Ortlinghaus SEIT 1898
DIE TECHNIK DER KONTROLLIERTEN MOMENTE

Translation of original operating manual

Technical product information

TPI 2062 EN

Press-safety-valve PSV 12

CE

0086-096-14 series

Keep for future use

Ortlinghaus-Werke GmbH
Postfach 50 14 40
42907 Wermelskirchen
Kenkhauser Str. 125
42929 Wermelskirchen
Germany
Tel. +49 2196 85-0
Fax +49 2196 855-444
Email info@ortlinghaus.com
Website www.ortlinghaus.com

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Table 1: List of amendments

Amendment	Edition date
BA rev. no. 2062.004	10.2012

1. Notes regarding use of the operating manual

These operating instructions, hereafter referred to as OI, are part of the product and contain important information on how to safely and correctly operate our product in machinery and plant systems as well as maintain, repair, convert, store, decommission and dispose of the product.

In addition to these OI please also refer to the technical descriptions and information provided in the product drawing as well as the application-specific design data, e.g. design calculations. If these should not be contained within the scope of documentation then please request these immediately from Ortlinghaus.

Without the product drawing these OI are incomplete.

Keep these OI in a safe place, make them accessible to all users at all times and pass them on to your customers! If necessary, you can download our OI or TPI via the internet from the “Service” directory at www.ortlinghaus.com. You are also free to make copies of this example. Always keep the OI near to the machine or system in order to ensure direct accessibility.

On delivery of the product, the attached OI represent the latest technical development at the time of publication. Any supplements provided by us should be added to the OI by you or future owners.
We reserve the right to make technical changes to these OI as part of technical further development. Please ensure that you have the most recent version of the information.
This information can be requested by telephone (for telephone number see front page) and obtained in text form or downloaded from the internet at www.ortlinghaus.com under “Download”.

1.1. Who are the operating instructions aimed at?

These OI are aimed at qualified specialist personnel, especially:

- ➞ assembly fitters of the machinery/plant system manufacturer;
- ➞ industrial mechanics/fitters of the machinery operator;
- ➞ other qualified and properly trained specialist personnel, responsible for and thereby entrusted with project planning, assembly, commissioning, operation, maintenance, decommissioning, storage and disposal of the product.

Persons tasked with using the product must read the OI carefully before conducting any work. If these prerequisites are not fulfilled, there is a risk of the product being used incorrectly with severe damage to the product and subsequent damage to other items as well as physical or fatal injury and health hazards to the user or third parties. Reference is made in addition to paragraph 1.5 of the OI.

1.2. What can be found in the operating instructions?

These OI with the product drawing contain all the necessary information related to the product named on the cover page for the proper utilisation throughout the various stages of operation.
Note the residual dangers and safety information provided for the stages of operation.

1.3. Use of these instructions

➞ Read through these OI completely before working with the product.

➞ The instructions in the OI must be complied with.

➞ Consider the product drawing as well as any design calculations.

➞ These OI are part of the product and should be kept accessible for all users.

➞ If the product is passed on to a third party then pass these OI on as well.

1.4. Notes on the symbols used in the text

Our products are produced in accordance with our knowledge of latest engineering practice at the time of design and are operationally safe and are subject to constant product enhancement. Nonetheless there is a danger to personnel and property if the following instructions are not complied with. For hazard-free installation, function and operation the most important passages in the following pages are highlighted with symbols.

These symbols mean:

NOTE!
➞ Pay special attention to this text.

1.4.1. Personal injury

WARNING!
- Hazard while performing the described activity or as a result of hazards during machine operation.

➞ Potentially severe head injury.

WARNING!
- Hazard while performing the described activity or as a result of hazardous electrical voltage during machine operation.

➞ Potentially severe head injury.

ATTENTION!
- Hazard while performing the described activity or as a result of hazards during machine operation.

➞ Potential physical injury or risk to health.

WARNING!
- Hazard while performing the described activity or as a result of non-observance of explosion protection during machine operation.

➜ Potentially severe head injury.

1.4.2. Product / machinery / plant system damage

CAUTION!
- Hazard while performing the described activity or as a result of mechanical hazards during machine operation.

➜ Potential material damage.

Non-observance of safety notices results in a loss of any claim for compensation.

1.5. Personnel qualifications and training

Work on our products may only be carried out by professionals (authorized persons) who possess appropriate qualification or professional training pertaining to the tasks to be carried out, and who acknowledge and understand the content of these OI.

Professional personnel (authorized persons) must acknowledge and observe the applicable safety standards.They must use appropriate safety equipment. Furthermore, professional personnel (authorized persons) must be able to detect possible hazards that could arise in the course of carrying out their work.

The level of responsibility, expertise, qualification and monitoring of professional personnel (authorized persons) is the responsibility of the operator. If personnel do not possess the requisite qualifications and knowledge then they must be trained and instructed accordingly.

1.6. The Ortlinghaus numbering system

Example: **0 111 - 222 - 33 - 444 555**

0 = Code digit for products

Code digits for series

Code digits for design characteristics

Design size

Serial no.

Further design characteristics

2. Technical data / intended purpose

2.1. Intended Use

The PSV press safety valve is a control element for switching hydraulically actuated multi-plate clutches, multi-plate brakes, and clutch/brake combined units in mechanical presses in accordance with DIN EN 692. The pressure oil is supplied to the clutch/brake or discharged to the tank via the press safety valve.

When using the press safety valve safe switch-on and switch-off of the press is ensured in accordance with EN 692.

The press safety valve represents the state-of-the-art in safety technology. When commissioning compliance with the safety regulations as specified by UVV must be verified.

The PSV 12 is equipped with proximity switches which permit the dynamic monitoring of the main stage.

