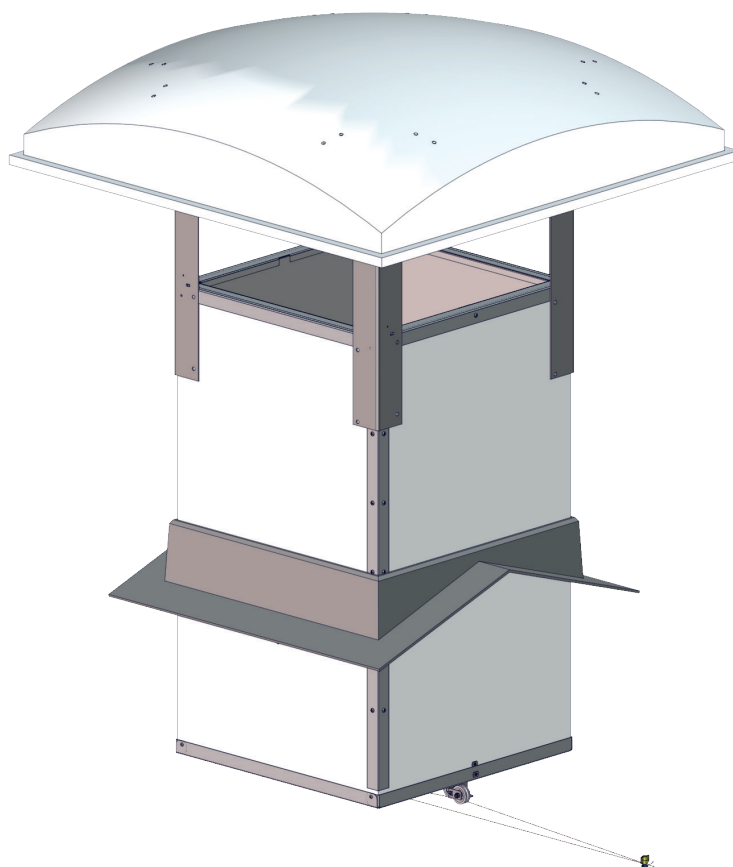




Natural-Flo Chimney

R700 (24")

R710 (36")





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VAL PRODUCTS, INC. WARRANTIES

VAL-CO™ 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 *on the next page*.



VAL PRODUCTS, INC. WARRANTIES - continued

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 Products 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 support 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 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.
6. VAL PRODUCTS 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.
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 FURNISHED, 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, extend, 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.



Symbols

Below are symbols used throughout the manual. Please pay attention to important information or notes on assembly instructions to aid you in the assembly process or to warn you of necessary safety precautions. The safety warnings are included as a guide to encourage the safe operation of your equipment. However; it is your responsibility to evaluate the hazards of each operation and implement the safest method of protecting yourself as owner and/or operator.



= 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.



= HYPER-LINK - Web site animation for assembly. (Double Click Here if you are using the Val-Co® Website, <http://www.val-co.com>)

Tools and Supplies

Rubber Mallet or Hammer
Drill Bits
Cutting Tools
Caulk Gun
Silicone Sealant
Thread locker

Features and Benefits

Benefits:

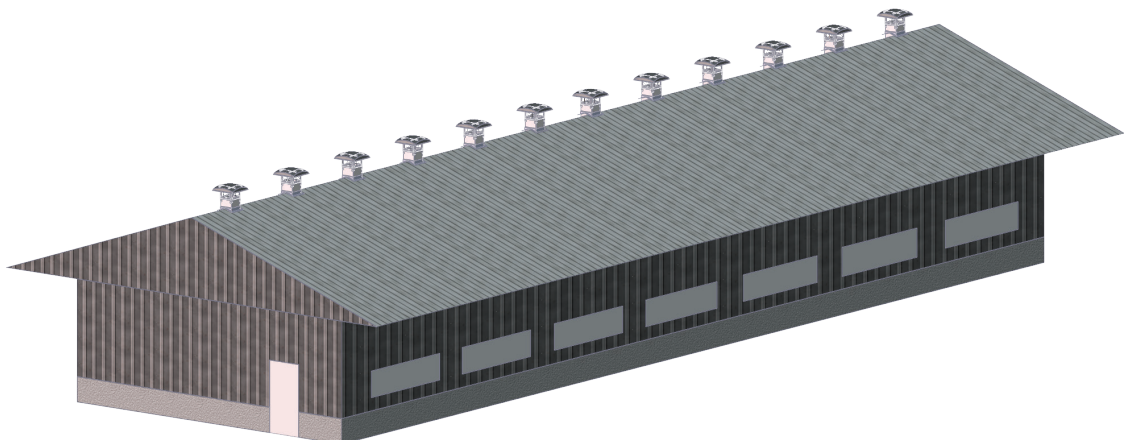
- Energy savings
- Tri-fold design
- Easy installation
- One piece construction reduces assembly and installation set-up time
- Top and bottom flange provides structural integrity
- Construction is self squaring
- 1" insulated, mechanical operating damper allows "air by design" exhaust
- High R value eliminates condensation

Features:

- Chimney extensions available for cathedral or flat ceiling style buildings
- Attractive one-piece molded polyethylene chimney dome
- Sturdy 10 gauge structural aluminum dome mounting brackets
- White insulated U.V. resistant surfaces
- Operating cable kit included
- Rust-resistant hardware

Overview


The number and spacing of Natural Flo Chimneys will be determined by your individual site. Consideration should be given to the number of animals, cfm needed for each, and the size of the chimney to maintain excellent air quality. If you are building new construction refer to your layout drawing and the instructions in this manual for installation. Renovations will require consideration to the existing structure. *Refer to the next 2 pages on Rough Openings for more detailed information.*





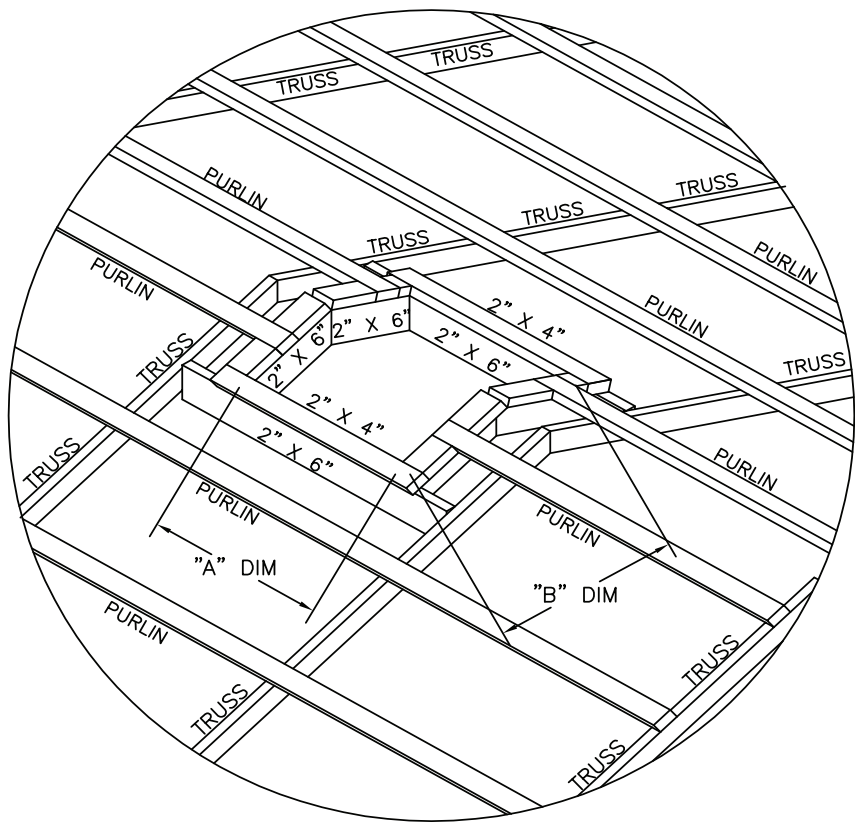
The Rough Opening

The Natural Flo Chimney requires a rough opening in the peak of the barn for installation of each Chimney. Use the chimney size and (A X B) dimension, in the chart below. Use 2" X 6" framing members, as shown in Figure 1.



Using the Truss as a reference, the Rough Opening for the Chimney must remain SQUARE TO WITHIN 1/8".

Figure 1



| CHIMNEY SIZE | "A" DIM | "B" DIM |
|--------------------------------|---------|---------|
| 24" X 24" (inside dimensions) | 27 1/2" | 27 1/2" |
| 36" X 36" (outside dimensions) | 36 1/2" | 36 1/2" |

The Rough Opening - continued

Figure 2

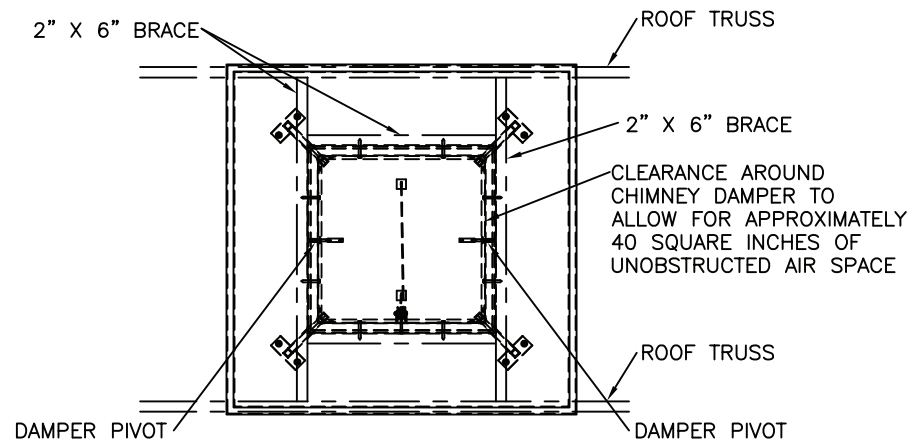
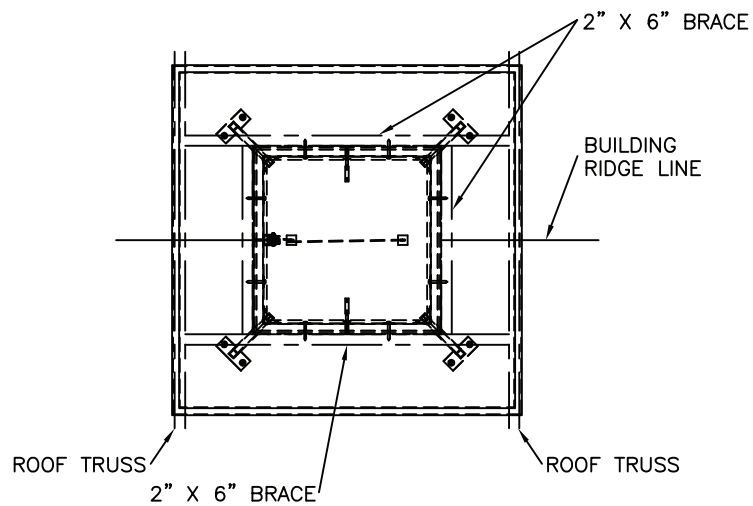


