

## LAYHER SOLOTOWER WITH TELESCOPING GUARDRAIL INSTRUCTIONS FOR ASSEMBLY AND USE



### Edition 03.2021

Mobile working platforms  
as per DIN EN 1004:2005-03  
Working platform 0.75 x 1.13 m

max. working height  
in closed areas: 2.15 m  
in the open: 2.15 m  
perm. load capacity 2.0 kN/m<sup>2</sup>  
on max. one working level  
(Scaffolding group 3 as per  
DIN EN 1004:2005)



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## NOTE

The products or assembly variants shown in these instructions for assembly and use may be subject to country-specific regulations. The user of the products bears the responsibility for compliance with these regulations.

Subject to local regulations, we reserve the right not to supply all of the products illustrated here.

Your Layher partner on the spot will be happy to provide advice and answers on products, their use or specific assembly regulations.

# 1. INTRODUCTION

## General

These instructions for assembly and use relate to assembly, modification and dismantling of the mobile working platform SoloTower in the form of "SoloTower with telescoping guardrail" made by Wilhelm Layher GmbH & Co KG of Güglingen-Eibensbach, Germany. These instructions cannot cover all the possible applications. If you have any questions about specific applications, please contact your Layher partner.

**Caution:** The Layher SoloTower may only be assembled, modified and dismantled under the supervision of a qualified expert and by technically trained employees.

# 2. GENERAL DIRECTIONS FOR ASSEMBLY AND USE

The expansion for the mobile working platform may be used for the specified scaffolding group in accordance with the stipulations of DIN EN 1004 and taking into account the appropriate sections of the German Ordinance on Industrial Safety and Health (BetrSichV).

**The user of the expansion for the mobile working platform must comply with the following instructions:**

1. The user must verify the suitability of the selected mobile working platform for the work to be performed (Section 4 of BetrSichV).

The ballasting and component requirements in the appropriate sections must be complied with. Non-compliance leads to a risk of accidents, with stability and load-bearing capacity no longer being assured.

If the selected tower cannot be built in the assembly variants described, a separate strength and stability calculation must be conducted for the tower or for individual parts of it.

2. Assembly, modification or dismantling of the mobile working platform in accordance with the present instructions for assembly and use may only be performed under the supervision of a qualified person or by professionally suitable employees after special instruction. Only the tower models shown in these instructions for assembly and use may be built and also used. The tower must be inspected before, after or during assembly, but no later than before it is put into service (Section 14 of BetrSichV). During assembly, modification or dismantling, the mobile working platform must be marked with a prohibition sign indicating "no entry" (BetrSichV Annex 1, Para. 3).

3. Before installation, all parts must be inspected to ensure they are in flawless condition. Only undamaged original parts of the mobile working platform systems from Layher may be used. Tower parts such as snap-on claws and spigots must be cleaned of dirt after use. The components must be secured against slipping and impacts while being transported. The components must be handled in such a way that they are not damaged.

4. Tools and materials on a small scale must be carried on the person.
5. The ladder frame joints must always be secured using spring clips.
6. Stability must assured during every phase of the assembly process.
7. Upward access to the working platform is permitted only on the inside of the tower.
8. Lifting gear must not be attached to or used on mobile working platforms.
9. Assembly and movement are only permitted on sufficiently firm ground, and only in a longitudinal or diagonal direction. All impacts must be avoided. During movement, normal walking speed must not be exceeded.
10. No personnel and/or loose objects may be on the tower while it is being moved.
- 11 After movement, the wheels must be locked by operating the brake lever.
12. Working on two or more working levels at the same time is not permitted. In the event of exceptions, the manufacturer must be consulted. When work is being done on several levels, they must be completely fitted with 3-part side protection.
13. The mobile working platforms must not be subjected to any aggressive fluids or gases.
14. Mobile working platforms must not be connected to one another by bridging unless the structural strength of that connection has been specifically verified. The same applies for all other special assemblies, e.g. suspended scaffolding etc. Furthermore, it is not permitted to construct bridging between a mobile working platform and a building.
15. If the mobile working platform is used outdoors or in open buildings, it must be moved – when wind strength exceeds 6 on the Beaufort scale or at the end of a shift – into a wind-protected area or safeguarded against tipping over by other suitable measures

**(wind strengths higher than 6 on the scale can be recognised by a noticeable difficulty in walking).** It is recommended that mobile working platforms be anchored if they are left unattended. The maximum permitted tilt is 1 %.

16. Decks may only be repositioned when the specified side protection heights and bracing are complied with. In the event of a design differing from the models shown in the present instructions for assembly and use, the manufacturer must be consulted, as a separate verification of stability may be required.

