



COMMUNITY NEST

Installation & Operation Manual

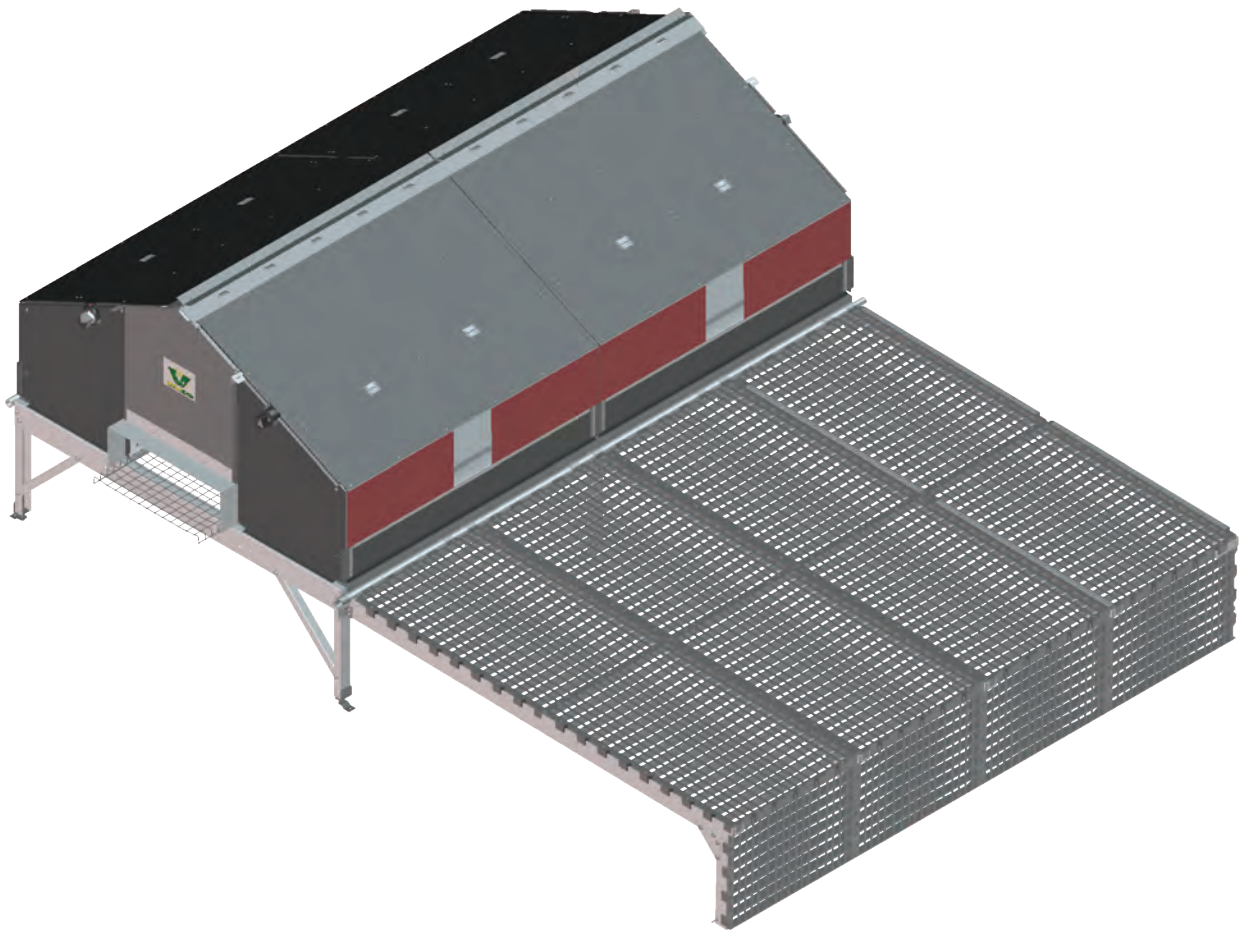






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Warranty (VAL PRODUCTS, INC. WARRANTIES)

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.

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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.

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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.

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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.



Warranty (continued)

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 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.
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Chapter 1 - Introduction



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

VAL-CO® recommends that you familiarize yourself with this entire manual and your facility's specific layout drawing. This will give you a better understanding of the Community Nest components, requirements, assembly and installation procedures. Exploded views and parts list for each assembly and sub-assembly are included at the back of the manual as Appendixes for reference. Some assemblies are broken down by sub-assemblies with careful consideration given for best installation procedures. We recommend that you follow the procedures of this manual for best results. Please note that color and transparency of parts have been used throughout the manual to emphasize a part or to bring clarity to the assembly. (A color version is available on the VAL-CO® web-site <http://www.val-co.com>)

Thank you for choosing the VAL-CO® Community Nest for your installation!

1.1 Design Features

Creating A Better Community For Your Birds

The Community Nest from VAL-CO® is an attractive and comfortable nest with easy access for your hens, providing you with minimal floor eggs.

| FEATURES | BENEFITS |
|--|---|
| Designed for quick assembly | Cost saving |
| Made with long-lasting, durable components | Longevity / Cost saving |
| Durable Galvanized Wire Components | Anti-corrosive protection - longevity |
| PVC Foam / Galvanized exterior | Facilitates wet wash down |
| Perforated mats | Mats stay cleaner / Produces cleaner eggs |
| Specially engineered nest slope for Gentle / positive transfer to egg belt | Less broken eggs / Fewer wire marks |
| Egg Belt has holes for minimum contact | Cleaner Better quality eggs / Less checks |
| Egg Belt can accelerate easily | Smooth egg flow |
| Durable Exterior components | Moisture resistant - Good Bio-Security |
| Solid shared plastic sidewalls | Unfriendly to Lice & Red Mites |
| High-rise or floor mounted installation | Versatile - Meets housing needs |
| Space between expeller and back wall with wall open at top | Optimum air flow to birds in nest |
| Expeller System designed to reduce broodiness | Keeps hens in production / Increases quality eggs |
| Expeller System keeps eggs out of reach after laid | Assures fresh eggs and less breakage |
| Perch Rod at nest entry | Encourages birds to use the nest |
| Good nest entry height | Easy Nest entrance / Encourages bird use |



1.2 Symbols

Below are symbols used throughout the manual to draw your attention to either important information or notes on assembly instructions to aide you in the assembly process or to warn you of safety precautions that need to be taken. The safety warnings are included as a guide to help and 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. The Hyper-link symbol is added to give you quick access to an animation of a an assembly, provided you are using the manual directly from the VAL-CO®web-site (<http://www.val-co.com>).



= 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 on icon for viewing animations if you are using the manual from the VAL-CO® web-site.

1.3 Tools Required

- | | |
|----------------|---------------------------------|
| • Hammer | • Driver/Socket/Wrench Set OR |
| • Pliers | • Air Wrench OR |
| • Chalk Line | • Open End Wrench |
| • Wire Cutters | - 15/16" for Idler Assembly |
| • String | - 7/16" for Take-Up Roller |
| • Hacksaw | - 9/16" for Cross-Support Feet |
| • Tape Measure | • OR Adjustable Open End Wrench |
| • Allen Wrench | |

Tool Set
(all in one driver/wrench set)



Hack Saw



Hammer



Impact Wrench



Pliers



Chalk Line



String



Allen Wrench



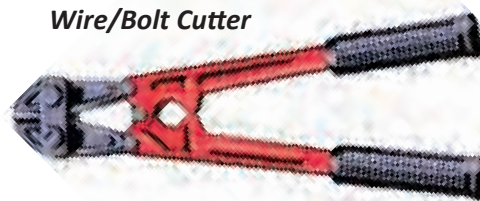
Wrench



Tape Measures



Wire/Bolt Cutter



Wire Cutter



1.4 Material Distribution

Distribute the components for the frames and nests down the length of the nest row(s) in the approximate place of use. (You may find it easier to pre-assemble the sub-assemblies first, see "Preparation" section in manual.) These materials include: sub-assemblies, nests, components, cross-supports, front rails, egg belt(s), support rails, legs (for floor mounted systems) and appropriate hardware. Be sure to distribute expeller nest components, expeller frame components, egg belt drive unit(s), take-up and Idler components at their designated locations. (Refer to your layout drawing.)



1.5 Hardware Reference

(Not actual size)



690000
NUT, HEX
3/8-16 ZP



690003
NUT, KEPS
1/4-20 ZP



690005
SCREW,
HX HEAD SERR
WASH TY-F ZP
5/16-18 X 1/2



690020
KEPS NUT
5/16-18



690024
SCREW,
HHCS ZP
5/16-18 X 3/4



690025
SCREW,
HHCS ZP
1/4-20 X 1



690026
SCREW,
HHCS ZP
5/16-18 X 5/8



690027
SCREW,
CRG SH NK ZP
5/16-18 X 3/4



690032
WASHER, FLAT
10 SAE ZP



690035
WASHER, FLAT
USS ZP
5/16



690058
SCREW,
CRG SN ZP
1/4-20 X 1/2



690062
SCREW,
HHCS ZP
1/4-20 X 3/4



690077
HHCS ZP
1/4-20 X 1/2



690081
SCREW,
HHCS, Z P
5/16-18 X 1-1/2



690082
SCREW, THMS
ZP
10-24 X 1/2



690101
SCREW,
HHCS ZP 1/4-
20 X 5/8



690102
WASHER,
FLAT SAE ZP
1/2



690010
SCREW,
THMS ZP
10-24 X 3/8



690112
SCREW,
TEK, PLATED
10 X 1/2



690114
SCREW,
HHTB ZP
3/8-16 X 4



690121
SCREW,
CRG ZP
1/4-20 X 1/2



690127
NUT, HEX ZP
1/4-20



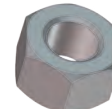
690142
SCREW, TEK,
HX WASH, ZN PL
12-24 X 7/8



690149
COTTER PIN
ZP
1/8 X 1.0



690313
PIN, HAIR
COTTER, .
091 X 1-5/8



690158
NUT, HEX ZP
5/8-11



690159
SCREW,
HHTB ZP
1/4-20 X 2-1/4



690166
NUT, HEX
NYLON LOCK NUT
ZP GR2
5/16-18



690209
WASHER,
LOCK SPLIT,
ZP
1/4



690252
WASHER, FLAT, ZP
.656ID X 1.312OD

690257
HHCS ZP
5/16-18 X 2-1/4



690276
PPH, ZP
12-1/2



690311
SCREW,
PPH ZP
#12 X 3/4

1.6 Frame Reference - Cross-Supports, Rails, Bracing

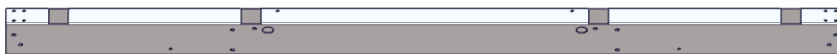


Parts will be called out in this manual either by part number or name such as in the case of the Cross-Supports. Example: There are 3 types of Cross-Supports, they share the same name for Floor Mounted and Highrise systems, "Cross-Support", but the part number is different as shown below. (Refer to your packing list or the parts list in the back of the manual for reference when necessary.)

Cross- Support for FLOOR MOUNT systems



630032 Support, Cross
(main Cross-Support)

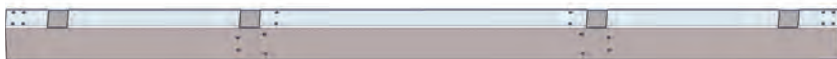


630533 Support, Cross, Egg Belt Idler
(used for Egg Belt Idler only)



630515 Support, Cross, Centered Divider
(For Divider Wall alignment-placement **critical**)

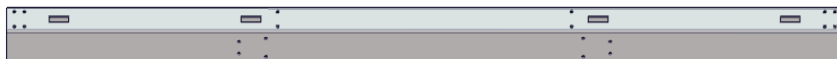
Cross - Support for HIGHRISE systems



630106 Support, Cross
(main Cross-Support)



630534 Support, Cross, Egg Belt Idler
(used for Egg Belt Idler only)



630516 Support, Cross, Centered Divider
(For Divider Wall alignment-placement **critical**)

Front Rails

630033 Rail, Front, with Slat Ridge (4 Ft - 1.21 m)



630170 Rail, Front, without Slat Ridge (4 Ft - 1.21 m)



630100 Rail, Front, , with Slat Ridge (5 Ft - 1.52 m)



630172 Rail, Front, (5 Ft - 1.52 m)



630096 Rail, Front, with Slat Ridge (8 Ft - 2.43m)



630171 Rail, Front, without Slat Ridge (8 Ft - 2.43 m)





1.6 Frame Reference - Cross Supports, Rails, Bracing (continued)

Front Rails - Winching *continued*

630798 Rail, Front, Winching (4 Ft - 1.21 m)



630799 Rail, Front, Winching, (5 Ft - 1.52 m)



630627 Rail, Front, Winching (8 Ft - 2.43 m)



Back Rails

630034, Rail, Back (4Ft. - 1.21 m)



630563, Rail, Back (8 Ft - 2.43 m)



630101, Rail, Back, (5 Ft. - 1.52 m)



1.6 Frame Reference - Cross Supports, Rails, Bracing (continued)

Expeller Frame



630501 Vertical
Motor Housing Support

Idler Frame

630547 LH
Egg Belt Idler
Cover



630545 RH
Egg Belt Idler
Cover



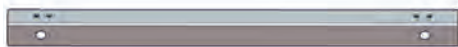
630566 RH Bracket &
630565 LH Bracket
Egg Belt Idler Assy
(used with #630535)

Bracing

630830 Brace for winchable systems



630535 Egg Belt Channel Brace, Egg Belt Idler



630133 Support Cross Brace, Front, Nest

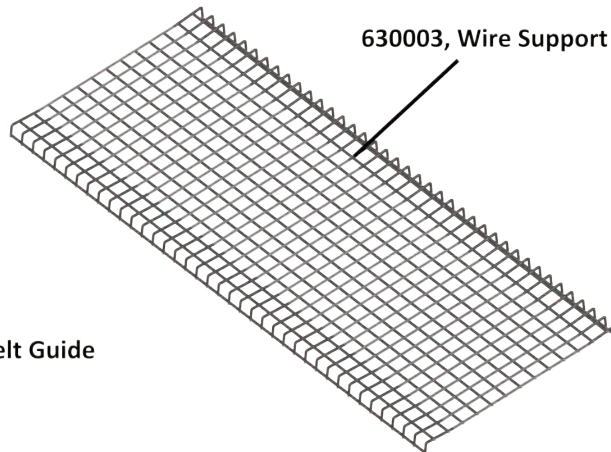


1.7 Egg Belt Reference

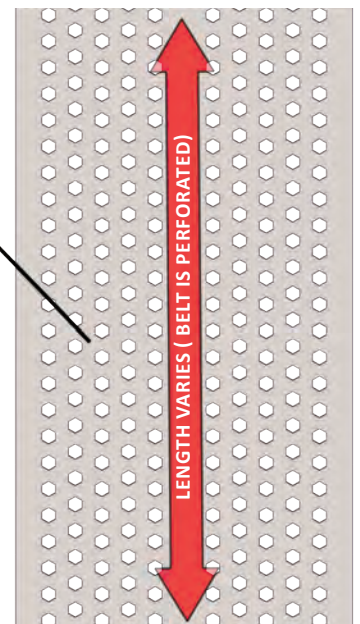
630424, Egg Belt Guide



630003, Wire Support



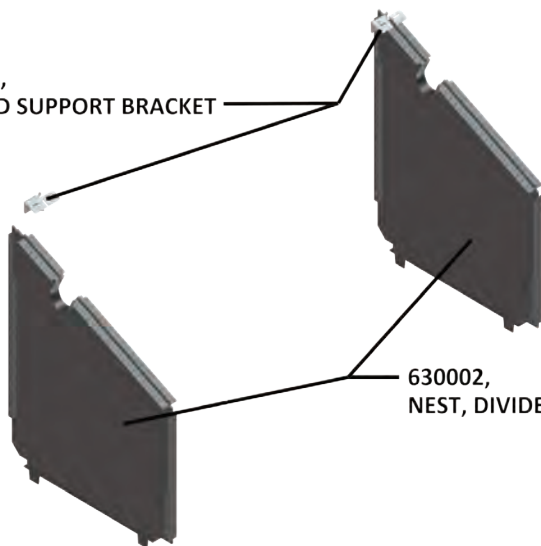
Egg Belt





1.8 Nest Reference - Exterior parts

630994,
ANGLED SUPPORT BRACKET

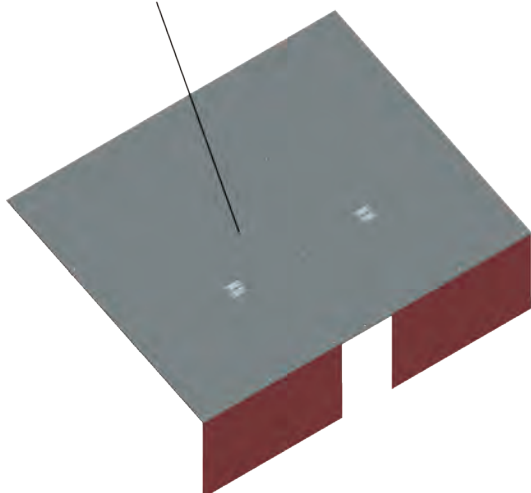


630002,
NEST, DIVIDER WALL

630055, ASSY, PANEL, WALL, END OF ROW



630839, REINFORCED, TOP ASSY



630169, Ridge Tab Support

630026, Ridge Cap Rail Support

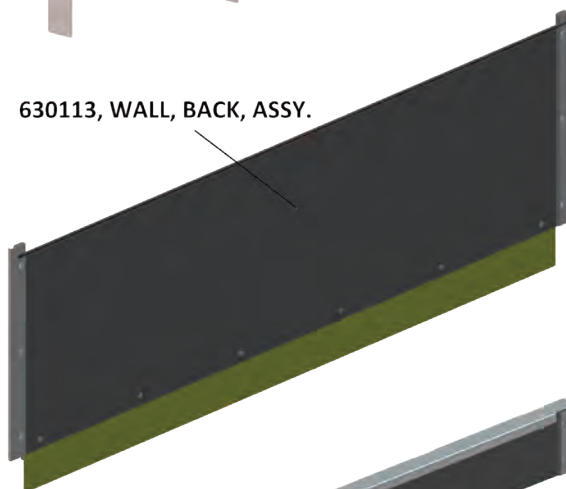


630843, PANEL, WALL

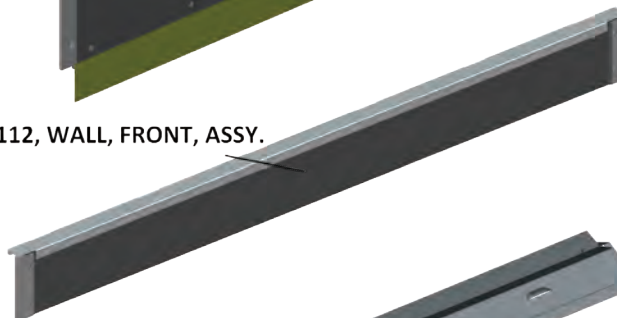
630661, COVER, END BAND



630113, WALL, BACK, ASSY.



630112, WALL, FRONT, ASSY.

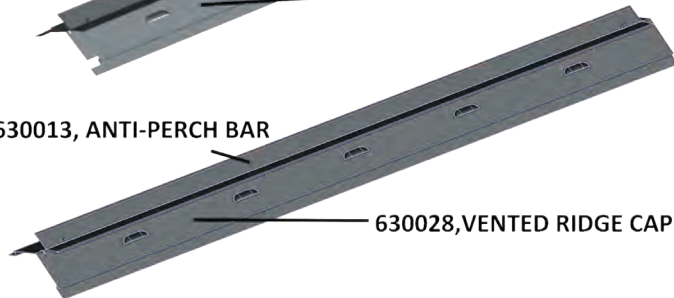


630013, ANTI-PERCH BAR



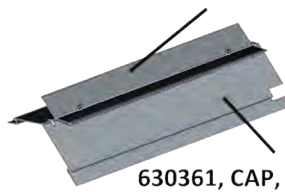
630023, VENTED RIDGE CAP

630013, ANTI-PERCH BAR



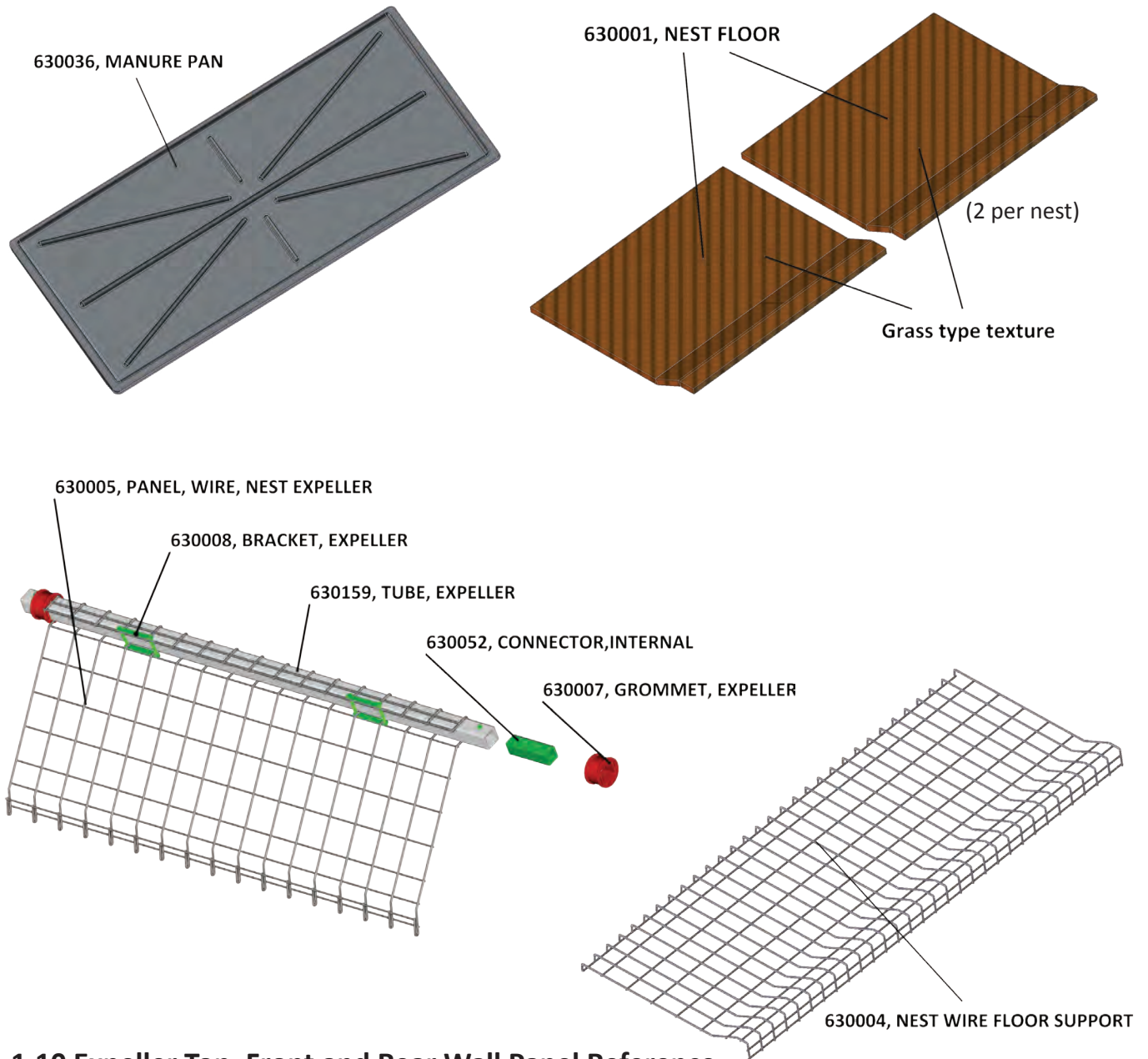
630028, VENTED RIDGE CAP

630362, ANTI-PERCH, FLAT BAR, F-EXPEL DRIVE UNIT



630361, CAP, RIDGE, VENTED

1.9 Nest Reference - Interior parts



1.10 Expeller Top, Front and Rear Wall Panel Reference

630360, ASSY, NEST FRONT, EXPELLER DRV UNIT



630417, ASSY, NEST REAR, EXPELLER DRV UNIT



630573, PANEL, NEST TOP, EXPELLER DRIVE UNIT



1.11 Assemblies List

| BASIC DOUBLE NEST ASSEMBLIES | |
|---|--|
| 630808 | DOUBLE NEST, STANDARD SECTION |
| 630809 | DOUBLE NEST, INTERMEDIATE SECTION |
| 630810 | DOUBLE NEST, FIRST SECTION |
| 630811 | DOUBLE NEST, EGG BELT COVER |
| 630812 | DOUBLE NEST, EXPELLER DRIVE SECTION |
| HIGHRISE FRAME SUB-ASSEMBLIES | |
| 630173 | ASSY, FRAME, SUPT, DBL NEST, 4', F/ HIGHRISE |
| 630175 | ASSY, FRAME, SUPT, DBL NEST, 8', F/ HIGHRISE |
| 630817 | ASSY, FRAME, SUPT, DBL NEST, 8', F/ HIGHRISE, 1ST |
| 630555 | ASSY, FRAME, EXPELLER SUPT, 5', F/ HIGHRISE |
| 630845 | ASSY, FRAME, SUPT, DBL NEST, 8', F/ HIGHRISE, INT |
| NON-WINCHABLE 24.75" LEG FRAME SUB-ASSEMBLIES, FOR 12' ASSEMBLIES | |
| 630174 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 24.75" LEGS, F/ NW SLATS |
| 630176 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ NW SLATS |
| 630818 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ NW SLATS, 1ST |
| 630556 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 24.75" LEGS, F/ NW SLATS |
| 630846 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ NW SLATS, INT |
| NON-WINCHABLE 18" LEG FRAME SUB-ASSEMBLIES, FOR 3', 6', & 9' ASSEMBLIES | |
| 630805 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 18" LEGS, F/ NW SLATS |
| 630804 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ NW SLATS |
| 630814 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ NW SLATS, 1ST |
| 630816 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 18" LEGS, F/ NW SLATS |
| 630847 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ NW SLATS, INT |
| NON-WINCHABLE 16.313" LEG FRAME SUB-ASSEMBLIES, FOR ALL ASSEMBLIES | |
| 630900 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 16.313" LEGS, F/ NW SLATS |
| 630901 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ NW SLATS |
| 630902 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ NW SLATS, 1ST |
| 630903 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 16.313" LEGS, F/ NW SLATS |
| 630904 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ NW SLATS, INT |
| NON-WINCHABLE 5.313" LEG FRAME SUB-ASSEMBLIES, FOR ALL ASSEMBLIES | |
| 630885 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 5.313" LEGS, F/ NW SLATS |
| 630886 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ NW SLATS |
| 630887 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ NW SLATS, 1ST |
| 630888 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 5.313" LEGS, F/ NW SLATS |
| 630889 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ NW SLATS, INT |



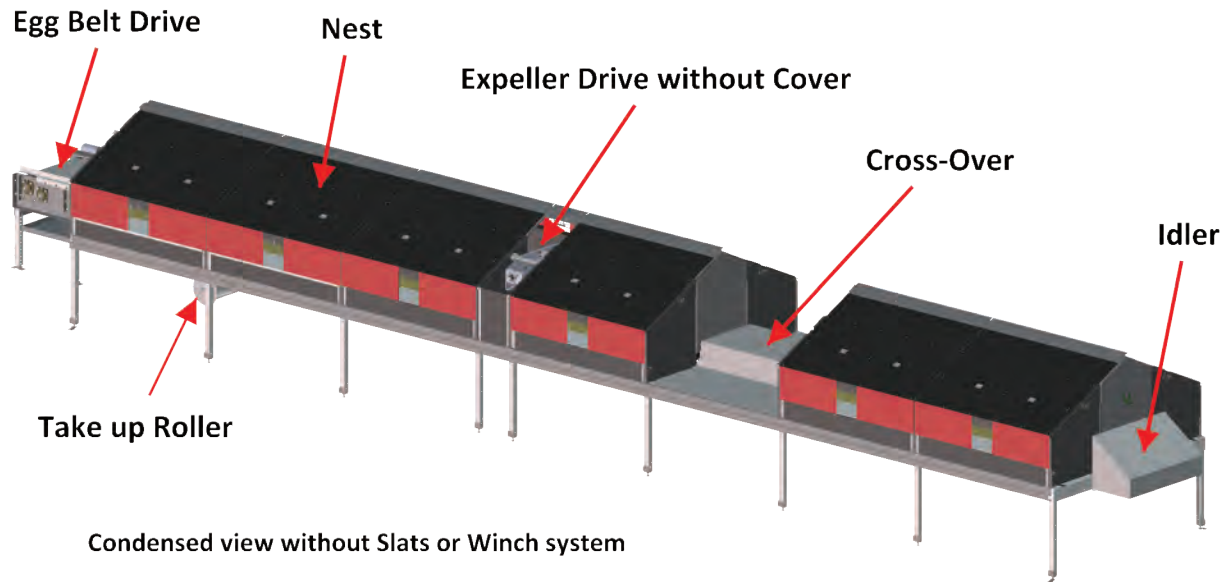
1.11 Assemblies List (continued)

| WINCHABLE 24.75" LEG FRAME SUB-ASSEMBLIES, FOR 12' ASSEMBLIES | |
|---|---|
| 630801 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 24.75" LEGS, F/ W SLATS |
| 630800 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ W SLATS |
| 630806 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ W SLATS, 1ST |
| 630807 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 24.75" LEGS, F/ W SLATS |
| 630848 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 24.75" LEGS, F/ W SLATS, INT |
| WINCHABLE 18" LEG FRAME SUB-ASSEMBLIES, FOR 3', 6', & 9' ASSEMBLIES | |
| 630803 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 18" LEGS, F/ W SLATS |
| 630802 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ W SLATS |
| 630813 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ W SLATS, 1ST |
| 630815 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 18" LEGS, F/ W SLATS |
| 630849 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 18" LEGS, F/ W SLATS, INT |
| WINCHABLE 16.313" LEG FRAME SUB-ASSEMBLIES, FOR ALL ASSEMBLIES | |
| 630833 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 16.313" LEGS, F/ W SLATS |
| 630832 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ W SLATS |
| 630834 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ W SLATS, 1ST |
| 630835 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 16.313" LEGS, F/ W SLATS |
| 630854 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 16.313" LEGS, F/ W SLATS, INT |
| WINCHABLE 5.313" LEG FRAME SUB-ASSEMBLIES, FOR ALL ASSEMBLIES | |
| 630875 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 5.313" LEGS, F/ W SLATS |
| 630876 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ W SLATS |
| 630877 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ W SLATS, 1ST |
| 630878 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 5.313" LEGS, F/ W SLATS |
| 630879 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, F/ W SLATS, INT |
| NON-SLAT BASED 5.313" LEG FRAME SUB-ASSEMBLIES, FOR ALL ASSEMBLIES | |
| 630880 | ASSY, FRAME, SUPT, DBL NEST, 4', W/ 5.313" LEGS |
| 630881 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS |
| 630882 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, 1ST |
| 630883 | ASSY, FRAME, EXPELLER SUPT, 5', W/ 5.313" LEGS |
| 630884 | ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, INT |

See Appendix 16 thru Appendix 55 for exploded assembly parts and lists



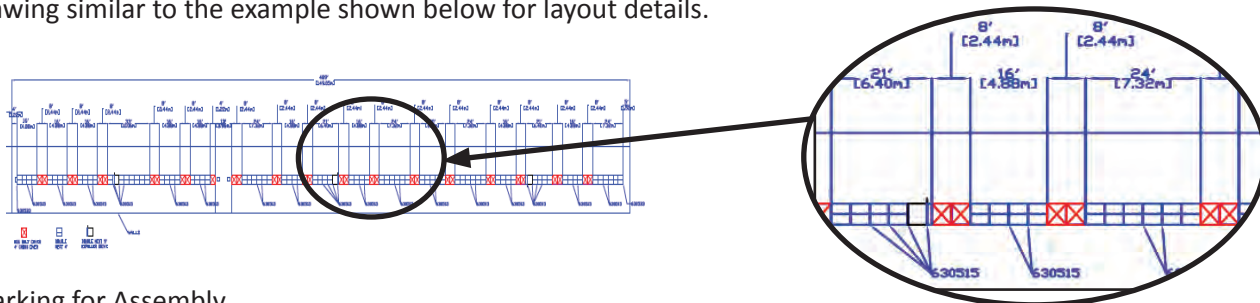
1.12 System Overview



COLOR is used throughout the manual on parts in the active assembly process to show more detail. Therefore, colors may not depict the actual part color in all instances.

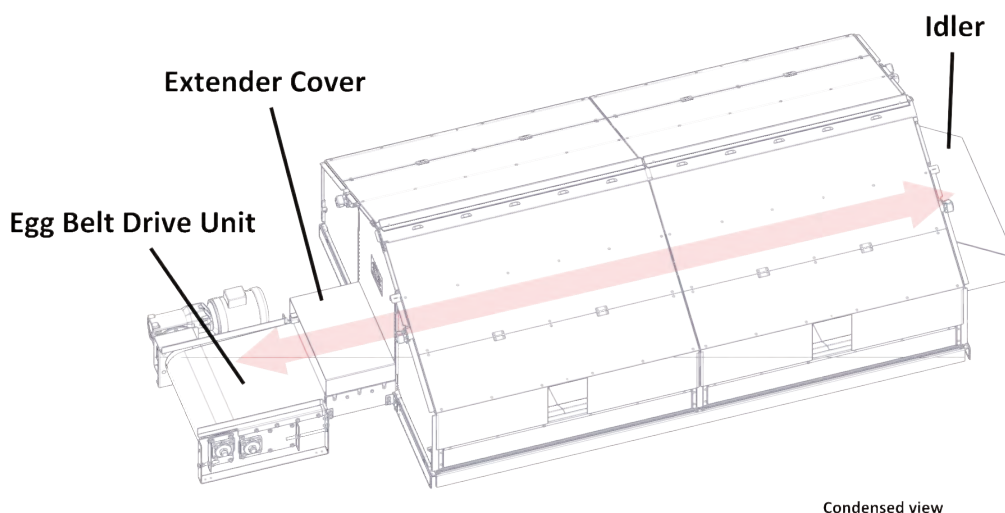
1.13 Building Layout

Before you begin assembly of the Community Nest system it is important to lay the system out. Refer to your layout drawing similar to the example shown below for layout details.




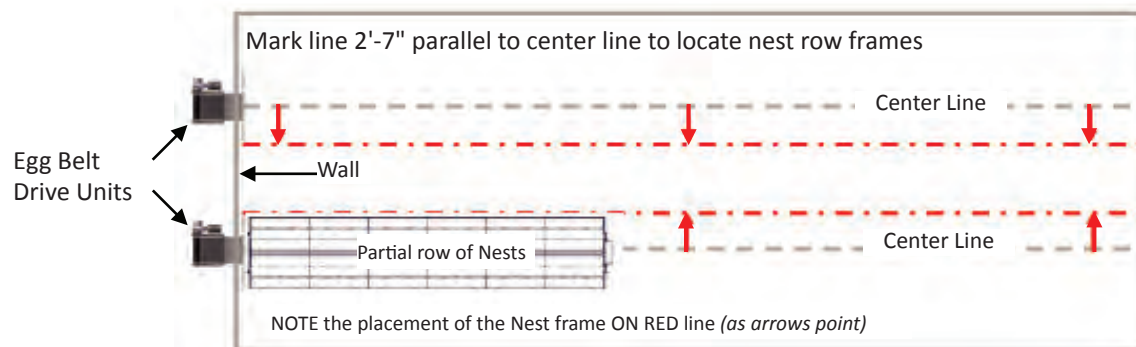
Marking for Assembly

Determining the position for the Egg Belt Drive Unit is CRITICAL. Once you have established the best location for the Egg Belt Drive Unit(s) (where the eggs are to be **conveyed TO**) other critical locations can be marked for the nest row(s). The Egg Belt runs through the center of the nests. The Extender Cover connects the Egg Belt Drive Unit to the nest row and may or may not run through an opening in a wall. The Idler is at the end of a nest row.



1. Mark the center line of the egg belt (also the center line of the nest) based on the egg belt drive unit location down the length of the nest row.
2. Mark a line 2'-7" (78.74 cm) parallel to the center line of the nest row. This line will be a guide to locate the frames of the nest row, it is one end of the cross supports (*highrise*) or the outside part of the legs (*floor mounted*) on one side of the nest row as shown in the example below with a partial row. Example shown with two nest rows.

 Use a laser, chalk line or string to mark layout lines.





1.14 Layout Options for Frame

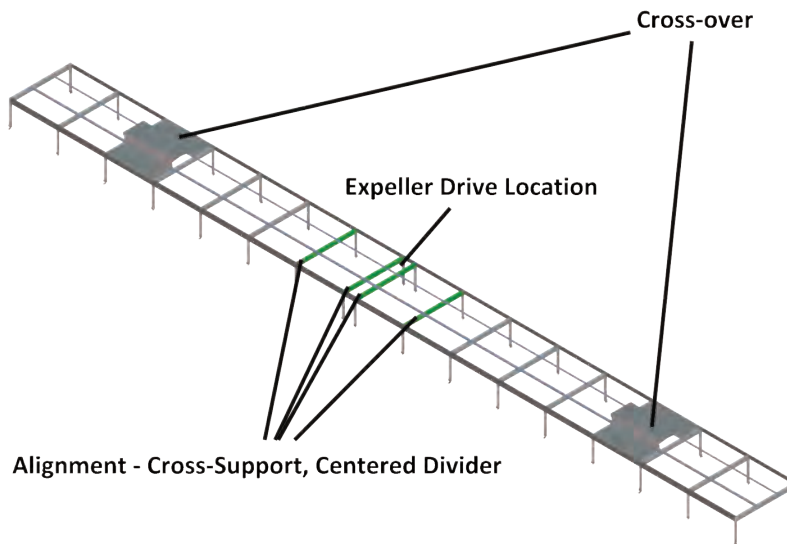
You should have been provided a layout of your system and your system should be based on that layout. For reference five layout options are shown on this and the following page showing the Alignment Cross-Support placement relative to the Expeller Drive(s) and Cross-overs.



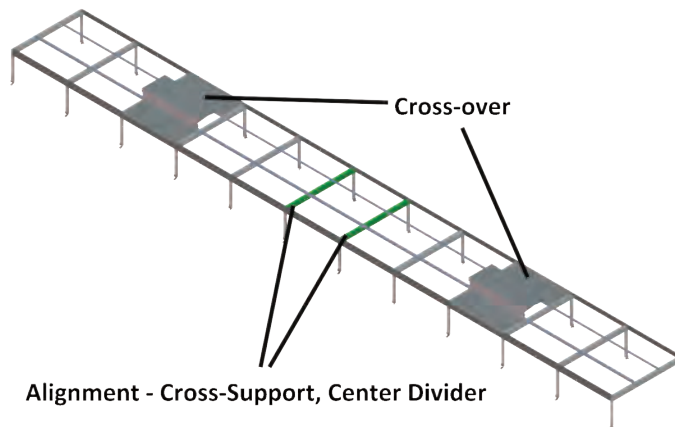
Expeller Drive Unit location parameters.

Maximum length of the expeller tube in each direction from an Expeller Drive Unit is 120' of NESTS or 156' if combined with 36' of Cross-overs. The expeller tube in each direction from an Expeller Drive Unit can be unbalanced up to 60' (ex: 96' in one direction and 156' in the other direction). The Alignment Cross-Supports are CRITICAL to stabilizing the nest system.

Option 1: Standard (STD) with Expeller Drive

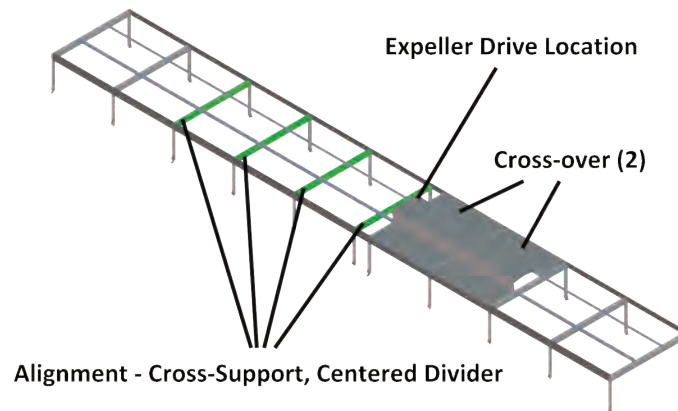


Option 2: Standard (STD) without Expeller Drive

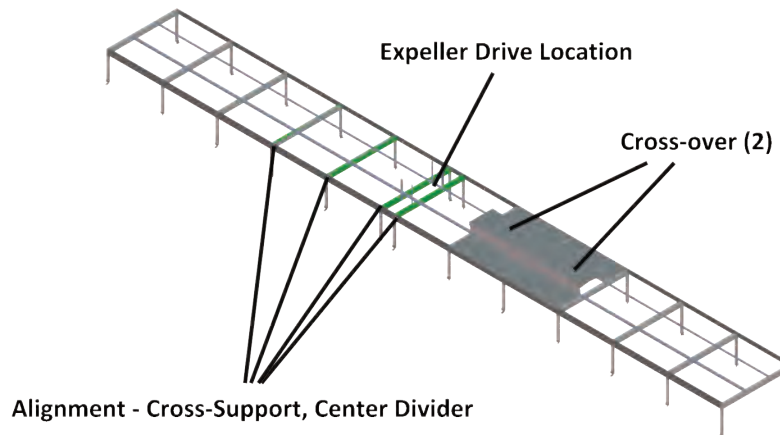


1.14 Layout Options for Frame (continued)

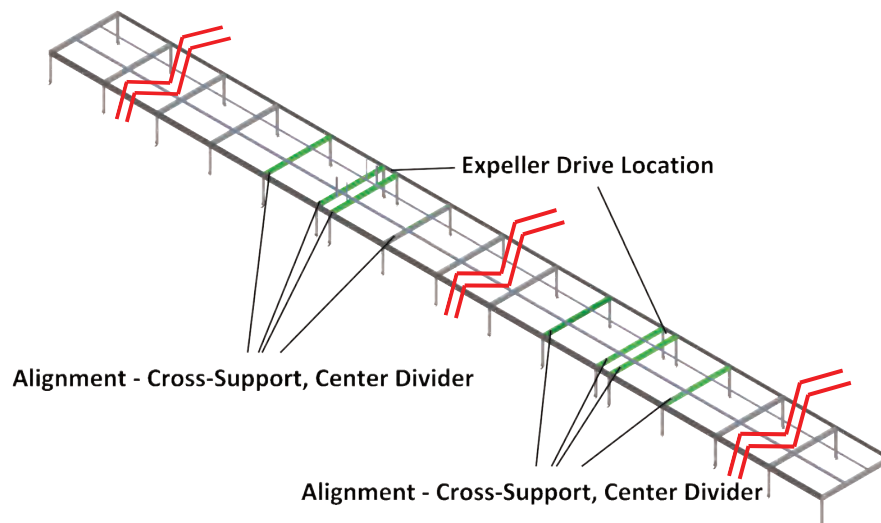
Option 3: Expeller Drive next to Cross-over



Option 4: Expeller Drive one Nest from Cross-over



Option 5: Multiple Expeller Drives per group of Nests





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Chapter 2 - Preparation (Pre-Assembly of the Sub-Assemblies)

The VAL-CO® Community Nest system is made from several sub-assemblies that can be pre-assembled and distributed down the length of the nest row(s). The next several pages are the assembly instructions for these sub-assemblies.

| Sub-Assemblies | | |
|--|--|--|
| <ul style="list-style-type: none"> • Leg - Foot and H Frame (Floor Mount) • H Frame (Highrise) • Idler Assembly | <ul style="list-style-type: none"> • Take-Up Assembly • Rigid Cap Anti-Perch • Divider Wall Bracket | <ul style="list-style-type: none"> • Ridge Cap Support -Tab • Egg Belt Drive Unit • Egg Belt Extender Cover |



- The assembly process of the FLOOR MOUNTED and HIGHRISE systems are similar and use parts common to both systems. Some non common parts look similar but are different for the two systems. If two part numbers identify the same part the first number is used on a Floor Mounted (FM) system and the second number is used on a Highrise (HR) system.
- It is recommended to assemble the sub-assemblies on a work table.



It is CRITICAL to assemble the nest frame down the complete length of the row before assembling the nest components onto the nest frame to insure a straight and square nest row. (This is necessary whether or not the sub-assemblies are pre-assembled.)

2.1 Sub-Assembly - Leg (Floor Mounted System)

1. Assemble half of the legs provide with system by assembling 630044 Bracket to the Leg with (2) 690077 Bolts and (2) 690003 Nuts, as shown in Figure 1. Insert 690114 Bolt through 611296 Foot Plate, note orientation shown in Figure 1. Thread (1) 690000 Nut on to 690114 Bolt and insert bolt through 630044 Bracket, note orientation shown in Figure 1, and thread a second 690000 Nut on to 690114 Bolt. Hand tighten nuts to dimension, as shown in Figure 3. If 5.313" Leg is used the 630044 Bracket is replaced by 611886 Bracket in this Step and Step 2.
2. Assemble the remaining half of legs similarly as described in previous instructions without 611296 Foot Plate, as shown in Figures 2 and 4.

Figure 1 Leg with Foot Plate

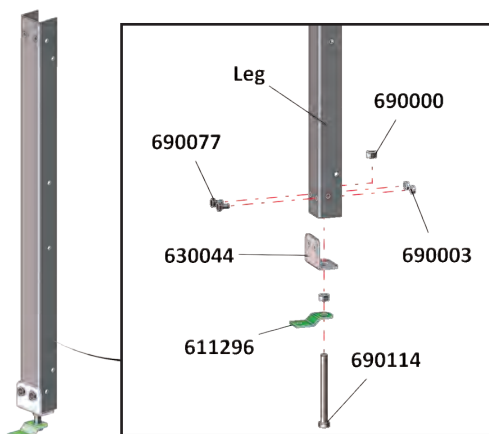
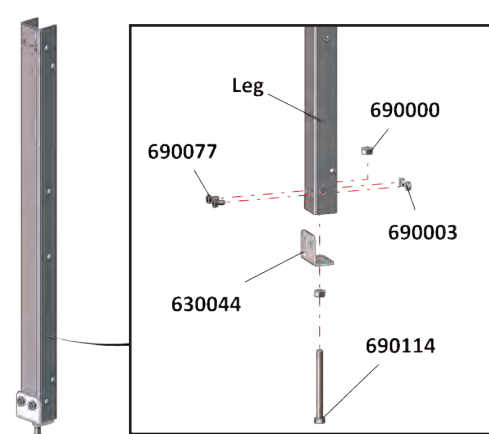


Figure 2 Leg with NO Foot Plate



It is recommended that you assemble all Legs before the cross-support and frame sub-assemblies.

Figure 3 Leg with Foot Plate Assembled

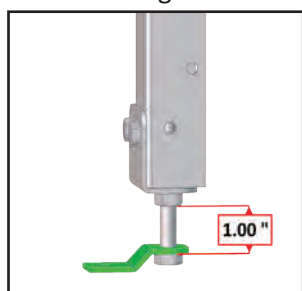
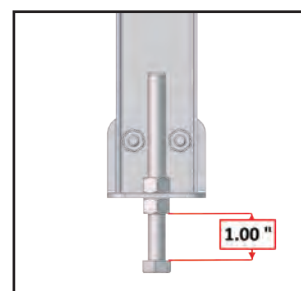


Figure 4 Leg with NO Foot Plate Assembled



1. Pre-set the gap between the head of the bolt and the first nut to approximately 1". This will allow for adjustment when leveling the nest row.
2. Highrise sub-assembly instructions are on the next page.



2.2 Sub-Assembly – Cross-Supports (Floor Mounted Systems)

3. Assemble the Leg Assemblies from the previous page (*in matched sets - two legs with Foot Plates and two legs without Foot Plates*) square to the Cross-Supports using (8) 690005 Screws per Cross-Support Assembly, *as shown in Figures 5 and 6. Note orientation of Legs to Cross-Supports.*

Foot Plate Use: *The Cross-Support Assemblies with Foot Plates are 1.) at each end of the nest row, 2.) the Cross-Supports the Expeller Drive Unit Supports mount to and 3.) alternating with and without Foot Plates starting from the Egg Belt Drive Unit. Refer to your layout drawing to determine locations of Centered Divider Cross-Support Assemblies with and without Foot Plates to determine how many Centered Divider Cross-Support Assemblies require Foot Plates. (See page 1-5 for details on Cross-Support part numbers for Floor Mounted and Highrise systems.)*



Figure 5

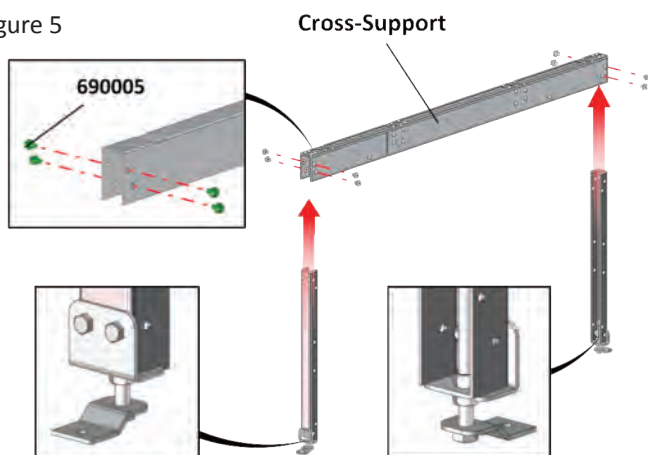
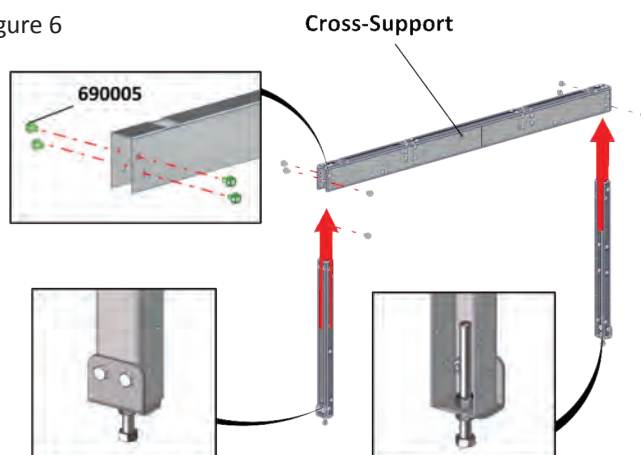


Figure 6



4. Assemble the required Leg Cross-Support Sub-Assembly (with or without Foot Plate as noted in previous step) to the middle of a set of Front Rails using (8) 690005 Screws for each Leg Cross-Support Sub-Assembly, *as shown in Figure 7.*

Figure 7 FLOOR MOUNTED “H” FORMATION (LEGS)

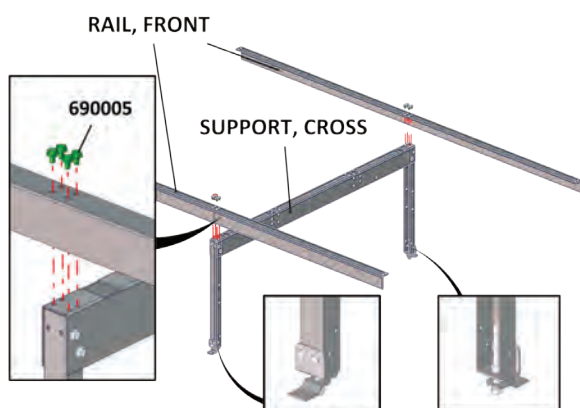
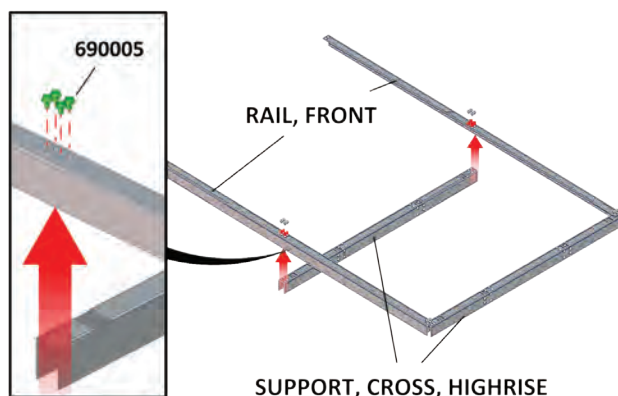


Figure 8 -HIGHRISE (NO LEGS)



Check location on your layout drawing and assemble the Centered Dividers (Alignment) Cross-Support as required. For Front Rail part numbers refer to page 1-5.

2.3 Sub-Assembly - Cross Supports (Highrise Systems)

(This number 1 HR systems replaces the number 4 used for FM systems.)

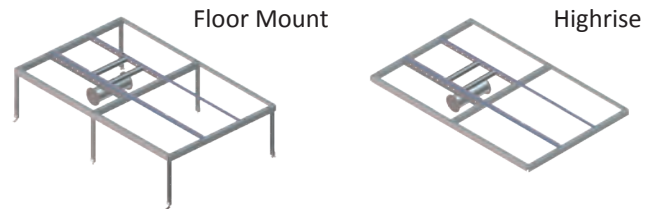
1. Assemble the required Cross-Support to the middle of a set of Front Rails using (8) 690005 Screws for each Cross-Support, *as shown in Figure 8. A second Cross-Support (noting the required Cross-Support)* can be added at this time to further the Highrise Cross-Support Assembly, *as shown in Figure 8* using (4) 690005 Screws. Refer to your layout drawing to determine locations of Centered Divider (Alignment) Cross-Support.

2.4 Sub-Assembly - Take-Up Frame

The Take-Up Assembly is typically located in the first frame section of the nest row which is attached to the Egg Belt Extender Cover that is attached to the Egg Belt Drive Unit.

This location can be convenient for servicing.

Figure 9 Take-Up Assembly Overviews

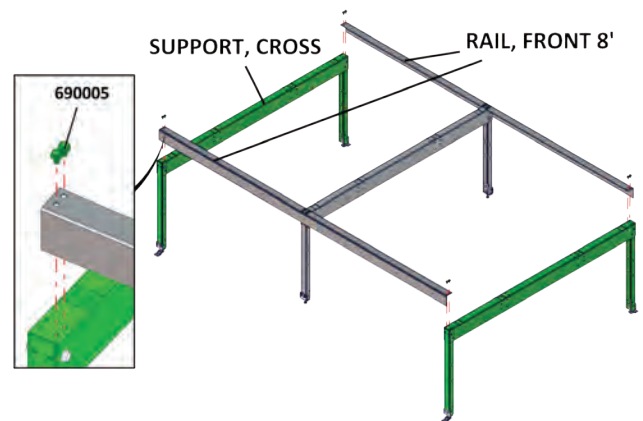


Take-Up Roller Weight is NOT attached



For increase take-up it is recommended to have a pit under the Take-Up roller (for floor mounted systems) that will allow the roller to take-up a greater amount of slack.

Figure 10



1. To assemble the Take-Up frame begin with a Cross-Support/"H" Formation sub-assembly using the rails and Cross-Supports, with or without foot plates as specified on the previous page.

2. Assemble (2) 630519 Egg Belt Take-Up Channel Supports to the required Cross-Supports of the Take-Up frame section using (8) 690005 Screws, as shown in Figure 12. Refer to your layout drawing to determine locations of Centered Divider (Alignment) Cross-Support and for Floor Mounted Systems refer to Step 3 Page 2-2 **Foot Plate Use** to determine if Foot Plates are required.

Figure 11

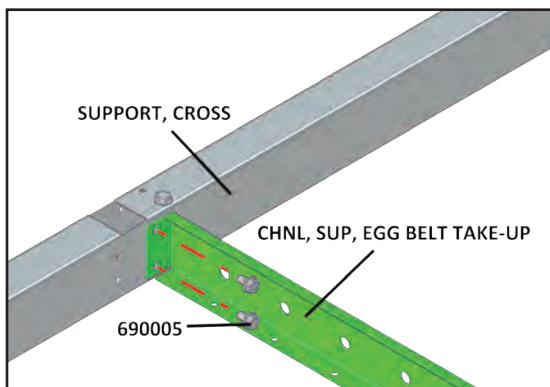
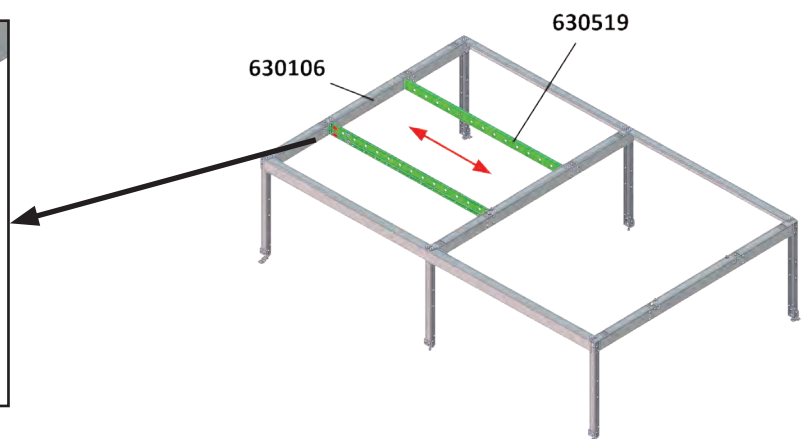


Figure 12





2.4 Sub-Assembly - Take-Up Frame (continued)

3. To assemble the (2) 630523 Roller Assemblies with (2) 630520 Roller Shafts and (4) 690102 Washers to (2) 630519 Egg Belt Take-Up Channel Supports, center the (2) 630520 Roller Shafts between the 630519 Egg Belt Take-Up Channels. Secure with (4) 610772 Collar Clamps, (4) 690025 Bolts and (4) 630127 Nuts to hold shafts in place, *as shown in Figure 13 and 14.*

Figure 13 Tube Roller -Exploded view

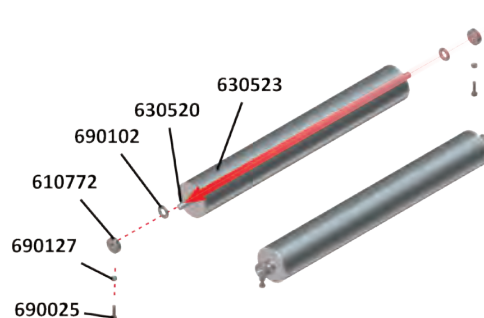


Figure 14

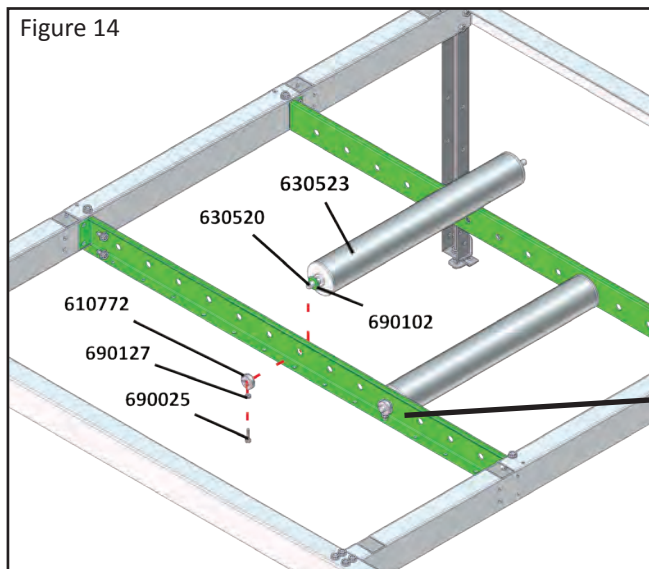
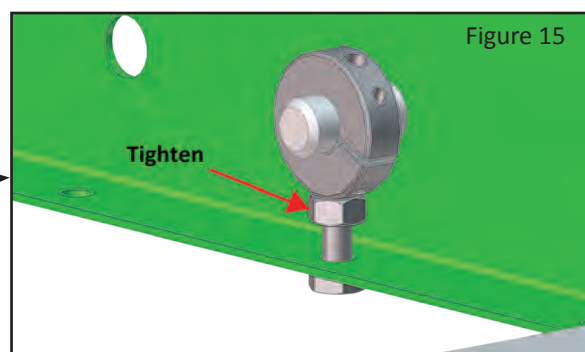


Figure 15



The (2) Roller Assemblies can be located at any location on the (2) 630519 Egg Belt Take-Up Channel Supports but must be spaced three holes apart as shown for the Take-Up weight.

4. Assemble (2) 630563 Back Rails using (6) 690005 Screws, *as shown in Figure 16 & 17*

Figure 16

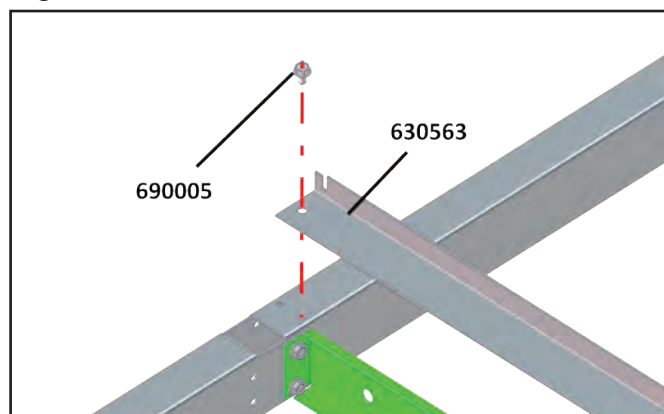
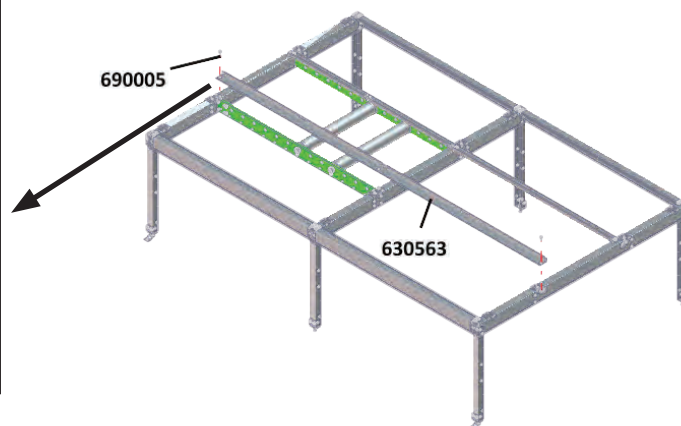
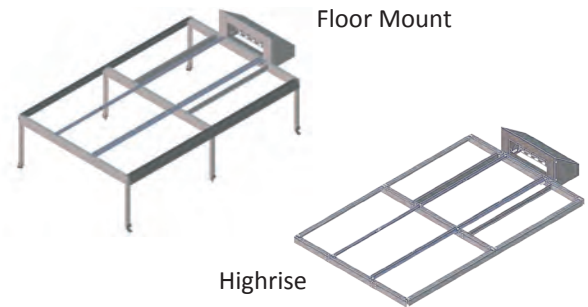


Figure 17

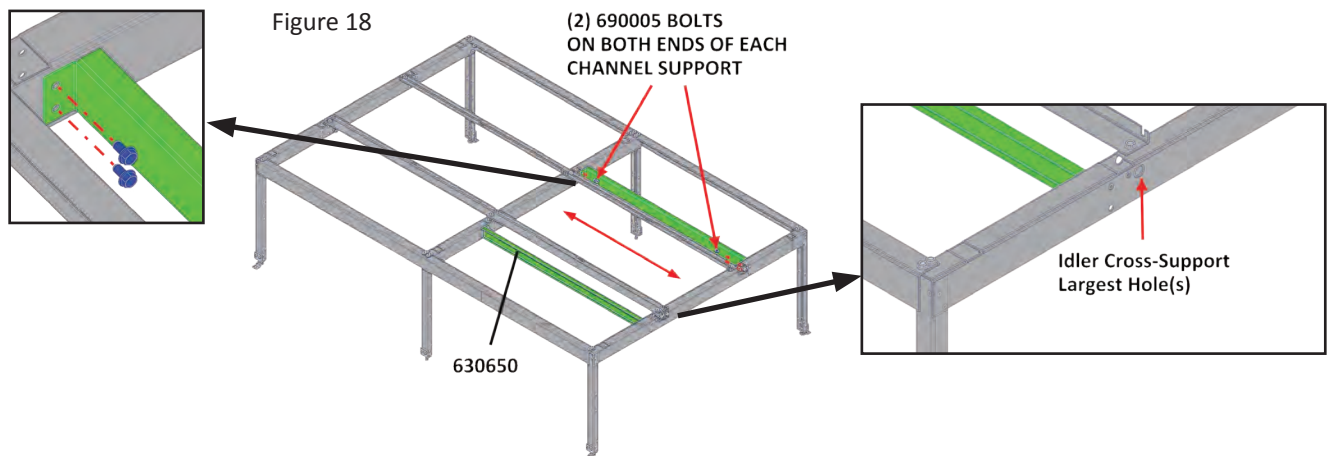


2.5 Sub-Assembly - Idler Frame

The Idler Frame sub-assembly is attached to the end of the nest row and may be assembled before or after the row of frame assemblies. **DO NOT assemble the Idler Cover onto the Idler until after the Belt has been installed.**



1. Assemble (2) 630650 Idler Support Channels to 630534 or 630533 Idler Cross-Support (largest holes facing away from nest row) and required Cross-Support using (8) 690005 Screws, as shown in Figure 18. Refer to your layout drawing to determine locations of Centered Divider (Alignment) Cross-Support and for Floor Mounted Systems refer to Step 3 Page 2-2 Foot Plate Use to determine if Foot Plates are required.



2. Assemble 630565 Left Hand and 630566 Right Hand Idler Bracket to 630535 Idler Channel Brace with (4) 690058 Bolts and (4) 690003 Nuts, as shown in Figure 19. Note bracket and bolt orientation.
3. Insert (2) 630536 Spacers into the largest holes in 630534 or 630533 Idler Cross-Support, then slide 630535 Idler Channel Brace with Brackets onto (2) 630536 Spacers and secure with (2) 690026 Bolts and (2) 690020 Nuts, as shown on Figure 20 and 21.

Figure 19

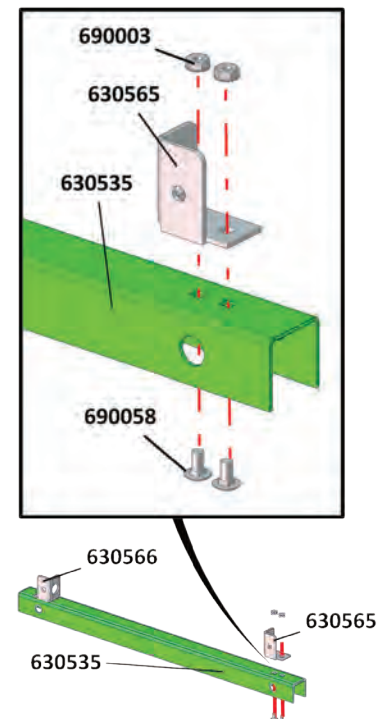
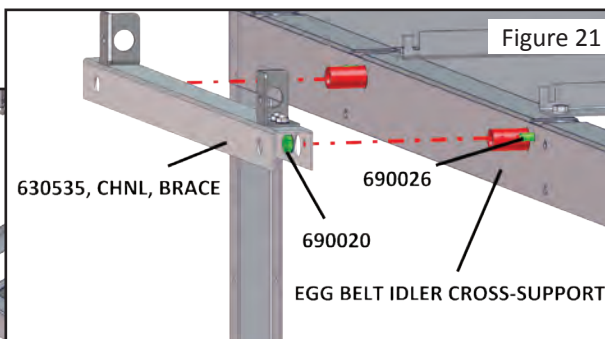
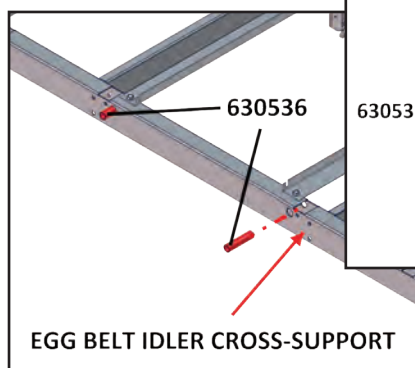


Figure 20

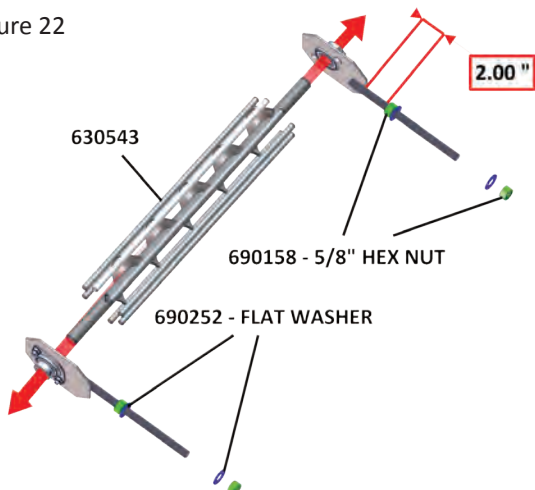




2.5 Sub-Assembly - Idler Frame (continued)

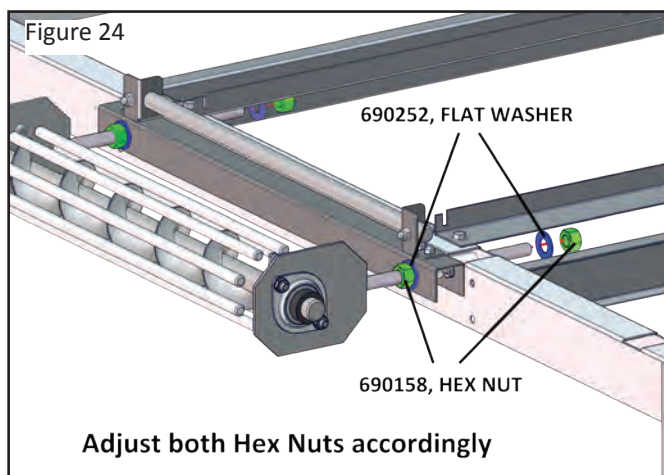
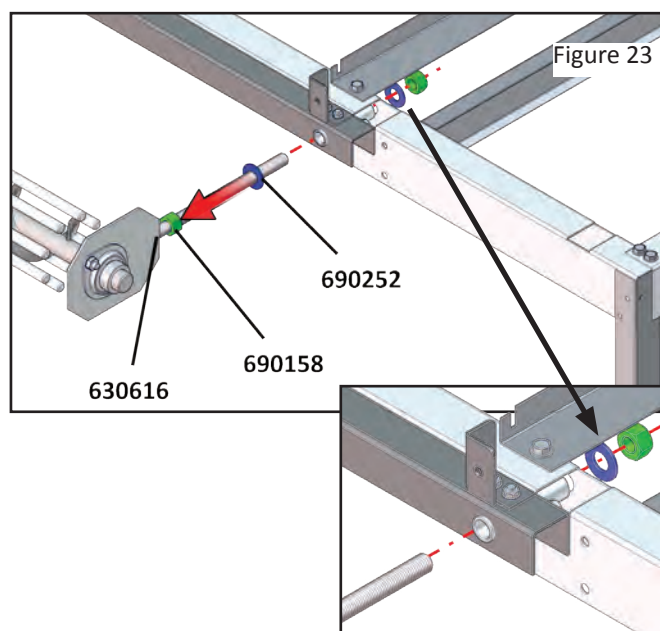
4. Thread (1) 690158 Nut onto Threaded Rod of 630616 Bearing Support to approximately 2" from Plate, as shown in Figure 22, then slide on 690252 Flat Washer, as shown in Figure 23. Repeat for second Bearing Support. Insert 630543 Roller Weld Assembly shaft ends into (2) 630616 Bearing Supports, as shown in Figure 23 and 24.

Figure 22

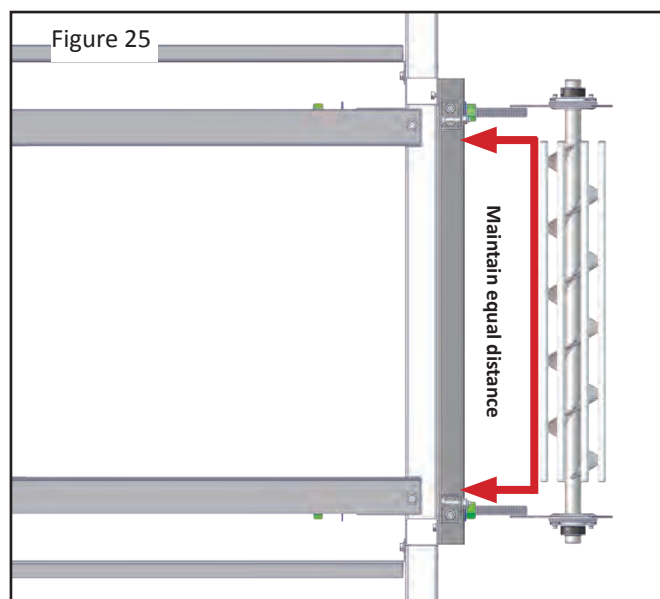


The Idler can be assembled after the egg belt has been placed on the frame by assembling the Idler "inside" the egg belt. This will allow not having to feed half of the egg belt through the Idler. See Laying Egg Belt of Frame and Threading Egg Belt through Idler sections.

