12 ‘ BULK FEED BIN

Model 512

Installation Manual

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JDS 3-17-2011

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Warranty

VAL PRODUCTS, INC. WARRANTIES

VAL-C0™ MANUFACTURED PRODUCTS OTHER THAN EXTENDED WARRANTY PRODUCTS

Val Products, Inc. (Val Products) warrants to the original purchaser that Val Products' manufactured products (other than the products subject to an extended warranty set forth below) will be free of defects in material and workmanship for a period of one (1) year from and after the date of original purchase and when used in a usual and customary fashion. If Val Products is notified that such a defect exists within one year of the original purchase date and, upon inspection, agrees that the product is defective, Val Products will, at its option, (a) repair or replace (FOB Val Products' 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 Val Products designated location for evaluation. Val Products' determination as to whether the product is defective is final. See the General Conditions and Limitations set forth below.

NIPPLE DRINKERS EXTENDED WARRANTY

Val Products, Inc. (Val Products) agrees to the following extended warranty with respect to VR Series and VL Series Nipple Drinkers manufactured by Val Products: VR Series and VL Series Nipple Drinkers that prove to be defective in workmanship or material and become unusable within a period of five (5) years from and after the date of original purchase will be repaired or replaced, at Val Products' option, at no charge (excluding labor of removal and installation), FOB Val Products' plant. VR Series and VL Series Nipple Drinkers which prove to be defective in workmanship or material and become unusable after five (5) years but within ten (10) years of the date of original purchase will be repaired or replaced, at Val Products' option, at a pro rated cost basis (excluding labor of removal and installation) to the original purchaser, FOB Val Products' plant, on the following basis: Year six (6), customer pays 50% of the current price, year seven (7), customer pays 60% of the current price, year eight (8), customer pays 70% of the current price, year nine (9), customer pays 80% of the current price, and year ten (10), customer pays 90% of the current price. All defective Nipple Drinkers must be returned to a Val Products' designated location for evaluation. Val Products' determination as to whether the product is defective and unusable is final. See the General Conditions and Limitations set forth below.

FIBERGLASS FAN HOUSINGS EXTENDED WARRANTY

Val Products, Inc. (Val Products) agrees to the following extended warranty with respect to the fiberglass fan housings manufactured by Val Products on VAL-CO™ PMC Power Miser 12", 16", 21", 24", 36", 48", and 50" Fiberglass Fans that prove to be defective in workmanship or material and become unusable over the life of the structure where the VAL-CO ™ Fiberglass Fan was originally installed after original purchase, provided that the fan has remained undisturbed in its original installation location, will be repaired or replaced, at Val Products' option, at no charge (excluding labor of removal and installation and shipping), FOB Val Products' plant. All defective fan housings must be returned to a Val Products' designated location for evaluation. Val Products' determination as to whether the product is defective and unusable is final. See the General Conditions and Limitations set forth below.

FIBERGLASS FAN MOTORS EXTENDED WARRANTY

Val Products, Inc. (Val Products) agrees to the following extended warranty with respect to the fiberglass fan motors included as original equipment on VAL-CO™ PMC Power Miser 12", 16", 21", and 24" Fiberglass Fans manufactured by Val Products that prove to be defective in workmanship or material and become unusable within a period of two (2) years from and after the date of original purchase will be repaired or replaced, at Val Products' option, at no charge (excluding labor of removal and installation and shipping), FOB Val Products' plant. All defective fan motors must be returned to a Val Products' designated location for evaluation. Val Products' determination as to whether the product is defective and unusable is final. See the General Conditions and Limitations set forth below.

General Conditions and Limitations Applicable to All Val Products, Inc. (Val Products) Warranties, Including Extended Warranties

1. The Product must be installed and operated in accordance with instructions published by Val Pro ducts 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 Val Products 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. Warranty applies only to products used in applications as originally intended by Val Products – other applications in industry or commerce are not covered by the Warranty. Val Products' products are expressly not designed or authorized for use in any applications where intended to sustain or sup port human life or any other application where the failure of the product could result in personal injury or death.
5. Malfunctions resulting from misuse, abuse, mismanagement, negligence, alteration, accident, lack of proper maintenance, lightening strikes, electrical power surges, or electrical power interruption shall not be considered defects under the Warranty. Corrosion, material deterioration and/or equip ment malfunction caused by or consistent with the excessive additions of chemicals, minerals, sedi ments or other foreign elements with the product shall not be considered defects under the War ranty.

6. VAL PRODUCTS WILL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR ANY KIND OF SPECIAL, INCI DENTAL, CONSEQUENTIAL, OR CONTINGENT DAMAGES INCLUDING, BUT NOT LIMITED TO, LOST OR DAMAGED PRODUCT, GOODS OR LIVESTOCK, COSTS OF TRANSPORTATION, LOST SALES, LOST OR DERS, 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.

7. THE WARRANTIES SET FORTH ABOVE CONSTITUTE VAL PRODUCTS' ENTIRE AND SOLE WARRANTY. VAL PRODUCTS 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 FUR NISHED, AND ANY OTHER WARRANTY ARISING BY OPERATION OF LAW, CUSTOM OR USAGE.
8. Val Products denies any authorization of any distributor, dealer, agent, or employee to modify, ex tend, or otherwise alter the conditions of any warranty in addition to, or in lieu of, those conditions and authorized in writing by an officer of Val Products. Val Products reserves the right to change or delete models, or change specifications at any time without notice or obligation to improve previous products.

Introduction

This manual covers the assembly instructions for the 12’ (3.6576 m) Feed Bin with parts lists. Bin accessories and/or options have been added to the appendixes for your convenience.

Features

- Weather tight roof
- Warp resistant top lid closes tight to keep out moisture and offers smooth operating openers
- Bin bolts have a built in weather seal
- Drip edge keeps water away from the taper hopper and unloading boot
- Taper Hoppers are offset to allow smooth feed flow
- Bin sheets are made of heavy gauge G-90 galvanized steel with 2-2/3” (33.86 mm) wide by 1/2” (12.7 mm) deep corrugation
- Legs are die formed with a sturdy bracing system for structural support.
- High strength bolts are used throughout

Site Selection

The success of assembling your new bulk feed bin begins with the ground you start on and the foundation you lay. The selected site must be firm, level ground with good water drainage and a soil bearing capacity of 3500 lbs. per sq. ft. (**3500 psf = 1587.573 kg per square 0.3048m)** Check with your local soil engineer if you have any questions. When you have determined that the soil is acceptable, you should also consider the following factors: accessibility of feed handling equipment, space for future growth and the absence of overhead obstructions such as power lines or tree branches.

General Information

- Read all safety information, instructions and illustrations before starting to assemble your new bulk feed bin. It is recommended that you review the complete assembly manual twice before starting and be sure to check your shipment with the packing list for any shortages. Please report shortages promptly.

- Metric measurements are shown in millimeters and in parenthesis throughout the manual. Example: 13" (330mm)

- The terms horizontal and vertical refer to the bin in a standing position.

- Instructions for optional bin accessories are packaged with the components.

- To help decide which is the top and bottom of corrugated hoppers, a hole spacing of 3.125" (79mm) is used at the top of all extension hoppers and at the bottom of all main hoppers.

- Vertical seams must be staggered on all hopper rings. On 12' x 6 or 7 ring bins align leg holes on bottom two main hopper rings to accommodate longer legs.

- Taper hopper vertical seams and boot collar seam use truss head bin bolts with the head always on the inside of the bin to allow for better feed flow.

- Corrugated hoppers and roof deck seams use hex head bin bolts with the head to the outside except to fasten legs to corrugation where the bolt head goes to the inside.

- Tighten all bin bolts from the nut side to help reduce the possibility of damaging the rubber seal on bin bolts. Do not allow the bolt heads to spin when tightening.

- When assembling corrugation sheets, use a drift pin to help align holes and always overlap sheets in the same direction. Finger tighten nuts until the next ring is assembled.

- Remove protective paper from decal before raising bin. Paper may be difficult to remove if exposed to warm sunlight for several hours.

Our concern is for your safety. The safety warnings are included in this manual as a guide to help and encourage the safe operation of your feeding equipment. It is your responsibility to evaluate the hazards of each operation and implement the safest method of protecting yourself as owner and/or operator.

Safety Symbols - Warning Labels

= NOTE - take notice this may help you!

= IMPORTANT INFORMATION - be sure to read!

= CHECK - the details of all requirements, processes or procedures of instructions listed.

= WARNING - The safety alert symbol is always used on warning signs that involve your safety. Anytime you see this symbol heed the warning it identifies. This symbol may be used alone or in conjunction with other symbols.

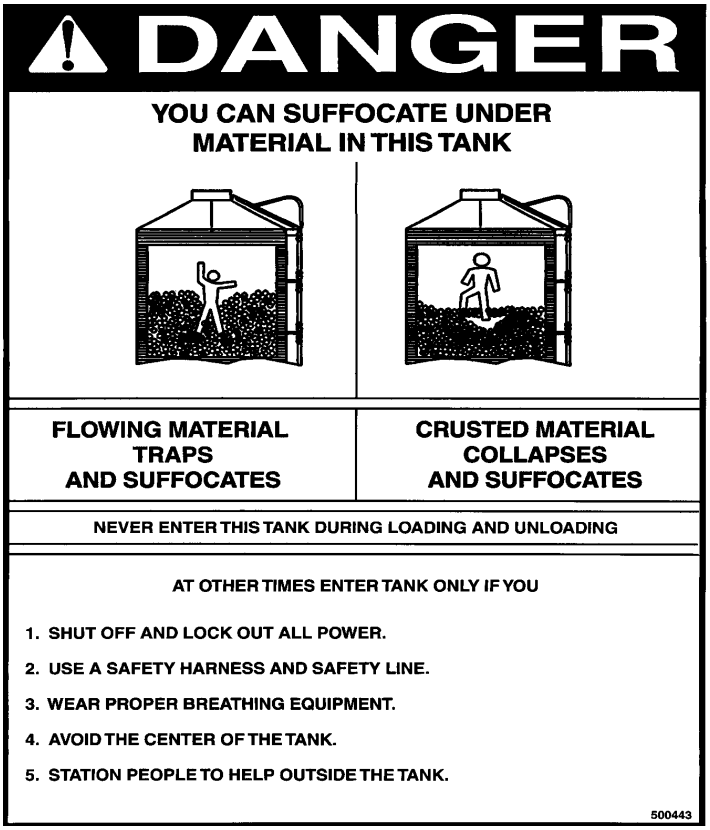
= DANGER - imminent hazard, if ignored serious injury or death WILL occur.

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

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

- **Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where serious injury or death may occur.**
- **Keep safety guards on equipment, wear gloves.** 
- **Ground all electrical equipment. Do not bypass electrical safety equipment. Make sure electrical equipment is properly installed and grounded by a qualified electrician.**
- **Wear a hard hat during construction.** 
- **Order and attach warning symbols to danger areas that are not already noted.**
- **Do not enter bin during operation or at any time without proper safety precautions.**

This Label MUST be present on the inside of the roof lid. Contact your distributor for a free replacement if missing.

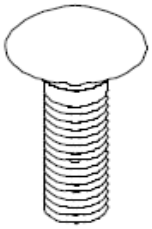


12’ Feed Bin Hardware Parts

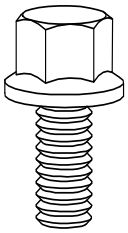
Check all parts with each packing list included with each carton of product or the parts list included in this manual at Appendix 1 on pages 34-38 before starting assembly. Report any shortages immediately to your supplier.

Save all cartons until bin is completed.

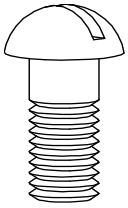
Hardware List



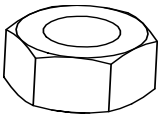
011475 7/16” x 1”
Carriage Bolt



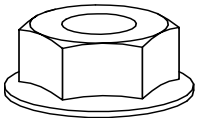
501442 - 5/16” x 1”
Flanged Hex Bin Bolt



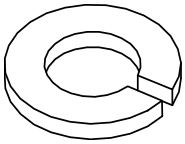
501440 - 5/16” x 3/4”
Truss Bin Bolt



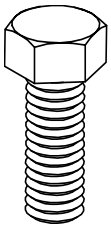
010603 - 5/16
Hex Nut



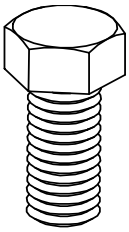
501441 - 5/16”
Flange Nut



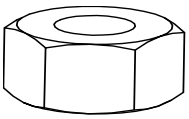
010253 - 3/8”
Lockwasher



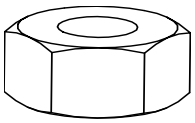
010664 - 3/8” X 1”
Hex Bolt



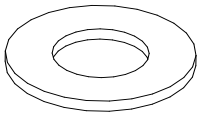
012240 - 7/16” x 1”
Hex Bolt



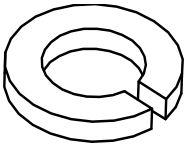
011115 - 3/8”
Hex Nut



011116 - 7/16”
Hex Nut



010433 - 7/16”
Flat Washer



010254 - 7/16”
Lockwasher

Tools Required

Below is a list of tools required to assemble your new bin. The use of an electric or air impact wrench will greatly reduce your assembly time.

- Open or Box End Wrenches (1/2”, 9/16”, 5/8”, 11/16”)
- Socket Set with Speed Wrench or Impact
- Hammer or Rubber Mallet
- Large Screwdriver
- 12” Drift Punches
- Nail Apron for convenience
- (2-3) Ladders (one ladder will need to be straight and fit thru 16” opening)

Be careful when using power equipment not to over-torque the fasteners.

12’ (3.66m) Feed Bin Specifications

FEED BIN DIAMETER	NUMBER OF RINGS	APPROXIMATE CAPACITY (40#/CUBIC FT.)					FILL HEIGHT	
		2000 LB. TONS	METRIC TONS	CUBIC FEET	CUBIC METERS	BUSHELS	FEET	METERS
12’ DIAMETER 60º Taper Hopper 40º Roof 16” Opening	1	16.92	15.35	846.2	23.96	680	19’ 1”	5.82
	2	22.90	20.77	1144.9	32.42	920	21’ 9”	6.63
	3	28.87	26.19	1443.5	40.88	1160	24’ 5”	7.44
	4	34.84	31.61	1742.2	49.33	1400	27’ 1”	8.26
	5	40.82	37.03	2040.8	57.79	1640	29’ 9”	9.07
	6	46.79	42.45	2339.5	66.25	1880	32’ 5”	9.88
	7	52.76	47.86	2638.1	74.70	2120	35’ 1”	10.69

- All 16” (40.64 centimeter) opening bins include VAL-CO™ ‘s exclusive 2-piece boot collar
- Ladder safety cages are available
- All bins are designed for the storage of FREE-FLOWING materials only

Soybean Meal, meat scraps and certain other materials are NOT considered FREE-FLOWING and should NOT be stored in these bins.

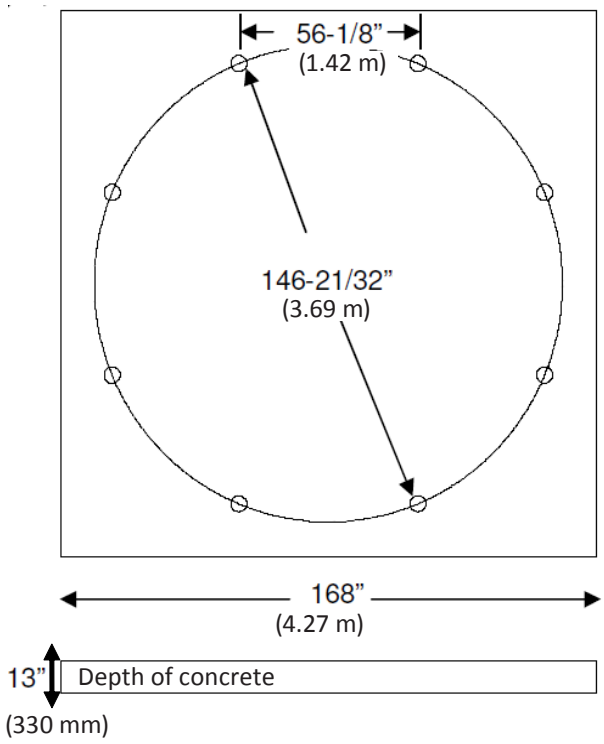
Foundation and Anchoring Specifications

To avoid cable hanging over edge of slab, place a PVC tube thru slab before pouring to drive ground rod thru.

After selecting the best site for your new bin and making sure the soil has the required 3500 pounds per square foot (psf), you are now ready to begin your foundation. It is extremely important that your bin has a firm and level foundation. The concrete used for this must have a minimum compression rate of 3000 lbs.. per square inch at 28 days. The pad must be smooth and meet the dimensions listed below. It is imperative that it is poured both square and level. When laying out the bolt locations, it is very important the bin maintains squareness. Be sure to check all (3) diagonal measurements and hold the same distance between holes *as shown below in Figure 1.*

3500 psf = 1587.573 kg (per square 0.3048m)

Figure 1



The "L" shaped anchor bolt *shown in Figure 2 below* can be purchased from local retailers. When using the optional anchor bolts, *shown in Figure 3 below,* holes can be drilled after concrete has set. However; you must use the same dimensions as shown below to assure the bin maintains squareness. Note: Locating anchor bolt holes by using the assembled bin legs does not assure the bin will be set squarely and can result in damage to equipment and/or personal injury.

Figure 2

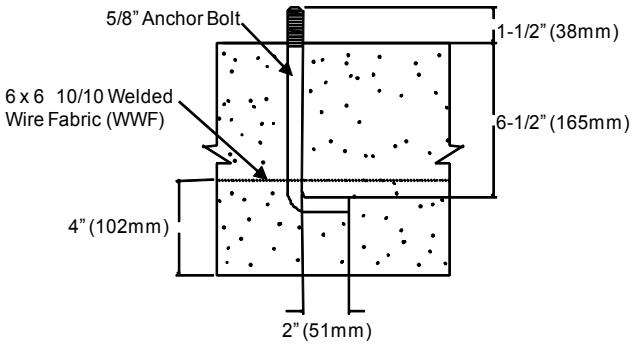
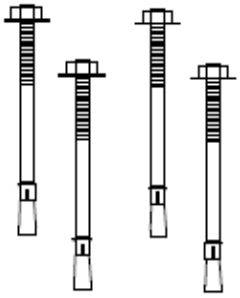


Figure 3

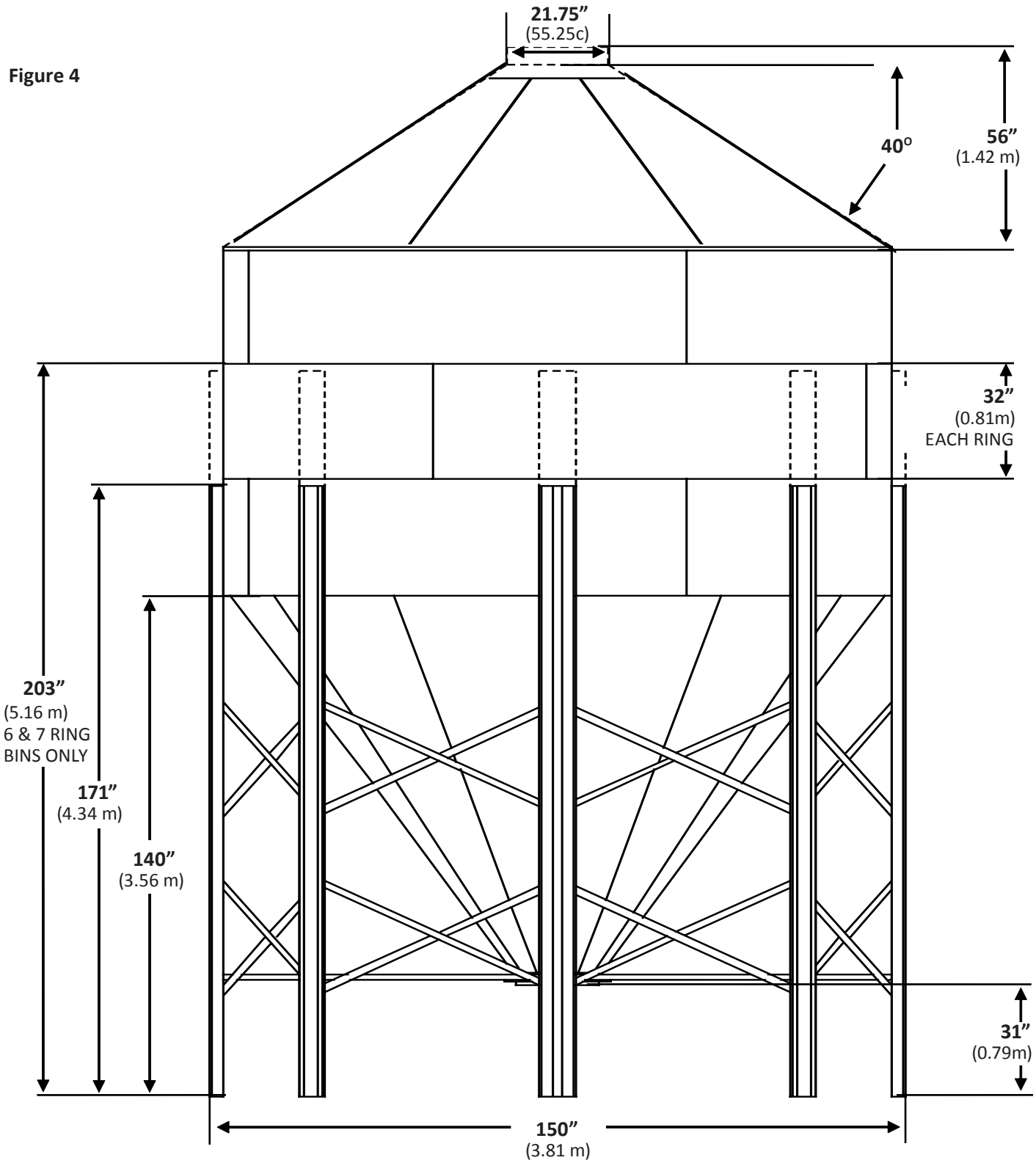


Optional style anchor bolts as shown here can be supplied by VAL-CO™.

