

clivus

The Natural Solution

M54W Trailhead Installation Manual



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A Maintenance Manual is available from your local Clivus Multrum representative.

Welcome

Congratulations on your purchase of a Clivus Multrum Composting Toilet. You have purchased a system that represents the leading edge in composting technology today. Clivus composters are manufactured to be efficient, durable and easy to maintain. With proper installation and regular maintenance the Clivus composter will give you years of trouble free service.

The M54WADA Composter can be installed by anyone with basic carpentry skills. However, it is recommended that the services of a licensed electrician be obtained for electrical hook-ups as required by state or local codes. The basic tools and materials required are listed in the instructions. The average installation time is approximately 30-40 worker-hours for each M54WADA unit.

If you have any questions, please contact your local representative or Clivus Multrum, Inc.

Composter Location

The M54 should be located in an area where there is no possibility of ground water or other sources of upward pressure on the unit. Also, the M54 should not be located in expansive soils, such as clay, which may cause vertical and horizontal pressure. A drain-to-daylight may be the best assurance of no upward pressure.

The M54 Composter Base may be fully buried for ground level access, partially buried or it may stand on the surface. Handicapped access requires a platform in front of the door and a ramp if the building is not at ground level.

Locate the M54ADA so that either a side faces magnetic south. Preferably, the left side when looking from the front will face south. The solar panel must be on the south side of the roof with 120° of unobstructed sunshine to function properly (no trees shading the south side of the roof for most of the day).

Before Starting

Read all instructions before assembly.

Four people (min.) are needed to assemble the M54ADA Trailhead.

Receiving the Shipment

Check for Damage

Examine the Clivus composter and its contents carefully for evidence of damage or rough handling.

Minor Damage: Do not sign the shipping receipt until the carrier has noted the damage on the Bill of Lading.

Significant damage: DO NOT SIGN the shipping receipt. Refuse the shipment and immediately call Clivus Multrum, Inc. at 1-800-425-4887.

CHECK PARTS IMMEDIATELY

Most of the Clivus system components are packed inside the composter for shipping. If the shipment is accepted, immediately cut the strapping, open the package, and remove the components packed inside. **Check item numbers on kit boxes against the packing list, but do not open individual kits until needed for assembly.** Refer to Figures 1 and 2 to identify the parts and check them against the packing list. Damage, shortages, and discrepancies must be reported to your local authorized representative or Clivus Multrum, Inc. within 5 working days. **If the composter will not be installed immediately, secure all components in a safe location which is protected from the weather.**

FOR REPLACEMENT CLAIMS, CLIVUS MULTRUM®, INC. MUST BE NOTIFIED OF ANY CONCEALED DAMAGE OR MISSING PARTS WITHIN 5 WORKING DAYS FROM RECEIPT OF GOODS. AFTER THIS PERIOD, ANY ADDITIONAL PARTS REQUIRED MUST BE PURCHASED

AT THE CUSTOMER'S EXPENSE.

Materials

An installation kit is provided with each composter that includes sealant, screws, and rivets.

You will also need to obtain the following materials locally:

- 100 cubic feet of 1" crushed stone

DO NOT USE REDWOOD, CEDAR, OTHER AROMATIC WOODS OR TREATED LUMBER.

