



## ASSEMBLY INSTRUCTIONS

Cantilever rack

KR2500



Please read this manual before using the product and follow the instructions it contains!

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## EXPLANATION OF TERMS

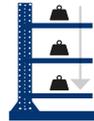
### CANTILEVER LOAD

- Total load per cantilever
- Max. 250 kg

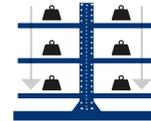


### UPRIGHT LOAD CAPACITY

- Total load of all cantilevers per upright
- Max. load depends on whether the rack is single-sided or double-sided
- Max. 1250 kg with single-sided upright
- Max. 2500 kg with double-sided upright

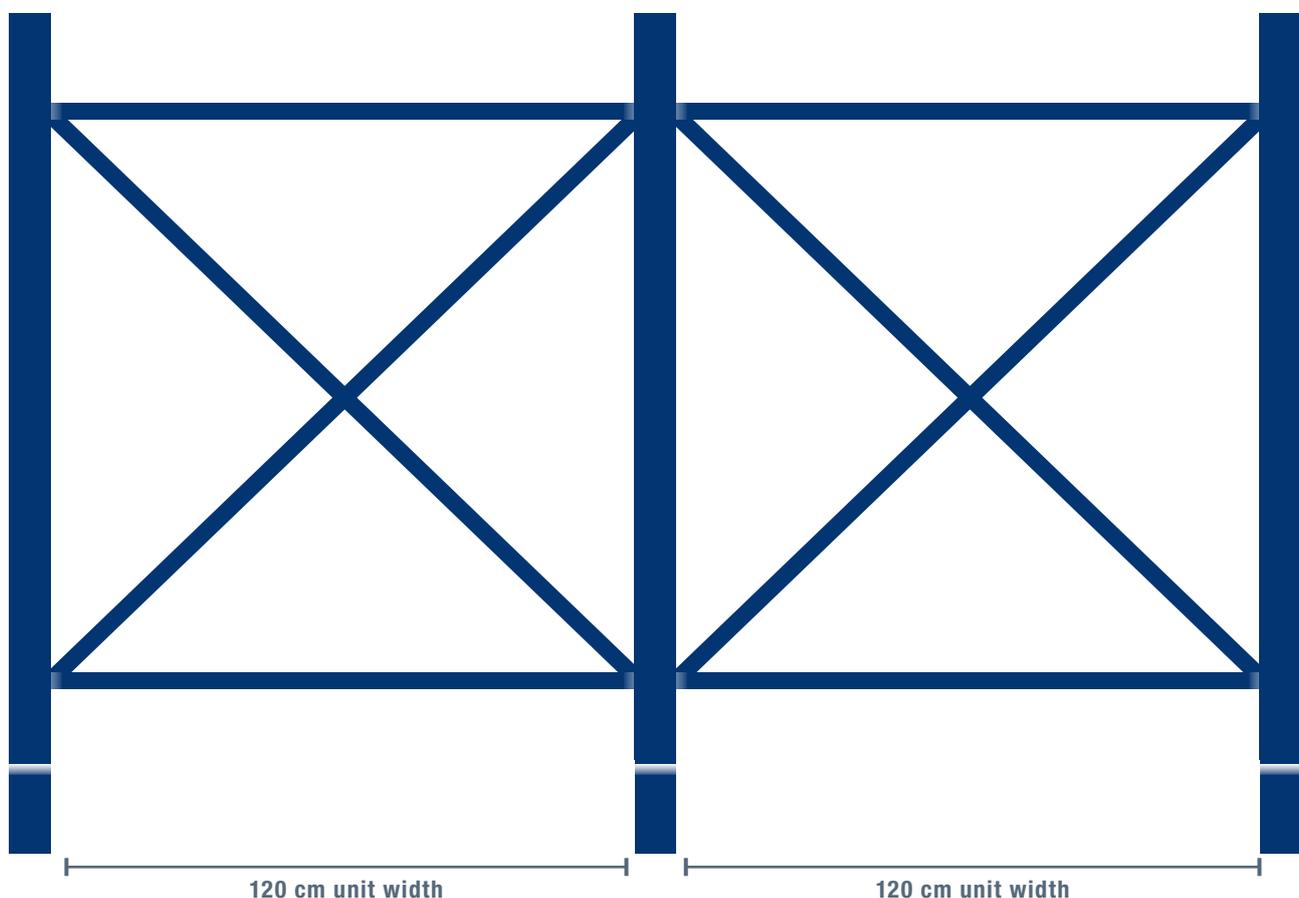


single-sided



double-sided

### UNIT WIDTH



120 cm unit width

120 cm unit width

## SERVICE & CONTACT

Contact our product experts and find help and solutions for your product. Here you will find all contact information listed by country and language: [www.topregal.co.uk/en/service](http://www.topregal.co.uk/en/service)

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## OVERVIEW

**UPRIGHT**

A complete upright consists of a upright profile, a welded-on foot part and 5 welded-on cantilevers.

A rack upright has a height of 2 m.

Cross and diagonal struts connect the individual uprights. The distance between two uprights is called the axial dimension.

