



Operating Instructions

SWIVEL LIFT BSL 350



www.amf-bruns.de

Foreword

Dear reader,

these Operating Instructions serve to provide all information required for the safe use of the Swivel Lift.

The Swivel Lift is designed and constructed in accordance with state-of-the-art technology and recognised safety standards. Persons and material assets can however still be at risk, as not all danger areas can be eliminated if the functional capability is to be maintained. Accidents caused by these risks can however be prevented by strictly observing these Operating Instructions. Over and above this, the operational efficiency of your Swivel Lift can be used to the full and unnecessary faults can be prevented.

These Operating Instructions only apply to the Swivel Lift BSL 350, as specified on the cover page and in the footnotes.

After reading these Operating Instructions for the first time, keep them in a safe place for future reference over the entire lifetime of the Swivel Lift. Chapter 11 of these Operating Instructions contains an Inspection Log that is required by the technical expert for his / her annual inspection of the Swivel Lift.

If you sell the Swivel Lift, hand these Operating Instructions over to the new owner.

All details, figures and dimensions given in these Operating Instructions are non-binding. They cannot be used as the basis for any claims whatsoever.

This document must not be reproduced or duplicated, in full or in part, without the prior, written permission of the manufacturer.

The Swivel Lift must be converted or modified in any way, without seeking the prior, written permission of the manufacturer. The manufacturer will accept no liability whatsoever if conversions or modifications are carried out without authorisation.

Use only original spare parts or spare parts which have been approved of by the manufacturer. If spare parts other than these are used, this can have a negative effect on the specified characteristics, the functionality and safety of the Swivel Lift. The manufacturer will not accept liability for consequential damage if other spare parts are used.

Contact our customer services department to order spare parts or accessories (see Chapter 15, page 70).

Explanation of symbols and signs

To improve understanding, the following conventions should be met for these Operating Instructions:

1.

The following conventions are used to highlight important information:



DANGER!

- warns of a situation of immediate danger, which will lead to severe or fatal injuries if not avoided.
-
-



WARNING!

- warns of a potentially dangerous situation, which will lead to severe or fatal injuries if not avoided.
-
-



CAUTION!

- warns of a potentially dangerous situation, which will lead to slight or minor injuries or material damage if not avoided.
-
-



ATTENTION!

...warns of a potentially dangerous situation, which can cause material damage, if not avoided.



...contains general notes and useful information.



...gives a reference to important information in other sections and documents.

2.

Some text passages serve a special purpose. These are identified as follows:

- Lists.

⇒ Instructional text, e.g. a sequence of activities.

3.

Meaning of directions:

If directions are given in the text (in front of, front, behind, rear, right, left), these directions relate to the normal direction of travel of the vehicle.

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1 Safety

CAUTION!

Risk of injury if the Swivel Lift is not operated correctly.

Therefore:



- It is imperative, that these Operating Instructions are read thoroughly before operating the Swivel Lift. Always observe the notes and information contained herein, in particular the Safety Instructions.
 - If these Operating Instructions or parts thereof are lost or become illegible, please request a new copy from the manufacturer.
-

Prerequisite to the safe handling and trouble-free operation of the Swivel Lift is a thorough knowledge of the applicable safety information and the safety regulations.

It is therefore imperative that this Chapter is read thoroughly before operating the Swivel Lift and that the instructions and warnings herein are strictly observed. Safety Instructions and warnings that are given at the corresponding places in the text in the following Chapter must also be strictly observed. The manufacturer will not be held responsible if safety information and warnings are not strictly adhered to.

In addition to the information given in these Operating Instructions, local legislative regulations must be taken into consideration, in particular those regarding safety and accident prevention.

1.1 Proper Use

The operational reliability of the Swivel Lift is only guaranteed if it is put to proper use. It must therefore only be used for the purpose for which it is intended.

The Swivel Lift must only be used to lift and lower unoccupied wheelchairs or persons seated in wheelchairs. By using the Swivel Lift, persons can be embarked into or disembarked from the vehicle to which it is fitted. The Swivel Lift is operated by an accompanying person who does not ride on the Swivel Lift's platform.

Proper use also includes strictly adhering to the information given in these Operating Instructions.



WARNING!

If the Swivel Lift is used for any other purpose than that described above, this may result in dangerous situations for persons or material damage being caused.

Therefore:

- Only use the Swivel Lift for the purpose for which it was intended.
 - Always adhere to information given in these Operating Instructions.
 - Do not use the Swivel Lift for any other purposes, particularly those given in Section 1.2. These are deemed to be improper use.
-

1.2 Improper Use

Any use other than that described in Section 1.1 is deemed to be improper use.

These include in particular:

- Lifting or lowering goods.
- Lifting and lowering persons who are not seated in a wheelchair.
- Use as a transfer bridge.
- Allowing operation by incompetent persons.
- Making unauthorised modifications to the Swivel Lift.
- Operation when safety-relevant faults exist or if in a faulty condition.
- Operation without protective devices fitted.

1.3 Personnel Requirements

The Swivel Lift must only be handled by persons who

- are of legal age,
- have been instructed in how to operate the Swivel Lift,
- have read and understood these Operating Instructions,
- have proven their ability to operate the Swivel Lift to the vehicle's owner,
- have been expressly assigned by the vehicle's owner to operate the Swivel Lift,
- have the technical knowledge to operate the wheelchair's brakes and switch the motors of electrically driven wheelchairs ON and OFF and
- are in a position to adapt themselves to the particular behaviour and needs of disabled persons.

Transportation, installation, commissioning, maintenance, repair, fault finding and disposal of the Swivel Lift must only be carried out by persons with the corresponding technical training and experience.

1.4 Product Monitoring

Please contact AMF-Bruns GmbH & Co. KG immediately if faults or problems are encountered when operating the Swivel Lift or if accidents or "near-misses" occur.

AMF-Bruns will effect a solution to the problem with your help and the knowledge gained will flow into future projects.

NOTE



Guarantee work on the Swivel Lift must only be carried out with the prior agreement of AMF-Bruns GmbH & Co. KG.

The costs of such work will not be accepted by AMF-Bruns without prior agreement.

In case of a claim, AMF-Bruns GmbH & Co. KG will require the serial number, the year built as well as a description of the damage and if possible, photographs of the damage.

1.5 Danger Zone

The danger zone is any area on, below or within the range of movement of the platform, as well as around the drive and carrier system, in which persons are exposed to the risk of injury or damage to health.

CAUTION!

Risk of injury through movements of the Swivel Lift.

There are a number of risks of personal injury if standing within the danger zone.

Therefore:

- Only operate the Swivel Lift if there are no persons standing within the danger zone.
 - Keep the danger zone under observation and stop the Swivel Lift if any persons enter the danger zone.
-



1.6 Safety Devices

1.6.1 Side guard rail

The side guard rail provides support for the passenger and increases the sense of security when the platform is being raised or lowered. This prevents the wheelchair from rolling sideways off the platform.

1.6.2 Roll-off guards

The platform is equipped with two roll-off guards, one wide and one narrow. When raised, these prevent the passenger in their wheelchair from rolling off the platform. Safety switches on both roll-off guards ensure that the platform can only be lowered or raised when both roll-off guards are raised and latched in this position.

1.6.3 Blinkers

Two blinkers fitted to the platform prevent hazards caused by the Swivel Lift being overlooked when it is being used.

1.7 Safety and Accident Prevention Regulations

Adhere to the following notes in order to prevent personal injuries and material damage. For commercial use, also adhere also to the relevant safety and accident prevention regulations laid down by the trade associations.

- The Swivel Lift must only be operated if all safety devices are correctly fitted and fully functional (see Section 1.6). Such devices must only be removed to enable maintenance and repair work to be carried out. All safety devices must be replaced immediately after such work has been completed. Otherwise, there is a high risk of injury.
- The Swivel Lift must only be used for the purpose for which it is intended, otherwise dangerous situations, with resultant injuries, may occur (Proper use: see Section 1.1, page 8).
- The owner is responsible for ensuring that proper use is adhered to, in particular that the Swivel Lift is only operated by authorised persons.
- If the Swivel Lift is used commercially or communally, the owner must ensure that operating personnel are familiar with the operation of the Swivel Lift under all operating conditions by giving training and familiarisation courses.
- In order to be able to transport wheelchair-bound persons, the vehicle must be fitted with the necessary special equipment in

accordance with DIN EN 75078. To prevent dangers in road traffic, the Swivel Lift must be equipped with warning lights or warning markings.

- A number of dangers may arise during operation due to adverse lighting conditions. The owner is obliged to equip the vehicle or the Swivel Lift with the corresponding lighting fixtures.
- It is forbidden for persons to ride on the platform if they are not in a wheelchair.
- Proper use of the Swivel Lift also includes adherence to the specified maintenance and repair work, in particular strict adherence to the maintenance intervals. If such work is not carried out, trouble-free operation cannot be guaranteed. There is a risk of personal injury and material damage being caused. We recommend that maintenance records are kept.
- If the Swivel Lift is used commercially or communally, it must be inspected by a technical expert at intervals of not more than one year after commissioning. During inspection, faults affecting the safety should be systematically identified and remedial action taken (see Chapter 11, "Inspection Log", page 47).
- Do not deposit any items or goods on the Swivel Lift. Persons can suffer injuries if such objects fall off the step.
- The Swivel Lift must not be operated in a faulty condition, as severe injuries may be caused by this. If faults occur, do not use the Swivel Lift until repairs have been effected.
- Switch the Swivel Lift OFF before carrying out maintenance or repair work, this includes cleaning work. Make certain that no other person can switch the Swivel Lift ON (e.g. by disconnecting the starter battery). If this is not done, there is a risk of injury.
- Use only original spare parts or spare parts which have been approved of by the manufacturer. If other parts are used, the manufacturer will not accept liability for the consequences.

2 Description

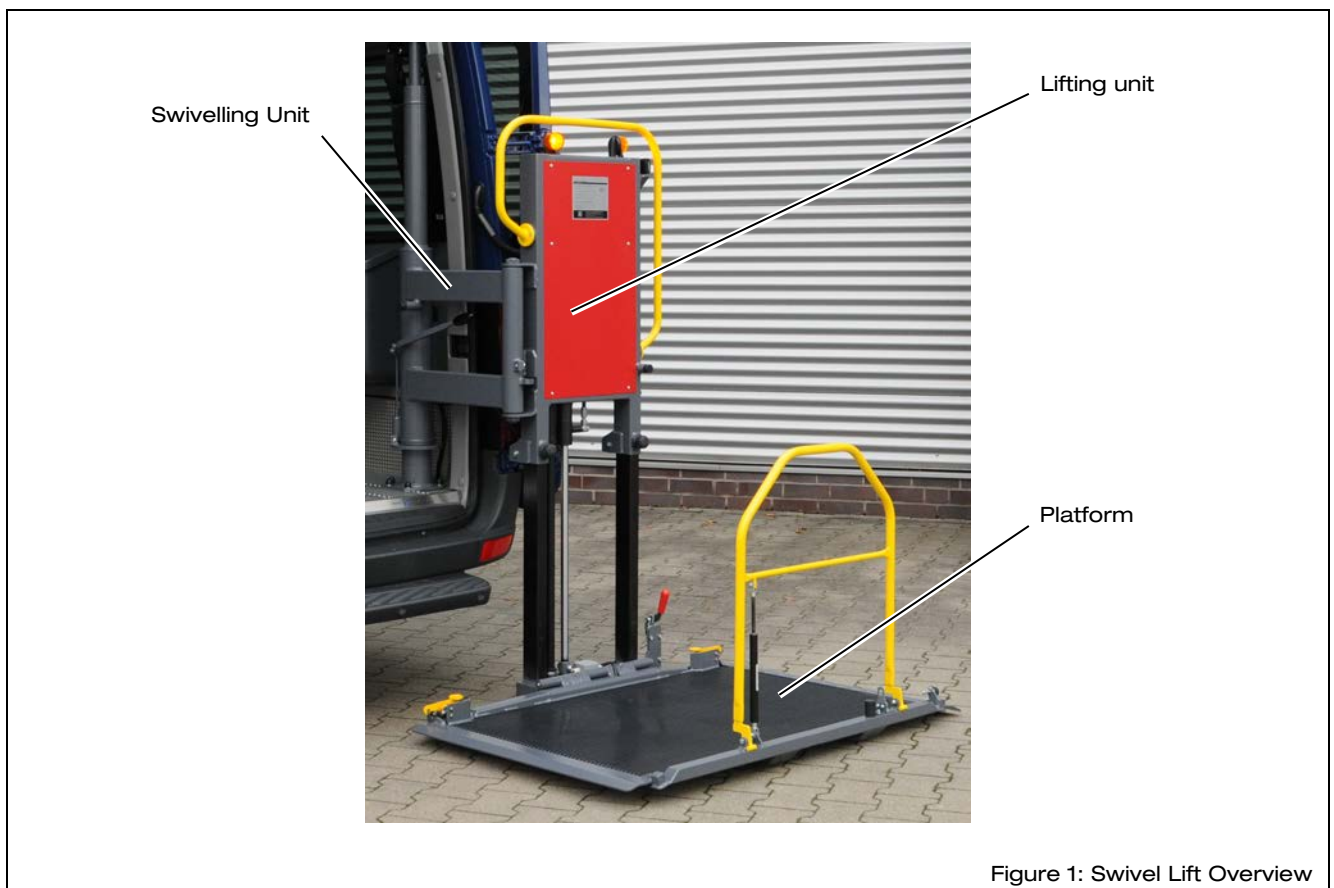
Persons who are wheelchair-bound can be embarked into or disembarked from a vehicle using the Swivel Lift.