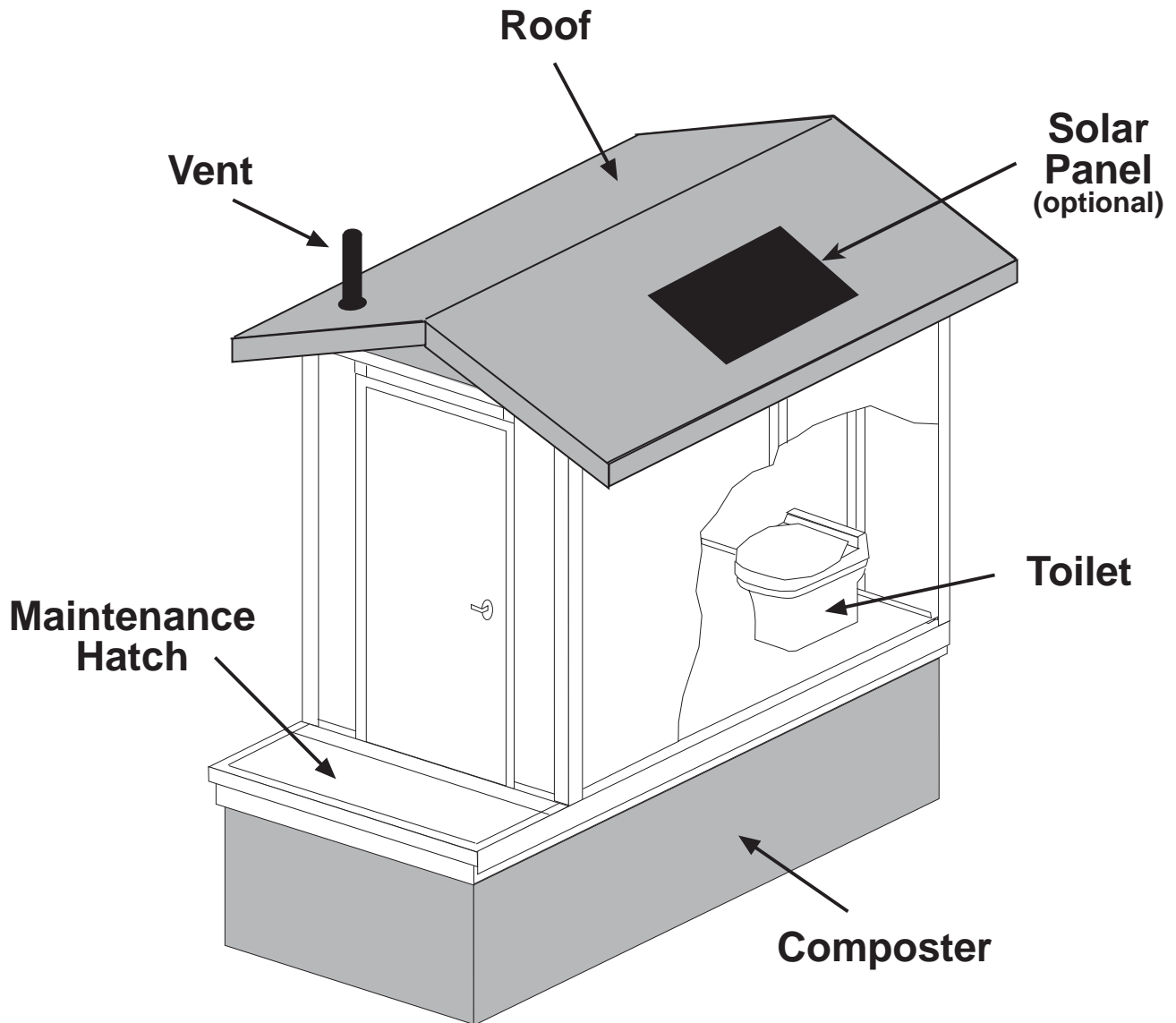
Tools

backhoe
gas-powered earth compactor
transit
4' or 6' level
shovels
pick ax (if soil is hard)
3 pound maul
3' length 2X4 board (scrap)
4-3" putty knives
2 tape measures
carpenter's square
2 or 3-8' step ladders
electric power source (generator)
crescent wrench
caulking gun
pliers
utility knife
staple gun and staples (roofing)
1/4" hex-head driver bit
assorted screwdrivers
2 each 11/64", 7/32", 3/32", 3/16" & 1/2" drill bits
2 cordless drills
compass (to determine South)