17. The access hatch must be kept shut whenever it is not in use.

18. Climbing over from one mobile working platform to another or to adjacent buildings is not allowed.

19. Jumping on decked surfaces is not allowed.

20. It must be checked that all parts, auxiliary tools and safety equipment for assembling the mobile working platforms are available at the place of use.

21. Horizontal and vertical loads that can cause the mobile working platform to topple over should be avoided, for example:

- due to pushing against the side protection
- additional wind loads (tunnel effect of through-type buildings, unclad buildings and corners).

22. If stipulated, mobile working platforms must be provided with appropriate base-widening solutions, which can be mobile beams, stabilisers and outriggers. Alternatively, wall bracing or wall clamping arrangements by means of distance tubes can be stipulated.

23. It is not permitted to increase the height of the deck using ladders, boxes or other objects.

24. Mobile working platforms are not designed to be lifted or suspended.

### 3. MEASURES TO PREVENT FALLS

As an alternative to the already familiar 3T method explained in the instructions for assembly and use of the SoloTower, in which assembly is done through the trapdoor to the next level up by means of the double guardrail, the Layher SoloTower can be assembled with a 2 m platform height and with collective side protection.

#### **Safety assembly with telescoping guardrail Fall prevention during assembly, modification or dismantling**

This is an expanded assembly variant of the Safety Assembly P2, which is designed with telescoping guardrails and four Uni assembly hooks due to the minimal length dimension.



### 3.1. The principle

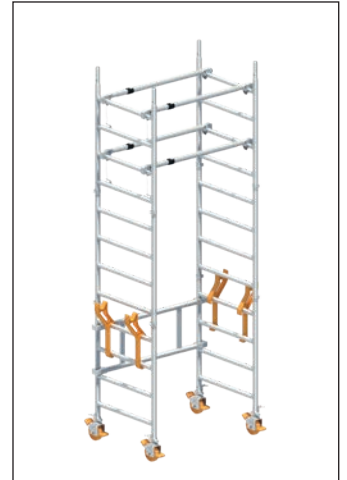
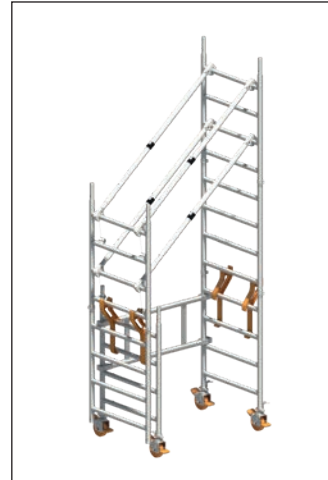
1. Attach the Uni assembly hooks on both sides. Position two 1 m ladder frames each, secured by spring clips, in the Uni assembly hooks.



2. Fit the four telescoping guardrails on the outside to the topmost rung and the 3rd rung from the top of the positioned ladder frame units.



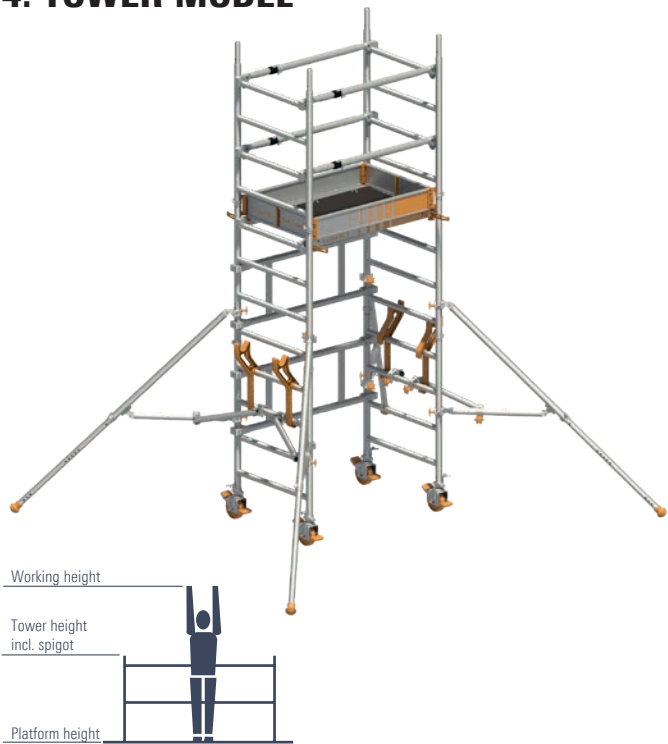
3. Place the ladder frame units into the spigots provided for the purpose, by swinging them upwards with the already fitted telescoping guardrails.



