



GreenLine

Roll-Off observatories

www.astrogfk.com

April 2021

Assembly Manual

GreenLine MINI, MEDIUM and BIG Roll-Off observatories



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

PARTS

You will need these tools:

- Cordless screwdriver with bits
- Socket wrench set (10-24mm)
- Rubber hammer
- Carpenters hammer
- Spirit level / cord
- 2 ladders (2M)
- Set of metric Allen (hex) keys
- Wrench set (10-24mm)
- a couple of "F"-clamps

....you will need **TWO** persons to set up
the roll-off observatory!



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



... the observatory people

Important information



GreenLine

Roll-Off observatories

www.astrogfk.com



Important:

If you have ordered an impregnation, it is oil-based, so the top coat should also be oil-based.

GreenLine Roll Observatories are now STANDARD with SLIDING DOORS, if you want a hinged door please order specifically.



Please note: 10 planks are stacked on top of each other on the back.

First there is a starter board, then 9 wall boards with rounded heads on both sides. - The last one has a flat top. The side walls each consist of 13 planks (including starter). They differ from the rear wall in that only one end of the plank is rounded.

If you make sure that the holes in the boards always point towards each other during installation, it will be easier for you to install the vertical rails from the back wall later.

There are two support beams with holes going through just before the notches (holes larger on the outside than inside). This is plank number 11.

You have a total of four guide rails: those pointing backwards, each with a built-in pulley.

If you have ordered manual operation of the roof and shutters, two additional rollers are installed at the end of the rear guide rail to accommodate a set of counterweights.

(Tip: place a wooden board on the base frame, put the weight on it and attach it.)

After installing the weights, the two plywood panels are screwed on. They cover the weights.

The best way to secure the roof and shutters is to get some window hooks or lock the foils at your local hardware store to secure the shutter.

Storm protection / severe weather kit:

We offer an optional wind protection kit. Either pre-installed, or as a quick DIY upgrade.

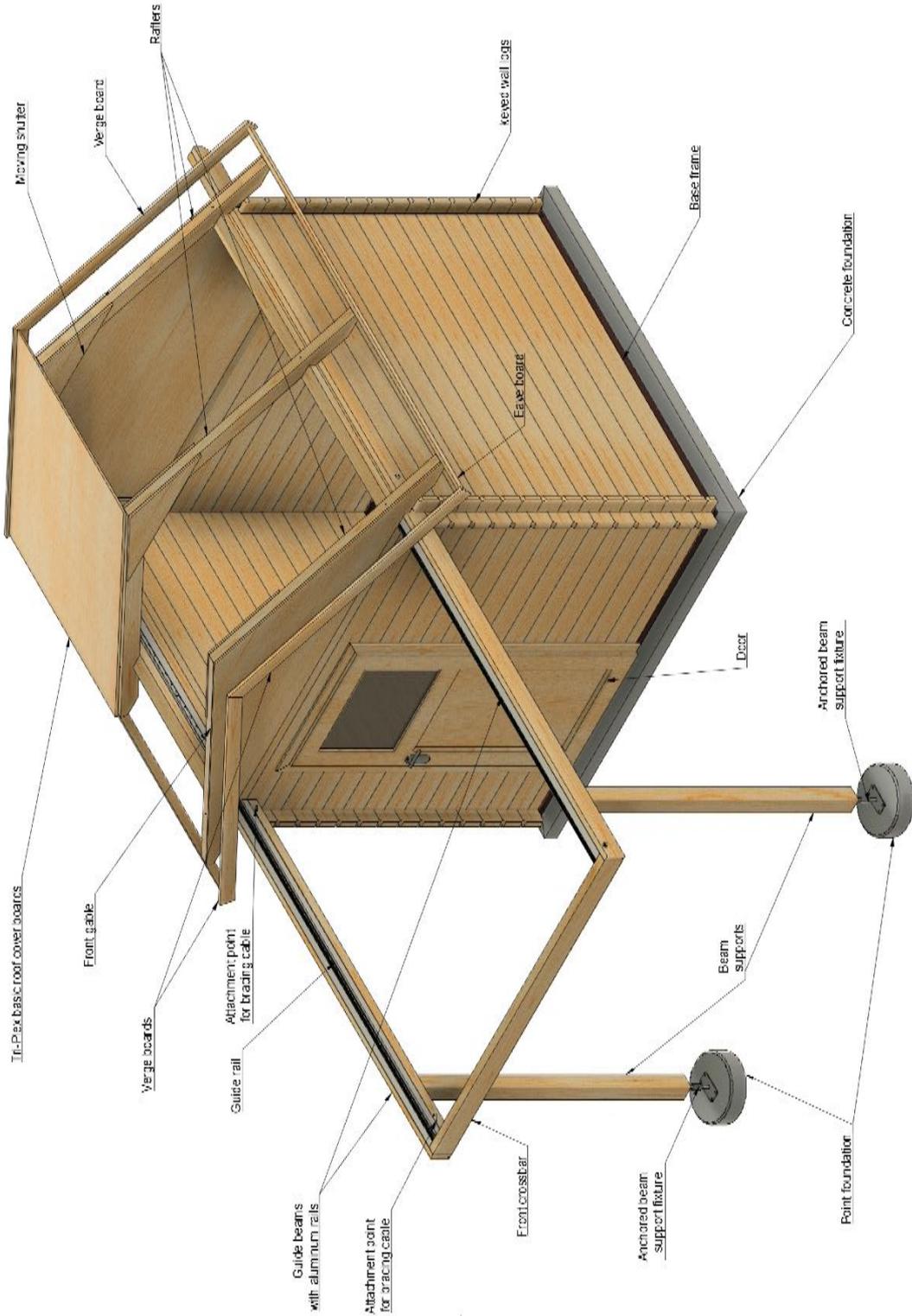
What is where?