The aim of this chapter is to illustrate the construction and function of the Swivel Lift. To this end, the individual assemblies and components are described in the following sections.

2.1 Layout and Function

The Swivel Lift comprises the following main components (see Figure 1):

- The swivelling unit,
- the lifting unit and
- the platform.



2.1.1 Swivelling unit

The swivelling unit (see Figure 2) is the interface between the lifting unit and the vehicle. It allows the platform to be manually swivelled out of the vehicle by a total of 180°.

The Swivel Lift is connected to the vehicle by a main swivelling column. This allows the Swivel Lift to be swivelled out of the vehicle to the 90° position and from the 90° position back into the vehicle. In the 90° position, passengers / unoccupied wheelchairs can be moved from the platform into the vehicle or from the vehicle onto the platform.

The lifting unit is mounted on the secondary swivel column. The secondary column allows the Swivel Lift to be swivelled from the 90° position to the 180° position and from the 180° position to the 90° position. When in the 180° position, the platform can be raised from the ground to the upper limit position or lowered from the upper limit position to the ground.

Both swivelling columns automatically latch in their respective end positions. The swivelling columns are unlatched by pushing the respective unlatching lever downwards.

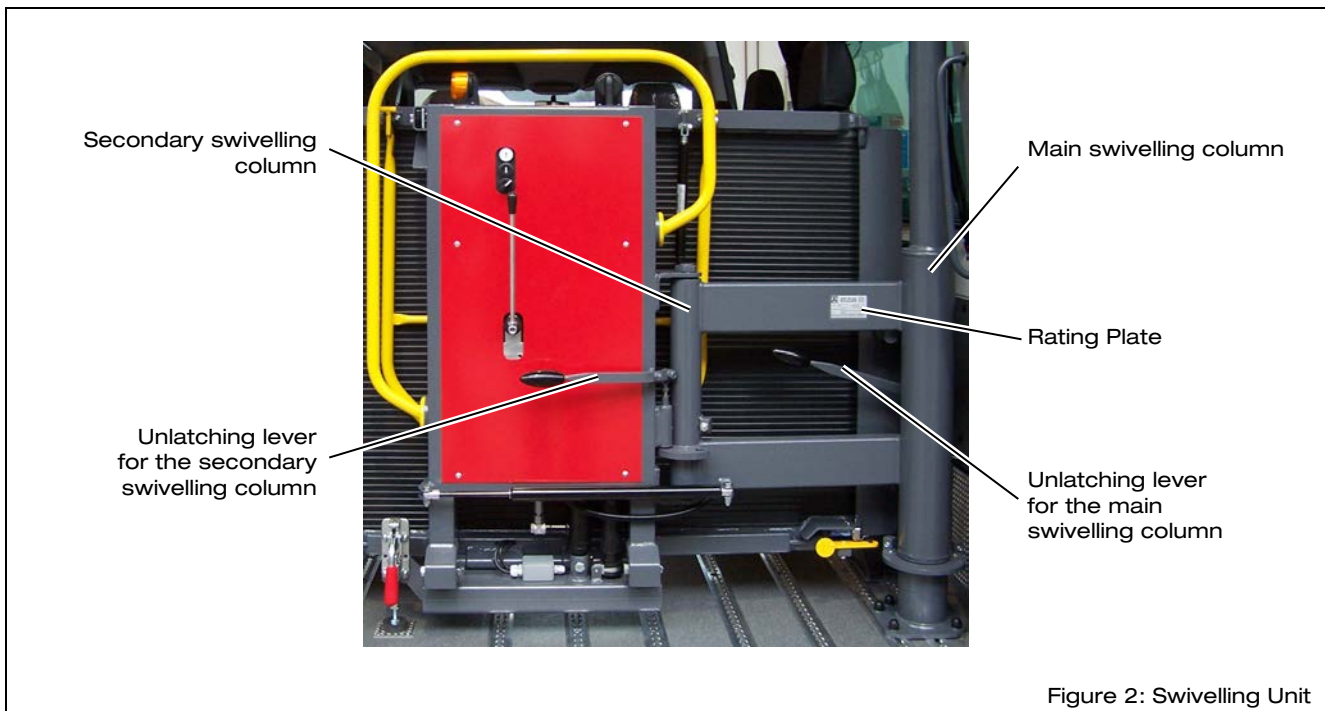


Figure 2: Swivelling Unit

2.1.2 Lifting unit

The lifting unit (see Figure 3) comprises the outer and inner lifting unit frames. It is connected to the secondary swivelling column by the outer lifting unit frame. The lifting and lowering movements are executed by the inner lifting unit frame which is powered by a hydraulic cylinder.

The hydraulic aggregate with electrically driven pump and control electronics for the lifting unit's functions are located behind covers within the outer lifting unit's frame. The hydraulic system can be manually operated in an emergency.

There are two blinking lights on the lifting unit. These operate as long as the Swivel Lift is switched ON.

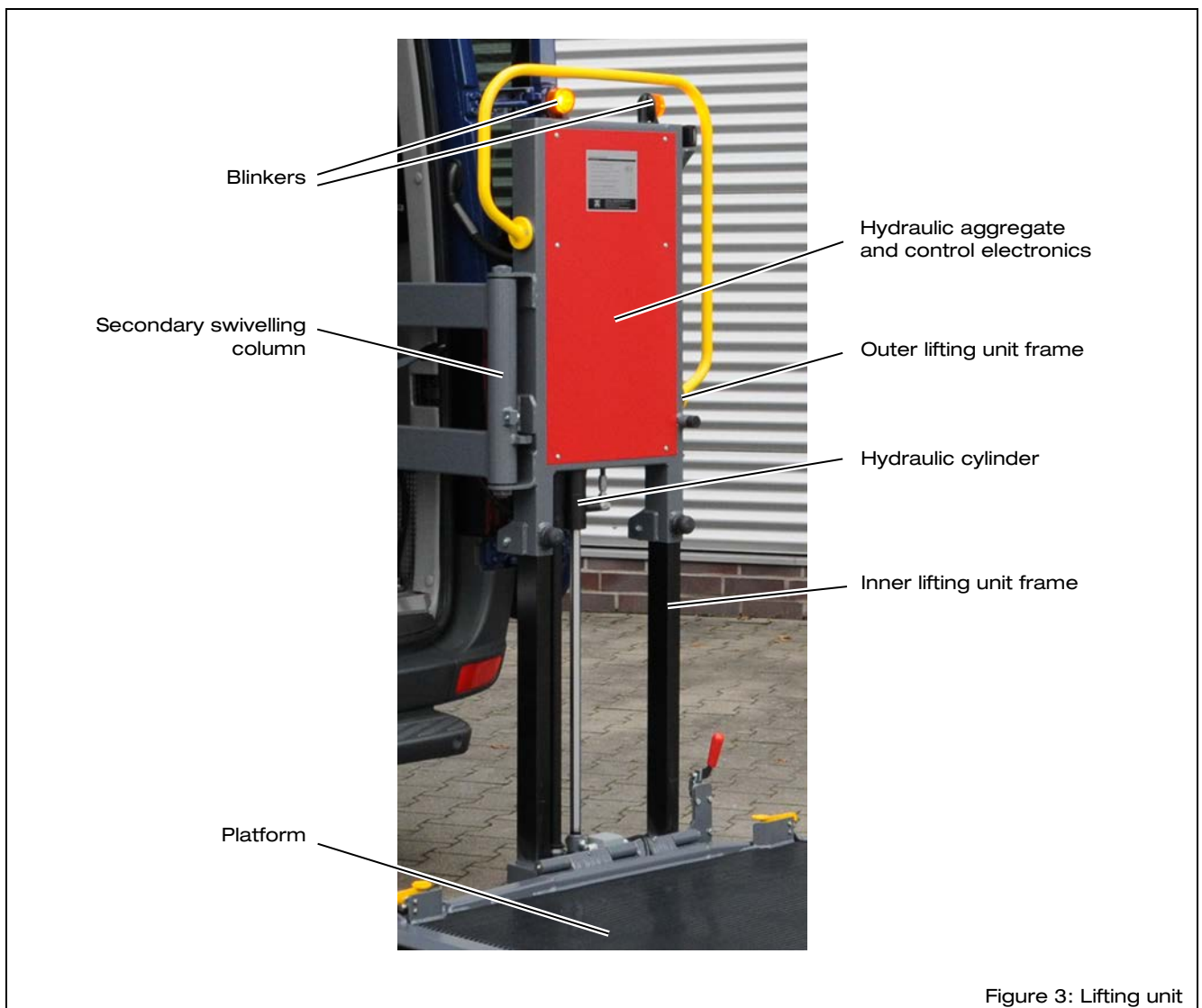


Figure 3: Lifting unit

2.1.3 Platform

The platform (see Figure 4) is fastened to the bottom of the inner lifting unit frame. The side guard rail prevents the wheelchair from rolling off the side of the platform, gives the passenger support and increases the sense of security when the platform is being raised or lowered. The gas pressure strut holds the side guard rail in the vertical position. Two roll-off guards prevent the wheelchair from rolling backwards or forwards off the platform. Before a passenger can access or leave the platform, the respective roll-off guard must be lowered by operating the foot-operated lever. Safety switches on both roll-off guards ensure that the platform can only be lowered or raised when both roll-off guards are raised and latched in this position.

The arrestor clamp secures the Swivel Lift in the driving position.



2.2 Operating Controls

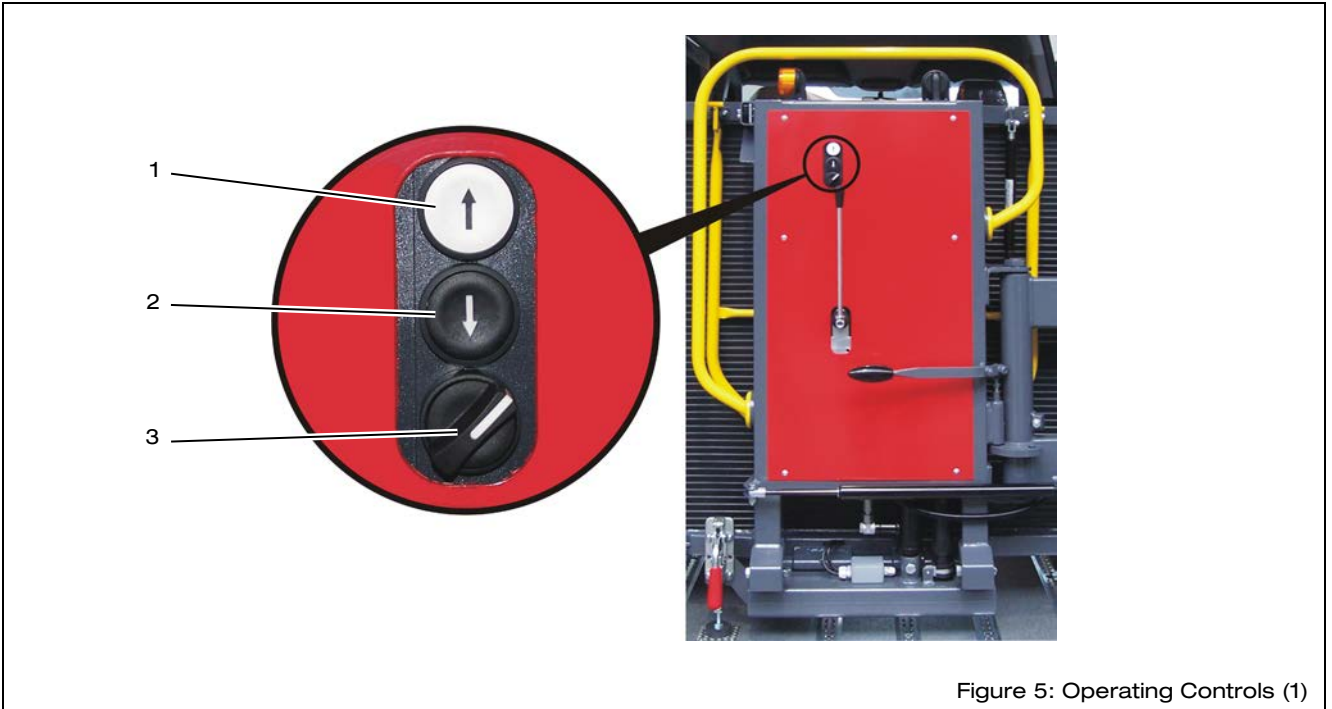


Figure 5: Operating Controls (1)

Item	Designation	Function
1	“Raise” push-button	Raises the platform.
2	“Lower” push-button	Lowers the platform.
3	Master switch	Switches the Swivel Lift ON and OFF.