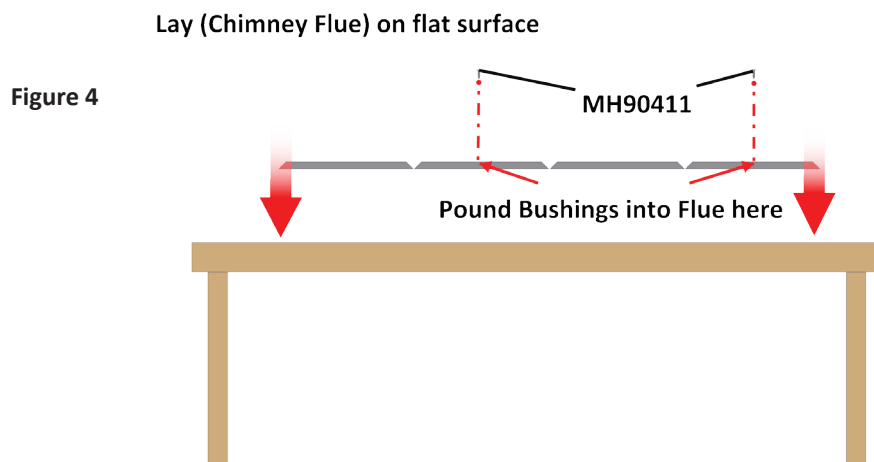
Figure 3



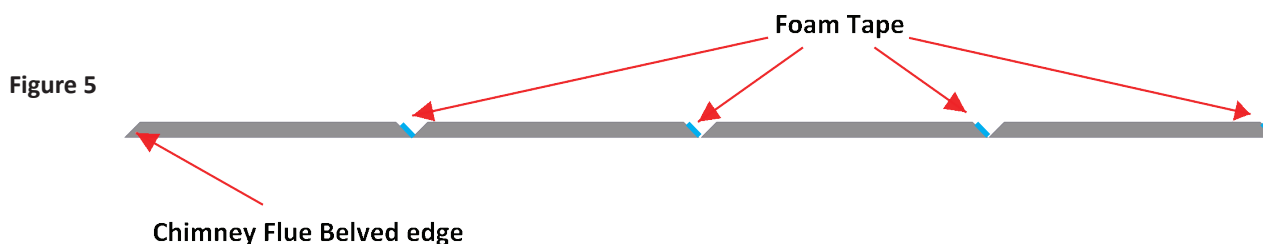


Natural-Flo Chimney Assembly

1. Lay the flat insulated flue down on a clean level surface with the “V” grooves up. Now pound the (2) #MH90411 Bushings into the two holes with a rubber mallet, *make sure they are pounded into the holes, leaving about 3/8” of the Bushings still sticking out of the panel.*

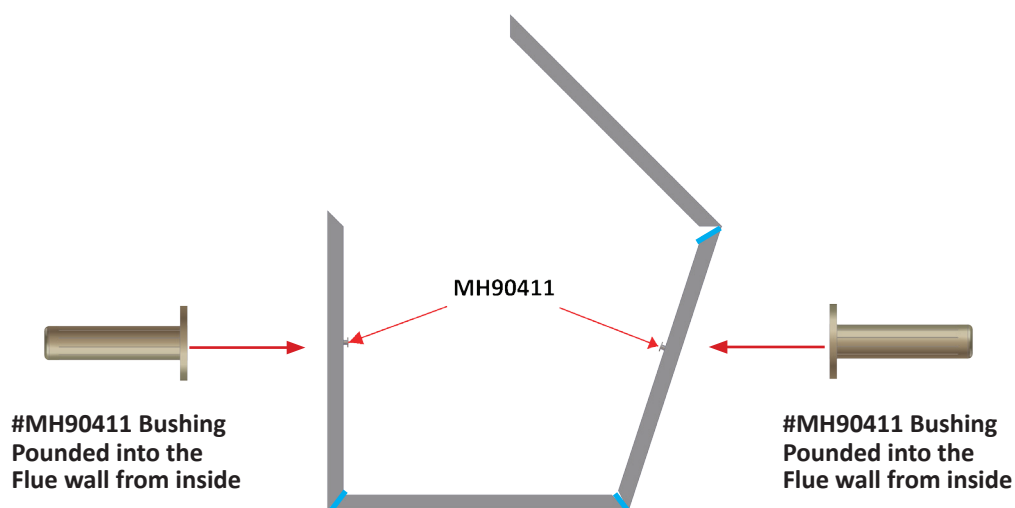


2. Apply Foam Tape to one side of each beveled cut, as shown below.



3. With the insulated Flue still flat, begin to pull (fold) one beveled end of the Flue up and over, *allowing the opposite beveled corners to adhere to the Foam tape which you applied in the previous step*, and gently press along the corners. **Be sure that the #MH90411 Bushings will end up inside the Flue when it is bent as shown below.** *(The beveled cut will allow for the bend at each corner of the Flue to form a square shape.)* **DO NOT PULL THE ENDS OF THE FLUE FULLY TOGETHER UNTIL YOU HAVE INSERTED THE DAMPER in the next step.**

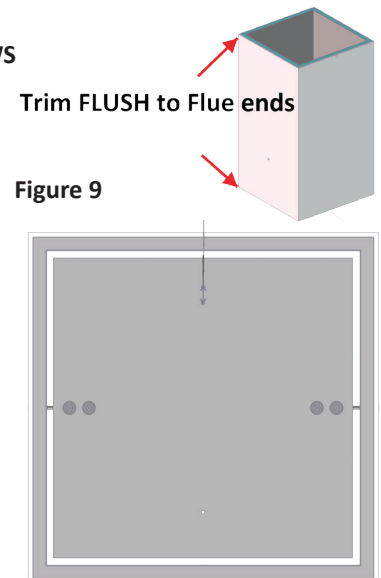
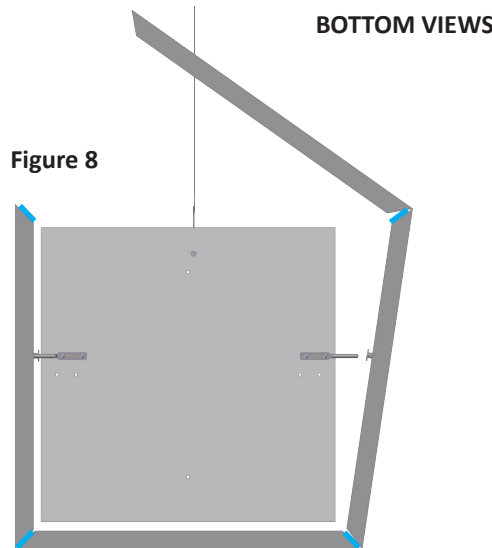
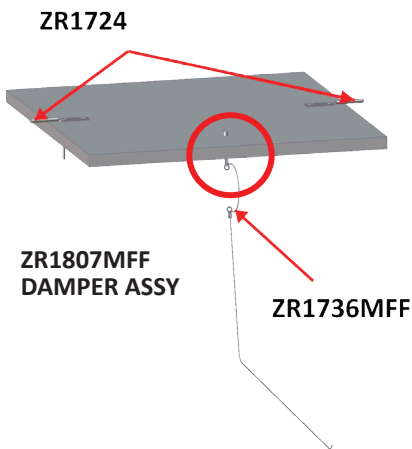
Figure 6



Natural-Flo Chimney Assembly - continued

4. Locate the #ZR1807MFF Damper Door Assembly and insert the two (2) #ZR1724 Stainless Damper Hinges (*Pivot Pins*) that are *pre-assembled* on the Damper Door into the Bushings on the Flue as you fold the insulated Flue around the Damper Assembly *into a square shape*. Now, pull the two ends together, *as shown below*, press firmly and trim the Foam Tape flush with both ends of the Chimney Flue.

Figure 7



5. Flip the Chimney over, (*placing bottom of Chimney on flat surface*) and push the 2nd #SMP8016 Aluminum Cap Assembly onto the TOP end of the Chimney Flue, *as shown in Figures 10*. Attach the Aluminum Cap to the Flue using two (2) #MH90915 Self Drilling Screws. Use two (2) screws, *one for each of the two (2) pre-drilled holes*, of the Aluminum cap, *as shown in Figure 11*.

Figure 10

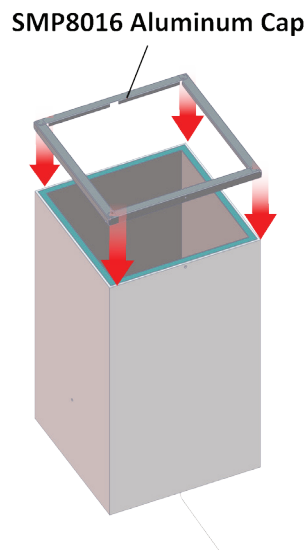
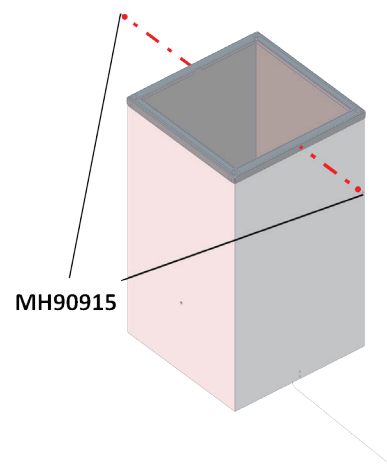


Figure 11



BE SURE NOT TO OVERTIGHTEN SCREWS so that they do not strip out.



Natural-Flo Chimney Assembly - continued

6. Flip the Chimney Flue upside down so the assembled Damper is *toward the top* and the *top of the Chimney Flue is on the flat surface*. **DETERMINE THE LOCATION OF THE 3-32 SS Cable**, as this is the side of the Damper and the Flue to which the Spring and Pulley Assembly will attach. Once you have determined the placement of Spring and Pulley, push the #SMP8016 (pre-assembled) Aluminum Cap onto the bottom end of the Flue. **Make sure the pre-drilled holes in the Aluminum Cap align with the holes where the Pulley assembly will be located**, as shown in Figure 12. This will eliminate later adjustment and the Aluminum Cap will help the Chimney maintain its shape during the assembly. For more detail of the Damper Assembly refer to the previous page.
7. Use one (1) #MN90915 self drilling screw to secure the Aluminum Cap to one (1) side of the flue, as shown in Figure 13.



The Damper Door is closer to the bottom of the Flue when fully assembled.



BE SURE NOT TO OVERTIGHTEN SCREWS!
(So they do not strip.)