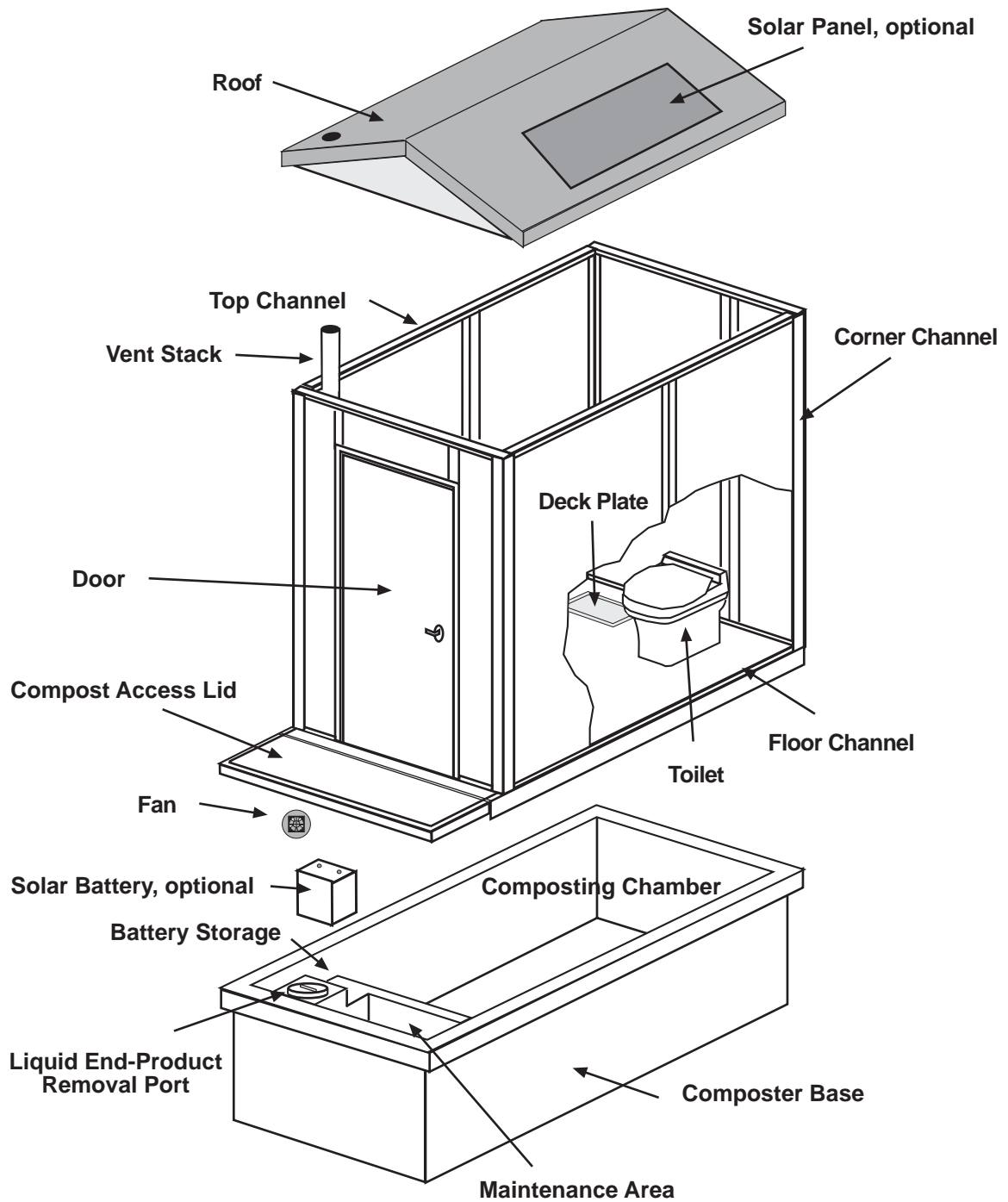
**KEEP THIS MANUAL
HANDY FOR
FUTURE REFERENCE OR
SERVICE.**

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Typical Configuration



Exploded View



Installation and Assembly Instructions

Set Composter Base

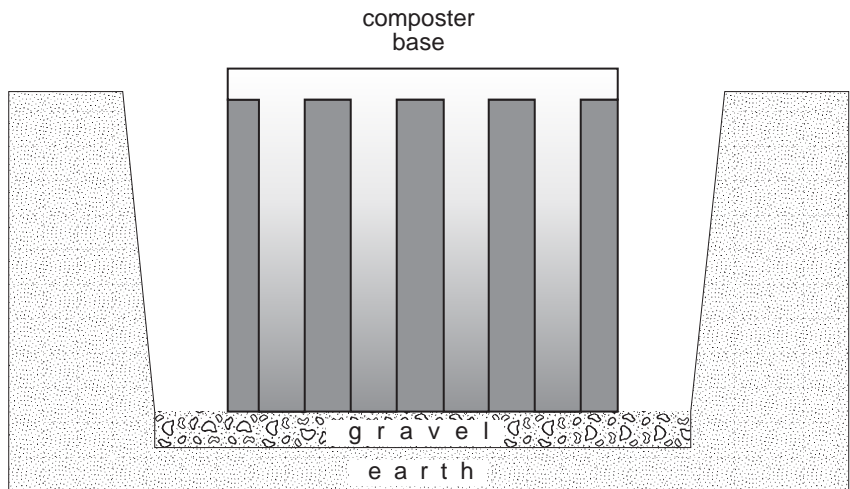
Excavate Hole for Base

Dig a hole approximately 7'6"X11'8"X5' deep. Level the hole with the transit. Add about 80 cubic feet of crushed stone into the hole and level again.

Place Composter Base

Place the M54ADA Composter Base with the Liquid End-Product Removal Port at the front on the leveled bottom of the hole. Check with the 4' or 6' level. Add or remove soil or stone until the Composter Base is level.

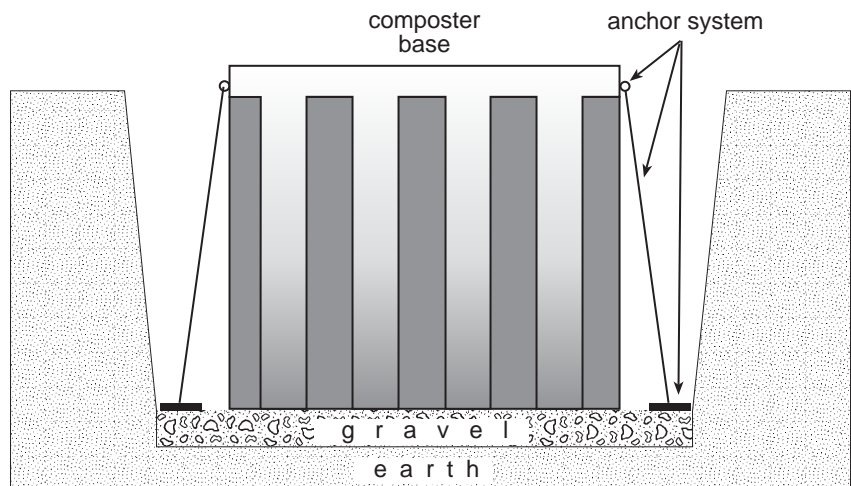
Note: The top lip of the Composter Base should extend at least 2" above grade to avoid rainwater intrusion.



Place Anchors

(Note: anchors are for wind-loading, not for hold down.)

Using two cable clamps, attach a braided steel cable to each anchor plate. Use two more clamps to attach the two free cable ends to the eye-bolts on the long side of the Base. Spread the plates out to the sides of the hole and fasten down using two stakes in each plate.



Backfill Around Base

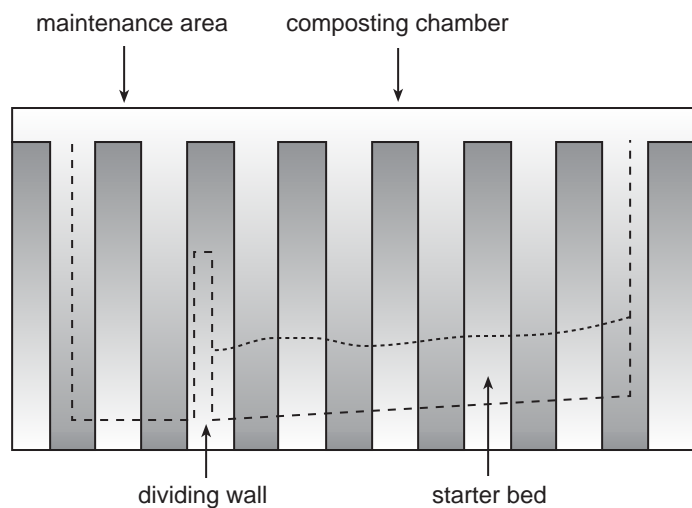
Begin backfilling with remaining crushed stone and complete with soil. Compact the fill vertically rather than against the sides of the composteur.

Add Starter Bed

Add the entire three bales of planer shavings to the Compost Chamber. Rake out the starter bed evenly.