5. Slide Threaded Rods of Bearing Support/Roller Assembly into (2) 630536 Spacers assembled in Step 3, as shown in Figure 23 and 24. Slide (2) 690252 Washers and thread (2) 690158 Nuts onto Threaded Rods protruding through 630536 Spacers until hand tight.

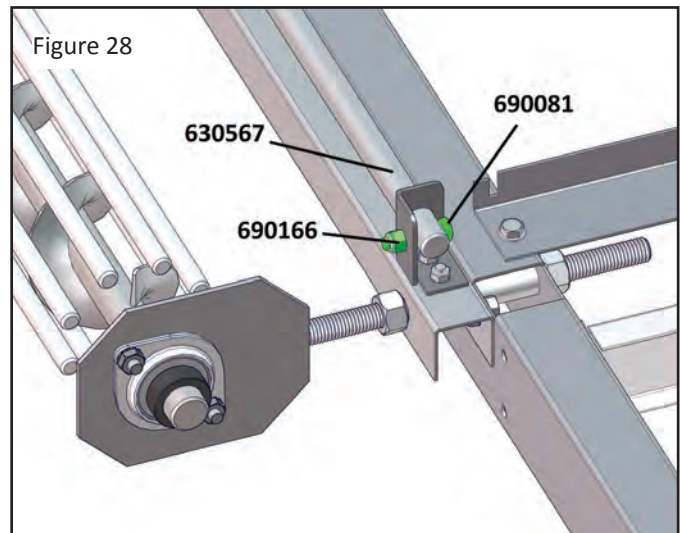
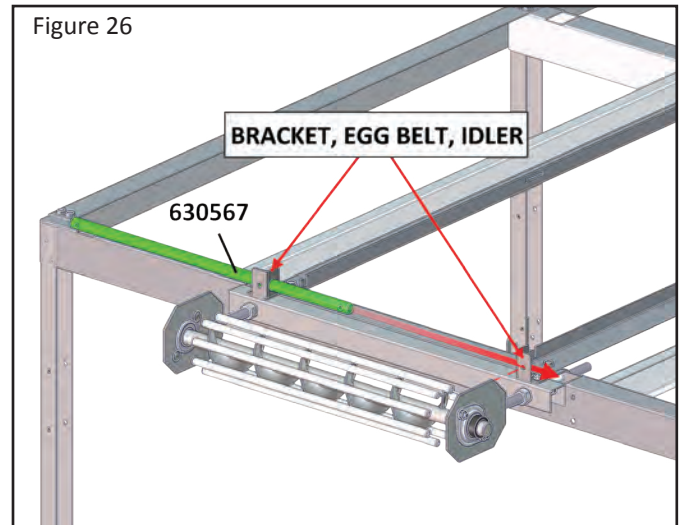
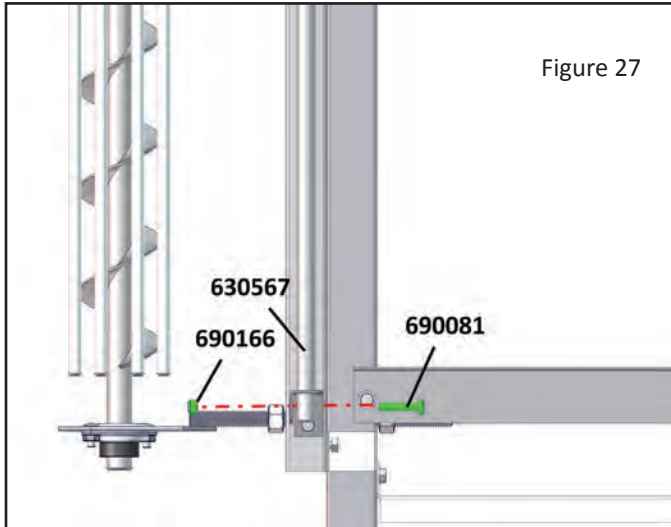


The Idler Roller must be set square to the frame (both ends equal distance) for proper tracking of the egg belt. Adjust Nuts on Threaded Rods to square Idler Roller see Figure 25.

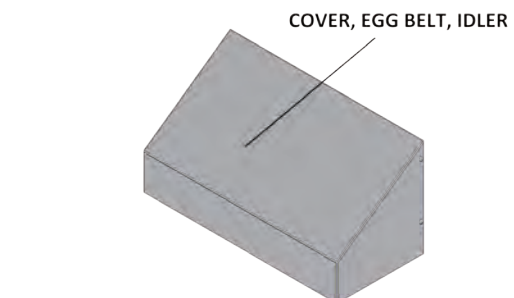
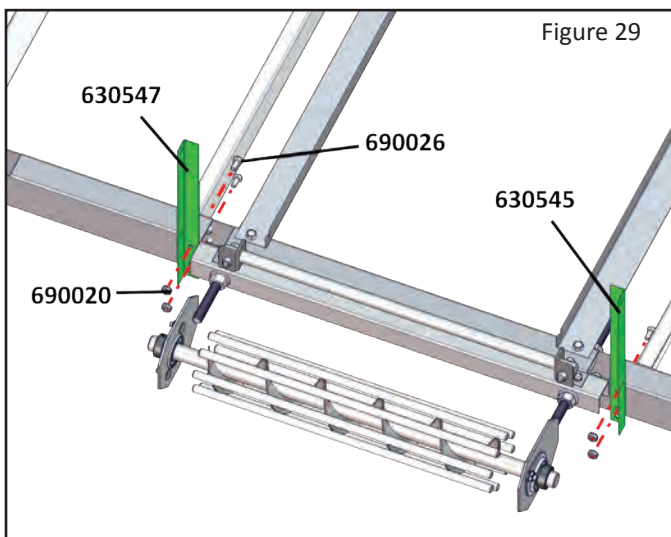



2.5 Sub-Assembly - Idler Frame (continued)

6. Insert 630567 Egg Belt Idler Shaft through one Egg Belt Idler Bracket and through to the other Egg Belt Idler Bracket, *as shown in Figure 26.*
7. Align holes and secure with (2) 690081 Bolts and (2) 690166 Nuts, *as shown in Figure 27.* Note the direction of the bolts as they are inserted into shaft and brackets.



8. Assemble 630545 Right Hand and 630547 Left Hand Idler Cover Bracket Assemblies to 630534 or 630533 Idler Cross-Support with (4) 690026 Bolt and (4) 690020 Nuts, *as shown in Figure 29.* Note bracket orientation and direction bolt is inserted into Idler Cross-Support.

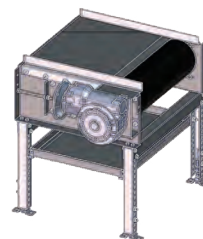


 *Idler Cover is not installed until near the end of installation. See Idler Cover Assembly section.*



2.6 Sub-Assembly - Egg Belt Drive Unit with Legs

The Egg Belt Drive Legs are shipped assembled, *as shown in Figure 30*. Small height adjustments to the Egg Belt Drive Unit can be made by loosening the Foot Nut and adjusting the Foot Bolt up and down, *as shown in Figure 30*. More height adjustment can be made by adjusting the height of the Foot Bolt Bracket up or down, *as shown in Figures 31 and 32*. If the Legs are too long they can be cut to a required height. *There may be instances where a Highrise system would use legs on the Egg Belt Drive Unit to allow for height adjustment.*



1. To adjust the Foot Bolt loosen the Foot Nut and adjust Foot Bolt up or down, *as shown in Figure 30*. To move the Foot Bolt Bracket or to cut Leg to a desired height adjust Foot Bolt down to access and disassemble (2) 690027 bolts and (2) 690020 nuts, *as shown in Figure 31*. Cut Leg to required height if required, reassemble Foot Bolt Bracket to required height and reassemble bolts and nuts, *as shown in Figure 31 and 32*. Adjust Foot Bolt to desired height and retighten Foot Nut.

Figure 30



Figure 31 - Exploded Detail

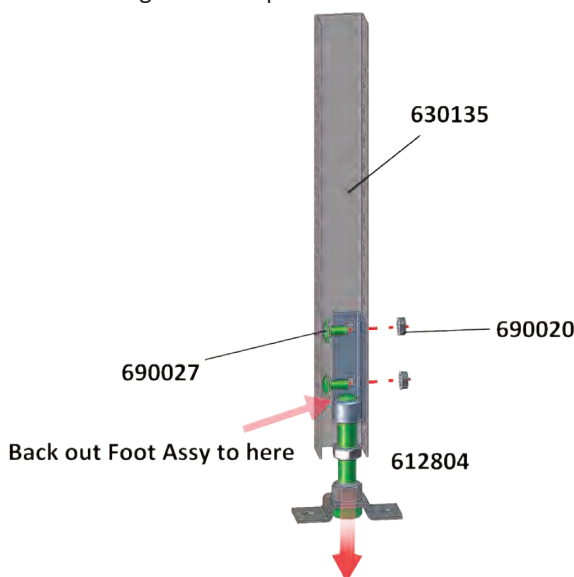
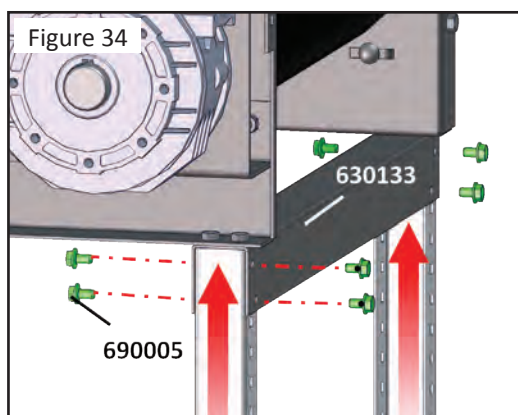
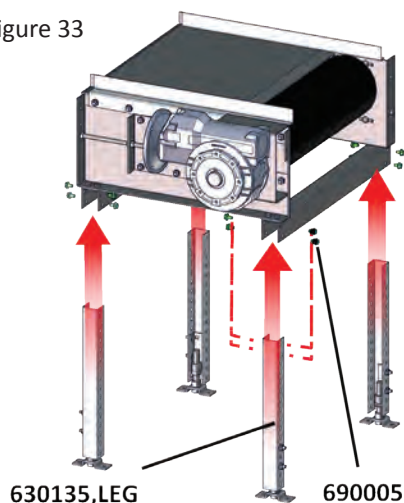


Figure 32 - Foot Plate Complete



2. Attach the (4) Leg assemblies to the (2) 630133 Front Nest Support Cross Braces (attached to the underside of the 630855 Egg Belt Drive Unit) with the 690005 Hex Head Screws, *as shown in Figure 33 and detailed in 34*.

Figure 33



The height of the Egg Belt Drive Unit is determined by the Egg Belt height.

2.6 Sub-Assembly - Egg Belt Drive with Legs (continued)

3. Assemble (2) Tray Supports to Egg Belt Drive Legs using (4) 690027 Bolts and (4) 690020 Nuts, *as shown in Figure 35*. Note the Tray Support orientation (*angles toward inside of legs*) and direction which the Bolts are inserted into Tray Supports. The Tray sets on top of Tray Supports and is removed by lifting and sliding to one side or the other, *as shown in Figure 36*.

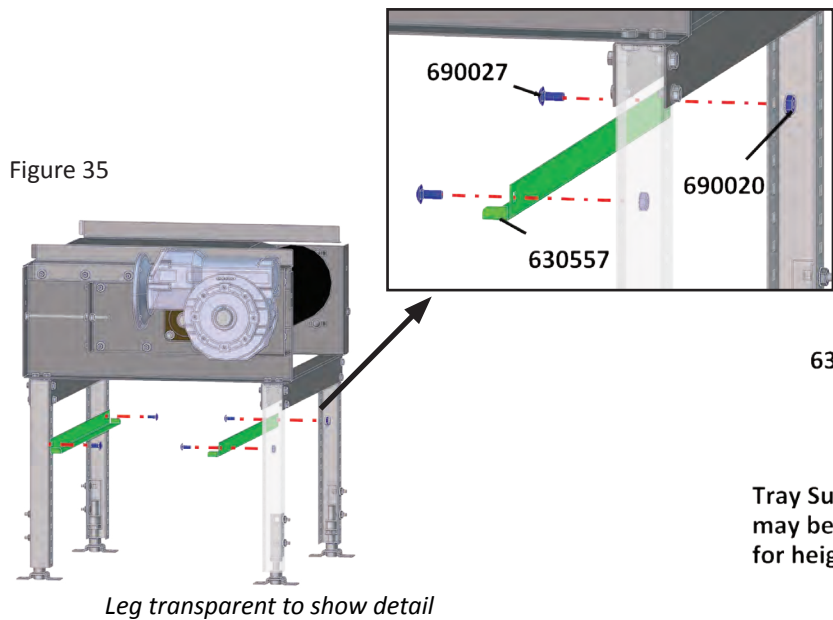


Figure 36

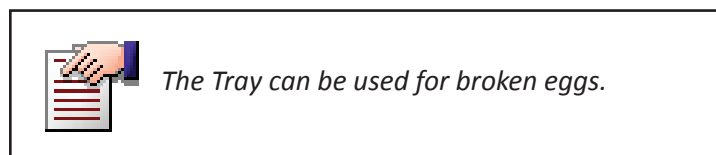
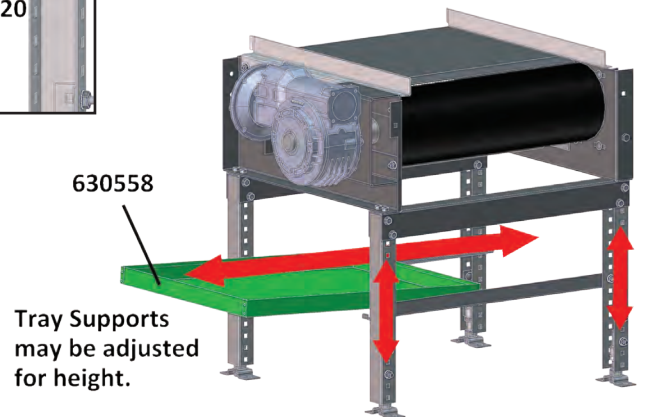


Figure 37 - Egg Belt Drive Unit 630382

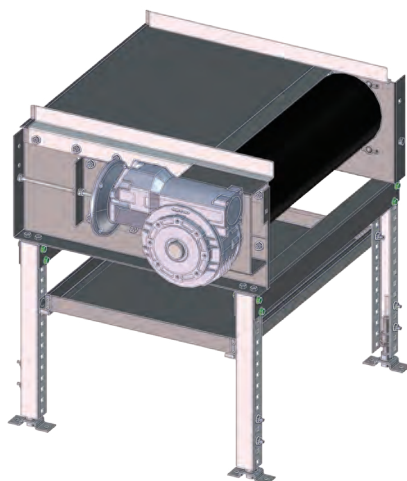
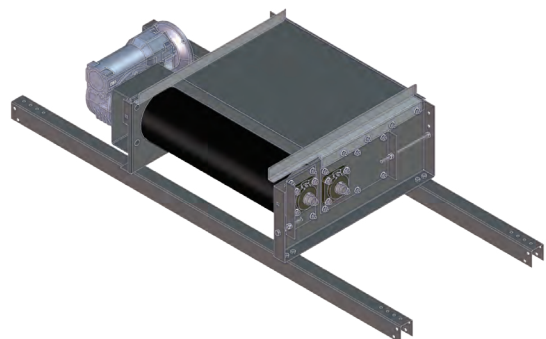


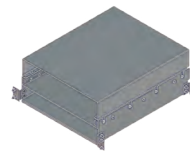
Figure 38 - Egg Belt Drive Unit 630379





2.7 Sub-Assembly - Egg Belt Extender Cover

The Egg Belt Extender Cover is available in several lengths (12", 24" 36" and 72"). The 12" (30.48 cm) Egg Belt Extender Cover and part numbers are shown in the figures below. See page 10-52 for part numbers for all lengths.



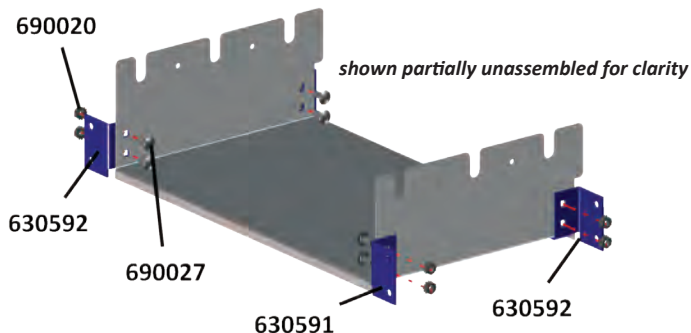
1. The Egg Belt Extender Cover is shipped assembled, as shown in Figure 39.
2. Assemble (2) 630591 LH and (2) 630592 RH Egg Belt Extender Cover Brackets to Egg Belt Extender Cover with (4) 690027 Bolts and (4) 690020 Nuts, as shown in Figure 40. Note the orientation of Brackets and location of the Bolt head inside Egg Belt Extender Cover.

Figure 39

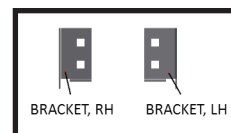
630601 EGG BELT EXTENDER COVER



Figure 40



NOTE - Carriage Holes in Brackets



FOR EASE OF EGG BELT INSTALLATION



To ease the egg belt installation through the Egg Belt Extender Cover the 630575 Egg Belt Cover can be removed by sliding 630575 Egg Belt Cover away from the notched end on the 630575 Egg Belt Cover and lifting, as shown in Figure 41. The 630583 Egg Belt Support Panel Assembly can be removed by disassembling (4) 690062 Bolts and (4) 690209 Washers, as shown Figure 42. See Threading the Egg Belt through Extender Cover section 3.7.

Figure 41

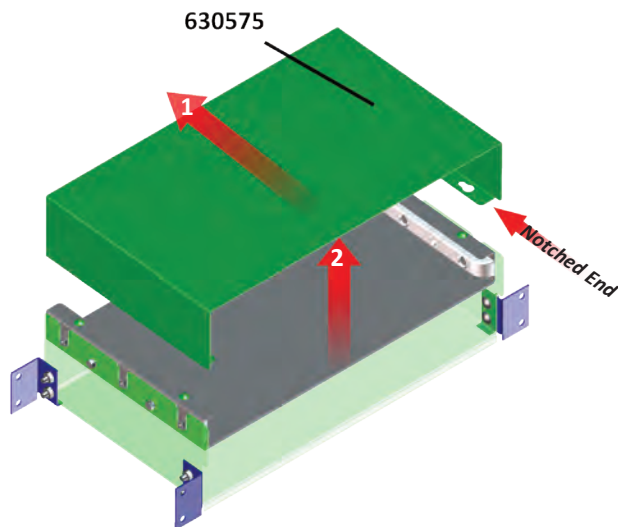
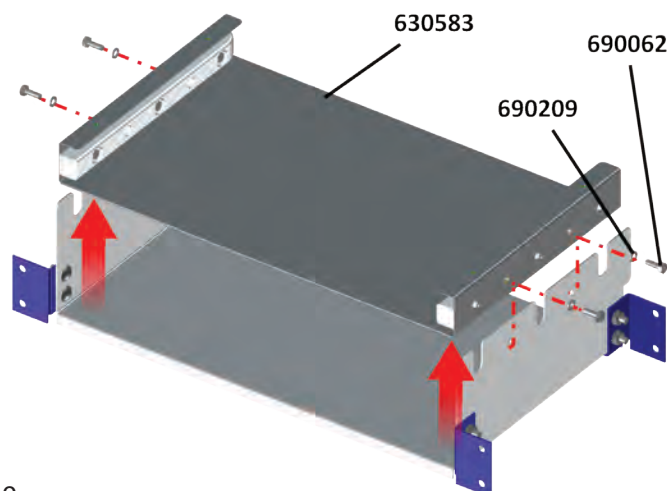


Figure 42



2.8 Sub-Assemble - Nest Sub-Assemblies

Ridge Cap Support Sub-Assembly and Ridge Cap / Anti-Perch Flat Bar Assembly

1. Insert 630169 Ridge Support Tab into slot in 630026 Ridge Cap Support Rail and secure with 690112 Screw, as shown in Figure 43.
2. Align holes in 630013 Anti-Perch Flat Bar and 630023 Vented Ridge Cap and insert (2) 690149 Cotter Pins through 630013 Anti-Perch Flat Bar and 630023 Vented Ridge Cap and spread/bend cotter pins tight against 630023 Vented Ridge Cap. *Note orientation, as shown in Figure 44. There are three different Ridge Cap/Anti-Perch Assemblies see pages 10-38 and 10-39 for part numbers, all three assemble in the same way.*

Figure 43 - Ridge Cap Support Rail / Tab Support

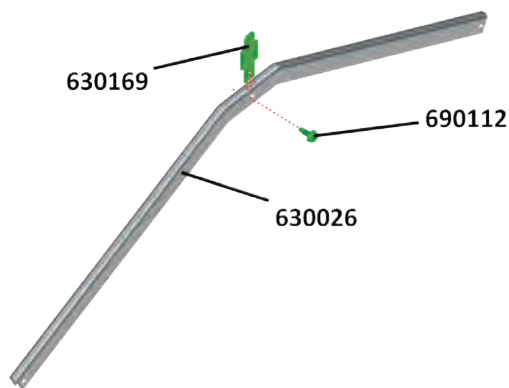
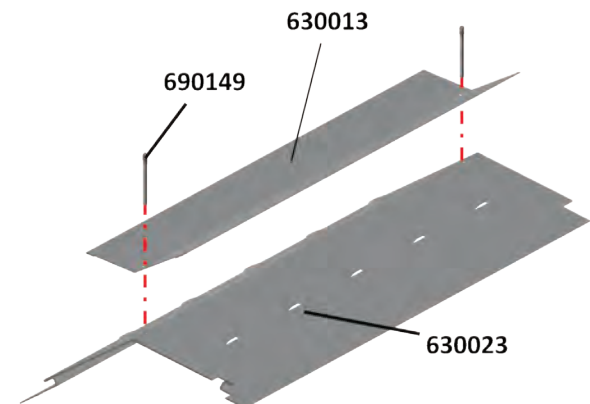


Figure 44 - Ridge Cap / Anti-Perch



Spread the ends out on the Cotter Pins until the Anti-Perch fits snug against the Ridge Cap.

There are two different types of Vented Ridge Caps, 630023 Notched and 630028 Un-notched. *See Figures 45 and 46 to note the difference.* The first Vented Ridge Cap at the beginning (the Egg Belt Drive Unit end) of a row and the first Vented Ridge Cap after a Cross-Over have to be un-notched Vented Ridge Caps. The first (un-notched) Vented Ridge Cap supports the next (notched) Vented Ridge Cap and so on down the nest row. At a Cross-Over it starts over and the first Vented Ridge Cap has to be un-notched. *See Ridge Cap Support Rail/Ridge Cap/Anti-Perch section 4.3.*

Figure 45

630023, NOTCHED RIDGE CAP (VENTED)



Figure 46

630028, UN-NOTCHED RIDGE CAP (VENTED)



Divider Wall / Angled Support Bracket

1. Assemble 630994 Top Support Bracket to 630002 Divider Wall using 690077 Bolt and 690003 Nut, as shown in Figure 47. *Note direction bolt is inserted into Divide Wall.*



Keps Nut should attach against metal 630994 Bracket and NOT against the plastic Divider Wall.

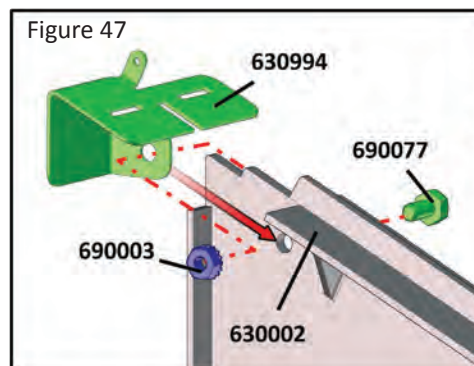
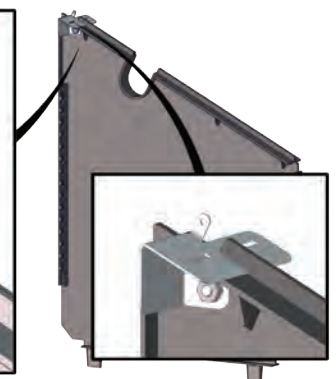


Figure 47





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Chapter 3 - Frame/Egg Belt/Expeller Drive Installation

3.1 Egg Belt Drive Unit /Egg Belt Extender Cover

The Egg Belt Extender Cover joins the Egg Belt Drive and nest row. Depending on your layout the Egg Belt Extender may extend through a wall opening.

1. Locate the Egg Belt Drive(s) as previously determined and shown in your layout drawing. *Below in Figure 1 and 2, it shows the Egg Belt Drive and nest row separated by a wall with the Egg Belt Extender joining them through an opening in the wall.*

Figure 1

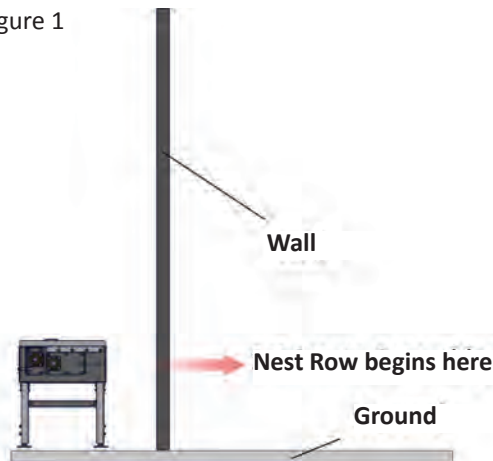
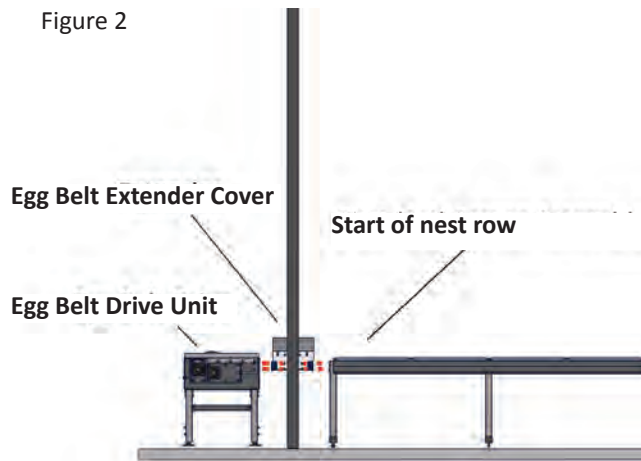


Figure 2



2. Align mounting holes in Egg Belt Extender Cover to the Egg Belt Drive Unit and assemble using (4) 690024 Bolts and (4) 690020 Nuts, as shown in Figure 3. See Sub-Assembly - Egg Belt Extender Cover section 2.7 for assembly instructions.
3. Align mounting holes in Egg Belt Extender Cover to the first Cross-Support (Assembly with Foot Plates for a Floor Mounted System) of the nest row and assembly using (4) 690005 Screws, as shown in Figure 4. (Cross-Support is part of the Take-Up Frame Assembly, IF the Take-Up is the first frame section as recommended)
(Steps 2 and 3 can be reversed, assembling the Egg Belt Extender Cover to the first Cross-Support and then to the Egg Belt Drive Unit.)

IF an Egg Belt Extender Cover is NOT used, the Egg Belt Drive Unit is assembled directly to the nest row aligning mounting holes in Egg Belt Drive Unit to Cross-Support and assembling using (4) 690005 Screws.

Figure 3 - Egg Belt Drive Unit attachment to Extender

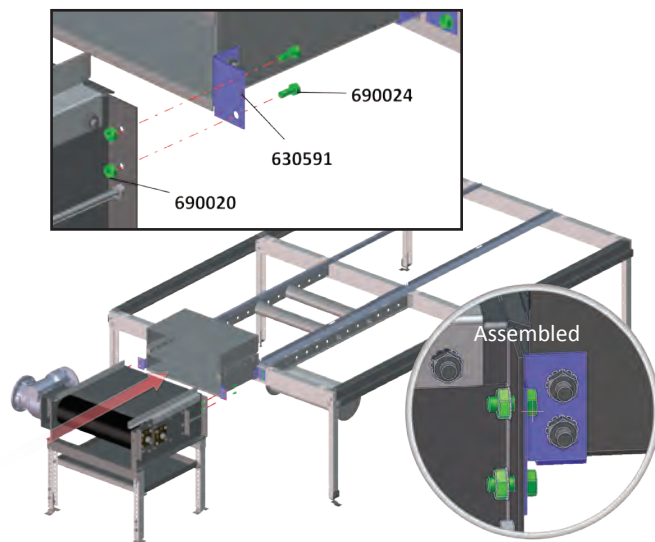
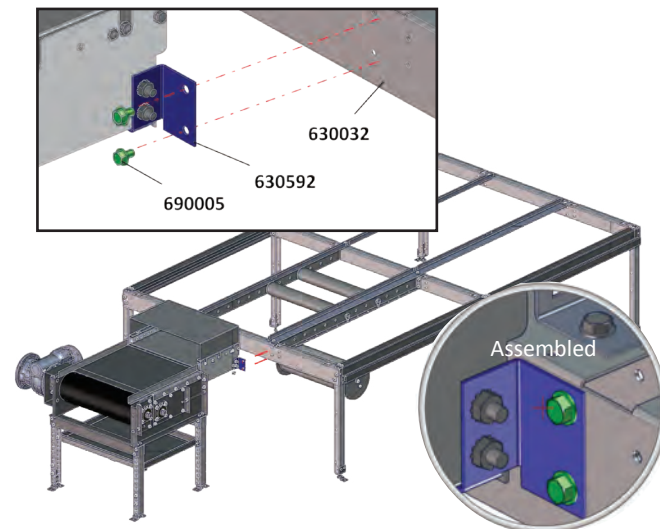


Figure 4 - Egg Belt Extender Cover attachment to Cross-Support





3.2 Egg Belt Drive Unit Control

Recommended Installation Locations: The Egg Belt Control with Indicator Light and ON/OFF Switch (*assembly required*) should be installed near the Egg Belt Drive Unit it controls, in the corridor at the front of the house or in the packing room to stop the Egg Belt as needed. The Egg Belt Control with Potentiometer and ON/OFF Switch (*assembly required*) should be installed near the packer (*if multiple nest rows feed into one packer an egg flow control system may be required or at a minimum cameras installed to monitor egg flow when eggs are being packed*) or the collection table to adjust the Egg Belt speed as needed. The Egg Belt Control containing the VFD should be installed in a location accessible, but, out of the way, in the packing room or in the corridor at the front of the house.

1. Assemble the Egg Belt Control with Indicator Light and ON/OFF Switch, Egg Belt Control with Potentiometer and ON/OFF Switch and Mounting Kit to Egg Belt Control containing the VFD and attach at chosen locations with attaching hardware supplied by others.
2. Wire Egg Belt Control components per the proper wiring diagram, *see Egg Belt Control Wiring Diagrams on pages 7-6 thru 7-8*. All wiring entering and exiting the Egg Belt Control boxes requires a strain relief. Strain reliefs and wire supplied by electrician.
3. When wiring complete re-assemble cover panels.

The following are General Guidelines for Low Voltage Farm Duty Signal Integrity and Best Wiring Practices:

- Low voltage signal wiring should consist of twisted pair shielded cable of 20 to 18 AWG, the more turns per foot the better
- Wire runs of this type should be limited to 200ft or less
- Signal wiring should be kept separate from mains power by 2ft or more if possible or run in a separate metal conduit
- When signal wiring must cross over mains or power wiring it should do so at a 90 degree angle
- Obvious noise sources should be avoided when running signal wiring such as:
 - fluorescent light ballasts
 - VSDs
 - power mains
 - relays and contactors
 - transformers, coils and other inductive equipment
 - two way radio equipment, antennas, etc.
 - single point grounding only



**Each Egg Belt Drive Unit REQUIRES
its own Egg Belt Control!**

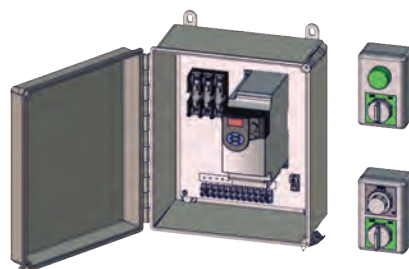
For additional information consult a code certified electrician.

920834



WARNING!

POWER MUST BE OFF WHEN SERVICING THE CONTROL!



3.3 Frame Assembly

The Floor Mounted nest row begins with a Cross-Support Leg Assembly with Foot Plates whether the nest row starts with the Take-Up Frame as recommended or a standard frame.



Foot Plate Use: The Cross-Support Assemblies with Foot Plates are 1.) at each end of the nest row, 2.) the Cross-Supports the Expeller Drive Unit Supports mount to and 3.) alternating with and without Foot Plates starting from the Egg Belt Drive Unit. Refer to your layout drawing to determine locations of Centered Divider Cross-Support Assemblies with and without Foot Plates to determine how many Centered Divider Cross-Support Assemblies require Foot Plates. (See page 1-5 for details on Cross-Support part numbers for Floor Mounted and Highrise systems.)

Winchable Slat Systems: See next page for installation instructions for Winchable Slat Brace added to frame as frame is being assembled on Winchable Slat Systems.

1. Assemble Frame Assemblies, as shown in Figures 5 and 6 using 690005 Screws as required. Follow your layout guide line to insure a straight nest row and use a square to insure square connections. **Note Foot Plate locations.**

Figure 5

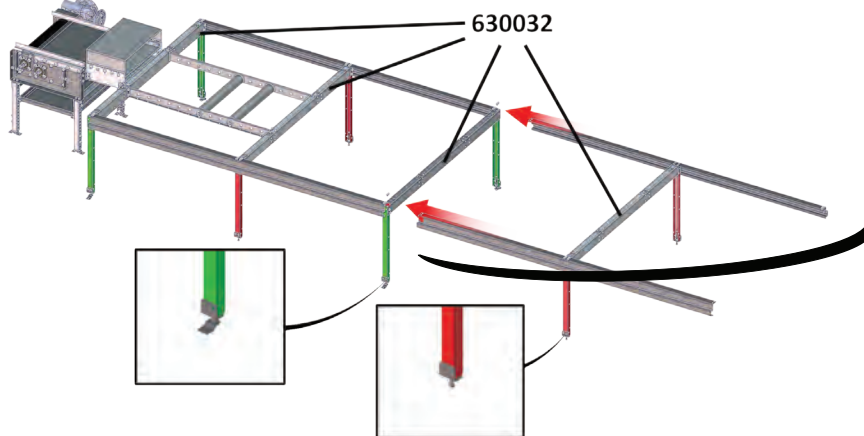
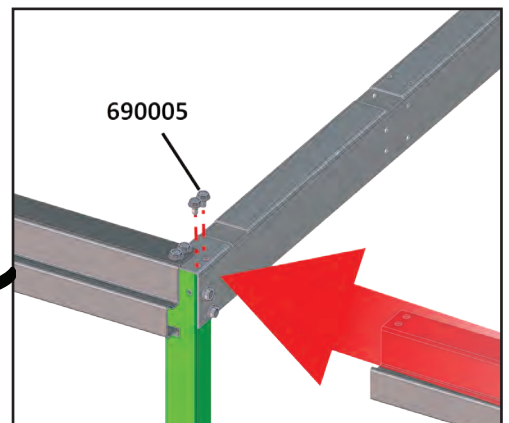


Figure 6



2. Attach the 3rd (third) Cross-Support sub-assembly (**WITH Foot Plate**) to the same set of Rails, as shown in Figure 7 & 8 using the 690005 Hex Head Screws. (**Alternate the Leg WITH Foot Plate - Cross-Support assemblies.**)

Figure 7

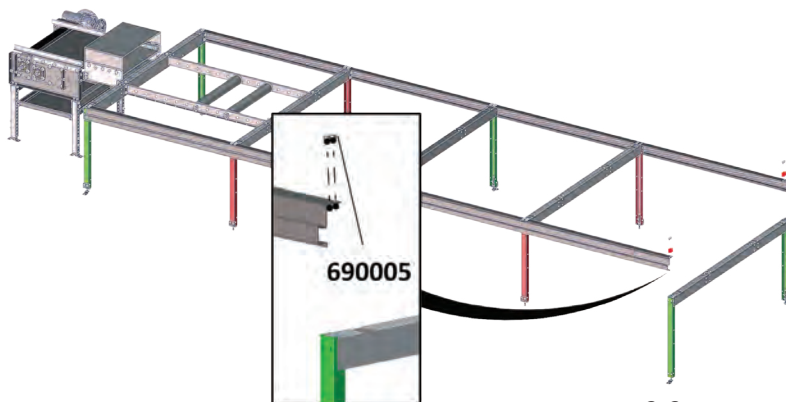
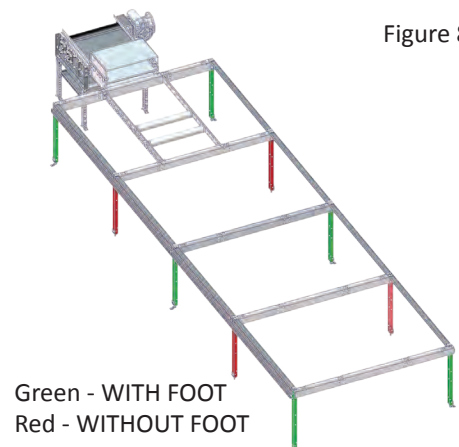


Figure 8





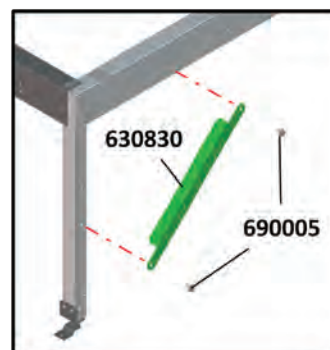
3.3 Frame Assembly (continued)

3. **For Winchable Slat System:** Assemble 630830 Cross Support Brace to Cross-Support and Leg using (2) 690005 Screws, *as shown in Figure 9*. Mounting holes are located that when Cross Support Brace is assembled it is at 45° to the leg.



Winch Brace required on Winchable Slat Systems, add brace to both legs of Cross-Support Leg Assemblies with Foot Plates. For use with Winching Front Rails. (See page 1-5 for details to identify Winching Front Rails.)

Figure 9



4. Continue down the nest row assembling Frame Assemblies and Cross-Support Leg Assemblies following your layout guide line to insure a straight nest row AND use a square to ensure square connections at each Frame Assembly. *Note location of Cross-Support Leg Assemblies **with** and **without** Foot Plates. See the following page for Expeller Frame and Idler Frame assembly.*



Back Rails may be assembled to the frame as the frame is being assembled. See Back Rail Assembly.

3.3 Frame Assembly (continued)

5. The Expeller Frame(s) and Center Divider Cross-Support Assemblies are assembled in the nest row the same as the standard Frame Assemblies. *Note the locations of Foot Plates on the Floor Mounted Systems.* Foot Plates are used at each end of the nest row, the Cross-Supports and the Expeller Drive Unit Supports mount to and alternating with and without Foot Plates starting from the Egg Belt Drive Unit. *Refer to your layout drawing to determine the location of the Expeller Frame(s) and Centered Divider Cross-Support Assemblies.* Figures 10 and 11 show the standard Expeller Frame layout, additional information and other layouts are shown on Layout Options pages 1-14 and 1-15.

Figure 10 Floor Mounted System

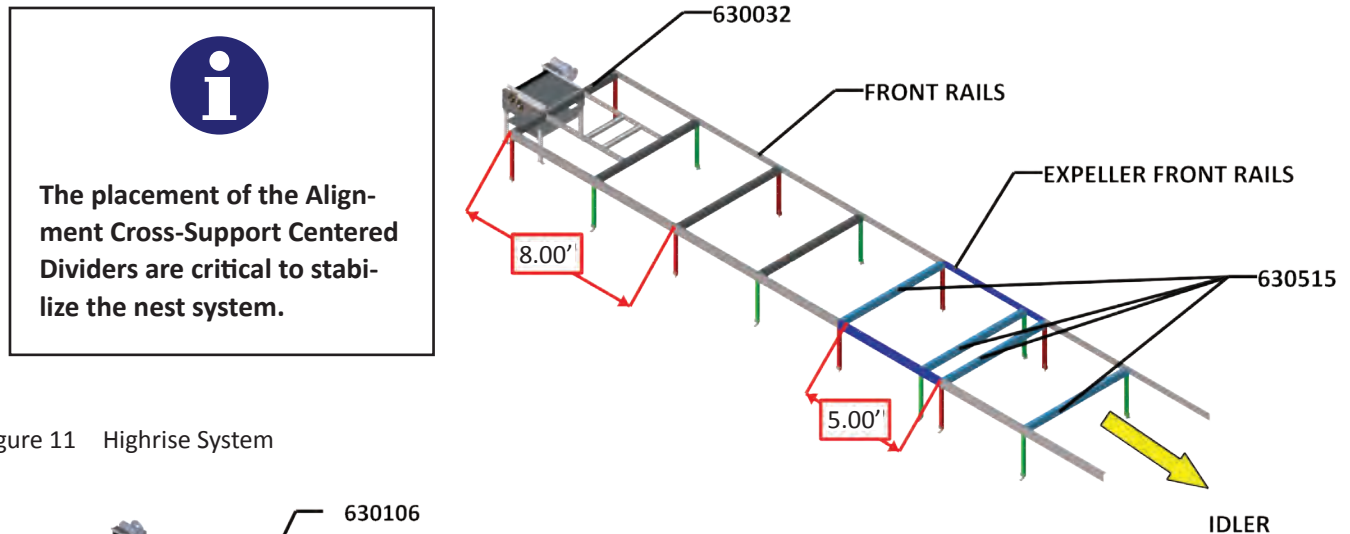
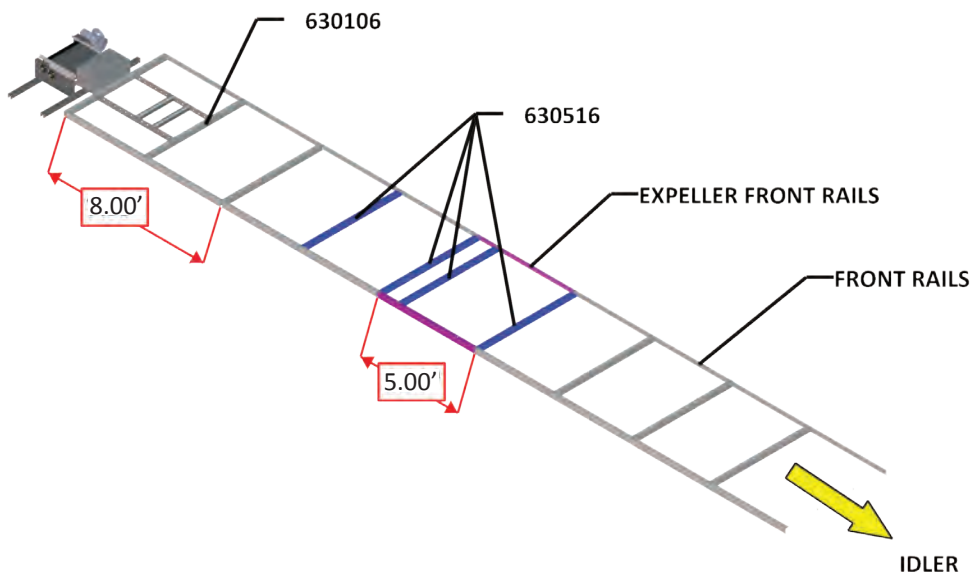


Figure 11 Highrise System



6. Continue assembling down the nest row referring to your layout drawing for Expeller Frame(s) and Centered Divider Cross-Support Assemblies locations and completing nest row with the Idler Frame Assembly. See Sub-Assembly - Idler Frame section for Idler Frame assembly instructions. Follow your layout guide line to insure a straight nest row and use a square to insure square connections.



Depending on your layout a 4' Frame Assembly maybe needed. Assembly is same as the standard Frame Assembly.

Reminder: a color version of this manual is available on the VAL-CO® web-site <http://val-co.com> showing detail in color.



3.4 Egg Belt Back Rail Assembly

1. Two Back Rails assemble to each Frame Assembly. There are different lengths of Back Rails to match the Front Rail length. Using 690005 Screws assemble Back Rail to Cross-Supports, as shown in Figures 12, 13 and 14. One 690005 Screw is required at each end of a Back Rail and one at Cross-Support. *Note starting location and orientations of rails in examples below.*



Floor Mounted and Highrise systems use the same Back Rails

Beginning of nest row

Figure 12

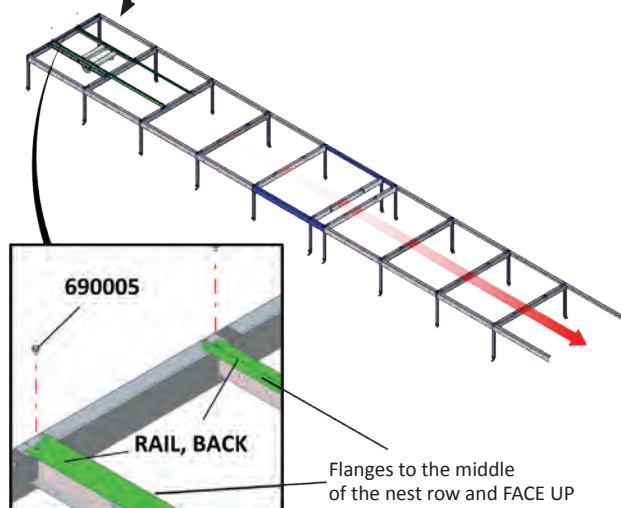
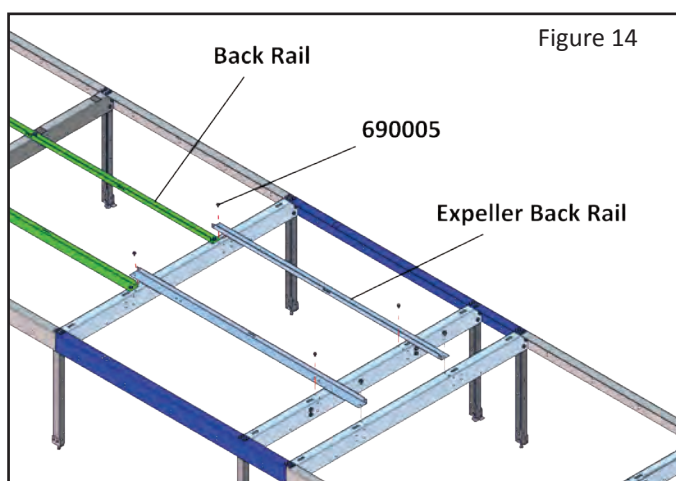
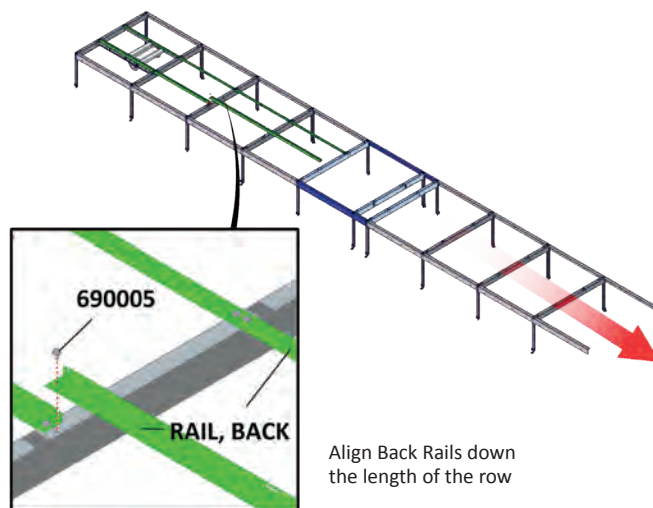


Figure 13



2. Repeat the assembling of the Back Rails down the length of the row using the correct Back Rail length for each Frame Assembly. *The Back Rails can be assembled as the frame is being assembled.*



Confirm nest frame row is straight and square with your layout guide line and a square. Adjust as needed and confirm that hardware is tight before installing the Egg Belt.

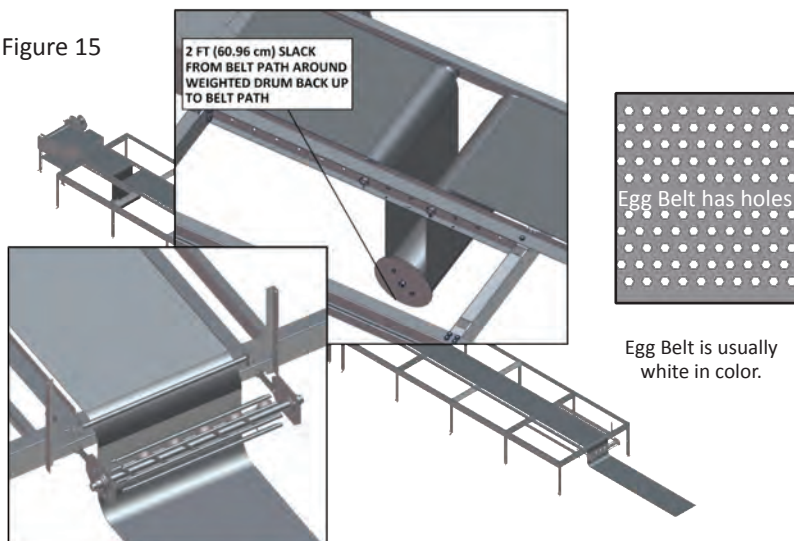
3.5 Egg Belt Assembly - Laying the Belt onto the Frame

1. Unroll the Egg Belt laying it on the nest frame between the Back Rails and over the Cross-Supports with the shiny side of the belt down. Allow extra Egg Belt at the Egg Belt Drive Unit end to thread through the Egg Belt Extender Cover and Egg Belt Drive Unit and approximately 3' to lace/weld the Egg Belt together. In addition allow a couple extra feet for the Take-Up Weight. The Take-Up Weight will hang between the Take-Up Roller Assemblies, as shown in Figure 15. Thread the Egg Belt through the Idler, as shown in Figure 15, if the Idler is already assembled or lay the Egg Belt over the end of the nest frame if the Idler is not assembled.



Leave at least two feet (60.96 cm) of belt length for the Take-Up Weight. When installed the Take-Up Weight should be approximately one foot (30.48 cm) below the Egg Belt path down the nest row. This will allow for expansion/contraction due to temperature changes. The shiny side of the Egg Belt being down during this step of the installation will result in the shiny side being on top (or the egg side) when Egg Belt is completely installed.

Figure 15



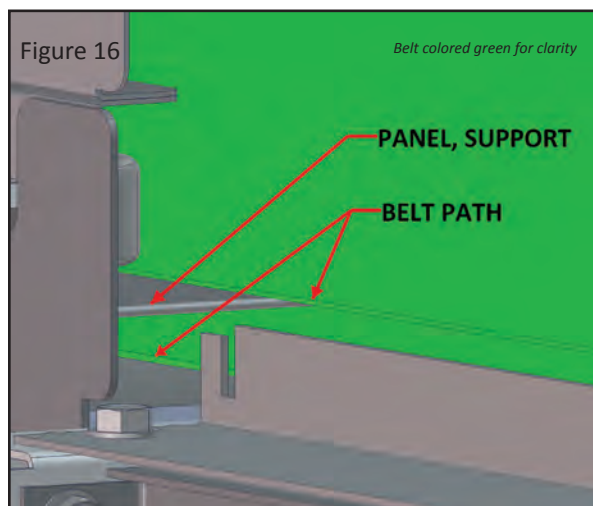
The Egg Belt remains laying over the end of the nest frame until after the Wire Supports are assembled to the nest frame. If Idler is not already assembled and to avoid having to thread half the Egg Belt through the Idler the Idler needs to be assembled after the Egg Belt is laid on the nest frame and prior to the Egg Belt being laid back over the Wire Supports (see sections 3.9). See Sub-Assembly - Idler Frame section 2.5 for Idler assembly instructions. Note Egg Belt path runs through Idler while assembling Idler, but Idler Cover is not installed until the end of installation.

3.6 Egg Belt Assembly - Threading Belt through the Egg Belt Extender Cover

To ensure enough Egg Belt is allowed for the Egg Belt Extender Cover, Egg Belt Drive Unit, lacing/weld the Egg Belt together and the Take-Up Weight it is recommended to thread the belt at the Egg Belt Drive end of the nest frame row at this time. If not enough Egg Belt was previously allowed, pull additional Egg Belt toward the Egg Belt Drive Unit end of the nest frame row.

1. With the Egg Belt laying on the nest frame, thread the Egg Belt Drive Unit end of the Egg Belt through the bottom rectangular opening (below the Panel Support) of Egg Belt Extender Cover toward the Egg Belt Drive Unit. Thread Egg Belt through Egg Belt Drive Unit (see next page) and return to Egg Belt Extender Cover threading through the top rectangular opening (above the Panel Support), as shown in Figure 16.

Figure 16



FOR EASE OF EGG BELT INSTALLATION

The Egg Belt Cover and the Egg Belt Support Panel Assembly of the Egg Belt Extender Cover can be removed to ease Egg Belt installation. See Sub-Assembly - Egg Belt Extender Cover section 2.7 for instructions. Note Egg Belt path through Egg Belt Extender Cover while re-assembling Egg Belt Extender Cover.



3.7 Egg Belt Assembly - Threading Belt through the Egg Belt Drive Unit

1. Thread Egg Belt from the Egg Belt Extender Cover, (as on previous page) over Pinch Rollers, down and around Drive Roller, as shown in Figure 17 and 18. Thread through the Egg Belt Extender Cover (as on previous page) allowing enough Egg Belt through to lace/weld Egg Belt. The Rollers are adjustable to increase space between roller to ease threading of Egg Belt.

Figure 17 View of Egg Belt Drive Underneath

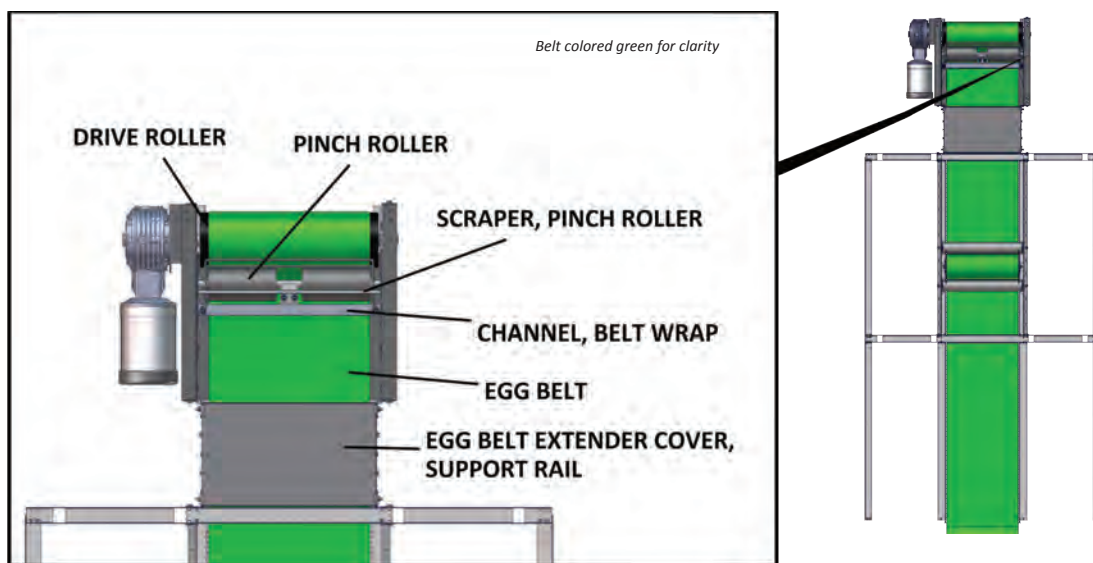
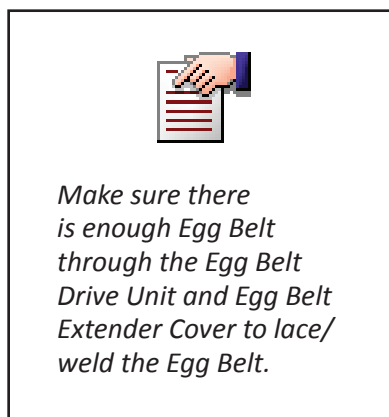
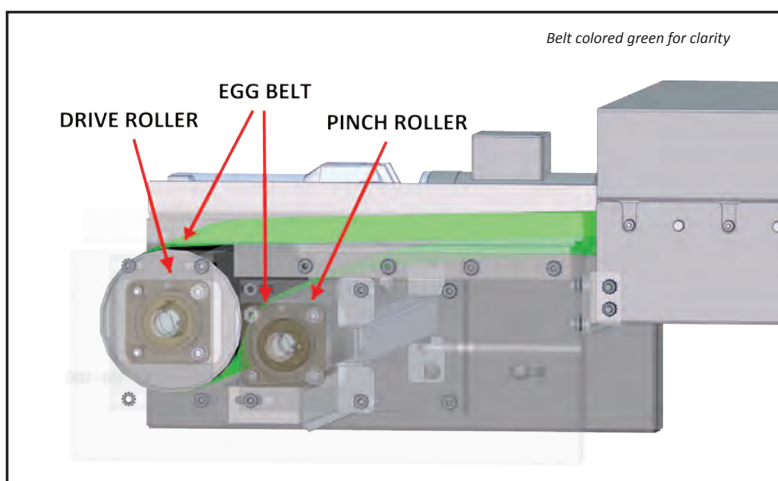


Figure 18 Belt PATH through Egg Belt Drive Unit



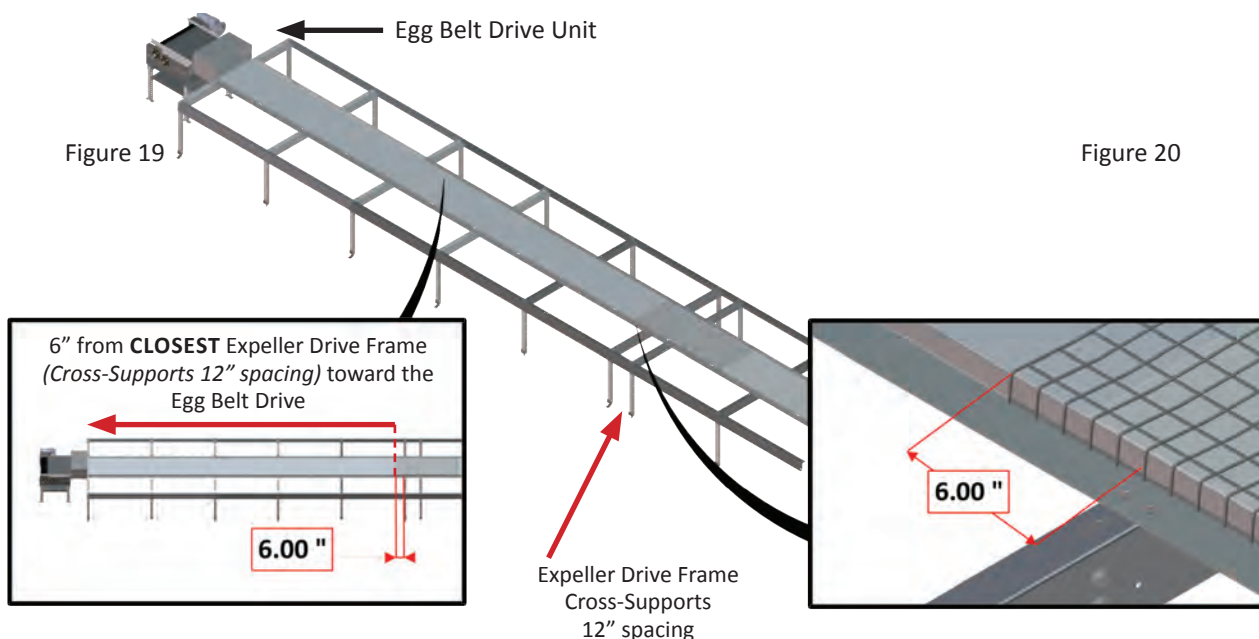
Make sure there is enough Egg Belt through the Egg Belt Drive Unit and Egg Belt Extender Cover to lace/weld the Egg Belt.



DO NOT RUN EGG BELT DRIVE UNIT TO ASSIST THREADING THE BELT!

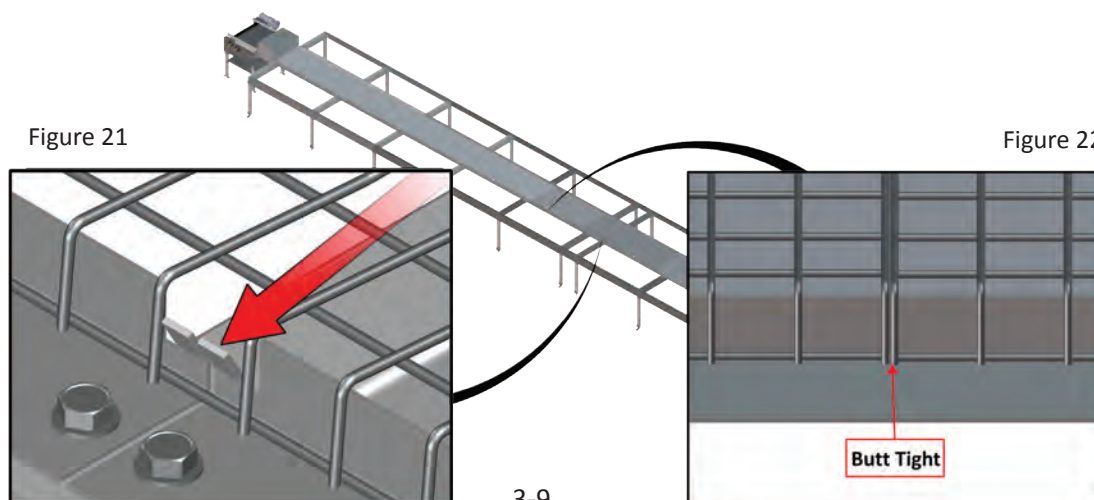
3.8 Egg Belt Wire Support Assembly

1. Assembly of 630003 Egg Belt Wire Supports begin at the Expeller Drive Frame closest to the Egg Belt Drive Unit. This frame can be located using your layout drawing (*the Cross-Supports are spaced 12" apart for the Expeller Unit*). Set the first 630003 Wire Support over both Back Rails with one end of the Wire Support located approximately 6" from the closest Cross-Support spaced 12" apart to the Egg belt Drive Unit, *as shown in Figure 19*. Continue to set 630003 Wire Supports on the Back Rails in both directions from the first one butting each one to the previous one, *as shown in Figure 22*, to the ends of the nest frame row. Wire Supports should sit flat on Back Rails. Cut Wire Supports to length at both ends of the nest frame row.



Make sure Wire Supports sit flat on Back Rails and butt tightly against each other, if not reposition as required. Wire Support joints can NOT meet on a Cross-Support.

2. To hold the Wire Supports in place locate the tabs (*approximately every 4'*) in the Back Rails, *shown in Figure 21* and bend the tabs (*with pliers*) away from the middle of the nest frame row approximately 30°. **More than 30° could cause an interference with Nest components.**





3.9 Threading the Egg Belt through the Idler and Lacing

1. If Idler is already assembled to nest frame row and the Egg Belt is not threaded through the Idler, thread Egg Belt through Idler, *as shown in Figure 23*. If the Idler Assembly is not assembled, assemble the Idler Assembly inside the Egg Belt and attach, *as shown in Figure 24*, to avoid having to thread half the Egg Belt through the Idler. See Sub-Assembly - Idler Frame section 2.5 for Idler assembly instructions. *Note Idler Cover is not installed until the end of installation.*
2. After the Egg Belt is threaded through the Idler unroll the Egg Belt over top the Egg Belt Support Wires to the Egg Belt Drive Unit end of the nest frame row overlapping the other end of the Egg Belt, *as shown in Figure 25*.

Figure 23

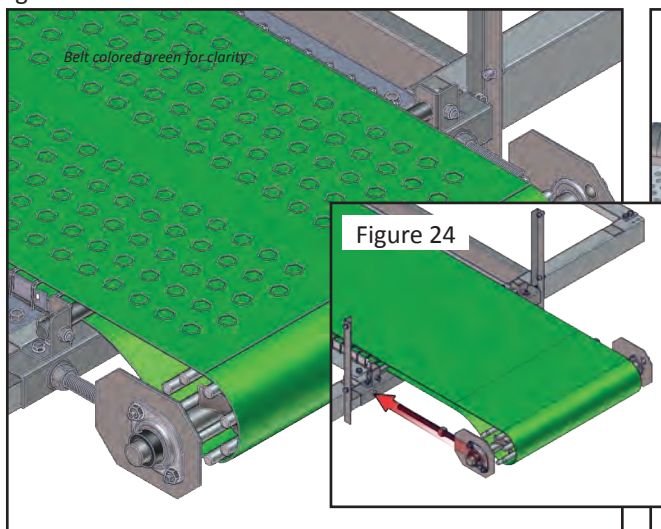
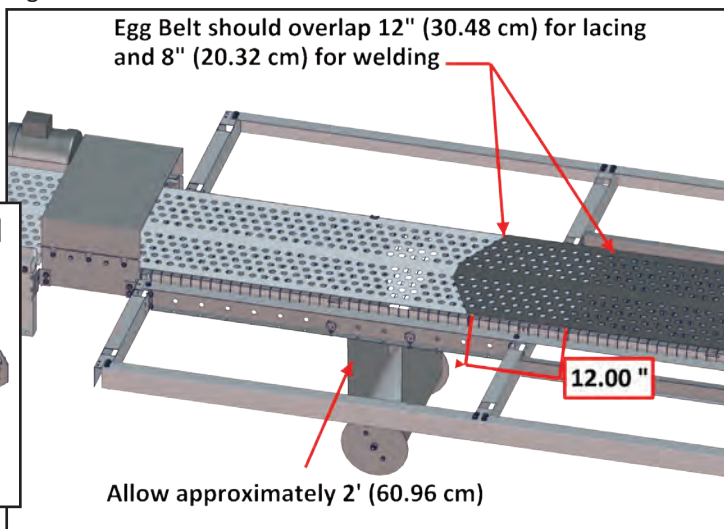


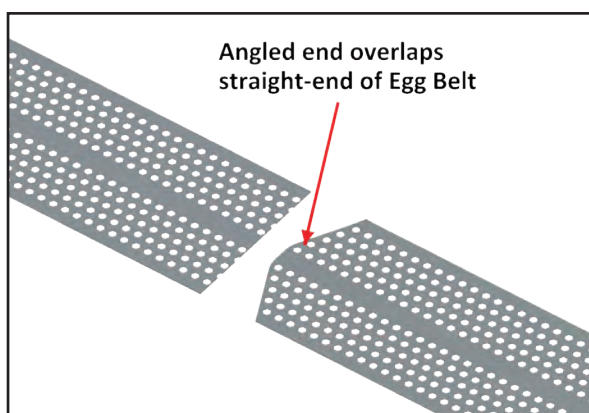
Figure 25



3.10 Cutting the Egg Belt - (for Lacing or Welding)

1. **The Egg Belt should NOT be cut until it is fully installed and the exact length required is known.** Allow enough Egg Belt length for the Take-Up Weight (*approximately 2 feet*), adjust Idler Roller location to 1/2" from Nut at the Cross-Support to the Roller Mounting Plate and the Egg Belt overlap. The overlap is 12" (30.48 cm) for lacing and 8" (20.32 cm) for welding. See Figure 25 and Figures on the following page for location of where the measurements are taken.
2. Once the exact length is known and the joining method (*lacing or welding*) has been determined the Egg Belt can be cut, *as shown in Figure 25*. The Egg Belt end traveling toward the Egg Belt Drive Unit is the bottom belt and is cut straight. The Egg Belt end traveling from the Idler end of the nest frame row overlaps the bottom Egg Belt and is cut at angles, *as shown in Figure 25*, with middle portion of the Egg Belt cut straight and rounded corners.

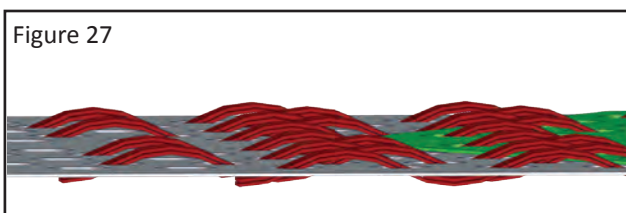
Figure 26



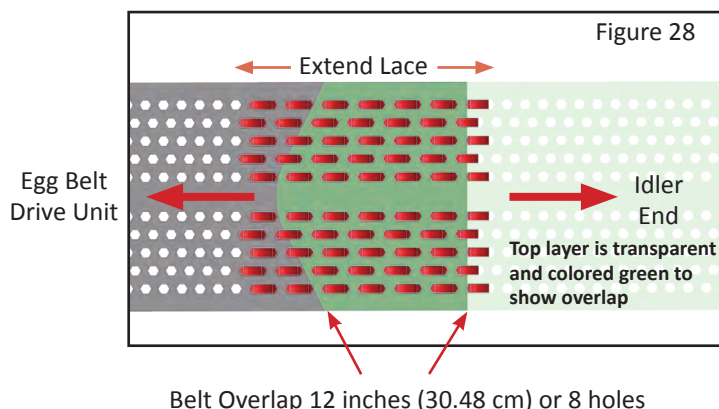
3.11 Lacing the Egg Belt Ends

After the Egg Belt has been cut as instructed on the previous page the Egg Belt can be laced or welded together. The following is the lacing instructions and welding instructions are on the next page.

1. With the angle cut end (*from the Idler*) of the Egg Belt overlapping the square cut end (*from the Egg Belt Drive Unit*) approximately 12" or 8 holes and the holes aligned the Egg Belt is ready for lacing.
2. Cut a piece (*approximately 36" long*) of 630814 3/4" Poly Red Belt Lacing. Starting from one edge of Egg Belt and beginning one or two holes before the overlap on the Idler end side of the Egg Belt thread one end of the Red Belt Lacing through the hole and the other end through the hole next to it in line with the length of the Egg Belt and toward the overlap. Pull the red Belt Lacing through both holes to an equal distance and taking both ends of the Red Belt Lacing thread through the next (*or third*) hole toward the Egg Belt Drive Unit and continue threading through subsequent holes until the entire piece of the Red Belt Lacing is used. The lacing extends past the overlap a couple of holes, *as shown in Figure 27 and 28*. Cut additional pieces of the Red Belt Lacing and weave through each row of holes in a similar way across the width of the Egg Belt, *as shown in Figure 27 and 28*, staggering the starting point of the Red Belt Lacing and the direction (*up or down*) through the Egg Belt that the Red Belt Lacing is started, *as shown in Figure 27*.



Lacing extends beyond the overlap in both directions.



3.12 Welding the Egg Belt Ends

1. With the angle cut end (*from the Idler*) of the Egg Belt overlapping the square cut end (*from the Egg Belt Drive Unit*) approximately 8" or 6 holes and the holes aligned the Egg Belt is ready for welding.
2. Make sure Egg Belt is aligned, square and flat before and during the welding process. Weld with Egg Belt on hard surface, hard plastic or metal.
3. Weld Egg Belt in the pattern, *as shown in Figure 29 on the next page*, from one side to the other to help maintain a square and flat weld joint.



1. Welds should penetrate the top layer and into the bottom layer but not penetrate the bottom layer.
2. Welds should have a ripple around the hole created by the weld.
3. Refer to your Sonic Welder Manual for proper operation.