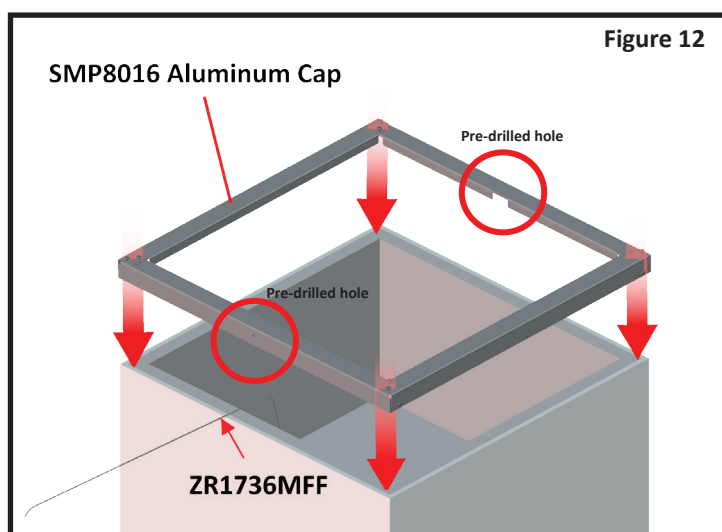


Figure 12

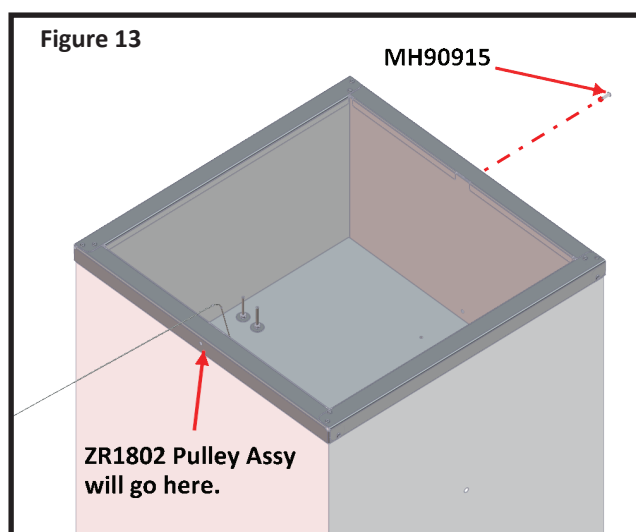


Figure 13

8. Hold the #SMP90924 Corner Channel (with pre-drilled holes) against the corner of the Chimney that was the open seam. Screw the Corner Channel to the outside of the insulated Flue using the #MH90915 Self Drilling Screws, as shown in Figure 14 below.
- 9 **Silicone all the inside corner seams of the insulated Flue.**

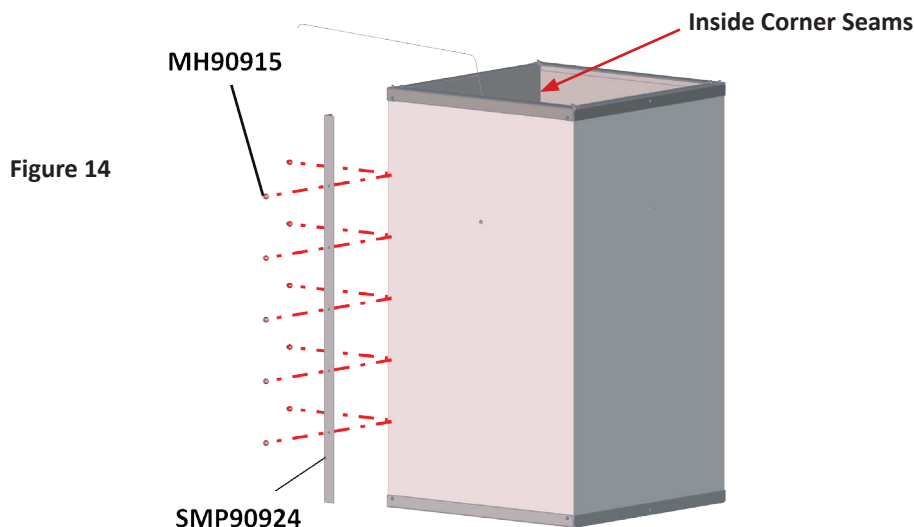


Figure 14

Natural-Flo Chimney Assembly - continued

9. Locate the Flue wall that is opposite the Double Pulley Block. Make a mark on the CENTER of this wall, 14-1/8" up from the BOTTOM of the Chimney. Drill a 1/4" hole all the way through the Chimney wall that you just marked. **(Make sure you push the Damper Door down on the same side, as you drill the hole.)** Now insert the #MH90914 Pan Head Bolt through this hole and secure with a #MH90043 NyLock Nut on the on the **INSIDE** of the Chimney. *(This is the Damper Stop bolt.)*

Figure 15

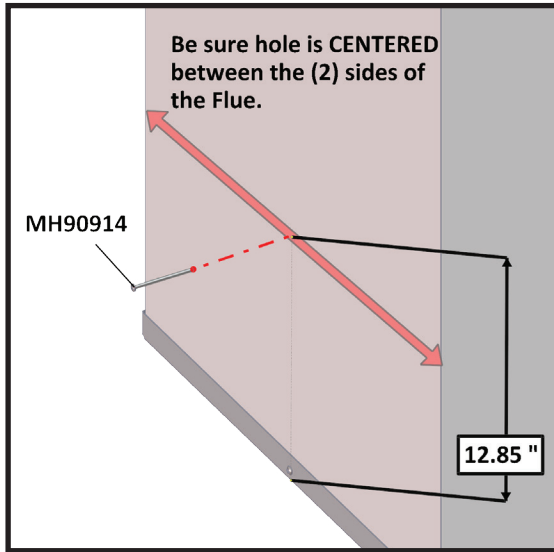
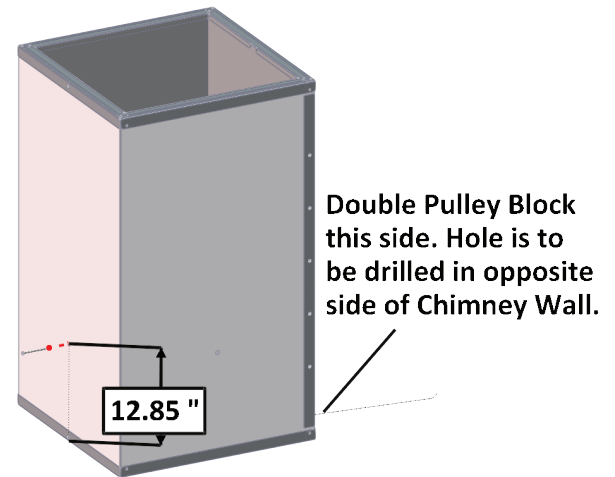


Figure 16



10. Use the #ZR1802 Mounting Strap for the Double Pulley Block as a template, as shown in Figure 17, to mark the CENTER of the 5/16" hole that you will be required to drill into the Chimney Flue just above the Aluminum Cap *pre-drilled hole*. Center the BOTTOM hole of the Mounting Strap over the pre-drilled hole in the Aluminum Cap and mark the CENTER for the hole on the outside of the Chimney Flue for drilling. **(The pre-drilled hole in the Aluminum Cap will also require drilling out to a 5/16" diameter, as the current hole measures 1/4" and the Welded Nut requires a 5/16" hole for insertion.)**
11. Push the two (2) #MH90923 Welded Nuts into the holes that you drilled from the **OUTSIDE of the Chimney going IN WARD**. Put a dab of "Loctite" in the Weld Nut and Screw the threaded stud of the Double Pulley Block tight into the Weld Nut. *Lay the Chimney on the back side (opposite of the side where you will attach the Double Pulley Block, for easier assembly.)*

Figure 17

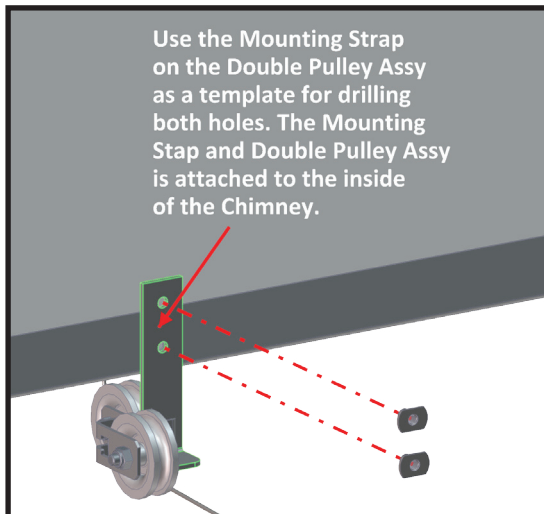
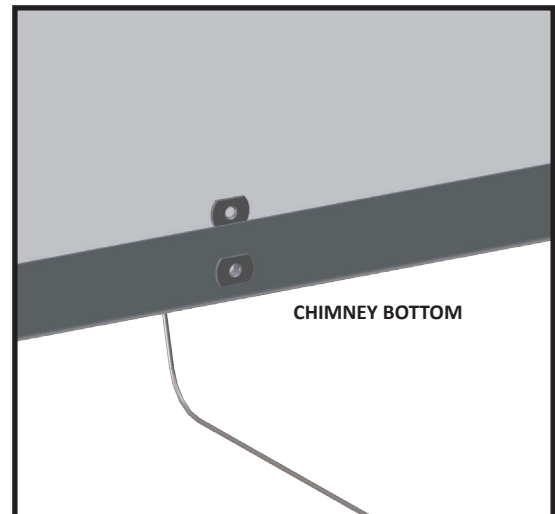


Figure 18





Natural-Flo Chimney Assembly - continued

12. Attach the #ZR1802 Double Pulley Block with Mounting Strap to the **INSIDE** of the Chimney, as shown in *Figure 19*, by inserting the two (2) #MN90918 1-1/2" SS Hex Bolt into the Welded Nuts that you installed in the previous step. **(Make sure that the threads are not sticking out of the outside of the Flue.)**