Table 2: Standards and guidelines used

2006/42/EG	Machine Directive
97/23/EG	Pressure Equipment Directive
2006/95/EG	Low Voltage Directive
DIN EN 692 2009-10(D)	Machine tools - Mechanical presses - Safety;
DIN EN ISO 13849-1 2008-12(D)	Safety of Machinery - Safety related parts of a control system - Part 1: General principles for design
DIN EN ISO 13849-2 2008-09(D)	Safety of machinery - Safety-related parts of control systems - Part 2: Validation
GS-MHHW-01 2007-08	Testing Principles for the Testing and Certification of Presses

2.2. Appropriate use

Our products are intended exclusively for use in accordance with the technical data stipulated per the design shown on the product drawing (0086 - . . . - . . - . . . . . .)
The order-specific design which was performed by Ortlinghaus may only be used for the intended application.

The technical data specified by the customer is a component of the intended use. Insofar as a specification sheet which has been approved by both sides is present, it is also essential. The customer is responsible for the correctness of its data.

Our product is intended to be integrated into a system or machine or to be assembled with other components to form a system or machine. For this reason, the product should only be brought into circulation once the system or machine into which the product is to be integrated has completely fulfilled the applicable EU machinery directive.

Intended use also includes complying with the directions given in this operating manual, and paying attention to any residual dangers. Remaining hazards are described in the hazard warning sections of the following chapters. During the various applications (operating stages) in which damage to the machine or hazards to personnel can arise, the operator must ensure that appropriate safety measures are applied. Observe the applicable national regulations pertaining to accident prevention and environmental protection.

2.3. Improper use

Any other use or use going beyond the use described in the chapter “Intended purpose” and “Proper use” is considered to be improper use. Ortlinghaus is not liable for damages arising from this.

In particular, but not exclusively, our product is considered to be subjected to **improper use** if it:

➞ is operated with improper electrical and hydraulic operating parameters,

➞ is used outside without sufficient protection against environmental conditions,

➞ is filled with unapproved fluids,

➞ is operated at an impermissibly high or low ambient temperature.

NOTE!

➞ If the safety instructions and residual hazards are not observed then this is also considered improper use.

WARNING!

- Unauthorised conversions and modifications on the product are not permitted for reasons of safety.

➞ Modifications to or on our products are prohibited. Where this is not observed, any claims made against Ortlinghaus-Werke GmbH will be deemed void.

2.4. Functional description

The PSV contains two parallel switching 3/2 directional valves, the main stages of these valves can be monitored via inductive limit switches.

If monitoring of the valve is prescribed (UVV. 8G, etc.), then the machine control must cyclically monitor whether both switches respond within 100 ms. Should this time span be exceeded, the machine control must prevent further strokes from being triggered.

The appropriate safety regulations for the machine location must be complied with (e.g. BG-ZH 1/457)!

The supply line to the clutch/brake is only pressurized, when both main pistons have been activated. If there is faulty switching pressure build up in A is not possible.

2.5. Operating data

Operation is only permitted if the following technical characteristic data is complied with.

Only oil types and trade names as specified in the Ortlinghaus Approval List ON 9.2.19 are permitted. The following operating temperatures are permitted for the ISO viscosity groups (VG):

Oil	**Temperature range**
ISO VG 22	+5 °C to + 40 °C
ISO VG 32	+ 25 °C to + 50 °C
ISO VG 46	+ 35 °C to + 60 °C

Operating pressure:	**15 to 100 bar**

Required purity class:	**The required purity class of equivalent to or better than ISO 4406 ≤ 19/17/14 must be maintained.**

2.6. Operating data Limit switch

Operating voltage 10 - 30 V DC,
PNP closing function and PNP opening function

2.7. Requirements

The general principles of Machinery Directive 2006/42/EC concerning the state of the technology apply. The machine manufacturer must also check with reference to the Product Liability Directive, whether the machine in which the PSV is installed must still be considered in accordance with EN 954-1 (transition period applied for to 31/12/2012) or whether it must be considered in accordance with the current EN ISO 13849-1.

2.7.1. Requirements as stipulated in EN 954-1

The overall system control of the press must satisfy the requirements specified in DIN EN 692. The PSV is a system that satisfies the Category 4 requirements (Cat4) in accordance with EN 954-1, if the electrical activation is designed in accordance with Category 4 (Cat4).

2.7.2. Requirements as stipulated in EN 13849-1

The overall system control of the press must satisfy the EN ISO 13849-1 2006 (D) specifications. The PSV is a component that has an MTTFD value of 100 years (= high). Thus Performance Level e (Ple) can be achieved if the architecture of the overall system control satisfies the Category 4 (Cat4) requirements.

2.7.3. Requirements for electrical activation in Category 4

The Category B requirements must be satisfied:

- Safety-related parts must be designed in such a manner that they can withstand the influences that are to be expected.

The Category 1 requirements must be satisfied:

- Proven components/principles must be employed.

In addition, safety-related parts must be designed in such a manner that

➞ a fault does not result in loss of safety,

➞ a fault is detected at or prior to the next request.

