016

Allgemeinfr:

- v: Variables Abmaass gemaaess jsutierung der Standfluesse
- Kundenspezifische Beschreibungen und Farben

Verwendungsweck:

- Spannen und Loosen von PG06 / PG10 / PG15 / PG25 / PG32 und PG32

generally:

- v: Variable limit according to affluide the foot of the machine
- Custom-built legends and colors

Intended purpose:

- Clamping and unclamping of PG06 / PG10 / PG15 / PG25 and PG32

Table 1: Max. clamping and unclamping force

Werkzeughalter / Tool holder	Spann- und Looserkraft / Clamping and unclamping force [kN]
PG 06	13
PG 10	32.0
PG 15	48.0
PG 25	62.8
PG 32	90.0

Table 2: Variable limit according to affluide the foot of the machine

Werkzeughalter / Tool holder	Spann- und Looserkraft / Clamping and unclamping force [kN]
PG 06	13
PG 10	32.0
PG 15	48.0
PG 25	62.8
PG 32	90.0

Technical data:

Max. clamping force:	90 +7.5/-3.1 kN
Max. unclamping force:	90 +7.5/-3.1 kN
Hub:	20 mm
Control voltage:	230 V AC
PGU 9500 E	210 - 250 V AC
Connection voltage:	50 - 60 Hz
PGU 9500 A	105 - 120 V AC
Connection voltage:	50 - 60 Hz
PGU 9500 J	90 - 110 V AC
Connection voltage:	50 - 60 Hz

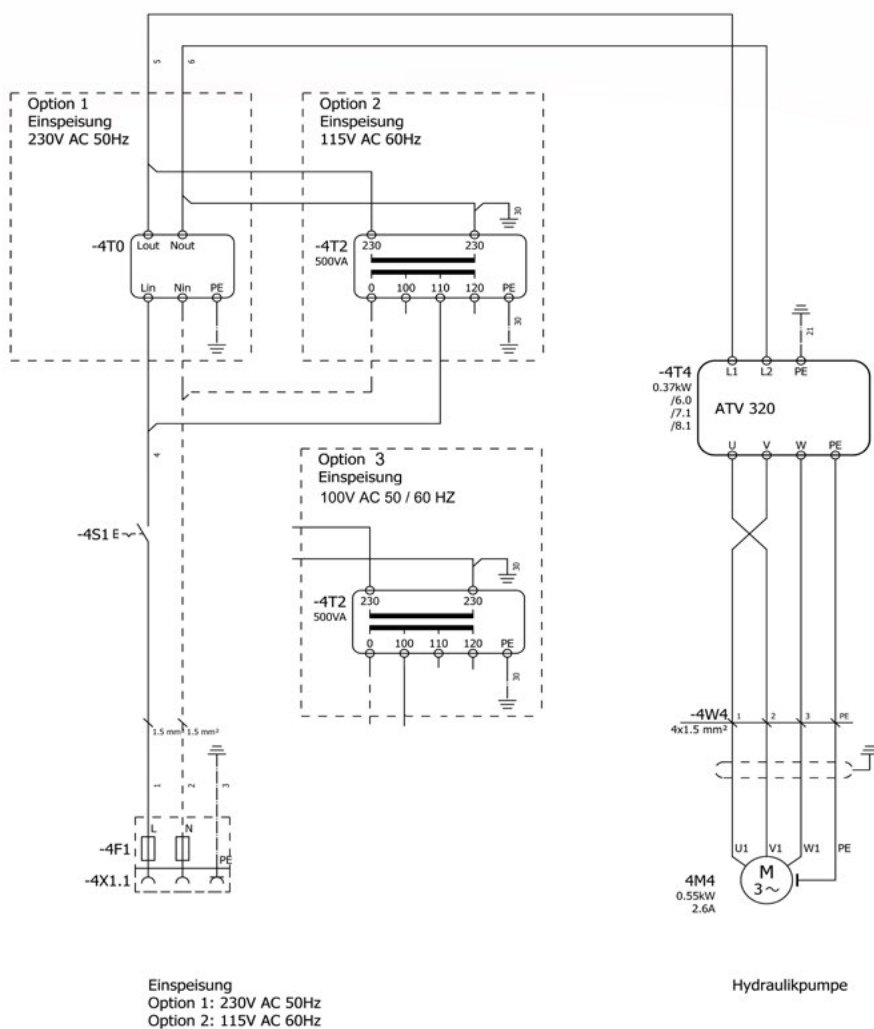
3D-modelliert (PROENGINEER)

