



ASSEMBLY AND OPERATING INSTRUCTIONS

Vertical rack VR1500



i

GENERAL	Explanation of terms	3
NOTES	General notes Preparation for mounting Technical specifications	3 4 5
PARTS LIST	Vertical rack 300 cm High Vertical rack 400 cm high	6 8
ASSEMBLY	Stand Cross beams Rack divider Cross beam attachment & ground anchoring	10 12 13 14
GOOD TO KNOW	Rack inspection Visual inspection	15 15
ACCESSORIES	L / U-profile collision protection Crash protection rail Spacer Load distributor Magnetic tape Service & contact	16 16 16 16 16 17



EXPLANATION OF TERMS

CONTACT LOAD – SHELF FIELD



- Total load capacity between 2 rack uprights
- Max. load per rack bay 1500 kg

CONTACT LOAD - SEPARATING ARMS



GENERAL NOTES

PREVENT RISKS

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 them confirm this with a signature.

ACCIDENT PREVENTION REGULATIONS

All relevant accident prevention regulations apply:

- Generally accepted safety rules.
- Country-specific regulations.
- 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. If you need technical support, please contact us.

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

- The guidelines for storage facilities and equipment German DGUV 108-007.
- The relevant workplace guidelines and regulations.
- The instructions of your safety officer.
- The structural conditions and ordinances, in particular also the quality and Load bearing capacity of the floor.
- That the facilities are in perfect condition.
- It is absolutely necessary to replace damaged or deformed components immediately. In case of doubt, interrupt the installation 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 involved in the assembly and conversion work must be secured against falling in accordance with the
 accident prevention regulations (VBG 37 §12).
- That protective clothing such as helmet, gloves, safety shoes etc. must be worn during assembly and conversion.
- That the racks must be effectively protected against the impact of forklift trucks or other vehicles.

PREPARATION FOR MOUNTING

All original TOPREGAL rack components that serve to stabilize the storage equipment must be attached without restriction. These include, above all, frame components, field bracing, diagonal braces, cross beams, floor plugs, screws/fastening elements and locking pins. In general, care must be taken during installation to ensure that the screws are not overtightened. The screws are to be pre-assembled hand-tight and tightened later with suitable tools such as cordless screwdrivers or spanners.

PLANNING

Before the shelves are set up, the area provided for them is measured and the position of the rack rows is recorded. Tape measure and chalk line are best suited for this. When setting up the racking, please note that the intended racking row spacing is not equal to the working aisle width and that the pallets, containers or empties may protrude into the aisle. The required working aisle width can be obtained from the manufacturer of the operating device or from your safety officer. Transport routes for power-driven or track-bound conveyors must be wide enough to ensure a safety clearance of at least 0.5m on both sides of the conveyors. The space required for manoeuvring operations must also be taken into account when dimensioning. The safety clearance can be dispensed with if access by persons is prevented by structural measures.

TESTING OF FLOOR AND FLOOR TOLERANCES

Before installing racking equipment, check:

whether the load-bearing capacity of the floor is suitable to safely absorb the intended loads. If in doubt, ask a specialist
and have the load-bearing capacity determined. The responsibility for the correctness of the information given lies with
the builder-owner.

• the surface of the floor:

requires a reinforced concrete slab, min. 200 mm thick, concrete grade C20/25. If the surface is provided with magnesite screed, insulating plates are required to avoid of corrosion and special ground anchors are required.



Structure

Racks may only be used in accordance with the assembly and installation instructions supplied by us. operating instructions can be set up and modified. The conversion of racks may only be carried out in an unloaded condition.

te Siche

Belastung

Steifigkeit Standsicherheit DGUV

108-007

TECHNICAL SPECIFICATIONS

BASIC STRUCTURE

The uprights are connected to the base plates by screw connections and then fixed in the supporting floor. The trusses are attached by simple plug-in construction with securing pins.

COLLISION PROTECTION

Corner areas and passages must be protected by a collision guard with yellow-black hazard marking that is not connected to the rack (see German DGUV: 108-007).

SOIL PROPERTIES

The minimum component thickness of the soil is 20 cm, the minimum borehole depth is 10 cm. The evenness of the ground is to be measured according to FEM 9.831 and DIN 18202. The minimum concrete quality is C 20/25.

IDENTIFICATION

Marking by a load plate is mandatory. These are included in the delivery.

TESTED SAFETY

Our pallet racking meets the requirements of the German DGUV: 108-007 (formerly BGR 234) for load, rigidity and stability. Tested safety to offer you a high quality and safe rack.

VERTICAL INSTALLATION / DEFLECTION

The rack must be aligned vertically. Deviations of the rack supports from the vertical in the length and depth of the shelves must not exceed 1/200 of the rack support heights. To compensate for uneven floors, height compensation plates can be used - but only up to a maximum of 2 cm. The individual uprights must be aligned within a row of shelves.

There is a general obligation to anchor the floor! Suitable bolt anchors are included in the delivery. The shelves may only be loaded after assembly is complete.



