create
space
and never
forget

Expandable Touchdown

Maintenance instruction

Applied systems

EXPANDABLE
movable spaces

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1. Maintenance intervals

The following sections describe the maintenance schedule for supplier produced systems such as BPW, SAF, DAIKIN, GEZE and ASSA ABLOY. This information is intended to give customers a quick insight into the maintenance of the various systems built by suppliers of Expandable B.V.. The maintenance schedule of the products built by Expandable B.V. can be found also in this Service manual. For carrying out maintenance work, Expandable B.V. refer to the documentation of the manufacturers of the products.

The documentation of the products built by suppliers such as BPW, SAF, DAIKIN, GEZE and ASSA ABLOY are always leading. Therefore, always consult the relevant documentation or possibly the web-site of these brands.

1.1 Periodic maintenance schedule

Carry out the following inspections periodically at the interval mentioned.

Check	Daily/ before each journey	every 5,000 km or two weeks	every 5,000 km or monthly	every 30,000 km or every 3 months	every 60,000 km or every 6 months	every 120,000 km or every 12 months	Every 2 years	Instruction	Responsible Party
Exterior lighting	X								Driver/operator
Oil level			X					User manual	Driver/operator
Slide out support beam				X				Will be developed	Driver/operator
Hydraulic filter						X		Will be developed	Service workshop
Hydraulic oil							X	User manual	Service workshop
Interior lighting						X[1]			Service workshop
Air bags: visual inspection	X								Driver/operator

Check	Daily/ before each journey	every 5,000 km or two weeks	every 5,000 km or monthly	every 30,000 km or every 3 months	every 60,000 km or every 6 months	every 120,000 km or every 12 months	Every 2 years	Instruction	Responsible Party
Brake pads: check thickness and condition				X				Axle supplier website.	Service workshop
Tyres: check pressure		X							Driver/operator
Bleed compressed air tank			X						Service workshop
Shock absorber					X				Service workshop
5th wheel unit: check bolt tightness					X			Axle supplier website.	Service workshop
Air filter EBS						X		Axle supplier website.	Service workshop
Periodic inspection by						X			Service workshop

Check	Daily/ before each journey	every 5,000 km or two weeks	every 5,000 km or monthly	every 30,000 km or every 3 months	every 60,000 km or every 6 months	every 120,000 km or every 12 months	Every 2 years	Instruction	Responsible Party
legislation									
All mounted parts on axle: bolt tightness check						X		Axle supplier website.	Service workshop
Brake caliper: check seals						X		Axle supplier website.	Service workshop
Axle fixing: check rubber spring bushing						X		Axle supplier website.	Service workshop
Braking system: adjust all brakes						X		Axle supplier website.	Service workshop

[1] According to NEN 1010

1.1.1 General and additional information for axles

Safety regulations

- All work must be performed by trained mechanics at competent repair facilities or authorised specialist companies who have access to all relevant tools and have acquired the knowledge required for this work. Anyone who performs maintenance and repair work must be trained in automotive mechanics and already have experience in repairing trailers and semi-trailers. Anyone who performs brake work must be trained in brake systems.
- Comply with local safety regulations.
- The relevant operation and service regulations as well as safety regulations of the vehicle manufacturer and of the manufacturers of other vehicle parts must be adhered to.
- The vehicle must be prevented from moving during repair work. Please observe the relevant safety regulations for repair work on commercial vehicles, in particular the safety regulations for jacking up and securing the vehicle.
- For all welding operations, the hangers, U-bolts, air bags and plastic lines must be protected against flying sparks and weld spatter.
- The earth terminal should under no circumstances be attached to the trailing arm, U-bolt or wheel hub.
- Do not carry out any welding on the trailing arm.
- Do not machine the trailing arms with cutters or grinders. The spring seat guides should always be widened if replacement trailing arms do not fi t exactly into the bed of the axle spring seats.
- It is not permitted for the hanger brackets to be heated for straightening work!
- During repair work, make sure that the brake is not operated inadvertently. The brake must be released.
- Do not perform repair work unless wearing protective clothing (gloves, safety boots, safety goggles, etc.) and using the recommended tools.
- Only use recommended tools.
- A second technician must provide assistance when carrying out work with heavy components (trailing arms, stabilisers, brake discs, brake drums or during brake back disassembly or assembly).
- All air lines and components must be de pressurised before being removed.