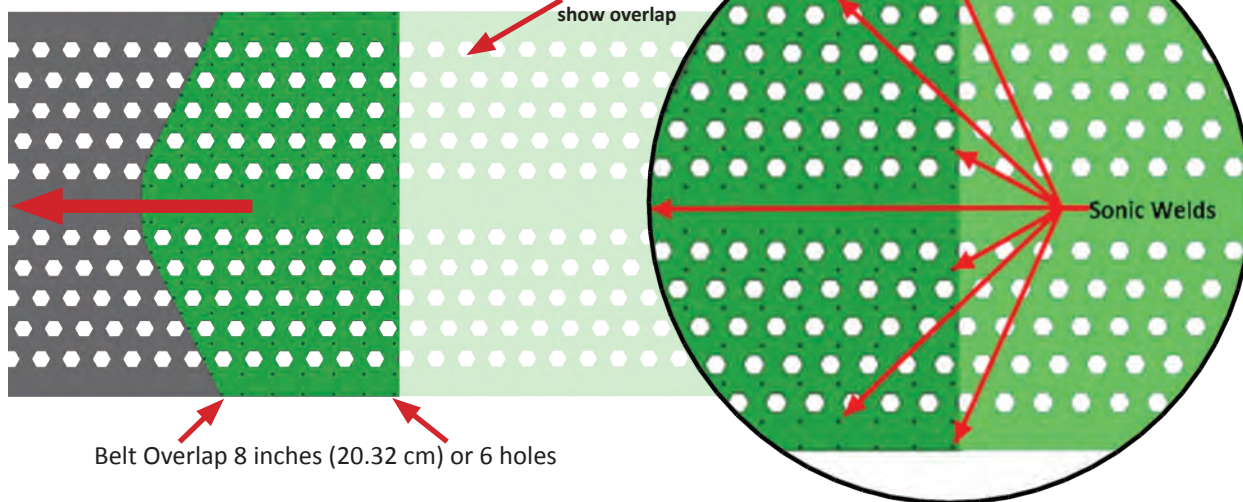
3.12 Welding the Egg Belt Ends (continued)

Figure 29

Belt colored green for clarity

Top layer is transparent and colored green to show overlap

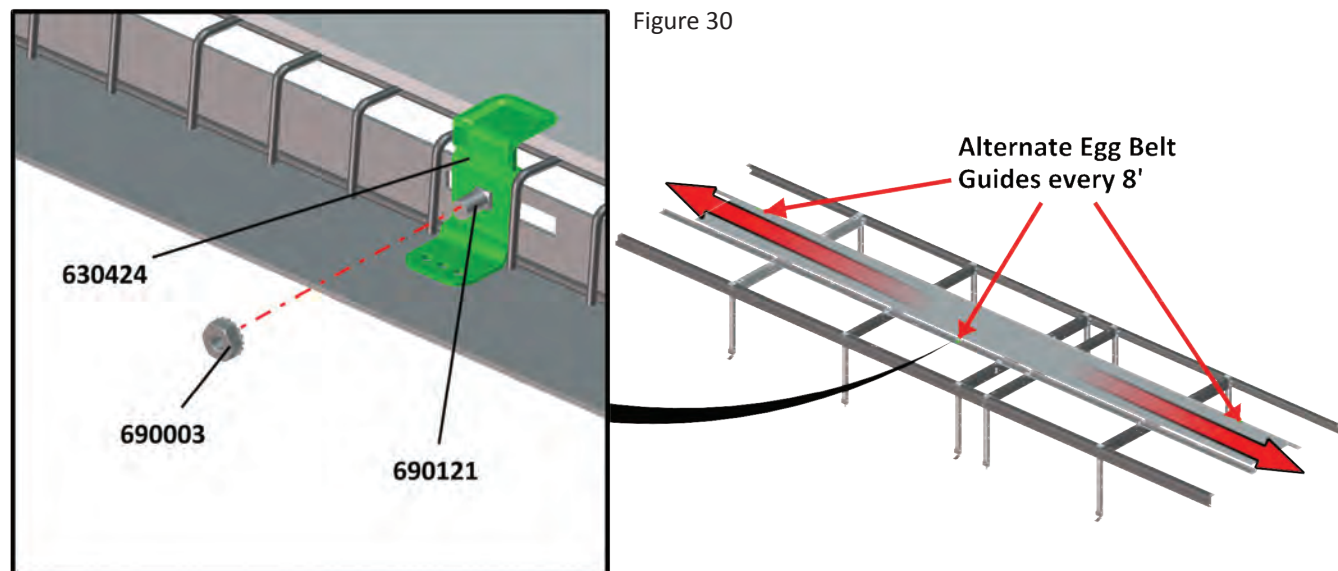
Egg Belt Drive



3.13 Egg Belt Guide Assembly

1. Assemble 630424 Egg Belt Guides to the Back Rails using 690121 Bolts and 690003 Nuts, as shown in Figure 30. Note orientation of Bolt inserted from the middle of the nest frame row. The slots are located approximately every 4' but the Egg Belt Guides are only assembled approximately every 8' alternating sides on the Belt Rails.

Figure 30



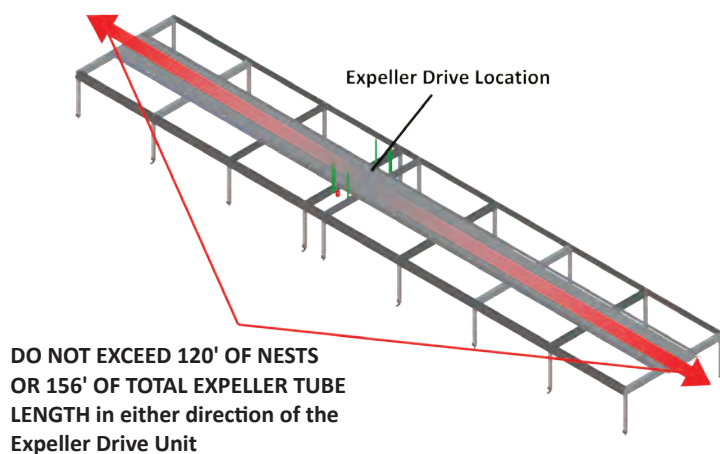
Testing the Egg Belt Drive Unit: After the Egg Belt Drive Unit has been wired and Egg Belt tightened check that the Egg Belt is tracking correctly. To tighten the Egg Belt the Pinch Roller on the Egg Belt Drive Unit may need adjusting and the Take-Up Weight installed. The Egg Belt Drive Unit Drive Roller and Idler Roller may need to be adjust to correct tracking issues.

3.14 Expeller Drive Unit location parameters



Maximum length of the expeller tube in each direction from an Expeller Drive Unit is 120' of NESTS or 156' if combined with 36' of Cross-overs. The expeller tube in each direction from an Expeller Drive Unit can be unbalanced up to 60' (ex: 96' in one direction and 156' in the other direction).

Figure 31

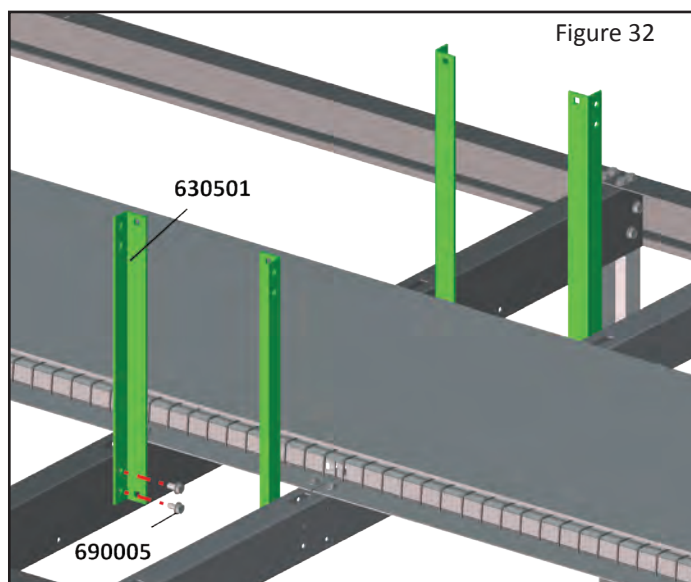


WARNING!

The Expeller system WILL NOT OPERATE PROPERLY if you over-extend the recommended length.

3.15 Expeller Drive Unit Supports Assembly

1. Locate the Expeller Drive Frame(s) using your layout drawing. Assemble (4) 630501 Expeller Vertical Supports using (8) 690005 Screws, as shown in Figure 32. Note orientation of Expeller Vertical Supports shown in green for purpose of identification.



TIME & STEP SAVERS: Distribute Expeller and system components down the length of the nest row at their approximate place of use.



3.16 Expeller Drive Unit Contactor Plate Assembly



HELPFUL TIP: Choose the Expeller Vertical Supports on the side of the nest row that will be most convenient for service to assemble the Expeller Drive Contactor Plate.

1. Assemble 630611 Expeller Drive Contactor Plate to 630501 Expeller Vertical Supports using (2) 690024 Bolts and (2) 690020 Nuts, as shown in Figure 33 and 34. Note location Expeller Drive Contactor Plate is mounted to Vertical Supports and orientation of Bolts and Nuts.

Figure 33

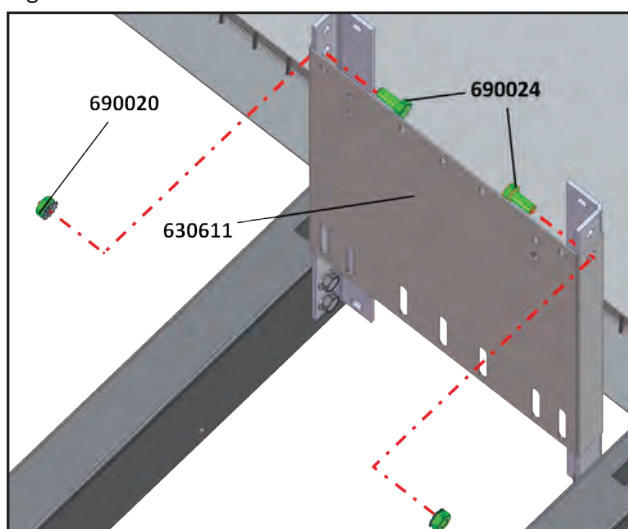
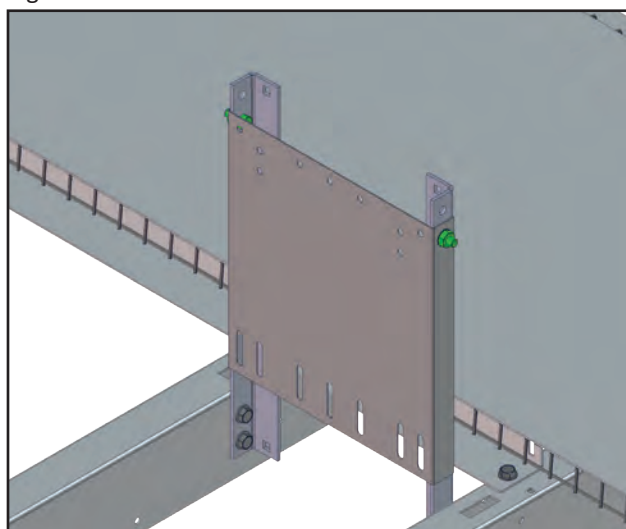


Figure 34



3.17 Expeller Drive Unit Contactor Box Controls

1. Assemble 920725 Mounting Kit to Expeller Drive Contactor Box and assemble to 630611 Expeller Drive Contactor Plate using (4) 00050857 Bolts and (4) 690003 Nuts, *as shown in Figure 35*. Slots have been provided for adjustment, if additional adjustment required holes can be drilled to suit.

Figure 35

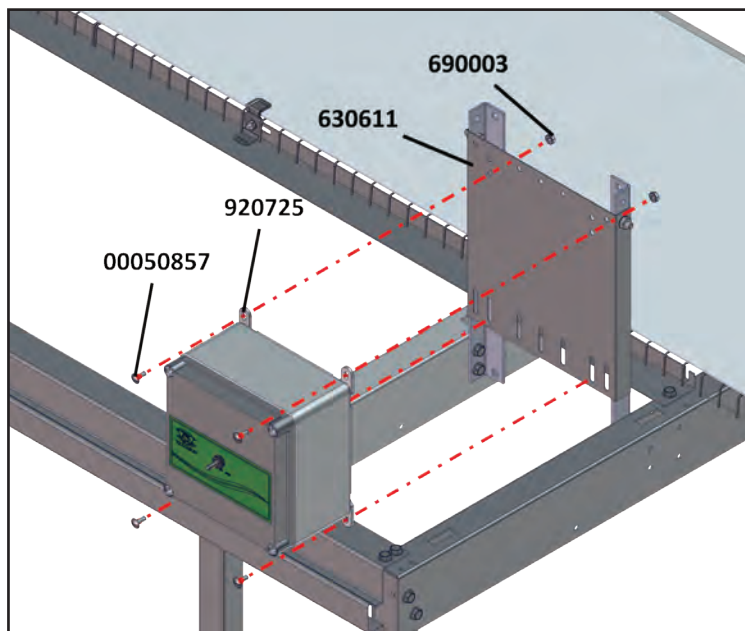
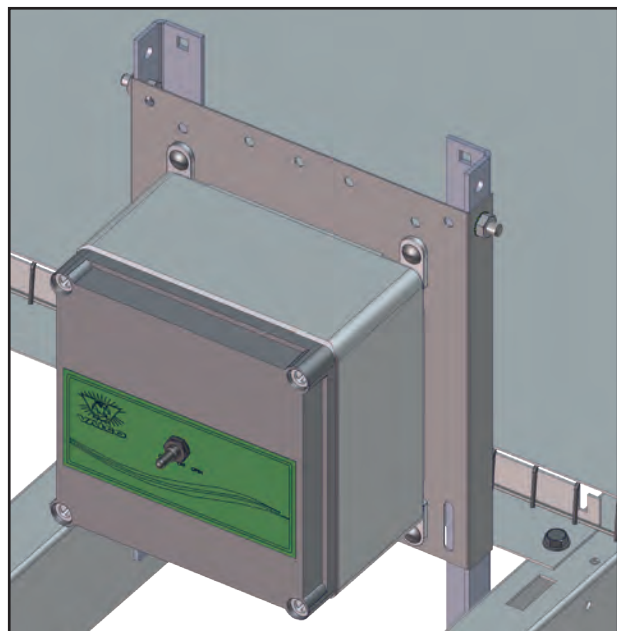


Figure 36



WARNING!
POWER MUST BE OFF WHEN SERVICING THE CONTROL!



The different electrical requirement Expeller Drive Contactor Boxes are shown on following page.

2. Wire the Expeller Drive Contactor Box Control(s) per the proper wiring diagram, see Expeller Drive Contactor Box Control Wiring Diagrams on pages 7-1 thru 7-4. All wiring entering and exiting the Expeller Drive Contactor Box(es) requires a strain relief. Strain reliefs and wire to expeller motor supplied with Expeller Drive Contactor Box(es).
All other wire (power, limit switches, etc.) and strain reliefs supplied by electrician.
3. When wiring complete reassemble cover panel.

See Expeller Drive Contactor Box Control Operating Instructions on pages 7-11 for operating Instructions.



Each Expeller Drive Unit REQUIRES its own EXPELLER DRIVE CONTACTOR BOX CONTROL!



3.17 Expeller Drive Unit Contactor Box Controls (continued)

Figures 37

920847 120V/60HZ/1PH

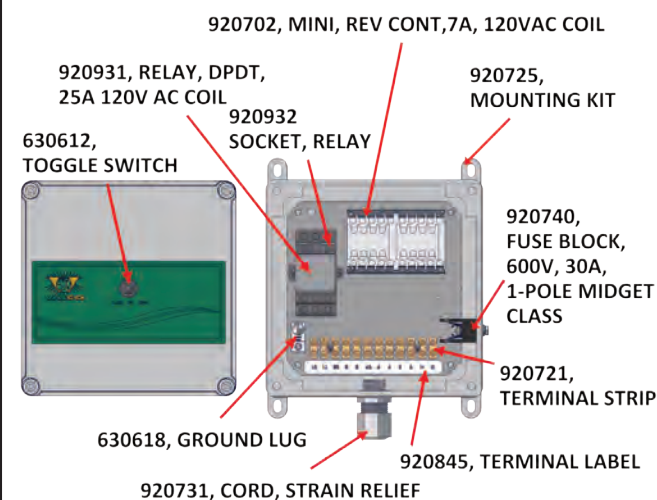


Figure 38

920851 480V/60HZ/3PH

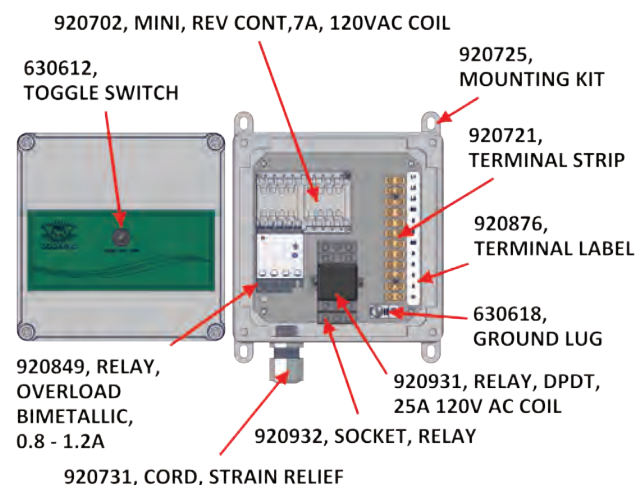


Figure 39

920860 240V/60HZ/1PH

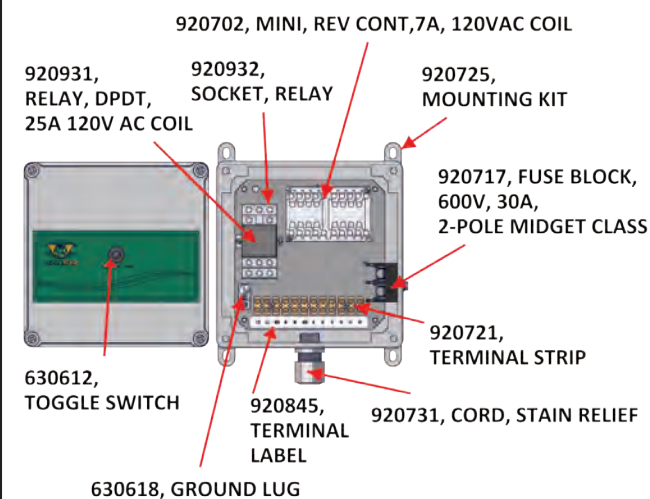
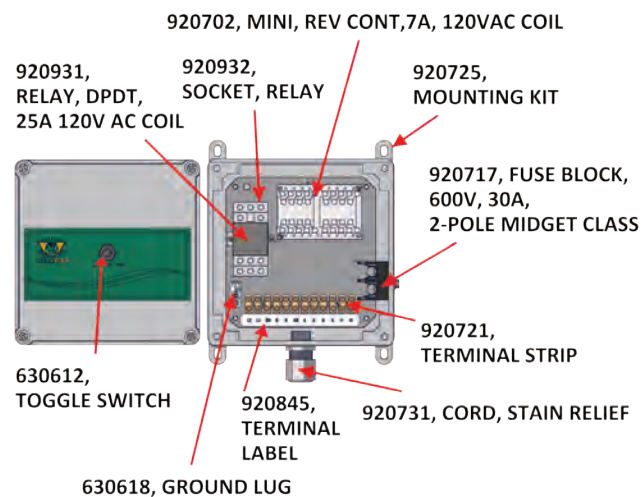


Figure 40

920861 240V/60HZ/3PH



3.18 Expeller Drive Unit Divider Wall and Rear Panel Assembly



It is **CRITICAL** the Egg Belt is installed prior to the Divider Walls and Nest components.

If not already done, distribute Expeller components (*Drive, Panels, etc.*) down the length of the nest row at their place of use as shown on your layout drawing.

1. At the Expeller Frame section(s) insert the tabs on the bottom of (2) 630002 Divider Walls into the Cross-Supports next to the Expeller on the same side of the nest row, *as shown in Figure 41*. Note orientation of *Divider Wall*. The Divider Walls will not be stable, insert a 630417 Expeller Rear Panel Assembly into the slots of the Divider Walls nearer the Egg Belt, *as shown in Figure 42*. Figures 43 and 44 show the details of the slots in the Divider Wall. Note the orientation of 630417 when assembled, *as shown in Figure 48 on the next page*, the plastic bumper is just above the Egg Belt.

Examples below are two (2) detailed views of the front and rear panel “L” Cap (slots). The instructions for assembling the rear panels are on the next page.

Figure 41

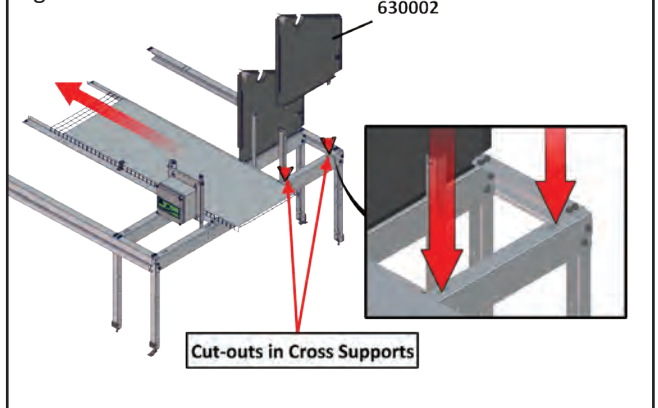


Figure 42

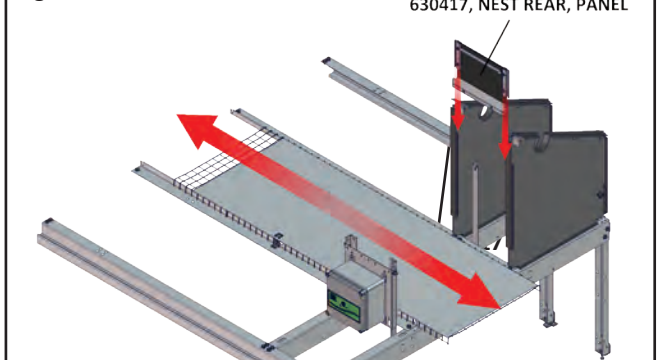


Figure 43

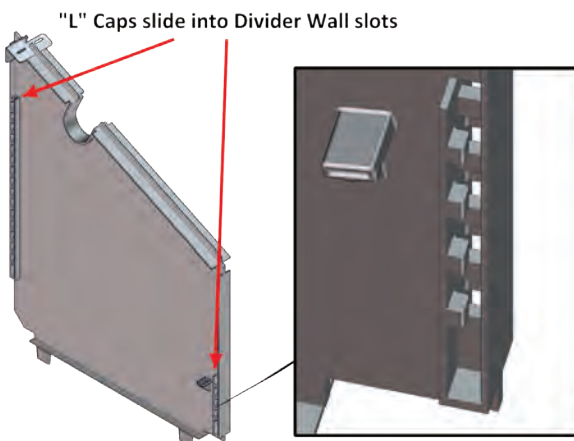
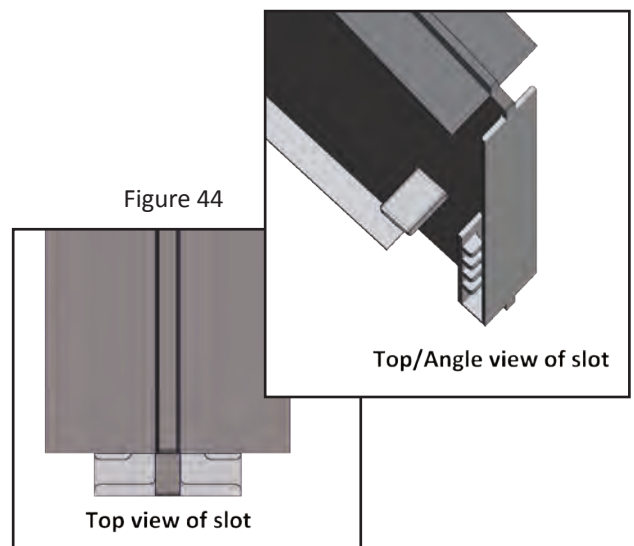


Figure 44



Channels built into the Divider Walls are designed to wrap around the “L” flange on the ends of the Rear Panels.



3.18 Expeller Drive Unit Divider Wall and Rear Panel Assembly (continued)

2. Assemble other side of nest, as shown in Figure 45 and 46. Do the same for other Expeller Drive(s).

Figure 45

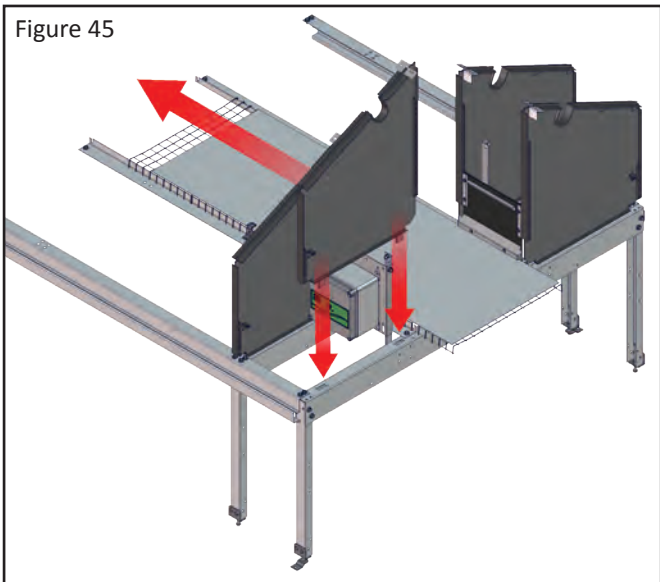
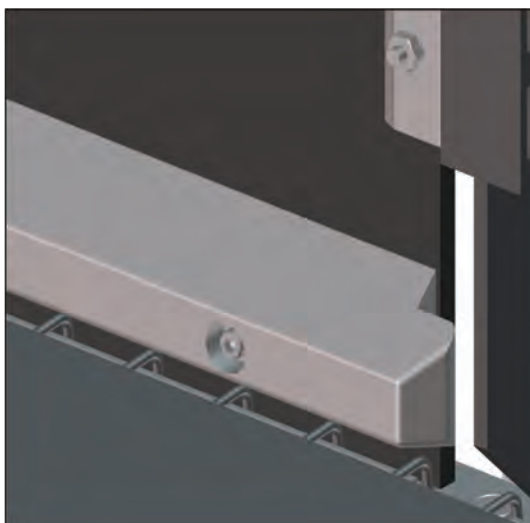
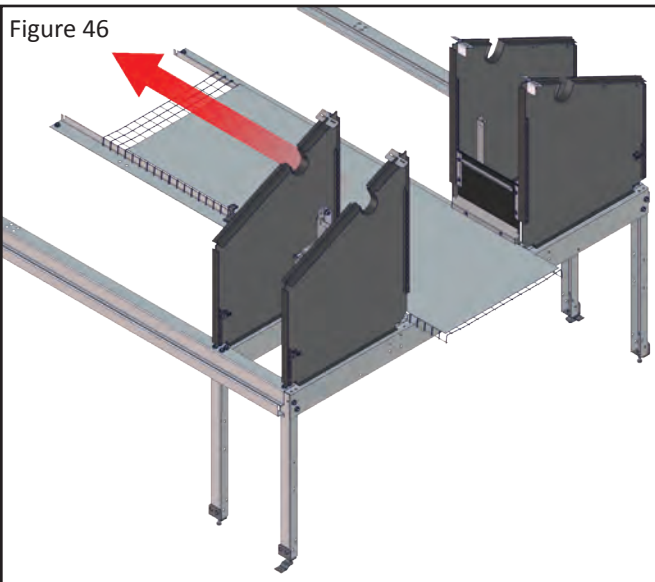


Figure 46



3.19 Expeller Drive Unit Assembly

The Expeller Drive Unit is shipped, as shown in Figure 48, without the motor.

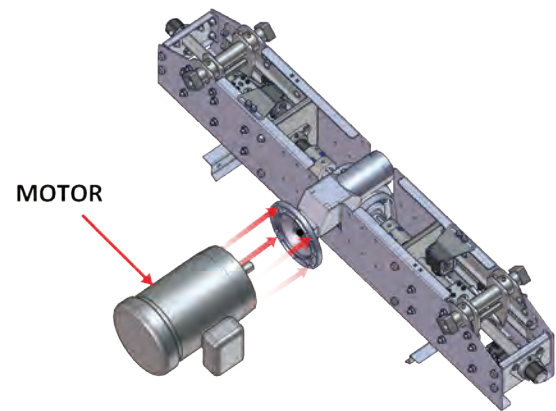
1. Assemble motor to the Expeller Drive Unit, as shown in Figure 48, with the keyway provided with motor and (4) Bolts included with the Expeller Drive Unit.

(The motor may be assembled after the Expeller Drive Unit is assembled to the Expeller Frame.)



(4) 630503 Expeller Tube Connections Kits and (4) 630458 Expeller Tube End Caps are provided with the Expeller Drive Unit. The Connection Kits will be used to attach the Expeller Tubes to the Expeller Drive Unit later, see Nest Assembly - Expeller section. The End Caps will be used to cap the ends of the Expeller Tube later, see Nest Assembly - Capping Expeller Tubes section.

Figure 48



Expeller Drive Installation

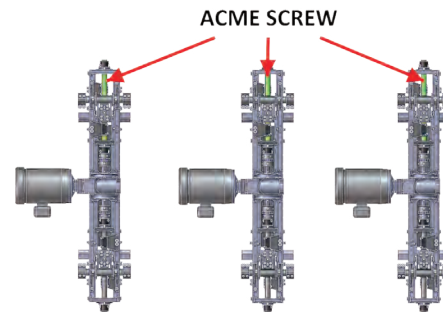
To protect the Expeller Drive Unit motor refer to your layout drawing to determine the orientation of your Expeller Drive Unit. If Expeller Drive Unit is next to a Cross-Over section orientate the Expeller Drive Unit so the motor is behind a nest and protected by the Nest Top Assembly.

When more than one Expeller Drive Unit is used in a nest row their orientation, relative to the direction their acme screw rotates, to each other is CRITICAL and they all must rotate the same. To identify the acme screws the left hand acme screw is painted green and the right hand acme screw is unpainted. All the left hand acme screws must be on the same side, as shown in Figure 49, of the nest row.



Green Acme Screws must all be in same direction in the Nest row

Figure 49



1. At the Expeller Frame section set the Expeller Drive Unit on the (4) 630501 Expeller Vertical Supports with the motor orientated to the desired position and align square holes and assemble (4) 690027 Bolts and (4) 6900020 Nuts, as shown in Figures 50 and 51. Note orientation of Bolts inserted from the middle of the nest frame row.

Figure 50

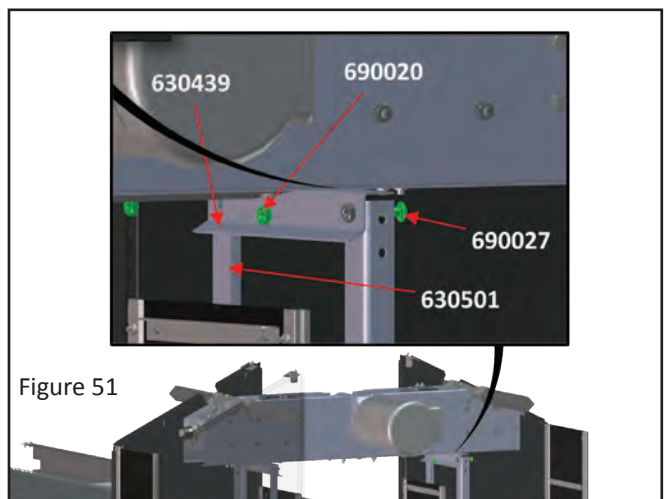
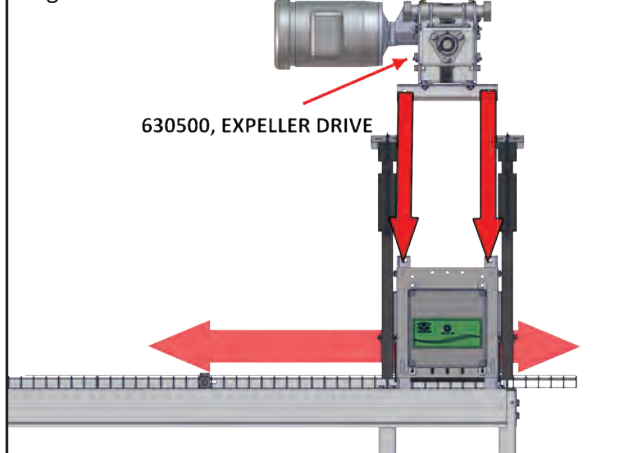
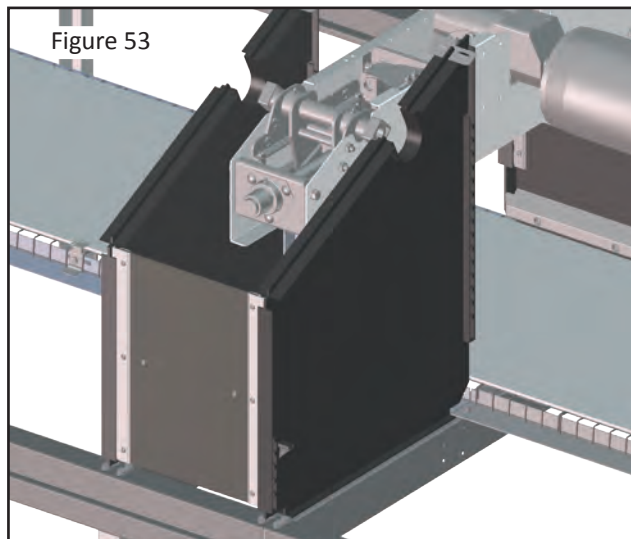
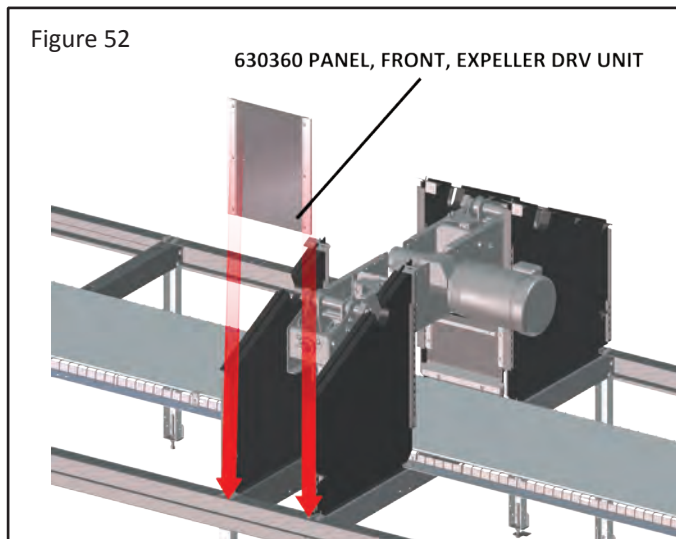


Figure 51



3.20 Expeller Drive Unit Front Panel Assembly

1. Insert 630360 Expeller Front Panel Assembly into the slots of the Divider Walls furthest from the Egg Belt, as shown in Figure 52 and 53, similar to the Expeller Rear Panel Assembly see Expeller Divider Wall and Rear Panel Assembly section.



3.21 Expeller Drive Unit Timer Control

The Expeller Drive Timer Control is typically located in the egg collection room or if multiple houses in a corridor between houses.

1. Assemble Mounting Kit to 630204 Expeller Drive Unit Timer Control and mount at a convenient location with attaching hardware supplied by others.
2. Wire Expeller Drive Timer Control per wiring diagram, see Expeller Drive Timer Control Wiring Diagram on page 7-5. All wiring entering and exiting, supplied by electrician, and must go through the strain relief in box. See *Expeller Drive Timer Control Installation Guidelines & Operating Instructions* section for electrical guidelines.

630204 TIMER/EXPELLER

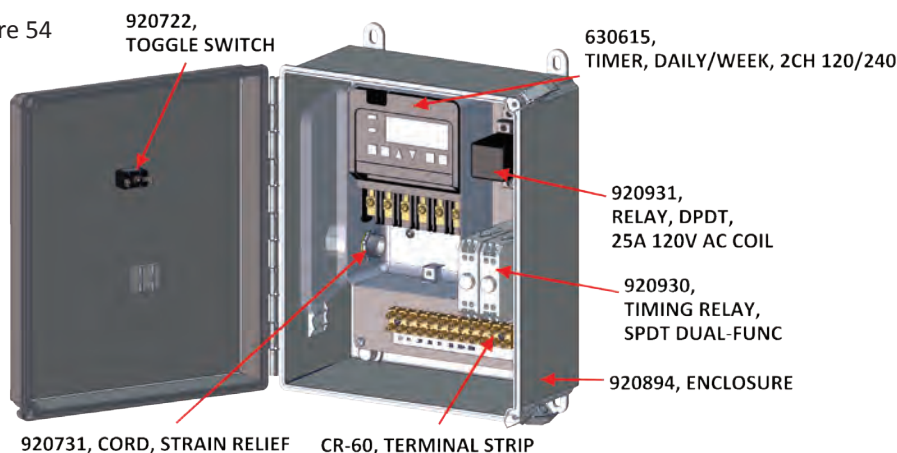


WARNING!

POWER MUST BE OFF WHEN SERVICING THE CONTROL!



Figure 54



Chapter 4 - Nest Assembly - Divider Walls/Ridge Caps/Back Wall/ Front Wall/Floor/ Mats

If not already done so, distribute the Nest and Expeller Wire components and sub-assemblies down the nest row.

The Nest assembly typically begins at the first Expeller Drive Unit in the nest row nearest the Egg Belt Drive Unit. The Nest assembly instructions will be described in the next several pages. A Cross-Over (*a place in the nest row allowing access to both sides of the nest row*) requires different components and assembly instructions. Refer to your layout drawing and see the Cross-Over Assembly Section when a Cross-Over is required. *Figure 1* shows the Nest assembly starts at the Expeller Drive Unit and assembles from there in both directions and *Figure 2* shows a Cross-Over.

4.1 Nest Location

Figure 1 NEST ASSEMBLY FROM EXPELLER DRIVE UNIT

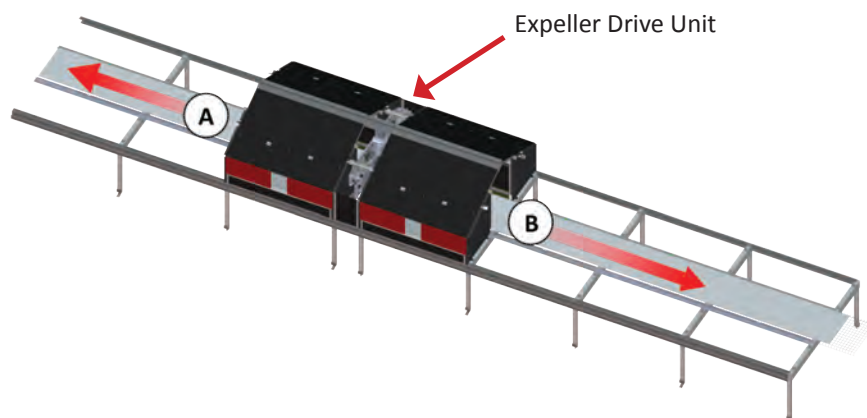
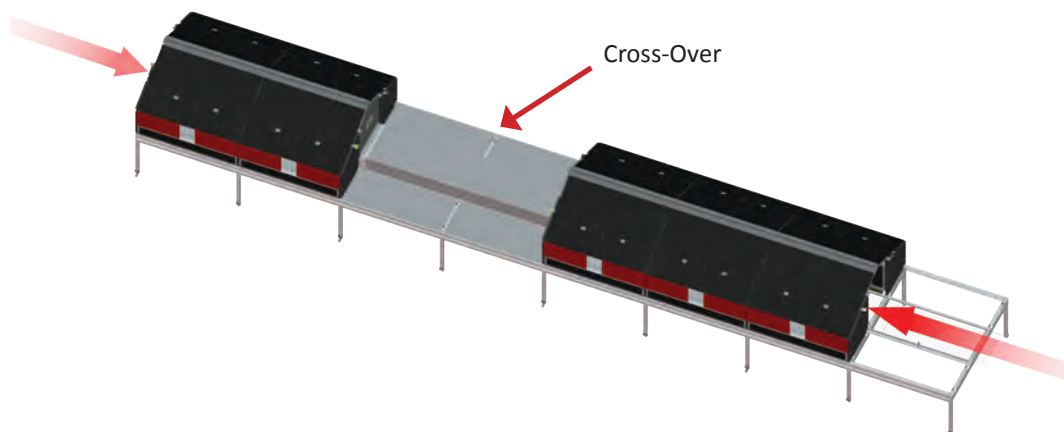


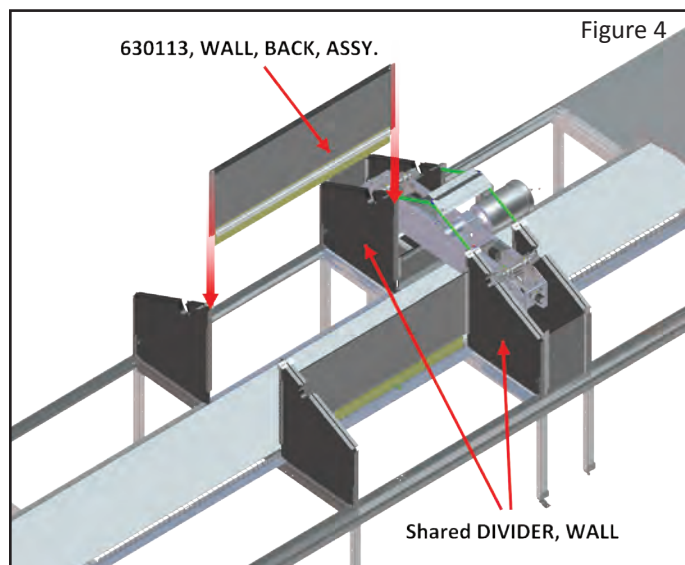
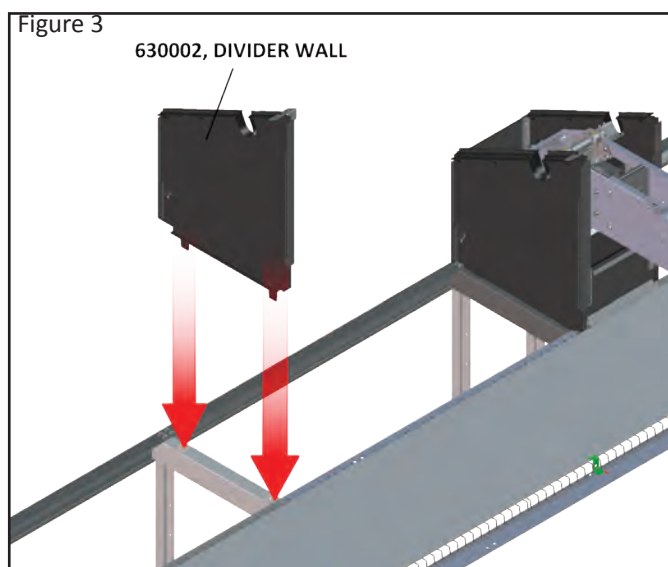
Figure 2 CROSS-OVER





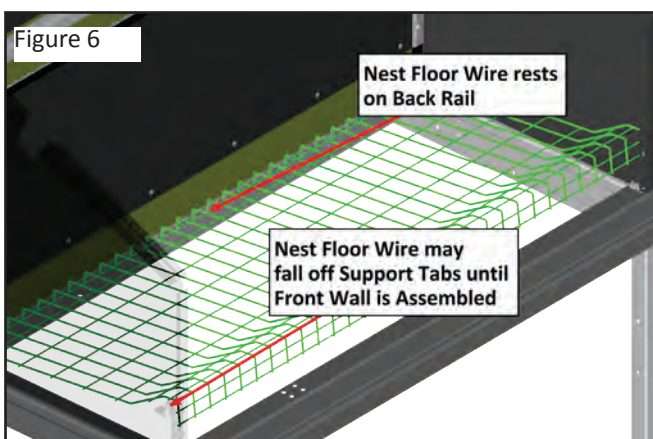
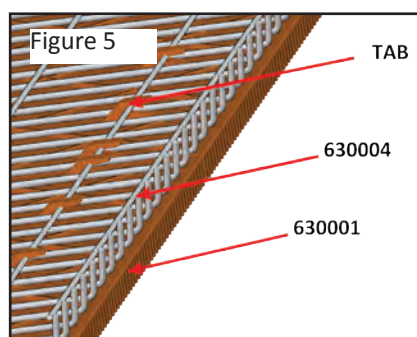
4.2 Nest Assembly - Divider Walls

- Beginning at Cross-Supports next to the Expeller Drive Unit Divider Walls assemble additional 630002 Divider Walls by inserting the tabs on the bottom of the Divider Wall into the Cross-Supports as shown in Figure 3. *Note orientations of Divider Wall.* The Divider Wall will not be very stable, insert 630113 Back Wall into slots nearer the Egg Belt in both Divider Walls (one at the Expeller Drive Unit and the one just assembled) as shown in Figure 4. *Note orientation, Back Wall Support Bar is toward the Egg Belt.* See Expeller Divider Wall section pages 3-17 and 3-18 for details on slots in the Divider Wall.



The first set of Nests on both sides of the Expeller share the Divider Walls with the Expeller Drive, as shown in Figure 4.

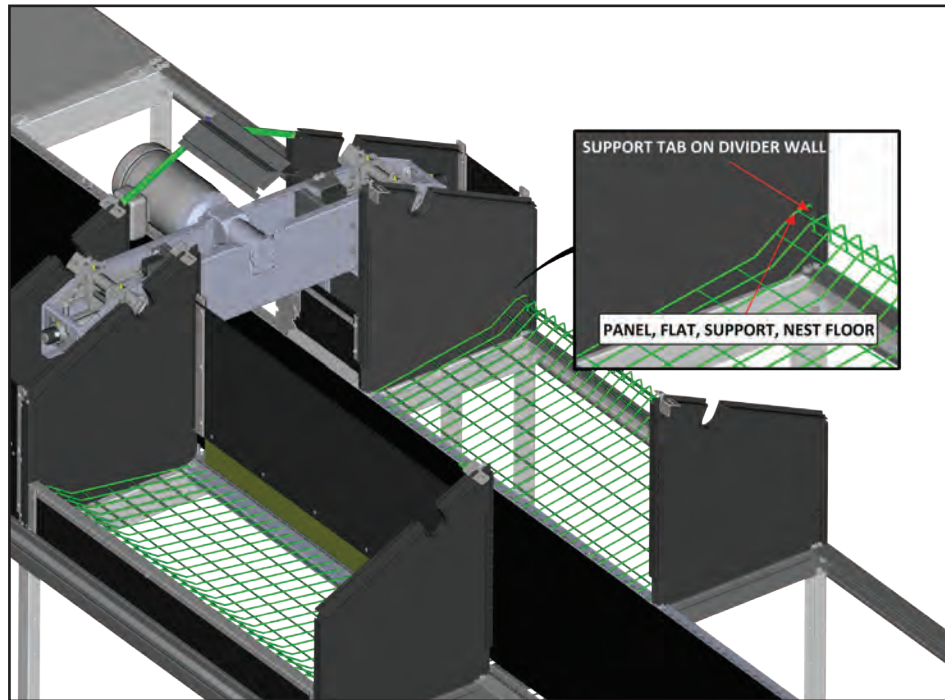
- Pre-assemble (2) 630001 Nest Mats to 630004 Nest Floor Wire Panel using the tabs on the bottom of the Nest Mats as shown in Figure 5. *Nest Mats and Wire Panel are shown from the bottom side for clarity. Nest Mats MUST be attached, otherwise Expeller Wires may dislodge Nest Mats during Expeller Drive Unit operation.*
- Locate pre-assembled 630004 Nest Floor Wire Panel with Nest Mat on the Back Rail of the nest frame and the Support Tabs of the Divider Walls, as shown in Figures 6 and 7 on next page. *Nest Mats not shown for clarity. Note orientation, the single wire bend side toward the Egg Belt with bend facing down. Note Nest Floor Wire Panel rests on the Back Rail NOT on the bent tab holding the Egg Belt Wire Support in place see Figure 6.*



It is **CRITICAL** to use the Centered Divider Cross Supports at locations shown on your layout drawing.

4.2 Nest Assembly - Divider Walls/Flooring (continued)

Figure 7



4. Insert 630112 Front Wall into slots furthest from the Egg Belt in Divider Walls, as shown in Figure 8, covering the front of the Nest Mat. Note orientation, metal portion of 630112 Front Wall facing up. Confirm Nest Floor Wire Wall Panel has not fallen off Support Tabs of the Divider Walls, the front of the Nest Mats are elevated as shown in Figure 9.

Figure 8

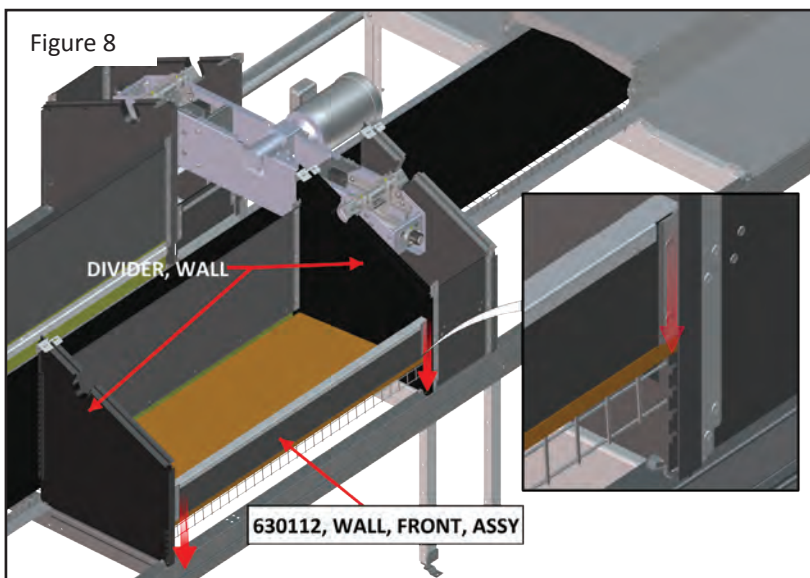
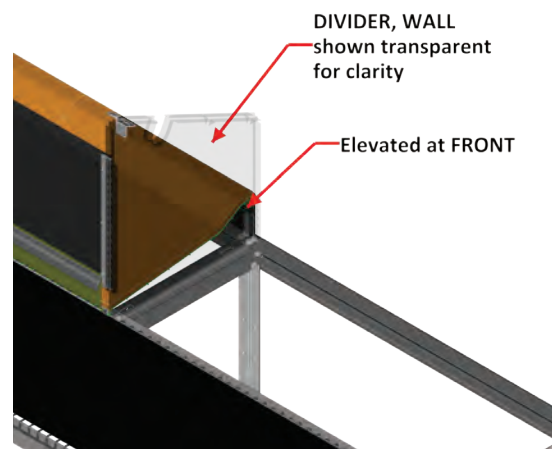


Figure 9



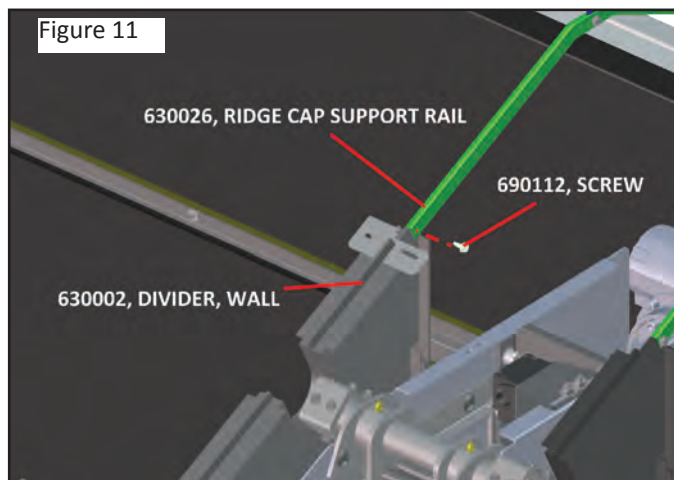
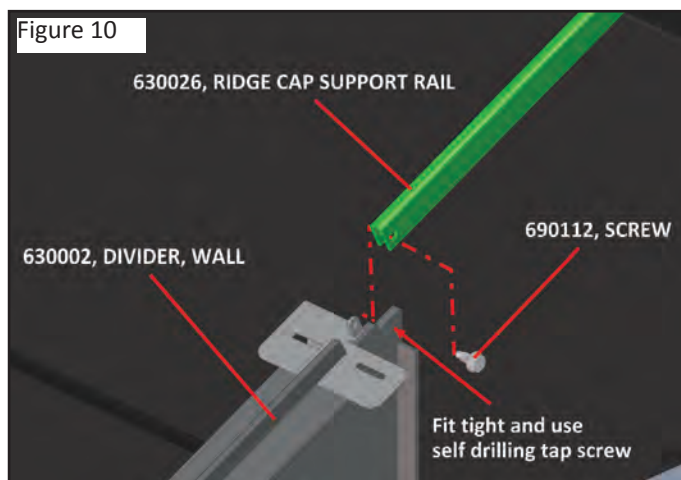
5. Continue assembling Divider, Back and Front Walls and Nest Floor Wire Panels and Nest Mats in both directions from the Expeller Drive Unit(s). See the Cross-Over Assembly Section when a Cross-Over is required, refer to your layout drawing.



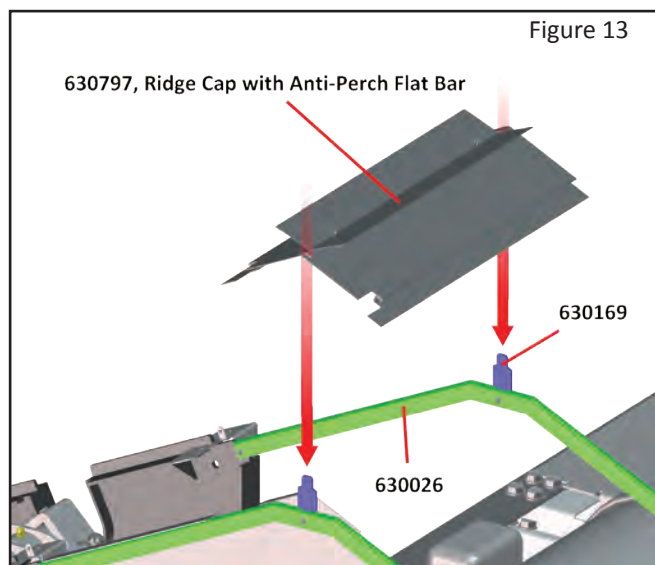
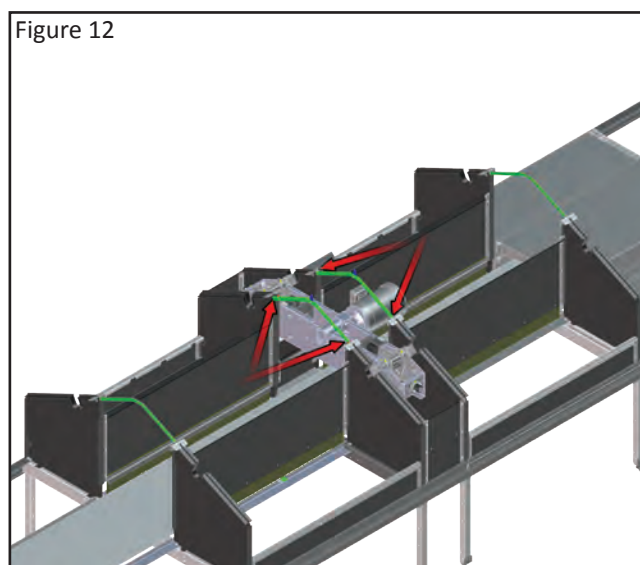
4.3 Nest Assembly - Ridge Cap Support Rail/Ridge Cap/Anti-Perch Flat Bar

The Ridge Cap Support Rail connects the nests back to back and supports the Ridge Cap. The Ridge Cap supports the nest Top

1. Assemble 630026 Ridge Cap Support Rail to the top of back to back nest Divider Walls, *as shown in Figure 10*, using (2) 690112 Screws, *as shown in Figure 11 and 12*. The Screws can be inserted from either direction. The 630026 Ridge Cap Support Rail should have 630169 Ridge Tab Support pre-assembled to it, if not see Sub-Assembly -Nest Sub-Assemblies section 2.8.
2. Continue assembling the Ridge Cap Support Rails to the Divider Walls down the nest row.



3. Assemble the Ridge Cap/Anti-Perch Flat Bar Assembly on the Ridge Cap Support Rails by aligning the rectangular cut-outs at each end of Ridge Cap/Anti-Perch Flat Bar Assembly over the 630169 Ridge Tab Supports and set onto the Ridge Cap Support Rails, *as shown in Figure 13 and 14 on the next page*. The Ridge Cap/Anti-Perch Flat Bar Assemblies overlap (or shingle) the previous one down the nest row starting from the Egg Belt Drive Unit. The un-notched end of the Ridge Cap/Anti-Perch Flat Bar Assembly sets on the Ridge Cap Support Rails and the notched end (allows it to fit over the previous Ridge Cap/Anti-Perch Flat Bar Assembly) sets on the adjacent Ridge Cap/Anti-Perch Flat Bar Assembly, *as shown in Figures 15 and 16*. The Ridge Cap/Anti-Perch Flat Bar Assembly(s) WITHOUT a notch is used at the first nest at the Egg Belt Drive Unit end of the row, *as shown in Figure 17*, and the first nest following a Cross-Over(s).



4.3 Nest Assembly - Ridge Cap Support Rail/Ridge Cap/Anti-Perch Flat Bar (continued)



Ridge Caps MUST BE ASSEMBLED IN SEQUENCE WITH ALL THE OTHER RIDGE CAPS.
Note the Ridge Cap/Anti-Perch Flat Bar Assemblies overlap (or shingle) the previous Ridge Cap/Anti-Perch Flat Bar Assemblies down the nest row starting from the Egg Belt Drive Unit. The notched end sets on top of the un-notched end.

Figure 14

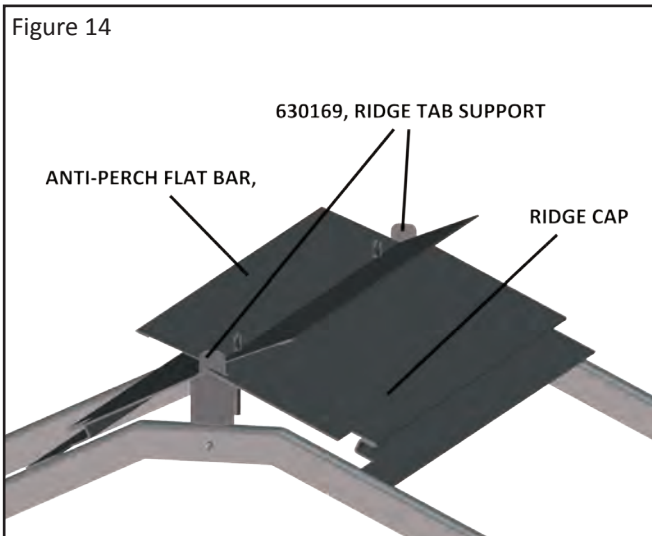


Figure 15

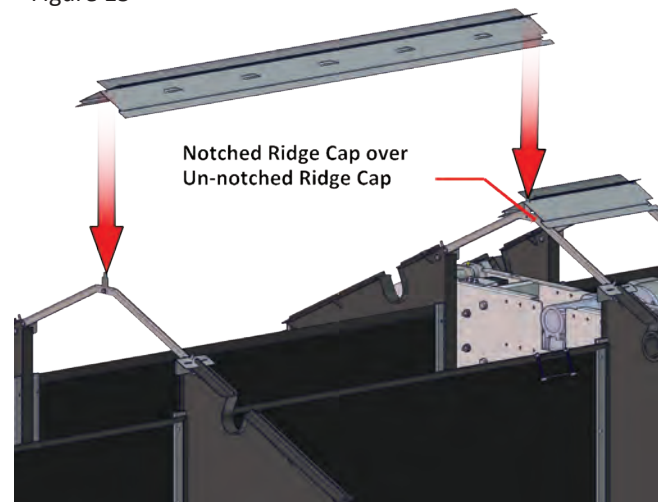
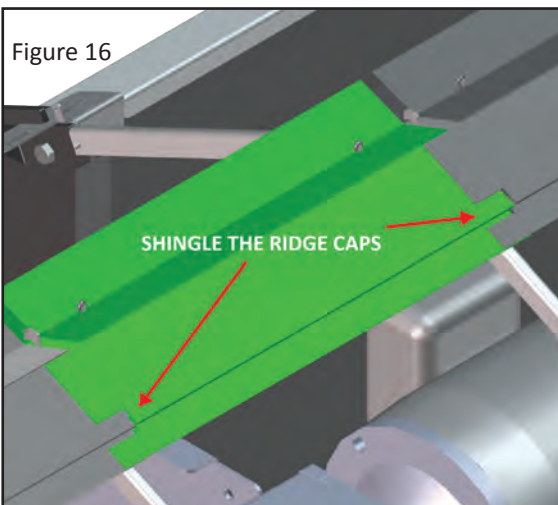


Figure 16



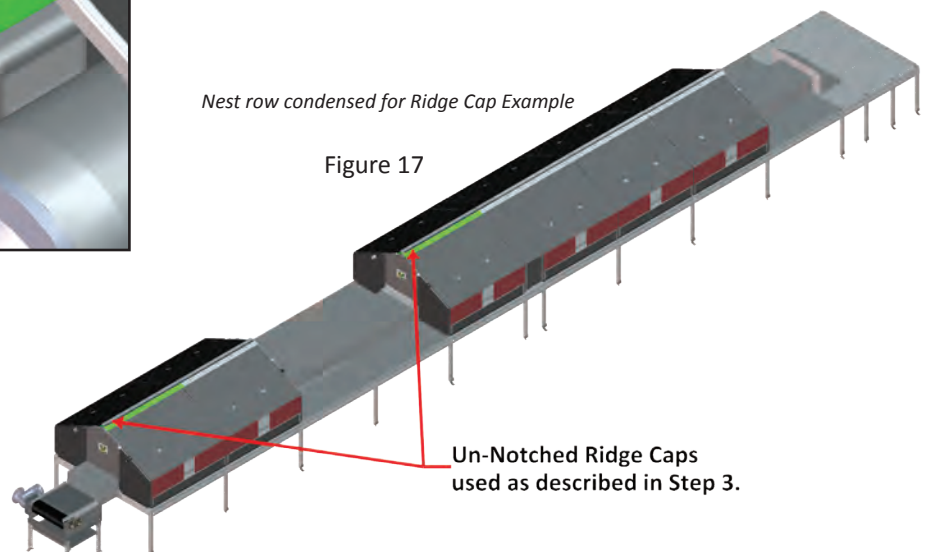
Expeller Wire are assembled after entire row is assembled to this point.

Nest Tops are assembled after Expeller Wires are assembled.

Expeller Wire assembly is shown on the next few pages.

Nest row condensed for Ridge Cap Example

Figure 17

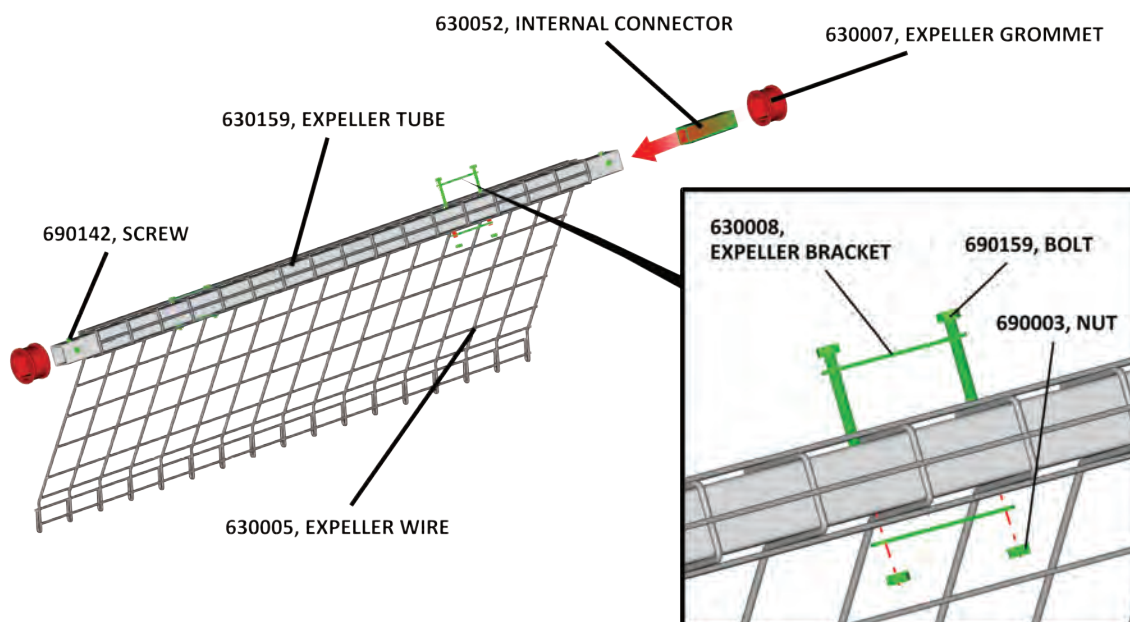




4.4 Nest Assembly - Expeller

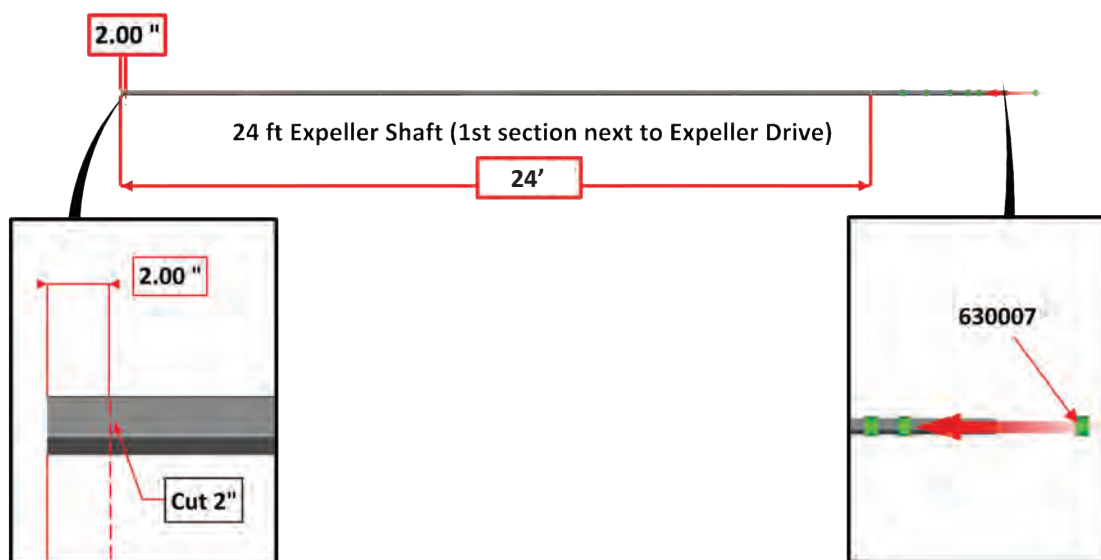
The Nest Expeller Wires are assembled to the Expeller Tubes (24' lengths) that are connected to the Expeller Drive Unit. Figure 18 shows the Expeller Wire and components to assemble Expeller Wire to the Expeller Tubes.

Figure 18



1. Begin at the Expeller Drive Unit with a 24' Expeller Tube 630159. Cut 2" off one end of the Expeller Tube. This will allow the Expeller Tube connections to be spaced away from a Divider Wall and the connector screws not to interfere with the Expeller Grommet, as shown in Figure 20 on the next page. Slide as many 630007 Expeller Grommets onto the Expeller Tube, as shown in Figure 19, as there are Divider Walls in the first 24' from the Expeller Drive Unit locating one at each Divider Wall. Set the 24' Expeller Tube with the Expeller Grommets into the "U" shaped cut-outs in the Divider Walls, as shown in Figure 20 on the next page.

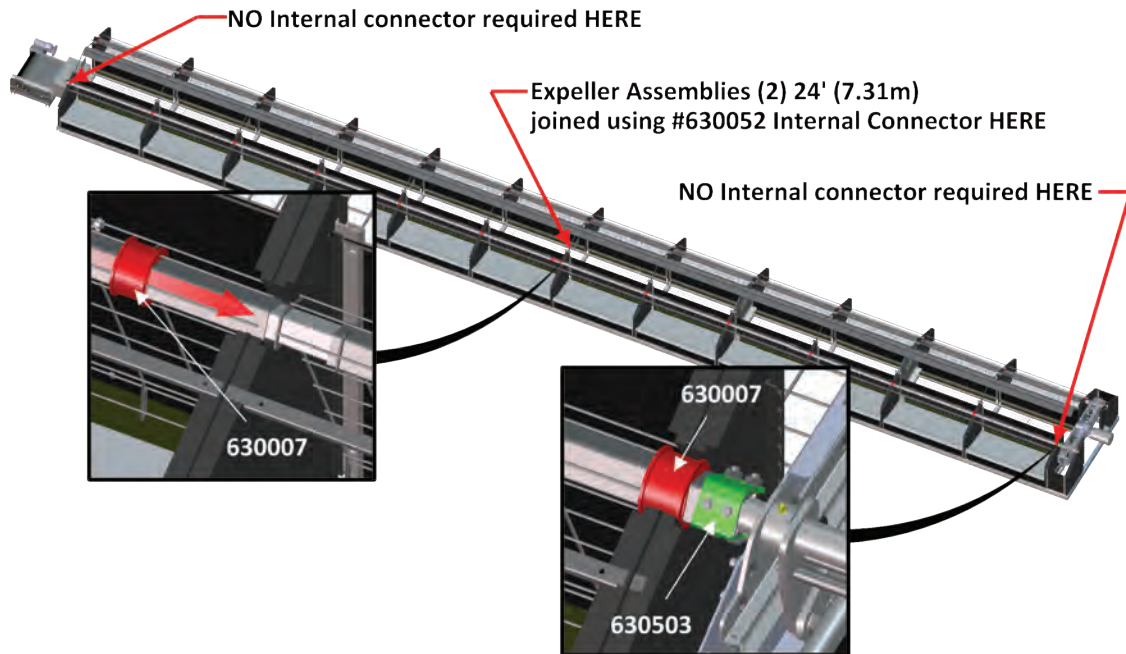
Figure 19



Maximum length of the expeller tube in each direction from an Expeller Drive Unit is 120' of NESTS or 156' if combined with 36' of Cross-overs. The expeller tube in each direction from an Expeller Drive Unit can be unbalanced up to 60' (ex: 96' in one direction and 156' in the other direction).

4.4 Nest Assembly - Expeller (continued)

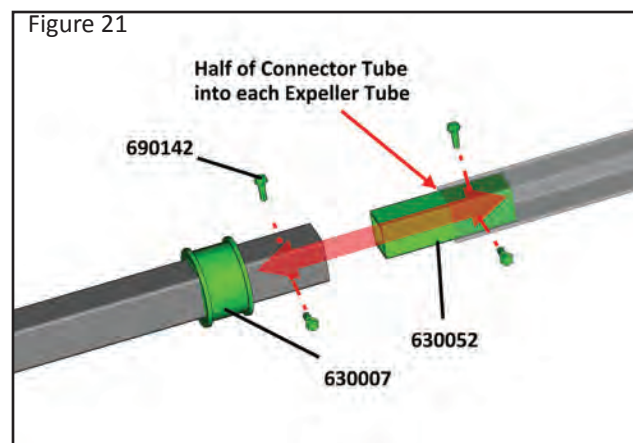
Figure 20



2. Insert 630052 Internal Connector half way into the 630159 Expeller Tube, set in place in previous step, and secure with (2) 690142 Screws on two sides 90° apart as shown in Figure 21. Using another 24' Expeller Tube slide required Expeller Grommets on to the Expeller Tube for the next 24' of nest and set it into the "U" shape cut-outs in the Divider Walls allowing space for the Internal Connector. Slide Expeller Tube on to the Internal Connector until butting tight against the adjacent Expeller Tube and secure with (2) 690142 Screws on the same two sides as the adjacent Expeller Tube screws were located. Make sure all screws are tight and Expeller Tubes align to insure consistent Expeller Wire location.
3. Continue assembling Expeller Tubes and Internal Connectors in both directions from the Expeller Drive Unit(s) until the Expeller Tube length is reached, refer to your layout drawing for length. See Capping Expeller Tubes for Expeller Tubes ending in between adjacent nests.



Reminder: Cut 2" off the Expeller Tube next to the Expeller Drive Unit(s). See the Cross-Over Assembly Section when a Cross-Over is required, refer to your layout drawing.





4.4 Nest Assembly - Expeller (continued)



Assembling the Expeller Tubes to the Expeller Drive Units can be done as the first Expeller Tubes are being positioned or after all have been connected together but must be completed before the Expeller Wires are assembled to the Expeller Tubes.

4. Connect the Expeller Tubes to the Expeller Drive Unit with 630503 Expeller Tube Connection Kits supplied with the Expeller Drive Unit. Butt Expeller Tube to Expeller Drive Unit and align Tube to Expeller, center and slide Connector Bracket over Tube and Expeller as shown in Figure 23. Assembly (2) 690257 Bolts and (2) 690020 Nuts but do not tighten. Note orientation of Connector Bracket and hardware. Assembly Connector Bracket to Expeller Drive Unit with (1) 690142 Screw as shown in Figure 23 while making sure the Expeller Tube is tight against Expeller Drive Unit and assembly Connector Bracket to Tube with (1) 690142 Screw. Tighten 690257 Bolts and 690020 Nuts securely. Continue assembling Expeller Tubes to Expeller Drive Units.

