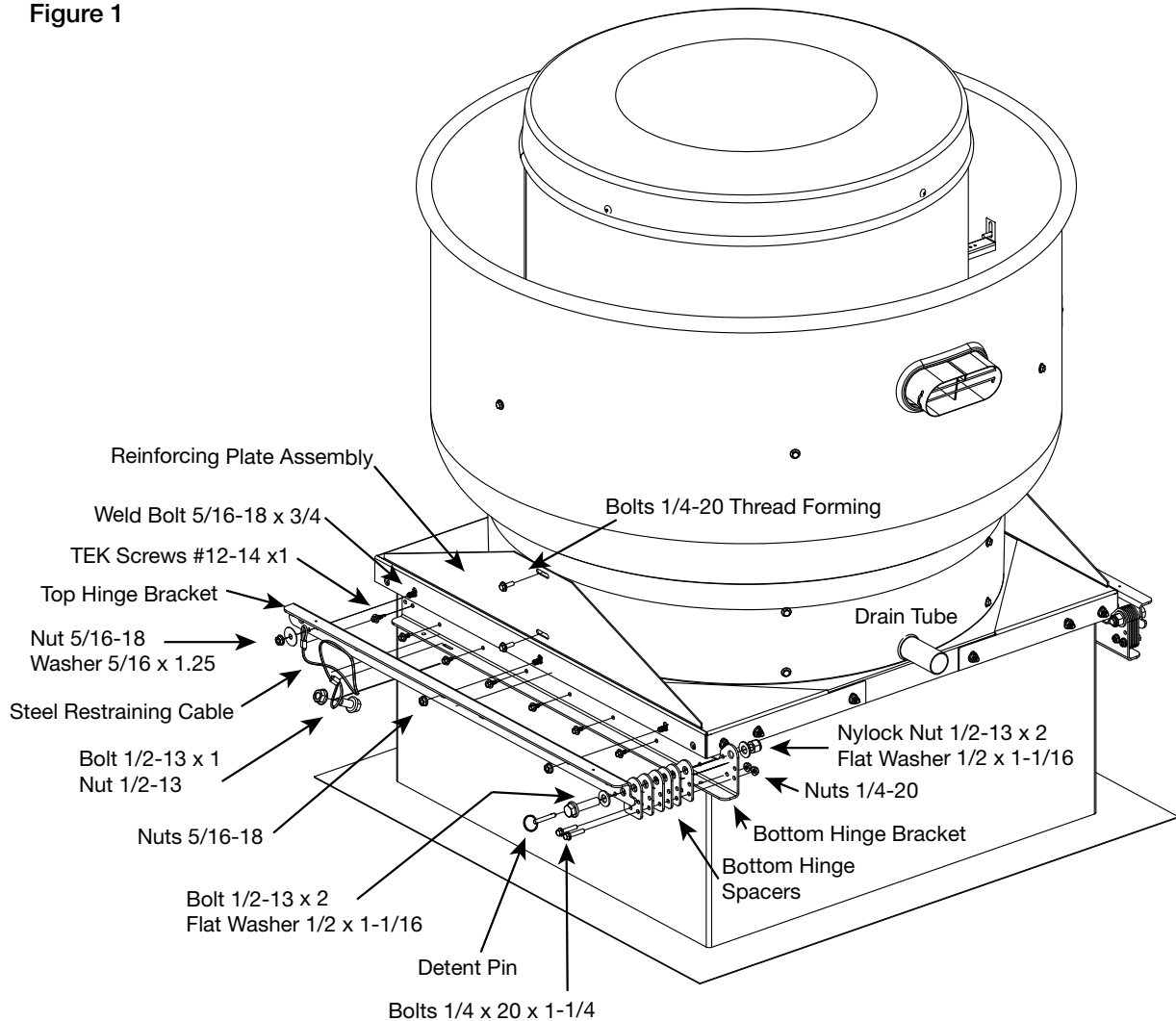


Installation, Operation and Maintenance Manual

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Figure 1



WARNING

Disconnect power and observe proper lock out tag out procedures per OSHA regulation (Title 29 code of federal regulations part 1910.147 & 1910.333).