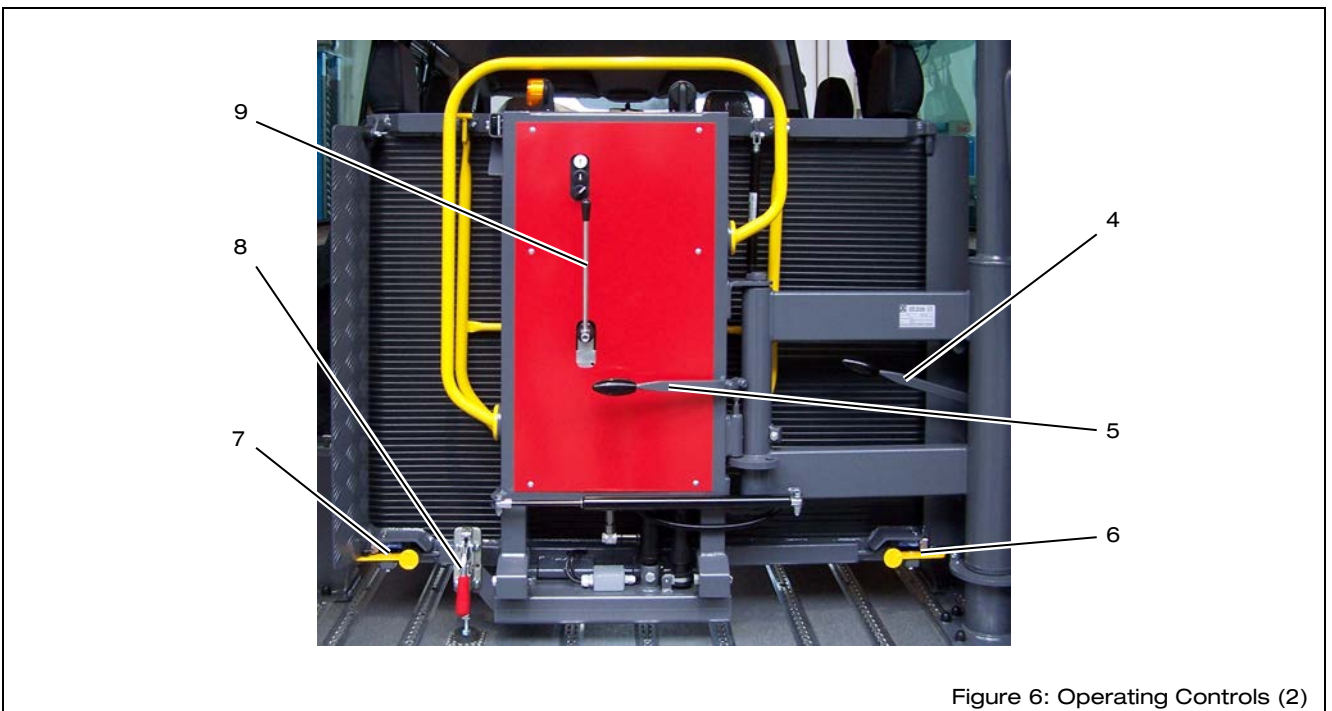


Figure 6: Operating Controls (2)

Item	Designation	Function
4	Unlatching lever for the main swivelling column	Unlatches the main swivelling column.
5	Unlatching lever for the secondary swivelling column	Unlatches the secondary swivelling column.
6	Foot-operated lever for the narrow roll-off guard	Unlatches the narrow roll-off guard.
7	Foot-operated lever for the wide roll-off guard	Unlatches the wide roll-off guard.
8	Arrestor clamp operating lever	Secures the Swivel Lift in the vehicle.
9	Manually-operated pump operating lever	Raises the platform in the emergency mode.

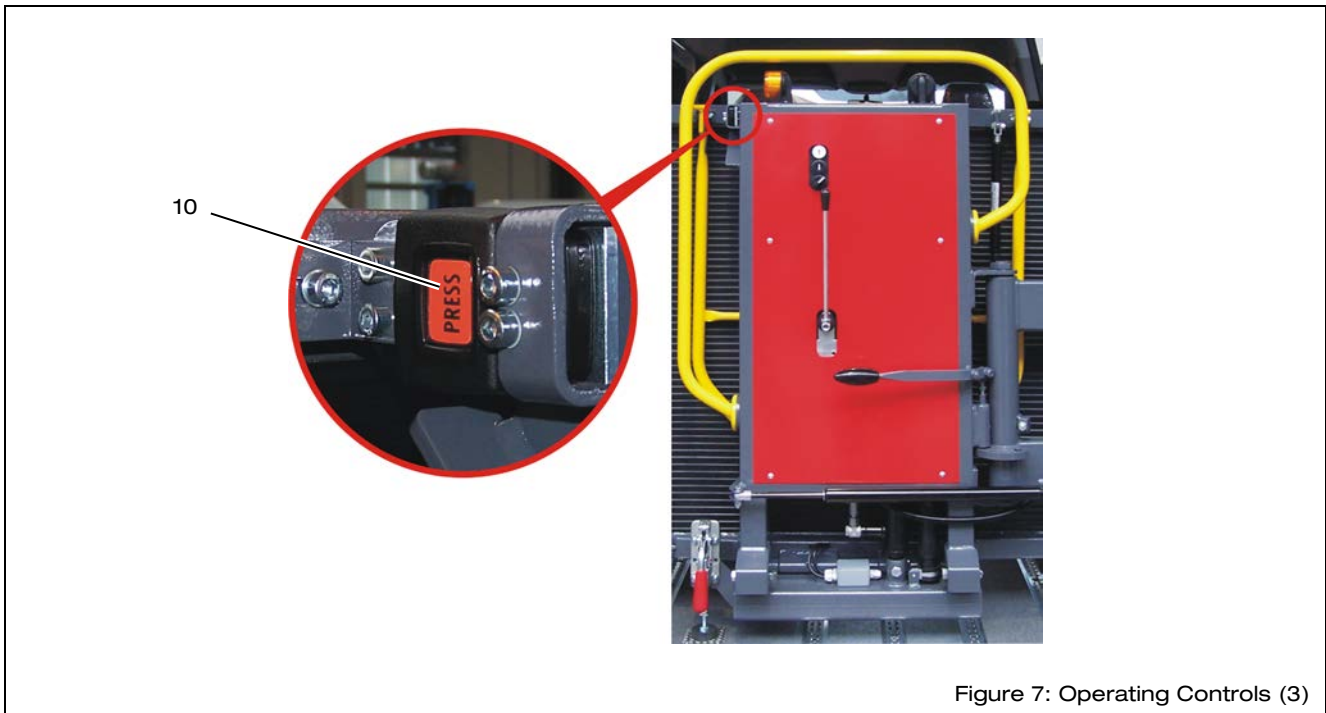


Figure 7: Operating Controls (3)

Item	Designation	Function
10	Platform unlatching button	Unlatches the platform, so that it can be deployed.

2.3 Technical Data

Designation	Swivel Lift BSL 350
Weight	approx. 150 kg
Usable platform area	approx. 1200 mm x 840 mm
Permissible number of persons on the platform	max. 1 person in a wheelchair
Carrying capacity	350 kg
Lifting height	900 mm
Lifting speed	10 cm/s
Max. lowering speed	15 cm/s
Equipment suitable for	outdoor use
Power unit	Electro-hydraulic
Operating / control voltage	12 V DC
Power consumption	0.5 kW
Rated current	65 A
Sound pressure emission	Below the legal guideline values
Permissible operating pressure	80 bar
Safeguard against excess hydraulic pressure	Pressure control valve: popping pressure, 81 bar
Safeguard against the platform lowering inadvertently if leaks occur in the hydraulic pipelines	Burst pipe protection valve
Hydraulic oil	Recommendation: ATF Dexron II, 1.1 litre

2.4 Rating Plate

A rating plate, which contains the fundamental data, is attached to the Swivel Lift (see Figure 8). The rating plate is attached to the swivelling unit (see Figure 2, page 14).

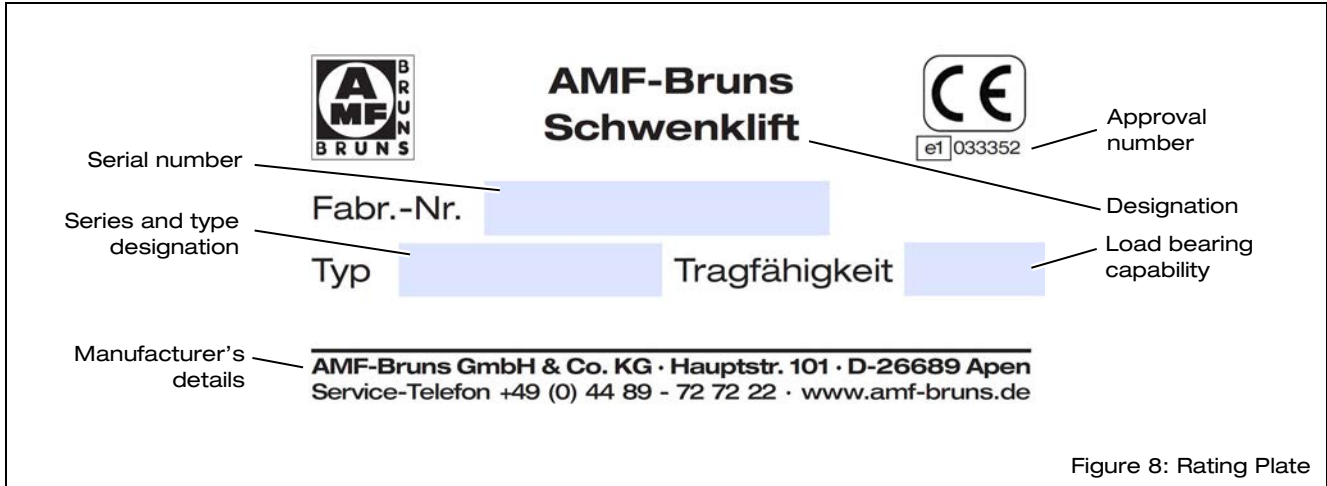


Figure 8: Rating Plate

3 Transportation

DANGER!



Dangers when transporting the Swivel Lift.

The Swivel Lift can fall over during transportation. There is a risk of personal injury and material damage.

Therefore:

- Transportation of the Swivel Lift is carried out by the manufacturer or by trained, experienced personnel.
-

4 Installation, Commissioning



The Swivel Lift must be installed in accordance with the AMF-Bruns Installation Instructions applicable to the vehicle in question.

DANGER!

Danger through incorrect installation work.

A number of risks of personal injury and material damage can be caused if the Swivel Lift is incorrectly installed in the vehicle.

Such risks of danger cannot only occur during installation but also as a result of installation not being carried out correctly.

Therefore:



- The Swivel Lift must only be installed by specialist personnel, who have been trained for this job by the manufacturer. This also applies to the electrical connections.
 - The vehicle manufacturer's body fitting guidelines must be adhered to.
 - A technical expert must be called in to inspect the Swivelling unit for correct installation and the effectiveness of the safety devices.
 - The technical expert must confirm the fact that operational safety of the Swivel Lift has been established by making a corresponding entry in the inspection log (see Chapter 11, page 47).
 - The Swivel Lift must not be used until this has been done.
-

5 Operation

5.1 Safety Regulations for Operation



The safety information given in the Safety chapter must have been read prior to operation (see Chapter 1, page 8).

WARNING!

Risk of injury and material damage if the Swivel Lift is operated in a faulty condition.

Therefore:

- Always carry out inspections/checks in accordance with the maintenance schedule before use (see Chapter 7, page 39).
 - For communal or commercial use: Have the Swivel Lift inspected at intervals of not more than one year by a technical expert.
-
-



WARNING!