4. Fit the access deck to the 5th rung from the top of the two ladder frames. Climb up to the now-secured level and lock the telescoping guardrails using the attached spring clips.



## 4. TOWER MODEL



Tower model	1600202
Working height [m]	4.15
Tower height [m]	3.37
Platform height [m]	2.15
Weight [kg] (without ballast)	119.8
Ballasting (stated in units)	
<b>In closed areas</b>	
Assembly central	0
Assembly off-set	LO R5
Assembly off-set with wall bracing	0
<b>In the open</b>	
Assembly central	0
Assembly off-set	LO R5
Assembly off-set with wall bracing	0

## 5. ASSEMBLY AND DISMANTLING


Observe the general directions for assembly and use on pages 4 – 5. The examples shown for assembly are intended for use **in closed areas and outdoors up to a maximum platform height of 2 metres** (see links).


Snap the snap-on claws of the access deck **4** and the telescoping guardrails **2** into the rungs of the ladder frames **1** from above.

Snap the snap-on claws of the double guardrails **3** from the inside onto the upright tubes of the ladder frames.

Level the tower after basic assembly. This is done using the threaded spindles of the wheels **8**.

Always tighten screw couplers provided with nuts using a suitable spanner (approx. 50 Nm).

 The snap-on claws of the double guardrails **3** and access decks **4** , and the spring clips **9** on the ladder frames **1** , must be properly snapped in and then secured. Lock the wheels **8** during assembly, modification or dismantling and whenever there is anybody on the tower.

 Secure the telescoping guardrails **2** directly after reaching the work platform and pin them using spring clips **9**.

The item numbers **1–13** of the parts in the complete document relate to the section Components of the system on page 18.



## 5.1. Assembly sequence

### 5.1.1. Basic assembly

1. Insert two wheels **8** into the 1 m ladder frames **1** and fix them using the locking screw at the appropriate end of the upright.
2. Connect the 1 m ladder frames **1** to a double guardrail **3** between the 2nd and 4th rungs from the bottom as initial bracing.



### 5.1.2. Assembly of model 1600202

1. Attach the four Uni assembly hooks **11** on both sides to the topmost rungs of the ladder frames in the basic assembly.

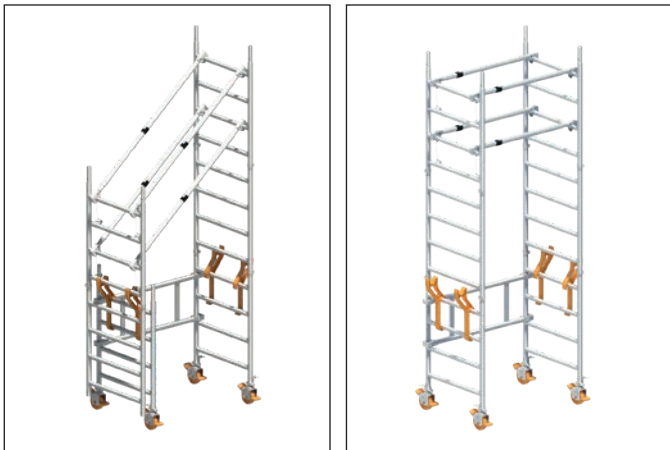
Assemble the 1 m ladder frames **1**, secure them with spring clips **9** and position them in the Uni assembly hooks.



2. Fit the four telescoping guardrails **2** on the topmost rung and on the 3rd rung from the top on the previously positioned ladder frame units.



3. Place the ladder frame units by swinging them upwards with the previously fitted telescoping guardrails into the spigots provided for the purpose on the 1 m ladder frames **1** in the basic assembly. Then secure the joints using spring clips **9**.



4. Fit the access deck **4** to the 8th rung from the bottom and snap it properly into place using the snap-on claws. 2. Fit the double guardrail **3** for bracing the ladder frames between the 5th and the 7th rungs from the bottom



5. Fit the stabilisers **5** to all four uprights of the already fitted ladder frames (see p. 15, Section 7, Stabiliser attachment).
6. Secure the stabilisers **5** by fitting the rotation lock **6** between the ladder frame upright and the transverse tube of the stabiliser to prevent against unintended rotation.



7. Insert a SoloTower assembly hook **10** into the recess provided for it in the snap-in claws of the already fitted access deck **4**.

