

CHORE-TIME®

Poultry Production Systems

REVOLUTION™ 8 & 12 FEEDER Variable Brood Feeding System Installation and Operators Manual



Installation and Operators Manual

Installation and Operators Manual

Chore-Time Warranty

Chore-Time Poultry Production Systems, a division of CTB, Inc., (“Chore-Time”), warrants each new CHORE-TIME® product manufactured by it to be free from defects in material or workmanship for one-year from and after the date of initial installation by or for the original purchaser. If such a defect is found by Chore-Time to exist within the one-year period, Chore-Time will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement. Labor costs associated with the replacement or repair of the product are not covered by the Manufacturer.

Additional extended warranties for the equipment and/or systems listed below are provided to the original purchaser as follows (for all other CHORE-TIME® products purchased, the one-year warranty period shall apply):

1. TURBO™ and RLX™ fans, less motors - 3 years
2. TURBO™ fan fiberglass housings, polyethylene cones, and cast aluminum blades - for the life of the product
3. TURBO™ fan motors and bearings - 2 years
4. TURBO™ fan components (including plastic shutters) - 3 years
5. Poultry feeder pans that becomes unusable within five years from the date of installation - Warranty prorated after three years usage
6. Rotating centerless augers, excluding applications involving high moisture feed stuffs (exceeding 18%), for ten years from the date of installation. Note: MULTIFLO® and applications involving high moisture feed stuffs are subject to a one-year warranty
7. Chore-Time manufactured roll-formed steel auger tubes for ten years from the date of installation
8. ULTRAFLO® Breeder Feeding System auger and feed trough are warranted for a period of five years from the date of original installation against repeated breakage of the auger or wear-through of the feed trough caused solely by the auger
9. ULTRAPAN® Feeding System augers are warranted for a period of five years from the date of installation againstlely by the auger

CONDITIONS AND LIMITATIONS

1. The product must be installed by and operated in accordance with the instructions published by the Manufacturer or Warranty will be void.
2. Warranty is void if all components of the system are not original equipment supplied by the Manufacturer.
3. This product must be purchased from and installed by an authorized distributor or certified representative thereof or the Warranty will be void.
4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under the Warranty.
5. This Warranty applies only to systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.

Chore-Time shall not be liable for any consequential or special damage which any purchaser may suffer or claim to suffer as a result of any defect in the product. "Consequential" or special damages" as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.

THIS WARRANTY CONSTITUTES THE MANUFACTURER'S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Chore-Time Distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for Chore-Time products in addition to those terms expressly stated above.

An officer of CTB, Inc. must authorize any exceptions to this Warranty in writing. Chore-Time reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

Effective: August 2004

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Thank You

The employees of Chore-Time would like to thank your for your recent Chore-Time purchase. If a problem should arise, your Chore-Time distributor can supply the necessary information to help you.

***Chore-Time Poultry Feeder Pan Pro Rata Schedule**

Year from date of installation during which pan becomes unusable	Charge to be paid by the purchaser for replacement.
0 - 1 years	NO CHARGE
1 - 2 years	NO CHARGE
2 - 3 years	NO CHARGE
3 - 4 years	4/10 of then current list price
4 - 5 years	5/10 of then current list price

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About This Manual

The intent of this manual is to help you in two ways. One is to follow step-by-step in the order of assembly of your product. The other way is for easy reference if you have questions in a particular area.

Important: Read **ALL** instructions carefully before starting construction.

Important: Pay particular attention to all **SAFETY** information.

- *Metric measurements are shown in millimeters and in brackets, unless otherwise specified. “ ” equals inches and “ ’ ” equals feet in English measurements.*

Examples:

1" [25.4]

4' [1 219]

- Optional equipment contains necessary instructions for assembly or operation.
- Very small numbers near an illustration (*i.e.*, 1257-48) are identification of the graphic, not a part number.

Safety Information

Caution, Warning and Danger Decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety decals immediately.

Using the equipment for purposes other than specified in this manual may cause personal injury and/or damage to the equipment.

Safety–Alert Symbol



This is a safety–alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. This equipment is designed to be installed and operated as safely as possible...however, hazards do exist.

Understanding Signal Words

Signal words are used in conjunction with the safety–alert symbol to identify the severity of the warning.



DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

Safety Instructions

Follow Safety Instructions

Carefully read all safety messages in this manual and on your equipment safety signs. Follow recommended precautions and safe operating practices.

Keep safety signs in good condition. Replace missing or damaged safety signs.

Decal Descriptions

DANGER: Moving Auger

This decal is placed on the Panel Weldment.

Severe personal injury will result, if the electrical power is not disconnected, prior to servicing the equipment.



DANGER: Electrical Hazard

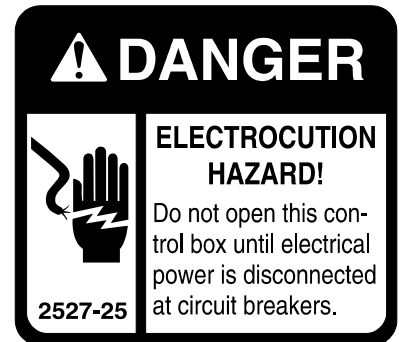
Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

Ground all electrical equipment for safety.

All electrical wiring must be done by a qualified electrician in accordance with local and national electric codes.

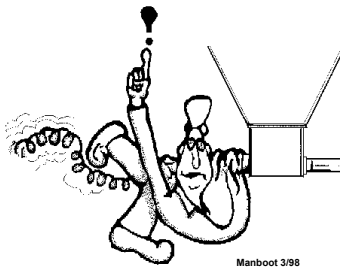
Ground all non-current carrying metal parts to guard against electrical shock.

With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment.



CAUTION:

Use caution when working with the Auger—springing Auger may cause personal injury.



General

Information

The Chore-Time REVOLUTION™ 8 and 12 Feeder Variable Brood Feeding Systems have been designed to feed poultry. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

This manual is designed to provide comprehensive planning and installation information. The Table of Contents provides a convenient overview of the information in this manual.

Manufacturer's Recommendations: Birds per Pan

Type	Max weight and/or weeks of age	Feeders	Number of birds/pan
Broiler	4.5lbs/2kg.	Revolution 12, Models C2 Plus, C2Plus S, C, H2, H2 Plus	60 - 90
Broiler	7lbs/3.1kg	Revolution 8, C2 Plus, C2 Plus S, G Plus, G Plus S, C, H2, H2 Plus	55 - 75
Broiler	9lbs/4.0kg	Revolution 8, G Plus, G Plus S	45 - 65
Broiler Breeder Pullet – rearing	0 – 18 weeks	C2 Plus (Breeder), C2 Plus S (Breeder)	14 - 15
Broiler Breeder Pullet – rearing	0 – 18 weeks Hi-Yield	C2 Plus (Breeder), C2 Plus S (Breeder)	12-14
Broiler Breeder Male – rearing	0 -- 18 weeks	C2 Plus (Breeder), C2 Plus S (Breeder), G Plus (Breeder), G Plus s (Breeder)	11-13
Broiler Breeder Layer	17 + weeks	C2 Plus (Breeder), C2 Plus S (Breeder)	13 - 14
Broiler Breeder Layer	17 + weeks Hi-Yield	C2 Plus (Breeder), C2 Plus S (Breeder)	12 - 13
Broiler Breeder Male	17 + weeks	G Plus (Breeder), G Plus S (Breeder)	8-10
Commercial Layer Pullet – rearing	0 – 20 weeks	Revolution 12, C2Plus, H2, H2 Plus	40-60
Commercial Layer	18 + weeks	Revolution 12, C2 Plus, C, H2, H2 Plus	30 - 40
Turkey Poult	0 – 5 weeks	Revolution 8, H2 Plus, H2, G Plus, G Plus S	60 - 65
Turkey Poult	0 – 10 weeks	Revolution 8, G Plus, H2 Plus, H2	40 - 50
Turkey Female	5 + weeks	ATF, ATF Plus	60
Turkey Male	5 + weeks	ATF Plus	40 - 50
Ducks	0 – 3 weeks	G Plus, G Plus S	60 - 70
Ducks	4 – 8 weeks	G Plus, G Plus S	50 - 60

***Notice:** Please be advised that the maximum number of birds that may be successfully produced per feed pan may vary based upon such factors as climate, housing type or style, bird breeds, genetic factors of the birds at issue, grower management practices, etc. All other environmental and management circumstances, such as proper bird density per house, access to adequate nutrients in feed, access to adequate water supply, proper ventilation, adequate health care for the birds, and other similar factors, must meet industry standards and recommendations, if any, of applicable bird breeder companies.

*** NOTICE:** The above Manufacturer's recommendations do not constitute a product warranty and are in no way to be considered as a guarantee of performance for poultry production. In addition, the above information in no way alters or revises the terms and conditions of any applicable Chore-Time manufacturer's warranty.

Planning the Suspension System

1. Select the House Layout.

- A. Optional Mid Line Controls may be used for partial house brooding. See “**Figure 1. Component location diagram for systems up to 400 feet [122 m]. (Top View).**” on page 8.

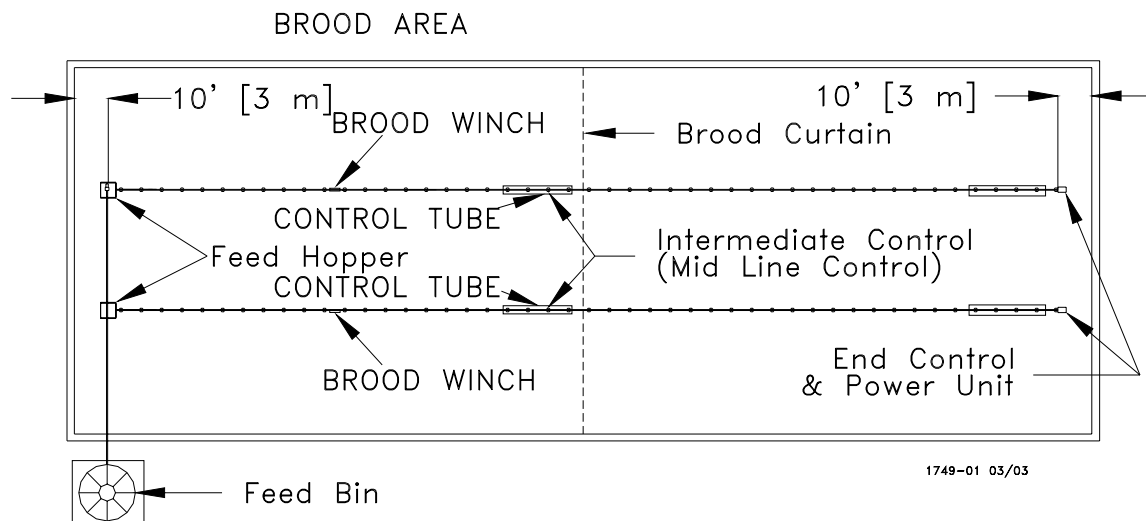


Figure 1. Component location diagram for systems up to 400 feet [122 m]. (Top View).

- B. Systems with line lengths over 400' [122 m] should be split in the center, as shown in “**Figure 2. Component location diagram for systems over 400 feet [122 m]. (Top View).**” on page 8. This will reduce auger running time and eliminate the need for Mid-Line Controls for partial house brooding.