Order kit #500388 for 12' bins.

12’ Diameter Bin Dimensions

Figure 4



12’ Feed Bin Overview

CORRUGATED HOPPERS

1 RING BIN
512038 14ga Main - [3]
512041 14ga Main w/decal -[1]

2 RING BIN
512038 14ga Main - [4]
512008 20ga Ext. - [3]
512009 20ga Ext. w/decal - [1]

3 RING BIN
512038 14ga Main - [4]
512011 18ga Ext. - [4]
512008 20ga Ext. - [3]
512009 20ga Ext. w/decal - [1]

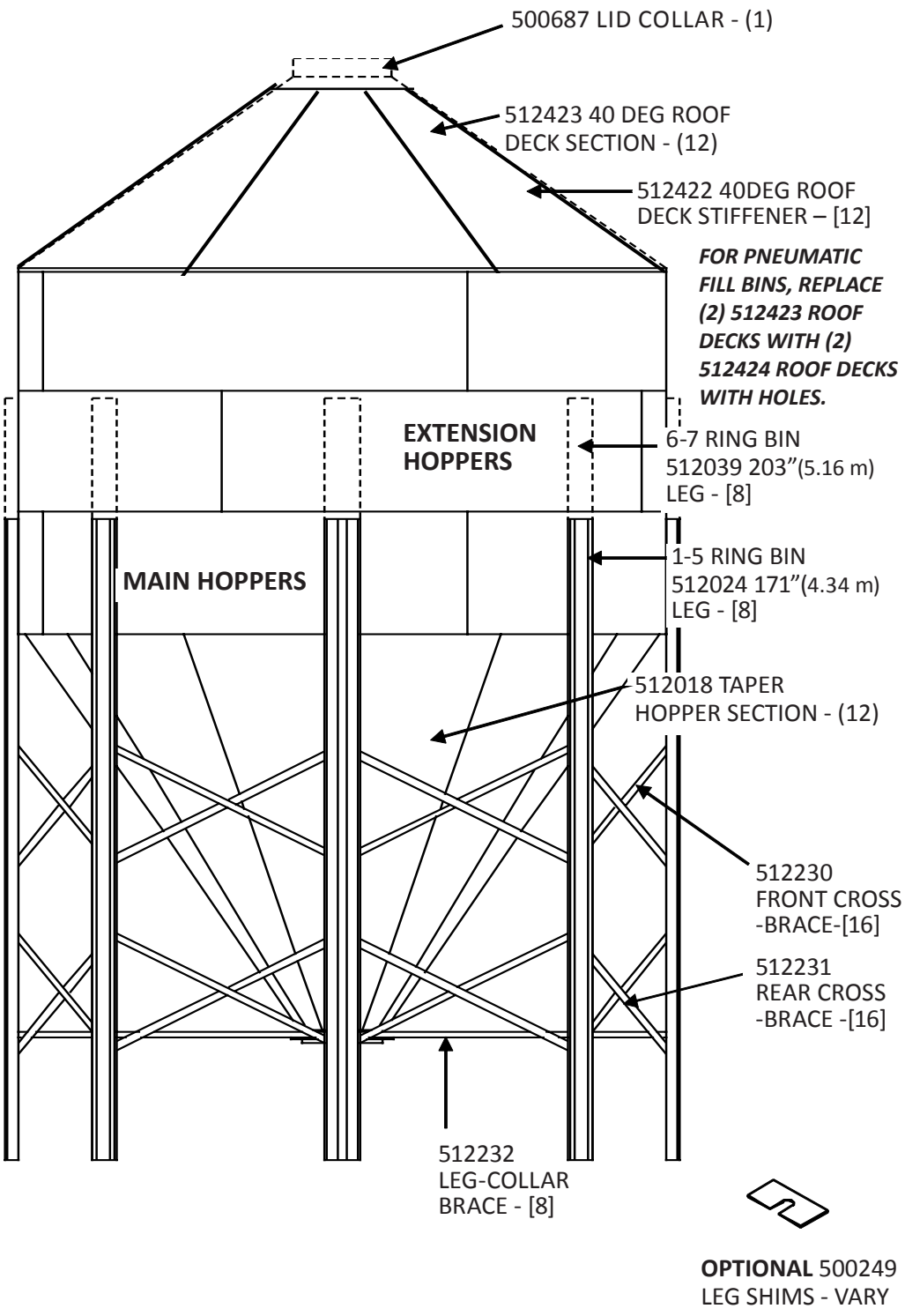
4 RING BIN
512038 14ga Main - [4]
512035 16ga Ext. - [4]
512008 20ga Ext. - [7]
512009 20ga Ext. w/decal - [1]

5 RING BIN
512040 12ga Main - [4]
512035 16ga Ext. - [4]
512011 18ga Ext. - [4]
512008 20ga Ext. - [7]
512009 20ga Ext. w/decal - [1]

6 RING BIN
512040 12ga Main - [4]
512037 14ga Ext. w/holes - [4]
512035 16ga Ext. - [4]
512011 18ga Ext. - [4]
512008 20ga Ext. - [7]
512009 20ga Ext. w/decal - [1]

7 RING BIN
512040 12ga Main - [4]
512037 14ga Ext. w/holes - [4]
512014 14ga Ext. - [4]
512035 16ga Ext. - [4]
512011 18ga Ext. - [4]
512008 20ga Ext. - [7]
512009 20ga Ext. w/decal - [1]

Figure 5

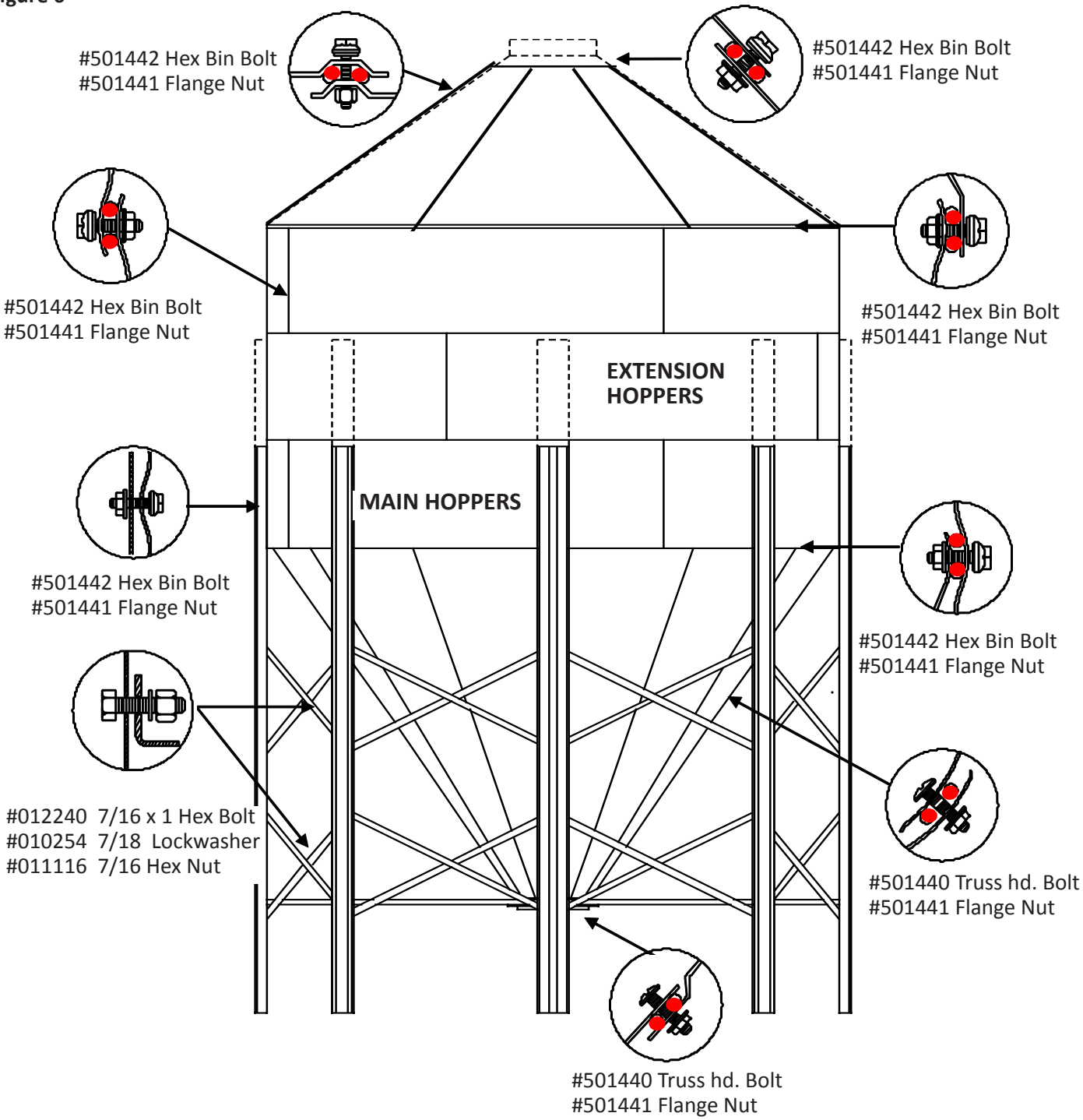


Hardware Assembly Summary

This illustration shows the type of fasteners, placement and position of caulking. This illustration can be used as a quick reference when assembling your bin. Refer to the step-by-step instructions for complete assembly details.

● = **Caulking Bead** ***(IT IS RECOMMENDED THAT YOU USE THE CAULKING PROCEDURE ON PAGE 17.)***

Figure 6



Determining Bin Assembly Method

It is necessary for you to determine how many rings your bin assembly includes and what method of bin assembly and lifting you will decide to use. There are 2 options for assembly. The first option is to assemble the bin ***"vertically"*** using a bin lifting device as you preform assembly. The Second option ***FOR 1-3 RING BINS ONLY*** is to assemble the bin on its side ***"horizontally"*** to completion. *(Lifting instructions - Appendix 14 on page 56.)*

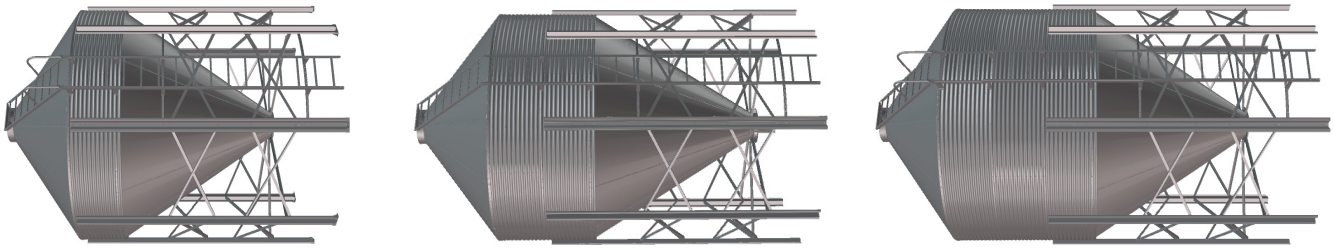
Option 1 "VERTICAL" ASSEMBLY - *RECOMMENDED* FOR ALL BINS

Figure 7

VERTICAL ASSEMBLY - ***REQUIRED*** FOR 4-7 BINS

Option 2 "HORIZONTAL" ASSEMBLY - *ONLY FOR 1-3 RING 12 ft. BINS (NOT Val-Co™ recommendation)*

(Assembly and lifting method is detailed at Appendix 13 on pages 51-53.



1 RING BIN **2 RING BIN** **3 RING BIN**

Corrugated Hopper Assembly / Caulking Instructions

The 1st ring assembly is the same for both assembly options 1 and 2. The following instructions will focus on Option 1 "Vertical" Assembly.

1. Once the assembly method is determined, identify the 4 lightest weight corrugated hopper sheets by the part number on the inside of each sheet. ***The higher the galvanized number, the lighter the steel. Example #512008 (20 ga.) Ext Hopper is lighter than #512011 (18 ga.) Ext. Hopper.***

2. Set the top ring of the hopper sheets in a circle *as shown in Figures 8 and 9.* ***Make sure the horizontal side with the most holes is to the top.***

3. Apply the caulking putty to the inside of the hopper sheets, (where they join and form a seam), along both sides of the holes *as shown in Figure 10*.

4. Place the caulked end to the inside or behind the un-caulked end of each adjacent hopper sheet *as shown in Figure 10.* ***Use a drift pin/AWL to align corner holes.***

Be sure caulking forms a good seal around the holes and seam to prevent leaking.

5. Assemble ends with #501442 Bin Bolts and #501441 Flange Nuts. Continue inserting Bin Bolts and Flanged Nuts to all the holes along the vertical seam as you assemble the ring.

Do not tighten until all (4) sheets of ring are assembled.

- *Make sure you have aligned the corner hole where the (4) hopper sheets meet **first** for easiest assembly.*
- *Remember to complete entire ring before tightening nuts.*
- *Make sure you tighten all Bin Bolts from the Flange Nut side. Using the Bin Holt head to tighten bolts can damage the rubber seal and may lead to possible leaking.*

6. After top ring is assembled run a row of caulking all the way along both sides of TOP horizontal holes on outside of hopper sheets. You are now ready to begin assembling Roof Deck sections.

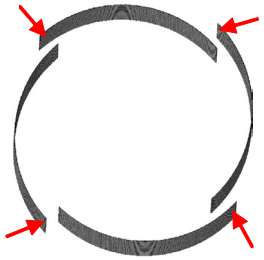
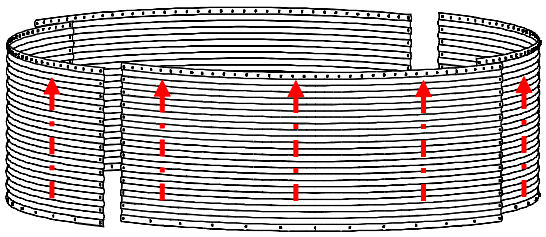


Figure 8

Assemble Hopper Sheets by overlapping the same end on each sheet as shown to left

Figure 9



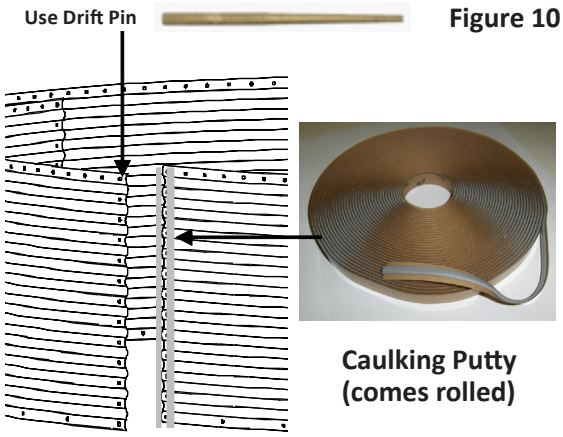
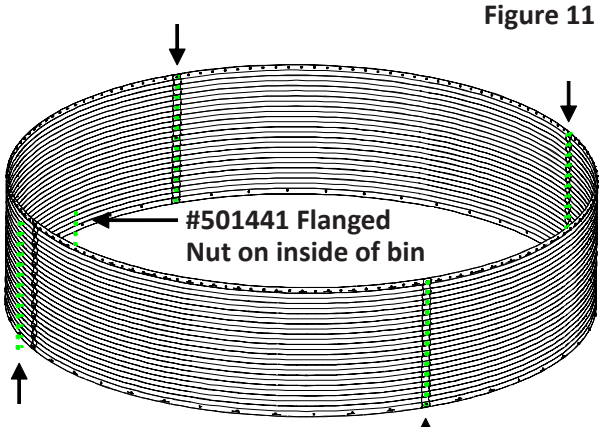


Figure 10

Caulking Putty (comes rolled)

Figure 11



#501442 Hex Bin Bolt (Flanged) on outside of bin

Do not tighten bolts until all (4) sheets of ring are assembled.

Roof Deck Assembly (VERTICAL example)

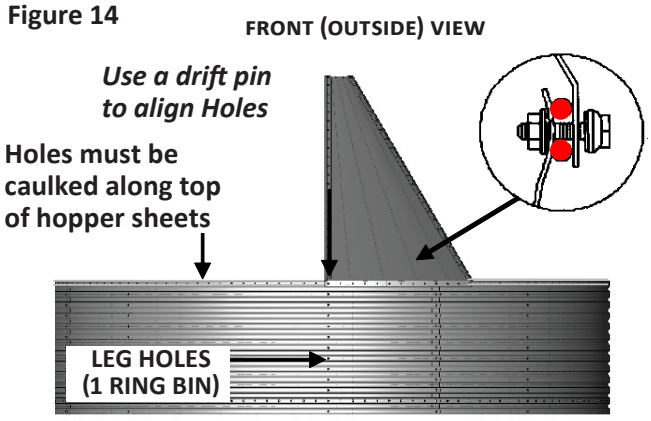
From here going forward we will use Option 1 "Vertical" assembly in detailing steps. These steps would be the same in a side"horizontal" assembly except that you might choose to follow the order of assembly shown on pages 51 and 52 for "Hortizonal" side assembly.

1. Before you begin to assemble the roof deck sections you must decide where the bin legs will be located on the bottom ring of the bin. Each ring of corrugation must be staggered 1/2 sheet. You can determine where the legs will be located compared to the top ring by the size of the bin /number of rings.

When all hopper sheets are assembled you should have the heaviest corrugation on the bottom and the decaled sheet on top.

On Pneumatic Fill bins, be sure the roof deck sections (with holes *as shown in Figure 13*) are straight across from each other and not located where legs will be in center of the roof deck section. *Consider which side you prefer to have the fill Inlet (intake), lid opening and ladder position.*

Figure 14



3. Place bottom edge of Roof Deck section over (previously) caulked holes in the top ring of hoppers and fasten with #501442 - 5/16" Bin Bolts and #501441 Flange Nuts keeping bolt heads to the out side *as shown in Figure 14 above.*

4. Double caulk the top side of roof deck vertical seam that will go under the adjacent next roof deck.

Figure 12

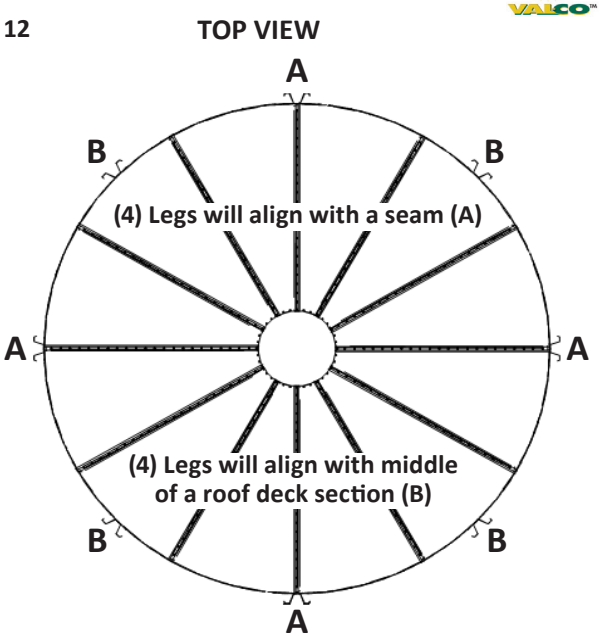


Figure 13

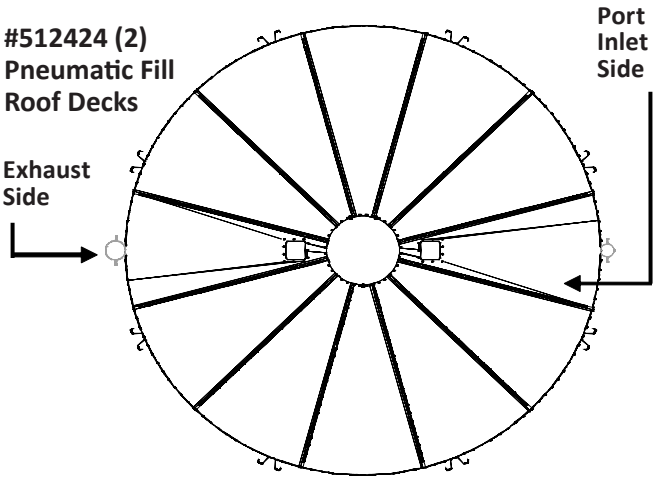
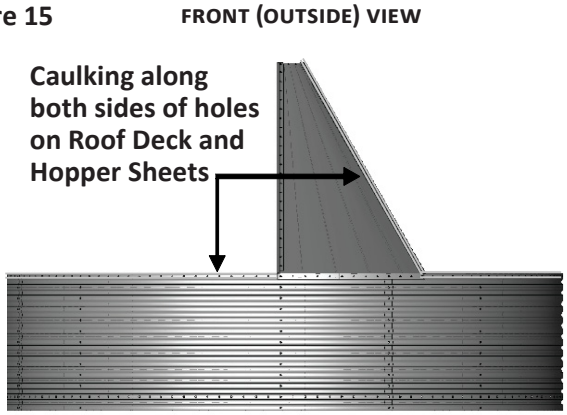


Figure 15



Be sure to caulk all seams along both sides of the holes to form a good seal to prevent leaking! *(As illustrated on page 17.)*

- *You will need a person inside the bin to accomplish this assembly.*
- *It is helpful to hold up the Roof Decks as you assemble them with a supporting pole using a punch or drift pin thru a top hole of the Roof Deck into the top of the pole as shown in Figure 16 to the right until you have several sections assembled.*

5. Place the next Roof Deck section on top of the two rows of caulking and align the holes on the vertical seam *as shown in Figure 17.*

6. Position Roof Deck Stiffener Angle under the seam of the (2) Roof Deck sections with the flange facing to ward the inside of the bin (downward) *as shown in Figure 17.*

7. Align the holes on the Stiffner Angle with the vertical holes of the Roof Deck sections. ***Use a drift pin to line up the holes at each end of the vertical seam and use #501442 Bin Bolt and #501441 Flange Nut to secure***.

