Original operating instructions

Evacuation and filling equipment for shock absorber EBS100R

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1 Manufacturer

Revision

Version	Comment	Responsible	Date
V0	Creation of the document	M. Franz	04/2024
V1	Updating the images	M. Franz	04/2026

Table of contents

1 General information

The operating instructions enable safe and efficient handling of the evacuation and filling equipment for shock absorber EBS100R (hereinafter referred to as machine/device).
The operating instructions are part of the system and must be kept close to it and be accessible to the staff at all times. The staff must read and understand the operating instructions carefully before starting all work.
If documentation from suppliers are included in the operating instructions (as attachments), GL GmbH assumes no guarantee for their content, individual statements, technical data, etc.

These are the original operating instructions.

1.1 Manufacturer

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When ordering spare or wear parts, please provide the following data:

- Job no.
- Designation
- Specifications
- Order no.
- Piece lists/spare parts lists no.
- Machine no.
- Drawing no.
- Pieces list item number
- Quantity

1.2 Product-relevant laws and guidelines

EC Directives

- Supply of Machinery (Safety) Regulations 2008

Standards

- EN ISO 12100:2010
- EN ISO 4413
- EN ISO 4414:2010
- EN 60204-1:2006
- EN ISO 14118:2018
- EN 614-2:2000+A1:2008

1.3 Warranty policy

The warranty period is 12 months from the delivery date if no different written agreement has been made.

1.4 Required and supplementary documentation

The documents listed in the attachment to the operating instructions (supplier documentation for the components, etc.) belong to the scope of delivery and must be observed.
The machine may only be commissioned if the supplier documentation has been provided, read and understood.

1.5 Presentation of information

In order to simplify and make working with the operating instructions safe, uniform icons, terms and abbreviations are used. They are explained in the next section for better understanding.

1.5.1 Safety indications

Safety indications warn against injury to persons or material damages. The measures described to avert danger must be adhered to. The safety and warning instructions in this document identify dangers and risks and are applied in accordance with ANSI Z535.6-2011 and the ISO 3864 series of standards.

Safety information is structured as follows:

The components have the following meaning:

- Warning sign: draws attention to the danger
- Signal word: identifies the extent of the danger
- Type and source of the danger: names the causes of the danger
- Consequences: describes the consequences in case of non-observation
- Measures: describes measures to avert danger

SIGNAL WORD

Type and source of the danger

Consequences in case of non-observation

- ➢ Avoidance measures/prohibition.

DANGER

The warning notice identifies a high-risk danger which results in death or serious injury if not avoided.

WARNING

The warning notice identifies a medium-risk danger which may result in death or serious injury if not avoided.

CAUTION

The warning notice identifies a low-risk danger which may result in slight or moderate injury if not avoided.

NOTE
A note contains information regarding possible material or environmental damages which do not cause injury to persons.

1.5.2 Icons

Various text attributes, means of notation and text structures make the document easier to read.

The text attributes (highlighting) within the document have the following meaning:

Table 1: Icons

Mark	Meaning
–	List without a specific order
1. 2.	Behaviour guidelines with an order
→	Reference to chapters/sections of the instructions or to documents which are also valid (→ Safety chapter)
xxx	Operating element, pushbutton, button

2 Safety

The machine was manufactured in accordance with the recognised rules of technology. Nonetheless, the danger of personal injury and material damages exists if the safety instructions in the operating instructions are not adhered to.

The machine may only be used in a technically faultless state and in accordance with its intended purpose whilst observing safety and dangers and observing the operating instructions.

2.1 Intended use

The machine is a complete machine under the terms of the Supply of Machinery (Safety) Regulation 2008.
It may be used exclusively in the commercial area. The machine is a technical working appliance and not intended for private use.

Its intended use also includes that you have read and understood the operating instructions and in particular →Chapter Safety in-full.

The device is intended for filling shock absorber systems, for which Rivian recommends the use of this device. The device must exclusively be operated using the oil prescribed by Rivian for the respective shock absorber systems.

For greasing the vacuum pump, only use the oil prescribed by the company GL.

2.2 Predictable misuse

A predictable misuse is viewed as being if you operate the machine:

- Using non-instructed and commissioned persons
- Outside the specifications provided
- Use it differently than described in →Chapter Intended use.
- Operate it when not fully assembled
- Use it under operating conditions which vary from those described in the operating instructions
- Let it run longer than absolutely necessary
- If the machine is operated unsupervised

DANGER

The device may be damaged if the wrong oil is used.

The device may be damaged.

- ➢ Operation with liquids not described in Chapter 2.1 may damage the device and is therefore prohibited.