- Following each repair, perform a function check or a test drive in order to make sure that the brakes and suspensions are functioning correctly. New brake linings only have maximum effect after a few braking actions. Avoid hard braking.
- All exchanged components must be reused or disposed in accordance with the applicable environmental regulations, laws and directives.

- The remaining thickness of the brake lining and the condition of the brake disc or brake drum must be visually inspected at regular intervals with respect to the way in which the vehicle is used (see BPW maintenance instructions). • Tighten all fixings to the recommended tightening torque.

Safety regulations

It is essential that all maintenance work is carried out in accordance with the prescribed intervals in order to maintain the safe operation and road worthiness of the trailer. The relevant operation and service regulations of the vehicle manufacturer and of the manufacturers of other vehicle parts must also be adhered to. Rectification of any defects which are discovered or replacement of worn parts should be carried out by a BPW Service Centre or BPW Direct Service Partner unless the vehicle owner has the facilities, equipment and workshop manuals and possesses an official certificate to perform interim inspections or special brake inspections.

When installing spare parts, it is strongly recommended that only original BPW components are used. Parts approved by BPW for trailer axles and suspensions regularly undergo special test procedures. BPW accepts product responsibility for them. However, BPW cannot assess every single third-party product as to whether it can be used for BPW trailer axles and suspensions without any risk to safety. This applies even if such products have already been tested by an accredited test authority. The warranty becomes null and void if spare parts other than original BPW parts are used.

1.1.1.1 Care and maintenance axles

Order	Work	Within 2 weeks of first journey under load, latest after 2000 km	Annually [1)]
	Visual inspection, check all component parts and welding seams for damage and wear.		□[2]
1	Check strap: Check condition and fastening.		
2	Check air suspension levelling valve for condition, seal-tightness and general tightness.		2*
3	Check condition of air bags.		3*
4	Check shock absorber fastening for tightness. Tightening torque with a torque wrench: M 24 (SW 36) M = 420 Nm (390 - 460 Nm) For aluminium and stainless steel hanger brackets: M 24 (SW 36) M = 320 Nm (300 - 350 Nm)	4*	4*
5	Check spring pivot bolts for tightness. Tightening torque with a torque wrench: Hanger brackets and channel crossmember Airlight II from 09/2007: M 24 (SW 36) M = 650 Nm (605 - 715 Nm)	5*	5*

Order	Work	Within 2 weeks of first journey under load, latest after 2000 km	Annually [1)]
	Hanger brackets from 8/2001: M 30 (SW 46) M = 900 Nm (840 - 990 Nm) Hanger brackets up to 7/2001: M 30 (SW 46) M = 750 Nm (700 - 825 Nm) Channel crossmember: M 30 (SW 46) M = 900 Nm (840 - 990 Nm)		
6	Check spring mounting kit for tightness. Tightening torque with a torque wrench: M 20 (SW 30) M = 340 Nm (315 - 375 Nm) M 22 (SW 32) M = 550 Nm (510 - 605 Nm) M 24 (SW 36) M = 650 Nm (605 - 715 Nm) When mounting new spring mounting kits for Airlight II: M 22 (SW 32) M = 550 Nm + 90° angle tightening	6*	6*
7	Wheel nuts: 630 Nm	7*	

Table 1 Periodical maintenance BPW

[1)] Under extreme conditions, with more frequency
[2)] Check twice annually
* Refer to image on next page.

