



# Side Belt Comfort Nest

412460

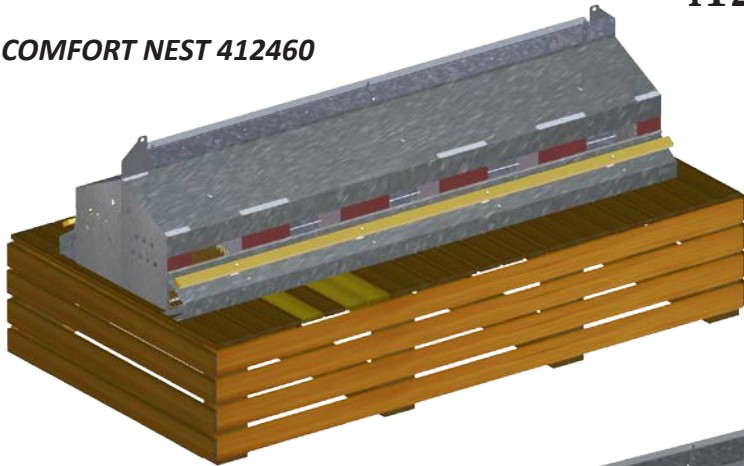
# Side Belt Nest

412200, 412210

# Egg Collector Tables

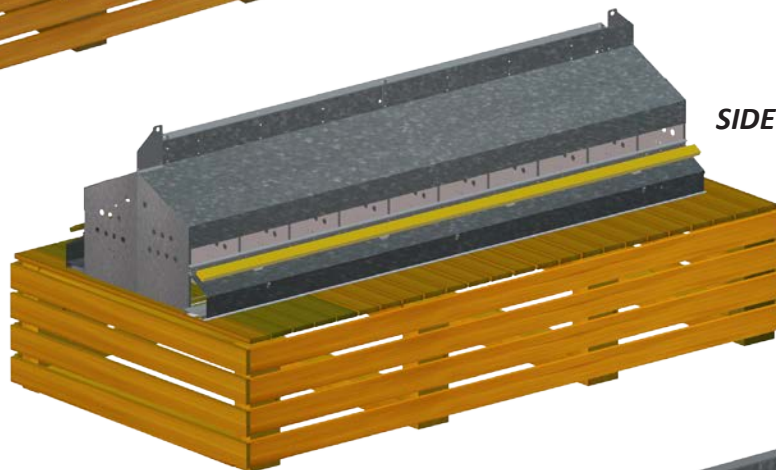
412620, 412621, 412622, 412623,  
412624, 412625, 412626, 412627

*COMFORT NEST 412460*

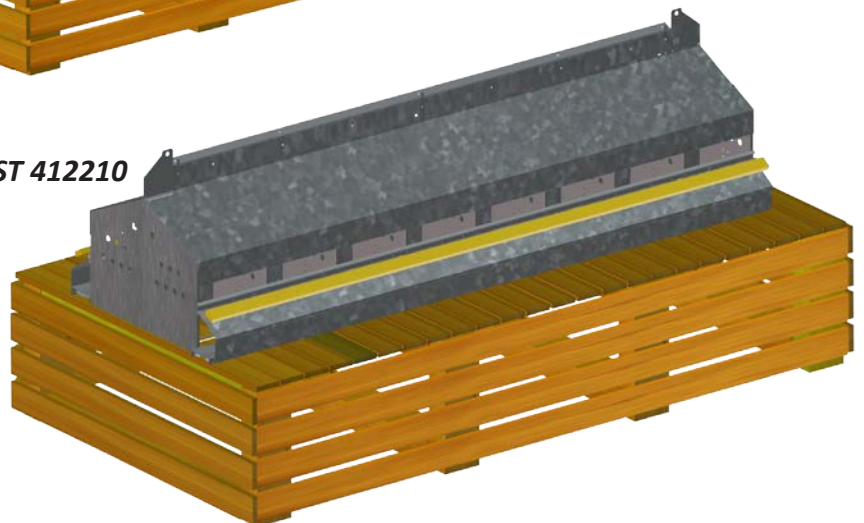


## Operation and Installation

*SIDE BELT NEST 412200*



*SIDE BELT NEST 412210*



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## VAL PRODUCTS, INC. WARRANTIES

### MANUFACTURED PRODUCTS STANDARD WARRANTY:

Val Products, Inc. (Valco) warrants that Valco-manufactured products (other than the products subject to an extended warranty set forth below) will be free of defects in material and workmanship, when used in a usual and customary fashion, for a period of one (1) year from the date of original purchase from an authorized Valco distributor or three (3) years from the date of original purchase from Valco, whichever period expires first. If Valco is notified that such a defect exists within that time and, upon inspection, agrees that the product is defective, Valco will, at its option, (a) repair or replace (EXW Valco's plant) the defective product, or (b) refund to the original purchaser (Valco's distributor) the original purchase price paid for the defective product less any installation, shipping, or other charges associated with the original purchase. All defective products must be returned to a Valco designated location for evaluation. Valco's determination as to whether the product is defective is final. See the General Conditions and Limitations.

<b>Product</b>	<b><u>Extended<sup>1</sup> Warranty Coverage Period</u></b>	<b><u>Limited<sup>2</sup> Warranty Coverage Period</u></b>	<b><u>Total Warranty Coverage Period (Extended + Limited)</u></b>
VR & VBL series drinkers	5 years	5 years	10 years
VQ, VA & VBR series drinkers	2 years	3 years	5 years
Roll-formed Tube	3 years	7 years	10 years
Coreless auger <sup>3</sup>	3 years	7 years	10 years
FUZE <sup>®</sup> feed pans	2 years	3 years	5 years
Fiberglass fan housings	Lifetime <sup>4</sup>	na	Lifetime <sup>4</sup>
Aluminum fan blades	Lifetime <sup>4</sup>	na	Lifetime <sup>4</sup>
Z-Fan <sup>™</sup> housings <sup>5</sup>	7 years	na	7 years

### **Explanations/Conditions of above listed footnotes for VAL-CO warranties:**

1. Extended Warranty Coverage: Valco warrants products subject to an extended warranty (above) will be free of defects in material and workmanship, when used in a usual and customary fashion, for the period of time as stated from the date of original purchase by an authorized Valco distributor. If Valco is notified that such a defect exists within that time and, upon inspection, agrees that the product is defective, Valco will, at its option, (a) repair or replace (EXW Valco's plant) the defective product, or (b) refund to the original purchaser the original purchase price paid for the defective product less any installation, shipping, or other charges associated with the original purchase. All defective products must be returned to a Valco designated location for evaluation. Valco's determination as to whether the product is defective is final. See the General Conditions and Limitations.
2. Limited warranty coverage products will be provided at a charge rate of 50% off the Valco list price at the time the warranty claim is made known to the company in writing and is subject to Valco's standard warranty policy conditions and limitations.
3. Coreless Auger warranty is voided if conveying materials with greater than 18% moisture content.
4. Lifetime warranty for fiberglass fan housings and cast aluminum blades is limited to products that prove to be defective in workmanship or material and become unusable over the life of the structure where the product was originally installed, provided that the product has remained undisturbed in its original installation location, and will be repaired or replaced, at Valco's option, at no charge (excluding labor of removal and installation and shipping), EXW Valco's plant.
5. Z-Fan housings are warranted for 7 years against rust through when employed in poultry housing ventilation applications only. Fan components excluding housing are covered by Valco's standard warranty.

## VAL PRODUCTS, INC. WARRANTIES - continued

### **General Conditions and Limitations**

1. The Product must be installed and operated in accordance with instructions published by Valco or the warranty will be void.
2. Warranty will be void if all components of the product or system are not original equipment supplied by the manufacturer.
3. Products not manufactured by Valco and supplied by outside manufacturers (such as, but not limited to, certain electrical motors, certain controls, gas valves, etc.) are warranted separately by the respective manufacturer and only to the extent of the manufacturer's warranty.
4. Valco feed bins are designed to be used with free-flowing agricultural feed materials with a density proximate to 40 pounds (18.15 kilograms) per cubic foot (.03 cubic meter). Soybean meal, meat scraps and other materials, both agricultural and industrial, are not free flowing and may significantly exceed recommended material density. Feed bin structural failure from their use will void this warranty.
5. Valco does not warrant against feed bin structural failure, or bin unloading components such as flexible auger transitions and boots that arises due to the addition of aftermarket devices attached to, or installed within or attached to the feed bin structure for the purpose of enhancing feed material flow and/or the elimination of feed bridging issues.
6. Warranty applies only to products used in applications as originally intended by Valco – other applications in industry or commerce are not covered by the Warranty. Valco products are expressly not designed or authorized for use in any applications where intended to sustain or support human life or any other application where the failure of the product could result in personal injury or death.
7. Malfunctions resulting from misuse, abuse, mismanagement, negligence, alteration, accident, lack of proper maintenance, lightning strikes, electrical power surges, or electrical power interruption shall not be considered defects under the Warranty. Corrosion, material deterioration and/or equipment malfunction caused by or consistent with the excessive additions of chemicals, minerals, sediments or other foreign elements with the product shall not be considered defects under the Warranty.
8. VALCO WILL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR ANY KIND OF SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR CONTINGENT DAMAGES INCLUDING, BUT NOT LIMITED TO, LOST OR DAMAGED PRODUCT, GOODS OR LIVESTOCK, COSTS OF TRANSPORTATION, LOST SALES, LOST ORDERS, LOST INCOME, INCREASED OVERHEAD, LABOR AND INCIDENTAL COSTS AND OPERATIONAL INEFFICIENCIES. IN NO EVENT SHALL THE WARRANTY LIABILITY EXCEED THE INVOICED PRICE OF THE PRODUCT TO THE ORIGINAL PURCHASER.
9. THE WARRANTIES SET FORTH ABOVE CONSTITUTE VALCO'S ENTIRE AND SOLE WARRANTY. VALCO EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR USE, DESCRIPTION OF QUALITY OF THE PRODUCT FURNISHED, AND ANY OTHER WARRANTY ARISING BY OPERATION OF LAW, CUSTOM OR USAGE.
10. Valco denies any authorization of any distributor, dealer, agent, or employee to modify, extend, or otherwise alter the conditions of any warranty in addition to, or in lieu of, those conditions and terms expressly stated above. Any exceptions not noted in the body of the Warranty must be authorized in writing by an officer of Valco. Valco reserves the right to change or delete models, or change specifications at any time without notice or obligation to improve previous products.

Effective April 1, 2020

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# Symbols

Congratulations on your VAL-CO® Comfort Side Belt Nest system. Be sure to check the parts against your shipping parts list to make sure you received everything you ordered.

It is important that you read all instructions and pay particular attention to all SAFETY information. (Measurements throughout the manual are given in both English then metric units with brackets.)



= IMPORTANT INFORMATION - Be sure to read!



= NOTE! This may help you.



= CHECK DETAILS OF ALL REQUIREMENTS OR PROCEDURES BEFORE PROCEEDING.



= PROHIBITED - Do NOT do!

OR



= STOP before going forward



= DANGER - imminent hazard, if ignored serious injury or death WILL occur

= WARNING - probable hazard, if ignored serious injury or death COULD occur

= CAUTION - potential hazard, if ignored, minor or moderate injury MAY occur



# Features



Before you begin installalling the Comfort Nest, please be sure to verify your packing list for parts and quantities.

The Comfort Nest and Side Belt Nest from VAL-CO® are attractive and comfortable nests with easy access for your hens, providing you with minimal floor eggs and a better community for your birds.

Please note that color and transparency of parts have been used throughout the manual to emphasize a part or to bring clarity to the assembly. (A color version is available on the VAL-CO® web-site <http://www.val-co.com>) Thank you for choosing VAL-CO® for your installation!



# Tools Required

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• Pliers</li><li>• Chalk Line</li><li>• Wire Cutters</li><li>• Tape Measure</li><li>• Allen Wrench</li></ul> | <ul style="list-style-type: none"><li>• Driver/Socket/Wrench Set OR</li><li>• Air Wrench OR</li><li>• Adjustable Open End Wrench</li><li>• Air Hydraulic Rivet tool</li></ul> |
|--|---|

**Tool Set**  
(all in one driver/wrench set)



**Air Hydraulic Rivet tool**



**Chalk Line**



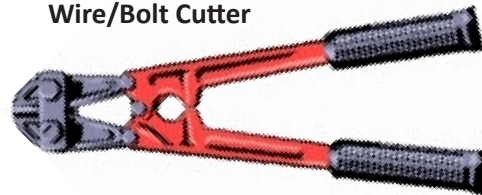
**Allen Wrench**



**Tape Measures**



**Wire/Bolt Cutter**



# Hardware (412475 HDW BAG)

*NOT ACTUAL SIZE*



412012-TROUGH BRACE



412025 TROUGH JOINER



412032-SUSP BRCKT



412007-NEST LOOP HINGE



412015-PERCH BRCKT



412017-WIRE ROD CLIP



012803-RIVET



412258-SUPPORT, ANTI ROOST



010626-1/4-20 X 2-1/4" HEX BOLT



012408- KEP NUT



012795-UNSLOTTED HEX HEAD SCREW



012793-NYLOCK NUT



# Assembly Fixture

VAL-CO® recommends the use of an assembly fixture of some kind. Below is an example of a simple fixture that can be used for holding the middle panel and partitions during assembly.

## Material List

- (2) 2" X 4" X 96" (5.08cm x 10.16cm x 2.44m) Boards
- (1) 24" x 94" (60.96cm x 2.38 ) Plywood
- (20) Nails



You may find it helpful to have one or more than one work bench at a comfortable height for assembly.

1. Lay (2) 2" x 4" X 96" boards parallel to plywood with approximately 1/8" (.32cm) gap between boards to hold middle panel. Nail 2 x 4's to plywood being careful not to place a nail where you are going to saw.
2. Saw (9) 1/8" (.32cm) grooves across both boards to create (10) equal distant slots for partitions (Approximately 9-9/16" 24.29cm) This may be used for either the side belt or comfort nest. The comfort nest will use (7) slots, every other slot as pictured on page 13.

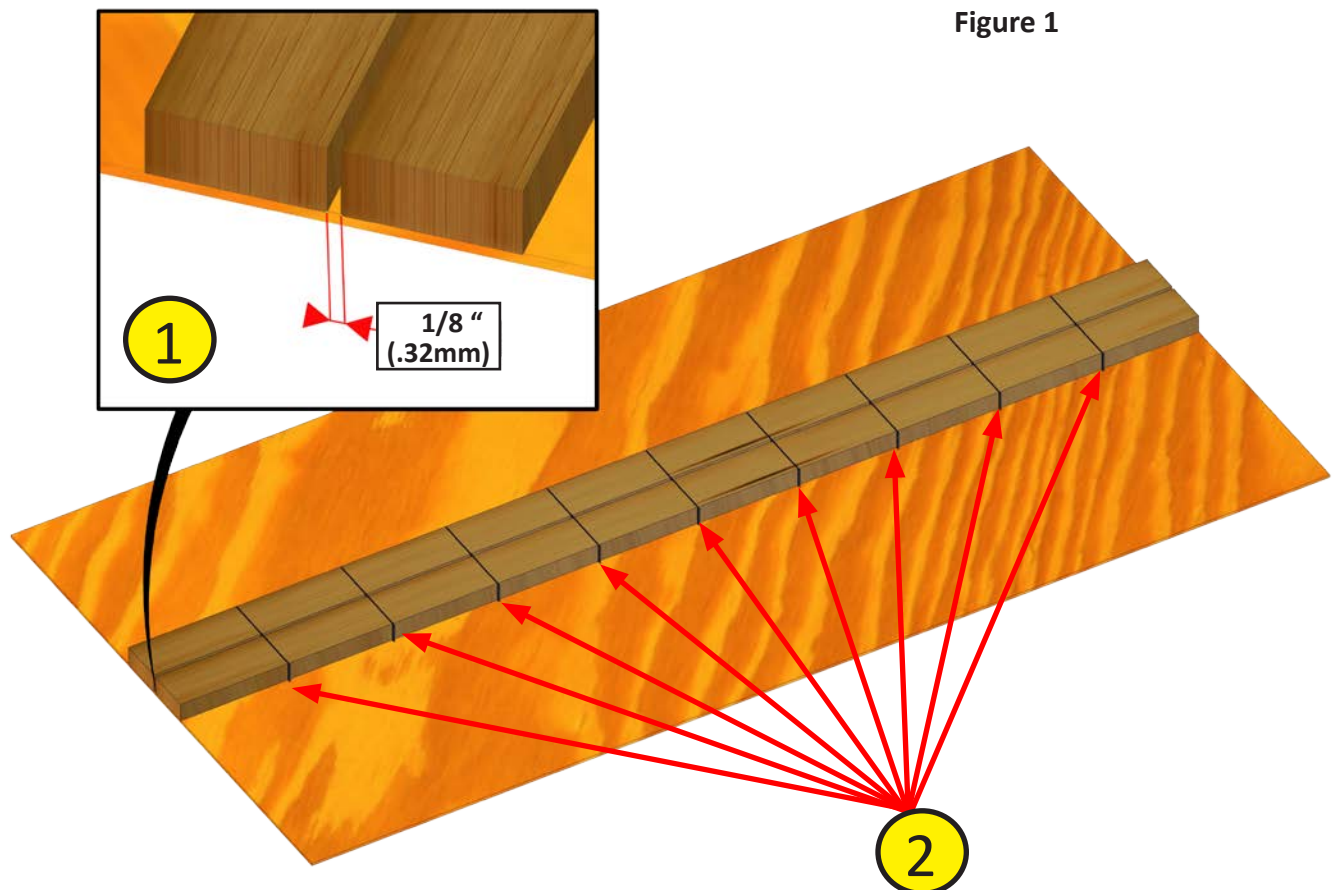


Figure 1

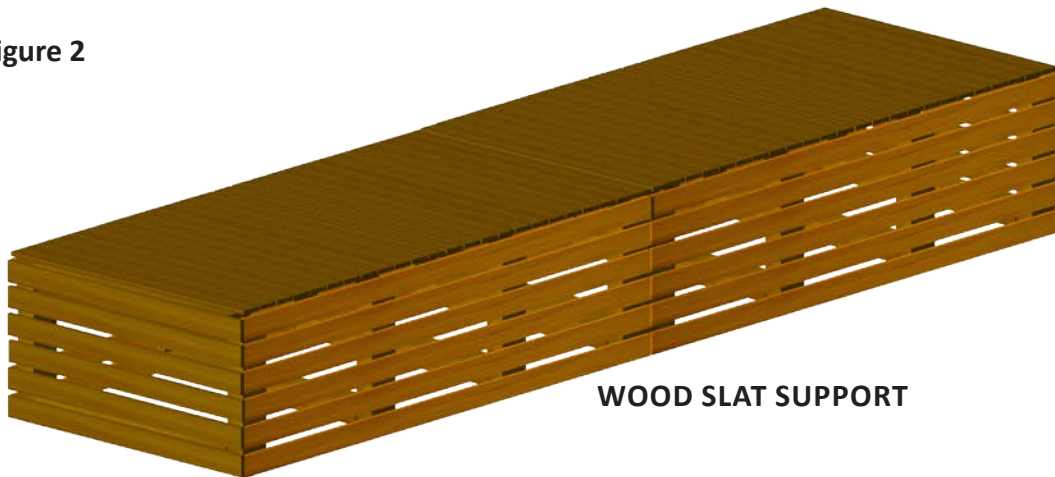
# NEST ASSEMBLY

## Nest Support



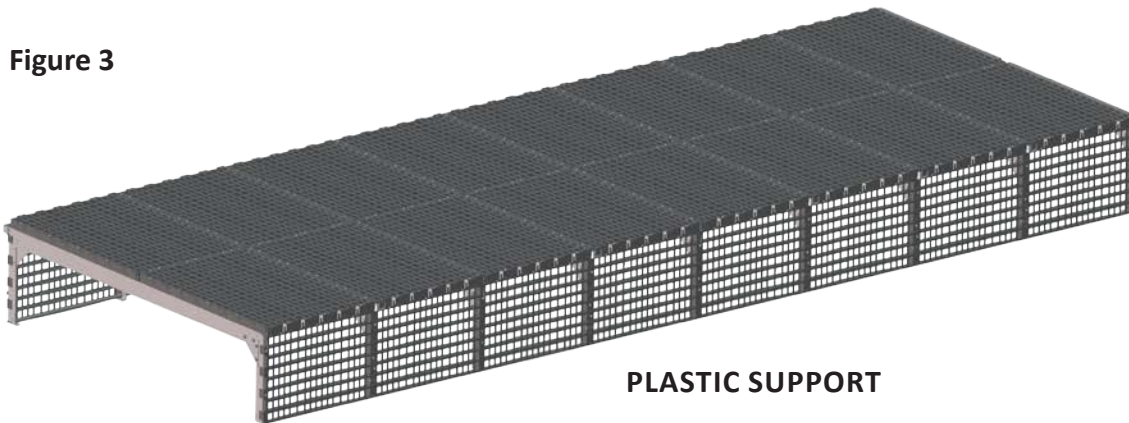
When setting up the nest you have two choices; one being the use of wood slat supports and the other being a biosecure system of plastic supports available from VAL-CO®. Both are shown below. This manual will use wood supports for installation examples.

Figure 2



WOOD SLAT SUPPORT

Figure 3

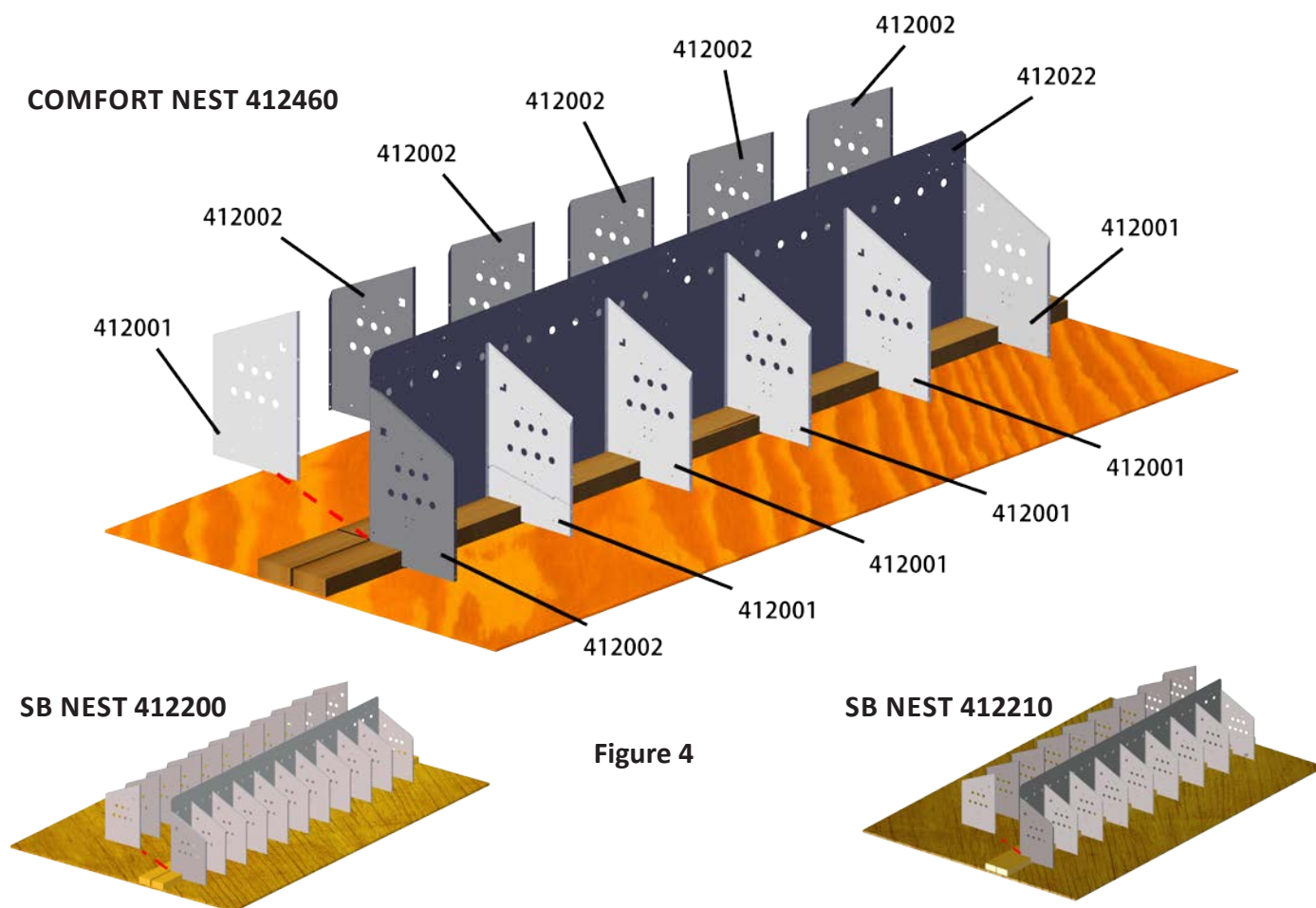


PLASTIC SUPPORT

## Partitions (Using wood fixture)

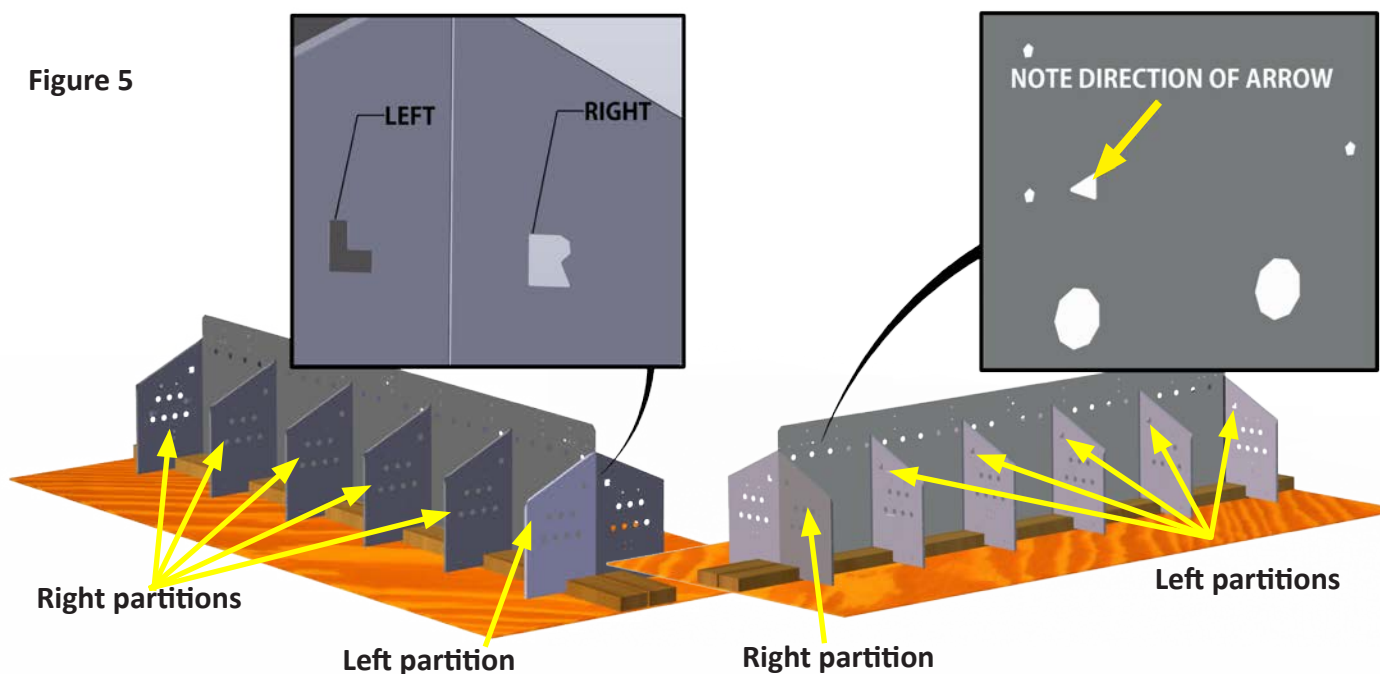
1. Position 412022 middle panel and 412001 & 412002 partitions shown in Figure 4 and 5 (on next page) into the wood fixture. partitions are identified with an "L" or "R" cutout for ease in assembly as detailed in Figure 5. *The Side Belt Comfort 412460 and Side Belt nests 412200 and 412210 assemble in a similar fashion with a few exceptions. These exceptions will be pointed out throughout the assembly instructions. The examples going forward are of the Comfort Nest which has larger nest boxes, different nest bottoms, egg deflectors, and roof panels designed for optional curtains, with roof supports.*