Note: If fan is connected to electrical source via rigid connection, a qualified electrician will need to change the rigid connection to a flexible connection long enough per local electrical codes to allow for fan movement.

| Included Fasteners | | |
|--------------------|---|-------------|
| Qty | Description | Part Number |
| 14 | Bottom hinge spacer | 778970 |
| 2 | 1/4 in. dia quick release detent pin | 417565 |
| 16 | 2 #12 x 1 in. L self-drilling screw w/ clima seal | 415450 |
| 4 | 1/4 in. - 20 x 1.25 in. shoulder bolt | 415973 |
| 4 | 1/4 in. - 20 flanged nut | 415455 |
| 18 | 5/16 in. - 18 x 0.75 in. weld stud | 415160 |
| 18 | 5/16 in. - 18 serrated flange nut | 415456 |
| 2 | 5/16 in. ID flat washer | 416152 |
| 2 | 1/2 in. - 13 x 2.0 in. bolt | 415470 |
| 2 | 1/2 in. - 13 x 1.0 in. bolt | 415546 |
| 2 | 1/2 in. - 13 Nylock nut | 415269 |
| 2 | 1/2 in. - 13 flange nut | 415471 |
| 4 | 1/2 in. ID flat washer | 415380 |
| 2 | 38 in. steel restraining cable | 868638 |

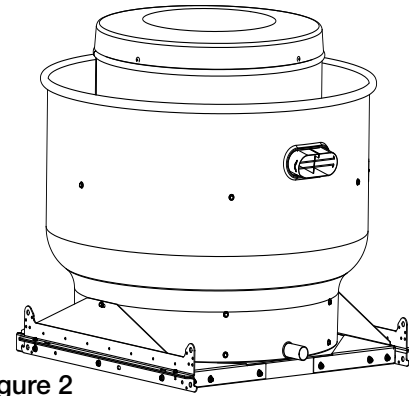


Figure 2

Recommended tools for installation

- Two 3/4 in. wrenches or hex sockets
- Two 1/2 in. wrenches or hex sockets
- 7/16 in. deep well hex driver
- 5/16 in. hex driver
- Tape measure

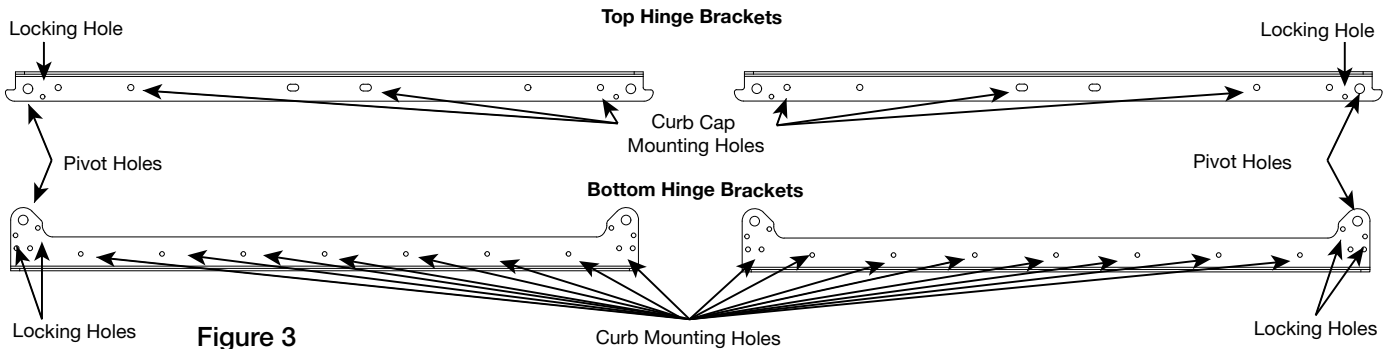


Figure 3

Installation

1. If fan was ordered as factory mounted as shown in Figure 2, skip to step 7. Otherwise, locate the two reinforcing plate assemblies.
2. Remove the two 1/4 in. - 20 thread forming bolts on the lower windband on the left and right of the drain tube.
3. Place the reinforcing plate assemblies on the left and right of the fan. Fasten the front and back sides of the reinforcing plate assemblies using six 5/16 in. - 18 weld studs and flange nuts per side. It may help to place the fan on top of the roof curb offset 45 degrees as to how it should sit. This will allow for easier access to the curb cap mounting holes. Reinstall thread forming bolts.
4. Fasten the top hinge brackets to each of the reinforcing plate assemblies using three 5/16 in. - 18 x 3/4 in. weld studs and three flange nuts per bracket.
5. Place fan squarely onto roof curb maintaining even spacing on each side between the curb and curb cap.