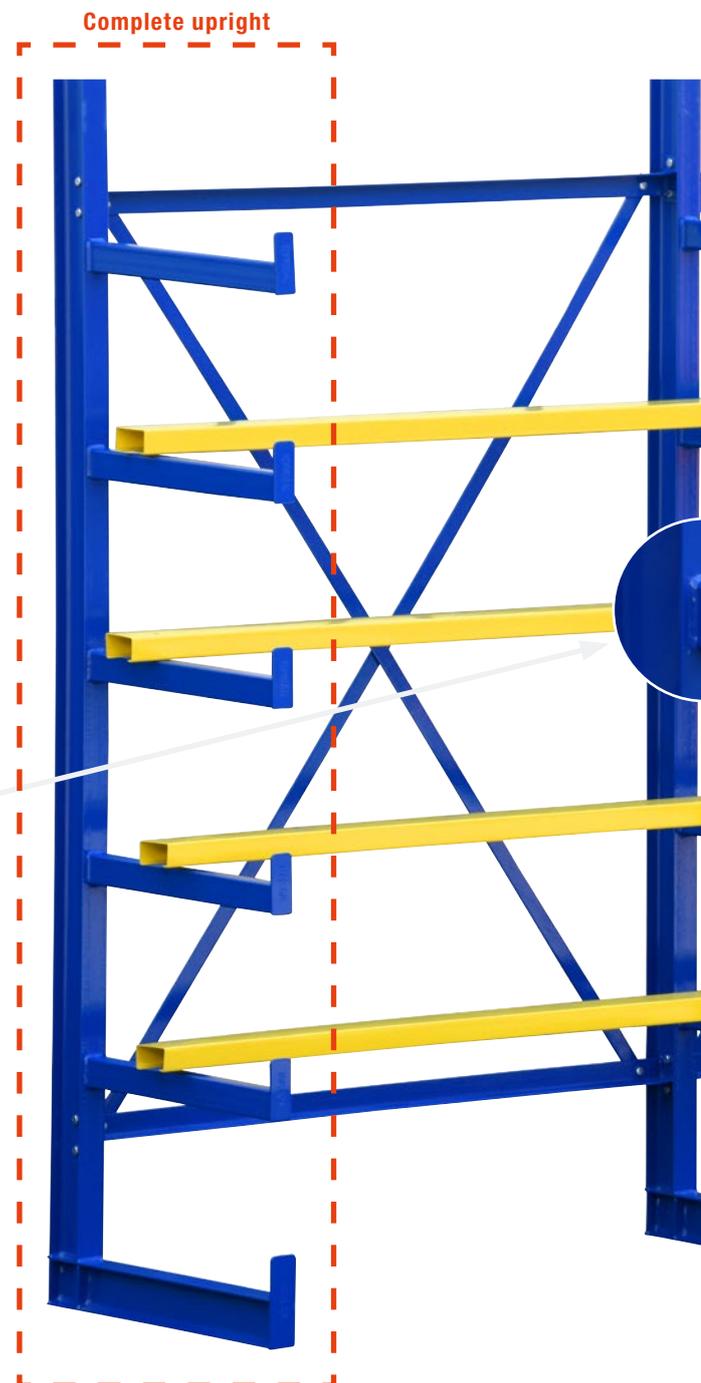
**CANTILEVERS**

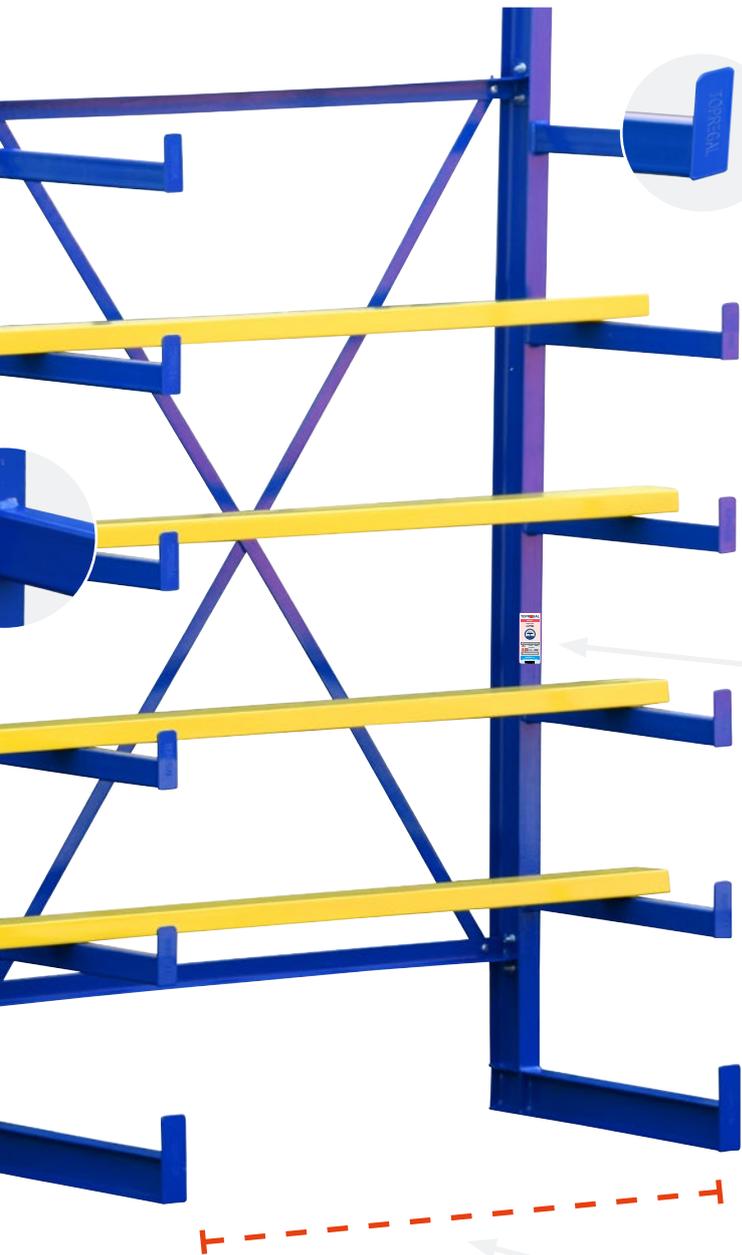
Cantilevers serve as load carriers and are firmly welded to the upright.