## Partitions (Using wood fixture)



The direction of the **ARROW CUTOUT** on the center panel and various other parts **MUST ALL BE POINTING THE SAME DIRECTION AS YOU ASSEMBLE.**

**Figure 5**





## Partitions (riveting to middle panel)

2. Rivet the top (3) holes of each 412001 left partitions and 412002 right partitions to middle panel as shown in Figure 6. Partitions can be riveted from either side. Be sure the rivet is thru BOTH partitions (on each side of middle panel) before securing the rivets. Each partition has (4) holes. **Rivet the top (3) in this step.**

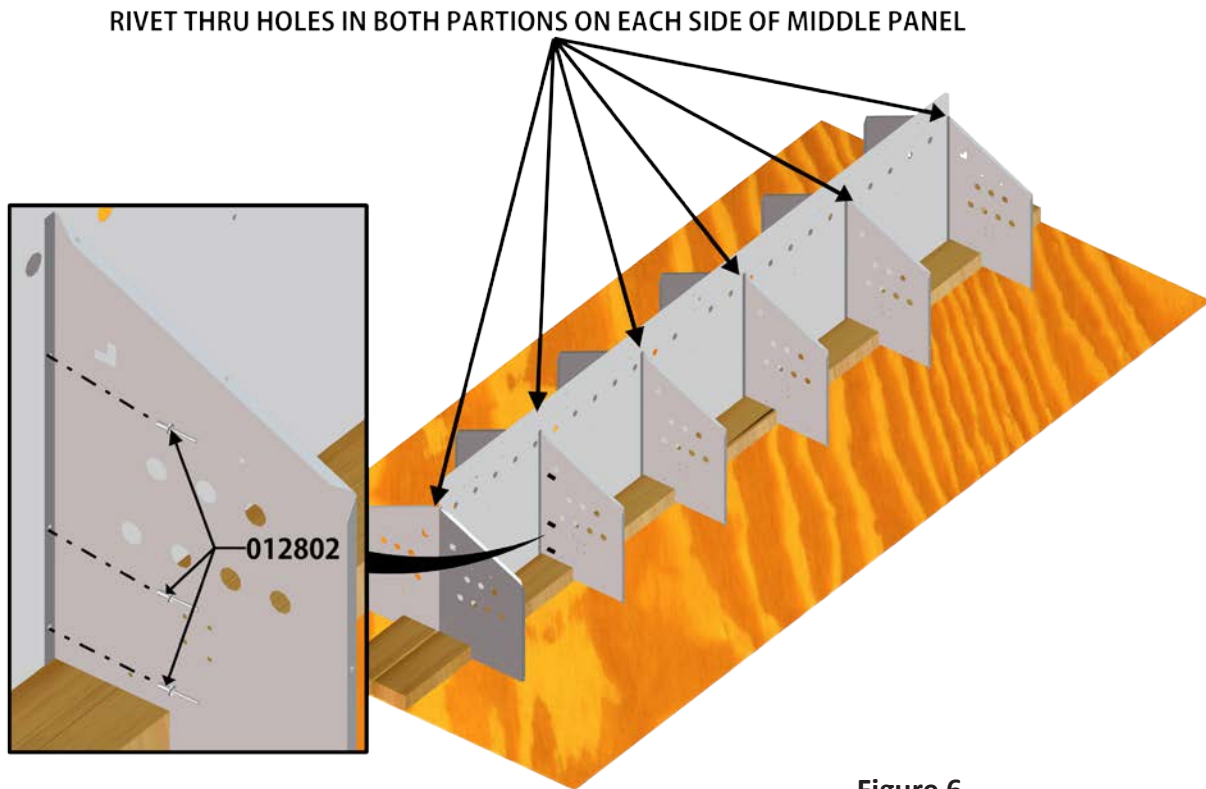
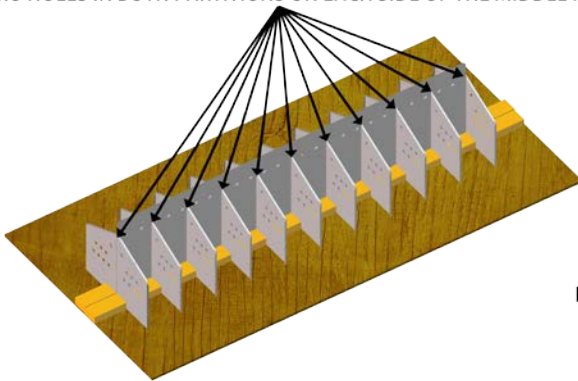


Figure 6

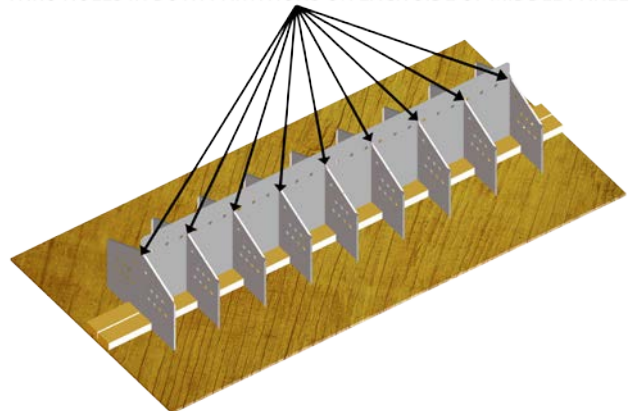
### SB NEST 412200

RIVET THRU HOLES IN BOTH PARTITIONS ON EACH SIDE OF THE MIDDLE PANEL



### SB NEST 412210

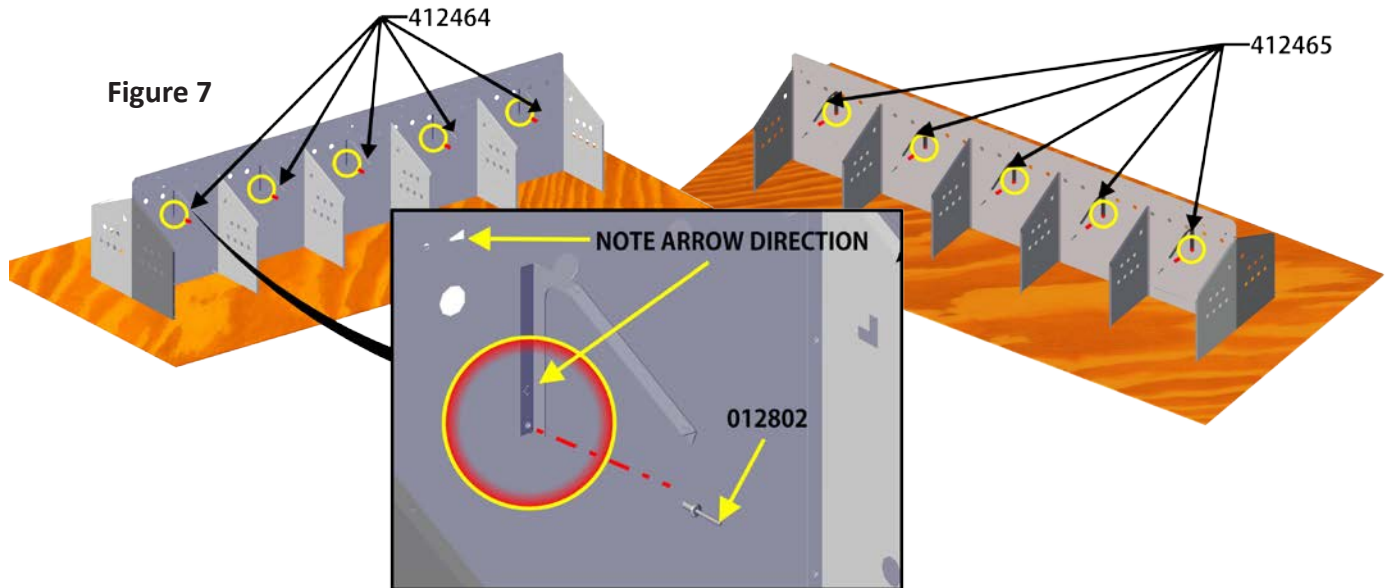
RIVET THRU HOLES IN BOTH PARTITIONS ON EACH SIDE OF MIDDLE PANEL



## Partition Roof Supports

- When assembling a 412460 Comfort Nest, rivet roof supports (braces) to middle panel, shown in Figure 7. **Use the LEFT supports for the left side and the RIGHT supports for the right side of the middle panel. BE SURE ALL ARROWS ARE POINTING THE SAME DIRECTION!**

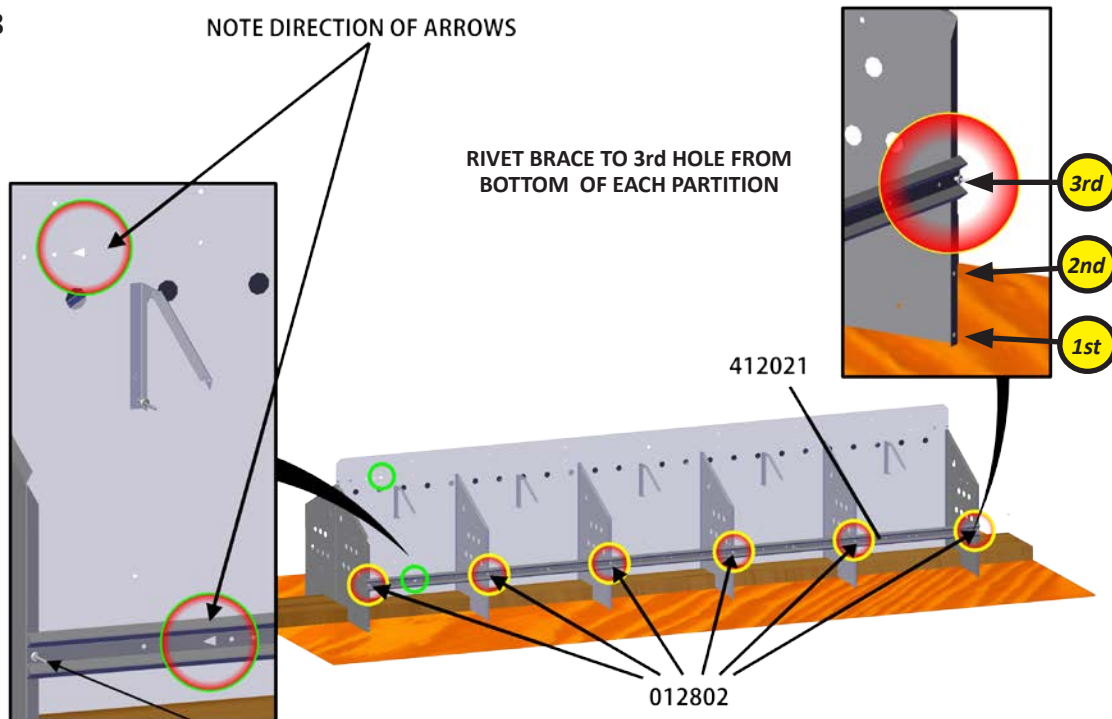
**EXCEPTION** for 412200 and 412210 side belt nests are that they have no roof supports because they have additional partitions to support the roof.



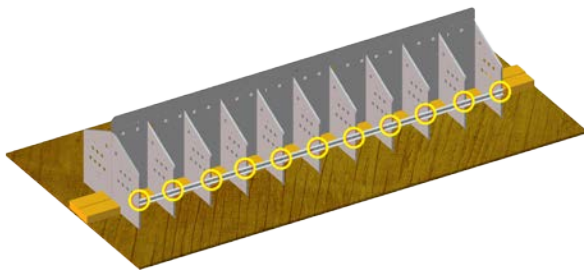
## Partition Front Brace

4. Making sure that the stamped arrow on the partition brace is pointing the same direction as the stamped arrow on the middle panel, rivet the partition brace to the third hole from bottom of each partition and repeat on opposite side.

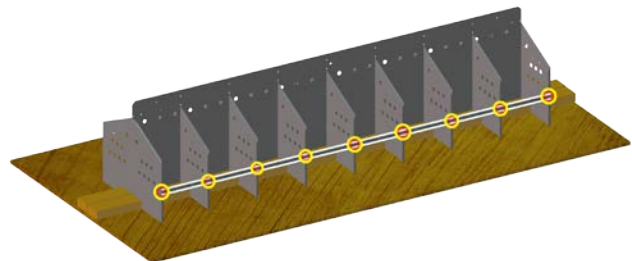
**Figure 8**



### SB NEST 412200



### SB NEST 412210

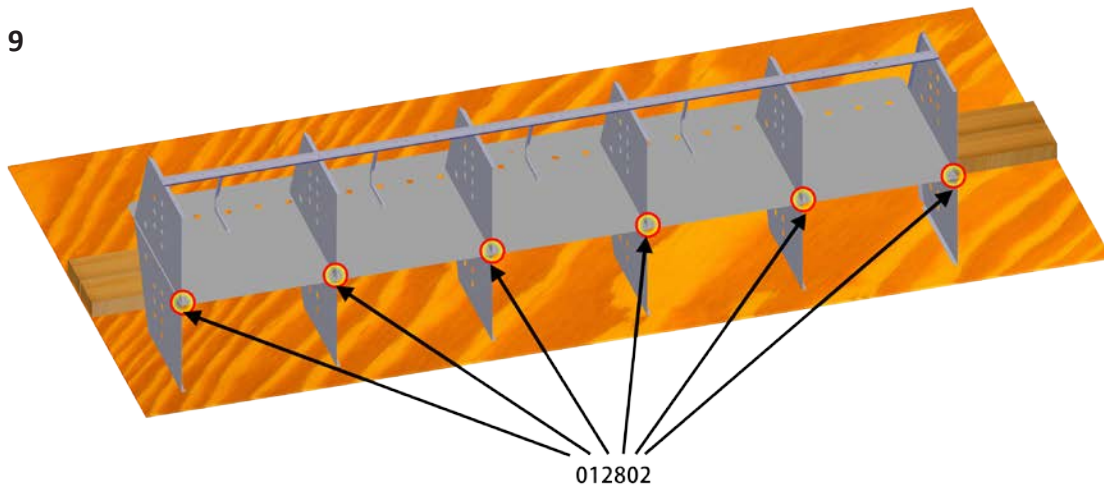




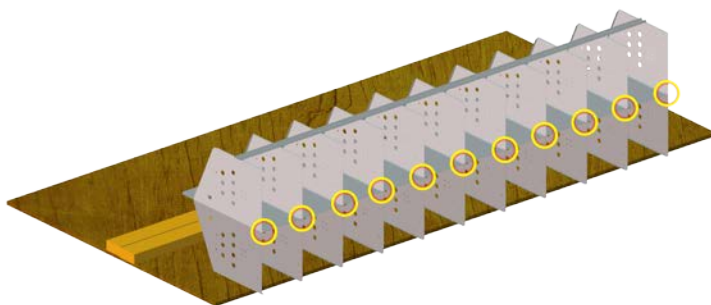
## Partition Front Brace

5. Carefully tip nest assembly onto it's side and rivet through both partition's bottom hole, shown in Figure 9.

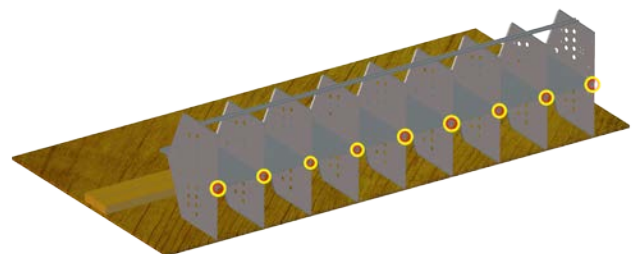
Figure 9



**SB NEST 412200**



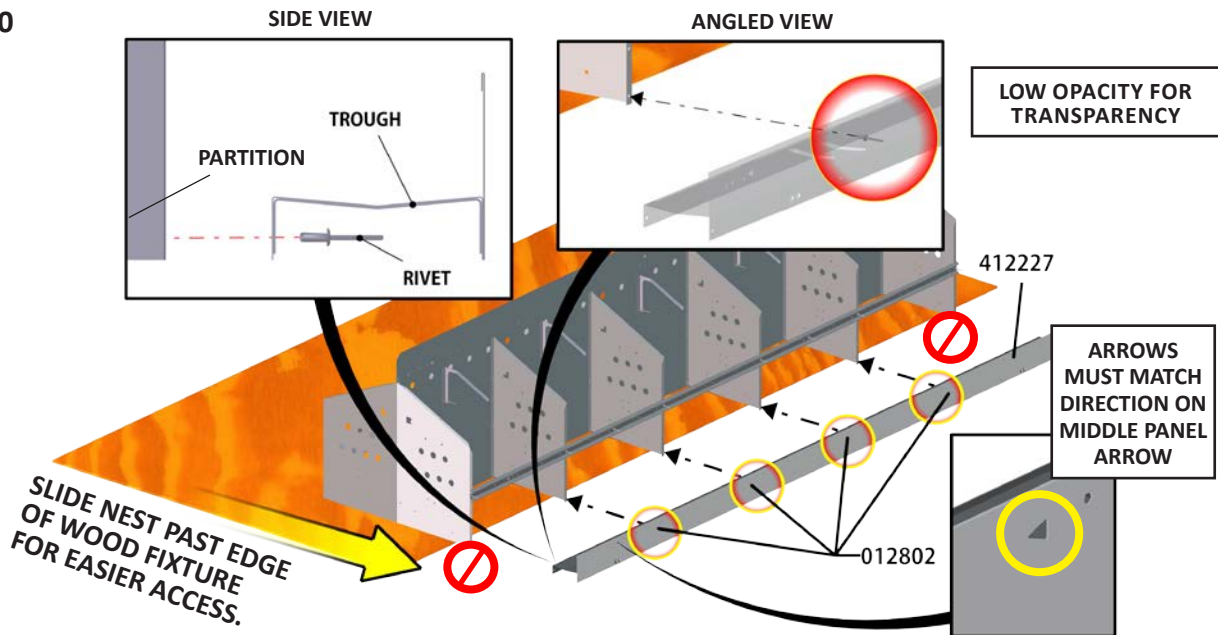
**SB NEST 412210**



# Trough

6. After all holes of the inside flange of the partitions are riveted to the middle panel, move the assembly off the wood fixture and to the edge of your work table. Right and left troughs are easily determined by **aligning arrows on front trough panel with arrows on the middle panel** of the assembly. Rivet using 012802 rivets to the bottom outside flange hole of the partition as arrows show. Be sure to rivet from the trough side, shown in Figure 10.

Figure 10



Do not rivet to END partitions until trough connectors are assembled to TROUGH ENDS. Connectors may be attached now or when you are connecting the nests or trough covers.

## Wire Rod & Clips

7. Rivet (2) wire rod clips to one end partition. Be sure to use the front and back holes, labeled CN, for the 412460 Comfort Nest, shown in Figure 11, and rivet from outside of the partition.

**NOTE:** The rod clips for the 412200 and 412210 are NOT positioned into the front or back holes. The inner holes, labeled SB, must be used, shown in Figure 12.

(See Figures 13 & 14 on the following page for detailed locations of CN & SB markings on the partitions.)

Figure 11

412460 Comfort Nest position

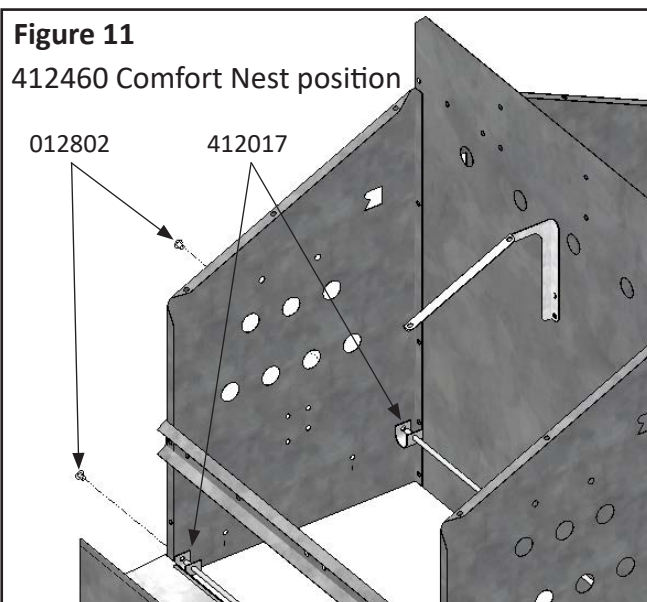
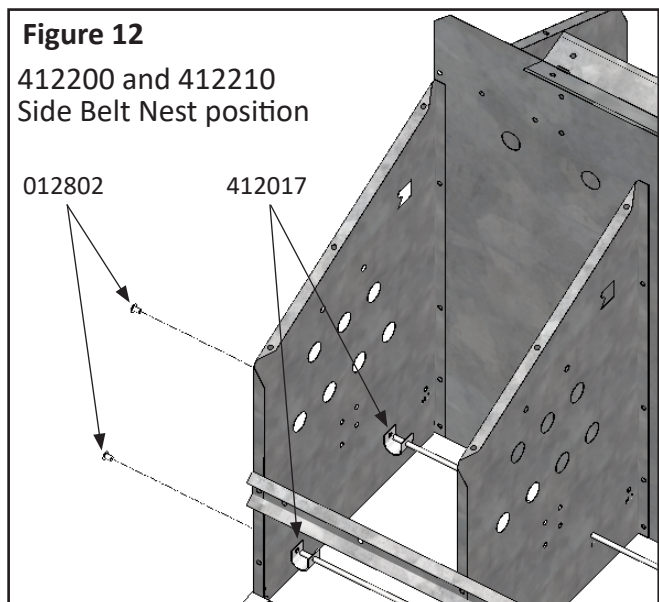
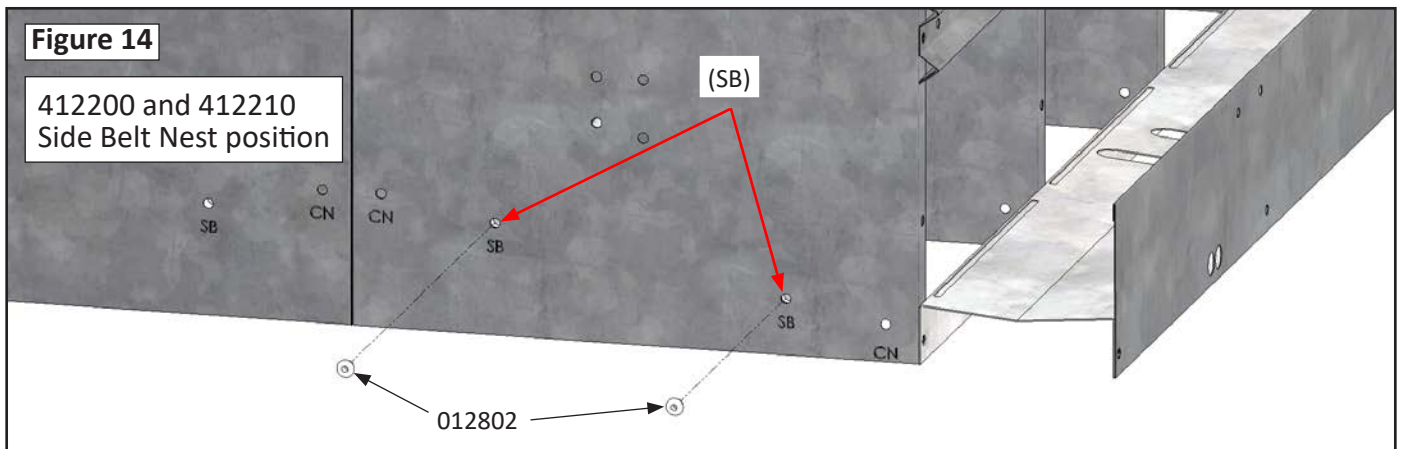
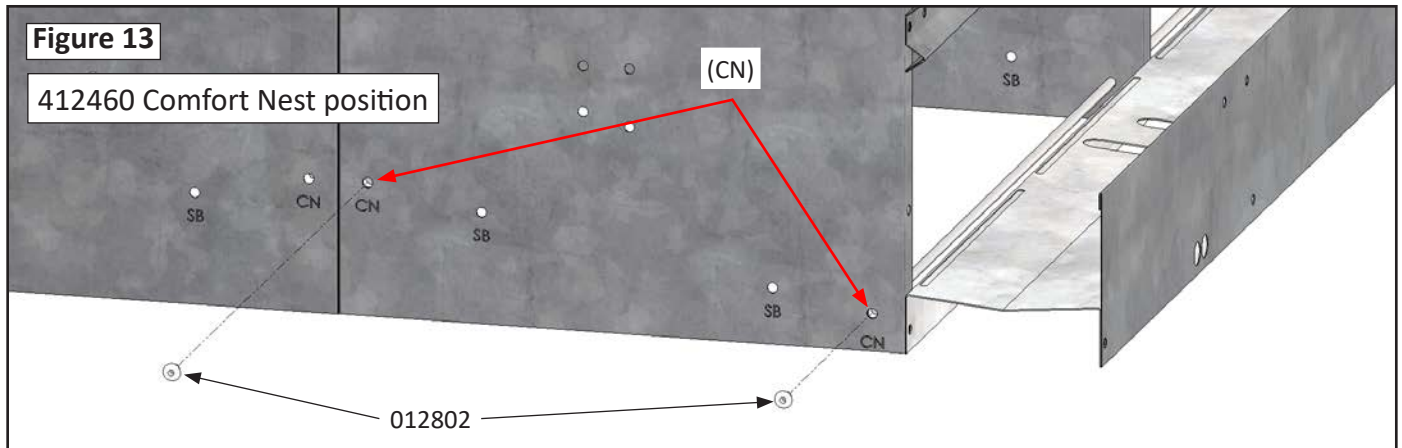


Figure 12

412200 and 412210 Side Belt Nest position



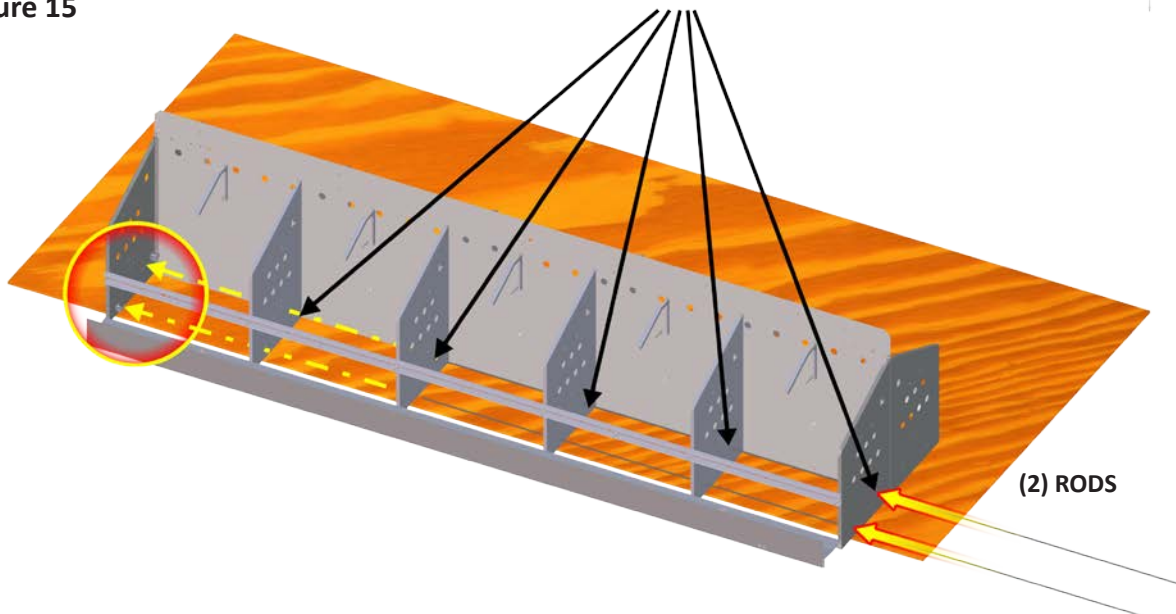
## Wire Rod & Clips



8. Thread (2) rods thru all partitions from the opposite end of the nest (from wire rod clips), again using the properly labeled holes based upon the particular nest being assembled as described in the previous step.
9. Next, thread rods into the wire rod clips installed, shown circled in Figure 15. Push both all the way into the clips, then thread (2) wire rod clips on opposite end of the rods. Rivet these to the partition at this end of nest (again, from the outside), as Figure 16 and 17 show on the next page.

