Rolling Towers

**Layher Uni Stair Tower**
**Instructions for Assembly and Use**

**Mobile working platforms**
according to DIN EN 1004:2005-03

Working platform 1.5 x 1.8 m

max. working height:
indoors 14.5 m
outdoors 8.5 m

Load bearing capacity 2.0 kN/m²
on max. one working level
(scaffold group 3 as per DIN EN 1004:2005-03)

Layher®

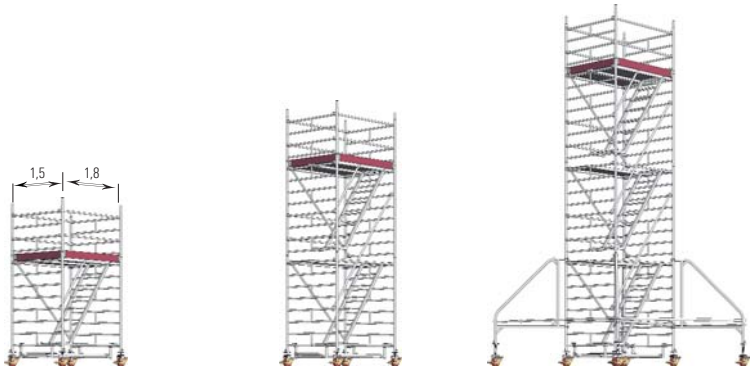
More Possibilities. The Scaffolding System.

# Tower Types

**Layher Uni Stair Tower**

For **outdoor use** observe height limits.

**Tower models**
**4201-4203**




| Tower model | 4201 | 4202 | 4203 |
|---|---|---|---|
| Working height (m) | 4.5 | 6.5 | 8.5 |
| Scaffold height[1] (m) | 3.7 (3.45) | 5.7 (5.45) | 7.7 (7.45) |
| Platform height (m) | 2.5 | 4.5 | 6.5 |
| Weight (kg) | 178.8 | 253.8 | 417.1 |

[1] Values in brackets: minimum tower height incl. spigots.

**Tower models**
**4204-4206**

| Tower model | 4204 | 4205 | 4206 |
|---|---|---|---|
| Working height (m) | 10.5 | 12.5 | 14.5 |
| Scaffold height[1] (m) | 9.7 (9.45) | 11.7 (11.45) | 13.7 (13.45) |
| Platform height (m) | 8.5 | 10.5 | 12.5 |
| Weight (kg) | 492.1 | 567.1 | 642.1 |

[1] Values in brackets: minimum tower height incl. spigots.

# Assembly



**1** Pay attention to the General Assembly and Use Instuctions on page 8. The examples shown of the tower types 4205 – 4206 (page 2) are designed for use indoors. According to the regulations in force since January, 1st, 1987, the permissible **maximum platform height outdoors is 8 m**.
Pay attention to the material list and ballasting table on page 7.

## 2 Basic assembly
## Tower models 4201 and 4202


Insert the castors 1 into the ladder frames 4 and secure against falling out by fastening the wing screws on the spindle nuts.

Connect the two ladder frames 4 with one guardrail 5 onto the 1st rung from the bottom. Snap-on the diagonal brace 6 at the entrance side to stabilize the ladder frames 4.

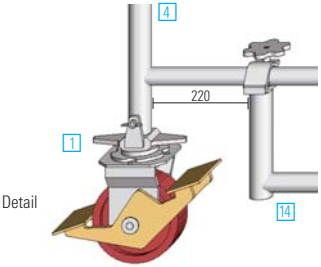
The deck support to screw on 14 or 21 must be placed under the ladder frames 4 in correct position (see detail). Bolt the base strut 17 to the deck support 14.

Insert the deck 1.8 m 10 into the deck support 14 directly beside the base strut 1.8 m 17.
Mount the stair 7. The stair 7 must always be built in at the right-hand side of the tower – seen from the direction of ascent. (Pay strict attention to the assembly examples.) If you fail to observe this arrangement, the stairway access deck 9 at the top platform will be placed on the wrong side.