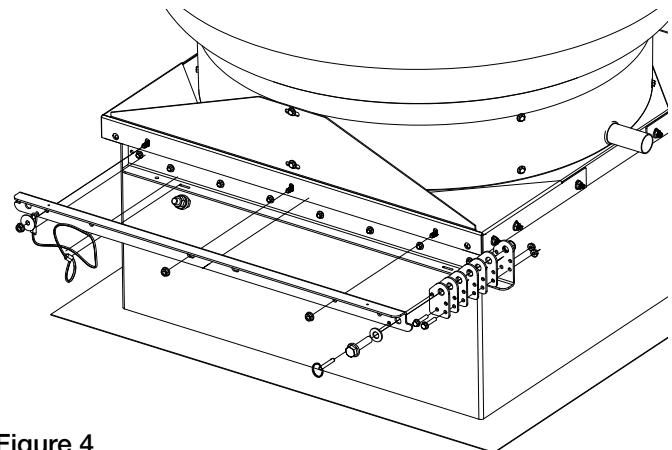


Figure 4

6. If kit was shipped loose, locate left and right bottom hinge brackets to their respective sides.
7. On a factory mounted hinge kit, remove the two self-drilling screws that fasten each bottom hinge bracket to its respective top bracket.
8. Insert the 1/2 in. - 13 x 2 in. bolt through a washer, the pivot hole of a top hinge bracket and its respective bottom hinge bracket's pivot hole. While pressing the lower bracket against the roof curb find how many bottom hinge spacers will be needed between the top hinge bracket and bottom hinge bracket. Refer to Figure 5.

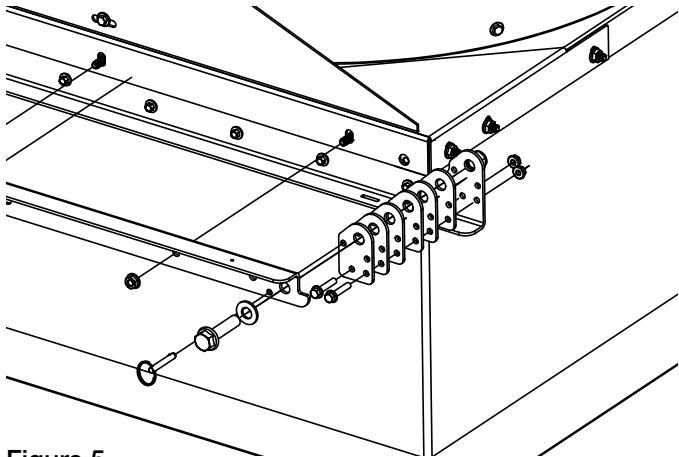


Figure 5

9. Fasten the necessary amount of bottom hinge spacers to the bottom hinge bracket using 1/4 in. - 20 x 1-1/4 in. hex bolts and flange nuts.
10. Tighten the 1/2 in. - 13 lock nut onto the 1/2 in. - 13 x 2 in. bolt and washers until the bolt can still rotate with resistance. Do not over-tighten or the hinge may bind and not function properly.
11. Insert the detent pin into the 'lock closed' hole to help hold the bottom hinge bracket in position for fastening to the roof curb. The top of the top hinge bracket should be 3 - 3/4 in. from the bottom of the bottom hinge bracket. Install eight self-drilling screws through the bottom hinge bracket and into the roof curb.

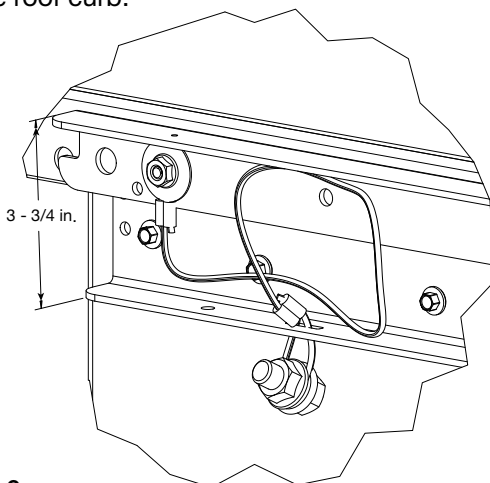


Figure 6

12. Referring to Figure 6, remove the flange nut on the top hinge bracket furthest from the hinging pivot, place one loop of the steel cable over the weld stud, add the 5/16 in. flat washer, then reinstall the flange nut tightly on the weld stud. Cut the zip ties holding the cable in a coil.
13. Install the other end of the steel cable into the slot in the bottom hinge bracket and secure in place using the 1/2 in. - 13 x 1 in. hex bolt and 1/2 in. flange nut as shown in Figure 6.
14. Repeat steps 6 through 13 for mounting the bottom hinge bracket on the opposite side.

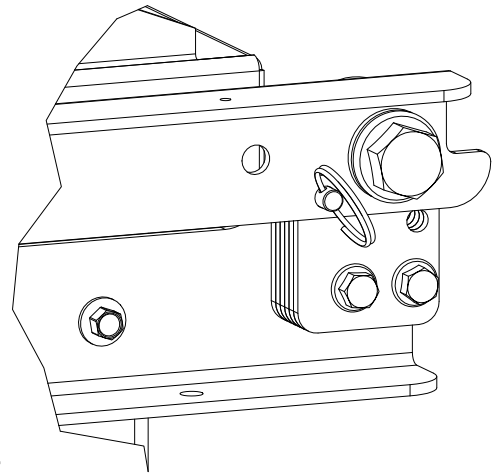


Figure 7

15. To lock hinge in closed position, insert a quick release detent pin through the locking hole of the top hinge bracket, through the bottom hinge spacers, and into the bottom hinge bracket as shown in Figure 7.