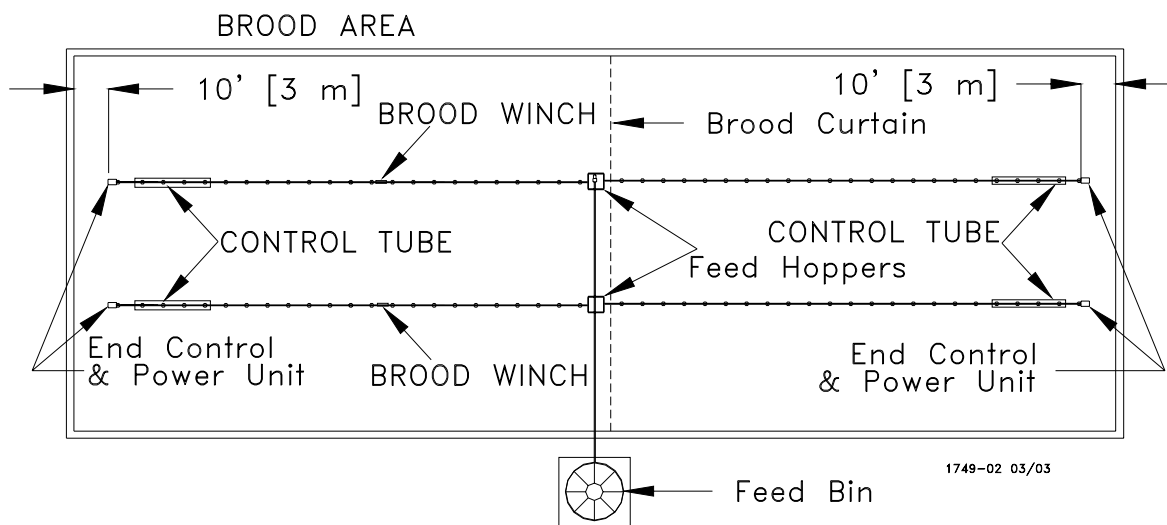


Figure 2. Component location diagram for systems over 400 feet [122 m]. (Top View).

2. Determine the Feed Bin location.
3. Determine the Brood Curtain location.
4. **Determine number of brood actuator and location.**
5. Determine the location for the End Control Pans, and if used the Mid Line Control Pans. **The Feeder Control Pans should be at least 10' [3 m] from the Wall or Brood Curtain.**
6. Determine the distance to the Feeder Line from the Side Wall.
7. Determine the distance from the Feed Hoppers to the End Wall for a Straight Line Feeding System.

General Installation Information

Please read the installation instructions in this manual prior to beginning the installation. This manual provides the necessary information on the installation, operation, and maintenance of the Chore-Time feeding equipment you have purchased.

The suspension, hopper assembly, feeder line installation, and anti-roost installation is the same for each system, except where noted otherwise. Please pay particularly close attention to insure proper assembly and installation of the equipment.

The REVOLUTION™ 8 and 12 FEEDER Control Units use a 348 RPM. Gearhead, delivering approximately 17 lbs [7.7 kg] per minute. This rating is based on feed with a density of 40 lbs per cubic foot [640 kg per cubic meter].

Single phase 60 Hz and single and three phase 50 Hz Power Units are available for the Rev. 12 and 8 Feeders.

Systems up to 300' [91 m] require 1/3 HP. Power Units. Systems over 300' [91 m] require 1/2 HP. Power Units.

Laying out the Suspension System

1. Select the Suspension type.
 - A. For systems up to 350' [107 m]

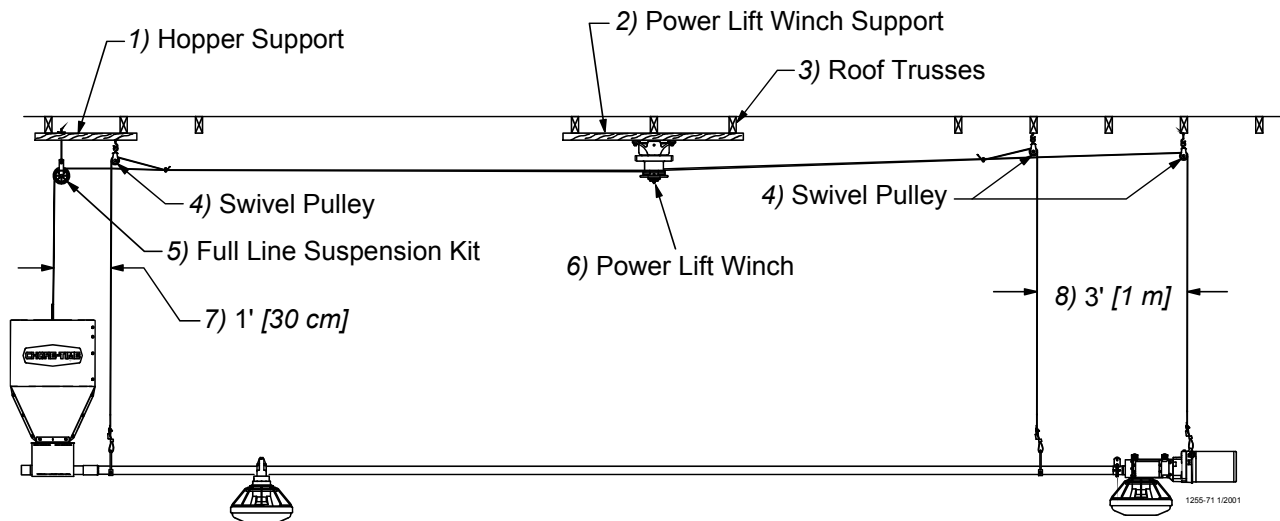


Figure 3. Suspension for systems up to 350' [107 m]

B. For systems over 350' [107 m]

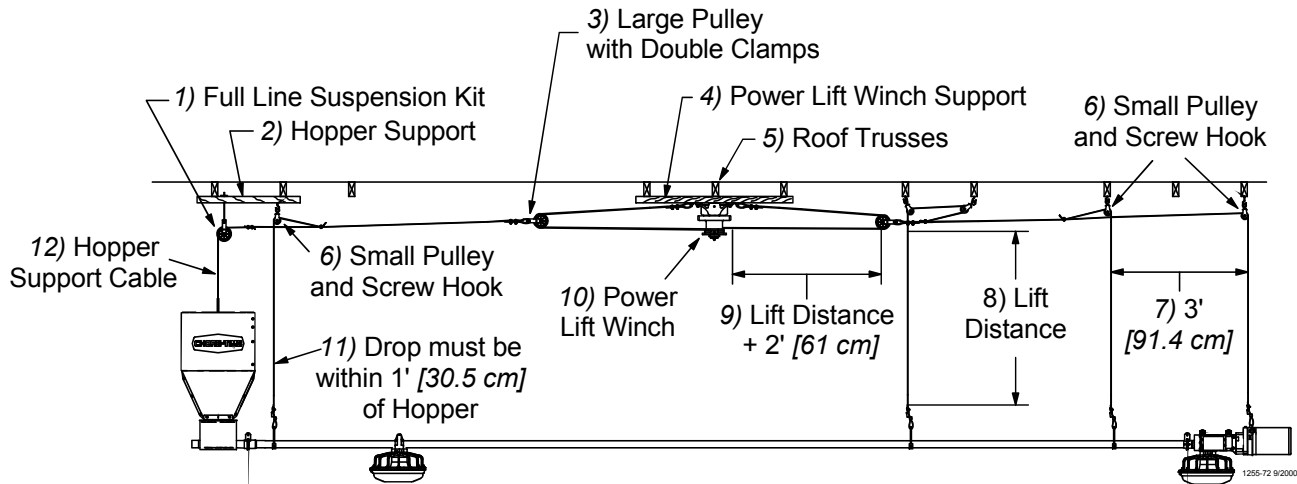


Figure 4. Suspension for systems over 350' [107 m]

2. Locate the Power Lift Winch. The Power Lift Winch requires a support that will span, in a wood frame house at least 3 rafters, and in a steel frame house at least 2 rafters.
3. Locate the Power Unit and Feed Hopper. Special support is required at each Power Unit and Feed Hopper location.
4. Determine the Drop Location and length. Suspension systems are based on ceiling heights of 14' [4.3 m] with suspension drop points every 8' [2.4 m]. DO NOT EXCEED 10' [3 m] BETWEEN SUSPENSION DROPS.
5. Determine the location for Screw Hooks. Mark a straight line or use cable to locate Screw Hooks. Use the offset of Screw Hooks where necessary.

Installing the Suspension System

Power Lift Winch Installation

1. Bolt the Power Winch, fully assembled, to the Power Lift Winch Support, either a 2" x 8" [50x200 mm] board that will span at least 3 rafters or a 3/8" [9.5 mm] thick steel plate welded to two pieces angle iron that are each long enough to span at least 2 rafters, using 5/16-18 hardware supplied in the Hardware Package. The brake mechanism will extend toward one side.

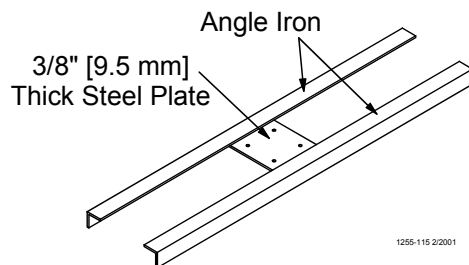


Figure 5. Optional Power Lift Winch support detail

Install a Cable Hook, supplied in Hardware Package, between the mounting bolt and Power Winch frame, as shown in figure 6. Figure 6. Assembling the Power Winch to the Rafters

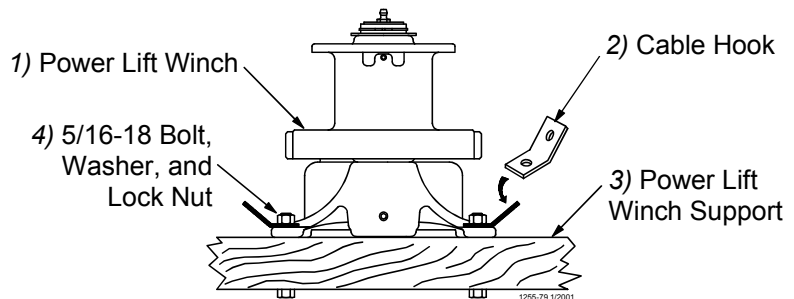


Figure 6. Assembling the Power Winch to the Rafters

2. Attach the Power Lift Winch Support (with the Power Winch secured) to the ceiling at the center of the feeder line. See **Figure 7**. The Power Lift Winch Support must be parallel to the feeder line and must span at least 3 rafters in a wood frame house and 2 rafters in a steel frame house. If the hopper is located at the center of the feeder line, locate the Power Winch a few feet offset from the center of the feeder line. However, the Winch Drum must be directly in line with where the main cable is to be installed.

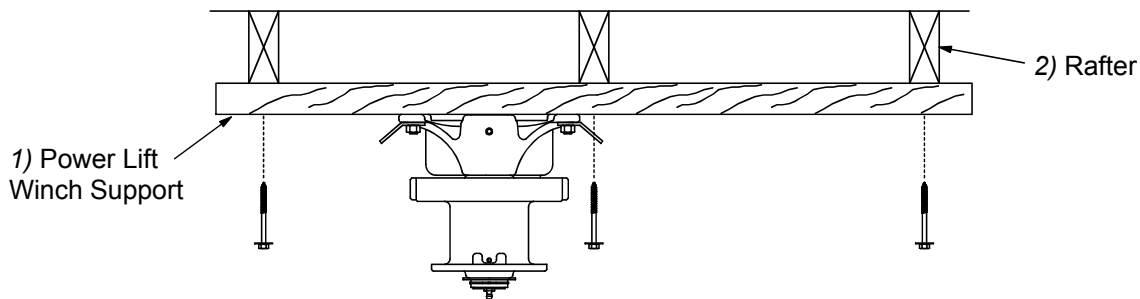


Figure 7. Mounting the Power Lift Winch and Support to the Rafters

Installing the Main Winch Cable

The Suspension Systems are based on ceiling heights of 14' [4.3 m] with Suspension Drop points every 8' [2.4 m]. **DO NOT EXCEED 10' [3 m] BETWEEN SUSPENSION DROPS.** Refer to suspension section in this manual for installation details.

