

IMPORTANT INFORMATION ABOUT YOUR SHED KIT

Download the most current instruction book at www.barnkits.com; use the "manuals" link on the menu bar and then select your building kit and size.

Thank you for purchasing our shed kit. Read the instructions before starting the assembly of the building. If you have any questions about assembling the kit, call 800-245-1577. Business hours (8:00-5:00 ET) Monday thru Friday. After business hours call 724-866-HELP (4357) or email to help@barnkits.com.

The material that is included in our kit is listed on the back page. The optional floor package, if purchased, will be supplied by a local lumber supplier.

Our kit does not include the shingles, the quantity needed is listed on the back page. The siding is primed. You will need to apply a finish coat using latex acrylic paint.

Some of the framing lumber was used in the shipping pallet. Unpack the material from the pallets. Unscrew the OSB panels and the 2x4s from the shipping pallet. The 2x4s will be used for wall bracing and to support the loft beams. The bit for the screws is packed in the hardware bag.

Most buildings are installed on a wood floor and the siding was designed to extend over the wood flooring. If the foundation is a concrete floor cut the siding flush with the bottom of the wall plate to prevent the concrete from contacting the siding.

Stacking the boards, according to size, will make them easier to find when needed. Do Not discard any material until your building is complete.

Before you begin construction, be sure to study this assembly manual. Also, obtain a building permit and check all pertinent building code regulations for your area.

Thank you for your purchase.

Tool List

Edge or the Tongue Edge.

measure from here

LAP Edge To identify which edge we want you to use, we will refer to the edge as either the 'LAP' Tongue Edge When measurements are given for a board length or width, it is from the longest side. Hammer & Hand Saw

Framing Square & Level

Power Circular Saw

Power Drill/screwdriver

Measuring Tape

Bill & Linda Rinella, owners

2-8' Step Ladders

Always wear safety glasses when cutting or nailing!

Constructing Details for Deluxe Floor System

Deluxe floors include 4x4 runners, standard floors do not.

Foundation size is $12'-0" \times 20'-0"$. Check local building codes in your area, the construction may have to change. For a concrete slab, install sill sealer as a moisture barrier between the concrete and the wall plates. Foam sill sealer can be purchased at home centers in rolls 3-1/2" or wider.

- 1. Stagger the 4x4 timbers as shown below. Cut (2) two 2x4- 8' boards into 2' long blocks to secure the 4x4s where they butt together.
- 2. Cut (2) two 2x4-8' to a length of 8' -0". They will be used for the joist headers. Layout, from left, for 16" on center joist spacing. 'X' marks where floor joist will be placed.

<u>15-1</u>	/4" 16	<u> </u>	"		
Х	X	X	X	X	\langle
Х	X	X	X	X	

- 3. Cut (17) seventeen 2x4-12' treated boards to 11' -9". These will be the floor joists. *Treated lumber may be thicker than 1-1/2". Take this into account when cutting the length of floor joists. Shorten joist measurements if necessary to obtain 12'-0" building width.*
- 4. Install the floor joists cut above between the 8' joist headers. Secure with 16d galv. deck nails.
- 5. Place floor assembly over the 4x4s. Square floor assembly. Measure the floor diagonally (corner to corner) and then the opposite corners; these measurements will be the same when the floor is square. Toenail frame (headers & joists) to the 4x4 runners.



- 6. Cut (2) two 2x4-12' to a length of 12' -0". Layout for 16" joist spacing, *See above*.
- 7. Install floor joists between the joist headers. Square the floor section and install against the section assembled above. Toenail to the 4x4s runners.
- 8. Install 4x8 flooring over the 2x4s. Use 8d galvanized spiral floor nails spaced 8" apart.

