

Booster Station
Documentation (Original)



Diagram no.: AP 210.400.081

Article no.: 3230.2408

System no.: 16052895



System Contents

1 Declaration of Installation

2 Assembly Instructions

3 Wiring diagram

4 Approval protocol

5 Data Sheets

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1 Basic Information

1.1 Notes on the Assembly Instructions

These assembly instructions describe safe and appropriate handling of the system. The safety notes and instructions provided must be observed. In addition, the local work safety regulations and general safety conditions where the system is installed also apply.

1.2 Other valid documents

Components from other manufacturers are installed in the system. These purchased parts have been subjected to risk analyses by the manufacturers. The constructions' conformity with the valid European and national regulations is declared by the manufacturers of the components.

1.3 Warranty and liability

In principle, the "General Conditions of Sale and Delivery" given to the operating company by the manufacturer apply. Warranty and liability claims in the event of injury or damage are precluded if they are due to one or more of the following causes:

Abnormal use of the system.

Incorrect commissioning, operation and maintenance of the system.

Modification of the system without prior consultation with the manufacturer.

Operating the system with defective or improperly installed safety and protective devices.

Failure to comply with the information in these assembly instructions in respect of assembly, commissioning, operation and maintenance.

Insufficient monitoring of system parts that are subject to wear.

Incorrect repair work.

1.4 Pictogram explanation

Important safety-related notes are marked with symbols in these assembly instructions. It is compulsory that the notes provided on work safety are complied with and followed. Take particular care in these cases in order to avoid accidents, injury and damage to property.



WARNING! Danger of injury or death!

This symbol identifies notes that may result in an impairment of health, injuries, permanent bodily harm or even death and / or damage to property if they are not observed.

WARNING! Hazard of electric current!!



This symbol points out a dangerous situation caused by electrical currents. Failure to observe these safety notes can result in the risk of serious injuries or death. The work may only be carried out by a briefed qualified electrician.



Warning! Hazardous substances!

This symbol indicates pollution or health risks associated with the use of hazardous substances.



Warning! Risk of explosion!

This symbol indicates a risk when used in explosive atmospheres.



Warning! Toxins!

This symbol indicates a risk to health as a result of toxins or collected gases that could lead to unconsciousness.



Warning! Risk of flying particles!

This symbol indicates a risk associated with flying particles.



Information about wearing personal protection equipment!

This symbol indicates a situation where it is recommended that safety equipment is worn.



Information about reading the documentation and data sheets!

This symbol indicates that the enclosed documents must be read.



Note about additional information!

This symbol indicates additional useful information.



1.5 What to do in case of faults – hotline/service number

Our service hotline is an ideal way to access fast support if you have technical questions. Our highly qualified employees will analyse the failure and suggest appropriate immediate measures.

Hotline: +49 (0) 1805-629 462 867

The hotline is available from 8 am to 10 pm from Monday to Friday.

On Saturdays, Sundays and public holidays, it is available from 8 am to 8 pm (German local time).

You can contact our service department from 7 am to 5 pm from Monday to Friday by calling the following number:

Service manager: +49 (0) 3631 9533-5026



2 Basic Safety Instructions

2.1 Standards and directives

The system has been built in accordance with the current state of the art and generally accepted safety rules. In designing the system, basic safety requirements, as well as standards and directives, have been observed according to the declaration of incorporation. All safety-related data is based on current regulations issued by the European Union. Apart from the safety advice given in these assembly instructions for use, the generally accepted rules of accident prevention and environmental protection have been observed and complied with.

2.2 Intended Use

MAXIMATOR compressor stations serve to increase the pressure in hydraulic systems in accordance with their specification in the enclosed data sheet and wiring plan.

Operational safety is only guaranteed if the system is used as intended.

Intended use also refers to correct compliance with the operating conditions, as well as the details and instructions in these assembly instructions.

2.3 Foreseeable incorrect use

MAXIMATOR compressor stations serve to increase the pressure in hydraulic systems in accordance with their specification in the enclosed data sheet and wiring plan.






Operational safety is only guaranteed if the system is used as intended.











Correct use also refers to compliance with the operating conditions, as well as the details and instructions in this user manual.

2.4 Hazards Originating from the System

The following section lists residual risks emanating from the system even if system is used as intended.

In accordance with Attachment 1 of the declaration of incorporation, the following basic requirements are not adequately satisfied and need to be taken into consideration during use.

	1.2.3.	Starting	No restart protection available	In the case of repeated drive energy (compressed air), the compressor starts to pump and build up pressure depending on the system configuration.
	1.2.6.	Failure of the energy supply		
	1.2.4.1	Normal stopping	Pre-charge available or, for several compressors, the "second" one continues although the "first" has been switched off	In accordance with the unit configuration, a network-based fluid supply line may still be under pressure at the output even after the compressor has been switched off. Likewise, compressors can run in parallel so that pressure may still build up even if one compressor has been switched off.
	1.2.4.4	Completeness of machines	Partly completed machinery - no interface for emergency-stop circuit available	
	1.5.8.	Noise	No noise protection measures available; must be observed upon installation in the full system. If necessary, wear ear protectors.	
	1.5.9.	Vibrations	Vibrations can occur; this must be observed upon installation in the full system.	