Risk of injury through falling from the platform.

Persons who are not seated in a wheelchair can fall off the platform. There is a risk of injury.

Therefore:

- It is forbidden for persons to ride on the platform if they are not in a wheelchair.
-
-



WARNING!

Risk of injury and material damage if the Swivel Lift is operated by unauthorised persons.

Dangerous operating conditions may be caused if the Swivel Lift is operated by unauthorised persons.

Therefore:

- The Swivel Lift must only be operated by persons who are familiar with operating the Swivel Lift.
 - The Swivel Lift must never be operated by the passenger. Unless of course the passenger is also the driver of the vehicle.
 - Before driving off: Switch the Swivel Lift OFF at the master switch.
 - Before leaving the vehicle: Remove the ignition key, bring the Swivel Lift to the stowed position, switch the Swivel Lift OFF and lock the vehicle's doors.
-
-



WARNING!

Risk of injury if safety devices are removed or are defective.

If safety devices are modified, bypassed or removed, they will no longer fulfil their function.

Therefore:

- Never modify, bypass or remove safety devices.
 - Always make certain that safety devices are refitted if they have been removed (e.g. for maintenance or repair purposes).
-



WARNING!

Danger through road traffic collisions.

A number of risks are involved for the passenger operator when using the Swivel Lift on public highways.

Therefore:

- When parking the vehicle ensure that other road traffic is affected as little as possible.
 - Park the vehicle such that as little danger as possible is presented to passenger and operator by other road traffic.
 - Switch the vehicle's engine OFF, apply the vehicle's handbrake and switch the vehicle's hazard warning lights ON before operating the Swivel Lift.
-



CAUTION!

Risk of injury because of insufficient space to operate the Swivel Lift safely or through unsuitable ground conditions.

If there is insufficient space available when operating the Swivel Lift, there is a risk of being injured by the Swivel Lift or other objects (e. g. walls, posts or poles).

If the Swivel Lift is deployed onto uneven or soft ground or if the full area of the platform is not in contact with the ground there is a risk of injury through the ramp subsiding unexpectedly when subject to load. If the ground is uneven or if the difference in height between the platform and ground is too great, there is a risk of injury through the wheelchair tipping over.

These risks apply to both passenger and accompanying person.

Therefore:

- When parking the vehicle, make certain that there is sufficient space to operate the Swivel Lift.
 - Only use the deployed Swivel Lift when its full area is in contact with a firm, level surface.
-



5.2 Switching OFF in an Emergency

⇒ Switch the master switch (3) to the “OFF” position (see Figure 9).

The Swivel Lift comes to an immediate standstill.



Figure 9: Master switch

5.3 Parking the Vehicle

- ⇒ Make certain that there is sufficient space available to operate the Swivel Lift.
- ⇒ Apply the vehicle's handbrake.
- ⇒ Switch the vehicle's engine OFF and remove the ignition key.
- ⇒ Switch the vehicle's hazard warning lights ON.
- ⇒ Open the rear doors.
- ⇒ When operating the Swivel Lift, make certain that the rear doors cannot swing closed due to wind or other influences.

5.4 Swivelling Out to the 90° Position

CAUTION!

Risk of injury through swivelling movements.

Persons and objects that are in the swivelling range of the Swivel Lift can be hit when the Swivel Lift is being swivelled. This can cause injuries through crushing, impact or shearing.

Therefore:

- Make certain that there are no persons or objects within the swivelling range of the Swivel Lift when swivelling it.



⇒ Switch the master switch (3) to the “ON” position (see Figure 9, page 24).

The blinkers blink.

The Swivel Lift is ready for operation.

⇒ Move the lever of the arrestor clamp (8) upwards as far as it will go.

The Swivel Lift is released (see Figure 10).



Clamped



Released

Figure 10: Arrestor Clamp

⇒ Push the main swivelling column unlatching lever (4) downwards and hold it in this position (see Figure 6, page 17).

⇒ Swivel the lifting unit out of the vehicle.

⇒ Release the main swivelling column unlatching lever (4).

⇒ Swivel the lifting unit in to the stop in the 90° position (see Figure 11, page 26).

The main swivelling column latches in this position.



Figure 11: 90° Position

5.5 Folding the Platform Down

CAUTION!

Risk of injury to the operator and other persons in the vicinity of the Swivel Lift.

There is a risk of being crushed or hit by the platform and side guard rail when folding them out to the operating position.

Therefore:



- Never reach into the platform's hinges when folding the platform up or down.
- Do not reach between the platform and the floor of the vehicle when folding the platform up or down.
- Do not reach between the platform and the lifting unit when folding the platform up or down.
- Never reach into the hinges on the platform floor when folding the side guard rail up or down.
- Inform other persons of the dangers.

⇒ Press the platform unlatching button (10) (see Figure 12, page 27).



Figure 12: Folding the Platform Down

- ⇒ Fold the platform down to its limit.
- ⇒ Raise the side guard rail to the vertical position (see Figure 13).



Figure 13: Raising the Side Guard Rail

- ⇒ Raise the narrow roll-off guard so far that it latches in position (see Figure 14, page 28).

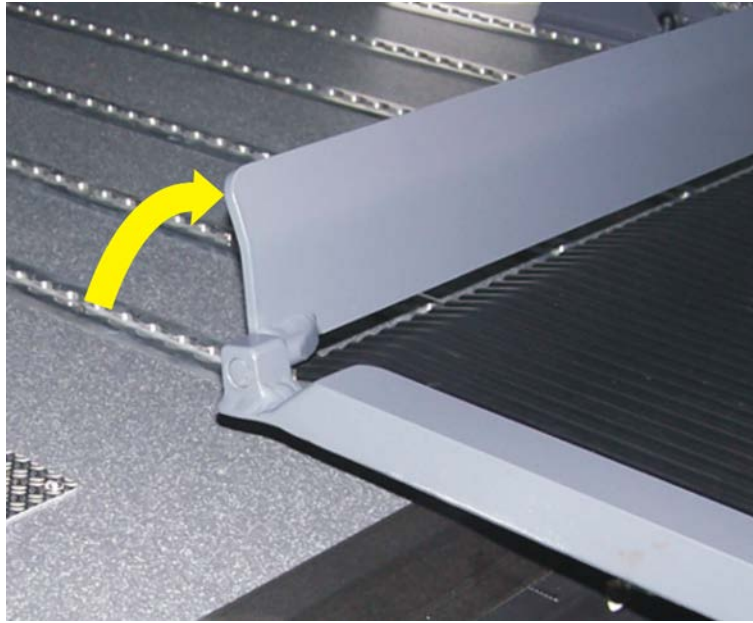


Figure 14: Raising the Narrow Roll-Off Guard

5.6 Disembarking a Passenger / Unloading a Wheelchair



If no passenger is to be disembarked or no unoccupied wheelchair is to be unloaded, continue reading from Section 5.7, page 29.



CAUTION!

Risk of injury when lowering the platform onto the floor of the vehicle.

When lowering the platform there is a risk of injury through feet and hands becoming trapped beneath the platform.

Therefore:

- Do not reach into the gap between access ramp and floor of the vehicle.
- Inform other persons of the danger.
- Stop the Swivel Lift if necessary.

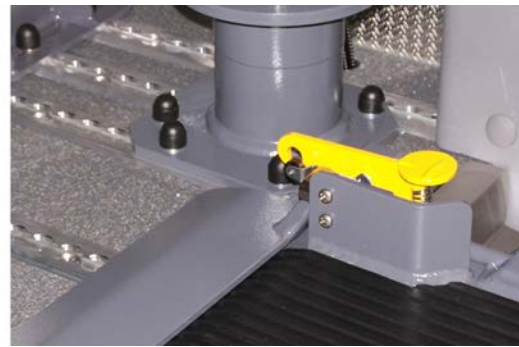
⇒ Press and hold the “Lower” push-button (2) as long as necessary to lower the platform onto the floor of the vehicle.

⇒ Operate the foot-operated lever for the narrow roll-off guard (6) (see Figure 15, page 29).

The narrow roll-off guard unlatches and lowers to the floor.



Unlatching the roll-off guard



Roll-off guard lowered

Figure 15: Lowering the Narrow Roll-Off Guard

- ⇒ Make certain that the wide roll-off guard is raised and latched in that position.
- ⇒ Release the passenger restraint systems.
- ⇒ Detach and remove the restraint systems from the wheelchair.
- ⇒ Release the wheelchair's parking brake.
- ⇒ Switch the motor of an electrically driven wheelchair ON.
- ⇒ Accompany the passenger out of the vehicle and onto the platform. / Drive or push the unoccupied wheelchair out of the vehicle, onto the platform.
- ⇒ Apply the wheelchair parking brake.
- ⇒ Switch the motor of an electrically-driven wheelchair OFF.
- ⇒ Raise the narrow roll-off guard so far that it latches in position.
- ⇒ Press and hold the "Raise" push-button (1) as long as necessary to raise the platform to the upper limit position.

5.7 Swivelling Out to the 180° Position

- ⇒ Push the secondary swivelling column unlatching lever (5) downwards and hold it in this position (see Figure 6, page 17).
- ⇒ Swivel the lifting unit out of the vehicle.
- ⇒ Release the secondary swivelling column unlatching lever (5).
- ⇒ Swivel the lifting unit in to the stop in the 180° position (see Figure 16, page 30).

The secondary swivelling column latches in this position.



Figure 16: 180° Position

5.8 Lowering the Platform

CAUTION!

There is a risk of injury to the passenger when lowering the platform. The passenger can fall from the platform.

Therefore:



- Make sure that the wheelchair is positioned in the centre of the platform.
- Make certain that the wheelchair's parking brakes are applied and that the motor of an electrically driven wheelchair is switched OFF.
- Do not lower the platform until this has been done.
- Make sure that the passenger remains calm. Talk to the passenger to keep him / her calm.

CAUTION!

Risk of injury when lowering the platform.

When the platform is lowered, there is a risk of feet and legs becoming trapped beneath the platform (see Figure 17, page 31).

Therefore:



- Keep a safe distance from the lowering platform when operating the Swivel Lift.
- Inform other persons of the danger.
- Stop the Swivel Lift if necessary.

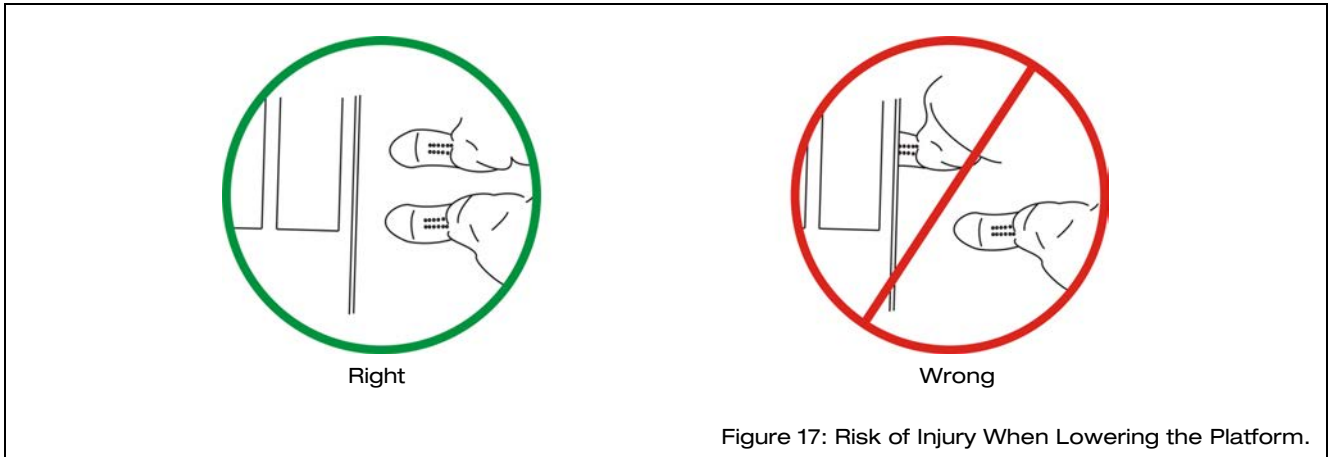


Figure 17: Risk of Injury When Lowering the Platform.