Adequate overhead structure must be provided to support the weight of the feeders, hoppers, power units, etc. The Suspension System is the same for the Rev. 12 and 8 Feeders. The type of installation required depends on the feeder line length.

IMPORTANT: Special support is required at each Hopper location.

- Power Unit Locations: **The Feeder Line must be supported within 3' [0.9 m] of the Power Unit.** This is in addition to the required Power Unit suspension. If the Control Unit or Hopper does not come out directly under a truss, fasten a pulley to a 2" x 8" [50 x 200 mm] board or steel angle that will span 2 trusses and is capable of supporting 300 lbs [136 kg] for the Hopper and 75 lbs [34 kg] for the Control Unit.
 - Feed Hopper Locations: **The Feeder Line must be supported within 1' [30 cm] of the Feed Hopper.** This is in addition to the required Feeder Hopper suspension. After determining the type of suspension system required, decide where the Feeder Line is to be installed. Mark a straight line on the ceiling or rafters the full length of the Feeder Line. Use a string, chalk line, or the winch cable, temporarily attached with staples, to mark the line. Center the line directly over where the Feeder Line is to be installed.
3. Extend the 3/16" [5 mm] Main Winch Cable the full length of the feeder line. Attach the cable temporarily to the ceiling with nails, staples, or some type of fasteners. Figure 9 "Figure 9. Double back arrangement for feed lines over 350' [107 m]" on page 11 shows a double back arrangement for feed lines over 350' [107 m].

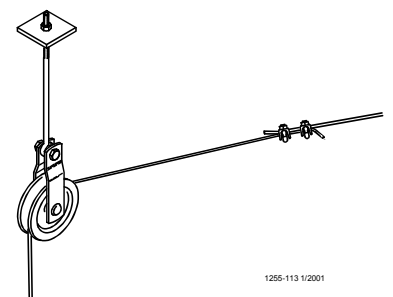


Figure 8. Full Line Suspension Kit

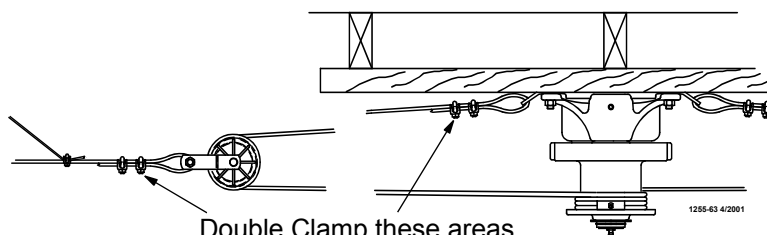


Figure 9. Double back arrangement for feed lines over 350' [107 m]

4. Route the cable through the Winch Drum Relief located near the bottom of the drum. Tighten the set screw to anchor the cable to the drum. See figure 10. **“Figure 10. Attaching the Cable to the Power Winch” on page 12**

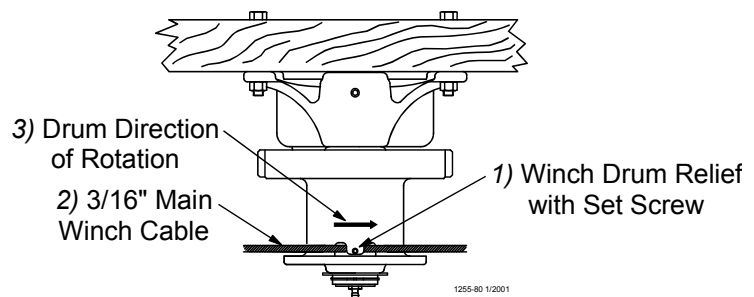


Figure 10. Attaching the Cable to the Power Winch

5. Turn the winch drum one full revolution. Guide the cable against the flange at the bottom of the winch drum. The cable must not wrap over itself on the drum, but should be wrapped as close as possible to each previous wrap. See figure 11. **“Figure 11. Power Winch Drum Rotation” on page 12**

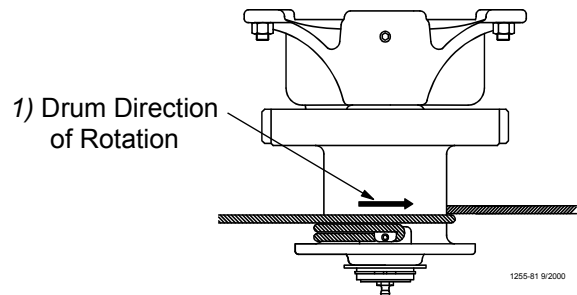


Figure 11. Power Winch Drum Rotation

Screw Hook Installation

The recommended distance between the drops for the Rev. 12 & 8 FEEDER is 8' [2.4 m] on center. Do not exceed 10' [3 m] spacing on drop lines.

If the distance raised is greater than the distance between the drop spacings, offset the hooks 3" [7.6 cm] to each side of the line to prevent the cable clamps from catching the pulleys. See Figure 12. **“Figure 12. Drop Line Off Set Detail” on page 12**

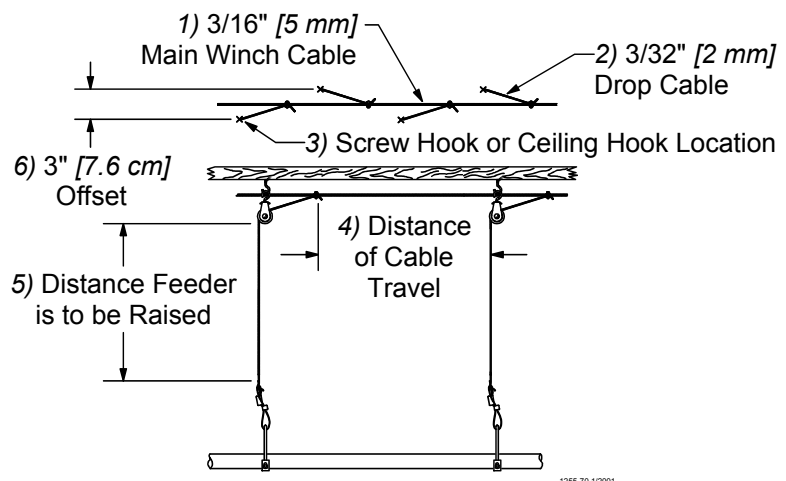


Figure 12. Drop Line Off Set Detail

Screw the hook into the truss the full length of the threads to prevent bending.

The openings of the screw hooks must be pointed away from the direction of travel when the Power Winch raises the feeder line. See Figure 13. **“Figure 13. Screw Hook Installation” on page 12**

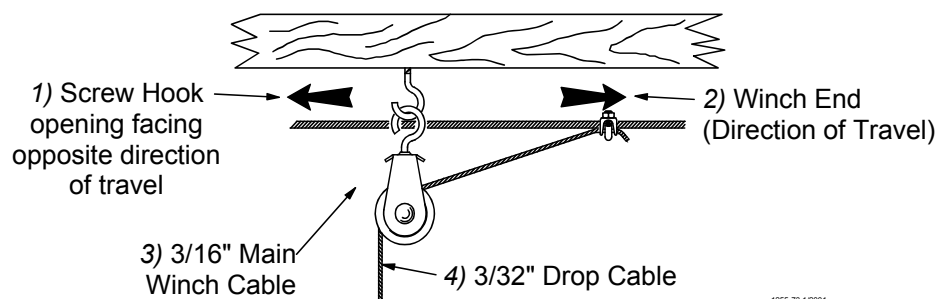


Figure 13. Screw Hook Installation

Ceiling Hook Installation

The ceiling hook may be used in a variety of installations. Depending on your ceiling or rafter type, install the Ceiling Hooks as shown in **Figures 14 - 17**.

Steel Truss Installations

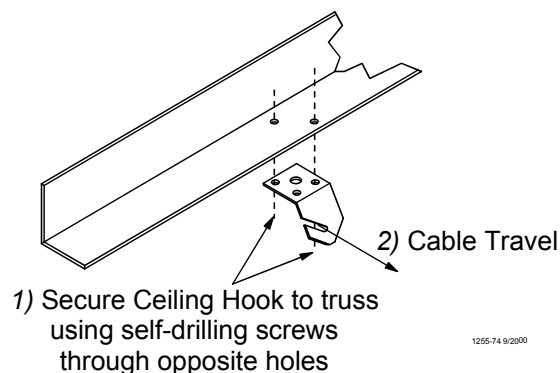


Figure 14. Steel Truss Ceiling Bracket Installation

Steel Truss Welded Installations

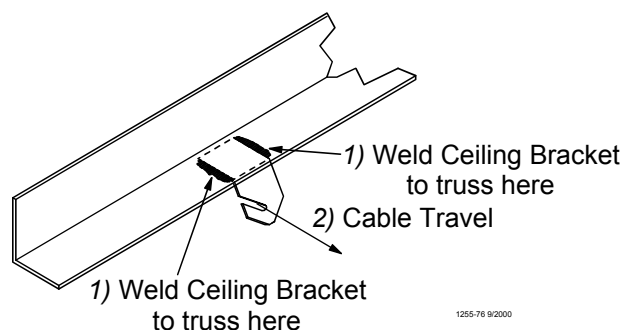


Figure 15. Welded Steel Truss Ceiling Bracket Installation

Wood Truss Installations

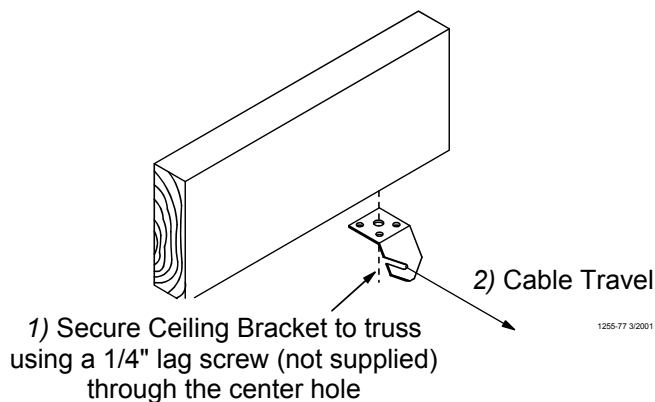


Figure 16. Wood Truss Ceiling Bracket Installation

6. After securing the Ceiling Hook to the truss, slide the hook of a Swivel Pulley into the slot, as shown in **Figure 17. Pulley Installation** on page 14.

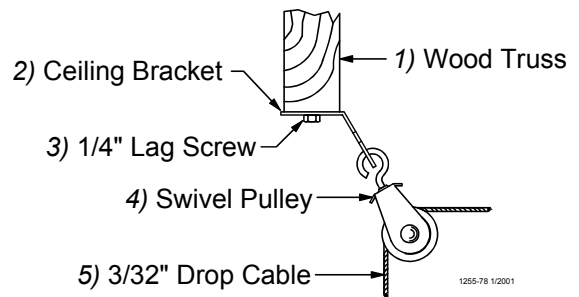


Figure 17. Pulley Installation

Drop Installation

Refer to **Figure 12. Drop Line Off Set Detail** on page 12 **Figure 13** on page 10.

