

**SIDE BULL**

Highlifter for Aircraft

**BULMOR**  
airground technologies

fit for  
A380



SideBull was co-developed by

 **Lufthansa LEOS**  
Ground Support Professionals

## **SIDE BULL** Applications

The innovative SideBull Highlifter can be used wherever freight or passengers are to be loaded onto an aircraft as quickly and comfortably as possible. Here are some of the many possible applications for the multitalent.

Each model is available in the XL version for maindeck service, or in the XXL version that reaches up to Boeing's 747 or Airbus' A380 upper deck.

### **SideBull Passenger VIP** **Transport of VIP passengers**

Having embarked at ground level or through a door in the terminal building (e.g. on second floor), VIP guests enjoy utmost comfort when boarding a plane with the SideBull.



### **SideBull Passenger PRM** **Transport of passengers with reduced mobility (PRM/Ambulift / MedEvac)**

Passengers in wheelchairs or stretchers board the SideBull comfortably at ground level and access the aircraft easily. The vehicle's cabin can be lowered to the ground next to the chassis. Or, if space is limited, by use of an integrated vertical lift with platform.



## SideBull Working Platform Aircraft Assembly / Maintenance

The SideBull's flexible lifting height from ground level to more than eight metres and its large variety of superstructures (cabin, platform, stairs and more) make it valuable for all kinds of maintenance or production tasks.



## SideBull Cleaning Aircraft Cleaning

Especially when combined with a garbage press, the SideBull offers enormous time savings at cleaning larger aircraft.



## SideBull Catering Aircraft Catering

The easy operation and high maneuverability of the SideBull highlifter recommend its use for aircraft catering. Also available with a change-over system: Several cabins can be operated with one vehicle chassis. The XXL version of the SideBull Catering reaches easily up to A380's UD1, the challenging upper deck catering door that is located above the wing.



## SideBull Stair Extension Passenger stair extension

Where there is a lack of passenger stairs to the A380 upper deck, the SideBull with stair extension offers a solution for fast boarding and deboarding.



## Simply convincing

### The innovative Multitalent for Ground Handling

„Look at things so deeply that they become simple.“ This sentence could have been the force behind the development of the SideBull. The award-winning highlifter represents a simple yet convincing solution for a great many tasks in ground handling.

Loading, driving out to the aircraft, lifting, docking, unloading: Never have these operations been completed as quickly and uncomplicatedly as with the innovative multitalent. For in the SideBull, the driver's cab is at cabin level so that the operator does not have to change position. Because the vehicle requires no stabilisers, the cabin can be lifted already while approaching the aircraft. And thanks to its unrivalled

safety features, each and every operation is both comfortable and safe.

Being so flexible, the SideBull can be used wherever freight or passengers are to be loaded onto an aircraft as quickly and comfortably as possible.

The vehicle's dimensions and interior fittings vary upon the intended purpose and the customer's requirements. Optionally, it comes with a change-over system: The cab can be quickly and easily detached from the chassis and replaced with a different one.

### Lifting and Docking

The cabin of the SideBull can be raised to a height of more than eight metres, with the result that it easily reaches the upper deck doors of an Airbus A380.

Thanks to its stable design, no stabilisers are required for lifting. Therefore, the innovative highlifter can lift its passengers or loads already while approaching the aircraft – a unique feature which provides enormous time savings in ground handling operations.

As the driver's cab is lifted together with the cabin, the driver does not have to change position at any time and enjoys a panoramic view.

## Safety First

The SideBull Highlifter was built above all else for safety: safety first for the passengers, safety first for the airplanes.

There is a fail-safe system for the lift hydraulics which would halt a sudden drop in the event of an oil break. The chains are built to carry a load of ten thousand kilograms, and they are even doubled for safety reasons. Rooted deep and safe in gravity, the SideBull crane can reach up high and has been cleared for wind speeds of up to 100 km/h.

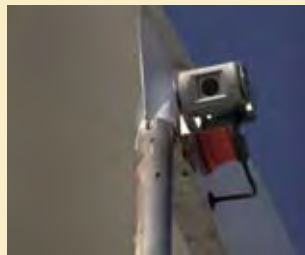
Cameras and sensors beneath the cabin alert the driver if someone walks into a possibly dangerous position. The two monitors before the driver display images from the outside cameras.