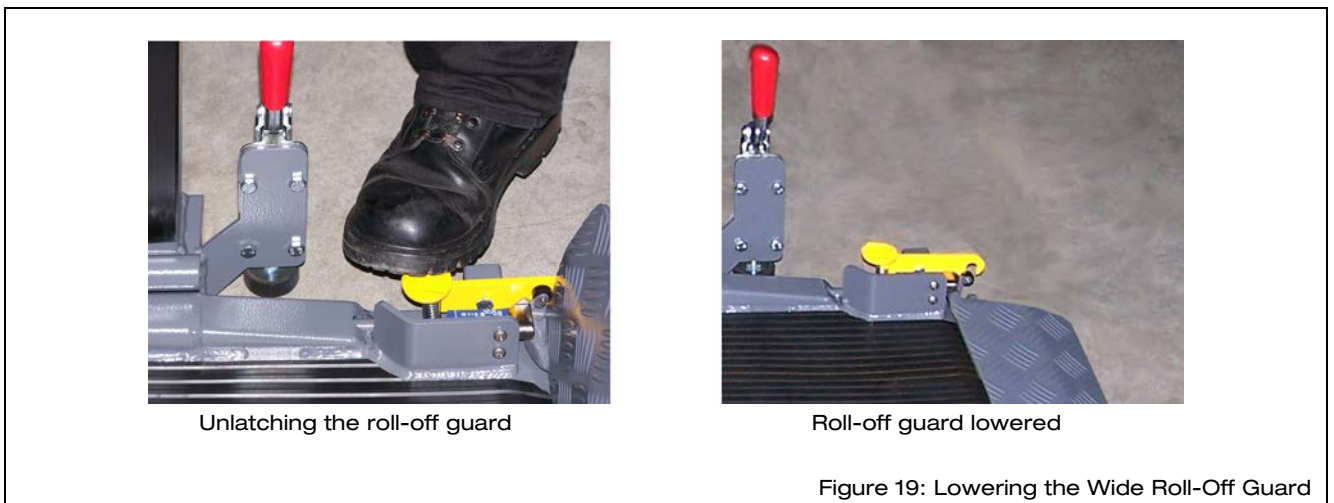
⇒ Press and hold the “Lower” push-button (2) as long as necessary to lower the platform onto the ground (see Figure 18).



Figure 18: Platform on the Ground

⇒ Operate the foot-operated lever (7) for the wide roll-off guard (see Figure 19).

The wide roll-off guard unlatches and lowers to the ground.



Unlatching the roll-off guard

Roll-off guard lowered

Figure 19: Lowering the Wide Roll-Off Guard

If there is a passenger / wheelchair on the platform:

- ⇒ Release the wheelchair's parking brake.
- ⇒ Switch the motor of an electrically driven wheelchair ON.
- ⇒ Accompany the passenger off the platform to a safe place / Drive or push the unoccupied wheelchair off the platform to a safe place
- ⇒ Apply the wheelchair parking brake.
- ⇒ Switch the motor of an electrically-driven wheelchair OFF.

5.9 Raising the Platform

CAUTION!

There is a risk of injury to the passenger when raising the platform.

The passenger can fall from the platform.

Therefore:



- Make sure that the wheelchair is positioned in the centre of the platform.
 - Make certain that the wheelchair's brakes are applied and that the motor of an electrically driven wheelchair is switched OFF.
 - Make certain that the roll-off guards are raised and latched.
 - Do not raise the platform until this has been done.
 - Make sure that the passenger remains calm. Talk to the passenger to keep him / her calm.
-

If a passenger / wheelchair is to be rolled onto the platform:

- ⇒ Accompany the passenger onto the platform. / Drive or push the unoccupied wheelchair onto the platform.
- ⇒ Apply the wheelchair parking brake.
- ⇒ Switch the motor of an electrically-driven wheelchair OFF.
- ⇒ Raise the wide roll-off guard so far that it latches in position.
- ⇒ Press and hold the "Raise" push-button (1) as long as necessary to raise the platform to the upper limit position.

5.10 Swivelling In to the 90° Position

- ⇒ Push the secondary swivelling column unlatching lever (5) downwards and hold it in this position (see Figure 6, page 17).
- ⇒ Swivel the lifting unit into the vehicle.
- ⇒ Release the secondary swivelling column unlatching lever (5).
- ⇒ Swivel the lifting unit in to the stop in the 90° position (see Figure 20).

The secondary swivelling column latches in this position.



Figure 20: 90° Position

5.11 Embarking a Passenger / Loading a Wheelchair



If there is no passenger or unoccupied wheelchair on the platform, continue reading from Section 5.12, page 34.

- ⇒ Press and hold the “Lower” push-button (2) as long as necessary to lower the platform onto the floor of the vehicle.
- ⇒ Operate the foot-operated lever for the narrow roll-off guard (6) (see Figure 15, page 29).

The narrow roll-off guard unlatches and lowers to the floor.

- ⇒ Release the wheelchair's parking brake.
- ⇒ Switch the motor of an electrically driven wheelchair ON.

- ⇒ Accompany the passenger from the platform to the position in the vehicle foreseen for the journey. / Drive or push the unoccupied wheelchair from the platform to the position in the vehicle foreseen for the journey.
- ⇒ Apply the wheelchair parking brake.
- ⇒ Switch the motor of an electrically-driven wheelchair OFF.
- ⇒ Secure the wheelchair in the vehicle using the restraint systems provided.
- ⇒ Secure the passenger with the personal restraint systems provided in the vehicle.
- ⇒ Raise the narrow roll-off guard so far that it latches in position.
- ⇒ Press and hold the “Raise” push-button (1) as long as necessary to raise the platform to the upper limit position.

5.12 Moving the Swivel Lift to the Driving Position

- ⇒ Operate the foot-operated lever for the narrow roll-off guard (6) (see Figure 15, page 29).

The narrow roll-off guard unlatches and lowers to the floor.

- ⇒ Fold the side guard rail down, such that it lies on the floor of the platform
- ⇒ Fold the platform up, until it latches in position.
- ⇒ Push the main swivelling column unlatching lever (4) downwards and hold it in this position (see Figure 6, page 17).
- ⇒ Swivel the lifting unit into the vehicle.
- ⇒ Release the main swivelling column unlatching lever (4).
- ⇒ Swivel the lifting unit in to the stop in the 0° position (see Figure 21, page 35).

The main swivelling column latches in this position.

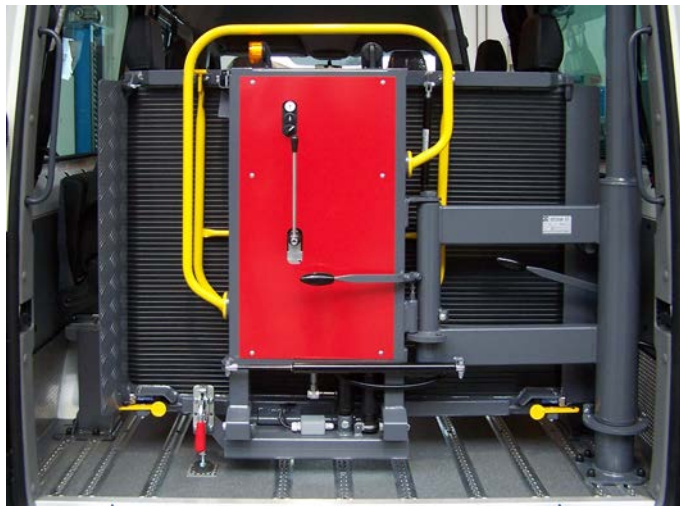


Figure 21: 0° Position

⇒ Push the lever on the arrestor clamp (8) downwards to the limit.

The Swivel Lift is clamped in position (see Figure 10, page 25).

⇒ Switch the master switch (3) to the “OFF” position (see Figure 9, page 24).

The Swivel Lift is switched OFF.

⇒ Close the vehicle door.

6 Emergency Mode

Should the hydraulic system's electrical drive fail, an emergency situation for the passenger can be avoided by operating the hydraulic system manually.

WARNING!

Risk of injury and material damage if the Swivel Lift is permanently operated in the emergency mode.

The failure of the hydraulic system's electrical drive can be caused by other, undetected damage to the Swivel Lift. This damage can cause danger in the emergency mode.

The operating personnel can be physically overburdened by the necessity to operate the Swivel Lift manually in the emergency mode. An emergency situation can arise for the passenger on the platform.

Therefore:

- Before operating in the emergency mode, switch the master switch (3) to the "OFF" position.
- Only use the emergency mode to prevent an emergency situation for the passenger!
- Do not use the Swivel Lift again until repairs have been carried out successfully.
- Initiate repairs.



6.1 Raising in the Emergency Mode

⇒ Move the manually-operated pump operating lever (9) up and down until the platform has been raised the desired position (see Figure 22).



Figure 22: Raising in the Emergency Mode

6.2 Lowering in the Emergency Mode

- ⇒ Remove the operating lever from the manually-operated pump (9).
- ⇒ Remove the securing screws from the cladding.
- ⇒ Remove the cladding (see Figure 23).
- ⇒ Press the emergency lowering valve (see Figure 24, page 38) downwards and turn it slowly in an anti-clockwise direction.

The platform will lower.

When the platform has reached the desired position:

- ⇒ Press the emergency lowering valve downwards and turn it as far as it will go in a clockwise direction.

The emergency lowering valve is closed, the platform remains in the desired position

- ⇒ Replace the cladding.
- ⇒ Screw the operating lever back onto the manually-operated pump.

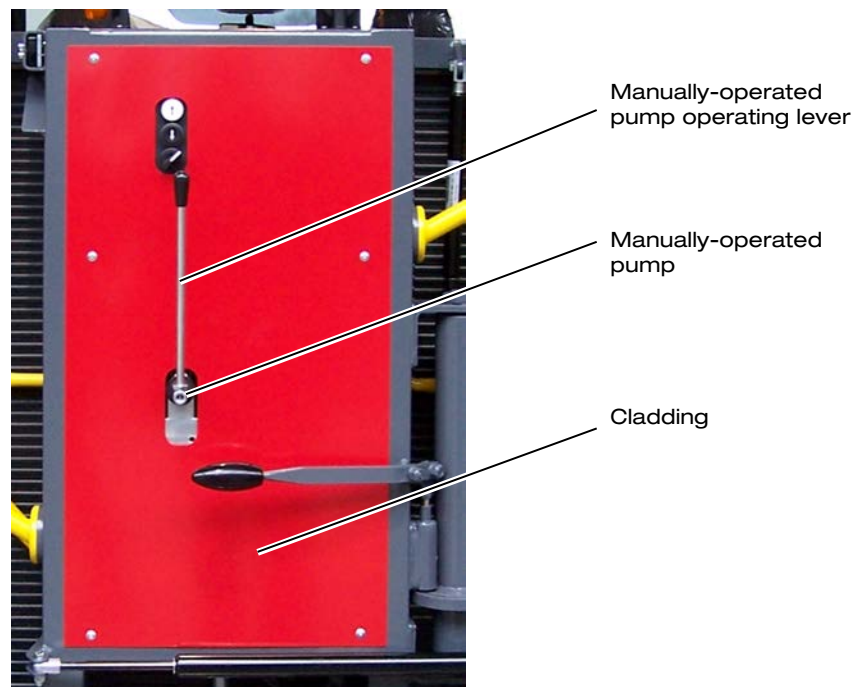
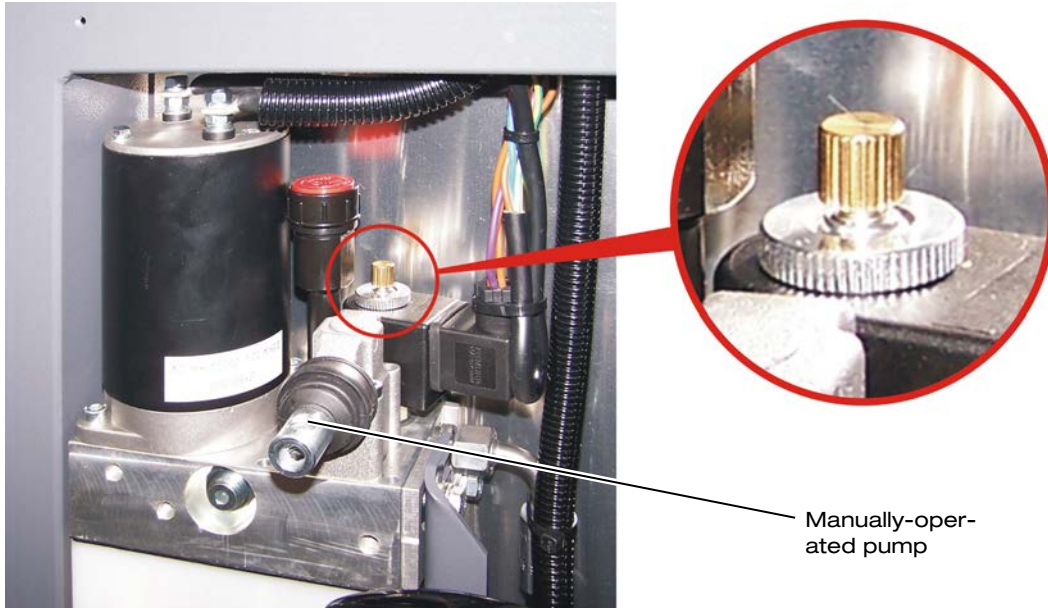


Figure 23: Removing the Cladding



Manually-oper-
ated pump

Figure 24: Emergency Lowering Valve

7 Maintenance and Repair

7.1 Safety Regulations for Maintenance and Repair



Read the safety information before carrying out maintenance and repair work (see Chapter 1, page 8).