1. Attach a 3004 Pulley to each hook.
2. Thread the end of the 3/32" or 1/8" cable through the pulley toward the winch. Clamp this end to the 3/16" winch cable about 6" [150 mm] from the last pulley, using a 3/16" cable clamp. See applicable figure; **Figure 13** or **17**.
3. Allow enough cable length for installation of the Adjustment Leveler. Sufficient cable is included to provide "throwbacks" on drops located beneath and near the winch. **Figure 18** shows a "throwback" cable arrangement.

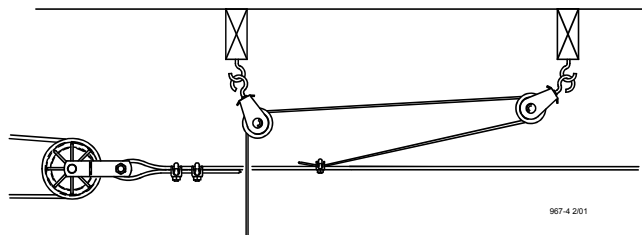


Figure 18. "Throwback" cable arrangement

4. **Begin installing suspension drops at the winch and proceed to the ends of the feeder line.** Keep the main cable tight between drops. It may be necessary to hang a weight on the end of the cable to maintain tension on the line.

Feeder Pan Assembly

All feeders assemble in the same manner. Refer to **Figure 20 and 21**. The inner cone must turn freely. Align the threads on the outside of the adjustment cone and the grill cap. Turn the cone assembly into the grill cap. Continue turning grill until the pointer lines up with the #3 position. See **Figure 20**. Turn the grill and cone assembly over place the feeder pan on the grill, turn the pan clockwise until the lock engages. Assemble the remaining Feeders. **Assembly Box Construction for Rev. 12 and 8 Feeders**

Figure 19A

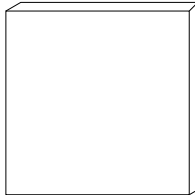


Figure 19B

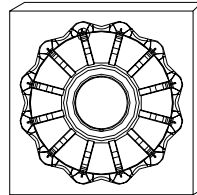
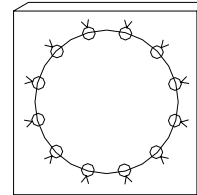


Figure 19C



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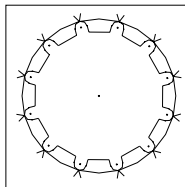


Figure 19D

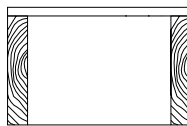


Figure 19E

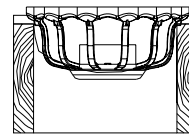


Figure 19F

Figure 19

This information and assembly only applies to Rev. 12 and 8 feeder installations.

Chore-Time recommends building an assembly box to aid in assembling the Rev. 12 and 8 feeders for pan assembly procedure option 1 (see next page).

To build the assembly box for the Rev. 12 feeder, use a 16" X 17" piece of plywood and two 14-1/2" and two 17" long pieces of 2 x 12.

1. Cut a piece of 3/4" plywood 16" X 17". See **Figure 19A**.
2. Center the grill on the 16" X 17" piece of plywood. Use a pencil and draw around the inner side edge of the grill as shown in **Figure 19B**.

Mark a "V" at each strut location.

3. Remove the grill.

Use a 7/8" spade bit to drill a hole at each strut location, as shown in **Figure 19C**.

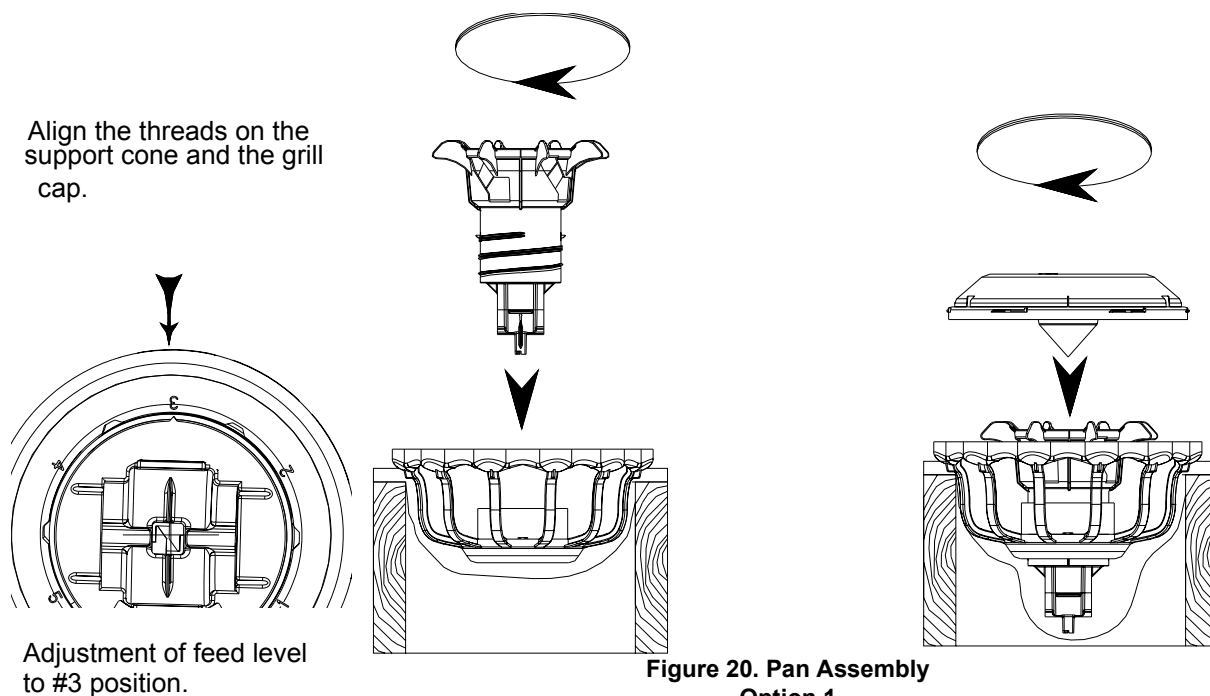
4. Use a sabre saw to cut along the *inside* circle, between the 7/8" holes. See **Figure 19D**.
5. Use (2) 14-1/2" and (2) 17" 2 x 12's to construct the box sides. Nail the 3/4" plywood fixture to the box. See **Figure 19E**.

It is important to use at least 12" sides for the box. Smaller lumber will not allow sufficient depth for the grill to be placed in the box face down.

Figure 19F shows how the grill should fit down in assembly box. NOTE: Board is cut away for clarity only.

Pan Assembly Procedure for Rev. 12 and 8 Feeders (Option 1)

1. Place a Grill in the pan assembly box fixture.
2. Install cone assembly in the grill, **Check fit, correct, grill and cone should be snug, incorrect if grill and cone have free motion.**
3. Place the feed pan in the grill ring, The pan must be fully seated in the grill then rotate the pan until the pan locks in their grill



Pan Assembly Procedure for Rev. 12 and 8 Feeders (Option 2)

- 1) Place cone assembly on a flat surface and set grill over the cone.
- 2) Rotate the grill until the threads are started.
- 3) Continue rotating the grill until you reach position 3.
- 4) Turn the assembly over then install the pan by rotating the pan until it latches.

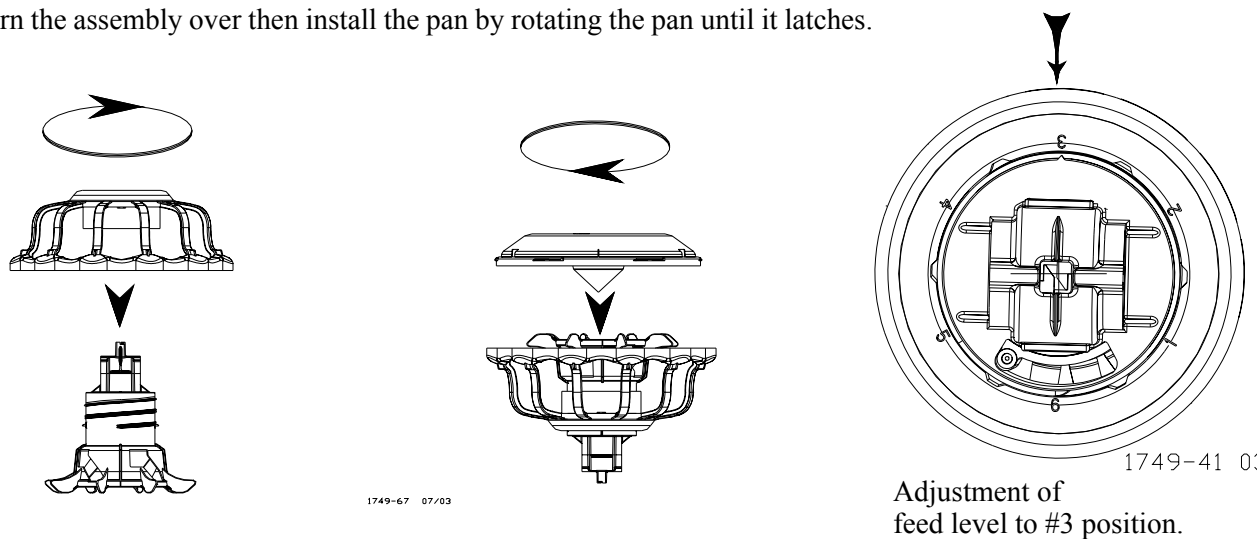


Figure 21. Pan assembly option 2

Installing the lock post.

The lock post is installed by inserting the straight shaft with the split end into the post on the inner cone. Push the post until it clicks into place.

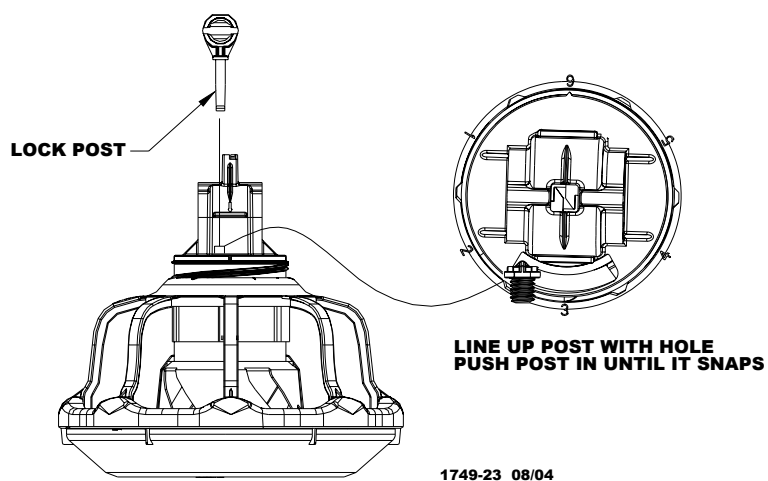


Figure 22. Installing the pivot bracket

Feeder line planning

Layout figured on 60 pans in brood area.