Our cantilevers have a length of 50 cm.

The distance in height between the cantilevers is 28 cm each.

Max. load per cantilever = 250 kg.





**ROLL-OFF SAFETY DEVICE**

To protect the load from accidental falling, a roll-off safety device is welded to the end of the cantilever.

The safety device on the cantilevers is 5 cm high, on the foot part it is 7 cm.

**LOAD CAPACITY LABEL**

Self-adhesive load capacity label displaying load capacities – complies with german DGUV: 108-007.

Always supplied and must be attached to the rack in a clearly visible position.



**UNIT WIDTH**

The unit width is determined by the distance between two uprights.

Our standard unit width is 120 cm.

Units can be added to increase the length as often as desired.

## GENERAL INFORMATION

### PREVENT DANGERS

The TOPREGAL product you have purchased is manufactured in accordance with the current state of the art and complies with the applicable regulations and rules. Nevertheless, it may pose a danger to people and property if:

- the rack is not properly assembled, improperly modified or converted.
- accessories used are not original ones.
- the safety regulations are not observed.

Therefore, every person involved in the assembly must read and follow the safety regulations and, if necessary, you should have this confirmed by a signature.

### ACCIDENT PREVENTION REGULATIONS

All relevant accident prevention regulations apply:

- Generally accepted safety regulations.
- Country-specific provisions.
- Guidelines for storage facilities and equipment of the respective country.

### PLEASE NOTE

Before assembly, commissioning or use, the information contained in these instructions must be observed in order to avoid hazards. If you need technical support, please contact us.

In order to avoid personal injury and damage to property, please observe the following:

- The German DGUV: 108-007 warehouse facility and equipment guidelines.
- The relevant workplace directives and regulations.
- The information from your safety officer.
- The structural conditions and regulations, in particular the condition and load-bearing capacity of the floor.
- And ensure that the facilities are in good order and condition. Damaged or deformed components must be replaced immediately. If in doubt, stop assembly or use, secure the installation area and inform your safety officer.
- That loading may only be carried out after all assembly work has been completed.
- That the persons carrying out the assembly and conversion work are to be secured against falling in accordance with the local accident prevention regulations.
- Protective clothing such as helmets, gloves, safety shoes, etc. must be worn during assembly and conversion.
- That the racks must be effectively protected against impact from forklifts or other vehicles.

## ASSEMBLY PREPARATION

All original TOPREGAL components used to stabilise the warehouse equipment must be attached without restriction. These mainly include frame components, unit connections, diagonal struts, floor anchors, screws / fastening elements. During assembly one should ensure that the screws are not over-tightened. The screws must be pre-fastened by hand and later tightened using suitable tools such as a cordless drill or a wrench.

## TESTING OF FLOOR AND FLOOR TOLERANCES

Before installing rack systems, check the following:

- Whether the load-bearing capacity of the floor is suitable for safely withstanding the intended loads. If in doubt, consult a specialist and have the load capacities determined. The responsibility for the correctness of the information lies with the client.
- The surface of the floor: a proven concrete slab, min. 200 mm thick, concrete quality C20/25 is required.
- The flatness of the floor must be guaranteed according to DIN 18202.



### Assembly

Racks may only be set up and converted by specially instructed persons in compliance with the assembly and operating instructions supplied by us. Racks may only be converted when they are not loaded.

## BASIC STRUCTURE

Two uprights per unit are connected to each other by screw connections cross and diagonal struts. The cantilever rack is then secured to the load-bearing base.

The racks must be designed so that the cantilevers do not project beyond the base of the foot, unless stability is ensured by other means. With cantilever racks, it must be ensured that the stored goods cannot fall out. This is achieved by welded-on roll-off safety devices (see german DGUV: 108-007).

## SAFETY DISTANCES

During assembly, the exact location of the rack must be marked on the floor beforehand. The necessary safety distance to building components (e.g. wall, column) and corridors must be observed (see german DGUV: 108-007).