**Figure 15**

**THREAD BOTH RODS THROUGH HOLES IN PARTITIONS AND INTO WIRE ROD CLIPS**





# Wire Rod & Clips

Figure 16

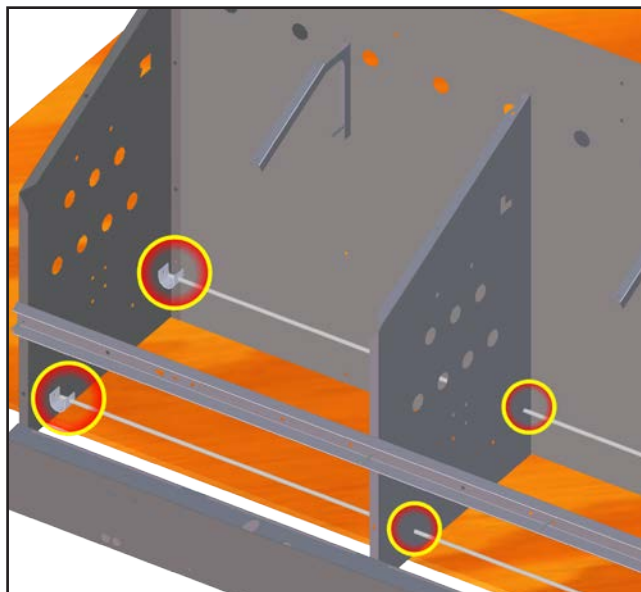
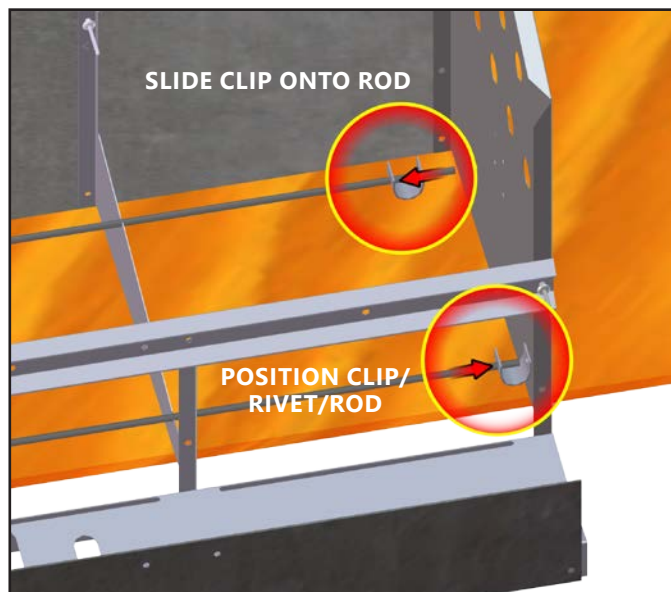


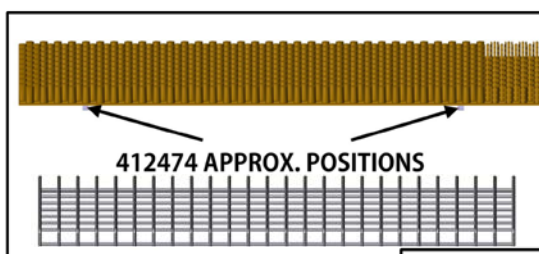
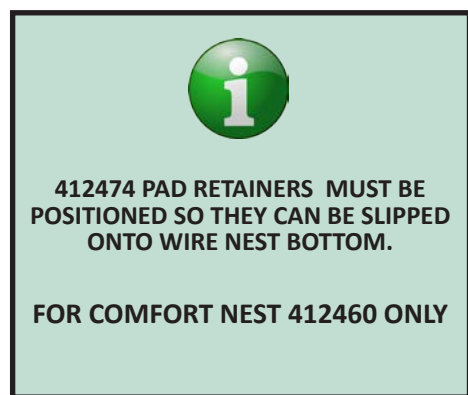
Figure 17



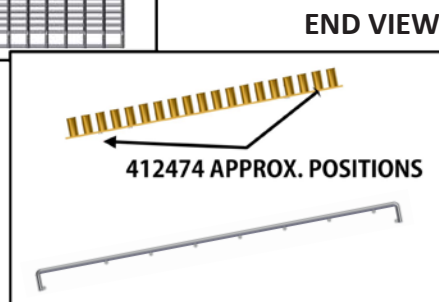
## Nest Bottoms & Pads

10. **FOR COMFORT NEST 412460 ONLY - FOR 412200 OR 412210 SB NESTS skip to lines 10a - 12a of instructions.**  
Attach (4) of the 412474 retainer clips to the corner areas of the pad by pushing the teeth into the pad bottom, shown in Figure 18. Be sure you have pushed them all the way in so that the bottom of the pad is secured around the bottom of each tooth on the pad retainer.

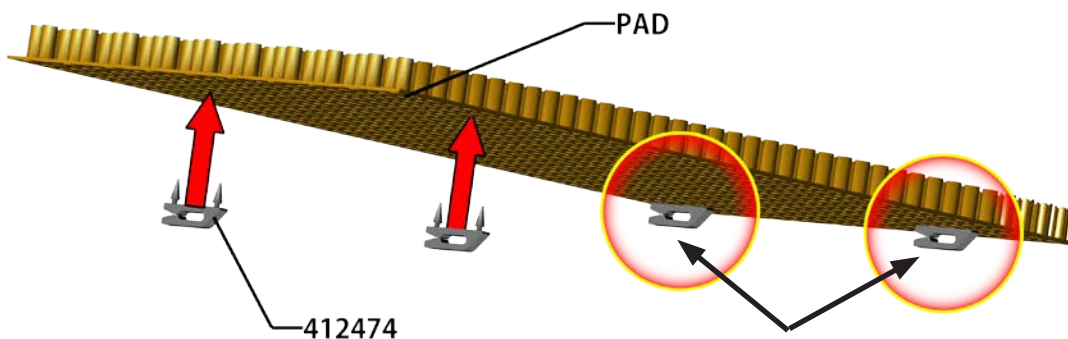
Figure 18



FRONT VIEW



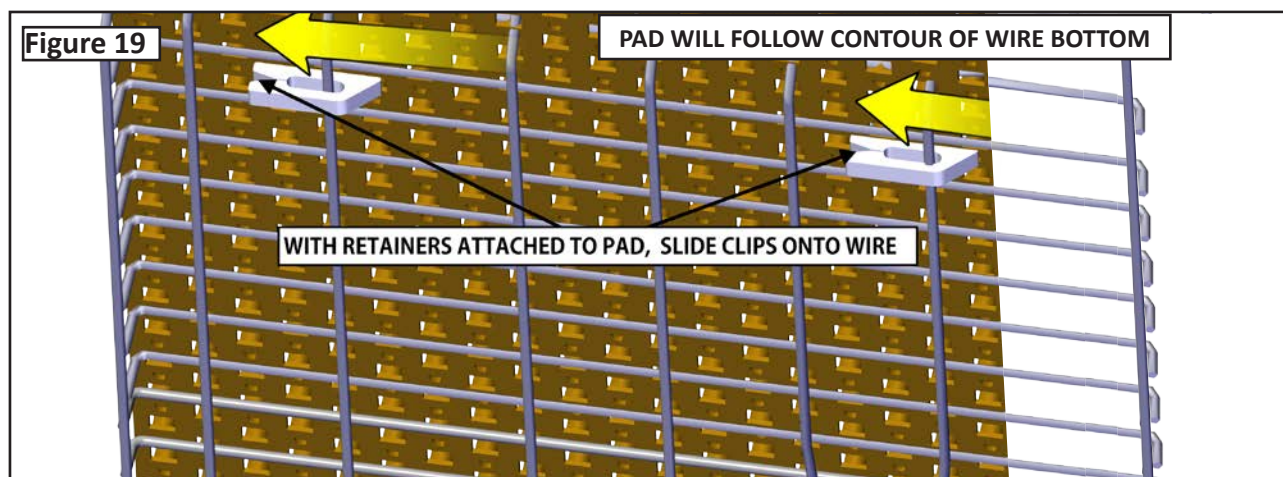
END VIEW



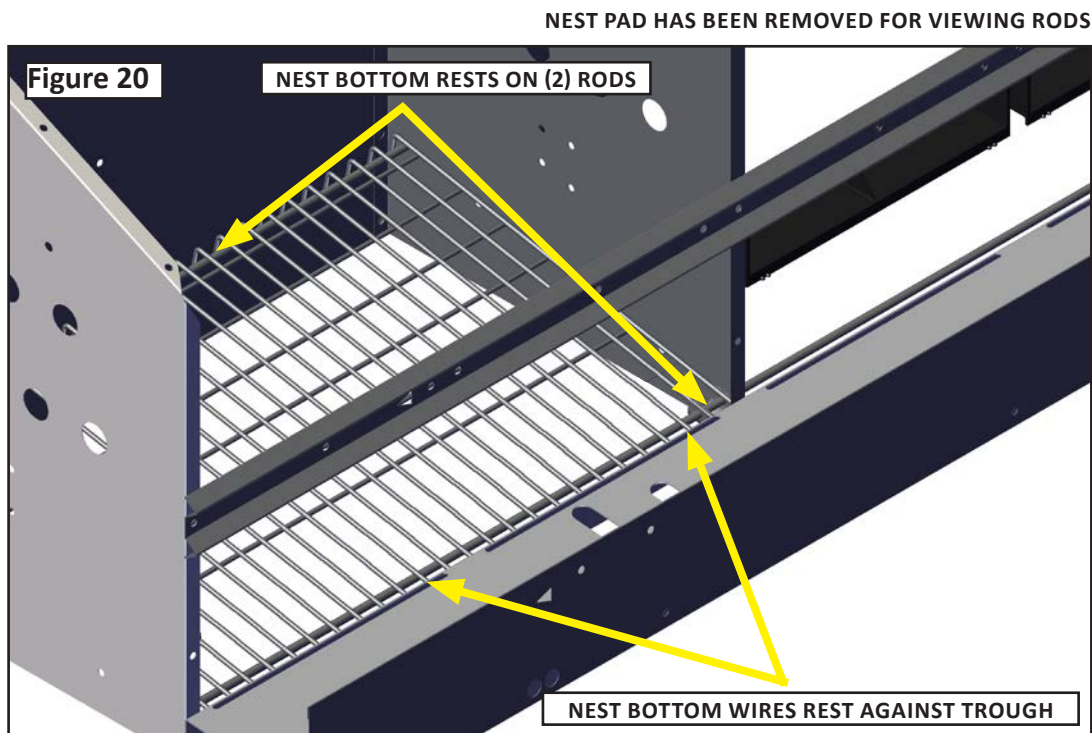
412474 PAD RETAINERS PUSHED INTO PAD CORNERS

## Nest Bottoms & Pads

11. Now slide the pad retainers of the comfort nest 412460 onto the nest bottom wires as shown in Figure 19.



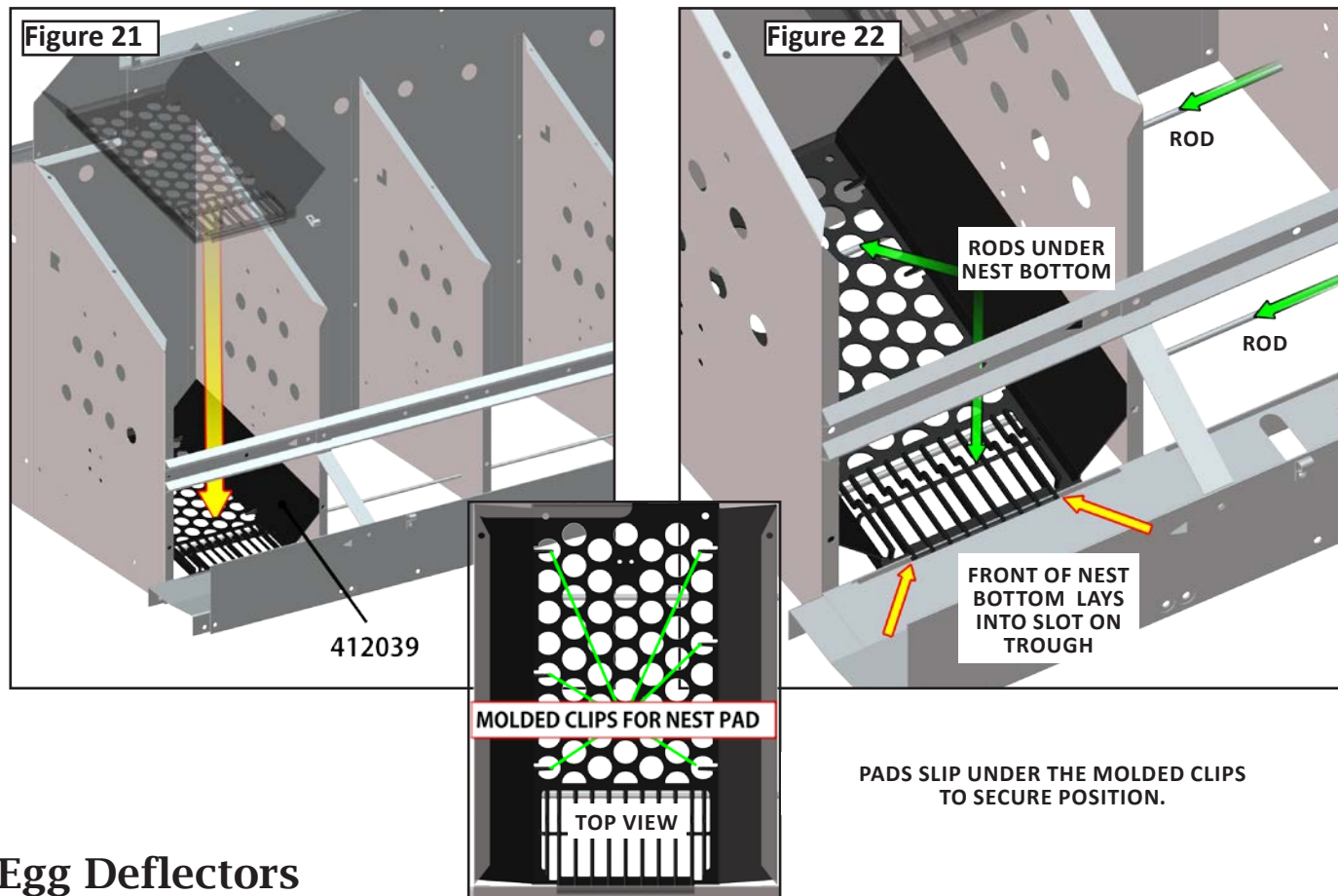
12. Place the nest bottom onto the rods as shown below, with the end that has no extra cross wires against the trough. The wires of the nest bottom seat on the rods securely. The lip on the nest bottom rests against the back side of the trough and should slide between partitions. Details are shown in Figure 20.



## Nest Bottoms & Pads

**412200 and 412210 Nest Bottoms & Pads.** Use these instructions 10a - 12a for 412200 and 412210 to replace steps 10 - 12 of the Comfort Nest.

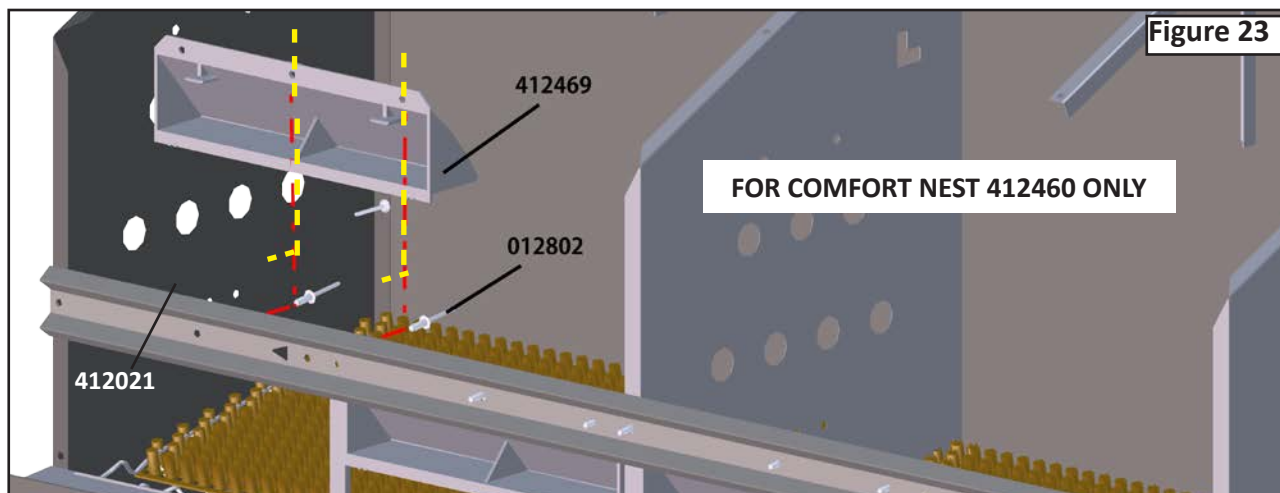
10a- 12a. Lay each nest bottom for each nest hole onto the (2) rods previously inserted as shown in Figure 21. Front of nest bottom is inserted into slot of trough, shown in Figure 22. Nest pads slip under molded clips to seat securely on nest bottoms.



## Egg Deflectors

13. **COMFORT NEST 412460 ONLY - for 412200 or 412210 SB Nests skip to line 13a.**

Position egg deflector behind partition brace of the 412460 Comfort Nest, then align holes and attach 012802 using rivets. Make sure you do this from the inside of the nest so the rivet head is against the plastic egg deflector, shown in Figure 23. It is only necessary to secure the egg deflector with (1) rivet at center, you may add a second rivet if you choose as shown.

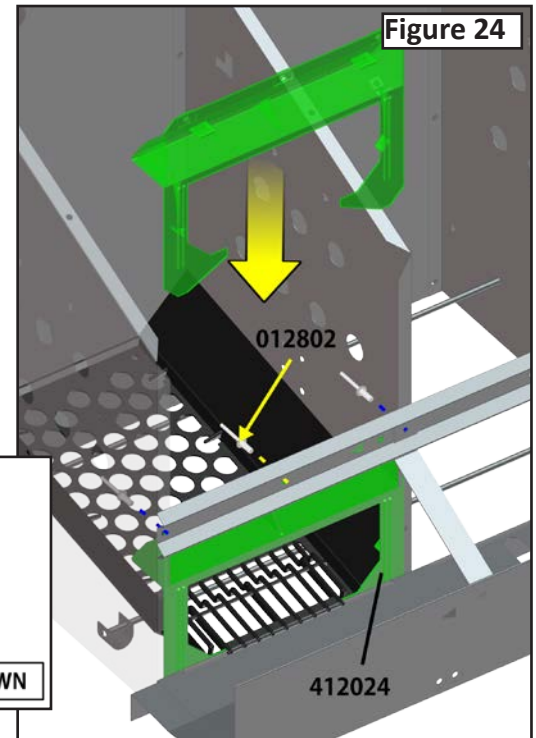
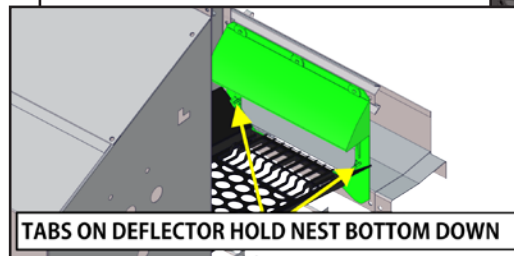
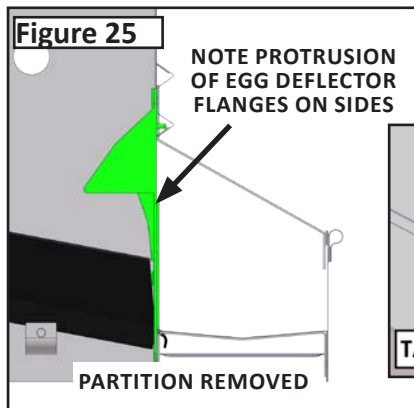




## Egg Deflectors

**412200 and 412210 Egg Deflectors.** Use these instructions 13a to replace step 13 of the Comfort Nest.

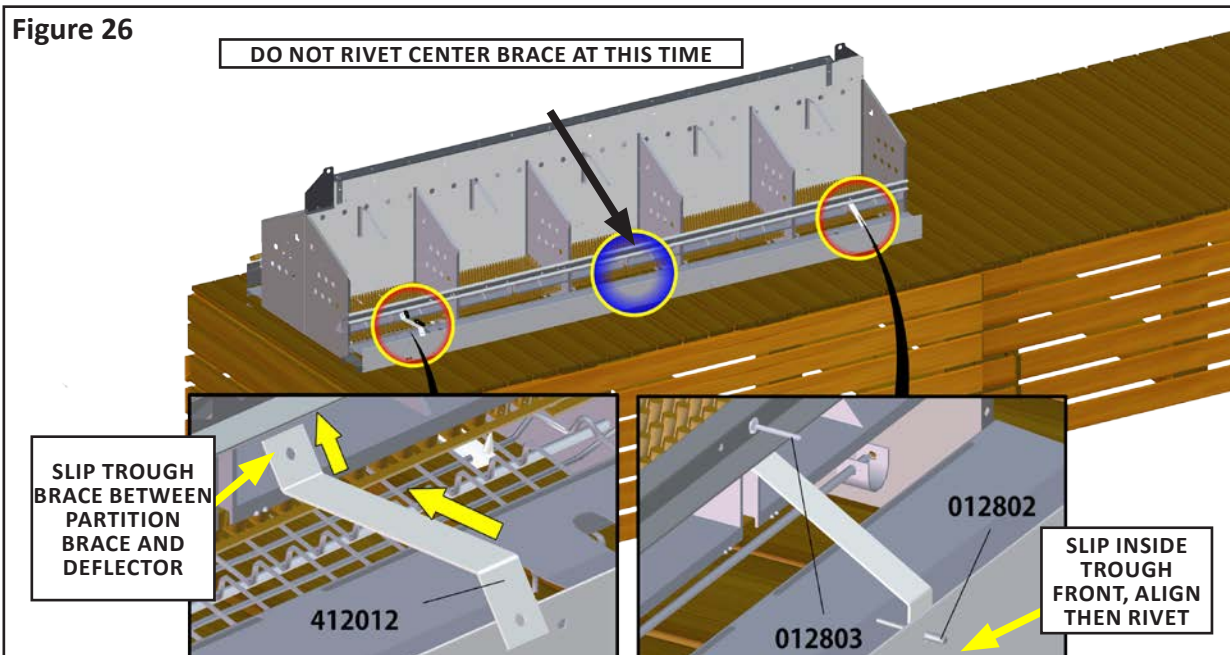
- 13a. Position the top edge of the egg deflector behind partition brace. Align holes and attach using 012802 rivets. Make sure you do this from the inside of the nest so the rivet head is against the plastic egg deflector, shown in Figure 24. The flanges on both sides of the egg deflector should lay against the front side of the partition flanges shown in Figure 25. It is only necessary to secure the egg deflector with (1) rivet at center, you may add additional rivets if you choose.



## Trough Brackets to Trough

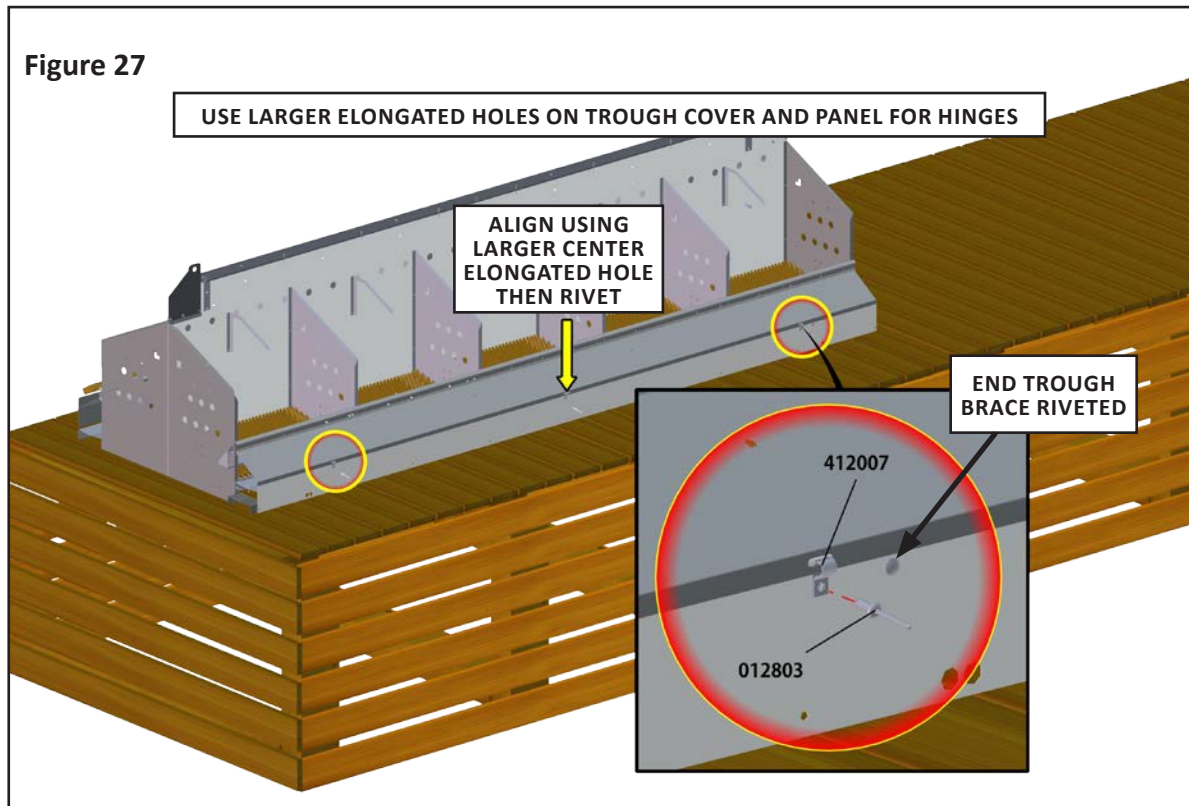
14. Align holes and rivet all (3) braces secure with 012803 #64 X 3/16" long rivets, shown in Figure 26. Place other end of brace INSIDE front trough panel and rivet end braces secure with 012802 #62 X 3/16" short rivets.

