

ASSEMBLY INSTRUCTIONS

MODEL LSF

LOUVERED SUPPLY FAN

HOW TO USE THIS MANUAL

Read and save these instructions. This manual is designed to assist with the assembly of Greenheck Model LSF, Louvered Supply Fans. It contains detailed assembly instructions, parts and hardware lists, as well as step-by-step renderings. Complete descriptions, and renderings of all parts and hardware items can be found on pages 2-4. Procedures described in this manual should be followed in the order they appear.

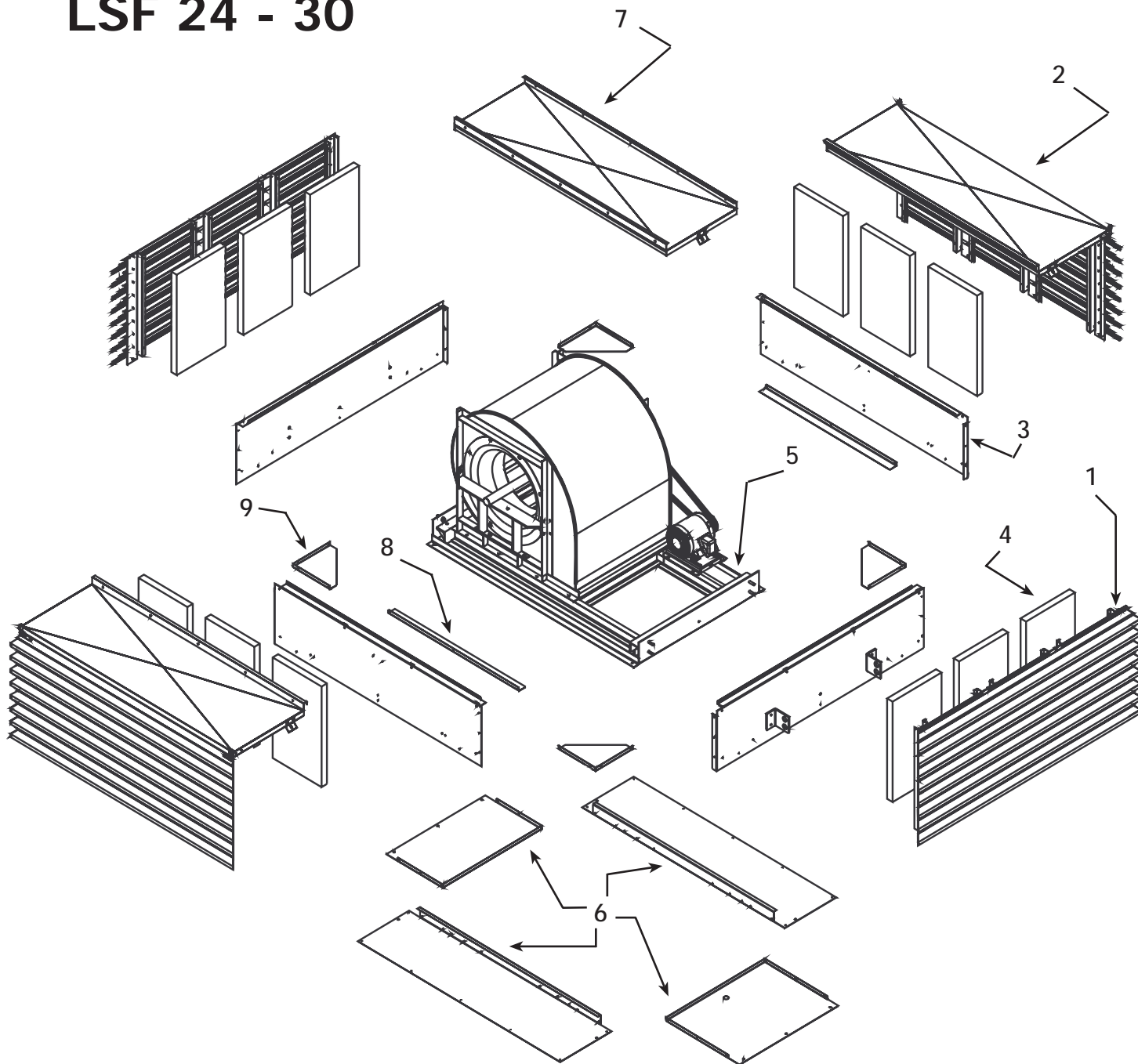
RECEIVING AND HANDLING

Upon receiving the equipment, check for both obvious and hidden damage. If damage is found, record all necessary information on the bill of lading and file a claim with the final carrier. Check to be sure that all parts of the shipment, including accessories and hardware, are present.

NOTE: ROOFTOP ASSEMBLY IS RECOMMENDED. FAN SHOULD BE ASSEMBLED ON PREVIOUSLY MOUNTED ROOF CURB.