2.8. Basic version, PSV on the subplate

Series: 0086 - 096 - 14 - 5 [1/7/8] 000 [1/8]

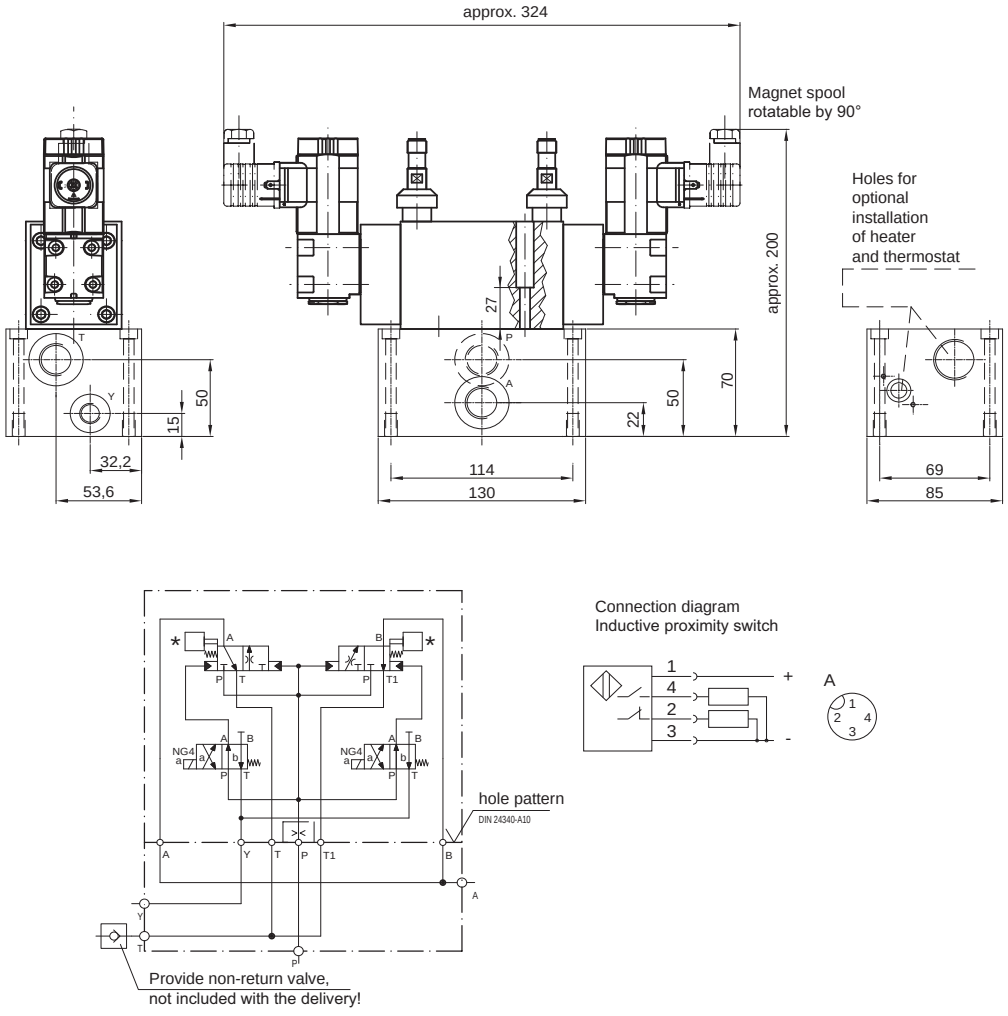


Fig. 1: Projection, hydraulic diagram

2.8.1. Technical data, characteristics

Control voltage	Orifice ø [mm]	Drawing no:
24 V DC	1,0	0086-096-14-510 **000**
	1,5	0086-096-14-510 **001**
	2,0	0086-096-14-510 **002**
	2,5	0086-096-14-510 **003**
	3,2	0086-096-14-510 **004**
	4,0	0086-096-14-510 **005**
	5,0	0086-096-14-510 **006**
	6,0	0086-096-14-510 **007**
	7,0	0086-096-14-510 **008**
110/115 V, 50/60 Hz	1,0	0086-096-14-570 **000**
	1,5	0086-096-14-570 **001**
	2,0	0086-096-14-570 **002**
	2,5	0086-096-14-570 **003**
	3,2	0086-096-14-570 **004**
	4,0	0086-096-14-570 **005**
	5,0	0086-096-14-570 **006**
	6,0	0086-096-14-570 **007**
	7,0	0086-096-14-570 **008**
220/230 V, 50/60 Hz	1,0	0086-096-14-580 **000**
	1,5	0086-096-14-580 **001**
	2,0	0086-096-14-580 **002**
	2,5	0086-096-14-580 **003**
	3,2	0086-096-14-580 **004**
	4,0	0086-096-14-580 **005**
	5,0	0086-096-14-580 **006**
	6,0	0086-096-14-580 **007**
	7,0	0086-096-14-580 **008**

Magnets		**DC**	**AC**
Power consumption:	Activation	17 W	64 VA

Duration of engagement (ED):	100 % ED
Protection class:	IP 64

Connection:	P, A, T = G 1/2
	Y = G 1/4

2.9. Design, PSV on subplate with heating

Series: 0086 - 096 - 14 - 6 [1/7/8] 000 [1/8]