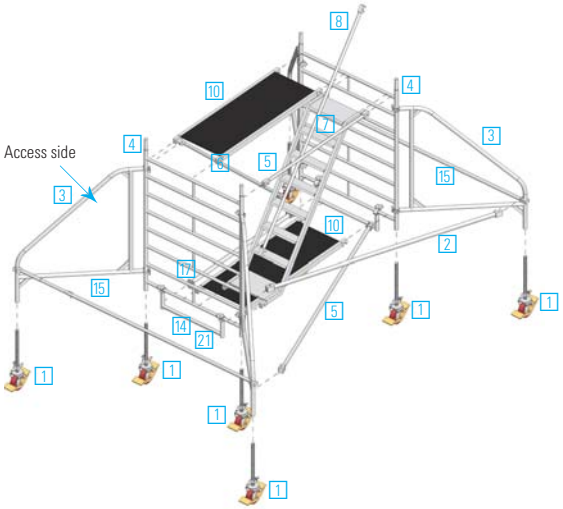
As protection mount one stair guardrail 5 onto the top rung of the ladder frame 4; on the opposite side of the stair 7 lock in the deck 10.
Level the tower using the threaded spindles.

**After assembly push guardrails 5 and diagonal braces 6 outwards as far as possible.**

For the following assembly steps for tower type 4201 see chapter 4 and for tower type 4202 see chapter 3.




## Tower models 4203–4206, 4212, 4222 with outriggers




For **models 4203** onwards insert the castors 1 into the outrigger 3 and secure against falling out by fastening the wing screws on the spindle nuts. Connect four outriggers 3 with rapid couplers, the lower coupler being place under the 2nd rung of the lower ladder frame 4. Before you fasten the hand wheel fix the outriggers 3 with the two plan braces 2 in their correct position. Then fasten the hand wheels fingertight.

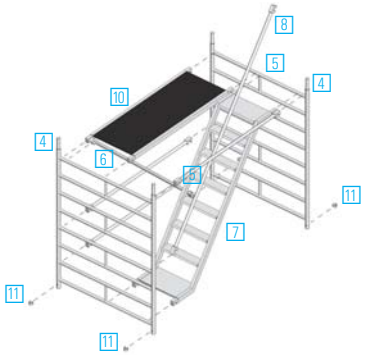
The next step will be the fixing of the two adjustable horizontal braces 15 in order to connect the two outriggers 3 in each case. The plan braces adjustable 15 must be built in parallel to the ladder frames 4. Thus you keep the entrance area free (see also page7, drawing for ballast fixing).

When working next to a wall, you may use a tower with outriggers 3 on one side only. Pay attention to the ballasting tables.

For the following assembly steps see chapter 3.

# Assembly

## 3 Assembly of the intermediate platforms




**During assembly and dismantling, system decks or scaffold planks according to DIN 4420-3 (minimum: 28 x 4.5 x 220 cm long) must be used as auxiliary decks at maximum height intervals of 2.0 m. These auxiliary decks provide a safe footing for assembly and dismantling, are removed after the erection. Each platform must be completely boarded.**

To continue follow the assembly examples (page 2). Plug in the ladder frames 4 and secure them with spring clips 11. Take care that the following stair 7 is always inserted one rung higher (25 cm) than the opposite deck 10 at its lowest end.

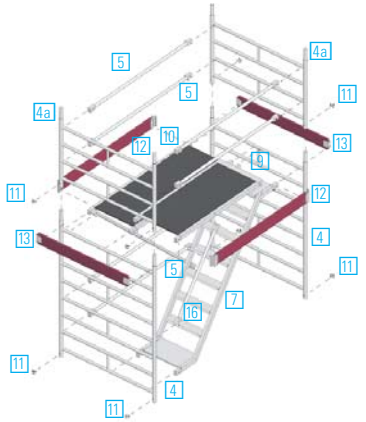
The diagonal braces 6 are always built in the opposite direction to the stair 7. The stair rails 8 have to be built in and fixed at the lower end of the stair 7 to the 3rd rung above the landing. At the intermediate platforms, which must only be used for ascending, two guardrails 5 are fixed on the outside for lateral protection.

