

RAVEN

# GRAIN COVER INSTALLATION INSTRUCTIONS



*Oval/Rectangle & Round*

# GRAIN COVER INSTALLATION GUIDE - OVAL/REC & ROUND

For questions, please contact your Sales Specialist at 800-635-3456 or 605-335-0174

## Grain Cover Installation Instructions

This installation guide includes instructions for multiple grain cover applications. Oval, rectangle and round cover installations are outlined in the following pages. Please select the page title that applies to your cover type and follow the guide to complete installation.

## Prior to Installation - Important Notes

Raven recommends that before starting your cover installation you check weather conditions, do not try to deploy covers in windy conditions. During and after deployment, some type of ballast must be used to prevent wind from taking control of the cover material, aeration fans may also be utilized. Typically, sandbags are used for ground piles without aeration and should be placed as required to prevent damage to the cover during installation.

Depending on the current wind conditions, the crew should be able to take advantage of a slight breeze by pumping a layer of air under the cover to help float the material while deploying. If at any time the air underneath becomes too excessive, the deployment crew should pull the cover closer to ground level to help push out some of the air. If an unexpected wind gust comes up during deployment, the crew should hold the leading edge of the cover material down to the grain pile to avoid wind lift. If uncontrolled wind lift of the cover occurs, immediately stay clear of the cover to avoid injury.

Depending upon your individual system, aeration fans can assist in holding the cover down during deployment.

Some multi-panel covers are produced in different custom widths, so be sure to check each piece to confirm the panels are deployed correctly. Most often, this situation exists when towers are present

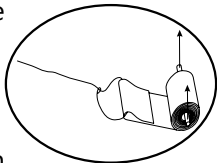


# SINGLE PIECE COVER INSTALL - OVAL & RECTANGLE

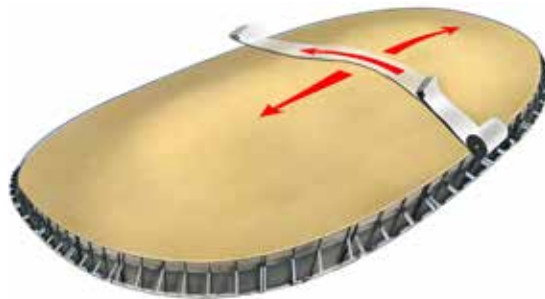
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## Single Piece Grain Cover Installation

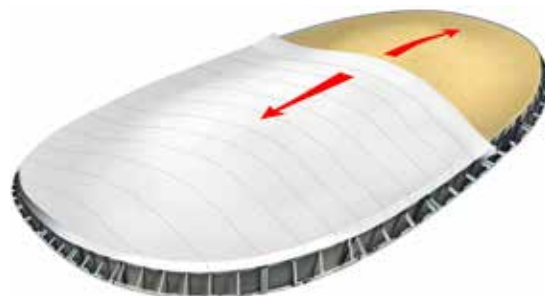
Place a pipe through the roll core and hang chains from a forklift, loader or other piece of equipment down to each end of the pipe to dispense roll. Carefully remove wrapping, as to not cut grain cover. Remove and retain installation instructions if attached. Position the roll about two-thirds of the length of your bunker with the open edge, white-side facing up, directed towards two-thirds of the pile.



Step  
1



Step  
2



Step  
3



Attach a rope (in the form of a noose) around the end layers of the roll. Place old tires or an aeration tube at the peak of the pile. Run the rope over to the other side of the pile, tied to a pulling vehicle. If using tires, place another rope tied to the tires at the peak of the pile and back down near the bunker wall and anchor.

Pull on rope, raising the cover to the peak; release the rope holding the tires letting them pull over with the cover. Pull the cover completely over the pile until there is an equal distance of overhang on both sides. Position about 6 to 8 people across the cover and pull it out covering two-thirds of the pile white side up. (Step 1)

Do the same with the last one-third of the pile. Pull cover tight. Turn on the fans/aeration system or anchor with ballast. (Step 2, 3)

Trim cover to about a two foot overhang around the sides of the bunker. Wrap a 2" X 4" in the edge of the cover as a batten strip and screw or nail it to the bunker wall.

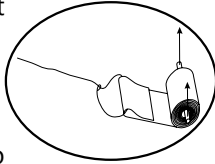
# MULTI-PIECE COVER INSTALL - SEWN SEAM - OVAL & REC

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## Multi-Piece Cover Install with Sewn Seam

Divide bunker into sections based on the number and width of pieces required (start at the end of the bunker the wind is coming from).