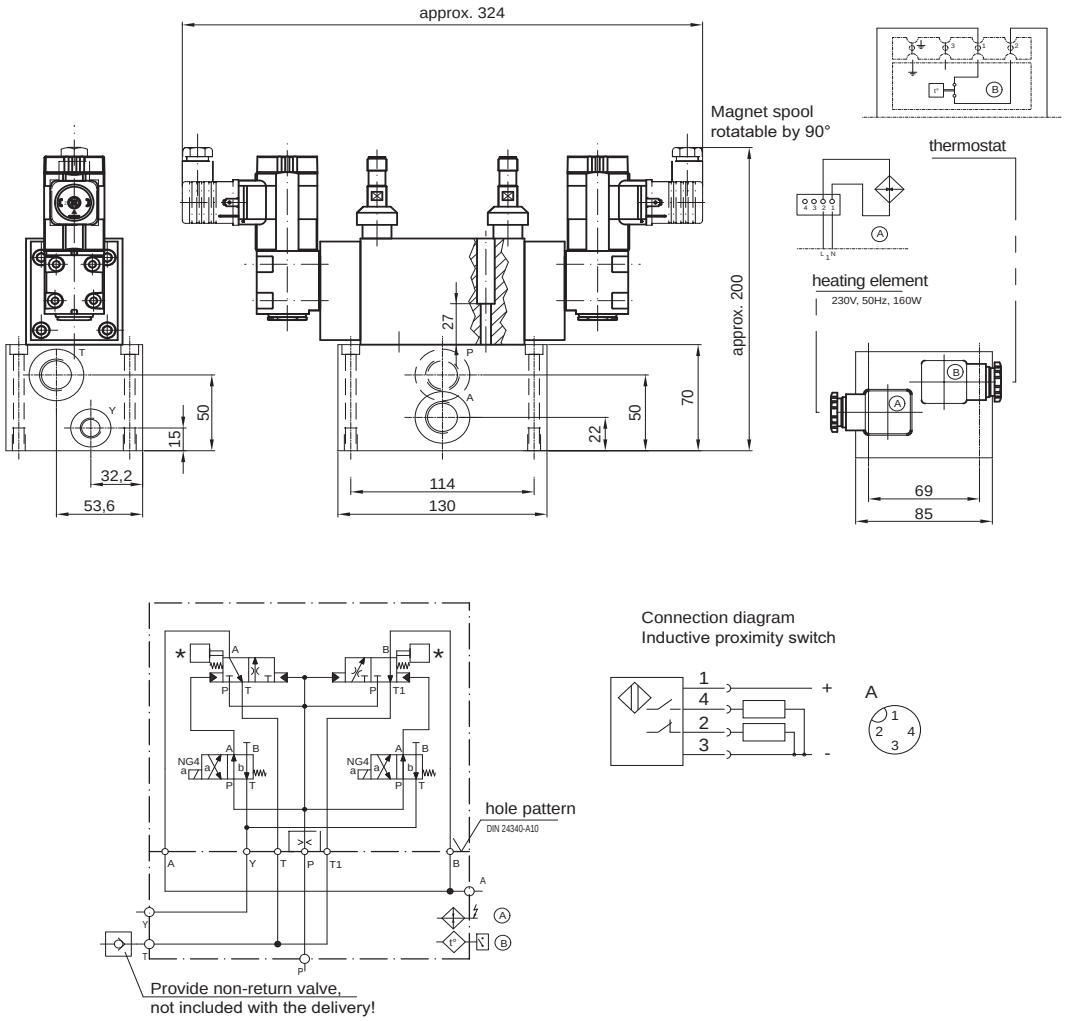


Fig. 2: Projection, hydraulic diagram

2.9.1. Technical data, characteristics

Control voltage	Orifice ø [mm]	Drawing no:
24 V DC (Heating capacity 160 W, 230 V, 50 Hz)	1,0	0086-096-14-610 **000**
	1,5	0086-096-14-610 **001**
	2,0	0086-096-14-610 **002**
	2,5	0086-096-14-610 **003**
	3,2	0086-096-14-610 **004**
	4,0	0086-096-14-610 **005**
	5,0	0086-096-14-610 **006**
	6,0	0086-096-14-610 **007**
	7,0	0086-096-14-610 **008**
110/115 V, 50/60 Hz (Heating capacity 160 W, 230 V, 50 Hz)	1,0	0086-096-14-670 **000**
	1,5	0086-096-14-670 **001**
	2,0	0086-096-14-670 **002**
	2,5	0086-096-14-670 **003**
	3,2	0086-096-14-670 **004**
	4,0	0086-096-14-670 **005**
	5,0	0086-096-14-670 **006**
	6,0	0086-096-14-670 **007**
	7,0	0086-096-14-670 **008**
220/230 V, 50/60 Hz (Heating capacity 160 W, 230 V, 50 Hz)	1,0	0086-096-14-680 **000**
	1,5	0086-096-14-680 **001**
	2,0	0086-096-14-680 **002**
	2,5	0086-096-14-680 **003**
	3,2	0086-096-14-680 **004**
	4,0	0086-096-14-680 **005**
	5,0	0086-096-14-680 **006**
	6,0	0086-096-14-680 **007**
	7,0	0086-096-14-680 **008**

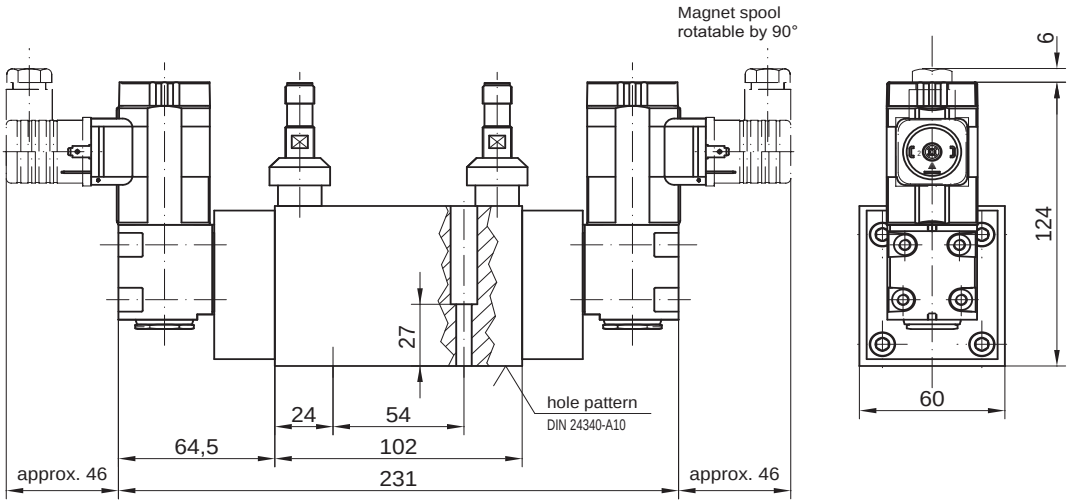
Magnets		**DC**	**AC**
Power consumption:	Activation	17 W	64 VA
	Holding	33 W	60 VA