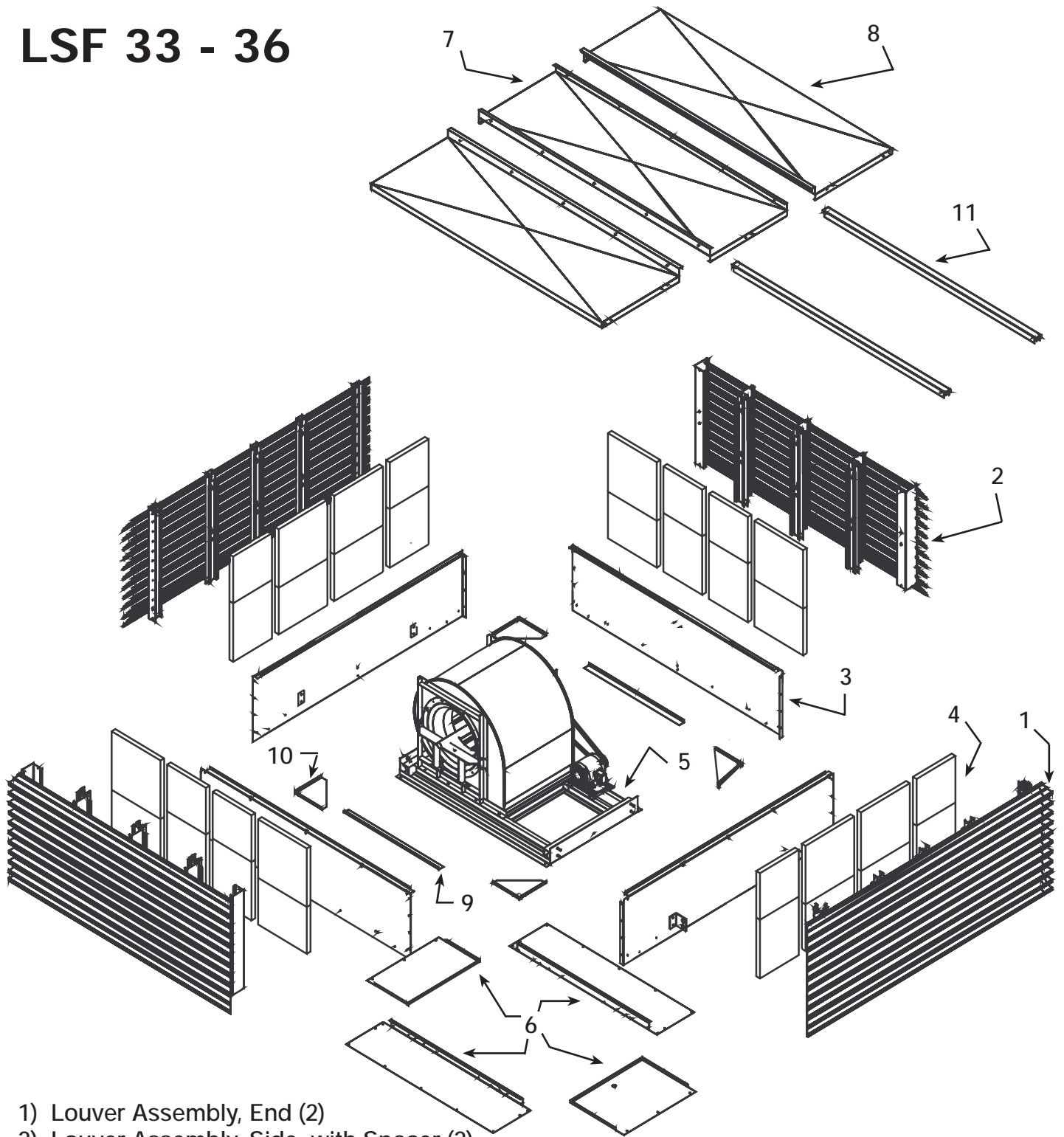


LSF 24 - 30



- 1) Louver Assembly, End (2)
- 2) Louver Assembly, Side (2)
- 3) Base Panel (4)
- 4) Filters (see page 12 for sizes and quantities)
- 5) Blower Assembly
- 6) Curb Adapter Panel (4) (shown upside down)
- 7) Hood Panel, Center
- 8) Reinforcing Angle for Base Panel (2)
- 9) Gusset (4)
- 10) Hardware Package #821385 (see page 4)

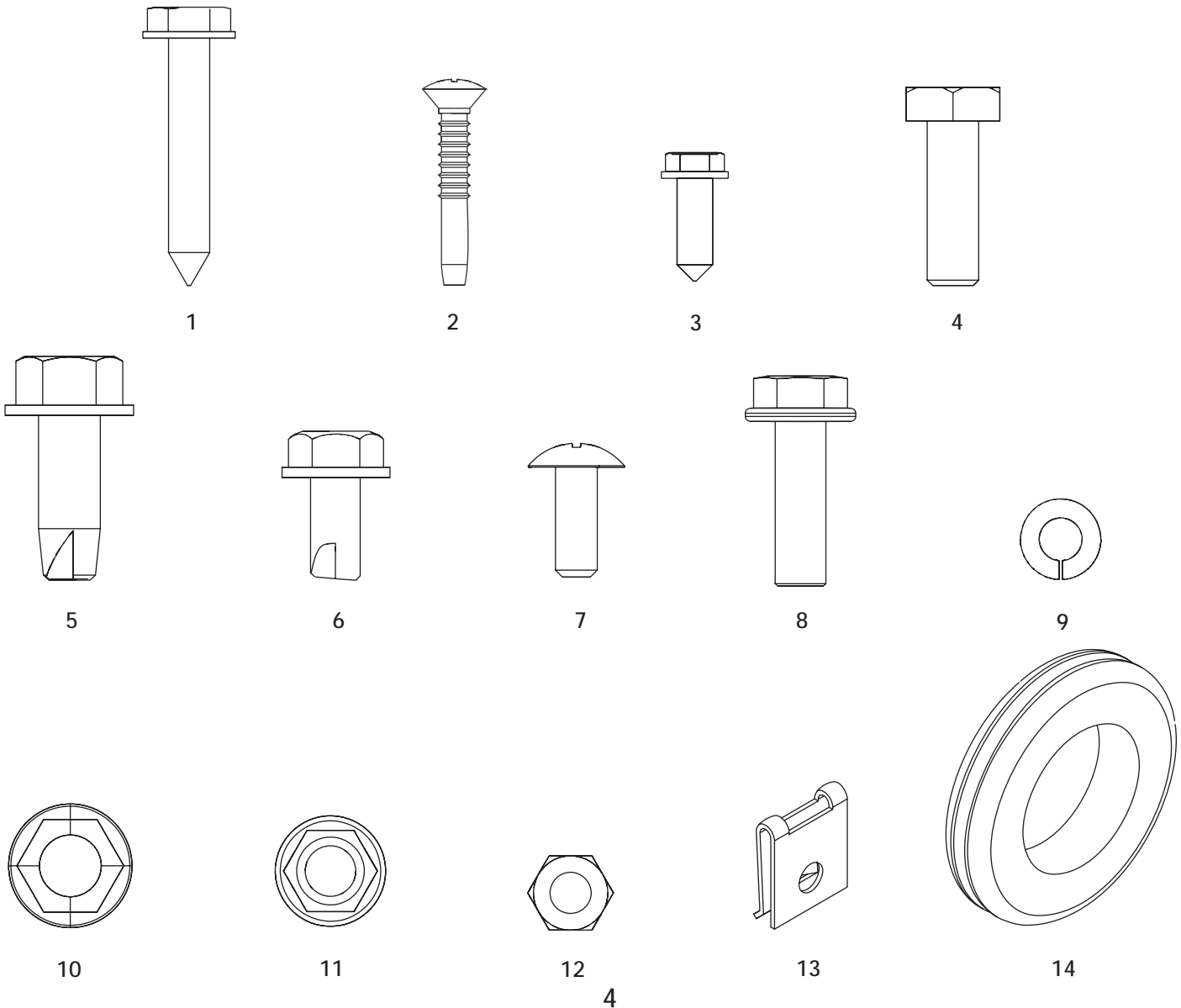
LSF 33 - 36



- 1) Louver Assembly, End (2)
- 2) Louver Assembly, Side, with Spacer (2)
- 3) Base Panel (4)
- 4) Filters (see page 12 for sizes and quantities)
- 5) Blower Assembly
- 6) Curb Adapter Panel (4) (shown upside down)
- 7) Hood Panel, Center
- 8) Hood Panel, Side (2)
- 9) Reinforcing Angle for Base Panel (2)
- 10) Gusset (4)
- 11) Hood Support Rail (2)
- 12) Hardware Package #821246 (see page 4)