GreenLine

Roll-Off observatories

www.astrogfk.com



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



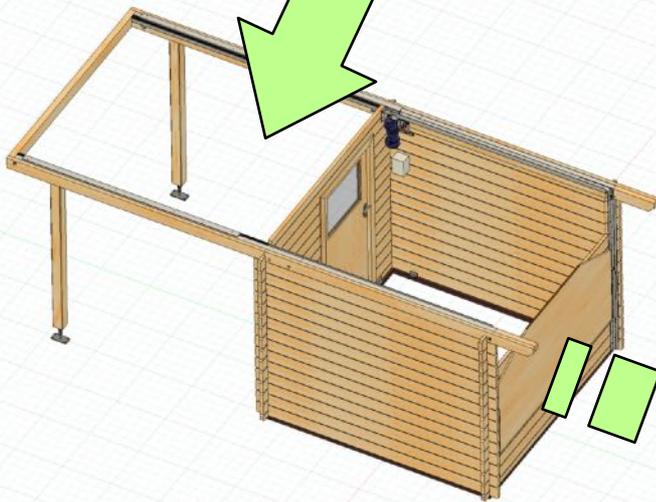
GreenLine

Roll-Off observatories

www.astrogfk.com

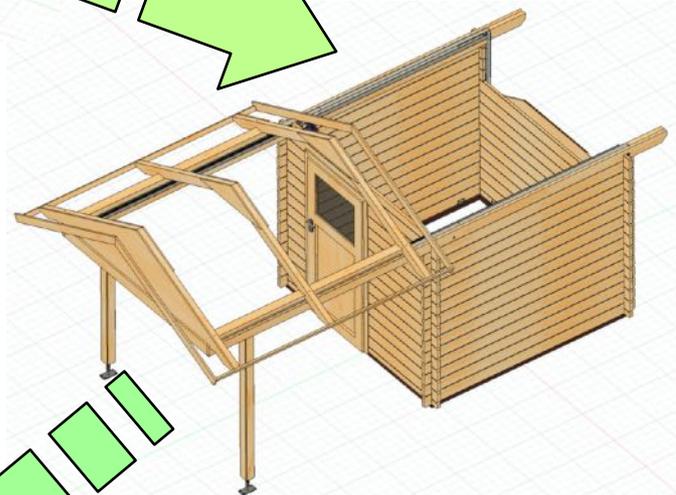
1

- Parts inventory
- Base frame
- Walls
- Beams and outriggers



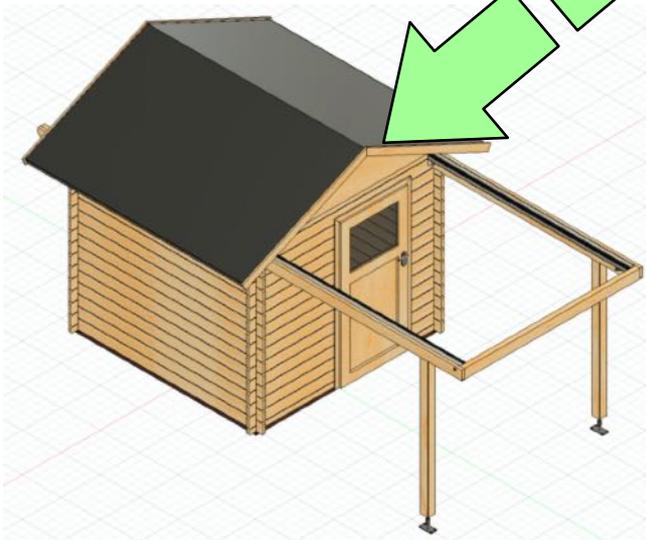
2

- Roof construction
- Moving rear wall (shutter)
- Steel cables
- Installation of drive system (optional)



3

- Roof plates are attached
- Roof weather protection layer (opt. tarboard / trapezoid)
- Sealing of the roof
- Rounding off work



Before you start....

Precisely follow all the steps described in this construction manual to become the proud owner of a high-end roll-off **GreenLine** observatory.

Contact us if anything is unclear:

Mr. Walter Neitzel will be glad to answer your questions:

+49 176 244 13045



GreenLine

Roll-Off observatories

www.astrogfk.com

FIRST STEPS



Assembly of the base frame:

Put the four painted squared timbers (4x6 cm) together to form a rectangular frame.

At this point it would be good to put a bitumen strip or something similar under the base frame (moisture barrier). Now screw the corners together. The frame should be centered on the concrete foundation. Before this frame is anchored to the foundation, the diagonal must be checked in any case, as well as its straight alignment.

The frame is anchored with eight M10 concrete anchors (not included). It is also good to countersink these anchors in the base frame so they are not in the way of subsequent assembly steps. After fixing the basic frame, you can start with the so-called starter planks.

(Planks B1, D1)



Now insert the wall planks one after the other.

(Please start with the smaller "starter" planks B1 and D1, then planks A1, C1 and E1)

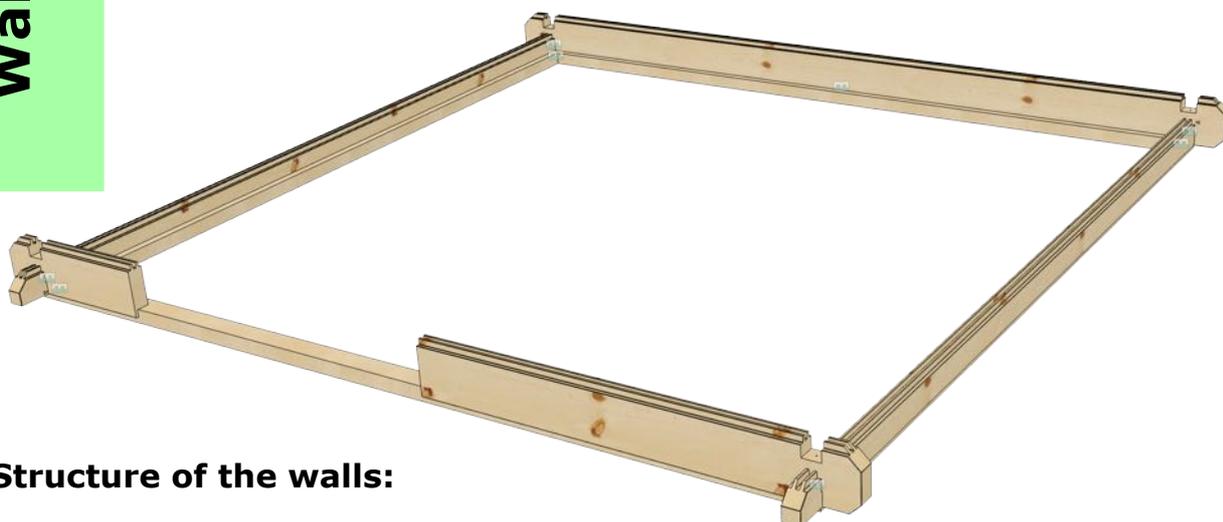
Walls & Door



GreenLine

Roll-Off observatories

www.astrogfk.com



Structure of the walls:

Place the first layer of wall planks (starter planks) and the first layer of log planks on the base frame. Now screw the starter with the brackets on the frame (5x30). Make sure that the wall planks lie evenly inside one another.



Do not use force, if one or the other planks does not immediately locks into the next one.

Try to find the cause and fix it.

Now complete the walls by stacking the remaining planks according to the photos.

Please check the walls regularly with a spirit level!