Figure 22

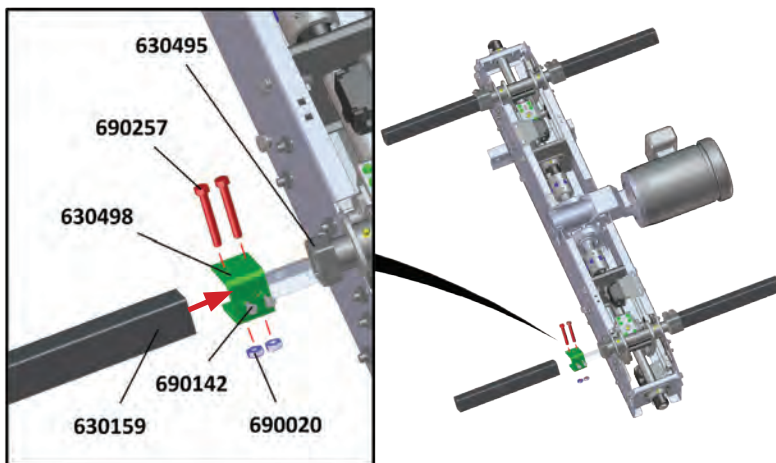
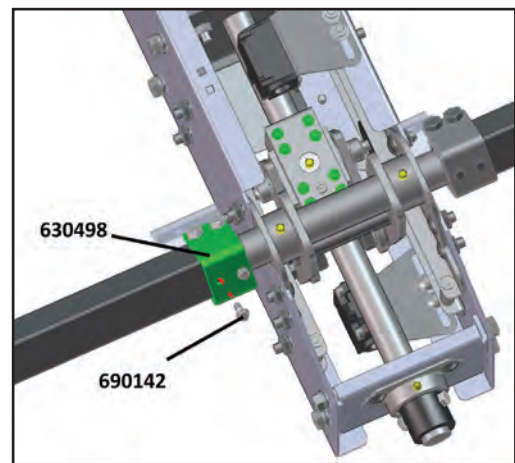
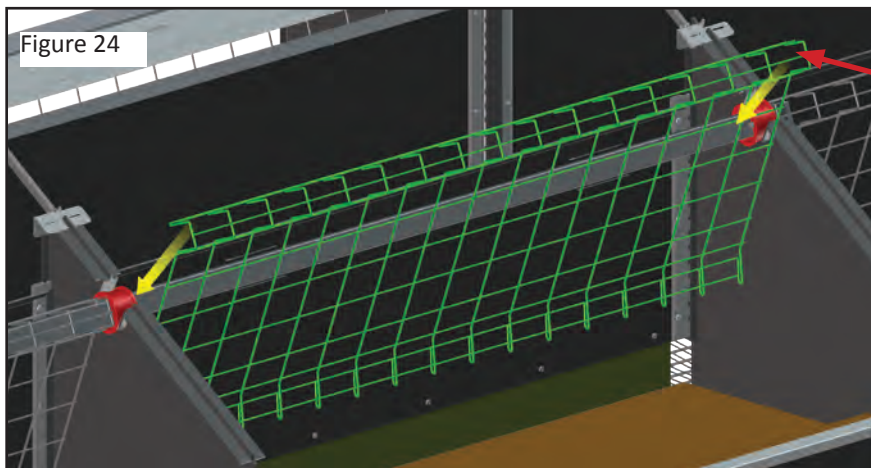


Figure 23

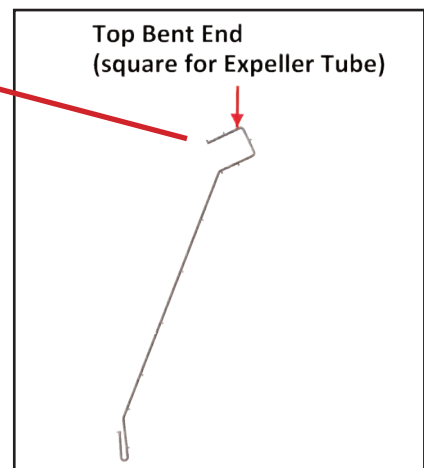


5. After the Expeller Drive Tubes have been assembled to the nest row, connected together and connected to the Expeller Drive Unit, the Expeller Wires can be assembled to the Tubes. Beginning at the Nest next to the Expeller Drive Unit(s) center the Expeller Wires between the Nest Divider Walls and slip top bent end onto the Expeller Tube, as shown in Figure 24, Note orientation of Expeller Wire. Assemble (4) 630008 Expeller Brackets with (4) 690159 Bolts and (4) 690003 Nuts to the Expeller Wire at two locations on the Expeller Wire, as shown in Figure 25 and 26 on the next page. Note bolt orientation and bracket location (around fourth space from each end of Expeller Wire).

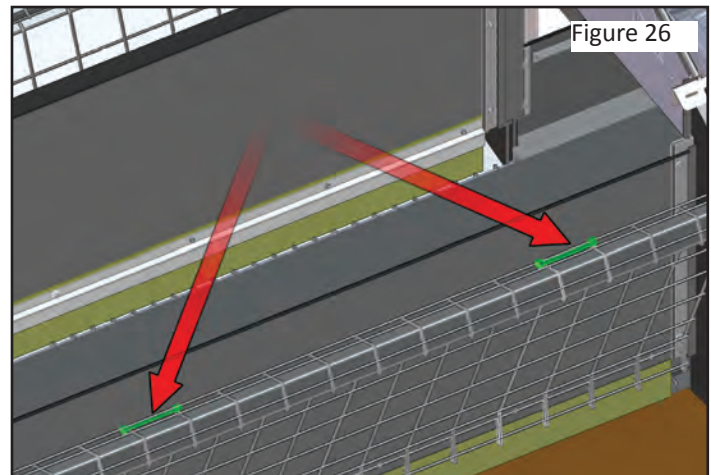
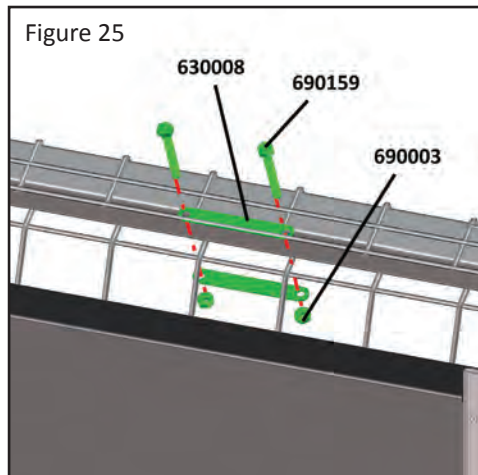
Figure 24



Top Bent End
(square for Expeller Tube)



4.4 Nest Assembly - Expeller (continued)



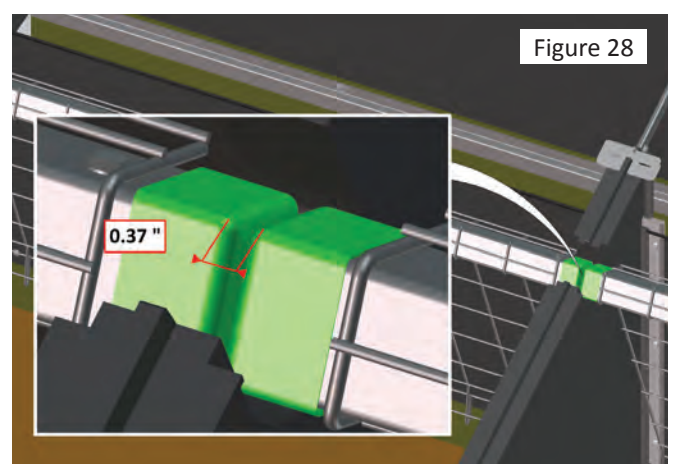
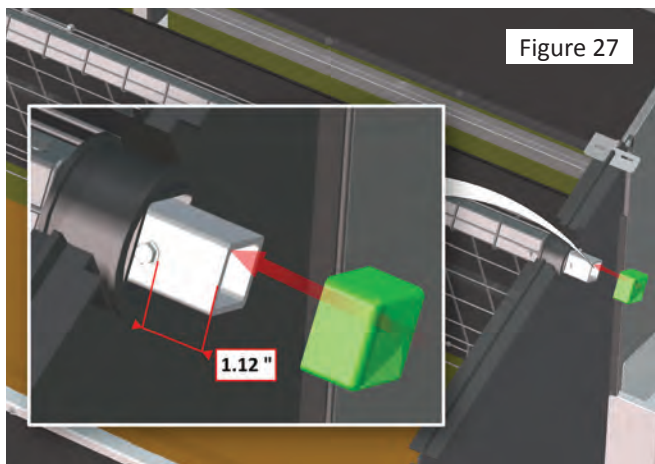
Continue assembling Expeller Wires to Expeller Tubes down the length of the Expeller Tubes and nest row.

4.5 Nest Assembly - Capping Ends of Expeller Tubes

Capping the ends of the Expeller Tubes at the end of the nest row(s) and can occur at a Cross-Over and/or in between adjacent nests if needed.

1. To cap the Expeller Tube at the end of a nest row or at a Cross-Over is same. With the Expeller Wires centered between the Divider Walls screw (1) 630142 Screw into the Expeller Tube next to the Expeller Grommet outside the nest to keep the Divider Wall in position. Cut the Expeller Tube to length, approximately 1-1/8" past the 630142 Screw. Slide 630458 Expeller Tube Cap End over end of the Expeller Tube, *as show in Figure 27*. Continue capping remaining Expeller Tube ends.
2. To cap the Expeller Tubes in between adjacent nests without a Cross-Over remove the Expeller Grommet if present. Cut the Expeller Tubes to length creating approximately a 3/8" space between Expeller Tubes centered at the Divider Wall, *as shown in the Figure 28*. Slide (2) 630458 Expeller Tube Cap End over ends of the Expeller Tube. Continue capping remaining Expeller Tubes ending between adjacent nests.

Figure 28 shows the Expeller Wires overlapping the Expeller Tube Cap End when Expeller Tubes end between adjacent nests.





4.6 Community Nest Testing - Expeller Drive Unit(s) and Expeller Wires

Prior to installing the tops, set-up and test equipment to be sure it is operating properly.



WARNING!
POWER MUST BE OFF WHEN SERVICING!

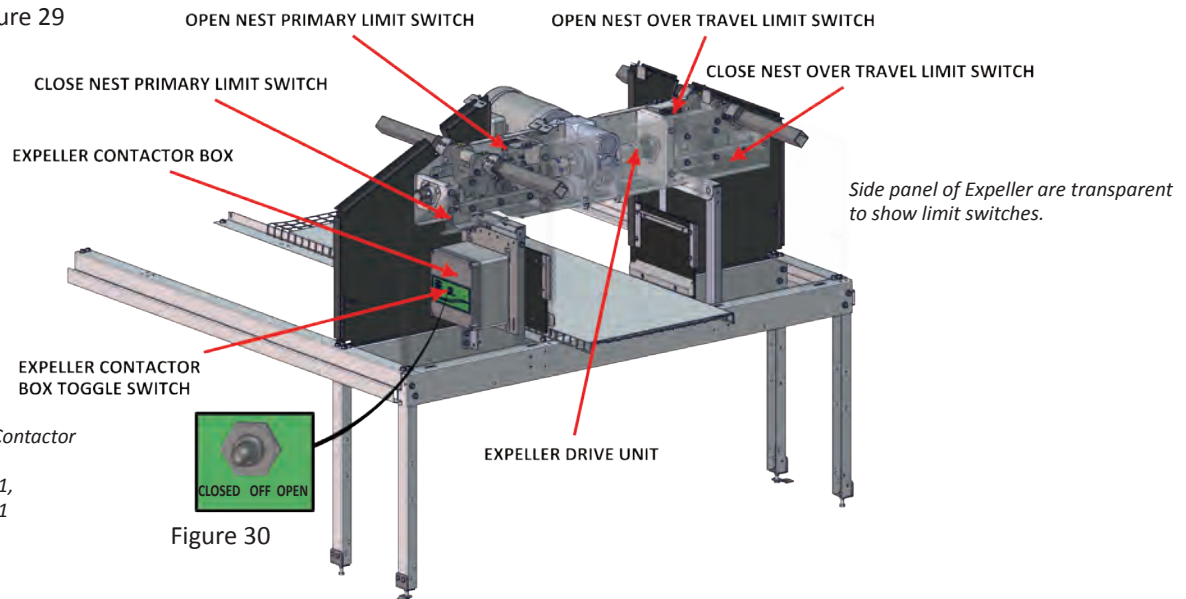
Expeller Drive Unit(s) and Expeller Wires Operation - (See Figure 29, next page)

1. Switch toggle switch on the outside of the Expeller Drive Timer Control to MANUAL.
2. At the first Expeller Drive Unit run the unit by holding the Toggle Switch on the Expeller Contactor Box (located below the Expeller Drive Unit on one side of the nest row) in either the OPEN or CLOSE position (the Expeller Wires move toward the Back Wall when toggle switch in the OPEN position).
3. On the same side of the nest row as the Expeller Drive Contactor Box manually actuate the Primary Limit Switch on the Expeller Drive Unit that would eventually be actuated by the Load Block Assembly based on the direction the Load Block Assembly is traveling.
 - A. The Expeller Drive Unit will shut OFF, if it does not check that the Limit Switches have been properly wired. CORRECT WIRING BEFORE PROCEEDING. Repeat for the opposite direction.
4. On the nest row side opposite the Expeller Drive Contactor Box move the Over Travel Limit Switches as far away from the Load Block Assembly as possible. Loosen hardware and slide Over Travel Limit Switch Mounting Brackets in the adjustment slots.
5. On the same side of the nest row as the Expeller Drive Contactor Box run the Expeller Drive Unit in the OPEN direction until the Expeller Wires next to the Expeller Drive Unit are within 1/4" of the Back Wall.
 - A. Locate the OPEN Primary Limit Switch so it is just actuated by the Load Block Assembly in its current position.
 - B. To test the Primary Limit Switch location run the Expeller Drive Unit in the CLOSE direction until the Expeller Wires are approximately 1" off the Back Walls. Change direction to the OPEN direction until the Primary Limit Switch stops the Expeller Drive Unit approximately 1/4" from the Back Wall. If the Primary Limit Switch does not stop Expeller Wires at approximately 1/4" adjust and retest as required. If Expeller Wires begin to push against the Back Walls stop immediately.
6. Check all the Expeller Wires of the nest row (both sides) driven by Expeller Drive Unit adjusted above to verify the Expeller Wires are all approximately 1/4" from the Back Wall. If adjustments are required the hardware (690003 and 690159) used to attach the Expeller Wire to the Expeller Tube can be tightened which will push the Expeller Wire closer to the Back Wall, if Expeller Wire tight against the Back Wall the Expeller Wire can be manually adjusted away from the Back Wall.
7. On the same side of the nest row as the Expeller Drive Contactor Box run the Expeller Drive Unit in the CLOSED direction until the Expeller Wires next to the Expeller Drive Unit are at the desired location when the nests are CLOSED. Typically when the end of the Expeller Wire is approximately 2" above the Front Wall.
 - A. Locate the CLOSED Primary Limit switch so it is just actuated by the Load Block Assembly in its current position.
 - B. To test the Primary Limit Switch location run the Expeller Drive Unit in the OPEN direction moving the Expeller Wires approximately 1" in the OPEN direction. Change direction to the CLOSED direction until the Primary Limit Switch stops the Expeller Drive Unit at the desired location when the nests are in the CLOSED position. If the Primary Limit Switch does not stop Expeller Wires at the desired location adjust and retest as required.
8. Check all the Expeller Wires of the nest row (both sides) driven by Expeller Drive Unit adjusted above to verify the Expeller Wires are all approximately at the desired location when the nests are CLOSED. If adjustments are required the hardware (690003 and 690159) used to attach the Expeller Wire to the Expeller Tube can be tightened which will move the Expeller Wire closer to the Back Wall, if Expeller Wire requires adjusting further away from the Back Wall the Expeller Wire can be manually adjusted away from the Back Wall. Adjustments made in the CLOSED position affect the OPEN position, recheck the OPEN position to verify Expeller Wires are at there proper locations.

4.6 Community Nest Testing - Expeller Drive Unit(s) and Expeller Wires (continued)

9. Set the Over Travel Limit Switches, limit switches moved in Step 4 above and on the nest row side opposite the Expeller Drive Contactor Box. Locate the Over Travel Limit Switches approximately 1/8" past the OPEN and CLOSED Primary Limit Switches set in Steps 5-8 above. The Over Travel Limit Switches will stop power to the Expeller Drive Unit, to return power these limit switches have to be manually moved. Loosen hardware and slide Limit Switch Mounting Bracket until limit switch is deactivated. Determine why an Over Travel Limit Switch was actuated and correct problem. Run Expeller Drive Unit back between the OPEN and CLOSED Primary Limit Switches and reset Over Travel Limit Switches to approximately 1/8" past the OPEN/CLOSED Primary Limit Switches.
10. Repeat Steps 2-9 for all of the Expeller Drive Units.
11. Run all of the Expeller Drive Units in the OPEN/CLOSE direction moving the Expeller Wires approximately half way between the OPEN and CLOSE positions.
12. Switch toggle switch on the outside of the Expeller Drive Timer Control to AUTOMATIC.
13. Open door to Expeller Drive Timer Control and Timer Box and set the Timer MODE to MANUAL.
14. On the Timer set LOAD 1 or LOAD 2 to ON and verify the Expeller Drive Units are running and the limit switches are stopping the Expeller Wires at there proper locations in the direction the Expeller Wires are travelling. When complete set the LOAD to OFF.
15. On the Timer set the other (not used in previous step) LOAD to ON and verify the Expeller Drive Units are running and the limit switches are stopping the Expeller Wires at there proper locations in the opposite direction. When complete set the LOAD to OFF.
16. Program the desired Expeller Drive Unit run times into the Timer, see Expeller Drive Timer Control Operating Instructions section for instructions. After complete set Timer to AUTOMATIC and switch toggle switch on the outside of the Expeller Drive Timer Control to AUTOMATIC.

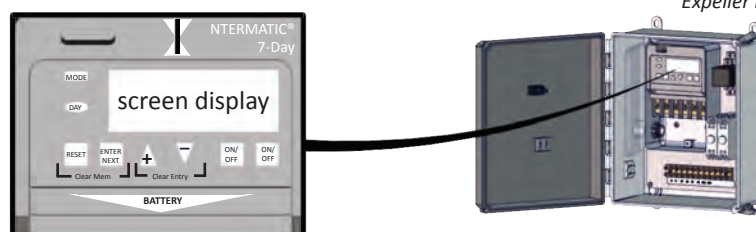
Figure 29



Expeller Drive Contactor
Box Control -
920847, 920851,
920860, 920861

Figure 30

Figure 31



Expeller Drive Time Clock Control - 630204



4.6 Community Nest Testing - Egg Belt Drive Unit(s) and Egg Belt(s) (continued)

Egg Belt Drive Unit(s) and Egg Belt(s) Operation

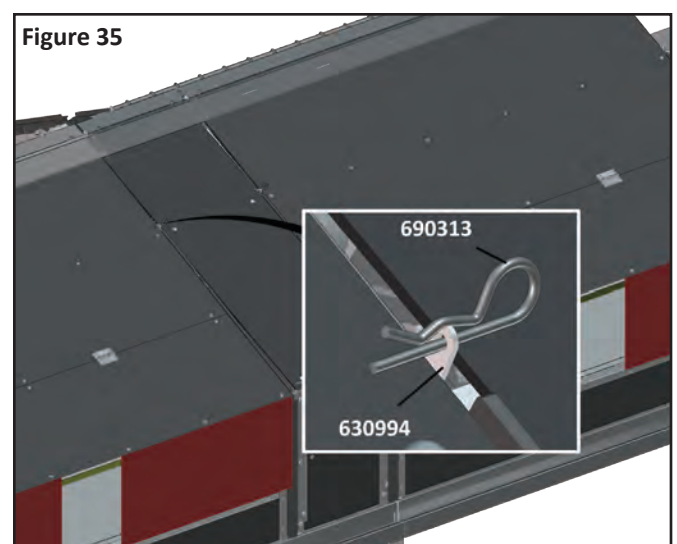
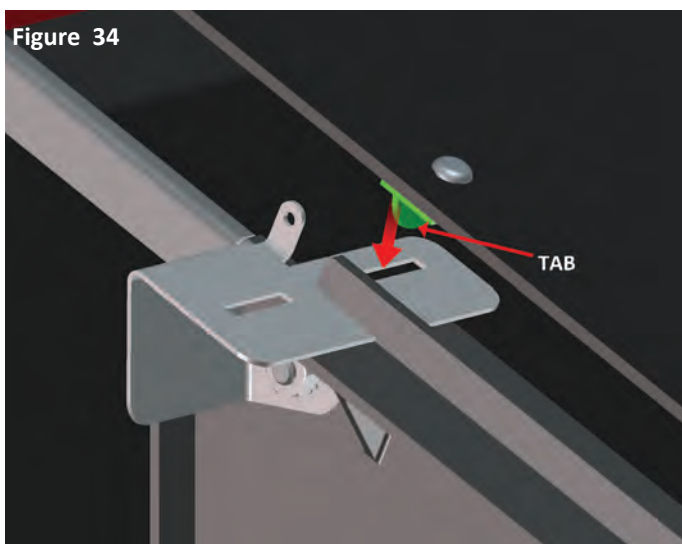
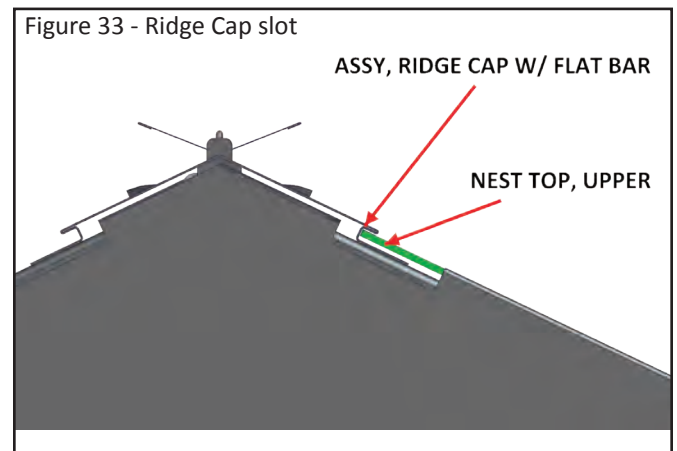
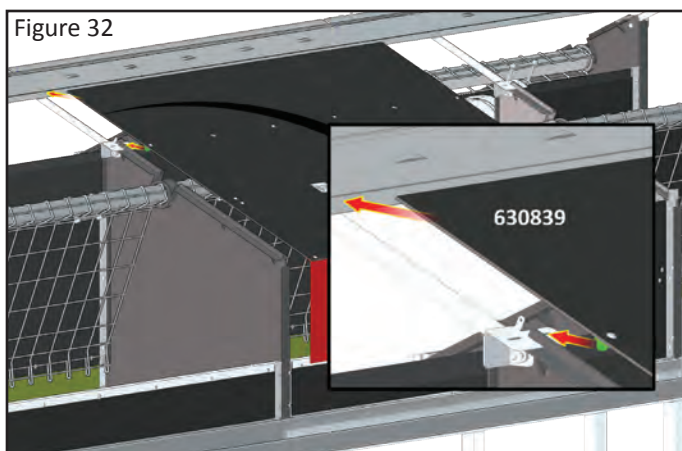
1. Verify control signals are working:
 - A. Turn ON/OFF switch on both Lighted ON/OFF Control and the Speed (Potentiometer) Control with potentiometer set between 20-100 to ON and verify drive is turning. Turn switches to OFF independently to verify both are working correctly.
 - B. Adjust the potentiometer to verify when knob rotated toward the higher number the belt speed increases and when rotated toward the lower number the belt speed decreases.
2. Turn both Lighted ON/OFF Control and the Speed Control ON and verify Egg Belt is tracking properly. If Egg Belt not tracking properly verify the Idler Roller is square to see Sub-Assemble - Idler Frame section. Adjust the Pinch and Drive Rollers on the Egg Belt Drive Unit, make small adjustments and allow belt to run. Verify final adjustments with two complete belt revolutions.
3. Repeat for each Egg Belt.

4.7 Nest Assembly - Top

The 630839 Nest Top is easily assembled and disassembled to gain access to the Egg Belt area.

If not already assembled, assemble 630994 Angled Support Brackets to Divider Walls. *See Sub-Assembly - Divider Wall/Angled Support Bracket, page 2-11, for assembly instructions.*

1. Install 630839 Nest Top by inserting the long plain edge of the Nest Top into the formed slot of the Ridge Cap/Anti-Perch Flat Bar Assembly and inserting the tabs on either end of the Nest Top into the Angled Support Bracket on the Divider Walls, *as shown in Figure 32-34*. The Nest Top can be flexed to insert tabs.
2. Continue assembling Nest Tops down the nest row.
3. After Nest Tops have been assembled on either side of the Divider Walls assemble 690313 Cotter Pin as shown in Figure 35 to hold down the Nest Tops.
4. Assemble 630573 Expeller Nest Top in the same way.



Repeat the entire nest assembly process for each set of nests until you have completed the nest row.



Intentionally Blank

Chapter 5 - Cross-Over, Wall Panel, Nest End Cover Band, Idler Cover and Rear Cross-Over Cover Assemblies

5.1 Cross-Over Assembly

Cross-Overs can be completely or partially installed after the Egg belt has been completely installed. Refer to your layout drawing for the Cross-Over locations. Cross-Overs can only be installed on standard Cross-Supports (NOT the Center Divider Cross-Support)



To ease assembly of Egg Guides lay Cross-Over Cover Assembly with formed sides facing up as shown in Figure 1-4.



**HYPER-LINK
TO CROSS-OVER
ASSEMBLY**

1. Assemble (2) 630513 Egg Guides, one to each side, to the inside of 630511 Egg Belt Cross-Over Cover Assembly using (6) 690080 Bolts, (2) 690058 Bolts, (8) 690003 Nuts and (36) 690035 Washers. The Egg Guides are assembled to the Cross-Over Cover Assembly to keep eggs away from the edge of the Egg Belt. The direction the eggs travel determine how the Egg Guides are assembled. The end of the Egg Belt Cover Assembly that will be toward the Egg Belt Drive is the exit end and the opposite end is the entrance end of the Egg Belt Cover Assembly. Refer to *Figure 1-4* during assembly. Align square/rectangular holes in the Egg Belt Guides to the holes in the Egg Belt Cover Assembly and at the exit end insert (1) 690080 Bolt through the rectangular hole closest to the end of the Egg Belt Guides and assemble (6) 690035 Washers on to the Bolt and insert Bolt through hole at edge of the Egg Belt Cover Assembly and thread (1) 690003 Nut onto 690080 and secure. Insert (1) 690080 Bolt through the square hole in the middle of the Egg Belt Guide that has a corresponding hole in the Egg Belt Cover Assembly and assemble (6) 690035 Washers on to the Bolt and insert Bolt through Egg Belt Cover Assembly and thread (1) 690003 Nut onto 690080 and secure. Insert (1) 690080 Bolt through the hole second hole from the entrance end of the Egg Belt Guide and assemble (6) 690035 Washers on to the Bolt and insert Bolt through Egg Belt Cover Assembly and thread (1) 690003 Nut onto 690080 and secure. Insert (1) 690058 Bolt through the hole at the entrance end of the Egg Belt Guide and Egg Belt Cover Assembly and thread (1) 690003 Nut onto 690080 and secure. *The Egg Belt Guide will deform when nut secured to create guide to ease the eggs toward the middle of the Egg Belt.* Assemble the other Egg Guide to the other side of the Egg Belt Cross-Over Cover Assembly keeping the exit and entrance ends the same as shown in *Figure 1-4*.

Figure 1
Egg Entry
(No washers)

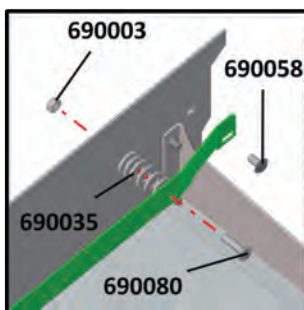


Figure 3
Middle
(6 washers)

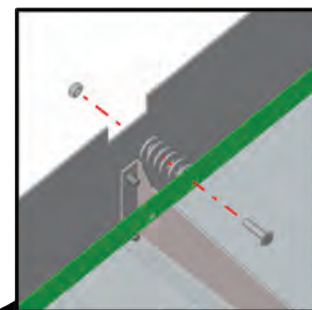


Figure 2
Egg Exit
(6 washers)

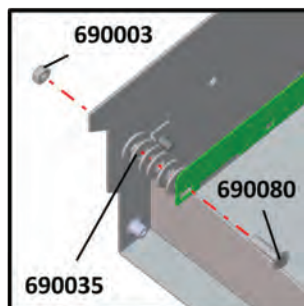


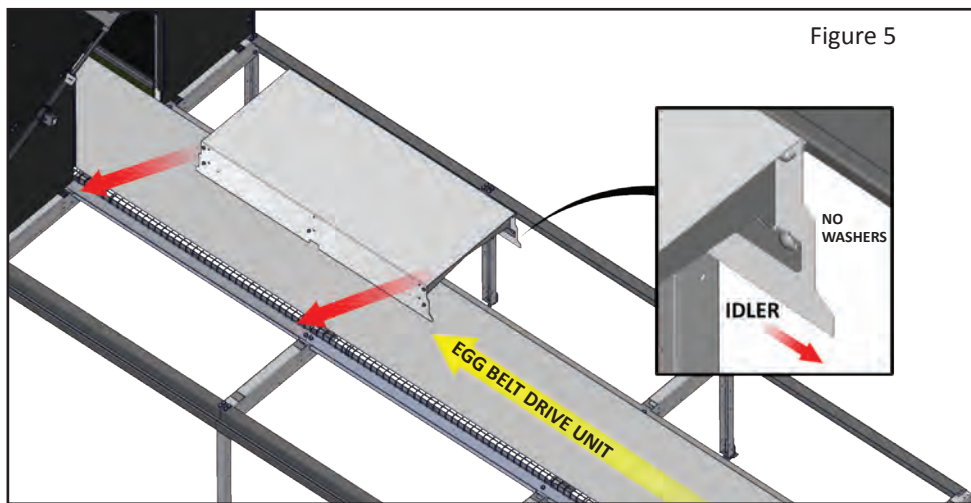
Figure 4
Egg Exit
(Assembled)



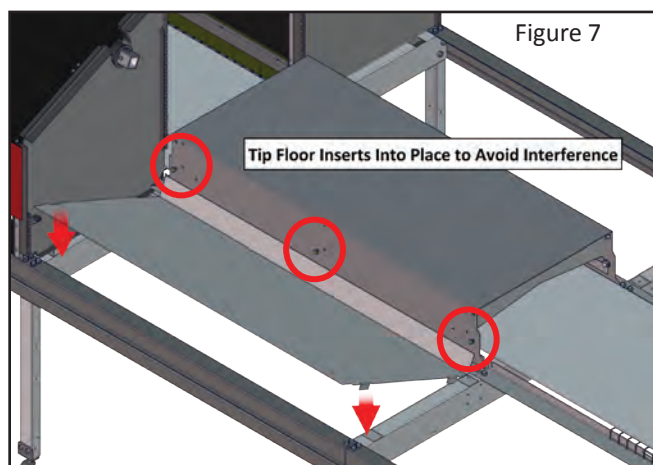
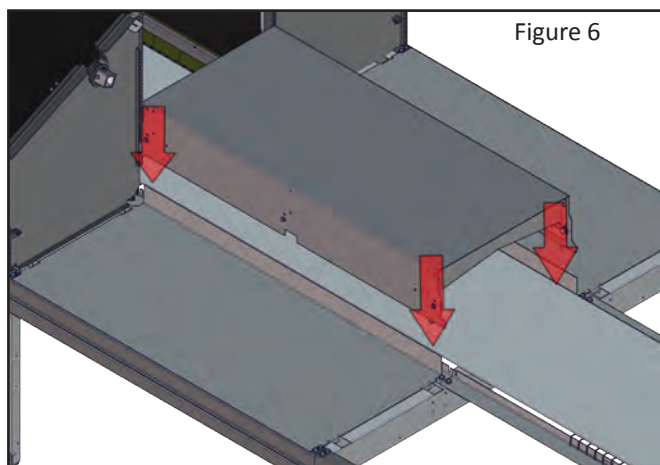


5.1 Cross-Over Assembly (continued)

2. Orientate the Cross-Over Cover Assembly with the Egg Guide exit end toward the Egg Belt Drive Unit end of the nest row and set the assembled Cross-Over Cover Assembly with the sides facing down on the Back Rails of the Cross-Over frame section of the nest row, *as shown in Figure 5*. Center the Cross-Over Cover Assembly over the Egg Belt and the Cross-Over frame section. Assemble additional Cross-Over Cover Assemblies as required, refer to your layout drawing to determine there locations.



3. Align the formed tabs on the 630509 Cross-Over Floor Inserts to the cut-outs in the Cross-Supports of the Cross-Over frame section of the nest row, *as shown in Figure 6 & 7*. Tip the Floor Inserts into place, *as shown in Figure 7* to avoid an interference with the bolts and nuts on the sides of the Cross-Over Cover Assembly. *The Cross-Over Floor Inserts can be assembled before the Cross-Over Cover Assembly, as shown in Figure 6*. Assemble additional Cross-Over Floor Inserts as required, refer to your layout drawing to determine there locations.



5.1 Cross-Over Assembly (continued)

4. When multiple 4' Cross-Over sections are next to each other a 630605 Cover Band is required to cover the space created between the Cross-Over Cover Assemblies. With Cross-Over Cover Assemblies located as described in previous step assemble 630605 Cover Band using (4) 690101 Bolts, *as shown in Figure 8. **The Cover Band can be assembled before or after the Cross-Over Floor Inserts are in place.***
5. When a Cross-Over is located at the either end of the nest row a 630605 Cover Band is required to cover the space between the Cross-Over Cover Assembly and the Egg Belt Extender Cover or Idler Cover. With Cross-Over Cover Assemblies located as described in Step 4 above, assemble 630605 Cover Band using (2) 690101 Bolts, *as shown in Figure 9 and 10. **The Cover Band must be assembled before the Idler Cover is assembled. See Idler Cover Assembly section 5.4.***
6. Assemble additional Cover Bands as required. Depending on your layout there may be extra Cover Bands. Refer to your layout drawing to determine there locations.



Be sure to refer to your layout drawing for correct placement of Expeller Units, Cross-overs, Alignment Cross-Supports and Nests. REMINDER: Make certain to have Motors and Acme Screws correctly positioned.

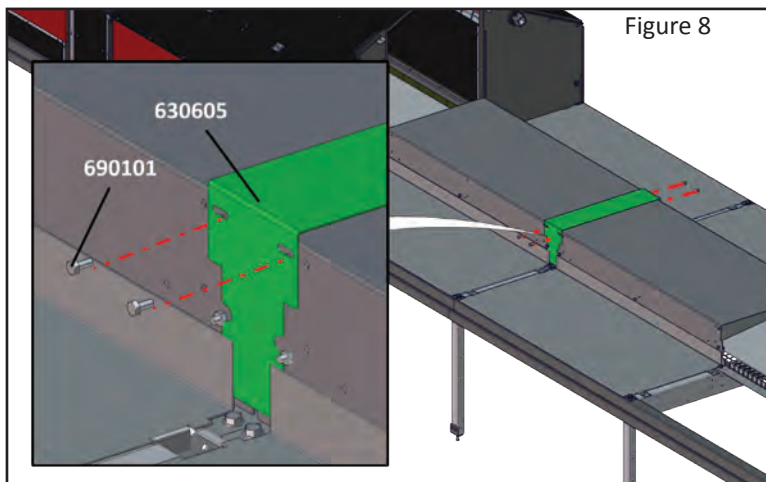


Figure 8



Cross-Over can be assembled as the frame is assembled or as the nests are assembled. This drawing does not depict any order or assembly.

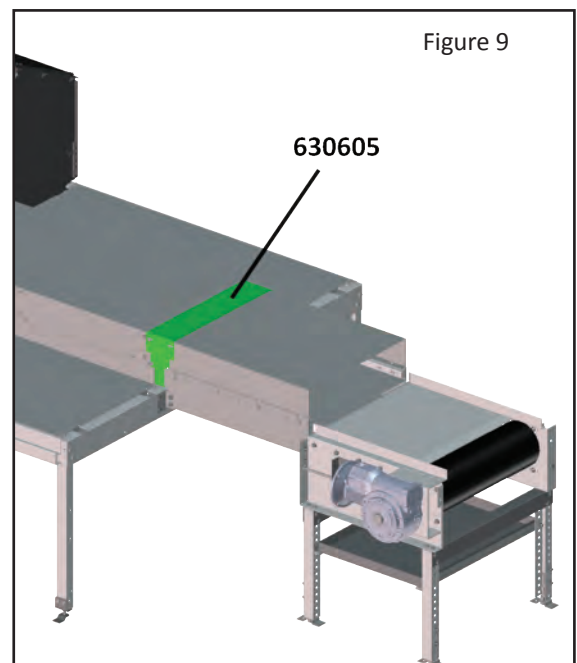


Figure 9

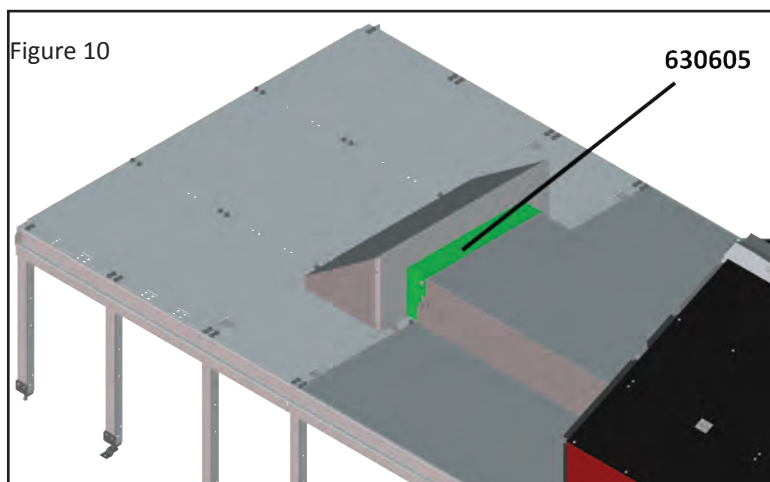


Figure 10



5.2 Wall Panel Assemblies

The Wall Panel Assemblies prevent birds access to the Egg Belt and are located at the beginning and end of the nest row and at Cross-Overs. The End of Row Wall Panel Assembly also prevents eggs from rolling past the last nest toward the Idler end of the nest row. The Wall Panels are easily assembled to the nest row. The Wall Panels at the beginning and end of the nest row can be installed at anytime after the Divider Walls are installed. Install Wall Panels at Cross-Overs after the Cross-Overs have been assembled, the Cover Band fits over top of the Cross-Over Cover Assembly.

1. Assemble 630661 Cover Band to 630843 Wall Panel using (2) 690010 Bolts and (2) 690012 Nuts, as shown in Figure 11. Insert assembled Wall Panel into back to back Divider Wall slots, as shown in Figures 12. See Expeller Divider Wall section Figures on page 3-17 for details of slots in Divider Walls.
2. Insert 630055 End of Row Wall Panel into the back to back Divider Walls nearest the Idler Assembly, as shown in Figure 13. See Expeller Divider Wall section 3.18 on page 3-17 for details of slots in Divider Walls.

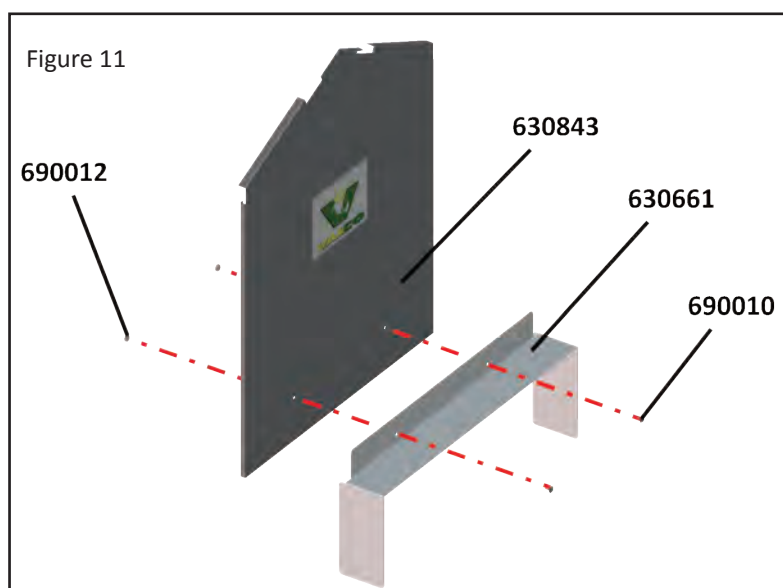


Figure 12

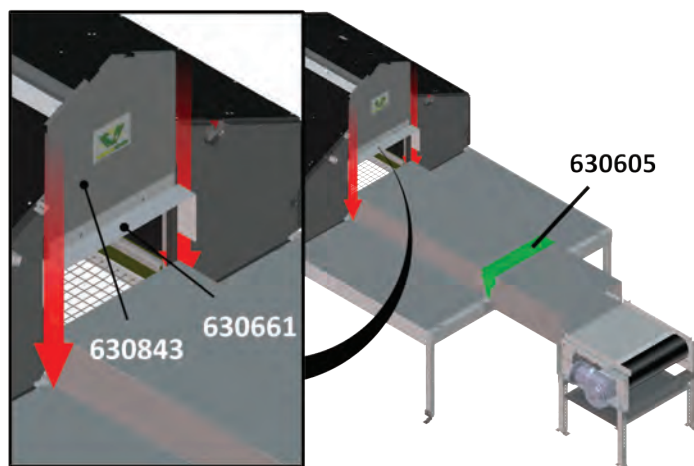
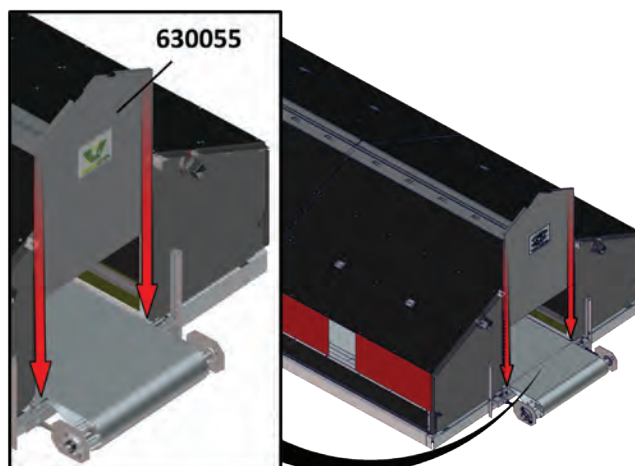


Figure 13



5.3 Idler Cover Assembly

The Idler Cover prevents bird access to the Idler Assembly and the Egg Belt.

1. Slide 631008 Idler Cover Assembly over 630545 Right and 630547 Left Idler Cover Bracket Assemblies, *as shown in Figure 14*. Align holes in Idler Cover to inserts in Idler Cover Bracket Assemblies and assemble using (4) 690101 Bolts and (4) 690209 Washers, *as shown in Figure 15*.

Figure 14

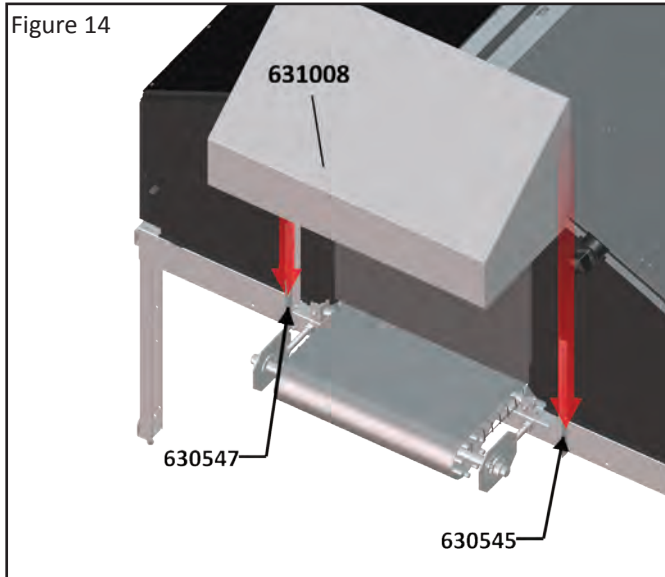
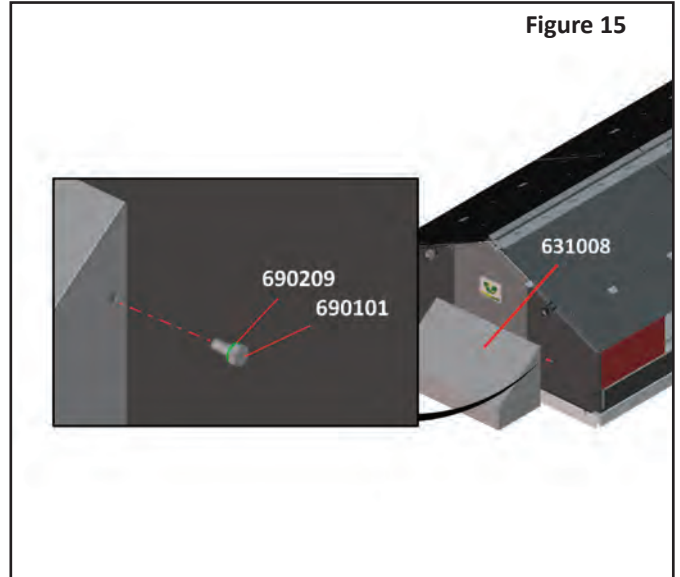


Figure 15

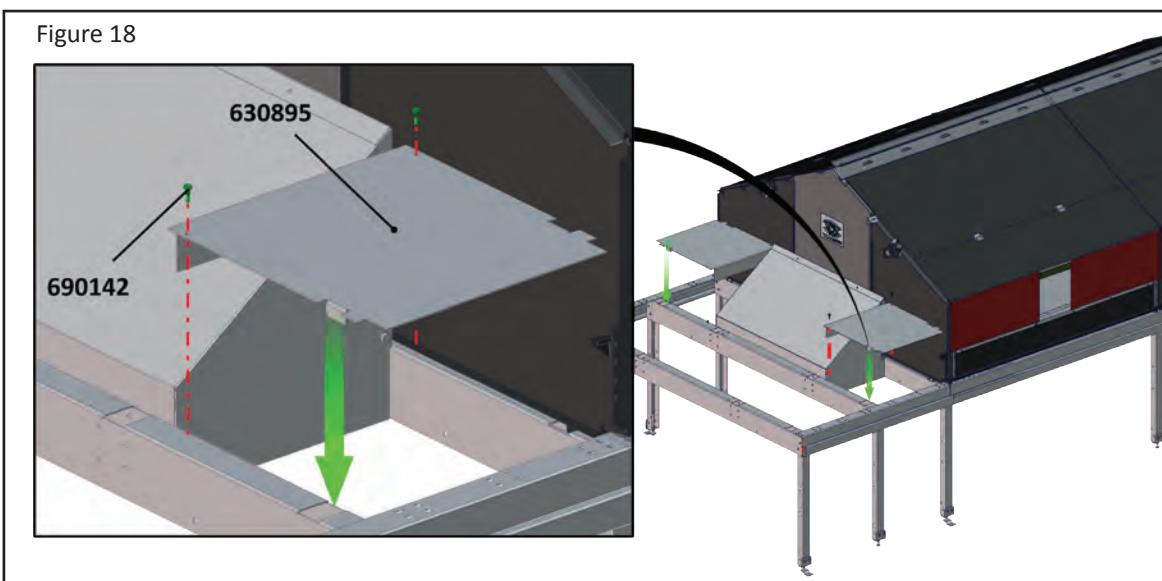
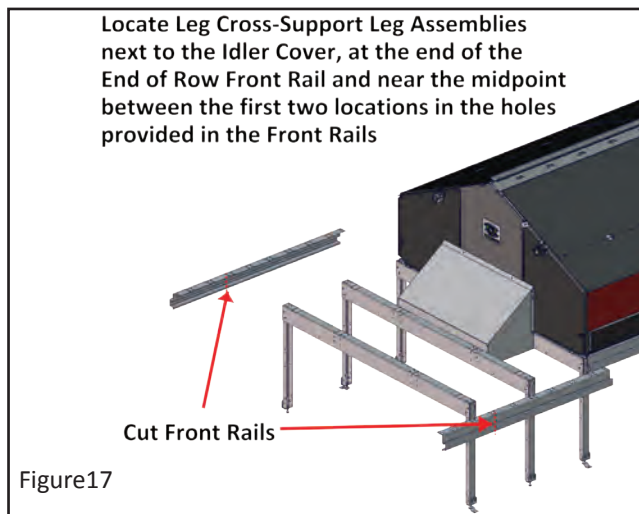




5.4 Rear Cross-Over Cover Assembly - Floor Mounted Systems

The Rear Cross-Over Assembly is used to finish the nest row to the end of the build or to the end of a slat section. The Rear Cross-Over Assembly is designed to be cut to length if required. If a nest row is finished to a wall, flashing (NOT supplied) may be necessary if the remaining gap is more than 1/2" to minimize unwanted floor/slat eggs. If floor space is preferred between the end of the nest row and a wall sufficient lighting is required to minimize shadows and reduce unwanted floor eggs.

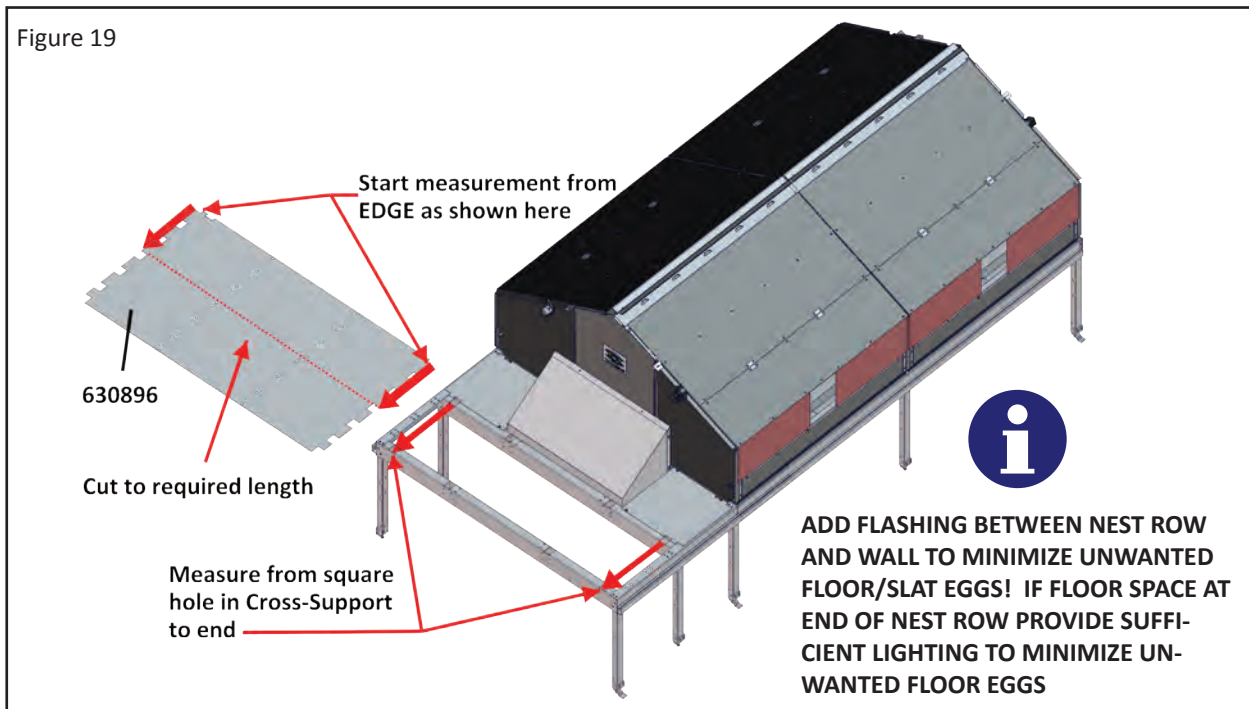
1. Cut End of Row Front Rails to the desired length (if required), as shown in Figure 17, noting when rails are assembled the cut end will be away from the nest row.
2. Assemble Front Rails, with cut end away from nest row, and Leg Cross-Support Assemblies the same way as the nest row using 690005 Screws. Assemble one Cross-Support Leg Assembly next to the Idler Cover. One at the end of the End of Row Front Rail and one near the midpoint between the first two in the holes provided in the Front Rails, as shown in Figure 17. Not all Leg Cross-Support Assemblies may be used depending on cut length of Front Rails. The maximum distance between Leg Cross-Support Assemblies is 18". Note the Leg Cross-Support Assemblies with and without Foot Plates.
3. Assemble (2) 630895 Side Floor Inserts on both sides of the Idler Cover inserting the formed tabs into the Cross-Supports and fasten with (4) 690142 Screws, as shown in Figure 18.



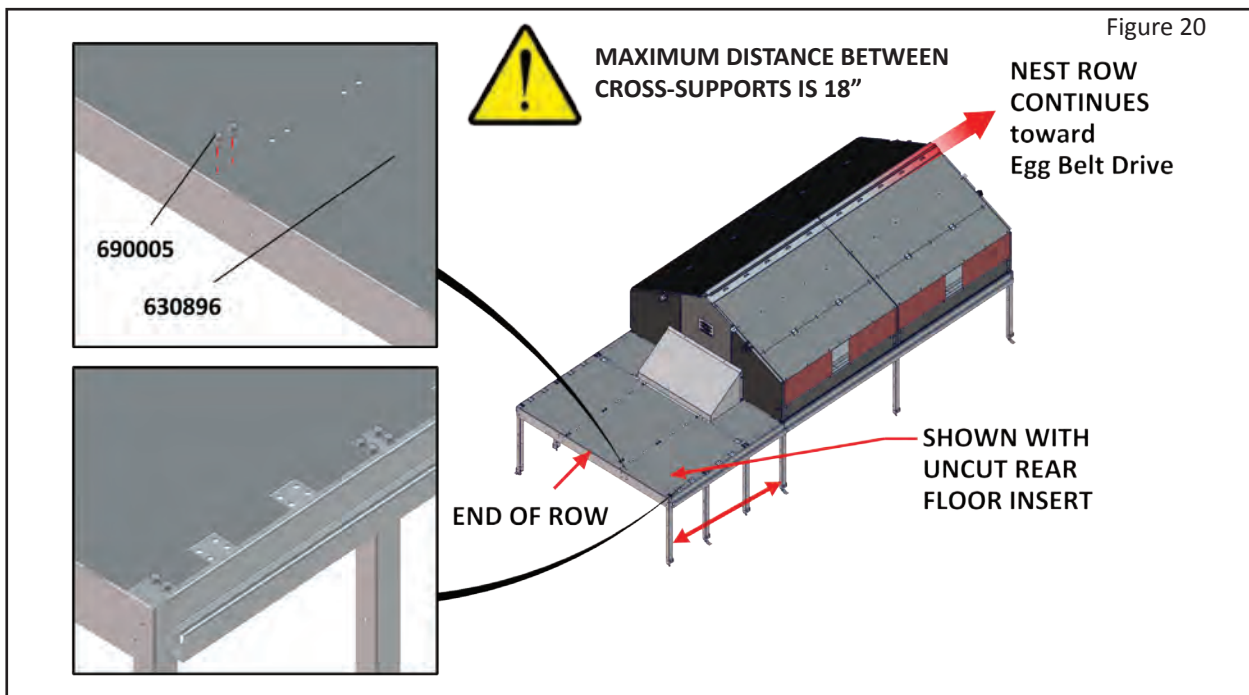
5.4 Rear Cross-Over Cover Assembly - Floor Mounted Systems (continued)

4. Cut 630896 Rear Floor Insert to length (if required), note the formed tabs insert into the Cross-Support next to the Idler Cover and the holes in the Rear Floor Insert, align with holes in Cross-Supports. Assemble Rear Floor Insert, with cut end away from nest row, inserting tabs into Cross-Support and fasten with 690005 Screws as required and shown in Figure 19 and 20.

Figure 19



Use proper (steel cutting saw and blade) tool to cut steel.





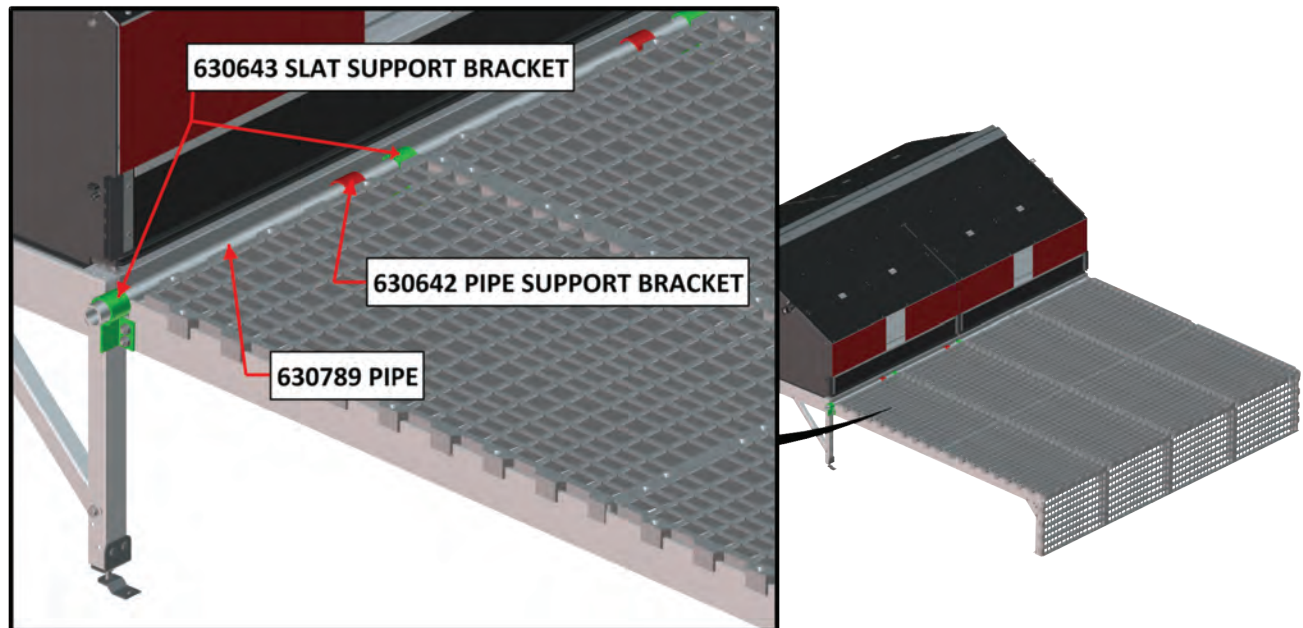
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Chapter 6 - Slat Assembly

6.1 Slat Assembly Introduction

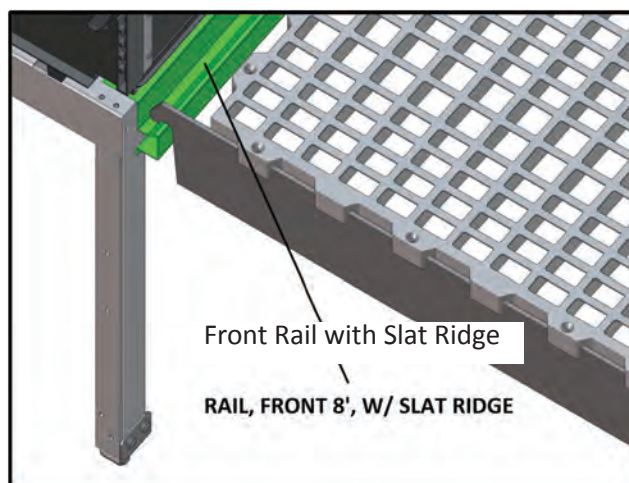
There are two styles of slat assemblies, winchable and non-winchable. Both styles are available in four sizes for each style, 3', 6', 9' and 12'. The two styles are similar and have some common parts, they differ in the way they assembly to the nest row frame. See section 6.3 for the Winchable Slat Assembly instructions and section 6.4 for the Non-Winchable Slat Assembly instructions. The Slat Assembly instructions reference the 6' size, see Appendix 54 thru Appendix 55 for details of other sizes.

Figure 1 Attached Pipe Front Rail (Winchable)



Note: The Winchable style requires a bracket added to the nest row frame and the Slat Support Rails. The Non-Winchable style the Slat Support "hooks" on the ridge built-in to the nest row frame.

Figure 2 Slat Ridge Front Rail (Non-Winchable)





6.2 Slat Installation

- The core temperature of the slats must be at least 40°F (5°C) when they are installed (*i.e. they must be stored in a location prior to installation that is at least 40°F (5°C) for approximately 24 hours*).
- During installation the house temperature must remain above 40°F (5°C).
- The slats are made of polypropylene, thus they will expand and contract as the temperature changes. Make sure you take this into account as you install your slats/substructure.

WARNING !



- Poultry flooring is designed to support the weight of chickens. Workers must walk only on supported areas of the flooring.
- Care must be taken to prevent impact loading of the flooring slats. Impact loading includes the dropping of objects and bouncing of personnel weight.
- If a hard object >10 lbs (4.5 kg) is dropped onto a slat the slat must be replaced (internal damage may have occurred which may or may not be visible)
- Any broken slats must be replaced immediately



It is recommended that you begin the Slat assembly at the Egg Belt Drive end of the nest row.

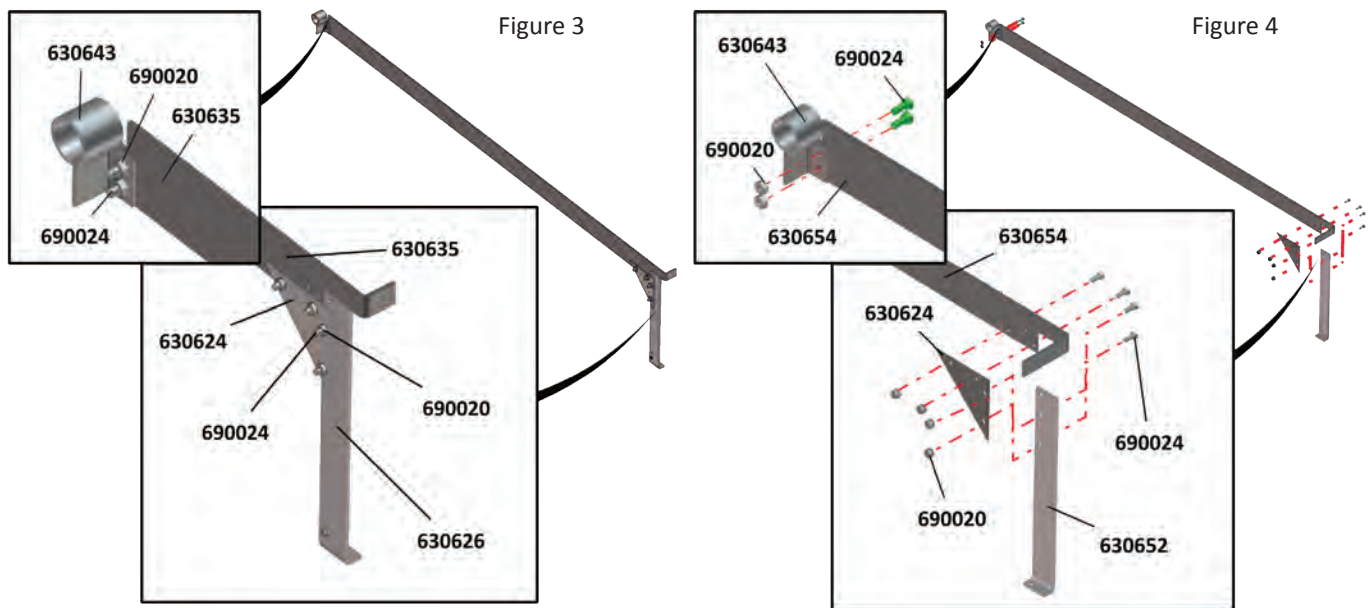


The Slat Assemblies are made up of Slat Support Sub-Assemblies that can be pre-assembled and distributed down the length of the nest row(s). The Slat Support Sub-Assemblies are all the same except the one at the right end (when facing the nest) of a Slat Section. A Slat Section for Non-Winchable Slats is equal sections of slats not to exceed 200' of nest row length. See the separate Winchable Layout Instructions for Slat Section length, it varies depending on the size of the slats and your layout.

6.3 Winchable Slat Assembly

1. Assemble 630626 Leg to 630635 Slat Support with 630424 Gusset, as shown in Figure 3 on the next page, using (4) 690024 Bolts and (4) 690020 Nuts. Assemble 630643 Slat Support Bracket to 630635 Slat Support, as shown Figure 3 on the next page, using (2) 690024 Bolts and (2) 690020 Nuts.
2. Assemble 630652 Leg to 630654 Slat Support with 630424 Gusset, as shown in Figure 4 on the next page, using (4) 690024 Bolts and (4) 690020 Nuts. Assemble 630643 Slat Support Bracket to 630654 Slat Support, as shown Figure 4 on the next page, using (2) 690024 Bolts and (2) 690020 Nuts. This Slat Support Sub-Assembly is used on the right end of a Slat Section.

6.3 Winchable Slat Assembly (continued)



3. Mounting holes for the 630642 Pipe Support Bracket are provided every 12", a Pipe Support Bracket is required every 24". Starting at the Egg Belt Drive end of the nest frame row determine your starting location of the first Pipe Support Bracket based on where the Slats begin. The first Pipe Support Bracket should be near the middle of the first Slat (*the middle between the first two Slat Support Sub-Assemblies*) at the Egg Belt Drive Unit end of the nest frame. The typical starting location for the first Pipe Support Bracket is 6" from the Egg Belt Drive Unit end of the frame but could vary depending on your building layout or obstructions preventing starting the slats at the end of the nest frame row. Locating the Pipe Support Bracket near the middle of the Slat allows for expansion and contraction of the Slats.

Figure 5

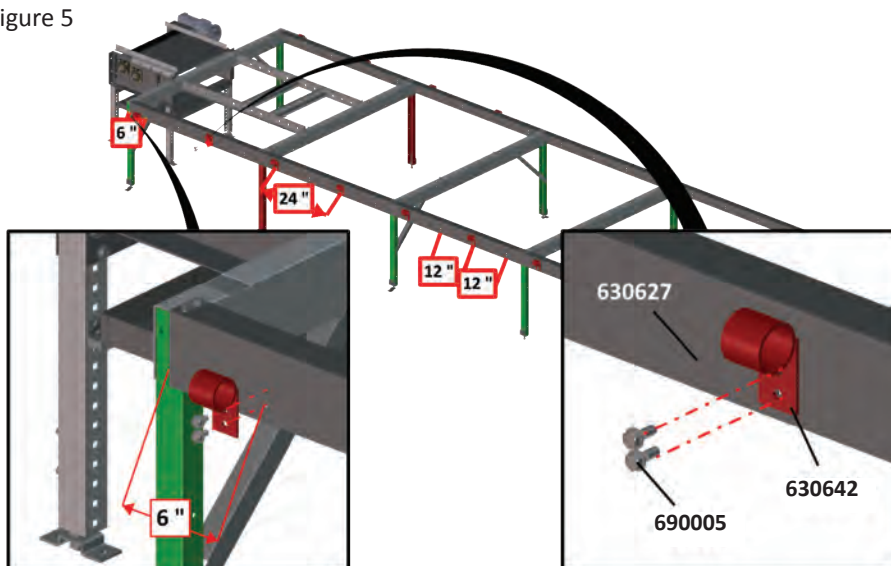


Figure 6

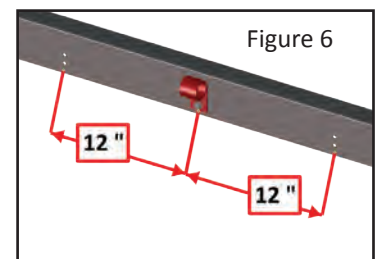
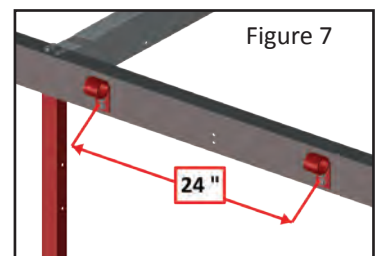


Figure 7





6.3 Winchable Slat Assembly (continued)



The Slat expand 5-5/8" over 100' of nest row with a temperature increase of 60°F and contract 5-5/8" over 100' of nest row with a temperature decrease of 60°F. Allow for expansion and contraction of the Slat if your temperature difference is greater the expansion and contraction will be greater. Examples of temperature increases or decreases are if installation occurs during extreme heat or cold or if the building will not have birds in it during extreme heat or cold.

4. Slide 630789 1" Pipe (actual 1-5/16" Diameter) through 630642 Pipe Support Brackets assembled to the nest frame and Slat Support Brackets assembled to the Slat Support Sub-Assemblies alternating between both brackets down the nest row, *as shown in Figure 9*, to the end of the Slat Section. 630654 Slat Support (with the longer formed end) is shown on the right side (when facing the nest) of a Slat Section and at the Egg Belt Drive Unit end of the nest row. Refer to Winchable Layout Instructions for the actual length of the Slat Section. The Slat Support Assemblies will not be very stable until 630759 Trimmed Front or Half Slat is assembled.
5. Join pieces of 1" Pipe together by inserting 630891 Internal Connector half way into Pipe and secure with (1) 690142 Screw, *as shown in Figure 10*. Slide adjacent piece of Pipe on to the Internal Connector and butt tight against Pipe and secure with (1) 690142 Screw. Locate Pipe joints near the middle of Slat Support Sub-Assemblies to allow for expansion and contraction of the Slat.

Figure 9

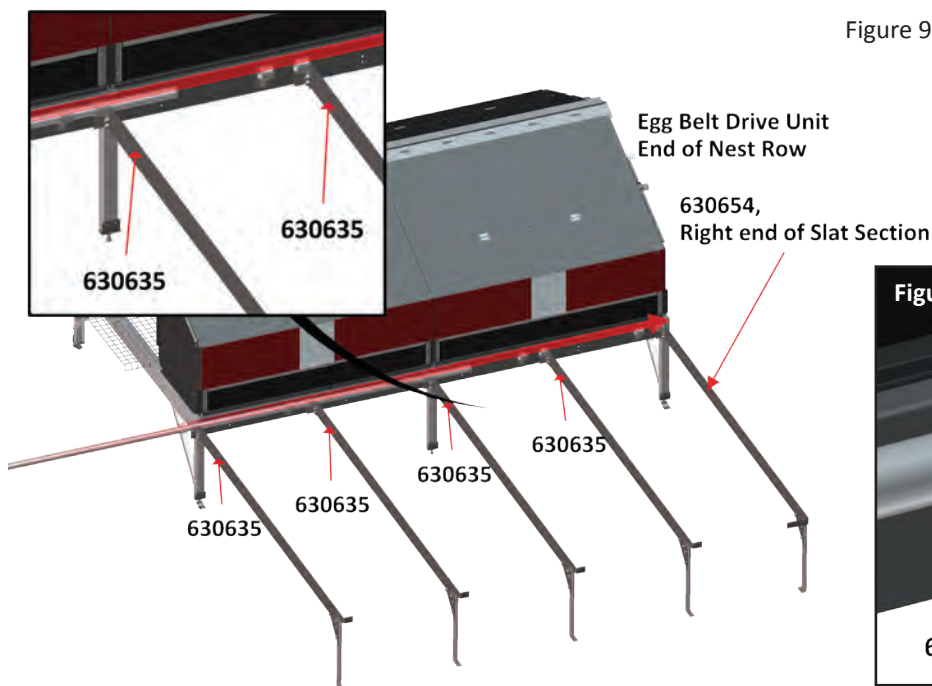
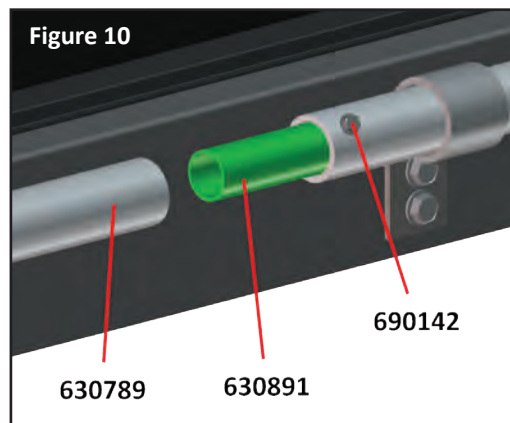


Figure 10



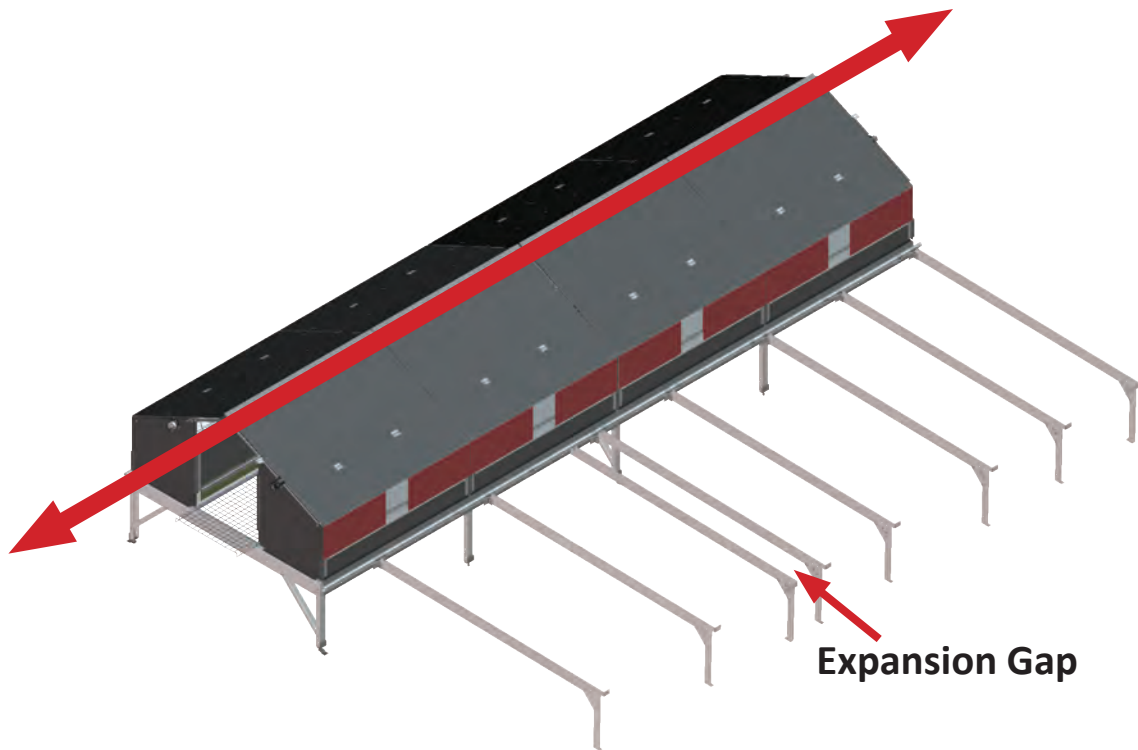
Check Slat Support Sub-Assemblies in correct location during assembly.