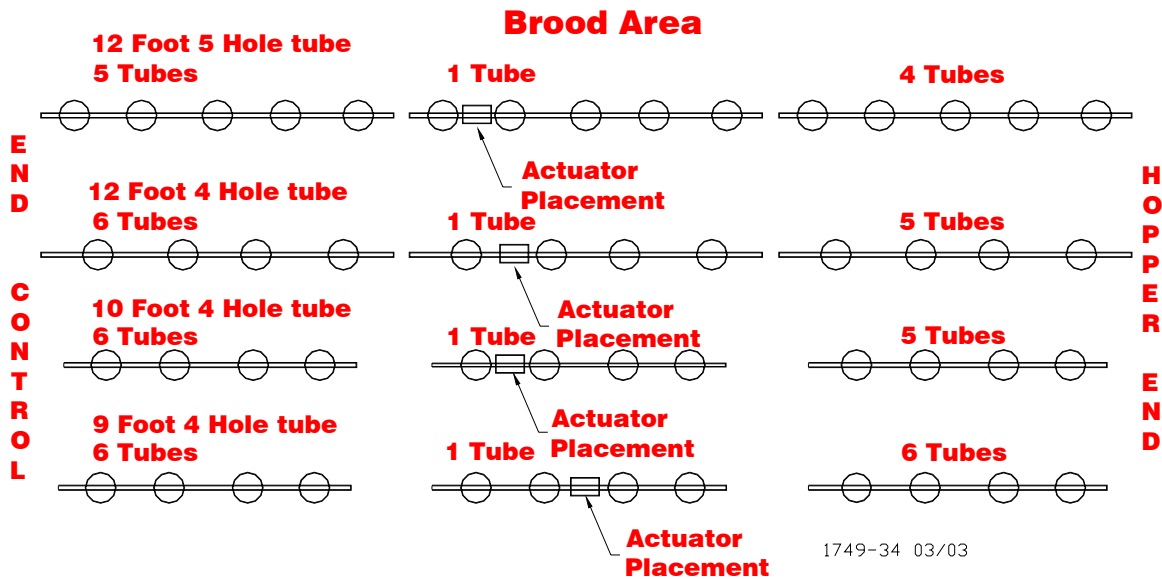


Figure 23. Typical building layout for actuator placement

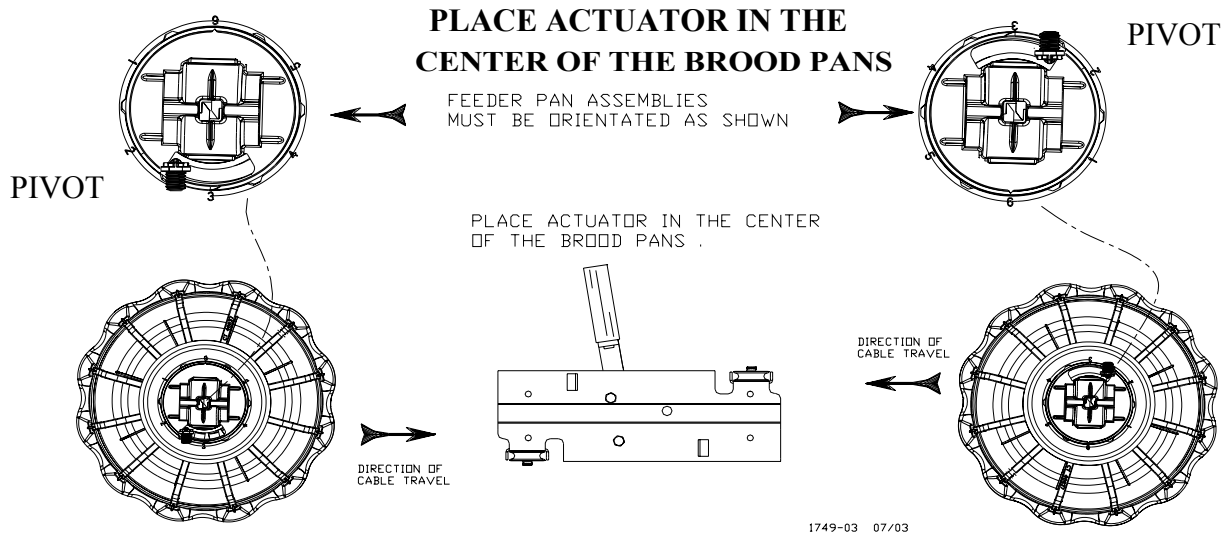


Figure 24. Pan orientation on tube

Determine the feeder layout you will be installing. Assemble the feed pans on the tube according to the layout above. Assemble the correct number of tubes with the pivot bracket on the correct side of the pan. To ensure the pivot bracket is assembled on the correct side stand over the actuator looking at the belled end of the tube. The pans in front of you will have the pivot bracket on the

Left, while the pans behind you will have the the pivot bracket on the right.

Example for a 9 foot tube you will assemble 6 tubes with the pivot bracket on the left side and 6 tubes with the pivot bracket on the right side. For a 9 foot tube system the tube where the actuator will be mounted will have two pans on the left and two pans on the right

Below is an overview of the feeder installed with the spring brackets and actuator wire installed. **It is very important that the pans be installed with the pivot bracket on the correct side!!!**

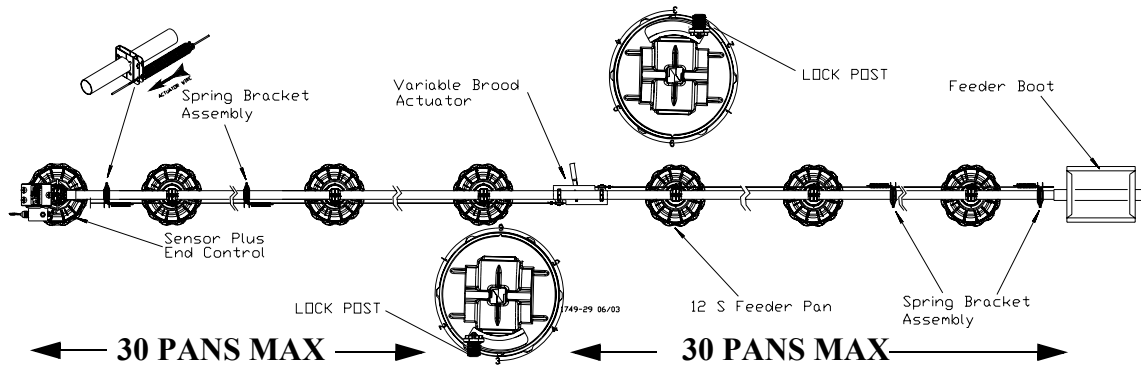


Figure 25. Feeder layout

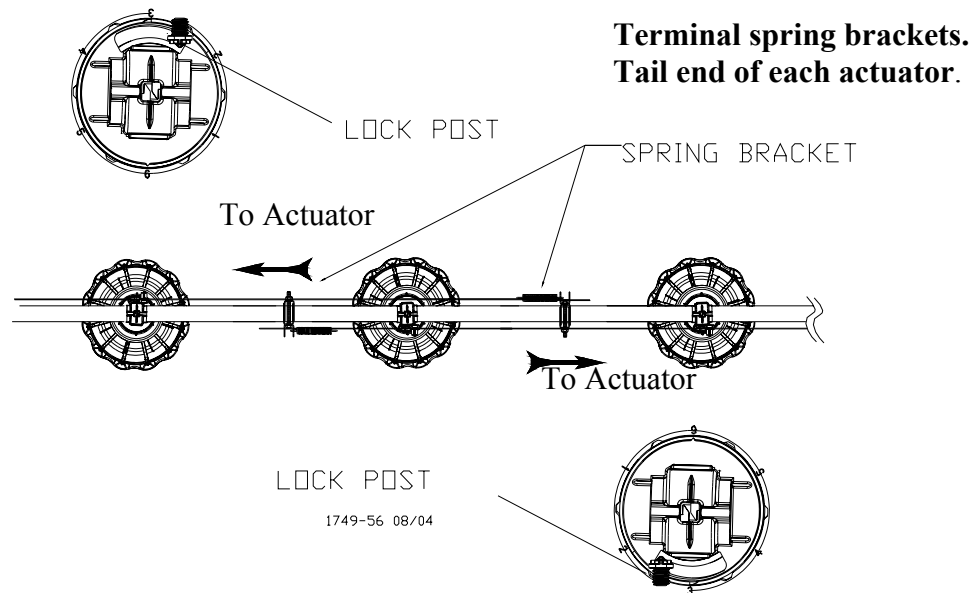


Figure 26. Pivot Bracket

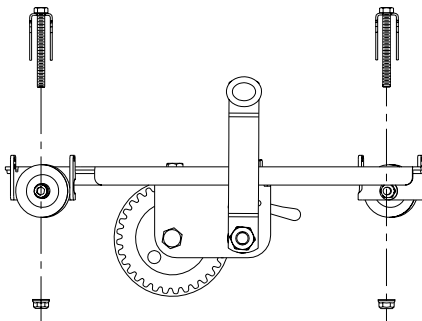
Feeder Line Assembly and Suspension

Actuator Tube Assembly

Install the actuator in the center of the actuator tube. Using the two half clamp and four 1/4-20 X 2.5 hex bolt and four 1/4-20 hex flange nut. Attach the Actuator on the tube. (The Actuator handle should be to the center of the house).

Note:

Close chick hole if necessary using a tube closure kit.
Supplied with Kit.



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Figure 27. Actuator installation

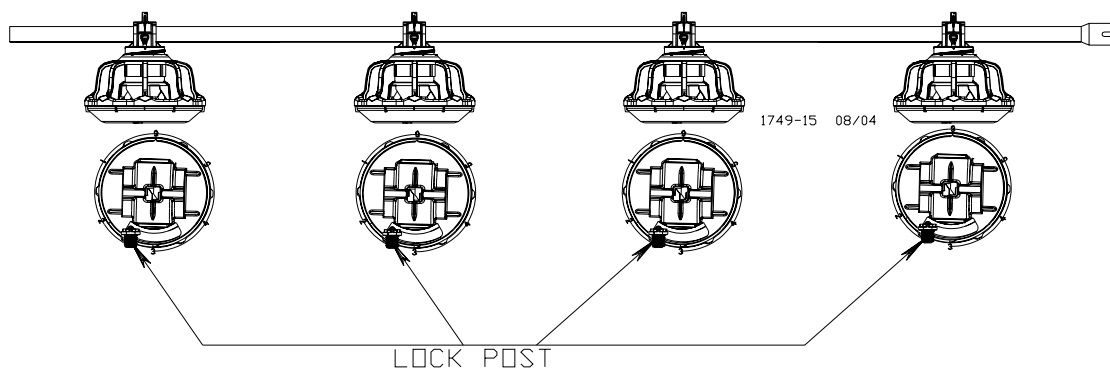
Feeder Pan and Tube Assembly Process

- Slide one Feeder Pan Assembly per hole onto the auger tubes.
IMPORTANT: Install all the feeders on the tubes in the same orientation. When sliding the feeders on the tubes, make sure the pivot bracket are on the same side of the tube.
- Rotate the auger tubes so that the seam is down, this holds the Pan Assemblies in place on the tubes. See **Figure 28**.

1) With the seam of the feeder tube up slide the pan assembly on the feeder tube. Position one (1) feeder pan over each hole on the feeder tube.

2) Rotate the feeder tube after the feeder pan assemblies are in place. This will lock the feeder pan assemblies in place.

LOCK POST MUST BE ON THE SAME SIDE OF THE TUBE.



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Figure 28. Assemble Feeders on tubes

You will assemble half the tubes with the pivot bracket on the left side and half on the right side.

The tubes with the actuator mounted will have different pans on the same tube.

Example: a 9 foot tube will have two pans on the left side and two tubes on the right side

a ten foot 4 hole will have one pan on the left and three pans on the right.