General remark:

In the rear area, 11 logs are laid, one on top of the other.

A starter plank and 10 logs with heads rounded on both sides, here is also a log that has no key at the top. The side walls each consist of 13 logs (incl. starter), they differ from the rear wall planks in that only one end of the log is rounded. The square ends point to the rear.



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



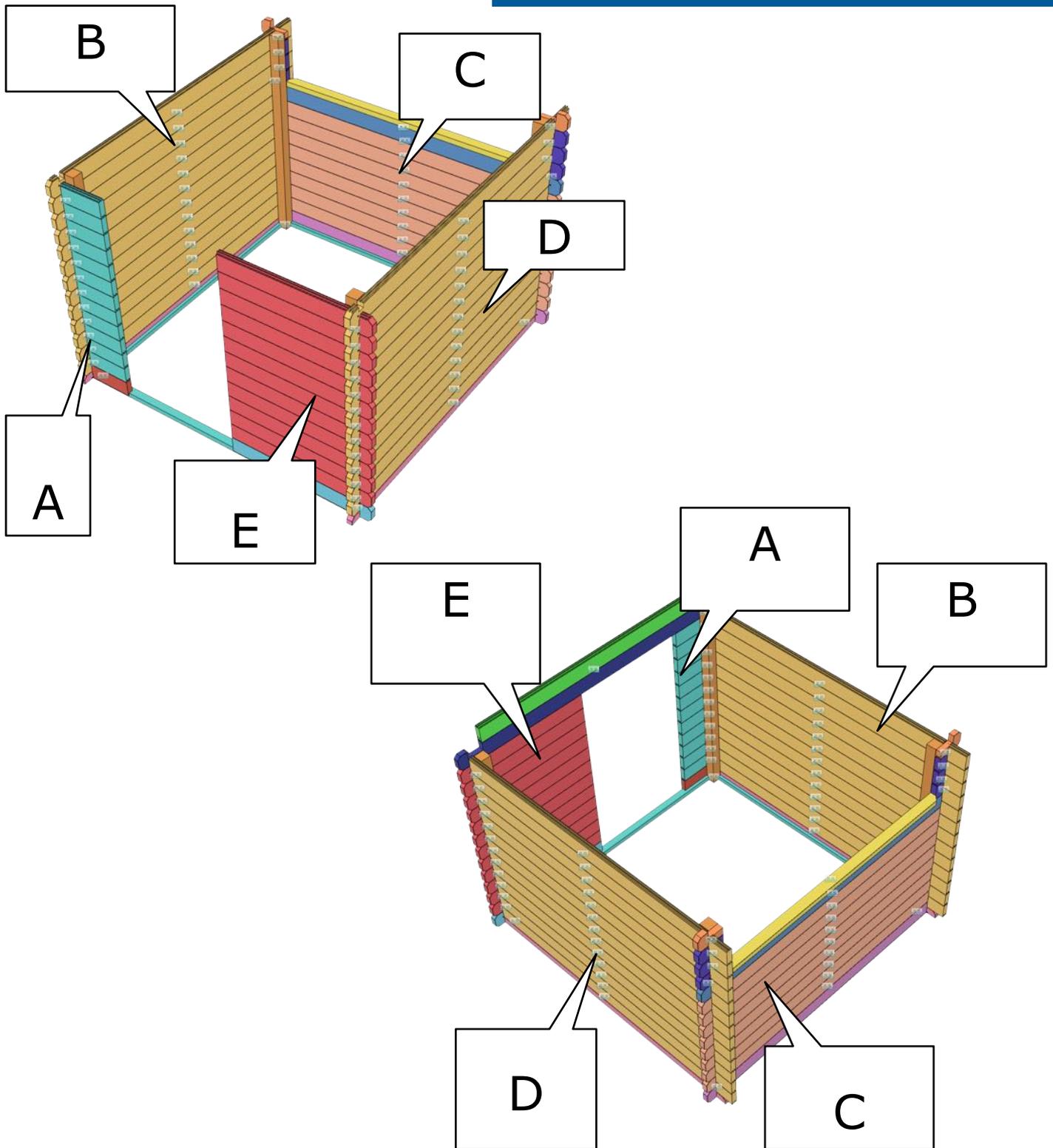
... the observatory people



GreenLine

Roll-Off observatories

www.astrogfk.com



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

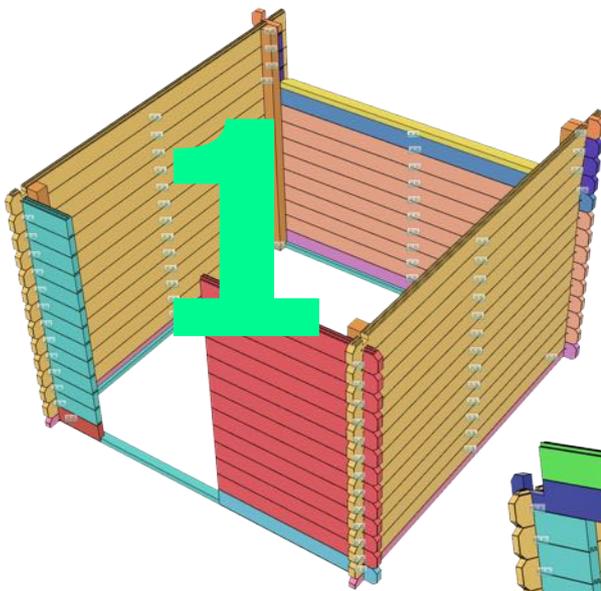
phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