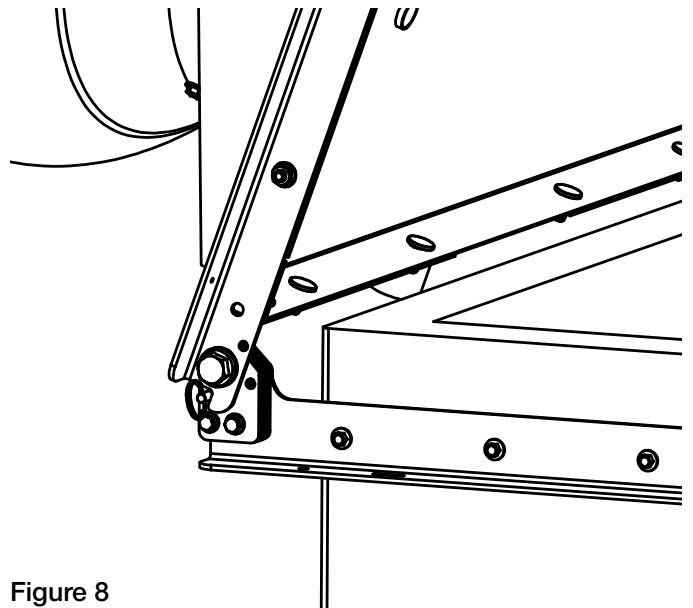
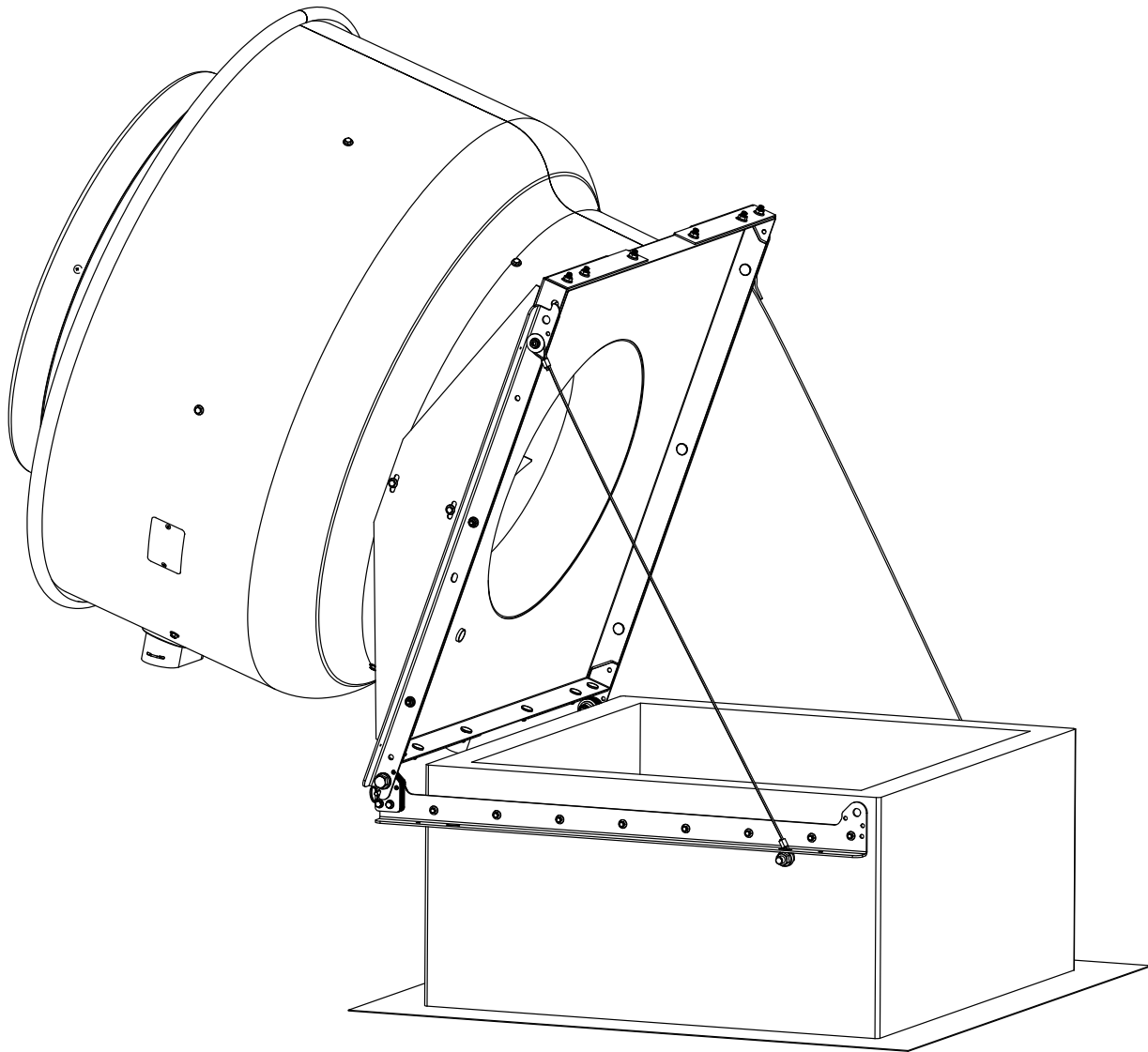