Piece #1 should be aligned at the 1st section division line. Place a pipe through the roll core and hang chains from a forklift, loader or other piece of equipment down to each end of the pipe to dispense roll. Carefully remove wrapping, as to not cut grain cover. Remove and retain installation instructions if attached. Tie a rope noose around the first 10 feet of cover and fold back on itself. Rope goes up and over the pile to a pulling vehicle (a ventilation tube on top ridge keeps rope from sinking into the grain).



Dispensed across width of the pile with an equal distance of overhang on both sides. Piece #2 will be placed next to Piece #1 and dispensed across the width of the pile (depending on the fold configuration and access alongside bunker, rolls may need to unspool off the bottom or the top or deploy from the opposite side of bunker to assure cover unfolds correctly). (Step 1)

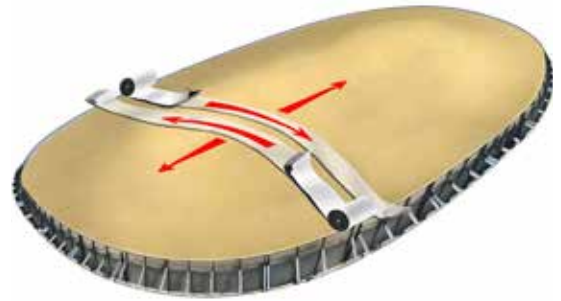
Join pieces #1 and #2. Unfolded Piece #1 down the end slope, white side up (check fold configuration prior to dispensing). Unfold Piece #2 the opposite direction. Utilize ballast or turn vacuum fans on to help secure if necessary.

Place additional pieces next to the previous deployed edge, dispense, join and unfold additional pieces as required. (Step 2, 3)

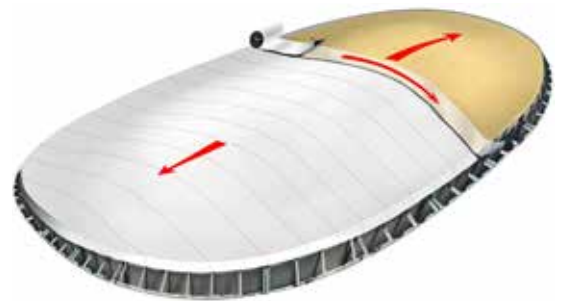
If the bunker has a tower inside, unroll the cover section on each side of the tower. You will need to cut the cover to fit around the tower. Scraps from outside edges can be used to fill voids in the tower, if needed.

Trim cover to about a two foot over hang around the sides of the bunker. Wrap a 2" X 4" in the edge of the cover as a batten strip and screw or nail it to the bunker wall.

Step  
1



Step  
2



Step  
3





# MULTI-PIECE COVER INSTALL - ACCESSORIES - OVAL & REC

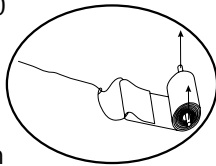
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## Multi-Piece Cover Install with RainFlaps™ and/or Fortress™ Internal Strapping System

Divide bunker into sections based on the number and width of pieces required (start at the end of the bunker the wind is coming from).

Piece #1 should be aligned at the 1st section division line. Place a pipe through the roll core and hang chains from a forklift, loader or other piece of equipment down to each end of the pipe to dispense roll. Carefully remove wrapping, as to not cut grain cover. Remove and retain installation instructions if attached.

Tie a rope noose around the first 10 feet of cover and fold back on itself. Rope goes up and over the pile to a pulling vehicle (a ventilation tube on top ridge keeps rope from sinking into the grain).



Dispensed across width of the pile with an equal distance of overhang on both sides. Piece #2 will be placed next to Piece #1 and dispensed across the width of the pile. (important: check fold configuration, prior to dispensing to assure the RainFlap™ is in the correct position if included, if cover contains Fortress™ internal strap system, be sure to position the end panel without straps toward the end of the bunker). (Step 1)

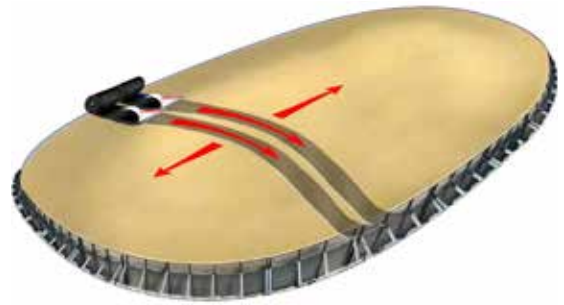
Join piece #1 and #2. Unfold Piece #1 down the end slope, white side up (check fold configuration prior to dispensing). Unfold Piece #2 the opposite direction. Utilize ballast or turn vacuum fans on to help secure if necessary.