Assemble and Suspend the Feeder Line

1. The actuator, auger tubes and feeders may be laid out end to end in approximately the final location of the line. **The belled end of each tube should be toward the (3) Hopper end of the line.** See Figure 29. Be sure to have the correct number of right and left sided tubes with the actuator in the center (The actuator handle should be to the center of the house). One actuator handles up to 60 feeder pans with the actuator placed dividing the (60) pans approximately in half.
2. Connect the individual feeder tubes together by inserting the straight end of one tube as far as possible into the (2) belled end of the next tube. **The last Feeder Tube before the (1) End Control Pan or Mid Line Control pan must be a Control Tube.**

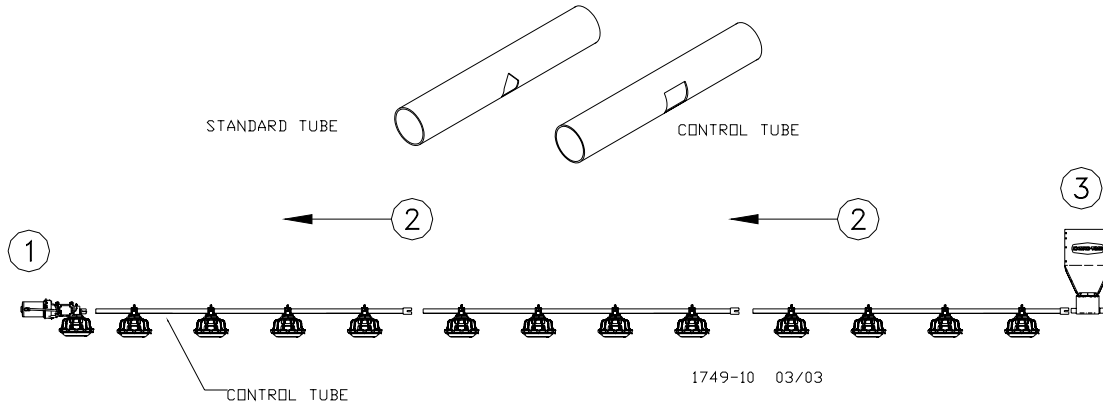


Figure 29 Attaching Feeder Tube Assemblies

3. To achieve total feed drop out all along the system, the Chore-Time Logo should be centered at the crown of the tubes and all the Hangers should be installed as shown in Figure 30.

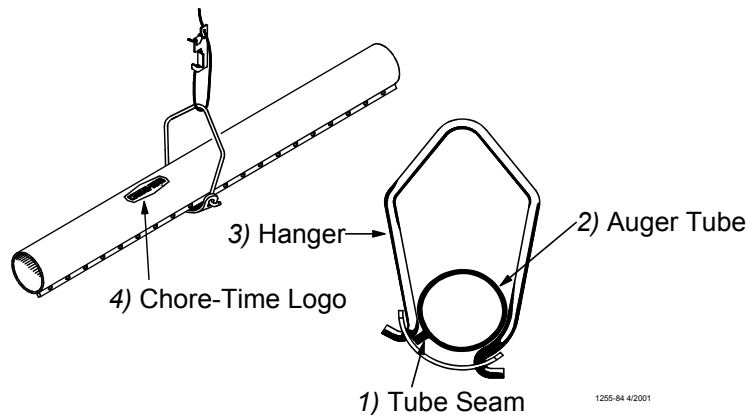


Figure 30. Hanger Installation

4. Place a Tube Clamp Assembly or Clamp/Anti-Roost Bracket at each joint. Figure 31 shows the standard Clamp and Clamp/Anti-Roost Bracket. Systems using 9' or 10' tubes require a Clamp/Anti-Roost Bracket at every **fifth** joint. Systems using 12' tubes require a Clamp/Anti-Roost Bracket at every **fourth** joint. All other joints in the system use the standard Tube Clamp Assembly.

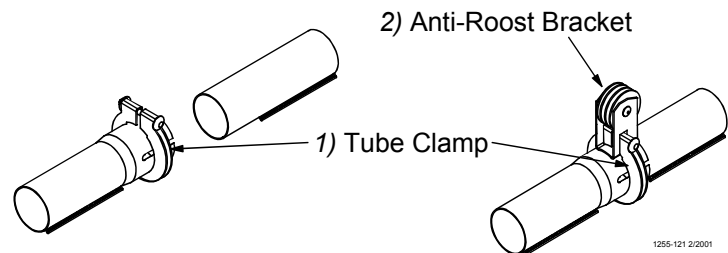


Figure 31. Tube Clamp and Tube Clamp with Anti-Roost Bracket

Continue down the entire length of the feeder line so that every joint is secured with a standard Clamp or Clamp/Anti-Roost Bracket. **Figure 32** shows the proper clamp location on the tube joint. *Do not tighten the clamp at this time.*

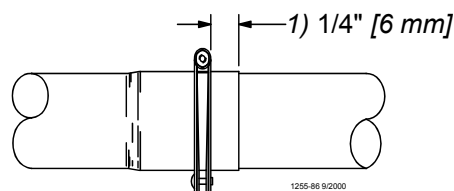


Figure 32. Clamp Installation

5. Install the Hangers on the feed line tube at the 8' [2.4 m] spacings determined by the suspension drop lines. **Figures 33 and 34** show the proper installation of the Hanger Assembly. Make sure the outlet drop hole is downward when the Hangers are installed, otherwise feed will not be allowed to drop into the feeder pan.

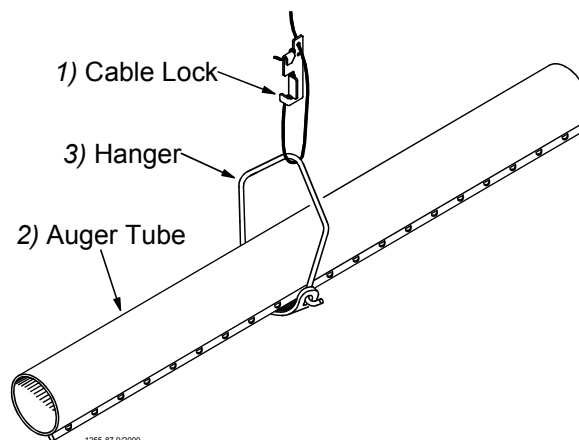


Figure 33. Hanger Installation

6. Install Adjustment Leveler within 6" [152 mm] of feeder line. **Figure 34** shows the proper cable routing around the Adjustment Leveler.
7. Following the installation of all drops, check drop cables before raising feeder line. Cable must be tracking properly on all pulleys before raising the feeder line.
8. Raise the feeder line to a convenient working height.
9. With the feeder line suspended, measure from the floor or ceiling to the auger tubes to level the system.
10. Before tightening each clamp:
 - make sure each tube is level (not sagging, sloping, etc.).

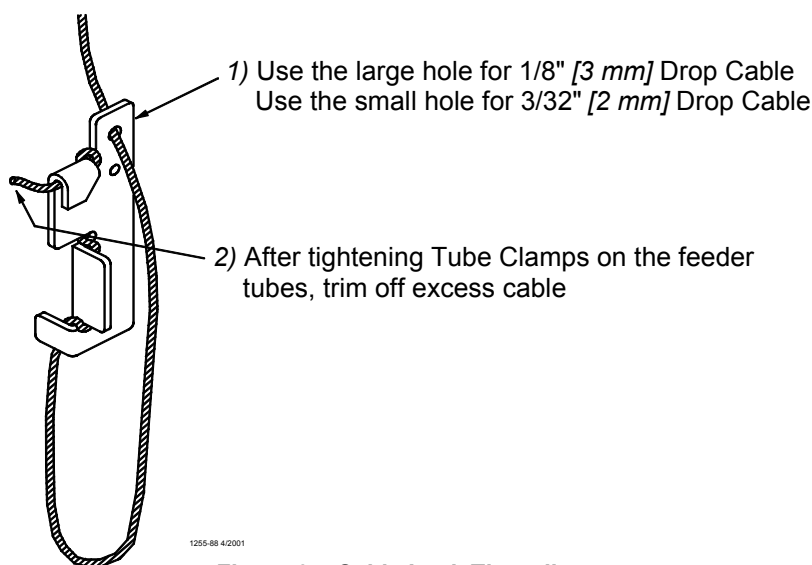


Figure 34. Cable Lock Threading

- make sure straight end of each tube is fully inserted in belled end of next tube.
- if providing total drop out, tubes should be rotated so that the Chore-Time Logo is on crown of tube.
- make sure the clamps are located, as shown in **Figure 32**.

Finally, tighten the Tube Clamps on the feeder tubes. Clamp the joints securely, but do not crush the tubes. Re-adjust all Adjustment Levelers as needed and trim off excess cable as shown in **Figure 34**.

Installing the End Control, Boot Assembly, and Auger

The End Control Unit must be at least 10 feet [3 m] from the end of the building to allow birds access around the end of the feeder line.

1. Assemble the End Control Unit to the Feeder Line Control Tube using a clamp/anti-roost bracket. See **Figure 35**. **DO NOT INSTALL THE POWER UNIT AT THIS TIME.**

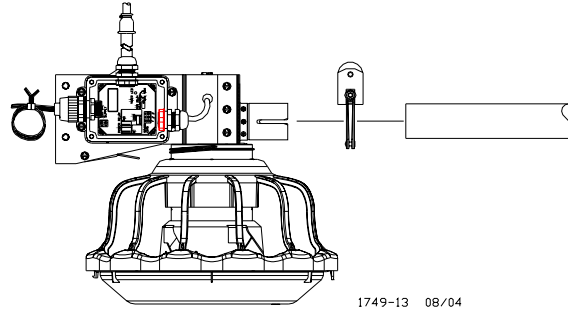


Figure 35. Connecting End Control Unit to the Feed Line Tube

2. Install the Feeder Boot by sliding the straight end of the Feeder Boot into the belled end of the Feeder Tube. Install a clamp/anti-roost bracket on the bell and tighten. The Feeder Boot must be level with the open top of the Feeder Boot flat. See **Figure 36**. **DO NOT INSTALL THE ANCHOR BEARING AND BEARING RETAINER AT THIS TIME.**

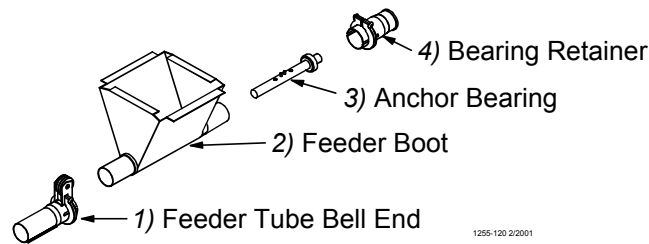
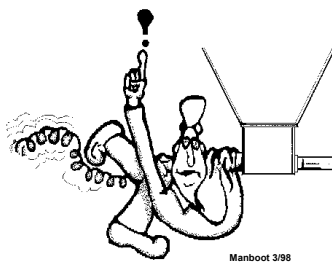


Figure 36. Installing the Feeder Boot

Auger Installation

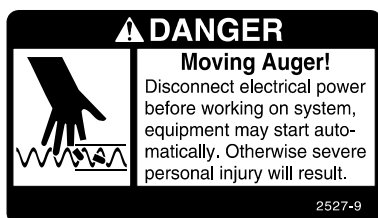
Note: Use extreme caution when working with the auger. The auger is under tension and may spring causing personal injury. Wear protective clothing, gloves, and safety glasses when working with the auger.