Material Description	12' x 20'			
2x4 Treated Blocking	2 pcs. 8'			
2x4 PT Joist Headers	2 pcs. 8'			
2x4 PT Joist Headers	2 pcs. 12'			
2x4 PT Floor Joist	17 pcs. 12'			
4x4 Treated Runners	4 pcs. 8'			
4x4 Treated Runners	4 pcs. 12'			
Flooring 5/8" or 3/4"	8 pcs. 4x8			
Galv Spiral Floor Nails	3 lb. 8d			
Galvanized Deck Nails	5 lb. 16d			

Step 1 Assemble Loft Beams

- 1. Locate (2) two 36" long 2x6 boards with a notch on one end and a 2x6 board without a notch. Position these 2x6 boards on a flat surface as shown below.
- 2. Apply a coat of glue to the top surface using wood glue supplied in the kit.
- 3. Locate (2) two 72" long 2x6 boards with a notch on one end. Install these 2x6 boards over the bottom boards.



4. To provide additional strength, install 2-1/2" wood screws spaced 16" apart as shown below.



5. Repeat steps to assemble a second Loft Beam.

Step 2 Assemble Gable Plates

1. Butt (2) two 72" long 2x4s together and secure them by nailing a 3-1/2" x 42-3/4" long plywood gusset across the top where they butt together. The gusset needs to be centered on the 2x4s (approximately 50-5/8" of the 2x4s will be exposed on each side of the gusset). Use wood glue and (2) two rows of (20) twenty 6d common nails to secure the gusset.



2. Repeat to assemble a second Gable Plate.

Step 3 Assemble Trusses

- **Building Tip:** To aid in the assembly of the trusses, temporarily tack-nail or screw 2x4 blocks to the floor using short 2x4 packing blocks supplied in kit. This will ensure that all the trusses are assembled the same.
- 1. Position a Gable Plate (from **Step 2**) on the floor with the narrow edge side down. Use 2x4 blocks to hold the 2x4 plate straight.
- 2. Position (2) two truss halves (*2x4s connected with a metal plate*) with the short legs against the 2x4 Gable Plate Assembly. **DO NOT** attach the Gable Plate Assembly to the truss. It is temporarily used to help hold the 2x4 truss parts in place and will be attached in a later step.
- 3. Secure 2x4 blocks around the perimeter of truss to hold truss parts in place.



- 4. Nail a 31-3/4" long 2x3 block where the trusses meet at the top with 10d coated sinker nails. Secure with a 32" wood gusset. Apply wood glue between the gusset and truss and nail with (25) twenty-five 6d common nails.
- 5. Turn the truss over and install a gusset to the other side of the truss.
- 6. Repeat this process to assemble (8) eight more trusses.

Step 4 Assemble Roof Gables

DO NOT use trusses or pre-pressed truss halves for roof gables

- 1. Place (2) two 61" long and (2) tow 34-3/4" long 2x4 gable rafters in the truss jig and secure with 1"x4" drive-on plates.
- 2. Nail a 31-3/4" long 2x3 board to the truss at the ridge with 10d coated sinkers.
- 3. Cut a 42-3/4" long 2x4 to fit and install in the center of the gable. Nail through gable plate and plywood gusset with (2) two 10d sinkers. Secure the top with a 1x4 barbed metal plate.
- 4. Butt (2) two 40-3/4" long 2x4s against the wood gusset. Secure the bottoms to the 2x4 gable plate by nailing through plate with (2) two 10d sinkers. Secure the tops with a barbed plate.
- 5. Install (2) two 30-3/4" long 2x4s with barbed plates and nails.



7. Position 2nd gable plate and repeat steps to assemble the front roof gable. Read note below:



- If you want the loft doors to open, repeat steps 1-6 substituting number step 3 with directions below:
 - 3. Install a 42-3/4" long 2x4 board in the opening 32" from top of wood gusset. Secure with 1"x4" metal barbed plates.

Step 5A Apply Siding to Rear Roof Gable

1. Remove 2x4 blocks and turn gable frame over.



Step 5B Apply Siding to Front Roof Gable

 Install siding on right working left. Lay out the first (2) two pieces of siding on frame. Important: Do not nail to frame if loft doors are to open. Mark and cut so siding is flush with top and right side of loft door opening. Cut to bottom of siding below gable plate. Nail first two pieces of siding to frame. Lay out next siding panel, do not nail if loft doors are to open, and repeat cut for left side door opening. Nail last two pieces of siding to frame.