2.3 Qualification of the staff

Work on the machine may only be carried out by trained, instructed and authorised persons. The respective staff authorisations must be clearly established.
The staff commissioned with the work on the machine must have read and understood all the operating instructions and in particular →Chapter Safety or have been familiarised with the content during the course of training.

2.3.1 Transport staff

Transport staff must:
- Be trained to handle lifting devices/floor-borne vehicles.
- Recognise dangers and take corresponding measures.
- Have read and understood the operating instructions.

2.3.2 Assembly staff

The assembly staff must:
- Be correspondingly trained (e.g. as machine fitters)
- Know the structure and function of the machine
- Recognise dangers and take corresponding measures.

2.3.3 Operating staff

The operator has been instructed by the owner for operation. He has been informed of possible operational dangers and incorrect conduct. Tasks above and beyond the instructed work may only be carried out by the operator if such tasks are specified in the operating instructions and the owner has expressly entrusted him/her with these.

The operating staff must:
- Be familiar with the structure, function, commissioning and operation of the machine
- Recognise dangers and take corresponding measures.
- Have read and understood the operating instructions.

2.3.4 Maintenance staff

The maintenance staff must:
- Be correspondingly trained (e.g. as machine fitters or electricians)
- Know the structure and function of the machine
- Know maintenance, lubrication and/or cleaning locations
- Recognise dangers and take corresponding measures.
- Have read and understood the operating instructions

2.3.5 Instructed person

The instructed person has provenly been instructed within the scope of a briefing by the person responsible on-site regarding the tasks assigned to him/her in case of improper conduct and trained as necessary. The instructed person is informed of the protective devices and protective measures required. S/he is capable of working with foresight, recognising danger and acting accordingly.
The instructed person may not intervene in the operation and running of the machine.

2.3.6 Service staff

Due to its expert training, skills, experience and knowledge of the relevant standards and regulations, service staff is able to carry out the work transferred to it.
It recognises possible dangers independently and avoids threats.

In particular, the service staff has practical experience and far-reaching knowledge for its possible tasks.

- Transport
- Erection/ Installation
- Commissioning
- Maintenance
- Troubleshooting
- Disassembly

2.4 Personal protective equipment

Sufficient protective equipment must be provided by the owner for the staff and supervisors must control that it is worn.

Depending on work with and on the machine, the following personal protective equipment must be worn:

Table 2: Personal protective equipment

Mandatory sign	Meaning	Mandatory sign	Meaning
	Use foot protection		Use hand protection
	Observe the instructions for use		Use eye protection

2.5 Safety and protection guards

The following information must be observed for the safety and protection guards.

- Ensure that all the safety and protection guards belonging to the machine have been provided, are correctly installed and function.
- Ensure that all safety and protection guards and locks are always easily accessible.
- Do not change the position of safety devices, avoid them or render them ineffective.

NOTE
In case of an accident, manipulation of the safety devices is deemed as intent.

The safety and protection guards for the device are as follows:

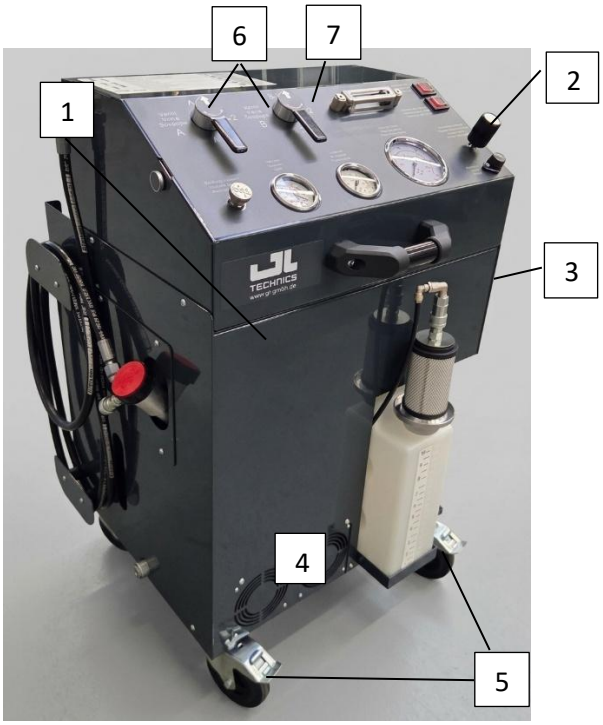

Figure 1: Safety guards for the machine

Item	Meaning	Item	Meaning
1	Casing	5	Castors with locking brake
2	Adjustable hydraulic pressure	6	Multivalves
3	SDE hose with burstproof hose (not illustrated)	7	Solenoid valve protects the vacuum pump against overpressure (not illustrated)
4	Ventilator cooling		

2.6 Conduct in an emergency

The following immediate measures must be taken in case of an emergency:

- Leave the danger area
- Secure the danger area
- Notify the person responsible
- If necessary, alarm the rescue service / doctor

2.7 Machine limits

Time limits

The expected working life of the machine is 25 years if used for its intended purpose. The replacement interval for the outer hydraulic lines is every 6 years.