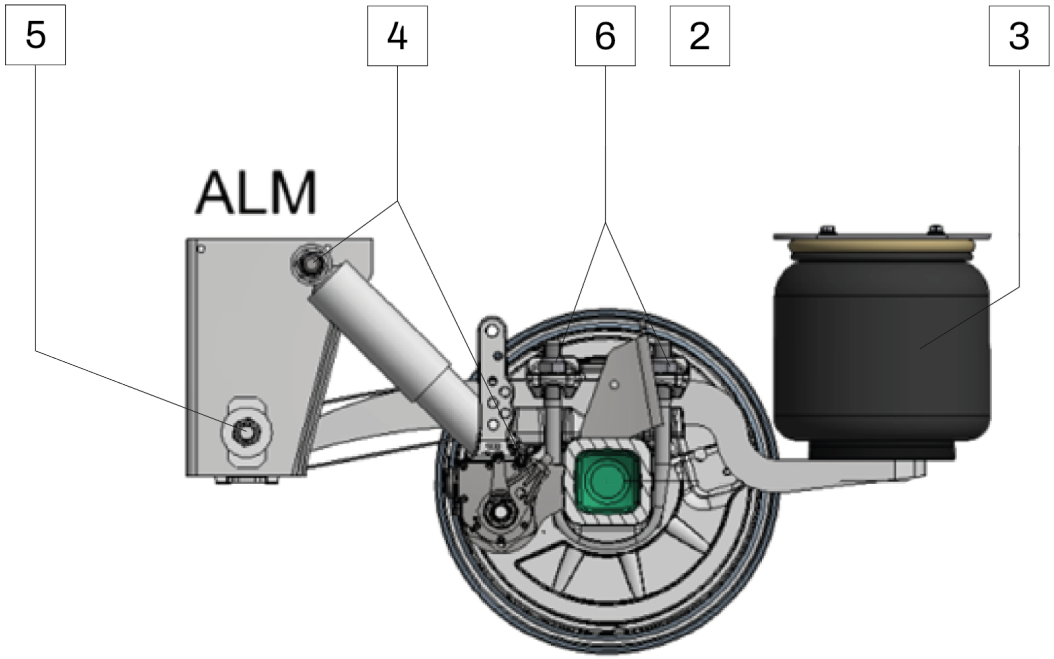


Fig. 1-1

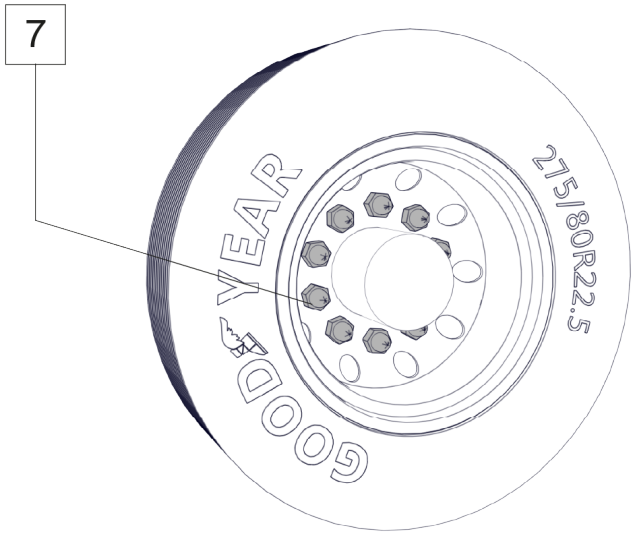


Fig. 1-2

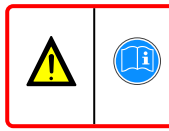
Note: Components that have damage due to improper mounting are to be exchanged after a review by a BPW Service Centre.

Always consult the BPW documentation for detailed information. This is always leading.

1.2 Daikin air conditioning system

Performing a test operation

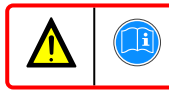
1. Confirm that the indoor unit gas and liquid stop valves are open.



It is possible that the pressure inside the refrigerant circuit does not rise, despite the opened stop valve. This can be due to the expansion valve (or the like) blocking the refrigerant, and does not obstruct the test run.

2. Open the Madoka Assistant app.
3. Navigate to the operation screen of the controller that is connected to the indoor unit(s) on which you want to perform a test run.
4. In the operation screen, set the operation mode to Cooling.
5. Go to the "Unit settings" menu (upper right corner of the operation screen).
   Result: You are in the "Unit settings" menu.
6. In the "Maintenance field", tap "Test operation".
   Result: You are in the "Test operation" menu.
7. Tap "Start test operation".
   Result: The indoor unit(s) enter test operation mode, during which normal operation is not possible.
8. Return to the operation screen.
9. Tap "Vertical airflow direction".
10. Tap "Fixed".
11. Cycle through the five fixed airflow directions, and confirm if the indoor unit flaps behave correspondingly.
12. Return to the "Test operation" menu.
13. Tap "Stop test operation".
    Result: The indoor units leave test operation mode. Normal operation is possible again.
14. Go to "6 Operation" on page 5 of the Daikin manual and confirm if the indoor unit(s) behave according to the information set out there.
15. Check the error history. If required, solve the cause of the errors and perform the test operation again.