**DO NOT RIVET CENTER BRACE TO TROUGH AT THIS TIME.**



## Trough Covers

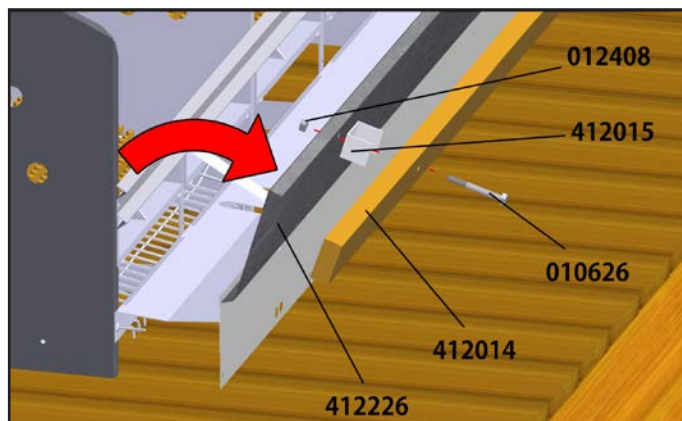
15. Use the **ELONGATED** holes next to both end trough braces. Rivet to the front trough panel with the flat side of hinge against front trough panel using 012803 long rivets. Align trough brace with the center **LARGER ELONGATED HOLE** (shown with arrow) on the trough cover and front trough panel. **Now rivet the center and end hinges through the front trough panel, trough cover and trough brace at the same time with (1) long rivet.**



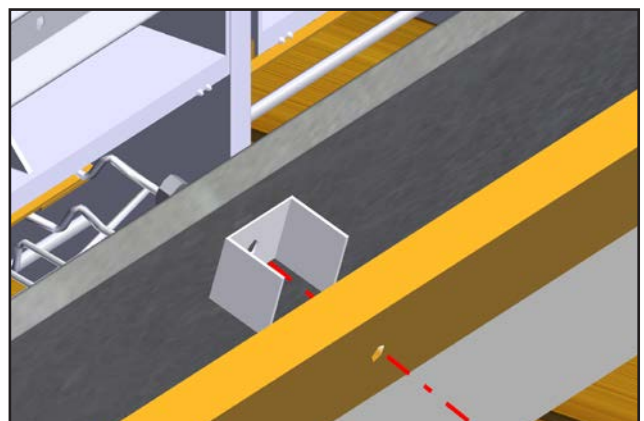
## Assemble Perch Boards to Trough Covers

16. To assemble perch board to trough covers, begin by pulling the trough cover open. Use the (4) perch brackets, 1/4" x 2-1/4" bolts and 1/4" locknuts for each nest side. Assemble the perch bracket so the legs of the bracket are against the perch board and the flat body of the bracket is against the trough cover, as shown in Figure 28 and Figure 29.

**Figure 28**



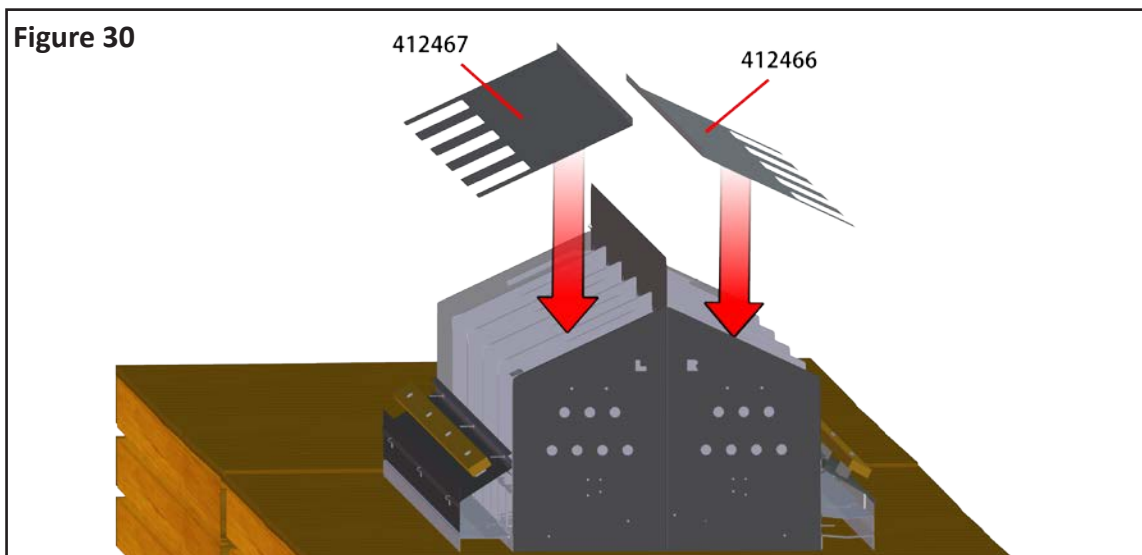
**Figure 29**





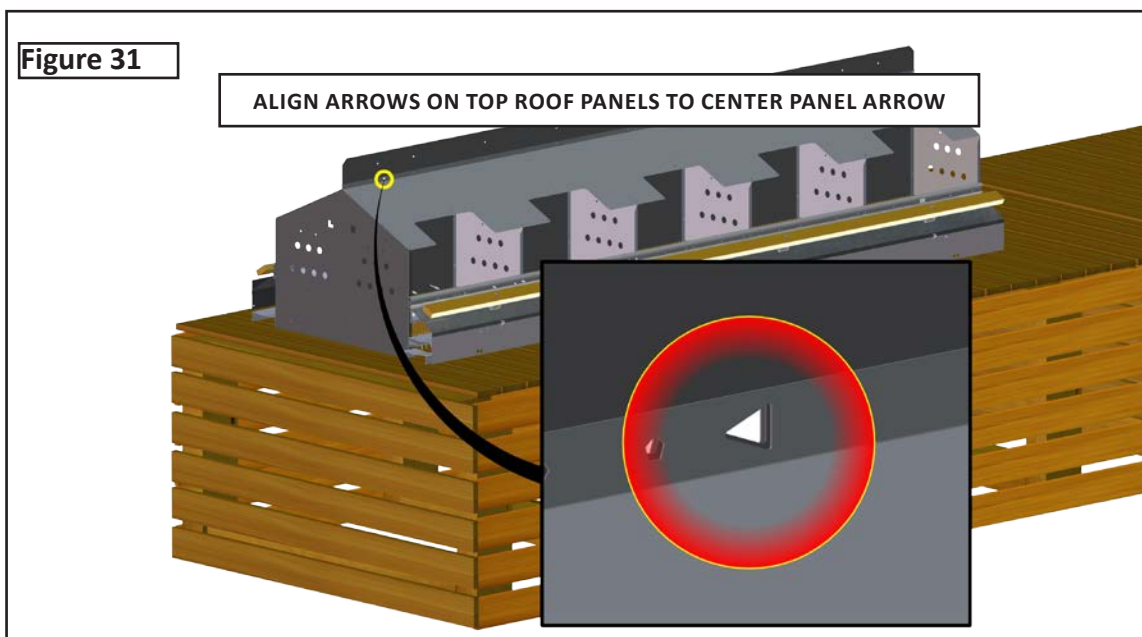
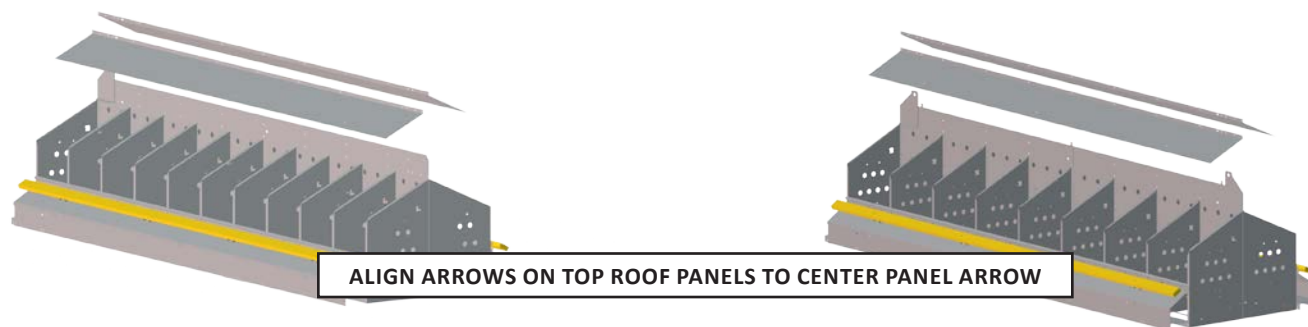
# Roof Panels

17. Lay (1) right & (1) left top roof panel on top of partitions keeping the arrows aligned in the top roof panels with the arrows in the middle panel.



**SB NEST 412200**

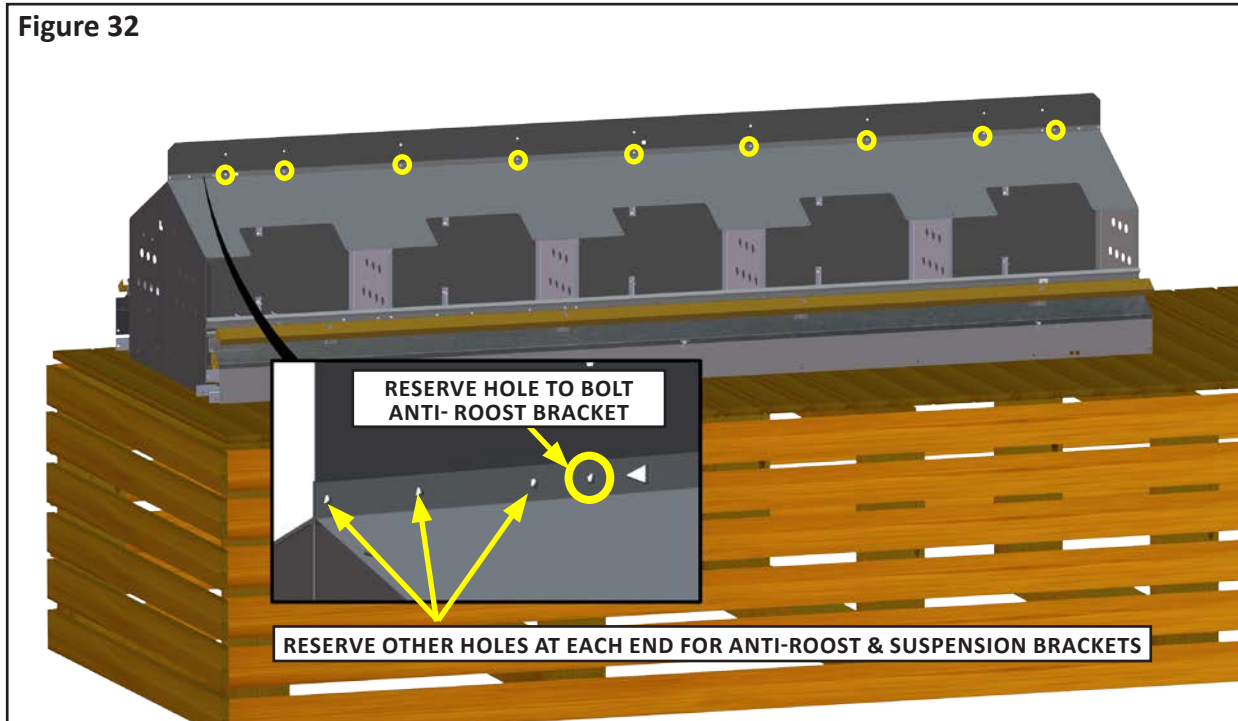
**SB NEST 412210**



## Roof Panels

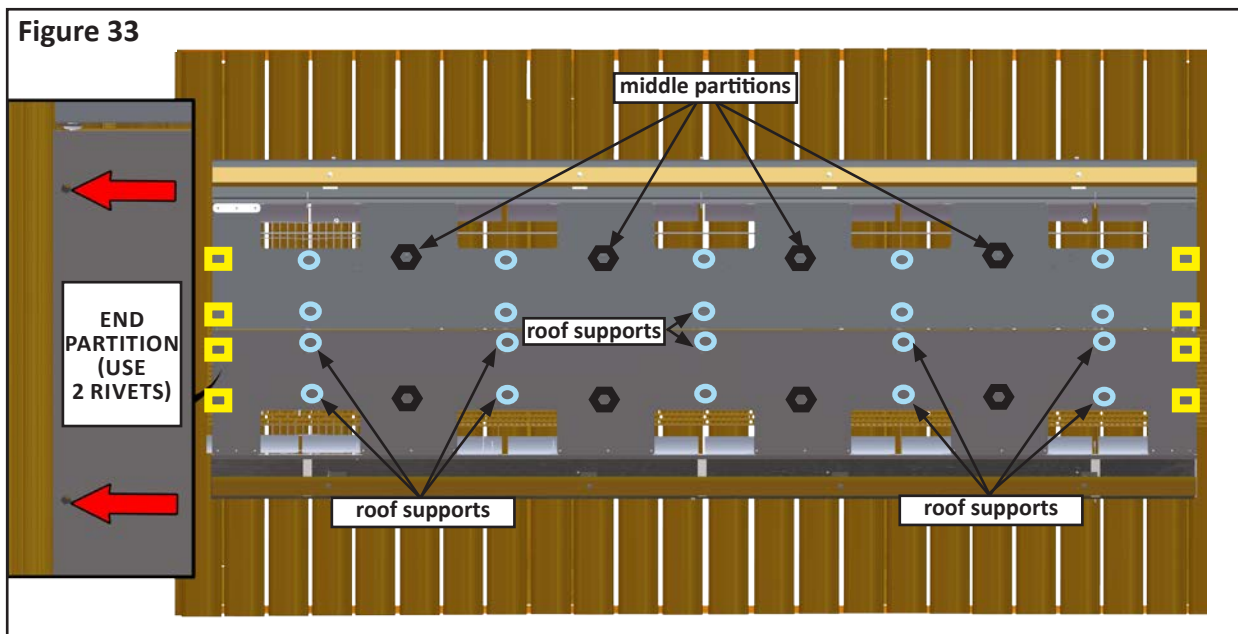
18. Secure the top roof panels of the comfort nest to the center panel using 012802 short rivets, as shown circled in Figure 32.

**Figure 32**



19. Rivet roof panels of the comfort nest with 012802 short rivets to partitions, using (2) rivets in each END partition shown with squares and (1) rivet in each MIDDLE partition shown with hexagons in Figure 33. Rivet roof supports 412464 right and 412465 left using (2) 012802 short rivets shown with circles to secure.

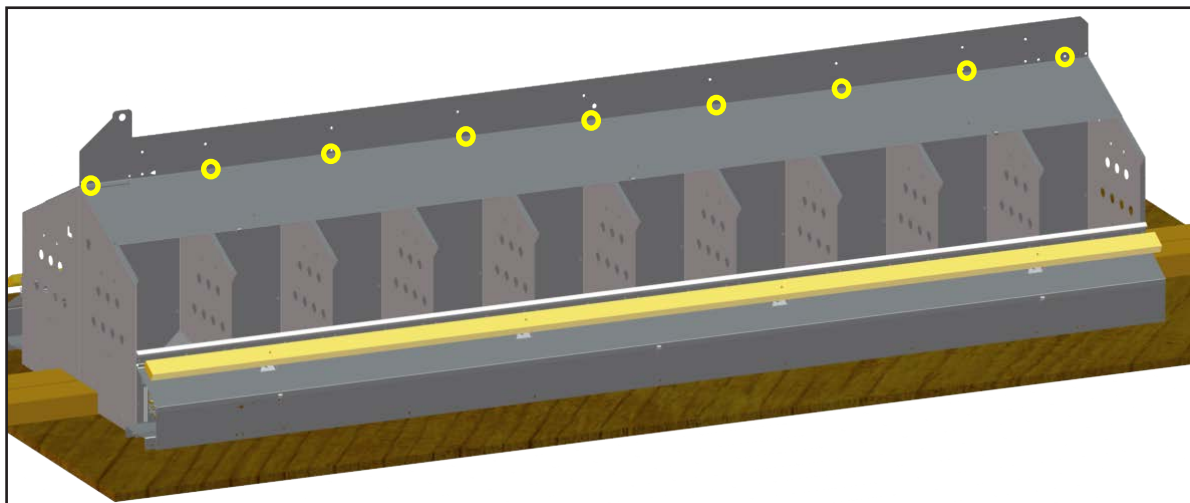
**Figure 33**



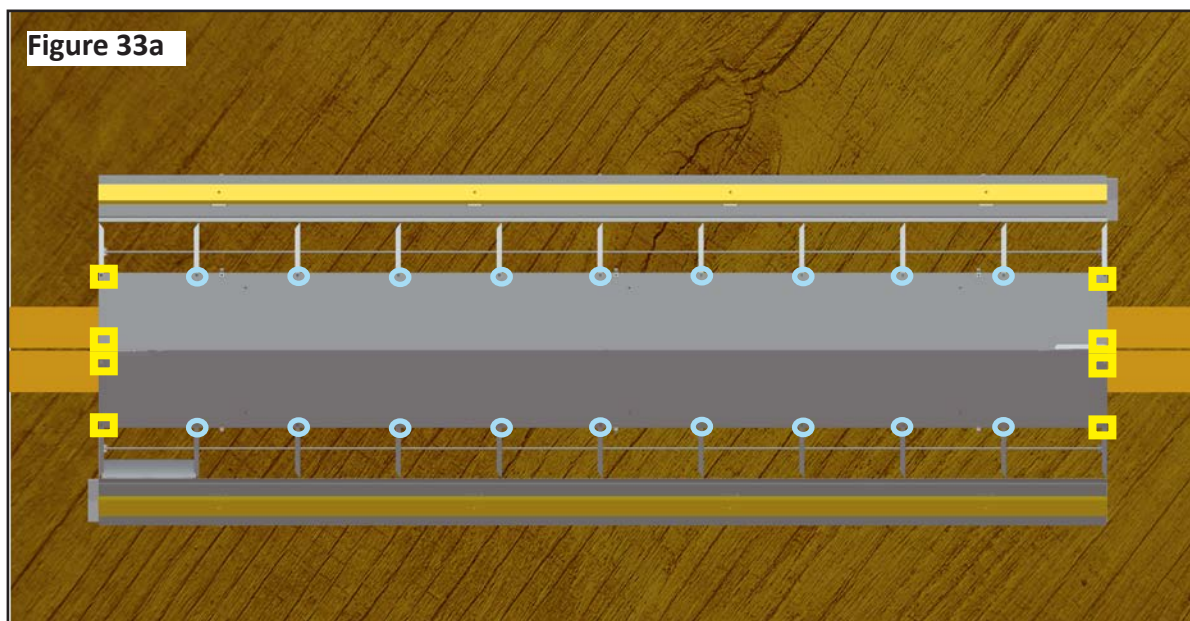
## Roof Panels

- 18a. Secure the top roof panels 412005 right and 412006 left of the **412200** side belt nest **OR** 412240 right and 412241 left of the **412210** side belt nest to the center panel using 012802 short rivets, as shown circled in Figure 32a.

**Figure 32a**

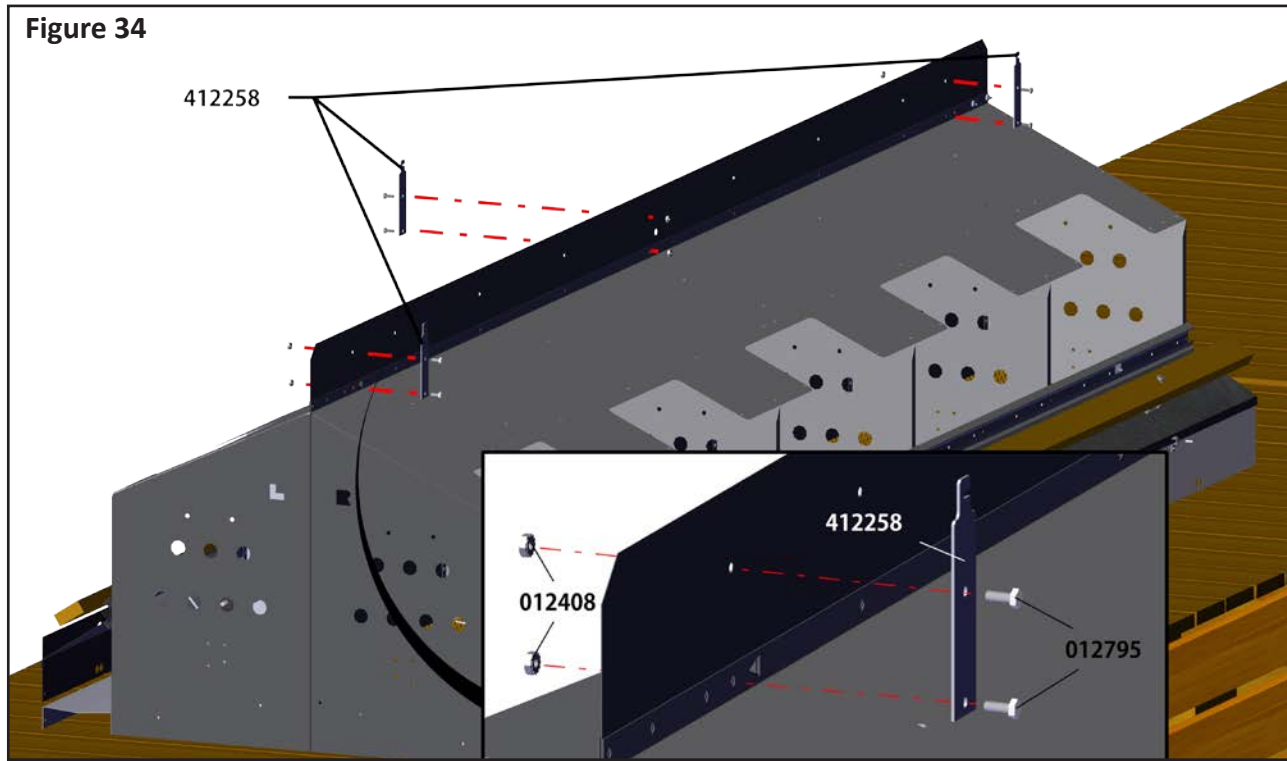


- 19a. Rivet roof panels of the **412200/412210 side belt nests** with 012802 short rivets to partitions, using (2) rivets in each END partition shown with squares and (1) rivet into each MIDDLE partition shown with circles to secure in Figure 33a. (Holes have been pre-drilled to match the number of partitions.)



## Anti-Roost Braces

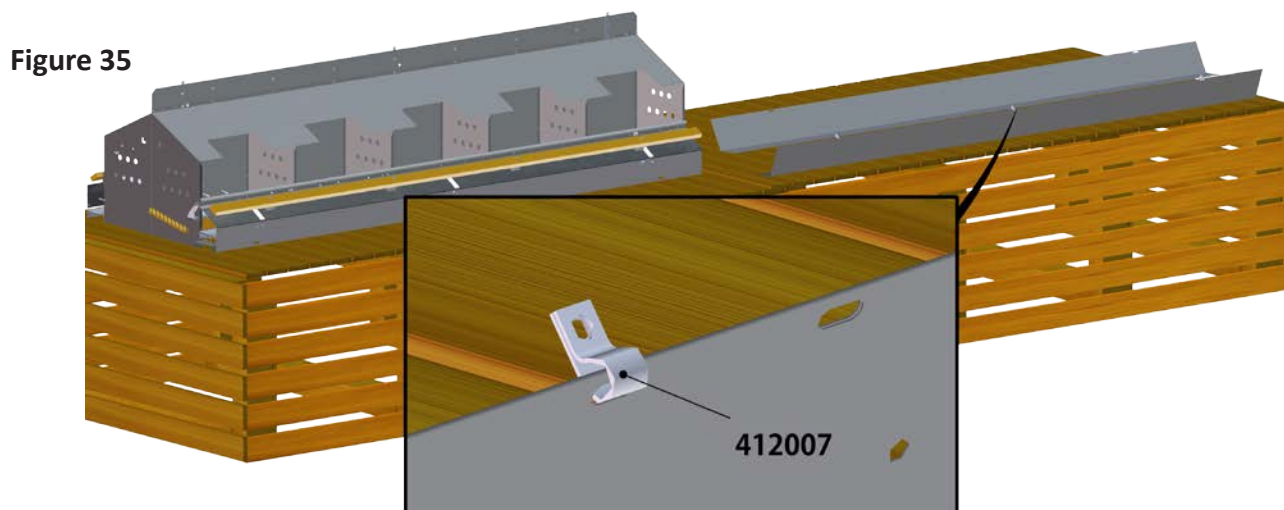
20. Using 012795 bolts and 012408 nuts, secure the (3) 412258 anti-roost supports to the center panel. Place one support at each end of the nest where the vertical set of holes matching the anti-roost support holes are located. Also place one support in the middle of the nest on the **OPPOSITE** side of the middle panel.



## Bottom Roof Panel

21. After both top roof panels and (3) anti-roost supports are assembled to nest, now prepare (2) bottom roof panels on work area with (3) hinges in each as detailed in Figure 33. Bend the legs together on each loop hinge and align to the holes on the top roof panel, as shown below.