Step 6A Assemble 10' Sidewalls

1. Position (2) two 2x4-48" boards and (2) two 2x4-72" boards together and indicate with 'X' marks where the wall studs will be located.



- 2. Install (7) seven 80-1/4" long wall studs between the wall plates. Use (2) two 10d sinkers at each end of stud. Nail the frames together with (5) five 10d sinkers, alternating sides.
- 3. Repeat to assemble (3) three more 10' long sidewall frames. You will need to cut (2) two 64'' long 2x4s to a length of 48'' to assemble the last 48'' wall frame.
- 4. Cut one of the 48" wide siding panels in half lengthways.
- 5. Square wall frame. *Measure diagonally (corner to corner); the measurements will be the same when the wall is square.*
- 6. Select the 2' wide panel, *with the 'tongue' edge*, and install this panel with the 'cut' edge flush with the end of the wall and extending 3/4" below the bottom plate. Use 8d galvanized nails spaced 8" apart.
- 7. Install (2) two more siding panels.



8. Select (1) one of the 10' wall frames and repeat to apply siding to a second sidewall frame.

Step 6B Assemble Sidewalls for 20' Building Length

- 1. Select one of the 10' sidewalls assembled in **Step 6**. Butt a 10' wall frame against the wall with siding. **Do Not** nail these frames together so they can be separated later.
- 2. Square the wall frame. Install a full width siding panel using 8d galvanized box nails spaced 8" apart. **Do Not** nail along the long edge that overlaps the 10' wall frame. You can nail this edge after the wall panels are installed. This will enable you to separate the wall panels making them easier to handle.



4. Repeat to apply siding to the other 10' wall frame.

Step 7 Assemble Back Wall

- 1. Position (4) four 68-1/2" 2x4 boards together and indicate with 'X' marks where the wall studs will be located. Mark the ends that will butt together with the letters 'A' and 'B'.
- 2. Install (8) eight 80-1/4" long wall studs, between the wall plates, over the 'X' marks and where the plates meet. Use (2) two 10d coated sinkers at each end of a stud. Nail wall sections together using (5) five 10d coated sinker nails, alternating each side of the studs.



- 3. Square wall frame. *Measure diagonally (corner to corner); the measurements will be the same when the wall is square.*
- 4. Install the 1st siding panel with the 'LAP' edge extending 3-1/2" past the wall frame. Use 8d galvanized box nails spaced 8" apart. The bottom will extend 3/4" below the bottom plate, or trim flush for cement slab.
- 5. Install the other siding panels. Cut the last panel to extend 3-1/2" beyond the wall frame.



Step 8 Assemble Door Header

Assemble door header using (2) two 75" long 2x6 boards and a 75" OSB filler panel. Apply wood glue between OSB and boards. Nail header together with 10d coated sinkers. Use (12) twelve nails on each side.

Step 9A Assemble Bottom Wall Plate (doors offset)

If you want the barn doors in the center of the front wall, go to **Step 9B**.

1. Butt (2) two 68-1/2" boards together to make bottom wall plate. Secure bottom plate with a 2x4-6' board (used as door spacer) installed 56-1/2" from the end of the 2x4 wall plate. Secure with (4) four 2-1/2" wood screws.



Step 9B Assemble Bottom Wall Plate (doors centered)

- 1. Butt (2) two 68-1/2" boards together. Center a 2x4-6' board (used as door spacer) on top and screw the boards together using (4) four 2-1/2" wood screws.
- 2. Mark stud spacing as shown below.



3. Go to **Step 10B**.

Step 10A Assemble Front Wall (doors offset)

- 1. Gather the material listed below to assemble the door wall.
- 2. Install (4) four 80-1/4" wall studs over the 'X' marks using 10d coated sinker nails.



To install doors offset to the left, flip wall before applying the siding.

- 5. Install a 12" and a full width siding panel on the left corner (right corner if installing door on left side). The cut edge on the 12" siding should be flush with the left side of the door opening and extend 3-1/2" past the frame. **Do Not** nail the 'LAP' edge until the other siding is applied. Position the full width siding panel and nail along the 'LAP' edge of the 12" wide panel.
- 6. Install (2) two 7-3/4" high pre-cut siding panels over the door opening. The siding will extend 3/4" below the door header.



