

## Dock leveller with extendable lip 100kN



The PowerRamp 232 100kN is an electro hydraulic dock leveller including hinged swing lip. The platform top as well as the lip is powered hydraulically.

### Materials

Platform and lip are made of high-quality durbar plate:

- Platform: Durbar plate 8/10, S235JRG, St-37
- Lip: Durbar plate 20/22, S235JRG, St-37.

Depending on the width, the dock leveller 232 100kN is strengthened along its length by means of 20 set L-profiles. Levellers longer than 3500mm are strengthened with 10 IPE-profiles in combination with durbar plate 6/8. These allow the dock leveller platform top to 'twist' and compensate for vehicle 'tilt' caused by off-set loads within the vehicle. The lip will remain in contact with the vehicle bed up to a maximum of 100 mm from the horizontal.

The rear of the top platform is connected to the lower frame by means of three hinges (each with a length of 300 mm). The pins of the hinges (Ø30mm) are made from drawn steel rods which can easily withstand the applied forces. Similar pins (Ø28mm, C45K) are used for the lip hinge at the front of the platform top. These are the centre of the self-cleaning, open lip hinge construction.

The robust front channel absorb the forces created by an emergency stop, cross traffic and where end loads are being loaded below dock height. The self-supporting characteristics enable either an open or closed pit floor to be selected or for a so-called tail-lift opening to be used. Furthermore the front channel fixed to the lower frame provides protection for the hydraulic and mechanical components on the underside of the dock leveller.

### Dimensions

If required the dock leveller 232 100kN can be delivered tailor-made. However our standard models

with a construction height of 600 mm are available in a large range of platform dimensions.

The lip (length 400 mm) has a location length of 225 mm on the vehicle bed, when using 100 mm thick bumpers.

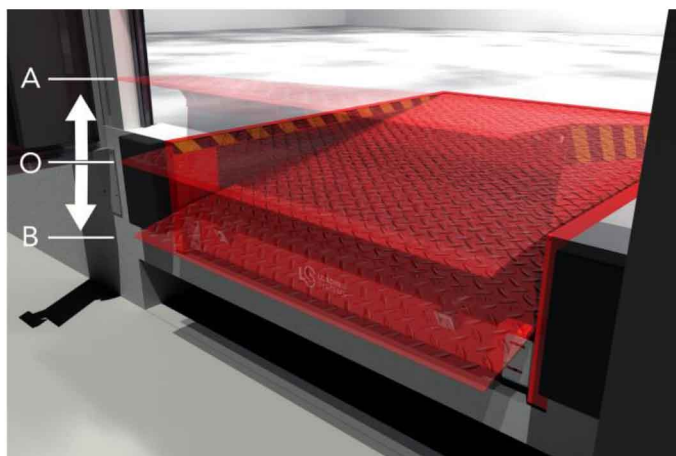
### Metric sizes (mm)

L2	BH	400 mm lip		500 mm lip*	
		±O	±U	±O	±U
2000	600	225	290	225	315
2500	600	285	285	235	305
3000	600	345	280	225	295
3500	600	305	275	190	290
4000	600	280	275	165	285

Platform width: 2000 or 2250 mm

According to EN 1398 the dock leveller is not allowed to be operated outside the permissible gradient range of  $\pm 12.5\%$  (approximately  $\pm 7^\circ$ ).

In this instance, the effective working range is measured from the front-side of the bumpers, taking the arc movement of the lip into consideration.



- L2 = Platform length
- BH = Construction height
- A = Effective working range above dock height
- B = Effective working range below dock height

### Drive

The hydraulic functions are performed according to a logical sequence, with the aid of the Logic Block System which is operated by varying pressure differences.

The platform is powered by two hydraulic cylinders (outside Ø 65 mm) and the lip by a separate self-dampening cylinder (outside Ø 55 mm). The hydraulic system is completely closed and cannot, even under the most extreme circumstances, be affected by dirt, sand or dust. Thanks to the over dimensioned cylinders; a

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low working pressure of approximately 70 bars is created.

The chrome hardened main cylinder is designed to hold a pressure of 1200 bar. As a precautionary measure, a pipe burst valve is integrated in the main cylinder. The chrome hardened lip cylinder and the hydraulic hoses are designed to hold a pressure of 600 bars.

The compact hydraulic power pack is positioned below the dock leveller's platform and is connected with both cylinders by two 750 mm long hydraulic hoses. This way damage from the outside or by movement is prevented. All these characteristics ensure a safe hydraulic system with a long life span and a minimum of maintenance.

### Operation

The dock leveller 232 100kN is operated with only one push button. By keeping the push button pressed, the platform will go up from its resting position, when the highest point is reached, the lip will swing out. When the push button is released, the platform and lip will descend automatically to the level of the vehicle bed.

During loading and unloading, each up and down (suspension) movement of the vehicle is automatically followed. After the loading or unloading process, the push button is pushed in continuously to bring the system back into the rest position.

The dock leveller 232 100kN is also suitable to load or unload so-called 'last cargo' below the dock level.

### Standard safety provisions

- Fully hydraulic safety stop by means of a pipe rupture valve built into cylinder.
- Emergency stop switch with reset facility.
- Non retractable sliding toe guards.
- Robust extra wide lip keepers for transverse movements (cross traffic).
- Black / Yellow safety markings.
- Non-removable maintenance strut.
- Motor safeguards by means of a thermal relay.
- Control panel instruction symbols.

### Standards

The dock leveller 232 100kN is CE marked. The Loading Systems dock levellers are in accordance with all safety aspects of the European standard EN 1398. The standard load capacity, which is 100 kN (axle load) is designed on a minimum surface contact per wheel of 195 x 130 mm and a maximum gradient of the platform top of 12.5 percent, in accordance with the European standard EN 1398.

### Technical Specifications

Standards .....	CE marking
Capacity (EN 1398) .....	100 kN
Construction height .....	600 mm
Lip length .....	400 mm
Lip angle .....	(ca. 4°) 45 mm
Motor .....	0,75 kW
Power supply .....	3 phase, neutral and earth / 400 V
Control current .....	24 V DC
Protection class control panel .....	IP 65
Working pressure .....	ca. 70 bar
Outside diameter main cylinder .....	65 mm
Outside diameter lip cylinder .....	55 mm
Operating temperatures between .....	-30° and +50° Celsius
Standard colour .....	(black) RAL 9005

### Options

- Various types of pit construction,
- dock leveller as box model,
- Greater lip length,
- Tapered lip on both sides,
- Top platform plate with non-slip coating,
- Hot dip galvanised with stainless steel shafts,
- Platform insulation,
- Air seals on three sides of platform,
- RAL colour as required,
- Return to rest position with push-button impulse,
- Rest position switch for control of traffic light, door, etc.,
- Leveller/ door interlocking,
- Integrated control panel including control for door, traffic light, etc.,
- Upgraded IP- value,
- Other voltage.

### Building-in possibilities

Because of varying client specific requirements and constructional elements a large range of build-in possibilities can be offered, such as a suspending (hang-in) frame, box model, permanent steel formwork, (pit boxes) prefab concrete elements, steel stand, dock pods including the thermal iso version. By making the correct choice, considerable cost savings can be made. Detailed building-in drawings are available upon request.