Figure 19

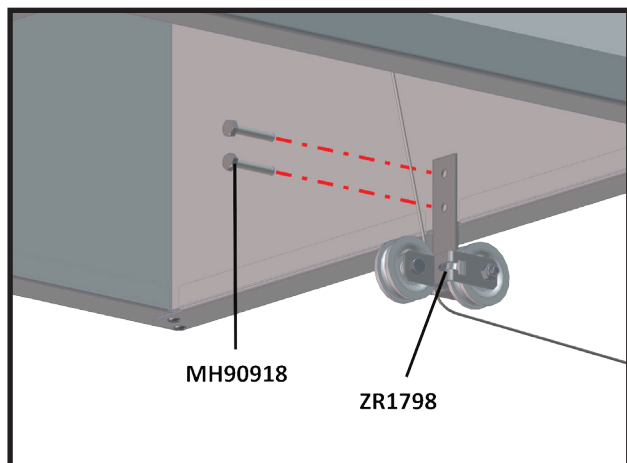
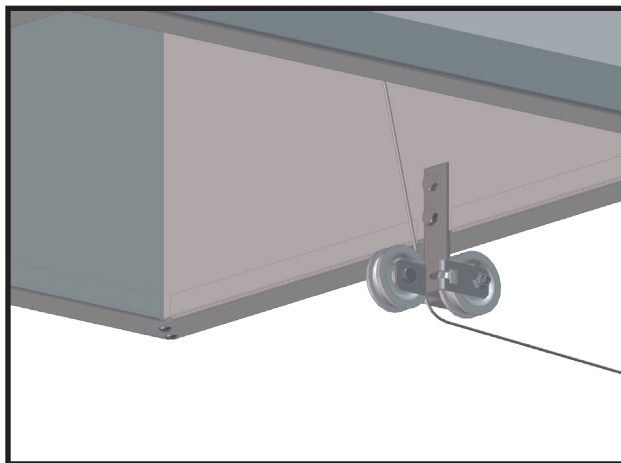
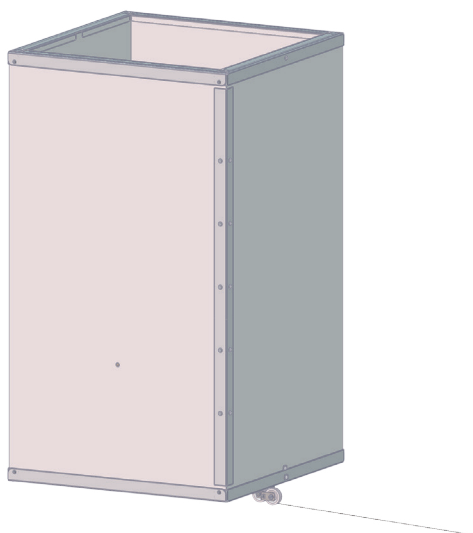


Figure 20



(Make sure that the threads are not sticking out beyond the outside of the Flue.)

Figure 21



Natural-Flo Chimney - Dome Assembly

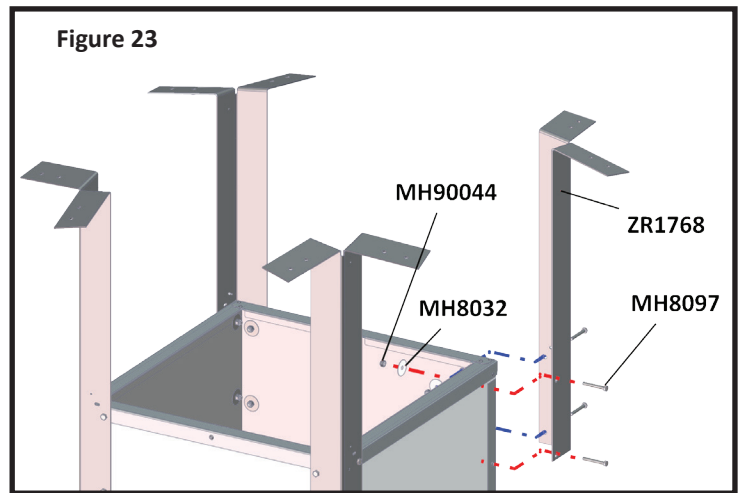
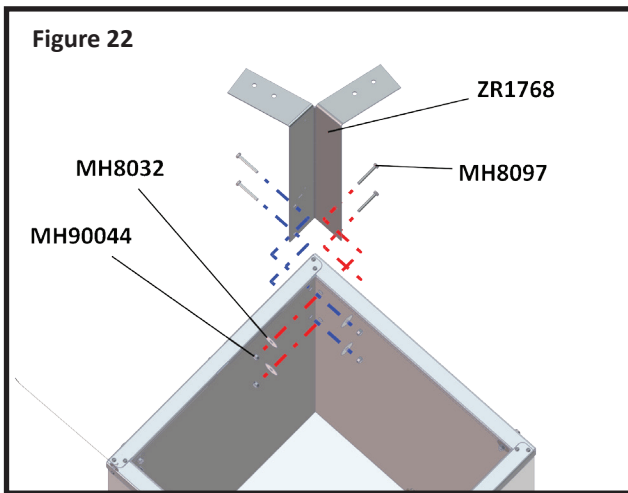
1. Flip the Chimney over so that the TOP is UP. Locate the four (4) #ZR1768 Chimney Brackets and hold the Bracket tight against the OUTSIDE of the Aluminum Cap and Flue Edge, **using the holes in the Chimney Dome Bracket as a template, as shown in Figure 22**, and drill one (1) 5/16" hole all the way through the side wall and the TOP Aluminum Cap, and bolt the Chimney Dome Bracket onto the Flue using the four (4) #MH8097 2-1/4" Hex Head Bolts with #MH8032 Flat Washers and #MH90044 NyLock Nuts.



The Washers and the Lock Nuts should be on the **INNER** Chimney wall. **DO NOT OVER TIGHTEN!**



Repeat this same procedure for all four (4) brackets. Tighten these bolts to a 30 in/lbs. of torque.



2. Bolt the #ZR1710 Dome for (R700 24" Chimney) and #ZR1710A for Dome for (R710 36" Chimney) into place, using the #MH90172 3/4" Hex Bolts, #MH8032 Flat Washers and #MH90044 NyLock Nuts. Repeat this same process for the three (3) remaining brackets.



(The Flat Washers should end up on the TOP of the Dome and the Nuts should end up on the **INSIDE** or **BOTTOM** SIDE of Dome.)

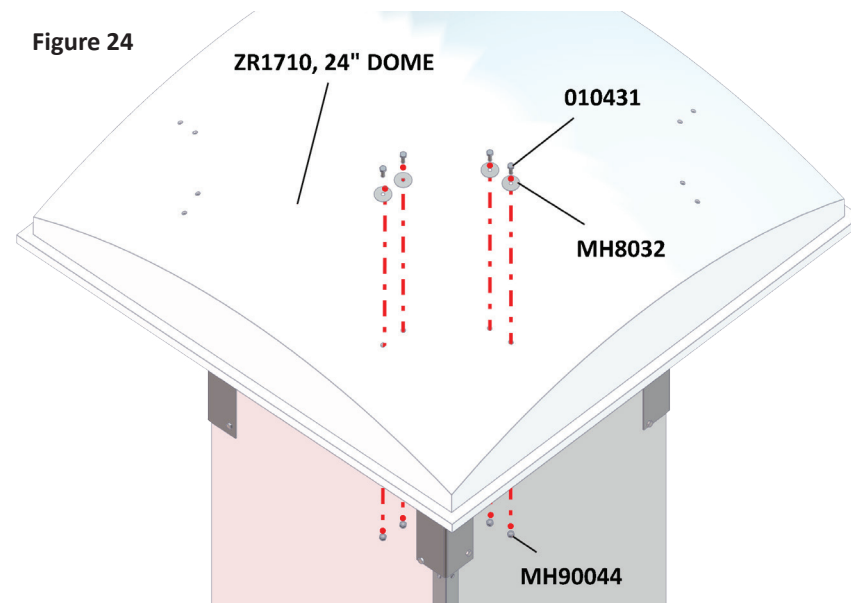
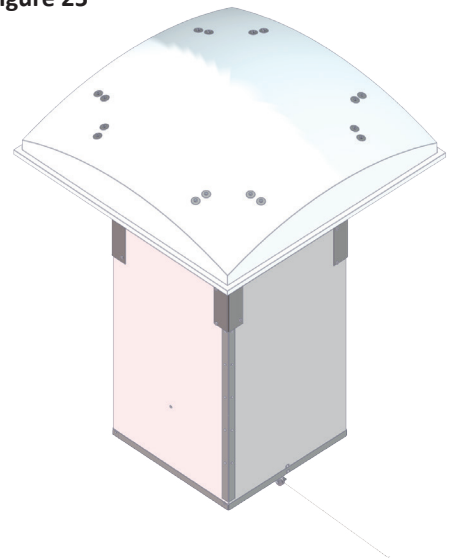


Figure 25





Natural-Flo Chimney - Bird Netting Installation

1. Secure a #MH90251 Hex Head Tek Screw through one of the MH8028 Flat Washers and drive it into one of the bottom holes located right above the slot in one of the Chimney Brackets. **DO NOT TIGHTEN AT THIS TIME.** Slide the Bird Netting up to the edge of the Chimney Bracket and place over the washer at the second row (set of holes) from the left edge of the Bird Netting and the fifth row (set of holes) up from the bottom edge of the netting. Repeat the process for the top of the same bracket using a #MH90256 1-1/4" long screw. **DO NOT TIGHTEN AT THIS TIME.**

Figure 26

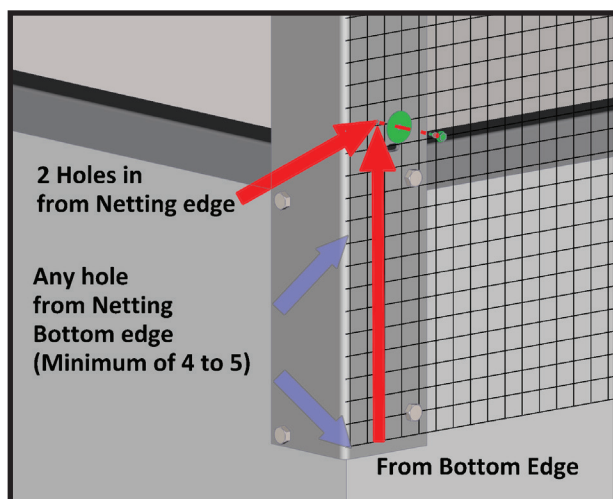
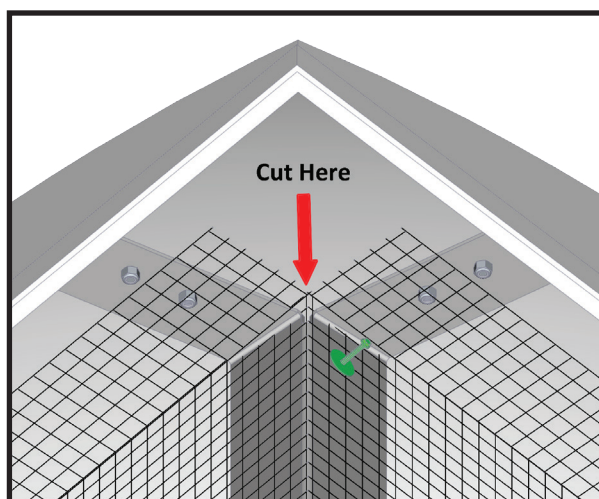


Figure 27



2. Wrap Bird Netting around the next Chimney Bracket and secure, *in the same fashion as the first bracket*. Remember to use the #MH90251 1/2" screws for bottom holes and #MH90256 1-1/4" screws for top holes. At the top of the second Chimney Bracket, cut back the first three (3) or four (4) rows of Bird Netting to allow the Bird Netting to flex back and prevent pulling. Repeat these processes for the next two Chimney Brackets.
3. To secure the end of the Bird Netting, pull the Bird Netting around the first Chimney Bracket, *doubled over the beginning edge by several holes of the netting and over the washers, as shown in Figure 28*. Tighten all the bottom screws at this time against the Bird Netting. **LEAVE THE TOP SCREWS LOOSE UNTIL YOU INSTALL THE DOME WIRES.** Once the Bird Netting is secure you can cut off the excess.
4. Next, place the open wire end of one of the #ZR1815 for 24", #812012 for 36", Dome Wires over the top screw, behind the washer, *as shown in Figure 29*.