6. Continue assembling 1" Pipe, Internal Connectors, Slat Support Sub-Assemblies and Pipe Support Brackets down the nest row to the end of the Slat Section.

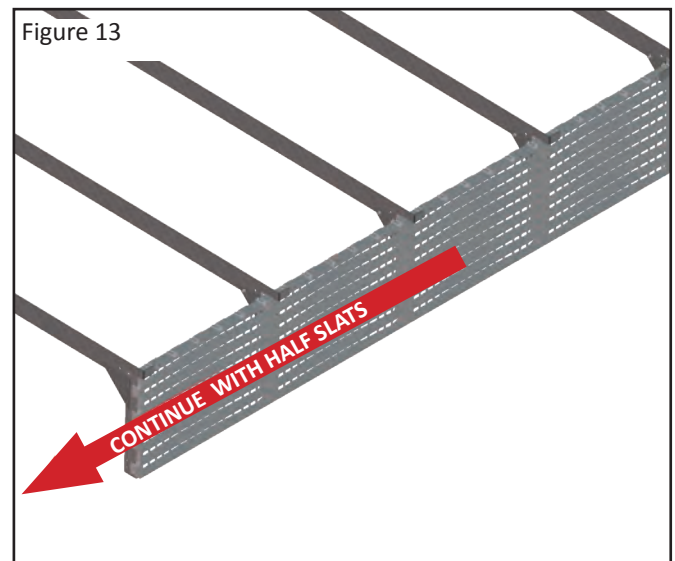
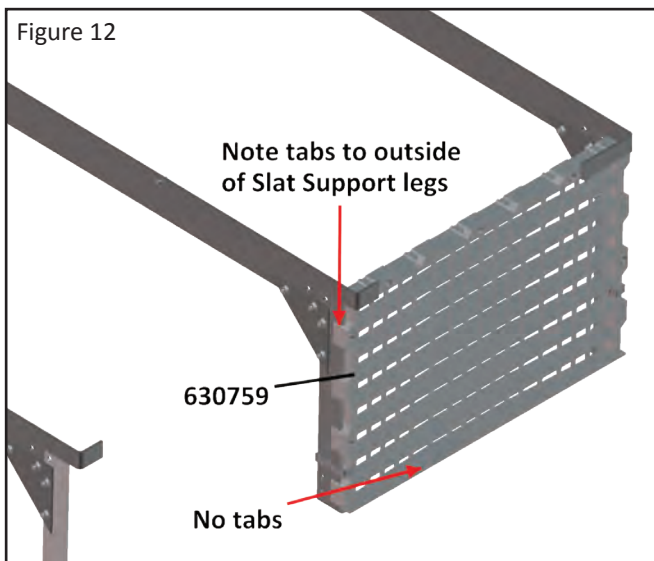
6.3 Winchable Slat Assembly (continued)

7. Begin the next Slat Section the same as the first allow for the necessary gap between Slat Sections for expansion and continue assembling down the nest row repeating Slat Sections as shown on your Winchable Layout Instructions. *The 1" Pipe is continuous down the nest row.*

Figure 11



8. Assemble the interlocking 630759 Trimmed Front or Half Slat to the Slat Support Sub-Assemblies, as shown in Figure 12. Note orientation of the straight (no tabs) side of Half Slat is down or on the floor.

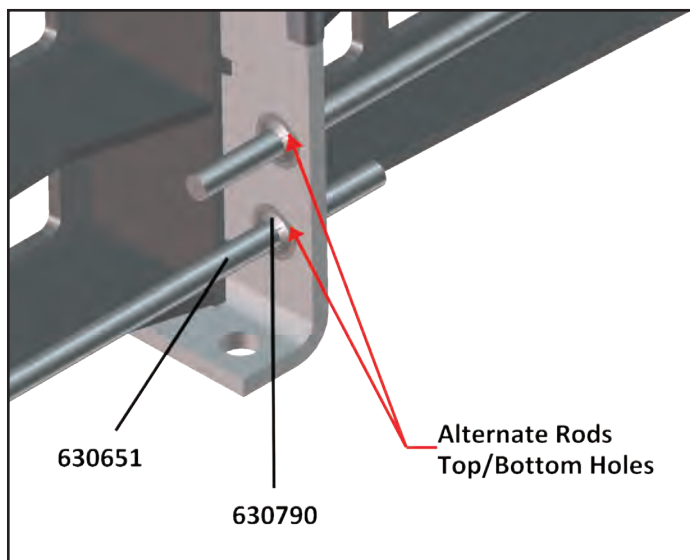




6.3 Winchable Slat Assembly (continued)

9. With 630759 Half Slat assembled to set the distance between Slat Supports Sub-Assemblies insert 630651 Vertical Support Rod through the Legs and secure with a 630790 Push-On Retainer on each end of the Rod to Slat Supports Sub-Assemblies, *as shown in Figure 14*. Alternate using the upper and lower sets of holes down the nest row of the Slat Section.

Figure 14



It is **CRITICAL** to install the vertical (*half*) Slats before you install the top, horizontal Slats.

10. Assemble 630791 Spring Clip through rectangular hole in a Half Slat hooking on the Leg and snapping over interlocking Half Slats, *as shown in Figure 15*. Assemble 630836 End Spring Clip hooking on Leg and snapping over a single Half Slat at the end of Slat Sections, *as shown in Figure 16*.

Figure 15

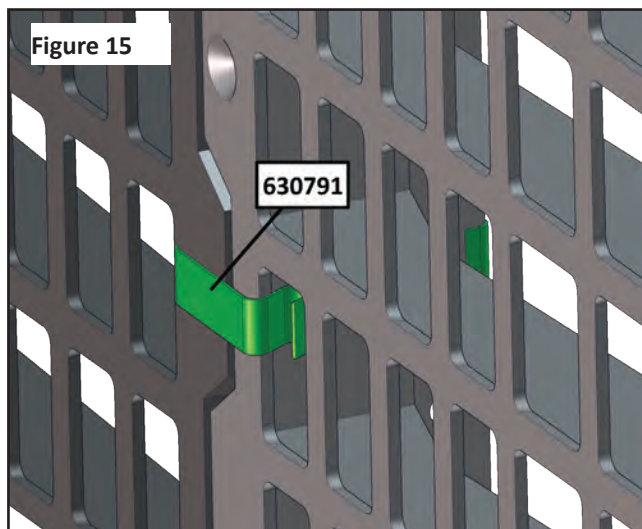
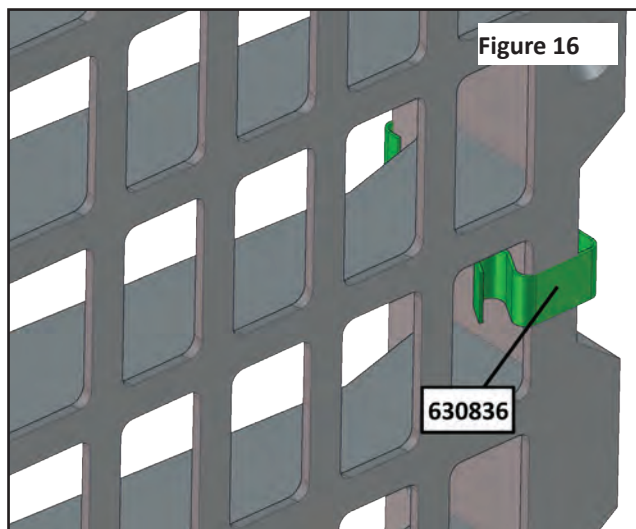
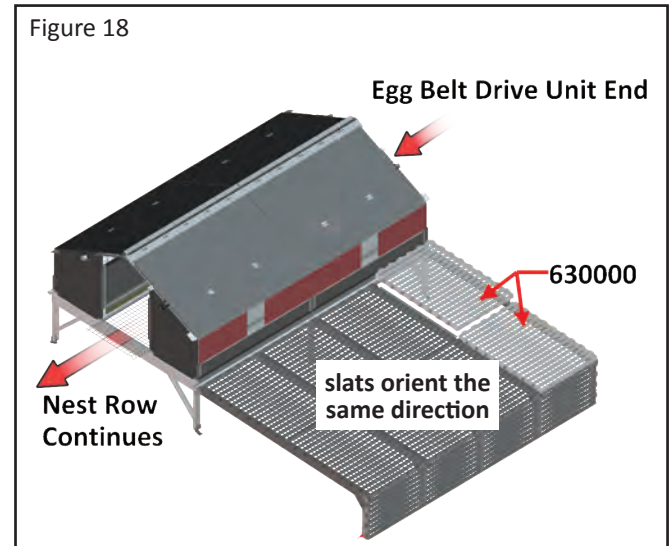
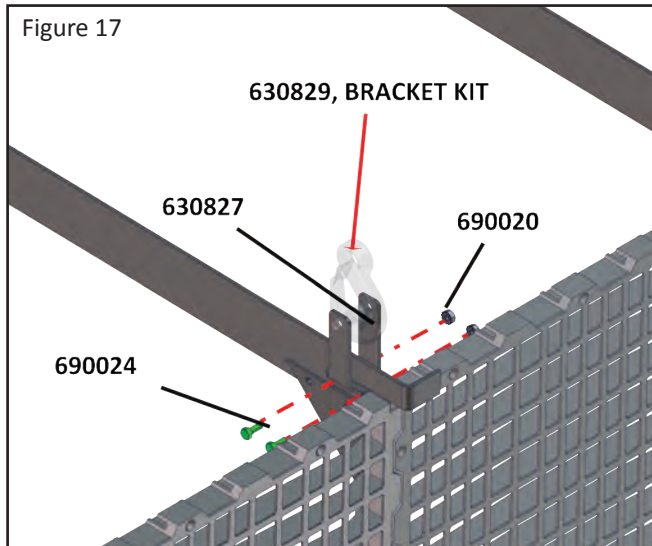


Figure 16



6.3 Winchable Slat Assembly (continued)

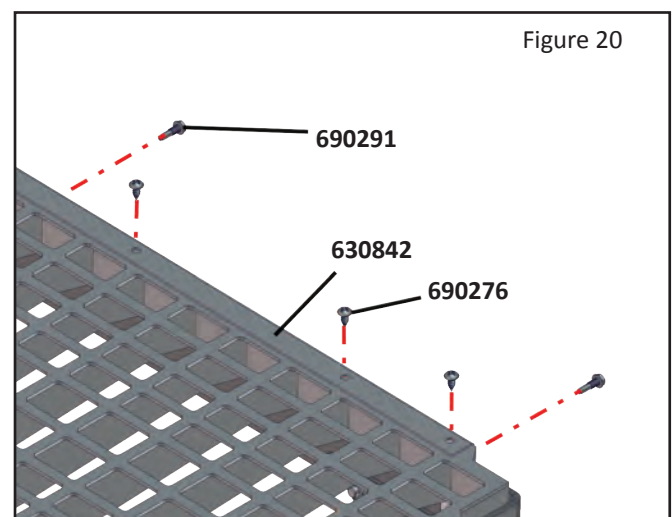
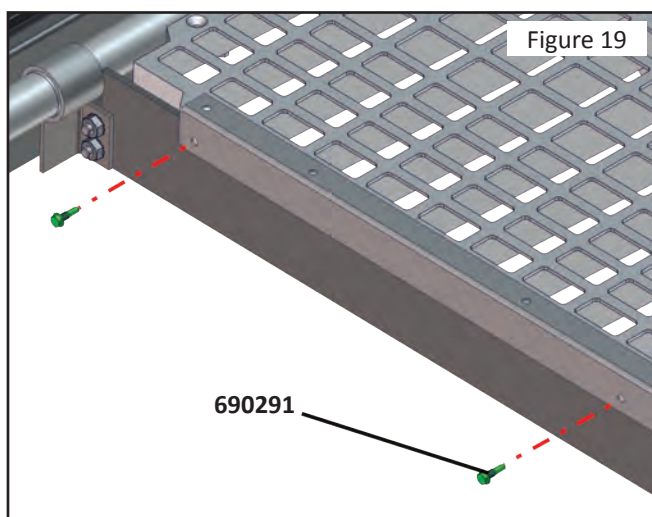
11. Assemble 630829 Bracket Kits to the Slat Support Sub-Assemblies, *as shown in Figure 17*, at locations shown on your Winchable Layout Instructions. Typically 4' from the end of a Slat Section and spaced 8' apart. **DO NOT assemble Spacer, Bolt, Nut and Hook.** The Spacer, Bolt and Nut will be assembled after the Top or Full Slats have been assembled. The Hook will be assembled to cable as instructed on your Winchable Layout Instructions.



12. Assemble the Top or Full Slats to the Slat Support Sub-Assemblies, *as shown in Figure 18, above*. Note orientation of Full Slats, all orientate down the nest row the same way. **The Full Slat above the Half Slat retains the top edge of the Half Slat.**
13. After Full Slats have been assembled over the 630829 Brackets the Spacer, Bolt and Nut NOT assembled in Step 11 can be assembled, *as shown in Figure 21 on the next page*.
14. Assemble 630842 Slat Support Angle to the edge of each Slat at both ends of the row using 690291 or 690276 Screws, *as shown in Figure 19 and 20*. If the side of the Slat is accessible use 690291 Screws otherwise use 690276 Screws.

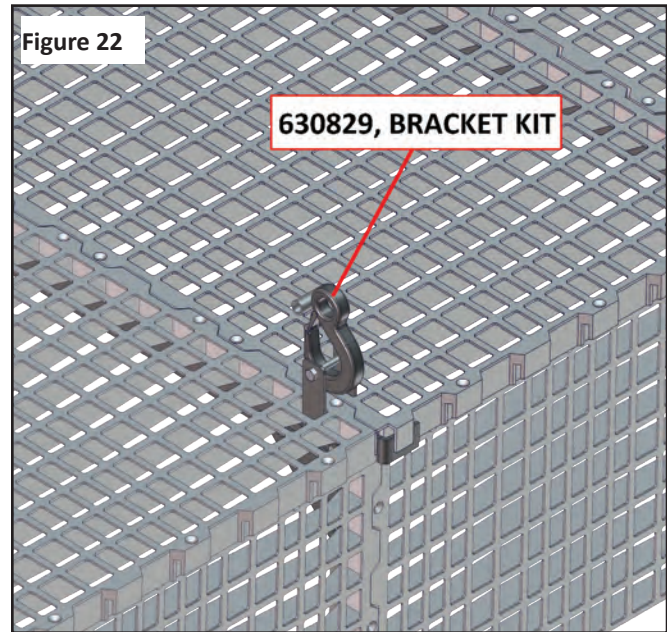
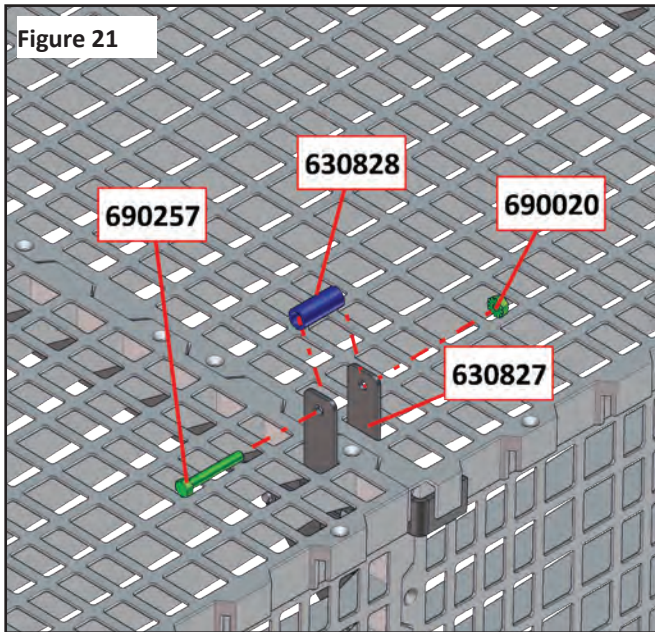


ANGLE SUPPORT LOCATION - Used at the beginning and end of slat sections ONLY!



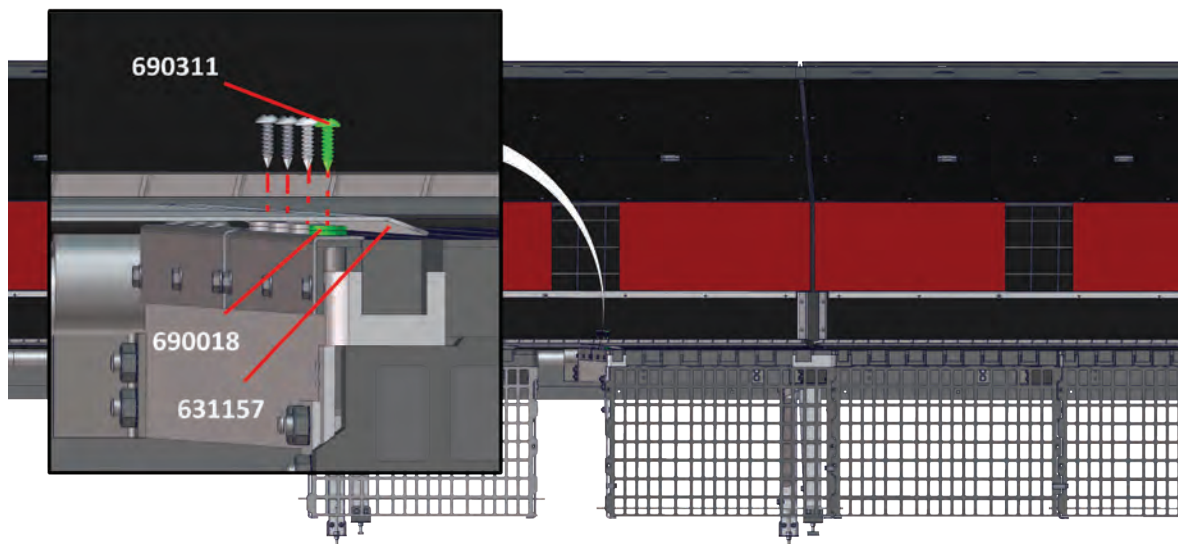


6.3 Winchable Slat Assembly (continued)



15. At the ends of Slat Sections within the nest row 631157 Slat Expand/Contract Cover(s) are required. The Slat Expand/Contract Cover(s) are assembled using 690311 Screws and 690018 Washers, *as shown in Figure 23*. If 690291 Screws can not be used for the 630842 Slat Support Angle than both 630842 Slat Support Angle(s) and Slat Expand/Contract Cover(s) are assembled at the same time using 690311 Screws and 690018 Washers. The 631157 Expand/Contract Cover(s) is only attached to one Slat Section allowing the Slat Expand/Contract Cover(s) to move. Refer to your layout drawing for Expansion Joint locations.

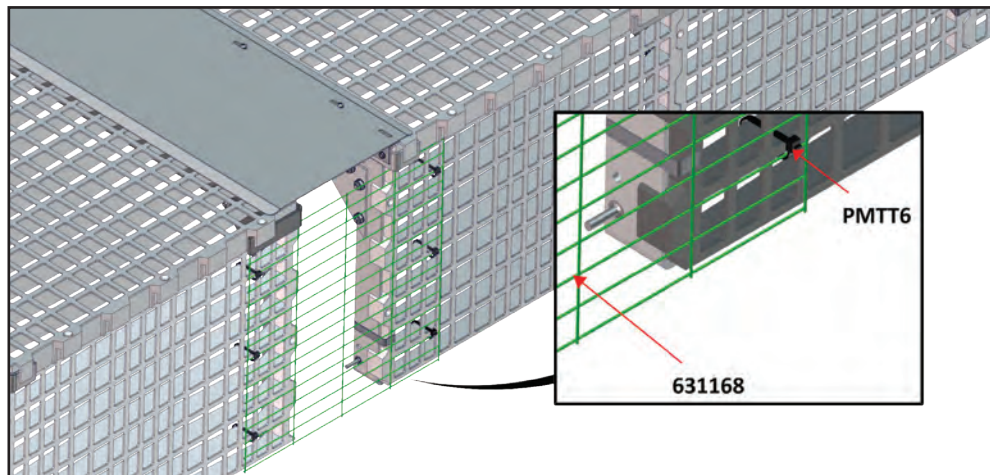
Figure 23



6.3 Winchable Slat Assembly (continued)

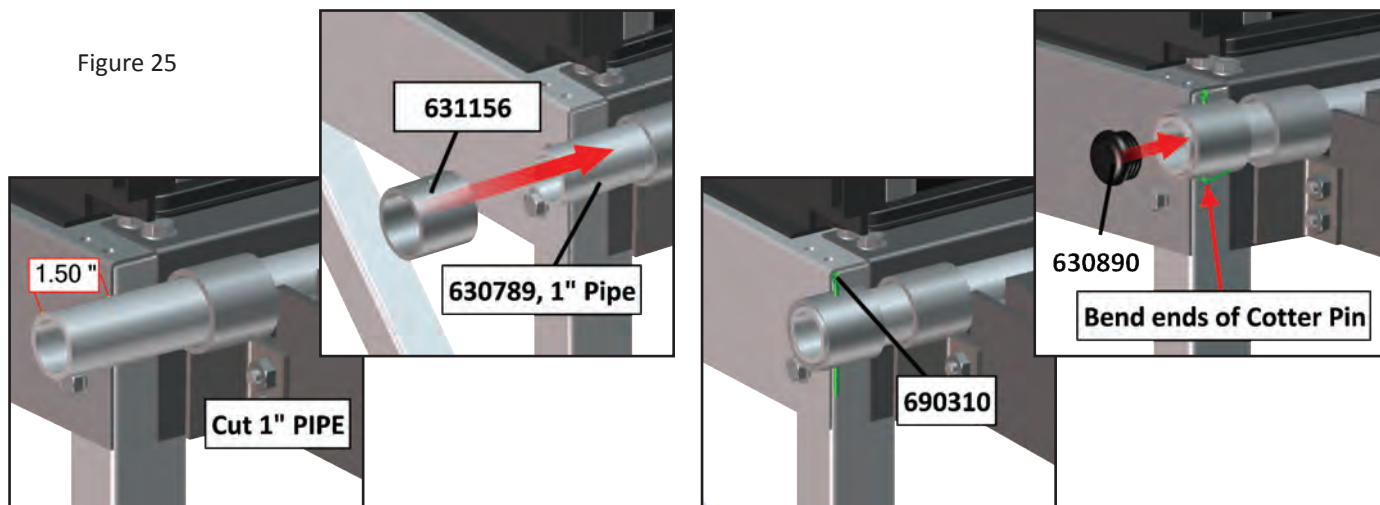
16. At the ends of the Slat Sections within the nest row assemble 631168 Wire Panel to both 630759 Half Slats using part number PMTT6 Wire Ties, *as shown in Figure 24. Locate Wire Ties to allow Wire Panel to move as required for expansion and contraction.*

Figure 24



17. When all Slat Sections are completely assembled with necessary allowances for expansion and contraction and allowing 1-1/2" at each end cut 1" Pipe to length. Assemble 631156 Slat Support Retainer to both ends of 1" Pipe, drill 1/8" diameter hole through 1" Pipe, *as shown in Figures 25*, using Slat Support Retainer as a guide and assemble 690310 Cotter Pin through hole and spread ends of Cotter Pin flush to Slat Support Retainer. Insert 630890 Pipe Plug into each end of 1" Pipe.

Figure 25



If Winchable Slats are planned to run the length of the building but are NOT within 1" of the end wall of the building flashing or equivalent must be added (provided by others) to reduce dark areas and reduce floor eggs. If litter area planned between the end(s) of the row(s) and the end wall(s) of the building the open areas below the nest and slats must be covered (*sold separately, 631013 Lattice Kit*) to prevent birds getting under the nests or slats.



The number of Slats assembled to each Slat Support will depend on the length of Slat Supports ordered. Each 630000 Slat, (used on top of the Slat Supports), is 3' (91.44cm). Example; 6' Slat Support will require (2) 630000 Slats each, 9' Slat Support will require (3) 630000 Slats each.



6.4 Non-Winchable Slat Assembly

1. Assemble 630626 Leg to 630631 Slat Support with 630424 Gusset, as shown in Figure 26, using (4) 690024 Bolts and (4) 690020 Nuts.
2. Assemble 630652 Leg to 630658 Slat Support with 630424 Gusset, as shown in Figure 27, using (4) 690024 Bolts and (4) 690020 Nuts. This Slat Support Sub-Assembly is used on the right end of a Slat Section.

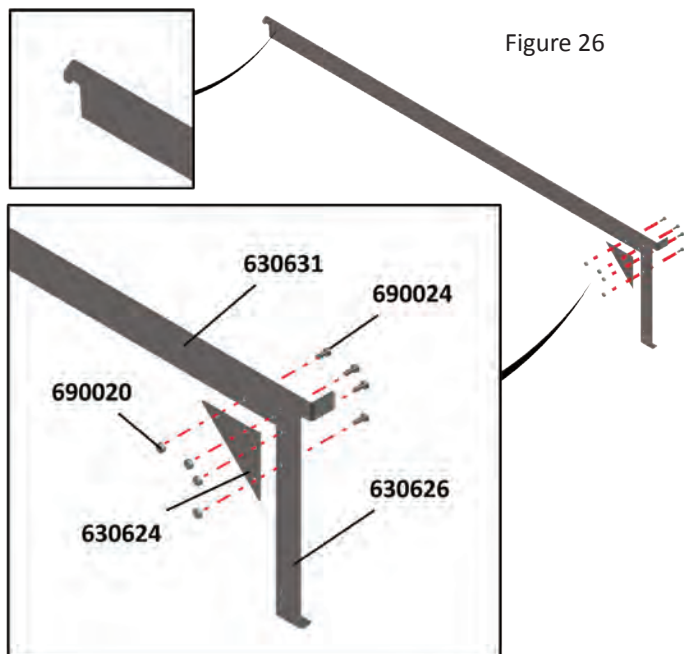


Figure 26

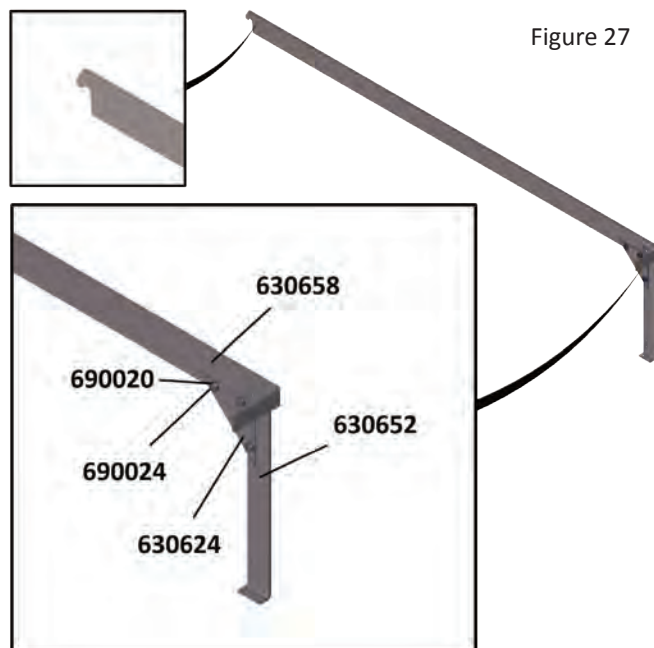


Figure 27

3. Assembly 630759 Trimmed Fronts or Half Slats and Slat Support Sub-Assemblies to the Slat Ridge Front Rail, as shown in Figure 28, the parts support each other. *Note orientation of the straight (no tabs) side of Half Slat is down or on the floor.*
4. Continue assembling the Half Slats and Slat Support Sub-Assemblies down the nest row allowing for necessary gap between Slat Sections for expansion. **A Slat Section for Non-Winchable Slats is equal sections of slats not to exceed 200' of nest row length (example 420' nest row length = three 140' Slat Sections).**

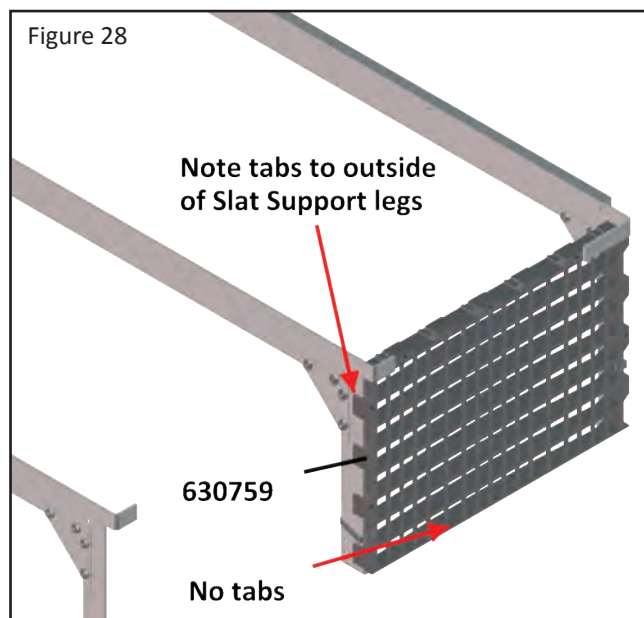


Figure 28

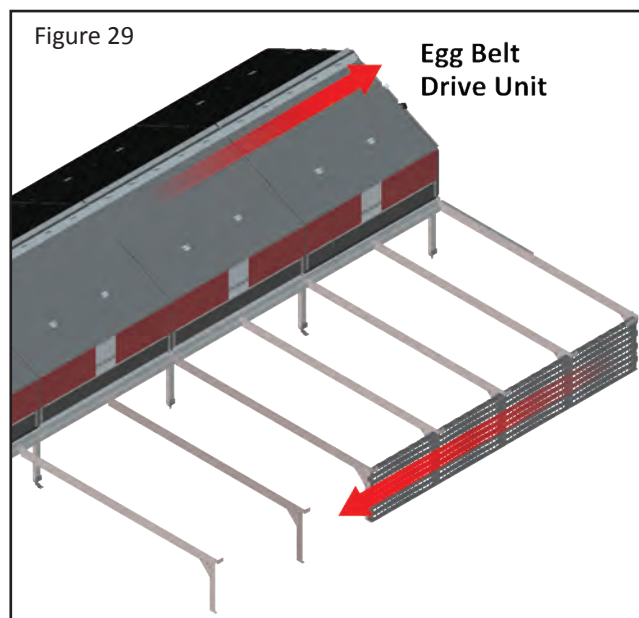


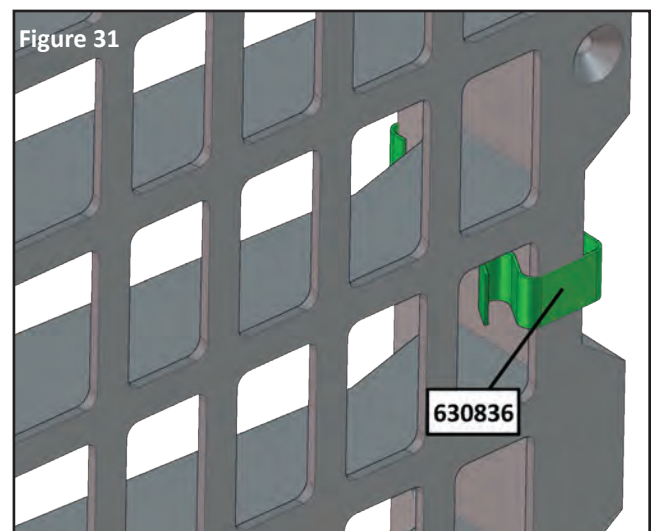
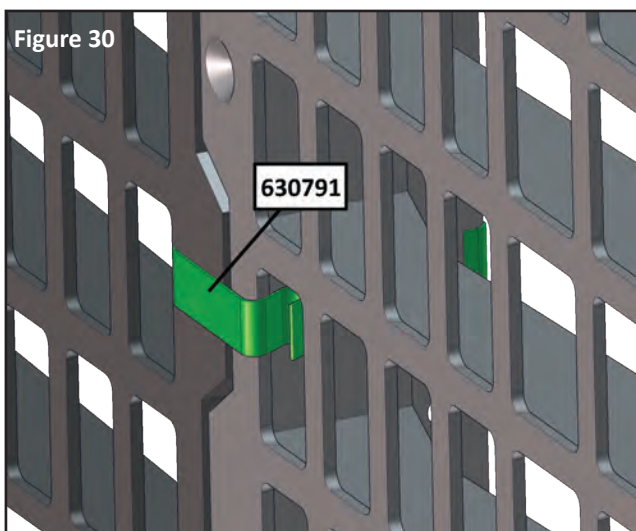
Figure 29

6.4 Non-Winchable Slat Assembly (continued)

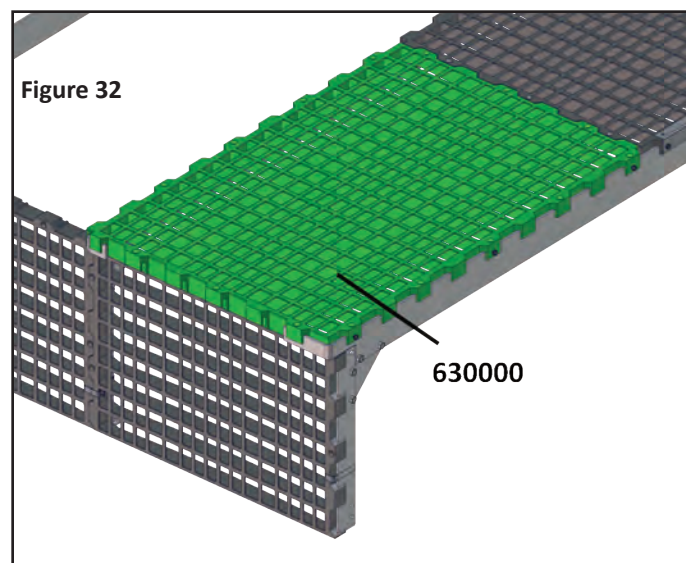


The Slats expand 5-5/8" over 100' of nest row with a temperature increase of 60°F and contract 5-5/8" over 100' of nest row with a temperature decrease of 60°F. Allow for expansion and contraction of the Slats if your temperature difference is greater the expansion and contraction will be greater. Examples of temperature increases or decreases are if installation occurs during extreme heat or cold or if the building will not have birds in it during extreme heat or cold.

5. Assemble 630791 Spring Clip through rectangular hole in a Half Slat hooking on the Leg and snapping over interlocking Half Slats, *as shown in Figure 30* Assemble 630836 End Spring Clip hooking on Leg and snapping over a single Half Slat at the end of Slat Sections, *as shown in Figure 31*.



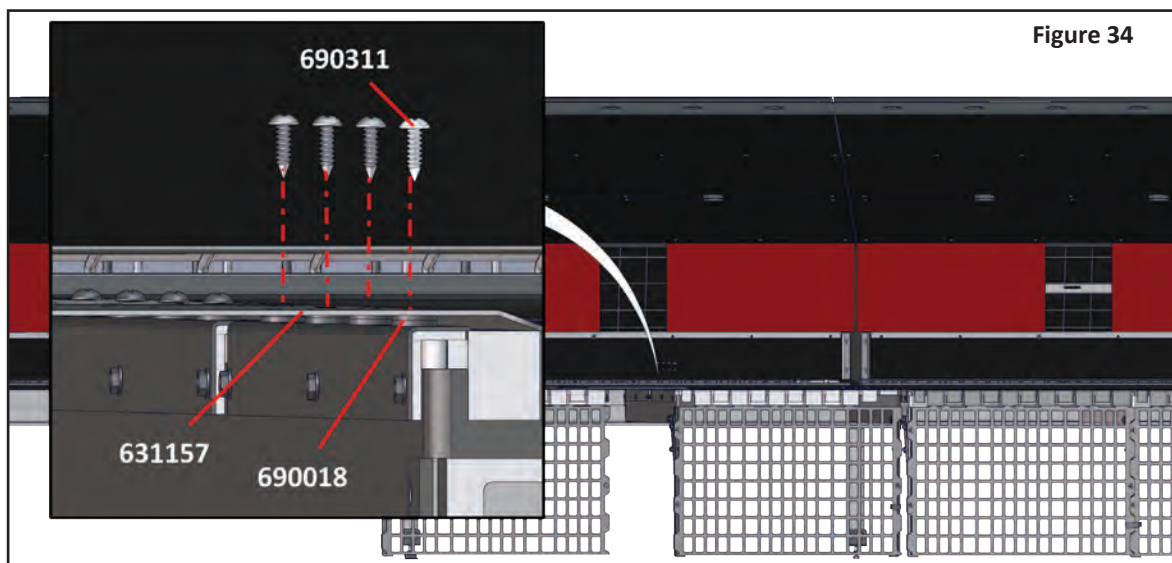
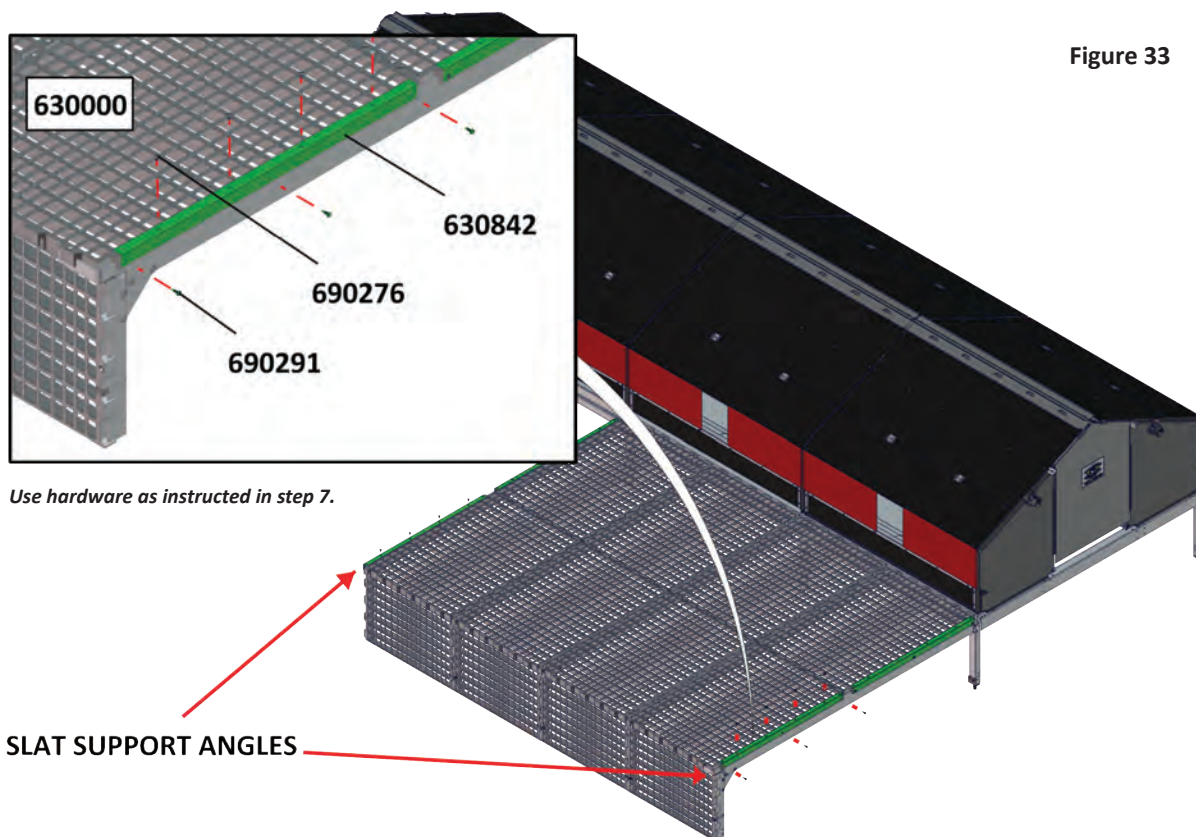
6. Assemble the Top or Full Slats to the Slat Support Sub-Assemblies, *as shown in Figure 32*. Note orientation of Full Slats, all orientate down the nest row the same way. **The Full Slat above the Half Slat retains the top edge of the Half Slat.**





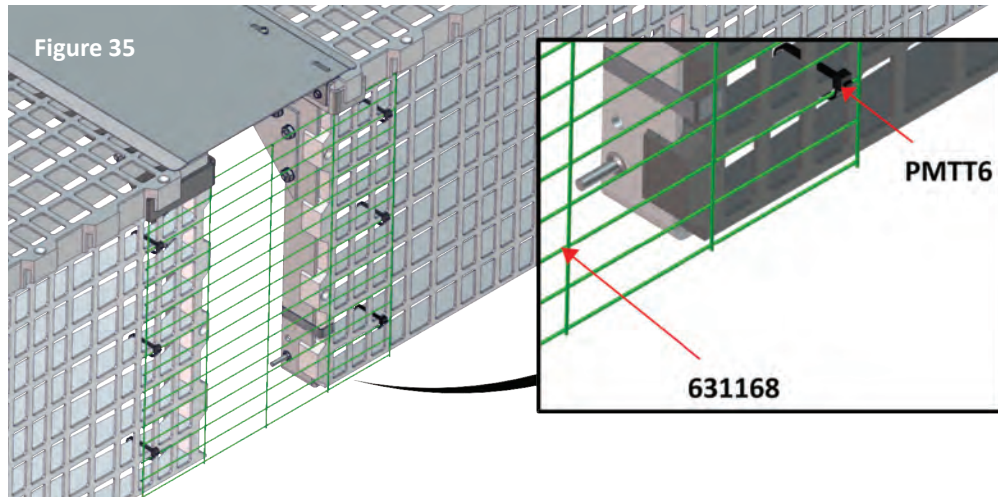
6.4 Non-Winchable Slat Assembly (continued)

7. Assemble 630842 Slat Support Angle to the edge of each Slat at both ends of the row using 690291 or 690276 Screws, *as shown in Figure 33*. If the side of the Slat is accessible use 690291 Screws otherwise use 690276 Screws. At the ends of Slat Sections within the nest row 631157 Slat Expand/Contract Cover(s) are required. The Slat Expand/Contract Cover(s) are assembled using 690311 Screws and 690018 Washers, *as shown in Figure 34*. If 690291 Screws can not be used for the 630842 Slat Support Angle than both 630842 Slat Support Angle(s) and Slat Expand/Contract Cover(s) are assembled at the same time using 690311 Screws and 690018 Washers. The 631157 Slat Expand/Contract Cover(s) is only attached to one Slat Section allowing the Slat Expand/Contract Cover(s) to move.

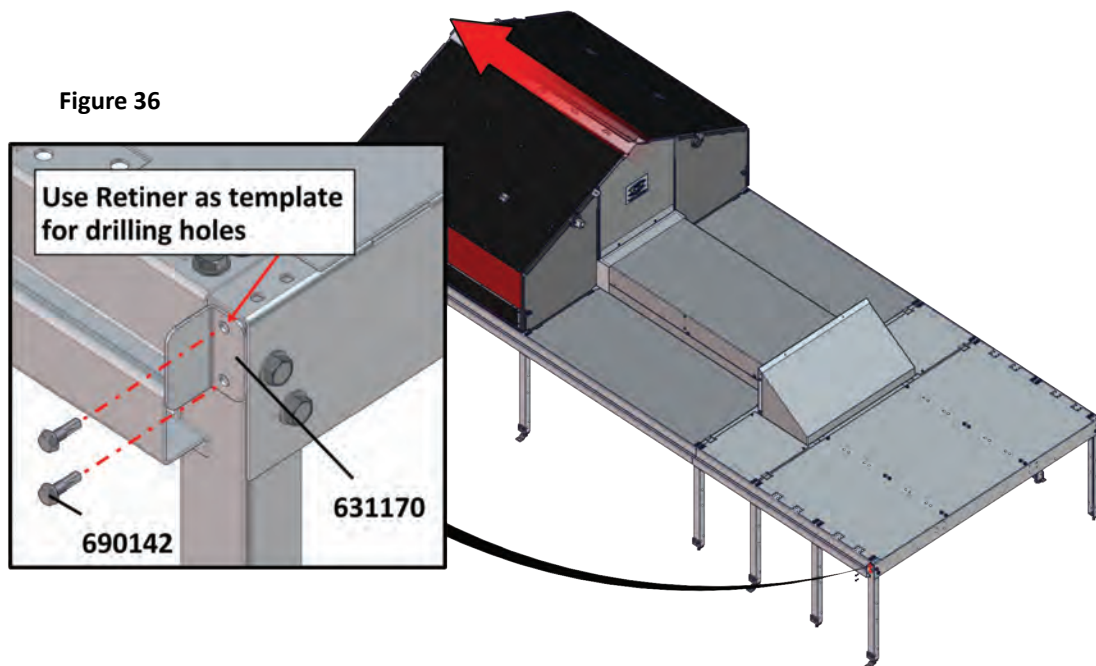


6.4 Non-Winchable Slat Assembly (continued)

8. At the ends of the Slat Sections within the nest row assemble 631168 Wire Panel to both 630759 Half Slats using part number PMTT6 Wire Ties, *as shown in Figure 35*. Locate Wire Ties to allow Wire Panel to move as required.



9. When all Slat Sections are completely assembled with necessary allowances for expansion and contraction assemble 631170 Retainer Bracket to both ends of nest row using 690142 Screws, *as shown in Figure 36*.



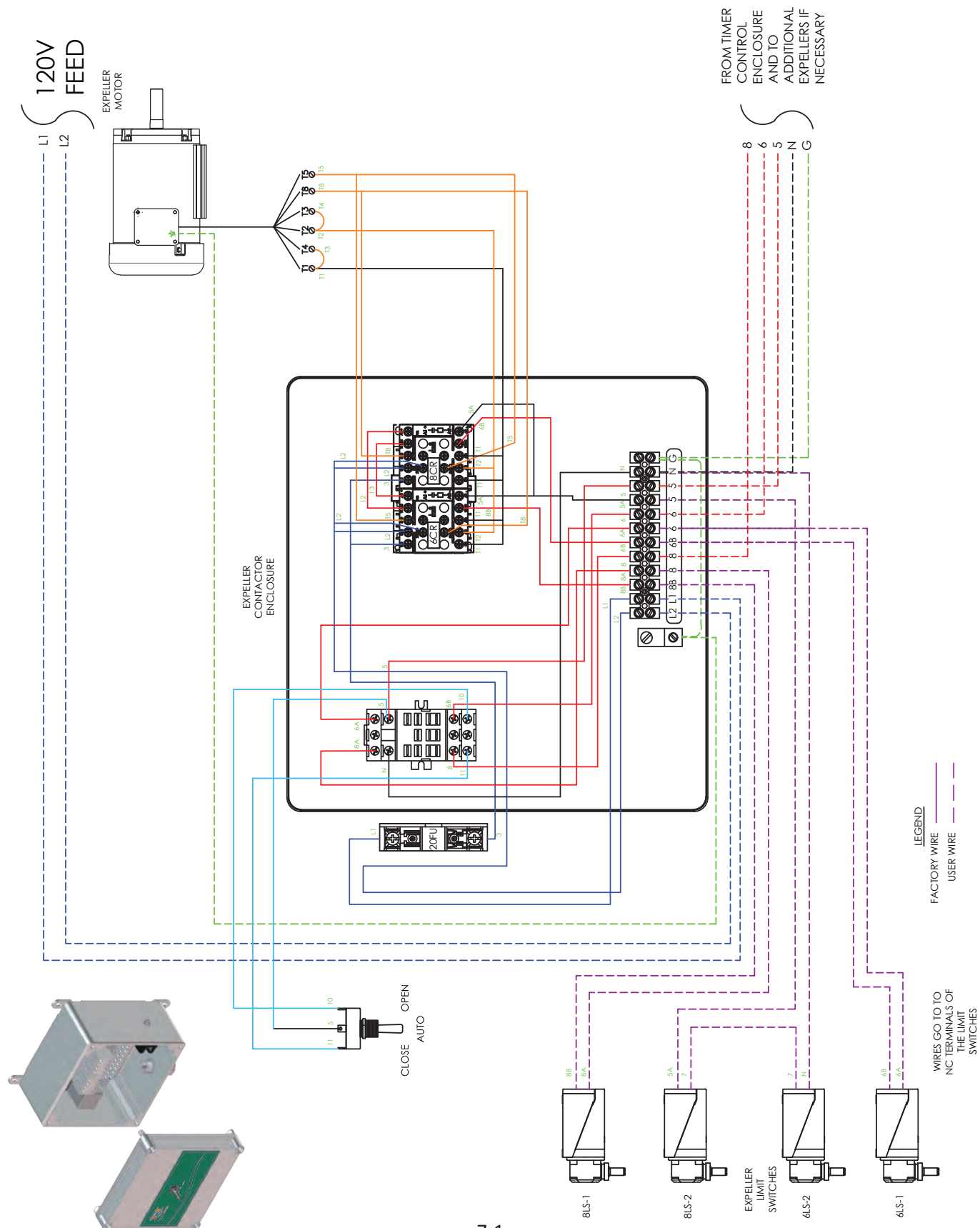
If Non-Winchable Slats are planned to run the length of the building but are NOT within 1" of the end wall of the building flashing or equivalent must be added (provided by others) to reduce dark areas and reduce slat eggs. If litter area planned between the end(s) of the row(s) and the end wall(s) of the building the open areas below the nest and slats must be covered (sold separately, 631013 Lattice Kit) to prevent birds getting under the nests or slats.



Intentionally Blank

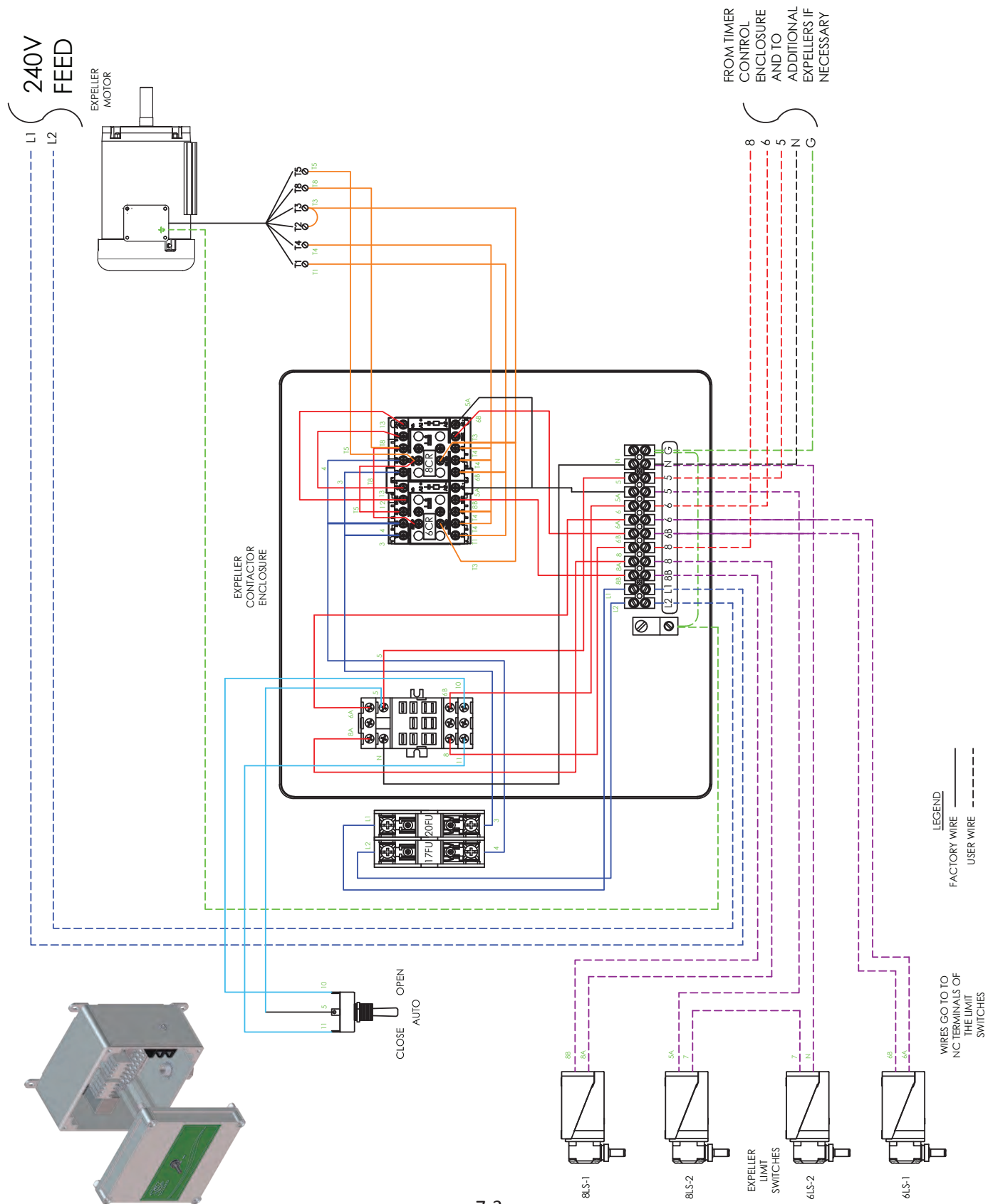
Chapter 7 - Control Instructions

APPENDIX 1 - Expeller Drive Contactor Box Control 920847 - DIAGRAM 920921



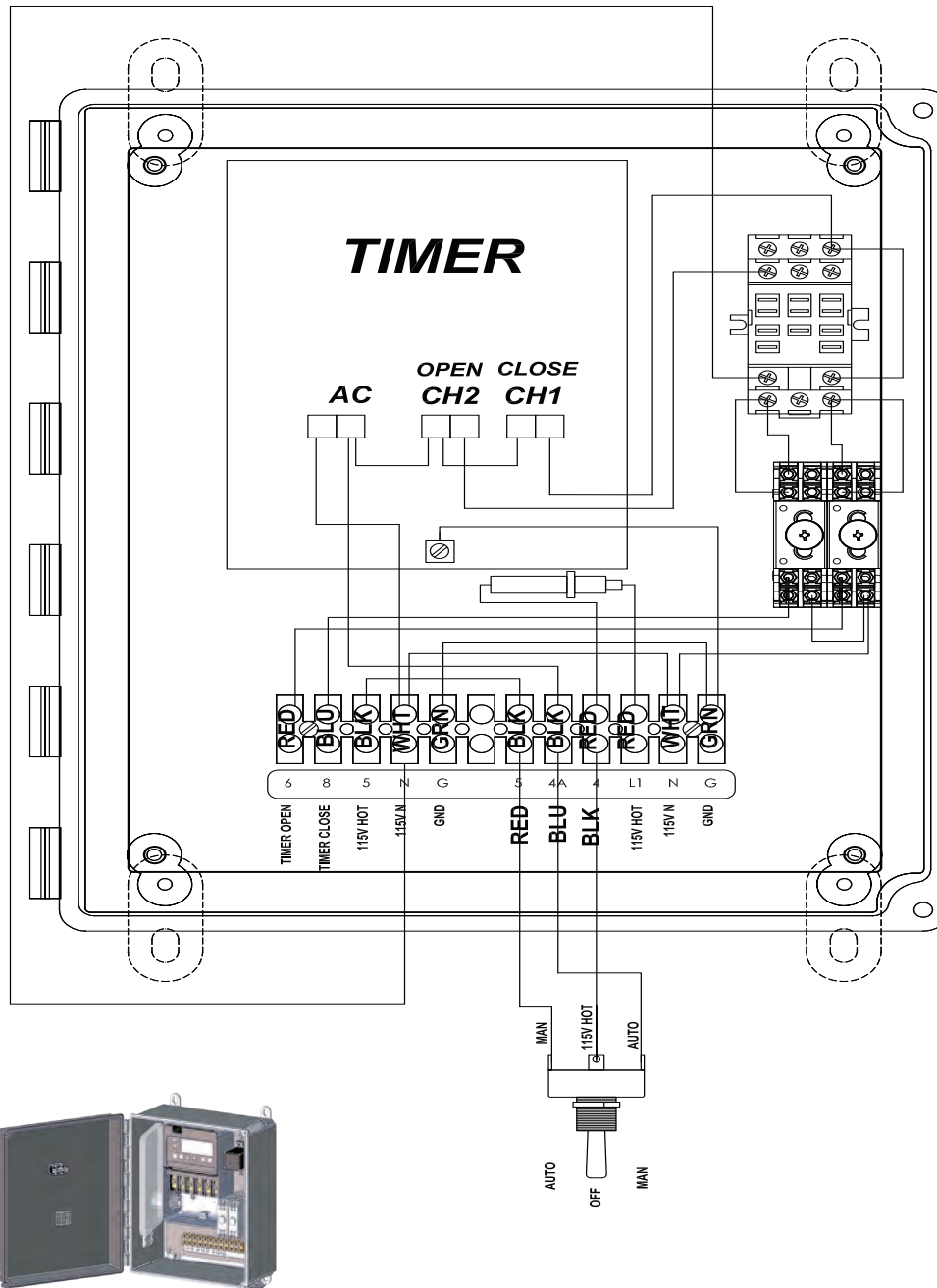


APPENDIX 3 - Expeller Drive Contactor Box Control 920860 - DIAGRAM 920922



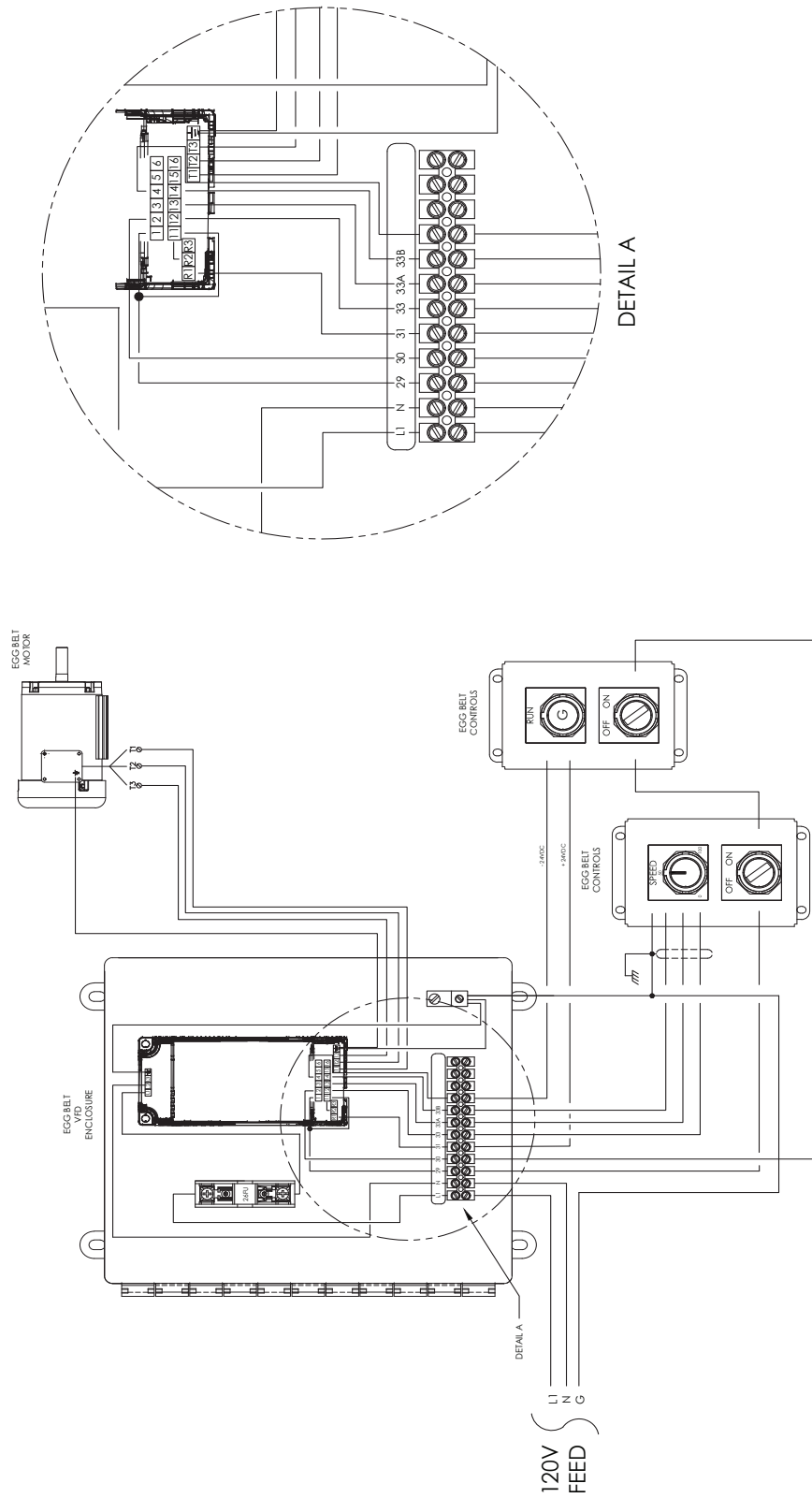


APPENDIX 5 - Expeller Drive TIME CLOCK Control 630204 - DIAGRAM 920893

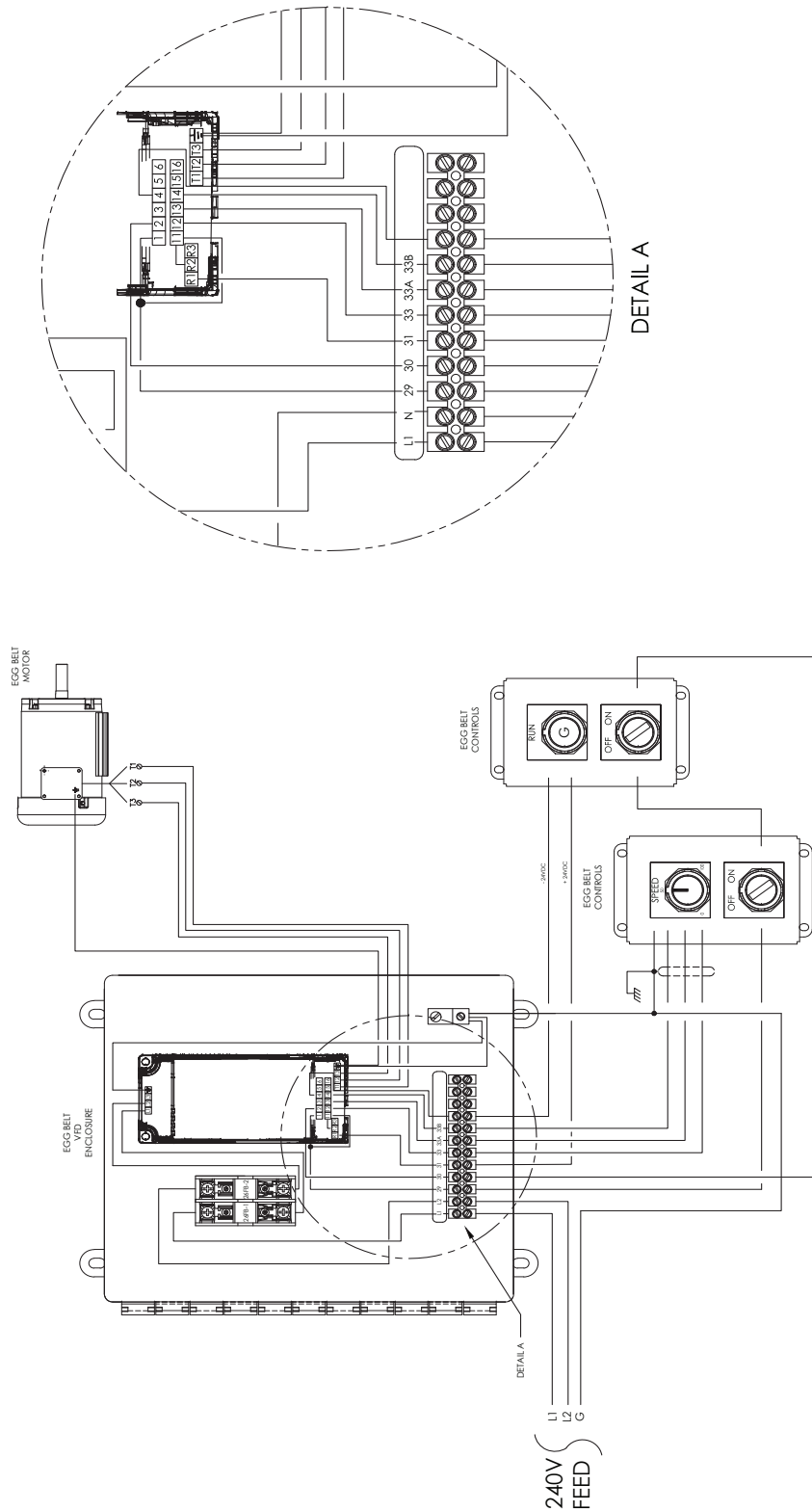




APPENDIX 6 - Egg Belt Drive Control 920837 - DIAGRAM 920925

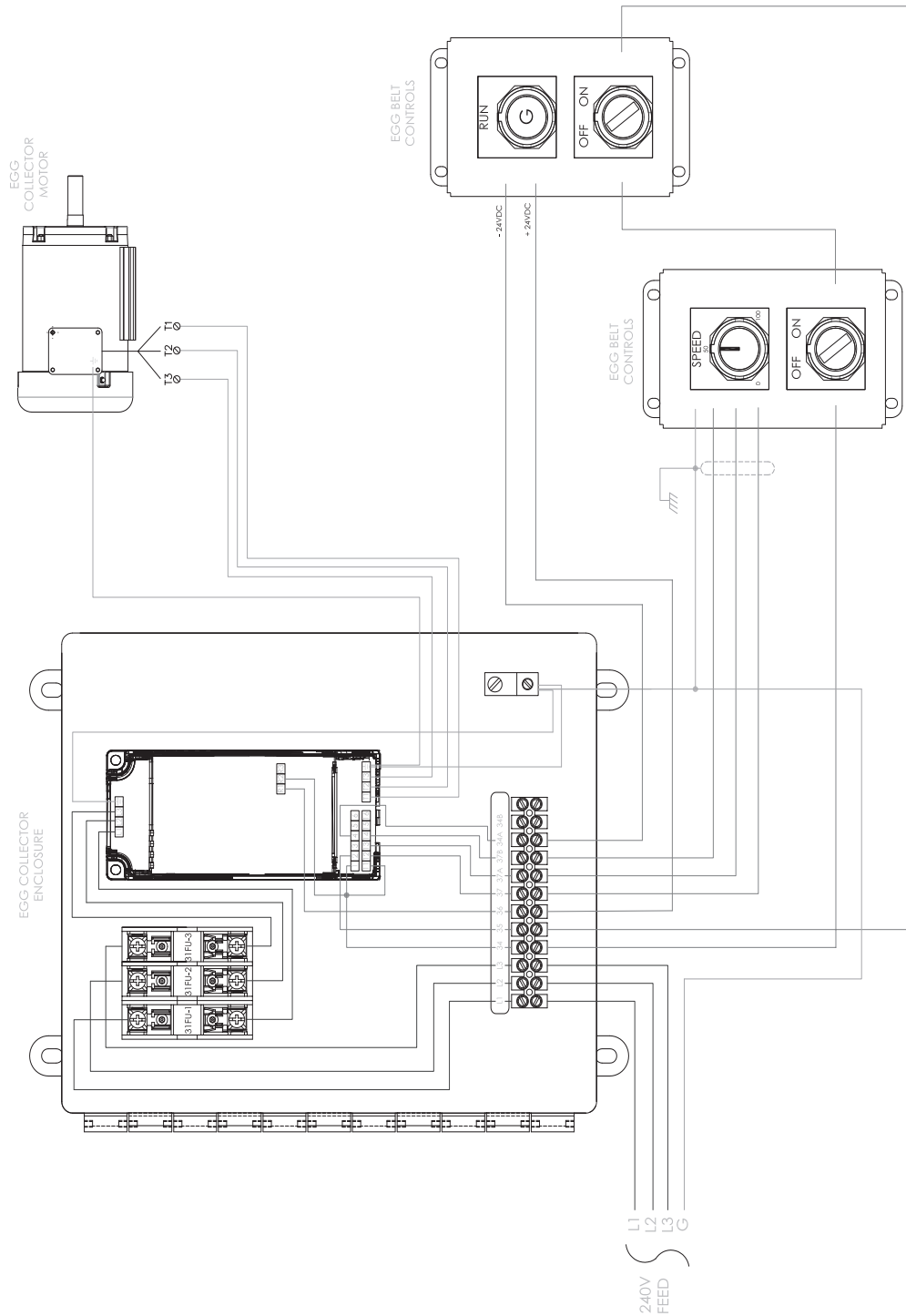


APPENDIX 7 - Egg Belt Drive Control 920836 - DIAGRAM 920924





APPENDIX 8 - Egg Belt Drive Control 920834 - DIAGRAM 920858





APPENDIX 9 - Expeller Drive Timer Control Operating Instructions

One 630204 Expeller Drive Timer Control is used per house. The toggle switch on the outside of the Expeller Drive Timer Control has three positions: MANUAL, AUTOMATIC and OFF. MANUAL allows the Expeller Drive Units to be operated independently at the Expeller Drive Contactor Box Control mounted below each Expeller Drive Unit. AUTOMATIC allows the 630204 Expeller Drive Timer Control to operate the Expeller Drive Units based on the set times. OFF removes the power leg from the control signal.

The double pole double throw (DPDT) 920931 Relay in conjunction with the 920930 Timing Relays allows only one signal from the 630615 Timer to be transmitted to the Expeller Drive Unit(s) at a time. Set the Timing Relays between 5 and 10 (30-60 seconds), which will allow the Expeller Motor(s) to stop before a reversing signal can be sent to the Expeller Motor. NOTE: set-up OPEN and CLOSE signals that if both being transmitted the OPEN signal activates the DPDT relay and transmits the OPEN signal (and Expeller Wires will be against the Back Wall of the nests).

The following are additional instructions to set the ON/OFF times (Events) for the Timer when used with the Expeller Drive Units. Below is a portion of the instructions supplied with the Timer covering programming date, time and ON/OFF Events and operating the Time Switch.

When in the AUTO mode the LOAD 1 ON/OFF and LOAD 2 ON/OFF need to be set to OFF to work for the first cycle times. The wiring of the Timer Control Box does not allow LOAD 1 and LOAD 2 to operate at the same time but the Timer can be set to operate LOAD 1 and LOAD 2 at the same time and is the reason for the relays noted above.

When setting up the ON/OFF EVENTS the related events (ON@ and OFF@, example EVENT 1 and EVENT 2) to start and stop the expeller in one direction would be set for the same load (example EVENT 1 and EVENT 2 would be toggled to LOAD 1). To move the expeller in the opposite direction the LOAD not previously used would be set for the related events (ON@ and OFF@, example EVENT 3 and EVENT 4) to start and stop the expeller in the opposite direction (example EVENT 3 and EVENT 4 would be toggled to LOAD 2).

The following instructions are also supplied with Timer in the Expeller Drive Time Clock Control box. Note the Expeller Drive Time Clock Control uses Time Switch ET1725C.

By pressing the MODE button, the Time Switch will cycle through the menus necessary for programming the current time, date, and timed events.

The basic procedure is to use the MODE button to move from one menu to the next (e.g., DATE, TIME, etc.), the + or – buttons for the first part of a setting (e.g., MONTH), the ENTER button to move to the next part of the setting (e.g., YEAR), then MODE to exit and move to the next menu. To skip a menu, press MODE to move ahead.

If you make a mistake, press the MODE button repeatedly to cycle back around to the error, then make the correct entry.



DATE and TIME must be set before you can access any other programming menus.



APPENDIX 9 - Expeller Drive Time Clock Control Operating Instructions - continued

Setting Date

1. Press the MODE button repeatedly until the words SET and DATE appear in the upper area of the display.
2. Press the + or – buttons to enter the current Month.
3. Press the ENTER button when the Month is correct to save the setting. The screen advances to current Date.
4. Again press the + or – buttons to enter the current Date, followed by the ENTER button.
5. Repeat to set the correct Year.
6. Press the MODE button to exit and advance to setting the time.

Setting Time

1. If necessary, press the MODE button repeatedly until the words SET and CLOCK appear in the upper area of the display.
2. Press the + or – buttons to enter the current time.
3. Press the MODE button to exit and advance to setting Events.



To go from AM to PM, keep pressing the + or – buttons to cycle through the day. You can hold the + or – buttons down for 3 seconds to make the time scroll quickly.

Setting ON/OFF Events

1. If necessary, press the MODE button repeatedly until the words SET ON/OFF EVENTS and EVENT 01 appear on the display.
2. If necessary, press the ENTER button on display ON @ or OFF @ (depending on what you want to set).
3. Press the DAY button to display 12:00 am and all days of the week.
4. Press the + or - buttons to enter the time you want to set.
5. If you want the Event to occur for a combination of days rather than every day (e.g. weekends only, weekdays only, or individual days), press the DAY button again as necessary to cycle through the individual days or combination of days you want.