## LABELLING

Labelling using a load capacity label is compulsory. These labels are included in the delivery volume.

## PLUMB INSTALLATION

The rack must be plumb. To compensate for uneven floors, height adjustment plates are to be used. The individual uprights within a row of racks must be aligned.

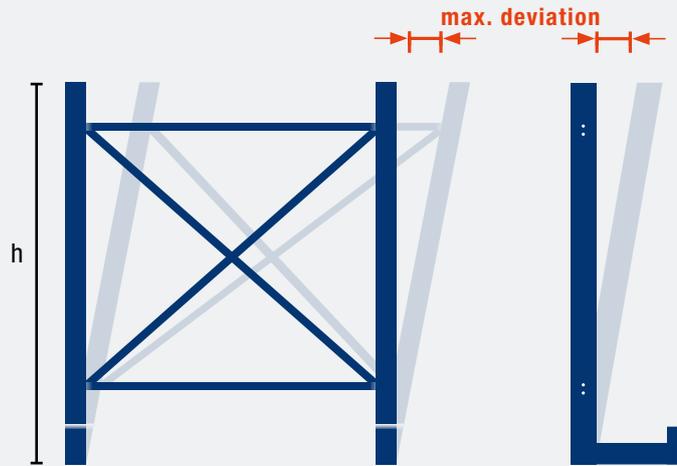
Deviations of the rack uprights from the plumb line in longitudinal and depth direction of the racks must not exceed 1/200 of the rack upright height.

**EXAMPLE: RACK UPRIGHT HEIGHT 2 METERS**

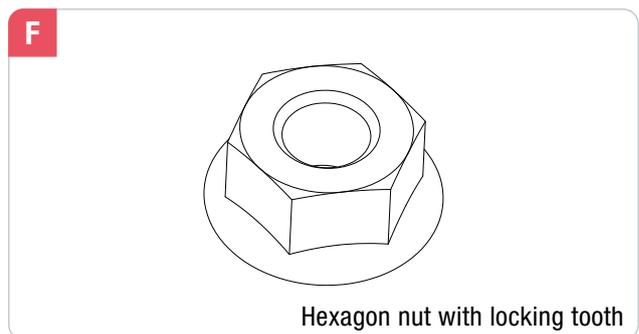
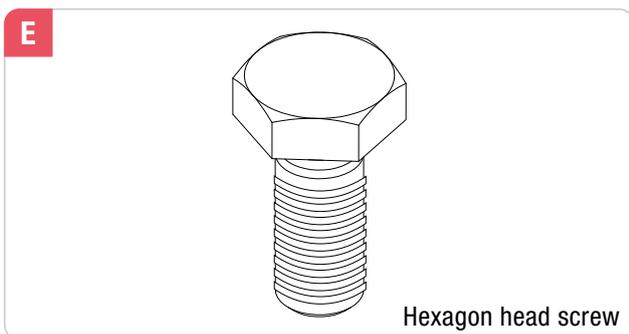
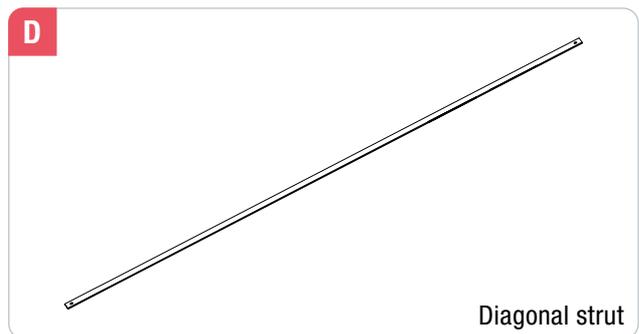
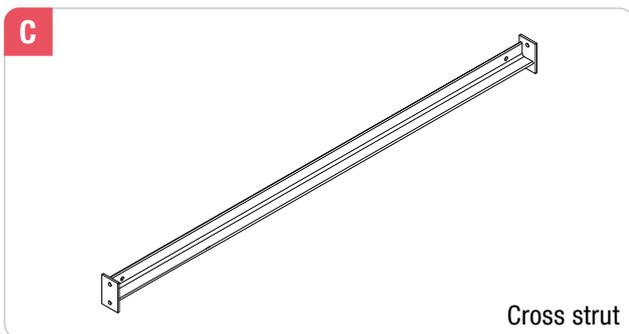
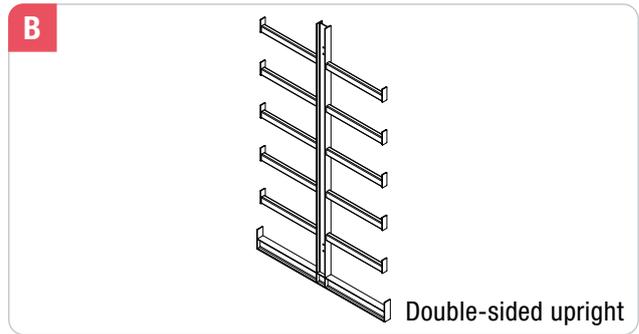
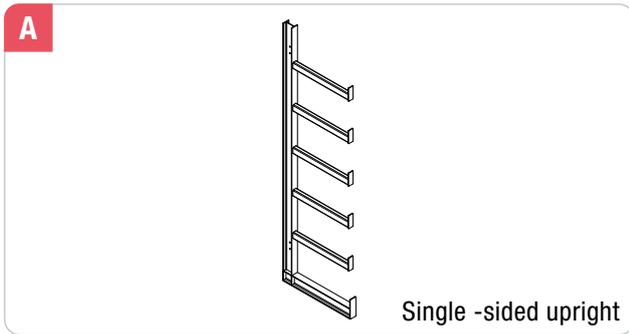
$$\frac{\text{Shelf height } h}{200} = \text{max. deviation}$$

