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Kedco Energy Wood Pellet Biobin

Please read these instructions carefully before you start to assemble the Biobin in order to familiarise yourself with the parts and processes involved. If the instructions are followed correctly, the assembly can be completed in 3-4 hours by a fitter and assistant. If you have any queries please contact us.

BEFORE YOU START

Check that you have all the components of the Biobin assembly kit, namely:

- 8 no. fibreglass rectangular side panels
- 4 no. fibreglass triangular panels
- 1 no. fibreglass bottom tray
(with stainless steel isolator plate)
- 2 no. fibreglass roof panels
- 4 no. corner brackets
(a metal support to fasten the side panels)
- 4 no. angle brackets
(an L-shaped metal fixture)
- 4 no. cross bars
- 1 no. filter sock
- Bag containing 200 no. M8x25 bolts
- Bag containing 30 no. M8x40 bolts
- Bag containing 230 no. M8 nuts
- Bag containing 230 no. M8 washers
- Bag containing 110 no. self-drilling tech screws
- Bag containing 8 no. rawl plugs
- 8 no. anchor bolts
- 2 no. camlock fittings
- 1 no. 150mm ventilation fitting
- 4 no. tubes of sealant
- 1 no. pellet access gate (optional)

EQUIPMENT AND MATERIALS REQUIRED

- Two 13mm wrenches
- Jigsaw and fibreglass cutting blade
- Step ladder
- Earth Cable (not supplied)
- Cordless drill with 8mm and 13mm sockets
- Cartridge dispenser/gun for sealant
- Garden hose and water supply

PROTECTIVE CLOTHING REQUIRED

- Workman's overalls
- Rubber gloves
- Dust mask

NOTES

- In order to construct the Biobin efficiently, you will need an assistant to help you with many tasks.
- It is best to assemble the unit on a flat concrete area, adjacent to where you intend to finally position the store.
Otherwise, the panels may not line up properly.
- The first and most **important** step to a successful installation of your Biobin is to create a flat concrete base measuring 2.3m x 2.3m. It is vital that this is installed perfectly level, if the base is uneven it will prevent the panels from lining up properly.

Stage 1: Constructing the storage cone

In this stage, the panels are bolted to create the cone shape and then the bottom tray is attached.

The materials used in this stage include:

- **4 no. fibreglass triangular panels**
- **1 no. fibreglass bottom tray**
- **1 no. pellet access gate (if required)**
- **48 no. M8x25 bolts, nuts and washers**
- **Sealant**

1.1 : Joining the four triangular panels

It is more straightforward to build the storage cone upside-down like a pyramid. You may find that a flat piece of wood or a mat underneath the panels makes the fibreglass sheets easier to manoeuvre. However, you must be careful to ensure that this prop does not cause the panels to be misaligned during construction. Each of the triangular panels is numbered. You must connect these panels in numerical order. Note that each panel has a raised bolted side and a recessed bolted side. When the cone is constructed, the raised edges are placed on top of the recessed edges. To connect the first two panels, take panel number 2 and stand it on the longest side. Run a heavy bead of sealant along the recessed edge of panel 2 surrounding the boltholes. Next, take panel number 1 and fit the raised edge over the recessed edge of panel number 2. Now you can insert the first bolt (M8x25) and washer and attach the nut on the inside. Insert the remaining bolts and tighten. Repeat this process to join the third panel. To attach the fourth panel, it is necessary to tilt the structure on its side to tighten the bolts.

1.2 : Connecting the bottom tray

Run the sealant around bolt holes on the top of each of the panels. Position the bottom tray and bolt securely. It is necessary to tilt the cone in order to tighten the bolts. Ensure that all joins are well sealed. Avoid getting sealant into the groove along which the stainless steel isolation plate runs. If this occurs, remove the sealant immediately.

Stage 2: Positioning the cone

In this stage you will position the cone and install the auger/ vacuum transport connection and/ or the **Pellet Access Gate**.

The equipment used in this stage includes:

- **fibreglass hole cutter to make the auger/ vacuum entry**
- **jigsaw with fibreglass cutting blade to make the access gate entry**
- **rubber O-ring to fit auger (not supplied) and sealant**

2.1 : Positioning the cone

Position the cone in the centre of the concrete base. If you are connecting the Biobin to a boiler, the **Connection Box/ Pellet Isolation Plate** must be aligned to suit the auger/ vacuum connection to your boiler. This is the ideal time to install the auger.