Step 10B Assemble Front Wall (doors centered)

- 1. Gather the material listed below to assemble the door wall.
- 2. Install (4) four 80-1/4" wall studs over the 'X' marks using 10d coated sinker nails.
- 3. Install the wall studs with the door jacks on each side of the door spacer.
- 4. Install door header on the door jacks.



* Check measurements. They



- should be the same or the door opening will not be square!
- 5. Locate a 12" siding panel that has a 'LAP' edge. Position the <u>'cut' edge</u> flush with the left side of the door opening. **Do Not** nail the 'LAP' edge until the other siding is applied.
- 6. Cut a full width siding panel in half lengthways. Select the siding with the 'tongue' edge and install this siding panel at the left end of the wall frame.
- 7. Install (2) two 7-3/4" pre-cut siding panels over the door opening, flush with the top plate.
- 8. Install a 12-34" siding panel with the 'cut' edge flush with the side of the door opening.
- 9. Install the last siding panel. It will extend 3-1/2" beyond the 2x4 wall frame.



Step 11 Set Walls

Tip: Use the 2x4s from the shipping pallet as braces to hold the walls straight.

1. Set the back wall panel between the sidewalls. Secure wall panels together at the corners using (5) five 10d coated sinker nails per corner. Nail wall panels to the floor through the bottom plate using 10d coated sinkers; (2) two nails per space between studs.

- 2. Install the front wall frame between the sidewalls.
- 3. Install the last siding panel on the sidewalls. Nail along the siding edge where the sidewall siding panels overlap.



5. Unscrew and remove the 2x4 door spacer (this will be used later). Cut and remove the bottom 2x4 in the door opening.

Step 12 Layout Loft Joist Spacing on 2x6 Beam

Layout both beams for the spacing of the loft floor joists. The 'X' marks where the floor joist will be placed.

Step 13 Install Loft Floor Joist Headers

1. Install (2) two 68-1/2" long 2x4s on the back wall to support the floor joist. Install the 2x4s flush with the top of the 2x4 wall plate. Secure to wall studs and top plate with 10d sinkers.



3. Repeat to install joist header support boards on the front wall.

Step 14 Install 2x6 Loft Beams

- 1. Cut (4) four 2x4 boards taken from one of the shipping pallets to a length of 76-1/4".
- 2. Install the rear 2x6 beam <u>84" from the 2x4 joist header boards</u> with the 'X' marks on the beam facing the back wall. You can use a 2x4-7' board as a gauge to properly space the beam. Refer to **Step 15** to see how the loft floor joist will be installed.

Place the notch under the top plate and support the beam with one of the 76-1/4" long 2x4s. Further secure the beam with a 2-1/2" wood screws through the top of the wall plate.



3. Repeat to Install the other beam with the 'X' marks on the beam facing the front wall. When the front beam is installed there will be 56" between the beams

Step 15 Install 2x4 Floor Joists



Step 16 Install Loft Flooring

1. Install 7/16" OSB loft flooring on back loft floor joists. Loft flooring is flush with outside of top wall plate. Use 7d sinker nails spaced 8" apart. *See layout pattern below:*



- 2. Repeat to install loft flooring at the front of the building.
- 3. Install 3-1/2" x 56" floor fillers on top of side wall plates between the loft flooring.

Step 17 Install Wall Trim

- 1. Install (2) two 84-1/2" long 1x4 corner trim boards on the back wall, flush with the siding on the sidewall. Use 8d galvanized box nails spaced 12" apart.
- 2. Cut to fit and install (2) two 1x4-72" trim boards across the top of the back wall. Install the 1x4 boards flush with the top of the loft flooring. *See diagram below.*
- 3. Repeat for front wall trim.



Step 18 Set Rear and Front Gables



 Install the rear gable on the rear wall. The siding on the gable must <u>extend over the 1x4</u> <u>trim</u> board, not behind it. See detail 'D' on next page. Nail bottom gable to loft flooring. Use 10d sinker nails spaced evenly in space between studs.