**BE CAREFUL WHEN
WORKING WITH THE
AUGER!**

To avoid kinking the auger, be careful not to drop the rolled auger when handling. Inspect the auger carefully as it is installed. Small kinks may be straightened. Large kinks must be removed and the auger brazed back together.

Cut the leading 18" [450 mm] and last 18" [450 mm] off each roll of auger. Also, cut out any other distorted auger sections and reconnect the auger as specified in the Auger Brazing section of this manual.



1. Use extreme caution when pushing the auger into the auger tubes. Keep your hand away from the end of the auger tube to avoid injury.
With the auger coiled about 6 feet [1.8 m] from the end of the boot, uncoil the auger from the outside and feed the auger through the boot into the tubes.
Push the auger into the tube in short strokes.
Uncoil and handle the auger carefully to avoid damaging or kinking the auger.
2. If more than one coil is required for each feeder line, the auger ends will have to be brazed together. Refer to the Brazing the Auger section in this manual.

3. Install the Anchor Bracket to the Power Unit/Gearhead, as shown in **Figure 37**, with the included 5/16-18 Bolts.

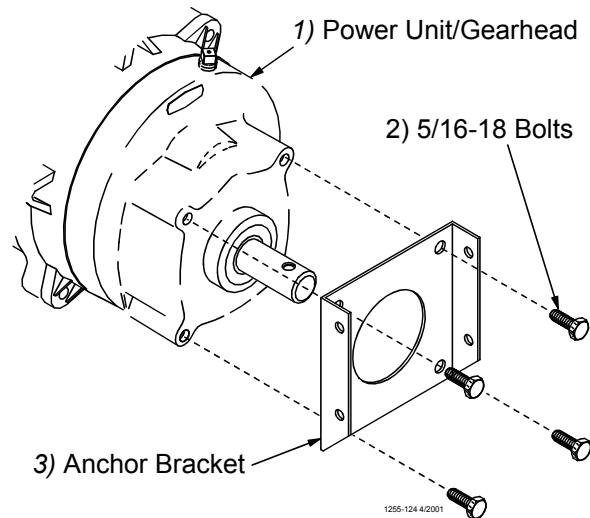


Figure 37. Assemble the Anchor Bracket to the Power Unit/Gearhead

4. Slide the Drive Tube and flat washer over the output shaft on the Power Unit, as shown in **Figure 38**.
5. Continue installing auger until the auger reaches the Control Unit end of the feeder line.
6. Turn the Drive Tube Weldment into the auger, then attach to the output shaft of the Power Unit, as shown in **Figure 38**. Use the Driver Block to secure the auger to the Output Shaft.

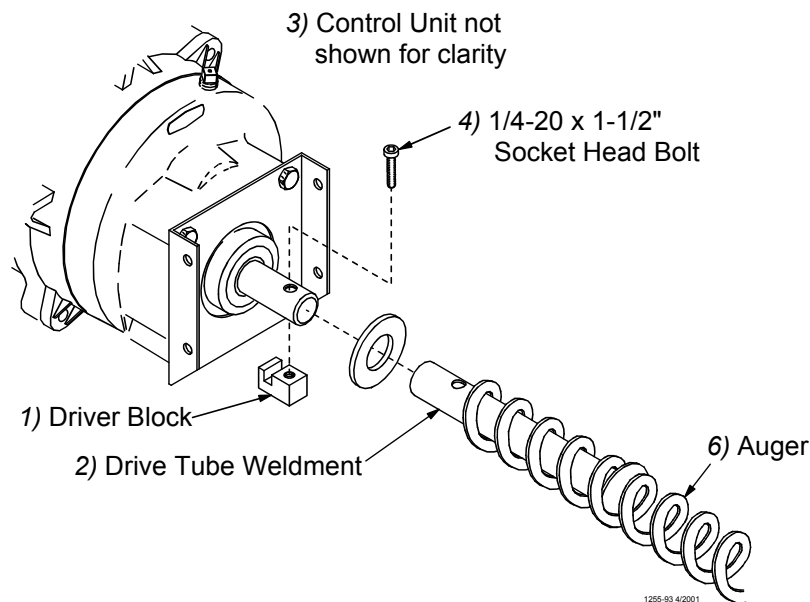


Figure 38. Auger Driver Components

7. Attach the Anchor Plate and Gearhead Assembly to the Control Unit Body using the included 1/4" Lock Washers and 1/4-20 x 1/2" Bolts. See **Figure 39**.

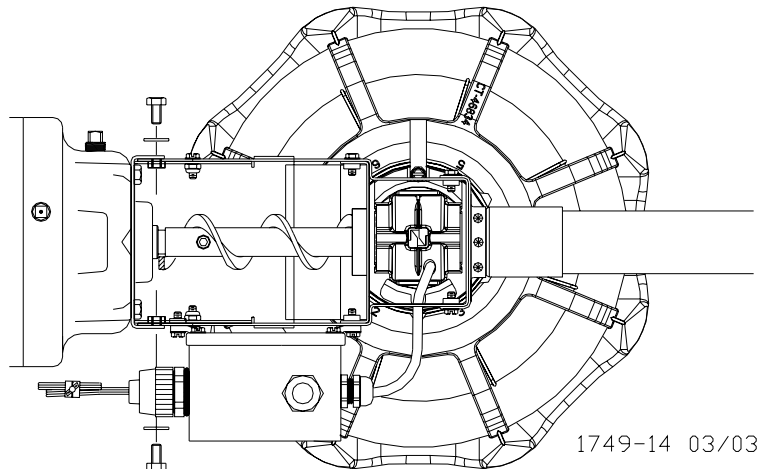


Figure 39. Attaching the Anchor Plate and Gearhead Assembly to the Control Unit Body

8. Install the Metal Water Tight Connector (item 1) in the Feed Line Motor (item 2). Cut the Flex Conduit (item 3) to length. Slide the wires from the end control through the Flex Conduit (item 3). Install the Flex Conduit (item 3) in the connectors. Connect the wires to the Feed Line Motor (item 2).

End Control

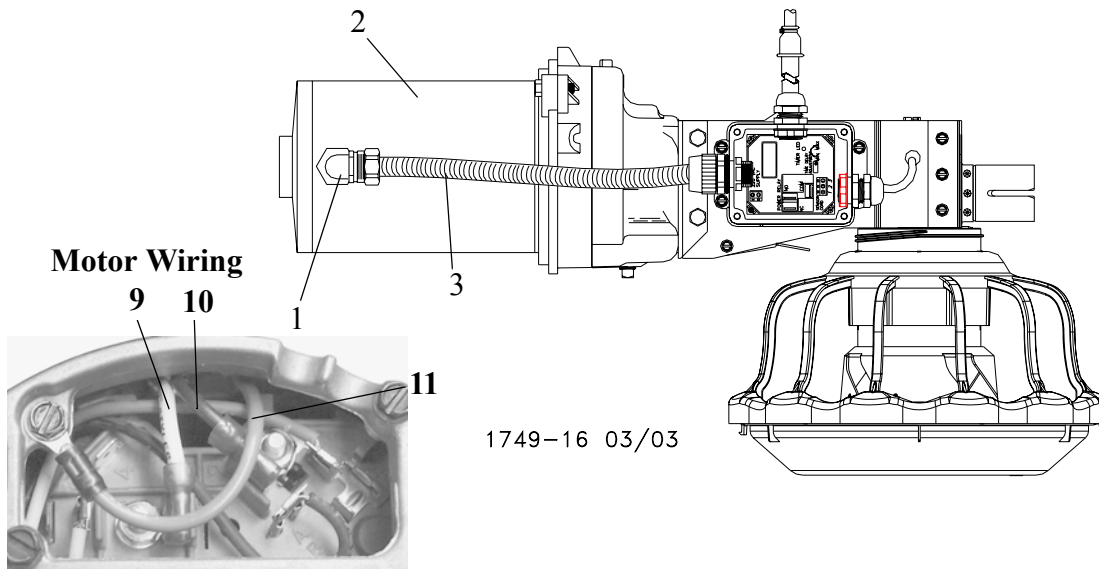


Figure 40. Wiring the Motor

9. Attach all covers and wire according to the wiring section of this manual.

10. Pull the auger at the boot end until it begins stretching. Then let it relax. In the *relaxed* position, mark the auger at the end of the boot. See **Figure 41**.

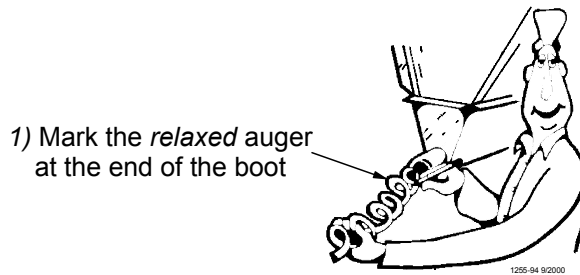


Figure 41. Measure the Auger from the relaxed position

11. Auger stretch:

The auger needs to be stretched 7" [180 mm] per 100' [30 m]. Example: A 300' [90 m] feeder line requires 21" [500 mm] of stretch.

Beginning at the *relaxed* position, measure the required amount of stretch. Mark the auger at that point.

Grip the auger 8" [200 mm] ahead of this mark with locking pliers. Allow the auger to pull back into the boot so that the pliers rest against the end of the boot. See **Figure 42**.

Use a hacksaw or bolt cutters to cut the auger at the stretched auger mark.

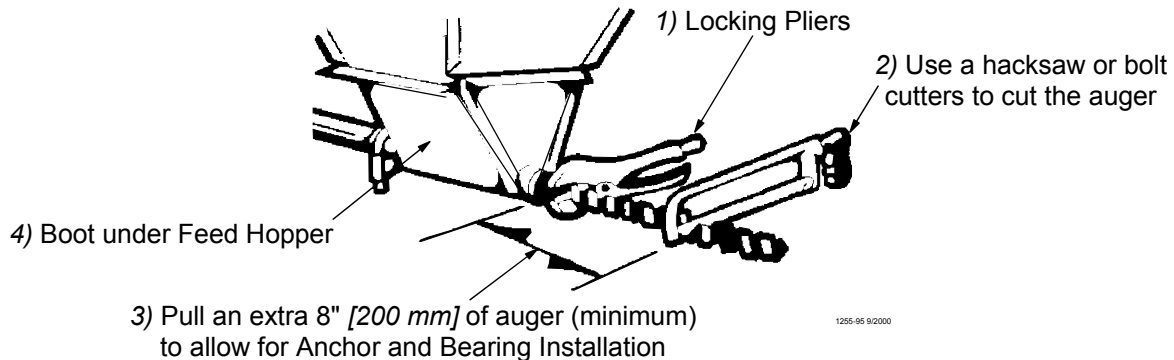


Figure 42. Cut the Auger with required stretch

12. Insert the Anchor Assembly into the auger until it touches the washer at the back of the anchor. Tighten the setscrews in the center of the anchor until they touch the auger, then tighten a maximum of 1/2 turn. See **Figure 43. DO NOT OVERTIGHTEN THE SET SCREWS.**

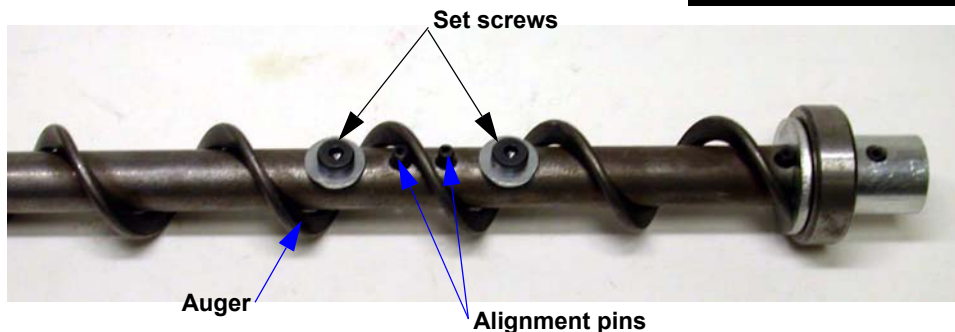
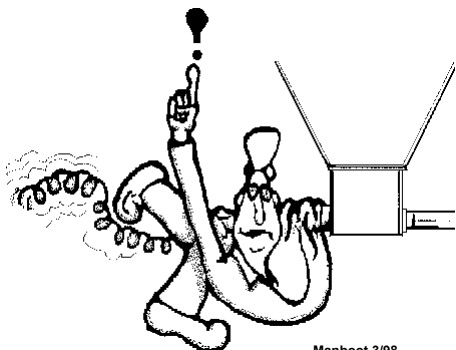


Figure 43. Auger and Anchor Bearing Connection

13. **Carefully** remove the locking pliers while holding onto the Anchor and Bearing Assembly and auger securely.
Slowly ease the auger back into the tube. Use caution. If the auger is allowed to spring back, the bearing race may crack.
 Install the Bearing Retainer and fasten with a tube clamp. Keep the Bearing Retainer flush with the end of the anchor for safety.
14. Place the cannonball in the boot.