$$\frac{200 \text{ cm}}{200} = 1 \text{ cm}$$

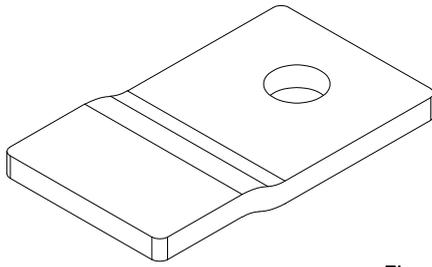
The maximum deviation in longitudinal and transverse direction must therefore not exceed 1 cm.



**INDIVIDUAL PARTS & ASSEMBLY MATERIAL**

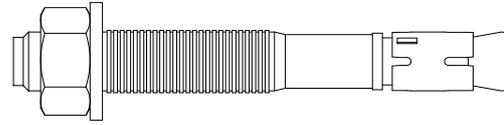


G



Floor bracket

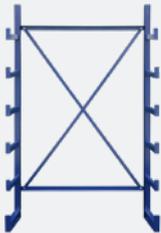
H



Bolt anchor

## OVERVIEW UPRIGHTS

### UNIT WITH 2 M HEIGHT



- Cantilever-rack upright 2 m high incl. foot plate
- Max. unit load capacity: 1250 kg single-sided / 2500 kg double-sided
- Colour TOPREGAL blue (corresponds roughly to RAL 5005)
- The upright is anchored to the floor using 2 bolt anchors for single-sided rack / 4 bolt anchors for double-sided rack
- 2 diagonal struts (length 189.5 cm each)
- 2 cross struts (length 120cm each)

### SINGLE-SIDED UPRIGHT



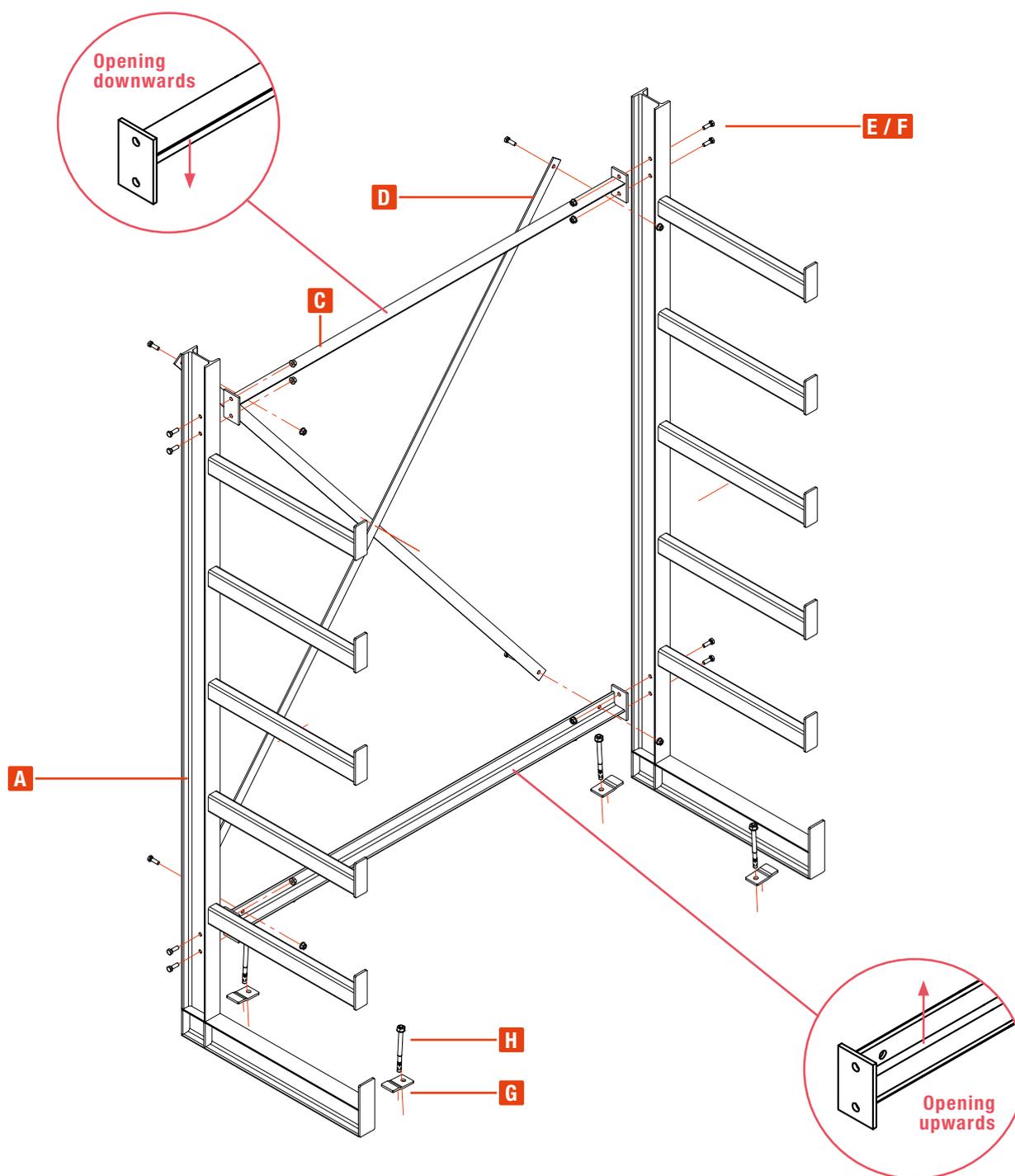
- 5 cantilevers are already firmly welded on
- Foot part is already welded on firmly
- Complete depth including upright 58 cm
- Height of roll-off safety device: 5 cm