Figure 8

16. To lock hinge in open position, insert a quick release detent pin through the bottom hinge spacers and into the lower hole of a bottom hinge bracket as shown in Figure 8. Due to variation in part fitment, the pin will not be in direct contact with the retention ear of the top hinge bracket. But it serves as a fail-safe in a high wind event during servicing.

NOTE: When closing the hinge be sure to remove detent pins, they can be kept in the 1/4 in. hole in the bottom hinge bracket while handling the fan to prevent losing them.



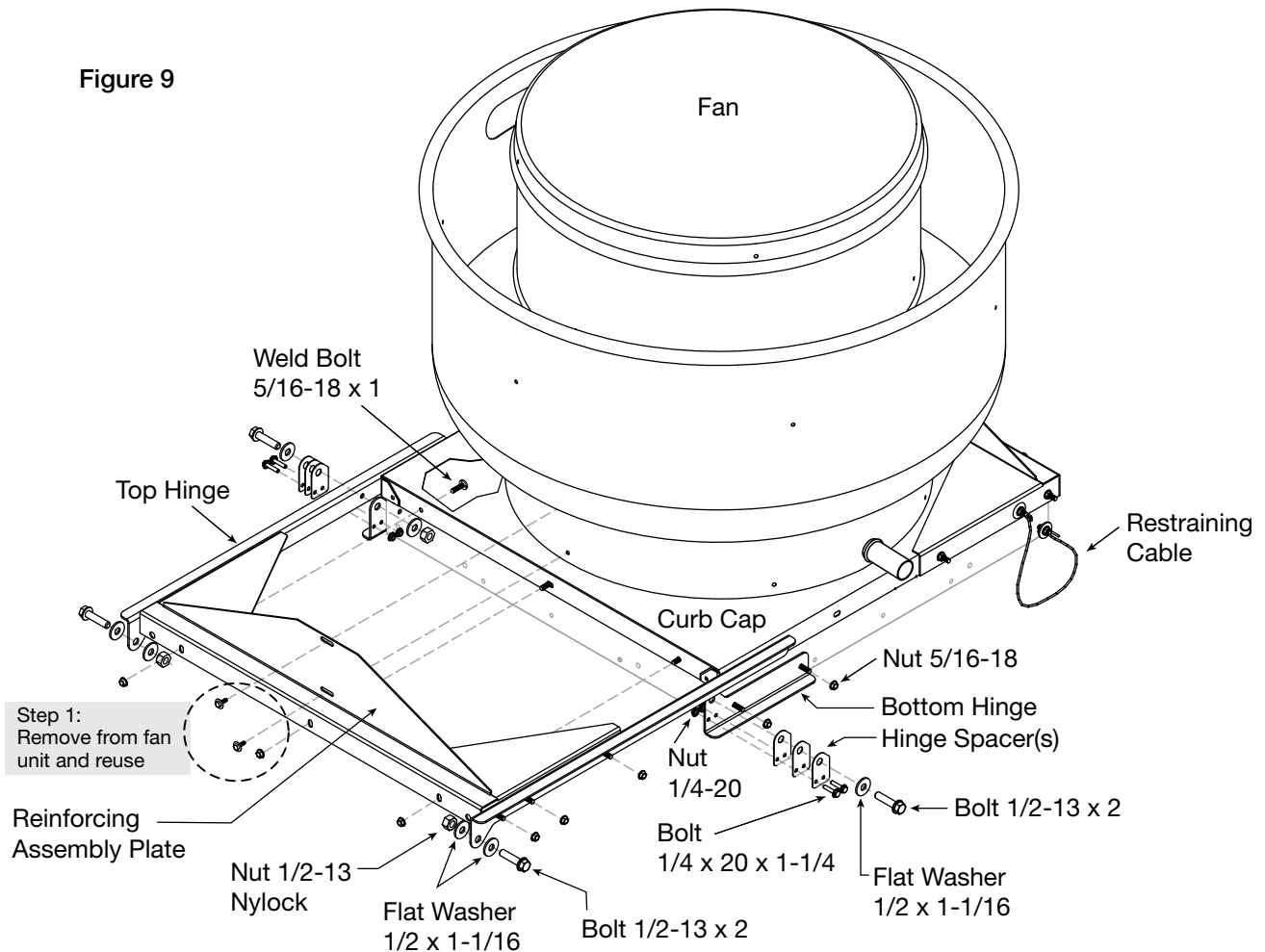
CAUTION

Roof curb or extended base should be properly attached to the roof to support the fan and curb when moved to the open position.