WARNING!

Risk of injury if protective and safety devices are removed or are defective.

If protective and safety devices are removed, they will no longer fulfil their function.

Therefore:

- Always refit protective and safety devices if they have been removed (e. g. for maintenance or repair purposes).
 - Never modify, bypass or remove protective and safety devices.
-



WARNING!

Risk of personal injury and material damage through the springs.

If springs under tension are removed or if gas pressure springs are taken apart, the sudden, uncontrolled release of spring tension can cause severe injuries or material damage.

Therefore:

- Do not remove springs if they are under tension.
 - Do not take gas pressure springs apart. They are under high pressure.
-



WARNING!

Personal injury and material damage can be caused by using inferior quality spare parts.

The manufacturer will accept no liability whatsoever for damage or injury caused by the use of non-original spare parts or spare parts that have not been approved of by the manufacturer.

Therefore:

- Use only original spare parts or spare parts that have been approved of by the manufacturer.
-





WARNING!

Risk of injury and material damage if maintenance and repair work is not carried out correctly.

Therefore:

- Only allow specialist personnel to carry out maintenance and repair work.
- If repair work has been carried out on load bearing parts, this must be inspected by a technical expert.

7.2 Routine Maintenance Work

The maintenance schedule below lists the maintenance work that must be carried out at regular intervals.

Contact the customer service department for maintenance work that must only be carried out by a specialist (see Chapter 15, page 70).

7.2.1 Service life of components

The service life of the hydraulic hoses is four years.

Maintenance-free components are designed to have the same service life as the entire service life of the Swivel Lift.

7.2.2 Maintenance schedule

Interval	Activity	Refer to
Daily	Functional test of the safety devices.	Section 7.3, page 41
	Carry out a visual inspection for damage, faults and leaks. Initiate repairs if necessary.	
	When operating the Swivel Lift, listen for any unusual noises and look for signs of jerking when the platform is being raised / lowered. Initiate repairs if necessary.	
	When operating the swivelling unit, observe that it moves freely and that the latches operated correctly. Initiate repairs if necessary.	
Yearly	Inspect the hydraulic hoses.	Section 7.4, page 42
	Check that all fastenings are secure.	
	Have the Swivel Lift inspected by a technical expert.	Section 7.5, page 42
Every four years	Renew the hydraulic hoses.	
As required	Clean the Swivel Lift.	

7.2.3 Maintenance records

Enter maintenance and repair work that has been carried out into the maintenance record provided for this purpose (see Section 7.6, page 43). This provides a traceable record of maintenance work.

For records of maintenance work over and above this, it is recommended that you keep your own lists.

7.3 Functional Test of the Safety Devices

7.3.1 Side guard rail

- ⇒ Check that the side guard rail is kept in its respective position by the gas pressure strut.
- ⇒ Check that the hinges between the side guard rail and the base of the platform are in good condition by giving it a shake.
- ⇒ If the side guard rail does not function correctly, do not use the Swivel Lift until repairs have been carried out successfully.

7.3.2 Roll-off guards

- ⇒ Check that the roll-off guards are latched correctly when they are in the raised position.
- ⇒ Carry out a separately check for each of the roll-off guard to see whether it is possible to raise or lower the platform when the roll-off guards are lowered.
- ⇒ Initiate repairs if the roll-off guards do not latch correctly or if it is possible to raise or lower the platform with the roll-off guards lowered. Do not use the Swivel Lift until repairs have been carried out successfully.

7.3.3 Blinkers

- ⇒ Check that the blinkers on the lifting unit start to blink as soon as the Swivel Lift is switched ON at the master switch (3).

7.4 Inspection of the Hydraulic Hoses.

The inspection of hydraulic hoses extends to:

- Seating of the fastenings
- Damage
- Ageing
- Brittleness
- Porosity

⇒ If damage is found, have the hydraulic hoses replaced.

7.5 Yearly Inspection

The yearly inspection by a technical expert is basically a visual inspection and functional test. It extends to

- the condition of all components and devices,
- an inspection for modifications that have been made to the Swivel Lift,
- the completeness and effectiveness of protective and safety devices and
- the completeness of the inspection log.



For detailed information regarding the yearly inspection of the Swivel Lift by a technical expert: see Chapter 11, "Inspection Log", page 47.



7.6 Maintenance and Repair Record

Maintenance Work Carried Out		
Date	Signature	Remarks / work carried out

8 De-Commissioning and Conservation

For queries regarding de-commissioning and conservation, contact our customer services department (see Chapter 15, page 70).

9 Disposal

When the Swivel Lift's useful life has expired, it must only be disposed of by qualified specialists. The manufacturer will accept no liability for damage caused by incorrect disposal.

10 Faults and Troubleshooting



WARNING!

Risk of severe injury and material damage if repair work is carried out incorrectly.

Therefore:

- Only allow specialist personnel to carry out repair work.

If faults occur when operating the Swivel Lift, proceed as described in the following troubleshooting table. Contact the customer service department if faults are encountered which cannot be remedied using the information and measures given in the table (see Chapter 15, page 70).

Fault	Possible Cause	Remedial measures
The Swivel Lift neither raises nor lowers. The blinkers do not blink.	The Swivel Lift is switched OFF.	Switch the Swivel Lift ON at the master switch (3).
	The fuse has blown.	Check the fuse and replace if necessary.
	The vehicle's battery is discharged or defective.	Check the vehicle's battery and re-charge or replace it as necessary.
	The electrical connection is faulty.	If necessary, operate the Swivel Lift in the emergency operating mode (see Chapter 6, page 36). Then take the Swivel Lift out of operation. Initiate repairs.
	The master switch is defective.	
The Swivel Lift neither raises nor lowers. The blinkers blink.	At least one of the roll-off guards is not raised.	Raise the roll-off guards.
	The switch on at least one roll-off guard is defective.	If necessary, operate the Swivel Lift in the emergency operating mode (see Chapter 6, page 36). Then take the Swivel Lift out of operation. Initiate repairs.
	The "Raise" (1) or "Lower" (2) push-button is defective.	
	There is a fault in the Swivel Lift's electrical or hydraulic system.	
The platform of the Swivel Lift lowers slowly of its own accord.	The lowering valve does not close correctly.	Do not operate the Swivel Lift until repairs have been carried out successfully.
	The emergency lowering valve is open.	Close the emergency lowering valve (see Section 6.2, page 37).

Fault	Possible Cause	Remedial measures
The Swivel Lift makes noises (e.g. rattles) when driving.	The Swivel Lift fasteners have become loose.	Check tighten all fastening bolts / screws.
A roll-off guard does not latch in position.	The latch mechanics are defective.	Do not operate the Swivel Lift until repairs have been carried out successfully.
A latch on the swivelling unit does not function.		

11 Inspection Log

Before using the Swivel Lift for the first time, it must be inspected by a technical expert.

If the Swivel Lift is used commercially or communally, this inspection must be repeated at intervals of not more than one year

During inspection, faults affecting the safety should be systematically identified and remedial action taken.

The items to be inspected are listed in the inspection list (see Section 11.2, page 49).



A technical expert is someone who, by virtue of their technical training and experience, has sufficient knowledge in the field of lifting platforms and is sufficiently familiar with the relevant national occupational health and safety regulations, accident prevention regulations and recognised rules of sound engineering practice (e.g. BG rules, DIN standards, VDE provisions, technical rules and regulations of other member states of the European Union or Turkey or other signatory states of the Agreement of the European Economic Area) that they are able to assess the safe working condition of such lifting platforms.



11.1 Inspection Log Master Data Sheet

Master Data Sheet for Swivel Lift BSL 350

Serial No. / Type*

Number plate
.....

Owner
.....
.....
.....

Year built
.....

Commissioned on

* see rating plate

11.2 Inspection List

For a routine, yearly inspection by a technical expert (see information, page 47).

Mechanical parts	
Main swivelling column anchorage points in the vehicle	All securing points in / on the vehicle are in a perfect, tight condition
Pivoting elements	All bolts and screwed connections are in a perfect, tight condition
Latches and unlatching levers on the main and secondary swivelling columns	Trouble-free latching in all positions
Platform latching	Firm latching in the folded up position
Lifting unit latching	Firm and silent latching in the swivelled in position
Roll-off guards on the platform	Secure latching in the raised position Fault-free function of all latch components
Side guard rail	Fault-free function of the gas pressure strut
General	Functional test and visual inspection of the condition of the entire Swivel Lift

Hydraulic system	
Power aggregate	Functional check of the valves
Hydraulic hoses	Inspect all hydraulic hoses and the burst pipe protection for leaks Connections in accordance with the wiring diagram
Hydraulic cylinder	Check for leaks and functionality

Electrical system	
Push-buttons	Functional check
Master switch	Functional check
Blinkers	Functional check
Electrical cables	Inspection of the connections in accordance with the electrical circuit diagram Inspection of the cables for damage to the insulation



11.3 Inspection Results

Results of the inspection prior to commissioning.

To be observed if installed by a third-party company

Installation inspection for

Serial No. / Type*

Number plate

Installation has been carried out correctly!

Place / date

.....
Installation company / Company stamp

.....
Technical expert / Signature

* see rating plate



Inspection result of a yearly inspection / a re-inspection

Serial No. / Type*

Number plate

Sheet No.

On the Swivel Lift was subject to a yearly inspection in accordance with the inspection list / a re-inspection.

No / the following defects were found:

.....
.....
.....
.....

There are no issues to preclude continued operation / Re-inspection is required.

Place /date

.....
Company / Company stamp

.....
Signature (technical expert)

Note has been taken of the result of the inspection.

All deficiencies have been rectified.

Confirmation by the owner or his representative with date and signature

.....
Place / date

.....
Signature (owner)

* see rating plate



Inspection Log

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Signature (owner)

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* see rating plate



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Signature (owner)

* see rating plate



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Signature (owner)

* see rating plate



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Company / Company stamp

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Signature (owner)

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Company / Company stamp

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All deficiencies have been rectified.

Confirmation by the owner or his representative with date and signature

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Company / Company stamp

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Note has been taken of the result of the inspection.

All deficiencies have been rectified.

Confirmation by the owner or his representative with date and signature

.....
Place / date

.....
Signature (owner)