Do not tighten UNTIL all the hardware is installed on the Roof Deck sections.

8. Continue around the bin until all (12) Roof Deck Sections are assembled.

9. Tighten the Bin Bolts and Flange Nuts.

Lid Collar Assembly

1. Caulk both sides of holes around the top end of the roof decks, *same as previously instructed,* and fasten lid collar to roof decks with Bin bolts and Flange nuts.

Figure 19

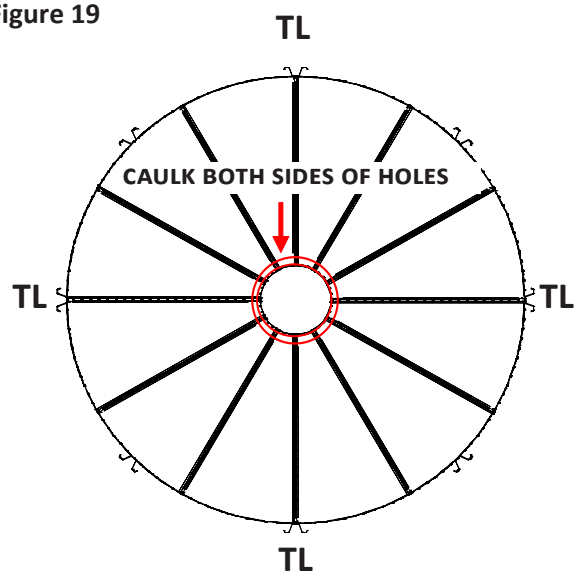


Figure 16

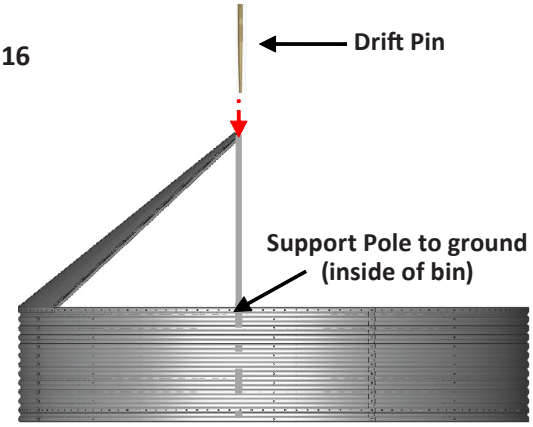


Figure 17

Back View of Figure 14 (INSIDE ROOF) showing Stiffner Angle assembly to Roof Deck & Hopper Sheet

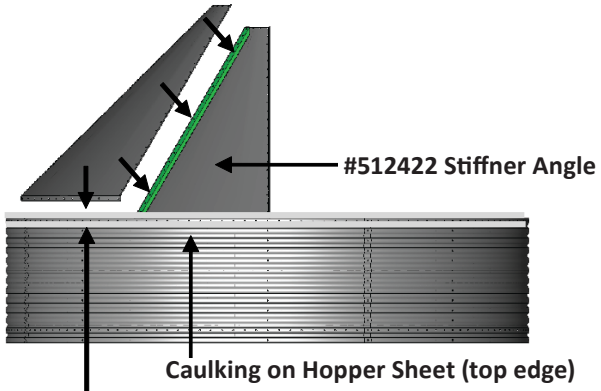


Figure 18

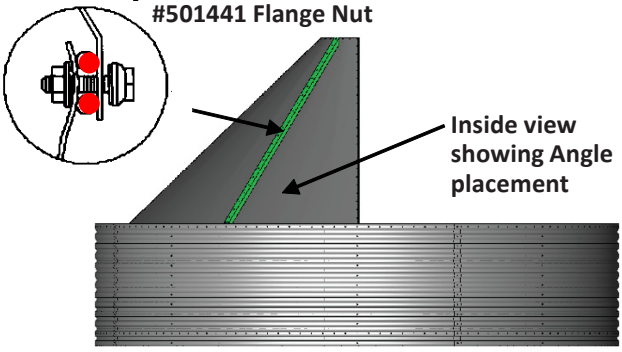
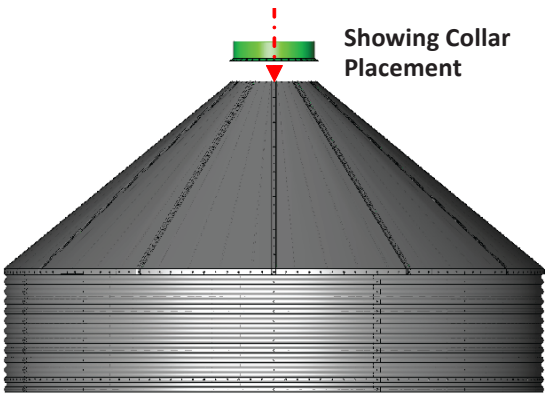


Figure 20 ROOF DECK SECTIONS COMPLETED



Now would be a good time to install accessory kits that require attachment to the roof or rings that are assembled. These kits would include the Wayback Lid or Tru-Lok Lid, Pneumatic Fill Kit and Tube Extensions and Ladder kits.

Ladder Position

Determine where the #512050 Roof Ladder Standoff should be located and leave (2) holes open for attaching when you assemble the ladder. *This will save you from having to remove them later.*

The ladder should be positioned between (2) bin legs approximately 90 degrees from direction of lid opener *as shown in Figure 21 and 22 below.*

Figure 21

TRU-LOK / LADDER POSITION

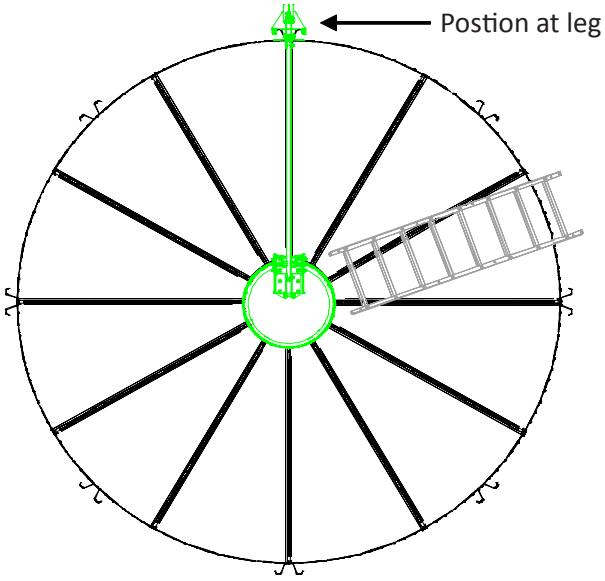
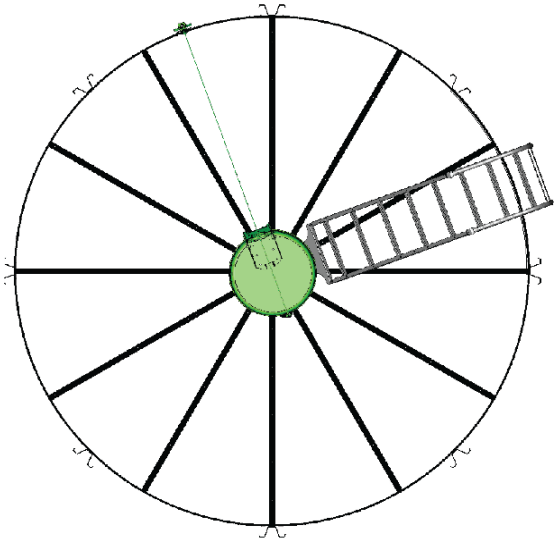


Figure 22

WAY-BACK LID / LADDER POSITION



Refer to page 22 and 23 for assembling the Way-Back Lid and Tru-Lok Lid. Instructions are also included in the product carton.

Roof Ladder Assembly (VERTICAL example)

1. Attach the #512050 Roof Ladder Standoff Bracket to the (2) empty holes in the Lid Collar with #501442 Bin Bolts and #501441 Flange Nuts *as shown in Figure 23.*

You may have assembled this hardware into the Lid Collar previously, so just remove them now to attach the Roof Ladder Standoff Bracket.

2. Remove the (2) bolts and nuts in Roof Deck at **Hopper seam** that align with Roof Ladder Standoff Bracket (6 hole spread) *as shown in Figure 23a* and attach (2) #500195 Ladder Top Brackets using top hole and same #501442 Bin Bolts and #501441 Flange Nuts as removed.

3. Assemble (2) #512915 Roof Deck Ladder Rails and (8) #500030 Ladder Steps with #010643 5/16" X 3/4" Bolts and #012789 Locknuts. Keep locknuts to inside of rails. Refer to Figure 24 to right, to determine proper spacing for rails.

4. Fasten Roof Ladder to Roof Standoff with (2) #010643 5/16" x 3/4" Hex Bolts and #012789 Locknuts.

Use top hole in Ladder Top Brackets to attach to bin.

5. To attach #500191 Ladder Extension assembly, fasten #500769 Roof Ladder Angle to the inside of the top end of both Ladder Rails and attach the #500768 Handrails to outside of the Ladder Rails using the same hardware as above.

6. Position 1st Extension Ladder Rails over #500195 Ladder Top Brackets and slide open end of #500769 Roof Ladder Angles under Roof Ladder.

7. Align the (2) holes in top brackets and 40^0 Roof Ladder Brackets with the ladders and loosely assemble parts with hardware above. Use the 2nd set of holes in the ladder rails.

8. Assemble the top end of the (2) handrails and bottom end to #500769 Connecting Angles with same hardware and tighten all nuts secure.

All nuts should be to inside of ladders.

Figure 23

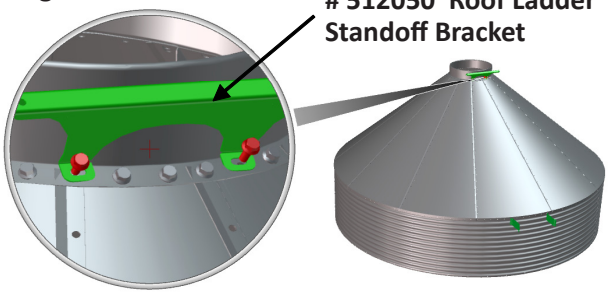


Figure 23a

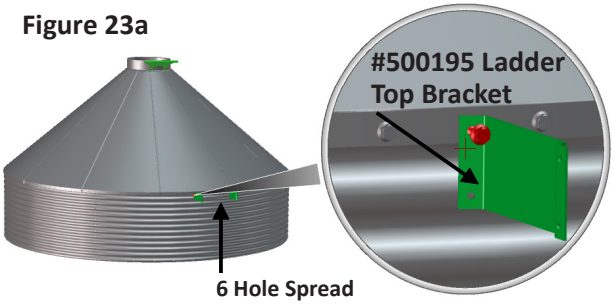


Figure 24

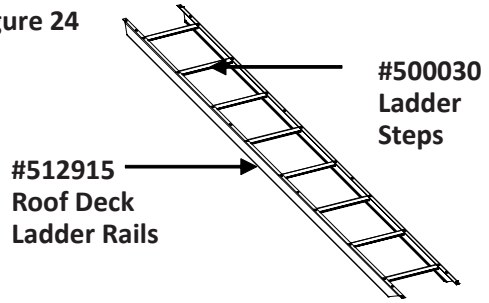
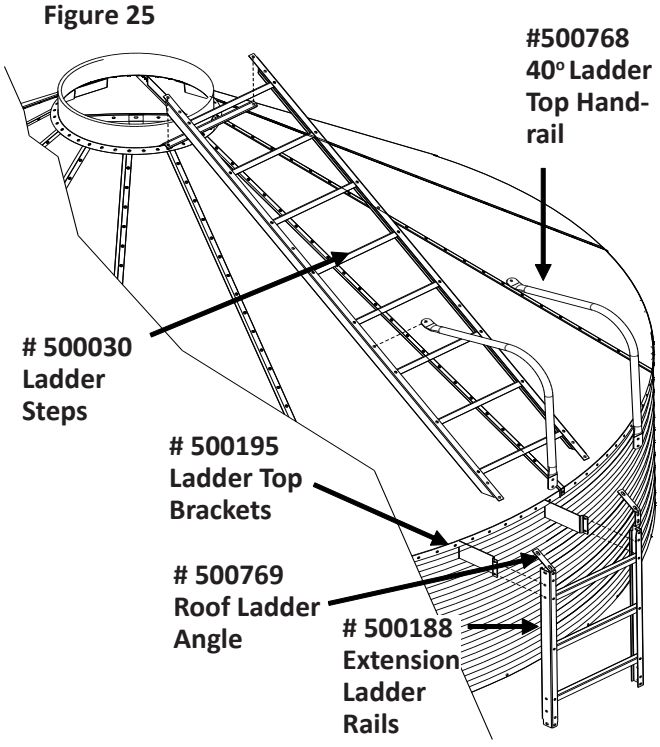


Figure 25



Installing Accessory Kits

It is recommended that you assemble extension ladders, lid opener, or Pneumatic Fill Tube Extensions as you assemble each ring of the corrugated hopper sheets. Continue assembling the bin in this manner until you have completed adding all hopper sheets, all extensions as required for each kit according to the number of rings for your bin.

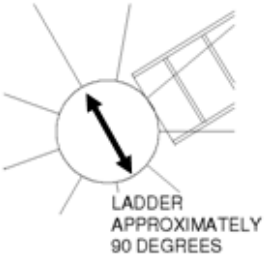
Wayback Lid

Installation

The Bin Lid comes pre-assembled; you will need to determine the direction that you prefer to place the bin opening. See Appendix 7 on page 46 for parts list.

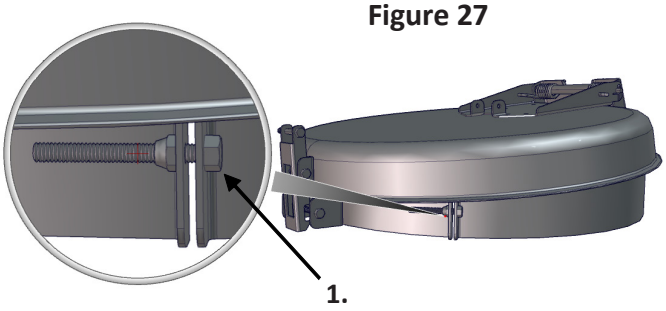
Figure 26

Recommend – Placement of Lid latch and hinge at a 90 degree angle to ladder for easy access.



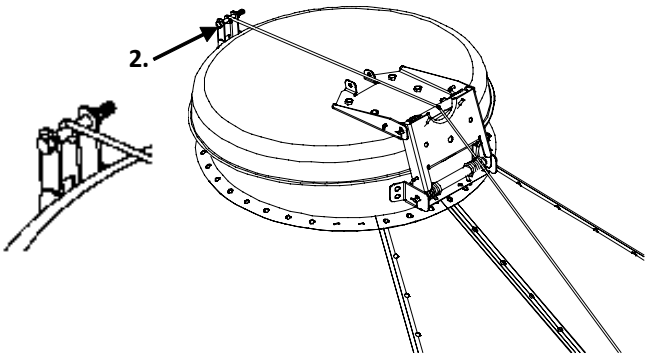
1. Slide the Lid assembly into the desired position and tighten the 5/16" x 2 ½ " Bolt located thru the holes of the Lid Locking Collar. (As pictured below)

Figure 27



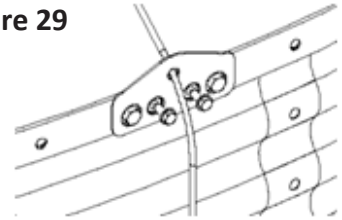
2. Wrap end of the Cord around the bolt and tie se curely. KNOT MUST BE TIGHT TO SECURE CORD. (as pictured below)

Figure 28



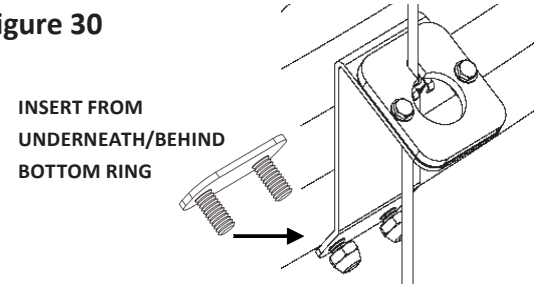
3. Guide the Cord over the bin roof (as pictured above) and use the Self- Drilling Screws to attach the Cord Retainer to the edge of the bin roof (as pictured below). 2 large holes on the Cord Re tainer are provided to allow the bin bolts to pass through. (as pictured below)

Figure 29



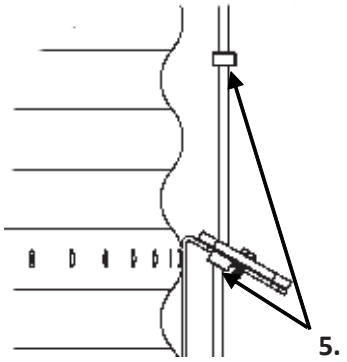
4. Attach the Cord Containment Bracket to the bottom edge of the bin. Place the Cord Containment Clamp on the underneath/behind the edge of the bin then tighten nuts sufficiently to hold Cord Containment Clamp securely in place. Now feed the Cord through the hole in the Cord Containment Bracket

Figure 30



5. Slip 2 Cord Locking Collars onto the Cord. To locate the proper placement, open the lid completely and adjust the Cord Locking Collar to fit tight under the Cord Containment Bracket. Then Close the lid and place the second Cord Locking Collar tight under the Cord Containment Bracket.

Figure 31



6. Slip the handle over the end of the Cord and tie a knot in the Cord, at the desired length.

7. To open Lid, pull Cord down through the bracket until the top Cord Locking Collar is under the bracket and let the Cord slide back and up into the slot to lock in place. Do not release the Cord handle until the Cord is locked in place.

8. To close the Lid, pull down on the Cord to release the Cord Locking Collar and slowly let the Cord slide up through the bracket until lid is closed and let Cord slide back and up into the slot to lock in place.

Tru-Lok

Installation

The Tru-Lok lid and extension tubes do require some assembly. See Appendix 10 on page 48 for parts list.

1. Rotate lid opener so that bottom bracket is centered over the roof deck seam that aligns with the leg to be used for the lid tube. Tighten bolt on lid locking collar securely. If the lid opener has a latch on the front, remove it to enable the tru-lok kit to function.

2. Unfasten 5/16 x 3 bolt and two closest 5/16 x 3/4 bolts (four for the 40Deg Roof) on the #500655 lid bracket. Assemble left top plate and right top plate to it reusing the hardware. Tighten bolts securely.

3. Fasten roof deck tube between top holes in both lid hinge plates with #010649 5/16" x 1-3/4" hex bolt and locknut. Do not overtighten bolt, tube must move freely.

4. Assemble #500709 pivot plate bracket to #500710 back-up plate with #010643 5/16" x 3/4" bolt and locknut thru bottom holes as shown above. To assemble pivot plate to bin remove (3) bin bolts from holes in roof deck & hopper seam in line with roof deck seam aligned with lid hinge bracket. Reuse bin bolts to attach bracket to bin.

5. Assemble side marked "TOP" of (2) #500704 pivot plates to end of roof deck tube with #010649 5/16" x 1-3/4" bolt and locknut. Assemble bottom side of pivot plates to the pivot plate bracket with (2) #010643 bolts and locknuts. Bolt heads go on inside of plates. Refer to drawing. Do not overtighten bolts, pivot plates need to move freely.

6. Fasten top #500729 tube extensions to pivot plates with (1) #010649 bolt and locknut per tube. Use same hardware to fasten additional extension tubes and #500226 basic tube. Tubes can be assembled as bin is built.