No.	Part No.	Item Description	Quantity	
			24-30 821385	33-36 821246
1	415006	Sheet Metal Screw, Indented Hex Washer, Zinc Plated, #14 x 1 1/2"	6	6
2	415203	Sheet Metal Screw, Phillips Oval Head, Stainless Steel, #10 x 1 1/4"	96	96
3	415439	Sheet Metal Screw, Indented Hex Washer, Stainless Steel, #12 x 5/8"	70	70
4	415041	Thread Cutting Screw, Indented Hex Washer Head, Zinc Plated, 5/16" - 18 x 1"	21	33
5	415005	Thread Cutting Screw, Indented Hex Washer Head, Zinc Plated, 3/8" - 16 x 1"	2	2
6	415225	Thread Cutting Screw, Indented Hex Washer Head, Zinc Plated, 5/16" - 18 x 5/8"	0	8
7	415729	Machine Screw, Phillips Truss Head, Stainless Steel, 1/4" - 20 x 5/8"	10	0
8	415486	Serrated Flange Fastener (Whiz Lock Screw), Zinc Plated, 5/16" - 18 x 1"	8	8
9	415837	Lock Washer, Stainless Steel, 1/4"	10	0
10	415457	Nut, Serrated, Zinc Plated, 3/8" - 16	2	2
11	415456	Nut, Zinc Plated, 5/16" - 18	8	8
12	415099	Nut, Stainless Steel, 1/4" - 20	10	0
13	415220	Tinnerman Clip, 5/16" - 18	21	21
14	370022	Grommet, Neoprene	1	1
-	450023	Rod Retainer Pin (not shown)	4	0
-	506023	Louver Bracket (not shown)	4	0

NOTE: Depending on unit size, all hardware may not be used.

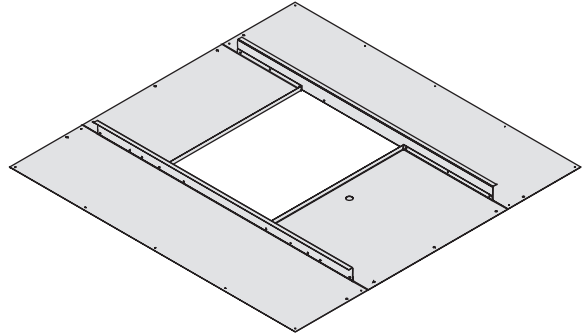


Step 1

Locate and identify parts as listed on Fan Parts and Hardware Parts Lists. See exploded view for assistance in identifying parts.

Step 2

Place duct adapter panels upside down so that the screws can be inserted into the predrilled holes in the flanges. Fasten the panels together as shown using the #12 x 5/8" stainless sheet metal screws.



Step 3

Install the neoprene grommet in wiring hole.

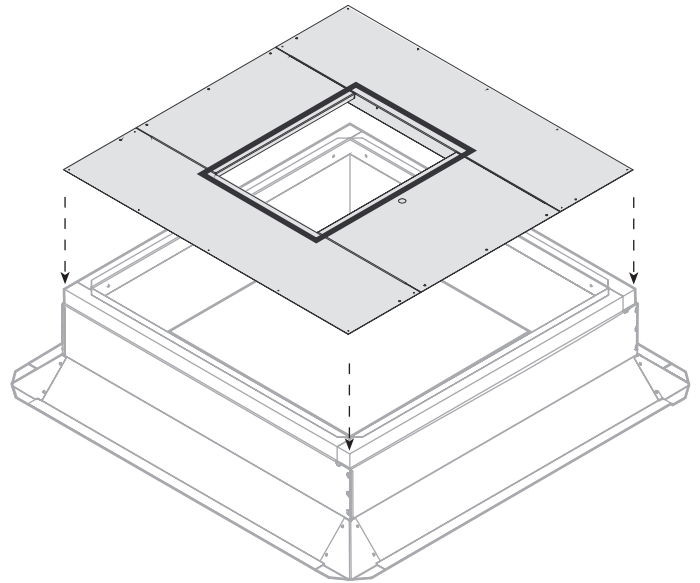
Step 4

Flip over the duct adapter panels and apply 3/4" x 3/4" gray adhesive backed foam tape to top of duct adapter around the edge of the opening at the proper location, noting the size of the unit. (Roll of foam tape will be attached to blower assembly.)

Sizes 24, 27, 30 flush with edge, all around

Size 33 flush with edge on long sides,
3/4" away from edge on short sides

Size 36 flush with edge on long sides,
1 1/4" away on short sides



Step 5

Mount assembled duct adapter onto pre-existing roof curb. Align the adapter squarely on the curb and nail through the prepunched mounting holes (nails not provided).

Step 6

Place and align the blower assembly on the duct adapter, being sure to place the motor near the wiring hole in the duct adapter. NOTE: Blower frame will extend 3/4" over each end of the curb. Make sure the frame is centered on the curb.

Step 7

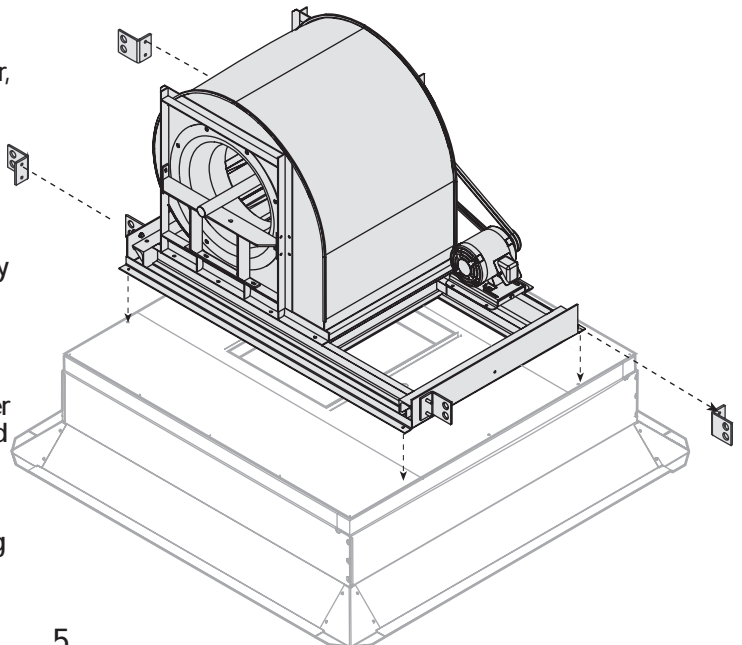
Using the 1/4" x 1 1/2" lag bolts, fasten the blower assembly to the curb aligning the prepunched holes in the blower assembly and duct adapter.