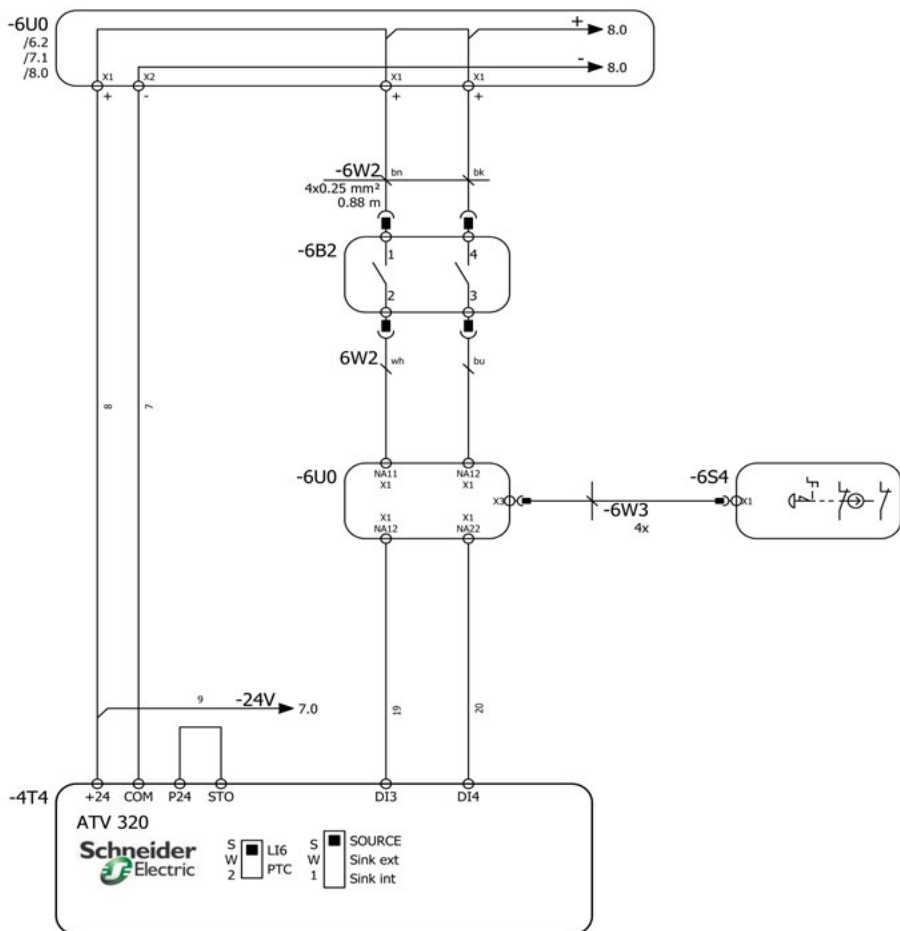
Information:

Index:	Version:	Aenderunb:	Blatt Nr.:	Anzahl Bl.:	Massestab:
B	2	1	1	13	1/10
ABNOX Werkzeugmaschinen PGU9500 PGU9500 Formel: 35806/02_METALLASSEN E-S1 Urspr.:					Fertigungs- Zeichnungs- Nummer: M56800-02