Space limits

- For its operation and running, an area of 1.5 m around the evacuation and filling equipment for shock absorber EBS100 must be kept free.
- Dry surroundings
- Flat, firm anti-slip warehouse flooring (concrete floor, synthetic resin floor, tiled floor, clinker floor)

Use limits

Observe the weight of the device. Also refer to: Chapter 3 Technical data

WARNING

Danger to health when lifting the device.

When lifting, health damages may arise.

- The device is very heavy. Always only lift it with two people
- War gloves when lifting the device

2.8 Unauthorised changes

It is forbidden to make unauthorised changes to the machine.

2.9 Spare and wear parts

Despite all technical innovations, machines are also subject to wear and tear. In order to keep possible standstill times as short as possible, we recommend keeping a stock of the spare and wear parts as marked on the piece list delivered →Attachments.

The warranty only exists for original spare parts delivered by GL GmbH. Spare parts and accessories not delivered by GL GmbH are not approved. The installation or use of such products can therefore under certain circumstances change the structurally specified machine properties negatively, thus influencing active and/or passive safety.

All liability and warranties from GL GmbH are excluded for damages arising from the use of non-original spare parts and accessories.

2.10 Pictograms

Pictograms must be available in-full all times and be clearly legible.
Damaged and illegible pictograms must be replaced without delay.

The following pictograms are attached to the machine:

Table 3: Pictograms

Pictogram	Meaning
	General warning sign
	Warning against hot surfaces
	Use foot protection
	Use eye protection
	Use hand protection
	Observe the instructions for use

2.11 General safety indications

WARNING

Danger of tripping, falling and slipping

Work on the machine may lead to tripping, falling and slipping, due to which persons can incur serious injury.

- Keep the workplace and surroundings clean and tidy.
- Remove soiling such as lubricants immediately.
- Do not use the system as a climbing aid.

WARNING

Danger due to machine changes

Machine changes or alterations may cause injuries.

- Do not make any changes to wheels, hoses, levers and casing.
- Work on the evacuation and filling equipment for shock absorbers may only be carried out by expert staff.

WARNING

Danger due to manipulation/bypassing protective devices

The manipulation or bypassing of protective devices may result in injuries!

- Never manipulate or bypass protective devices.

NOTE
Work with the device may only be carried out by persons familiar with the machine who have also read and understood the operating instructions.

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3 Technical data

3.1 Marking and identification

Table 4: Marking and identification

Device type EBS100R	Value
Supply voltage	230 V / 50 Hz 110 V / 60 Hz
Power consumption	230 V / 0.8 kW 110 V / 1.4 kW
Wight	approx. 100 kg
Dimensions in mm (l x b x h)	690 x 608 x 1002
Article number	400.509.000 400.511.000
Slop tank volume	10 litres
Flow rate at 3.0 bar	Approx. 6 l / min.
Flow rate at 40 bar	Approx. 1 l / min.
Vacuum pump end pressure	2 mbar
Hose length of the feed and return hose	Approx. 4 m
Pre-set maximum pressure	30 bar
Compressed air connection, nominal width	7.2 mm
Oil separator volume	Approx. 1000 ml
Emission sound pressure	≤ 70dB(A)

3.2 Specifications

3.2.1 Operating and storage conditions

Table 5: Specifications - Operating and storage conditions

Designation	Value
Operating and storage temperature	-5 to +40 °C
Transport temperature range	-20 to 50 °C
Operating humidity (roofed)	Max. 80 %
Storage, transport humidity (vibrations)	Max. 90 %
Erection height above sea level, max.	2000 m
Emission sound pressure	< 70 dB(A)

3.2.2 Hydraulics

Table 6: Specifications - Hydraulics

Designation	Value
Hydraulics	Power unit 230 V or 110 V
Adjustable hydraulic pressure	Yes
Adjustable pressure	5 to max. 30 bar

WARNING

Danger of the hydraulic power unit running dry

Running dry may results in damages and **failure** of the device

- The power unit must be filled up to its maximum before each use.
- Observe the inspection glass and refill hydraulic oil as required
- Only have the device operated by expert staff
- Use exclusively the pressure liquid specified.
- The tank content of the power unit is considerably larger than the oil quantity required for one application.

3.3 Nameplate

The nameplate is located on the reverse side.

