

**General hints:**

**A. Surfacing requirements**

This piece of equipment is intended for children to play with, rather than on, and therefore has not intended body support. No free height of fall is thereby stipulated.

**B. Foundations**

Please see detailed instructions at the end of this document.

**C. Attention**

For optimum sound transmission we recommend PE piping, diameter 100 mm, from the roll. Alternatively plastic drainage pipes can be used, avoid 90° bends, use 3 x 30° instead. Flexible - or pipes with uneven walls are not suitable for this application.

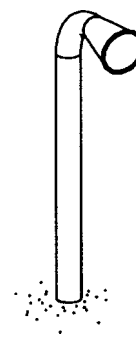
**Special information:**

Please do not alter any parts of the equipment or the construction itself since this may affect the safety standards and your guarantee.

We reserve the right to make technical alterations!  
For further information please call your local agent.

**Conference  
Order no. 10.55000**

Graubner Play Stations for developing the senses



**Data for shipment:**

Number of parts: 1

1 pallet with  
x (number of) calling tubes, stainless steel  
1 spherical joint with integrated cleaning opening  
per calling tube: 6 heavy duty bolts M12

Plastic pipes, collecting well and pipe sleeves are not part of the standard supply volume!

Weight: per calling tube approx. 30 kg  
Size: approx. 40 x 70 x 170 cm

**Required space including operational space:**

Ø 3.00 m per calling tube, take into account space required for collecting well and pipes!

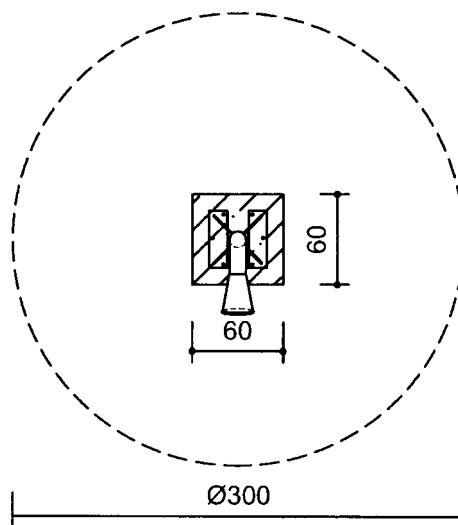
**Ground elevation**

Scale 1:50  
all dimensions in cm

**Foundation block**

Quality of concrete C 25/30

1 piece 60 x 60 x 70 cm  
per calling tube  
Excavation depth 90 cm



**Recommended assembly tools:**

- collecting well
- pipeline, pipe sleeves, pipe bends
- Tool for setting heavy duty anchors
- Metal saw
- Spirit level
- Set of spanners
- mortar

**Attention!**

During the assembly period (including the setting of the concrete) it is not allowed to play on or put any weight on the equipment in order to secure stability during use after the assembly. Standard concrete requires at least 2 weeks to set.

**Notes on assembly:**

**Collecting well:**

Collecting well, e. g. container of concrete, internal diameter of 100 cm, depth of 125 cm, well cone 100/62,5 cm, loading of 30 tons, may be chosen according to the situation on site (minimum requirements: must be suitable to allow for assembly and maintenance).

The well must be built on a frost proof foundation, depending on the local ground conditions. Depending on the number of calling tubes to be installed, allow for holes of the pipes.

**Plastic drainage pipes:**

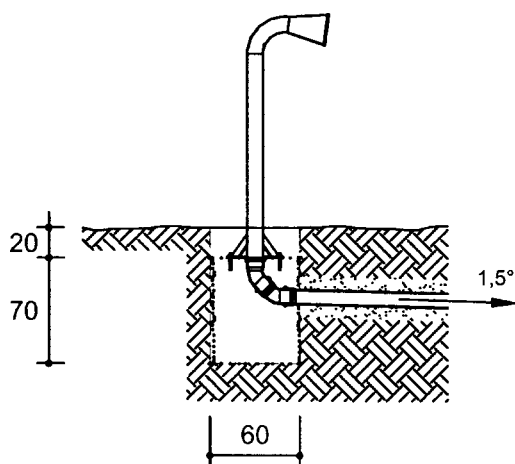
The pipes for the transmission of sound must be laid with a gradient of 1.5 % in direction of the well (water condensation). The positioning of the collecting well must be such that this gradient can be achieved (take into account the maximum distance between speaking station and collecting well). Lay the pipes on a bed of sand, cover with a layer of sand prior re-filling with ground material. Push the pipes through the holes into the centre of the well.

**Drainage of water:**

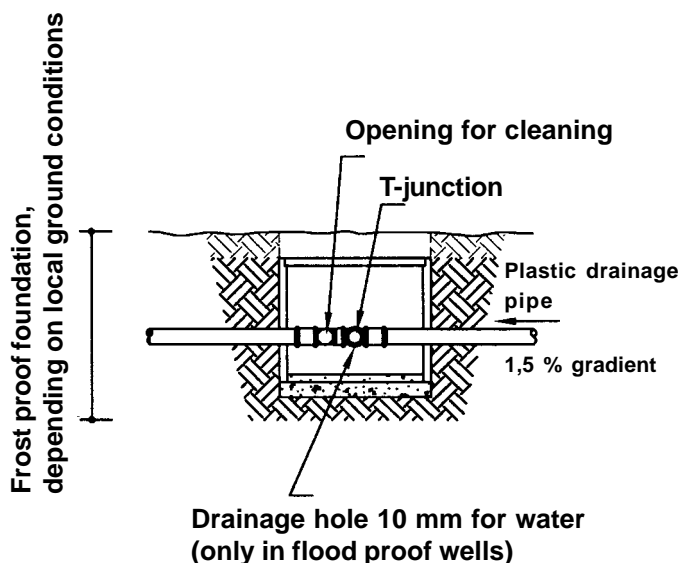
The piping must be laid with a gradient of 1.5 %, such that water can drain out of the pipes at a determined location. This may be necessary to relieve the pipe system of condensed water, or else for cleaning. A well must be set at the lowest elevation of the pipe system, this is also the position of the T-junction. The well serves as a maintenance and cleaning point. The pipe system must be built water proof, when installed in an area of high level ground water. In this case the draining of water out of the pipes must be carried out at regular intervals and/or when the sound transmission deteriorates.