Place additional pieces next to the previous deployed edge, continue to dispense, join and unfold additional pieces as required. (Step 2, 3)

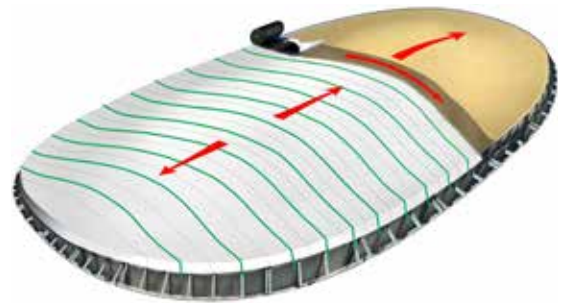
If the bunker has a tower inside, unroll the cover section on each side of the tower. You will need to cut the cover to fit around the tower. Scraps from outside edges can be used to fill voids in the tower, if needed.

Trim cover to about a two foot over hang around the sides of the bunker. Wrap a 2" X 4" in the edge of the cover as a batten strip and screw or nail it to the bunker wall.

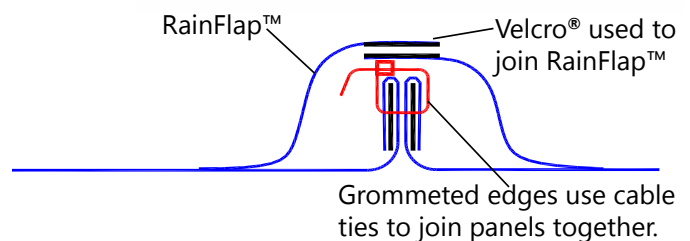
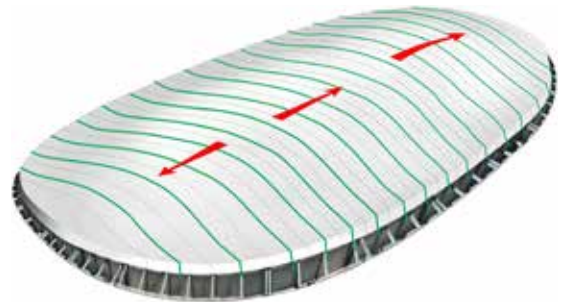
Step 1



Step 2



Step 3



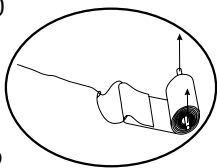
# SINGLE PIECE COVER INSTALL - ROUND

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## Single Piece Cover Installation

Hang roll from pipe and chains for dispensing.

Tie a rope noose around the first 10 feet of cover and fold back on itself. Rope goes up and over the center of the pile to a pulling vehicle (a ventilation tube or tire on top ridge keeps rope from sinking into the grain).



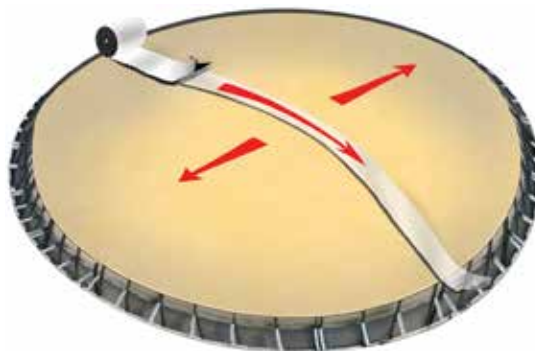
Dispensed roll across width of the pile with an equal distance of overhang on both sides. Position an individual near the peak of the pile to keep the cover from sliding down the slope. (Step 1)

Pull out folds white side up from center of pile to outer edge of bunker and overlap bunker edge by approximately two feet. (Step 2)

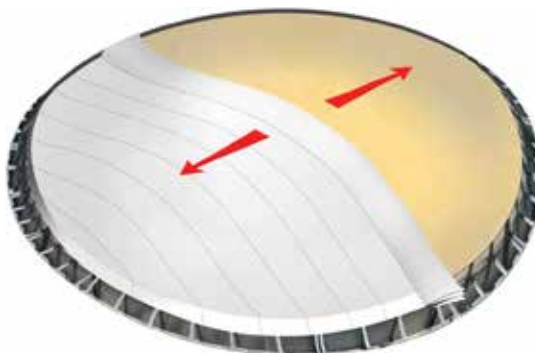
Flop over remaining accordion folds and pull out the opposite direction covering the entire pile. (Step 3)

Trim cover to about a two foot over hang around the sides of the bunker. Wrap a 2" X 4" in the edge of the cover as a batten strip and screw or nail it to the bunker wall.