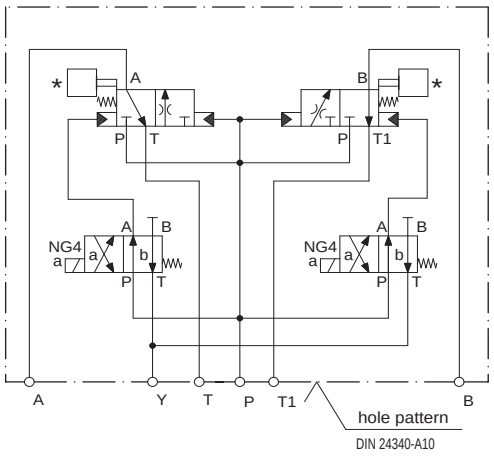
Duration of engagement (ED):	100 % ED
Protection class:	IP 64

Connection:	P, A, T = G 1/2
	Y = G 1/4

2.10. Design, only press safety valve

	0086 - 096 - 14 - 210000	Control voltage	24 V DC
Series:	**0086 - 096 - 14 - 270000**		110/115 V, 50/60 Hz
	0086 - 096 - 14 - 280000		230 V, 50/60 Hz





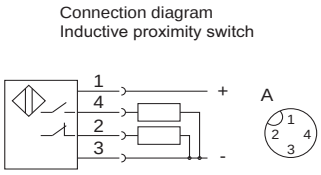


Fig. 3: Projection, hydraulic diagram

3. Transport, packaging

The delivery is to be checked for transport damage and any apparent deficiencies upon receipt. In the event of damage, inform Ortlinghaus accordingly. Only products that are in technically flawless condition are to be installed or commissioned.

NOTE!
➜ Read the OI before commencing further work.

3.1. Hazard notes on transport, packaging

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
Loose parts can move around during transportation	Encroachment of a moving part on a static part	Injury, crushing, abrading, catching, running over	Secure loose parts against moving and do not reach into assemblies during transportation
	Falling objects		Note the attitude of the packaging (note TOP direction!), wear safety footwear
Transportation, handling, moving	Falling objects		Use of secure lifting gear with sufficient load capacity
Open the packaging	Gravity (stored energy)		Note the attitude of the packaging (note TOP direction!), wear safety footwear
Greased or oiled parts can slide away during transportation	Slippery surfaces		Secure parts, set down on stable and non-slip base, wear safety footwear and gloves
When removing from packaging, transportation without packaging	Sharp edges, pointed parts		Secure parts for transportation, check for damage and sharp edges before removing parts, wear safety gloves/footwear
Material/substance hazards:			
Fluids seeping out during transportation	Fluid	Poisoning, fire hazard, allergisation	Take protective measures when dealing with leakages
		Sliding	Remove fluid
Ergonomic hazards:			
	Straining, posture	Fatigue, musculoskeletal strain	Note weight information, use transportation devices, perform work in upright position

3.2. Condition on delivery

The scope of the deliverables is defined on the shipping documents. Check whether the delivery is complete and correct. The packaging is in accordance with the order.

3.3. Transport

The press safety valve is a sensitive component. Transport it with the necessary precautions, carefully in the packaging, do not expose it to any impacts or harmful environmental influences such as humidity. If there is transport damage it must be reported immediately. Do not commission or operate the equipment without having first performed a proper inspection.

4. Installation and assembly instructions

The supplier or operator is responsible for the installation of the product described. Comply with the applicable regulations and requirements as well as these OI. Check the operational readiness before installation. Use appropriate lifting gear for handling whilst the installation work is being carried out.
Follow the instructions for installation.

WARNING!
- Observe the hazard notes in chapter “Maintenance” and “Repair, modification”!

➜ Observe the applicable environmental regulations.

4.1. Installation conditions

- The installation area and the product must be free of grease, dust or other impurities.
- The installation area must be selected with regard to the performance of the entire system, i.e. in the immediate vicinity of the clutch/brake to be switched.
- For safety reasons an additional function element that is capable of blocking this connection should not be installed between PSV and clutch/brake.
- The position must be selected so that the valve is in the horizontal install position.
- The PSV must be securely connected with the machine on the fixing bores of the subplate. Fastening only on the pipework is not permitted!
- The connection pipework must be executed with a standard DIN EN 10305 - PN 250 hydraulic pipe and soft packing union pieces in accordance with DIN 2353 / ISO 8434-1 (series L and S, e.g. Voss ES-4 or Parker E02-Plus).
- To safely prevent pressure spikes an orifice must be provided in the **P** connection of the PSV. Only use Ortlinghaus orifices.
- The connecting cable must be installed in accordance with the valid regulations.
- Ortlinghaus PSVs should only be used on Ortlinghaus subplates.
- The **Y** connection must be placed so that it extends freely down into the tank and ends above the oil level.

4.2. Installation

- Only trained, specialized personnel should perform installation tasks.
- All pipes must be thoroughly rinsed before assembly.
- When installing ensure that contamination does not get into the connection openings.
- When installing a single PSV ensure that the seals are in proper condition, before fitting on the PSV. The fixing screws must be tightened with the torque specified in the technical data.
- Do not use liquid sealants for the pipework.
- Mount the machine body on a possibly provided base plate to which the corresponding PSV is screw-mounted.
- The valve coils must have separate electrical wiring to the main control. The signal processing to the main press control must has to be according DIN EN 629.The electrical data of the press control must meet the electrical requirements of the PSV.