The test operation finishes after 30 minutes.



Before carrying out any maintenance or repair activities, stop system operation with the controller, and turn off the power supply circuit breaker. Possible consequence: electric shock or injury.

To clean the controller, do NOT use organic solvents, such as paint thinner. Possible consequence: damage, electric shock, or fire.

Do not wash the remote controller. Possible consequence: electric leakage, electric shock, or fire.

When the dirt on the surface cannot be removed easily while cleaning the controller, soak the cloth in neutral detergent diluted with water, squeeze the cloth tightly, and clean the surface. Afterwards, wipe dry with a dry cloth.

Always consult the supplier documentation. This is always leading.

1.2.1 About maintenance

When the indoor unit needs to be maintained, the controller will display ⚠ on the home screen, and display a warning screen as soon as you try to enter the main menu. Perform the required maintenance, and then remove the warning screen. The following warning screens are related to indoor unit maintenance:

.

Time to clean filter 	Time to replace filter 
Time to empty dust collector 	—

1.3 Cleaning and maintenance GEZE electrically operated sliding doors

The sliding doors of the manufacturer GEZE should be serviced annually by a GEZE service technician.

Set the mode of operation to “Off”.

- Secure door leaves against accidental movement before carrying out cleaning work.
- Cleaning should only be carried out by persons who have been instructed in the safety devices.
- Mark the door accordingly during cleaning.
- During cleaning work, secure the system against unauthorised switching of the mode of operation.

What is to be cleaned	How is it to be cleaned
Safety sensor	Wipe with moist cloth.
Glass surfaces	Wipe with a suitable glass cleaner and dry.
Stainless surfaces	Wipe with non-scratching cloth.
Coated surfaces	Wipe with water and soap.
Anodised surfaces	Wipe with non-alkaline potassium soap (pH value 5.5...7).
Programme switch	Wipe with damp cloth. Do not use a cleaning agent.

Table 1 Cleaning and maintenance GEZE

1.3.1 Maintenance

	☐ The owner must ensure that the system is working perfectly. In order to ensure faultless operation, the door system has to be maintained by a service technician when the main tenance indicator lights up. ☐ Slimdrive SL T30 must be permanently ready to use. The operator is responsible for checking its functioning at least once a month.

The maintenance displays are located at the programme switches. The version differs depending on the programme switch used:

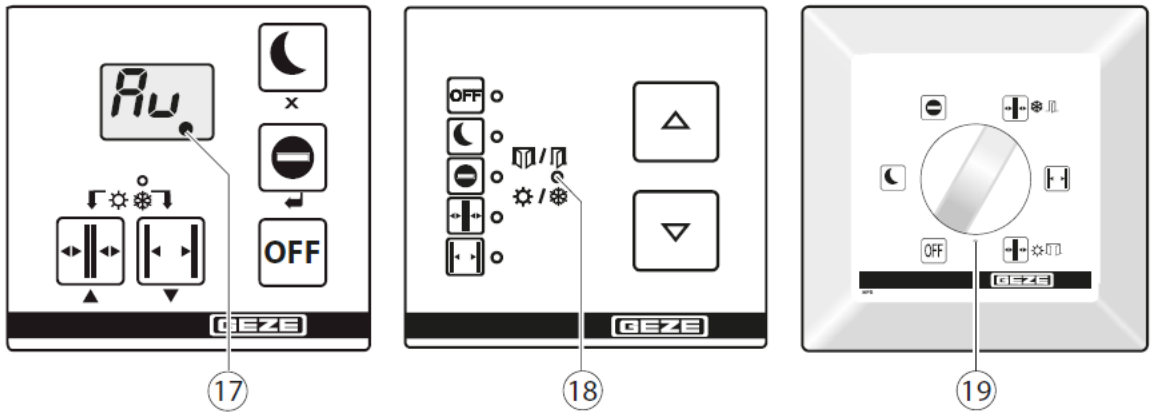


Fig. 1-3

Programme switch Maintenance indicator	
Display programme switch	A red dot (17) appears at the bottom right of the display (also refer to Chapter 3.3.1 (GEZE manual).
TPS	“Reduced opening width” LED (18) flashes.
MPS, MPS-ST	LED (19) flashes.