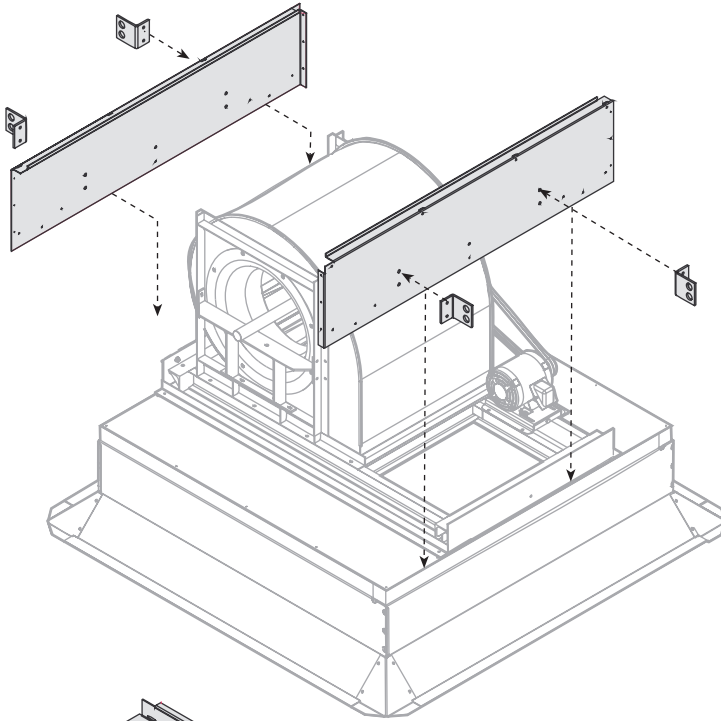
Step 8

Locate the two (2) wood shipping blocks between blower assembly frame and isolation base. Remove and discard the hardware and the blocks.

Step 9

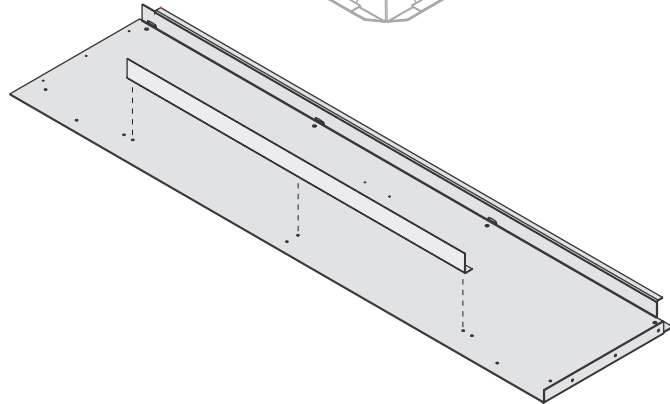
To begin installation of the base panels, remove the lifting lugs. Save the lifting lugs and mounting hardware. They will be reused in Step 10.





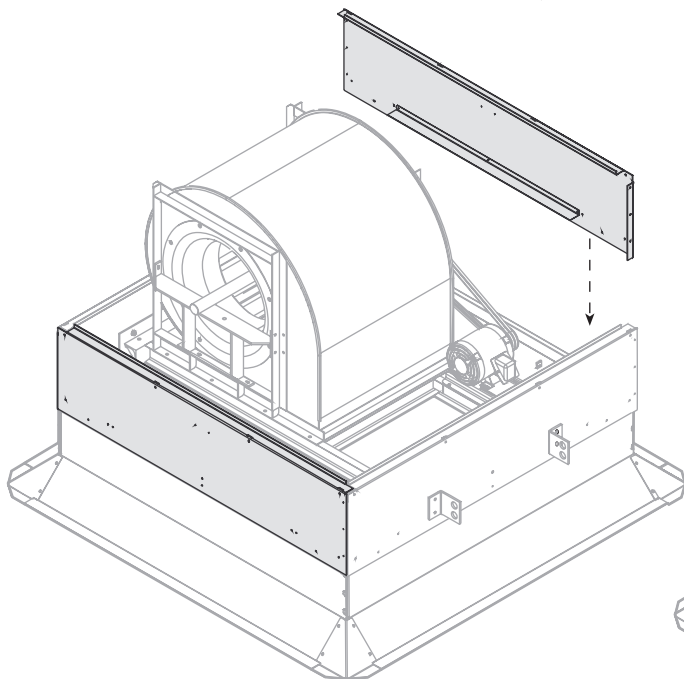
Step 10
Set one (1) end panel in place on the end of the support frame.

Replace the lifting lugs, reusing the hardware to fasten the panel in place. Do not tighten the hardware completely until instructed to do so. Use a 3/8"-16x1" thread cutting screw in the center of the end base panel between the lifting lugs. Do not tighten completely. Repeat Step 10 for the other end base panel.



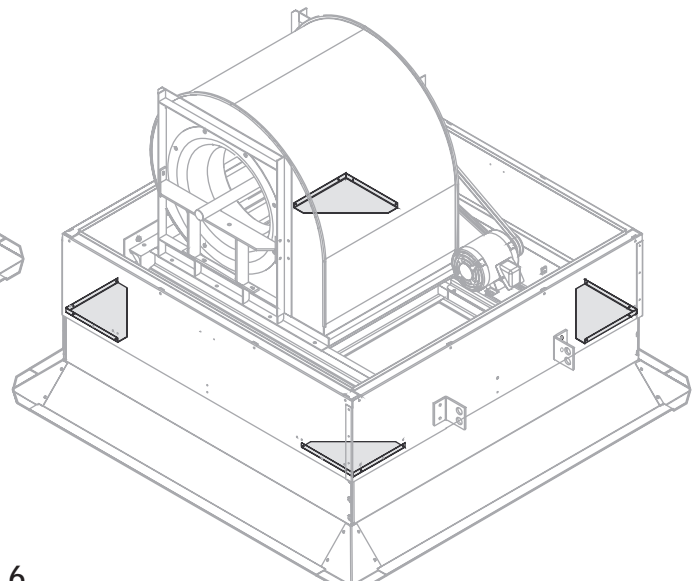
Step 11
Install reinforcing angle on the two (2) side base panels. Use #12 x 5/8" stainless sheet metal screws for each reinforcing angle.

Step 12
Place the side base panel with reinforcing angle on the duct adapter and fasten at both ends using #12 x 5/8" stainless sheet metal screws along both vertical edges. Repeat Step 12 for the other side base panel.