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Figure 9



WARNING

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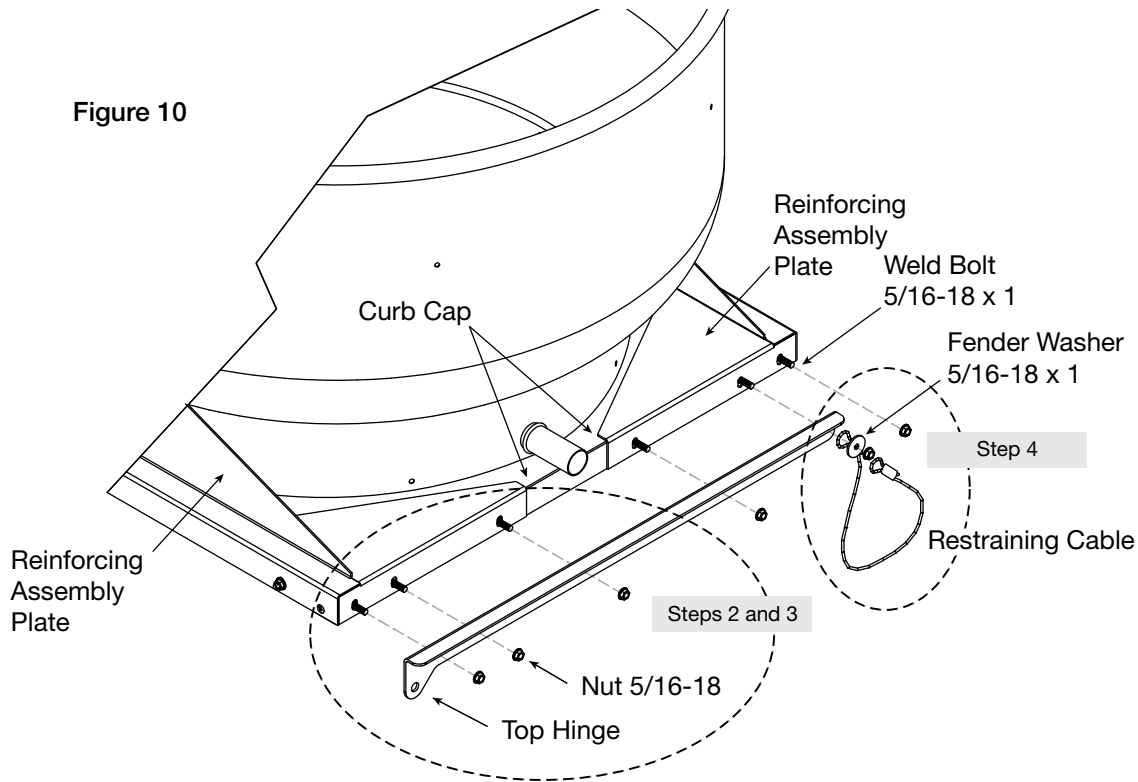
Note: If fan is connected to electrical source via rigid connection, a qualified electrician will need to change the rigid connection to a flexible connection long enough per local electrical codes to allow for fan movement.

Installation

1. Step 1, remove bolts/screws from fan unit that will be used to connect the reinforcing assembly plate. Figure 9.

If fan is currently installed on a curb, remove screws holding the cap to the curb. If this does not apply go to Step 2.

Figure 10



2. Place reinforcing assembly on the curb cap; loosely install the four screws removed in Step 1. If cap has factory holes that line up with hinge holes, go to Step 3. If cap does not have matching holes from the factory, mark the remaining hole locations for drilling. Drill a 5/16 inch hole in the curb cap at these locations.
3. Attach each top hinge and reinforcing assembly to the curb cap with 5/16 inch - 18 x 1 inch long weld-bolt screws and 5/16 inch spinlock nuts. Refer to Figure 10.