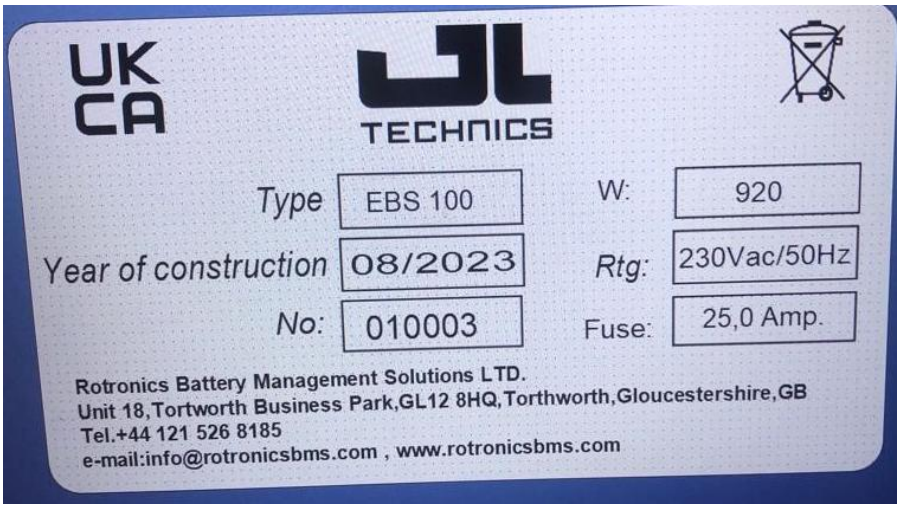

Figure 2: Nameplate

4 Function description

4.1 Operating and device components

The machine consists of the following components:

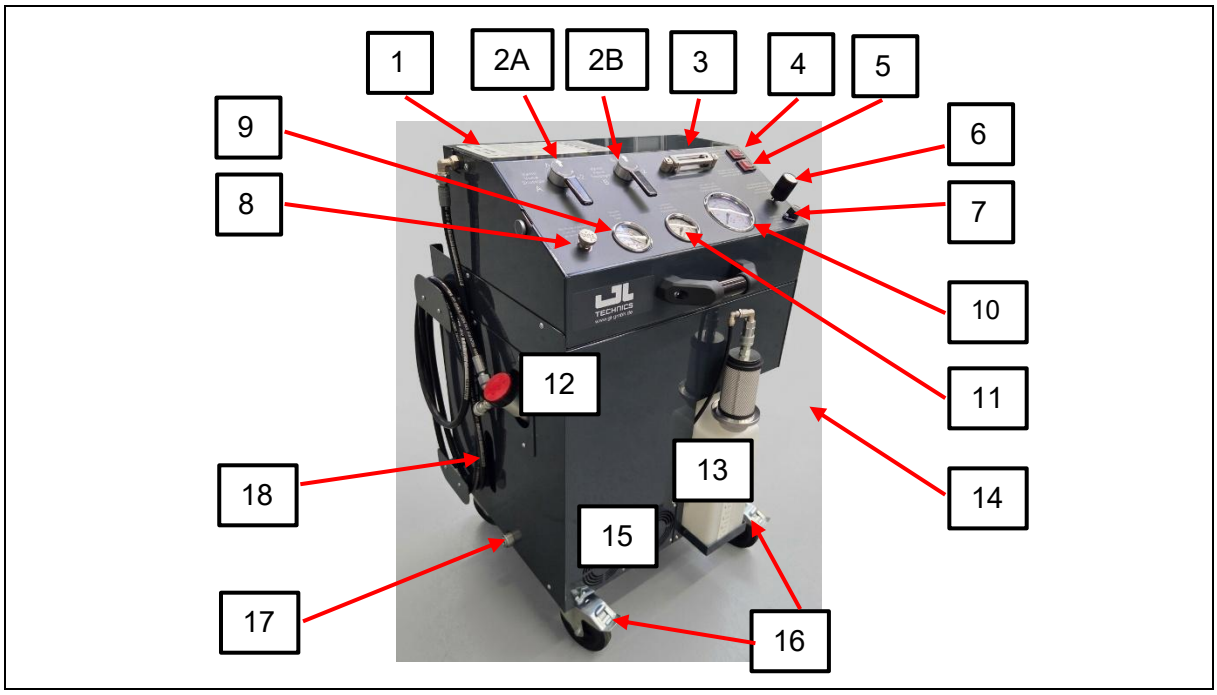

Table 7: Operating and device components part 1

Figure 3: Operating/device components part 1

Item	Meaning	Item	Meaning
1	Brief guide for lever positioning	10	Manometer hydraulics 0 – 60 bar
2	Lever for valves A (2A) and B (2B)	11	Air pressure manometer 0 – 16 bar
3	Hydraulics inspection glass	12	Fresh oil tank filler
4	Hydraulic pump on/off	13	Slop tank
5	Vacuum pump on/off	14	Oil separator (not illustrated)
6	Hydraulics pressure governor	15	Ventilator for power unit and vacuum pump
7	Circuit breaker	16	Locking brake
8	Vacuum ventilation and bleeding	17	Hydraulic power unit oil drain plug
9	Manometer vacuum 1 – 0 bar	18	Hydraulic power unit inspection glass filling level