8. Position the components needed for further assembly on the SoloTower assembly hooks **10**.

### Part arrangement for model 1600202

a. 1 x Toe board unit **7**



9. Climb up on the inside using the rungs of the ladder frame and through the trapdoor provided.

10. **Directly after reaching the work platform, secure the telescoping guardrails **2** by pinning them using the attached spring clips.**

11. Take the toe board unit **7** out of the position a indicated under item 8, fold it open on the work level now constructed, and fit it as a frame around the access deck (see p. 16, Section 8, Fitting the toe board unit).

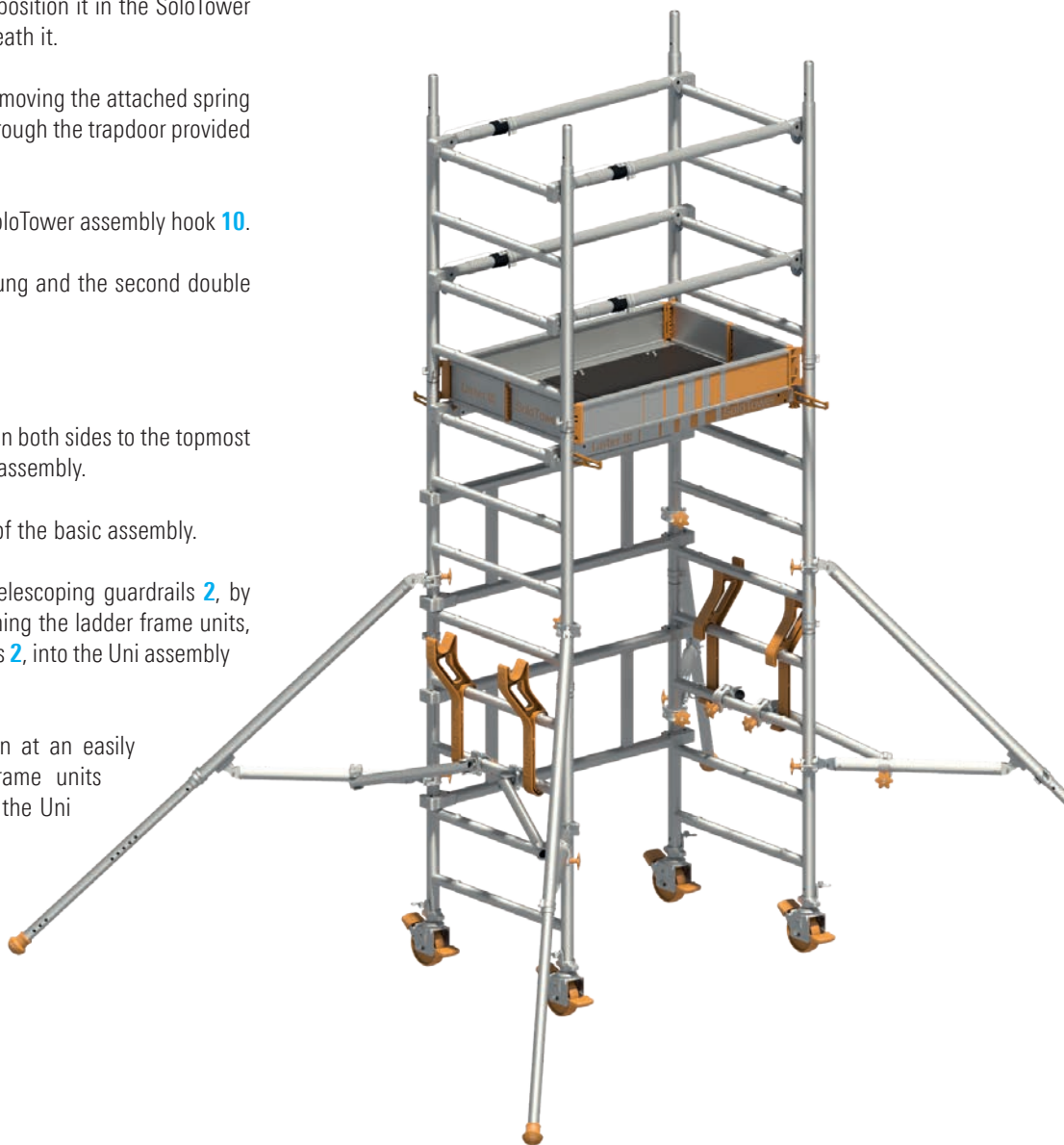


## 5.2. Dismantling sequence

1. Insert a SoloTower assembly hook **10** into the recess provided for it in the snap-in claws of the already fitted access deck **4**.
2. Fold the toe board unit **7** together and position it in the SoloTower assembly hooks **10** on the level underneath it.
3. Release the telescoping guardrails by removing the attached spring clips, immediately before descending through the trapdoor provided using the rungs of the ladder frame.
4. Remove the toe board unit **7** from the SoloTower assembly hook **10**.
5. Remove the access deck **4** at the 8th rung and the second double guardrail **3**.
6. Remove the stabilisers **5**.
7. Attach the four Uni assembly hooks **11** on both sides to the topmost rungs of the ladder frames in the basic assembly.
8. Remove the spring clips **9** at the joints of the basic assembly.
9. Remove the ladder frames **1** and the telescoping guardrails **2**, by swinging them downwards and positioning the ladder frame units, with the still fitted telescoping guardrails **2**, into the Uni assembly hooks **11** already fitted.