IMPORTANT NOTE: INSTALLING THE AUGER/ VACUUM PROCEED TO STEP 2.2 ONLY IF YOU ARE INSTALLING AN AUGER OR VACUUM TRANSPORT CONNECTION. IF YOU DO NOT REQUIRE THIS OPTION YOU SHOULD CONTINUE TO STEP 2.3

2.2 : Installing the auger/ vacuum connection

Cut the openings for the auger or vacuum transport system in the connection box using the appropriate size hole saw. You can either install the auger now or remove it and do final installation of the auger when the Biobin is fully assembled. Be sure to fully seal around the auger to ensure a waterproof seal. To avoid water running down the auger it is advised to fit a rubber O-ring around the auger, at a point inside the outer panel of the Biobin. This will create a barrier to stop water running down to the auger connection box.

IMPORTANT NOTE: PELLET ACCESS GATE INSTALLATION PROCEED TO STEP 2.3 ONLY IF YOU ARE INSTALLING THE PELLET ACCESS GATE. IF YOU DO NOT REQUIRE THIS OPTION YOU SHOULD CONTINUE TO STAGE 3 NOW.

2.3 : Cutting the storage cone for access gate attachment

Use the pellet access gate as a template to outline the position of the opening of the access gate on the storage cone. This opening should be at least a bucket-height from the bottom of the storage cone (approx. 0.5m). Use a jigsaw with a fibreglass cutting blade to cut the rectangular hole.

2.4 : Attaching the access gate

Use the 4 small bolts to attach the access hatch to the storage cone.

Stage 3:Assembling the panels

In this stage, each of the four pairs of side panels is assembled and the access hatch(es) is/are cut.

The materials used in this stage include:

- **8 no. fibreglass side panels**
- **M8x25 bolts, nuts and washers**
- **Sealant**

3.1 : Bolting together the side panels

Each of the fibreglass side panels is numbered. Match the sets of panels with the same reference numbers to construct an L-shape structure. Use a good bead of sealant to ensure a proper seal. After this step you should have four sets of L-shaped panels.

3.2 : Determining the alignment of the panels

Before you attach the L-shaped panels to each other, you must decide the best layout of the Biobin unit. The position of the panel with the **Camlock** and **Ventilation Fittings** should facilitate easy access for bulk delivery. We recommend that the access hatch for the **Pellet Access Gate** should be one the same side as the camlock fittings.

3.3 : Cutting the access hatch on the appropriate side panels

Note that a template has been scribed on each of the panels to indicate where the access hatch can be cut. Be sure that you select the appropriate panels and use a jigsaw with a fibreglass cutting blade to cut this opening.

Stage 4: Attaching the side panels to the storage cone

The materials used in this stage include:

- **Sealant**
- **M8 x 25 bolts, nuts and washers**
- **4 no. angle iron supports**

• **24 no. self drilling tech screws**

4.1 : Drilling the boltholes for the first panel to the cone

Place the first panel against the storage cone and drill the bolthole positions. Repeat this for each of the panels. Do not bond and seal the panels to the storage cone yet.

4.2 : Attaching the angle iron support bars

The angle iron support bars are connected at the middle joints between the four sets of panels. Start by placing the two rear sets of panels together at the edge of the storage cone. Notice that there are predrilled holes along the length of one of the adjoining panels. Use these holes as a guide to drill holes in the other panel. Shift the panels away from the storage cone. Place sealant along the outer side of the storage cone to which these panels will be joined. Also, place sealant along the rim of one of the panels that you have just drilled. Bolt the panels to the storage cone. Next, position the L-shaped iron on the inside of the middle joint between the two sets of panels and connect.

4.3 : Joining the bottom half of the middle joint

The lower part of the joint between the middle panels and below the rim of the storage cone is joined using the **self drilling tech screws**.