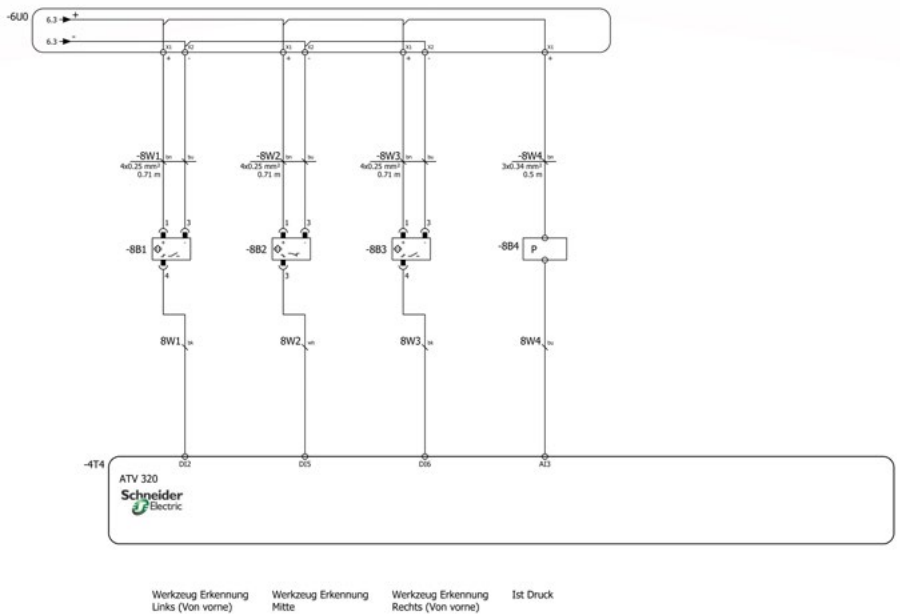
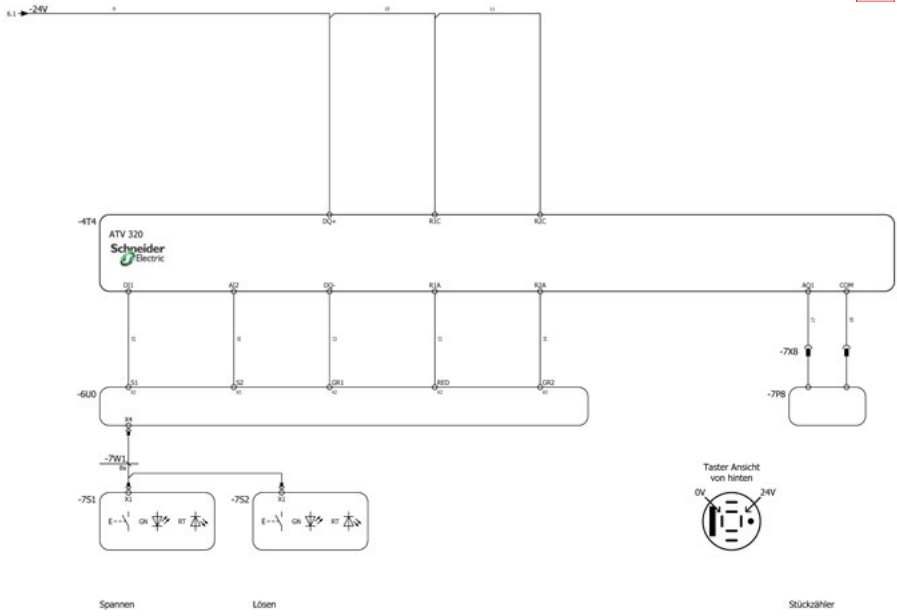


16.3 Electric Diagram powRgrip® Clamping Unit PGU 9500 E, A and J





Türe + Not-Halt



17. Conformity

EC declaration of conformity
according to the EU Machinery Directive 2006/42/EC, Annex II 1. A

Manufacturer	Person established in the Community authorised to compile the technical file
---------------------	---

ABNOX AG Langackerstrasse 25 CH – 6330 Cham	Basil Schneiter ABNOX AG Langackerstrasse 25 CH – 6330 Cham
---	--

Description and identification of the machinery

Product/Type:	PGU 9500 A (115V/60Hz); PGU 9500 E (230V/50Hz) PGU 9500 J (100V/50-60Hz)
Serial number:	XXX MM JJ – XXX MM JJ
Project number:	PRJ-001121
Commercial name:	powRgrip® PGU 9500
Function:	for clamp and unclamp tools of the powRgrip® tool holding

It is expressly declared that the machinery fulfils all relevant provisions of the following EU directives.