* see rating plate

12 Spare Parts

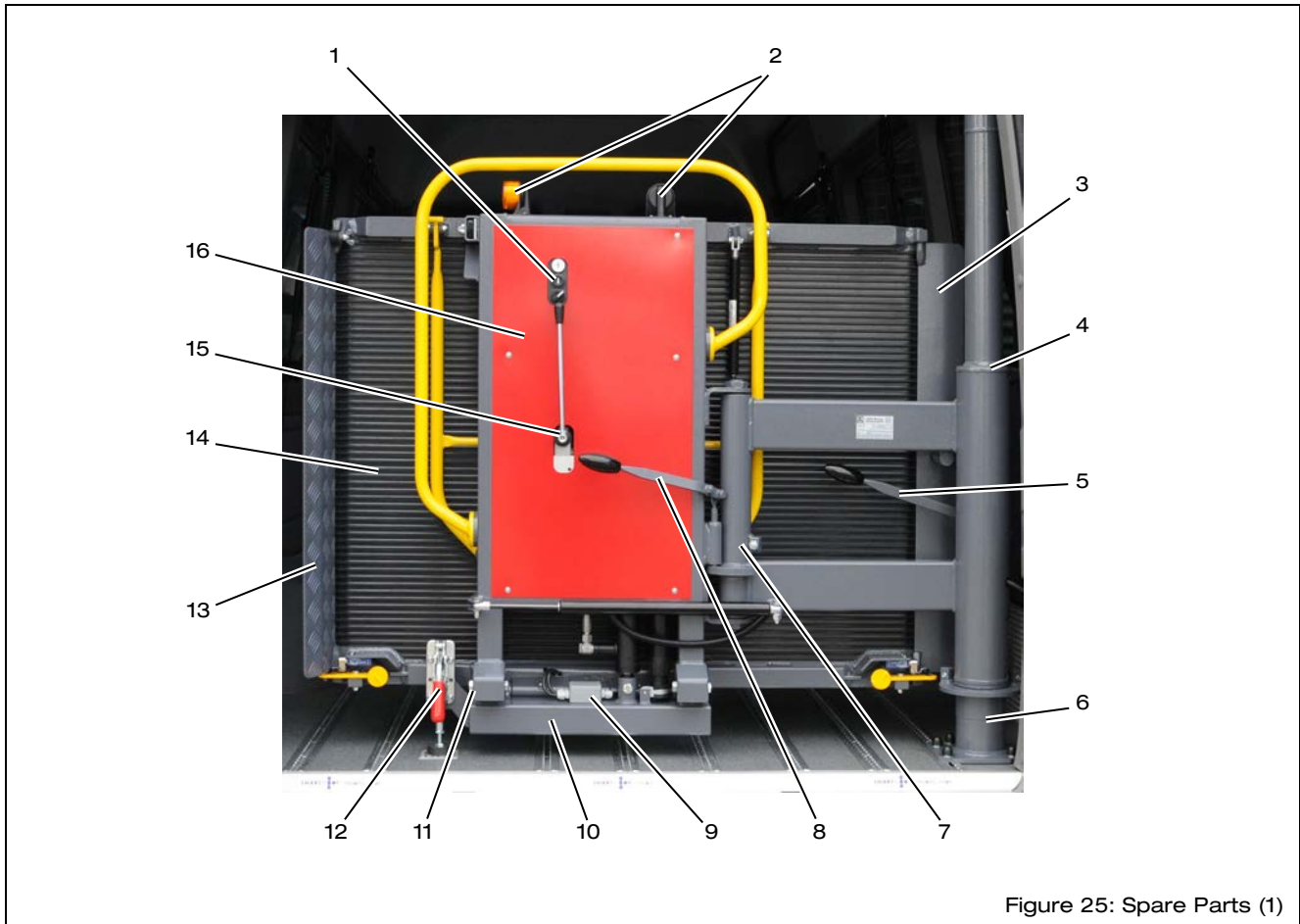


Figure 25: Spare Parts (1)

No.	Article No.	Designation
1	10003003	Switch/push-button unit
2	10019708	LED blinker pre serial no. A6246, year built 10/2015
	200350941	LED blinker post serial no. A6246, year built 10/2015
3	H10501026	Roll-off guard, narrow
4	H10501162	Bearing cap
	H10501180	Swivelling column complete with foot and operating lever

No.	Article No.	Designation
5	10011409	Gas pressure strut
	10011725	Ball knob
	10019052	Latch bolt with slit
	10022075	Eye bolt long for the main swivelling column
	H10501057	Spacer sleeve
	H10501075	Operating lever for the main swivelling column
6	10008023	Grooved ball bearing
	10011666	Angular contact ball bearing
7	10011408	Tapered roller bearing
	H10501181	Hinge shaft for the secondary swivelling column, incl. 2 flat nuts
8	10011725	Ball knob
	10022076	Eye bolt, short
	H10501080	Operating lever for the secondary swivel- ling column
9	10010254	Aluminium housing 2AG2
10	H10501185	Inner Swivel Lift lifting unit (stroke 750 mm)
11	10003988	Guide roller for the outer lifting unit
	10005189	Bearing bolt for the pressure roller
12	10019552	Push rod clamp
13	H10501025	Roll-off guard, wide
14	200159311	Wide-grooved rubber mat BSL 350
15	10015229	Manually-operated pump including operat- ing lever
16	200121091	Front-side cladding

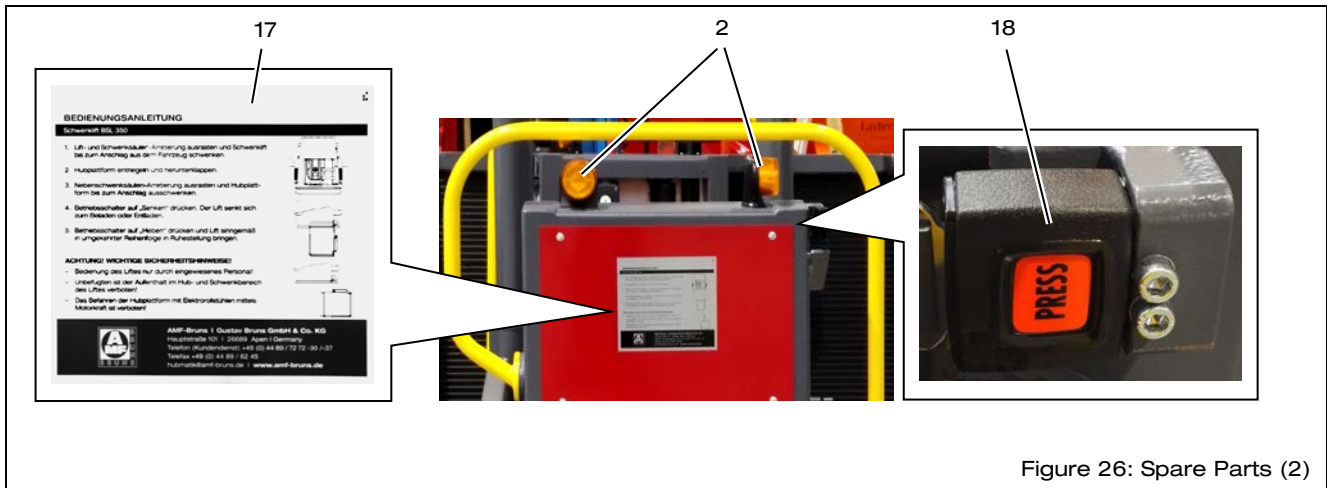


Figure 26: Spare Parts (2)

No.	Article No.	Designation
17	10015559	Swivel Lift sticker
18	H150325	Latch lock

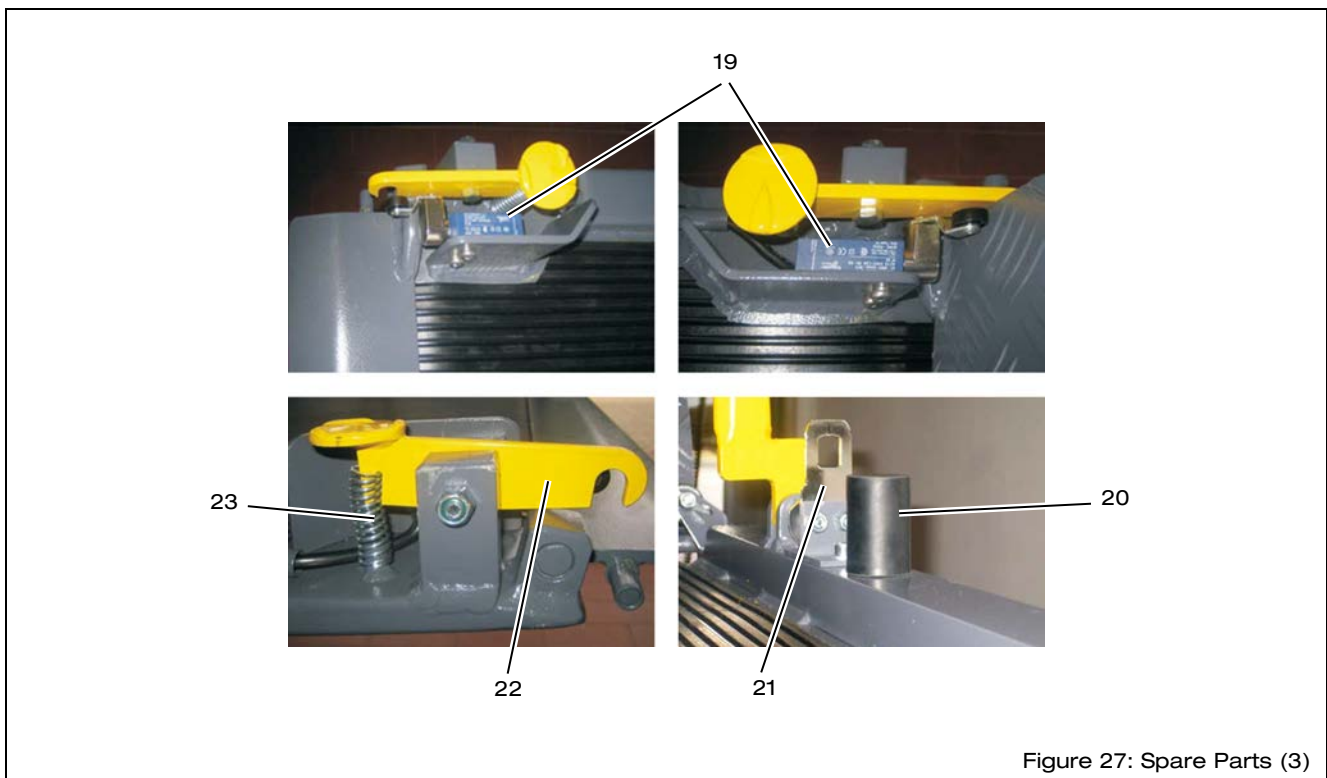


Figure 27: Spare Parts (3)

No.	Article No.	Designation
19	10005152	Position switch
20	10003622	Rubber buffer
21	H10501049	Latch tongue with aluminium bracket (if necessary, also use latch lock H150325)
22	200146376	Foot-operated lever

No.	Article No.	Designation
23	10012441	Spring for foot-operated lever

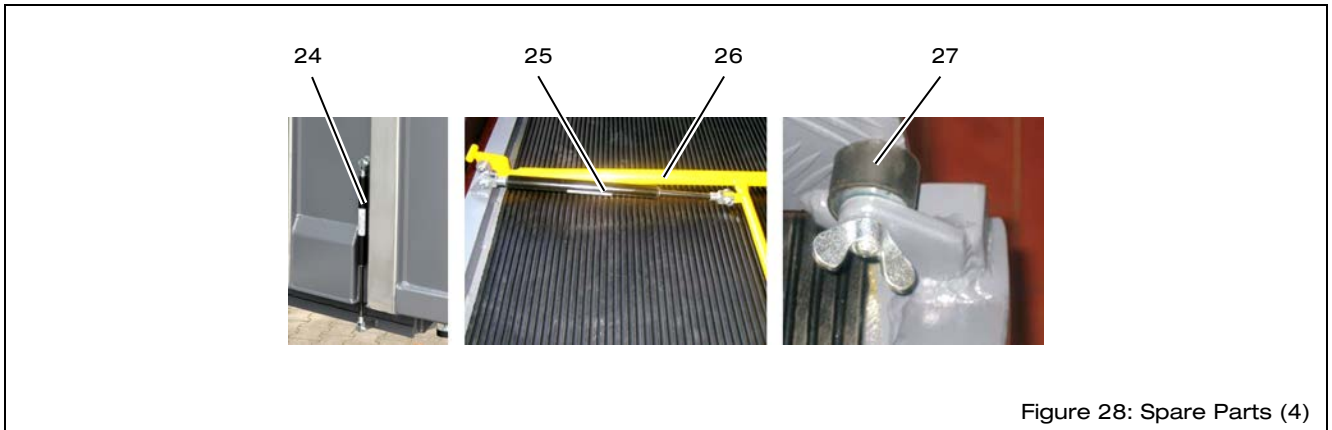


Figure 28: Spare Parts (4)

No.	Article No.	Designation
24	10002635	Gas pressure strut for the platform
25	10002635	Gas pressure strut for the side guard rail
26	10011227	Side guard rail
27	10003034	Rubber buffer