4.4 : Attaching the remaining side panels and angle brackets

After you have attached the third set of side panels you will need to carefully climb into the silo to attach the third and fourth angle brackets. Obviously, you must have an assistant to help you! Before you go inside, be certain you have all of the required materials such as nuts/ washers/ bolts, sealant, 2 no. angle brackets, 4 no. long cross bars. In addition, a step ladder should be positioned beside the wood pellet store to allow a safe exit from the interior.

Stage 5: Attaching the internal metal supports

In this stage, the long cross bars are attached to the angle brackets that have been already fitted and the corner brackets are connected to the side panels. You will need to go inside the structure to attach the metal supports.

The materials used in this stage include:

- **4 no. long cross bars**
- **4 no. corner supports**
- **M8x25 and M8x40 bolts, nuts and washers**

5.1 : Attaching the long cross bars

Bolt one of the long metal bars to the bottom of an angle bracket and then to the opposite angle bracket. Next, bolt a second long metal bar to the upper part of the angle brackets so that it is parallel to the first one. Securing these bars may require some manoeuvring. Then bolt the remaining two cross bars.

5.2 : Attaching the corner supports

Your assistant will need to screw in the M8x40 bolts for the corner brackets from the outside. Once the corner brackets have been secured, the unit should now be rigid – facilitating an easy escape from the silo!

Stage 6: Attaching the roof panels

There are two roof panels, one of which has a **Rubber Baffle** attached. The purpose of the baffle is to protect the back wall of the silo when pellets are being blown into the unit. Consequently, the panel with the hanging baffle is fixed to the **rear** half of the unit.

The materials used in this stage include:

- **2 no. roof panels**
- **24 no. tech screws**

6.1 : Securing the roof panels

Run a bead of sealant around the top of the storage unit and along the join between the roof panels. Place the front roof panels first but do not secure just yet. Place the rear roof panel on next. Move the roof panels to ensure a good fit. Next, screw down the panels using the tech screws. Do not over-tighten the screws as this may cause the screw threads to be stripped. It is advisable to run another bead of sealant under the eave of the roof panels.

Stage 7: Attaching the exterior pipes

The materials used in this stage include:

- **2 no. 150mm bend pipes** • **Sealant**
- **2 no. camlock fittings** • **Earth cable (not supplied)**

7.1 : Attaching the fittings and earth cable

Place a heavy bead of sealant around the outside of each of the pipe fittings. Place the pipes and camlock fittings over these projections and leave to set for a few hours.

Please ensure that a suitable earth wire is connected to the clamp on the inlet pipe.

7.2 : SAFETY - IMPORTANT NOTE

The inlet fitting must be earthed.

Stage 8: Anchoring the biobin

The materials used in this stage include:

- **8 no. anchor bolts**

Drill 10mm holes with a masonry bit through the holes of the bottom lip of the silo into the concrete base and insert the anchor bolts and tighten to fix the silo to the base.

Stage 9: Testing the seals

This stage must be performed. It is essential to ensure the Biobin is completely sealed (dust and watertight) before the first pellet delivery takes place.

The equipment used in this stage includes:

- **Water hose**

When the sealant has set, check all joins for leaks by hosing down the silo for 10-15 minutes. Take off the *Inspection Panel* at the front of the unit and inspect the inside of the storage unit for damp areas. If water has penetrated, then you need to find the source and reseal the area. Test until you are

confident that all seals are working.

Care and use of your biobin wood pellet store

Biobin provides the best possible storage for your wood pellets and to ensure this is always the case, please follow a few simple steps:

STEP 1

Before filling your tank for the first time be sure that all the joints are completely sealed to avoid any water leaks.

STEP 2

When filling your silo be sure to attach the filter sock to catch all the excess dust from the exhaust.

STEP 3

Ensure the filter sock is washed after each use to avoid it clogging with dust.

STEP 4

The green finish of the fibreglass is weather proof and is hard wearing and needs no more maintenance other than to wash down with soapy water occasionally to keep it clean.

STEP 5

It is advised to clean out your silo after every two fills to avoid a build up of pellet dust in the bottom of the silo.

STEP 6

The isolator plate can be slid into place in the bottom of the silo in the case that the auger needs to be removed. Be sure the steel plate is fully inserted before removing the front access panel, you can now freely work at the auger without pellets coming out of the silo.

INSTRUCTIONS CORRECT FOR CURRENT SPECIFICATIONS, OCTOBER 2007