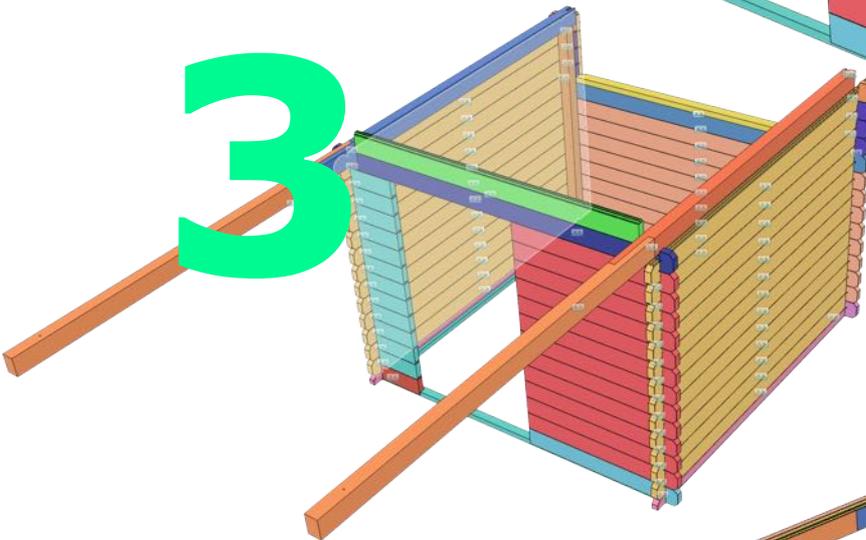
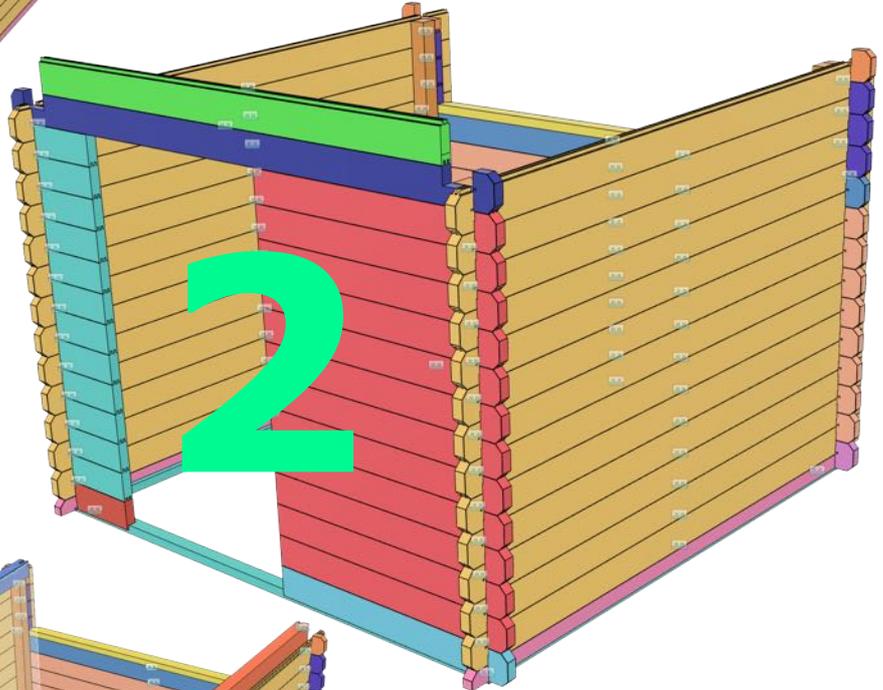
Roll-Off observatories

www.astrogfk.com



BUILDING THE WALLS

We color-coded the diverse building components to more clearly show what belongs where.



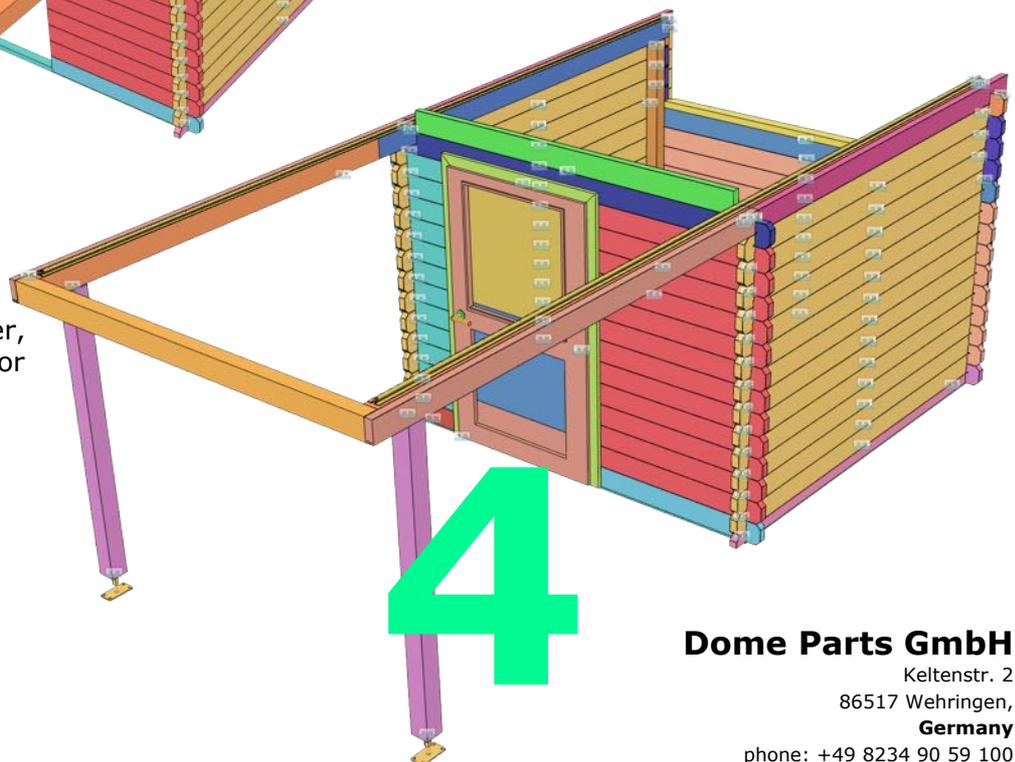
This sequence gives a good impression of all the phases of your construction.

TYPES OF DOORS

Depending on what exactly you order, you will either have a hinging door, or a sliding door.

All standard GreenLine observatories come with a SLIDING DOOR.

Other doors are only on demand.



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

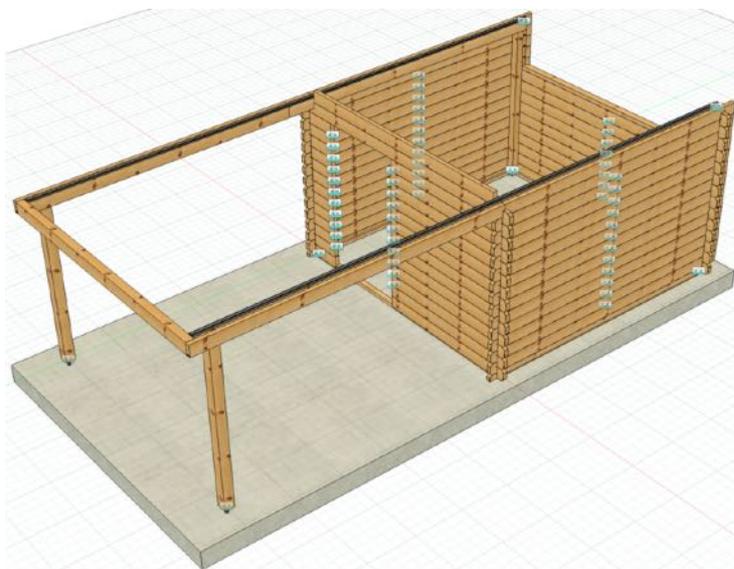
Roof & Guide Beams

Guide bar

You have a total of four beams: two sections with pulleys and pre-mounted rails, which point to the rear wall, and two more beams rails also pre-installed, but without pulleys. These belong in the front area and are held up by the two vertical support beams.