Do not add the next platform until the uppermost platform below is completely mounted and braced.

**For dismantling proceed in the reverse order, i.e. do not start dismantling the next platform until the upper one is completely dismantled. After assembly push guardrails 5 and diagonal braces 6 outwards as far as possible.**

For following assembly steps see chapter 4.

## 4 Assembly of the working platform



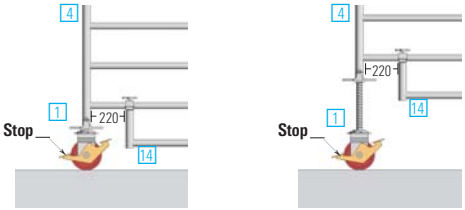

At the level of the top stair head build in the stairway access deck 9. First slot the support into the stair 7 so that the bottom flange grips underneath the landing. Then lower the stairway access deck 9 down and lock it into the top rung of the opposite ladder frame 4. This secures the stairway access deck 9 against unintended lift-off or displacing.

Now place the deck 1.8 m 10 beside the stairway access deck 1.8 m 9. The horizontal gap between the two decks is a maximum of 25 mm. Mount stair guardrail 1.2 m 16 at the 4th rung of the ladder frame 4 from the bottom and fix the upper part of the rail with bolts to the frame of the stairway access deck 9.

Then plug in two ladder frames 4a and secure them with spring clips 11. Add the safety protection according to regulations consisting of two guardrails 5 at each side as well as two toe boards 1.8 m 12 and two end toe boards 1.44 m 13.

**After assembly push guardrails 5 and diagonal braces 6 outwards as far as possible.**

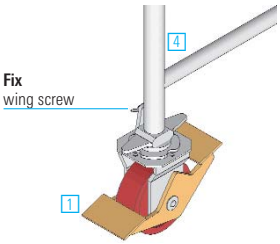
## 5 Operating the castors




Maximum height adjustment at the spindle = 25 cm

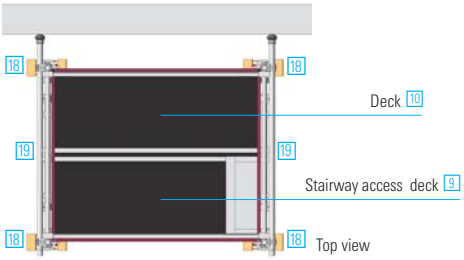
During assembly and while working, the castors 1 must be kept locked by pressing down the brake lever labelled STOP. When the brake is locked, the lever labelled STOP is in the down position.

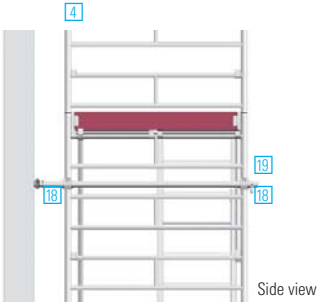
For movement, the castors are unlocked by pushing the other lever down.



# Wall Support

**Wall support under load**




When working next to a wall, supports may be required according to the table **"Ballasting"** (page 7). Use te Uni-distance-tube 19 and fix it to the ladder frames 4 with the couplers 18.

# Dismantling

During assembly and dismantling, system decks or scaffold planks according to DIN 4420-3 (minimum 28 x 4.5 x 220 cm long) must be built in as auxiliary decks at maximum height intervals of 2.0 m. These auxiliary decks, providing a safe footing for assembly and dismantling, are removed after the erection. Each platform must be completely boarded.

**Remove the corresponding diagonal braces 6 and bracing elements only after having taken down the ladder frames 4, 4a situated above.**

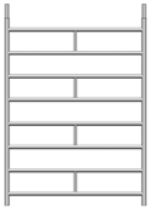
Dismantling is carried out in the reverse order of assembly.

To remove parts open the snap-on claws by depressing the locking clips. The red claws of the decks enable a single person to assemble or dismantle them easily.

Open the red claws at one end and rest the base of the clips on the rung. Now open the opposite clips and remove the deck.