Figure 31

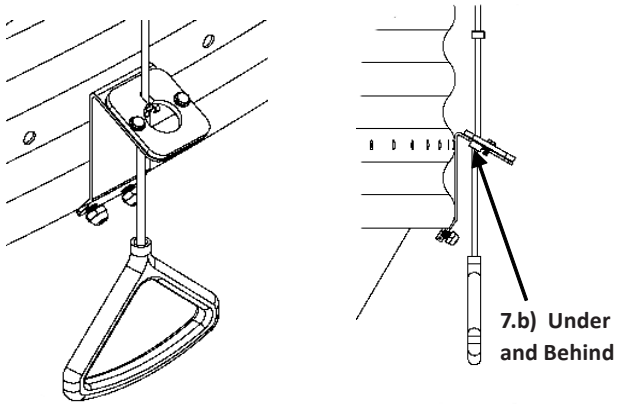


Figure 32

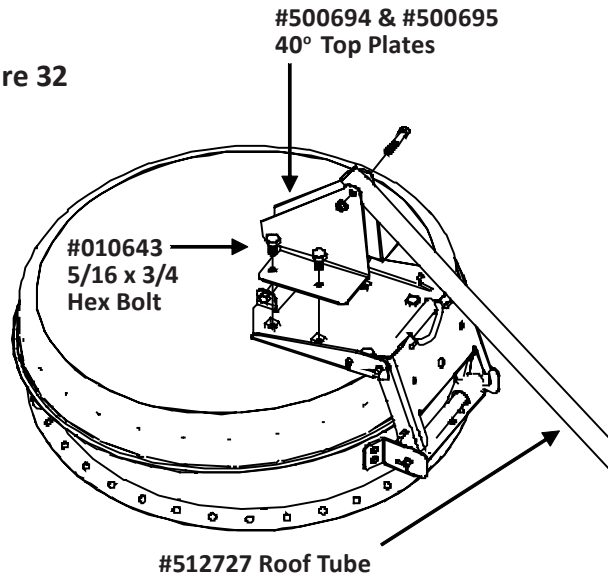
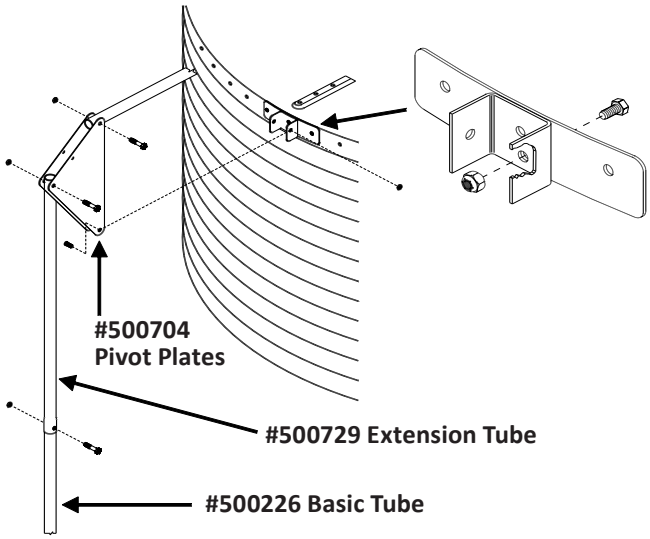


Figure 33 Attach pivot plate brackets below roof deck seam aligned with lid hinge on opener.



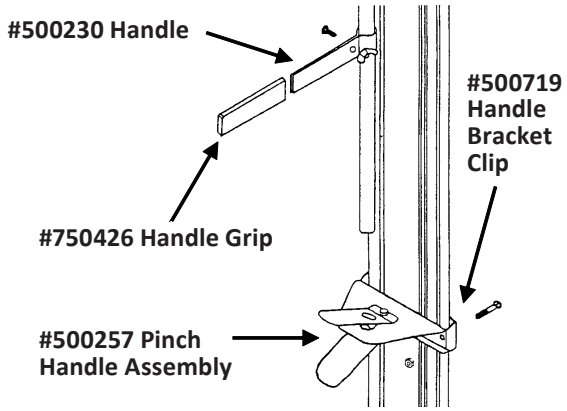
7. Place #500257 pinch handle assembly on bin leg approximately 40” from bottom of bin and fasten with (2) #500719 clips and (2) #010649 bolts and locknuts.

Exact height can be adjusted for your comfort after bin is erect.

8. Slide #500230 tube handle over bottom of tube and place tube thru pinch handle. Close lid and secure handle approximately 40” above pinch handle with #011434 1/4” x 1” carriage bolt and #010943 wing nut.

9. Wet inside of rubber handle grip and slide over handle.

Figure 34



Pneumatic Fill Kit

The Pneumatic Fill Kit and extension tubes do require some assembly. *See Appendix 14 page 56 for parts list with overview drawing.*

Inlet Assembly:

1. Connect the flared end of the 4” Inlet Port to one end of the 4” Inlet Roof Tube and the other end of the 4” Inlet Tube to the shorter flared end of the 40° Inlet Elbow piece using the 1/4” x 3/4” self drilling screws in all pre-drilled holes on the flanged ends.

2. Attach the 4” narrow (half) clamp section to the roof at the seam to the bin with a carriage bolt and flange nut. *(We recommend you do this before you attach the tube assembly to the roof section or insert the Side Fill tube for easier install.)*

3. Apply a strip of caulking on both sides of the line of bolts between the plate and roof section. Now attach the plate at the end of the 4” Inlet Port to the roof section with the 5/16” x 1” Hex bin bolts w/washers and 5/16” Flange nuts. *(Match predrilled holes on the plate to the pre- drilled holes on the roof section. Be sure not to spin the bolt which could damage the washer. We recommend that you tighten from the nut side.)*

4. Connect the Side Fill Tube into the flanged end of the 40° Inlet Elbow piece and use the 1/4” x 3/4” self-drilling screws. (You may choose to attach to 40° Elbow before you attach the system to the roof.)

Figure 35

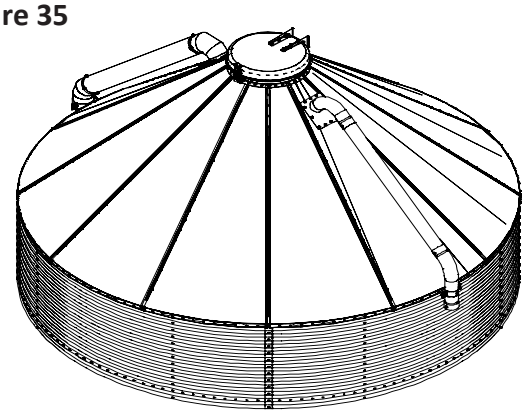
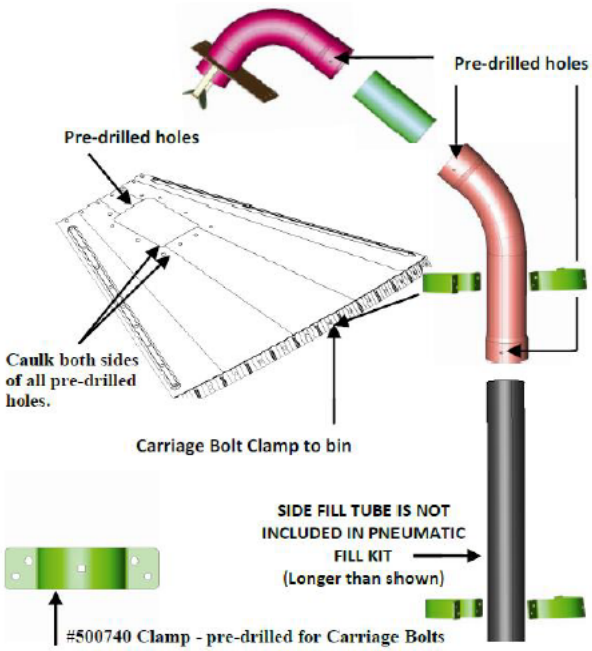


Figure 36



Exhaust Assembly:

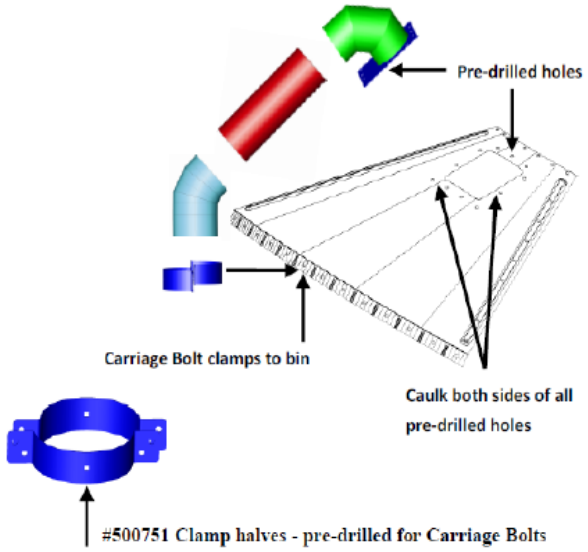
1. Connect 6” Exhaust Port to the Tube section then connect the Tube section to the (flexible) Exhaust Elbow (tube ends crimped for insertion). Then use the #14 Sheet Metal screws/Neoprene washers at pre-drilled holes of the tubes to secure *as shown in Figure 37.*

2. Attach one of the 6” Clamp halves to the roof at the seam to the bin with a carriage bolt/flange nut.

3. Apply caulking between the plate and roof section. Now attach the plate at the end of the Exhaust Port to the 6” roof section with the 5/16” x 1” Hex bin bolts w/washers and 5/16” Flange nuts. (Match pre-drilled holes on plate to the pre- drilled holes on the roof section.)

4. Attach and tighten the other half of the 6” Clamp around the bottom portion of the 6” Exhaust Elbow with 5/16” Hex bin bolts w/washers and 5/16” Flange nuts to secure. (6” Clamp halves (4) included for optional Exhaust extension tube.)

Figure 37



Vertical Assembly-(REQUIRED for 4-7 Ring Bins)

To finish assembling the bin, you will need a crane or boom/rig with the proper lifting height and capacity to lift your completed bin. Failure to properly handle and secure the bin can result in serious injury or equipment damage.

Lifting can be done with an appropriate heavy gauge steel chain which meets the weight requirements of the completed bin. This chain should be connected to a qualified heavy gauge steel device (engineered according to weight and product specifications) which has been mounted to the collar.

VAL-CO™ does not at this time provide a Bin Lifting Kit for the 12 ft Feed Bin and is not responsible for safety issues, Bin Lifting design or method of lifting the bin for assembly.

1. After checking that the bin is safely secured, raise the bin high enough to slip the next hopper sheet to the inside of the previous ring. Refer to the parts list drawing on page 14 to find which ga. corrugation is to be used next.

Remember! corrugation always goes from lightest at top to heaviest on bottom.

2. Be sure to caulk corrugated hopper sheets the same as previously done on the first ring and stagger the seams by 1/2 of a sheet *as these are shown in Figure 39.*

Be sure that you place each new hopper sheet on the inside of the previous top ring. Tighten all bin bolts from the flange nut side. *Using the bin bolt head to tighten bolts can damage the rubber seal and may lead to possible leaking problems.*

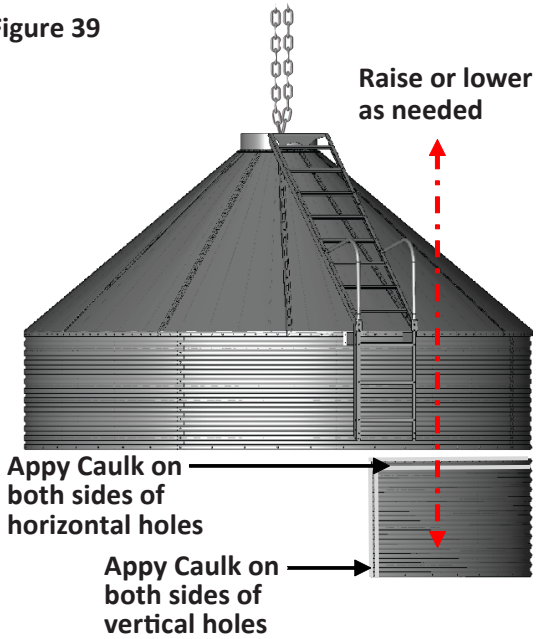
REMINDER - assemble extension ladders, lid opener, accessories , or Pneumatic Fill Tube Extensions as you assemble each ring of the corrugated hopper sheets. Continue assembling the bin in this manner until you have completed adding all hopper sheets, ladder extensions, accessories, and Pneumative Fill Tube Extensions as required according to the number of rings for your bin.

WARNING

FOR YOUR SAFETY!
A QUALIFIED RIGGER AND SUPPORTS ARE RECOMMENDED TO REDUCE THE RISK OF PERSONAL INJURY OR EQUIPMENT FAILURE.

Figure 38

Figure 39



VAL-CO™ is NOT responsible for Bin Lifting Assembly Methods. Safety and Method are the responsibility of the assembler.

Vertical Assembly continued - Extension Ladder Assembly

At this point in the manual we will concentrate on basic bin assembly and ***not*** *detail bin lifting.*

3. Continue adding the appropriate hopper sheets according to the number of rings you are assembling. *Refer to parts list on page 14 for next ga. corrugation to be used.* Caulk all holes on both sides, using the same method as previously instructed, until you have completed the 2nd ring.

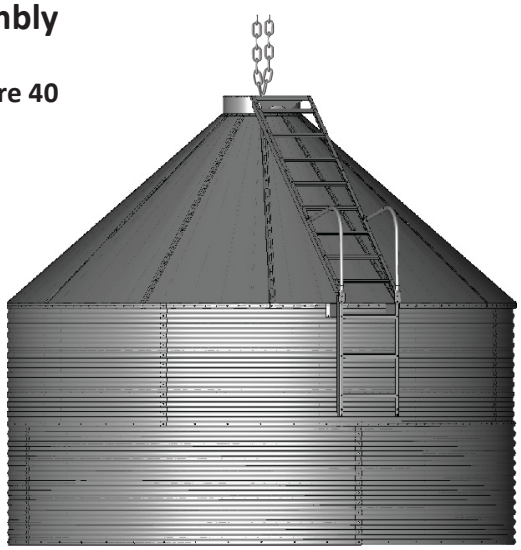
4. Remove the bin hardware in (2) holes for each #500031 Ladder Bracket that align with the #500195 Top Brackets, (#500195 Top *Bracket location, top ring at the roof edge, is shown in Figure 25 on page 21).* ***There will be one set of Ladder Brackets for each hopper ring.*** Now attach the #500031 Ladder Brackets in alignment with the #500195 Top Brackets, *as shown in Figure 41 on this page,* with the hardware that you just removed.

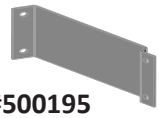
5. Slip next Extension Ladder Assembly inside bottom of previous ladder and assemble to each other and adjacent Ladder Brackets with (4) #010643 5/16" x 3/4" Hex bolts and #012789 Locknuts.
Repeat these instructions with each ladder extension.

6. Continue steps 1 thru 5 for each additional ring.

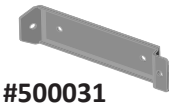
Remember to stagger the vertical seams by 1/2 ring. If assembling a 6 or 7 ring bin, be sure to align the leg holds in the bottom two (2) hopper sheets.

Figure 40





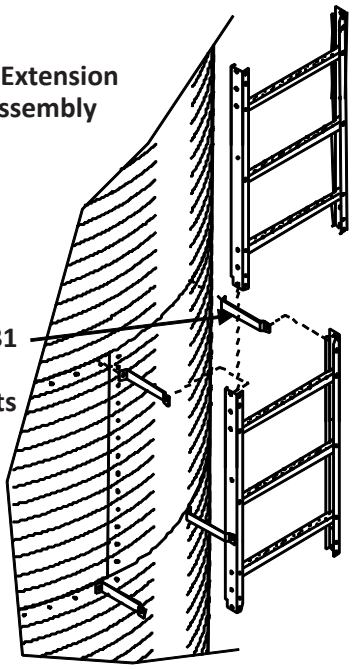
#500195 Top Brackets



#500031 Ladder Brackets

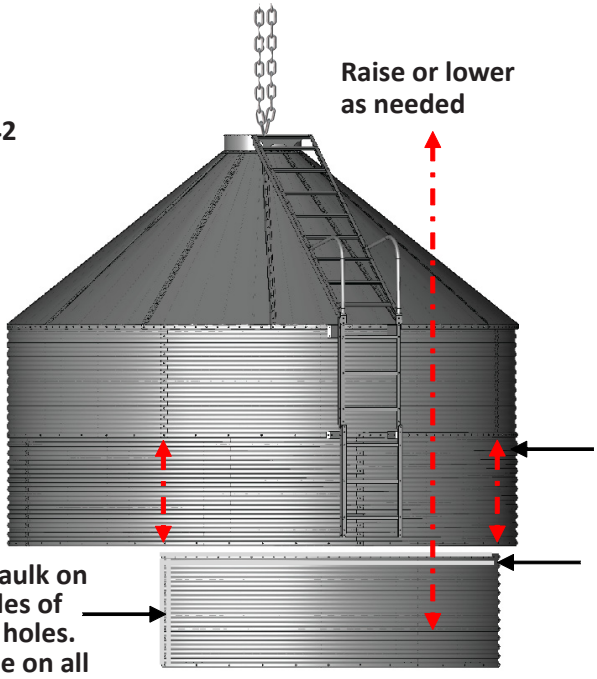
Figure 41

#500191 Extension Ladder Assembly



#500031 Ladder Brackets

Figure 42



Raise or lower as needed

Align seams on 1st and 3rd Ring

Apply Caulk on both sides of vertical holes. Continue on all ring assemblies.

Appy Caulk on both sides of horizontal holes. Continue on all ring assemblies.

Vertical Assembly continued - Extension Ladder Assembly

Figure 43

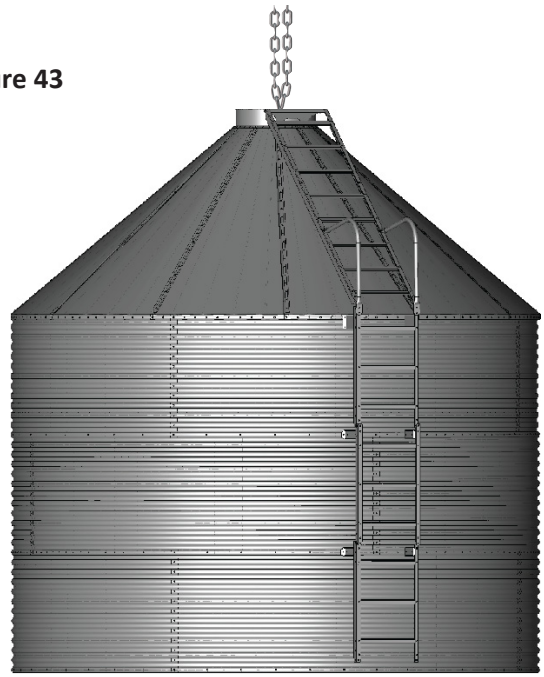


Figure 44

Raise or lower as needed

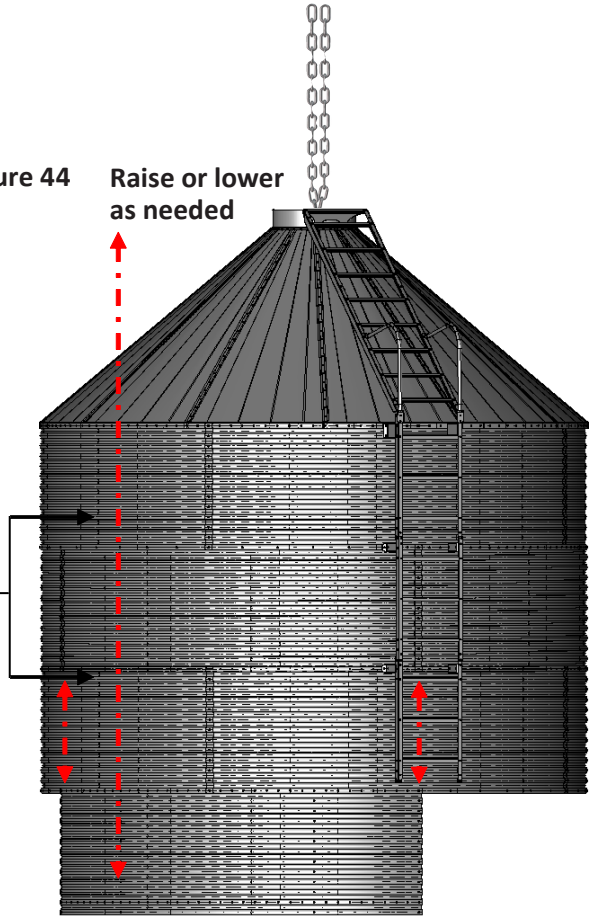
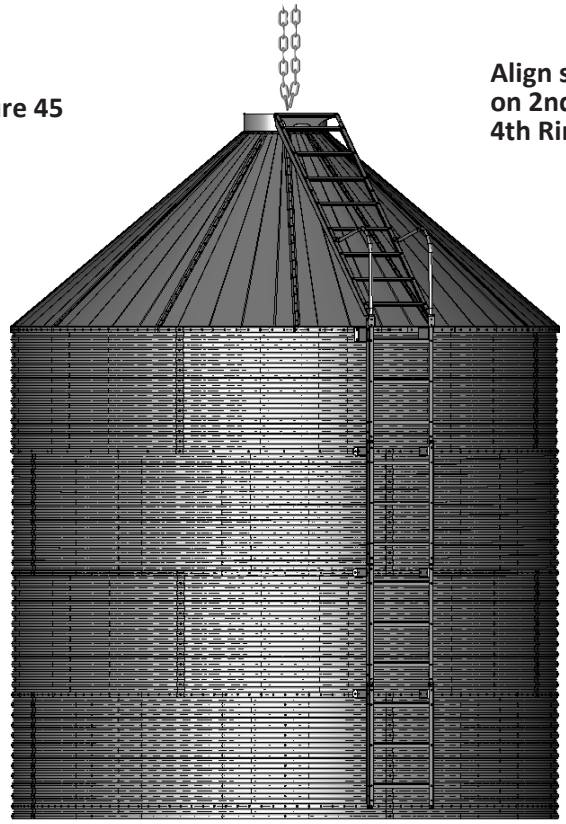


Figure 45

Align seams on 2nd and 4th Rings.