Fasten the two left beam segments to form a guide beam. The same for the right beam segments. For this purpose, three screws of the size 8x80 for each side are included.

Place the rear beam elements on the left and right (using the key and groove of the wall planks) so that the outer edge of the rear wall is flush with the timber of the guide beam.



Support and guide beams

Now place the two support beams in the specified positions under the guide beams and screw them tightly through the bar from above. (Washer and M16 screw).

Fasten the cross beam between the two guide beams. They are screwed with four screws.

Always construct your guide beam / cross beam and support beams with a spirit level.

Also check the straight and parallel alignment of the two guide beams. Verification of all horizontal and vertical dimensions is very important for smoothly running roof section.

We recommend size M8 concrete anchors to fix the columns to the ground; available in your local hardware store.



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

Diagonal bracing

GreenLine MINI:

Diagonal bracing is done by means of steel cables.

Attach both steel cables for the diagonal bracing of the guide beams. The ring fixtures are screwed into the beam, then attach the pre installed terminators of the steel cables.

Both cables should be tense, but not overstretched.



GreenLine MEDIUM & BIG:

In these bigger observatories diagonal bracing is done with two rigid cross beams.

The two cross beams are fixed between the guide beams and the cross bar with two screws each (8x140)



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



... the observatory people



GreenLine

Roll-Off observatories

www.astrogfk.com

Corner support beams

How to mount the corner support beams in your

GreenLine MINI:

Assemble the rear inner corner support beams (labeled B / C, C / D) as follows: at the bottom with a screw (8 x 80) in the downward facing stub. Then fix it by a screw (8x180) from above through the guide bar. The corner beam should fit "snug" in the corner, if necessary use a clamp, to help it in.

The last action is to drive a screw (8x80) from the outside through plank (B and D) #11. (you may need add more)

A screw (8x80) is driven-in from the outside of the starter plank on the two front corner bars (door area) that are also on the inside. Then again from above, through the guide bar (8x180). Here, too, a screw is driven-in from the outside in plank #11. The left bar is also the door post. This receives three screws (5x60), ascending from bottom to top, in the pre-drilled holes. Here, too, using one or more clamps are very helpful.



How to install the corner support beams in your

GreenLine Medium and GreenLine BIG:

Mount the corner support beams on the inside (labeled A / B, B / C, C / D, D / E) as follows: at the bottom with two screws (8 x 80) in the downward facing stub. Then fix it by a screw (12x200) from above through the guide beams. The corner beam should fit "snug" in the corner, if necessary use a clamp, to help it in.

The last action is to drive a screw (8x80) from the outside through the planks (B and D) #11.

The first plank right next to the entrance on the left is the door post, which is fastened at the bottom with two screws (8x80). Then three times (8x100), ascending from bottom to top, in the pre-drilled holes.



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



... the observatory people



GreenLine

Roll-Off observatories

www.astrogfk.com

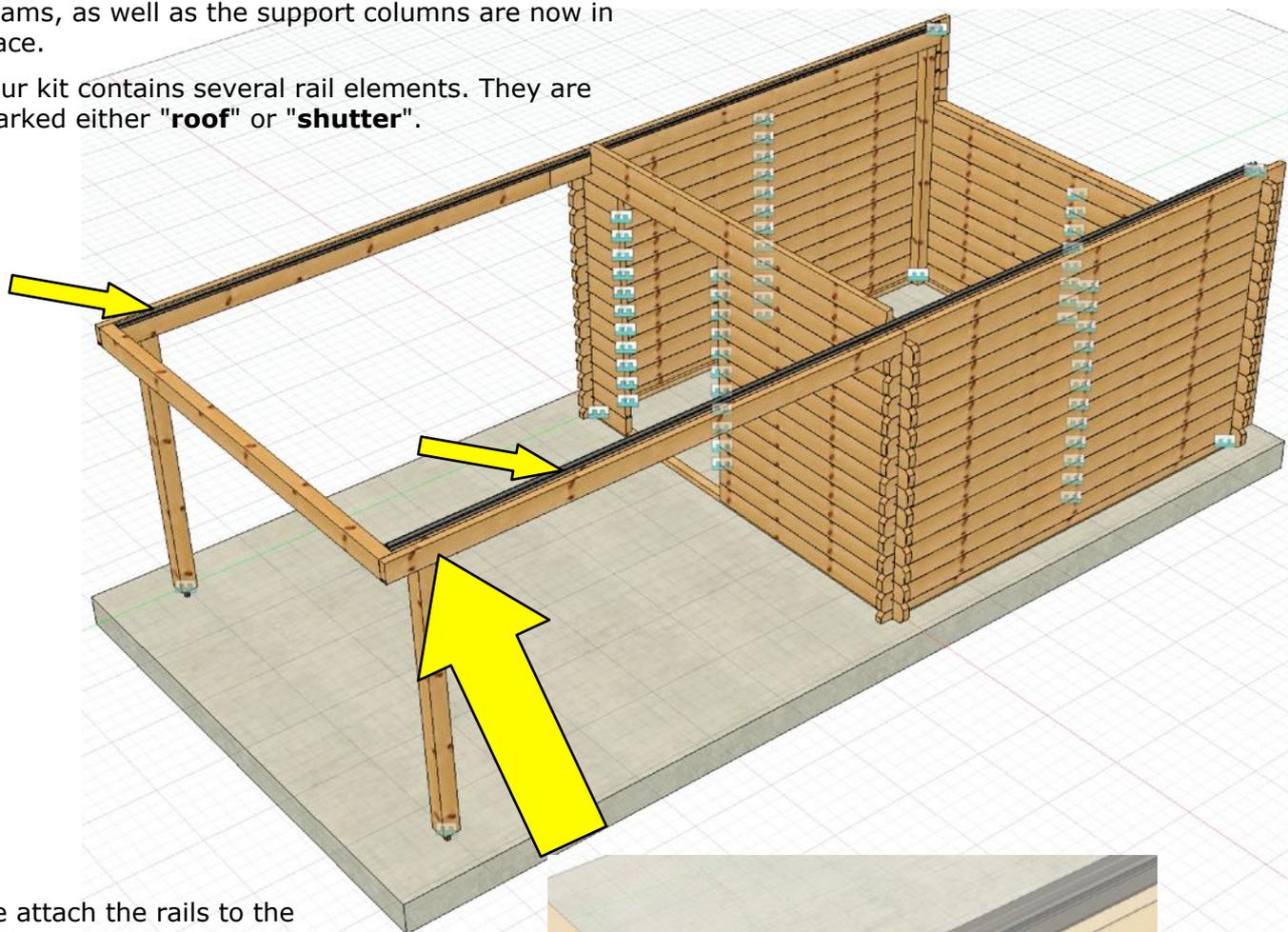
Guide Rails

Installation of the rails

That was all quite easy, wasn't it?