### DOUBLE-SIDED UPRIGHT



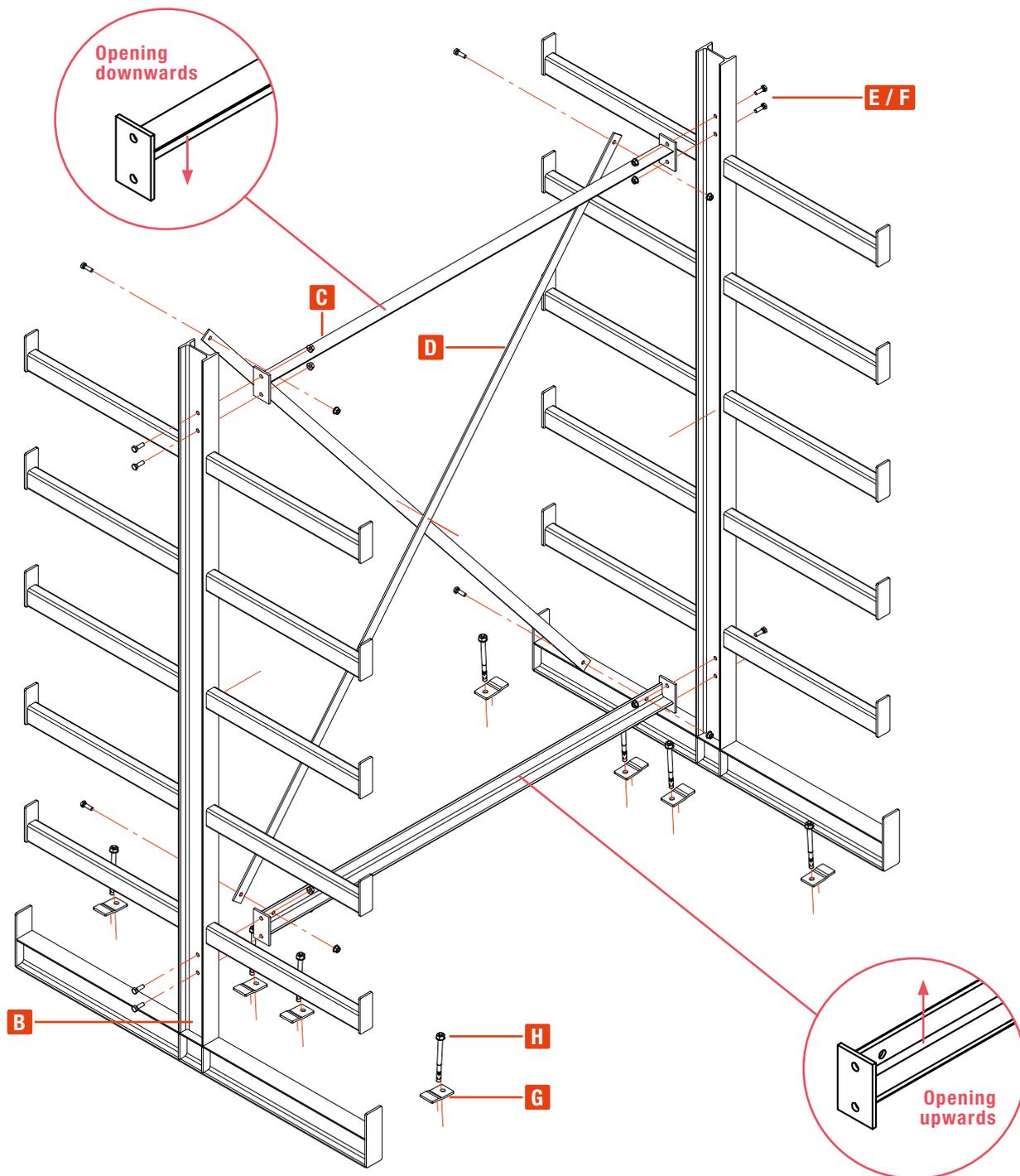
- 10 cantilevers are already firmly welded on
- Foot part is already welded on firmly
- Complete depth including upright 113 cm
- Height of roll-off safety device: 5 cm

## SINGLE-SIDED RACK



1. Fasten the cross struts **C** between the single-sided upright profiles **A** using hexagon bolts **E** and nuts **F**.
2. Then attach the diagonal struts **D** to the uprights as shown.
3. Drill holes, push holder **G** with bolt anchor **H** into the floor and tighten bolt anchor.