DO NOT USE REDWOOD, CEDAR, OTHER AROMATIC WOODS OR TREATED LUMBER.

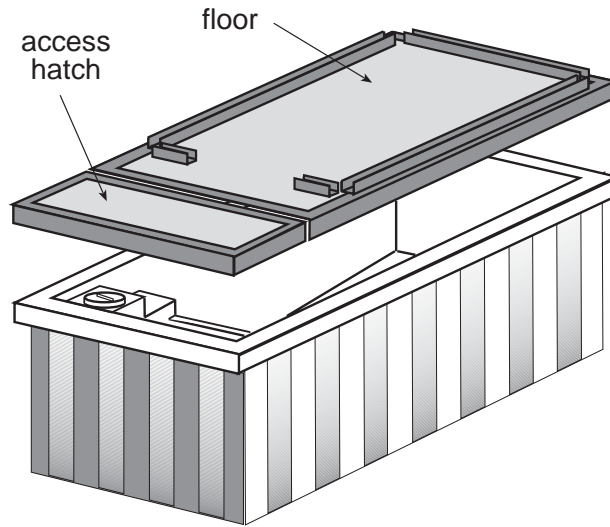
Distribute 20 gallons of water throughout the Compost Chamber. Allow it to soak into and drain through the starter bed material. Pump the excess water out of the Liquid Storage Chamber and redistribute the starter bed material if it has become dislodged.



Place Floor Panel

Center the floor panel over the compost tank, with the access hatch over the front of the tank and the textured surface facing up.

Within the floor channels, mark 1" in from every corner, then 16" on-center along the sides and rear of the floor. Using the 1/4" bit and the 3 1/2" Tapcon® screws, screw the floor to the Base.



Erect Building

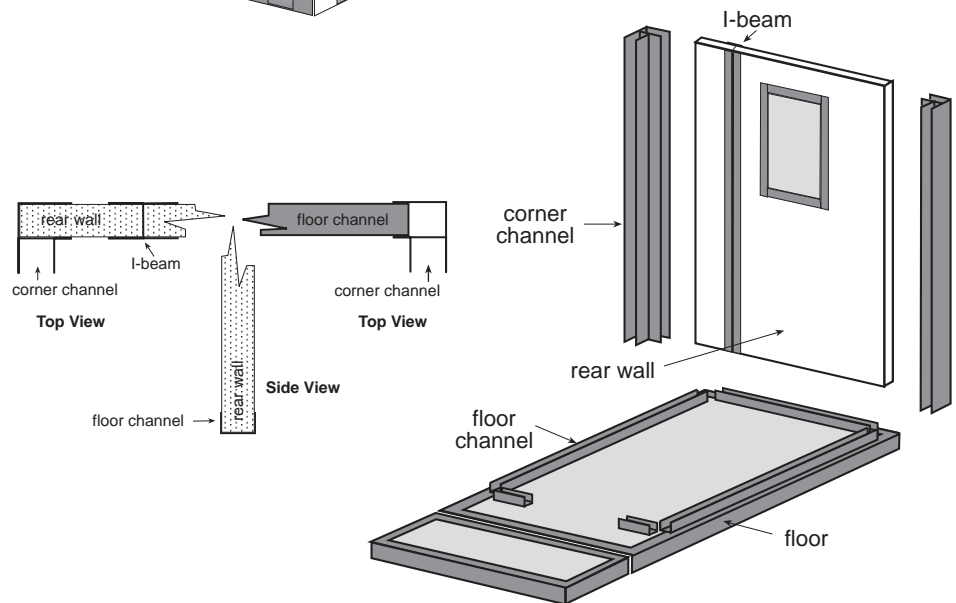
IMPORTANT NOTE!

The Corner Channels must be placed so that the Side Wall Panels are inserted into the shallow side of the channel, NOT the deep side.

Set Rear Wall

Use the wood block and maul to fit one Corner Channel onto the 48" wide Rear Panel. Position the 48" Rear Panel and Corner Channel into the Floor Channel, using the putty knives to guide the corner channels over the floor channel on both the inside and outside of the building. Tap firmly into place using the wood block and maul. Slip one I-beam onto the other edge of the Rear Panel.

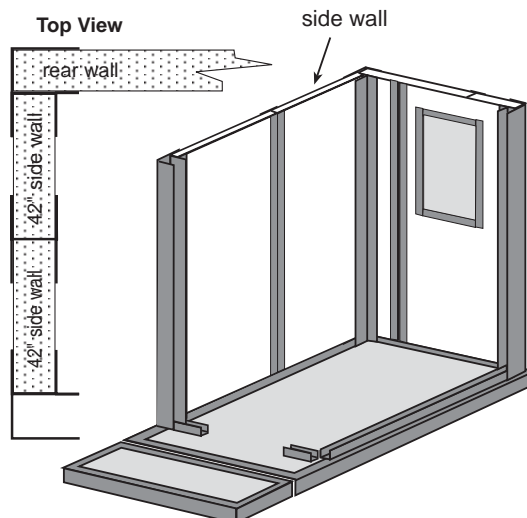
Fit a Corner Channel onto the 17" wide Rear Panel and insert the Rear Panel into the I-beam and Floor Channels as above.



Set Side Walls

Place a 42" Side Wall Panel into the Floor Channel and Rear Corner Channel. Tilt the top corner of the Side Wall Panel into the top of the Corner Channel and lightly tap into place using the wood block and maul. Slip an I-beam onto the Side Panel. Slide a Corner Channel onto the other 42" Side Panel and insert into I-beam and Floor Channel, with Corner Channel outside the Floor Channel.