Extremely important for SideBull's work with the A380 is a sensor that prevents the cabin from lowering within a meter of an object beneath it. There is also a fail-safe web of sensors under the base of the unit, so that it will halt if anything should come within its line of sight as it lowers. Another fail-safe in the base unit can lower the cabin in the event of emergency.

As the SideBull approaches an airplane, it moves from functioning as a normal motor vehicle to one with very fine sensitivity for its docking skills. Control now moves to the joystick, and speed is limited to 2 km/h. The SideBull is now being guided into position by the driver – who can refer to cameras and enjoys a clear panorama of sight.



At this delicate moment of approach, a cushion system with SideBull's platform creates an engine cut-out point once a certain pressure of contact between platform and airplane has been reached.

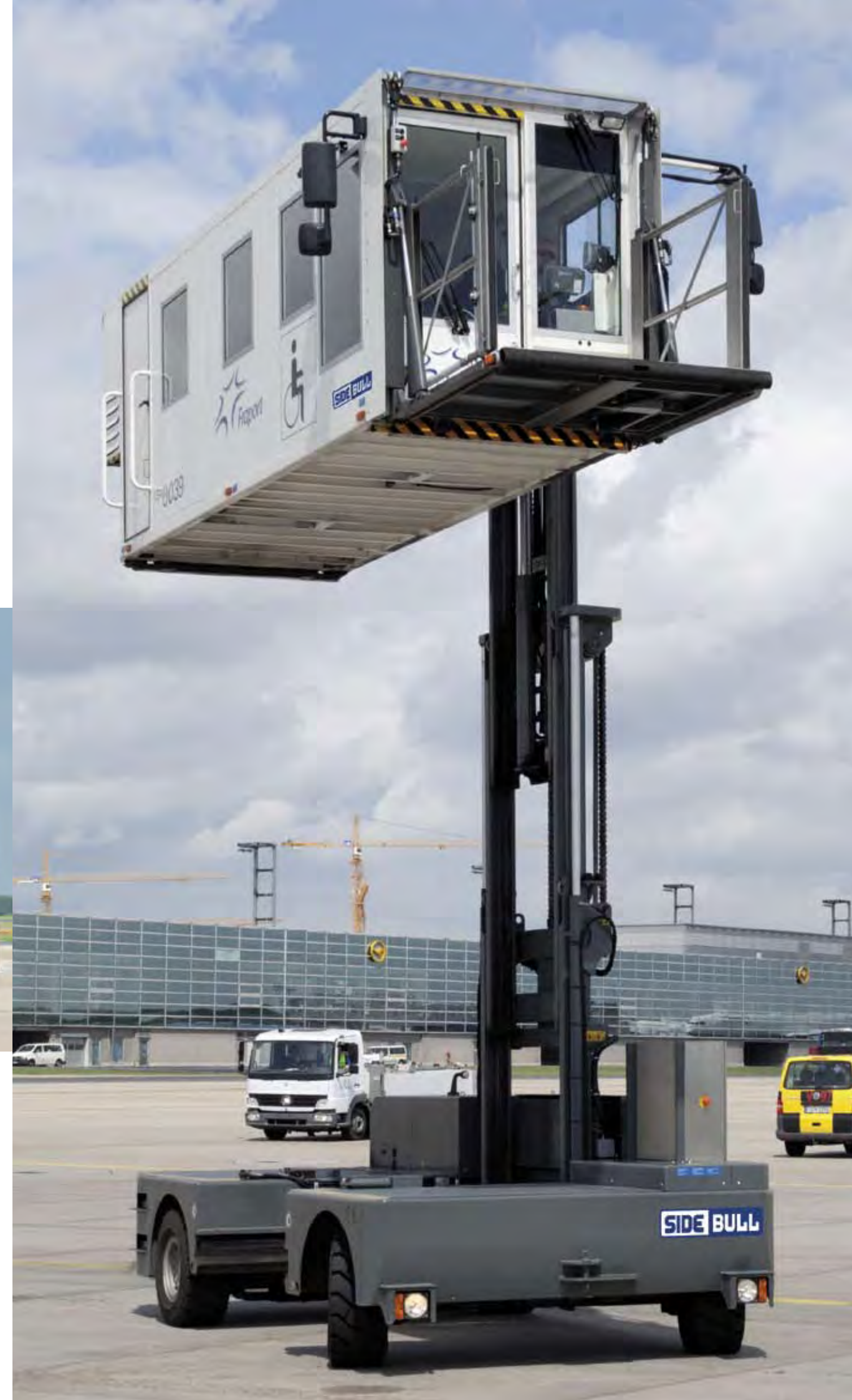


Docked and solid – needing no stabilisers, and with the driver having full view of his surroundings, SideBull is ready to disembark its passengers, crew or cargo.



### Boarding / Loading

The SideBull accommodates its loads or passengers conveniently and securely. As the vehicle cabin can be lowered completely to ground level, boarding and loading is quick and easy, requiring no auxiliary means.



### Driving

When travelling, the SideBull transports the lowered cabin in a space-saving manner. But the multitalent can also be driven with the cabin in the raised position. Up to a wind speed of 100 km/h perfect stability is guaranteed. The SideBull is fun in the narrowest of spaces as it has an extremely small turning circle.



## A perfect match: SideBull and A380

When the A380 paid its first visit to an international passenger airport our SideBull highlifter was there to greet it. Previously subject to extensive testing from the Airbus team, the SideBull proved its worth and on this occasion showed how perfectly suited it is for handling the A380. Thanks to its unique design, the