	1.5.13.	Emission of hazardous materials and substances	There are some hazardous substances; this must be observed upon installation in the full system.	Hazardous substances can also be pumped depending on the unit configuration.
	1.6.3.	Isolation of energy sources	Primary pressure still exists	There may still be pressure at the unit input depending on the unit configuration.
	1.5.7.	Explosion	ATEX version	Only systems that are identified accordingly with an enclosed declaration of conformity in compliance with the ATEX Directive are designed.
    	<p>Pneumatic and hydraulic energy can cause serious injuries.</p> <p>In the case of damage to individual components, highly pressurised fluids can escape and lead to injury and/or damage:</p> <ul style="list-style-type: none"> - Depressurize the system before beginning any work. - Do not remove, modify or decommission safety installations . - Pressure settings may not be changed beyond the max. values. 			
	<p>Danger of flying particles!</p> <p>Very high levels of pressure can be controlled with the system. Therefore only use attachment parts (adapters, hoses etc.) that are approved for these pressure ranges.</p>			
	<p>Asphyxiation hazard</p> <p>Nitrogen displaces oxygen - therefore do not operate the system in closed rooms or ensure sufficient ventilation.</p>			

2.5 Basic safety measures

The following basic safety measures must be observed:



- The system may only be used in accordance with its intended purpose.
- The system may only be assembled, operated and serviced by trained and instructed specialist personnel. The personnel in question must have read and understood the assembly instructions. This particularly applies to knowledge on how injury risks for operators and third parties can be avoided.
- All safety information contained in these assembly instructions and in all other documentation must be observed and complied with.
- No unauthorised persons may be allowed to have access to the system.
- Stoppages and adverse environmental impact due to incorrect handling must be precluded.
- The relevant instructions on work safety and environmental protection must be observed during transportation, assembly and dismantling, operation, maintenance and service work.
- All work on the system must be carried out carefully and with safety in mind.
- Spare parts must always be obtained from MAXIMATOR GmbH. MAXIMATOR GmbH accepts no liability for damage resulting from the use of spare parts supplied by other manufacturers.



2.6 Requirements of staff

Prior to commencing work, personnel must be instructed in the hazards connected with handling of the system.

The system may pose injury hazards if not operated by trained personnel.

Any person instructed to commission, service or repair the system must have read and understood the assembly instructions in their entirety. This also applies to personnel who have already operated, or received training for the system.

The assembly instructions must be available to staff at all times. We recommend that you obtain written confirmation of knowledge of the contents of the assembly instructions.

The operating company or the personnel it authorises to use the system within the scope of their work are responsible for ensuring accident-free operation.

To ensure safe handling of the system, personnel are obliged to observe the following instructions:

- Personnel are not permitted to work on the system if they are overtired or under the influence of alcohol or medication.
- Personnel must not have any physical limitations that diminish their attentiveness or judgment, either temporarily or permanently.
- Personnel must wear protective clothing suited to the task at hand.
- All safety information contained in these assembly instructions and in all other documents must always be fully observed and complied with.
- If hazards that might result in personal injury are identified, the system must be shut down immediately.

Personnel must have sound knowledge of the following operational processes, directions and procedures:

- Operational system procedures
- Protective fencing, safeguards and signs in the danger zone.
- Procedures to be followed and measures to be taken in the event of danger

3 Commissioning the System

3.1 Safety Instructions

Before positioning and installing the system, the system components must be checked to ensure that they are complete and fully functional; also, the assembly instructions, wiring plan and data sheets need to be read.



Only qualified technicians may assembly and install the system.

General accident prevention measures should be taken before commissioning and filling the system; also, personal protective equipment (PPE) comprising goggles and gloves should be worn.

Only use materials that are approved for the fluid used and the specified pressure ranges as stated in the data sheet and wiring plan.

Damaged or unsuitable materials can lead to serious injury and damage!

3.2 Requirements made of the installation location

The system can be installed both inside and outside buildings protected from the weather.

The installation area must be flat and have sufficient stability and working load capacity. The installation surface must be free of dirt. The system is designed for use in the following atmospheric conditions:

Temperature range:	+5 to +60°C
Relative air humidity: max.	60%
Ambient pressure range:	min. 1 bar less than drive pressure
Altitude:	above sea level

3.3 Minimum distances

For operation and servicing purposes, the system must be installed with sufficient clearance from walls, ceilings and other devices. Free access to the system must be possible at all times. Reference values for the local circumstances are stated in the DIN EN547-1 and DIN EN547-3.