# Components



| | | |
|---|---|---|
| 1 **Castor 200 with spindle 7 kN and wing screw** | **1259.200** |  |
| 2 **Plan brace** 2.95 m | **1209.285** |  |
| 3 **Outrigger** | **1216.000** |  |
| 4a **Ladder frame 150/4** | **1299.004** |  |
| 4 **Ladder frame 150/8** | **1299.008** |  |
| 5 **Guardrail** 1.8 m | **1205.180** |  |
| 6 **Diagonal brace** 2.5 m | **1208.180** |  |
| 7 **Stair** 1.8 m | **1212.180** |  |
| **Stair guardrail** | | |
| 8 3.07 m<br>16 1.2 m | **1213.180**<br>**1327.120** |  |

| | | |
|---|---|---|
| 9 **Stairway access deck** 1.8 m | **1243.180** |  |
| 10 **Deck** 1.8 m | **1241.180** |  |
| 11 **Spring clip** | **1250.000** |  |
| 12 **Toe board with claw** 1.8 m | **1239.180** |  |
| 13 **End toe board** 1.44 m | **1238.144** |  |
| 14 **Deck support to screw on** 0.9 m | **1326.090** |  |
| 15 **Plan brace adjustable** | **1318.000** |  |
| 17 **Base strut** 1.8 m | **1324.180** |  |
| 18 **Special double coupler, rigid**<br>WS 19 mm<br>WS 22 mm | <br>**1269.019**<br>**1269.022** |  |
| 19 **Uni-distance-tube** 1.8 m | **1275.180** |  |
| 20 **Ballast** 10 kg | **1249.000** |  |

# Parts List



**Towers 4212** (outriggers at one side) and **4222** (outriggers at both sides) are intended for **outdoor use**. Assembly of the outriggers according to description on page 3.

| Tower Model | Reference | 4201 | 4202 | 4212 | 4222 | 4203 | 4204 | 4205 | 4206 |
|---|---|---|---|---|---|---|---|---|---|
| Ladder frame 150/4 | 1299.004 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Ladder frame 150/8 | 1299.008 | 2 | 4 | 4 | 4 | 6 | 8 | 10 | 12 |
| Stairway access deck 1.8 m | 1243.180 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Deck 1.8 m | 1241.180 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 |
| Guardrail 1.8 m | 1205.180 | 5 | 8 | 8 | 8 | 11 | 14 | 17 | 20 |
| Diagonal brace 2.5 m | 1208.180 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 |
| Stair 1.8 m | 1212.180 | 1 | 2 | 2 | 2 | 3 | 4 | 5 | 6 |
| Stair guardrail 3.07 m | 1213.180 | – | 1 | 1 | 1 | 2 | 3 | 4 | 5 |
| Stair guardrail 1.2 m | 1327.120 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Toe board 1.8 m, with claw | 1239.180 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| End toe board 1.44 m | 1238.144 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Outrigger | 1216.000 | – | – | 2 | 4 | 4 | 4 | 4 | 4 |
| Plan brace 2.95 m | 1209.285 | – | – | 2 | 2 | 2 | 2 | 2 | 2 |
| Plan brace adjustable | 1318.000 | – | – | – | 2 | 2 | 2 | 2 | 2 |
| Base strut 1.8 m | 1324.180 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Deck support to screw down, 0.9 m | 1326.090 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Spring clip | 1250.000 | 4 | 8 | 8 | 8 | 12 | 16 | 20 | 24 |
| Castor 200 with spindle, 7 kN | 1262.200 | 4 | 4 | 6 | 8 | 8 | 8 | 8 | 8 |
| Ballast | 1249.000 | For the number of ballast weight see the Ballasting table. | | | | | | | |

# Ballasting

In order to ballast the tower use Layher ballast weights 20, Ref. 1249.000 (10 kg each). Coupler with hand wheel permits simple, quick and secure fixing of the respective ballast required at the correct places. Only these ballast weights are to be used, **liquid or granular ballast materials must not be used.**
**The ballast weights must be distributed evenly to all ballasting fixing points. The remainder, not divisible by 4, is distributed to the fixing points A.**