If everything went well, all the walls, the guide beams, as well as the support columns are now in place.

Your kit contains several rail elements. They are marked either "roof" or "shutter".



Please attach the rails to the guide beams, using the existing holes (long rail at the back, short rail at the front).

In spite of everything, make sure that all rail segments follow a straight line.

Take care not to cause any dents or cuts in the rails. This largely determines how well your roof will later run over both rails!



Dome Parts GmbH

Keltenstr. 2

86517 Wehringen,

Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



... the observatory people



By the way

A **GreenLine** roll-off observatory is a fine thing. Did you know that the famous English astronomer Sir Patrick Moore always had wooden observatories at his house? Many of his publications and books, which inspired so many people to observe the heavens, were written there. The British television series "The Sky at Night" hosted by Patrick Moore, showed time and again his green roll-off observatory in the garden.

So, you are in good company when you have decided for one of our **GreenLine** roll-off observatories



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com


GreenLine
Roll-Off observatories
www.astrogfk.com

Roof assembly

Roof and roller beams

Place both trolleys / sleepers with their rollers on the guide rails. Use at least two large clamps to hold them in place after aligning them perpendicular to the rails. This is important.

Positioning tip: a piece of wood approx. 15mm fits outside between the guide bar and the trolley. And the beginning of the trolley should be at the front gable.

The guide roller bar with the rack must be on the left (for Medium and Big, for Mini the rack is on the right). Position both guide beams so that the steel cables will later point away from the observatory. You can now start assembling and installing the rafters on the guide rollers and attach all the connecting plates and all other components as shown in the drawing.



ATTENTION: *The roof roller system runs very smooth and easy. Do NOT forget to use clamps to keep the roof section in place while you work at it!*

Attach all rafters pairs to the two roller beams. Use the supplied 8x100 Spax The positions are indicated on the roller beam.

The rafters pairs with the front gable is for the entrance area, the pair with the smaller triangular plates on the rafter heads should be at the backside of the observatory.

All positions are marked for this purpose. Note the outer cover of both the guide beams are pre-installed in our factory to save you time.

Remove the clamps to allow the roof to properly settle on the rails. Then lock it back with the clamps so you can proceed with the roof construction

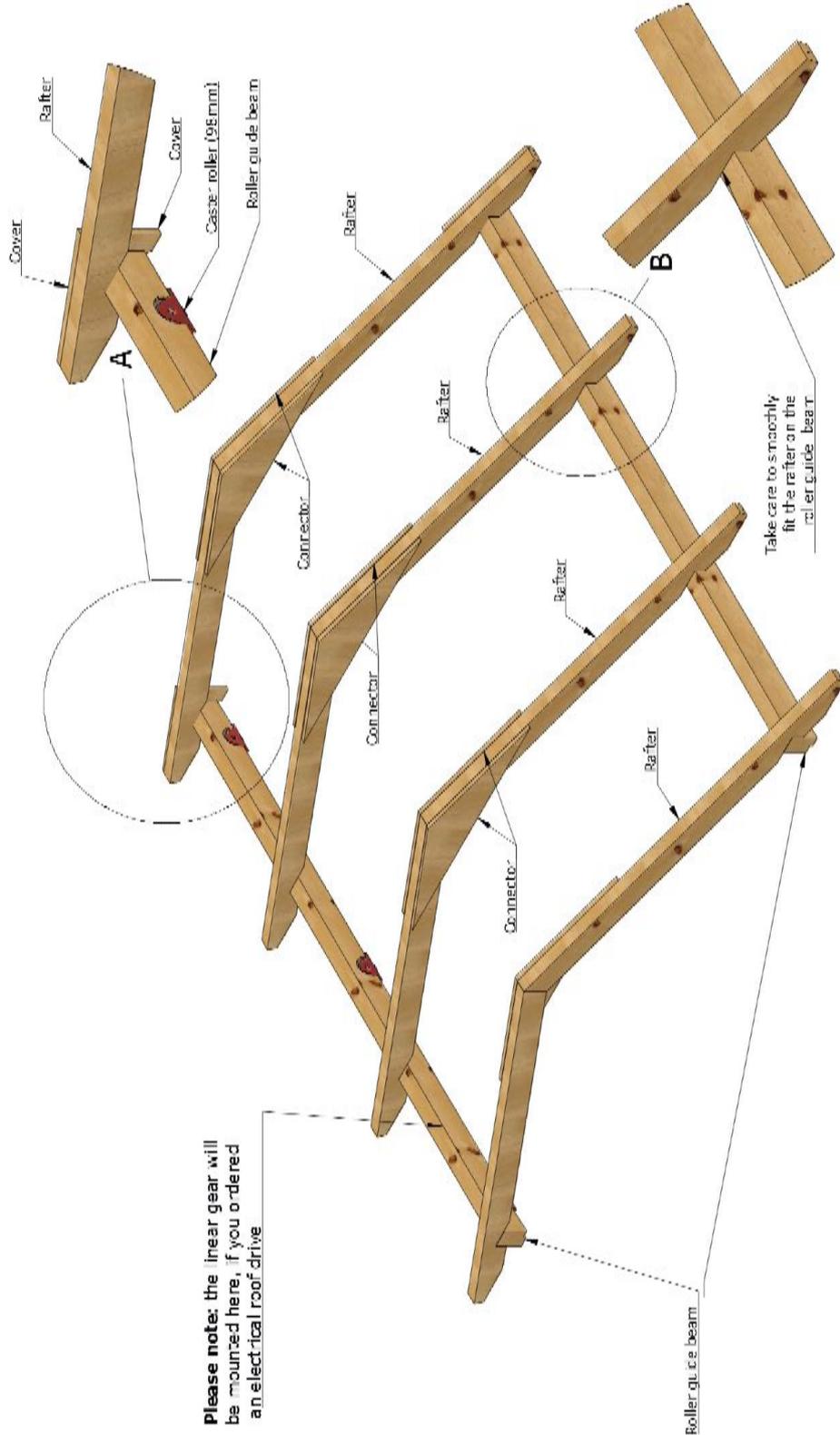


Make sure to use the ENTIRE contact surface when you attach the rafter pairs to the roller beam. (See detail). The notches in the rafter pairs must fit perfectly around the edges of the roller beam! Check this! Then using the supplied screw screw everything tightly together.