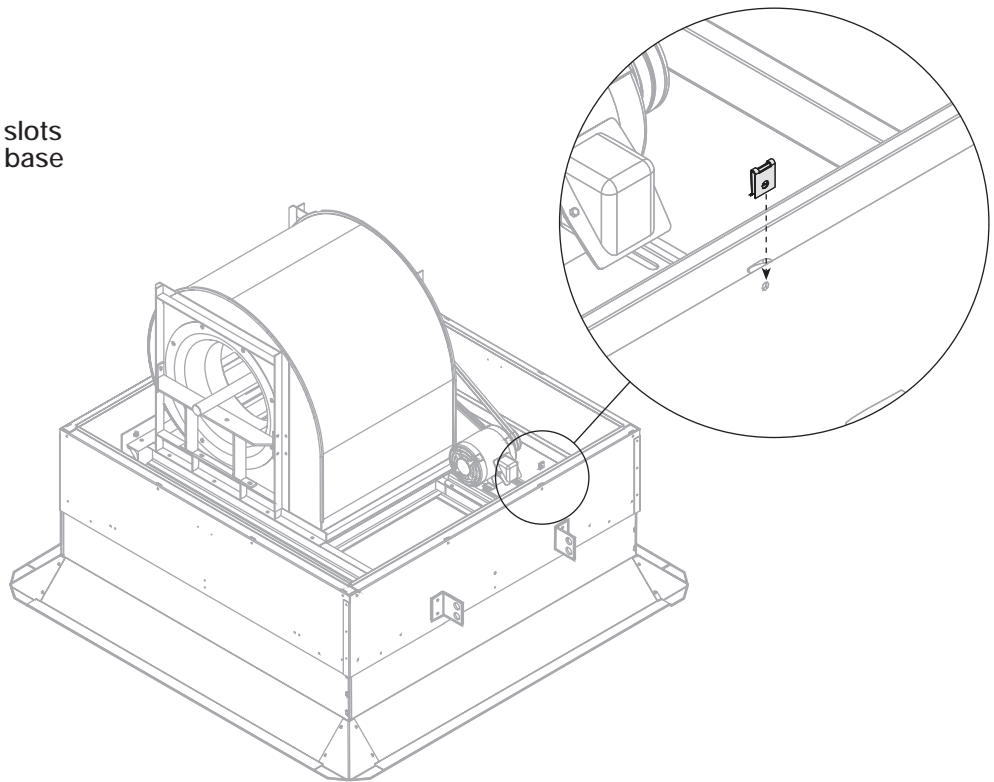


Step 13
Install corner gussets on the surface of the duct adapter and fasten to the bottom corners of the base panels, using four (4) #12 x 5/8" stainless sheet metal screws in each gusset.

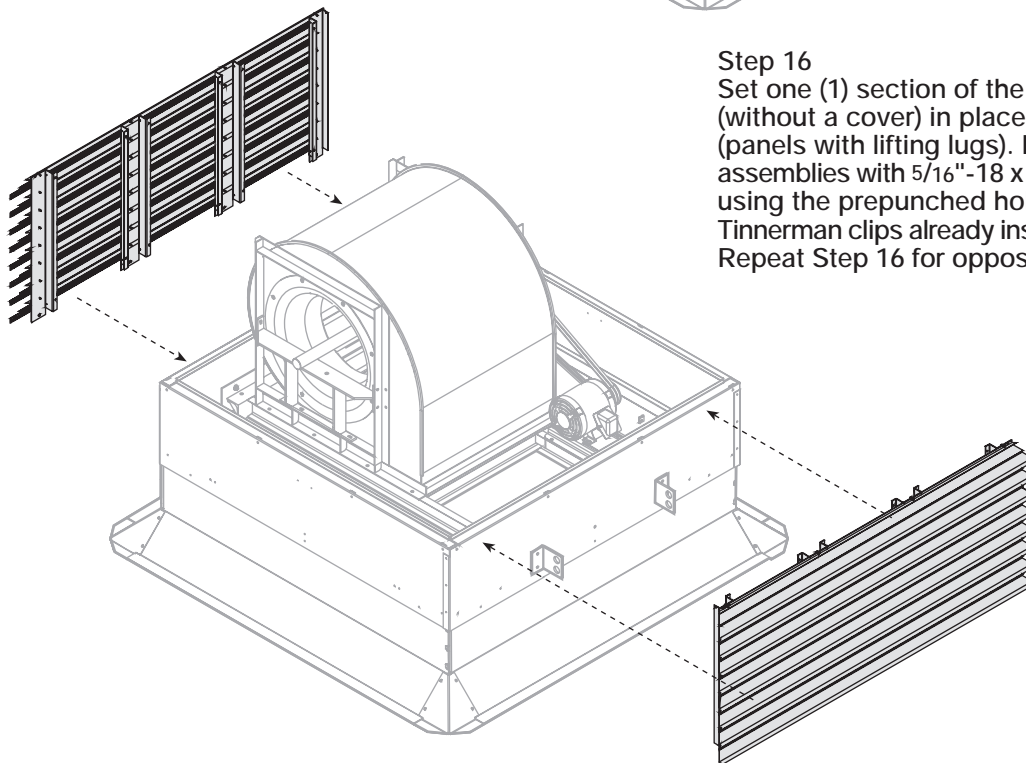
Step 14
Tighten the two (2) bolts in each lifting lug as well as the one (1) in the center of the base panel that were not tightened in Step 10.



Step 15
Install Tinnerman clips in the slots
prepunched at the top of the base
panels.



Step 16
Set one (1) section of the end louver assemblies
(without a cover) in place on an end base panel
(panels with lifting lugs). Fasten posts on louver
assemblies with $5/16$ "-18 x 1" thread cutting screws,
using the prepunched holes in the posts, and
Tinnerman clips already installed in the base panels.
Repeat Step 16 for opposite louver end assembly.



STOP

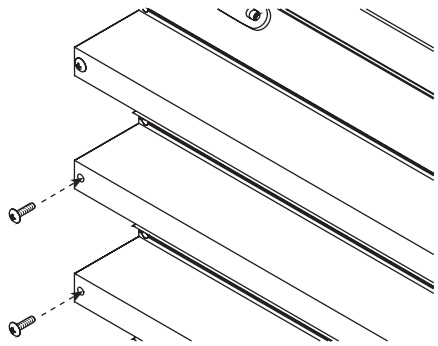
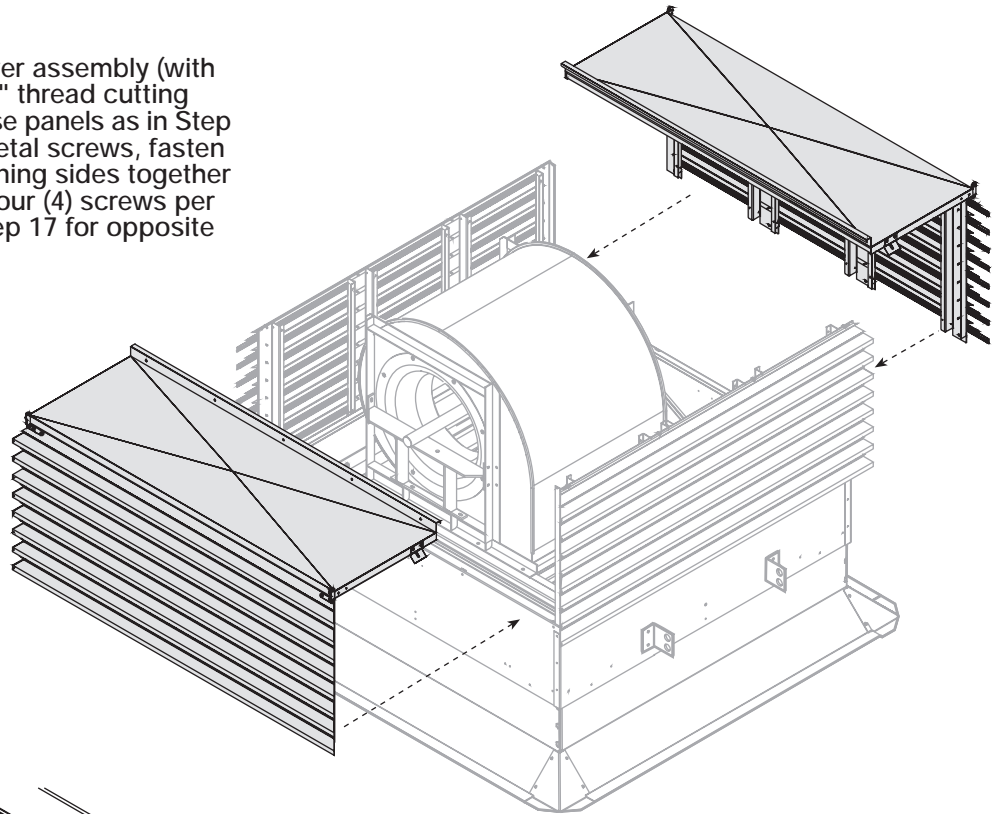
LSF Sizes 24-30, Continue on page 8
LSF Sizes 33-36, Continue on page 10