To choose a combination not shown during cycling (e.g., Tuesday and Thursday), you must create an individual event for each of the days you want.

6. ET1725C ONLY – For a multi-circuit device with loads set independently, you can choose the load you want the event to control. The default setting is for both loads, as you can see on the display. Press the ON/OFF button under a load to remove the load from the event.
7. When you have set the event correctly, you have two choices:
 - Press the ENTER button to set the next ON/OFF event (up to 28 events).
 - Press the MODE button to exit.

Operating the Time Switch

Press the MODE button repeatedly to select the desired operating mode on the display.

There are 2 options:

1. AUTO—where the Time Switch follows the events you have pro-programmed, turning the circuits ON and OFF at the time(s) set.



You can override programmed events and force the Time Switch ON or OFF by pressing the ON/OFF button.



APPENDIX 9 - Expeller Drive Time Clock Control Operating Instructions - continued

2. MANUAL—where any events set are disabled and the Time Switch controls all circuits through the ON/OFF button.



You can review or edit any programmed events at any time by pressing the MODE button repeatedly to return to the appropriate menu, then following programming instruction provided on this sheet.

OPTIONAL - Deleting (Clearing) an Event

Use this procedure to clear the settings programmed for an event.

1. If necessary, press the MODE button repeatedly until the words SET ON/OFF EVENTS are shown on the display.
2. Press the ENTER button as necessary to cycle through events that have been set until you see the event you want to delete.
3. Press the * or - buttons AT THE SAME TIME to display --:-- --.
4. Press the MODE button to exit.

Battery Maintenance

- Batteries can be easily replaced without removing the Time Switch mechanism or field wiring.
- Press in and downward (in the direction of the arrows) on the battery cover.
- It is recommended to replace the batteries every 2-3 years with (2) AAA Industrial grade Alkaline cells as part of normal maintenance on the Time Switch.
- Be sure to observe battery polarity markings when installing batteries.
- No other battery maintenance is required.

APPENDIX 10 - Expeller Drive Contactor Box Control Operating Instructions

One Expeller Drive Contactor Box Control is located at each Expeller Drive Unit to operate the Expeller Drive Unit independently of the 630204 Expeller Drive Timer Control. To operate the Expeller Drive Unit from the Expeller Drive Contactor Box Control the toggle switch on the 630204 Expeller Drive Timer Control must be in the MANUAL position. With the toggle switch in the MANUAL position the toggle switch on the Expeller Drive Contactor Box can be actuated to the OPEN or CLOSED position. The toggle switch is a momentary switch and has to be held in the OPEN or CLOSED position to run the Expeller Drive Unit to the desired position. The limit switches will stop the Expeller Drive Unit at their set positions. If Expeller Wires do not stop at the desired position see Community Nest Testing - Expeller Drive Unit(s) and Expeller Wires section.



APPENDIX 11 - Egg Belt Drive Control Operating Instructions

One Egg Belt Drive Control is used per Egg Belt Drive Unit. To operator, both the indicator light box and the potentiometer box, ON/OFF switches must be in the ON position. Adjust the potentiometer to speed up or slow down the speed of the Egg Belt Drive Unit, the greater the indicator number the greater the speed (if the reverse is happening reverse the wires).



To stop Egg Belt Drive Unit use the ON/OFF switch, do not set the potentiometer to “0” to stop the Egg Belt Drive Unit.

See Allen-Bradley manual (PowerFlex 4 or 4M) included with control for “Basic Program Group” starting on page 3-8.

PowerFlex 4 Parameters

- P031 – Set to the motor nameplate rated volts
- P032 – Set to the motor nameplate rated frequency
- P033 – Set to the Full Load Amps (FLA)
- P036 – Set to option 2
- P038 – Set to option 2

PowerFlex 4M Parameters

- P101 – Set to the motor nameplate rated volts
- P102 – Set to the motor nameplate rated frequency
- P103 – Set to the Full Load Amps (FLA)
- P106 – Set to option 2
- P108 – Set to option 2



Input Voltage 100 - 120V, 1 Phase – Output Voltage 230V, 3 Phase
Input Voltage 200 - 240V, 1 Phase – Output Voltage 230V, 3 Phase
Input Voltage 200 - 240V, 3 Phase – Output Voltage 230V, 3 Phase
Input Voltage 380 - 480V, 3 Phase – Output Voltage 460V, 3 Phase

See Allen-Bradley manual included with control for Fault/Error Codes on the Drive



Chapter 8 - Preventing Floor Eggs

APPENDIX 12 - Recommendations for Preventing Floor Eggs

When eggs are laid on the floor, they become detrimental to the production of the flock because:

1. **there are less useable eggs**
2. **there is a higher risk of contamination**
3. **the extra work for the farm staff**

The following are some recommendations to reduce floor eggs:

- Install a bright (not colored) lighting system that will produce a light spectrum which covers all areas of the house. The lighting system should shine light on the water nipples, nests, slats, and litter. Turn the dimmable lights on an hour before the house lights are turned on and turn them off an hour after the house lights are turned off with the brightness increasing until the house lights are turned on and decreasing after the house lights are turned off. This will help the early birds find the nests before the house lights are turned on and birds to find their place after the house lights are turned off.
- Avoid shadow/dark areas in the house. Shadows/dark locations under the feeding system or near building supports are common places for floor eggs.
- Prevent direct sunlight from entering into the nest.
- Locate the row of nests in the center of the house or proportional to the side walls if more than one row.
- The birds should be able to easily reach the nest without obstruction.
- On a Floor Mounted System it is recommended to use approximately 50% slats.
- The slats for the nests should be sloped (maximum of 10%) to reduce eggs laid on the slats.
- Birds tend to migrate toward activity in the house, partitioning down the length of the nest row(s) and across the width of the row(s) to keep the number of birds balanced with the water, feeder and nests.
- A warm draft free nest reduces the number of eggs laid outside the nest.
- If water is not sufficient, the birds will gather around the drinking points. This can delay bird movement toward the nests.
- The feeding and drinking systems should be placed as close to the nests as possible, with the water closest to the nest. The birds must be able to cross the feeding system.
- Birds must have the opportunity to eat and drink before or after laying their eggs, hence keep the water near the nest. The feeding time must allow the birds to satisfy their morning appetite before they start laying. Do not supply the birds with feed during peak egg laying time. If they are fed during this time, they will be drawn away from the nests. Most of the eggs are laid during the first half light hours.
- After feeding, winch up the feeding system to reduce shadows/dark area under the trough/pans. The best way to accomplish this is to use an electric winching system on a timer.
- When transferring birds to the community nest house, spread the birds over the slatted area.
- Open the nests so the birds can get used to the nests before the start of laying eggs.
- The litter on the floor should not be too deep at the beginning of the laying period. Too much litter stimulates the birds to lay their eggs outside the nest.
- From the beginning of each flock, always collect the eggs laid outside the nest as frequently as possible. The amount of floor eggs greatly depends on how quick and observant the farm attendant is and subsequent action taken.
- It is important that all human activity in the house be performed as calmly as possible so not to disturb birds in the nests.
- If pullets are raised in a layer house, there is a greater risk of the birds laying floor eggs and therefore more attention is required.

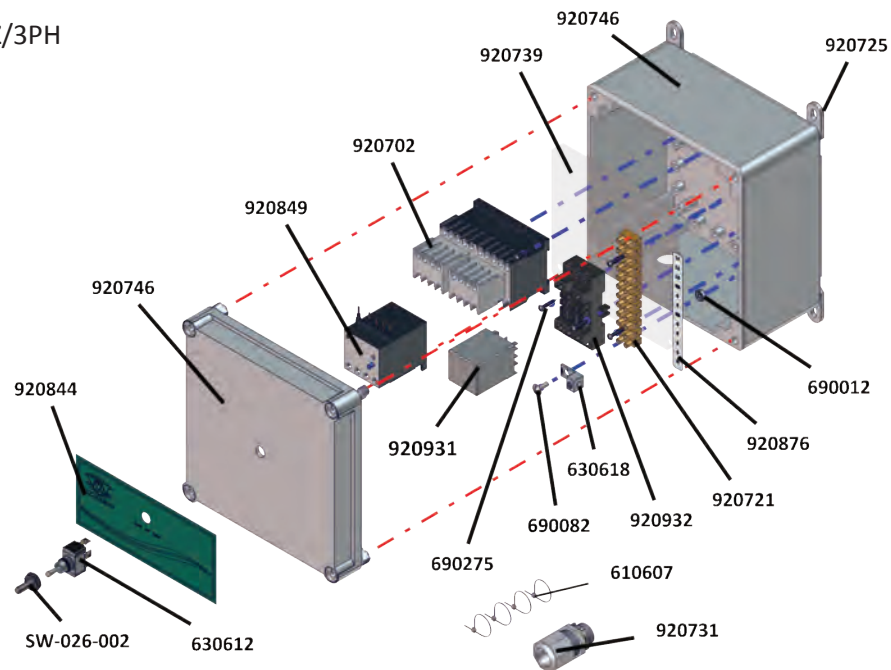


APPENDIX 13 - Expeller Drive Contactor Box Controls- 1PH (continued)

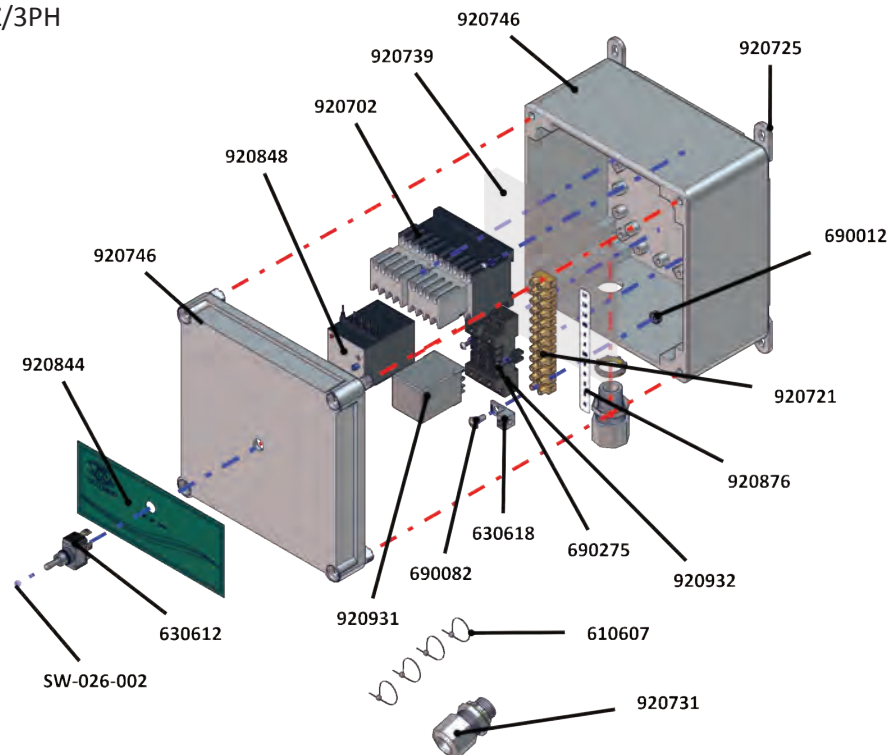
| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 920847, 920860 - 1PH (<i>Interchangeable Parts</i>) | | |
| 012887 | WASHER, FLAT #8 SAE PLATED | 1 |
| 610607 | TY-RAP, SELF-LOCK T&B #TY-23M | 4 |
| 630612 | SWITCH, TOGGLE,(ON)-OFF-(ON) 10A 250VAC | 1 |
| 630618 | GROUND LUG - #14-2 ALUMINUM | 1 |
| 690012 | NUT, KEP 10-24 ZP | 1 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP | 1 |
| 690192 | SCREW, 8-32 X 1/2 RHMS ZP (920847) | 1 |
| 690193 | NUT, KEP 8-32 ZP (920847) | 1 |
| 690275 | SCREW, # 6 x 3/4 PPH SELF TAPPING, ZP | 6 |
| 920702 | MINI, REV CONT,7A, 120VAC COIL 4 NO/2 NC AUX, W/PWR WIRING | 1 |
| 920721 | TERMINAL STRIP, EURO, 12-POLE, 10MM | 1 |
| 920727 | CORD, 16/6, SO (<i>not shown</i>) | 6 |
| 920728 | WIRE, 16AWG, MTW, RED, STRANDED, COPPER (<i>not shown</i>) | 2.5 |
| 920729 | WIRE, 16AWG, MTW, WHITE, STRANDED, COPPER (<i>not shown</i>) | 1 |
| 920731 | CONNECTOR, CORD, STRAIN RELIEF 0.375-0.750 | 2 |
| 920739 | PLATE. 6.3 X 6.3, GALV, MOUNTING | 1 |
| 920725 | MOUNTING EAR, KIT | 1 |
| 920746 | ENCLOSURE, 7.87 X 7.87 X 5 NON-METALLIC | 1 |
| 920844 | EXPELLER PANEL LABEL | 1 |
| 920845 | EXPELLER TERMINAL LABEL 1PH | 1 |
| 920918 | WIRE, 16AWG, MTW, BLACK, STRANDED, COPPER (<i>not shown</i>) | 2.5 |
| 920919 | WIRE, 16AWG, MTW, BLUE, STRANDED, COPPER (<i>not shown</i>) | 2.5 |
| 920931 | RELAY, DPDT, 25A 120V AC COIL GPRS-B2C25D | 1 |
| 920932 | SOCKET, RELAY GPRA-SB11G1 | 1 |
| SW-026-002 | SW TGL BOOT GY SILICONE | 1 |
| 920847, 920860, (<i>Parts per individual Control</i>) | | |
| 920717 | FUSE BLOCK, 600V, 30A, 2-POLE, MIDGET CLASS (920860) | 1 |
| 920720 | FUSE, 500V, 10, TD, MIDGET (920860) | 1 |
| 920733 | FUSE, 500V, 6A, TD, MIDGET (920860) | 2 |
| 920740 | FUSE BLOCK,600V, 30A, 1-POLE MIDGET (920847) | 1 |
| 920921 | WIRING DIAGRAM (920847) (<i>not shown</i>) | 1 |
| 920922 | WIRING DIAGRAM (920860) (<i>not shown</i>) | 1 |

APPENDIX 14 - Expeller Drive Contactor Box Controls - 3PH

920851 480V/60HZ/3PH



920861 240V/60HZ/3PH



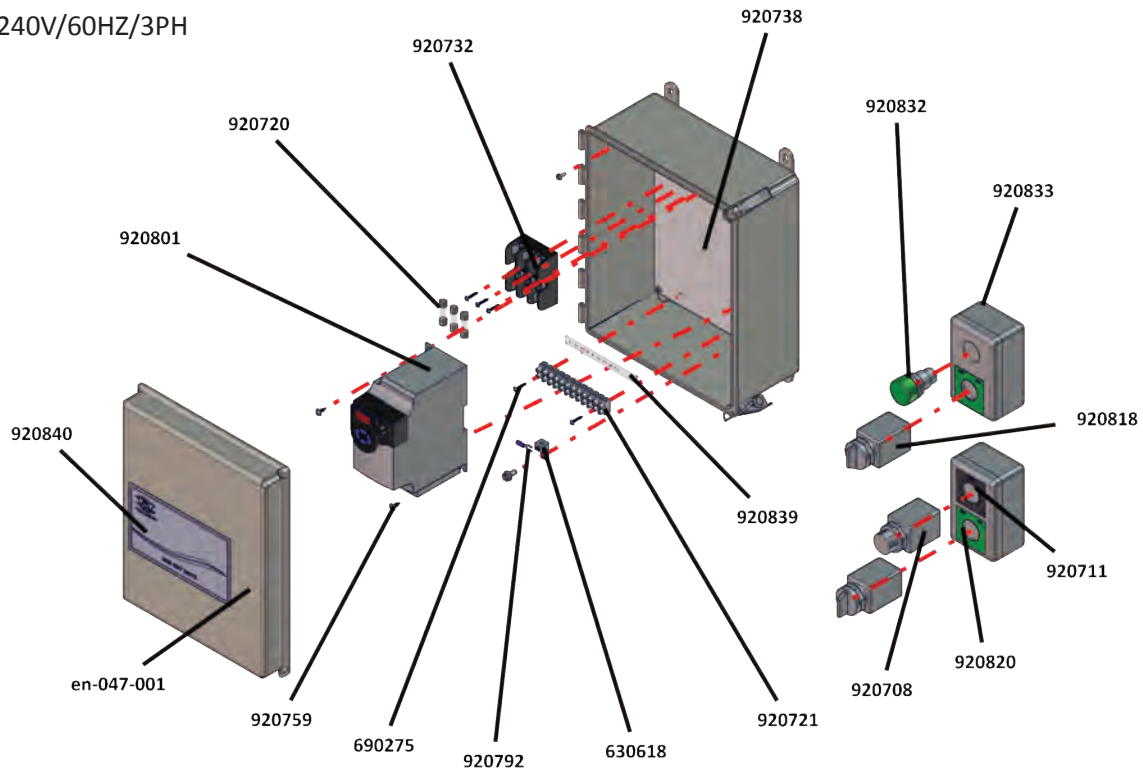


APPENDIX 14 - Expeller Drive Contactor Box Controls - 3PH (continued)

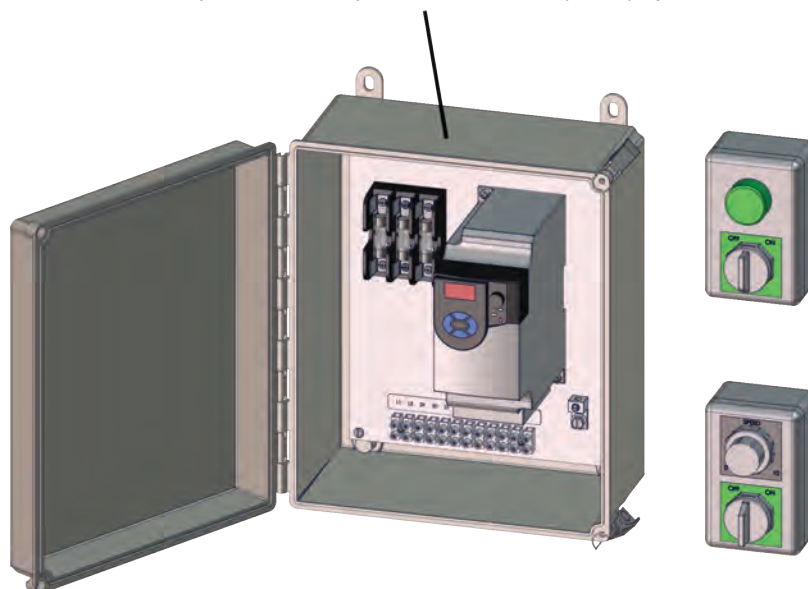
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|--|--|-----|
| 920851, 920861 - 3PH (<i>Interchangeable Parts</i>) | | |
| 610607 | TY-RAP, SELF-LOCK T&B #TY-23M | 4 |
| 630612 | SWITCH, TOGGLE,(ON)-OFF-(ON) 10A 250VAC | 1 |
| 630618 | GROUND LUG - #14-2 ALUMINUM | 1 |
| 690012 | NUT, KEP 10-24 ZP | 1 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP | 1 |
| 690275 | SCREW, # 6 x 3/4 PPH SELF TAPPING, ZP | 6 |
| 920702 | MINI, REV CONT,7A, 120VAC COIL 4 NO/2 NC AUX, W/PWR WIRING | 1 |
| 920721 | TERMINAL STRIP, EURO, 12-POLE, 10MM | 1 |
| 920725 | MOUNTING EAR, KIT | 1 |
| 920727 | CORD, 16/6, SO (not shown) | 6 |
| 920728 | WIRE, 16AWG, MTW, RED, STRANDED, COPPER (not shown) | 2.5 |
| 920729 | WIRE, 16AWG, MTW, WHITE, STRANDED, COPPER (not shown) | 1 |
| 920731 | CONNECTOR, CORD, STRAIN RELIEF 0.375-0.750 | 2 |
| 920739 | PLATE. 6.3 X 6.3, GALV, MOUNTING | 1 |
| 920746 | ENCLOSURE, 7.87 X 7.87 X 5 NON-METALLIC | 1 |
| 920844 | EXPELLER PANEL LABEL | 1 |
| 920876 | 3 PH EXPELLER TERMINAL LABEL | 1 |
| 920923 | WIRING DIAGRAM (not shown) | 1 |
| 920918 | WIRE, 16AWG, MTW, BLACK, STRANDED, COPPER (not shown) | 2.5 |
| 920919 | WIRE, 16AWG, MTW, BLUE, STRANDED, COPPER (not shown) | 2.5 |
| 920931 | RELAY, DPDT, 25A 120V AC COIL GPRS-B2C25D | 1 |
| 920932 | SOCKET, RELAY GPRA-SB11G1 | 1 |
| SW-026-002 | SW TGL BOOT GY SILICONE (not shown) | 1 |
| 920851, 920861 (<i>Parts per individual Control</i>) | | |
| 920848 | RELAY, OVERLOAD BIMETALLIC 1.2 - 1.8A (920861) | 1 |
| 920849 | RELAY, OVERLOAD BIMETALLIC, 0.8 - 1.2A (920851) | 1 |

APPENDIX 15 - Egg Belt Drive Controls

920834 240V/60HZ/3PH



920802, ENCLOSURE, EGG COLLECTOR, VFD, 3/240V



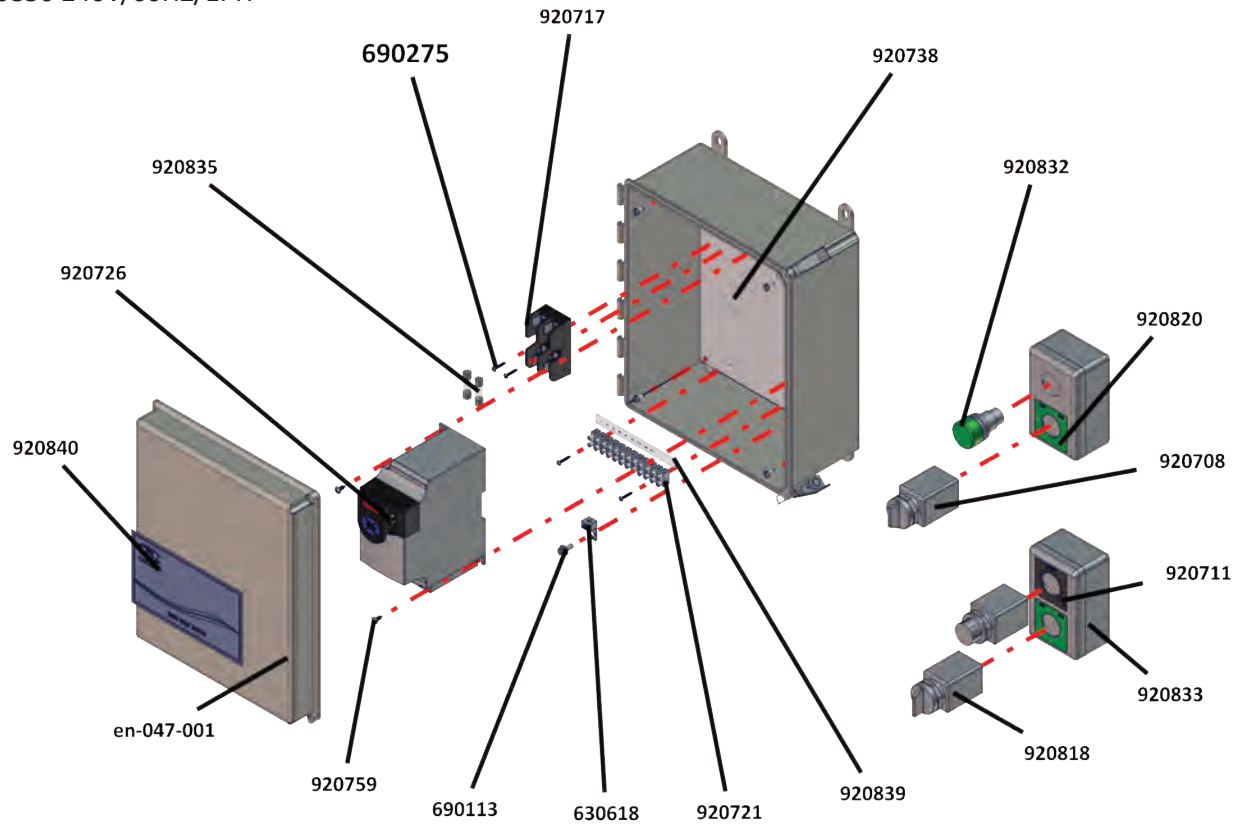


APPENDIX 15 - Egg Belt Drive Controls (continued)

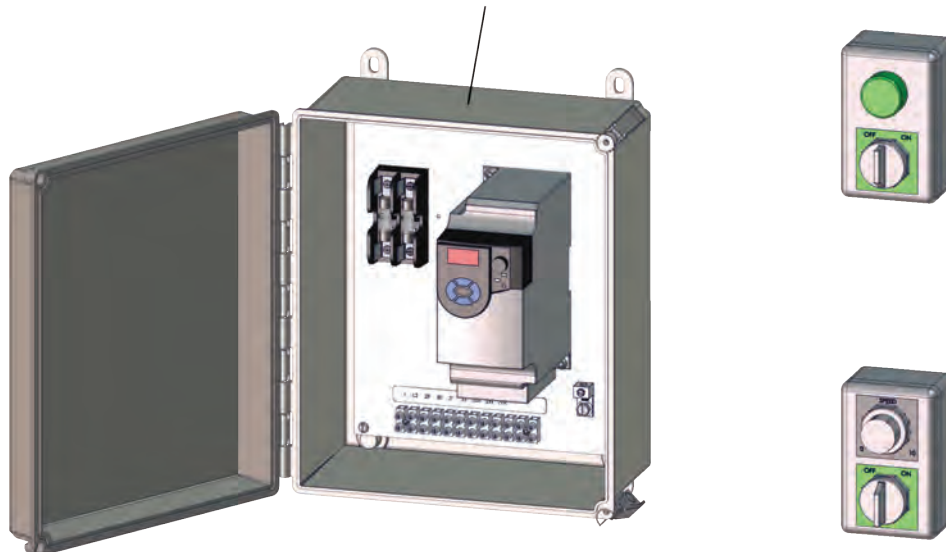
| PART # | DESCRIPTION | QTY |
|-------------------------------------|--|-----|
| 920834 - ASSEMBLY, 3-PHASE 240V EGG | | |
| 630618 | GROUND LUG - #14-2 ALUMINUM | 1 |
| 690012 | NUT, KEP 10-24 ZP <i>(not shown)</i> | 1 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP <i>(not shown)</i> | 1 |
| 690275 | SCREW, # 6 x 3/4 PPH SELF TAPPING, ZP | 5 |
| 920708 | POTENTIOMETER, 30MM, 10K OHM | 1 |
| 920711 | LEGEND PLATE, STANDARD, 30MM W/TEXT: SPEED, 0-100 | 1 |
| 920720 | FUSE, 500V, 10, TD, MIDGET | 3 |
| 920721 | TERMINAL STRIP, EURO, 12-POLE, 10MM | 1 |
| 920730 | WIRE, 16AWG, MTW, GREEN, STRANDED, COPPER <i>(not shown)</i> | 1.5 |
| 920732 | FUSE BLOCK, 600V, 30A, 3-POLE MIDGET, FERRAZ-SHAWMUT 30313 | 1 |
| 920738 | PLATE, MOUNTING, EGG BELT VFD | 1 |
| 920759 | SCREW, #10 X .50" SELF-TAPPING | 2 |
| 920792 | CONNECTOR, ELEC T&B #14RB-8F | 6 |
| 920801 | VFD, POWERFLEX 4M, 240V, 3PH, 1HP, 4.2A | 1 |
| 920802 | ENCLOSURE, EGG COLLECTOR, VFD, 3/240V | 1 |
| 920818 | SELECTOR SWITCH, 2 POSITION, 30MM, W1-N.O. CNT, SS02-SHWE-N | 2 |
| 920820 | LEGEND PLATE, STANDARD, 30MM W/TEXT: OFF/ON, LPGN-56 | 2 |
| 920832 | 30MM, GREEN, PILOT LAMP 24V | 1 |
| 920833 | ENCLOSURE 2-HOLE 30MM, POLYCARBONATE, PC2 | 2 |
| 920839 | LABEL, EGG BELT VFD PANEL TERMINAL | 1 |
| 920840 | LABEL, EGG BELT VFD PANEL | 1 |
| 920858 | WIRING DIAGRAM, COLLECTOR VFD 3PH 240V <i>(not shown)</i> | 1 |
| EN-047-001 | ENCL/12X10X6 HG COVER NEMA4X | 1 |
| WS-23 | WIRE STRD UL1015 PVC 22AWG RED <i>(not shown)</i> | 3 |
| WS-29 | WIRE STRANDED 14MTW BLACK <i>(not shown)</i> | 6 |
| ZC1150R | 3 CONDUCTOR/SHIELDED/22 AWG <i>(not shown)</i> | 1 |

APPENDIX 15 - Egg Belt Drive Controls (continued)

920836 240V/60HZ/1PH



920926, ENCLOSURE, EGG COLLECTOR, VFD, 1/240V



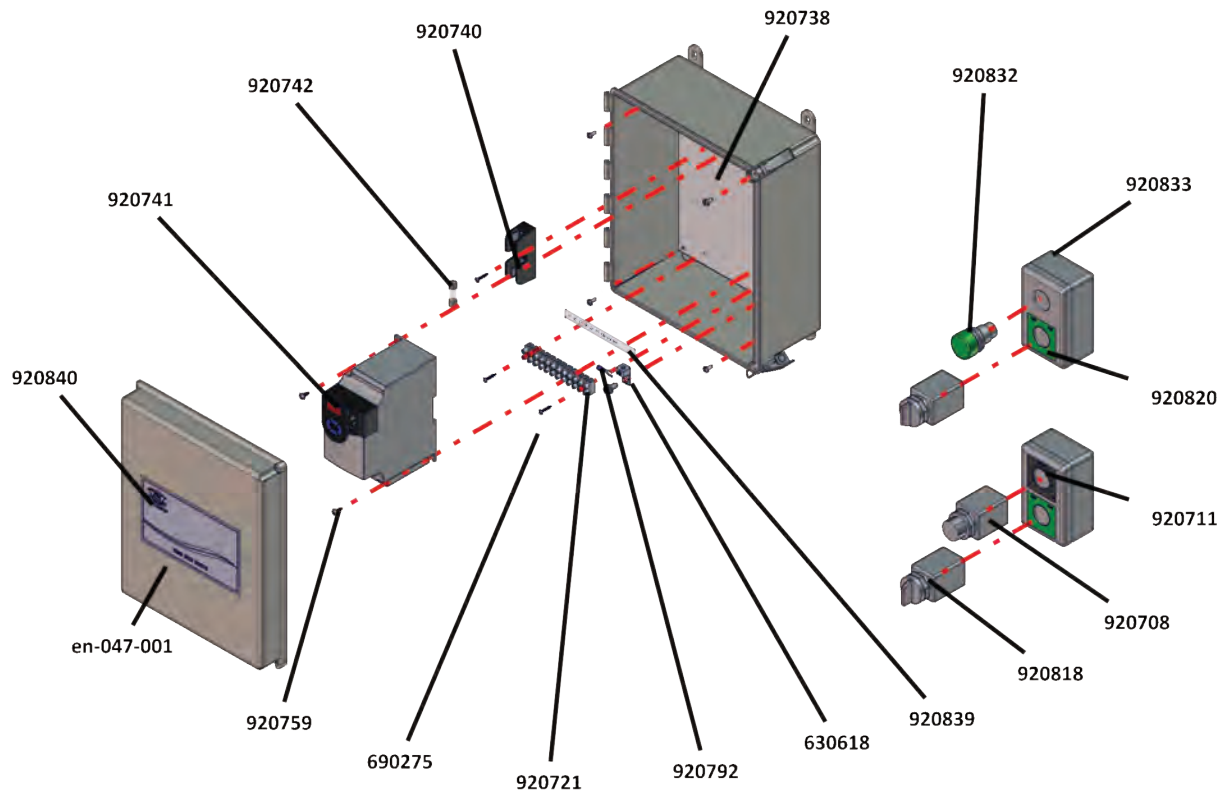


APPENDIX 15 - Egg Belt Drive Controls (continued)

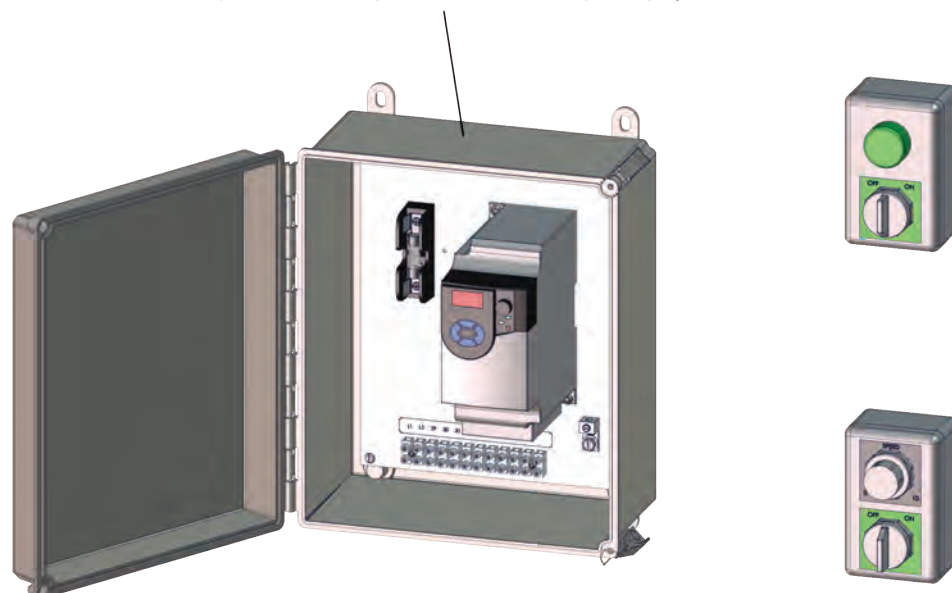
| PART # | DESCRIPTION | QTY |
|------------|--|-----|
| | 920836 - ASSEMBLY, 1-PHASE 240V EGG | |
| 630618 | GROUND LUG - #14-2 ALUMINUM | 1 |
| 690012 | NUT, KEP 10-24 ZP <i>(not shown)</i> | 1 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP <i>(not shown)</i> | 1 |
| 690275 | SCREW, # 6 x 3/4 PPH SELF TAPPING, ZP | 4 |
| 920708 | POTENTIOMETER, 30MM, 10K OHM | 1 |
| 920711 | LEGEND PLATE, STANDARD, 30MM W/TEXT: SPEED, 0-100 | 1 |
| 920717 | FUSE BLOCK, 600V, 30A, 2-POLE, MIDGET CLASS | 1 |
| 920721 | TERMINAL STRIP, EURO, 12-POLE, 10MM | 1 |
| 920726 | VFD, 240V, 1-PHASE, 1HP, 4.2A, AB POWERFLEX 4 | 1 |
| 920729 | WIRE, 16AWG, MTW, WHITE, STRANDED, COPPER <i>(not shown)</i> | 1 |
| 920730 | WIRE, 16AWG, MTW, GREEN, STRANDED, COPPER <i>(not shown)</i> | 1 |
| 920738 | PLATE, MOUNTING, EGG BELT VFD | 1 |
| 920759 | SCREW, #10 X .50" SELF-TAPPING | 2 |
| 920792 | CONNECTOR, ELEC T&B #14RB-8F <i>(not shown)</i> | 4 |
| 920818 | SELECTOR SWITCH, 2 POSITION, 30MM, W1-N.O. CNT, SS02-SHWE-N | 2 |
| 920820 | LEGEND PLATE, STANDARD, 30MM W/TEXT: OFF/ON, LPGN-56 | 2 |
| 920832 | 30MM, GREEN, PILOT LAMP 24V | 1 |
| 920833 | ENCLOSURE 2-HOLE 30MM, POLYCARBONATE, PC2 | 2 |
| 920835 | FUSE, MIDGET, 500V, 15A, TD | 2 |
| 920839 | LABEL, EGG BELT VFD PANEL TERMINAL | 1 |
| 920840 | LABEL, EGG BELT VFD PANEL | 1 |
| 920924 | WIRING DIAGRAM, 920926 CONTROL | 1 |
| 920926 | 240V, 1PH, EGG BELT VFD UNIT | 1 |
| EN-047-001 | ENCL/12X10X6 HG COVER NEMA4X | 1 |
| WS-23 | WIRE STRD UL1015 PVC 22AWG RED <i>(not shown)</i> | 3 |
| WS-29 | WIRE STRANDED 14MTW BLACK <i>(not shown)</i> | 1 |
| ZC1150R | 3 CONDUCTOR/SHIELDED/22 AWG <i>(not shown)</i> | 1 |

APPENDIX 15 - Egg Belt Drive Controls (continued)

920837 120V/60HZ/1PH



920927, ENCLOSURE, EGG COLLECTOR, VFD, 1/120V





APPENDIX 15 - Egg Belt Drive Controls (continued)

| PART # | DESCRIPTION | QTY |
|-------------------------------------|---|-----|
| 920837 - ASSEMBLY, 1-PHASE 120V EGG | | |
| 630618 | GROUND LUG - #14-2 ALUMINUM | 1 |
| 690012 | NUT, KEP 10-24 ZP <i>(not shown)</i> | 1 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP <i>(not shown)</i> | 1 |
| 690275 | SCREW, # 6 x 3/4 PPH SELF TAPPING, ZP | 3 |
| 920708 | POTENTIOMETER, 30MM, 10K OHM | 1 |
| 920711 | LEGEND PLATE, STANDARD, 30MM W/TEXT: SPEED, 0-100 | 1 |
| 920721 | TERMINAL STRIP, EURO, 12-POLE, 10MM | 1 |
| 920738 | PLATE, MOUNTING, EGG BELT VFD | 1 |
| 920740 | FUSE BLOCK, 600V, 30A, 1-POLE MIDGET | 1 |
| 920741 | VFD, POWERFLEX 4M, 120V, 1PH, 1HP, 4.5A | 1 |
| 920742 | FUSE, MIDGET, 500V, 30A, TD | 1 |
| 920759 | SCREW, #10 X .50" SELF-TAPPING | 3 |
| 920792 | CONNECTOR, ELEC T&B #14RB-8F | 2 |
| 920818 | SELECTOR SWITCH, 2 POSITION, 30MM, W1-N.O. CNT, SS02-SHWE-N | 2 |
| 920820 | LEGEND PLATE, STANDARD, 30MM W/TEXT: OFF/ON, LPGN-56 | 2 |
| 920832 | 30MM, GREEN, PILOT LAMP 24V | 1 |
| 920833 | ENCLOSURE 2-HOLE 30MM, POLYCARBONATE, PC2 | 2 |
| 920839 | LABEL, EGG BELT VFD PANEL TERMINAL | 1 |
| 920840 | LABEL, EGG BELT VFD PANEL | 1 |
| 920925 | WIRING DIAGRAM, 920927 CONTROL <i>(not shown)</i> | 1 |
| 920927 | 120V, 1PH, EGG BELT VFD UNIT | 1 |
| EN-047-001 | ENCL/12X10X6 HG COVER NEMA4X | 1 |
| WS-23 | WIRE STRD UL1015 PVC 22AWG RED <i>(not shown)</i> | 3 |
| WS-29 | WIRE STRANDED 14MTW BLACK <i>(not shown)</i> | 1 |
| ZC1150R | 3 CONDUCTOR/SHIELDED/22 AWG <i>(not shown)</i> | 1 |



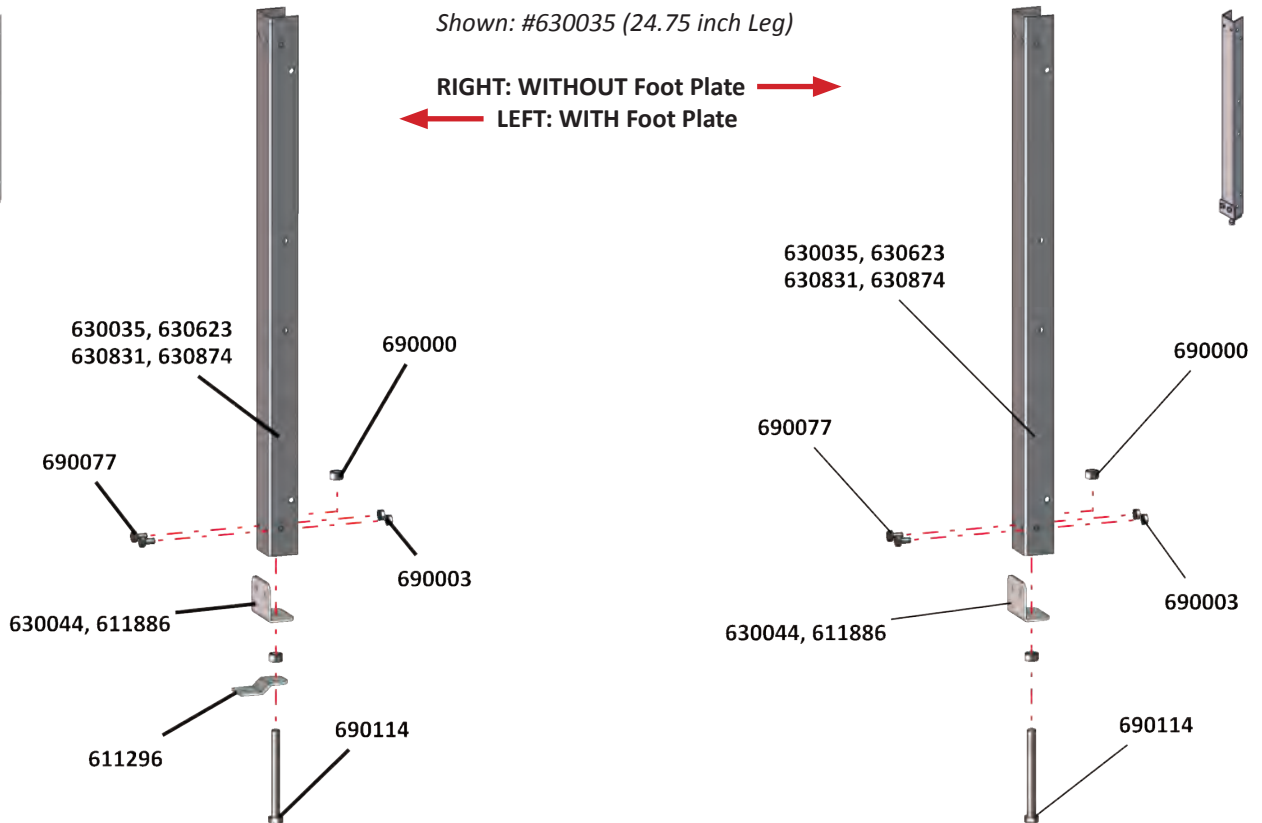
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Chapter 10 - Component Exploded Drawings and Part Lists

APPENDIX 16 - Leg and Foot Components



Leg assemblies With Foot Plate and Without Foot Plate are the same except for the length of the leg and the inclusion or exclusion of the Foot Plate. The Kit part number will determine the length of the leg ordered, as shown at the bottom of each assembly's parts list. ADDITIONAL COMPONENTS IN BOM(S) ARE EXTRAS TO BE USED IN ENTIRE NEST ROW AS REPLACEMENTS OR SPARE PARTS.

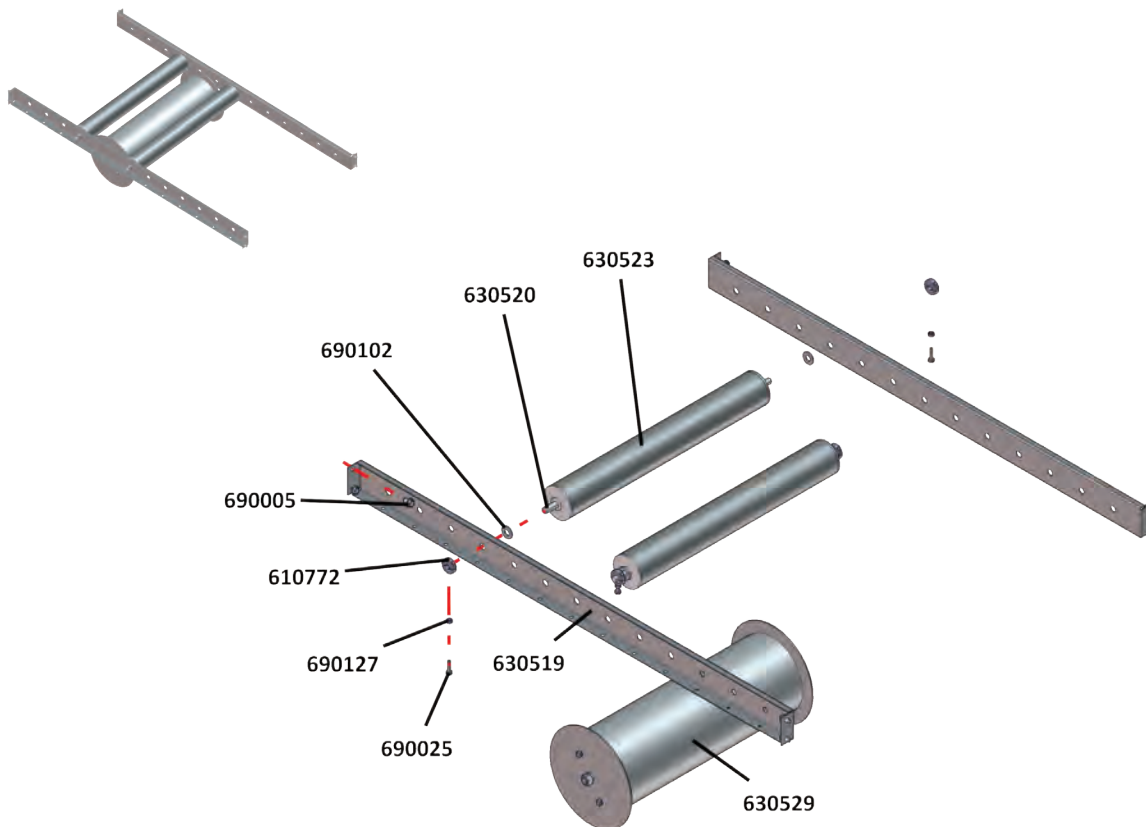


| PART # | DESCRIPTION | QTY |
|---------------------------------|--|-----|
| FOOT COMPONENTS / PER EACH FOOT | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB (used for 630874 leg only) | 1 |
| 690000 | NUT, HEX 3/8-16 ZP | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | 2 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 2 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 1 |
| LEG AND FOOT, F/NW SLATS | | |
| 630035 | LEG, NEST, 24.75INCH | 1 |
| 630623 | LEG, NEST 18" | 1 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS | 1 |
| 630874 | LEG, NEST, 5.313" | 1 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630874) | 1 |
| 630044 | FOOT, NEST (630035, 630623, 630831) | 1 |



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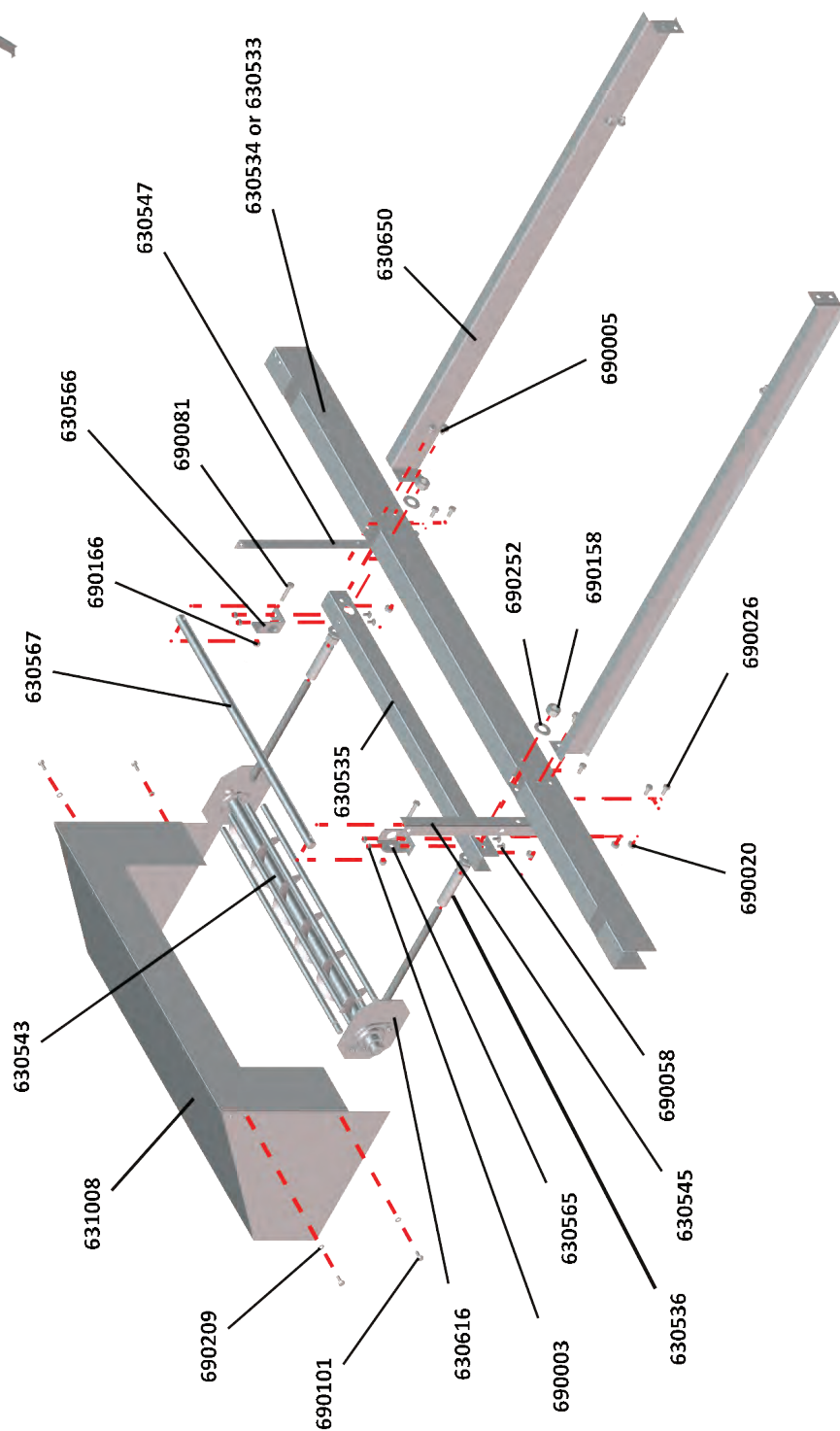
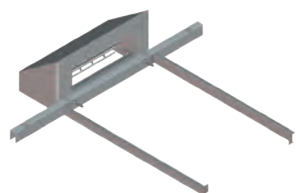
APPENDIX 17 - Take-Up Assembly



| PART # | DESCRIPTION | QTY |
|----------------------------------|--|-----|
| 630530 BOM KIT, EGG BELT TAKE-UP | | |
| 610772 | COLLAR, CLAMP .5 BORE, DRILLED | 4 |
| 630519 | CHNL, SUP, EGG BELT TENSIONER | 2 |
| 630520 | SHAFT, ROLLER, EGG BELT TENSIONER, ZINC PLATED | 2 |
| 630523 | ROLLER ASSY, 2.875 DIA, EGG BELT TENSIONER | 2 |
| 630529 | ROLLER, ASSY, 6.625 DIA, EGG BELT TENSIONER | 1 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 8 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP | 4 |
| 690102 | WASHER, FLAT 1/2 SAE ZP | 4 |
| 690127 | NUT, HEX 1/4-20 ZP | 4 |



APPENDIX 18 - Idler Assembly





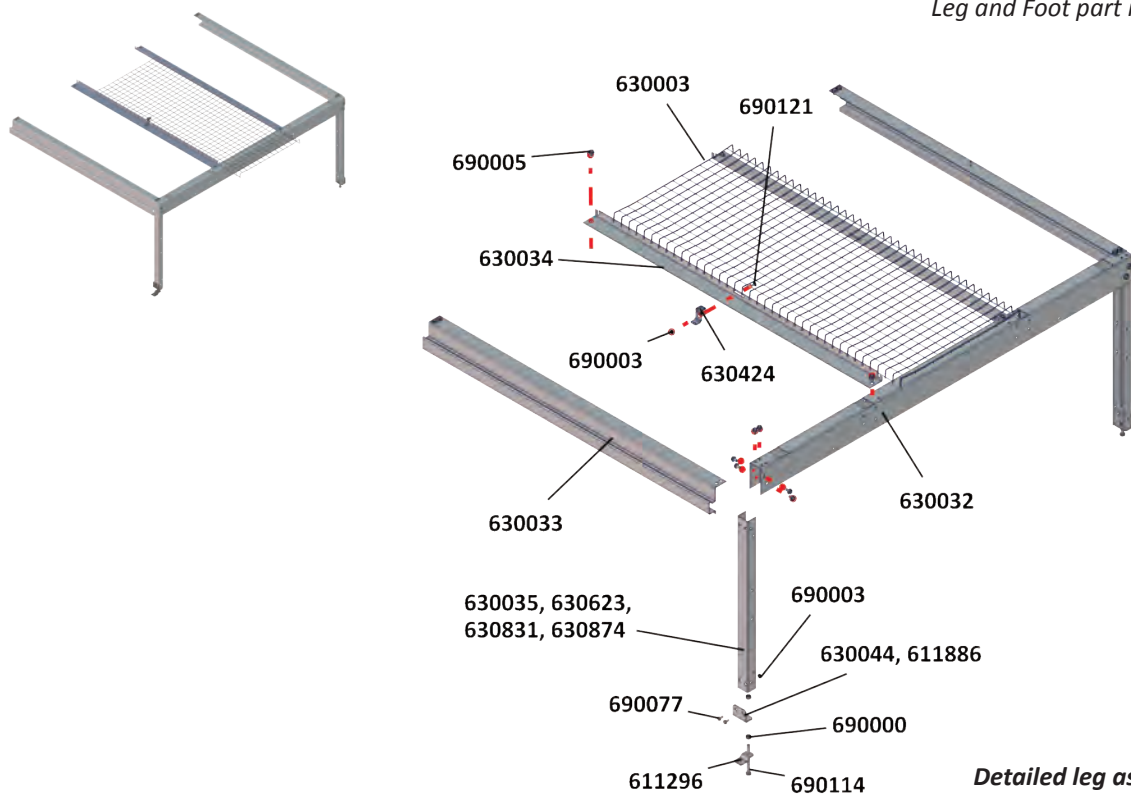
APPENDIX 18 - Idler Assembly (continued)

| PART # | DESCRIPTION | QTY |
|--|--|-----|
| 630549, 630550 - Idler Assemblies <i>(interchangeable parts)</i> | | |
| 630535 | CHNL, BRACE, EGG BELT IDLER | 1 |
| 630536 | SPACER, EGG BELT IDLER | 2 |
| 630543 | ROLLER WA, EGG BELT IDLER POWDER COAT GRAY | 1 |
| 631008 | COVER ASSY, EGG BELT IDLER | 1 |
| 630545 | BRKT ASSY, RH, EGG BELT IDLER COVER | 1 |
| 630547 | BRKT ASSY, LH, EGG BELT IDLER COVER | 1 |
| 630565 | BRACKET, LH, EGG BELT IDLER ASSY | 1 |
| 630566 | BRACKET, RH, EGG BELT IDLER ASSY | 1 |
| 630567 | SHAFT, EGG BELT IDLER ASSY ZINC PLATED | 1 |
| 630616 | BEARING SUPPORT KIT, EGG BELT IDLER | 2 |
| 630650 | CHNL, SUP, EGG BELT IDLER ASSY | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | 4 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 8 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690026 | SCREW, 5/16-18 X 5/8 HHCS ZP | 6 |
| 690058 | SCREW, 1/4-20 X 1/2 CRG SN ZP | 4 |
| 690081 | SCREW, 5/16-18X 1-1/2, HHCS, Z P | 2 |
| 690101 | SCREW, 1/4-20 X 5/8 HHCS ZP | 4 |
| 690158 | NUT, HEX 5/8-11 ZP | 4 |
| 690166 | NUT, HEX 5/16-18 ZP GR2 NYLON LOCK NUT | 2 |
| 690209 | WASHER, LOCK 1/4 SPLIT, ZP | 4 |
| 690252 | WASHER, FLAT, .656ID X 1.312OD ZP | 4 |
| Supports, Cross, Idler | | |
| 630533 | SUPPORT, CROSS, EGG BELT IDLER | 1 |
| 630534 | SUPPORT, CROSS, EGG BELT IDLER | 1 |



APPENDIX 19 - 4' Non-Winchable Slat Frame

Leg and Foot part numbers will vary by kit

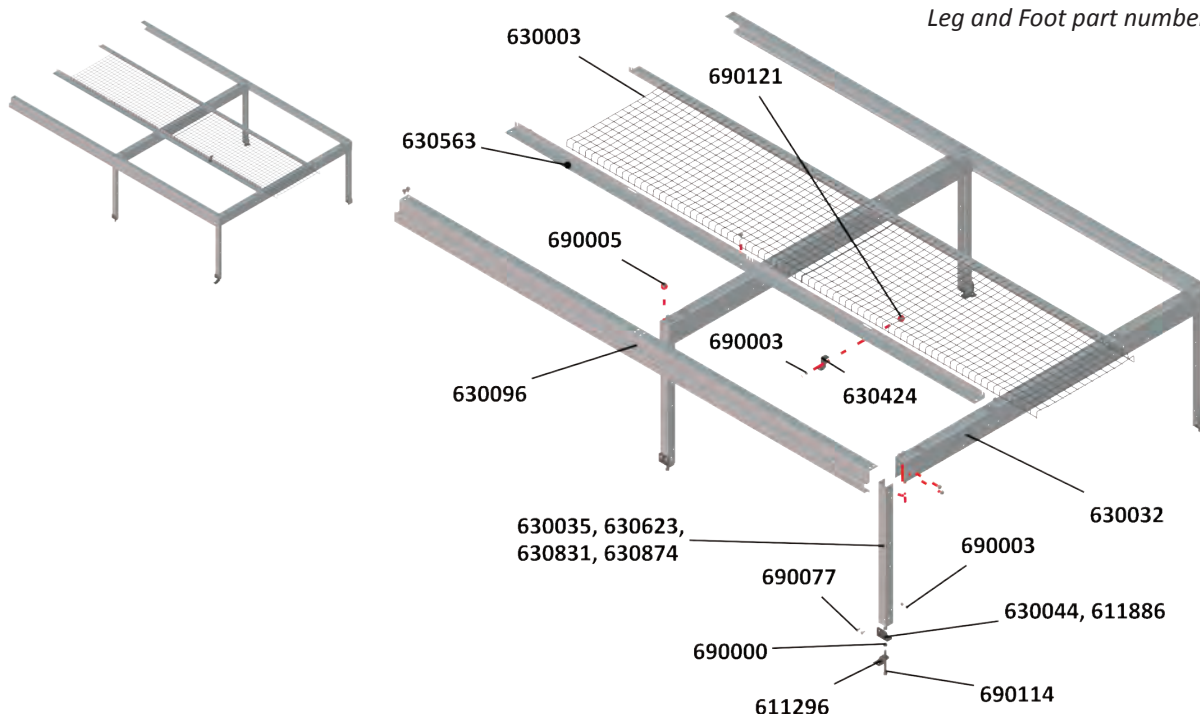


Detailed leg assembly - Appendix 16

| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630174, 630805, 630900, 630885, ASSY, FRAME, SUPT, DBL NEST, 4' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 1 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 1 |
| 630032 | SUPT, CROSS | 1 |
| 630033 | RAIL, FRONT 4', W/ SLAT RIDGE | 2 |
| 630034 | RAIL, REAR | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 690000 | NUT, HEX 3/8-16 ZP | 4 |
| 690003 | NUT, KEP 1/4-20 ZP | 5 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 20 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 4 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 2 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| LEG AND FOOT, F/NW SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630174) | 2 |
| 630623 | LEG, NEST 18" (630805) | 2 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630900) | 2 |
| 630874 | LEG, NEST, 5.313" (630885) | 2 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LEG, PSMB (630885) | 2 |
| 630044 | FOOT, NEST (630174, 630805, 630900) | 2 |

APPENDIX 20 - 8' Non-Winchable Slat Frame

Leg and Foot part numbers will vary by kit



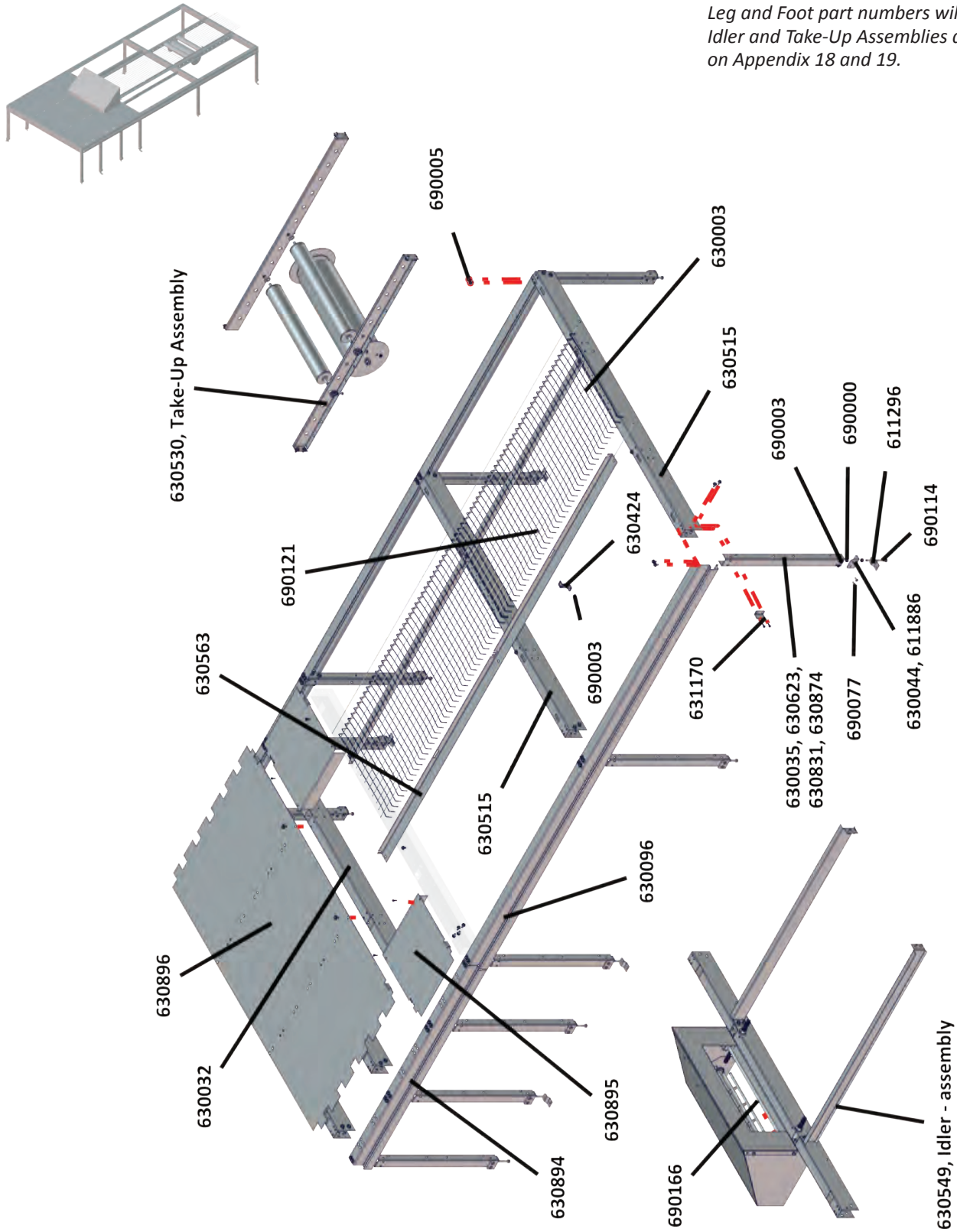
Detailed leg assembly - Appendix 16

| PART # | DESCRIPTION | QTY |
|---|---|-----|
| 630176, 630804, 630901, 630886, ASSY, FRAME, SUPT, DBL NEST, 8' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630032 | SUPT, CROSS | 2 |
| 630096 | RAIL, FRONT 8', W/ SLAT RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 38 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| LEG AND FOOT, F/ NW SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630176) | 4 |
| 630623 | LEG, NEST 18" (630804) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630901) | 4 |
| 630874 | LEG, NEST, 5.313" (630886) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630886) | 2 |
| 630044 | FOOT, NEST (630176, 630804, 630901) | 2 |



APPENDIX 21 - 8' Non-Winchable Slat Frame 1st

Leg and Foot part numbers will vary by kit.
Idler and Take-Up Assemblies are shown
on Appendix 18 and 19.