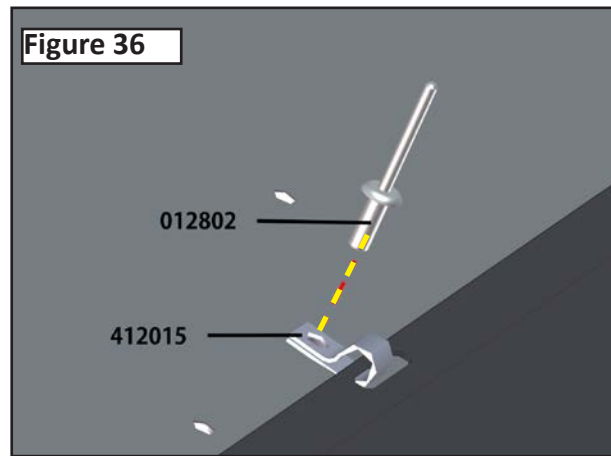
***Side Belt Nest 412200 and 412210 has no extended roof area to accomodate optional curtains.***





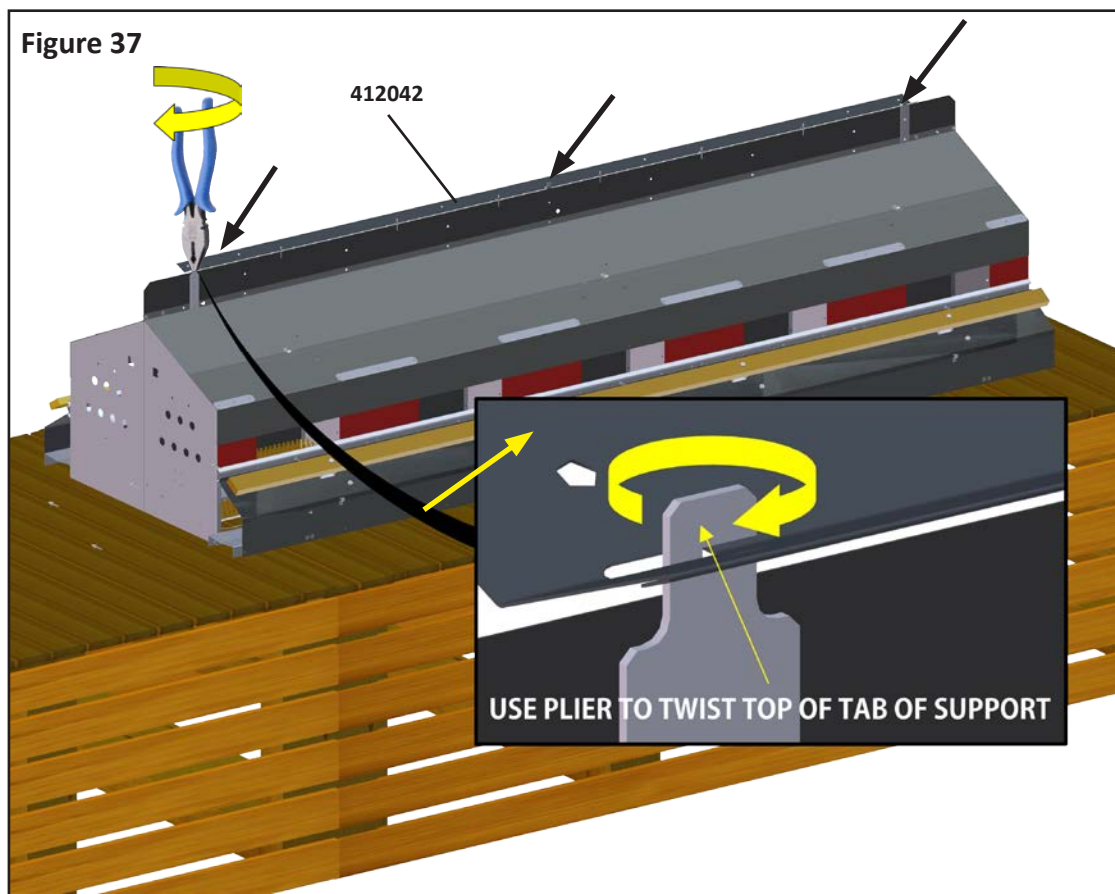
## Bottom Roof Panel

22. Rivet each loop hinge at the aligned hole with (1) short rivet, as shown in Figure 36. (There should be a total (3) hinges and (3) rivets per panel.)



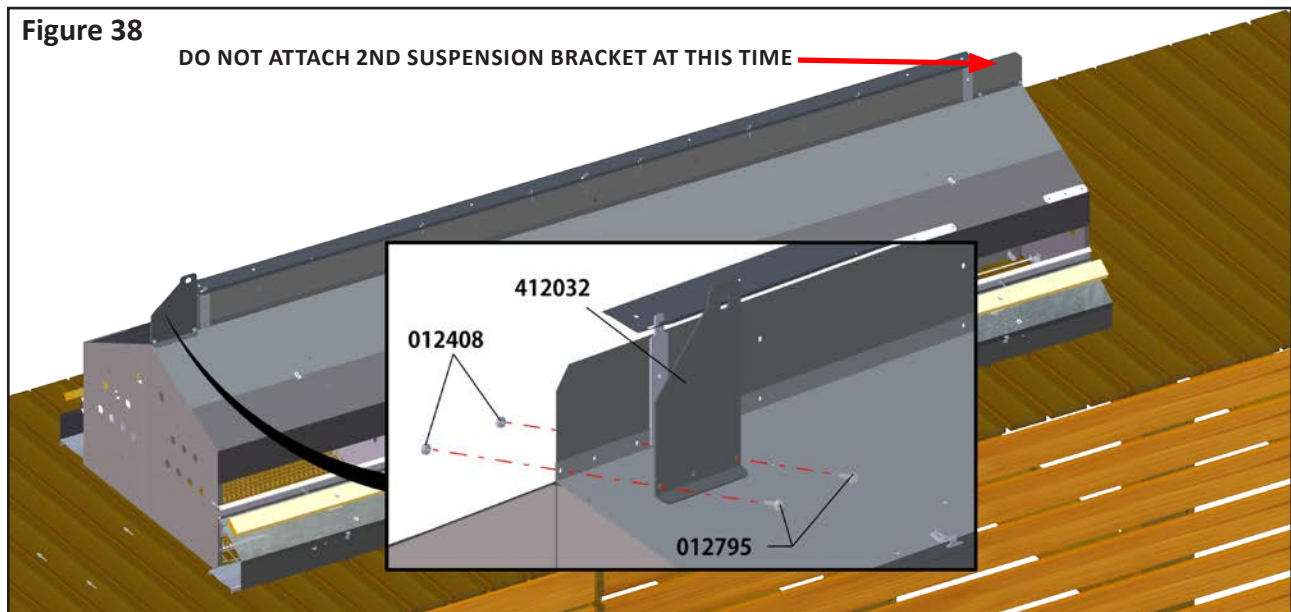
## Anti-Roost Angle

23. Install the anti-roost plate onto anti-roost support brackets by placing the slots of the anti-roost plate over the (3) anti-roost support brackets. After the anti-roost plate is on the brackets bend the tab on each of the anti-roost brackets at an angle to prevent the anti-roost plate from coming off, shown in Figure 37.



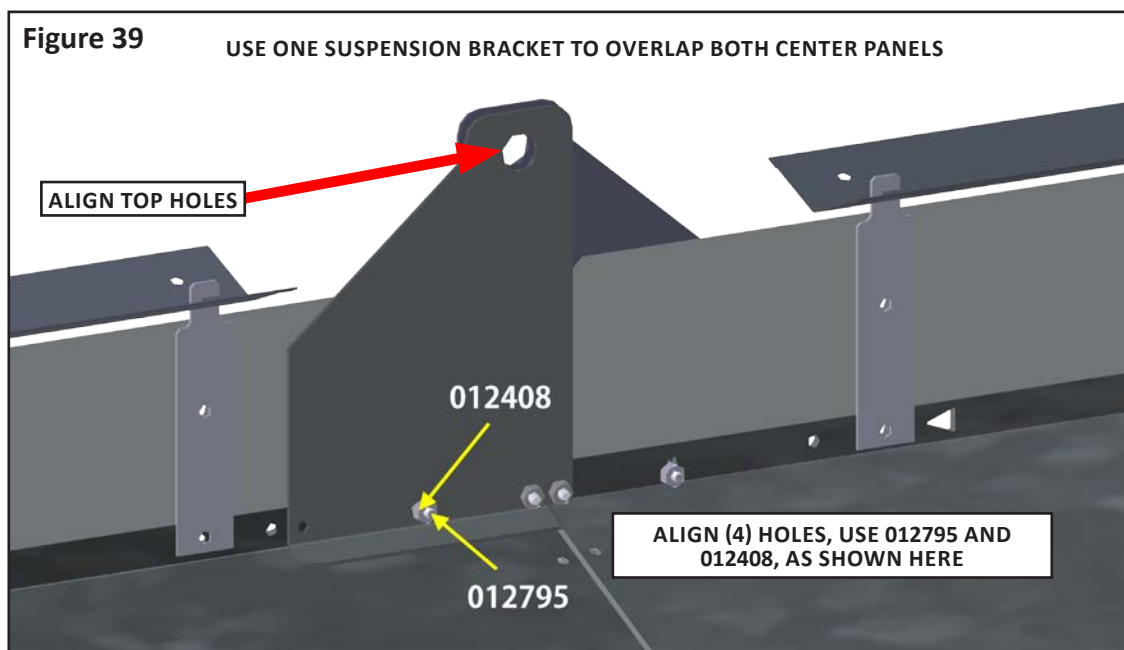
## Suspension Brackets

24. Attach (1) suspension bracket to the first end of the nest. Use (2) #10-24 x 1/2" hex bolts and (2) locknuts for each bracket, shown in Figure 38. **DO NOT ATTACH 2ND BRACKET UNTIL CONNECTING NESTS.**



## Connecting Nests

25. When connecting 2 nests together, rotate the suspension brackets and allow them to overhang each nest and placed on opposite sides of the nests. (This should be done on each set of connecting nests to secure them in place.) The suspension bracket holes align with each other and the middle panel, shown in Figure 39.



## Connecting Troughs (Nest to Nest)

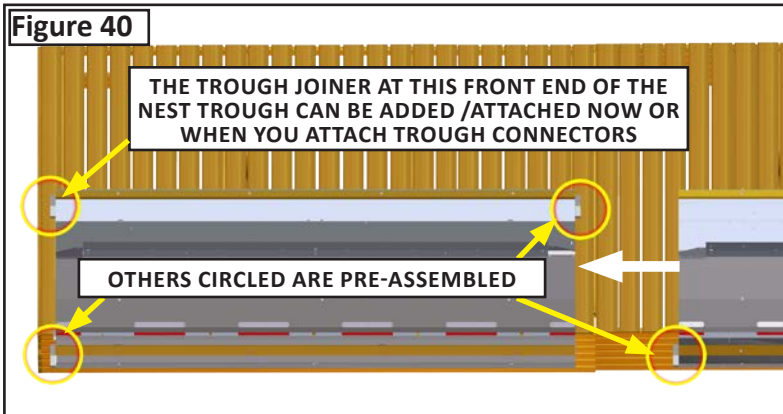
26. Trough joiners are pre-assembled at opposite corners of each nest on each nest trough to connect nest troughs or connector troughs. Use 012803 long rivet per joiner at the end partition and the 012802 short rivet at the front trough panel, shown in Figure 40 and 41. When adding the next nest, align with the previous nest (with trough joiner attached) and rivet the second set of holes of the joiner to the trough of the next nest.



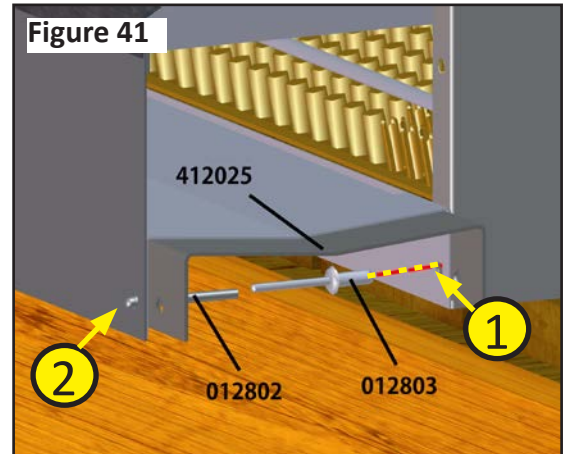
**Be sure to attach trough joiners before setting nest into place so you can reach under trough easier. There are only (2) trough joiners per nest, use (2) from the trough connector kit .**

**Rivet from inside of trough joiners when possible to prevent interference with belt.**

**Figure 40**



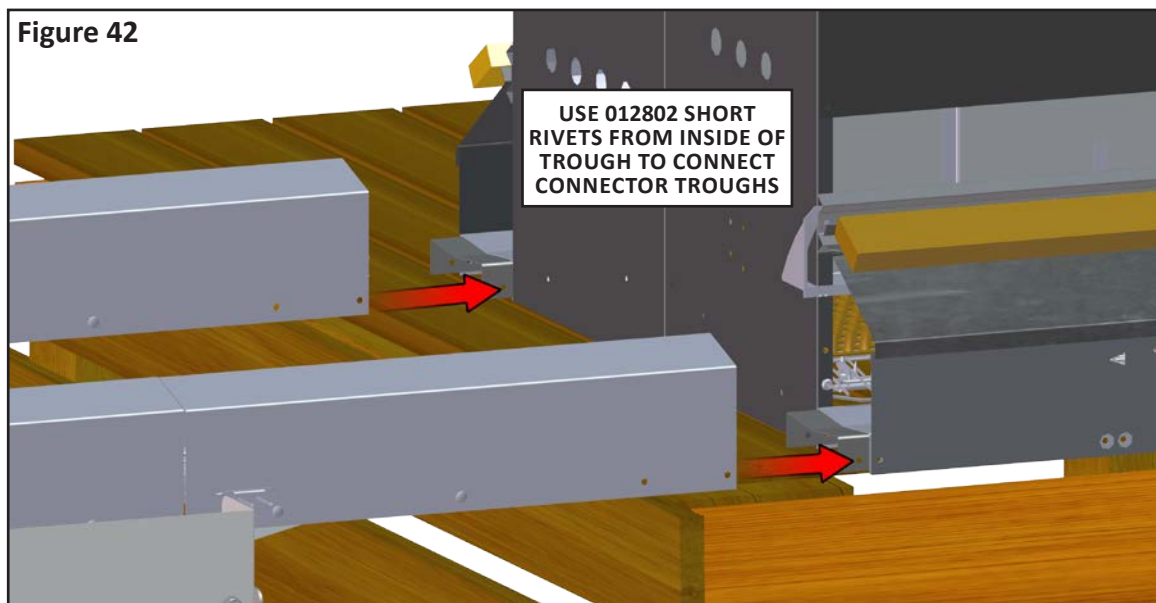
**Figure 41**



**The first nest will attach to a connector trough which will attach to the egg collector. You will need add (1) trough joiner to the first nest trough.**

27. After setting the first line or group of nests, you can now assemble connector troughs as needed for the egg collector connection. The egg collector is often located in a separate room and the connector trough is used to pass thru the wall. The connection trough may also be used for a pass thru between nests. Rivet one end of connector trough to a trough joiner on the 1st nest using 012802 short rivets.

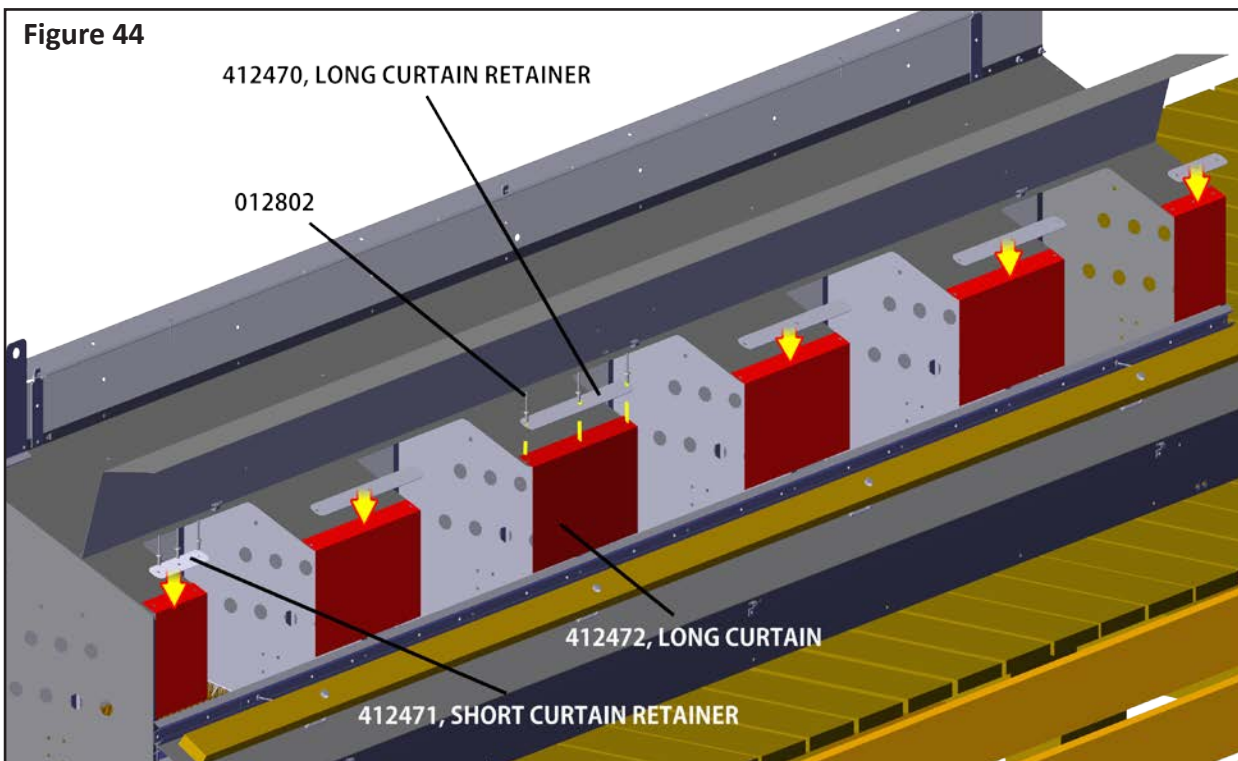
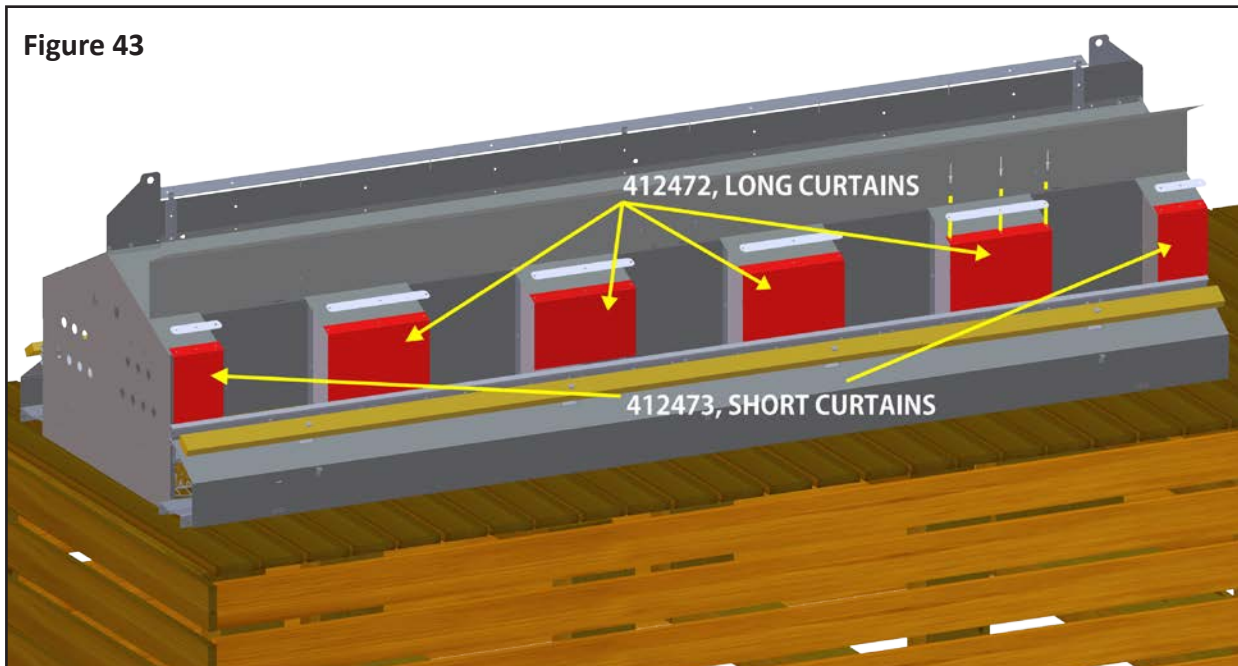
**Figure 42**



## Nest Curtain Attach

28. To attach the curtains, place the curtains with 412473 short curtains on both ends and the long curtains between the ends as shown in Figure 43. Lay the curtain against the top of the UPPER roof panel and the retainer on top of the curtain panel as shown detailed in Figure 44.

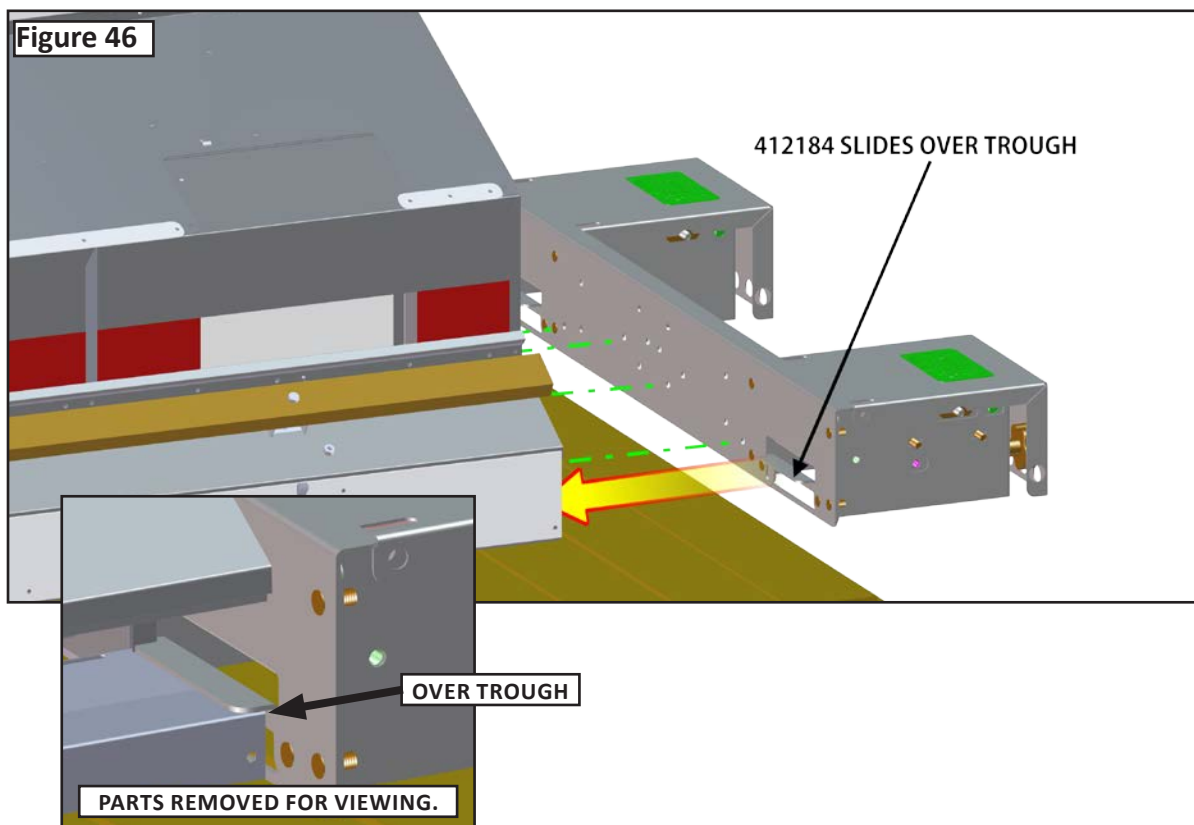
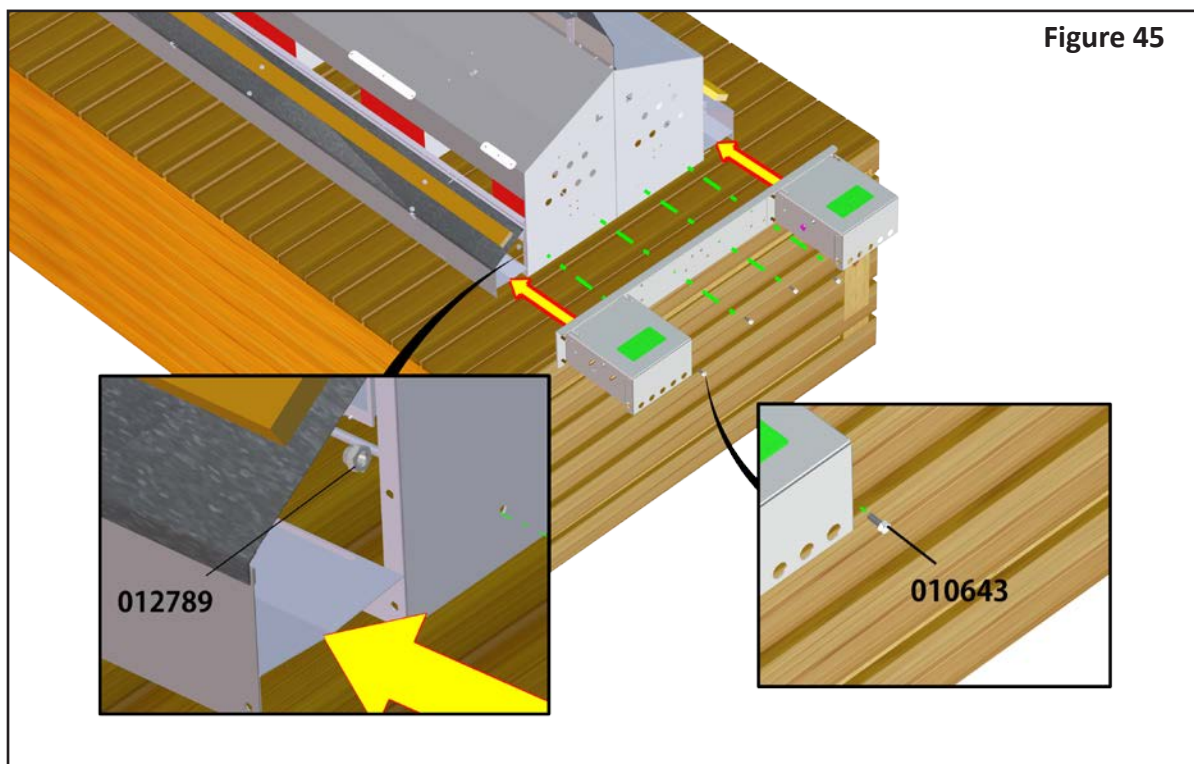
**Side Belt nests 412200 and 412210 instructions do not apply. No curtains are available for either nest model and are an option for the comfort nest.**





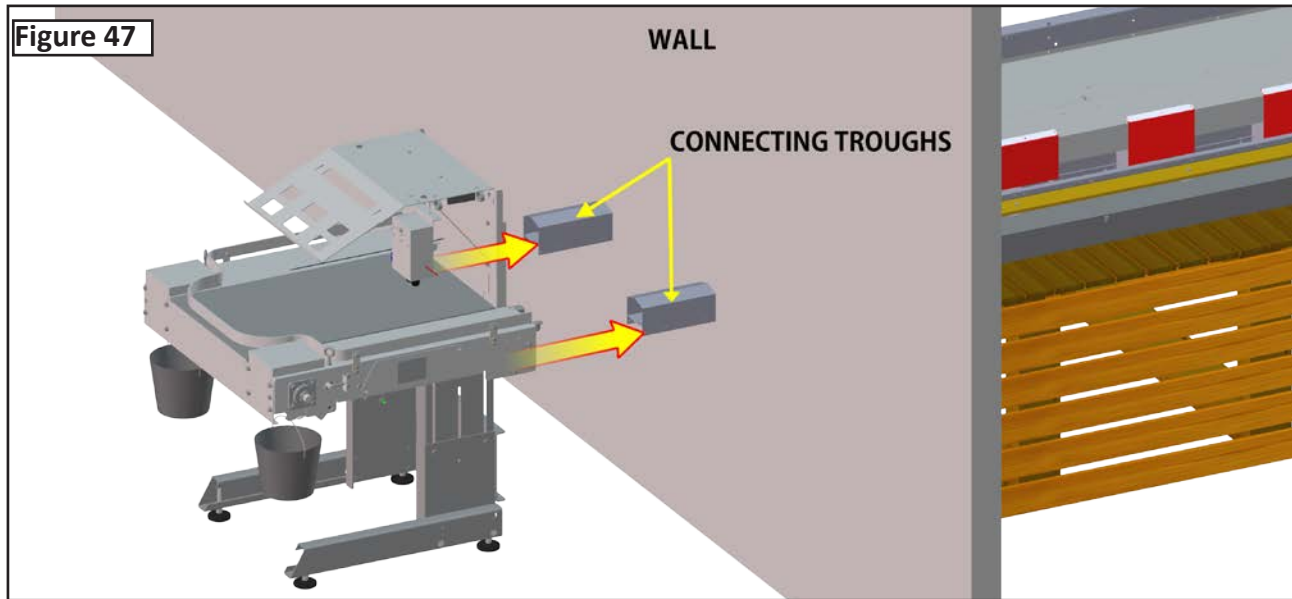
## Belt Return Attach

29. The belt return is shipped assembled. Align the return to the troughs and using the assembly as a template drill holes to attach. Use (8) 010643 5/16-18 X 3/4" hex bolts and the (8) 012789 nylock nuts, as shown in Figure 45. Be sure the belt shield slides over the top of the trough, as shown in Figure 46.