Repeat for the other Side Wall Panels.



Set Door Wall

Place the door panel into the corner channels and the floor channels.

Place Top Channels

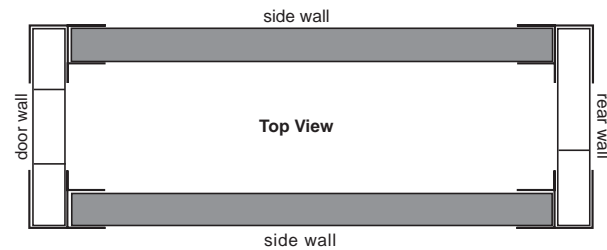
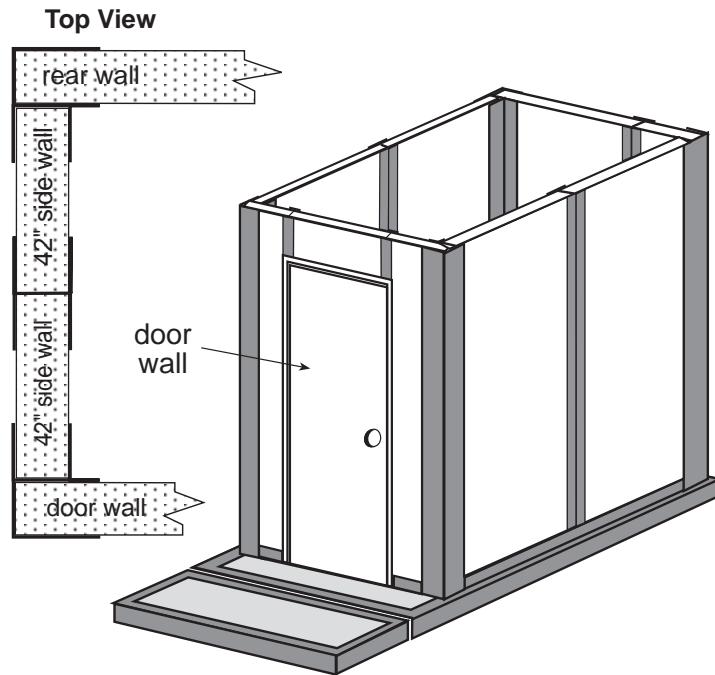
Place the Top Channels onto the top edges of the Side Wall Panels, sliding the Top Channels inside the Corner Channels. Use the wood block and maul to make sure all the Panels and joints are snug and flush. Check for squareness.

Fasten Panels

Using the 3/4" stainless steel TEK screws, fasten **3" in** from the corner and **3/4" down** from the top of both faces of each Corner Channel, and **3" in** from the corner and **3/4" up** from the bottom of both faces of each Corner Channel, inside and outside. These holes will go through the Top Channel and Corner Channel and the Floor Channel and Corner Channel.

Use the same TEK screws on the inside and outside of the building at the Floor Channels. Place one screw 18" in from any corner, then 16" on-center. Repeat for 3 sides of the building. For the Door Panel, drill and screw at each end of the short Floor Channels.

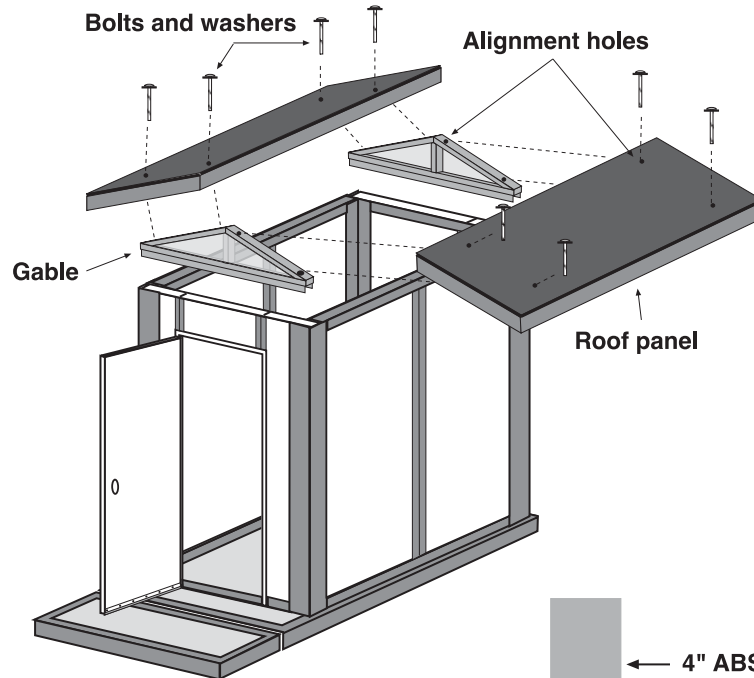
Using the same TEK screw fasten the Corner Channels to the panes every 16" on center on all four sides. Screws should be placed on the bead toward the outside edge of the Channel.