5. Commissioning

Prior to commissioning, connections must be checked for proper attachment and the connecting pipework for leak-tightness. A functional test should then be performed. Furthermore, a functional test must also be carried out after maintenance or repair with a stationary system or machine.

With hydraulic systems, the initial contamination must be filtered out before first use.

Check for unusual noises, vibrations and oscillations. Monitor the operating temperature. If unusual heating should be detected in the first hours of operation, the commissioning is to be halted.

5.1. Hazard notes on commissioning

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
During commissioning	Hazards from commissioning	Personal injury	Ensure no persons are allowed to enter or remain in the danger zone of the equipment
Pressure system: Reduction of product-related function caused by back-pressure in pressure line	Acceleration/ braking (kinetic energy)	Running over, sliding away, crushing	Monitor pressure in the pressure supply lines
Switching on the pressure supply: Loosing of faulty pressure connections, separation of fastening screws	Leakage of medium under pressure	Risk of injury from media under pressure piercing body parts, scalding	Adjust the pressure limitation valve in such a manner that the max. permissible value cannot be exceeded; comply with the installation instructions!
Electrical hazards:			
Contact with live parts	Arcs	Burning, electric shock	The electrical connections must be established in accordance with the applicable safety requirements. Only use sufficiently insulated plugs and cables for connection; reference to the applicable (e.g. VDE) protection standards.
	Electric shock		
Neighbouring components become live due to faulty condition	Transfer of voltage	Electric shock	Comply with the applicable protection standards for electrical devices.
	Short circuit	Fire	
Caution: Even when outside of electromagnetic fields, during operation electromagnetic components generate	Electromagnetic effects	Effects on implants	Although this stray flux is typically low, it is possible that it may have an effect on implants such as pacemakers. Warning signs must be attached.
Overload due to extreme overvoltage	Short circuit	Burning, electric shock	Comply with the applicable protection standards for electrical devices.
Defective coil (> 50 V)	Short circuit	Fire	100% resistance test prior to delivery
Material/substance hazards:			
Leaks: In operation, when assembling/disassembling the pressure oil connections	Fluid	Allergization	Check for leaks prior to commissioning or during operation at suitable intervals.
Ergonomic hazards:			
	Straining, posture	Fatigue, musculoskeletal strain	Note weight information, use transportation devices, perform work in upright position

6. Operation

No liability is assumed for completeness with regard to the guidance and safety instructions contained within these OI. Observe the system documentation for the complete machine for start-up, operation, maintenance, repair and shut-down.

If irregularities should be detected during operation, the system or machine must be brought to a standstill immediately.

6.1. Hazard notes for operation

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
During operation	Dangers from operation	Personal injury	Ensure no persons are allowed to enter or remain in the danger zone of the equipment
Switching on the pressure supply: Loosening of faulty pressure connections, separation of fastening screws	Leakage of medium under pressure	Risk of injury from media under pressure piercing body parts, scalding	Check the connections to the pressurised lines at appropriate intervals, observe and monitor max. permissible pressure (provide sufficient safety margin to the max. permissible pressure)
Electrical hazards:			
Contact with live parts	Arcs Electric shock	Burning, electric shock	The electrical connections must be established in accordance with the applicable safety requirements. Only use sufficiently insulated plugs and cables for connection; reference to the applicable (e.g. VDE) protection standards.
Neighbouring components become live due to faulty condition	Transfer of voltage	Electric shock	Comply with the applicable protection standards for electrical devices.
	Short circuit	Fire	
Caution: Even when outside of electromagnetic fields, during operation electromagnetic components generate	Electromagnetic effects	Effects on implants	Although this stray flux is typically low, it is possible that it may have an effect on implants such as pacemakers. Warning signs must be attached.
Overload due to extreme overvoltage	Short circuit	Burning, electric shock	Comply with the applicable protection standards for electrical devices.
Defective coil (> 50 V)	Short circuit	Fire	100% resistance test prior to delivery
Material/substance hazards:			
Leaks: In operation, when assembling/disassembling the pressure oil connections	Fluid	Allergization	Check for leaks prior to commissioning or during operation at suitable intervals.

6.2. Inspection while the machine is in operation

An additional check during machine operation is not required.

6.3. Recommended oils

The function of the selected lubricant is of decisive importance for the permanent operation of our wet-running products.

➞ Please refer to factory norm
ON 9.2.19 for a list of the oils which we recommend.

➞ The factory standard can be requested from us easily by telephone or email (for telephone number or email address, see front page).

The indicated oil recommendations are based exclusively on the function of the product described here.

Restrictions may be caused by other components connected to the same oil circuit.
Please note the system manufacturer's approved oils list.

CAUTION!
- Under no circumstances should lubricants of different types be mixed together! Mixing them together can negatively alter the properties.

➞ This can lead to functional impairments, e.g. reduction in friction or foam generation. Damage to the product or machinery, e.g. seals/gaskets, is also possible.

CAUTION!
- Use only filtered oil!

The required purity class of equivalent to or better than ISO 4406 ≤ 19/17/14 must be maintained.

Required oil filter unit: 10 µm.

7. Troubleshooting

If unusual operational noises, oscillations, increased temperatures or functional faults should arise then the system must be brought to an immediate standstill and secured against a re-start whilst maintenance work is carried out.

WARNING!

- After being brought to a standstill there is a possible risk of burning due to residual heat.

➜ Allow the working area to cool sufficiently.

The following faults are only intended as a rough guide for troubleshooting. Always additionally consider the other components of the system and include these in the troubleshooting.
Observe the instructions for commissioning after maintenance or repair work is completed.