After successfully installing the rafters pairs, remove all clamps that secured the roller beams and the roof during the assembly work. This is as good a time as any, to check if the roof moves smoothly. If it goes well, secure the roof again with at least two clamps.



Assembling the Roof



Please note: the linear gear will be mounted here, if you ordered an electrical roof drive

Take care to smoothly fit the roller on the roller guide beam



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



Roof assembly

Roof construction, roof cover and fixtures



Please take care that the planks that cover the sideward slits in the roof do fit snugly between the rafters, to keep out insects, stray rain and drift snow.



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

The Roof

Assembly of the roof boards

Please note:

Rafters, edges, eaves and gable boards must be nicely parallel! No slits or open seams!

Always start attaching the roof plates in the middle and then work outwards!

Due to the construction of roof frame, there should be no seams, or slits in the ridge area!

Check that there is roof overhang before you start fixing everything in earnest!



Assembly of verge boards

Screw the verge boards to the eaves boards so that the underside is flush with the lower edge. This means that they are approx. 2 cm above the roof covers plates

How to cover and protect your roof

The roof should be covered with asphalt, tar paper, shingles, or a high quality PVS or ABS trapezoid roof covering.

A provisional roof felt-cover is part of the delivery, but this is NOT a substitute for a proper roof covering. You can see this as temporary protection (max. three months) until bitumen sheeting, trapezoid cover sheets or the like MUST come on top of it.

If available: Roof panels / trapezoidal panels made of PVC and with ridge cover (holes must be pre-drilled!) must fastened with flat headed screws.

Make sure to seal the trapezoidal sheets on the downward-facing side with silicone or SikaFlex.

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

Roof section

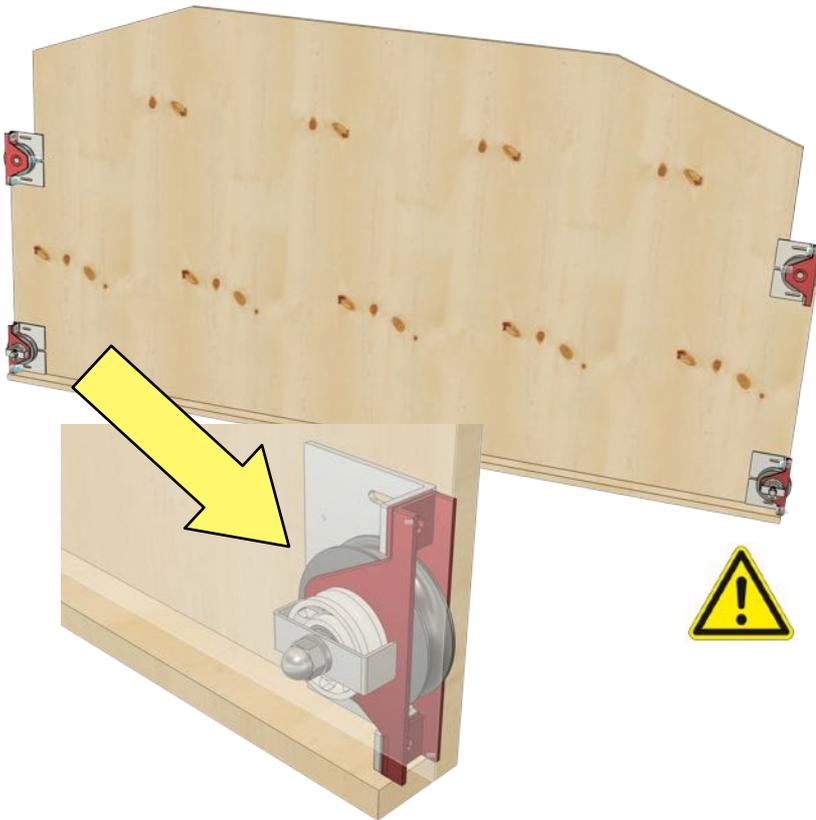


Detail: verge and eaves boards, optional trapezoidal sheets as cover.





Shutter



Movable rear wall (shutter):

Attach the two vertical shutter rails with the enclosed screws, 28pcs. (5x30).

Attach the guide rails from the top of the wall, vertically (two photos below). The rails should be fixed parallel to the rear wall. You must determine the exact distance from the rear wall by placing the roof in the "closed" position. The two triangular closing boards (roof, left & right) should later coincide with the shutter board.



With two people insert the shutter in the rails from above. Place a short square piece of wood under the shutter, to keep it in place.



Make sure that all rollers engage in the rails. You should check the gap between the shutter and the outer logs. If necessary, you can adjust by changing roller distance. The brushes attached to the side are only clamped under the rollers.



Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com

Sliding door

Insertion of the door leaf

Put the door blade with the handle, or grip plate facing outwards. The door blade is first placed in the lower door guide rail. (see picture)



This wooden guide rail is attached to the base frame of the observatory.

At the top there is a metal guide rail, it contains two slide rollers that each have a locking screw.

Two metal brackets mounted on top of the doorblade have a gap (rightside)

Now lift the door so that the locking screws from the roller slides slip into the gaps of the door bracket. Tighten the screws, to lock the metal bracket.

Adjusting the door

By turning the screws on the slide, the door can be adjusted in height and inclination (right / left). The get the hang, simply try to fine tune it.



GreenLine

Roll-Off observatories

www.astrogfk.com

Door frame



Door frame

The door frame consists of three shaped wooden parts (L-profile); two long elements and a short part. The ends, cut at 45 degrees belong to each other.

The frame is fixed into the ends of front plank series A and E at the outside, with the included screws.

The threshold plank is mounted flush with the door panel on the inside.



Door rail cover GreenLine Medium & BIG observatories

After you have hung and adjusted the door, the sliding door fittings must be covered. Mount the cover strip flush to the front cross member and fasten it with four screws (5x100).

Door rail cover GreenLine MINI observatories

After you have hung and adjusted the door, the sliding door fitting must be covered. To do this, the cover strip is held flat with the crossbeam and fastened to the corner posts with two screws (5x60).





GreenLine

Roll-Off observatories

www.astrogfk.com

Roof Drive System GreenLine MINI



Roof drive unit

In contrast to the other larger RollOff observatories, the motor unit for the **GreenLine MINI** is installed on the right.

Position the drive (pre-assembled with mounting board) in the corner of your observatory.