WARNING: The gable ends are heavy and awkward. You'll need helpers to lift and set gables in place.

Step 18 Set Rear and Front Gables (continued)

2. Install (2) two 61" long 1x4 gable trim flush with the top edge of the gable. Install the ends with <u>blue marks tog</u>ether. Install trim with 8d galvanized nails spaced 12" apart.







3. Layout the truss spacing. Measure from the <u>inside face of the 2x4 gable plate</u> to mark the location of the first truss. The last truss space will be more than 24".

Important: When marking the opposite wall, place the 'X' mark on the same side of the line so your trusses are parallel when they are installed.



Step 20 Install Trusses & Soffit Boards

1. Place trusses over the 'X' marks and secure trusses to 2x4 truss plate using 2x4 hangers and 10d coated sinker nails.

2. Locate 65-1/4" long soffit boards that have a beveled edge. Install one of these boards flush with the top of the siding and butting against the rear gable trim. Secure soffit boards to the top wall plate with 3" long screws spaced 8" apart. Install the last 48" soffit boards to fit behind 2x3 boards on the front gable.

Metal Truss Hanger

at have a bards flush g against ards to the paced 8" ds to fit e.

Soffit Board Flush With Siding

Step 21 Install Roof Sheathing Straight Edge

- 1. Install a 42" x 72" OSB roof panel flush with the face of the rear gable trim. Use a straight edge to align the top of the sheathing with the top of the truss. Continue adding sheathing following the layout on the next page. Use 7d coated sinkers, spaced 6" apart.
- 2. Repeat step for opposite side.
- To prevent the nails from protruding thought the bottom of the soffit board, do not nail at an angle when nailing roof sheathing to the soffit boards.



Step 21 Install Roof Sheathing (continued)

- 3. Install roof sheathing on the upper roof trusses. Insert (2) two plyclips onto roof sheathing between every truss on the top row. The top row of roof sheathing will be about 1" below the ridge to allow for ventilation. Use 7d coated sinker nails, spaced 6" apart.
- 4. Repeat for the opposite side.



Install Roofing - Not Supplied in Kit

After completing Step 22 next, install metal roof edging on perimeter of the roof area. If you are not installing shingles at this time, you can purchase felt paper to protect the sheathing. Install the felt paper before you install the metal roof edge.

Install shingles according to the instructions on the wrapper. Additional information and tutorials can be found on various online sources.



Optional ridge vent provides ideal ventilation.

Building Tip: Install ridge vent in lieu of shingle caps. Ridge vent provides ideal ventilation, preventing heat and moisture build-up from damaging your building or its contents.



Install Front Gable Overhang

5. Cut to fit 7-1/2" wide soffit panels under the overhang. Use 6d galvanized nails.

Step 22

- Install 35-3/4" long 1x3 trim boards flush with each side of the loft door opening. Install a 50" long trim board across the top. *If door opening is cut out the siding will extend 3/4" below the top trim board.*
- Install loft doors using 4" hinges and 1-1/4" long black screws. Install a 4" barrel bolt to the back of the right door using 1-1/4" black screws. Drill a hole for the round shaft to drop into.

Step 23 Install Doors



- 1. Lay the <u>left door</u> with the trim facing up. The siding on the left door <u>extends past the door trim</u>. See detail below.
- 2. Install 5" hinges to the left side of the door frame. To position the hinge properly, hold the rectangular plate against the frame. Use 2" black screws.
- 3. Install hinges to the right side of the other door.
- 4. Install 76-3/4" long trim boards along each side of the door opening. Tack these boards with a couple nails; you may want to move the trim later when you install the doors.
- 5. Install the 81-3/4" board, that has angle cuts on both ends, over the door opening.



- 6. Install a barrel bolt, on the lower back of the door with 1-1/4" black screws to secure this door in place when closed. Drill a hole for the round shaft to drop into.
- 7. Install another bolt at the top of the door.
- 8. Install door latch with screws provided.