NOTE: The stop cable is installed to the top hinge under the nut furthest from the pivot point. Secure the cable with the 5/16 inch x 1-1/4 inch fender washer. Allow the opposite end to hang loose until Step 8. Figure 10

4. Set unit on roof curb or hinge base. Center curb cap on the curb or hinge base so there is equal space around the perimeter. If curb cap has a hinge base, align hold down screws with threaded holes and loosely install thumb screws. Refer to Figure 12.
5. Attach each lower hinge to the upper hinge with the 1/2 inch - 13 x 2 inch bolt, 1/2 inch washers and 1/2 inch nylock nut. Attach equal number of hinge spacers to bottom hinge with 1/4 inch - 20 x 1-1/4 inch bolts and 1/4 inch nut to take up the gap between the top and bottom hinges. THE NUMBER OF SPACERS WILL VARY FROM UNIT TO UNIT. Refer to Figure 11.

Figure 11

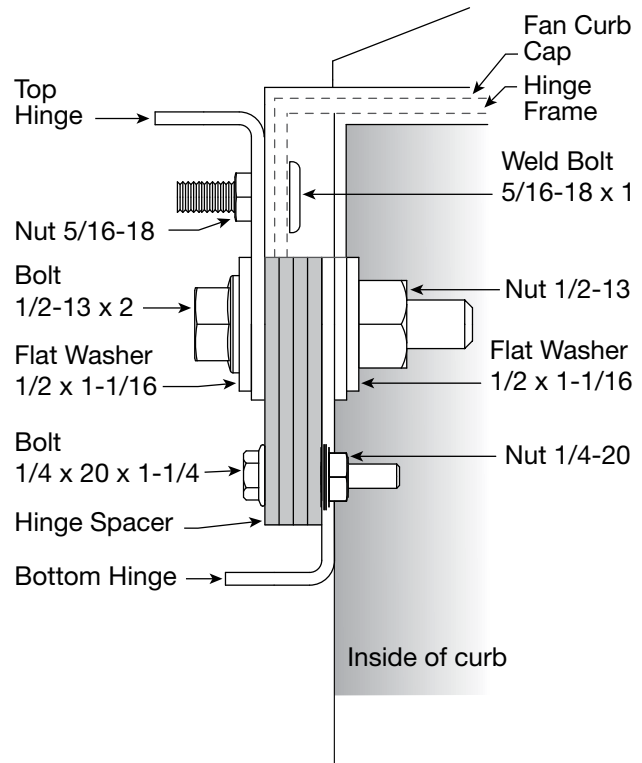
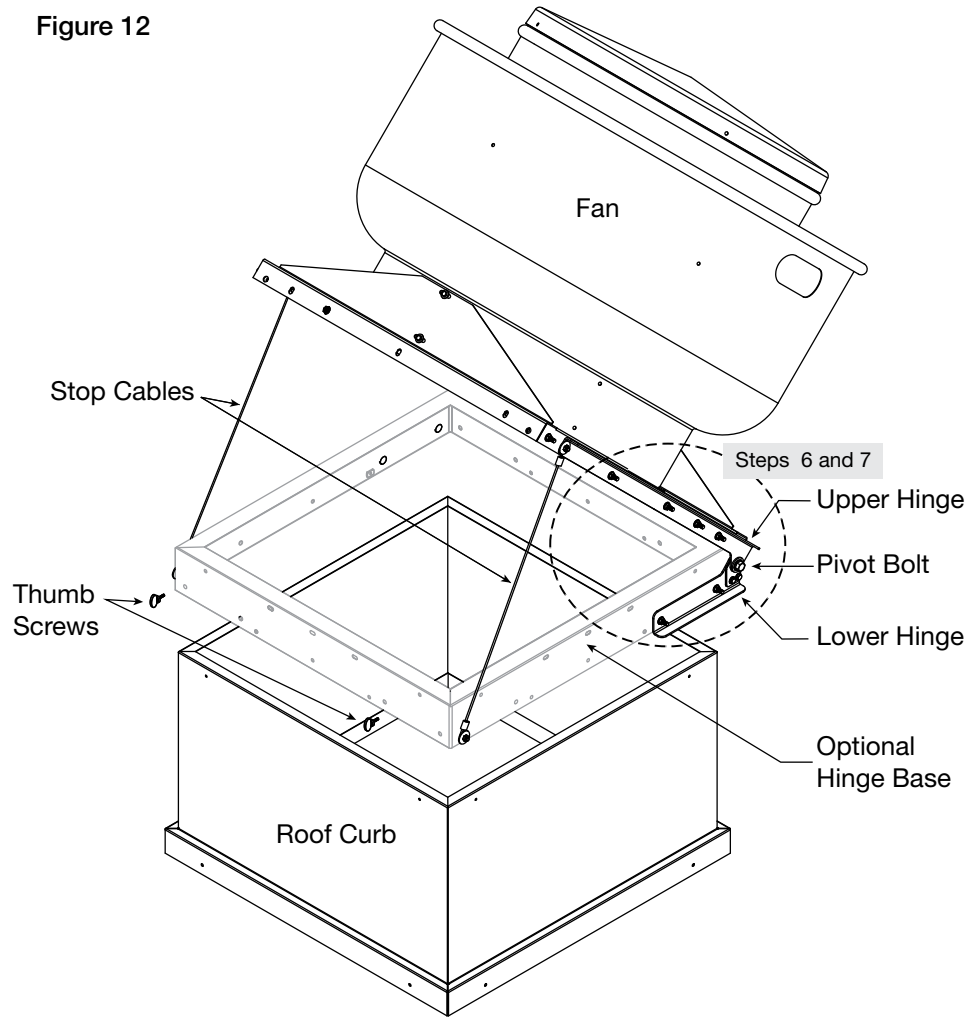