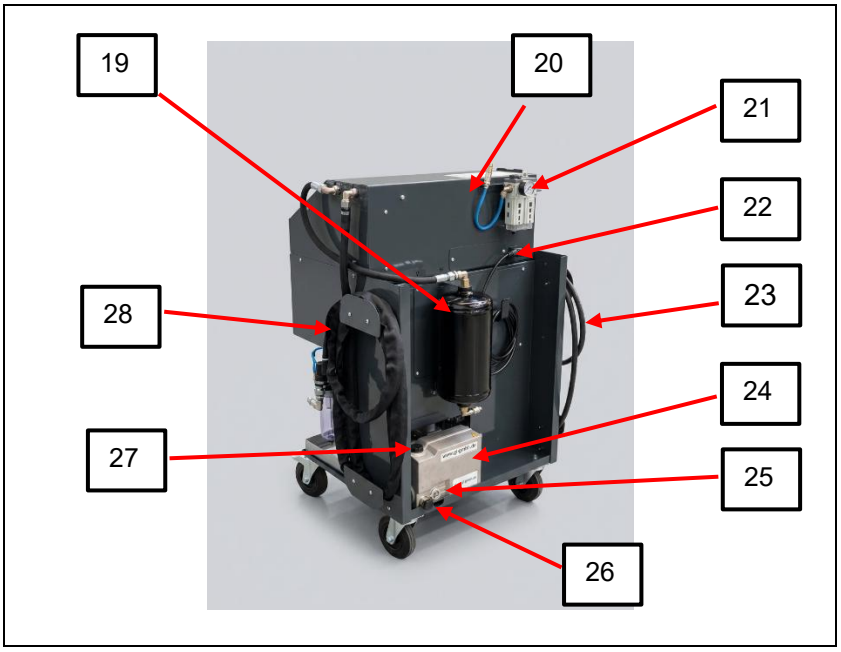

Figure 4: Operating/device components part 2

Table 8: Operating and device components part 2

Item	Meaning	Item	Meaning
19	Buffering tank	24	Vacuum pump (350 ml, 2 mbar)
20	Nameplate with manufacturer's data	25	Min./max. vacuum pump oil inspection glass
21	Water filter and compressed air connection	26	Vacuum pump oil drain plug
22	Mains connection with cable	27	Vacuum oil filler
23	SDE hose 2	28	SDE hose 1

4.2 Production course

Erection/Workplace

The machine must be erected on a flat surface and secured with the brakes against rolling away. When operating and running, the workplace is located around the device combination. Otherwise, no fixed workplace at the device is planned.

Emptying

The oil in the hydraulic system can be pressed out using compressed air.
Additionally, the oil quantity which cannot be pressed out of the hydraulic system can be drawn out using a vacuum pump.
Of both these options are repeated and used alternately, only a little residual oil remains in the hydraulic system.

Vacuuming

The hydraulic system can be evacuated with a vacuum pump which is integrated in the device. Here, it must be observed that the vacuum pump is only able to process a certain oil quantity and therefore the hydraulic system should always be emptied with compressed air prior to vacuuming.

NOTE

The vacuum pump may only be filled with the oil intended from GL GmbH.

This oil is transparent and difficult to recognise!

- ➢ Ensure good lighting at the workplace.

Filling

Hydraulic oil is pumped into the shock absorber system via SDE hose 1 using a hydraulic power unit Here, the filling pressure can be set using a pressure governor. In order to fill the shock absorber system free of blow holes, it is mandatory to evacuate the shock absorber system in advance and to bleed the lines in the device.

5 Running & operating

- The machine may only be operated by operating staff.
- Ensure that the safety devices (such as the EMERGENCY off switch) on the machine are always freely accessible.
- During work on and with the machine, nobody may be in the danger area.
- Ensure that displays and signal lamps are always accessible and legible.
- Always keep switch cabinets closed during operation.

WARNING

Danger to health when lifting the device

Lifting heavy devices may result in injuries

- The device is very heavy. Always only lift it with two people
- War gloves when lifting the device

Caution

Danger of damage to the device

The device may be damaged if the wrong hydraulic oil is used.

- Operation with other liquids than the specified hydraulic oil may damage the device and is therefore prohibited, refer to Chapter 2.1..

5.1 Initial commissioning

The machine is commissioned at the works and its function tested.

NOTE

The machine must be unpacked carefully.

- Open the box, remove all parts except the device and place them aside.
- Loosen the box from the pallet and lift it upwards.
- Drive the device off the pallet using suitable aids – ATTENTION, the device is very heavy.