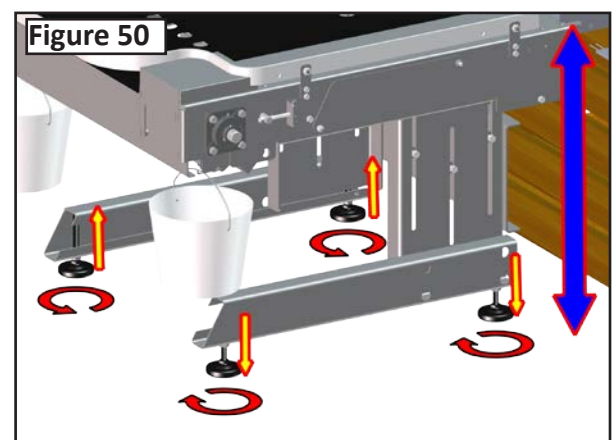
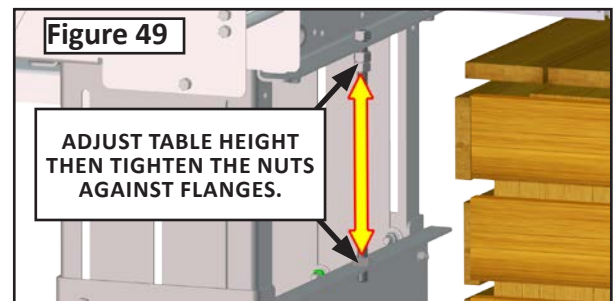
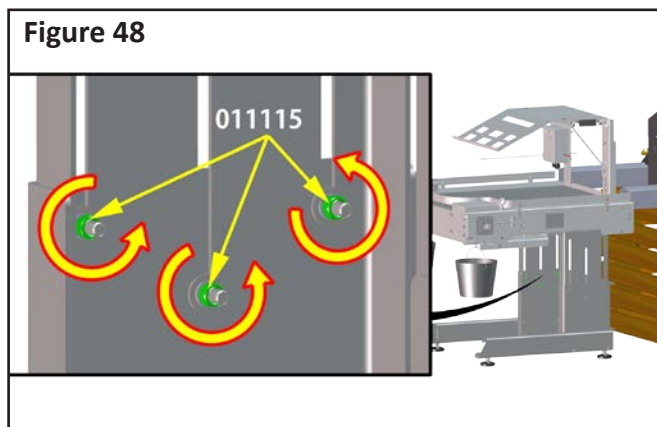


# Attaching Egg Collector to Connecting Troughs

30. The egg collector is shipped fully assembled. To attach the collector to the nests use the connecting troughs. The connecting troughs often run through a wall and the collector sits in a room outside of the nest area shown in Figure 47. **If using Poly Belt see separate quicksheet #990166 for attachment to table and belt adjustment.**



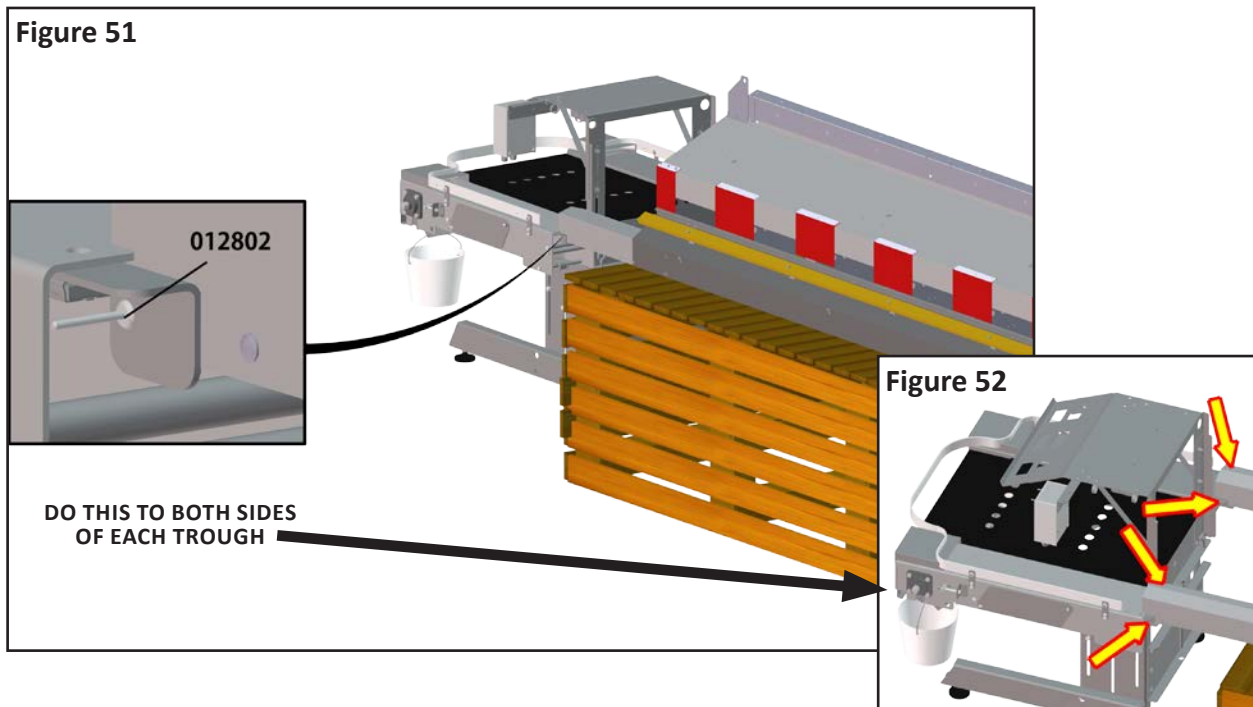
31. The egg collector height will need to be adjusted to the height of the trough covers. Begin by loosening all (3) bolts on both legs before adjusting height of table, shown in Figure 48. (Bolts must be loose enough to allow legs to slide up or down.)
32. Turn adjuster rod clockwise to lower table and counterclockwise to raise. The nut below the flange of the plate the rod runs through will need to be used to actually raise the table. The threaded rod will only force the table to lower by itself, it can't force the table to raise by itself. Tighten side bolts securely after adjusting, shown in Figure 49.



Legs may also adjust as shown in Figure 50.

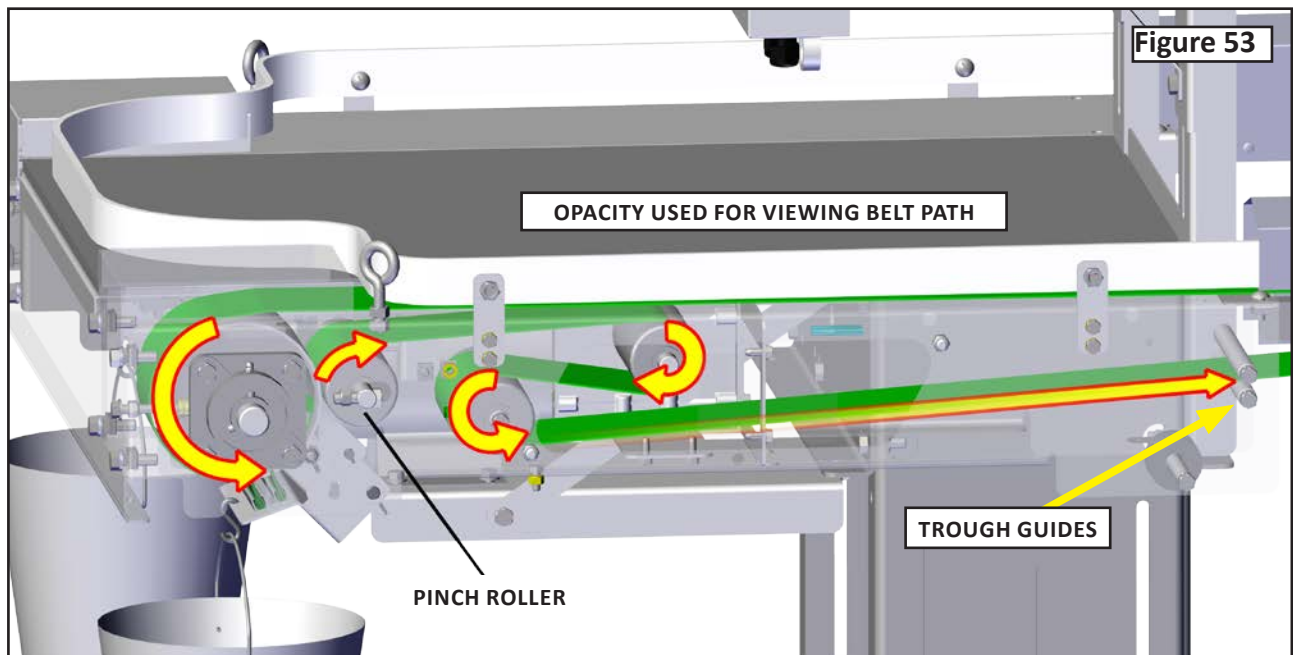
## Attaching Egg Collector to Connecting Troughs

33. Attach using the 012802 rivets, shown in the detailed view in Figure 51. Be sure and to this to both sides of each trough, shown in Figure 52.



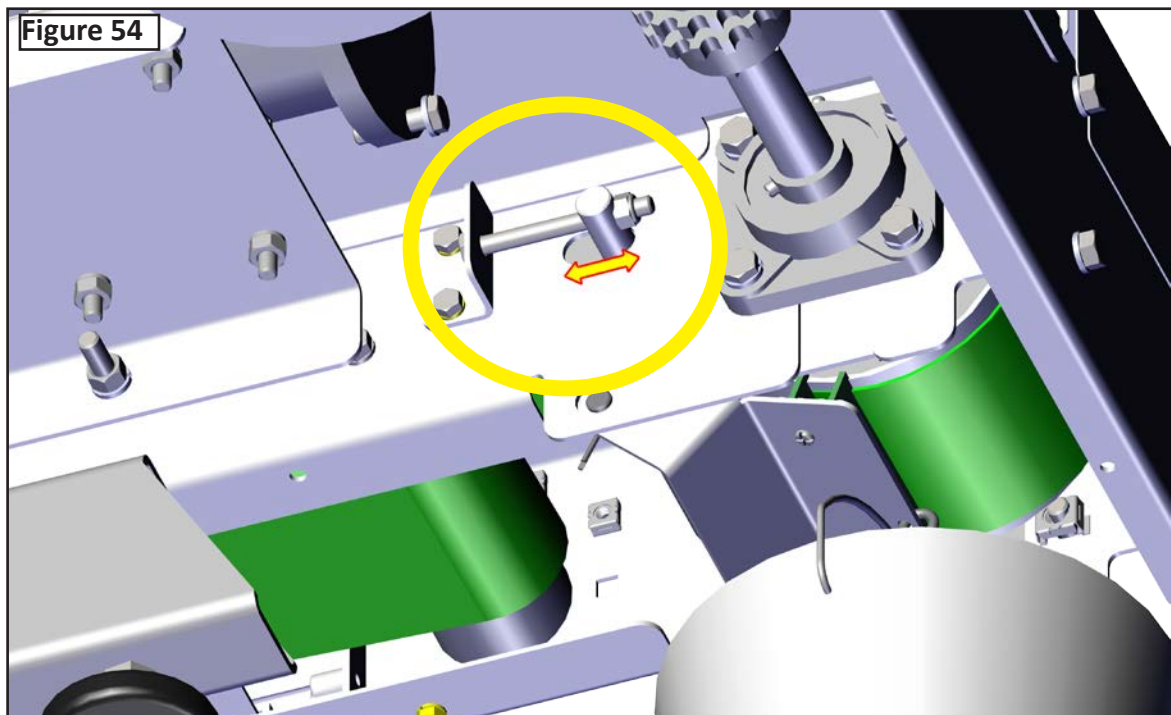
## Threading and Adjusting the Belt/Belt Path

34. Thread belt thru the egg collector table from the top side as shown in Figure 53. Continue threading thru the belt guides to the underneath side of the nest troughs. Take-Up belt threading instructions are shipped with the take-up kits. When installing the belt, if it is necessary the pinch roll can be moved away from the drive roll by turning the nut on the pinch roll adjustment bolt.

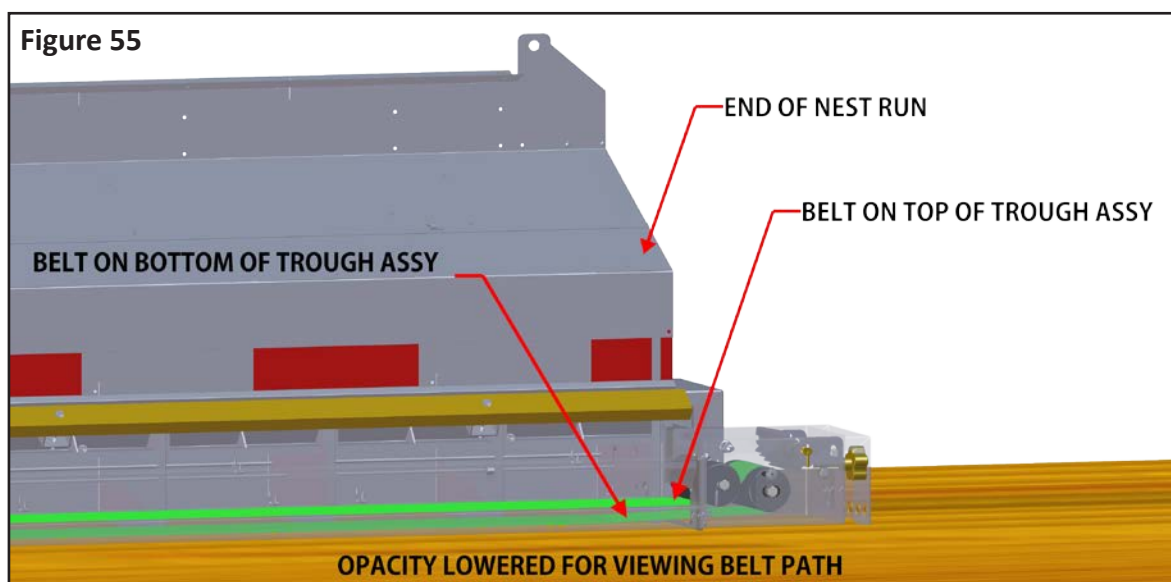


## Threading and Adjusting the Belt/Belt Path

35. Adjust the pinch roller as necessary. The view below, Figure 54, shows the underneath, back side of the roller for adjustment. The roller slides on the bar and may be adjusted either direction using the nut to secure it's position.



36. Thread belt thru the top and bottom of the nest troughs and thru the Return as shown in Figure 55.





## Suspension-Winch system

If you are using the VAL-CO® winch system, a manual on the winch system is available. We have not included the winching detail due to the multiple choices and systems used. You should already have a detailed plan showing the spacing, and location of the winch and other parts. We have pictured a couple overviews to assist you.

### **MAXIMUM WEIGHT REQUIREMENTS MUST BE OBSERVED WHEN SETTING UP THE SIDE BELT AND SIDE BELT COMFORT NESTS.**



**GENERALLY EACH NEST ROW WILL REQUIRE 2 OR MORE OVERHEAD WINCHES DEPENDING  
ON THE LENGTH OF YOUR NEST ROW AND WEIGHT.**

**The largest VAL-CO® winch is rated at 5,000 lbs. and may be  
used in multiple configurations.**



**BE SURE THAT EACH PULLEY AT EACH DROP LINE HAS SUFFICIENT  
WEIGHT SUPPORT!**

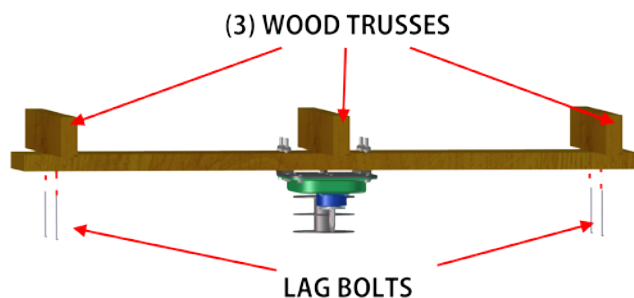
**(This may require additional support boards at each drop line location.)**

**(Plastic pulleys will not support the weight.)**

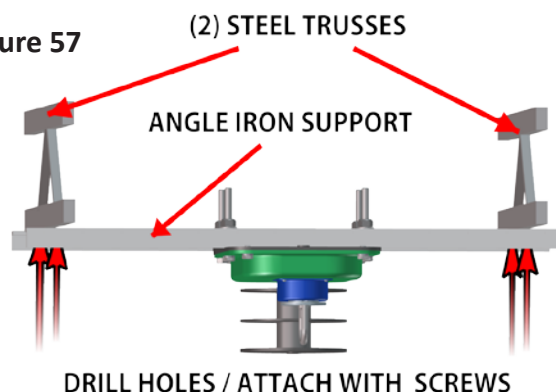
### **MOUNTING WINCH ASSEMBLY**

1. Cut one 2 x 10 long enough to span three ceiling purlins/trusses. These will be used to support the winch assembly.
2. Pre-drill holes in wood supports to prevent splitting. Use the winch assembly as a template to pre drill the support boards. Winch cable drum should be centered on 2" x 10" as shown.
3. Insert carriage bolts (not supplied) down through winch support boards and winch assembly. Tighten bolts securely.
4. Mount the winch supports securely to all (3) ceiling purlins/trusses. WINCH SUPPORTS MUST SPAN THREE PURLINS/TRUSSES. Winch cable drum must be centered through the center line of the main cable run.

**Figure 56**



**Figure 57**



# Suspension-Winch system

## OVERVIEW

1. Determine the center line of each nest row and install the winch and pulleys DIRECTLY ABOVE each row. The winch may be installed on the ceiling (most common installation) or side wall. Figure 58 shows the centerline MAIN CABLE RUN location.

NOTE THAT THE NESTS ARE PERFECTLY ALIGNED SO THAT WHEN YOU LOOK DOWN THE ROW THEY APPEAR AS YOU SEE THEM IN FIGURE 56.



Use the shipping weights of the nest, troughs and belt to estimate the number of nests for each winch.

Figure 58

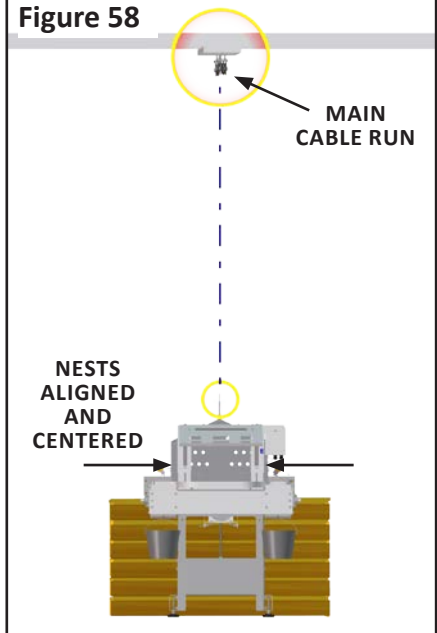
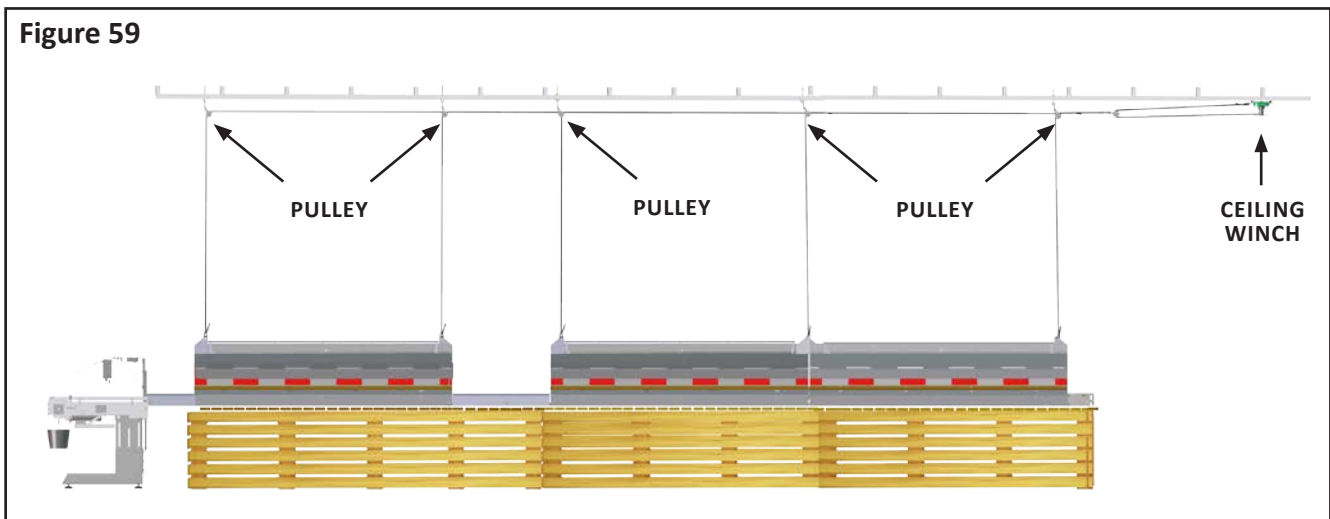


Figure 59



Use the winching manual shipped with the winch for detailed instructions on installation.

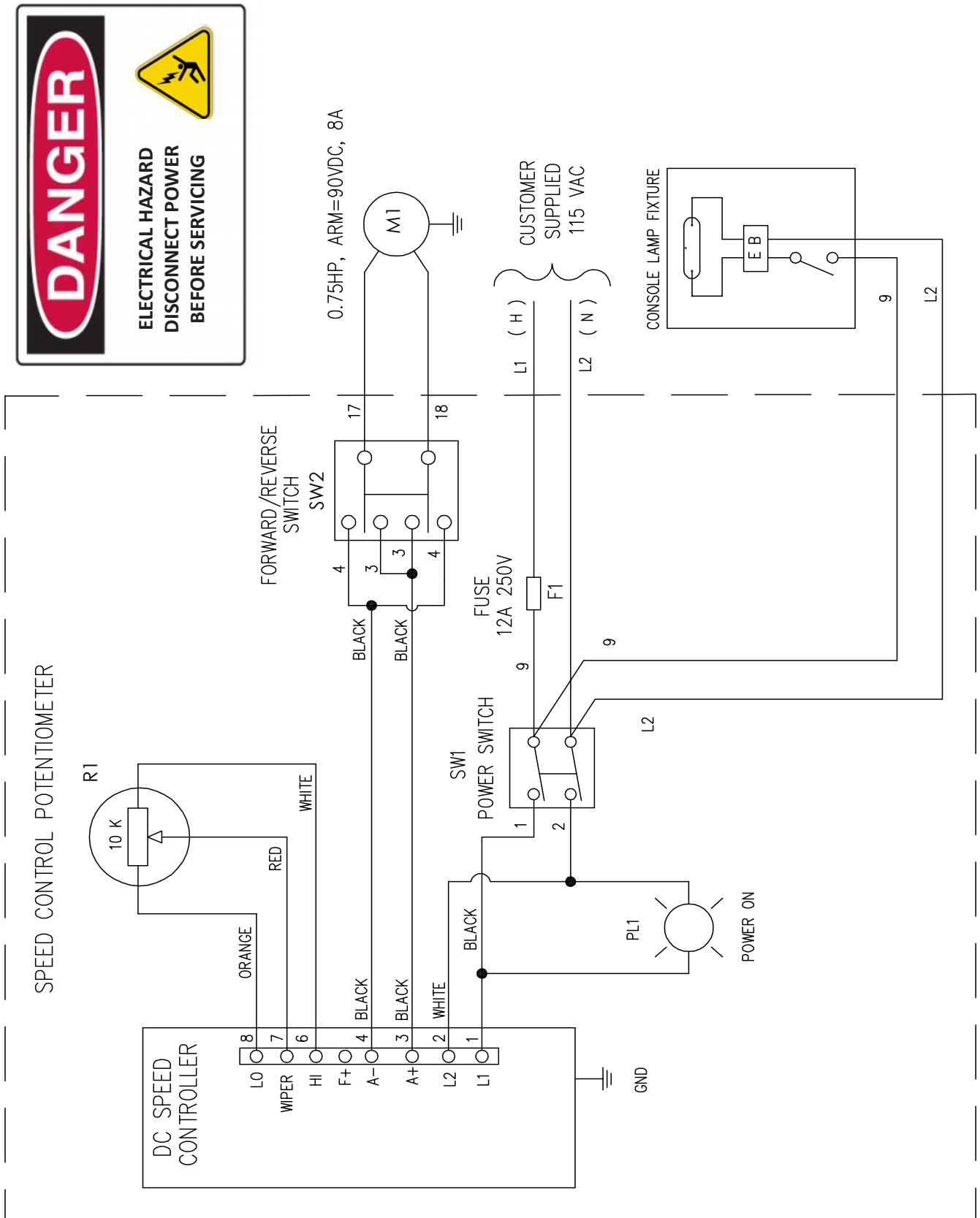
Add number of nest/trough sections by weight for each winch.

Most nest rows use at least 2 winches.