Remove the telescoping guardrails **2** in at an easily reachable height, then the ladder frame units can be removed from their positions in the Uni assembly hooks.

10. Remove the Uni assembly hooks **11** and the complete basic assembly.



## 6. BALLASTING

For ballasting, use Layher ballast weights **13** of 10 kg each. Couplers with hand wheels permit simple, quick and secure fixing of the ballast required at the correct places. As a general principle, only use ballast weights of solid materials, not liquid or granular materials.

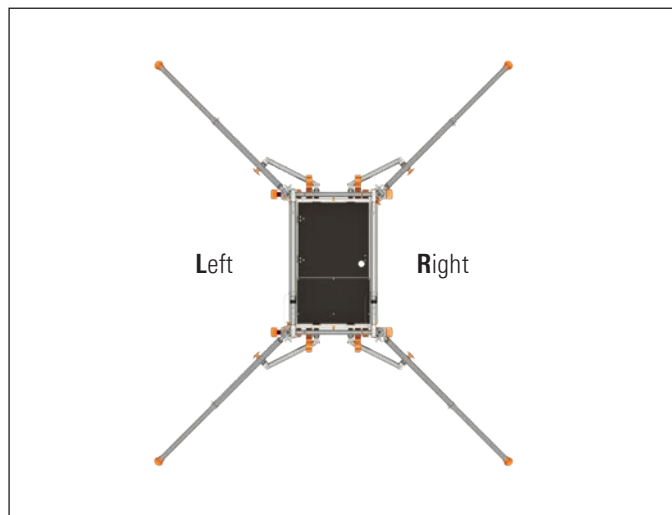
The ballast weights must be spread over the lowest connection points and evenly spaced on the side indicated in the model table (see p. 8, section 4, Tower model).

The indivisible remainder is then distributed over the same side, where possible, in the middle or diagonally inside the tower.

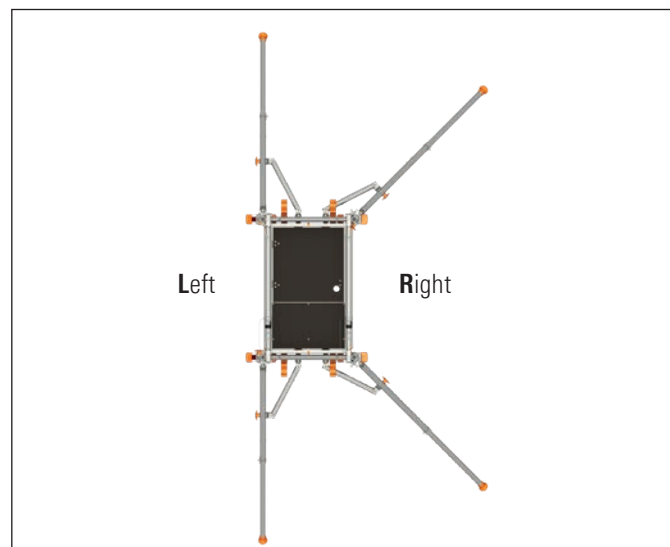
Depending on the assembly variant and the number of ballast weights needed, it may be necessary to provide additional fastening points, which can for example be done using scaffolding tubes and couplers.

### Attachment of ballast weights

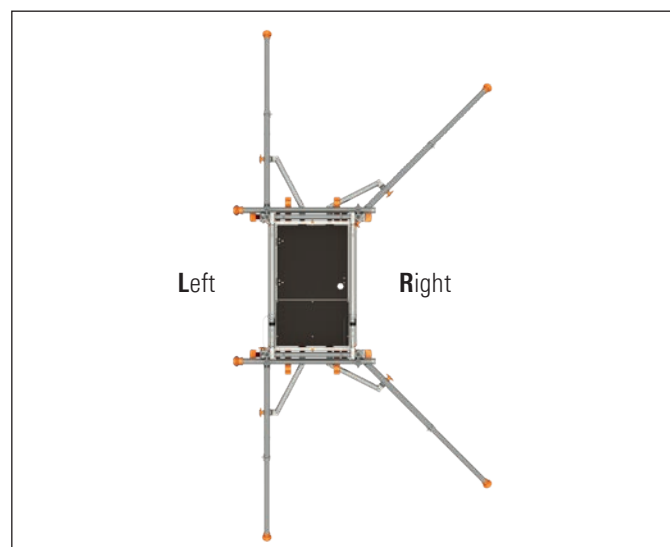
Assembly central:



Assembly off-set:



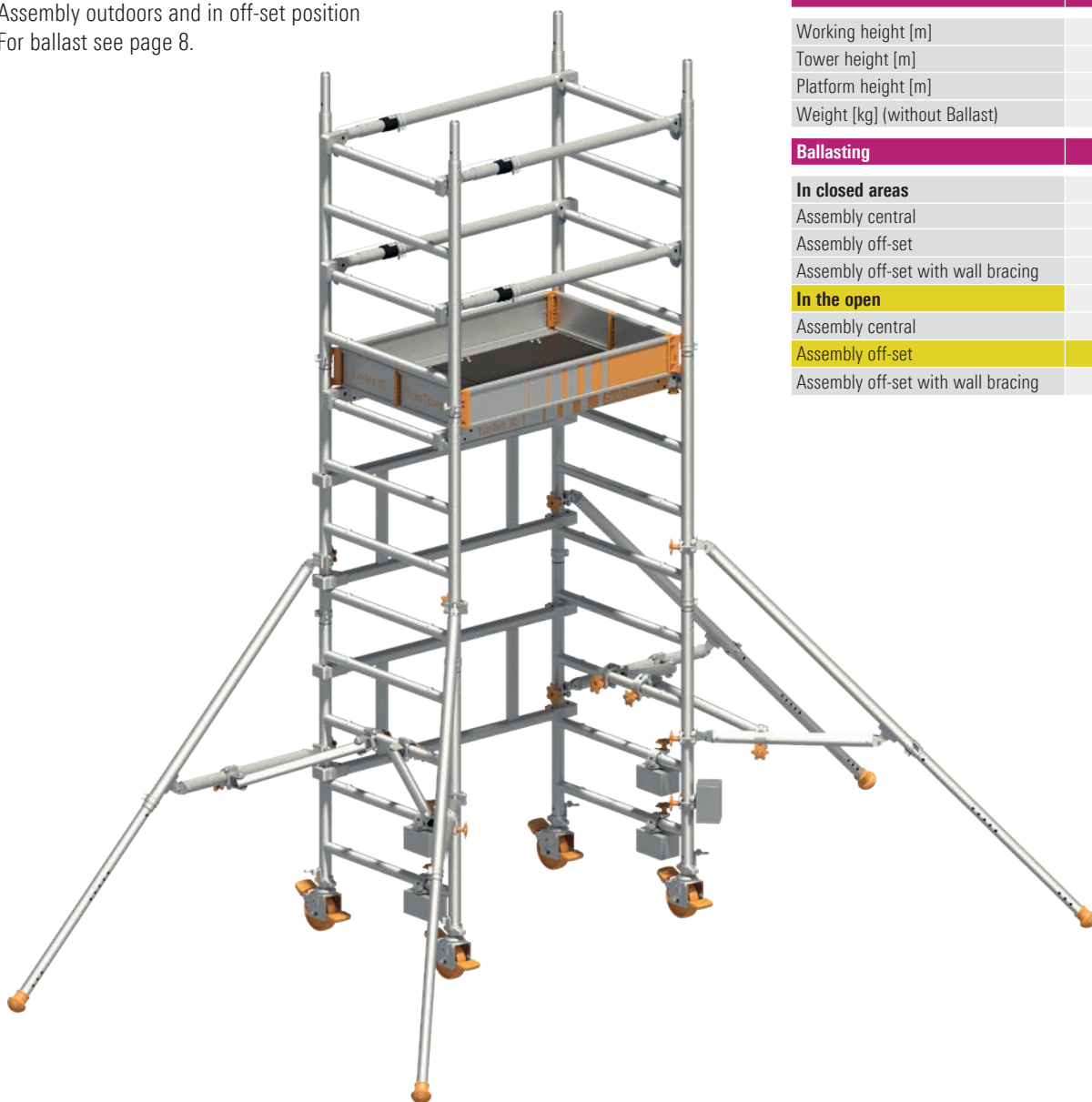
Assembly with wall bracing:



### Example for assembly of model 1600202

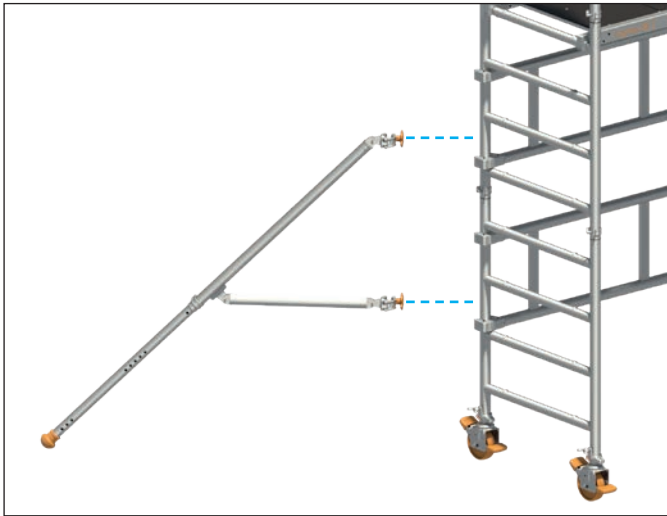
Assembly outdoors and in off-set position

For ballast see page 8.



Tower model	1600202
Working height [m]	4.15
Tower height [m]	3.37
Platform height [m]	2.15
Weight [kg] (without Ballast)	119.8
Ballasting	
<b>In closed areas</b>	
Assembly central	0
Assembly off-set	L0 R5
Assembly off-set with wall bracing	0
<b>In the open</b>	
Assembly central	0
Assembly off-set	L0 R5
Assembly off-set with wall bracing	0

## 7. STABILISER ATTACHMENT



Every model described in these instructions must have, on each upright of the ladder frames, a stabiliser including a rotation lock to ensure stability of the tower.

Base-widening devices such as stabilisers should generally speaking always be attached before the tower is accessed to prevent the structure from tipping over.

For fitting, position the first half-coupler directly above the 5th rung of the ladder frame, but do not tighten it yet. Once the half-coupler is positioned, temporarily remove the spring clip, allowing the telescoping tube to be extended to the required length and then secured by reinserting the spring clip in a congruent hole. Move the positioned half-coupler along the upright tube to bring the stabiliser to the right position, so that the rubber foot at the end of the stabiliser is in firm contact with the ground.

The transverse tube of the stabiliser can now be fastened to the upright tube with the second half-coupler, while ensuring that the rubber foot always remains in contact with the ground to provide the required support.

After aligning the stabilisers, tighten all the half-couplers using the hand wheel. Then safeguard the stabiliser against inadvertent rotation using the rotation lock provided.

**The positions of the stabilisers must be set as follows:**

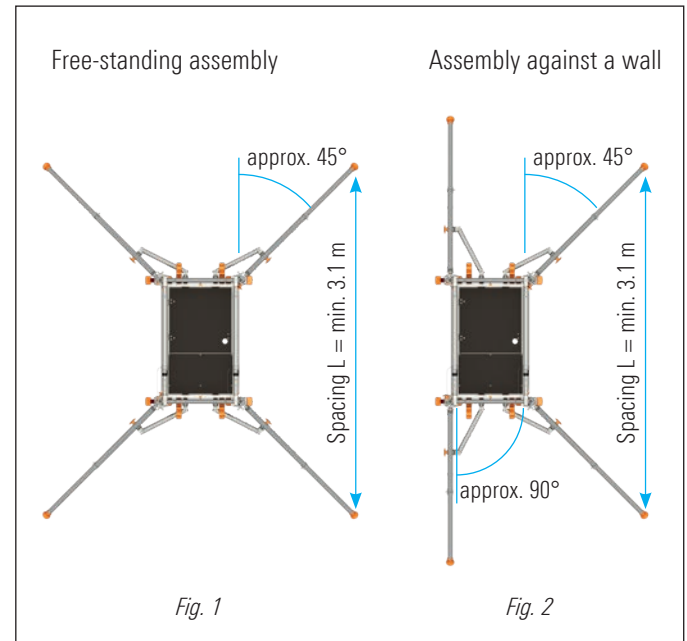
### **Free-standing assembly:**

In each case about  $45^\circ$  to the tower longitudinal side (Fig. 1).