Malfunction	Reason	Remedy
PSV does not switch	PSV defective	Replace PSV
	Fault in the signaling	Check the electrical machine control system
	No supply pressure	Check power supply unit
	The concurrency check registers a fault	Replace the PSV
	Unknown **machine damage**	Request Ortlinghaus customer service

8. Maintenance

The maintenance work must only be carried out with the machine at a standstill and secured against re-start. Observe also the maintenance instructions for the complete system or the other components.

WARNING!

- The product can be a safety-relevant part that may present a hazard potential that should not be underestimated if not properly maintained.

➞ If the function is impaired, we recommend a replacement or Ortlinghaus customer service. We accept no liability for damage or operational interruption caused by improperly executed maintenance works. Observe the applicable environmental regulations.

8.1. Hazard notes on maintenance

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
Disassembly	Falling objects	Crushing, catching, abrading, running over	Observe the disassembly sequence, use use lifting accessories with a sufficient load-bearing capacity, wear safety footwear
Disassembly and removal of parts	Slippery surfaces	Slipping, stumbling, falling	Advice from operator --> with oil-driven products oil can run out, collect residual oil and dispose of properly, provide gloves/ safety footwear, ensure stability, observe safety instructions
	Sharp edges, pointed parts	Crushing, cutting	Observe instructions in OI, disassembly only by sufficiently trained personnel, wear gloves/safety footwear
Disassembly of pressurised lines --> Pressure	Pressure	Leakage of medium under pressure	Depressurise pressure connections prior to disassembling (check with manometer), collect residual oil and dispose of, observe safety instructions
Electrical hazards:			
Contact with live parts	Arcs	Burning, electric shock	The electrical connections must be established in accordance with the applicable safety requirements. Only use sufficiently insulated plugs and cables for connection; reference to the applicable (e.g. VDE) protection standards.
	Electric shock		
Neighbouring components become live due to faulty condition	Transfer of voltage	Electric shock	Comply with the applicable protection standards for electrical devices.
	Short circuit	Fire	
Caution: Even when outside of electromagnetic fields, during operation electromagnetic components generate	Electromagnetic effects	Effects on implants	Although this stray flux is typically low, it is possible that it may have an effect on implants such as pacemakers. Warning signs must be attached.
Overload due to extreme overvoltage	Short circuit	Burning, electric shock	Comply with the applicable protection standards for electrical devices.
Defective coil (> 50 V)	Short circuit	Fire	100% resistance test prior to delivery

Hazard	Cause	Effects	Remedial actions, safety information
Material/substance hazards:			
Leaks: In operation, when assembling/disassembling the pressure oil connections	Fluid	Allergization	Check for leaks prior to commissioning or during operation at suitable intervals.
Ergonomic hazards:			
	Straining, posture	Fatigue, musculo-skeletal strain	Note weight information, use transportation devices, perform work in upright position
Hazards in connection with the operational environment of the machine			
Disassembly/assembly or with other miscellaneous work	Impurities, dust, moisture	Stumbling, falling	When working, ensure that working surface is clean and dry, clean product

8.3. Maintenance intervals

Depending on wear, we recommend that an inspection be carried out at reasonable intervals to check for:

- unacceptable operating noises, vibrations and temperatures
- operating performance and function
- condition of the screw connections on the machine body
- external leaks
- corrosion and deposits of dust or dirt

After an extended period at rest (e.g. 1 month) a functional check must be carried out.

NOTE!

- Any damage discovered must be rectified immediately.

➜ Observe the instructions from the chapter “Rectification of faults”.

8.2. Care

Our products are to be protected against corrosion in accordance with their conditions and location of use. Remove loose dirt, corrosion, and deposits of dust or dirt. Do not use a pressure washer or agents which may damage the corrosion protection or parts of the product.

CAUTION!

- Damage can be caused to our product during care or cleaning.

➜ Please do not use any corrosive, acidic or alkaline cleaning agents and abrasives.

➜ Electrical components can be damaged or destroyed by cleaning agents. Clean these with extreme care.

When cleaning our products you can, for example, use

- benzene, brake cleaner for the metal surfaces,
- or an agent with additional corrosion-inhibitors such as SafeCoat DW 18 VC for external application.

Only use cleaning agents in accordance with the manufacturer’s instructions. Avoid contact with skin. Only use with good ventilation.

9. Servicing and repair, modification

The PSV is a safety component.

Consequently do not open, replace, rework, or modify the PSV or individual parts of the PSV. Any intervention will invalidate the warranty provided by Ortlinghaus.

If the PSV malfunctions contact our service organization (+49 2196 85-248). For repair send the PSV to Ortlinghaus.

Change to the PSV, modifications of any kind, are not permissible. Changes are limited to the removal and replacement of the PSV and when reinstalling a PSV onto the connection plate so that the tubing does not have to be opened.

9.1. Hazard notes on servicing and repairs

NOTE!

➜ Only Ortlinghaus customer service department or personnel trained and authorised by Ortlinghaus are permitted to carry out servicing and repairs!