## DOUBLE-SIDED RACK



1. Fasten the cross struts **C** between the double-sided upright profiles **B** using hexagon bolts **E** and nuts **F**.
2. Then attach the diagonal struts **D** to the uprights as shown.
3. Drill holes, push holder **G** with bolt anchor **H** into the floor and tighten bolt anchor.

## LOAD & WEIGHT DISTRIBUTION

- The specified, evenly distributed load for cantilever and upright must not be exceeded.
- Care must be taken to ensure that the stored goods are evenly distributed on the shelves.
- The load units must not be dropped on them.
- Racks may only be loaded according to our specifications. The loading of the racks must be evenly distributed, as the static design is based on the assumption of an evenly distributed surface load. Point impact loads and sliding loads must therefore be avoided.

## INSPECTION & CHECKS

- Has the rack been assembled according to the assembly instructions?
- Are parts of the construction damaged?
- Are there damages due to impact or overload on beams and/or uprights?
- Are the uprights plumb?
- Are there any cracks in the weld seams or in the base material?
- What is the condition and effectiveness of the safety devices?
- What is the condition of the building floor?
- Is the load evenly distributed, are the racks too heavily loaded?
- What is the position of the load unit on the rack?
- Is the stability of the load units given?

## HANDLING

- The racks must always be assembled in accordance with the information in the assembly instructions. Unauthorised changes to the racks are not permitted in any form.
- Appropriate load capacity stickers are to be affixed to all rack rows. These operating instructions must also be made available to the warehouse workers.
- Local changes to the racks may only be made when they are not loaded.
- People must not stand on racks.
- Damaged and deformed rack parts must be replaced immediately, as the load-bearing capacity is only guaranteed in an undamaged condition. Therefore, damaged components must not be used any further.
- A collision of industrial trucks (e.g. forklift trucks) with the rack uprights can lead to a massive impairment of the rack's load-bearing capacity and must therefore be avoided under all circumstances.
- In general, all accident prevention regulations and the statutory provisions for work safety also apply.

## INSTRUCTIONS FOR USE

### GENERAL

People must not stand on rack uprights and shelves, in particular cantilevers. The KR2500 may only be loaded manually.

### OPERATING THE RACKS

The centre of gravity of the load must be aligned so that it is stable. Damaged and deformed load-bearing components of a rack system must be replaced immediately, as the load-bearing capacity can only be guaranteed in perfect condition. Persons involved in assembly and dismantling must be secured against falling in accordance with the local accident prevention regulations.

## PERMISSIBLE LOAD CAPACITIES

Cantilever load = evenly distributed load on 1 pair of cantilevers.  
Upright load = 1250 kg single-sided / 2500 kg double-sided.

The stored goods that are directly on the foot parts are not taken into account. The sum of all cantilever loads must not exceed the maximum upright load. Cantilever loads are evenly distributed loads. The storage of heavier loading units than those specified by us and indicated on the load capacity labels is not permitted.

## NOTE FOR FORKLIFTS / INDUSTRIAL TRUCKS

It is imperative to ensure that racks are not hit by forklifts / lift trucks or other industrial trucks. Suitable protective equipment for this can be found on page 17.

## RACK INSPECTION

The European guideline DIN EN 15635 points out the responsibility of the operator to keep the racks in a proper condition. To this end, visual inspections and expert inspections must be carried out at regular intervals on the shelves to ensure safety. The following aspects, among others, must be examined:

- Are the rack supports perpendicular?
- Are there any cracks in the weld seams or in the base material?
- What is the condition and effectiveness of the safety devices?
- What is the condition of the building floor?
- What is the position of the load unit on the rack?
- Are load capacity labels and information notes available and up-to-date?
- Is the stability of the load units given?

The inspections carried out, defects and their remedy are to be documented in writing. This documentation is to be kept at least until the next regular inspection. However, it is advisable to keep the documentation for the entire service life of the rack (cf. BGI/GUV-I 5166).

## PERSONS QUALIFIED FOR INSPECTION

Qualified persons are those who can demonstrate specialist knowledge from recent professional activity in the environment of the test object and appropriate further training. These are e.g. fitters from the manufacturer or appropriately qualified personnel of the operator.

## VISUAL INSPECTION

- Visual inspections are to be carried out on a weekly basis.
- Visual inspections may be carried out by a competent internal person.

## EXPERT INSPECTION

- Expert inspections are to be carried out at least every 12 months.
- The comprehensive expert inspection should be carried out by an expert, usually external person, and a comprehensive inspection protocol should be written.