Position the Roof

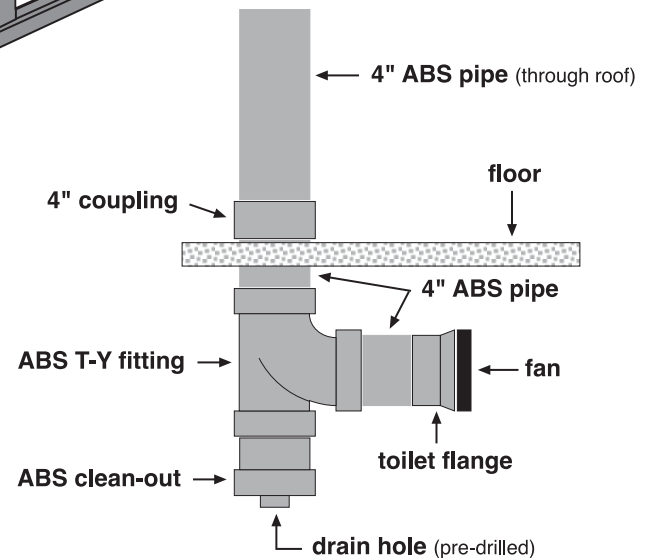
With the glass facing out, center the Roof Gables over the front and rear walls. Place a Roof Panel onto the Gables. Front end has greater distance from pre-drilled holes to roof edge. From the outside, insert the 4-1/4" bolts and washers and attach nuts loosely. Repeat for second Roof Panel.

With both Panels in place, tighten bolts securely. Fasten the Gables to the walls using 3/4" TEK screws at 1" from the edges, then 16" on-center, both inside and outside.



Install Vent System

With the dark bronze trim ring over it, slide the 10' ABS pipe through the pre-drilled vent hole in the roof. Push the ABS fan assembly up through the vent hole in the floor and connect to the 10' pip with the 4" coupling provided. No glue is needed. Turn the fan assembly so the fan faces to the right, parallel to the front of the building. Fasten the trim ring at the ceiling using the 3/4" TEK screws.

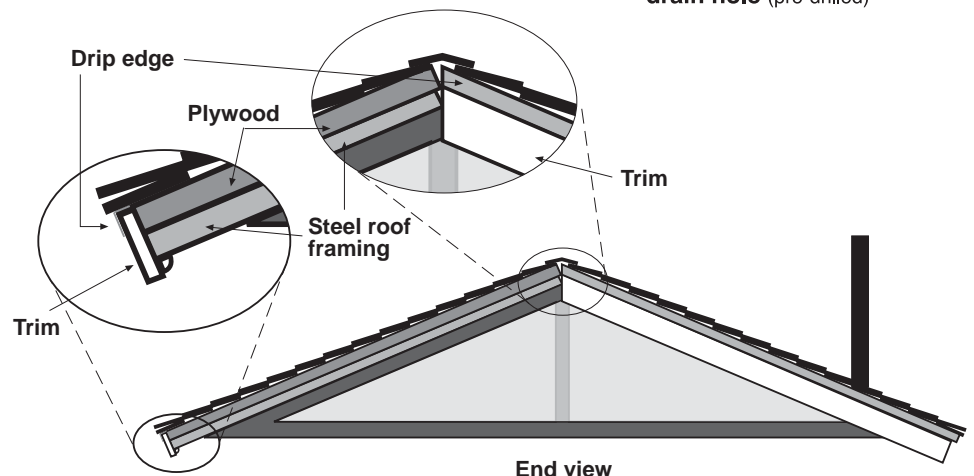


Trim Roof

Cut and fit the 4" trim boards along eave and rake ends of the roof using galvanized finish nails provided.

Use vent flashing, roofing paper, drip edge and roofing nails to shingle roof.

2" x 2" V-shape, dark bronze strip (two pieces, one 84", one 48") is used as trim for unerside of roof peak. Screw 84" length with TEK screws inside of building. Cut remaining piece to fit outside, both front and rear gable ends.



Electrical Components

Mount Solar Panel

Locate solar hardware package. Use four aluminum brackets for mounting a single panel system. Multi-panel systems include two aluminum rails for joining panels. Carflex connector is provided for wiring multiple panel systems in series.

Use a screwdriver to knock out the plastic indentation on the solar panel wiring box and attach the strain relief fitting. Strip and expose the solar cable (2-strand, 14 gauge, insulated). Feed the wires through the strain relief and screw on the strain relief ring. Attach the black (negative) strand to the gray terminal (negative) and the red (positive) strand to the red (positive) terminal. Screw on wiring box cover. Screw on wiring box cover.