2014/30/EC	Directive 2014/30/EC of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the member states relating to electromagnetic compatibility (recast)
2014/35/EC	Directive 2014/35/EC of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (recast)
2006/42/EC	Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, amending Directive 95/16/EC (recast) (1)

Reference to the harmonised standards used, as referred to in Article 7 (2)

EN ISO 12100:2010-11	Safety of machinery – General principles for design – Risk assessment and risk reduction (ISO 12100:2010)
EN 60204-1:2006-06	Safety of machinery- Electrical equipment of machines- Part1: General requirements.

Cham, 14.10.2016

Place, Date



Signature
Roberto Bernich
Quality Manager



Signature
Matthias Iseli
CEO

18. EU Safety Data Sheet

Hydraulic oil HLP ISO VG 32

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : PANOLIN HLP ISO 32
Version (revision) : 3.0.0 (2.0.1)
Print date : 30.04.2014

Classification 132/2008 (CLP) : Agg. Tox. 1; H304 Aquatic Chronic 2; H411

None

Additional information

The product contains < 3% DSKO extract, as measured by IP 346. It is therefore not as carcinogen. Full text of H-, P- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove affected person from the danger area and lay down. Contaminated, soaked clothing and shoes change and dispose of them. In case of respiratory tract irritation, consult a physician.

In case of inhalation

In case of respiratory tract irritation, consult a physician.

In case of skin contact

In general, the products is not irritating to skin. After contact with skin, wash immediately with plenty of water and soap. In case of severe symptoms, consult a physician.

After eye contact

Rinse immediately and thoroughly with eye-bath or water. Consult persistent redness or other symptoms, a doctor.

After ingestion

If symptoms occur consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

Stable, extinguishing media: foam, CO₂, water, extinguishable, water haz. water spray jet.

5.1 Extinguishing media

Unsuitable extinguishing media

Full water jet

Full water jet

5.2 Special hazards arising from the substance or mixture

In case of fire toxic gases may be formed.

5.3 Advice for firefighters

Special protective equipment for firefighters: Self-contained breathing apparatus.

5.4 Additional information

Use water spray jet to protect personnel and to cool endangered containers. Under extreme heating in closed containers polymerisation, decomposition Pressure formation and bursting of containers possible. Do not allow run-off from fire-fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Particular danger of slipping on leaked/spilled product. Take the precautions customary when handling chemicals.

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : PANOLIN HLP ISO 32
Version (revision) : 3.0.0 (2.0.1)
Print date : 30.04.2014

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

PANOLIN HLP ISO 32 (32010)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses

Hydraulic oil

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Panolin AG

Street/P.O.Box : Bismarckstr.

Country code/Postal : 8322 Radstettwil

Country : Switzerland

Telephone : +41(0)41 936 65 65

Contact : info@panolin.com

Swiss Toxicological Information Centre

Phone: +41 (0)44/251 51 51

1.4 Emergency telephone number

None

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

unclassified.

Classification according to Directive 67/548/EEC or 1999/45/EC

None

Classification according to Regulation (EC) No. 1272/2008 [CLP]

None

None

2.2 Label elements

Labelling (67/548/EEC or 1999/45/EC)

Standard phrases for special risks to human beings and the environment

The phrases for special risks to human beings and the environment are not applicable to this substance.

The phrases for special risks to the environment are not applicable to this substance.

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2.3 Other hazards

None

None

SECTION 3: Composition / information on ingredients

Mixture of different substances.

3.2 Mixtures

Hazardous ingredients

None

Weight fraction : < 0.5 %

N : R51/53 ; Xn ; R66 ; R66

Classification: 6.07+6.08/EC :

None

None

None

None

None

None

None

None

None

None

None

None

None

Trade name : PANOLIN HEP ISO 32
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Trade name : PANOLIN HEP ISO 32
Version (revision) : 3.0.0 (P.0.1)
Print date : 30.04.2014

6.2 Environmental precautions

Take care with liquid disposal and proceed according to the waste disposal regulations. Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Prevent formation of dust.
Use dust extraction measures.
No particulate emissions.
Measures to prevent fire
No specific requirement.