Before you fasten the hinges to the door trim, temporarily prop the doors in the opening. *Tip:* set the door stop on a piece of siding to help hold the door in place. Leave a space between the doors and the side trim to allow room for the doors to expand when they absorb moisture.

If your door opening is out of square, the space around the doors will not be even. You can reposition the side trim to make allowances for this. The side trim does not have to be flush with the frame of the door opening. You can move the trim in or out to make the door spacing equal.

Secure trim with 8d galvanized box nails spaced 12" apart.

Attach hinges to trim with 2" black screws.

Siding Extends Past Trim

Qty.	2x4 Framing		Size			Qty.	White Pine Trim		Size			
10	Floor Joist for Loft			84	"		4	1x4	Gable Ti	rim	61	"
40	Wall Studs black ends		80	1/4"		4	1x4	Gable Ti	rim	42	1/2"	
2	Wall Studs with Door Jacks		80	1/4"		4	1x4	Lower W	Vall Trim	72	"	
16	Gable & Wall Plate	es		72	"		4	1x4	Corner 7	Trim	84	1/2"
12	Wall Plates & Floo	r Joist He	aders	68	1/2"		4	1x4	Corner 7	Trim	80	"
4	Gable Top Rafter			61	"		1	1x4	Door Tri	m	81	3/4"
4	Gable Side Rafter			34	3/4"		2	1x4	Door Tri	m	76	3/4"
10	10 Wall & Tie Plates			64	"		1	1x3	Loft Do	or Trim	50	"
6	6 Wall & Tie Plate Material			48	"		2	1x3	Loft Do	or Trim	35	3/4"
2	2 Gable Studs		42	3/4"			Pre-built Components					
4	4 Gable Studs			40	3/4"		18	Pre-built Truss Halves				
4	Gable Studs			30	3/4"		6	3-1/2" x 65-1/4" Pre-built Soffit Board				
	2x6 Framing						2	3-1/2" x 48" Pre-built Soffit Boa				ls
2	2 Door Header			75	"		2	36" x 76" Pre-built Barn Doors				
6	5 Beam Material (4 with notch)			72	"		2	21" x 35-1/2" Loft Door Frames				
4	Beam Material with notch			36	"			Hardware				
	2x3 Framing					7	lb. 10d Sinkers 32		7/16" Pl	yclips		
4	Gable Extension top		61	"		8	lb. 8d Galv. Box 2		2	Bottle Glue		
4	Gable Extension	S	ide	42	1/2"		5	lb. 7d Sinkers 98		Black Screws		
2	Gable Extension Blocks		4	1/2"		3	lb. 6d Common 38		38	Truss Hangers		
11	Truss Ridge Blocks		31	3/4"		1	lb. 6d Ga	lv. Box	1	Door Ha	asp	
	Miscellaneous Lumber						2	4" Barrel	Bolts	2	6" Barre	el Bolts
10	24 Blocks for Truss Jig 1			0" to 12	2"		17	1x4 Driv	e-on Plate	176	Wood S	Screws
1	OSB Door Header Filler 5-1			/4" x 7	'5"		6	4" Door I	Hinges	6	5" Door	Hinges
18	Wood Gussets for Trusses			9" x 32	"		2 3/4" Plywood Gable Nailer		e Nailer	3-1/2" x 42-3/4"		
2	2 7/16" Loft Floor Fillers 3-1			l/2" x 5	56"			7/16" OSB Sheathing				
Lower Wall Siding Gable Sidin		g & So	ffit		6	48" x ′	72"	2	48" x	36"		
14	48" x 84" 4 48" x 5		6"			4	44" x ′	72"	6	48" x	48"	
2	12" x 84"	4 2	4" x 3	x 39-3/4"			4	42" x '	42" x 72" 4		13" x 72"	
2	7-3/4" x 36"	4 7	-1/2" >	' x 48"			2	42" x 4	48"	2 13" x 6		60"
		2 7	-1/2" >	x 24			2	42" x	60"	2	13" x	48"

Millcreek 12' x 20' Barn kit Packing List

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Roof Material: 12 bundle shingles, 9 pcs. 10' metal roof edge, optional felt paper 1 roll