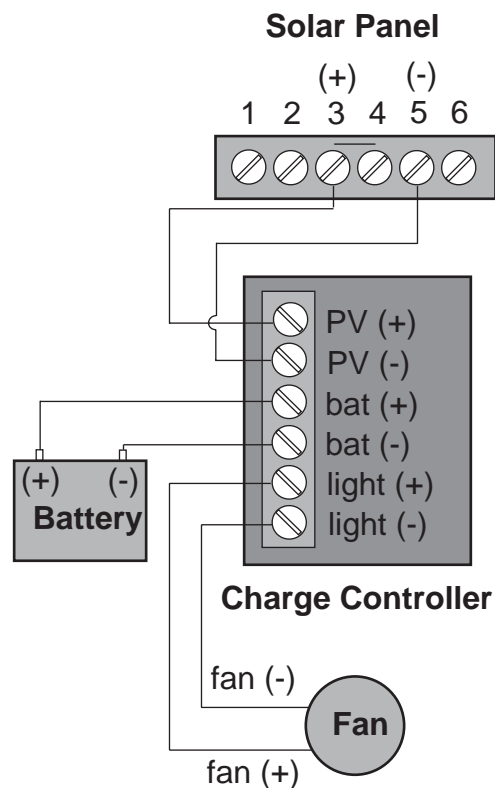
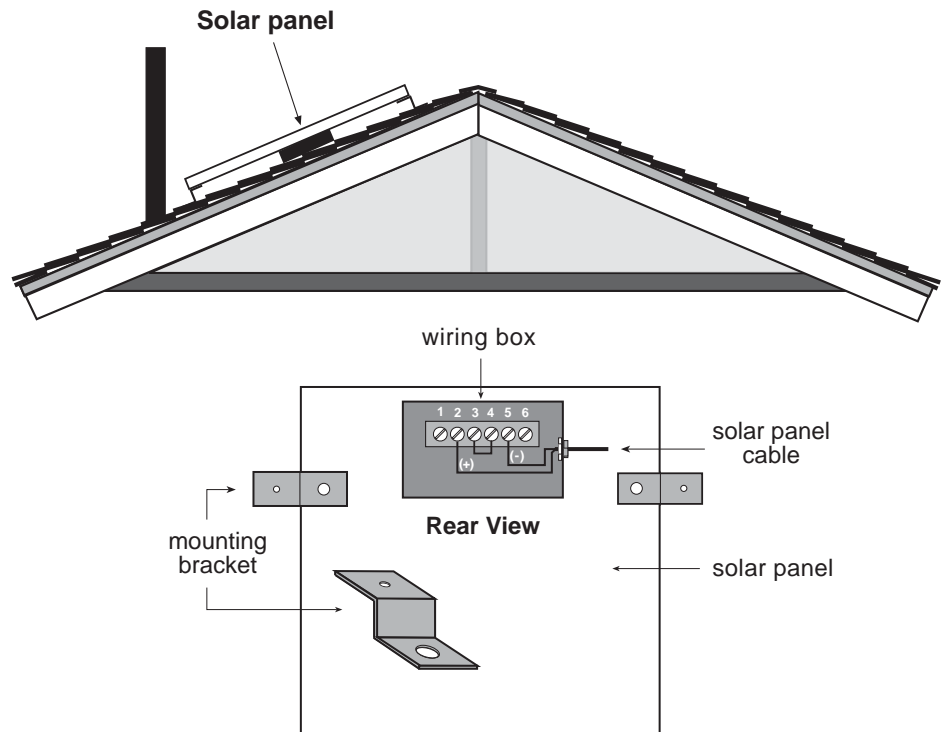
On the south-facing side of the roof, use the panel as a guide to mark for the 3/8" holes to receive the well nuts or lag screws to attach the panel to the roof.

Drill a 1/2" hole in the ABS vent pipe near top of the vent flashing. Feed the cable down the pipe and out the clean-out nut. Seal the hole at the roof flashing, but leave the lower hole unsealed to allow moisture to drain.

Solar Power Wiring (Typical)

Place the battery on the shelf under the hinged Compost Access Lid. Mount the Controller on the Composter Base wall, near the Battery. Cut about 1' length off the end of the solar cable. Split 6" at one end and 2" at the other. Attach the 6" ends to the battery--Red to Positive, Black to Negative. The 2" end connects to the Controller--Red to Battery Positive, Black to Battery Negative. **Use caution when wiring the Controller to avoid permanent damage to the part.**

Follow the wiring diagram on this page for typical daylight-only fan systems. The fan will operate when battery charge exceeds 12.6 volts.



Fixture Installation

Install Toilet

Remove the screw at the front of the toilet and remove the top/liner. Position the toilet base with 2" clearance from the Window Wall. Use the 3/16" drill bit to drill pilot holes for the screws packed with the toilet. Attach toilet base to floor with 4 screws.

Push the green toilet chute into the hole so the flange rests firmly on the floor. Replace the toilet top/liner, being sure the liner fits inside the chute while the hook engages on the back of the toilet. Replace the front screw and caulk around toilet base using the white caulking provided.

Add ADA Rails

Mount the ADA rail on the Window Wall 34" from the floor on-center, with 6 clear inches in the back right corner (as you face the rear of building (or consult local ADA regulations for height). Level the rail and mark the holes at each end. Use 3/4" ss panhead Phillips screws to secure.

Repeat for the second ADA rail, leaving 6" from the rear wall clear.

Toilet Paper Dispenser

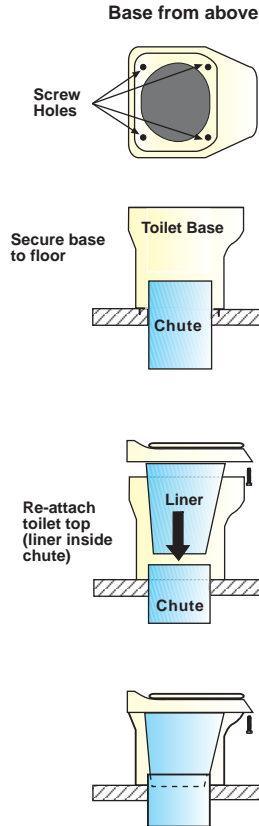
Install the dispenser at a minimum height of 19" on-center and a maximum of 36" from the back wall at its furthest edge (or consult local ADA regulations). Use the 1-1/4" ss panhead Phillips screws to secure.

Use one of the padlocks to secure the toilet paper.

Door Hardware

The door knob bolt should be screwed in before the spindle is inserted. Screw and snap on the remaining parts.

Follow the manufacturer's instructions for installing the door closer. Use the 1-1/4" pan head screws to attach the closer to the door header and door panel (blocking is in place to receive these screws).