After you have finished assembling all the hopper sheets on a 1-7 ring bin you are ready to attach the bin legs. Directions on how to assemble the legs will follow on the next page Under Leg Assembly.

Leg Assembly - (Vertical 1 - 5 Rings)

1. Begin by assembling the Upper #500156 and Lower #500155 Leg Base Plates to the bottom of each leg using (3) #010664 3/8" x 1" Hex Bolts, #010253 3/8" Lock Washers and #011115 3/8" Nuts. *as shown in Figure 46 and 47.*

- *To assemble legs you will continue to need someone inside the bin to push bolts thru holes.*

Figure 46

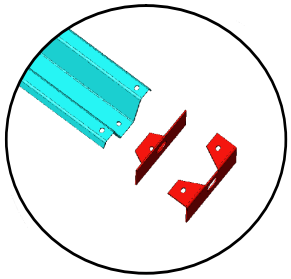


Figure 47

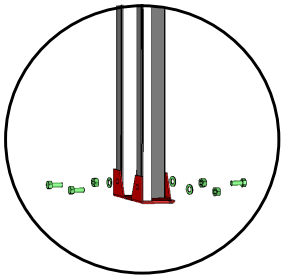
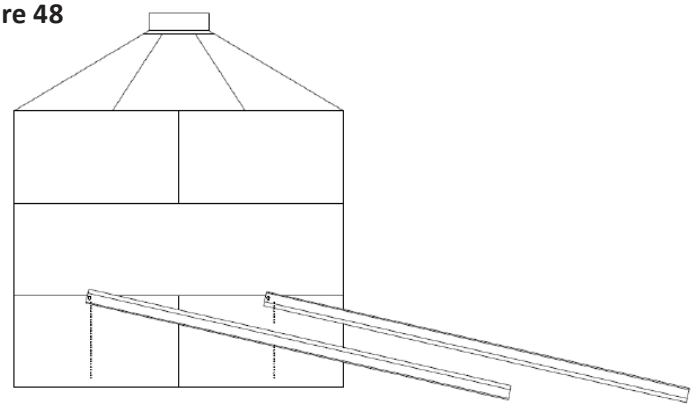


Figure 48



2. After base plates are assembled loosely attach the top hole of each leg to top leg hole in bottom ring *as shown in Figure 48, above,* with (1) 501442 bin bolt and #501441 Flange Nut. ***Bolt heads go to inside of bin.***

3. Position legs around bin all in same direction as shown above. When all legs are attached you will need to raise bin slowly and reposition legs as bin is raised until legs are hanging straight down bin *as shown in Figure 49.*

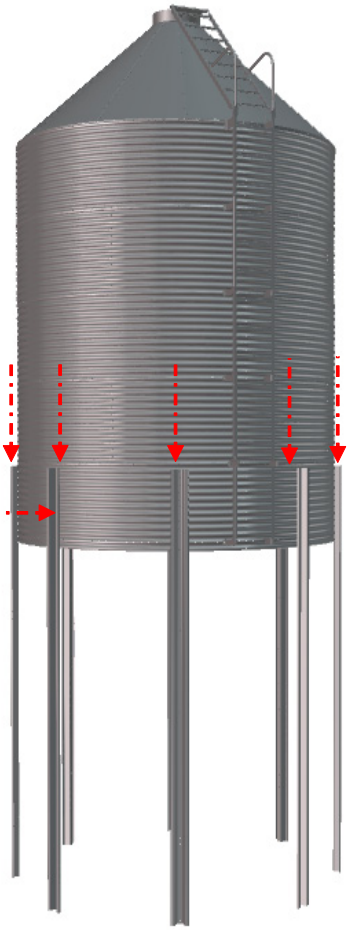
4. Use properly secured ladders to finish assembling legs to bin. Attach the #512024 (171") bin leg to the (12) leg holes in the bottom ring *as shown in Figure 49.*

Leave second from bottom hole open to **attach taper hoppers later.** Set bin down after legs are secured.

Use a Drift Pin from the outside of the bin as previously instructed, for aligning holes.

REMINDER: Tighten all bin bolts from the flange nut side. Using the bin bolt head to tighten bolts can damage the rubber seal and may lead to possible leaking problems.

Figure 49



This example shows (1) leg missing to detail holes and other legs attached with red arrows to detail placement of legs continuing around bin ring.

Leg Assembly - (Vertical 6 - 7 Rings)

1. Assemble the same as the 1-5 Ring bins as described in steps 1-4 above and shown in Figure 50. Be sure to use the #512039 (202.8") bin legs.

The #512039 202.8" bin leg will require the bottom two rings or (24) holes. When attaching either the 6th or 7th ring be sure to align the bottom ring seams to the previously assembled ring so that the vertical sets of (12) holes on each hopper sheet align as shown in Figure 43 to right.

Leg and Brace Assembly

1. Assemble #512230 Front Cross Angle and #512231 Rear Cross Angle together in center with #012240 7/16" x 1" Hex Bolt, #010254 7/16"Lock-washer and #011116 Nut *as shown in Figure 51*.
2. Position between pair of legs using holes *as shown in Figure 51* and fasten with same 7/16" hardware as above. Ends of angles with longer tabs go to the top of the legs. Alternate positioning of ends is recommended for best fit.

EXAMPLE: If top end of angle is over adjoining angle then bottom end of that angle should be under the adjoining angle) Repeat assembly until all cross braces are assembled. Do not tighten nuts until all bracing is finished.

Figure 50

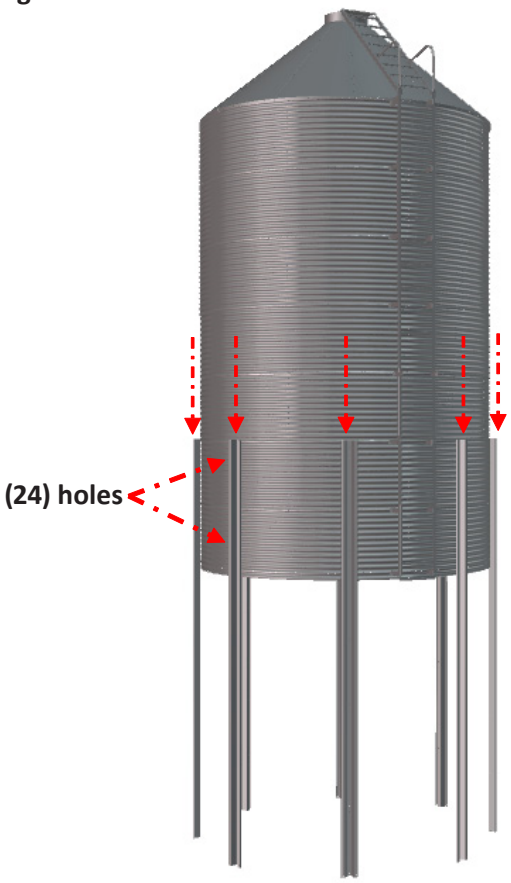


Figure 51

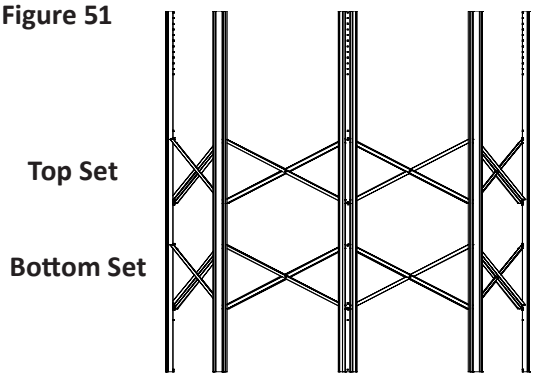
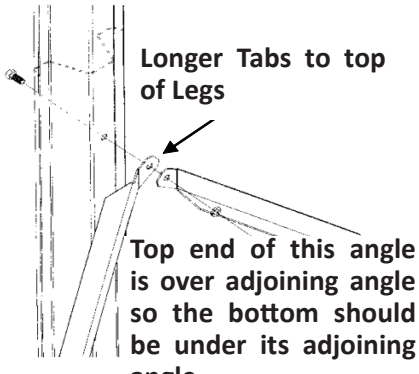


Figure 52



Taper Hopper Assembly

To assemble taper hoppers to bin you will need (5) people, (2) on ladders to align and assemble taper hoppers to corrugation and to assemble top part of vertical seams, (2) on the ground to position parts and assemble bottom half of vertical seams and (1) on a straight ladder inside the bin for the last taper hopper. Be sure to have sturdy, stable ladders to work from. (1) Straight ladder must be narrow enough to fit thru collar and long enough to lean against corrugation from the ground.

Optional: Taper Hopper angle bracing is available and if used should be assembled to each taper hopper seam as you perform assembly.

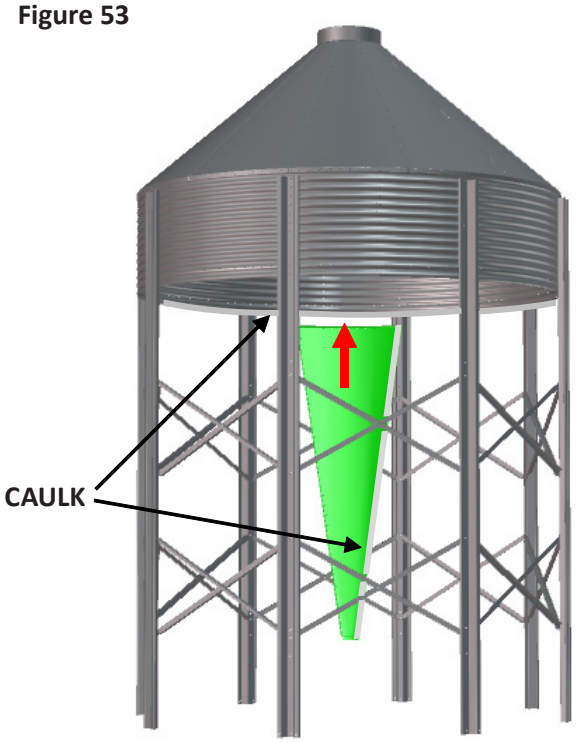
It is important to start with a taper hopper seam aligned with a leg.

1. Caulk inside horizontal holes on corrugation and along each vertical seam making sure both sides of holes are caulked thoroughly to avoid leaking.

2. Use #501442 hex bin bolts and 501441 flange nuts along horizontal seam keeping bolt heads to outside except for leg holes. Use #501440 Truss Bin bolts and Flange Nuts for all vertical taper hopper seams keep ing bolt heads to inside of bin. ***Leave bottom hole open for collar.*** *See Figure 53 for this example.*

3. **Before assembling the last Taper Hopper section**, *which will allow just enough flex,* to slightly spread the gap for inserting the #512200 HD Taper Hopper Boot Collar, to slip in and up through, the inside of the bottom end of hoppers *as shown in Figure 54. Caulk as detailed in step 7 on next page.*

Figure 53



Caulk on inside Bottom Hopper Sheet along both sides of horizontal holes.

At this time you will need to place the straight ladder inside the bin thru the Boot Collar.

Figure 54

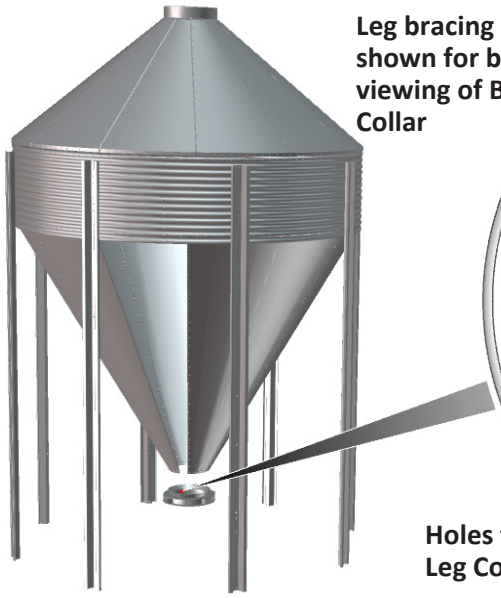
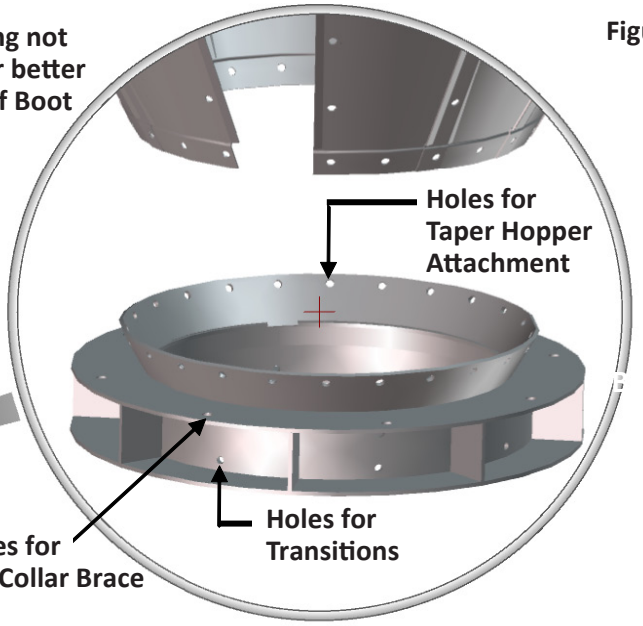
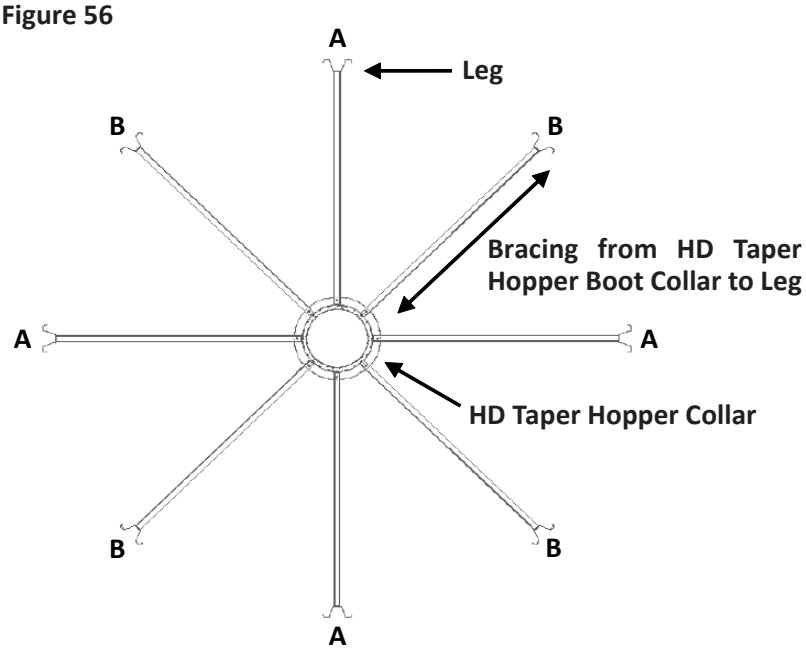


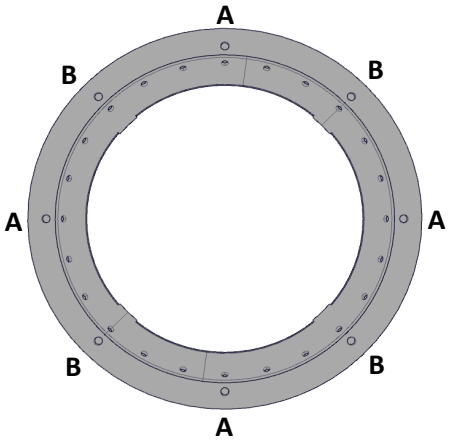
Figure 55



HD Taper Collar Bracing

Figure 56





(4) Legs and Braces will align with a Taper Hopper seam. (A)

(4) Legs and Braces will align with the middle of a Taper Hopper section. (B)

Note positioning of holes in HD Taper Hopper Boot Collar.

4. **Align collar so holes in HD Taper Hopper Boot Collar Plate align directly with legs**. *See Figure 56 above and 54 on previous page for reference.*

5. Temporarily fasten a couple of leg-collar braces in place to be sure collar is properly aligned.

Brace must point to opposite leg or bin component failure may result.

6. When aligned, remove temporary braces and caulk around collar to Taper Hopper seam covering both sides of holes. Use same hardware as used on vertical seams. Assemble last Taper Hopper same as previous hoppers.

7. Attach collar to each bin leg with #512232 leg-collar braces using #012240 7/16" x 1" hex bolts, #010254 lock washers and #011116 nuts on collar end and #011475 7/16" x 1" carriage bolts, #010433 7/16" flat washers and #011116 nuts on leg end.

Use square hole in leg for carriage bolts.

Figure 57

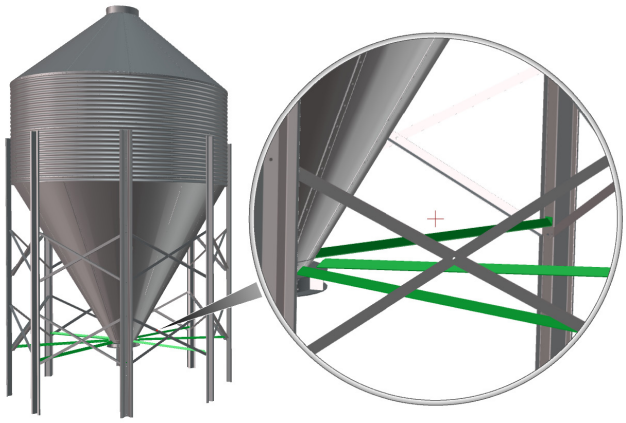


Figure 58

Side Ladder Assembly

1. To finish assembling side ladder, get (2) #512051 Ladder Standoff Rails and assemble between legs using #010643 5/16" x 3/4" bolts and #012789 5/16" locknuts *as shown in Figure 59*.

2. Assemble (2) #500031 Ladder Brackets to Top Ladder Standoff Rail with #010643 bolts and #012789 locknuts.

Be sure to align brackets with extension ladders previously assembled to bin.

3. Assemble #500191 Extension Ladder to the bottom Extension Ladder. Attach to the Ladder Brackets on Top Standoff Rail.

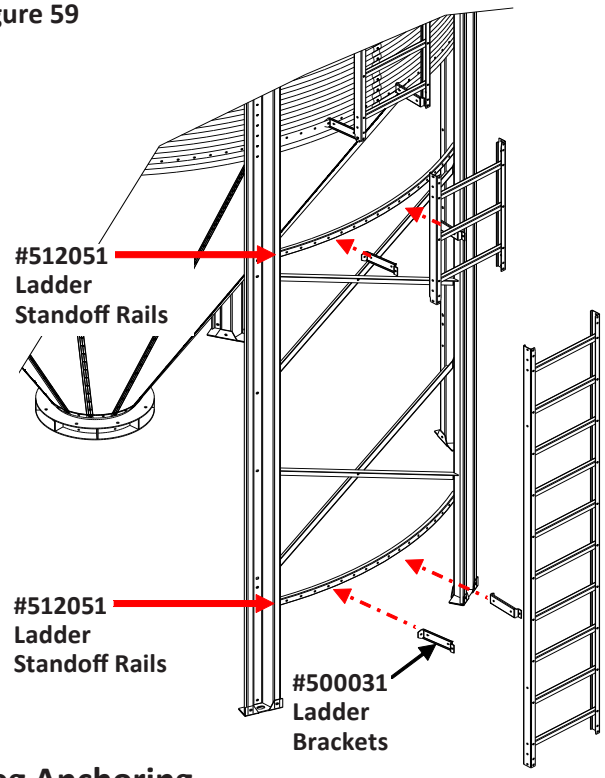
4. Attach #500196 Basic Ladder Assembly to bottom Extension Ladder with same hardware used above.

5. Assemble to both Ladder Brackets on each Standoff Rail also using same hardware. Be sure all bolts protrude to inside of ladder.

Make sure all locknuts are tightened securely before proceeding to next step. Do not over-torque locknuts.

Figure 60 Side Ladder Assembled

Figure 59



Leg Anchoring

1. Check that each leg is square with foundation and shim as necessary to assure squareness.

It is critical that legs are anchored properly.

2. Double check all dimensions before anchoring secure.

Figure 61 Anchored to Foundation

Position all legs according to foundation and anchoring specifications on page 12 of manual and secure legs to foundation.

