

ADS

The ADS series, for use on passenger and cargo elevators, was designed on the basis of tried-and-tested LDS heavy-duty shock absorbers. A type examination ensures that the series meets EN 81-1/2 requirements.

There are two variants to choose from: ADS-SR with protective tube or ADS-ST with bar.

ADS - Advantages

Surface protection > lacquered housing, chrome-plated piston rod

Temperature range > -20° - +80°C

Security > limit switch in accordance with DIN EN 50047

Handling > simple installation and maintenance

Selection / Ordering

The following information is required for selection/ordering:

- selection guideline: EN 81 or other
- min. / max. mass upon impact
- nominal speed of elevator
- mounting position: elevator car or counterweight
- number of parallel shock absorbers
- desired stroke

Operating and installation instructions

ADS series shock absorbers are delivered ready for installation.

Upon receipt, the shock absorber must immediately be checked for any transport damage. This applies in particular to damage to the chrome layer on the piston rod.

Check that the order details match the following information on the nameplate:

- type
- maximum mass
- design speed

Installation

Safety information: elevator shock absorbers should only be installed and serviced by qualified personnel. The applicable safety regulations and elevator manufacturer's instructions should be observed.

Before beginning any installation or maintenance work, it must be ensured that the automatic or manual activation of the device by a third party is not possible.

1. The elevator shock absorbers are delivered ready for installation.
2. Secure the shock absorbers in the designated position using suitable fasteners.

Safety information:

- The shock absorber must be installed vertically with the piston rod to the top!
 - The mass must strike the centre of gravity!
3. If several shock absorbers are installed, the mass must be evenly distributed. The mass must strike all shock absorbers simultaneously.
 4. Press the shock absorber several times by hand. This allows air bubbles which have mixed with the hydraulic oil during the transportation process to escape into the gas tank. The piston rod and protective tube must extend completely to the end position. Check the oil level.
 5. Connect the safety limit switch.

Safety information: ensure that electrical cables are not damaged by the protective tube or by the bar during operation of the shock absorber

ADS-SR cross section

ADS elevator shock absorbers are self-contained components operating on the principle of displacement.

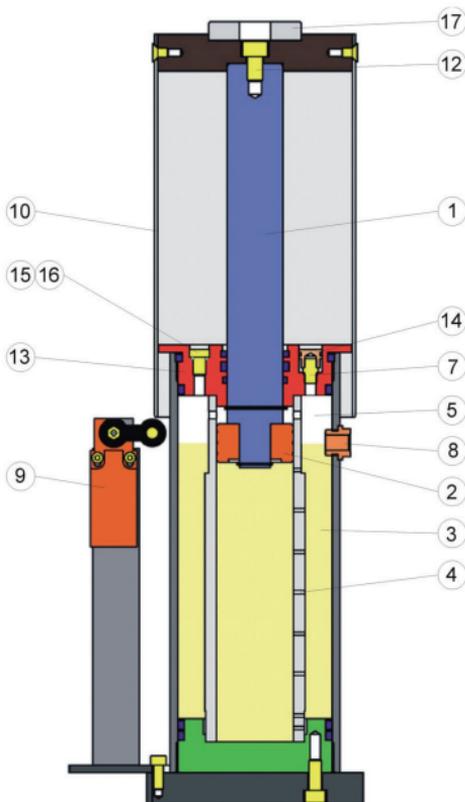
If the piston rod (1) is pressed by an external force, the piston (2) displaces the hydraulic fluid (3) through the available throttle orifices (4) which lower proportionally to the stroke covered.

As a result, the approach speed is inevitably lowered. In order to compensate for the plunging piston rod volume, a gas accumulator is located above the hydraulic oil (5).

This is compressed when the piston rod plunges. At the same time, the pressure increases. When unloaded, the piston rod is reset by the stored pressure. A stop plate (17) absorbs the impact force and reduces impact noise. ADS shock absorbers are preloaded with 5 bars of pressure via a filling valve (7) for nitrogen.

An oil sight glass (8) makes it easy to check the oil level when the piston rod is extended.

The system includes a safety limit switch (9) in accordance with DIN-EN 50047, which can be used to monitor the extended piston rod. Depending on the version, this switch is operated from either the protection tube (10) or from the contact bar (11) upon retraction of the piston rod.