Figure 28

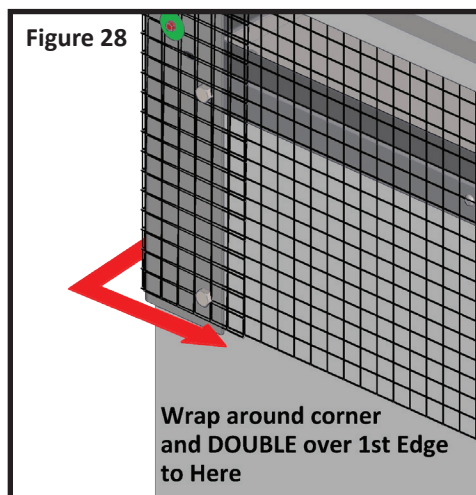
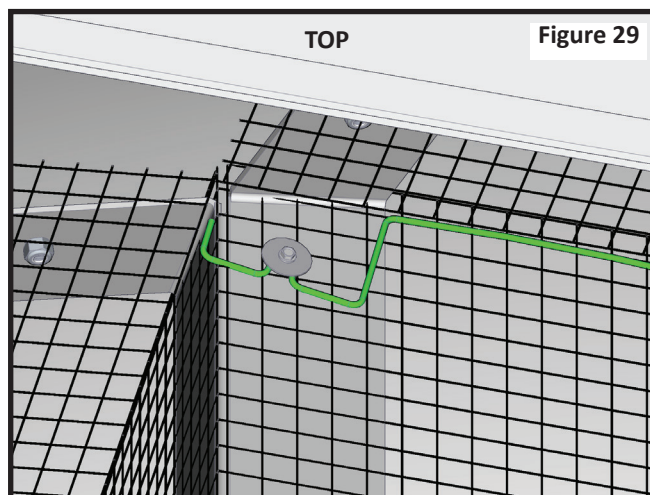


Figure 29



Natural-Flo Chimney - Bird Netting Installation - continued

5. Hook the second Dome Wire back behind the #MH90251 Hex Head Tek Screw and #MH8028 Flat Washer on the next Chimney Bracket just as you did the first Dome Wire, *as shown in Figure 30.*
6. Push the first Dome Wire up into the Dome, making sure the Bird Netting is secured between the Dome and the Dome Wire. Tighten the Hex Head Tek Screw on the first dome wire.
7. Now with the wire in place against the inside of the Dome, take the unattached end of the first Dome Wire with the eye hook and hook the open end of the second wire into the eye hook of the first dome wire, *as shown in Figure 32. Repeat process for the remaining Dome Wires.* Secure each Dome Wire to the Bird Netting using two (2) #713473 Cable Ties (supplied for each).

Figure 30

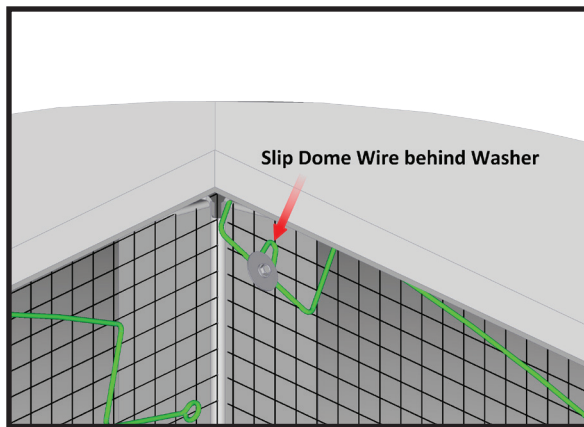


Figure 31

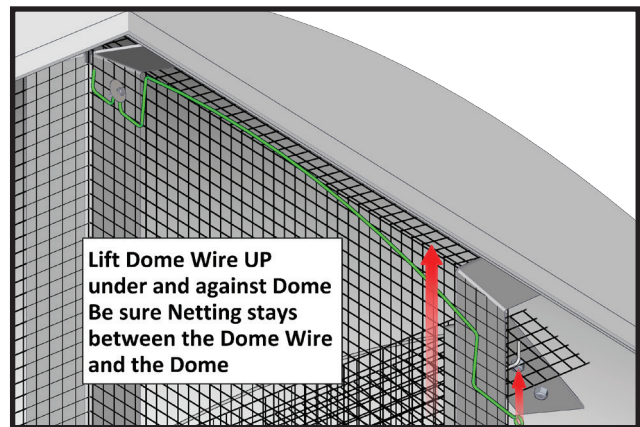
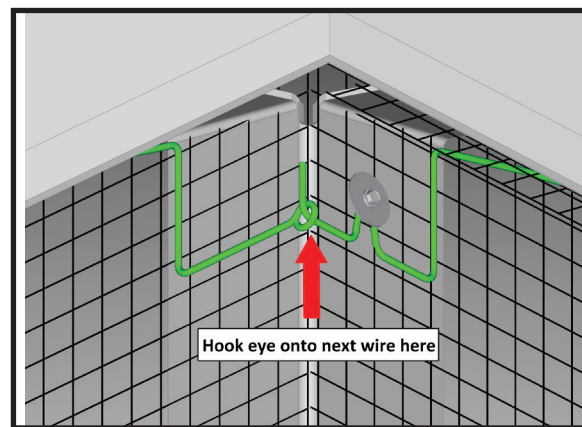


Figure 32



The assembly with the addition of optional Bird Netting is now complete.



Natural-Flo Chimney Roof Installation

1. Slide the Chimney Flashing onto the Chimney Flue from the bottom end before installing into the rough opening. The Flashing will sit directly on the roof peak. Leave the Flashing free to slide up while you complete steps 2 and 3 on the next page.

Figure 33

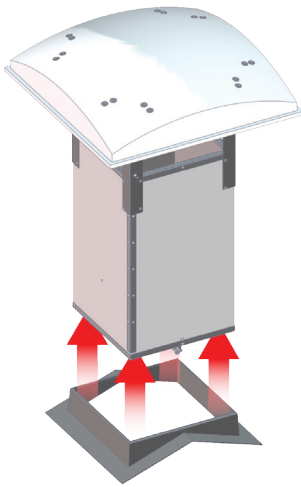
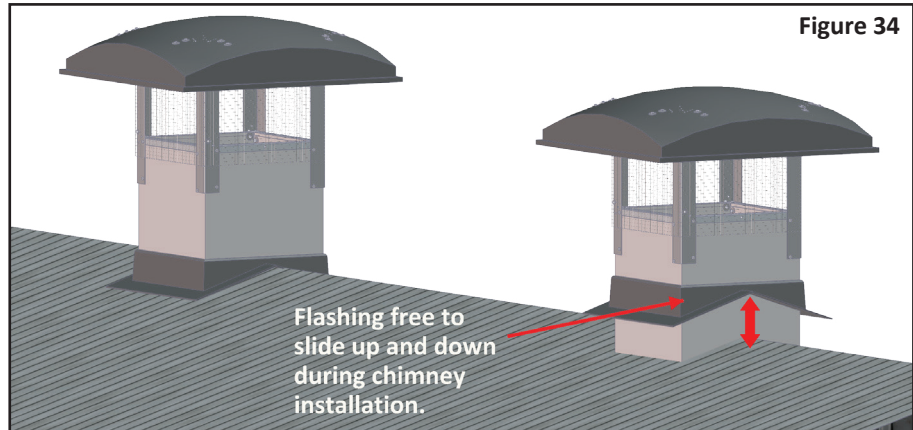


Figure 34



Secure Flashing AFTER Chimney is installed.



Before you begin installing the Chimneys into the roof, be aware that all the Double Pulley Blocks inside the bottom of the Chimneys **MUST** end up on the same side throughout the barn, *as shown in Figure 35*. This will allow you to actuate the Chimneys in series. **ALL THE CHIMNEYS MUST BE INSTALLED WITH THE DAMPER PIVOT PINS PERPENDICULAR WITH THE ROOF PEAK**, as shown in the view from underneath, Figure 35a.

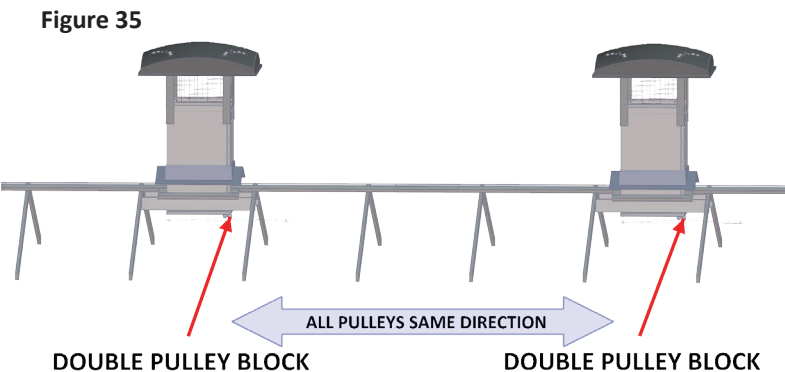
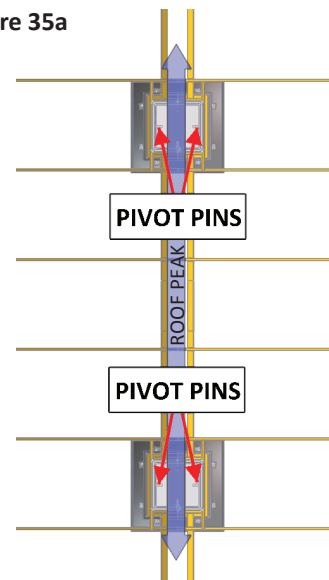
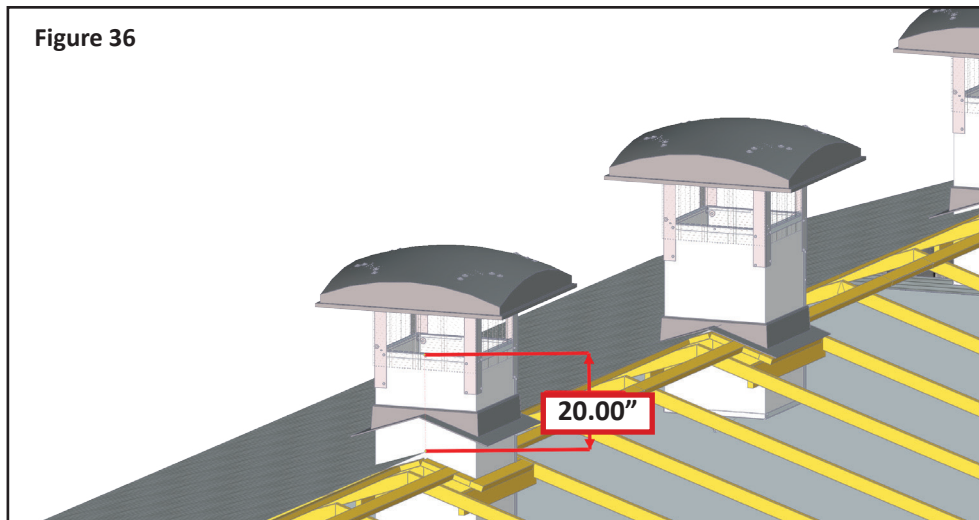