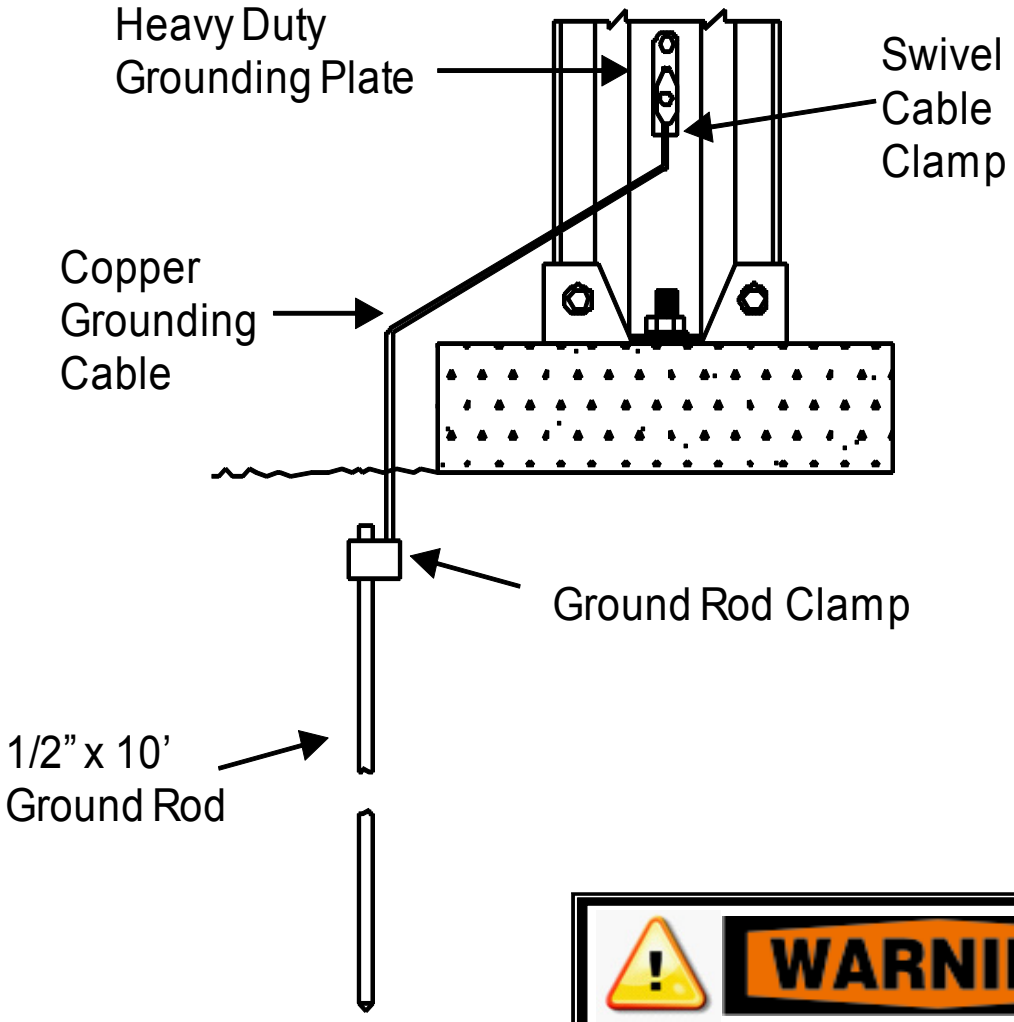
Intentionally Blank

Bin Grounding Instructions

All bins should have (2) grounding connections placed at approximately equal distance around bin. Refer to drawing below for proper grounding specifications. Parts can be purchased at your local electrical retailer.

BE SURE BIN IS GROUNDED ACCORDING TO NATIONAL ELECTRICAL CODE

Figure 62



WARNING

All bins should have (2) ground connections placed at equal distances around bin. Refer to the drawing for proper grounding. Parts can be purchased at local electrical retailers.
Be sure bin is grounded according to the National Electrical Code.

Appendix 1- 12 Ft Feed Bin Parts List *(Refer to page 14 and 15 for overview drawing of bin parts)*

Check all parts with packing list included in the product carton or this list below before starting assembly. Report any shortages immediately to your supplier.

Save all cartons until the bin is completed.

PART #	DESCRIPTION	QTY PNEUMATIC FILL	QTY WAYBACK LID
1 Ring Feed Bin		**512741**	**512W41**
512038	14 ga. Main Hopper - Plain w/Drip Edge	3	3
512041	14 ga. Main Hopper - Decal w/Drip Edge	1	1
512024	Galv. Leg - 171”	8	8
512230	Front Cross Tie Angle	16	16
512231	Rear Cross Tie Angle	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512059	Basic Caulking Carton	1	1
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0
2 Ring Feed Bin		**512742**	**512W42**
512038	14 ga. Main Hopper - Plain w/Drip Edge	4	4
512008	20 ga. Extension Hopper - Plain	3	3
512009	20 ga. Extension Hopper - Decal	1	1
512024	Galv. Leg - 171”	8	8
512230	Front Cross Tie Angle	16	16
512231	Rear Cross Tie Angle	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Pneumatic Fill Roof Deck Sect 40° w/Hole	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	1	1
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0

Appendix 1 - 12 Ft Feed Bin Parts List Continued

PART #	DESCRIPTION	QTY PNEUMATIC FILL	QTY WAYBACK LID
3 Ring Feed Bin		**512743**	**512W43**
512038	14 ga. Main Hopper - Plain w/Drip Edge	4	4
512008	20 ga. Extension Hopper - Plain	3	3
512009	20 ga. Extension Hopper - Decal	1	1
512011	18 ga. Extension Hopper	4	4
512024	Galv. Leg - 171”	8	8
512230	Front Cross Tie Angle	16	16
512231	Rear Cross Tie Angle	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	2	2
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0
4 Ring Feed Bin		**512744**	**512W44**
512038	14 ga. Main Hopper - Plain w/Drip Edge	4	4
512008	20 ga. Extension Hopper - Plain	7	7
512009	20 ga. Extension Hopper - Decal	1	1
512035	16 ga. Extension Hopper	4	4
512024	Galv. Leg - 171”	8	8
512230	Front Cross Tie Angle	16	16
512231	Rear Cross Tie Angle	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	3	3
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0

Appendix 1 - 12 Ft Feed Bin Parts List Continued

PART #	DESCRIPTION	QTY PNEUMATIC FILL	QTY WAYBACK LID
	5 Ring Feed Bin	**512745**	**512W45**
512011	18 ga. Extension Hopper	4	4
512035	16 ga. Extension Hopper	4	4
512008	20 ga. Extension Hopper - Plain	7	7
512009	20 ga. Extension Hopper - Decal	1	1
512040	12 ga. Main Hopper W/Drip Edge	4	4
512024	Galv. Bin Leg 171”	8	8
512230	Front Cross Tie Brace	16	16
512231	Rear Cross Tie Brace	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener - 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	4	4
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0

Appendix 1 - 12 Ft Feed Bin Parts List Continued

PART #	DESCRIPTION	QTY PNEUMATIC FILL	QTY WAYBACK LID
	6 Ring Feed Bin	**512746**	**512W46**
512011	18 ga. Extension Hopper	4	4
512035	16 ga. Extension Hopper	4	4
512008	20 ga. Extension Hopper - Plain	7	7
512009	20 ga. Extension Hopper - Decal	1	1
512040	12 ga. Main Hopper W/Drip Edge	4	4
512037	14 ga. Ext Hopper W/Leg Holes	4	4
512039	12’ Bin Long Leg 202.8” (6-7 Ring only)	8	8
512230	Front Cross Tie Brace	16	16
512231	Rear Cross Tie Brace	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener - 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512163	Long Leg Hardware Bag	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	5	5
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0

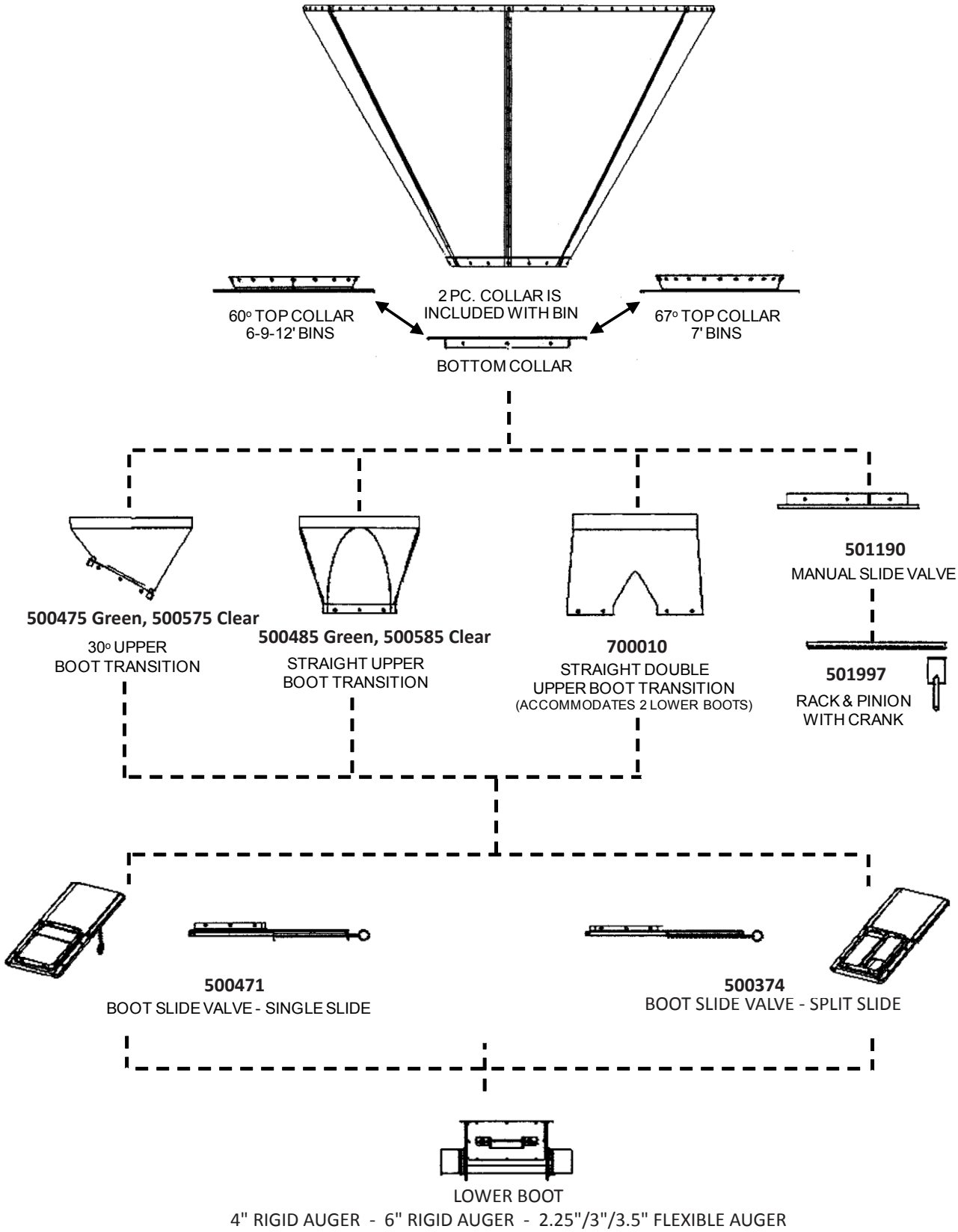
Appendix 1 - 12 Ft Feed Bin Parts List Continued

PART #	DESCRIPTION	QTY PNEUMATIC FILL	QTY WAYBACK LID
7 Ring Feed Bin		512747	512W47
512011	18 ga. Extension Hopper	4	4
512014	14 ga. Extension Hopper 12’	4	4
512035	16 ga. Extension Hopper	4	4
512008	20 ga. Extension Hopper - Plain	7	7
512009	20 ga. Extension Hopper - Decal	1	1
512040	12 ga. Main Hopper W/Drip Edge	4	4
512037	14 ga. Ext Hopper W/Leg Holes	4	4
512039	12’ Bin Long Leg 202.8”(6-7 Ring only)	8	8
512230	Front Cross Tie Brace	16	16
512231	Rear Cross Tie Brace	16	16
512232	Leg-Collar Brace Angle	8	8
512422	12’ Roof Stiffener - 40°	12	12
512423	Roof Deck Section (40° Roof)	10	12
512424	Roof Deck Section - Pneumatic Fill 40°	2	0
512018	Taper Hopper Section 16”	12	12
512160	Basic Hardware Carton	1	1
512163	Long Leg Hardware Bag	1	1
512059	Basic Caulking Carton	1	1
512072	Extension Hardware Carton	6	6
512171	Collar Carton	1	1
500650	Way-Back Lid Carton	0	1
500790	40° Pneumatic Fill Kit Lid Carton	1	0

Appendix 2 - 12 Ft Feed Bin Accessories Parts List

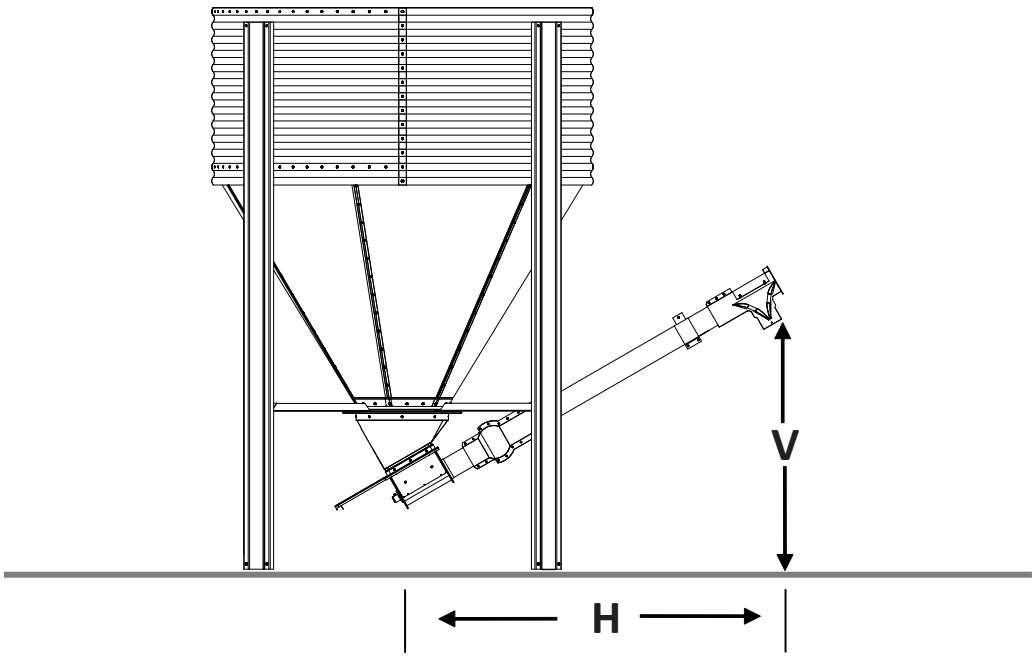
PART #	DESCRIPTION
Bin Accessories	
500388	Anchor Bolt Kit for 12’ Diameter Bins
512515	12’ Taper Hopper Access Panel
501399	Roof Vent Kit - 12’ Bin
502003	Peek Thru Window
512090	6.71 ton 20 ga. Extension Ring With Hardware - 12’ Bin
512091	6.71 ton 14 ga. Extension Ring With Hardware - 12’ Bin
512250	12’ Bin Taper Hopper Repair Kit
501190	Manual Slide Valve Assembly - 16”
501997	Optional Rack & Pinion Crank Attachment for 501190 Slide Valve
500621	Taper Hopper Slide Valve
500471	16” Boot Slide Valve Assy (plastic upper boot transition required for installation)
512021	Taper Hopper Reinforcement Brace (12 required per bin)
Bin 16” Opening Attachments	
500475	30° Upper Boot Transition - Green
500485	Straight Upper Boot Transition - Green
500575	30° Upper Boot Transition - Clear
500585	Straight Upper Boot Transition - Clear
700010	Straight Double Upper Boot Transition (Accomodates 2 Lower Boots)
501190	Manual Slide Valve
501997	Rack & Pinion with Crank
500471	Boot Slide Valve - Single Slide
500374	Boot Slide Valve - Split Slide

Appendix 3 - Bin 16” Opening Attachments



Appendix 4 - Auger Length Needed

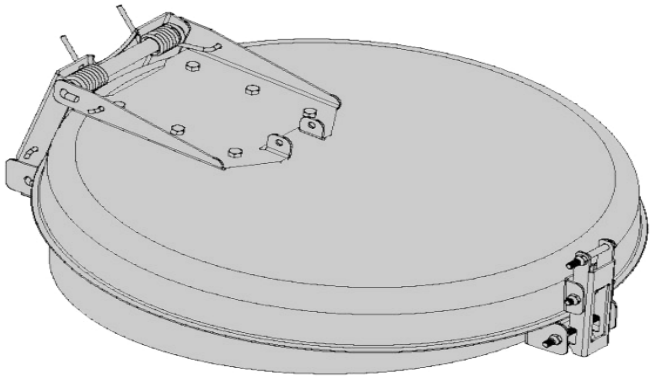
4" and 6' Rigid Auger

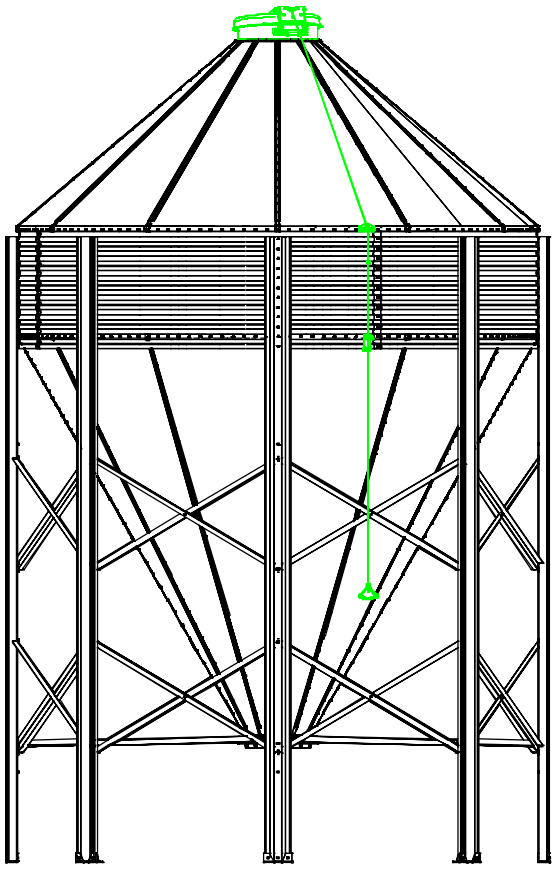


ANGLE OF ELEVATION	AUGER LENGTH													
	5 FT.		8 FT.		11 FT.		12 FT.		16 FT.		20 FT.		21 FT.	
	H	V	H	V	H	V	H	V	H	V	H	V	H	V
15º ANGLE	6' 4"	2' 8"	9' 2"	3' 6"	12' 1"	4' 3"	13' 1"	4' 6"	16' 11"	5' 7"	20' 10"	6' 7"	21' 9"	6' 10"
30º ANGLE	5' 11"	3' 11"	8' 7"	5' 5"	11' 2"	6' 11"	12' 0"	7' 5"	15' 6"	9' 5"	18' 11"	11' 5"	19' 10"	11' 11"
45º ANGLE	5' 4"	5' 0"	7' 5"	7' 2"	9' 7"	9' 3"	10' 3"	10' 0"	13' 1"	12' 10"	15' 11"	15' 8"	16' 7"	16' 4"

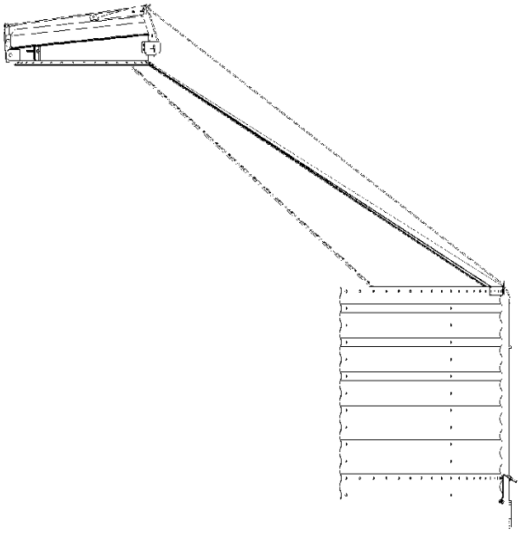
Parts List for Augers and Boots are not included in this manual. To order parts please contact your VAL-CO™ representative. Installation instructions are included with the Auger and Boot packing lists.