STOP

LSF Sizes 24, 27, 30

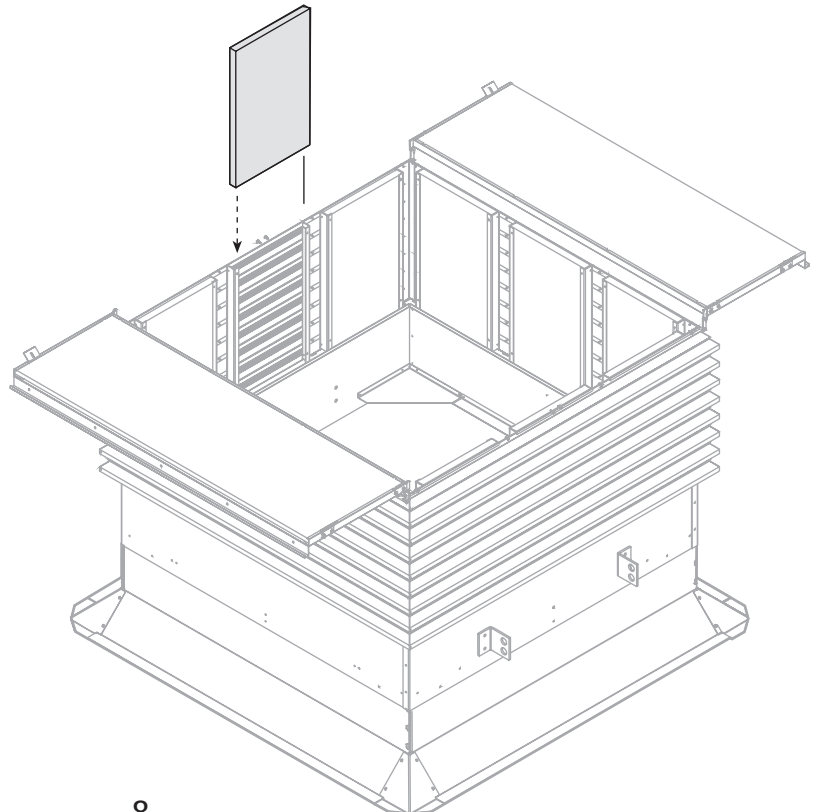
Step 17

Set in place one (1) side louver assembly (with hood panel). Use $\frac{5}{16}$ "-18 x 1" thread cutting screws to fasten posts to base panels as in Step 16. Using #12 x $\frac{5}{8}$ " sheet metal screws, fasten the corner posts of the adjoining sides together at the top and bottom. Use four (4) screws per louver assembly. Repeat Step 17 for opposite side louver assembly.



Step 18

Fasten mitered louver corners with #10 x 1.25" sheet metal screws.



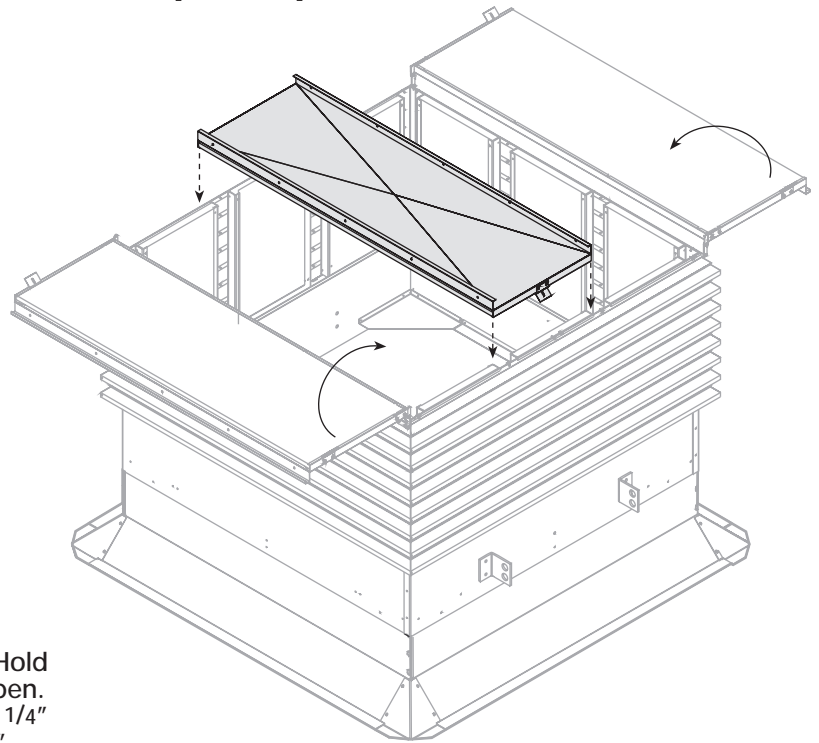
Step 19

Slide the filters into their racks using the diagram on page 12 as a guide for proper size, location, and orientation of the filters.

LSF Sizes 24, 27, 30

Step 20

Set center hood cover on top of louver assemblies. Slowly close the side hood panels, one at a time, adjusting the center section slightly if necessary to attain a proper alignment of all three hood panels.

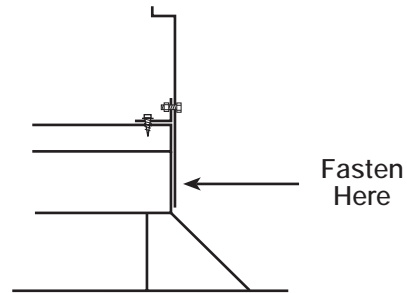


Step 21

To secure the center hood, locate the center hood latch. Mark where the slot meets the top louver. Drill $\frac{9}{64}$ " hole and insert one (1) sheet metal screw through center hood latch and top louver. Repeat Step 21 for opposite side of center hood.