Figure 35a



Natural-Flo Chimney Roof Installation - continued



2. Install the Chimney into the rough opening with 20" of Flue sticking above the peak of the roof, *as shown in Figure 36.*
3. Lag bolt the Chimney into the rough opening with (2) Lag Screws and Flat Washers per chimney side wall (*Hardware not included*). Before tightening all the way, shim excess air gaps to keep the Chimney square in the rough opening and to ensure the damper operates freely. **DO NOT OVER TIGHTEN** the Lag Screws. (*Over tightening could damage to the Chimney walls.*)
4. Pull both Damper Cables through the Double Pulley Block which is on one of the end walls near the bottom of the Chimney. (*Refer to drawing with Linkage Installation on page 21.*)

Figure 37

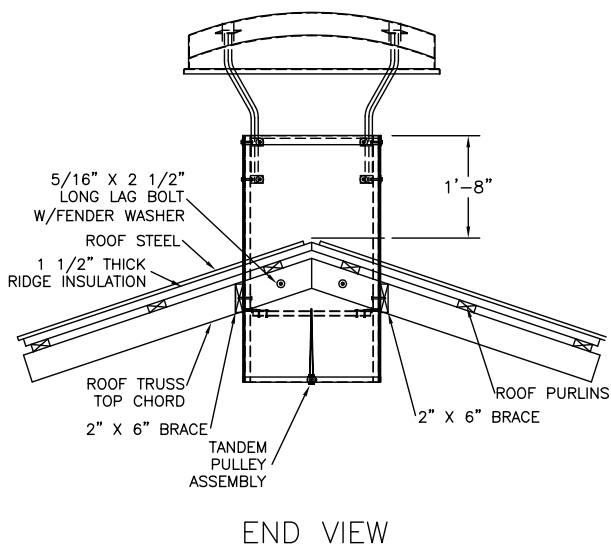
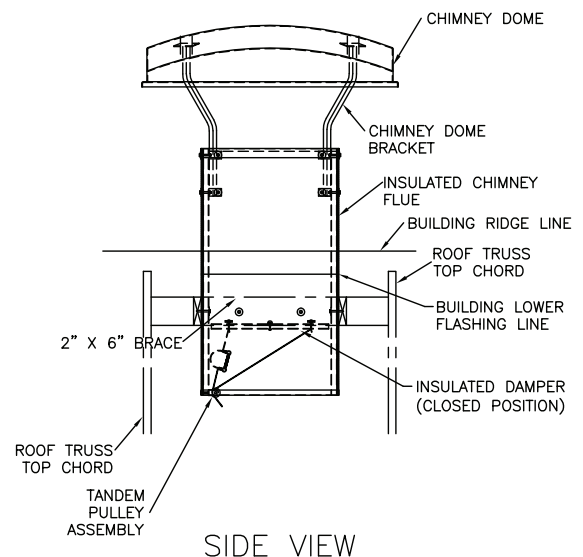


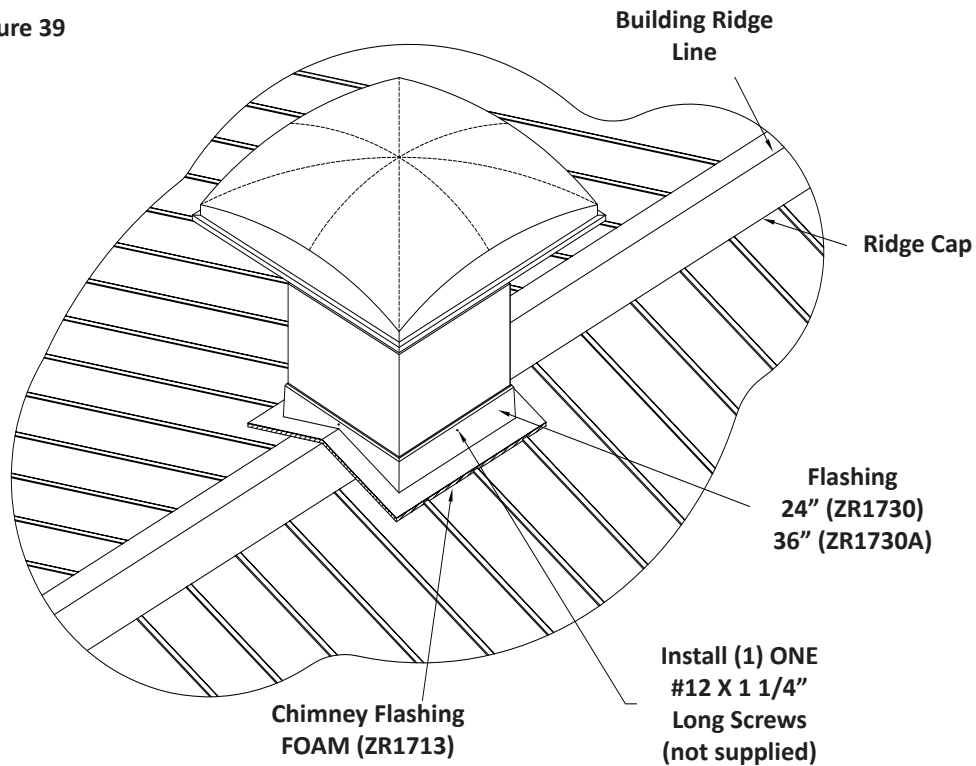
Figure 38





Natural-Flo Chimney Roof Installation - continued

Figure 39



5. Chimney Flashing foam shall be used to close the openings created by the roof sheeting corrugations. Caulking should be applied to the TOP and BOTTOM of the foam.
6. Caulking should be applied to the Flashing UNDERSIDE near all outside edges before fastening in place.
7. Attach the Flashing to the roofing on the HIGH POINTS of the corrugations. *(If attached to the low points of the corrugations the flashing to warp.)*



Be sure to use **SELF SEALING FASTENERS**. *(These are NOT provided.)*

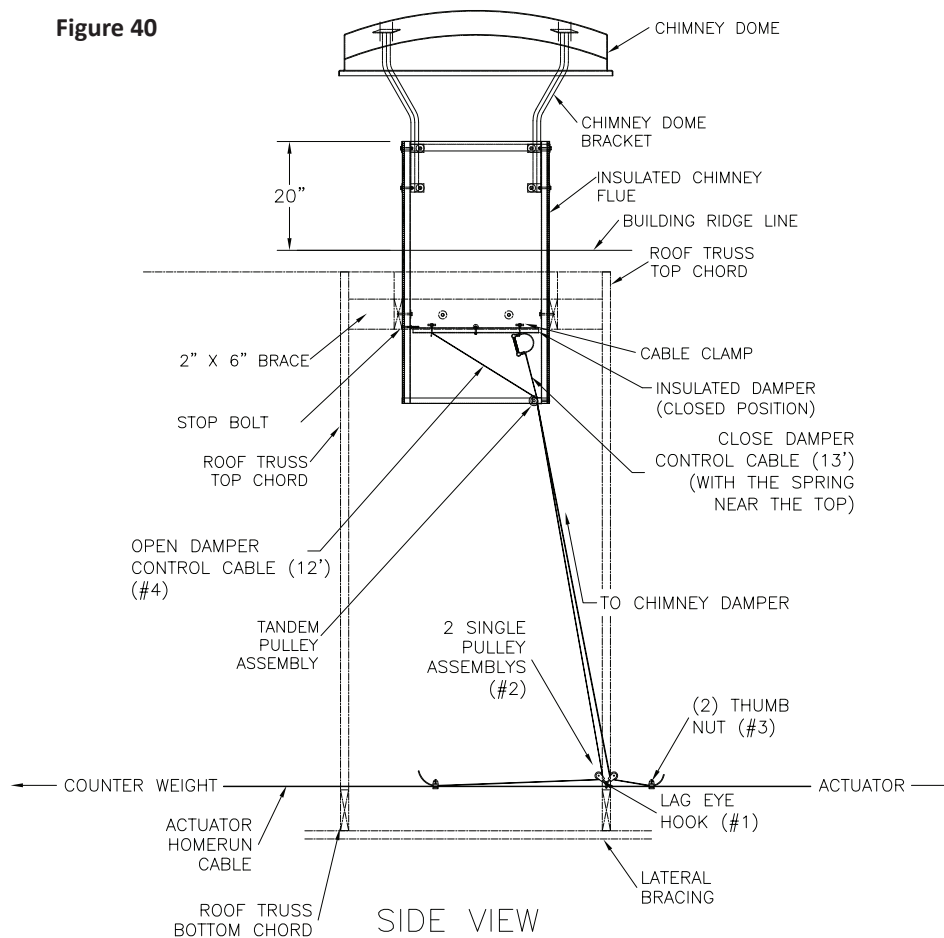
8. Use #12 X 1 1/4" Long screws to attach the Flashing to the Chimney walls. Use one screw through the center of each side into the Chimney wall. **DO NOT OVERTIGHTEN THESE SCREWS!**
9. Caulk the joints between the TOP of the Flashing and the Chimney walls.



It is recommended that you use an Acrylic Terpolymer Sealant such as Tremco "Mono 555" or equivalent caulking should be used on the Flashing.

Linkage for Optional Placement of the Home Run Cable

Figure 40



1. Straight below the Double Pulley Block that is mounted inside the base of the Chimney, a 2" X 4" lateral brace must be installed between the roof truss bottom chords.
2. Straight below the Double Pulley Block that is mounted inside the base of the Chimney, screw the Lag Eye Hook into the Top of the Lateral bracing.
3. Attach the Two (2) Pulleys to the Eye Hook and squeeze the Eye Hook closed so the pulleys are secured.
4. You **MUST** adjust the Limit Switches on the Actuator or Curtain Machine for **MAXIMUM** travel of 11". Once this has been accomplished extend the Actuator until the outer Limit Trips.
5. Install the home run cable over the roof truss bottom chord near the pulley assemblies which were installed in step 3. Attach one end to the Actuator and the other end to the counter weight.
6. Identify the close damper control cable (with the spring) and pass it through the pulley on the bottom truss chord which is farthest from the Actuator. Attach the close damper control cable to the home run cable a minimum of 12" from the pulley while held tight. This attachment is made with a #ZR1746 Thumb Nut.