Appendix 5- Way-Back Lid Overview

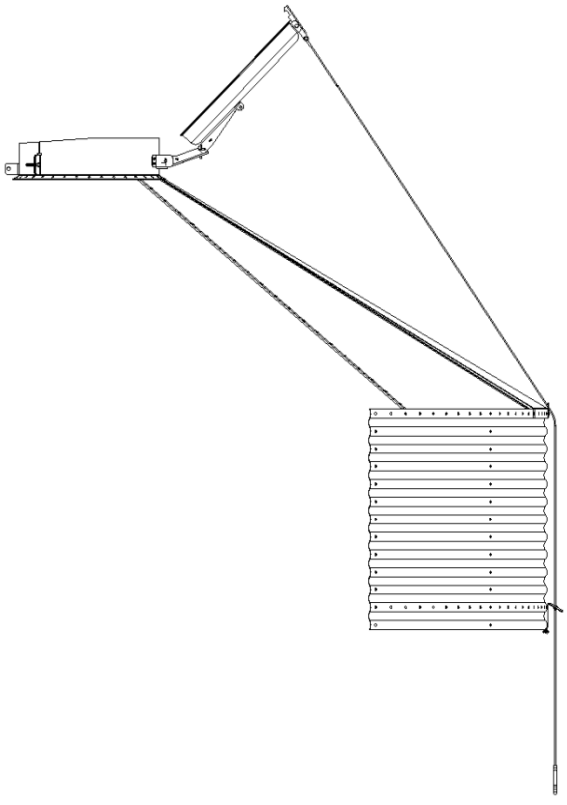




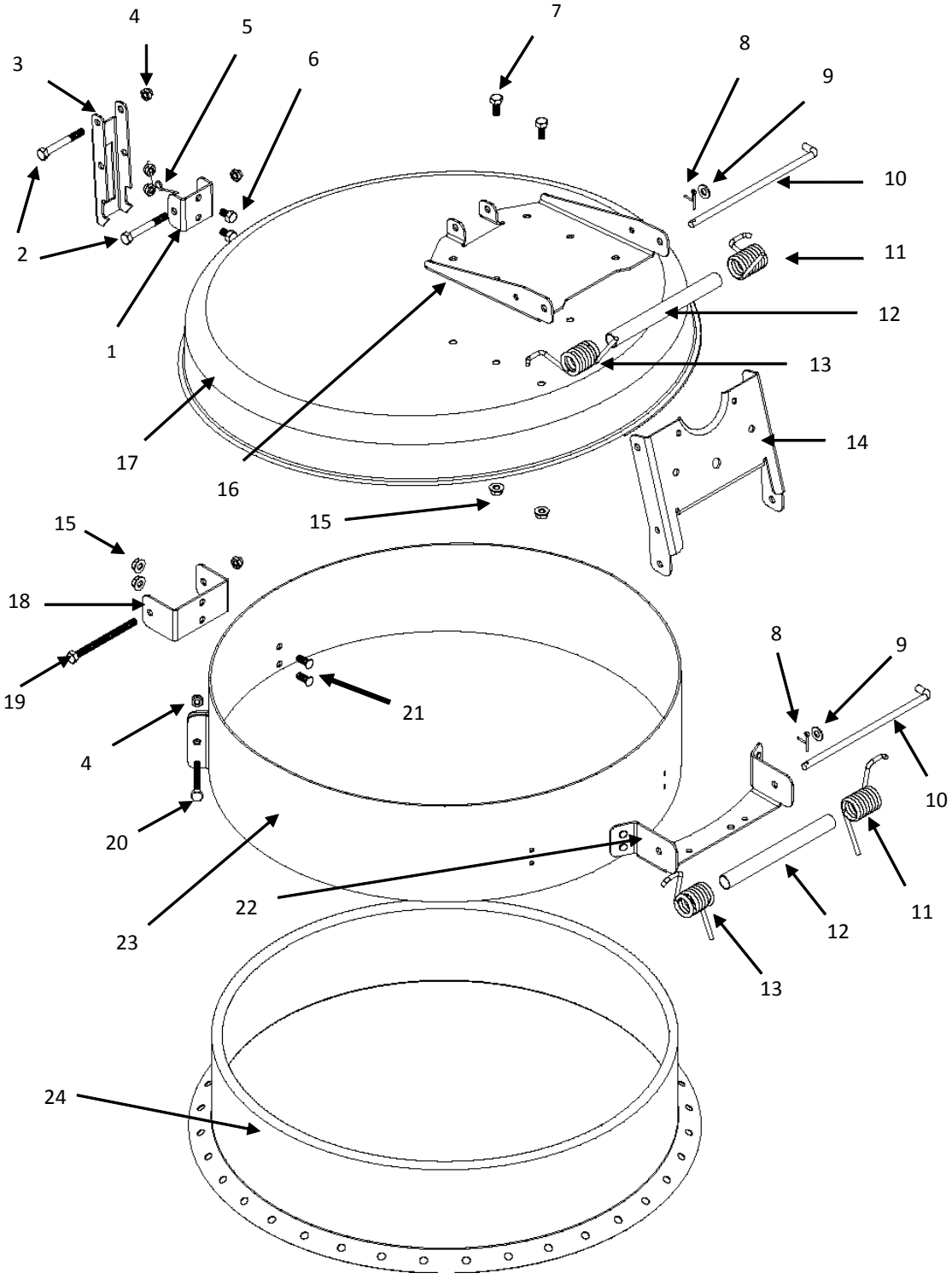
Lid Closed



Lid Fully Open



Appendix 6 - Exploded Way-Back Lid Assembly drawing (500650)

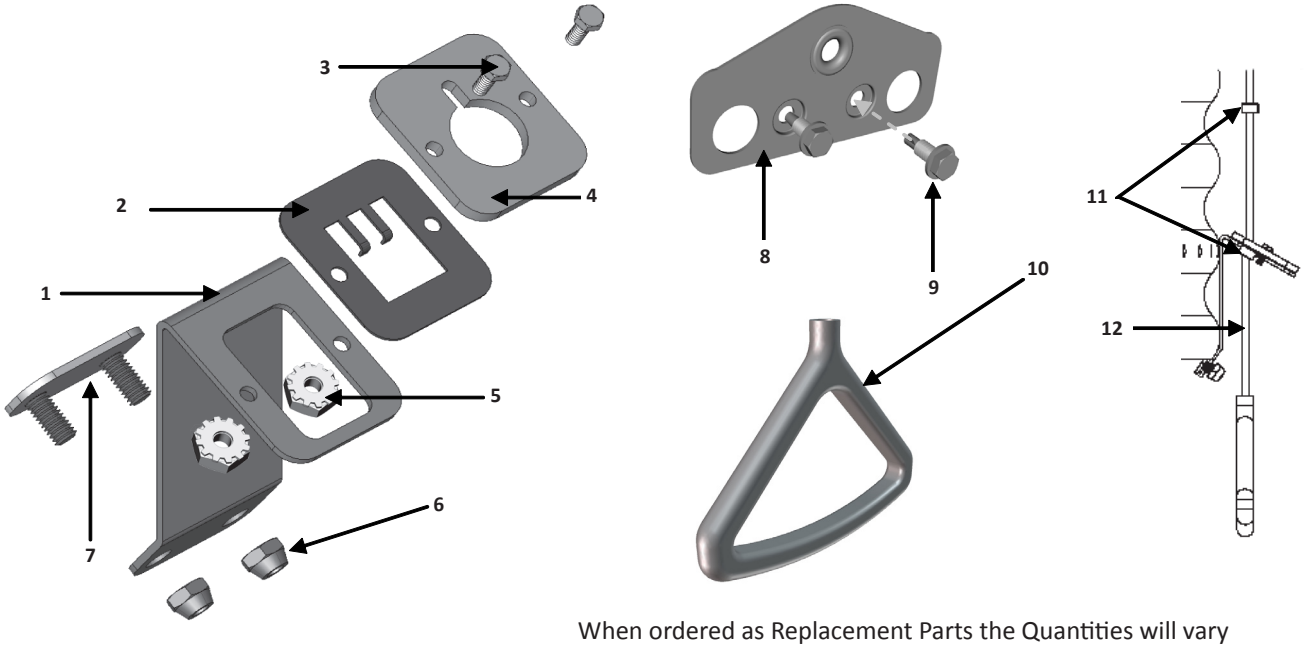


Appendix 7 - Way-Back Lid Parts List

When ordered as Replacement Parts the Quantities will vary

KEY #	PART #	DESCRIPTION	QTY
500650 – WayBack Lid Assembly (Pre-Assembled)			
1	500659	Lid Locking Bracket	1
2	010652	5/16” X 2-½” Hex Bolt	2
3	500660	Unlocking Arm	1
4	012789	5/16” Locknut	6
5	500662	Locking Spring	1
6	010640	5/16” X ½” Hex Bolt	2
7	010643	5/16” X ¾” Hex Bolts	6
8	012660	Cotter Pin	2
9	010426	5/16” Washer	2
10	500685	Hinge Rod	2
11	500482	Right Hand Spring	2
12	500658	Spring Spacer	2
13	500492	Left Hand Spring	2
14	500654	Collar – Hinge Bracket	1
15	500441	5/16” Flange Nut	8
16	500655	Top Hinge Bracket	1
17	500686	Bin Lid	1
18	500661	Collar Lock Bracket	1
20	010656	5/16” X 4” Bolt	1
21	012780	5/16” X 3/4” Thread Stud	2
21	010651	5/16” X 2–½” Bolt	1
22	500653	Bottom Hinge Bracket	1
23	500652	Lid Locking Collar	1
24	X sizes	Lid Collar (not included in kit)	1

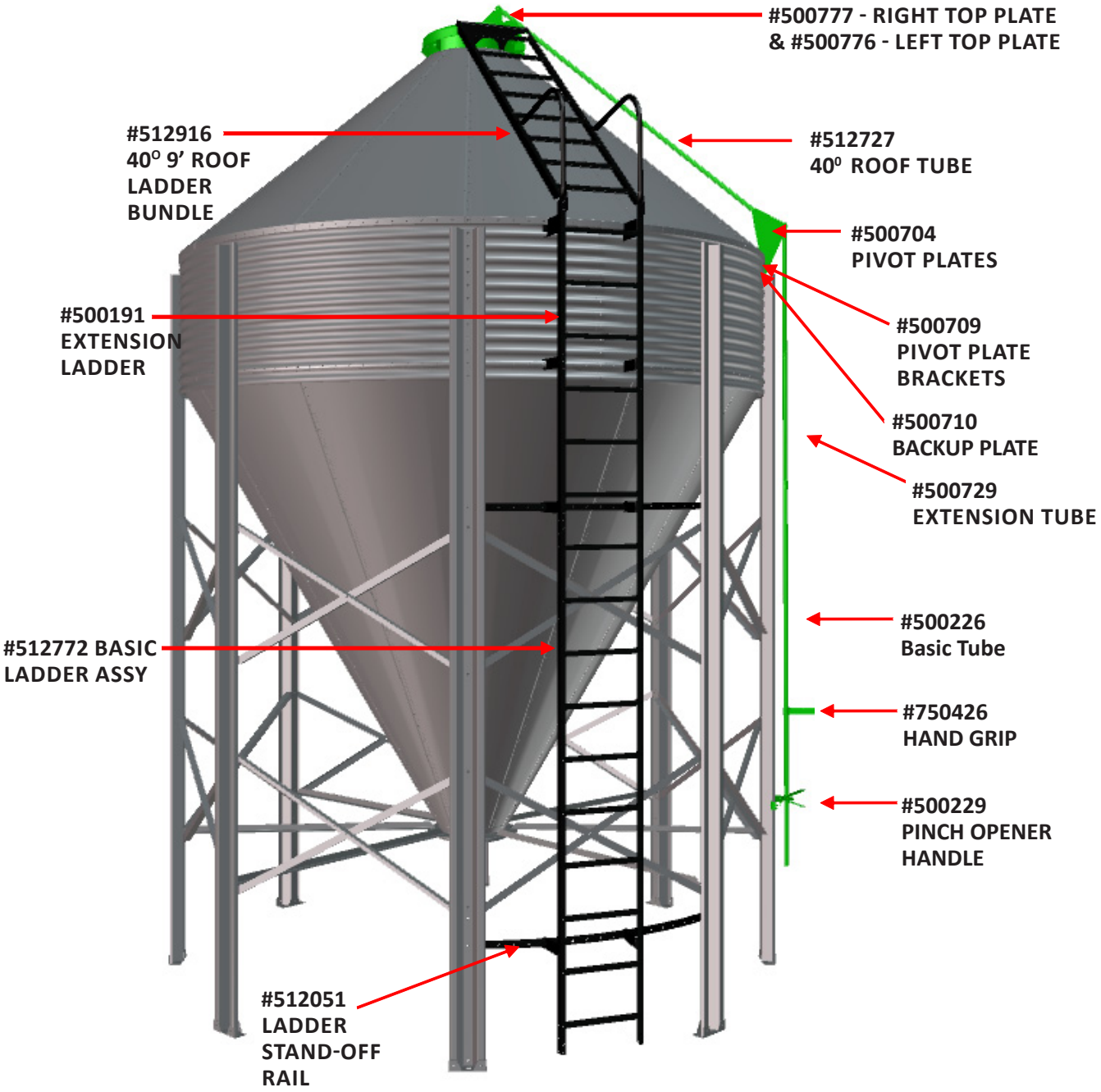
Appendix 8 - Way-Back Lid Cord Containment Bracket and Retainer Parts List



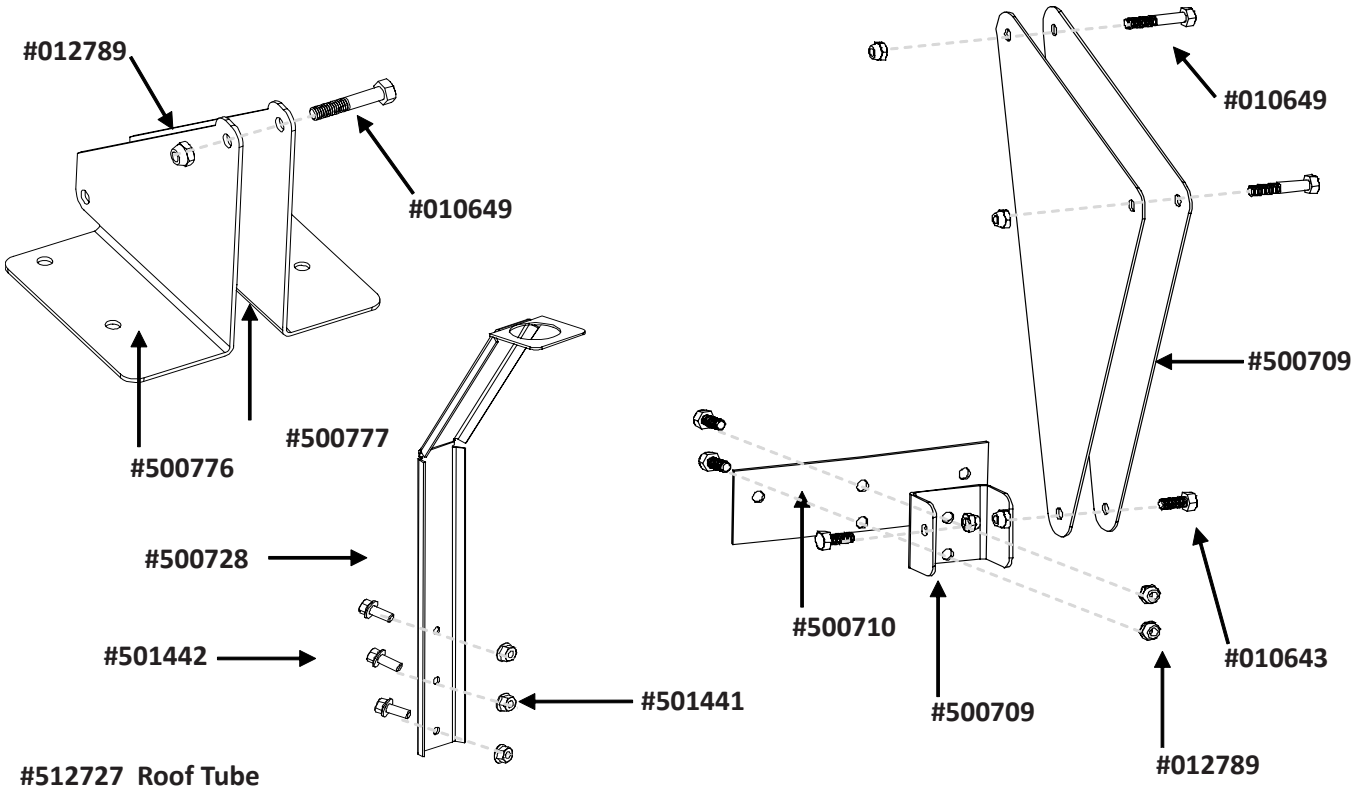
When ordered as Replacement Parts the Quantities will vary

KEY #	PART #	DESCRIPTION	QTY
#500679 - Cord Containment Bracket Assembly Parts List			
1	500665	Cord Containment Bracket	1
2	500691	Cord Retainer	1
3	012795	#10-24 x ½" Un-Slotted Hex Screw	2
4	500664	Plastic Cord Guide	1
5	012408	#10-24 Kep Locknut	2
6	012789	5/16"-18 NYLOCK nut	2
7	500671	Cord Containment Clamp	1
8	500688	Rope Retainer	1
9	012425	¼" X ¾" Self Drilling Screws	2
10	500666	Cord Handle	1
11	500669	Cord Locking Collar	2
12	500668	Cord	1

Appendix 9 - Tru-Lok Add-On Lid Opener and Ladder Overview

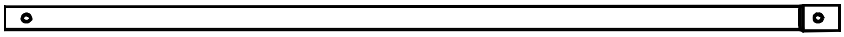


Appendix 10 - Tru-Lok Add-On Parts Drawing (Option)



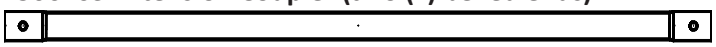
#512727 Roof Tube

#500729 Extension Tube (one (1) belled end)

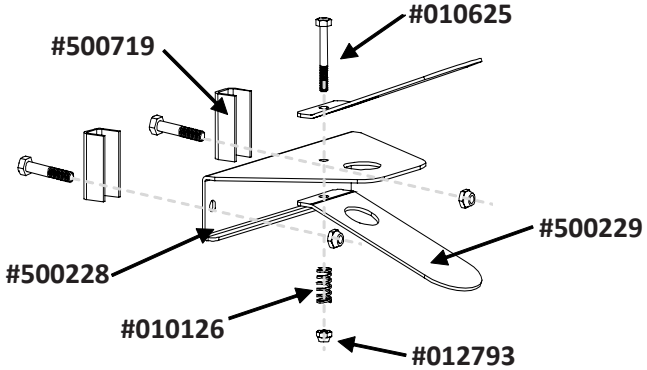


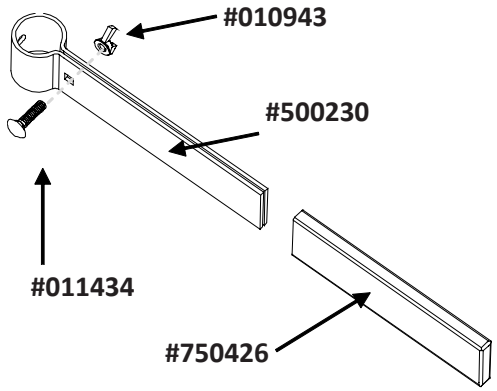
#500226 Basic Tube

#500763 Extension Coupler (two (2) belled ends)



It should be noted that the Basic Tube has NO holes for connections on the bottom end and the Extension Tube has a belled end to fit over, for connection, to the Basic Tube or other Extension Tubes.