Step 22

Set in place hasp bracket through hood latch. Hold hasp bracket in place and swing hood panel open. Mark hasp hole locations on top louver and drill $\frac{1}{4}$ " holes at each mark. Insert one (1) $\frac{1}{4}$ "-20 x $\frac{1}{2}$ " machine screw, through the hasp bracket and top louver. Fasten by attaching one (1) $\frac{1}{4}$ " lock washer and one (1) $\frac{1}{4}$ " x 20 hex nut to each screw. Follow the same procedure for the other end of the hood. Repeat Step 22 for the opposite side hood.



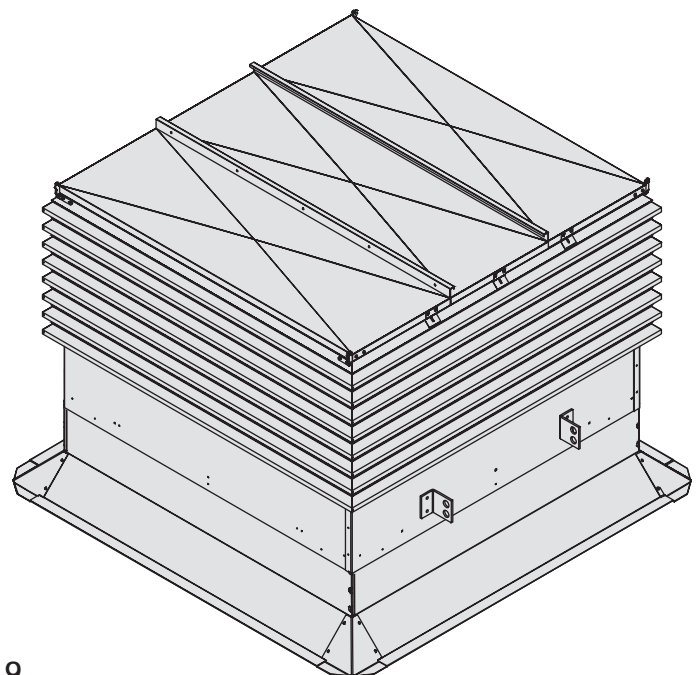
Step 23

Close side hood panels and insert rod retainer pin through louver bracket to secure side hood panel. Join side hoods to center hood along hood seams using four (4) $\frac{5}{16}$ "-18x1" serrated flange fasteners and four (4) $\frac{5}{16}$ "-18 nuts on each flange.

Step 24

Using prepunched mounting holes in base panels, fasten unit to roof curb nailer (fasteners not provided).

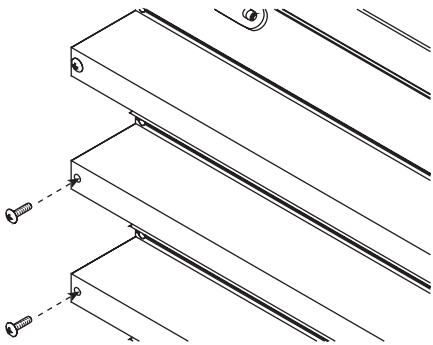
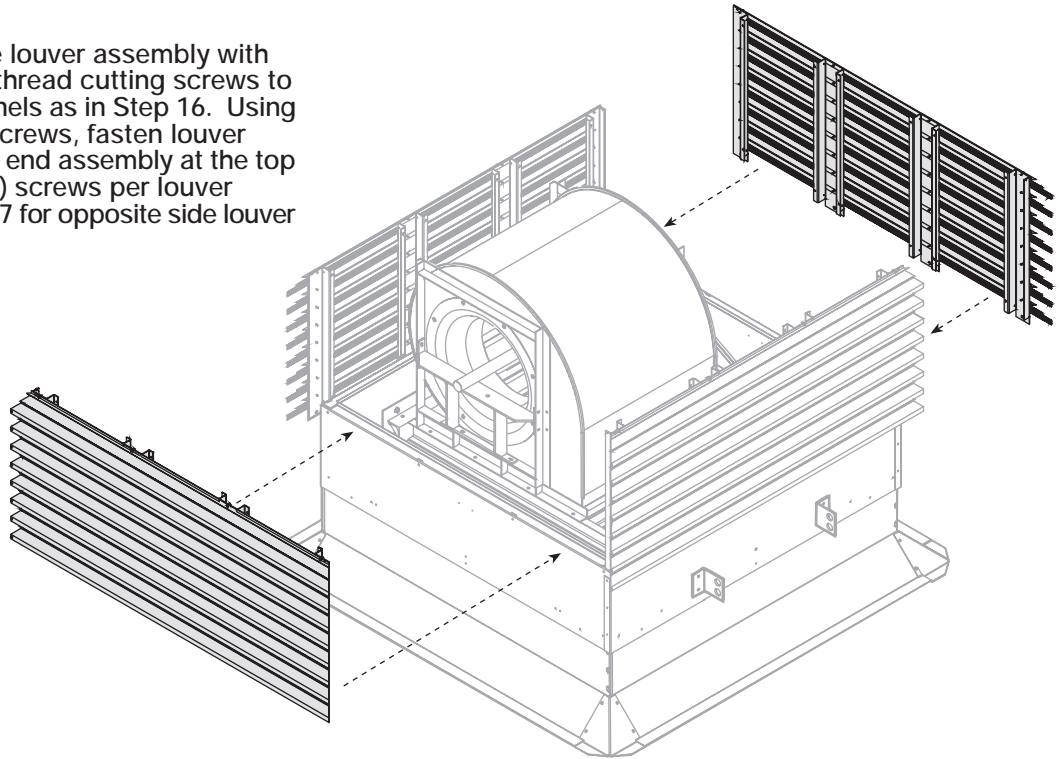
Completed LSF Size 24, 27, or 30.



LSF Sizes 33, 36

Step 17

Set in place one (1) side louver assembly with spacer. Use 5/16"-18x1 thread cutting screws to fasten posts to base panels as in Step 16. Using #12 x 5/8" sheet metal screws, fasten louver spacer to corner post of end assembly at the top and bottom. Use four (4) screws per louver assembly. Repeat Step 17 for opposite side louver assembly.