Figure 12



6. Rotate the lower hinge until parallel with the upper hinge. If cap has factory holes that line up with hinge holes, go to Step 7. If cap does not have matching holes from the factory, mark the hole locations in the curb and drill a 5/16 inch hole at each location. Reference Figure 12.

CAUTION

Roof curb or extended base should be properly attached to the roof to support the fan and curb when moved to the open position.

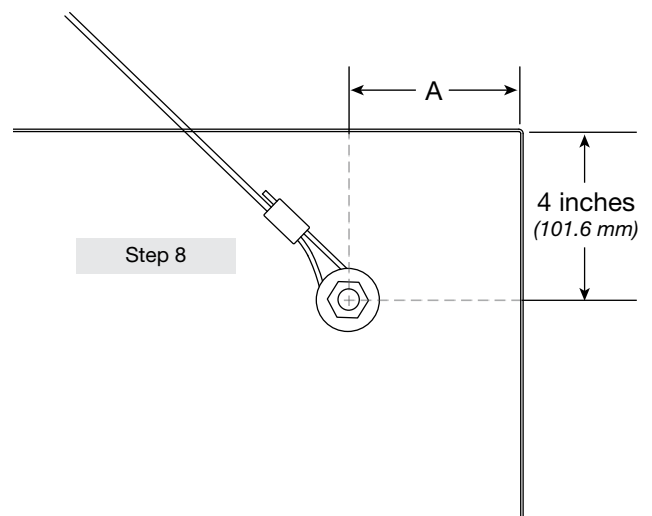
7. Install 5/16 inch weld bolts through lower hinge into curb and install nuts. If necessary, disconnect hinge bolt and remove unit from curb to install lower hinge.

NOTE: If curb is of construction other than sheet metal, use appropriate connector. For example, if the curb is made of wood, use a lag bolt.

8. Attach the loose end of the stop cable to the curb with appropriate fastener and fender washer. See Figure 13 for hole location.
9. Wind gusts are capable of lifting the curb cap off from the curb. Secure the curb cap to the curb with the thumb screws provided with a hinge base or other appropriate method.

Figure 13

| Dimension A | Model |
|-------------|-----------|
| 8 inches | 260 - 480 |
| 16 inches | 500 - 540 |



Downblast Centrifugal Replacement Parts

| Item No. | Description | Model No. | 260-300 | 330-360 | 420 | 480 | 500-540 |
|----------|----------------------------------|-----------------|---------|---------|--------|--------|---------|
| | | Length (inches) | 40 | 46 | 52 | 58 | 64 |
| 1 | Reinforcing Assembly | | 829561 | 830873 | 830874 | 830875 | 868633 |
| 2 | Hinge, Galvanized, Top, Left | | 742410 | 742417 | 742413 | 742414 | 742415 |
| 3 | Hinge, Galvanized, Top, Right | | 742450 | 742578 | 742617 | 742669 | 742724 |
| 4 | Hinge, Galvanized, Bottom, Left | | 742412 | 742418 | 742419 | 742420 | 742421 |
| 5 | Hinge, Galvanized, Bottom, Right | | 742451 | 742579 | 742629 | 742670 | 742725 |

Upblast Centrifugal Replacement Parts

| Item No. | Description | Model No. | 300 | 360 | 420 | 480 | N/A |
|----------|----------------------------------|-----------------|--------|--------|--------|--------|--------|
| | | Length (inches) | 40 | 46 | 52 | 58 | 64 |
| 1 | Reinforcing Assembly | | 817130 | 817133 | 817131 | 817132 | N/A |
| 2 | Hinge, Galvanized, Top, Left | | 742410 | 742417 | 742413 | 742414 | 742415 |
| 3 | Hinge, Galvanized, Top, Right | | 742450 | 742578 | 742617 | 742669 | 742724 |
| 4 | Hinge, Galvanized, Bottom, Left | | 742412 | 742418 | 742419 | 742420 | 742421 |
| 5 | Hinge, Galvanized, Bottom, Right | | 742451 | 742579 | 742629 | 742670 | 742725 |