5.2 Operation of the device combination

5.2.1 Preparation and installation

1. The machine must be currentless before starting with installation and commissioning

2. Position the device close to the hydraulic system connections and tighten the locking brakes (16).
3. Plug the machine power cable (22) into a 230 V socket.
4. Check the hydraulic power unit and vacuum pump (25) oil levels (18) and refill oil as necessary (12).
   Here, the oil level for the hydraulic power unit (18) should be close to the maximum.
   The vacuum pump oil level (25) should lie between the minimum and maximum. If there is too much oil in the vacuum pump, oil can be drained off via the outlet sleeve (26). If there is too little oil in the vacuum pump, oil can be refilled via the filling nozzle (27).

NOTE

The vacuum pump may only be filled with the vacuum pump oil specified by GL GmbH .

This oil is transparent and difficult to recognise!

- Ensure good lighting at the workplace.
- Check which hydraulic oil the vehicle manufacturer prescribes for filling the respective shock absorber system and only use this oil for filling the shock absorber system.

Caution

Danger to health in case of contact with hydraulic oil

- Always wear protective goggles when working with the device
- In case of eye contact with hydraulic oil, rinse the eyes immediately with a lot of water whilst pulling the eyelids upwards.

5. If there is oil in the vacuum pump oil separator (26), it must be emptied by screwing the plastic cylinder off before rinsing.
6. If water can be seen in the compressed air water separator (21), the water filter must be emptied by turning it at the lower end. Place a cloth or similar beneath the water separator in order to catch the liquid beneath it.
7. Connect the connection hose (19) to the slop tank (13).

5.3 Operation

Both levers A (valve A) and lever B (valve B) describe the following positions:

- Evacuation / Vacuum Test (A-1, B-1)
- Fill the vehicle with fresh oil (A1, B-3)
- Drain off used oil and empty using compressed air (A-3, B-1)
- Set the device pressureless (A-2, B-2)

Figure 5: Brief instructions for hydraulic system lever position

5.3.1 Reduce pressure in the hydraulic system

1. Set lever A (2A) to position A-3 and lever B (2B) to position B-1 in order to relieve the pending pressure in the hydraulic system.
2. Connect the connection hose (19) to the slop cannister (13) on the slop tank.
3. Moreover, connect the “SDE hose 1” (28) to the shock absorber system.
4. The pressure is then relieved via expansion in the slop cannister (13)

5.3.2 Blow out the hydraulic system

1. Set lever A (2A) to position A-3 and lever B (2B) to position B-1 in order to blow out the hydraulic system.
2. Connect the compressed air to the compressed air connection (21) and “SDE hose 1” (28) and “SDE hose 2” (23) on the hydraulic system.
3. The manometer compressed air (11) displays the pending compressed air pressure.
4. The oil in the hydraulic system is rinsed into the slop cannister.
5. If the slop cannister level no longer changes, the blow out process is completed.

5.3.3 Evacuation

1. Set lever A (2A) to position A-1 and lever B (2B) to position B-1.
2. Connect the “SDE hose 2” (23) to the hydraulic system.
3. Switch the vacuum pump on: For this, switch the vacuum pump switch (5). The manometer vacuum (9) must display an underpressure of at least 0.9 bar.
4. If the system is to be filled after vacuuming, the following is important:
   “SDE hose 1“ (28) must also be connected to the shock absorber system during vacuuming.
   Only switch the vacuum pump (24) off during the filling process.
5. If only vacuuming is required, then switch the vacuum pump off using the switch (5).

5.3.4 Filling

NOTE
➢ To fill the hydraulic system free of blow holes, it is important to evacuate it beforehand (see “Evacuation”)

1. After evacuation, initially pull “SDE hose 2” (23) off the hydraulic system.
2. Then, switch the vacuum pump (24) off.
3. As described in the “Evacuation” section, both levers must be placed as follows: Lever A in position A-1 and lever B in position B-1.
4. Switch the hydraulic pump on (4) and wait until clear liquid free of blow holes can be seen in the inspection glass (3) (let the hydraulic power unit run)
5. The hydraulic manometer (10) displays the filling pressure.
6. Turn lever B (2B) to position B-3 via position B-2.
7. Set the desired pressure using the pressure governor (6).
8. As soon as the manometer hydraulic (10) displays the pressure set,
   also remove “SDE hose 1” (28) from the hydraulic system.
9. Then, switch the hydraulic pump off (4).

5.3.5 Switch the device pressureless

1. First, set lever A in position A-1 and lever B in position B-2 and then after a short period lever A in position A-2 and lever B in position B-3 in order to release pressure from all hoses.
2. To ventilate the vacuum pump, open the vacuum ventilation valve by turning the cap counterclockwise (8) until the manometer vacuum (9) is at 0 bar. Don’t forget to close the vacuum ventilation valve afterwards by turning the cap clockwise.