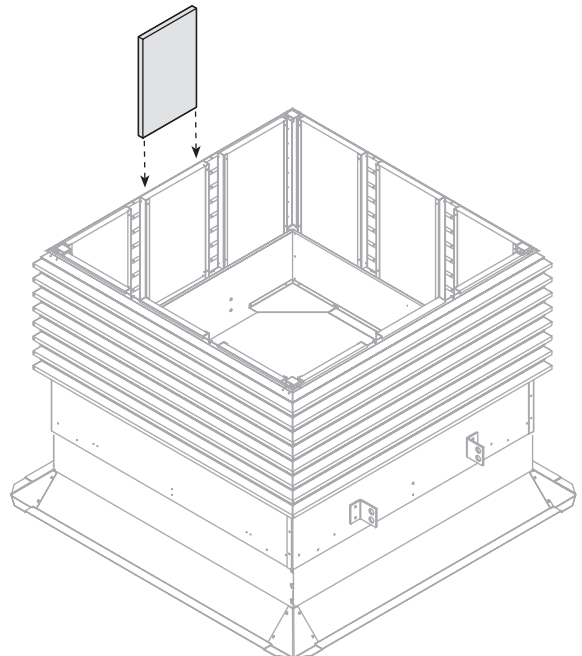


Step 18

Fasten mitered louver corners with #10 x 1.25" sheet metal screws.

Step 19

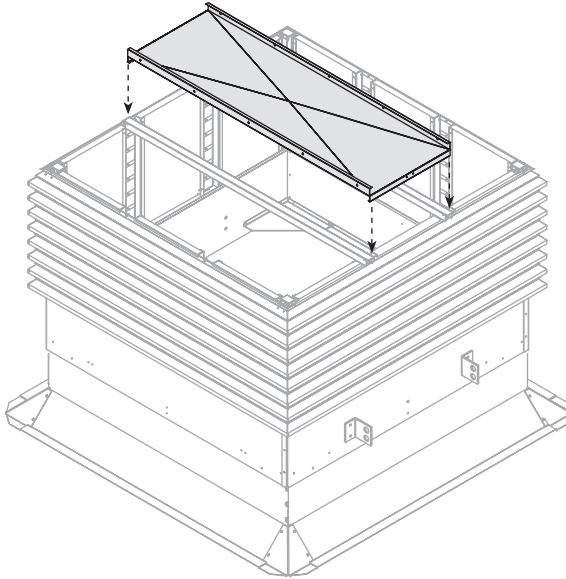
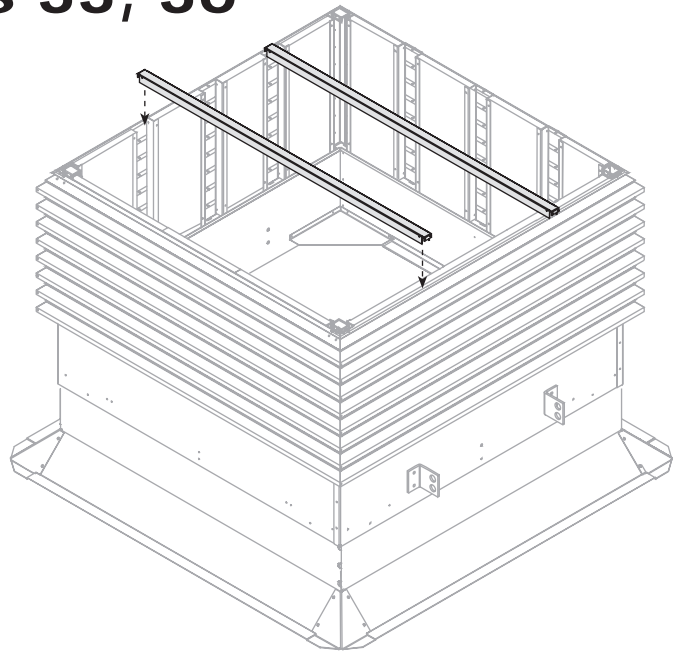
Slide the filters into their racks using the diagram on page 12 as a guide for proper size, location, and orientation of the filters.



LSF Sizes 33, 36

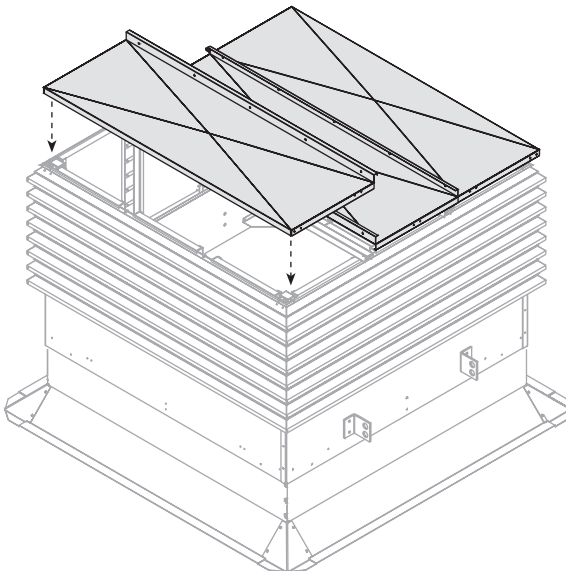
Step 20

Set in place hood support rails over center posts (leaving one (1) post between for spacing). Use $5/16''$ - $18 \times 5/8''$ thread cutting screws to fasten hood support rails to center posts (four (4) screws per center post).



Step 21

Set center hood cover on top of hood support rails, align slots in center hood to holes in hood support rails.

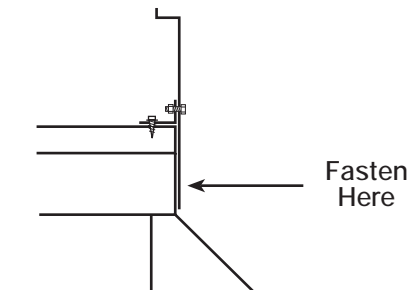


Step 22

Set side hood cover panels on top of unit, one on each side of center hood. Use thread cutting screws to fasten hood panels to corner mount brackets and hood support rails. Join side hoods to center hood along hood seams using four (4) $5/16''$ - $18 \times 1''$ serrated flange fasteners and four (4) $5/16''$ - 18 nuts on each flange.

Step 23

Using prepunched mounting holes in base panels, fasten unit to roof curb nailer (fasteners not provided).



LSF Filters Sizes & Quantities

All Sides Are Identical

Size 24		
16 x 20	16 x 20	16 x 20
16 x 20	16 x 20	16 x 20

Size 27		
16 x 20	16 x 25	16 x 20
16 x 20	16 x 25	16 x 20

Size 30		
16 x 25	16 x 25	16 x 25
20 x 25	20 x 25	20 x 25

Size 33			
20 x 20	20 x 20	20 x 20	20 x 20
20 x 20	20 x 20	20 x 20	20 x 20

Size 36			
20 x 20	20 x 25	20 x 25	20 x 20
25 x 20	25 x 25	25 x 25	25 x 20

FILTER SIZE	UNIT SIZE				
	24	27	30	33	36
16 X 20	24	16			
20 X 20				32	8
20 X 25			12		16
16 X 25		8	12		
25 X 25					8

Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid.

Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

Due to continuing research, Greenheck reserves the right to change specifications without notice.