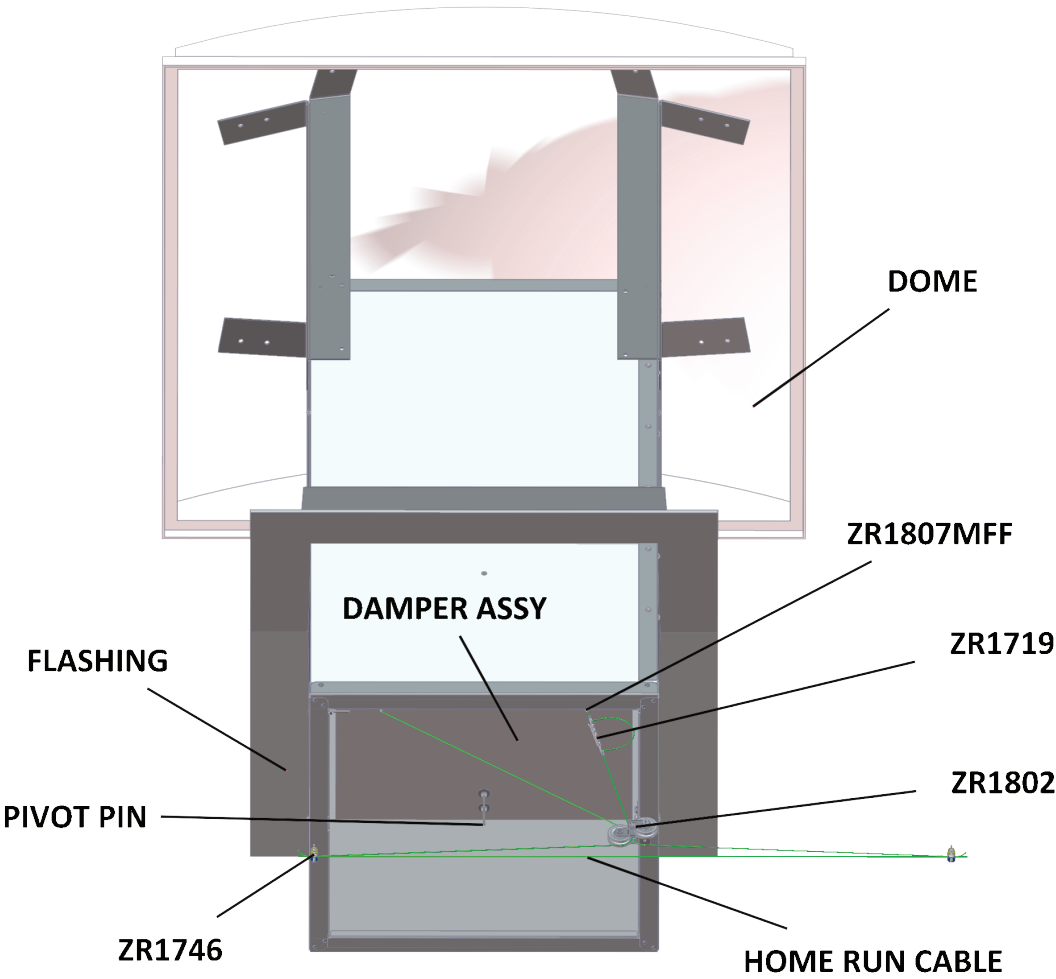
Be sure **NOT** to stretch the spring while making this attachment.

7. Identify the OPEN damper control cable and pass it through the pulley closest to the Actuator. Attach the OPEN damper control cable to the home run cable a minimum of 12" from the pulley while held tight. This attachment is made with a #ZR1746 Thumb Nut.



Actuator or Curtain Machine Linkage Detailed View


Angled View from Bottom showing cable to chimney attachments




Actuators and Curtain Machines

An Actuator or Curtain Machine can be mounted vertically or horizontally on the wall, rafters or ceiling. Refer to the instructions that accompany your Actuator or Curtain Machine since the configurations will vary with each inlet system and building. Below are cautions and warnings to consider with any installation.

WARNING!



In order for the Val-Co® warranty to be in effect, Actuators or Curtain Machines MUST be installed according to the directions which are shipped with the Actuator or Curtain Machine. Make sure all pulleys are in line with each other, otherwise cables and pulleys will fail prematurely.





The Header Pulley (*first pulley of the home run line*) MUST be directly in line with the Chimney Pulley Blocks!




C433

MANUALS
ON
Val-Co® WEB-SITE



Safetrac Curtain Machines

DANGER



ELECTROCUTION!

**Disconnect ALL POWER
before servicing any
Actuator or
Curtain Machine.**

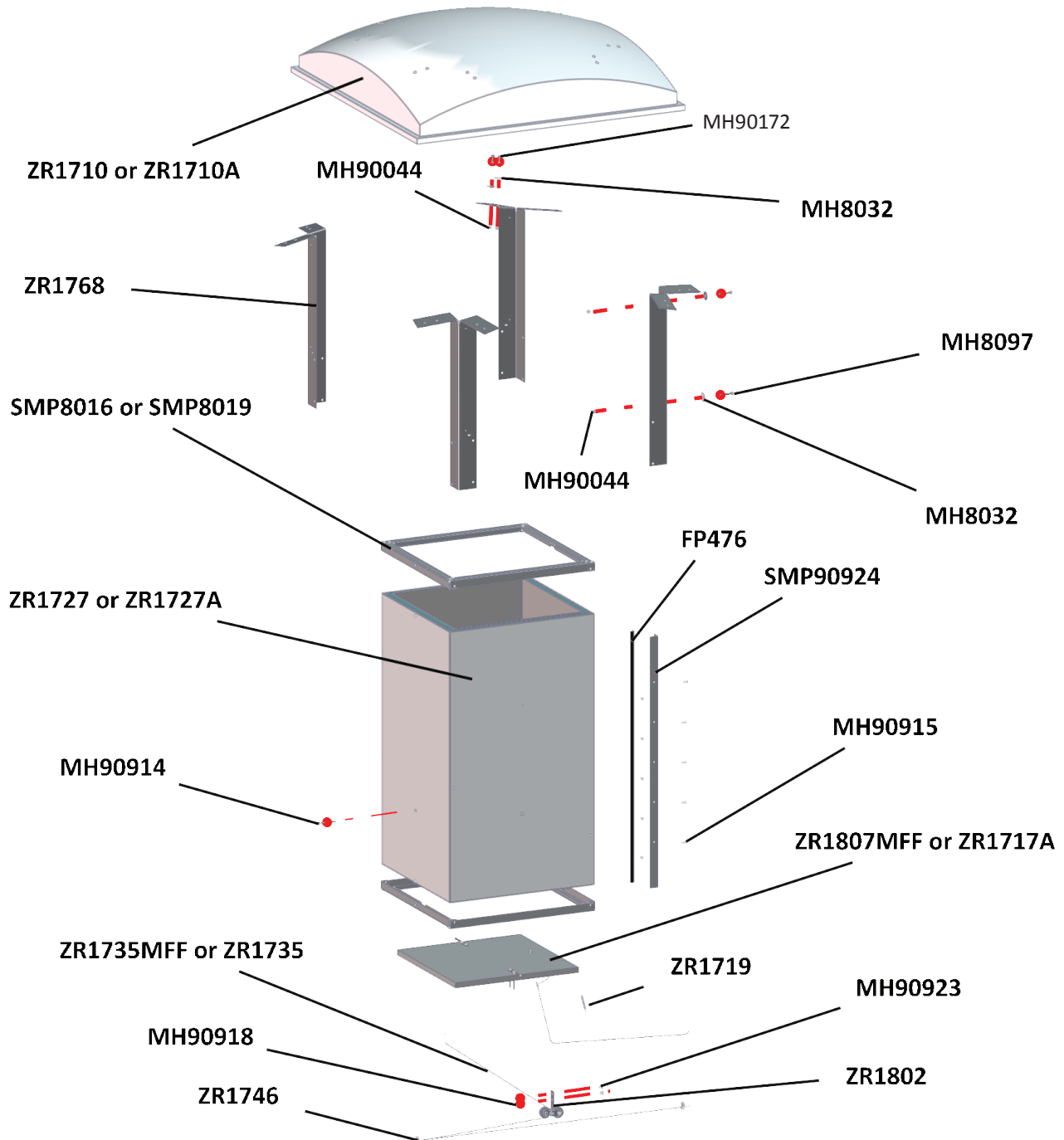
Val-Co® Actuators and Curtain Machines

| PART # | DESCRIPTION |
|-----------------|--|
| C433 | AC 230 Volt 18" Linear Actuator With Potentiometer & Mount |
| BE7110 | Vent Actuator - 220VAC 60/50HZ - 600 lb. Capacity - 23" Stroke |
| STA60-16 | SafeTRAC Acme Screw Curtain Machine 60" - 16 RPM |
| STA60-16SPK | With Optional Sprocket & Chain Drive |
| STA60-30 | SafeTRAC Acme Screw Curtain Machine 60" - 30 RPM |
| STA60-30SPK | With Optional Sprocket & Chain Drive |
| STA60-60 | SafeTRAC Acme Screw Curtain Machine 60" - 60 RPM |
| STA60-60SPK | With Optional Sprocket & Chain Drive |
| STA72-16 | SafeTRAC Acme Screw Curtain Machine 72" - 16 RPM |
| STA72-16SPK | With Optional Sprocket & Chain Drive |
| STA72-30 | SafeTRAC Acme Screw Curtain Machine 72" - 30 RPM |
| STA72-30SPK | With Optional Sprocket & Chain Drive |
| STA72-60 | SafeTRAC Acme Screw Curtain Machine 72" - 60 RPM |
| STA72-60SPK | With Optional Sprocket & Chain Drive |



Appendix 1 - Natural-Flo Chimney 24" or 36" Exploded Drawing

Double numbers: 1st number is 24" and 2nd number is 36" part.