Table 2 Cleaning and maintenance GEZE

The maintenance display lights up after the specified calendar period or number of opening cycles, depending on what occurs first:

Door system	Calendar period	Opening cycles
Standard	1 Year	500.000
FR variant	1 Year	200.000
RD variant	1 Year	200.000
T30 variant	1/2 year	200.000

Table 3 Cleaning and maintenance GEZE

GEZE offers maintenance contracts with the following services:

☐ Cleaning and readjustment of roller carriage and tracks
☐ Inspection and adjustment of toothed belts
☐ Inspection of door suspension plate and floor guide
☐ Inspection of fixing elements for firm fit
☐ Performance of miscellaneous adjustment work
☐ Performance of operational checks
☐ Perform function test for SL-RD and SL-T30

1.4 General periodical check list Touchdown

Vehicle data

Chassis Number _____

Registration number _____

Kilometres / Miles ABS-EBS / _____

Customer _____

Date:

Touchdown	To access	Check	Condition
Chassis	Check welds and bolted assemblies	☐	☐
Support legs	Check for operability in raised gear and under load	☐	☐
Touchdown	Check for correct attachment and wear	☐	☐

Touchdown	To access	Check	Condition
Air suspension	Check bridles according to maintenance manual	☐	☐
Suspension mounting sub-assembly	Check fixing bolts (manufacturer's specifications)	☐	☐
Air bellows	Visual inspection	☐	☐
Dampers	Check for leakage dampers	☐	☐
Lift axle	If fitted, check operation	☐	☐
Tyres	Visual inspection for damage	☐	☐
Tyres	Check wheel rims, tightening	☐	☐
Air tanks	Drain water from the tanks	☐	☐
Brakes	Check the tightness of the pneumatic system	☐	☐
Hose couplings	Tightness check of couplings	☐	☐
Brake chamber	Parking brake check	☐	☐
Brake disk	Check caliper (possibility of repositioning within tolerance lim-	☐	☐

Touchdown	To access	Check	Condition
	its)		
Release valve	Check valve function	☐	☐
Brake drum	Check operation of automatic play reduction due to wear	☐	☐
Brake drum	Lubrication of automatic slack adjustment mechanism due to wear	☐	☐
Brake arm	Check brake camshaft bearing: lubrication	☐	☐
Brake linings	Wear check of linings	☐	☐
Lights	Check for correct operation and faults	☐	☐
Electronics / EBS	Reading fault list	☐	☐
Accessories	Check that attachments such as the mounting bracket spare wheel, toolbox and other items	☐	☐
Surfaces	Painting, Galvanising, Painting KTL	☐	☐
Periodic	Functional check	☐	☐

Touchdown	To access	Check	Condition
Steering shaft	Functional check according to manufacturer's specifications	☐	☐
Lifting eyebolt	Check according to manufacturer's specifications and test log book.	☐	☐
Floor	Screw tightening	☐	☐
Floor end	Check for damage to sealing weld, repair if necessay	☐	☐
Superstructure	Visual inspection	☐	☐
Roof	Visual inpection	☐	☐
Door tightness	Visual inspection	☐	☐
Door closing	Visual inspection	☐	☐
Interior of super-structure	Check for defects / leaks repair if necessary. Check tightness welds and repair if necessary	☐	☐
Hydraulic system	Check for leaks in pipes and connections (if damaged - limited lifting force)	☐	☐

Touchdown	To access	Check	Condition
Door stop	Check correct operation, repair if necessary	☐	☐
Floor protection seal	Check for damage, repair if necessary	☐	☐
Air pipes	Check air pipes - fastening - check fastening system, repair if necessary	☐	☐
Superstructure	Visual platform check	☐	☐

Table 1 Periodical test report.

Check: ☐ NOT Checked, ☑ Checked. **Condition:** ☒ NOT OK, ☑ OK

Document any existing damage to the semi-trailer before starting to work. For further technical details **always check** the latest operating instructions.

any questions?
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