Detailed leg assembly - Appendix 16



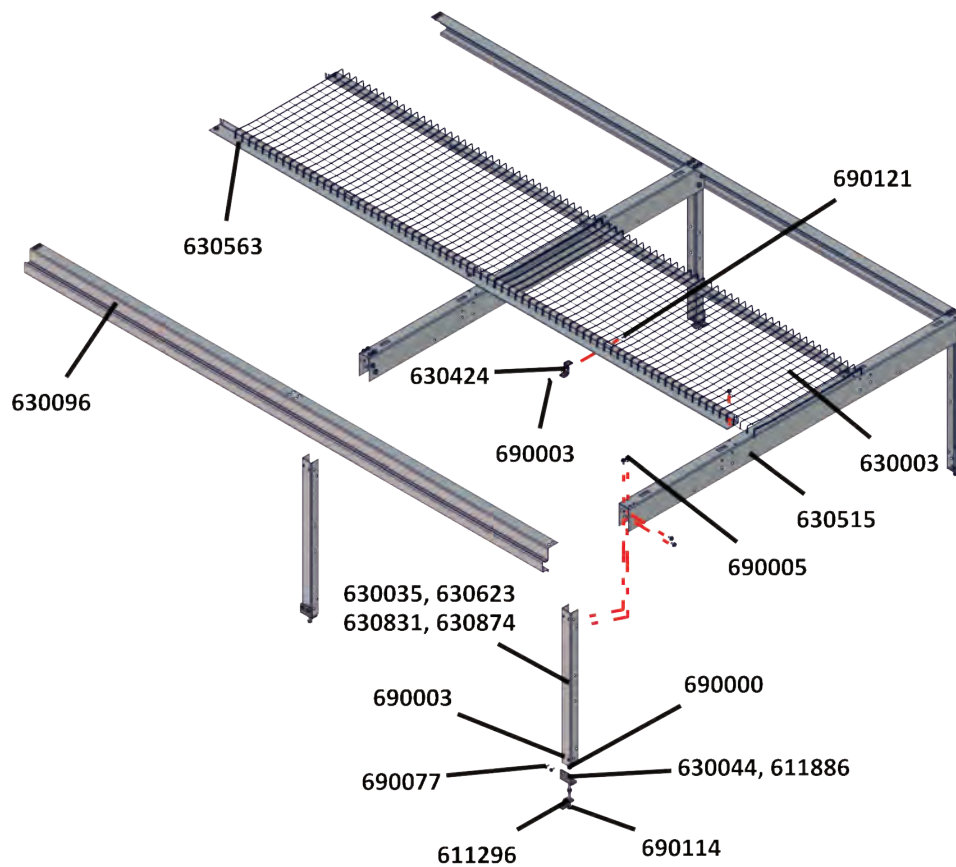
APPENDIX 21 - 8' Non-Winchable Slat Frame 1st (continued)

| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630818, 630814, 630902, 630887, ASSY, FRAME, SUPT, DBL NEST, 8' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 8 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630032 | SUPT, CROSS | 3 |
| 630096 | RAIL, FRONT 8', W/ SLAT RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 5 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630530 | BOM KIT, EGG BELT TAKE-UP | 1 |
| 630549 | BOM KIT, EGG BELT IDLER ASSY | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 630894 | RAIL, FRONT, EOR, NON-WINCH | 2 |
| 630895 | FLOOR, INSERT, EOR, SIDE CROSS-OVER | 2 |
| 630896 | FLOOR, INSERT, EOR, REAR CROSS-OVER | 1 |
| 631170 | RETAINER, BRACKET, NON-WINCH | 4 |
| 690000 | NUT, HEX 3/8-16 ZP | 28 |
| 690003 | NUT, KEP 1/4-20 ZP | 33 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 124 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP (included in Take-Up Assy) | 2 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 28 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 14 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 5 |
| 690127 | NUT, HEX 1/4-20 ZP (included in Take-Up Assy) | 2 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 24 |
| 690166 | NUT, HEX 5/16-18 ZP GR2 NYLON LOCK NUT (in Idler Assy) | 2 |
| LEG AND FOOT, F/NW SLATS, 1ST | | |
| 630035 | LEG, NEST, 24.75INCH (630818) | 12 |
| 630623 | LEG, NEST 18" (630814) | 12 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630902) | 12 |
| 630874 | LEG, NEST, 5.313" (630887) | 12 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630887) | 14 |
| 630044 | FOOT, NEST (630818, 630814, 630902) | 14 |



APPENDIX 22 - 8' Non-Winchable Slat Frame INT

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



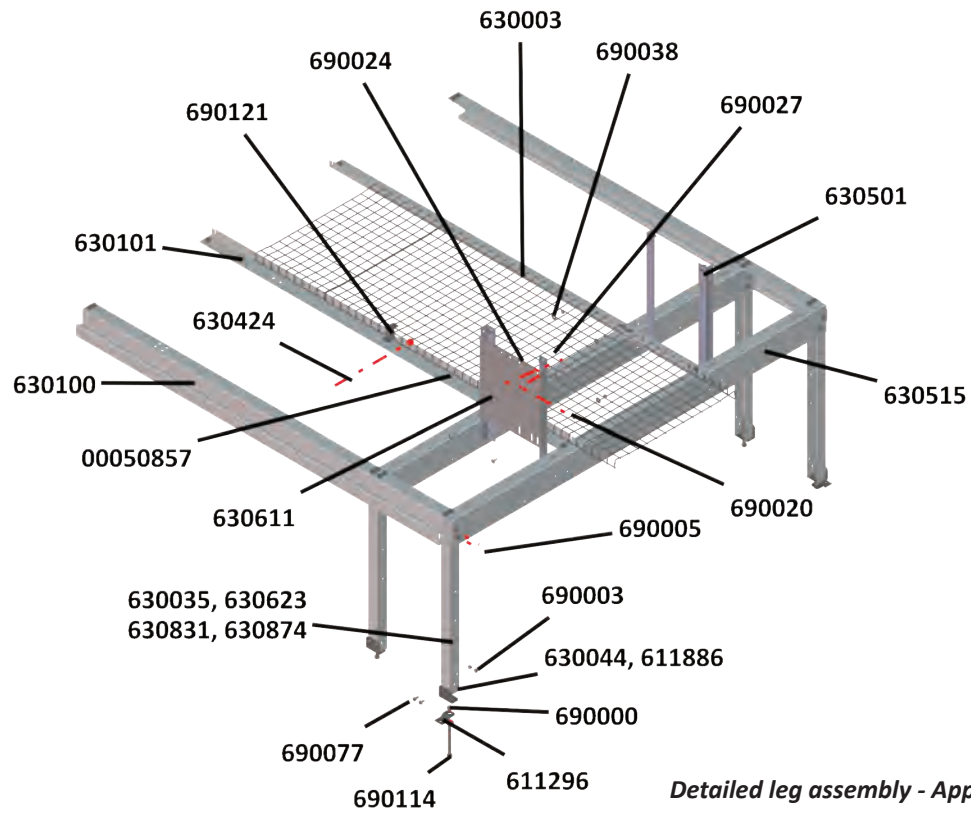
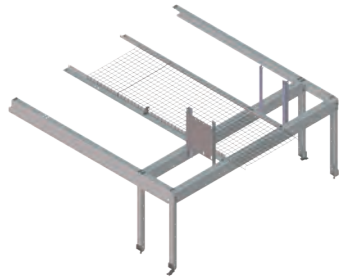
APPENDIX 22 - 8' Non-Winchable Slat Frame INT (continued)

| PART # | DESCRIPTION | QTY |
|--|---|-----|
| 630846, 630847, 630904, 630889, ASSY, FRAME, SUPT, DBL NEST, 8' (<i>interchangeable parts</i>) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630096 | RAIL, FRONT 8', W/ SLAT RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630563 | RAIL, BACK 8' | 2 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 38 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| LEG AND FOOT, F/NW SLATS, INT | | |
| 630035 | LEG, NEST, 24.75INCH (630846) | 4 |
| 630623 | LEG, NEST 18" (630847) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630904) | 4 |
| 630874 | LEG, NEST, 5.313" (630889) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630889) | 4 |
| 630044 | FOOT, NEST (630846, 630847, 630904) | 4 |



APPENDIX 23 - 5' Non-Winchable Slat Frame

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



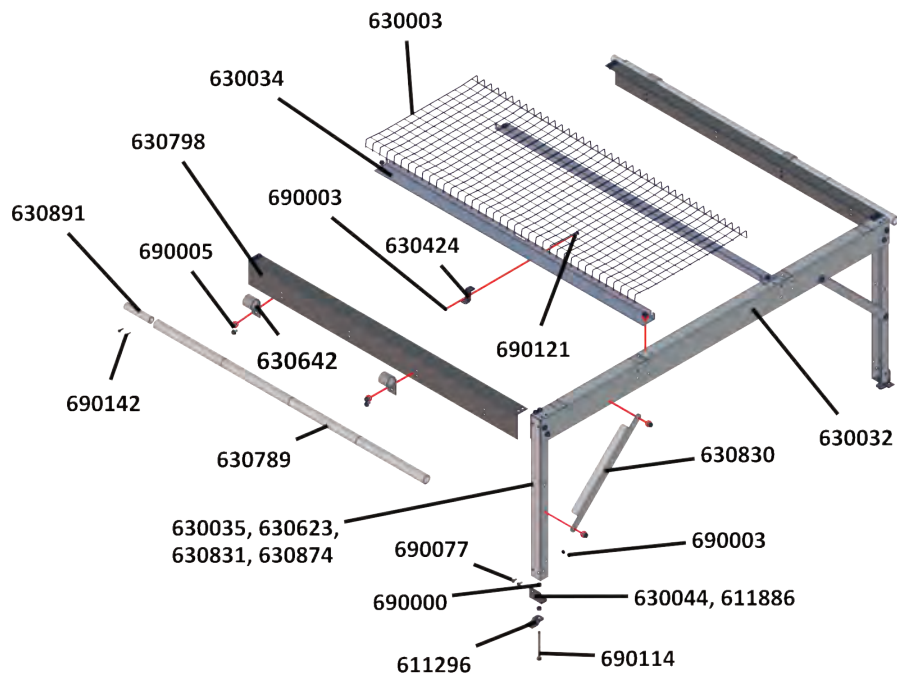
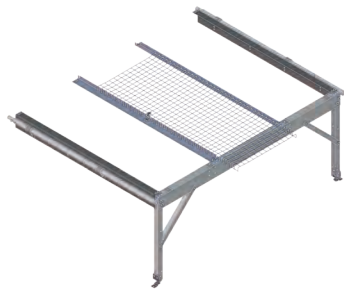
APPENDIX 23 - 5' Non-Winchable Slat Frame (continued)

| PART # | DESCRIPTION | QTY |
|--|---|-----|
| 630556, 630816, 630903, 630888, ASSY, FRAME, EXPELLER SUPT, 5' (interchangeable parts) | | |
| 00050857 | SCREW, 1/4-20 X 5/8 THMS ZP | 4 |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630100 | RAIL, FRONT, MOTOR COMPART, W/ SLAT RIDG | 2 |
| 630101 | RAIL, REAR, MOTOR COMPARTMENT | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630501 | SUPPORT, VERT, MTR HOUSING | 4 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630611 | PLATE, CONTACTOR, BOX, MOUNT | 1 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 48 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 2 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 4 |
| 690038 | WASHER, FLAT 1/4 USS ZP | 4 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| LEG AND FOOT, F/NW SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630556) | 4 |
| 630623 | LEG, NEST 18" (630816) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630903) | 4 |
| 630874 | LEG, NEST, 5.313" (630888) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630888) | 4 |
| 630044 | FOOT, NEST (630556, 630816, 630903) | 4 |



APPENDIX 24 - 4' Winchable Slat Frame

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



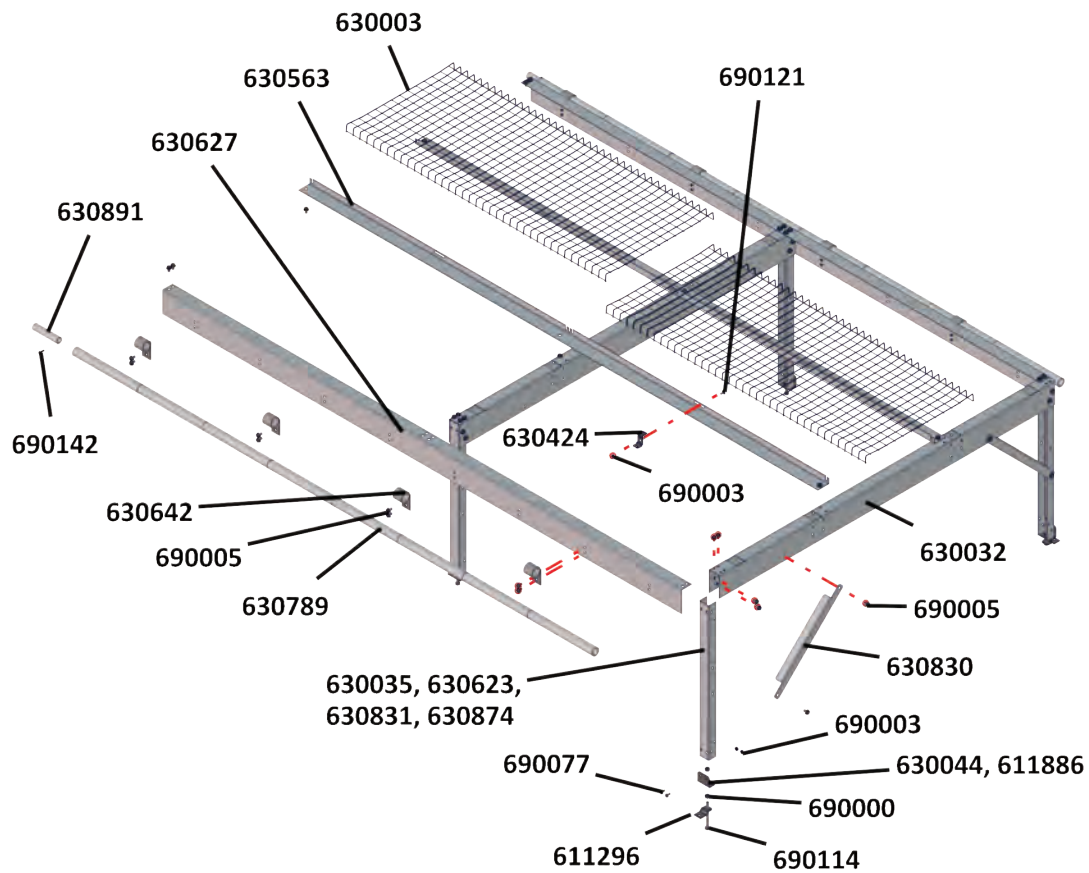
APPENDIX 24 - 4' Winchable Slat Frame (continued)

| PART # | DESCRIPTION (* Quantities vary) | QTY |
|---|---|-----|
| 630801, 630803, 630833, 630875, ASSY, FRAME, SUPT, DBL NEST, 4' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 1 |
| 630032 | SUPT, CROSS | 1 |
| 630034 | RAIL, REAR | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630642 | WA, PIPE SUPPORT WINCHING | 4 |
| 630789 | PIPE, GALV 1" X 21' SCHED 40 PLAIN END | 8 |
| 630798 | RAIL, FRONT 4', WINCHING | 2 |
| 630891 | CONNECTOR, INTERNAL, 1"OD . .065" WALL X 4.5" LONG | 0.4 |
| 690000 | NUT, HEX 3/8-16 ZP | 4 |
| 690003 | NUT, KEP 1/4-20 ZP | 5 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *32 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 4 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 2 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 1 |
| LEG AND FOOT, F/ W SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630801) | 2 |
| 630623 | LEG, NEST 18" (630803) | 2 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630833) | 2 |
| 630874 | LEG, NEST, 5.313" (630875) | 2 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630875) | 2 |
| 630044 | FOOT, NEST (630801, 630803, 630833) | 2 |
| 630830 | BRACE, CROSS, SUPT, WINCHABLE FRAME (not used w/630874) | 2 |



APPENDIX 25 - 8' Winchable Slat Frame

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



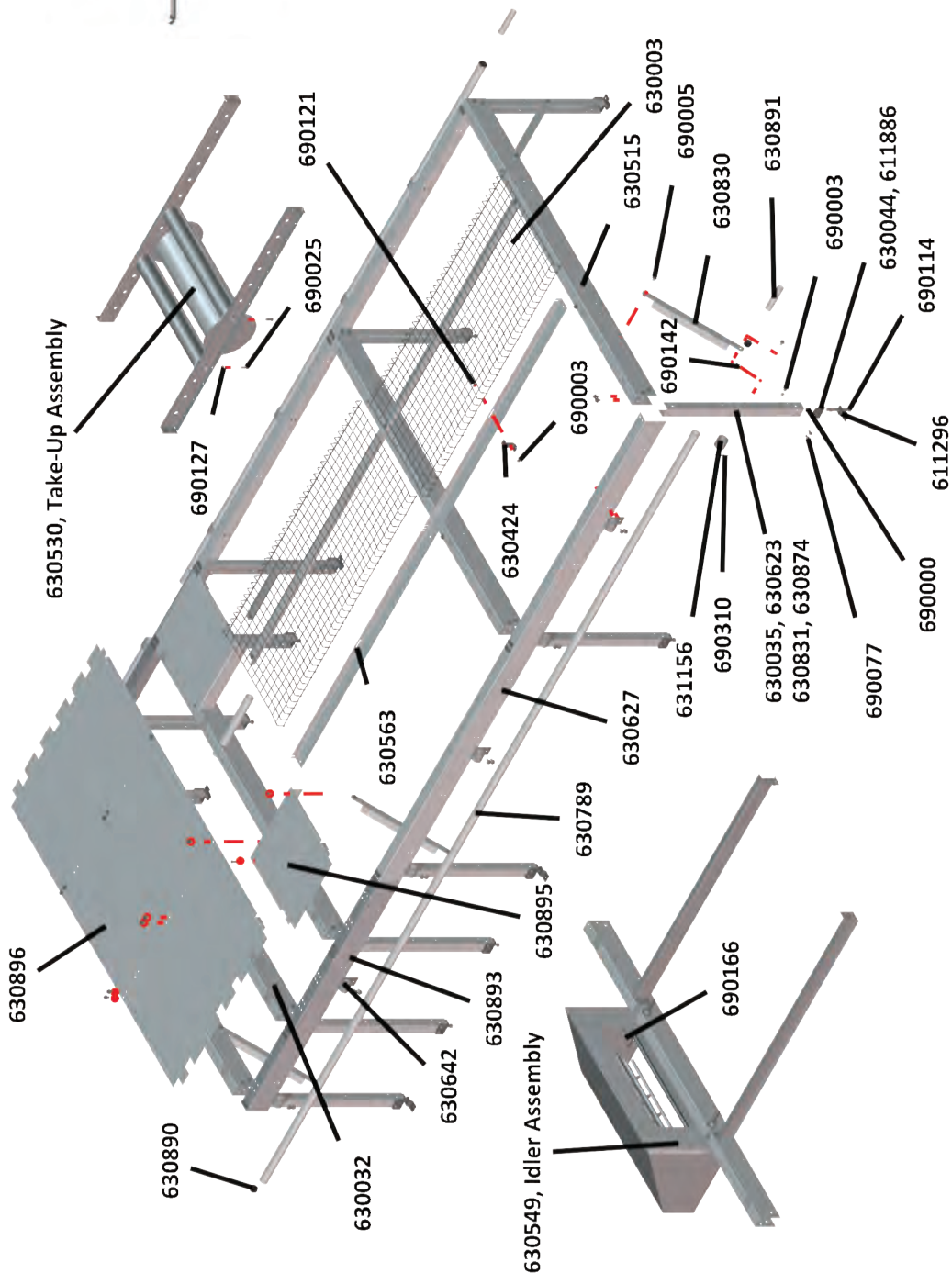
APPENDIX 25 - 8' Winchable Slat Frame (continued)

| PART # | DESCRIPTION (* Quantities vary) | QTY |
|---|---|-----|
| 630800, 630802, 630832, 630876, ASSY, FRAME, SUPT, DBL NEST, 8' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630032 | SUPT, CROSS | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 630627 | RAIL, FRONT 8', WINCHING | 2 |
| 630642 | WA, PIPE SUPPORT WINCHING | 8 |
| 630789 | PIPE, GALV 1" X 21' SCHED 40 PLAIN END | 16 |
| 630891 | CONNECTOR, INTERNAL, 1"OD .065" WALL X 4.5" LONG | 0.8 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *58 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 2 |
| LEG AND FOOT, F/ W SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630800) | 4 |
| 630623 | LEG, NEST 18" (630802) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630832) | 4 |
| 630874 | LEG, NEST, 5.313" (630876) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630876) | 4 |
| 630044 | FOOT, NEST (630800, 630802, 630832) | 4 |
| 630830 | BRACE, CROSS, SUPT, WINCHABLE FRAME (not used w/630874) | 2 |



APPENDIX 26 - 8' Winchable Slat Frame 1st

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



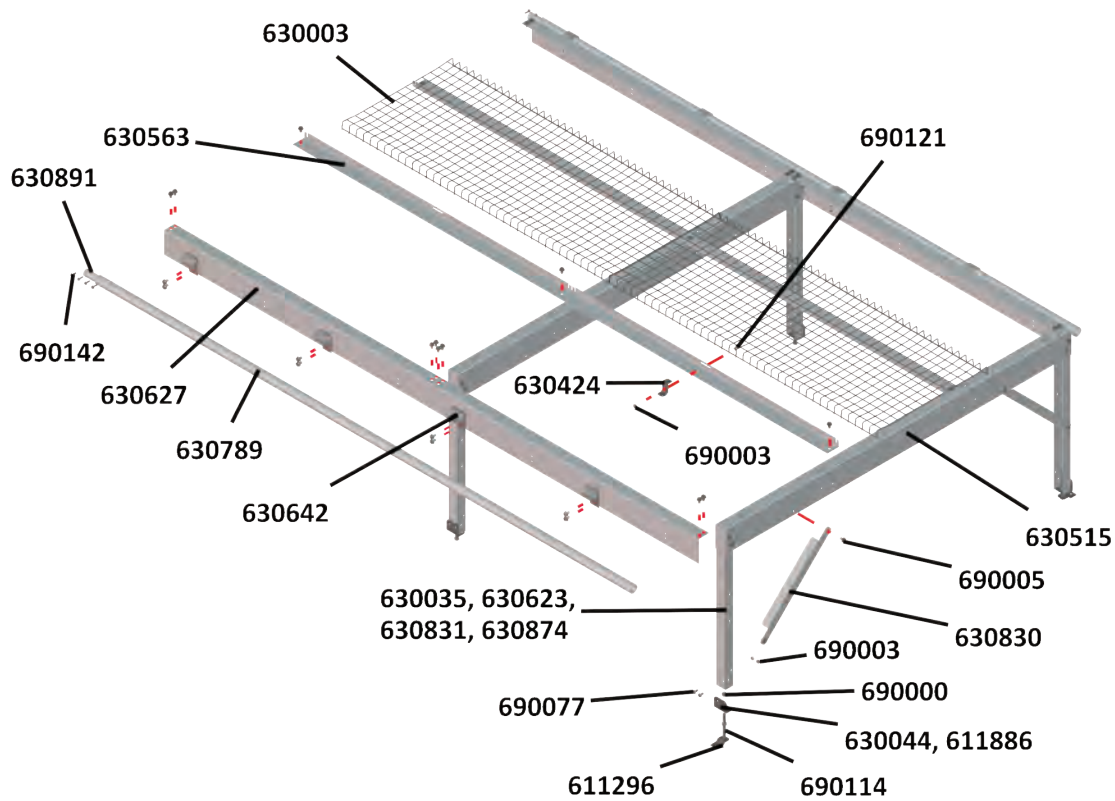
APPENDIX 26 - 8' Winchable Slat Frame 1st (continued)

| PART # | DESCRIPTION (*Quantities vary) | QTY |
|---|---|----------|
| 630806, 630813, 630834, 630877, ASSY, FRAME, SUPT, DBL NEST, 8' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 8 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630032 | SUPT, CROSS | 3 |
| 630424 | EGG BELT GUIDE | 5 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630530 | BOM KIT, EGG BELT TAKE-UP | 1 |
| 630549 | BOM KIT, EGG BELT IDLER ASSY | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 630627 | RAIL, FRONT 8', WINCHING | 2 |
| 630642 | WA, PIPE SUPPORT WINCHING | 14 |
| 630789 | PIPE, GALV 1" X 21' SCHED 40 PLAIN END | 26 |
| 630890 | PLUG, PIPE, WINCHABLE SLATS | 4 |
| 630891 | CONNECTOR, INTERNAL, 1"OD .065" WALL X 4.5" LONG | 1.6 |
| 630893 | RAIL, FRONT, EOR, WINCHING | 2 |
| 630895 | FLOOR, INSERT, EOR, SIDE CROSS-OVER | 2 |
| 630896 | FLOOR, INSERT, EOR, REAR CROSS-OVER | 1 |
| 631156 | RETAINER, SLAT SUPPORT GALVANIZED | 4 |
| 690000 | NUT, HEX 3/8-16 ZP | 28 |
| 690003 | NUT, KEP 1/4-20 ZP | 33 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *160 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP (included in Take-Up Assy) | 2 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 28 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 14 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 5 |
| 690127 | NUT, HEX 1/4-20 ZP (included in Take-Up Assy) | 2 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 28 |
| 690166 | NUT, HEX 5/16-18 ZP GR2 NYLON LOCK NUT (in Idler Assy) | 2 |
| 690310 | COTTER PIN, 1.8" X 2-1/2", ZP | 4 |
| LEG AND FOOT, F/ W SLATS, 1ST | | |
| 630035 | LEG, NEST, 24.75INCH (630806) | 12 |
| 630623 | LEG, NEST 18" (630813) | 12 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630834) | 12 |
| 630874 | LEG, NEST, 5.313" (630877) | 12 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630877) | 14 |
| 630044 | FOOT, NEST (630806, 630813, 630834) | 14 |
| 630830 | BRACE, CROSS, SUPT, WINCHABLE FRAME (not used w/630874) | 6 |



APPENDIX 27 - 8' Winchable Slat Frame INT

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16



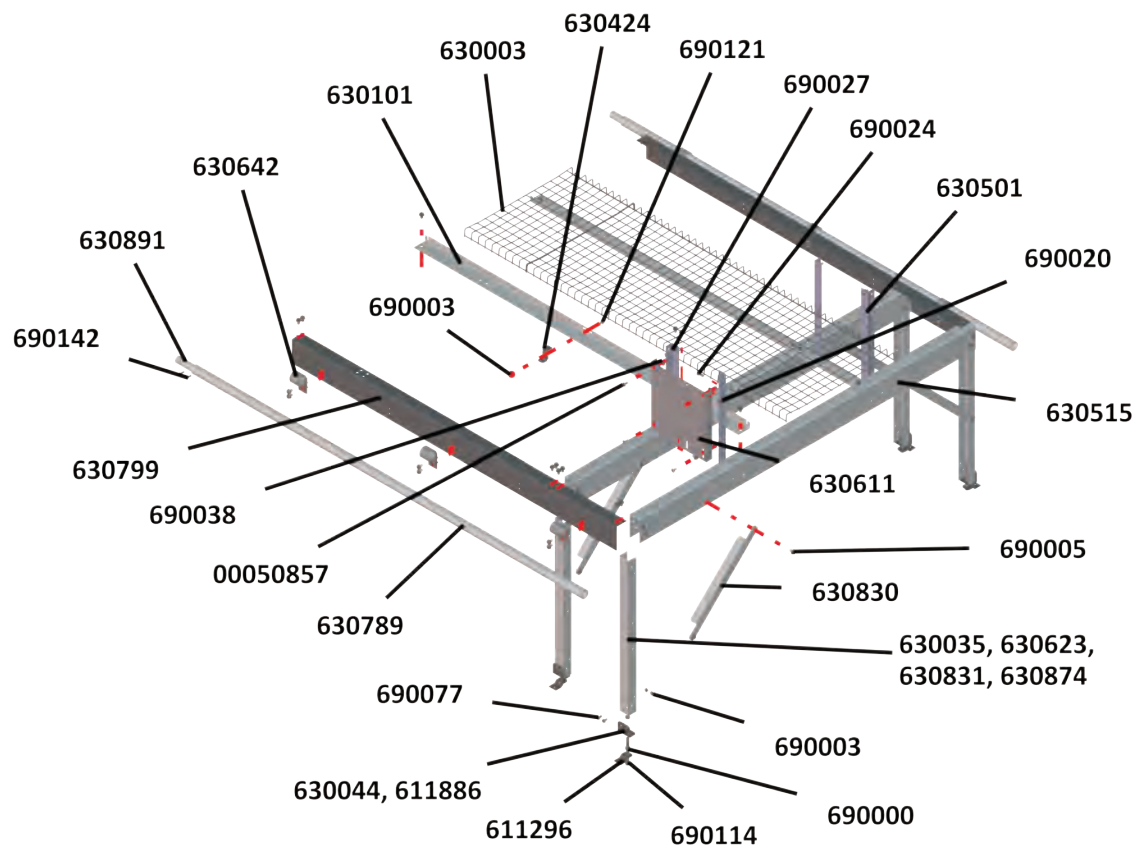
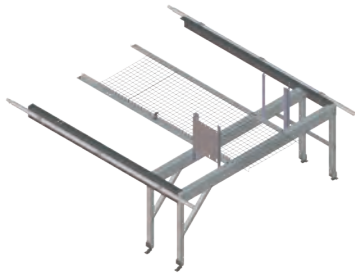
APPENDIX 27 - 8' Winchable Slat Frame INT (continued)

| PART # | DESCRIPTION (* Quantities Vary) | QTY |
|---|---|-----|
| 630848, 630849, 630854, 630879, ASSY, FRAME, SUPT, DBL NEST, 8' (interchangeable parts) | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630563 | RAIL, BACK 8' | 2 |
| 630627 | RAIL, FRONT 8', WINCHING | 2 |
| 630642 | WA, PIPE SUPPORT WINCHING | 8 |
| 630789 | PIPE, GALV 1" X 21' SCHED 40 PLAIN END | 16 |
| 630891 | CONNECTOR, INTERNAL, 1"OD .065" WALL X 4.5" LONG | 0.8 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *58 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 2 |
| LEG AND FOOT, F/ W SLATS, INT | | |
| 630035 | LEG, NEST, 24.75INCH (630848) | 4 |
| 630623 | LEG, NEST 18" (630849) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630854) | 4 |
| 630874 | LEG, NEST, 5.313" (630879) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630879) | 4 |
| 630044 | FOOT, NEST (630848, 630849, 630854) | 4 |
| 630830 | BRACE, CROSS, SUPT, WINCHABLE FRAME (not used w/630874) | 2 |



APPENDIX 28 - 5' Winchable Slat Frame

Leg and Foot part numbers will vary by kit



Detailed leg assembly - Appendix 16

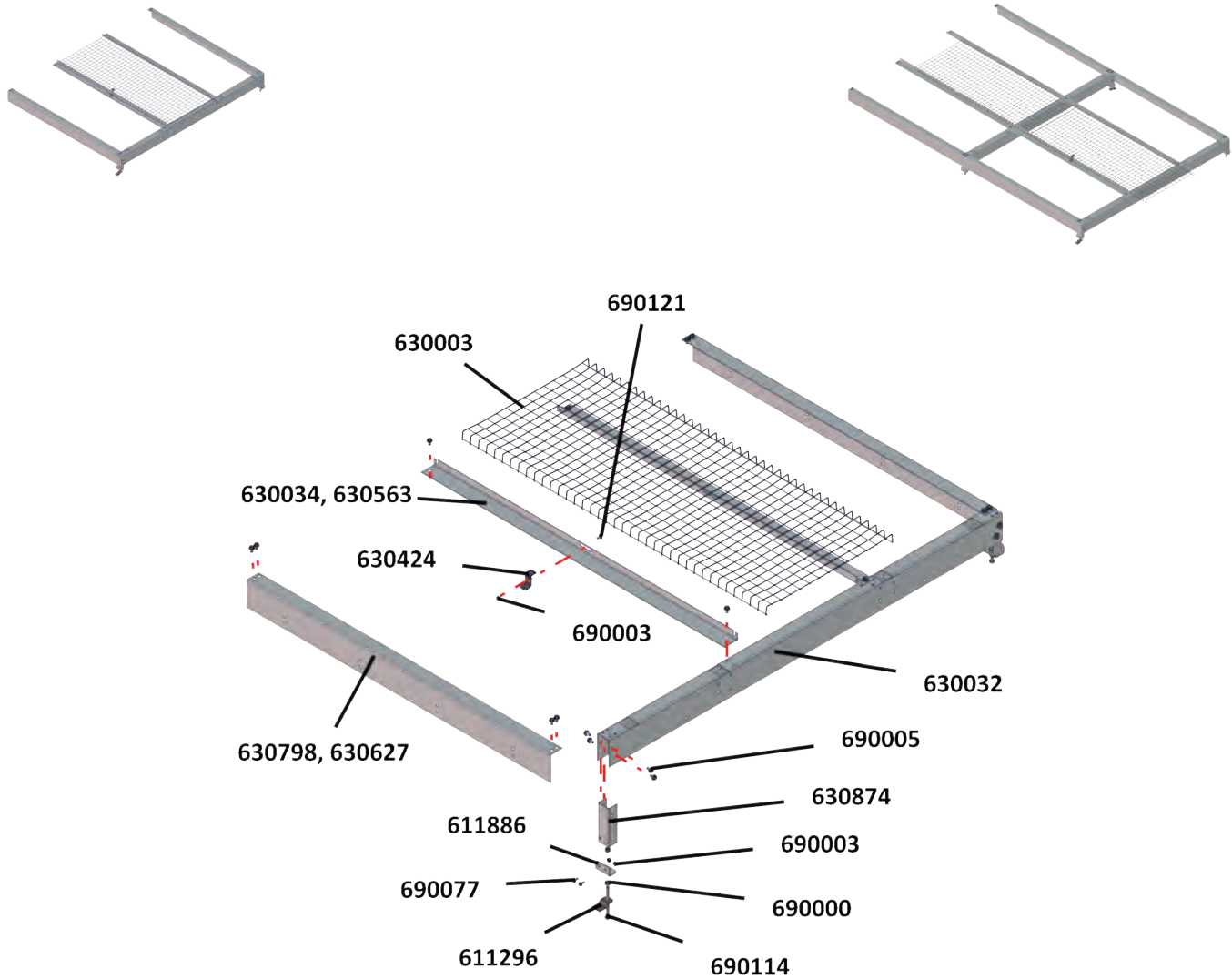


APPENDIX 28 - 5' Winchable Slat Frame (continued)

| PART # | DESCRIPTION (* Quantities Vary) | QTY |
|--|---|-----|
| 630807, 630815, 630835, 630878, ASSY, FRAME, EXPELLER SUPT, 5' (interchangeable parts) | | |
| 00050857 | SCREW, 1/4-20 X 5/8 THMS ZP | 4 |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 4 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630101 | RAIL, REAR, MOTOR COMPARTMENT | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630501 | SUPPORT, VERT, MTR HOUSING | 4 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630611 | PLATE, CONTACTOR, BOX, MOUNT | 1 |
| 630642 | WA, PIPE SUPPORT WINCHING | 6 |
| 630789 | PIPE, GALV 1" X 21' SCHED 40 PLAIN END | 12 |
| 630799 | RAIL, FRONT 5', WINCHING, F/EXP DRV | 2 |
| 630891 | CONNECTOR, INTERNAL, 1"OD . .065" WALL X 4.5" LONG | 0.4 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 13 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *68 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 2 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 4 |
| 690038 | WASHER, FLAT 1/4 USS ZP | 4 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 1 |
| LEG AND FOOT, F/W SLATS | | |
| 630035 | LEG, NEST, 24.75INCH (630807) | 4 |
| 630623 | LEG, NEST 18" (630815) | 4 |
| 630831 | LEG, NEST, 16.313", F/LEVEL SLATS (630835) | 4 |
| 630874 | LEG, NEST, 5.313" (630878) | 4 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB (630878) | 4 |
| 630044 | FOOT, NEST (630807, 630815, 630835) | 4 |
| 630830 | BRACE, CROSS, SUPT, WINCHABLE FRAME (not used w/630874) | 4 |



APPENDIX 29 - 4' & 8' Non-Slat Frame (SUPT, DBL NEST, W/ 5.313" LEGS)



Detailed leg assembly - Appendix 16

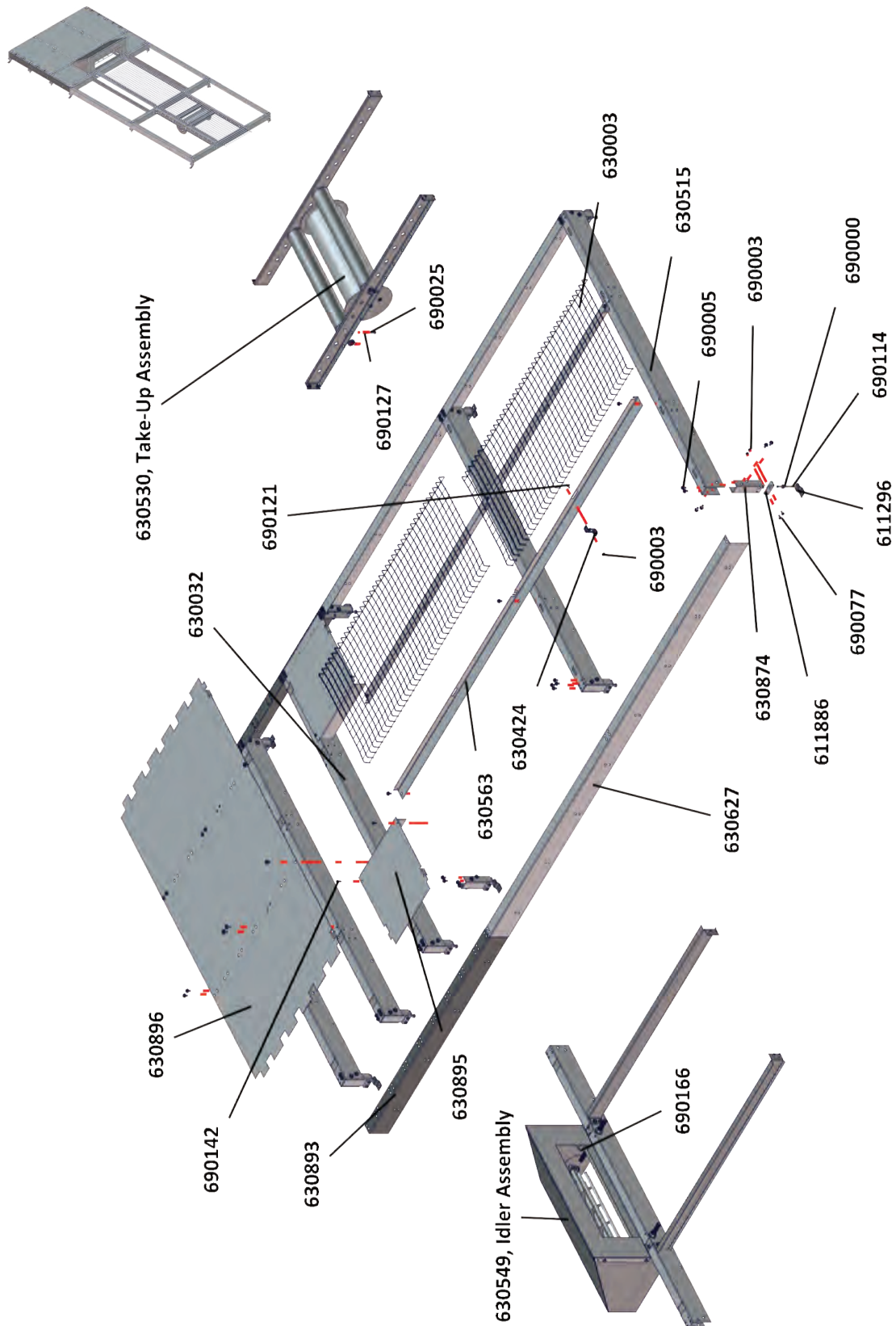


APPENDIX 29 - 4' & 8' Non-Slat Frame (SUPT, DBL NEST, W/ 5.313" LEGS) (cont)

| PART # | DESCRIPTION (* Quantities vary) | QTY |
|--|--|-----------|
| 630880, 630881 ASSY, FRAME, SUPT, DBL NEST, W/ 5.313" LEGS | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | *1 or 2 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LEG, PSMB | *2 or 4 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | *1 or 2 |
| 630032 | SUPT, CROSS | *1 or 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630874 | LEG, NEST, 5.313" | *2 or 4 |
| 690000 | NUT, HEX 3/8-16 ZP | *4 or 8 |
| 690003 | NUT, KEP 1/4-20 ZP | *5 or 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | *20 or 38 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | *4 or 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | *2 or 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| Rails (Front and Back) for 630880, 630881 Kits | | |
| 630034 | RAIL, BACK (630880 4') | 2 |
| 630563 | RAIL, BACK 8' (630881 8') | 2 |
| 630627 | RAIL, FRONT 8', WINCHING (630881 8') | 2 |
| 630798 | RAIL, FRONT 4', WINCHING (630880 4') | 2 |



APPENDIX 30 - Non-Slat Frame (SUPT, DBL, NEST, 8' W/5.313" LEGS, 1ST)



Detailed leg assembly - Appendix 16

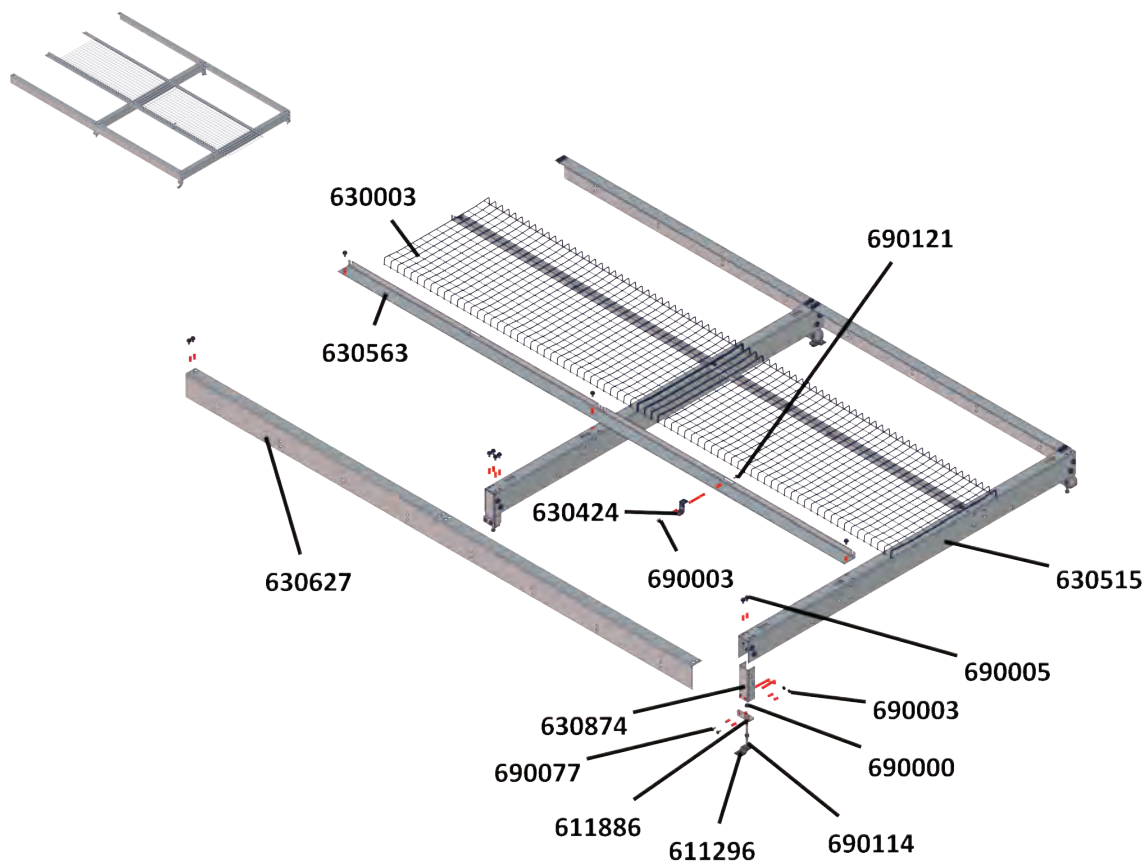


APPENDIX 30 - Non-Slat Frame (SUPT, DBL, NEST, 8' W/5.313" LEGS, 1st) (continued)

| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630882 - ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, 1ST | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 8 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB | 14 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630032 | SUPT, CROSS | 3 |
| 630424 | EGG BELT GUIDE | 5 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630530 | BOM KIT, EGG BELT TAKE-UP | 1 |
| 630549 | BOM KIT, EGG BELT IDLER ASSY | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 630627 | RAIL, FRONT 8', WINCHING | 2 |
| 630874 | LEG, NEST, 5.313" | 12 |
| 630893 | RAIL, FRONT, EOR, WINCHING | 2 |
| 630895 | FLOOR, INSERT, EOR, SIDE CROSS-OVER | 2 |
| 630896 | FLOOR, INSERT, EOR, REAR CROSS-OVER | 1 |
| 690000 | NUT, HEX 3/8-16 ZP | 28 |
| 690003 | NUT, KEP 1/4-20 ZP | 33 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 124 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP (included in Take-Up Assembly) | 2 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 28 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 14 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 5 |
| 690127 | NUT, HEX 1/4-20 ZP (included in Take-Up Assembly) | 2 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 24 |
| 690166 | NUT, HEX 5/16-18 ZP GR2 NYLON LOCK NUT (in Idler Assy) | 2 |



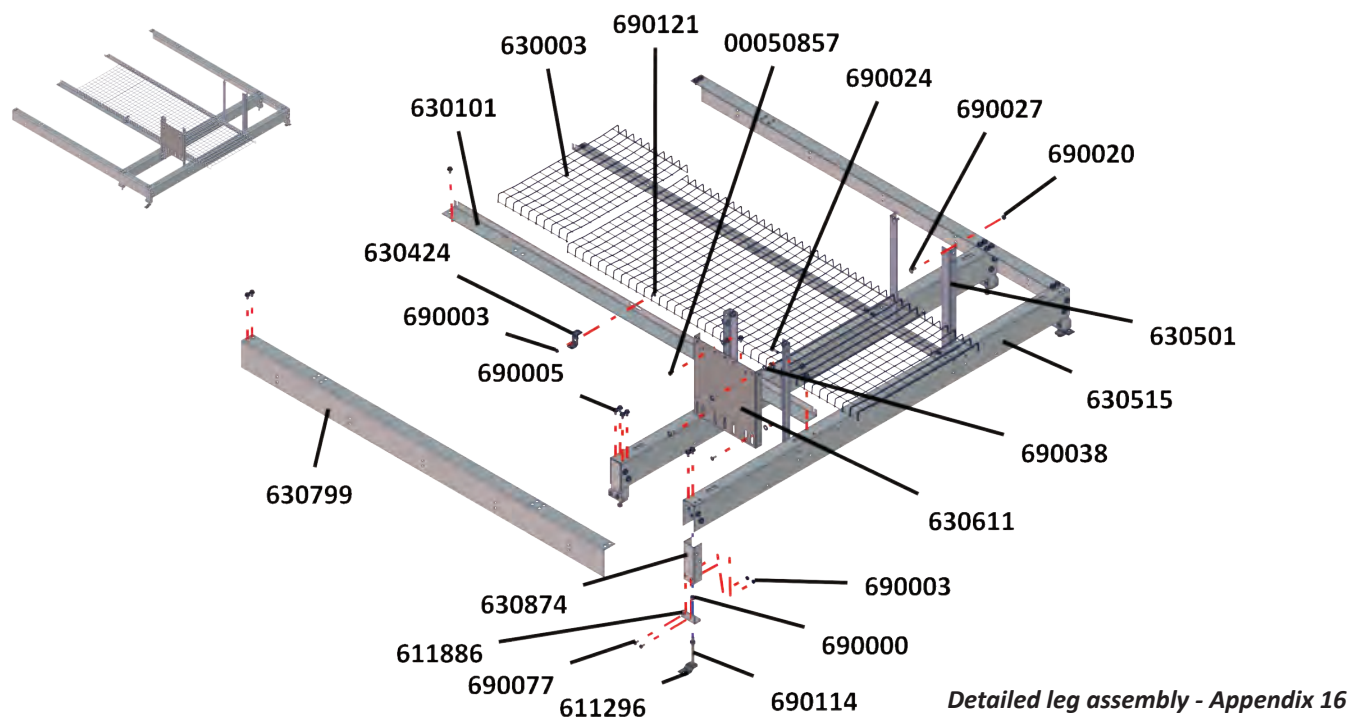
APPENDIX 31 - Non-Slat Frame (SUPT, DBL, NEST, 8' W/5.313" LEGS INT)



Detailed leg assembly - Appendix 16

| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630884 ASSY, FRAME, SUPT, DBL NEST, 8', W/ 5.313" LEGS, INT | | |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB | 4 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630563 | RAIL, BACK 8' | 2 |
| 630627 | RAIL, FRONT 8', WINCHING | 2 |
| 630874 | LEG, NEST, 5.313" | 4 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 9 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 38 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |

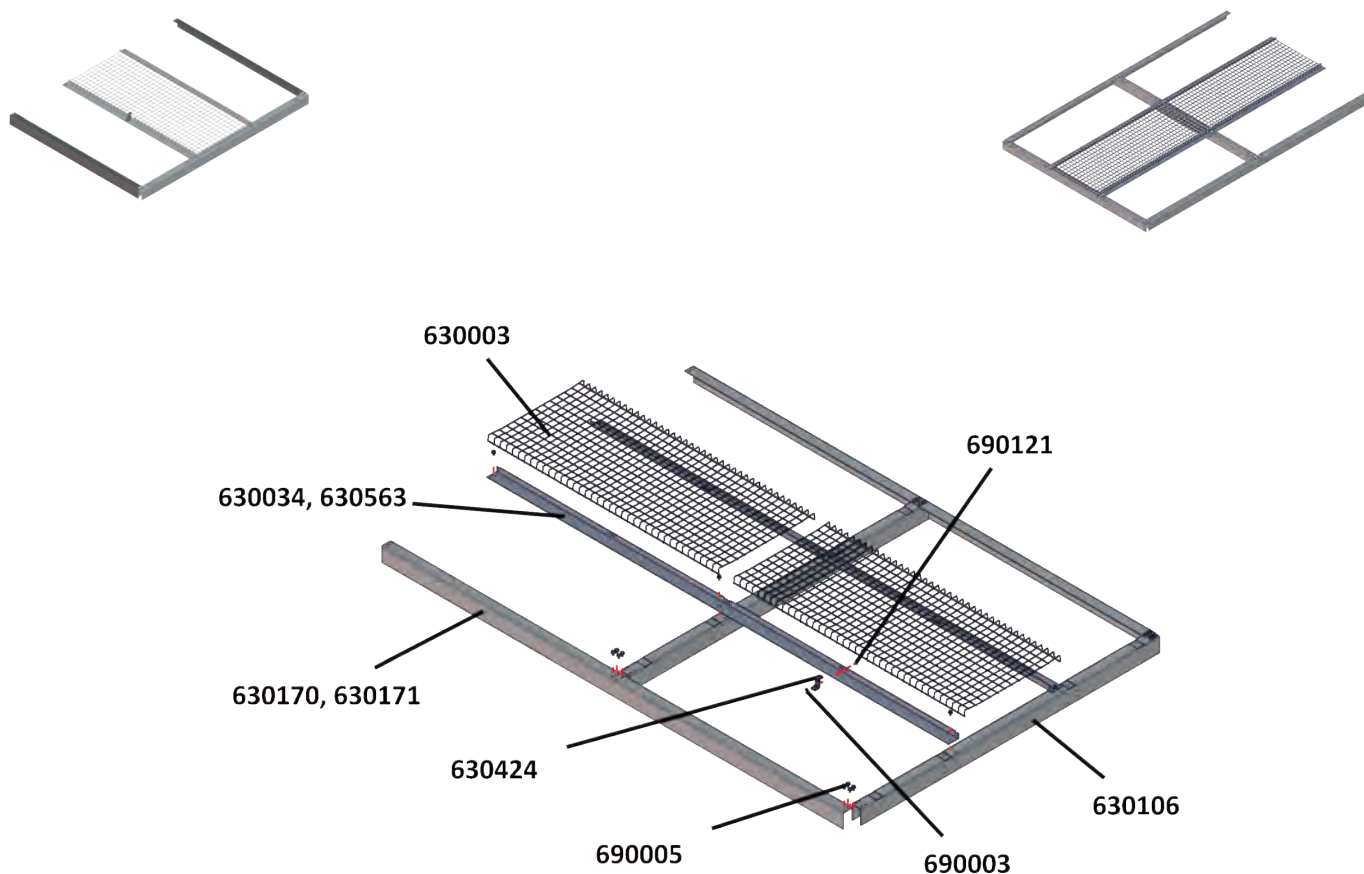
APPENDIX 32 - Non-Slat Frame (EXPELLER SUPT, 5' W/5.313" LEGS)



| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630883 ASSY, FRAME, EXPELLER SUPT, 5', W/ 5.313" LEGS | | |
| 00050857 | SCREW, 1/4-20 X 5/8 THMS ZP | 4 |
| 611296 | FOOT, F/3/8 BOLT, PSMB/LSMB | 2 |
| 611886 | FOOT, FRONT EOR, F/4IN SHTR LE G, PSMB | 4 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630101 | RAIL, REAR, MOTOR COMPARTMENT | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630501 | SUPPORT, VERT, MTR HOUSING | 4 |
| 630515 | SUPPORT, CROSS, CENTERED DIVID | 2 |
| 630611 | PLATE, CONTACTOR, BOX, MOUNT | 1 |
| 630799 | RAIL, FRONT 5', WINCHING, F/EXP DRV | 2 |
| 630874 | LEG, NEST, 5.313" | 4 |
| 690000 | NUT, HEX 3/8-16 ZP | 8 |
| 690003 | NUT, KEP 1/4-20 ZP | 13 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 48 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 2 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 4 |
| 690038 | WASHER, FLAT 1/4 USS ZP | 4 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 8 |
| 690114 | SCREW, 3/8-16 X 4 HHTB ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |

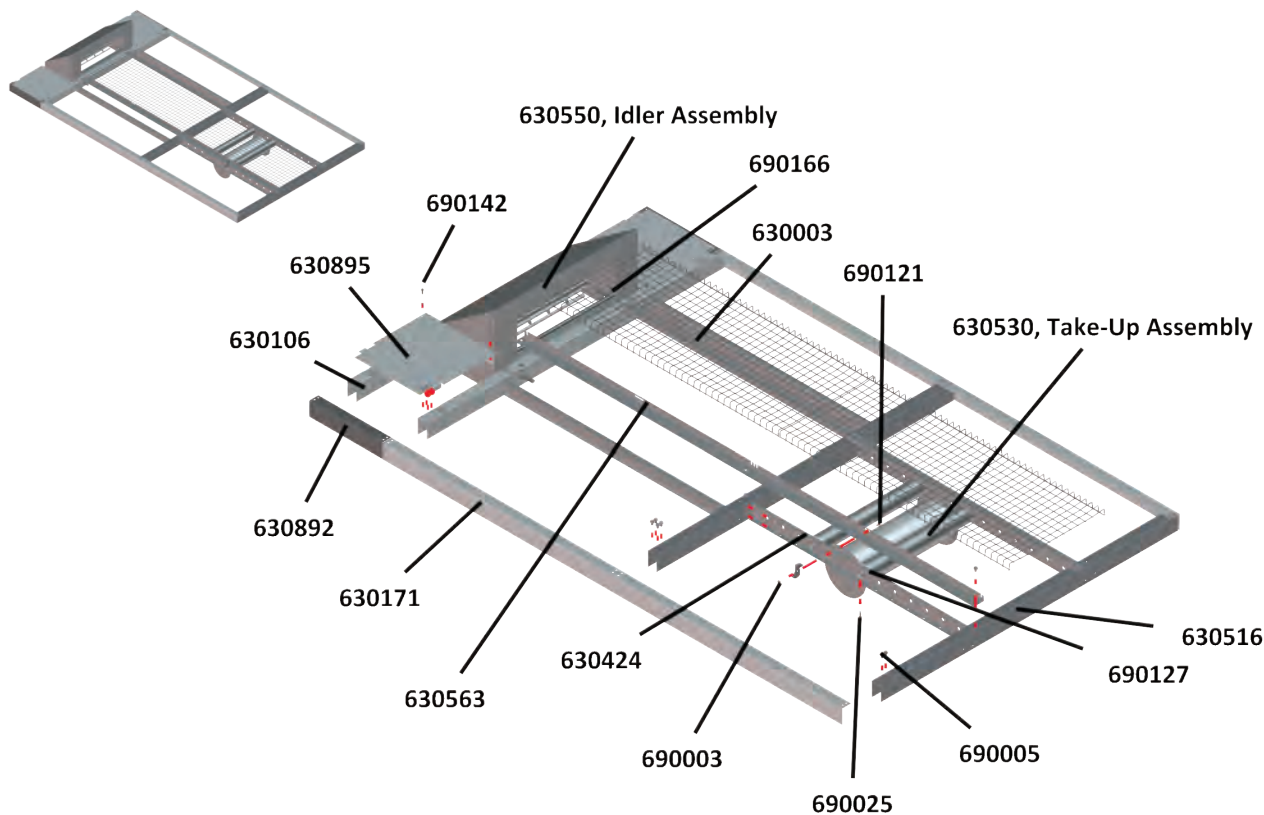


APPENDIX 33 - Highrise Frame (SUPT, DBL NEST, F/HIGHRISE)



| PART # | DESCRIPTION (*Quantities vary) | QTY |
|--|---|-----------|
| 630173, 630175 ASSY, FRAME, SUPT, DBL NEST, F/HIGHRISE | | |
| 630003 | PANEL, WIRE SUPT, EGG BELT (630173, 630175) | *1 or 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 690003 | NUT, KEP 1/4-20 ZP | 1 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP (630173, 630174) | *12 or 22 |
| 630106 | SUPT, CROSS, HIGHRISE (630173, 630175) | *1 or 2 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |
| Rails (Front and Back) for 630173, 630175 | | |
| 630034 | RAIL, BACK 4' (630173) | 2 |
| 630170 | RAIL, FRONT 4', W/O SLAT RIDGE (630173) | 2 |
| 630171 | RAIL, FRONT 8', W/O SLAT RIDGE (630175) | 2 |
| 630563 | RAIL, BACK 8' (630175) | 2 |

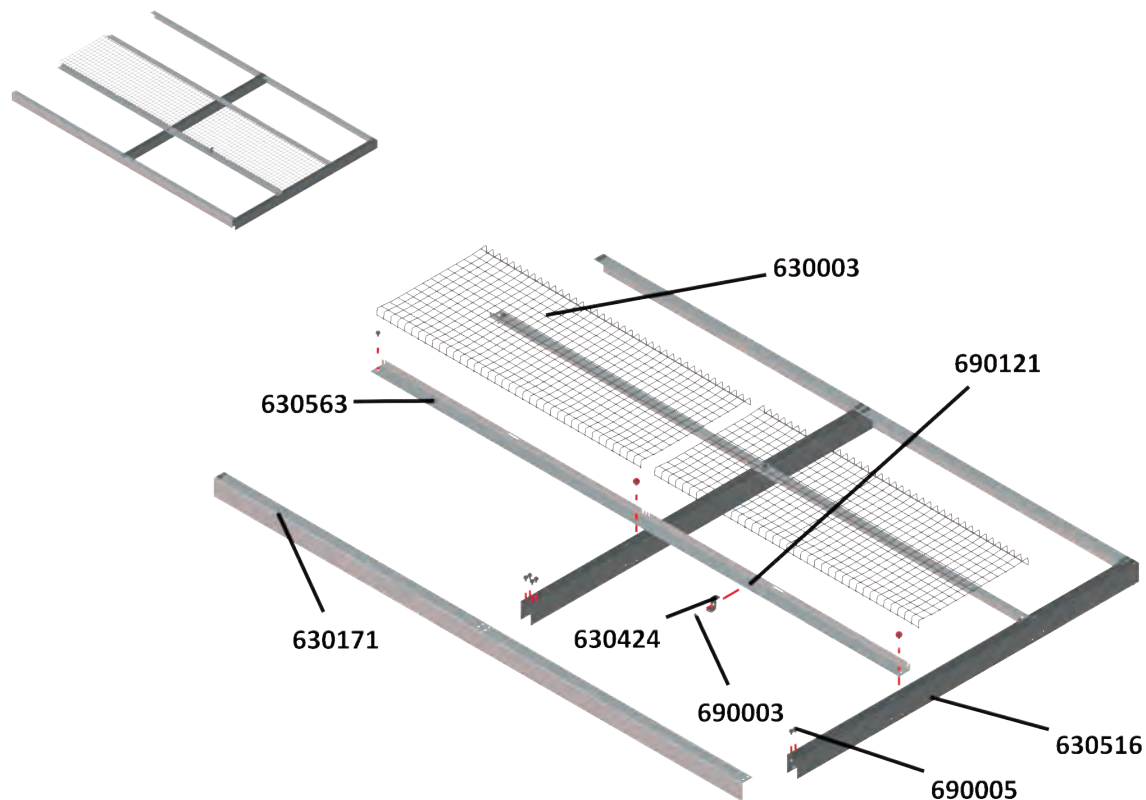
APPENDIX 34 - Highrise Frame (SUPT, DBL, NEST, 8', F/HIGHRISE, 1ST)



| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630817 ASSY, FRAME, SUPT, DBL NEST, 8', F/HIGHRISE, 1ST | | |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630106 | SUPT, CROSS, HIGHRISE (<i>Idler Assy is included with this Assy</i>) | 1 |
| 630171 | RAIL, FRONT 8', W/O SLAT RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 5 |
| 630516 | SUPPORT, CROSS, CENTERED DIVIDER, HIGHRISE | 2 |
| 630530 | BOM KIT, EGG BELT TAKE-UP | 1 |
| 630550 | BOM KIT, EGG BELT IDLER ASSY HIGHRISE | 1 |
| 630563 | RAIL, BACK 8' | 2 |
| 630892 | RAIL, FRONT, EOR, HR | 2 |
| 630895 | FLOOR, INSERT, EOR, SIDE CROSS-OVER | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | 5 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 50 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP (<i>included in Take Up Assembly</i>) | 2 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 5 |
| 690127 | NUT, HEX 1/4-20 ZP (<i>included in Take Up Assembly</i>) | 2 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | 24 |
| 690166 | NUT, HEX 5/16-18 ZP GR2 NYLON LOCK NUT (<i>in Idler Assy</i>) | 2 |

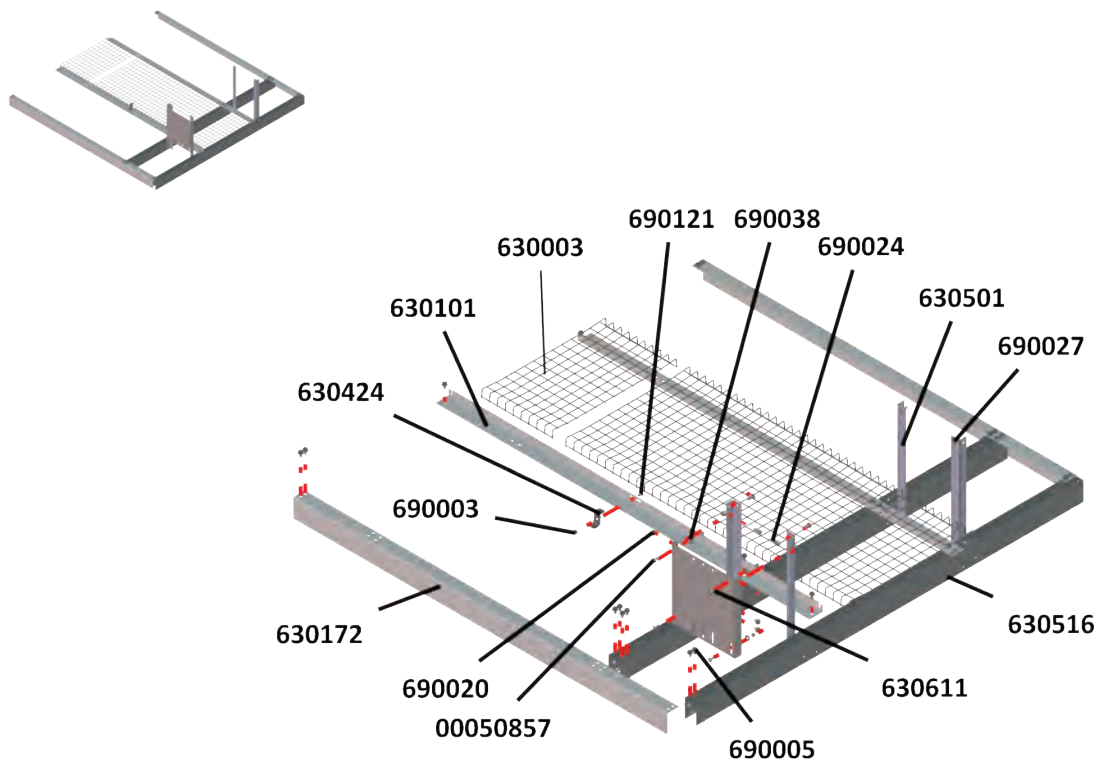


APPENDIX 35 - Highrise Frame (SUPT, DBL, NEST 8', F/HIGHRISE, INT)



| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630845 ASSY, FRAME, SUPT, DBL NEST, 8', F/HIGHRISE, INT | | |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630171 | RAIL, FRONT 8', W/O SLAT RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630516 | SUPPORT, CROSS, CENTERED DIVIDER, HIGHRISE | 2 |
| 630563 | RAIL, BACK 8' | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | 1 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 22 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |

APPENDIX 36 - Highrise Frame (EXPPELLER SUPT, 5', F/HIGHRISE)

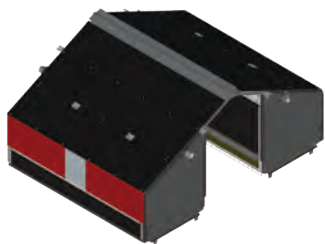


| PART # | DESCRIPTION | QTY |
|--|--|-----|
| 630555 ASSY, FRAME, EXPPELLER SUPT, 5', F/HIGHRISE | | |
| 00050857 | SCREW, 1/4-20 X 5/8 THMS ZP | 4 |
| 630003 | PANEL, WIRE SUPT, EGG BELT | 2 |
| 630101 | RAIL, REAR, MOTOR COMPARTMENT | 2 |
| 630172 | RAIL, FRONT, MTR COMP, W/O SLA T RIDGE | 2 |
| 630424 | EGG BELT GUIDE | 1 |
| 630501 | SUPPORT, VERT, MTR HOUSING | 4 |
| 630516 | SUPPORT, CROSS, CENTERED DIVIDER, HIGHRISE | 2 |
| 630611 | PLATE, CONTACTOR, BOX, MOUNT | 1 |
| 690003 | NUT, KEP 1/4-20 ZP | 5 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 32 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 2 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 4 |
| 690038 | WASHER, FLAT 1/4-20 X 1/2 GRG ZP | 4 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 1 |

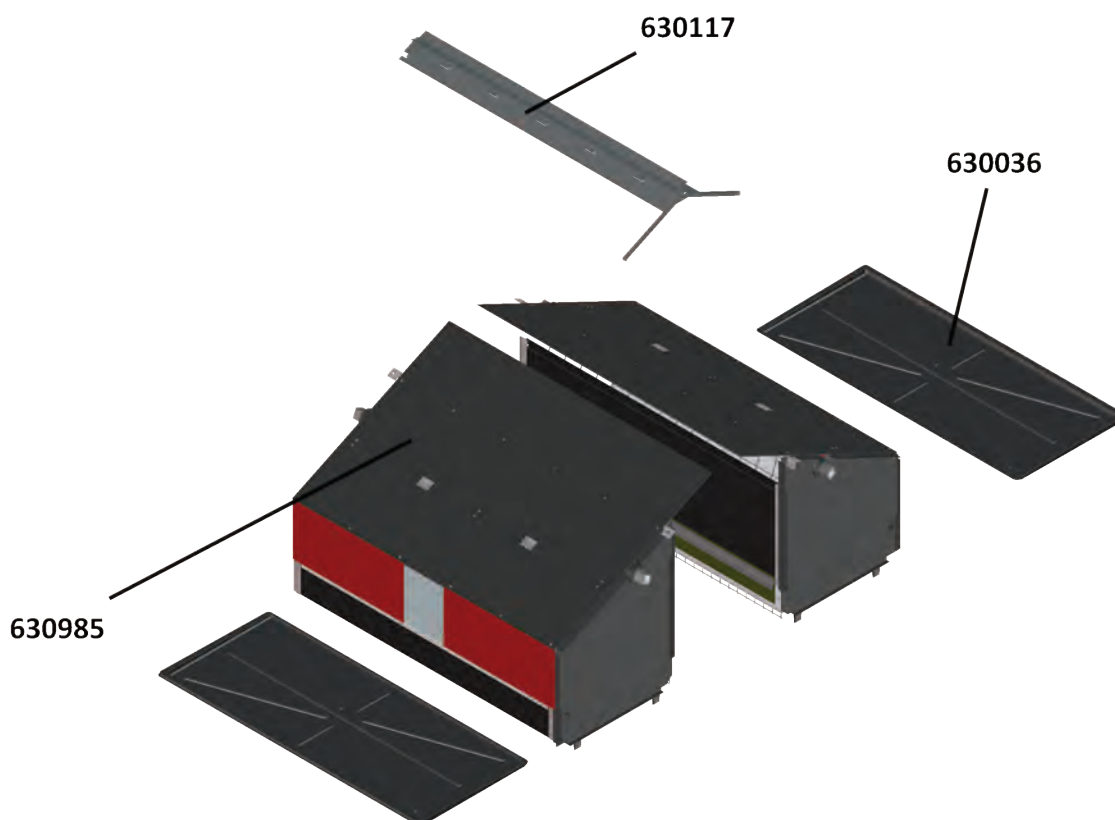
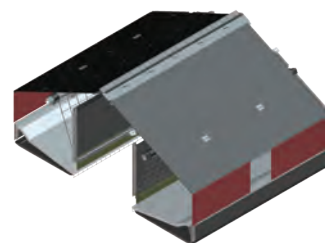


APPENDIX 37 - Double Nest, Standard

Front end

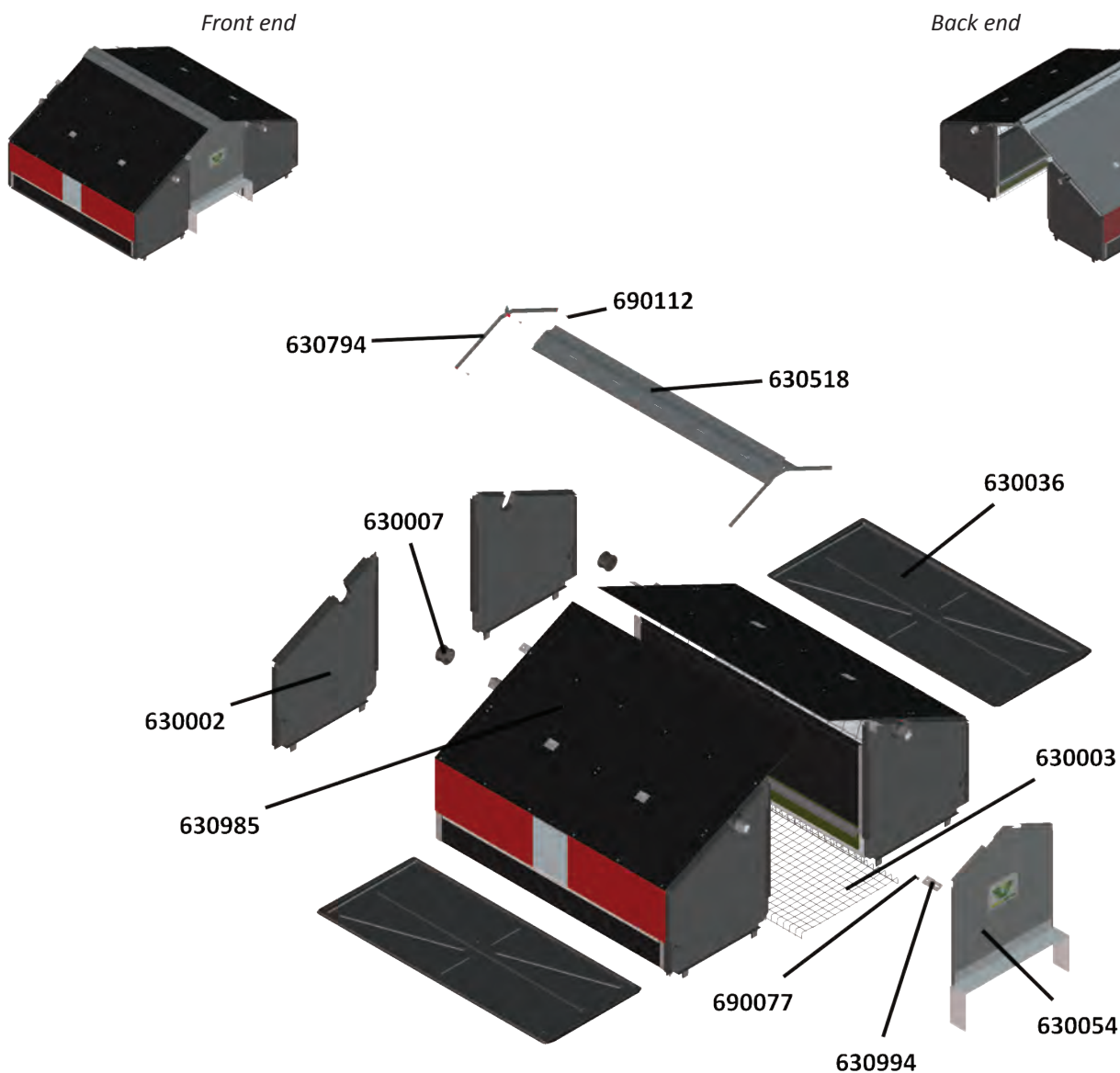


Back end



| PART # | DESCRIPTION | QTY |
|---|----------------------------|-----|
| 630808 DOUBLE NEST, STANDARD SECTION 4' | | |
| 630036 | TRAY, MANURE | 2 |
| 630117 | KIT, NEST ROOF W/ FLAT BAR | 1 |
| 630985 | ASSY, NEST | 2 |

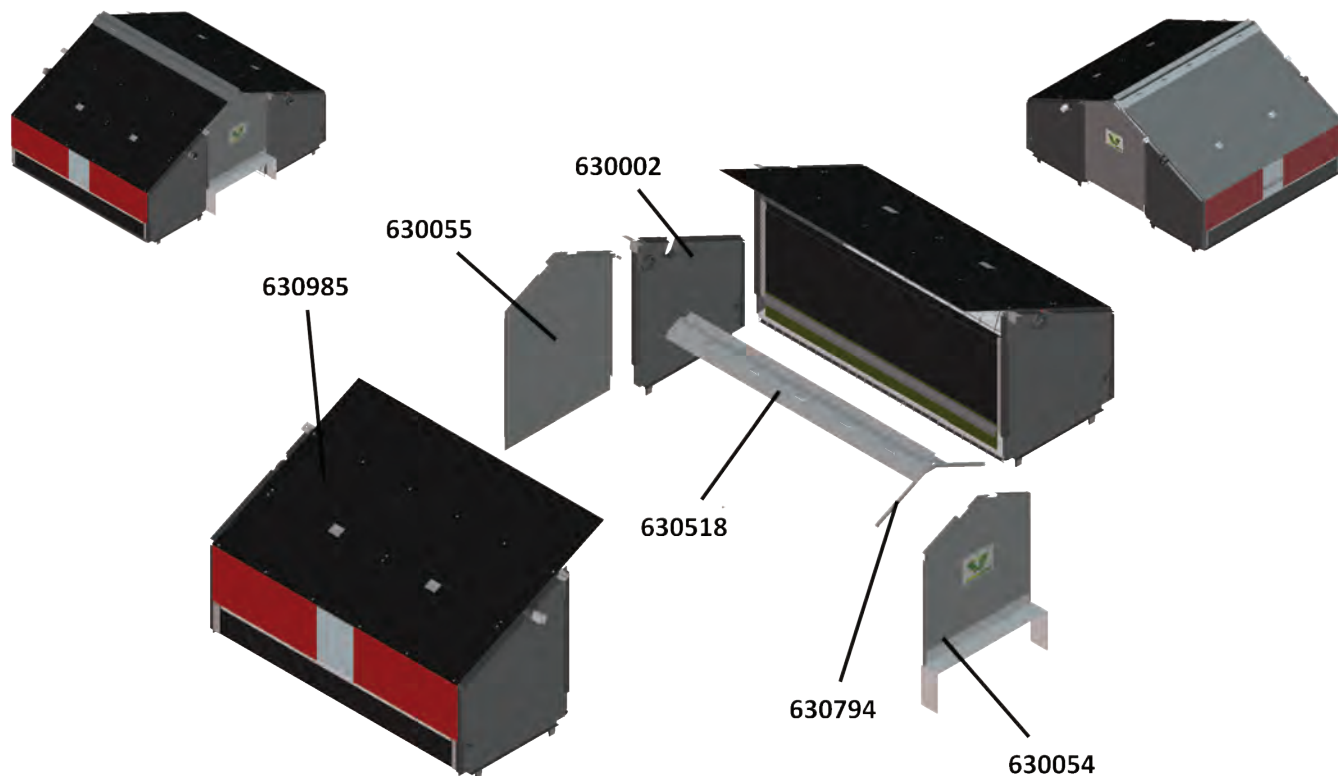
APPENDIX 38 - Double Nest, Intermediate Section, 4'



| PART # | DESCRIPTION | QTY |
|---|---------------------------------------|-----|
| 630809 DOUBLE NEST, INTERMEDIATE SECTION 4' | | |
| 630002 | DIVIDER, WALL | 2 |
| 630007 | GROMMET, EXPELLER | 2 |
| 630036 | TRAY, MANURE | 2 |
| 630054 | PANEL, WALL, FRONT OF ROW | 2 |
| 630518 | KIT, NEST ROOF W/ FLAT BAR EOR | 1 |
| 630794 | KIT, RAIL, SUPT, RIDGE CAP | 1 |
| 630985 | ASSY, NEST | 2 |
| 630994 | ANGLED SUPPORT BRACKET NEST PARTITION | 2 |
| 690003 | NUT, KEP 1/4-20 X 1/2 ZP | 2 |
| 690077 | SCREW, 1/4-20 X 1/2 HCCS, ZP | 2 |
| 690112 | SCREW, #10 X 1/2IN, TEK, PLATE D | 4 |

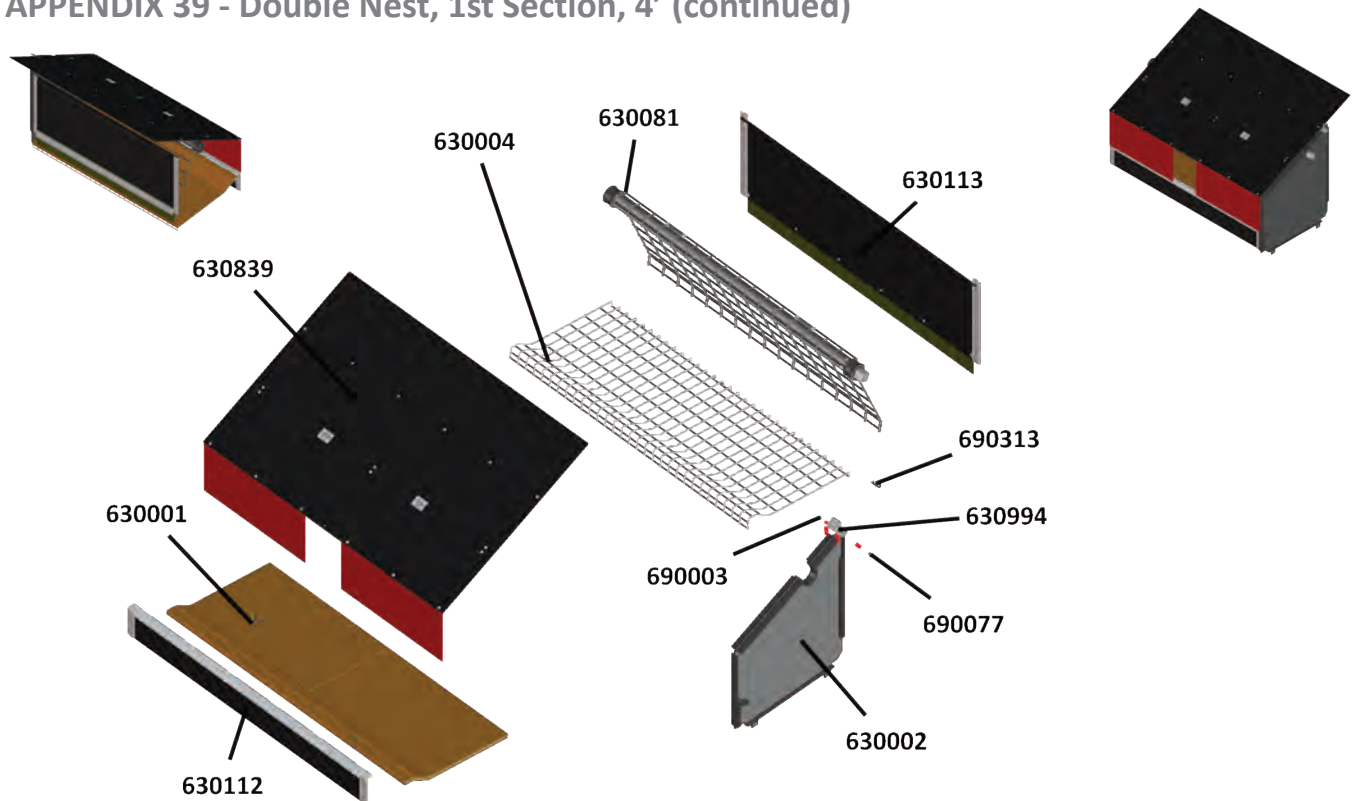


APPENDIX 39 - Double Nest, 1st Section, 4'



| PART # | DESCRIPTION | QTY |
|--------------------------------------|---|-----|
| 630810 DOUBLE NEST, FIRST SECTION 4' | | |
| 630002 | DIVIDER, WALL | 2 |
| 630004 | PANEL, WIRE, SUPT, NEST FLOOR | 1 |
| 630005 | PANEL, WIRE, NEST EXPELLER | 1 |
| 630007 | GROMMET, EXPELLER | 2 |
| 630036 | TRAY, MANURE | 2 |
| 630054 | PANEL, WALL, FRONT OF ROW | 1 |
| 630055 | PANEL, WALL, END OF ROW | 1 |
| 630113 | WALL, BACK, ASSY. | 1 |
| 630518 | KIT, NEST ROOF W/ FLAT BAR EOR | 1 |
| 630794 | KIT, RAIL, SUPT, RIDGE CAP | 1 |
| 630839 | ASSY, TOP, REINFORCED | 1 |
| 630985 | ASSY, NEST | 2 |
| 630994 | ANGLED SUPPORT BRACKET NEST PARTITION | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | 2 |
| 690012 | NUT, KEP 10-24 ZP (not shown) | 10 |
| 690032 | WASHER, FLAT # 10 SAE ZP (not shown) | 10 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS ZP (not shown) | 2 |
| 690082 | SCREW, 10-24 X 1/2 THMS ZP (not shown) | 10 |
| 690112 | SCREW, #10 X 1/2IN, TEK, PLATED (not shown) | 4 |