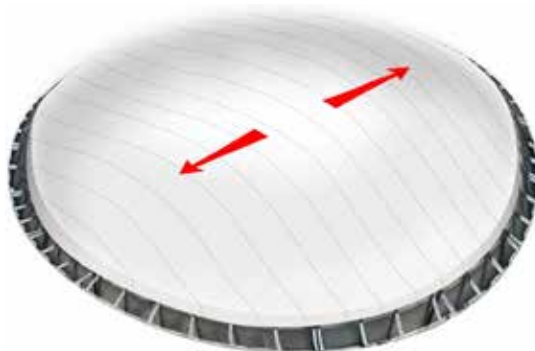
Step  
1



Step  
2



Step  
3

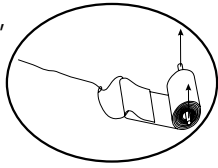


# FOUR+ PIECE COVER INSTALL WITH YOKE - ROUND

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## Four+ Piece Cover Install with Yoke

Place the rolls in equal sections around the pile. If there is a support tower for a catwalk, place the rolls so there will be a seam in that area. Hang roll from pipe and chains for dispensing.



Tie a rope noose around the first 10 feet of cover and fold back on itself. Rope goes up and over the center of the pile to a pulling vehicle (a ventilation tube or tire on top ridge keeps rope from sinking into the grain). (Step 1)

Dispensed the 1st roll to the center of the pile. Position an individual near the peak of the pile to keep that section from sliding down the slope.

The yoke or leading edge of the cover will have 4 to 6 webbings, depending upon the yoke design. Use a couple of these webbing to attach the yoke portion of the cover to the tower during installation to hold it in place. Allow about 5 feet of slack near the tip of the cover, making the next step easier.

The remaining strap will get tied to the tower later when sections are all joined together.

With webbing straps tied to the tower, unfold the top black layer revealing the white stair stepped layers. The tips of each of the sections can now be joined together and to the tower (you may have to unfold some of the cover to do this). (Step 2)

Place 6 to 8 people along the edge of the stepped layers. Use more people at the top where the cover is heaviest. As a team, start pulling the cover sideways down the pile along the side of the next section so your new edge can be joined with the next section. (Step 3, 4)

With the section pulled out and down to the bottom, the two sections can be joined by sewing or utilizing the RainFlap system.

Repeat the process on the other sections. After all of the sections have been pulled out and joined, it is time to batten the outside edges to the wall or ground.

If you have walls, hand the edge of the cover over the nailing strip at the top of the wall by about 2' and batten the edge with a 2" X 4" using nails or screws.

If you have a ground pile, the edge should be covered with tires, sandbags, railroad ties, soil or something sufficient to hold the edge down in place.

**Please Note:** For 4-piece Round Covers with a center ring lift, please use the following exceptions:

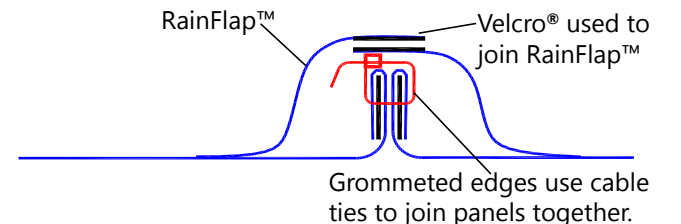
In step #1, instead of dispensing the covers onto the filled pile, place the rolls on the ground by squaring them off to the side, from the center ring lift. Unroll about 25 to 30 feet of the cover. Unfold the top layer placing it next to the base of the roll to its left. Repeat procedure for all rolls.

In step #2, position the yoke to the lift ring. Care should be taken to center the yoke in equal quarters on the ring as you fasten it, so you can trim off excess material as needed. Rain flap edges may need to be joined as the sections are positioned around the ring lift.

In step #3, unroll all four pieces from the center to the outer wall. Unfold the top layer revealing the stair stepped edges. Pull each panel completely out, however use care to avoid snagging the cover on the aeration tubes. Now join all four sections together with the rain flap system.

Anchor cover perimeter to keep from whipping in the wind, until pile is completely filled.

For final layout, once the pile is filled, hang the cover over the nailing strip at the top of the wall by about 2' and batten the edge with a 2" X 4" using nails or screws.





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Note: To the best of our knowledge, these are typical installation procedures and are intended as guidelines only. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS OR GUIDELINES REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and we disclaim all liability for resulting loss or damage. Limited Warranty available at [www.RavenEFD.com](http://www.RavenEFD.com) 100215 EFD 100815