**DO NOT EXCEED THE WEIGHT RATING ON YOUR WINCH!**

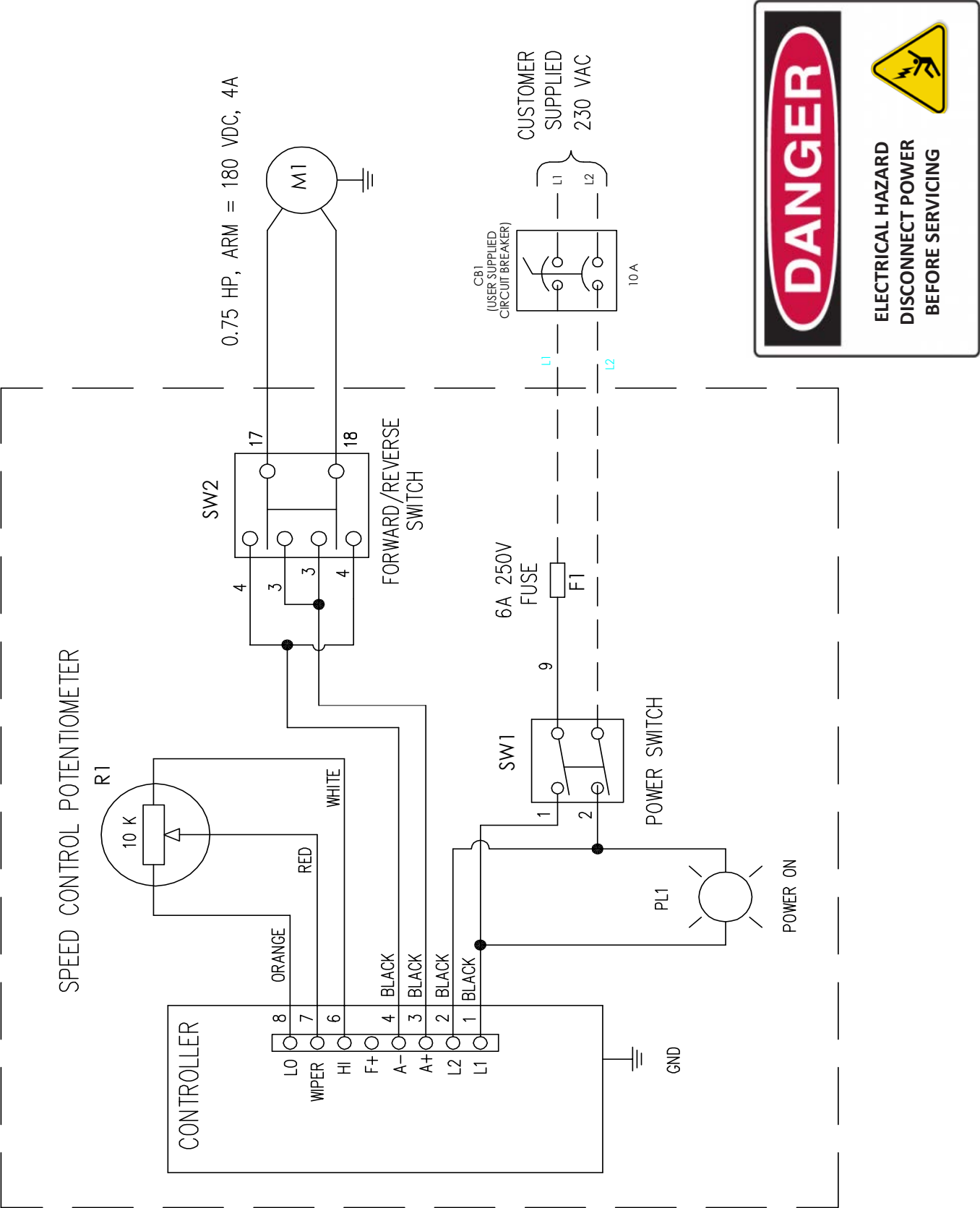
# Control Wiring Schematic 921641

### Models 412620, 412621, 412624, 412625



# Control Wiring Schematic 921642

Models 412622, 412623, 412626, 412627





## Align the Nests

**Nest rows MUST be aligned!**

After installation and before each new flock of birds the nests should be straightened horizontally (from side to side) and vertically (making sure they are level). This will ensure the correct angle for the eggs to roll out of the nest pads onto the egg belt. If the nests are not leveled, one side may have too steep an angle and eggs may crack.

SHIMS may be required to obtain level nest/troughs for the egg belt to pass smoothly.

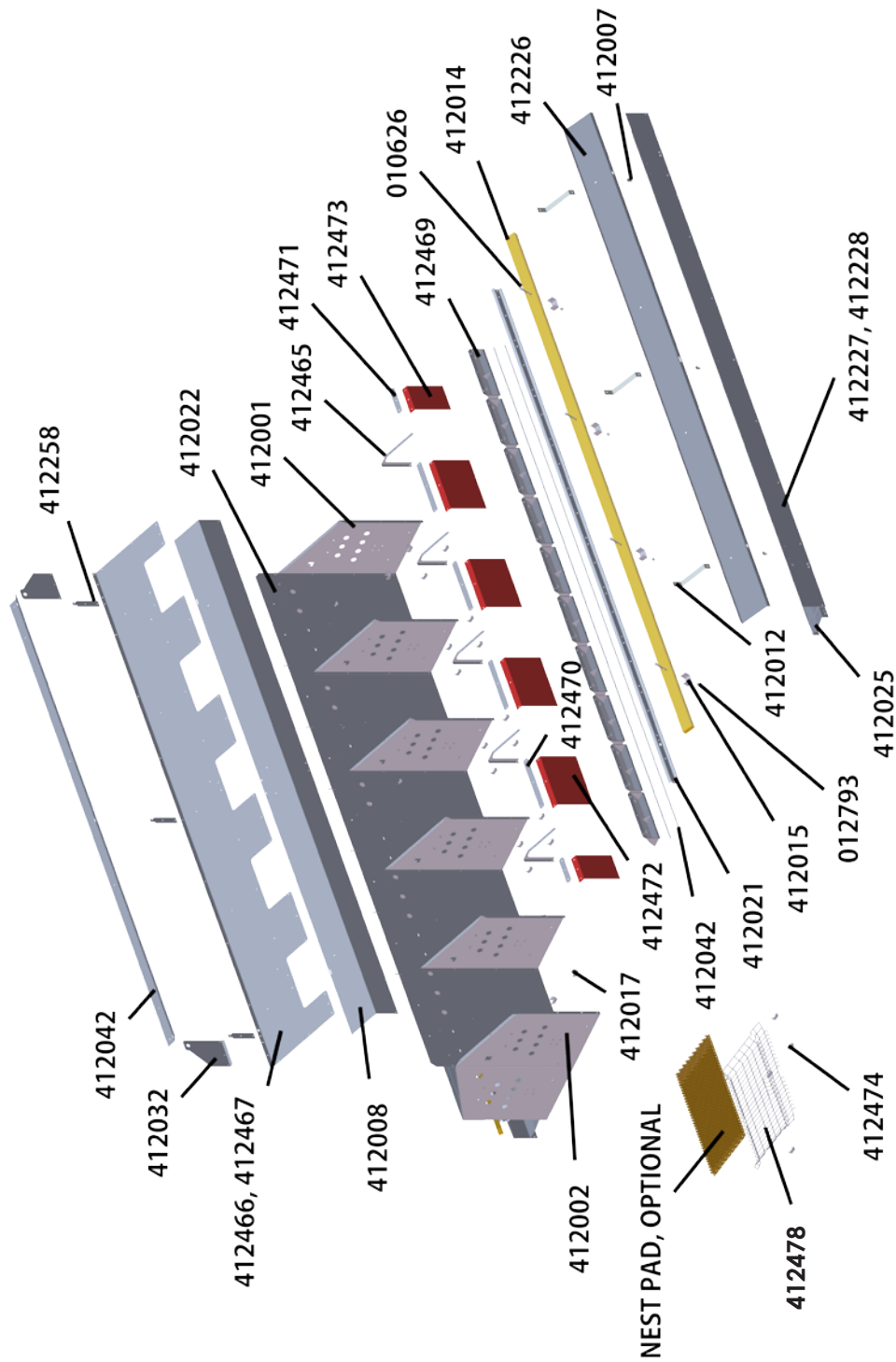
**FAILURE TO COMPLETE ALIGNMENT OF THE NEST ROW WILL RESULT IN PREMATURE WEAR OF THE EGG BELT, AND POSSIBLE EGG BREAKAGE.**

**FRAYED OR BADLY WORN BELTS CAN CAUSE DAMAGE TO THE EGG BELT DRIVE SYSTEM!**

## Startup Instructions

1. Be sure pinch rollers are applying pressure on the belts against the drive rollers. If necessary turn pinch roll adjustment nut to allow spring to push the roller against the drive roller. The nut does not have to be in contact with the pinch roll shaft during operation.
2. When installing belt or belt is caught on something, the forward/reverse switch on controller can be used to allow the drive rolls to run in opposite direction to help take tension off of belts. The belts should only be run in reverse for a very short time period, if ran too long damage to the belts could occur. **DO NOT CHANGE THE FORWARD/REVERSE SWITCH FROM ONE DIRECTION TO THE OTHER IMMEDIATELY. TURN THE CONTROL OFF BEFORE CHANGING DIRECTIONS OF THE BELTS. FAILURE TO DO SO WILL RESULT IN DAMAGE TO CONTROL AND/OR MOTOR.**
3. When first running the table, be sure egg belts run through the center of the connecting troughs. To adjust the tracking of the belt left and right, loosen the bolts on the outer drive roll bearing, then turn the adjustment bolt on the **FRONT** of the table. The bolt can be turned in either direction, depending on what direction the belt needs to move. When finished be sure to tighten outer drive roll bearing bolts.
4. Drive roll covers are held in place with pressure, to remove them squeeze the sides together and lift up. Drive roll covers are only to be removed for maintenance purposes. **DRIVE ROLL COVERS SHOULD NEVER BE REMOVED WHILE TABLES ARE RUNNING. INJURY COULD RESULT IF COVERS ARE NOT IN PLACE DURING OPERATION.**

# Comfort Nest 412460 Exploded View

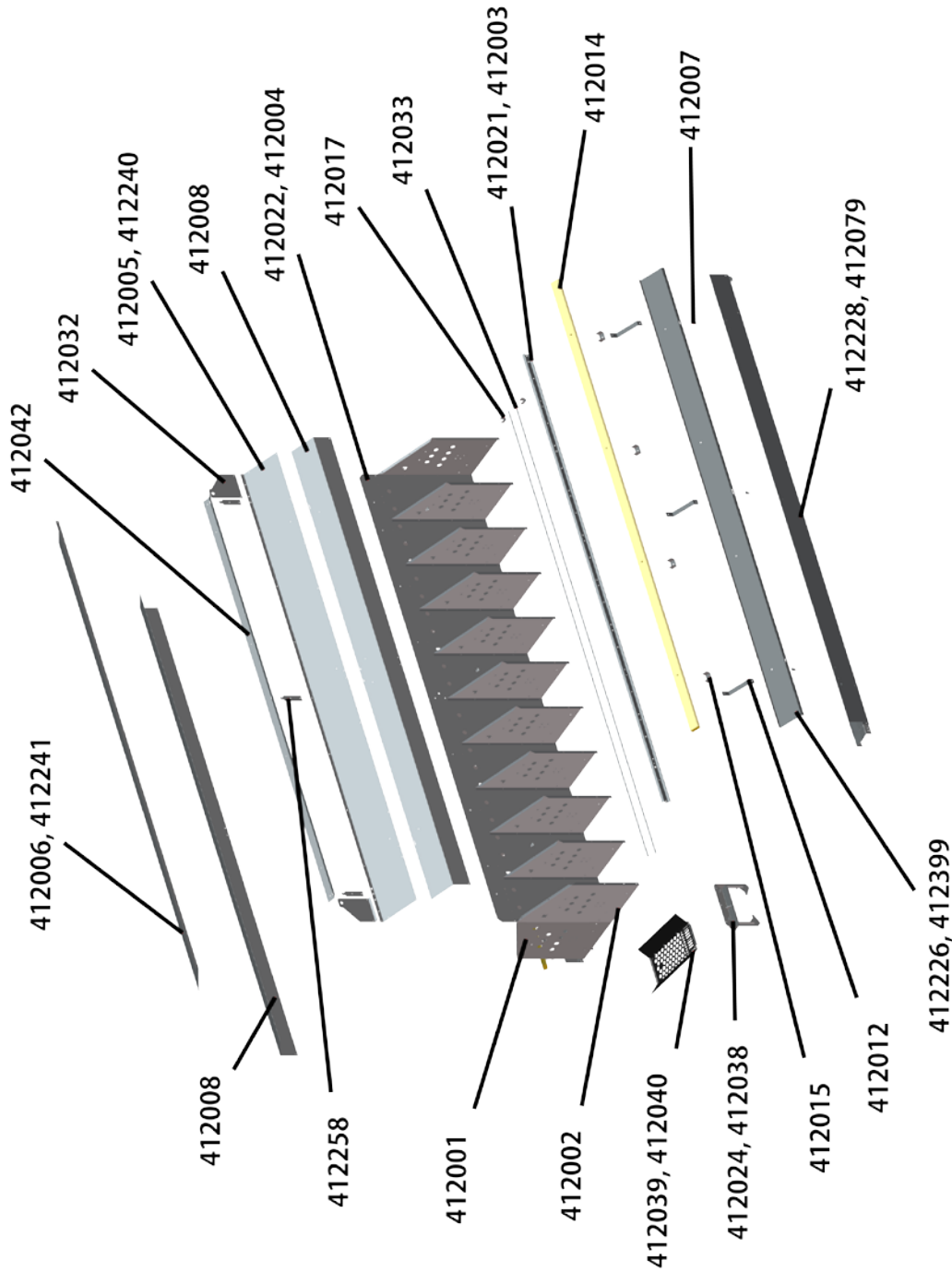


# Comfort Nest Parts List

PART #	DESCRIPTION	QTY
<b>412460</b>		
012802	RIVET, POP #62X3/16" ALL-ALUM	230
412001	PARTITION, NEST, LEFT, SB	6
412002	PARTITION, NEST, RIGHT, SB	6
412008	ROOF, BOTTOM, SB	2
412014	PERCH BOARD, SIDE BELT NEST (3/4" X 1-3/4" X 96" W/HOLES)	2
412021	BRACE, FRONT, NEST, 20 HOLE SIDE BELT	2
412022	PANEL, MIDDLE, SB, 20H	1
412033	5GA. GALVANIZED WIRE (.207" X 95.375")	4
412042	A-R PLATE SB	1
412226	TROUGH COVER 8/20H	2
412227	TROUGH ASSY RH 8/20H	1
412228	TROUGH ASSY LH 8/20H	1
412464	SUPPORT, ROOF, LEFT COMFORT NEST	5
412465	SUPPORT, ROOF, RIGHT COMFORT NEST	5
412466	ROOF, RIGHT, COMFORT NEST	1
412467	ROOF, LEFT, COMFORT NEST	1
412469	DEFLECTOR, EGG, DOUBLE WIDE SIDE BELT	20
412470	RETAINER, CURTAIN, LONG COMFORT NEST	8
412471	RETAINER, CURTAIN, SHORT COMFORT NEST	4
412472	CURTAIN, LONG, COMFORT NEST	8
412473	CURTAIN, SHORT, COMFORT NEST	4
412474	RETAINER, NEST PAD, NXT	40
412475	HDWE BAG, COMFORT NEST	1
412478	BOTTOM, NEST, COMFORT NEST	10
<b>412475 HARDWARE BAG - (shown detailed on page 1-7)</b>		
412012	TROUGH BRACE SB	6
412025	TROUGH JOINER	2
412032	SUSP BRCKT	2
412255	HDWE BAG, SMALL PARTS	1
412007	NEST LOOP HINGE	14
412015	PERCH BRCKT	9
412017	WIRE ROD CLIP	9
412258	SUPPORT, ANTI ROOST	4
412265	HDWE BAG, NEST, SB	1
010626	1/4-20 X 2-1/4" HEX BOLT	9
012408	#10-24 HEX KEP LOCKNUT	12
012793	1/4-20 NYLOCK NUT	10
012795	#10-24 X 1/2" UNSLOTTED HEX HEAD MACHINE SCREW	12
012803	RIVET, #64 X 3/16" ALL ALUM	50



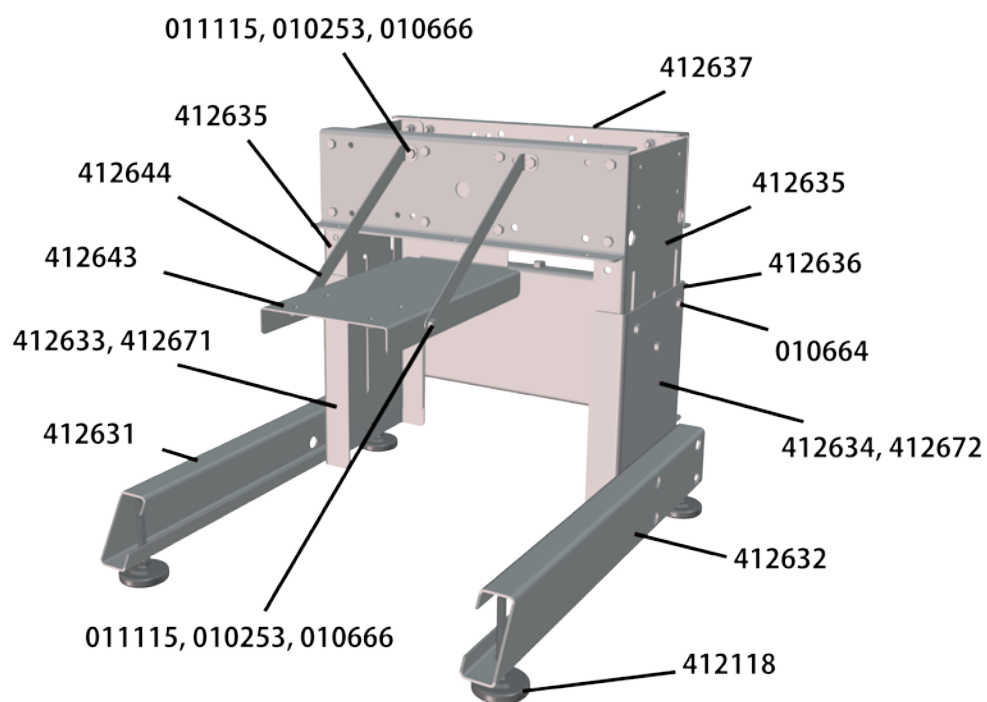
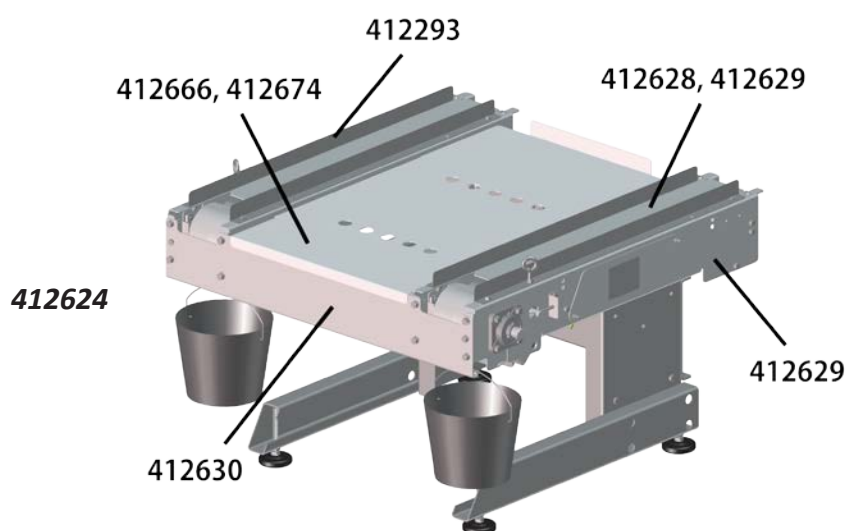
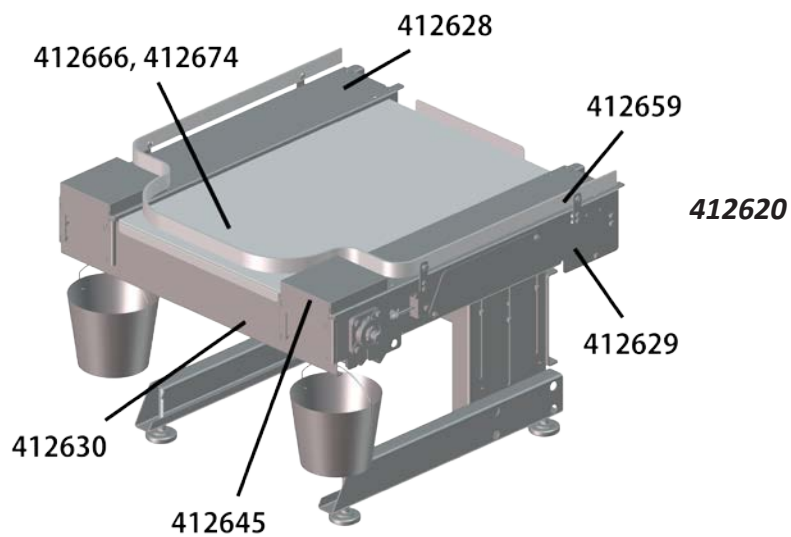
# Side Belt Nest 412200 & 412210 Exploded View



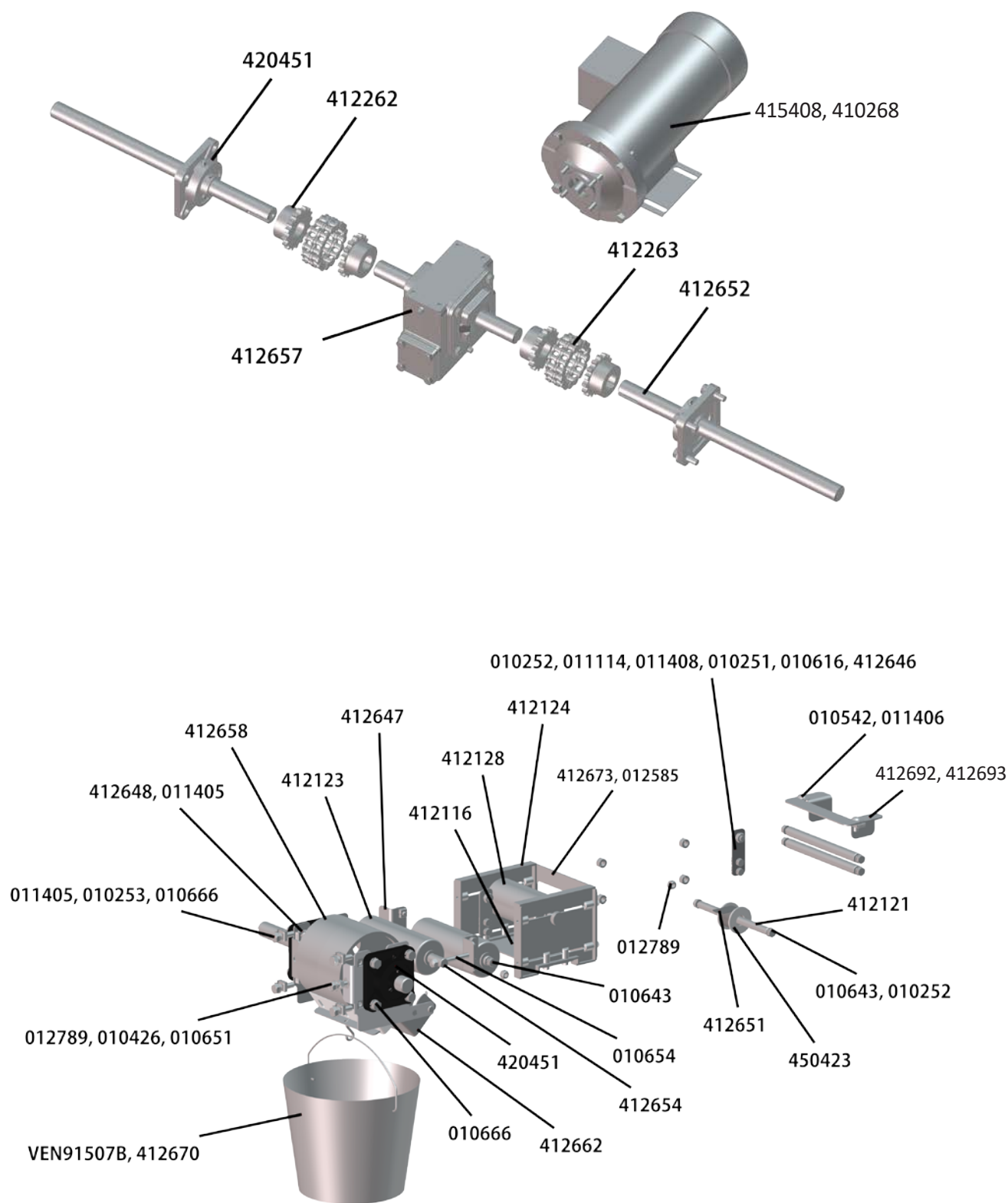
## Side Belt Nest Parts List

PART #	DESCRIPTION	QTY
<b>412200, 412210 (Interchangeable Parts)</b>		
012802	RIVET, POP #62X3/16" ALL-ALUM	180
412001	PARTITION, NEST, LEFT, SB	11
412002	PARTITION, NEST, RIGHT, SB	11
412008	ROOF, BOTTOM, SB	2
412014	PERCH BOARD, SIDE BELT NEST (3/4" X 1-3/4" X 96" W/HOLES)	2
412033	5GA. GALVANIZED WIRE (.207" X 95.375")	4
412042	A-R PLATE SB	1
412255	HDWE BAG, SMALL PARTS	2
412007	NEST LOOP HINGE	14
412015	PERCH BRCKT	9
412017	WIRE ROD CLIP	9
412258	SUPPORT, ANTI ROOST	7
412265	HDWE BAG, NEST, SB	2
010626	1/4-20 X 2-1/4" HEX BOLT	9
010764	BAG, PLASTIC 4" X 8"	1
012408	#10-24 HEX KEP LOCKNUT	12
012793	1/4-20 NYLOCK NUT	10
012795	#10-24 X 1/2" UNSLOTTED HEX HEAD MACHINE SCREW	12
012803	RIVET, #64 X 3/16" ALL ALUM	50
<b>PARTS SPECIFIC TO 412200</b>		
412005	ROOF, TOP, RIGHT, SB, 20H	1
412006	ROOF, TOP, LEFT, SB, 20H	1
412021	BRACE, FRONT, NEST, 20 HOLE SIDE BELT	2
412022	PANEL, MIDDLE, SB, 20H	1
412024	DEFLECTOR, EGG, NARROW NEST, SIDE BELT	20
412039	NARROW NEST BOTTOM	20
412226	TROUGH COVER 8/20H	2
412227	TROUGH ASSY RH 8/20H	1
412228	TROUGH ASSY LH 8/20H	1
<b>PARTS SPECIFIC TO 412210</b>		
412003	BRACE, FRONT, NEST, 16 HOLE SIDE BELT	2
412004	PANEL, MIDDLE, SB, 16H	1
412038	DEFLECTOR, EGG, WIDE NEST, SIDE BELT	16
412040	WIDE PLASTIC SIDE BELT NEST BOTTOM	16
412069	8/16H TROUGH ASSY - RT	1
412079	8/16H TROUGH ASSY - LT	1
412240	ROOF, TOP, RIGHT, SB, 16H	1
412241	ROOF, TOP, LEFT, SB, 16H	1
412399	SB TROUGH COVER - 8/16H	2