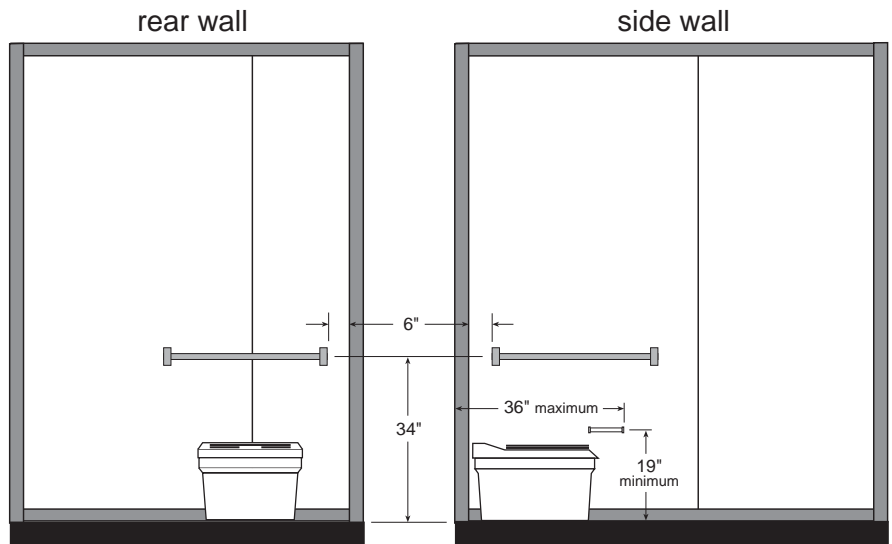
**You are using
a recycling toilet
by CLIVUS®**

- 1** *This toilet uses no water or chemicals.*
- 2** *Waste is being composted in the equipment below this building.*
- 3** *Do not throw cigarettes, plastics, bottles or cans into this recycling toilet.*

**THANK YOU FOR HELPING US
PRESERVE THE ENVIRONMENT**

Clivus Multrum® , Inc.

15 Union Street
Lawrence, MA 01840
1-800-4-CLIVUS



Final Elements

The stall plaque (1-2-3 sign) is placed on the inside of the M54ADA above the toilet paper dispenser.

The hasp to lock the Compost Access Lid should be placed on the left side of the base with half on the base and half on the hinged floor panel. This protects the Battery and Controller and prevents access to the Composter Base.

Install the door sweep.

Install waterless, towel-less hand sanitizer dispenser.

Using the white caulk, seal around the base of the fan vent tube support coupling where it meets the floor.

Parts and Hardware

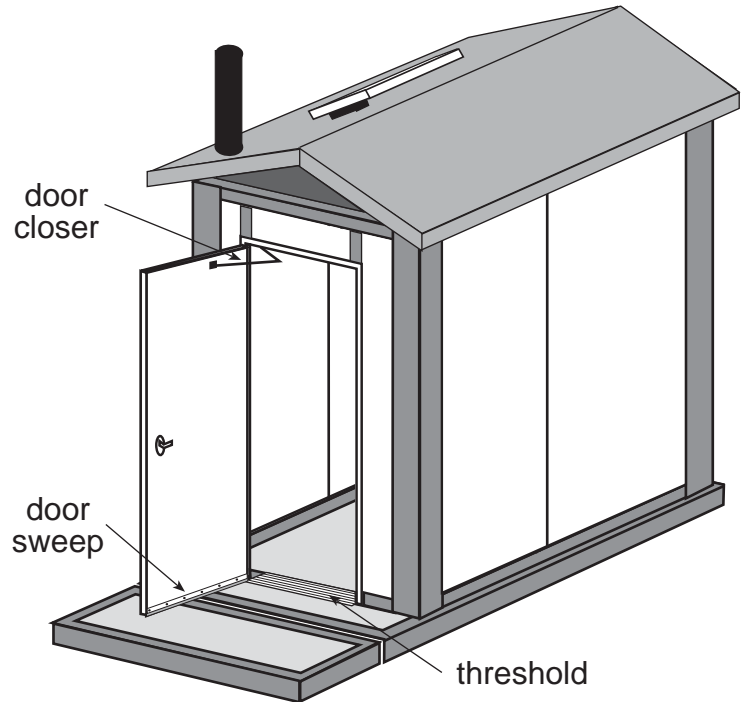
Parts

Composter Base w/ anchors
Floor Panel and Compost Access Lid
Floor Channels (pre-mounted)
 12 1/2" (2)
 83 5/8" (2)
 61" (1)
Rear Wall Panels (48" and 17")
Door Wall Panels, 133/4" (2)
Side Wall Panels, 42" (4)
Corner Channels (4)
Top Channels for Side Walls (2)
I-Beams for Walls (3)
I-Beams for Door Header (2)
Roof Gables (2)
Roof Peak Trim for Inside (1)
Roof Peak Trim for Outside (1)
Roof Panels (2)
Vent Pipe Flashing
Fan assembly, AC or DC
ABS Vent Pipe
Aluminum Vent Pipe Trim
Toilet Assembly
Toilet Chute
Toilet Paper Dispenser
ADA Rails (2)
Door Knob Assembly

Hasp Lock
Door Closer
Door Sweep
Stall Plaque (1-2-3 sign)
MC100 Multrum Cleaner
MB100 Multrum Bacteria
Maintenance Tools
Solar System (optional)
 Solar Panel(s)
 Battery
 Controller
 Wire Kit

Hardware

3/4" ss self-tapping TEK screw (500)
3-3/4" Tapcon screw (20)
4-1/4" Bolt w/ nut and washer (8)
3/4" ss panhead phillips screw (12)
Roofing Nails
Galvanized Finish Nails
Padlocks, small (2)
Sealant (black)



Starter Bed Material

Softwood Planer Shavings (3)

This completes the installation of the M54ADA Composter. For general care of the system, consult the M54ADA Maintenance Manual.

Questions about the installation or operation of this device should be directed to your local Clivus Multrum representative or to Clivus Multrum, Inc.