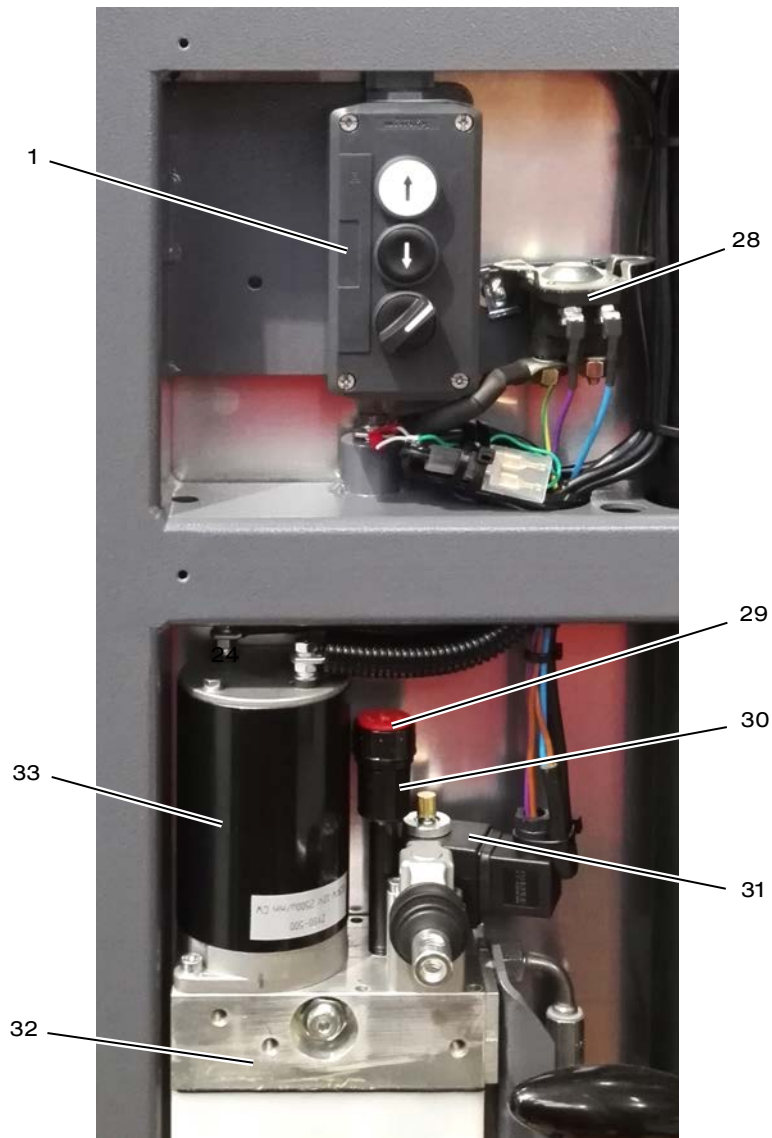


Figure 29: Spare Parts (5)

No.	Article No.	Designation
28	10022350	Starter switch 12 V DC / 150 A
29	10019462	Breather
30	10018155	Filler tube
31	10019222	Poppet valve SVTO.S08.02.N00
32	200142070	Hydraulic aggregate
33	H123003	Electric motor 12 V DC, 0.5 kW

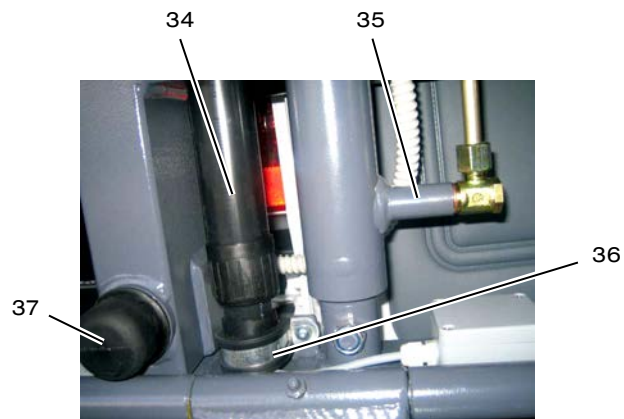


Figure 30: Spare Parts (6)

No.	Article No.	Designation
34	10022631	Plastic armoured conduit, type 40
	10022632	Plastic armoured conduit, type 32
35	10014410	Flow control valve 3L-G1/4
36	10002813	Pipe clamp
37	10003035	Rubber buffer

13 Electrical Circuit Diagram

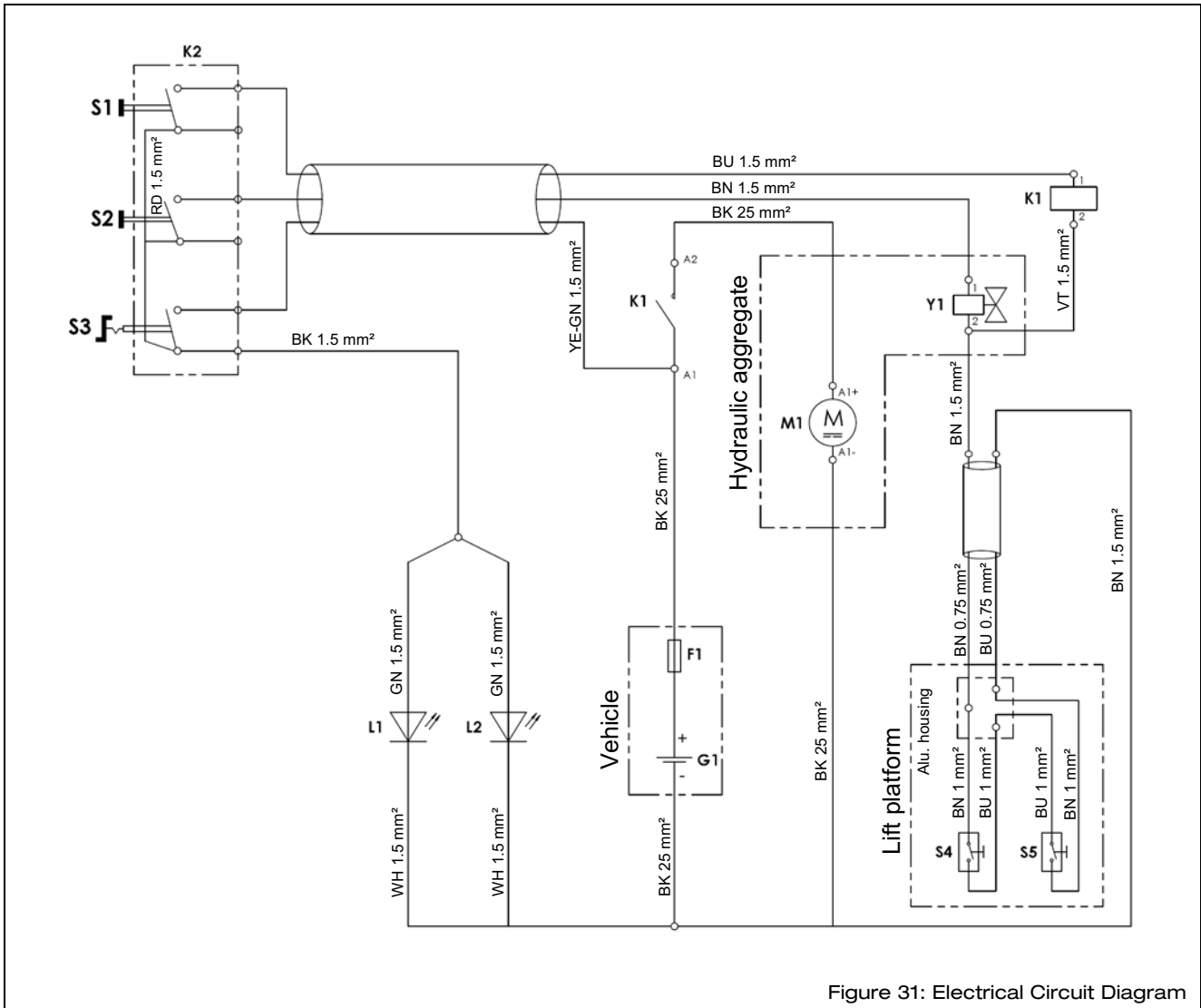
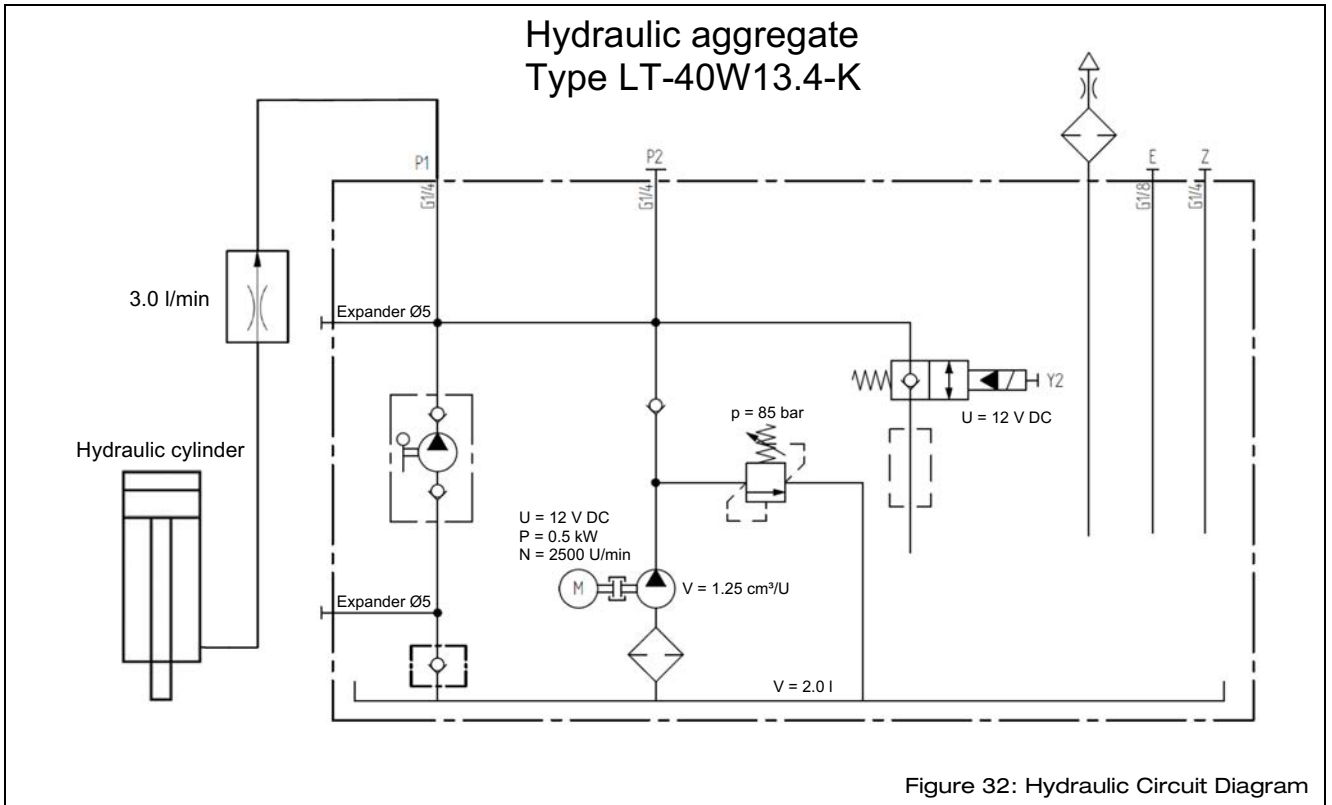


Figure 31: Electrical Circuit Diagram

Abbreviation (acc. to IEC 60757)	Colour
BU	Blue
BN	Brown
YE-GN	Yellow-Green
GN	Green
VT	Violet
RD	Red
BK	Black
WH	White

Abbreviation	Meaning
F1	125A fuse
G1	Vehicle battery
L1 / L2	LED blinker lamps
K1	Contactor
K2	Manual push-button
M1	DC motor
S1	“Raise” push-button
S2	“Lower” push-button
S3	Master switch
S4 / S5	Roll-off guard switches

14 Hydraulic Circuit Diagram



15 Customer Service

The AMF-Bruns customer service department will be more than pleased to assist in ordering spare parts, maintenance and repair work and help with general problems or queries.

The address is:

AMF-Bruns GmbH & Co. KG

Hauptstraße 101

D - 26689 Apen

Tel.: +49 (0) 44 89 / 72 72-22

Fax: +49 (0) 44 89 / 62 45

service.hubmatik@amf-bruns.de

www.amf-bruns.de



Further service information can be found in the service section of our Internet site.



NOTE

Guarantee work on the Swivel Lift must only be carried out with the prior agreement of AMF-Bruns GmbH & Co. KG.

The costs of such work will not be accepted by AMF-Bruns without prior agreement.

In case of a claim, AMF-Bruns GmbH & Co. KG will require the serial number, the year built as well as a description of the damage and if possible, photographs of the damage.

16 Declaration of Conformity



EC Declaration of Conformity

according to EC Machine Directive 2006/42/EC, Annex II A

We, the manufacturer, hereby declare, that the design and construction of the machine designated below complies with the fundamental health and safety requirements of the EC Machinery Directive 2006/42/EC. This declaration is rendered null and void if unauthorised modifications are made to the machine.

Designation **Swivel Lift**

Type: **BSL 350**

Manufacturer:

Company: **AMF-Brunns GmbH & Co. KG**

Address: **Hauptstraße 101
26689 Apen**

Harmonised standards applied:

DIN EN 1756-2, DIN EN ISO 12100

Other technical standards and specifications applied:

DIN 32983, DIN 75078-1, BGR 500

Authorised representative for the technical documentation:

Thomas Lakewand (address: see manufacturer's address)

Apen, 01.02.2013

Place, date



Signature

Gerit Bruns, managing director

Details of the signatory



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DIN EN ISO 9001
REG.-NR. 0105027