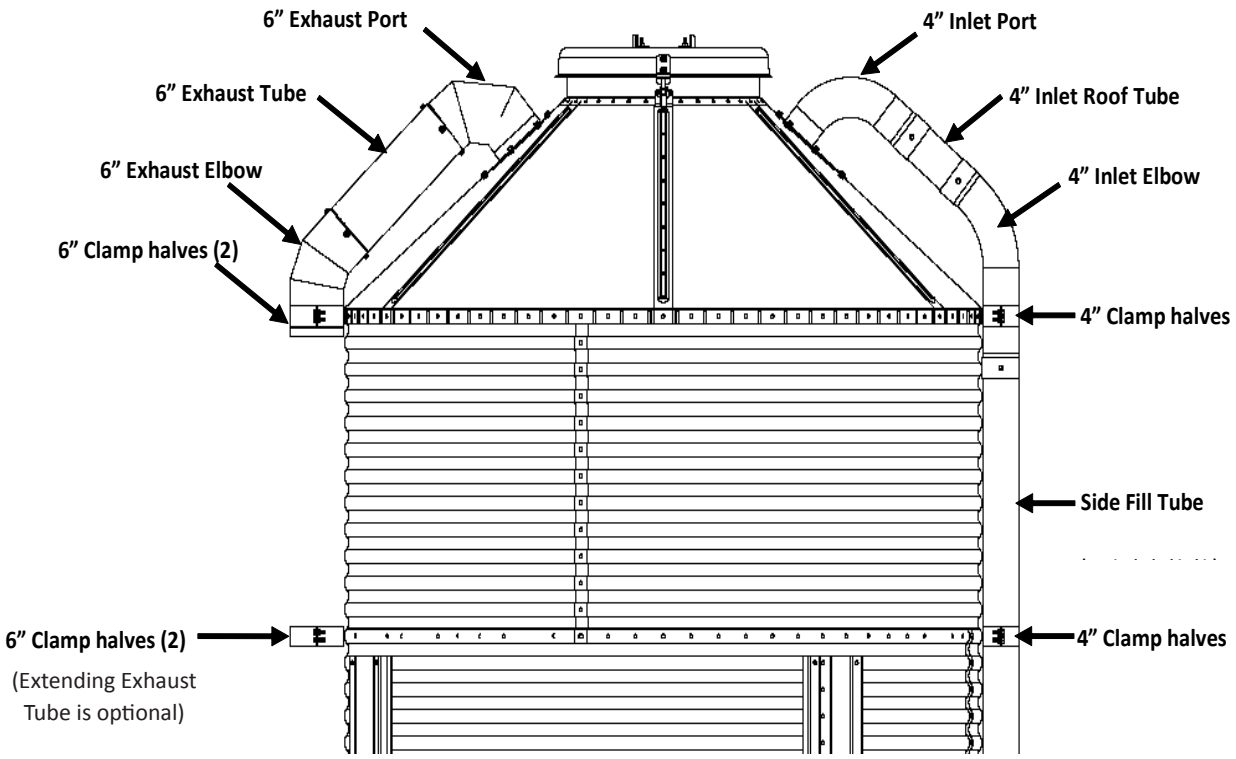
Appendix 10 - Tru-Lok Add-On Parts List

PART #	DESCRIPTION	QTY
OPTIONAL - Tru-Lok Add-On (571241, 571242, 571243, 591244, 571245, 571246, 571247)		
500775	Tru-Lok Accessory Carton	1
512727	Tru-Lok 40° Roof Tube - 12’	1
500226	Tru-Lok Basic Tube	1-3
500729	Tru-Lok Extension Tube	0-3
500728	Tru-Lok Tube Guide (Available for 3-7 Ring only)	1
500763	34” Lid Tube Ext. Coupler	0-2
Tru-Lok Add-On - REPLACEMENT PARTS (Quantities will vary)		
500777	Right Top Plate	-
500776	Left Top Plate	-
512727	40° Roof Tube	-
500704	Pivot Plates	-
500709	Pivot Plate Bracket	-
500710	Backup Plate	-
500257	Pinch Handle Assembly	-
500229	Pinch Opener Handle	-
500228	Pinch Opener Mtg Bracket	-
010126	1/2” Medium Load Spring	-
500719	Handle Bracket Clip	-
010625	1/4-20 x 2 Hex Bolt	-
012793	1/4-20 Nylock Nut	-
500230	Handle	-
750426	Hand Grip	-
010643	5/16-18 x 3/4” Hex Bolt	-
011434	1/4-20 x 1 Carriage Bolt	-
010943	1/4-20 Wing Nut	-
010649	5/16” Hex Bolt	-
012789	5/16” Locknut	-
501442	5/16” x 1” Flanged Hex Bin Bolt	-
501441	5/16” Flange Nut	-

TRU-LOK LID OPENER TUBE USAGE CHART (12’ BIN)

Tube #	1 RING	2 RING	3 RING	4 RING	5 RING	6 RING	7 RING
512727	1	1	1	1	1	1	1
500226	1	1	2	2	2	2	3
500729	2	3	0	1	2	3	0
500763	0	0	1	1	1	1	2

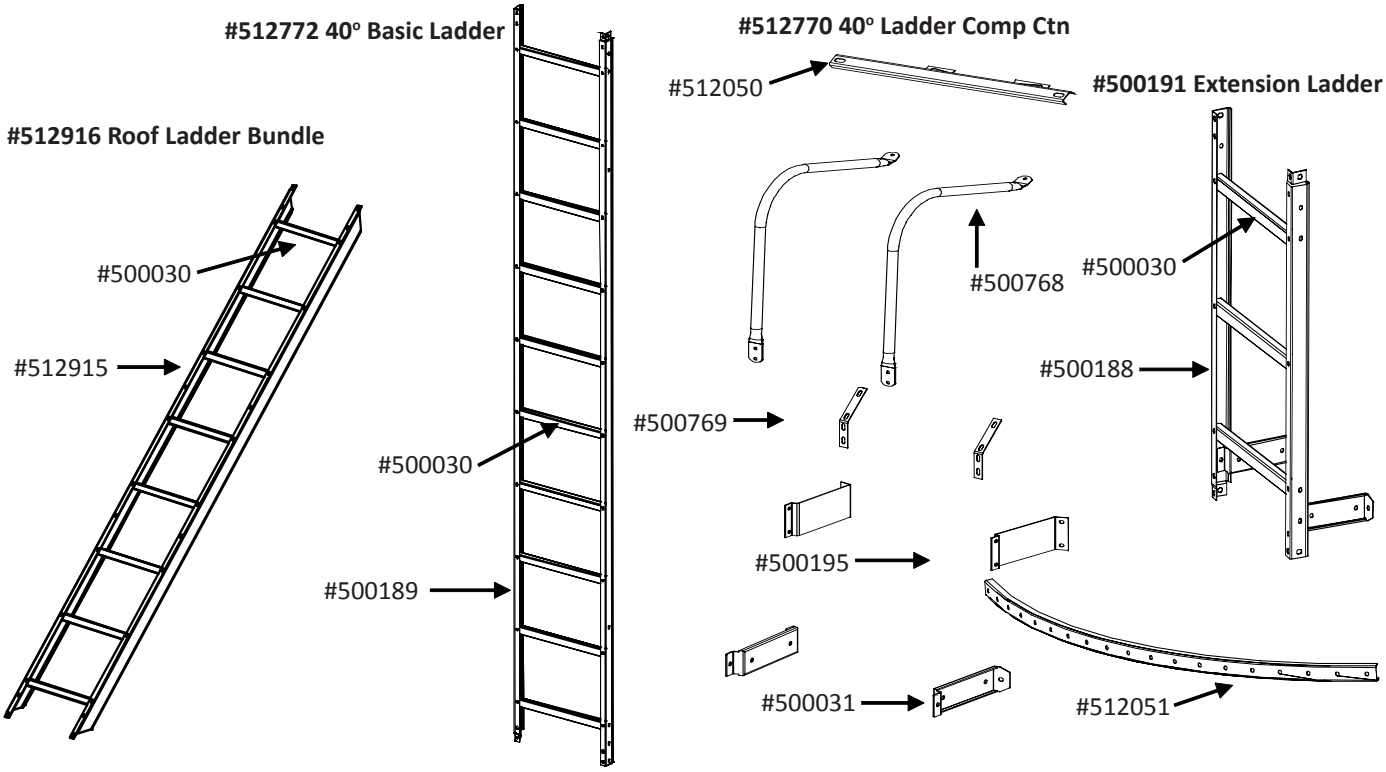
Appendix 11- Pneumatic Fill Overview and Parts List (Option)



When ordered as Replacement Parts the Quantities will vary

PART #	DESCRIPTION	QTY
OPTIONAL - Pneumatic Fill Parts - 512640		
500534	Caulking (50’ roll)	1
500740	4” Narrow Clamp (half)	6
500743	6” Exhaust Port (elbow) w/plate	1
500744	6” x 24” galv. Duct elbow	1
500751	6” Exhaust clamp (half)	6
500786	4” inlet port w/plate	1
500788	51 Degree Elbow (drilled)	1
500942	Pneumatic Fill Hardware bag	1
512425	6” x 39.87” Exhaust Tube	1
512918	4” x 32.82” Inlet (roof) Tube	1
704441	4” x 4’ Galvanized Side Fill Tube (Available for 5 ring)	1
704412	4” x 11’ Galvanized Side Fill Tube (Available for 1 Ring)	1
704413	4” x 15’ Galvanized Side Fill Tube (Available for 2-3 Ring)	1
704414	4” x 19’ Galvanized Side Fill Tube (Available for 4-7 Ring)	1
704287	4” Tube Joiner With Hardware (Available for 5-7 Ring)	1
704411	4” x 7’ Side Fill Tube (6-7 Ring)	1

Appendix 12 - LadderParts Drawing and Parts List



PART #	DESCRIPTION	QTY
OPTIONAL - Ladder Assemblies 512921, 512922, 512923, 512924, 512925, 512926, 512927		
512772	Basic 40° Ladder Assy	1
500191	Extension Ladder (Quantity will equal the number of Rings +1)	2-8
512051	Ladder Stand-Off Rail 12’	2
512916	40° 12’ Roof Ladder Bundle	1
Ladder - REPLACEMENT PARTS (Quantities will vary)		
010643	5/16-18 X 3/4” Hex Bolt	-
012789	5/16-18 Nylock Nut	-
500030	Ladder Step	-
500189	Ladder Rail (108”)	2
512770	12’ - 40 DEG Ladder Comp Ctn (includes Ladder attach. brackets, top brackets, hdwr bag, standoff, handrail and Roof Ladder Brkt/connecting angle)	1
500031	Ladder Attachment Bracket	-
500195	Ladder Top Bracket	-
512050	Roof Ladder Standoff	1
512287	Ladder Hdwe Bag	-
500768	40 DEG Ladder Top Handrail	2
500769	40 DEG Roof Ladder Bracket	2
512915	40° Roof Ladder Rail	2

Appendix 13 - Ladder Cage Parts List (Option)

Optional Cage on a 6 Ring Bin

PART #	DESCRIPTION	QTY
OPTIONAL - Ladder Cage		
500925	LADDER CAGE KIT - 6x3, 7x2, 9x2, 12x1	1
500926	LADDER CAGE KIT - 6x4, 7x3, 9x3, 12x2	1
500927	LADDER CAGE KIT - 7x4, 9x4, 12x3	1
500928	LADDER CAGE KIT - 7x5, 9x5, 12x4	1
500929	LADDER CAGE KIT - 7x6, 9x6, 12x5	1
500931	LADDER CAGE KIT - 12 x 6	1
500932	LADDER CAGE KIT - 12 x 7	1
Ladder Cage - REPLACEMENT PARTS (Quantities will vary)		
500901	LC Eave Extension	-
500902	LC Support to Roof LDDR	-
500903	LC Support to Bin	-
500904	LC Support - Short Vert	-
500905	LC Support - Basic Vert	-
500906	LC Support - Ext Vert	-
500907	LC Support - Hoop/Rail	-
500908	LC Half Hoop Ext	-
500909	LC Bottom Hoop Ext	-
500910	LC Support - Formed Vert	-
500914	LC Basic Top Hardware Bag	-
500915	LC Basic Bottom Hardware Bag	-
500916	LC Ext Hardware Bag	-
500920	LC Support - O/S Roof Ladder	-

Appendix 14 - Optional Side Assembly for 1-3 Ring Bins ONLY

1. Follow the Corrugated Hopper Assembly / Caulking Instructions on page 17 for vertical assembly.

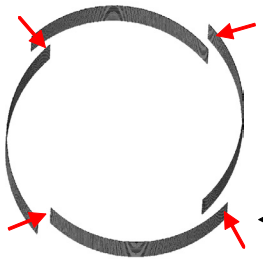
2. Tip assembled Hopper Sheet Ring on its side *as shown in the Figure 2 below to finish assembly.*

3. Attach Taper Hopper sections *as detailed on pages 29 and 30 and shown in Figure 3.*

4. Attach Upper and Lower Leg Base Plates to Legs *as detailed on page 27.*

5. Attach each #512024 leg to the (12) holes *as shown in Figure 4 below.*

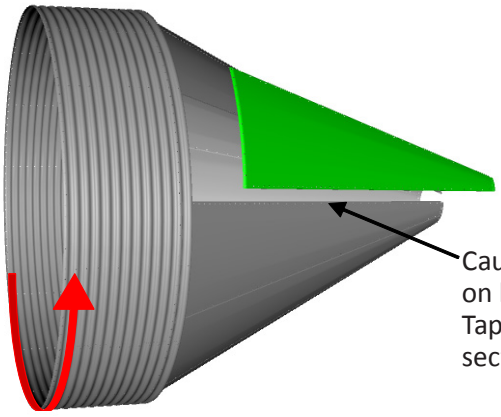
Figure 1



ASSEMBLE HOPPER SHEETS AS SHOWN ON LEFT (OVERLAP SAME END OF EACH SHEET)

Figure 2

Figure 3

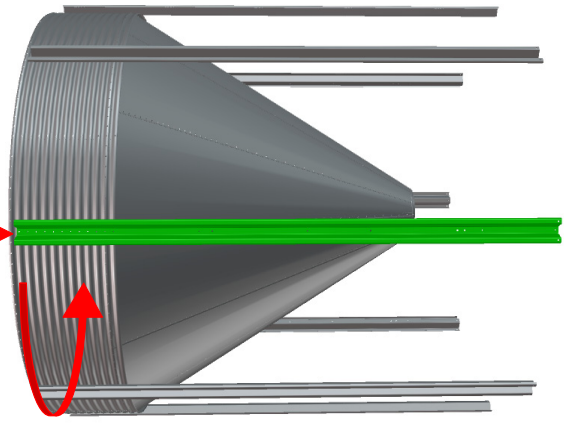


Caulk all holes on both sides of Taper Hopper sections

Figure 4

Roll as you need to assemble

(12) Leg holes



Example in Figure 4 shows last leg to be moved into place over (12) leg holes

Appendix 14 - continued

6. Attach HP Taper Hopper Boot Collar *as detailed on pages 29 and 30 and shown in Figure 5.*
7. Attach Roof Sections, Roof Angles, and Collar *as detailed on pages 18 thru 19 and shown in Figure 6.*
8. Determine the best direction and location for the Lid opening and Ladder placement *as detailed on page 20.*
9. Attach the Front Cross Bracing and Rear Cross Bracing to the legs *as detailed on page 28 and shown in Figure 7.*
10. Attach WayBack Lid, Tru-Lok, or Pneumatic Fill kit and ladder kits *as per instructions included with product and shown in Figure 8. (Some detail on pages 21-23 and 25.*

Be sure that all holes, seams and Collars on tank are properly caulked as shown on page 17.

Figure 5

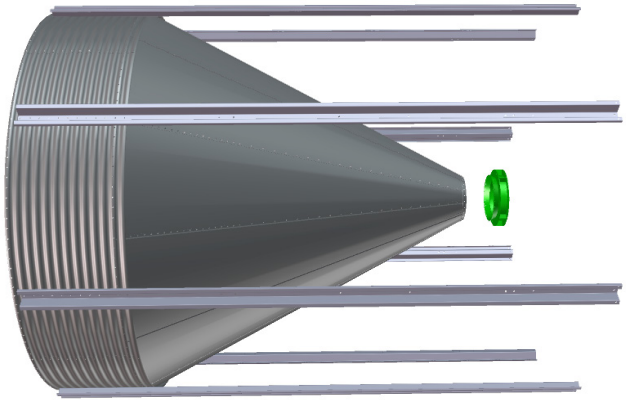


Figure 6

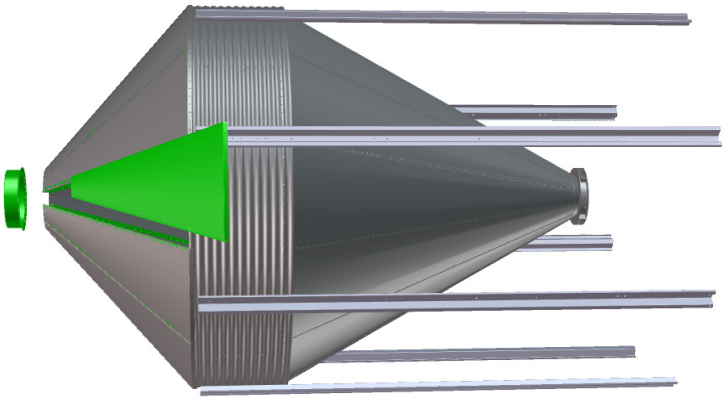


Figure 7

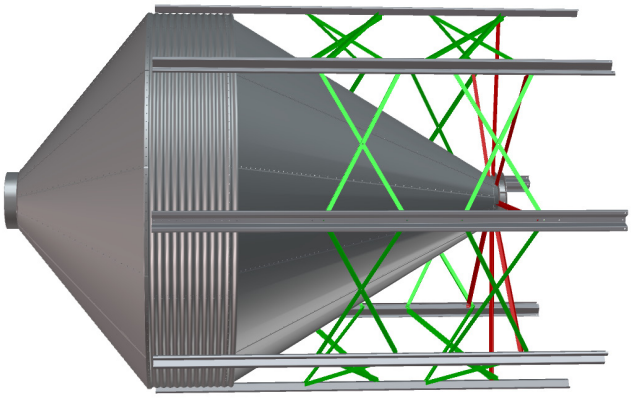
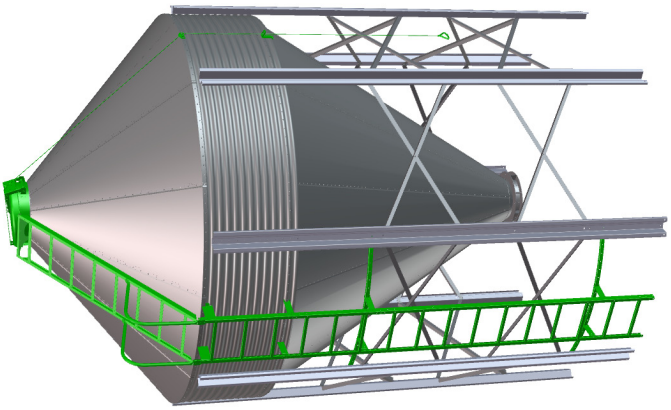


Figure 8



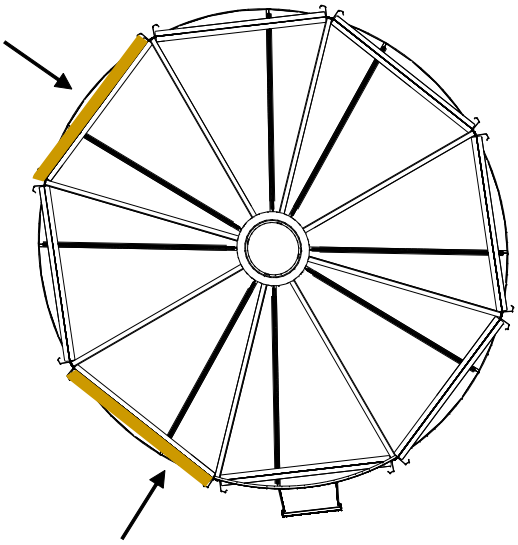
Appendix 14 Continued (HORIZONTAL ASSEMBLY ONLY)

Before erecting your new bin be sure all parts are assembled properly and hardware tightened securely.

1. Peel protective paper off "VAL-CO™" decal before raising bin.
2. Cut two (2) 2" x 4" braces to 50" (1.27 m) long and fasten between legs *as shown below in Bottom End View for support.*
3. Raise the bin *as shown in the Raising the Bin drawing below*. Be sure to use appropriate heavy equipment.

- **Be sure to use proper strength heavy equipment such as; crane, truck with hydraulic lift bed or other.**
- **Level the legs, to assure stability, after the bin is raised.**
- **Leg shims #500249 are available.**

Figure 53

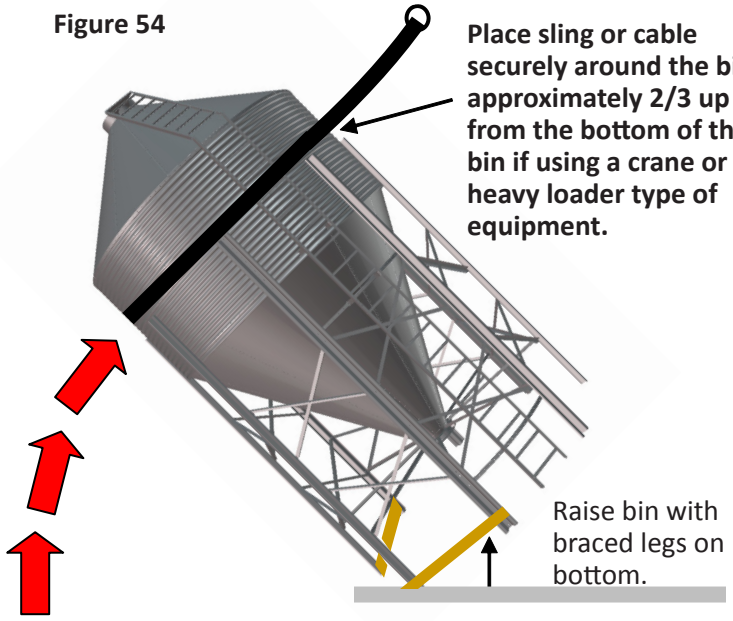


Bottom End View showing bracing required to stabilize bin for raising.

Erecting the Bin *FOR 1-3 RING 12 FT BINS ONLY*

Bin Lifting Kits for 12 ft bins are not currently available and special design specifications are critical.

Figure 54



Appendix 15 - Customer Service

My dealer's name:

_____

How to contact my dealer:

Customer Service
210 E. Main Street
P. O. Box 117
Coldwater, OH 45828
800.998.2526

Street / PO Box _____

City _____

State / Province _____

Zip / Postal _____

Phone _____

Fax _____

E-mail _____

Web site _____

North America:
Phone: 800.99VALCO (800.998.2526)
Fax: 419.678.2200
Email: sales@val-co.com

International:
Phone: (+1) 419.678-88731
Fax: 419.678.2200
Email: intl.sales@val-co.com