10. Storage, de-commissioning

10.1. Hazard notes on storage, de-commissioning

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
Disassembly of pressurised lines --> Pressure	Pressure	Leakage of medium under pressure	Depressurise pressure connections prior to disassembling (check with manometer), collect residual oil and dispose of, observe safety instructions
Disassembly from the machine, removal of connection within drivetrain e.g. braking effect missing	Machine movement	Running over, sliding away, crushing	Bring the system to a standstill and secure against unintended movement prior to disassembly, secure the hazard area, check for sufficient stability when disassembling, use lifting accessories with a sufficient load-bearing capacity.
	Stability/structural safety	Slipping, stumbling, falling	
Disassembly and removal of parts	Slippery surfaces	Slipping, stumbling, falling	Advice from operator --> with oil-driven products oil can run out, collect residual oil and dispose of properly, provide gloves/ safety footwear, ensure stability, observe safety instructions
	Sharp edges, pointed parts	Crushing, cutting	Observe instructions in OI, disassembly only by sufficiently trained personnel, wear gloves/safety footwear
Material/substance hazards:			
Removal of product, fitting/ removing pressure connections	Aerosol, fluid, vapour	Respiratory problems, allergisation	Depressurise pressure connections before disassembly (check with manometer), collect residual oil in pressure chamber or plate chamber (with wet running) and dispose of, observe safety instructions
Ergonomic hazards:			
	Straining, posture	Fatigue, musculoskeletal strain	Note weight information, use transportation devices, perform work in upright position
Hazards in connection with the operational environment of the machine			
Disassembly/assembly or with other miscellaneous work	Impurities, dust, moisture	Stumbling, falling	When working, ensure that working surface is clean and dry, clean product

10.2. Storage

The unit has been treated with conservation agents when delivered. Check for corrosion protection prior to storing. Supplement or renew if necessary.

CAUTION!

- The following points must also be taken into account with regards to the storage location:

➞ Secure the product against movement.

➞ Storage outside is not permitted.

➞ The location must be reasonably ventilated and dry (max. 65% atmospheric humidity).

➞ A temperature control system is necessary (+10 °C to +25 °C, no rapid temperature fluctuation).

➞ No UV or solar radiation.

➞ Free from aggressive and corrosive substances such as solvents.

With longer storage times suitable measures for additional corrosion protection should be implemented following consultation with Ortlinghaus.

10.3. De-commissioning

Prior to commencing with the de-commissioning of our product refer to the general operating instructions for the system or machine. Adhere to the safety instructions. When disassembling our product avoid independent movements of the machine or system. Secure any masses supported by our product and secure the hazardous area.

Check the residual pressures of all pressure lines and de-pressurise these if necessary. If, during disassembly, it is not possible to completely empty the system or if residual fluids are present, implement the requisite protective measures and collect the leaking fluid media.

The product must only be transported in compliance with the instructions or safety instructions provided in “Transport, packaging”.

For removal proceed in the reverse sequence from that described in the chapter: "installation instructions". Set the product down on a level, stable and non-tilting base.

Furthermore, observe the instructions in chapters “Storage” and “Disposal”.

11. Disposal

The product consists of different materials, which can either be reused or disposed of separated by type. Disassemble the product and separate the individual parts by material type.

The individual parts are to be disposed of in accordance with the stipulations of the respective country of application and in accordance with the national and local regulations, or are to be submitted for the appropriate recycling process.

NOTE!
➜ Observe the applicable environmental regulations.

11.1. Hazard notes on disposal

Hazard	Cause	Effects	Remedial actions, safety information
Mechanical hazards:			
Disassembly	Falling objects	Crushing, catching, abrading, running over	Observe the disassembly sequence, use use lifting accessories with a sufficient load-bearing capacity, wear safety footwear
Disassembly and removal of parts	Slippery surfaces	Slipping, stumbling, falling	Advice from operator --> with oil-driven products oil can run out, collect residual oil and dispose of properly, provide gloves/ safety footwear, ensure stability, observe safety instructions
	Sharp edges, pointed parts	Crushing, cutting	Observe instructions in OI, disassembly only by sufficiently trained personnel, wear gloves/safety footwear
Material/substance hazards:			
Removal of product, fitting/ removing pressure connections	Aerosol, fluid, vapour	Respiratory problems, allergisation	Depressurise pressure connections before disassembly (check with manometer), collect residual oil in pressure chamber or plate chamber (with wet running) and dispose of, observe safety instructions
Ergonomic hazards:			
	Straining, posture	Fatigue, musculoskeletal strain	Note weight information, use transportation devices, perform work in upright position
Hazards in connection with the operational environment of the machine			
Disassembly/assembly or with other miscellaneous work	Impurities, dust, moisture	Stumbling, falling	When working, ensure that working surface is clean and dry, clean product

12. Annex

12.1. Declaration of Conformity

Ortlinghaus-Werke GmbH
Kenkhauser Str. 125
42929 Wermelskirchen
Germany

SEIT 1898
Ortlinghaus
DIE TECHNIK DER KONTROLLIERTEN MOMENTE

EN

EC Declaration of Conformity
in accordance with the
DIRECTIVE 2006/42/EC
OF THE EUROPEAN PARLAMENT AND OF THE CAUNCIL
of 17 May 2006 on machinery, and amending Directive 95/16/EC

We declare herewith that the

Pressure safety valve for series **0086-096-12-… …**
0086-096-13-… …
0086-096-14-… …

[PSV 12, pressure safety valve]

is conformant with the conditions of the aforementioned directive.

CE Coordinator for Ortlinghaus-Werke GmbH, Wermelskirchen:

- Frank Ratanski
  Phone +49 2196 85-260 - Email: frank.ratanski @ortlinghaus.com

Ortlinghaus-Werke GmbH **Wermelskirchen, 25.10.2011**

Peter Ortlinghaus
CEO

pp Thomas Schrüllkamp
Head of Development

phone: +49 2196 85-0 - fax: +49 2196 85-5444 - www.ortlinghaus.com - info@ortlinghaus.com

Ortlinghaus SEIT 1898

DIE TECHNIK DER KONTROLLIERTEN MOMENTE

Ortlinghaus-Werke GmbH
Postfach 50 14 40
42907 Wermelskirchen
Kenkhauser Str. 125
42929 Wermelskirchen
Germany
Tel. +49 2196 85-0
Fax +49 2196 855-444
Email info@ortlinghaus.com
Website www.ortlinghaus.com