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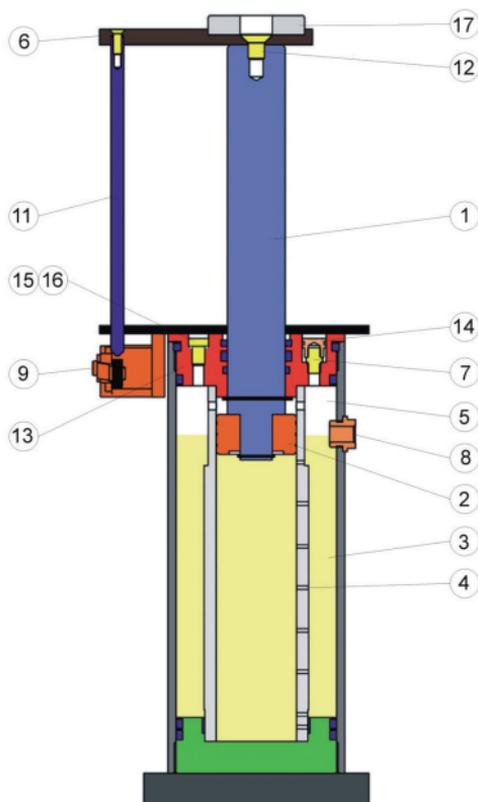
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Start-up

1. Start-up may only take place if all the conditions listed under "Installation" have been fulfilled.
2. Apply pressure to the shock absorber at a low speed.
3. Check the signal of the safety end switch.
4. After unloading, please check that the piston rod is extended. The shock absorber should also be checked for any damage or leaks at the same time.
5. If no damage or leaks are found, the test should be carried out at the design speed and with the maximum mass. The shock absorber should then be checked as described in point 4.
6. If no damage or leaks are found, the shock absorber is ready for operation.

Checking and refilling the gas

In order to reset the piston rod, the elevator shock absorbers are filled with gas.

Checking

The pressure is sufficient when the piston rod (1) automatically moves to the end position after manual actuation.

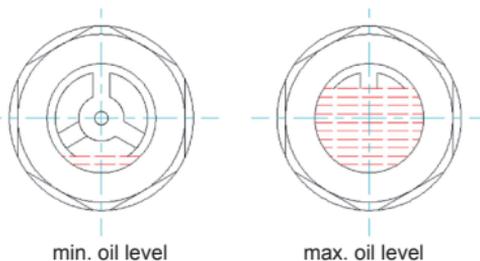
Refilling

If the piston rod fails to extend, or extends only partially, the gas must be refilled. By default, the shock absorber is filled to a pressure of 5 bars with nitrogen. Alternatively, the shock absorber can also be filled with compressed air. Other gases are not allowed!

1. Remove the protective tube (10) and the top plate (6), including the contact bar (11), by loosening the screw (12).
2. A gas filler valve (7) is located in the seal receiver (13) in all versions. First, remove the cap (14) labelled "Air". The gas filler valve (7) should now be visible.
3. The gas can be filled using a tyre inflation device, up to a maximum of 6 bars of pressure. The piston rod (1) must extend completely during the filling process.
4. Check the valve for tightness using leak detection spray.
5. Close the gas filler valve (7) using the cap (14) labelled "Air".

Oil level check – refilling the oil

It is not necessary to disassemble the shock absorbers in order to check the oil level. The oil sight glass is always visible when the piston rod is extended. The oil level should move between the minimum and maximum levels.



If the oil level is too low, the oil can be refilled as follows:

1. Type of oil to be used: hydraulic oil with 46 cSt
2. Remove the protective tube (10) and the top plate (6), including the contact bar (11), by loosening the screw (12).
3. Remove the cap (14) labelled "Air". Let out the pressure from the gas filler valve (7).
4. Open the oil filler plug (15).
5. Refill the oil, keeping within the limit values.

Safety information: the piston rod (1) must be extended!

6. Check the O-ring (16) of the filler plug (15) for damage and replace it (NBR 70, size: 2.62 x 5:23).
7. Close the oil filler plug (15).
8. Refill the gas as described in points 3 and 4, "Checking and refilling the gas".
9. Check the openings for oil and gas leaks using leak detection spray.
10. Mount the protective tube (10) or the top plate (6) using the screw (12).

Maintenance

ADS series elevator shock absorbers are maintenance-free.

It is recommended that a check be carried out on the shock absorbers as part of the elevator's maintenance cycle.

If any faults are found, these can be repaired as described.

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