### **Assembly against a wall**

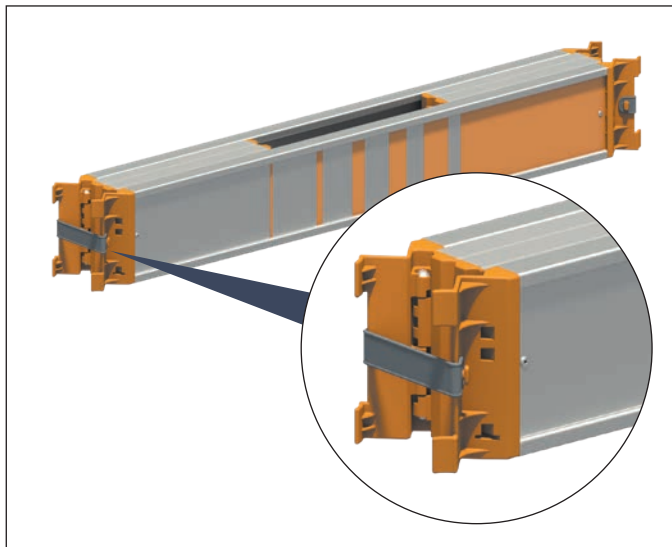
On the wall side about  $90^\circ$  to the tower end face. Side facing away from the wall about  $45^\circ$  to the tower longitudinal side (Fig. 2).

The specified angles can be checked after attachment of the stabilisers on the basis of the length dimensions "Spacing L". When moving the tower, the stabiliser must not be lifted more than 2 cm off the ground.



## 8. FITTING THE TOE BOARD UNIT

1. Release the rubber strips on both sides



2. Position the toe board unit against the uprights of the ladder frame on one side



3. Fold open the toe board unit



4. Position the toe board unit against the opposite uprights



*In the images on this page, the ladder frames and the guardrails have been omitted for more clarity.*



## 9. PARTS LIST

	Tower model	Reference No.	1600.202
1	Ladder frame	1297.004	6
2	SoloTower telescoping guardrail	1204.113	4
3	SoloTower double guardrail	1342.113	2
4	Access deck	1242.113	1
5	SoloTower stabiliser	1248.000	4
6	Rotation lock	1248.261	4
7	SoloTower toe board unit	1240.113	1
8	Wheel	1300.150	4
9	Spring clip	1250.000	8
10	SoloTower assembly hooks (set of 4)	1300.002	1
11	Uni assembly hooks	1300.010	2
12	Assembly bag	1300.003	1
13	Ballast	1249.000	Number of ballast weights according to Ballasting table
	Optional	Reference No.	1600.202
	Uni distance tube	1275.110	2
	Double coupler	4700.019	1
	Identification block	6344.400	2
	See-through pocket	6344.011	1

## 10. COMPONENTS OF THE SYSTEM

1



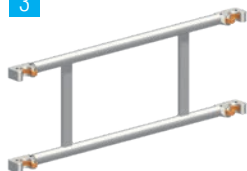
**1297.004 Ladder frame 1 m**  
aluminium,  
rungs with non-slip grooving

2



**1204.113 SoloTower telescoping guardrail**  
aluminium

3



**1342.113 SoloTower double guardrail**  
1.13 m,  
aluminium

4



**1242.113 Access deck**  
aluminium frame with deck  
and hatch made of plywood with  
phenolic resin coating

5



**1248.000 SoloTower stabiliser**  
aluminium  
telescoping: min. 1.2 m, max. 2.0 m

6



**1248.261 Rotation lock**  
aluminium, 0.5 m.

7



**1240.113 SoloTower toe board unit**  
aluminium

8



**1300.150 Wheel**  
dia. 150 mm with 250 mm spindle  
Permissible loading to 7 kN (700 kg).

9



**1250.000 Spring clip**  
steel.

10



**1300.002 SoloTower assembly hooks (set of 4)**  
steel

11



**1300.010 Uni assembly hooks (set of 2)**  
polyethylene

12



1300.003 Assembly bag

17

6344.011 See-through pocket  
with integrated prohibition sign

13

1249.000 Ballast (10 kg)  
steel  
hot-dip-galvanised  
with half-coupler

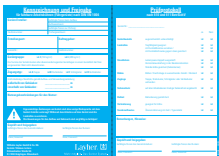
14

1275.110 Uni distance tube  
aluminium,  
with hook and rubber foot

15

4700.019 Double coupler AF 19  
steel, galvanised

16



6344.400 Tower identification block



More Possibilities. The Scaffolding System.

**Wilhelm Layher GmbH & Co KG**  
Scaffolding Grandstands Ladders

Ochsenbacher Strasse 56  
74363 Gueglingen-Eibensbach  
Germany

P.O. Box  
74361 Gueglingen-Eibensbach  
Germany  
Phone +49 (0)7135 70-0  
Fax +49 (0)7135 70-265  
E-mail [info@layher.com](mailto:info@layher.com)  
[www.layher.com](http://www.layher.com)