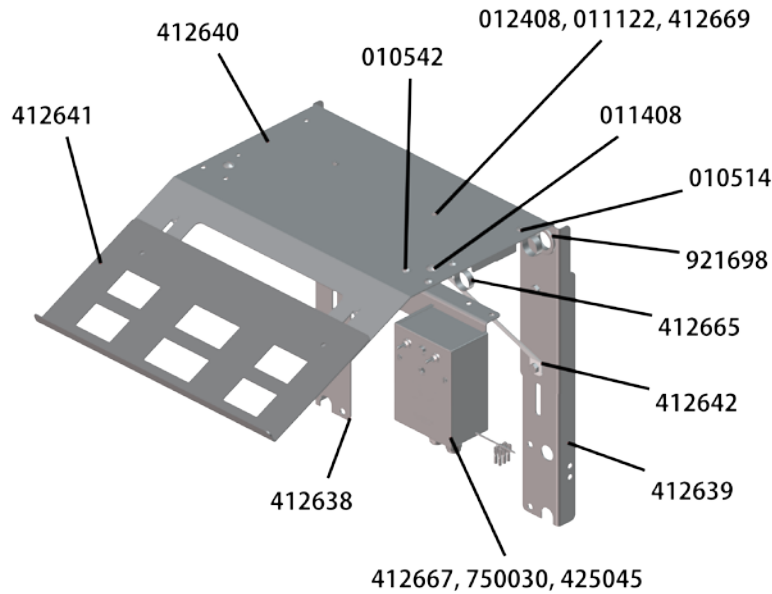
# Egg Collector Table



# Egg Collector Table



## Egg Collector Table



**WITH RACK ASSEMBLY**- models 412620, 412621, 412622, 412623

**WITHOUT RACK ASSEMBLY**- models 412624, 412625, 412626, 412627

## Egg Collector Table Parts List

PART #	DESCRIPTION	QTY
<b>412620, 412621, 412622, 412623, 412624, 412625, 412626, 412627 - Interchangeable Parts</b>		
010251	WASHER, LOCK 1/4" MED SPLIT ZP	20
010252	WASHER, LOCK 5/16" MED SPLIT ZP	42
010253	WASHER, LOCK 3/8", MED SPLIT ZP	56
010424	WASHER, FLAT, 1/4" SAE ZP	4
010426	WASHER, FLAT 5/16" SAE ZP	8
010430	WASHER, FLAT, 3/8" USS ZP	10
010502	#10-24 X 1/2" SLOTTED TH SCREW ZINC PLATED	2
010514	SCREW, 1/4-20 X 3/4", THMS, ZP SLOTTED HEAD	2
010542	5/16" X 3/4" SLOTTED TRUSS BOLT	10
010602	NUT, HEX 1/4"-20 A FINISHED ZP	4
010616	1/4" X 5/8" HEX BOLT	18
010643	5/16-18 X 3/4" HEX BOLT	18
010645	5/16" X 1" HEX BOLT	4
010651	5/16" X 2-1/2" FULLY THREADED HEX BOLT	2
010654	BOLT, HEX HEAD, 5/16" X 3" ZP	4
010664	3/8" X 1" HEX BOLT	4
010666	3/8" X 1-1/4" HEX BOLT	50
010670	BOLT, EYE 3/8-16" X 1-1/2" ZP	4
010943	1/4" WING NUT	4
010944	NUT, WING 5/16"-18 ZP	2



## Egg Collector Table Parts List

011114	5/16-18 HEAVY HEX NUT	28
011115	NUT, HEX 3/8-16"A FINISHED ZP	36
011117	NUT, HEX1/2"-13 A-FINISH ZP	2
011122	#10-24 X 3/8" ROUND HEAD SCREW	2
011380	SCREW, PHIL, 8-32X3/8, THD CUT PAN, ZINC, TYPE F	4
011405	NUT, RETAINER, 3/8-16, ZP .093 -.126	24
011406	NUT, RETAINER, 5/16-18, ZP .093 -.126	4
011407	NUT, RETAINER, 1/4-20, ZP .093 -.126	16
011408	BOLT, 3/8-16 X 1", SLOT, ZP TRUSS HEAD	2
011416	#10-24 X 3/8" HEX SELF-TAPPING SCREW	2
012408	#10-24 HEX KEP LOCKNUT	4
012585	1/4-20 X 5/8" TAPTITE SCREW	16
012660	COTTER PIN, 7/64" X 3/4" LG ZP	4
102789	5/16-18 NYLOCK NUT	18
152409	1/4" X 1-1/4" HEX LAG SCREW	2
412116	TENSIONER BASE	2
412118	LEVELING FOOT PAD	4
412121	SPROCKET SHAFT	2
412122	ROLLER SHAFT	6
412123	ROLLER, 2-3/8" X 6-5/8"	4
412124	TENSIONER SLIDE	4
412128	TENSIONER ROLLER	2
412129	TENSIONER SHAFT	2
412135	1/4" X 1/4" X 1" KEY	4
412136	1/2" COLLAR - ZINC PLATED	4
412157	5" BRUSH RETAINER	2
412177	ACCESS DOOR	2
412185	FLOURESCENT LIGHT BULB (models 412620 & 412621)	1
412191	POWER CORD, 125V, 9', GROUNDED NEMA 5-15, TYPE A PLUG, 14/3 (models 412620, 412621, 412624 & 412625)	1
412199	5" BRUSH	4
412206	4.50" X 3.00" BELT PATH DECAL	2
412262	HUB, COUPLER, CHAIN, 4016, 1"	4
412263	CHAIN, COUPLER, 4016	2
412381	14/3 BLACK SJTOW WIRE	5
412506	7/8" KNOCKOUT PLUG	1
412628	HOUSING, BELT DRIVE, EGG, 4" LEFT	1
412629	HOUSING, BELT DRIVE, EGG, 4" RIGHT	1
412630	FRONT PLATE, BELT DRIVE, EGG 4"	1
412631	BASE, FOOT, BELT DRIVE, EGG 4", LEFT	1
412632	BASE, FOOT, BELT DRIVE, EGG 4", RIGHT	1
412633	BASE, LEG, LEFT, BELT DRIVE EGG, 4"	1
412634	BASE, LEG, RIGHT, BELT DRIVE EGG, 4"	1
412635	LEG, BELT DRIVE, EGG, 4"	2

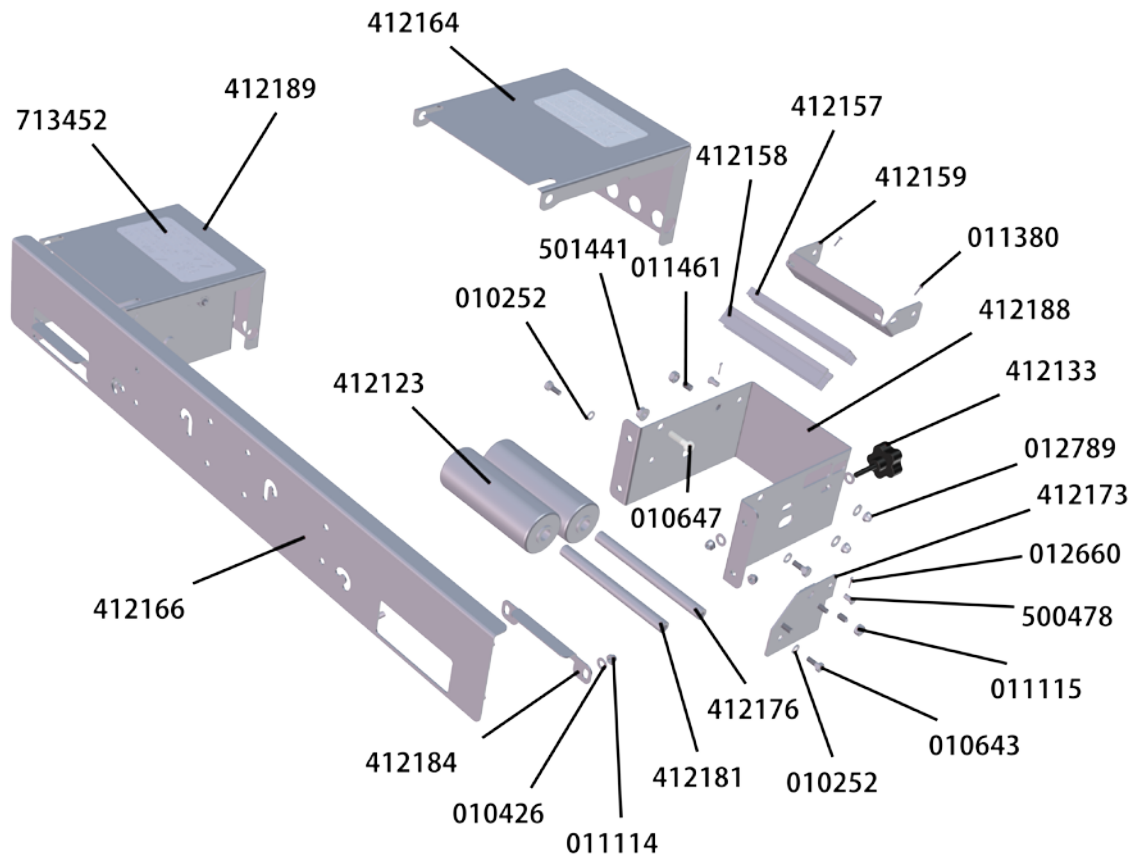
## Egg Collector Table Parts List

412636	TIE PLATE, LEG, BELT DRIVE EGG, 4"	1
412637	SUPPORT, HOUSING, BELT DRIVE EGG, 4"	2
412638	BASE, RACK, BELT DRIVE, EGG 4" LEFT	1
412639	BASE, RACK, BELT DRIVE, EGG 4" RIGHT (models 412620, 412621, 412622, 412623)	1
412640	RACK, BELT DRIVE, EGG, 4" (models 412620, 412621, 412622, 412623)	1
412641	EGG PLATE, BELT DRIVE, EGG 4" (models 412620, 412621, 412622, 412623)	1
412642	SUPPORT, RACK, BELT DRIVE, EGG 4" (models 412620, 412621, 412622, 412623)	2
412643	MOTOR MOUNT, BELT DRIVE, EGG 4"	1
412644	SUPPORT, MTR MOUNT, BELT DRIVE EGG, 4"	2
412645	COVER, DRIVE ROLL, BELT DRIVE EGG, 4"	2
412646	BRACKET, EGG GUIDE, BELT DRIVE EGG, 4"	4
412647	BRACKET, PINCH ROLL, BELT DRIVE EGG, 4"	4
412648	BEARING PLATE, LEFT BELT DRIVE, EGG, 4"	2
412649	BEARING PLATE, RIGHT BELT DRIVE, EGG, 4"	2
412650	MOUNT PLATE, CONTROL BELT DRIVE	1
412651	SPRING, CONSTANT FORCE, 1"	2
412654	SHAFT, PINCH ROLL, BELT DRIVE EGG, 4"	2
412657	REDUCER, 40:1,56C, DUAL OUTPUT	1
412658	DRIVE ROLL, BELT DRIVE, EGG, 4	2
412659	EGG GUIDE, BELT DRIVE, EGG, 4"	1
412660	JACK SCREW, BELT DRIVE, EGG4"	1
412662	BASE, BRUSH RETAINER BELT DRIVE, EGG, 4"	2
412665	CABLE CLAMP, 1-1/4" GALV (models 412620, 412621, 412622, 412623)	2
412666	TOP, BELT DRIVE, 4"	1
412669	LIGHT ASSEMBLY, FLOURESCENT 120V	1
412670	PAIL, 5QT, GALV	2
412673	BACK, TENSIONER, BELT DRIVE EGG, 4"	2
412674	MAT, TABLE, BELT DRIVE, EGG 4"	1
412692	CONNECTOR, INSULATOR, 4" DRIVE BELT	1
412693	SUPPORT, TROUGH BRACKET	1
420451	BEARING, 1.00" FLANGE	4
420464	SPRING - PINCH ROLL	4
420473	1/2" CONDUIT NUT	2
425044	1/2" BLACK FLEXIBLE TUBING	5.4
425045	CONNECTOR, 90 DEG, 1/2" CONDUIT LIQUID TIGHT	1
425046	1/2" CONDUIT CONNECTOR	1
450423	1.75"OD X .688"ID WASHER	4
470614	4" X 3" VAL-CO DECAL	2
500478	5/16" X 1/2" CLEVIS PIN	4
730244	#16-14 X 1/4" EXPANDED BARREL FEMALE SPADE CONNECTOR	8
730245	16-14 FULLY INSULATED MALE SPADE CONNECTOR	2
730248	14/16GA. QUICK CONNECT	2
750030	CORDGRIP, 1/2" NPT STRAIGHT	2
921698	GROMMET, PUSH-IN, RUBBER SBR (models 412620, 412621, 412622, 412623)	1
VEN91507B	"S" HOOK .177" X 1.5"	2

# Egg Collector Table Parts List

PARTS SPECIFIC TO 412620		
415408	MTR,.75HP,90VDC 1750RPM,56C, IN.F	1
412633	BASE, LEG, LEFT, BELT DRIVE EGG, 4"	1
412634	BASE, LEG, RIGHT, BELT DRIVE EGG, 4"	1
412667	DC CONTROL, 115V, BELT DRIVE	1
PARTS SPECIFIC TO 412621		
415408	MTR,.75HP,90VDC 1750RPM,56C, IN.F	1
412671	BASE, LEG, LIONG, LEFT BELT DRIVE, EGG, 4"	1
412672	BASE, LEG, LIONG, RIGHT BELT DRIVE, EGG, 4"	1
412667	DC CONTROL, 115V, BELT DRIVE	1
PARTS SPECIFIC TO 412622		
410268	MTR,.75HP,180V 1750RPM,56C, IN.F	1
412633	BASE, LEG, LEFT, BELT DRIVE EGG, 4"	1
412634	BASE, LEG, RIGHT, BELT DRIVE EGG, 4"	1
412668	DC CONTROL, 230V, BELT DRIVE	1
PARTS SPECIFIC TO 412623		
410268	MTR,.75HP,180V 1750RPM,56C, IN.F	1
412671	BASE, LEG, LIONG, LEFT BELT DRIVE, EGG, 4"	1
412672	BASE, LEG, LIONG, RIGHT BELT DRIVE, EGG, 4"	1
412668	DC CONTROL, 230V, BELT DRIVE	1
PARTS SPECIFIC TO 412624		
415408	MTR,.75HP,90VDC 1750RPM,56C, IN.F	1
412633	BASE, LEG, LEFT, BELT DRIVE EGG, 4"	1
412634	BASE, LEG, RIGHT, BELT DRIVE EGG, 4"	1
412667	DC CONTROL, 115V, BELT DRIVE	1
PARTS SPECIFIC TO 412625		
415408	MTR,.75HP,90VDC 1750RPM,56C, IN.F	1
412671	BASE, LEG, LIONG, LEFT BELT DRIVE, EGG, 4"	1
412672	BASE, LEG, LIONG, RIGHT BELT DRIVE, EGG, 4"	1
412667	DC CONTROL, 115V, BELT DRIVE	1
PARTS SPECIFIC TO 412626		
410268	MTR,.75HP,180V 1750RPM,56C, IN.F	
412633	BASE, LEG, LEFT, BELT DRIVE EGG, 4"	1
412634	BASE, LEG, RIGHT, BELT DRIVE EGG, 4"	1
412668	DC CONTROL, 230V, BELT DRIVE	1
PARTS SPECIFIC TO 412627		
410268	MTR,.75HP,180V 1750RPM,56C, IN.F	1
412671	BASE, LEG, LIONG, LEFT BELT DRIVE, EGG, 4"	1
412672	BASE, LEG, LIONG, RIGHT BELT DRIVE, EGG, 4"	1
412668	DC CONTROL, 230V, BELT DRIVE	1

## Belt Return 412180 Exploded View

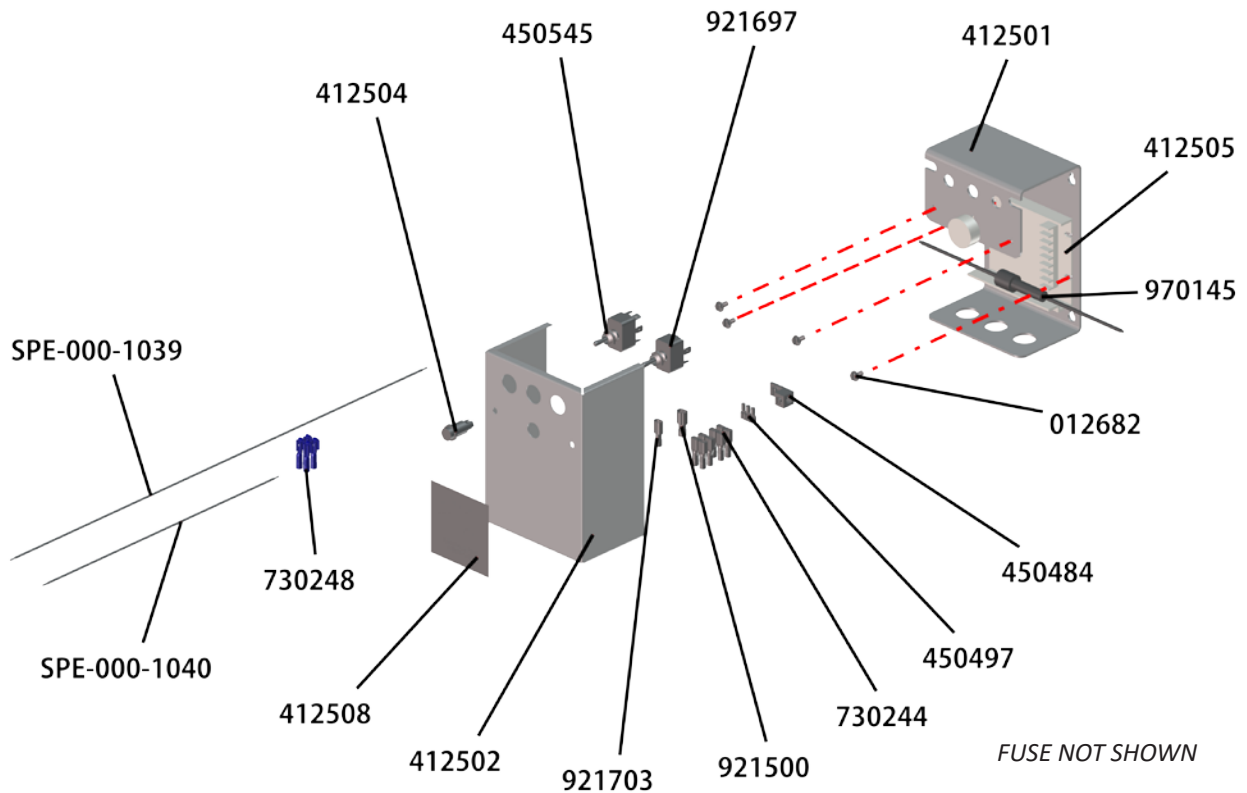


## Belt Return Parts List

PART #	DESCRIPTION	QTY
<b>412180 Belt Return</b>		
010252	WASHER, LOCK 5/16" MED SPLIT ZP	14
010426	WASHER, FLAT 5/16" SAE ZP	16
010643	5/16-18 X 3/4" HEX BOLT	6
010647	5/16" X 1-1/4" HEX BOLT	4
011115	NUT, HEX 3/8-16" A FINISHED ZP	4
011380	SCREW, PHIL, 8-32X3/8, THD CUT PAN, ZINC, TYPE F	4
011461	3/8" BALL NOSE SPRING PLUNGER	4
012660	COTTER PIN, 7/64" X 3/4" LG ZP	4
012789	5/16-18 NYLOCK NUT	22
412123	ROLLER, 2-3/8" X 6-5/8"	4
412133	ADJUSTER KNOB	2
412157	5" BRUSH RETAINER	2
412158	6-1/4" BRUSH	4
412159	BRUSH BRCKT	2
412164	BELT COVER	2
412166	BACK PANEL, RETURN, SB	1
412173	RT ADJUSTER BRCKT	1
412174	LT ADJUSTER BRCKT	1
412176	SINGLE THREAD ROLLER SHAFT	2
412181	DOUBLE THREAD ROLLER SHAFT	2
412184	BELT SHIELD	2
412188	RT BELT RETURN CASE	1
412189	LT BELT RETURN CASE	1
412368	BELT RETURN/NEST HDWE BAG	1
010252	WASHER, LOCK 5/16" MED SPLIT ZP	8
010643	5/16-18 X 3/4" HEX BOLT	8
011114	5/16-18 HEAVY HEX NUT	8
012803	RIVET, #64 X 3/16" ALL ALUM	8
500478	5/16" X 1/2" CLEVIS PIN	4
501441	NUT, HEX FLANGE 5/16"-18, ZP JS500	4

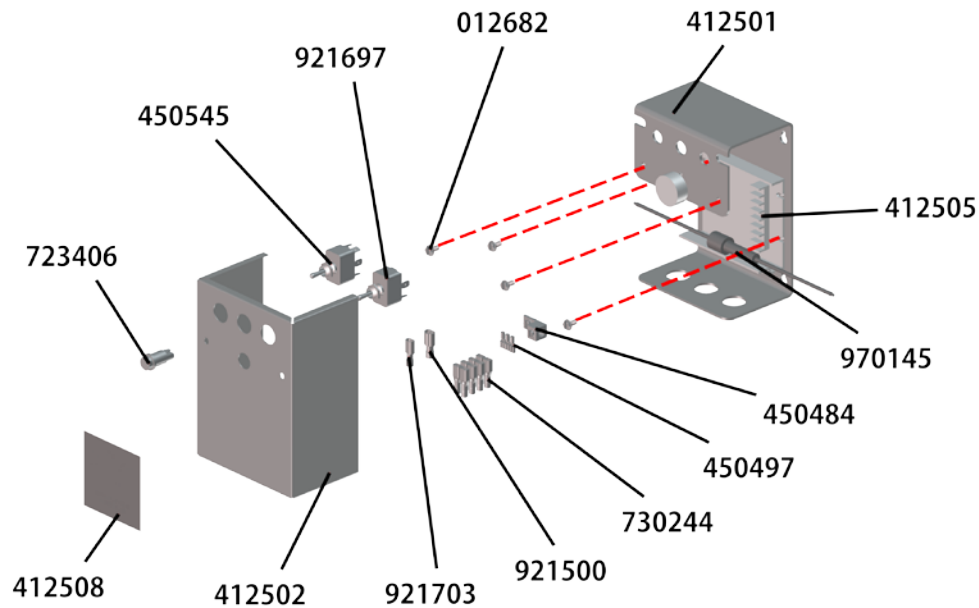


# Control 412667 Exploded View and Parts List



PART #	DESCRIPTION	QTY
<b>412667 DC CONTROL, 115V, BELT DRIVE</b>		
012682	SCREW, #10-24 X 3/8" SLTD HEX WASHER HEAD, ZP	5
412501	DC CONT HOUSING	1
412502	DC CONT COVER	1
412504	120V LIGHT	1
412505	DART DC CONTROLLER	1
412508	DC CONTROLLER DECAL	1
425070	12AMP 250VOLT FUSE	1
450484	GROUND BLOCK	1
450497	3/16" FEMALE QUICK CONNECT	2
450545	3-POSITION TOGGLE SWITCH 20A-125VAC, 10A-250VAC, DPDT	1
730244	#16-14 X 1/4" EXPANDED BARREL FEMALE SPADE CONNECTOR	8
730248	14/16GA. QUICK CONNECT	4
921132	WIRING DIAGRAM, BASE, COLL TAB CB	1
921500	CONNECTOR, MALE, QUICK CONNECT FULLY INSULATED, 12-10 AWG	1
921697	SWITCH, TOGGLE, ON/OFF, DPST 15A, 3/4HP, QUICK CONN	1
921703	CONNECTOR,FEMALE,QUICK CONNECT FULLY INSULATED, 12-10 AWG	1
970145	FUSE HOLDER, IN-LINE	1
SPE-000-1039	WIRE, 14 AWG STRND, BLACK	2.3
SPE-000-1040	WIRE, 14GA.STANDARD, WHITE	0.7

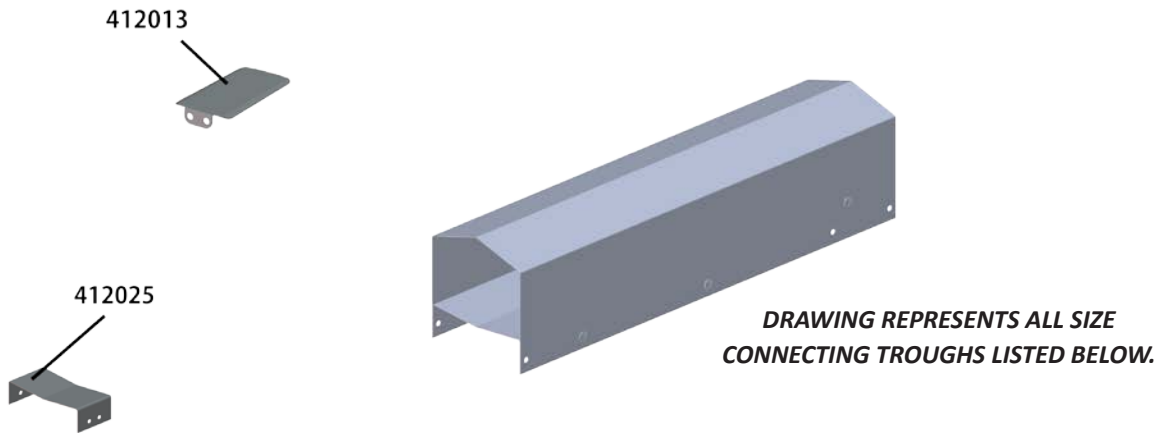
# Control 412668 Exploded View and Parts List



FUSE NOT SHOWN

PART #	DESCRIPTION	QTY
<b>412668 DC CONTROL, 230V, BELT DRIVE</b>		
012682	SCREW, #10-24 X 3/8" SLTD HEX WASHER HEAD, ZP	5
412501	DC CONT HOUSING	1
412502	DC CONT COVER	1
412505	DART DC CONTROLLER	1
412508	DC CONTROLLER DECAL	1
450484	GROUND BLOCK	1
450497	3/16" FEMALE QUICK CONNECT	2
450545	3-POSITION TOGGLE SWITCH 20A-125VAC, 10A-250VAC, DPDT	1
730244	#16-14 X 1/4" EXPANDED BARREL FEMALE SPADE CONNECTOR	8
730248	14/16GA. QUICK CONNECT	4
723406	INDICATOR LIGHT, NEON, 250V	1
921132	WIRING DIAGRAM, BASE, COLL TAB CB	1
921500	CONNECTOR, MALE, QUICK CONNECT FULLY INSULATED, 12-10 AWG	1
921697	SWITCH, TOGGLE, ON/OFF, DPST 15A, 3/4HP, QUICK CONN	1
921703	CONNECTOR,FEMALE,QUICK CONNECT FULLY INSULATED, 12-10 AWG	1
921704	FUSE, 6A, 250V, 1.25 X .25	1
970145	FUSE HOLDER, IN-LINE	1
SPE-000-1039	WIRE, 14 AWG STRND, BLACK	2.3
SPE-000-1040	WIRE, 14GA.STANDARD, WHITE	0.7

# Trough Covers Exploded View & Parts List



PART #	DESCRIPTION	QTY
<b>412070, 412071, 412072, 412073, 412074, 412075 (Interchangeable parts)</b>		
010711	3/16" X 7/32" TUBULAR RIVET (quantities will vary by assembly)	*
<b>412070 (18")</b>		
412046	18" SB TROUGH CONN	1
412047	18" SB TROUGH COVER	1
<b>412071 (24')</b>		
412044	24" SB TROUGH CONN	1
412045	24" SB TROUGH COVER	1
<b>412072 (28.75")</b>		
412048	28.75" SB TROUGH CONN	1
412049	28.75" SB TROUGH COVER	1
<b>412073 (36")</b>		
012802	RIVET, POP #62X3/16" ALL-ALUM	4
412013	SB BELT GUIDE W/HOLES	1
412051	36" SB TROUGH CONN	1
412052	36" SB TROUGH COVER	1
<b>412074 (48")</b>		
012802	RIVET, PIP #62X3/16" ALL-ALUM	4
412013	SB BELT GUIDE W/HOLES	1
412053	48" SB TROUGH CONN	1
412054	48" SB TROUGH COVER	1
<b>412075 (96")</b>		
012802	RIVET, PIP #62X3/16" ALL-ALUM	11
412013	SB BELT GUIDE W/HOLES	2
412025	TROUGH JOINER	1
412007	NEST LOOP HINGE	3
412056	96" SB TROUGH CONN	1
412057	96" SB TROUGH COVER	1
412078	TROUGH CLIP	3

# Customer Service

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