6 Troubleshooting

Possible faults and causes are listed in the following table.

If a fault occurs, proceed as follows:
1. Check whether the fault is listed in the following table.
2. Follow the measures specified.

NOTE

Please inform our customer service if your device doesn't work faultlessly despite following the instructions. They will help you fast and reliably.

Table 9: Faults table

Fault	Cause	Measure
During the step "Blowing out", no oil is rinsed into the slop cannister	- Compressed air connection not coupled correctly	- Re-couple the compressed air connection to the device
	- Lever not set correctly	- Lever A in position A-3 and lever B in position B-1
	- Hose to the slop cannister not coupled correctly	- Re-couple the hose to the slop cannister
	- Hose bent	- Unbend it, if necessary replace the faulty hose
	- Hoses to the vehicle not coupled correctly	- Re-connect SDE hoses 1 and 2 to the vehicle
Vacuum pump works but the ventilator doesn't	- Electrics faulty	- Send the device to GL GmbH
Ventilators work but the vacuum pump doesn't	- Electrics faulty	- Send the device to GL GmbH
Vacuum doesn't reach less than - 0.9 bar	- Leakage	- Check whether both levers are in position 1 - Leakage at the vehicle. To check this, SDE hose 2 must be removed from the vehicle. If the vehicle then achieves the desired value, the leakage must be in the vehicle

Fault	Cause	Measure
After switching on, no oil can be seen in the machine inspection glass	- Lever set incorrectly	- Check whether lever B is in position 1
Power unit doesn't build-up any pressure	- SDE hose 2 still connected to the vehicle - Lever set incorrectly - Hose bent - Intake filter blocked - Leakage at the vehicle. - Insufficient oil in the fresh oil tank	- Remove SDE hose 2 from the vehicle - Check whether lever A is in position 1 and lever B in position 3 - Check whether oil is lost anywhere, check hoses for damages and cracks - Open the oblique filter and clean the strainer with compressed air. - Remove SDE hose 1 from the vehicle and check then whether pressure builds up - Unbend it, if necessary replace the faulty hose - Fill the fresh oil tank with fresh hydraulic oil as specified by the vehicle manufacturer
Making pressureless doesn't function	- When making pressureless, the hydraulic manometer does not drop to 0 bar - When making pressureless, manometer vacuum does not increase to 0 bar	- Leave lever B in position 3 and lever A for a longer period in position 2. If pressure is not reduced, call the service hotline. - Open vacuum ventilation again. If pressure is not reduced, call the service hotline.
Hydraulic power unit doesn't run	- Electricity supply missing	- Check power cable connection - Electrical faults – call service
Operating pressure of 40 bar cannot be retained	- Return hose is coupled to the emptying adapter or the shock absorber	- Decouple the return hose and build-up pressure again - Call Service.

Fault	Cause	Measure
for switched off power unit	- Back pressure valve faulty	

7 Transport & storage

7.1 Safety

WARNING

Danger of crushing when moving

The danger of crushing exists during transport!

- ➢ Use personal protective equipment.
- ➢ Only transport on flat surfaces.
- ➢ Do not reach into the machine.

- The machine may only be transported by transport staff.
- Delivery and transport is made lashed on a wooden pallet,

7.2 Packaging

The packaging type for the machine depends on the requirements of the transport route and the contractual agreements.

NOTE

Incorrect handling of the packaging

Incorrect handling of the packaging may result in material damages to the goods transported.

- ➢ Observe the information attached to the packaging.
- ➢ Observe country-specific environmental protection conditions and rulings for the storage, disposal and recycling of transport packaging.
- ➢ Recycle marked reusable packaging such as pallets.
- ➢ When disposing specially treated and conserved packaging materials for sea transport, observe its appropriate and proper treatment or recycling. Improper thermal use, e.g. for heat production may entail incalculable risks for the environment and health.
- ➢ Please note that improper use of transport packaging or parts thereof may result in damage to the environment and adverse health effects.

Observe accident prevention regulations and information on the packaging.
Take the highest permissible weight into account in case of transport and lifting devices.

7.3 Storage

7.3.1 Storage conditions

- Do not store the machine outdoors
- Store dry and dust-free
- Protect against mechanical vibration
- Storage temperature between -5 and 40°C

NOTE

The device may only be used on flat, resilient and anti-slip surfaces, such as industrial floors (concrete floor, synthetic resin floor, rough tiled or clinker floor).

7.3.2 Intermediate storage

NOTE

Damage due to improper intermediate storage

If stored improperly intermediately, the machine may be damaged.