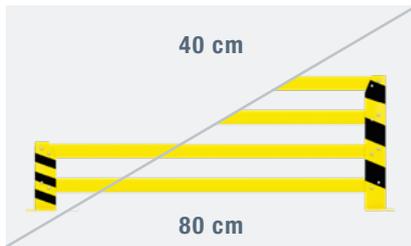


Do you have questions about rack inspection or would you like our certified rack inspectors to carry out the inspection for you?

Talk to us about it! Tel. +49 (0)7158 9181 500

## CRASH PROTECTION RAIL

Art. No. 40 cm = 11757, 11758, 11759, 5434, 11760  
80 cm = 11761, 11762, 11763, 11764, 11765



- Material thickness: 4 mm
- Height: 40 cm / 80 cm
- Lengths: 93 cm / 123 cm / 193 cm / 253 cm / 360 cm
- Painted in yellow with black signal stripes
- Protection against accidental collision, e.g. with industrial trucks
- Tested according german DGV: 108-007

## CRASH PROTECTION BOLLARD

Art. No. 10136



- Material thickness: 4 mm
- Height: 120 cm
- Weight: 19 kg
- Diameter: 16 cm
- Foot plate with 25 x 25 cm
- Painted in yellow with black signal stripes
- Protection against accidental collision, e.g. with industrial trucks

## L / U-PROFILE COLLISION PROTECTION

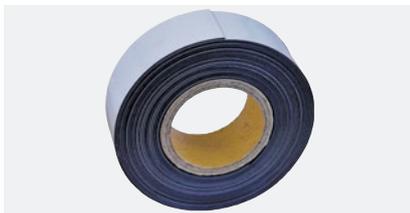
Art. No. L-Form = 4749, 9870 / U-Form = 4748, 9668



- Heights: 40 cm / 80 cm incl. 4 bolt anchors
- Painted in yellow with black signal stripes
- Corner rack protection to protect the outer uprights from accidental impact by lifting equipment such as forklift trucks, ants, etc.
- Tested according german DGV: 108-007

## MAGNETIC BAND

Art. No. 9590, 9591



- Magnetic tape for labelling racks or car bodies, machines, cantilevers, metal cabinets, etc.
- Dimensions: L 10 m / B 5 cm or 10 cm / T 0.15 cm
- Reusable
- Easy cutting to size with standard scissors

## RUBBER STRIP

Art. No. 4013, 4014



- Non-slip supports for cantilevers
- Protects your stored goods from damage and slipping
- Is glued to the cantilevers
- Thickness: 2.2 mm
- Individually adaptable by cutting to size



**LR2000 STORAGE RACK**

- Height of rack 2 m – 4 m
- Upright depths 40 cm, 50 cm, 60 cm, 80 cm, 100 cm or 120 cm available
- Beams are individually height-adjustable in 5 cm increments and available in 110 cm / 220 cm lengths
- Various deck types, extensive range of accessories



**MFR1000 MULTIPURPOSE RACK**

- One rack – countless variations
- Tailored to your work areas
- Modular design – expandable at any time
- Exclusive from TOPREGAL



**MFW1000 MULTI-PURPOSE WORKBENCH**

- Height-adjustable table from 76 cm – 116 cm (with castors from 90 cm – 130 cm)
- 60 cm + 80 cm deep
- Back panel with over 25 different tool holders
- Modular design / individually configurable and adaptable to your needs



**LOCKER / LARGE METAL CABINET**

- Locker / large metal cabinet, lockable, 60 cm & 80 cm depth
- Available as mobile and stationary version
- 176.5 cm high, 110 cm wide
- Metal cabinet: Max. 60 kg per shelf
- Locker: Max. 40 kg per shelf



**TYPE PR9000 PALLET RACK**

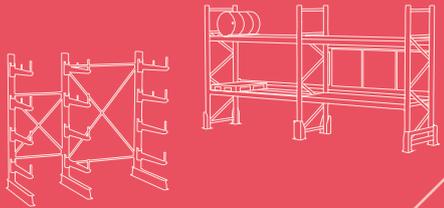
- Height of rack 2 m – 7.5 m
- Upright depth 80 cm or 110 cm
- Load capacity of up to 1000 kg per pallet
- Levels individually height-adjustable in 5 cm increments
- Various decks
- Wide range of accessories



Individually configurable at [www.topregal.com](http://www.topregal.com) or by phone +49 (0)7158 9181 500

# TOPREGAL

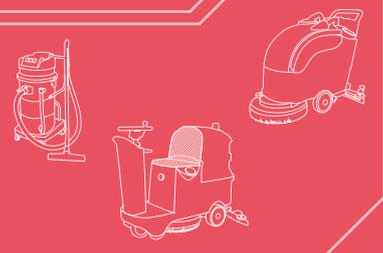
TOPREGAL



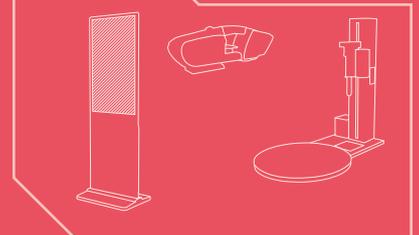
SolidHub



WIPEKET



TECMASCHIN



SOLOPORT