**The maximum distance between a speaking station and the collecting well is reached at approx 20 m.**

**Sketch of calling tube**



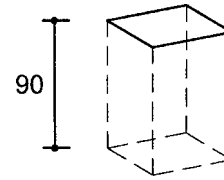
**Sketch of collecting well**



**Sequence of assembly operations:**

1. Locate the site and take into account the space required, including the safety distances, according to the ground elevation on page 1.

2. As far as possible plan the positions of the speaking stations and the collecting well such that the separate pipes are of equal length. Should various pipe lengths be required, locate the two longest stretches of pipe opposite each other, such that they run in a straight line through the collecting well.



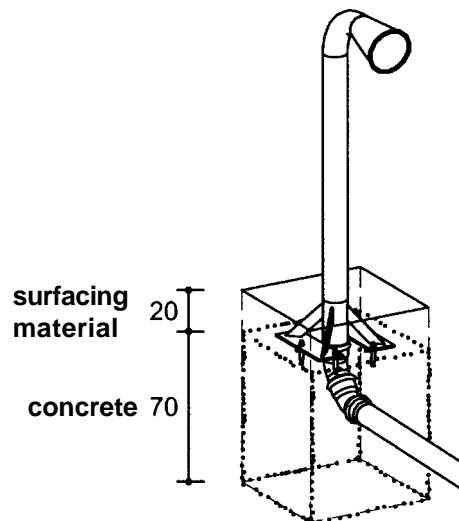
4

3. Build the collecting well according to the description and sketch on page 2.

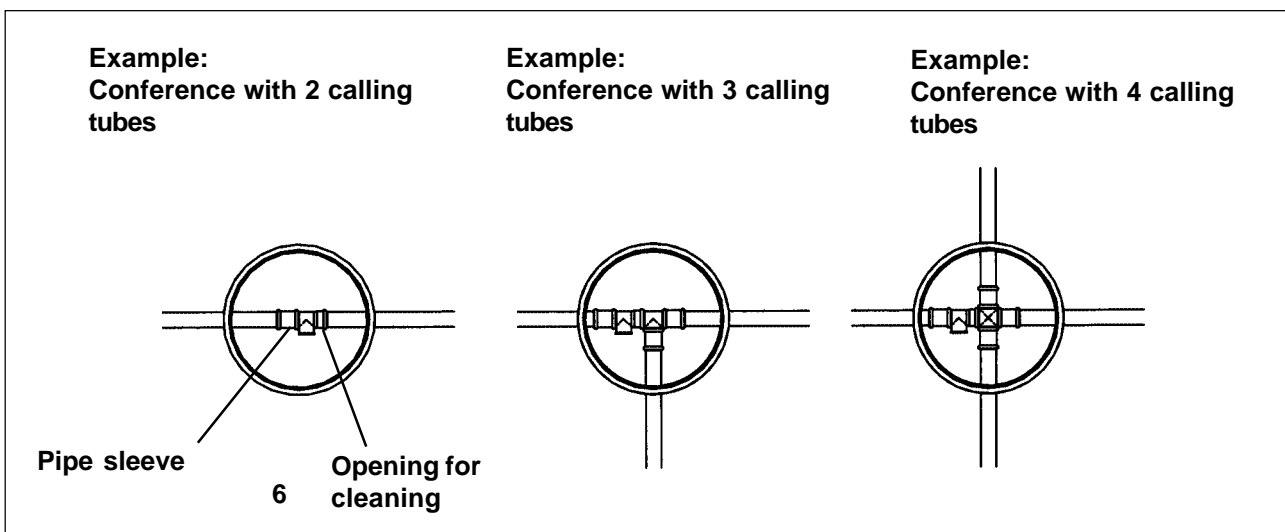
4. Cast the foundation according to the sketch and the side elevation. Allow holes for the pipes (pipe sleeves, pipe bends). Prior to casting the concrete cover the pipe openings. Surface of the concrete must be smooth and level at -30 cm below ground level. Allow the concrete to set sufficiently to take the heavy duty bolts

5. Install the speaking stations. Align exactly vertically.

6. Lay the pipes between the speaking stations and the collecting well with a gradient of 1.5 % in direction of the well.



7. Install the pipes in the collecting well according to the following description:  
 If there is no risk of flooding drill a hole of 10 mm diameter into the bottom of the spherical junction to allow water to drain. Position the junction in the well and check for the correct length of the pipes. Cut the pipes to length, if necessary, and chamfer the edges. Apply sliding agent to the pipes and push the sleeves onto the pipes, if necessary use a hammer and a piece of wood to move the sleeves. Install the junction, such that the cleaning opening faces downward or to the side. Push the sleeves into their correct positions.



8. Check the hole system for function before filling up the ditches.
9. Repair minor damages caused during assembly or transportation.
10. Please ensure that all assembly aids, e. g. excess bolts, assembly instructions, distance battens or tape are removed entirely from the play equipment and the playground after work is finished.