- ➢ Only store the machine at a dry and dust-free location.
- ➢ If you store the machine intermediately without packaging, carry out the necessary conservation measures.

If intermediate storage is necessary, we recommend using the transport packaging. If the machine is stored intermediately without packaging, the conservation measures described in →**Section 7.3.1** must be taken. In case of doubt, please consult with the manufacturer.

8 Maintenance and repair

To reduce wear and tear and avoid failure and faults, the prescribed maintenance and repair work must be made regularly in accordance with the servicing plan

- Decommission the machine before maintenance, servicing and repair work.
- Re-assemble protective devices immediately after termination of maintenance and repair work and ensure that they work faultlessly.
- Carry out maintenance and repair work exclusively when the machine is at a standstill.
- Unsuitable operating and auxiliary materials may damage the machine. Use exclusively the specified operating and auxiliary materials.
- Never mix different types of operating and auxiliary materials or from different manufacturers. Use exclusively approved and marked containers for the respective operating material.
- Retighten loosened screw connections after maintenance and repair work.
- Replace damaged machine components with original components without delay.

NOTE
The device must be serviced in accordance with the instructions in the operating instructions.

NOTE
The device may only be repaired and serviced by experts.

NOTE
If the threads are replaced, only original spare parts from the company GL GmbH may be used.

8.1 Supplier components maintenance

Maintenance information for the supplier components can be found in the supplier documentation from the respective manufacturer in the →Attachments.

8.2 Maintenance plan

- All externally located hoses must be replaced every 6 years.
- The oil separator O-ring should be lubricated every 6 months. For this, a small quantity of the prescribed oil can be used.

NOTE
The oil separator must be emptied after each use.

Table 10: Maintenance plan

Component	Maintenance work	Interval
Entire machine	Function check	Annually
Entire machine	Visual check for leakage	Monthly / Before use
Entire machine	Visual check for general damages	Monthly / Before use
Hydraulic oil level	Check before use and top-up as necessary	Monthly
Hydraulic hoses	Exchange	Every 6 years
Screw connections	Visual check	Before use
Oblique filter	Open and blow out compressed air	Annually
Wear parts (seals, rollers, all external lines: SDE hose 1, SDE hose 2, hose to the slop tank)	Exchange	Every 6 years

NOTE
Avoid skin contact with hydraulic oil. When filling with hydraulic oil, use suitable auxiliaries and wear appropriate gloves. When rectifying oil leakages, wear gloves and avoid skin contact. After working with hydraulic oil, wash your hands thoroughly.

8.3 Cleaning

- Clean the machine with a dry, lint-free cloth. Wear suitable gloves when cleaning.
- Remove corrosive agents and grease residue with cleaning solvent or petroleum.

8.4 Spare parts list

You can find the spare parts lists in the supplier documentation from the respective manufacturer. It can be requested using the telephone number or e-mail address on the nameplate.

9 Disposal

- Dispose of the machine and its components in accordance with national regulations.
- Disassemble the machine as individual components (hoses, metal).
- Dispose of operating material, in particular oil and grease in accordance with national regulations and the respective valid safety data sheets.
- Disassemble the machine as transportable components.
- Collect liquids separately and dispose of them expertly.
- Empty pipelines and containers and clean them expertly.
- Dispose of gas and hazardous waste expertly.

The operator is responsible for disposal for maintenance and servicing work.
The following materials can accrue here:

- Material residues
- Auxiliaries (e.g. lubricating oil)
- Cleaning and care products
- Consumables
- All types of waste, also worn components
- Other waste

Proceed as follows when disposing of materials:

- Collect liquid waste as substances endangering groundwater (WHG) in approved containers and make them available for proper disposal.
- Sequester or sponge up spilt or escaped liquids immediately.

10 Lists

10.1 List of illustrations

10.2 List of tables

11 Attachments

11.1 Documents also valid

Designation/Component	Manufacturer
Hydraulics documentation	
Drawings	
Spare and wear parts lists	See Chapter 8.5 Spare parts list (with drawing number and designation)

11.2 EC Declaration of Conformity

UK Declaration of Conformity

Original UK Declaration of Conformity

The manufacturer

GL GmbH Metall- und Werkstatttechnik

Nürtinger Str. 23-25

D-72636 Frickenhausen

Hereby declares that the machinery described below:

Designation	Evacuation and Filling Device for Shock Absorbers
Type	EBS100
Commission-no.:	

Conforms to the requirements of the following UK Regulations:

Supply of Machinery (Safety) Regulation 2008

Designated standards applied:

EN ISO 12100:2010	EN ISO 4413:2010
EN ISO 4414:2010	EN 614-2:2000+A1:2008
EN ISO 14118:2018	EN 60204-1:2006

Authorised representative for compiling the technical file:

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Location,

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