7.2 Conditions for safe storage, including any incompatibilities

Hints on joint storage

Not required

Storage class : 10

Storage class (R6G 510) : 10

Further information on storage conditions

Do not store outside. Avoid heating over 40°C.

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No further details, see Section 7.

None

8.2 Exposure controls

Use full personal protective equipment

Take the necessary precautions when handling chemicals. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuff

Eye/face protection

Suitable eye protection

Wear safety glasses.

Skin protection

Wear protective gloves

Oil resistant, tested, protective gloves (eg nitrile rubber) must be worn.

Body protection

No particular measures required. In case of splashing, wear oil-resistant protective clothing.

Respiratory protection

None, but avoid breathing vapours if possible.

Trade name : PANOLIN HEP ISO 32
Version (revision) : 3.0.0 (P.0.1)
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Trade name : PANOLIN HEP ISO 32
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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Liquid

Colour: yellow

Odour

None

Safety relevant basic data

Boiling temperature/boiling range (1013 hPa) : -30 °C

Flash point : No data available

Fire point : 188 °C

Vapour pressure : No data available

Viscosity (50°C) : 90 mm²/s

Viscosity (20°C) : 100 mm²/s

Viscosity (40°C) : 31.5 mm²/s

None

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

No information available.

10.2 Chemical stability

No information available.

10.3 Possibility of hazardous reactions

No information available.

10.4 Conditions to avoid

None, if handled according to order.

10.5 Incompatible materials

Reactions with strong oxidizing agents possible. Reactions with strong acids or alkaline possible.

10.6 Hazardous decomposition products

Reactions may produce hazardous decomposition products such as carbon monoxide and dioxide, oxides, oxides of nitrogen.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity

Practical experience/human evidence

This product is unlikely to harm health, given normal and proper handling and hygienic precautions.

Additional information

None, based on the calculation method of the Preparations Directive (1999/45/EC).

Irritant and corrosive effects

Additional information



Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)



Trade name : PANOLIN HEP ISO 32
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 Version (Revision) : 3.0.0 (2.0.1)

The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

SECTION 12: Ecological information

- 12.1 **Toxicity**
No information available.
- 12.2 **Persistence and degradability**
Possibility to eliminate the product out of sewage, Oil and fat separators.
- 12.3 **Bioaccumulative potential**
No information available.
- 12.4 **Mobility in soil**
No information available.
- 12.5 **Results of PBT and vPvB assessment**
No information available.
- 12.6 **Other adverse effects**
No information available.
- 12.7 **Further ecological information**
Do not empty into waters or drains.

SECTION 13: Disposal considerations

- 13.1 **Waste treatment methods**
Product/packaging disposal
 Waste codes/waste designations according to BWC/AVV
 Waste code product : 13 01 10*
 Waste code packaging : 13 01 10*
 Waste code other :
 Appropriate disposal / Package
 Empty containers should be scrapped or reconditioned. Containers, which have not been emptied properly must be disposed of as hazardous waste.
Other disposal considerations
 Dispose according to legislation. Disposal, in accordance with local official regulation.
- 13.2 **Additional information**
Water, possibly with the addition of detergent.

SECTION 14: Transport information

- 14.1 **UN number**
No dangerous goods in sense of this transport regulation.
- 14.2 **UN proper shipping name**
No dangerous goods in sense of this transport regulation.
- 14.3 **Transport hazard class(es)**
No dangerous goods in sense of this transport regulation.
- 14.4 **Packing group**
No dangerous goods in sense of this transport regulation.

Safety Data Sheet
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Trade name : PANOLIN HEP ISO 32
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- 14.5 **Environmental hazards**
No information available.
- 14.6 **Special precautions for user**
None

SECTION 15: Regulatory information

- 15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
Regulatory information
National regulations
Water hazard class (WdC)
No information available. Classification according to VVdWS
- 15.2 **Chemical Safety Assessment**
No information available.

SECTION 16: Other information

- 16.1 **Indication of changes**
02. Classification of the substance or mixture : 03. Hazardous ingredients
None.
- 16.2 **Abbreviations and acronyms**
None.
- 16.3 **Key literature references and sources for data**
None.
- 16.4 **Relevant P-, H- and EUH-phrases (Number and full text)**
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