SideBull can easily reach UD1, the challenging door that is located above the wing. Later the SideBull took also part in Airbus' „Cabin Virtual First Flight“, once more providing fast, secure and easy service for the aircraft's lower and upper deck.

## **SIDE BULL** Technical Data

Motor	Perkins diesel motor, option: electric drive
Drive	Diesel: hydrostatic / Electric: electromechanic
Hydraulic system	Sauer Danfoss proportional hydraulics PVG
Braking system	Front axle: disc or drumbrake / Rear axle: lamella brake, parking brake
Drive type	4 x 2, option: 4 x 4, differential axle
Chassis	Terra, Baumann or equivalent
Steering	Front axle steering, option: 4-wheel steering
Driving speed	Max. 40 km/h (Working Platform: 25 km/h). Lift operation: 2 km/h
Suspension	4 point axle suspension
Safety control	Category 3 Safety control according to CE

**SideBull XL: Lifting height 0-5.7 metres = Main deck service for all types of aircraft**

**SideBull XXL: Lifting height 0-8.1 metres = Main and upper deck service for all types of aircraft**

Model	Lifting Height	Load Cap.	Vehicle Length	Vehicle Width	Cabin Length	Cabin Width	Cabin Height	Exchange option
<b>SideBull Passenger PRM (Ambulift) or VIP</b>	5.7 m (XL) 8.1 m (XXL)	4 t*	6-10 m*	2.5-3.0 m*	6-9 m*	2.0-2.5 m*	2.0-2.5 m	X
<b>SideBull Catering</b>	5.7 m (XL) 8.1 m (XXL)	4.5 t*	6-10 m*	2.5-3.0 m*	6-9 m*	2.0-2.5 m*	2.0-2.5 m	X
<b>SideBull Cleaning</b>	5.7 m (XL) 8.1 m (XXL)	4.5 t*	6-10 m*	2.5-3.0 m*	6-9 m*	2.0-2.5 m*	2.0-2.5 m	X
<b>SideBull Working Platform</b>	5.7 m (XL) 8.1 m (XXL)	5 t* +	6-10 m*	2.5-3.0 m**	6-9 m*	2.0-2.5 m*	2.0-2.5 m**	
<b>SideBull Special Models</b>	5.7 m (XL) 8.1 m (XXL)	Modification of our existing models and new developments according to your requirements						

\* Dimensions variable upon customers requirement / \*\* if applicable



SideBull is a product of BULMOR airground technologies GmbH.

Utility model and patent protection applies.

Winner of the Berlin-Brandenburg Innovation Prize.

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