Attach like this:

UNDER the plate, with three 8x100 screws

ABOVE the plate, with three 6x60 screws

Install the control unit directly below and attach it to the wall with four 5x30 screws.

Please note: when routing the cables, these should be pulled up **BEHIND** the control unit.

Installation of the drive unit

The motor and gear box comes pre- mounted on its board.

The gear wheel must completely engage in the rack.

Check that the motor axis is **perpendicular** to the plane of the rack. This is important!

Should it be necessary to adjust: Loosen the four nuts under the plate, push the motor forwards (or backwards) until the gear settles correctly.

Please refrain from powering-up the roofdrive, we first have to install both **limit switches**.

Limit switches

The two limit switches (pre-assembled on an aluminum bracket) are screwed in place with two 5x30 screws. (see the markings on the front left cross member, above the door rail. The switches are marked with "Open" and "Close".

Please note:

Although both switches were also pre-adjusted during the first-time build-up, both should still be checked and, if necessary, readjusted during your test run.





GreenLine

Roll-Off observatories

www.astrogfk.com

Roof Drive System GreenLine Medium&BIG



The roof drive is installed on the left-hand side of these **GreenLine RollOff observatories**.

Position the drive (pre-mounted on its board) in the corner as seen in the picture left.

Attach like this:

UNDER the plate, with three 8x100 screws

ABOVE the plate, with three 6x60 screws

Installation of the drive unit

The motor and gear box comes pre-mounted on its board.

The gear wheel must completely engage in the rack.

Check that the motor axis is **perpendicular** to the plane of the rack. This is important!

Should it be necessary to adjust: Loosen the four nuts under the plate, push the motor forwards (or backwards) until the gear settles correctly.

Please refrain from powering-up the roofdrive, we first have to install both **limit switches**.

Limit switches

The two limit switches (pre-assembled on an aluminum bracket) are screwed in place with two 5x30 screws. (see the markings on the front left cross member, above the door rail. The switches are marked with "Open" and "Close".

Please note:

Although both switches were also pre-adjusted during the first-time build-up, both should still be checked and, if necessary, readjusted during your test run.

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



The finishing touch.....

Congratulations!

Your observatory is (almost!) ready now.

However, you should apply a wood finish / protection as soon as possible to keep your value as long as possible. Here you are free: whether it is a wood glaze or a wood varnish.

Avoid brute force when using the observatory and always remember: it is made of wood! It lives! It works! And it can burn - but only once!



ATTENTION

Dimensional deviations and malfunctions can be caused by:

- the climate (humidity, wind, temperature, sunshine or frost)
- fresh paint, through attachments, changes, over loading the roof
- a foundation that is not fully hardened or not set.

Important:

If you have ordered an impregnation, consider it is oil-based, so the top coat should also be oil-based.



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

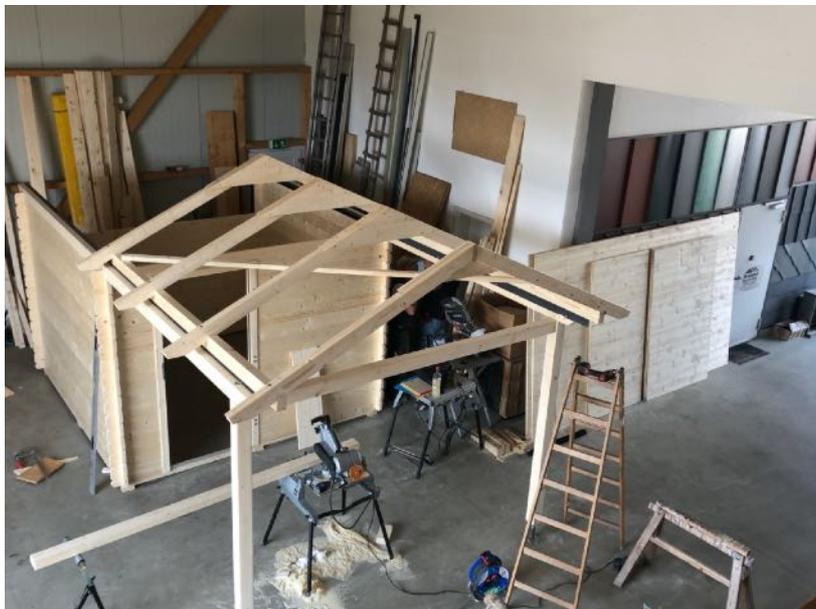
phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com



GreenLine

Roll-Off observatories

www.astrogfk.com



... the observatory people

Dome Parts GmbH

Keltenstr. 2

86517 Wehringen,

Germany

phone: +49 8234 90 59 100

web: <https://www.astrogfk.com/>

e-mail: mail@astrogfk.com

Maintenance



GreenLine

Roll-Off observatories

www.astrogfk.com

Maintenance / repair work on the drivers / shutter guide rails

If repairs are required, proceed as follows:

Open the roof. Fix the open shutter to be able to work on it. (Place square timber / board under the shutter)

Remove the two top screws on the shutter rail

Remove the screw and then place a piece of wood (head) from the last plank under the guide beam.

Unscrew the visible screws of the log and remove the plank covering the rear wall pick-up assembly. Do this under an angle. Now you can access the pick-up mechanism and steel cables.

Pick-up roller assembly:

Remove the steel cable from the roller assembly. Now the roller assembly can be moved freely in the aluminum rail.

Pulleys:

The pulleys can now be exchanged using an open-end wrench.

Rails:

Remove the screws from the rail and reinsert the new element.

Steel cables:

To do this the steel cables must be separated from the pick-up assembly and then removed from the rail.

When re-installing, pay attention to the cable guide in the shaft. The steel cable must be readjusted after every change or replacement.

Always also check consistency!

After the change, the cover plank has to be screwed on in place again, also so the small head element.

Shutter jitter and locking up:

If the shutter starts to jitter or locks up, you can solve this by adjusting the the guide-rail rollers (left and right on the shutter). There are three small screws in slotted holes. Loosen these and shift the rollers outwards. Tighten everything and check if the shutter moves OK now.

Shutter doesn't go up far enough:

There are adjustable terminals on the lower guide rollers of the shutter, which would then have to be readjusted (from the inside of the observatory).

Shutter does not move cleanly:

Lubricate the guide rails with a good quality grease. Do not use oil.

Adjust the guide rollers, Check cable tension.

Are there any objects in the way in the mechanics?



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com

Notes



GreenLine

Roll-Off observatories

www.astrogfk.com



... the observatory people

Dome Parts GmbH

Keltenstr. 2
86517 Wehringen,
Germany

phone: +49 8234 90 59 100
web: <https://www.astrogfk.com/>
e-mail: mail@astrogfk.com