VERTICAL RACK 300 CM HIGH

A Stand profile 2,5 m

B Stand profile 3 m



C Diagonal braces



D Cross brace



E Foot section



F Hexagon head screw M8 x 20 mm



G Hexagon head screw M8 x 65 mm



H Self-locking nut M8



I Spacer sleeve (length 25 mm)



J Cross beam



K Locking pin



L Arm separator



M Wing nut M8



N Washer M8



0 Wedge anchor M12 x 100 mm



VERTICAL RACK 400 CM HIGH

A Stand profile 4 m

B Stand profile 4 m



C Diagonal braces



D Cross brace



E Foot section



F Hexagon head screw M8 x 20 mm



G Hexagon head screw M8 x 65 mm



H Self-locking nut M8



I Spacer sleeve (length 25 mm)



J Cross beam



K Locking pin



L Arm separator



M Wing nut M8



N Washer M8



 ${\bf 0}$ Wedge anchor M12 x 100 mm



TOPREGAL

STAND



1. Assemble upright profile A / B and foot part E and fasten with hexagon head screws F, nuts-M8 H screw it tight.

2. Cross struts D and diagonal struts C as shown in the picture with the discance sleeve I, the hexagonal bolts G and the self-locking nuts M8 H to the stand profile A / B.

Vertical rack 3 m

Vertical rack 4 m





Bracing

The 1st cross strut is to be mounted in the 4th hole. Between cross brace and the following diagonal brace the respective holes remain free as indicated above - i.e. the screw of the next strut goes into the following hole, and so on.

CROSS BEAMS



- 1. Hang the rear crossbars (J) at the top and bottom. On the front side the trusses (J) on the same height. The middle crossbar(s) may be freely selected in height.
- 2. Drill holes and insert bolt anchor 0 for floor anchoring through base plate and fix with max. 46 Nm.

RACK DIVIDER



3. Place the Rack Divider L on the crossbar as shown and secure it with the hexagon nut G, washer N and tighten wing nut M.

CROSS BEAM ATTACHMENT & GROUND ANCHORING



Required parts: Preassembled rack upright, cross beam J, safety pin K

Set up the pre-assembled uprights and hook the crossbars J into the upright profile A / B at the desired height on both sides. Insert the locking pins K into the hole provided in the crossbar J. The trusses are hooked in a 50 mm grid.

FLOOR ANCHORING BASE PLATE

Required parts: Preassembled rack, bolt anchor O

- Drill holes in the bottom: 12 mm Ø, min. 100 mm deep.
- Blow out holes clean.
- Drive in bolt anchor the nut should be flush with the thread.
- Tighten anchor firmly with max. 46Nm.
- After tightening, the marking in the thread must not be visible!





Fixing the foot plate

It is perfectly sufficient to place one bolt anchor per foot plate on the double perforated side to be fastened. However, for better stability we recommend 2 bolt anchors per foot plate. The third hole serves as an alternative to provide additional stability if obstacles such as cables, steel reinforcements, etc. occur when drilling a hole.

RACK INSPECTION

The European directive DIN EN 15635 refers to the responsibility of the operator to keep the racks in proper condition. For this purpose, visual inspections and expert inspections must be carried out on the racks at regular intervals to ensure safety. The following aspects, among others, must be checked:

- Are the rack supports vertical?
- Are there any cracks in welds 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 loading unit on the rack?
- · Are loading and information notes available and up-to-date?
- Is the stability of the loading units given?

The tests performed, defects and their rectification must be documented in writing. This documentation shall be kept at least until the next regular inspection. However, it is recommended that the documentation be kept for the entire service life of the racking system (see German BGI/GUV-I 5166).

PERSONS QUALIFIED FOR INSPECTION

A person is qualified if he / she can demonstrate specialist knowledge from his / her professional activity in the environment of the test object and appropriate further training. These are e.g. fitters of the manufacturer or appropriately qualified personnel of the operator.

VISUAL INSPECTION

- Visual inspections must be carried out at least once a week.
- Visual inspections can be carried out by an internal, competent person.
- The scope of inspection may be reduced to those parts of the rack where defects have been present since of the last test.

EXPERT INSPECTION

- Expert inspections shall be carried out at least every 12 months.
- The comprehensive expert inspection should be carried out by a competent, usually external person and a comprehensive test protocol is created.



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! Phone +44 (0)20 78941516

L / U-PROFILE COLLISION PROTECTION

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



CRASH PROTECTION RAIL

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



SPACER

- 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

• Heights: 40 cm / 80 cm incl. 4 bolt anchors • Painted in yellow with black signal stripes

• According to German DGUV 108-007

Protection against accidental collision, e.g. with industrial trucks

• Corner rack protection to protect the outer uprights from accidental impact by lifting equipment such as forklift trucks, ants, etc

According to German DGUV 108-007

Art.-No. 1912



- Spacer for parallel positioning of rows of pallet racks
- · Can also be used to fix the rack to the wall

• Load distributor for upright with 110 cm depth

· Protects the floor and reduces the point load

• Lenath: 20 cm

• Length: 120 cm

- · Colour: TOPREGAL blue (corresponds roughly to RAL 5003)
- For upright height < 3 m we recommend 2 spacers per upright
- For upright height > 3 m we recommend 3 spacers per upright

LOAD DISTRIBUTOR

Art.-No. 1790-A, 1790-80-A



MAGNETIC TAPE

Art.-No. 9590, 9591



- Magnetic tape for labelling racks or e.g. on car bodies, machines, beams, 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

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: <u>www.topregal.co.uk/en/service</u>

Responsible for the content: TOPREGAL GmbH Industriestrasse 3 70794 Filderstadt GERMANY www.topregal.com



V 13.11.23