Appendix 2 - Natural-Flo Chimney 24" or 36" Part Lists

| PART # | DESCRIPTION | QTY |
|----------------------------|---|-----|
| R700 24" Chimney | | |
| SMP8016 | 24" CHIMNEY TOP & BOTTOM ASSY (<i>Aluminum Cap</i>) | 2 |
| SMP90924 | CORNER ANGLE (48") 44 LONG | 1 |
| ZR1710 | 24" ROOF CHIMNEY DOME ONLY | 1 |
| ZR17263 | CHIMNEY/ PACKAGED HRDW SS | 1 |
| ZR1727 | 24" CHIMNEY SHAFT SUB ASSEMBLY | 1 |
| ZR1735MFF | 7X7 SSAC 3/32" CABLE 4.0" LG WITH STOP (<i>stop shown on next page</i>) | 1 |
| ZR1768 | BRACKET, CHIMNEY DOME | 4 |
| ZR1807MFF | 24" DAMPER SUB ASSY | 1 |
| ZR1730 | 24" Chimney Flashing (1 piece) | 1 |
| R710 36" Chimney | | |
| SMP8019 | 36" CHIMNEY TOP & BOTTOM ASSY (<i>Aluminum Cap</i>) | 2 |
| SMP90924 | CORNER ANGLE (48") 44 LONG | 1 |
| ZR1710A | 36" ROOF CHIMNEY DOME ONLY | 1 |
| ZR1717A | 36" ROOF CHIMNEY DAMPER ASSEMBLY | 1 |
| ZR17261 | CHIMNEY/ PACKAGED HRDW SS | 1 |
| ZR1727A | 36" CHIMNEY SHAFT SUB ASSEMBLY | 1 |
| ZR1735 | 7X7 SSAC 3/32" CABLE 12' LONG | 1 |
| ZR1768 | BRACKET, CHIMNEY DOME | 1 |
| ZR1730A1PC | 36" Chimney Flashing (1 piece) | 1 |
| Chimney Accessories | | |
| R702 | 24" CHIMNEY WINTER DOOR | 1 |
| R704 | 24" CHIMNEY FLASHING | 1 |
| R712 | 36" CHIMNEY WINTER DOOR | 1 |
| R714 | 36" CHIMNEY FLASHING | 1 |
| 812010 | BIRD NETTING KIT, 24" CHIMNEY PERIMETER BIRD SCREEN | 1 |
| 812011 | BIRD NETTING KIT, 36" CHIMNEY BERIMETER BIRD SCREEN | 1 |



Appendix 3 - Hardware Detail *(not actual size)*



MH90411
HINGE, BUSHING,
CHIM DAMPER PLASTIC



MH8028
WASHER, FLAT,
OD, SS
3/16 ID X 1



MH90256
SCR TEK HEX
8-18 X 1.25 SS



010431
HEX BOLT
5/16-18 X 1 SS



MH8032
WASHR, FLAT,
OD SS
5/16 ID X 1 1/2



MH90030
HEX, NYLOCK
NUT, SS
#10-24



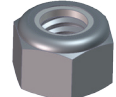
MH90915
SCR, PAN HD,
SQ DR, SS
#12X3/4



MH90251
SCR, TEK, SS
#8-18 X 1/2



MH8097
BOLT,
STD HD., S/S
5/16-18 X 2.25



MH90044
HEX SS
NYLOCK, NUT,
5/16-18



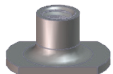
MH90918
BLT, HX, SS
1/4-20 X 1 1/2



MH90043
HEX, NYLOCK NUT
1/4 - 20, SS



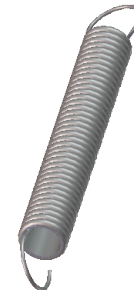
MH90412
Wire Rope Stop



MH90923
WELDNUT,
SLAB BASE SS
1/4-20



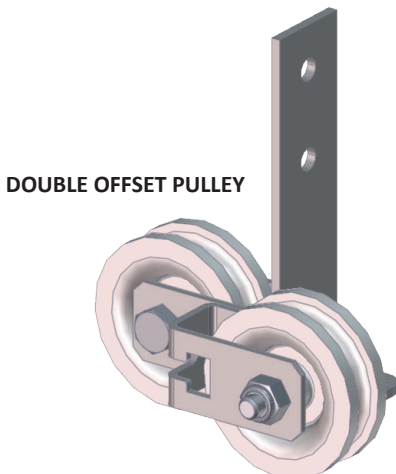
MH90169
BOLT SS
1/4"-20 X 1-1/4



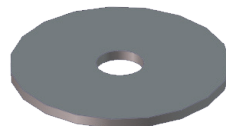
ZR1719
SPRING, DAMPER
CHIMNEY, SS



FP476
FOAM TAPE
CROSS LINK
PE .562WX
1/8TH X 12.5' +1'/-0 L



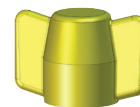
DOUBLE OFFSET PULLEY



MH8021
FLAT #10 FENDER



MH90914
LT, PANHD,
SLTD, SS
1/4-20 X 3



VB125
CLAMP NUT
SMALL 7/16"



VB126
CLAMP BOLT
SMALL 7/16"
W/LONG SLOT

Appendix 4 - Natural-Flo Chimney 24" Packaged Hardware

| PART# | DESCRIPTION | QTY |
|---|--|----------|
| ZR17263 - Hardware for 24" Chimney | | |
| 10431 | 5/16-18 X 1" SS HEX BOLT | 13 |
| FP476 | FOAM TAPE CROSS LINK PE .562WX 1/8TH X 12.5' +1'/-0 L | 2 |
| MH8021 | WASHER, FLAT #10 FENDER | 4 |
| MH8028 | WASHER,FLAT,3/16"IDX1"OD,SS | 16 |
| MH8032 | WASHR,FLAT,5/16"IDX1 1/2"OD SS STAINLESS STEEL | 32 |
| MH8097 | BOLT,5/16-18x2.25,STD HD.,S/S | 16 |
| MH90030 | NUT,HEXNYLOCK#10-24,SS | 2 |
| MH90043 | NUT,HEXNYLOCK,1/4-20,SS | 1 |
| MH90044 | NUT,HEXNYLOCK,5/16-18,SS | 32 |
| MH90169 | BOLT 1/4"-20X1-1/4"SS STAINLESS STL | 2 |
| MH90407 | EYE BOLT #10-24X2"X 1/2" ID SS STAINLESS STL | 1 |
| MH90411 | HINGE,BUSHING,CHIM DAMPER PLASTIC | 2 |
| MH90914 | BLT,PANHD,1/4-20X3,SLTD,SS STAINLESS STL | 1 |
| MH90915 | SCR,PAN HD,#12X3/4,SQ DR,SS STAINLESS STL | 13 |
| MH90918 | BLT,HX,1/4-20X1 1/2,SS STAINLESS STL | 2 |
| MH90923 | WELDNUT,1/4-20,SLAB BASE SS STAINLESS STL | 2 |
| MH94231 | PKG'D HRDW/CHMNY BIRD SC MOUNT SCREWS & WASHERS | 1 |
| 713473 | 4" PLASTIC CABLE TIE | 8 |
| MH90251 | SCR,TEK,#8-18X1/2,TEK,SS | 12 |
| MH90256 | SCR TEK HEX 8-18 X 1.25 SS | 4 |
| VB125 | CLAMP NUT SMALL 7/16" | 2 |
| VB126 | CLAMP BOLT SMALL 7/16" W/LONG SLOT | 2 |
| ZR1719 | SPRING, DAMPER CHIMNEY STAINLESS STEEL | 1 |
| ZR1802 | DOUBLE OFFSET PULLEY ASSEMBLY STAINLESS STL FOR CHMNY LINKAGE | 1 |
| ZR1739A | PULLEY, 1-7/8"OD X 1/4"ID FOR ACTUATOR LINKAGE | 2 |
| ZR1799 | DOUBLE OFFSET PULLEY SS BRACKET ASSEMBLY STAINLESS STL | 1 |
| ZR1797 | U BRKT SINGLE PULLEY CHMNY SS CHIMNEY STAINLESS STL | 2 |
| ZR1798 | MOUNT STRAP, DOUBLE OFFSET PULLEY STAINLESS STEEL | 1 |



Appendix 5 - Natural-Flo Chimney 36" Packaged Hardware

| PART # | DESCRIPTION | QTY |
|---|---|-----|
| ZR17261 - Hardware for 36" Chimney | | |
| FP476 | FOAM TAPE CROSS LINK PE .562WX 1/8TH X 12.5' +1'/-0 L | 2 |
| MH8032 | WASHR,FLAT,5/16"IDX1 1/2"OD SS STAINLESS STEEL | 24 |
| MH8033 | WASHER, 5/16 IDS/S FLAT .050TH .050 +/- .005 THICK | 1 |
| MH8047 | BOLT CARRIAGE 1/4"-20X1-3/4"SS STAINLESS STL | 1 |
| MH8097 | BOLT,5/16-18x2.25,STD HD.,S/S | 16 |
| MH90030 | NUT,HEXNYLOCK#10-24,SS | 1 |
| MH90043 | NUT,HEXNYLOCK,1/4-20,SS | 1 |
| MH90044 | NUT,HEXNYLOCK,5/16-18,SS | 24 |
| MH90169 | BOLT 1/4"-20X1-1/4"SS STAINLESS STL | 1 |
| MH90171 | BOLT HEX HD, 1/4"-20X2"SS STAINLESS STL | 1 |
| MH90172 | BLT,HEXHD,5/16-18X3/4,SS | 8 |
| MH90407 | EYE BOLT #10-24X2"X 1/2" ID SS STAINLESS STL | 1 |
| MH90411 | HINGE,BUSHING,CHIM DAMPER PLASTIC | 2 |
| MH90914 | BLT,PANHD,1/4-20X3,SLTD,SS STAINLESS STL | 1 |
| MH90915 | SCR,PAN HD,#12X3/4,SQ DR,SS STAINLESS STL | 13 |
| MH90922 | LAG,OPEN EYE,9/16X3 3/4 SS STAINLESS STL | 1 |
| MH90923 | WELDNUT,1/4-20,SLAB BASE SS STAINLESS STL | 1 |
| VB125 | CLAMP NUT SMALL 7/16" | 2 |
| VB126 | CLAMP BOLT SMALL 7/16" W/LONG SLOT | 2 |
| ZR1719 | SPRING, DAMPER CHIMNEY #LE-045D-11 STAINLESS STEEL | 1 |
| ZR1739A | PULLEY, 1-7/8"OD X 1/4"ID FOR ACTUATOR LINKAGE | 2 |
| ZR1794 | U BRKT TANDEM PULLEY CHMNY CHIMNEY | 1 |
| ZR1795 | PLATE SPACER TANDEM PULLEY ASSEMBLY | 1 |
| ZR1800 | PULLEY TANDEM ASSY SS STAINLESS STL FOR CHMNY | 1 |
| ZR1801 | PULLEY SINGLE ASSY SS STAINLESS STL FOR CHMNY | 2 |
| ZR1739A | PULLEY, 1-7/8"OD X 1/4"ID FOR ACTUATOR LINKAGE | 1 |
| ZR1797 | U BRKT SINGLE PULLEY CHMNY SS CHIMNEY STAINLESS STL | 1 |



Appendix 6 - Customer Service

My dealer's name:

Street / PO Box _____

How to contact my dealer:

City _____

State / Province _____

Zip / Postal _____

Customer Service

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

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