3.4 Supply lines

Install the supply lines required to operate the system in accordance with the valid regulations and safety conditions. The closure caps attached in the factory must be removed before connecting the supply lines. The required connection dimensions are stated on the enclosed wiring plan.

3.5 Working materials

Compressed air and/or nitrogen and fluid as defined in the system specification is required to operate the system. These working materials must be provided by the operator on-site.

3.5.1 Air and gas quality:

The compressed air should have the following quality classes as defined in ISO 8573-1:

Solids	Class 6:	max. particle size 5 µm
max. particle concentration:		5 mg/m ³
Dew point:	Class 7:	+10°C water content of max. 5 g/m ³
Oil content:	Class 4:	1 - 5 mg/m ³

The stipulated liquid quality ensures optimum durability of the sealing and guide elements.

Gas: 10µ particle size

3.6 Valve setting

Check the position of the shutoff valve before commissioning the system for the first time and set to the correct position (closed) if necessary.

3.7 Explosion Protection

Depending on the system design, it will be supplied with additional documentation in accordance with Directive 94/9/EC. Within the scope of the declaration of conformity in accordance with Directive 94/9/EC, the system also undergoes an ignition risk assessment and is identified with a CE symbol and the allowed application range. If there is no additional documentation enclosed with the system, it was not manufactured in compliance with 94/9/EC. An ignition risk assessment has not been carried out. Only the installed pump complies with 94/9/EC.



3.8 Start-up and re-commissioning / operation

Upon start-up and re-commissioning after a longer standstill, ensure that the valves are opened slowly and that pressure is built up gradually.

3.9 General function description

All MAXIMATOR compressor stations function in the same way, however some system-specific details/models may vary.

3.9.1 Drive air supply

An adequate supply of compressed air to drive the compressor and valves is required to operate the system.

It is connected at port (PL). The drive pressure regulated on the drive pressure controller can be read on the respective manometer. The ball valve must be opened to supply the compressor.

3.9.2 Shut-off valves

Depending on the compressor station model, it may have stop valves at the outputs in accordance with the wiring plan and relief valves in compliance with requirements.

3.9.3 Indicators

Depending on the compressor station model, it may have indicators for the pressure. The measuring range and the position are stated on the wiring plan.

3.9.4 Fluid supply

The fluid may be supplied from a supply network or gas cylinders. The pressures and port sizes are stated on the wiring plan and documents.

3.9.5 Memory

Depending on the model, the compressor station may have a reservoir. The storage parameters are stated on the wiring plan and documents.

4 Servicing and Maintenance

4.1 Safety instructions, maintenance and repair work



Operating failures brought about by insufficient or incorrect maintenance are an imminent hazard to the health and life of personnel and may also cause substantial repair costs and long system downtimes. The manufacturer will not assume any liability for damage caused by incorrect maintenance or care.

The maintenance intervals are stipulated in a maintenance schedule.

The following must be observed:

- Maintenance and repair work may only be carried out by the manufacturer's service team or by specially trained and instructed personnel.
- Maintenance and repair work on the system may only be performed when it is switched off and depressurized.
- Prevent unintentional system restart.
- During maintenance and repair work, some of the protection devices are deactivated. These must be properly reinstalled and their function tested immediately after completion of the maintenance and repair work!

4.2 Maintenance intervals

Position	Scope	Interval
Filter elements	Change of filter element	Depending on use / gas quality or 1 x year
Drive air / store	Condensation discharge	Depending on use / gas quality or 1 x month
Complete system	Leak test	During commissioning /daily during use
Complete system	Functional test if not used	Quarterly

5 Spare parts



Only use the manufacturer's original spare parts.

Wrong or faulty spare parts and components from external manufacturers may result in major damages to the system.

All guarantee and service claims become void if unapproved spare parts are used.

5.1 Ordering spare parts

The following information is always required when ordering spare parts:

- (Please see the hydraulic circuit diagram for details)
- Type number
- Factory number
- Year of construction
- Parts number
- Quantity
- Designation
- Requested shipment method (post, freight, sea, air, express)
- Shipping address

Orders for spare parts without the above information cannot be processed. If the shipping method is not provided, the manufacturer/supplier will select the shipping method at his own discretion.



5.2 Reconsignment / claims

Alternative you can send your product to MAXIMATOR for repair.

Please send your consignment for repair to:

MAXIMATOR GmbH
Ullrichstrasse 1-2,
99734 Nordhausen
Germany

Operational sequence

- **Receipt of the article for repair:**
After completing our [returns form](#), enclose a copy of it with the delivery so that your consignment will be included in our repair process immediately after the article has been received.
- **Record of the repairs:**
After receiving your Maximator product, a detailed cost estimate will be worked out according to the instructions and guidelines on the form and then it will be sent to you immediately.
- **Approval and repair:**
After approval of our cost estimate, our technicians will begin to repair your Maximator product immediately. The repaired product will then be sent back to you, subject to considering your despatch instructions.