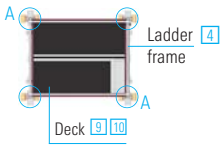
| Tower Model | | 4201 | 4202 | 4212 | 4222 | 4203 | 4204 | 4205 | 4206 |
|---|---|---|---|---|---|---|---|---|---|
| **Assembly indoors** | Without outriggers | ○ | 6 | × | × | × | × | × | × |
| | Two sided outriggers | □ | □ | × | ○ | ○ | ○ | ○ | ○ |
| | One sided outriggers | □ | □ | 2 | × | 2 | 4 | 6 | 8 |
| | One sided outriggers with wall support | □ | □ | ○ | × | ○ | ○ | ○ | ○ |
| **Assembly outdoors** | Without outriggers | 2 | 16 | × | × | × | × | × | × |
| | One sided outriggers | □ | □ | 8 | × | 20 | × | × | × |
| | Two sided outriggers | □ | □ | □ | ○ | ○ | ○ | × | × |
| | One sided outriggers with wall support | □ | □ | ○ | × | ○ | 4 | × | × |

The figures shown indicate the number of ballast weighs 10 kg each. ○ **= no ballast required.** × **= not permitted.** □ **= Erection with additional parts, only possible after consulting the manufacturer.**

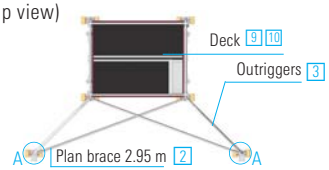
**How to position the ballast weights**

○ = fixing points for ballast weights
A = fixing points for remainder of ballast weights not divisible by 4

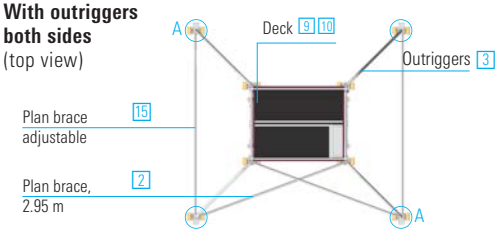
**Without outriggers**
(top view)




**With one sided outriggers**
(top view)




**With outriggers both sides**
(top view)



# General Instructions on Assembly and Usage

**Layher Uni Stair Tower**

The rolling tower may be used for the scaffolding group and as additionally specified in the German operating safety regulations (BetrSichV).

**The user of mobile working platforms must comply with the following instructions:**

**1.** The user must check the suitability of the selected rolling tower for the work to be performed (Section 4 of BetrSichV).

**2.** The max. platform height is, in accordance with DIN EN 1004:2005-03:

– indoors 12.0 m
– outdoors 8.0 m

The material and ballasting requirements on page 7 must be complied with; risk of accidents in the event of non-compliance. For greater heights, additional measures are necessary, obtainable from the manufacturer. The stability of the rolling tower must be assured.

**3.** The assembly, modification or dismantling of the rolling tower in accordance with the present instructions for assembly and use may only be performed under the supervision of a qualified person and by professionally suitable personnel after special instruction. Only the scaffolding types shown in these instructions for assembly and use may be used.
The unit must, after assembly and before being put into service, be inspected by persons qualified to do so (Section 10 of BetrSichV). The inspection must be documented (Section 11 of BetrSichV). During assembly, modification or dismantling, the rolling tower must be provided with a prohibition sign indicating "No access allowed" and be adequately safeguarded by means of barriers preventing access to the danger zone (BetrSichV Annex 2, para. 5.2.5).

**4.** Before assembly, all parts must be inspected to ensure they are in perfect condition. Only undamaged original parts from the Layher mobile working platform systems may be used.
Tower parts such as snap-on claws and spigots must be cleaned of dirt after use. Tower parts must be protected against slipping and impacts during truck transportation. It must be ensured that the tower parts are stored where they are free from weather effects. Tower parts must be handled in such a way that they are not damaged.