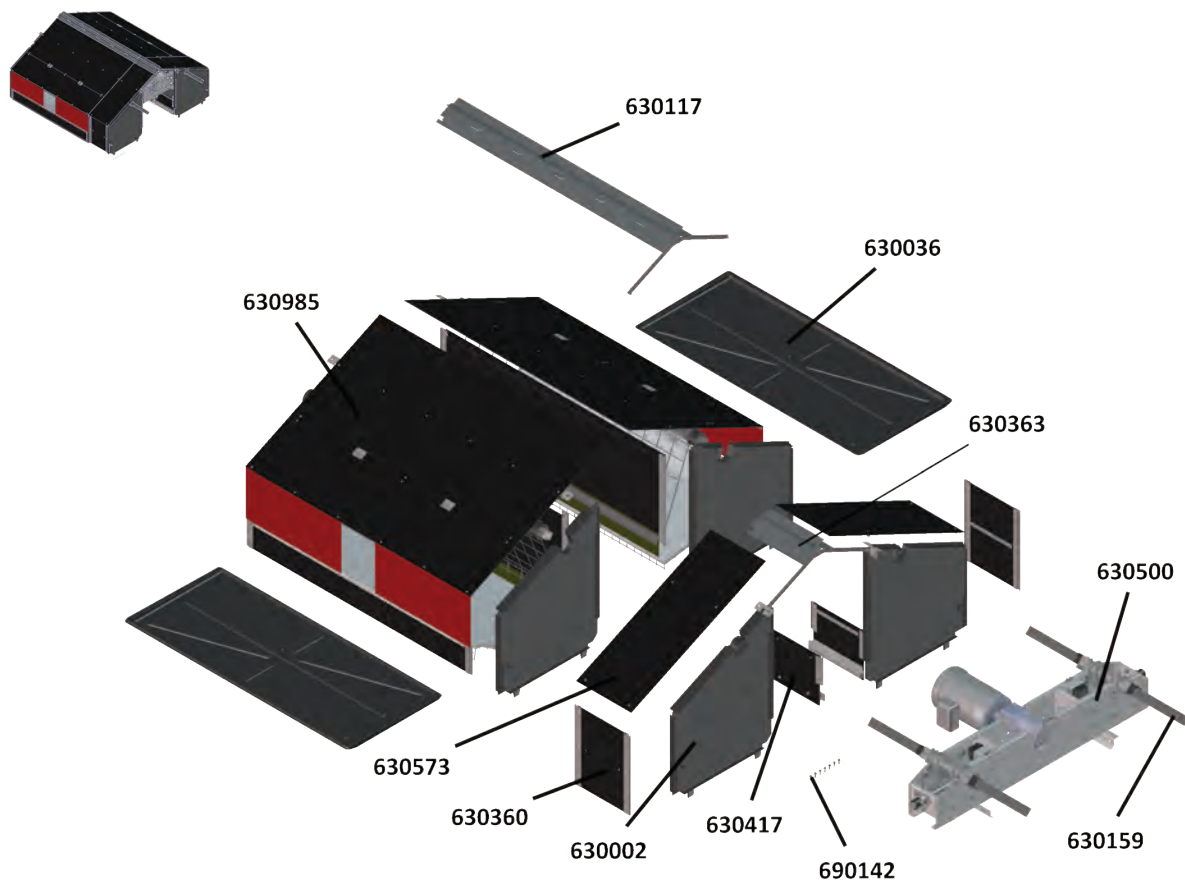
APPENDIX 39 - Double Nest, 1st Section, 4' (continued)



| PART # | DESCRIPTION | QTY |
|------------------------------|---------------------------------------|-----|
| 630985 ASSEMBLY, NEST | | |
| 630001 | FLOOR, NEST | 2 |
| 630002 | DIVIDER, WALL | 1 |
| 630004 | PANEL, WIRE, SUPT, NEST FLOOR | 1 |
| 630081 | ASSY, EXPELLER | 1 |
| 630112 | WALL, FRONT, ASSY. | 1 |
| 630113 | WALL, BACK, ASSY. | 1 |
| 630839 | ASSY, TOP, REINFORCED | 1 |
| 630994 | ANGLED SUPPORT BRACKET NEST PARTITION | 1 |
| 690003 | NUT, KEP 1/4-20 ZP | 1 |
| 690077 | SCREW, 1/4-20 X 1/2 HHCS, ZP | 1 |
| 690313 | PIN, HAIR COTTER, .091 X 1-5/8 | 1 |



APPENDIX 40 - Double Nest, Expeller Drive Section 5'

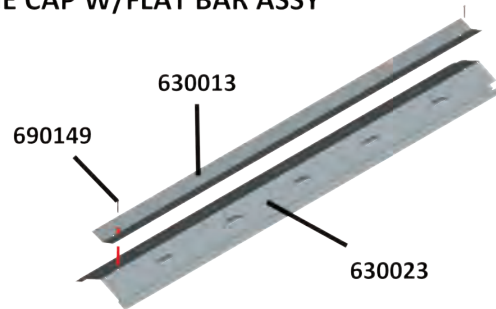


| PART # | DESCRIPTION | QTY |
|--|---|-----|
| 630812 DOUBLE NEST, W/EXPELLER DRIVE SECTION 5' | | |
| 630036 | TRAY, MANURE | 2 |
| 630117 | KIT, NEST ROOF W/ FLAT BAR | 1 |
| 630159 | TB SQ, 1.5 X 12 GA WALL X 24', GALV | 4 |
| 630500 | ASSY, EXPELLER DRIVE COMPART. | 1 |
| 630985 | ASSY, NEST | 2 |
| 630991 | BOM KIT, EXPELLER COVER | 1 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL (<i>extras</i>) | 8 |
| 630991 EXPELLER DRIVE SECTION | | |
| 630002 | DIVIDER, WALL | 4 |
| 630363 | KIT, NEST ROOF W/FLAT BAR | 1 |
| 630417 | NEST REAR ASSY, EXPELLER DRIVE UNIT | 2 |
| 630360 | ASSY, REINFORCED PANEL, FRONT EXPELLER DRIVE UNIT | 2 |
| 630573 | ASSY, NEST TOP, EXPELLER DRIVE | 2 |

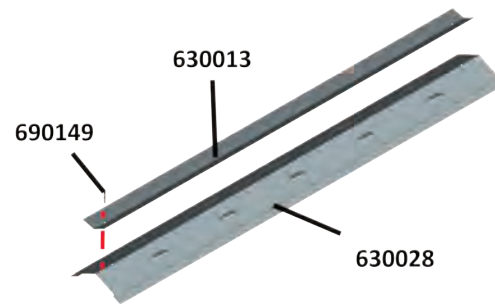
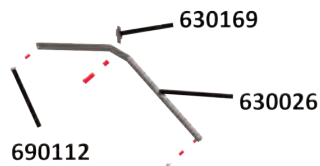
APPENDIX 41 - Ridge Cap and Ridge Cap Support W/Flat Bar



630795, RIDGE CAP W/FLAT BAR ASSY



630794, RIDGE SUPPORT ASSY



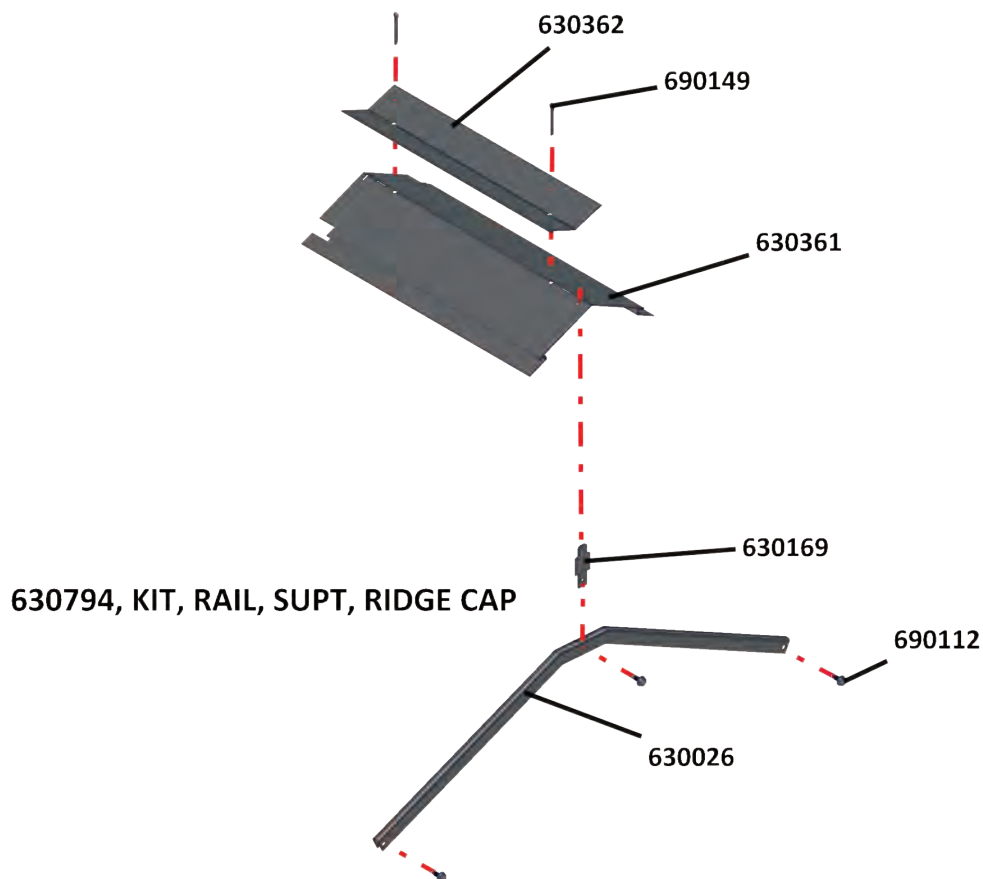
630796, RIDGE CAP W/FLAT BAR ASSY, EOR

| PART # | DESCRIPTION | QTY |
|----------------------------------|-----------------------------------|-----|
| 630117 KIT, NEST ROOF W/FLAT BAR | | |
| 630794 | KIT, RAIL, SUPT, RIDGE CAP | 1 |
| 630795 | ASSY, RIDGE CAP W/ FLAT BAR | 1 |
| 630518 KIT, NEST ROOF W/FLAT BAR | | |
| 630794 | KIT, RAIL, SUPT, RIDGE CAP | 1 |
| 630796 | ASSY, RIDGE CAP W/FLAT BAR | 1 |
| SUB-ASSEMBLY PARTS | | |
| 630013 | ANTI-PERCH, FLAT BAR | 1 |
| 630023 | CAP, RIDGE, VENTED, FLAT (630795) | 1 |
| 630026 | RAIL, SUPT, RIDGE CAP | 1 |
| 630028 | CAP, RIDGE, VENTED EOR (630796) | 1 |
| 630169 | TAB, RIDGE SUPPORT | 1 |
| 690112 | SCREW, #10 X 1/2IN, TEK, PLATE D | 3 |
| 690149 | PIN, COTTER 1/8 X 1 ZP | 2 |



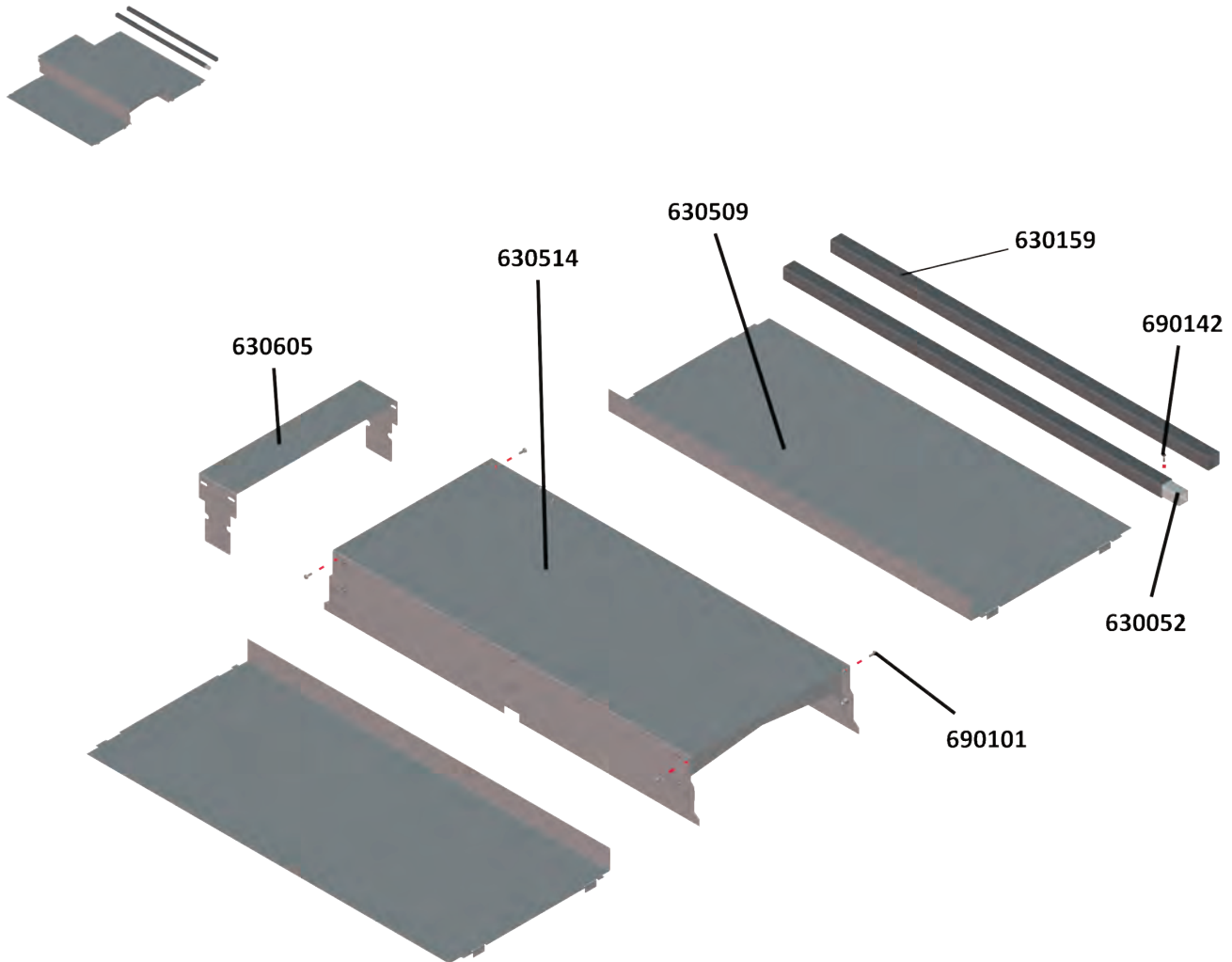
APPENDIX 42 - Expeller Drive Ridge Cap and Ridge Cap Support

630797, RIDGE CAP W/FLAT BAR/EXPELLER DRIVE UNIT



| PART # | DESCRIPTION | QTY |
|--|--|-----|
| 630363 - EXPELLER DRIVE RIDGE CAP AND RIDGE CAP SUPPORT | | |
| 630794 | KIT, RAIL, SUPT, RIDGE CAP | 1 |
| 630797 | ASSY, RIDGE CAP W/ FLAT BAR, F/ EXPEL DRV UNIT | 1 |
| 630794 - KIT, RAIL, SUPT, RIDGE CAP | | |
| 630026 | RAIL, SUPT, RIDGE CAP | 1 |
| 630169 | TAB, RIDGE SUPPORT | 1 |
| 690112 | SCREW, #10 X 1/2IN, TEK, PLATE D | 3 |
| 630797 - ASSY, RIDGE CAP W/ FLAT BAR, F/ EXPEL DRV UNIT | | |
| 630361 | CAP, RIDGE, VENTED, EXPEL DRV UNIT | 1 |
| 630362 | ANTI-PERCH, FLAT BAR, F/ EXPEL DRV UNIT | 1 |
| 690149 | PIN, COTTER 1/8 X 1 ZP | 2 |

APPENDIX 43 - Double Nest, Egg Belt Cover 4'



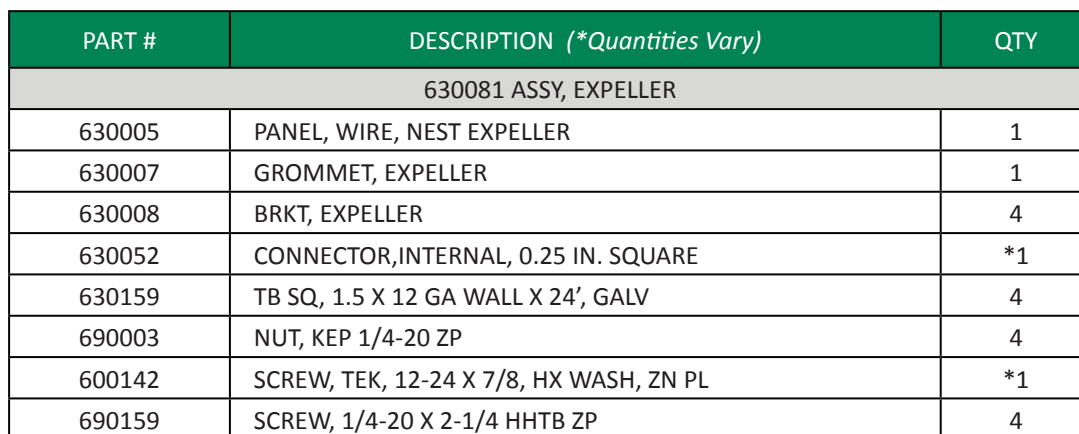
| PART # | DESCRIPTION (*Quantities Vary) | QTY |
|---------------------------------------|---|-----|
| 630811 DOUBLE NEST, EGG BELT COVER 4' | | |
| 630052 | CONNECTOR,INTERNAL, 0.25 IN. SQUARE | *1 |
| 630159 | TB SQ, 1.5 X 12 GA WALL X 24', GALV | 8 |
| 630509 | FLOOR, INSERT, F/CROSS OVER | 2 |
| 630514 | BOM KIT, COVER ASSY, EGG BELT CROSS OVER | 1 |
| 630605 | COVER, BAND | 1 |
| 690101 | SCREW, 1/4-20 X 5/8 HHCS ZP | 4 |
| 690142 | SCREW, TEK, #12-24 X 7/8, HX W ASH, ZN PL | *1 |



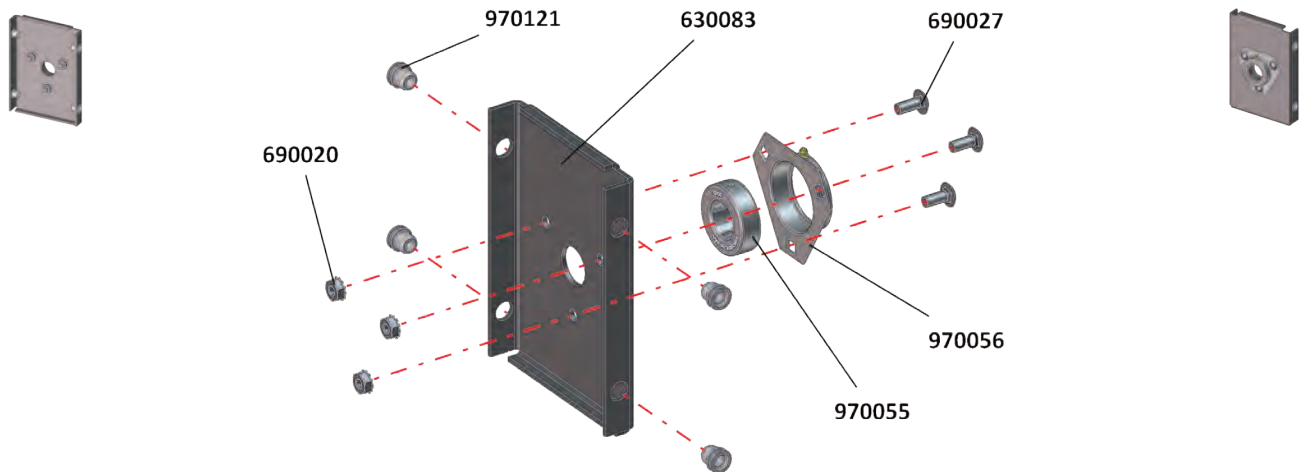


APPENDIX 44 - Expeller Drive Unit (continued)

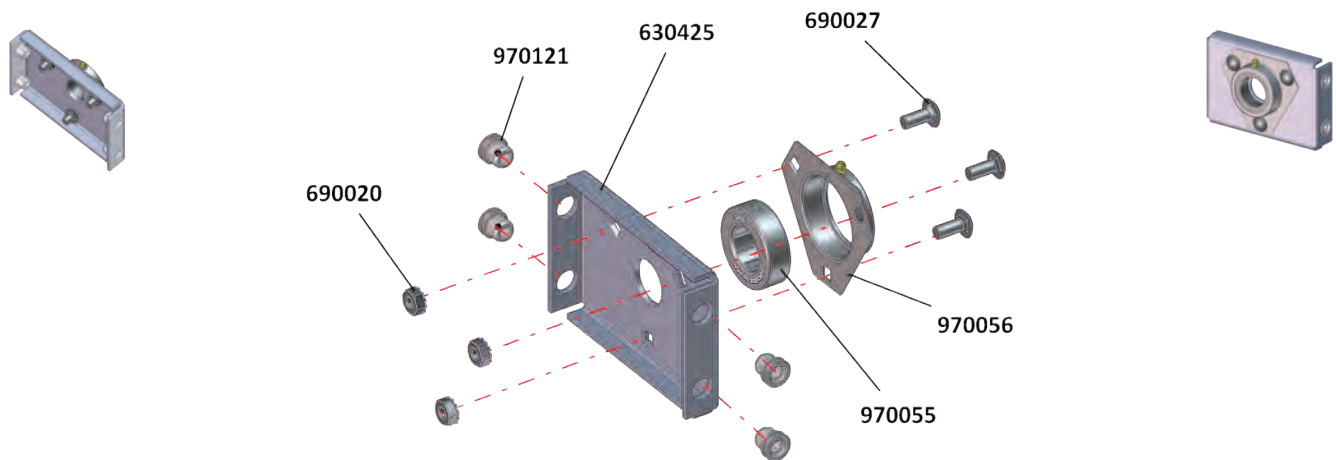
| PART # | DESCRIPTION | QTY |
|-------------------------|---|-----|
| 630500 - EXPELLER DRIVE | | |
| 630022 | PLATE, EXPELLER, DRIP TRAY | 1 |
| 630076 | SWITCH, LIMIT, MICRO, LAVATO | 4 |
| 630082 | PLATE ASSY, BRG, NEST EJECTION | 2 |
| 630088 | ASSY, LIMIT SWITCH | 4 |
| 630187 | REDUCER, 525 DXTMQ-166-D-56 (LEESON) | 1 |
| 630426 | ASSY, PLATE, BEARING, NEST EJECTION, EXT | 2 |
| 630439 | SUPPORT, NOTCHED, HORIZ, MTR H OUSING | 2 |
| 630454 | BOM KIT, LOVE JOY, LH, EXTENDE D | 1 |
| 630456 | BOM KIT, LOVE JOY, RH, EXTENDE D | 1 |
| 630458 | END CAP, EXPELLER TUBE | 4 |
| 630484 | ASSY, LOAD NUT, LH, EXPELLER | 1 |
| 630485 | ASSY, LOAD NUT, RH, EXPELLER | 1 |
| 630495 | WELD ASSY, EXPELLER SWING ARM W/ BEARINGS | 2 |
| 630496 | RAIL, SWING ARM CHANNEL | 8 |
| 630497 | SPACER, TUBE, RAIL, SWING ARM CHANNEL | 8 |
| 630499 | HOUSING, DRIVE, EXPELLER | 2 |
| 630502 | BUSHING, 1/2 ID X 5/8 OD X 3/8 BRONZE | 4 |
| 630503 | BOM KIT, EXPELLER TUBE CONNECTION KIT | 4 |
| 690003 | NUT, KEP 1/4-20 ZP | 18 |
| 690004 | SCREW, 1/4-20 X 5/8 CRG SN ZP | 8 |
| 690018 | WASHER, FLAT 1/4 SAE ZP | 8 |
| 690020 | NUT, KEP 5/16-18 ZP | 36 |
| 690026 | SCREW, 5/16-18 X 5/8 HHCS ZP | 4 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 32 |
| 690034 | NUT, KEP 3/8-16 ZP | 4 |
| 690069 | SCREW, 3/8-16 X 1 HHCS, ZP | 4 |
| 690070 | WASHER, LOCK, 3/8, ZP | 16 |
| 690084 | SCREW, 3/8-16 X 3/4, HHCS, ZP | 16 |
| 690113 | SCREW, 1/4-20 X 1/2 HWH TYP-1 | 6 |
| 690159 | SCREW, 1/4-20 X 2-1/4 HHTB ZP | 8 |
| 690251 | SHIM, ROUND 1/2 ID X 7/8 OD X .045 THK | 8 |
| 690252 | WASHER, FLAT, .656ID X 1.312OD ZP | 4 |
| 690253 | SCREW, 1/2-13 X 1, HHCS ZP | 4 |
| 690254 | NUT, THIN, HEX JAM 1/2-13 ZP X 7/32 THK | 4 |
| 970053 | COLLAR, LOAD #CM115 PCOAT BLAC K | 2 |
| 970055 | BRG, THRUST 64TB64ZP | 4 |
| 970056 | FLANGE, 9113-ZP | 4 |
| 970794 | SCREW, 1/4-20 X 1-3/4inch GRADE 8 | 2 |



APPENDIX 46 - Plate Assy, BRG, Nest Ejection and Plate, Bearing, EXT



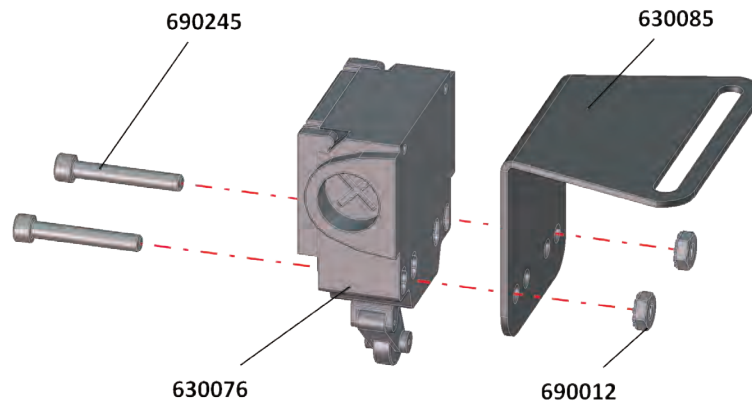
| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630082 - PLATE ASSY, BRG, NEST EJECTION (included in Expeller Drive Unit) | | |
| 630083 | BLOCK, BRG | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 3 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 3 |
| 970055 | BRG, THRUST 64TB64ZP (USE WITH 970056) | 1 |
| 970056 | FLANGE, 9113-ZP (USE WITH 970055) | 1 |
| 970121 | INSERT, THREADED OPEN END 3/8- 16 | 4 |



| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630426 ASSY, PLATE, BEARING, NEST EJECTION, EXT (included in Expeller Drive Unit) | | |
| 630425 | BLOCK, BRG | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 3 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 3 |
| 970055 | BRG, THRUST 64TB64ZP (USE WITH 970056) | 1 |
| 970056 | FLANGE, 9113-ZP (USE WITH 970055) | 1 |
| 970121 | INSERT, THREADED OPEN END 3/8- 16 | 4 |

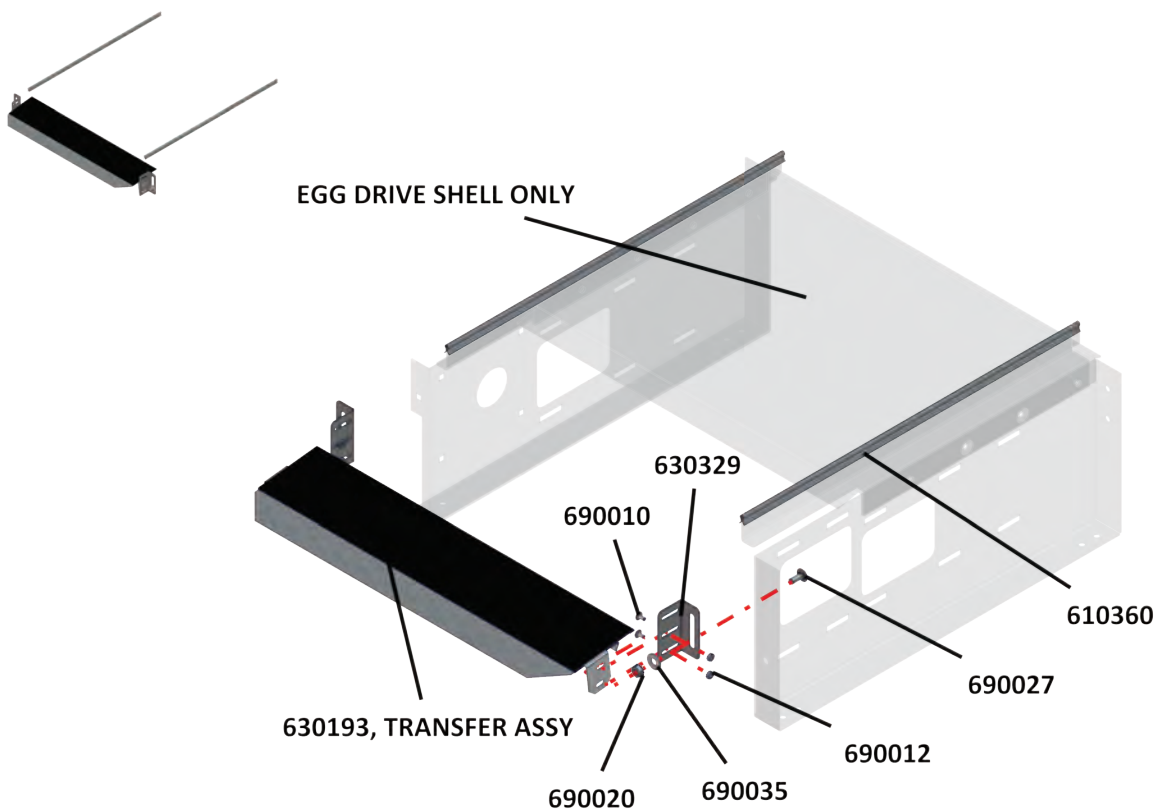


APPENDIX 47 - Limit Switch



| PART # | DESCRIPTION | QTY |
|--|------------------------------|-----|
| 630088 ASSY, LIMIT SWITCH <i>(included in Expeller Drive Unit)</i> | | |
| 630076 | SWITCH, LIMIT, MICRO, LOVATO | 1 |
| 630085 | BRKT, LIMIT SWITCH, FRONT | 1 |
| 690012 | NUT, KEP 10-24 ZP | 2 |
| 690245 | SCREW, 10-24 X 1-1/4IN SHCS | 2 |

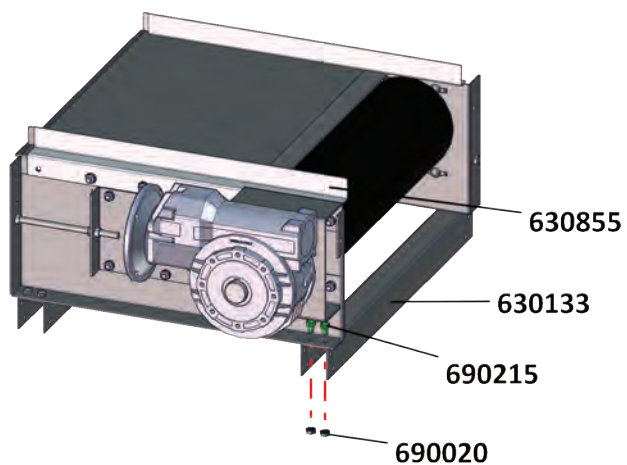
APPENDIX 48 - Egg Transfer



| PART # | DESCRIPTION | QTY |
|--------------------------------------|------------------------------------|-----|
| 630194 BOM KIT, TRNS ASSY, EGG 21.73 | | |
| 610360 | LINER, CURTAIN HOLDER GREY, 8' | 1 |
| 630193 | TRANSFER ASSY, EGG 21.80IN F/ NEST | 1 |
| 630329 | SUPPORT, TRANSFER, EGG | 2 |
| 690010 | SCREW, 10-24 X 3/8 THMS ZP | 4 |
| 690012 | NUT, KEP 10-24 ZP | 4 |
| 690020 | NUT, KEP 5/16-18 ZP | 2 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 2 |
| 690035 | WASHER, FLAT 5/16 USS ZP | 2 |

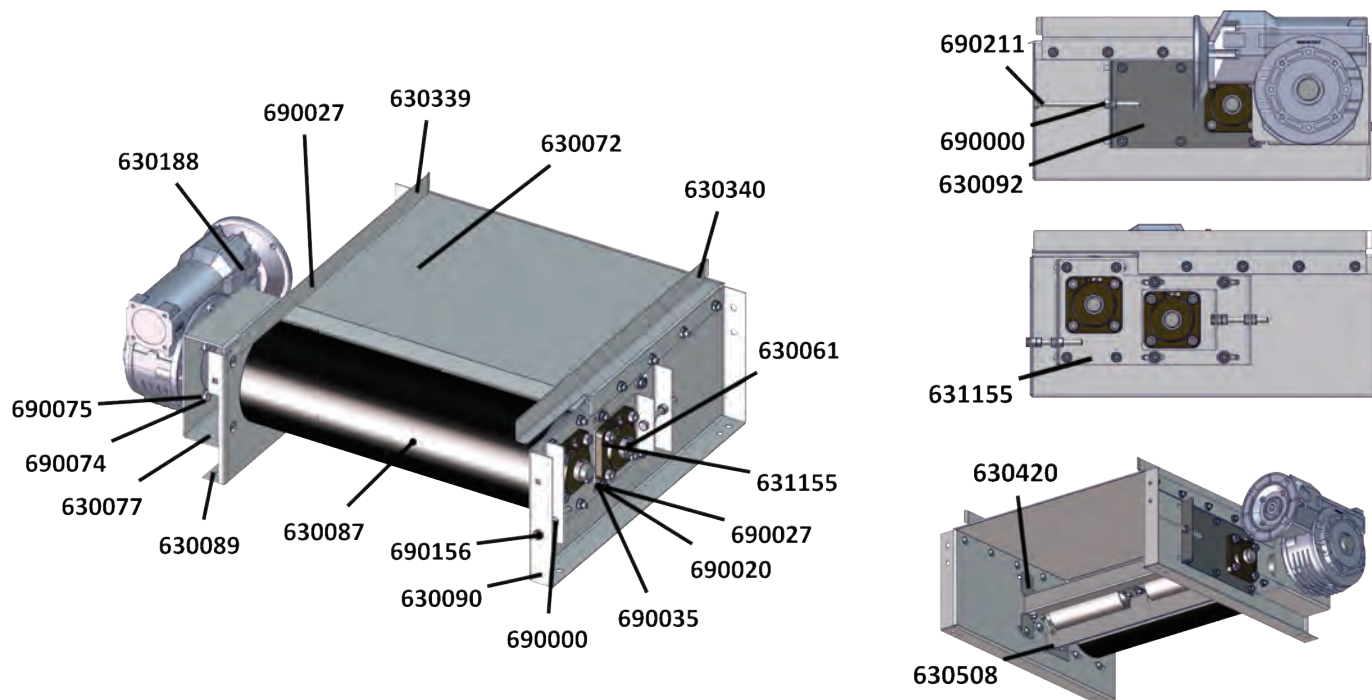


APPENDIX 49 - Egg Drive Unit -630856



| PART # | DESCRIPTION | QTY |
|--|--|-----|
| 630856 EGG BELT DRIVE, DBL NEST, WITH LEG SUPPORTS | | |
| 630133 | SUPT, CROSS BRACE, FRONT, NEST | 2 |
| 630855 | EGG BELT DRIVE, DBL NEST, W/O LEG SUPPORTS | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 8 |
| 690215 | SCREW, 5/16-18 X 1/2 HHCS ZP | 8 |

APPENDIX 50 - Egg Drive Unit - 630855

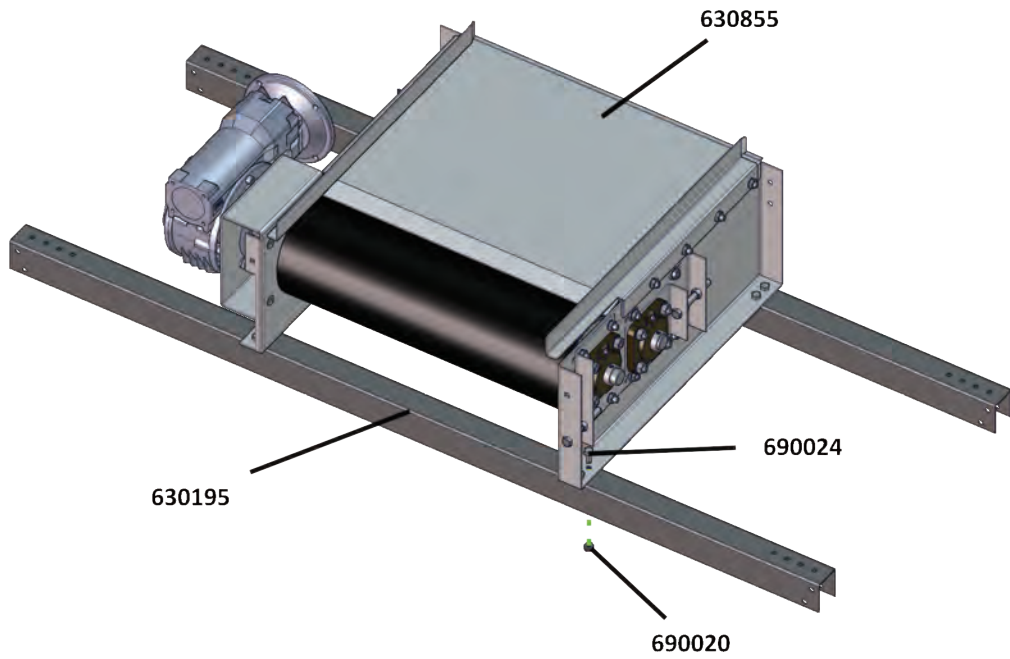


| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630855 EGG BELT DRIVE, DBL NEST, WITHOUT LEG SUPPORTS | | |
| 630061 | ASSY, SLACK ROLLER/ SHAFT | 1 |
| 630072 | PLATE, TOP, ROLLER MOUNT, MAIN DRIVE | 1 |
| 630077 | PLATE, MOUNTING, REDUCER, NEST | 1 |
| 630087 | ASSY, DRIVE ROLLER/SHAFT | 1 |
| 630089 | PLATE, LH, ROLLER MOUNT, MAIN DRIVE | 1 |
| 630090 | PLATE, RH, ROLLER MOUNT, MAIN DRIVE | 1 |
| 630092 | PLATE ASSY, BRG, SLACK ROLLER, ADJ (LH) | 1 |
| 630188 | REDUCER, LEESON 534DXTHMQ+T334-129.4-H-56-24 | 1 |
| 630339 | EGG GUIDE, DRIVE UNIT, LH, NES T | 1 |
| 630340 | EGG GUIDE, DRIVE UNIT, RH, NES T | 1 |
| 630420 | ASSY, BELT WRAP GUARD | 1 |
| 630508 | SCRAPER, PINCH ROLLER, EGG BELT DRIVE | 1 |
| 631155 | PLATE ASSY, BRG, DRIVE ROLLER | 1 |
| 690000 | NUT, HEX 3/8-16 ZP | 6 |
| 690020 | NUT, KEP 5/16-18 ZP | 26 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 26 |
| 690035 | WASHER, FLAT 5/16 USS ZP | 4 |
| 690074 | SCREW, M10-1.5 X 25MM HHCS | 4 |
| 690075 | WASHER, LOCK, M10, ZP | 4 |
| 690156 | SCREW, 3/8-16 X 3.5IN HHTB ZP | 1 |
| 690211 | SCREW, 3/8-16 X 7 HHTB -FTHD Z P | 1 |



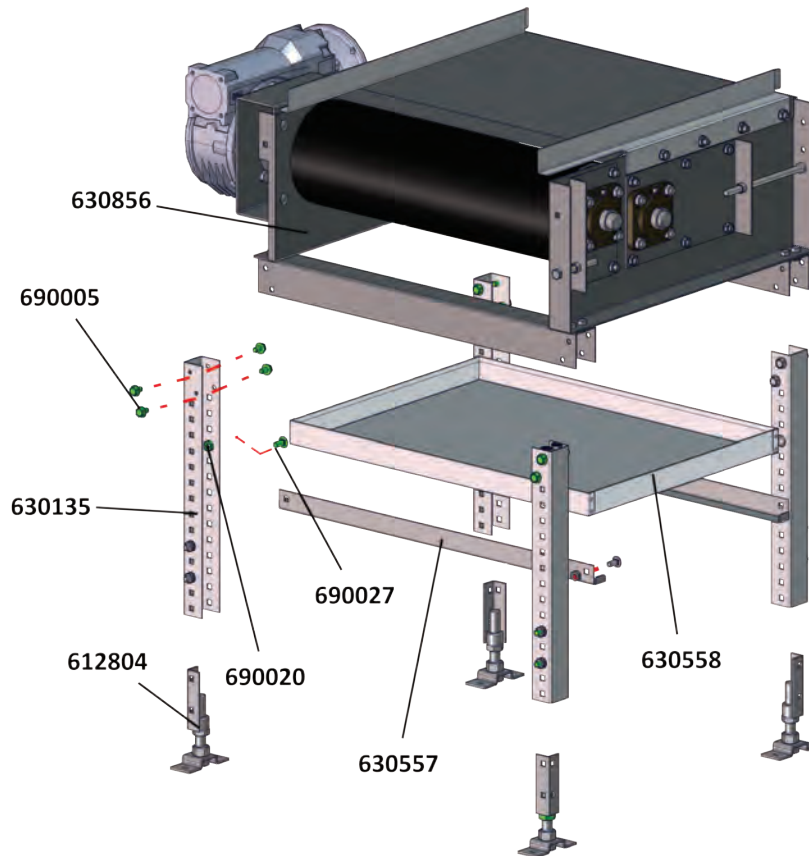
APPENDIX 51 - Egg Drive Unit - 630379

630379, EGG BELT DRV, DOUBLE NEST, F/



| PART # | DESCRIPTION | QTY |
|---|--|-----|
| 630379 EGG BELT DRIVE, DBL NEST, F/HIGHRISE | | |
| 630195 | SUPT, CROSS BRACE, FRONT, NEST, HR | 2 |
| 630855 | EGG BELT DRIVE, DBL NEST, W/O LEG SUPPORTS | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 8 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 8 |

APPENDIX 52 - Egg Drive Unit 630382

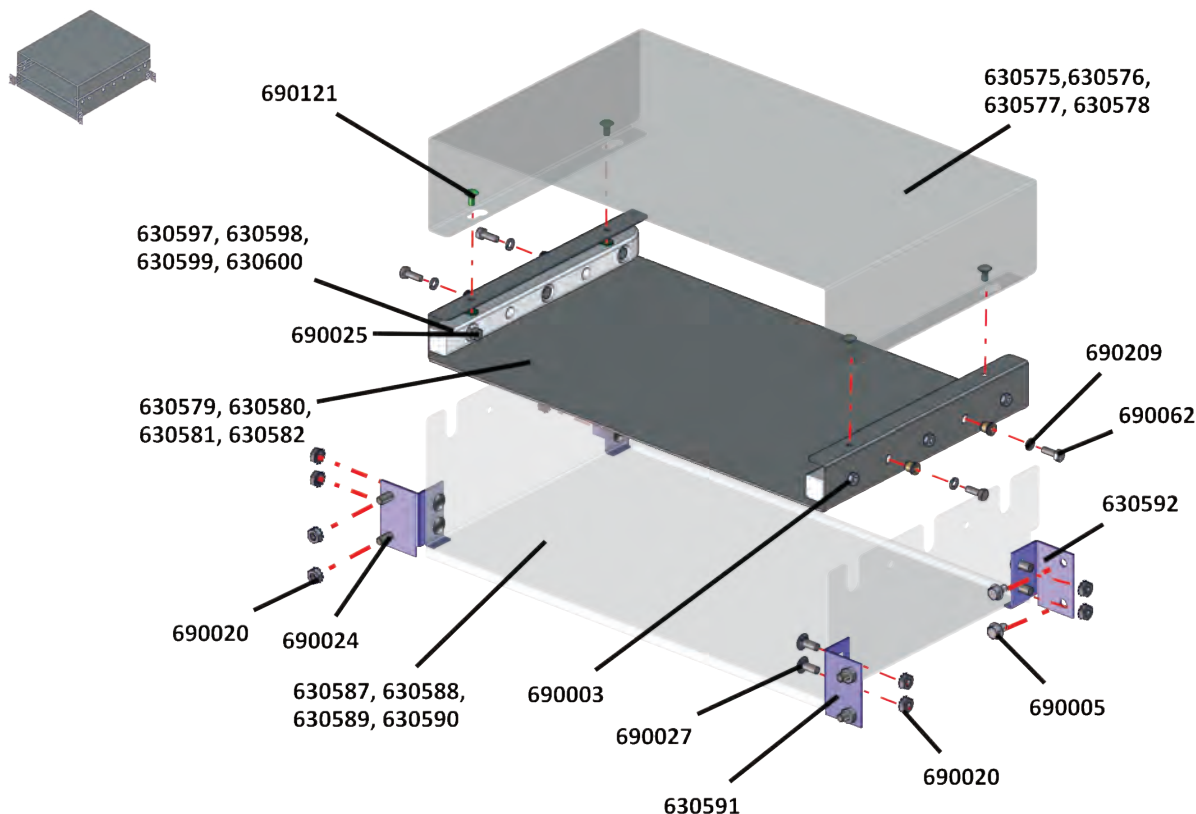


| PART # | DESCRIPTION | QTY |
|--|---|-----|
| 630382 - EGG BELT DRV, DOUBLE NEST, W/LEGS | | |
| 612804 | ASSY, LEG, MAN DR | 4 |
| 630135 | LEG, FRONT, NEST | 4 |
| 630557 | SUPPORT, TRAY, EGG BELT DRIVE | 2 |
| 630558 | TRAY, REFUSE, 18 X 24 X 1.5 | 1 |
| 630856 | EGG BELT DRIVE, DBL NEST, WITH LEG SUPPORTS | 1 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 16 |
| 690020 | NUT, KEP 5/16-18 ZP | 12 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 12 |



APPENDIX 53 - Egg Belt Extender/Cover

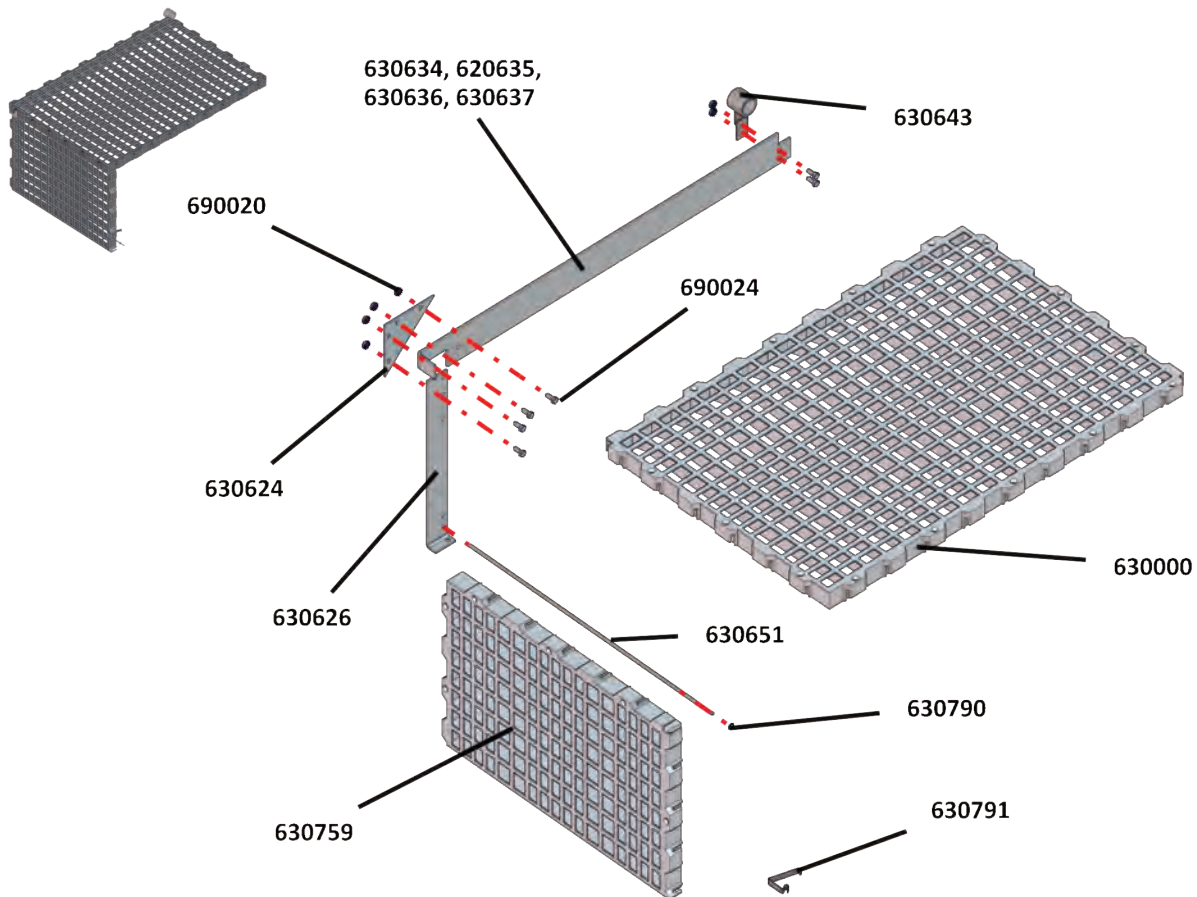
630601 12" Model shown



| PART # | DESCRIPTION (*Quantities Vary) | QTY |
|---|--|-----|
| 630601, 630602, 630603, 630604 - KIT, EGG BELT, FEOR-DR | | |
| 630591 | BRACKET, LH, EGG BELT, FEOR-DR | 2 |
| 630592 | BRACKET, RH, EGG BELT, FEOR-DR | 2 |
| 690003 | NUT, KEP 1/4-20 ZP | *10 |
| 690005 | SCREW, 5/16-18X1/2 HH SERR WAS H TY-F ZP | 4 |
| 690020 | NUT, KEP 5/16-18 ZP | 12 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 4 |
| 690025 | SCREW, 1/4-20 X 1 HHCS ZP | 4 |
| 690027 | SCREW, 5/16-18 X 3/4 CRG SH NK ZP | 8 |
| 690062 | SCREW, 1/4-20 X 3/4 HHCS ZP | *7 |
| 690121 | SCREW, 1/4-20 X 1/2 CRG ZP | 4 |
| 690209 | WASHER, LOCK 1/4 SPLIT, ZP | *4 |

| PART # | DESCRIPTION | QTY |
|---|--------------------------------------|-----|
| COVERS, SUPPORT PANELS, RAILS AND BUMPERS | | |
| 630575 | COVER, EGG BELT, FEOR-DR, 12" | 1 |
| 630576 | COVER, EGG BELT, FEOR-DR, 24" | 1 |
| 630577 | COVER, EGG BELT, FEOR-DR, 48" | 1 |
| 630578 | COVER, EGG BELT, FEOR-DR, 72" | 1 |
| 630579 | PANEL, SUPPORT, EGG BELT 12" | 1 |
| 630580 | PANEL, SUPPORT, EGG BELT 24" | 1 |
| 630581 | PANEL, SUPPORT, EGG BELT 48" | 1 |
| 630582 | PANEL, SUPPORT, EGG BELT 72" | 1 |
| 630587 | SUPPORT RAIL, EGG BELT, FEOR-DR, 12" | 1 |
| 630588 | SUPPORT RAIL, EGG BELT, FEOR-DR, 24" | 1 |
| 630589 | SUPPORT RAIL, EGG BELT, FEOR-DR, 48" | 1 |
| 630590 | SUPPORT RAIL, EGG BELT, FEOR-DR, 72" | 1 |
| 630597 | BUMPER, EGG BELT, FEOR-DR, 12" | 2 |
| 630598 | BUMPER, EGG BELT, FEOR-DR, 24" | 2 |
| 630599 | BUMPER, EGG BELT, FEOR-DR, 48" | 2 |
| 630600 | BUMPER, EGG BELT, FEOR-DR, 72" | 2 |

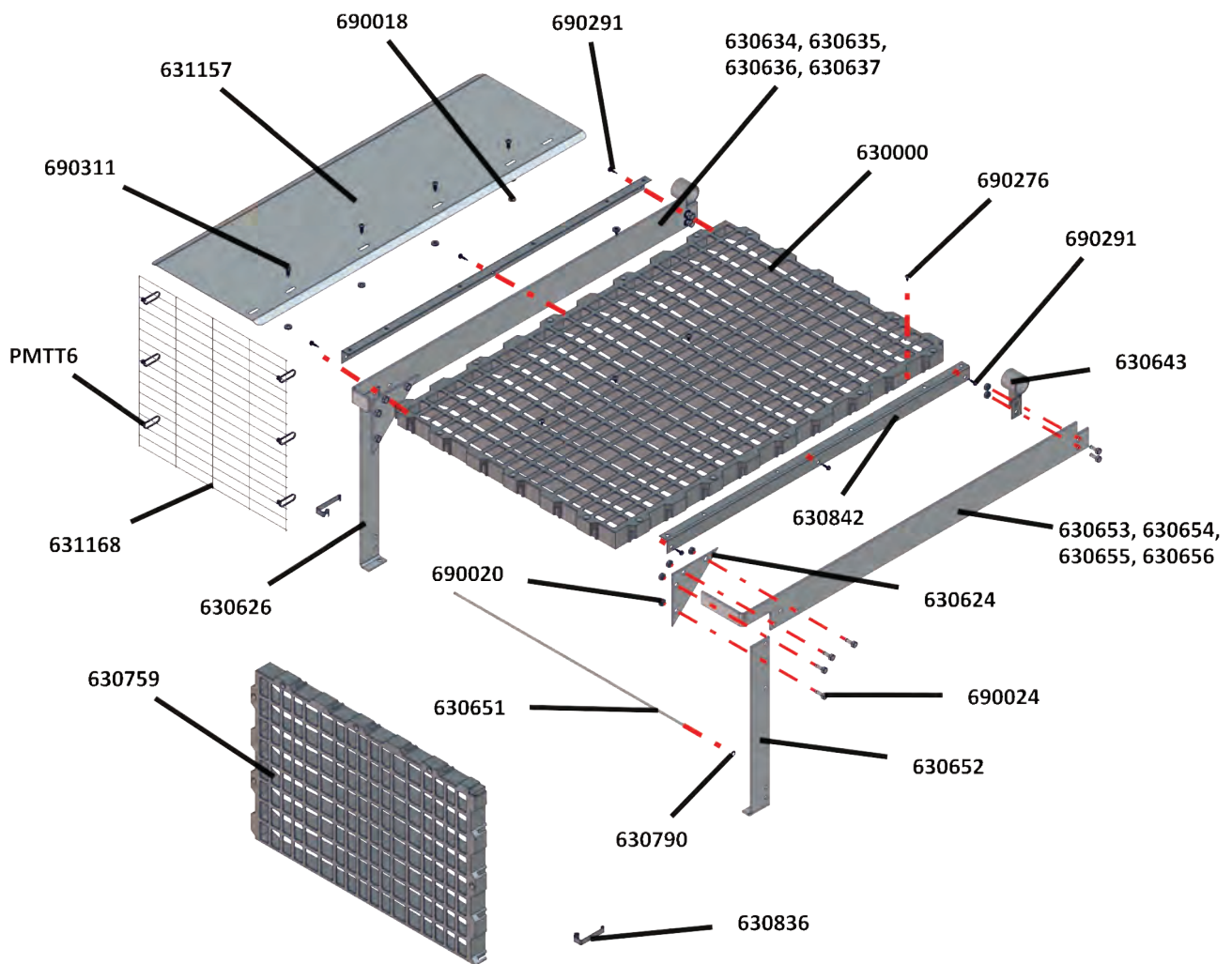
APPENDIX 54 - Winchable Slats



| PART # | DESCRIPTION | QTY |
|---|---|-------|
| 630662, 630663, 630664, 630665 - KIT, ASSY, WINCHABLE SLATS (*quantity varies by kit) | | |
| 630000 | SLAT, FLOOR, WHITE (2' x 3') | * 1-4 |
| 630624 | GUSSET, RAIL SUPPORT | 1 |
| 630626 | SUPPORT, VERT, SLAT GALVANIZED | 1 |
| 630643 | WA,SLAT SUPPORT WINCHING GALVANIZED | 1 |
| 630651 | ROD, VERTICAL SUPPORT | 1 |
| 630759 | SLAT, TRIMMED FRONT | 1 |
| 630790 | RETAINER, PUSH ON, PS 250085 | 2 |
| 630791 | SPRING CLIP FOR FLOOR SLAT | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 6 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 6 |
| RAIL, SLATS | | |
| 630634 | RAIL, SLAT, 36" WINCHING GALVANIZED (630662) | 1 |
| 630635 | RAIL, SLAT, 72" WINCHING GALVANIZED (630663) | 1 |
| 630636 | RAIL, SLAT, 108" WINCHING GALVANIZED (630664) | 1 |
| 630637 | RAIL, SLAT, 144" WINCHING GALVANIZED (630665) | 1 |



APPENDIX 54 - Winchable Slats (continued)



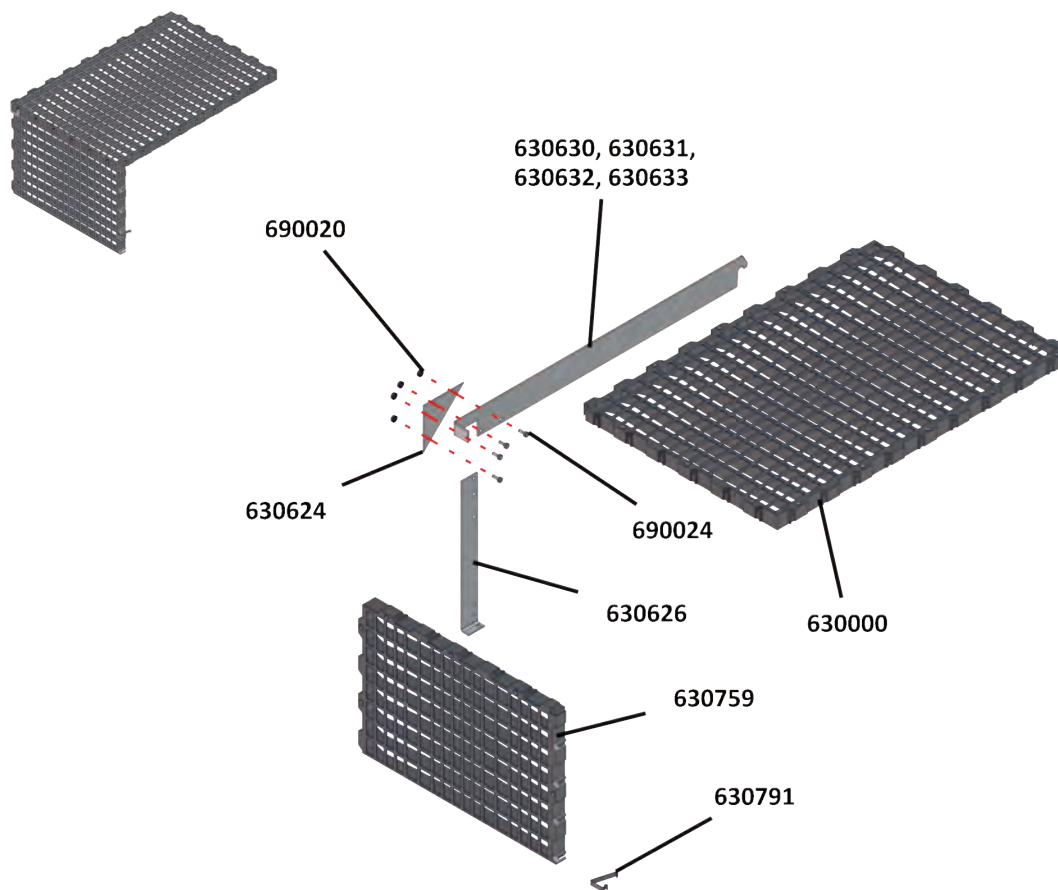


APPENDIX 54 - Winchable Slats (continued)

| PART # | DESCRIPTION (<i>Quantities Vary</i>) | QTY |
|--|---|-------|
| 630666, 630667, 630668, 630669 KIT END ASSY, WINCHABLE SLATS | | |
| 630000 | SLAT, FLOOR, WHITE (2' x 3') | * 1-4 |
| 630624 | GUSSET, RAIL SUPPORT | 2 |
| 630626 | SUPPORT, VERT, SLAT GALVANIZED | 1 |
| 630643 | WA,SLAT SUPPORT WINCHING GALVANIZED | 2 |
| 630651 | ROD, VERTICAL SUPPORT | 1 |
| 630652 | SUPPORT, VERT, SLAT, REVERSE GALVANIZED | 1 |
| 630759 | SLAT, TRIMMED FRONT | 1 |
| 630790 | RETAINER, PUSH ON, PS 250085 | 2 |
| 630836 | SPRING CLIP FOR FLOOR SLAT EOR | 2 |
| 630842 | ANGLE, SUPPORT, SLAT TO RAIL | 2 |
| 631157 | COVER, SLAT, EXPAND/CONTRACT | 1 |
| 631168 | PANEL, 1 X 4 X 16, 14 GA GALV | 1 |
| 690018 | WASHER, FLAT 1/4 SAE ZP | 8 |
| 690020 | NUT, KEP 5/16-18 ZP | 12 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 12 |
| 690276 | SCREW, #12 X 1/2" PPH ZP | 8 |
| 690291 | SCREW, TEK,#10-16X3/4, HHWASH | 6 |
| 690311 | SCREW, #12 X 3/4" PPH ZP | 4 |
| PMTT6 | WIRE TIES, BAG OF 100, 7.5 " BLACK UV | 1 |
| RAIL, SLATS | | |
| 630634 | RAIL, SLAT, 36" WINCHING GALVANIZED (630666) | 1 |
| 630635 | RAIL, SLAT, 72" WINCHING (630667) | 1 |
| 630636 | RAIL, SLAT, 108" WINCHING GALVANIZED (630668) | 1 |
| 630637 | RAIL, SLAT, 144" WINCHING GALVANIZED (630669) | 1 |
| 630653 | RAIL, SLAT, 36" WINCHING, REVERSE (630666) | 1 |
| 630654 | RAIL, SLAT, 72" WINCHING, REV GALVANIZED (630667) | 1 |
| 630655 | RAIL, SLAT, 108" WINCHING, REVERSE, GALVANIZED (630668) | 1 |
| 630656 | RAIL, SLAT, 144" WINCHING, REVERSE, GALVANIZED (630669) | 1 |

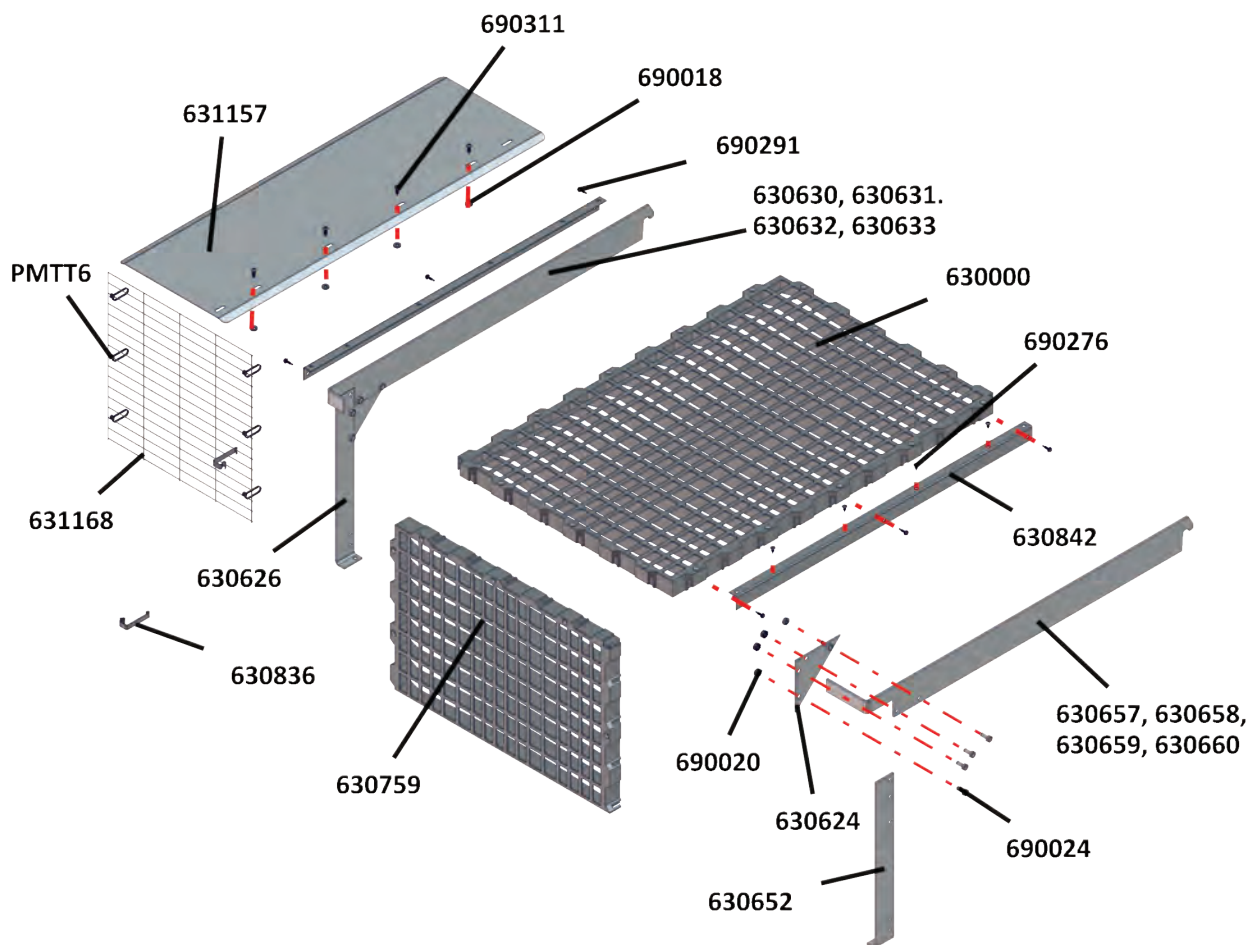
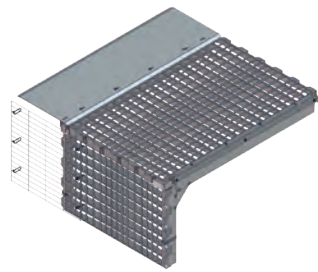


APPENDIX 55 - Non-Winchable Slats



| PART # | DESCRIPTION (*Quantities Vary) | QTY |
|---|---|------|
| 630819, 630820, 630821, 630822 - KIT ASSY, NON-WINACHABLE SLATS | | |
| 630000 | SLAT, FLOOR, WHITE (2' x 3') | *1-4 |
| 630624 | GUSSET, RAIL SUPPORT | 1 |
| 630626 | SUPPORT, VERT, SLAT GALVANIZED | 1 |
| 630759 | SLAT, TRIMMED FRONT | 1 |
| 630791 | SRING CLIP FOR FLOOR SLAT | 1 |
| 690020 | NUT, KEP 5/16-18 ZP | 4 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 4 |
| RAIL, SLATS | | |
| 630630 | RAIL, SLAT, 36" NON-WINCHING PLATED (630819) | 1 |
| 630631 | RAIL, SLAT, 72" NON-WINCHING PLATED (630820) | 1 |
| 630632 | RAIL, SLAT, 108" NON-WINCHING PLATED (630821) | 1 |
| 630633 | RAIL, SLAT, 144" NON-WINCHING PLATED (630822) | 1 |

APPENDIX 55 - Non-Winchable Slats (continued)





APPENDIX 55- Non-Winchable Slats (continued)

| PART # | DESCRIPTION | QTY |
|---|--|------|
| 630823, 630824, 630825, 630826 - KIT, END ASSY, NON-WINCH (*quantity varies by kit) | | |
| 630000 | SLAT, FLOOR, WHITE (2' x 3') | *1-4 |
| 630624 | GUSSET, RAIL SUPPORT | 2 |
| 630626 | SUPPORT, VERT, SLAT GALVANIZED | 1 |
| 630652 | SUPPORT, VERT, SLAT, REVERSE GALVANIZED | 1 |
| 630759 | SLAT, TRIMMED FRONT | 1 |
| 630836 | SPRING CLIP FOR FLOOR SLAT EOR | 2 |
| 630842 | ANGLE, SUPPORT, SLAT TO RAIL | 2 |
| 631157 | COVER, SLAT, EXPAND/CONTRACT | *1-4 |
| 631168 | PANEL, 1 X 4 X 16, 14 GA GALV | 1 |
| 690018 | WASHER, FLAT 1/4 SAE ZP | 8 |
| 690020 | NUT, KEP 5/16-18 ZP | 8 |
| 690024 | SCREW, 5/16-18 X 3/4 HHCS ZP | 8 |
| 690276 | SCREW, #12 X 1/2" PPH ZP | 8 |
| 690291 | SCREW, TEK, #10-16X3/4, HHWASH | 6 |
| 690311 | SCREW, #12 X 3/4" PPH ZP | 4 |
| PMTT6 | WIRE TIES, BAG OF 100, 7.5" BLACK UV | 1 |
| RAIL, SLATS | | |
| 630630 | RAIL, SLAT, 36" NON-WINCHING PLATED (630823) | 1 |
| 630631 | RAIL, SLAT, 72" NON-WINCHING PLATED (630824) | 1 |
| 630632 | RAIL, SLAT, 108" NON-WINCHING PLATED (630925) | 1 |
| 630633 | RAIL, SLAT, 144" NON-WINCHING PLATED (630826) | 1 |
| 630657 | RAIL, SLAT, 36" NON-WINCHI REV GALVANIZED (630823) | 1 |
| 630658 | RAIL, SLAT, 72" NON-WINCHI REV GALVANIZED (630824) | 1 |
| 630659 | RAIL,SLAT, 108" NON-WINCHI REV GALVANIZED (630925) | 1 |
| 630660 | RAIL,SLAT, 144" NON-WINCHI REV GALVANIZED (630826) | 1 |



APPENDIX 56 - Customer Service

My dealer's name:

Street / PO Box _____

City _____

How to contact my dealer:

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) 419.678.8731

Fax: (+1) 419.678.2200

Email: intl.sales@val-co.com