Please note the following points in the case of returned goods:

- Please fill out the form completely.
- Please enclose a copy of the returns form with your return delivery.
- Note that it is compulsory to state the medium (with the safety-data sheet) in the case of contaminated equipment. We reserve the right to refuse acceptance in the case of an unlabelled package.
- Label the package externally and give information about any possible contamination.

6 Malfunctions

6.1 Safety Instructions



Incorrect troubleshooting may cause serious personal or property damage. Failures may therefore only be addressed by authorised, inducted personnel members who are familiar with working with the system, under observation of all safety regulations.

Only specialist personnel may carry out work on the electrical equipment while observing the safety regulations.

6.2 What to do in the event of failures

The following always applies:

1. Switch the system off immediately in the event of failures that pose a direct risk to persons, property and/or operational safety.
2. Also, disconnect the system from the mains and protect against re-start!
3. Inform the manager on site immediately about the failure.
4. Allow the type and extent of the failure to be established by an authorised specialist, and allow him to detect the cause and address the failure.

6.3 What to do after addressing failures

Before reconnection, check that:

- Any failures and the cause of the failures have been professionally addressed
- All safety equipment has been mounted in accordance with the regulations and is in perfect technical working order,
- No persons are within the danger zone of the system.



6.4 Failures, causes and remedies

Fault	Cause	Remedy
No volume flow	Valves closed	Check valve setting
	Filter clogged	Check / exchange filter
No pressure	Valves closed	Check valve setting
	Supply line without pressure	Check supply line
	Pressure controller closed	Check pressure controller setting
	No hydraulic liquid	Check hydraulic liquid

7 Transport, packaging and storage



The following safety instructions must generally be observed:

- Never raise a load above a person's head.
- Always handle system components with the utmost care and caution.
- Only use suitable slings and lifting equipment with sufficient rated loads.
- Only use designated lashing points.
- System components may only be lifted using the provided slinging points.
- Observe the centre of gravity during transportation (overturning hazard).
- Ropes, webbing or other lifting equipment must be equipped with safety hooks.
- No damaged ropes may be used.
- Ropes and webbing must not be knotted.
- Ropes and webbing must not be attached to sharp edges.
- Avoid mechanical shocks.
- Only transport the station when fixed.
- In the event of overseas transport, the system must be packaged tightly and protected against corrosion (drying agents).

7.1 Transport

The system is delivered fully mounted. Only transport when empty.

Secure the system tightly when transporting with vehicles. Make sure that no components can be damaged by lifting points.

The partly available lifting points are only intended for the first-time assembly. The lifting points have to be removed after assembly.

The system can be moved with a fork-lift truck when placed on a pallet, by hand or with another suitable transportation device:

The valid safety regulations must always be observed!



7.2 Packaging

If no return arrangements have been made for the disposable packaging, separate the materials according to type and size, and recycle or reuse.

Always dispose of the packaging materials in an environmentally-compatible manner and in accordance with the applicable local disposal regulations. If necessary, commission recycling companies.

Packaging materials are valuable raw materials and, in many cases, they can be reused, reconditioned and recycled.

7.3 Storage

Do not open packages until assembly and store them within the designated position and storage marks.

If no other information is provided, only store packages under the following conditions:

- Do not store outdoors
- Store in a dry and dust-free environment.
- Do not expose to aggressive media.
- Protect against sunlight.
- Avoid mechanical shocks
- Storage temperature. 15 to 25°C
- Relative air humidity: max. 60%
- If the equipment is stored for extended periods (longer than 3 months), the general condition of assembly groups and packaging must be inspected regularly. If necessary, renew or top up the conservation agents.

8 Dismantling and Disposal

8.1 Deinstallation



After the end of the service life of the system, it must be dismantled and disposed of in an environmentally-friendly manner.

Risk of injury in case of incorrect disassembly! Stored residual energy, sharp components, points and corners on or in the system or on the necessary tools can cause injuries.

- Ensure that there is sufficient space before beginning work.
- Shut off all operating media to the system.
- Make sure that the workplace is clean and tidy. Loose components and tools stacked on top of each other or lying about pose potential accident risks.
- Consult the manufacturer in case of any uncertainty

8.2 Disposal

If no agreement for the recovery or the disposal was made, recycle the disassembled components:

- Scrap used metals.
- Recycle plastic elements
- Sorting and disposing of other components in accordance with material type.

Danger to the environment due to incorrect disposal! Electronic scrap and electronic components, lubrication and other auxiliary materials may only be disposed of by approved specialised companies.

If you have any questions about environmentally-friendly disposal, consult the local community authorities or special disposal companies.