**5. During assembly and dismantling, system decks or scaffold planks according to DIN 4420-3 (min. 28 x 4.5 x 220 cm long), must be built in as auxiliary decks at max. height intervals of 2.0 m. These auxiliary decks, providing a safe footing for assembly and dismantling, are removed after the erection. Each platform must be completely boarded.**
Due to structural reasons intermediate platforms with access decks must be built in at maximum intervals of 4.00 m. For safety reasons, it is advisable for two persons to erect the towers above a height of 4.0 m. To assemble the upper tower sections, the individual parts must be hoisted using transportation ropes.
The attachment of lifting gear for vertical transportation, e. g. of tools or materials, requires approval based on a special structural analysis. Small quantities of tools and materials can be carried up in person, otherwise hoisted by transportation ropes to the working level.

**6.** Secure the ladder frame joints with spring clips against unintended lift-off.

**7. During assembly push guardrails and diagonal braces outwards as far as possible on the ladder rungs.**

**8.** At **intermediate decks** used for climbing only, two guardrails are required. For small towers where the height of the deck exceeds 1.0 m, equipment must be provided that permits the attachment of side guards in accordance with DIN EN 1004:2005-03.

**9.** Access to the working platform is only permitted on the inside.

**10.** It is not permitted to work on two or more decks at the same time. In the event of discrepancies consult the manufacturer.

**11.** Persons working on mobile platforms should not lean or press against the guardrails, nor jump onto platforms.

**12.** It is not permitted to affix lifting or hoisting devices to mobile working platforms.

**13.** Move the tower manually and only on firm, level ground which is free from obstacles and sufficiently load bearing. Move the tower only longitudinally or diagonally. Avoid any impact. Do not exceed normal walking speed during movement. After extending the base one sided with wall supports in use, move parallel to the wall only.

**14.** No persons or loose objects must remain on the tower when moving it.

**15.** Before use and after moving the tower, lock the castors by pressing the brake lever.

**16.** Do not expose the tower to corrosive liquids or gases.

**17.** Mobile working platforms must not be bridged between each other, or a building **without special verification.** The same applies to special erections, e. g. suspended use etc.

**18.** At a wind force above 6 (Beaufort-Scale) and after finishing the working shift, move the tower when **operating outdoors** or in open buildings to a wind protected area or secure it by other appropriate measures against toppling over. (Wind speeds above 6 on the Beaufort-Scale can be recognised by noticeable difficulty when walking.)
If possible, rolling towers used on the outside of buildings must be securely attached to the building or to another structure. It is recommended that rolling towers be anchored when they are left unattended.

**19.** Set the rolling tower verhedly with the adjusting spindles, or by placing suitable materials underneath it. The inclination must not exceed 1%.

**20.** Keep the access hatches shut, except when climbing the tower.

**21.** All couplers must be fastened with 50 Nm.

**22.** A rolling tower is not intended for use as a stairway tower providing access to other structures.

**23.** It is prohibited to jump on the decks.

**24.** A check must be made that all parts, auxiliary tools and safety equipment (ropes etc.) for erecting the rolling towers are available on the site.

**25.** Avoid horizontal and vertical loads that can cause the mobile work platform to topple over, such as
- horizontal loads, for example when working on adjacent structures
- additional wind loads (due to tunnel effect from through-type building, unclad buildings and corners)

**26.** When stipulated, mobile beams or outriggers and ballast must be installed.

**27.** It is prohibited to increase the height of the decking by using ladders, boxes or other objects.

**28.** It is not permitted to construct bridges between the rolling tower and a building.

**29.** Rolling towers are not designed to be lifted or suspended. If their use as suspended scaffolding is planned, for example, consult the manufacturer.

All dimensions and weights are guideline values.
Subject to technical modification.

Our deliveries shall be made exclusively in accordance with our currently valid General Terms of Sale.

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More Possibilities. The Scaffolding System.

Wilhelm Layher GmbH & Co. KG
Scaffolding Grandstands Ladders

Post Box 40
74361 Gueglingen-Eibensbach
Germany
Phone +49 7135 70-0
Fax +49 7135 70-372
E-Mail export@layher.com
www.layher.com

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