**BE CAREFUL
WHEN
WORKING**

Auger Brazing

The auger should be brazed if it is necessary to splice or lengthen it. A bronze, flux coated rod is recommended.

The ends of the auger should butt against each other, **DO NOT THREAD INSIDE EACH OTHER**. See **Figure 44**. The joint should be well filled with no sharp edges or rough corners to wear against the tube. To align the auger for brazing, lay it in angle or channel iron and clamp it firmly in place. Use low heat. Allow the joint to air cool; rapid cooling will cause the auger to become brittle.

2) Lap the auger ends
approximately 1" [25 mm]

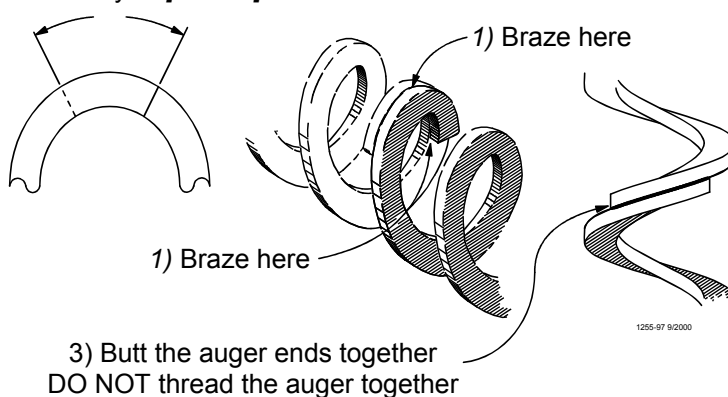


Figure 44. Auger Brazing

LAYOUT FOR VARIABLE BROOD OPENINGS. THE PAN ASSEMBLY WILL BE DIVIDED WITH HALF THE PIVOT BRACKETS ON THE LEFT AND HALF ON THE RIGHT. THE TUBE WHERE THE ACTUATOR IS INSTALLED WILL HAVE SOME PANS ON THE RIGHT AND SOME ON THE LEFT. CHECK THE CHARTS BELOW FOR THE TYPE OF INSTALLATION.

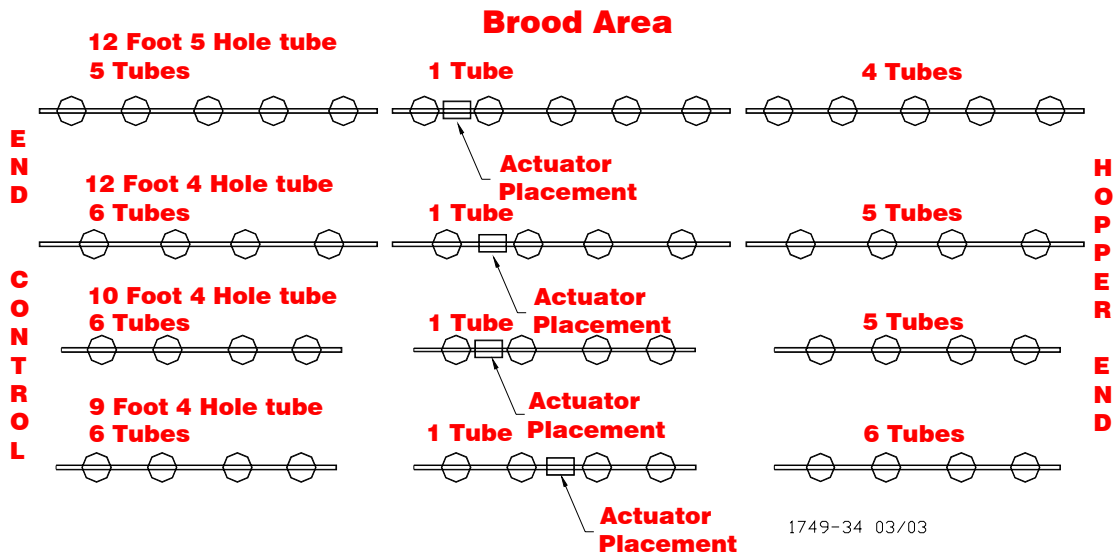


Figure 45. Typical building layout

Installing spring brackets:

- Install the terminal spring and bracket (using 2 1/4-20 x 3 inch hex bolt and two 1/4-20 hex flange nuts) at the control unit **See Figure 46.** If necessary the last pan may need to be setup to push the vari-brood opening. **See Figure 48.**
- Install the intermediate spring and bracket approx. 30 feet from the terminal bracket.
- Brackets will be installed using 2 1/4-20 X 3 inch hex bolt and two 1/4-20 hex flange nuts.
- Repeat the procedure for the opposite end and complete the installation of all spring brackets.
- (max number: 30 pans each side of actuator)

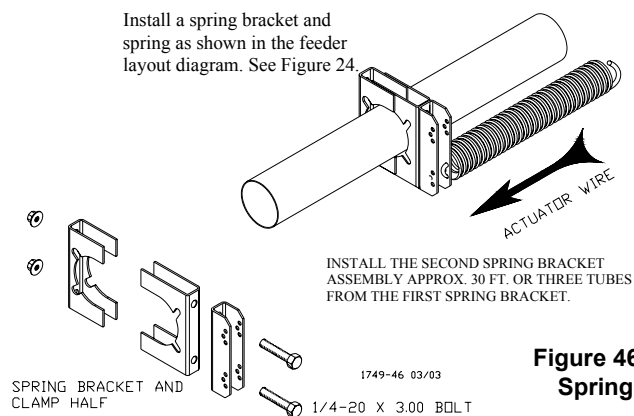
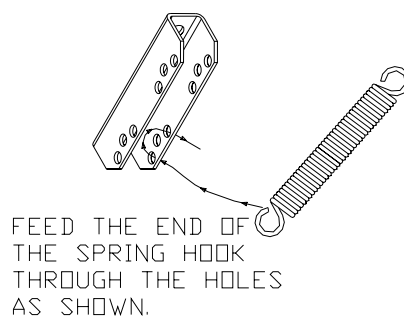


Figure 46. Terminal Spring Bracket



Assemble the spring to the spring bracket by sliding the loop of the spring up through the second hole in the bracket.

Figure 47. Spring Bracket Assembly

Install the second spring bracket assembly approx. 30 feet from the terminal spring bracket.

Spring bracket installation for 9 foot 4 hole and 12 foot 5 hole tubes.

For these applications the last pan will be a push to actuate the vari-brood feed feature.

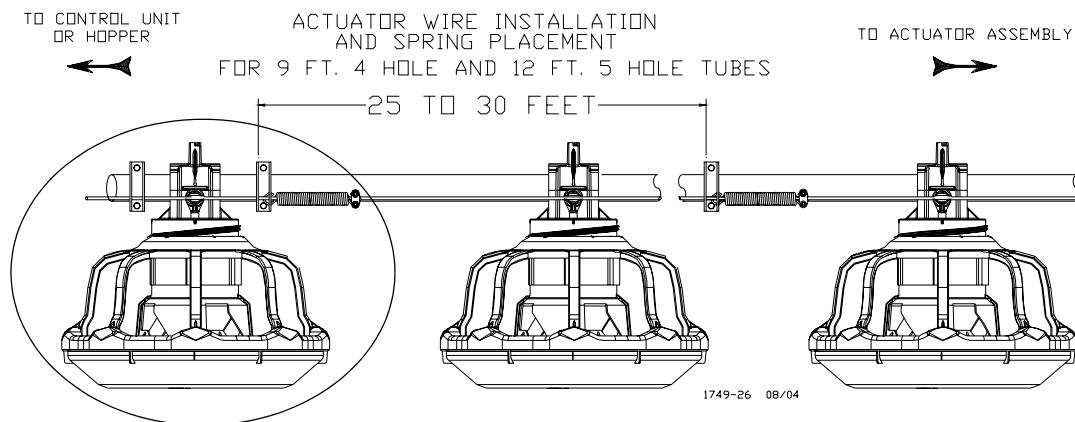


Figure 48. Wire layout for 9 ft. 4 hole and 12 ft. 5 hole

Push Pan setup. The push pan can be at the hopper or control

Spring bracket installation for the remaining types of tubes

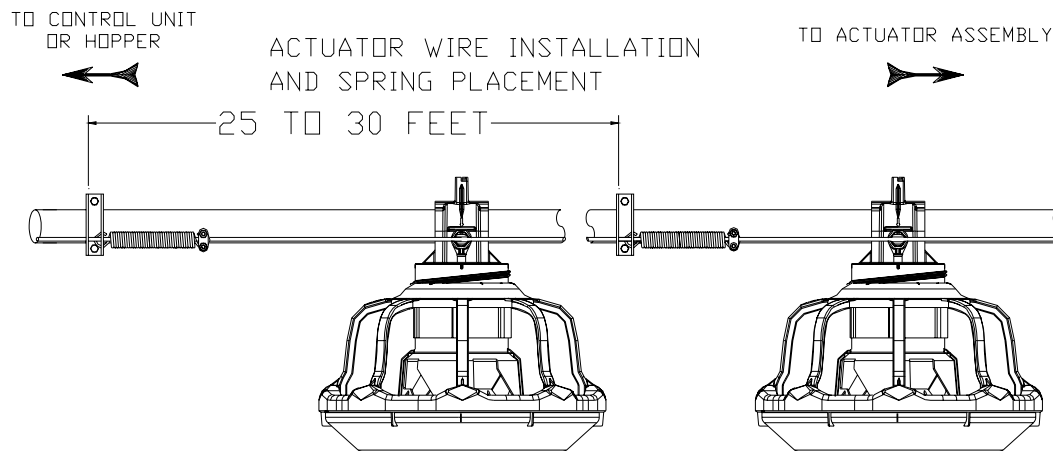


Figure 49. Wire layout for 10 ft. 4 hole and 12 ft. 4 hole

Unroll the actuator wire and lay the wire behind the pivot clips on the feeders.

Do not allow the wire to feed from the side!! This will cause excess waves and kinks.

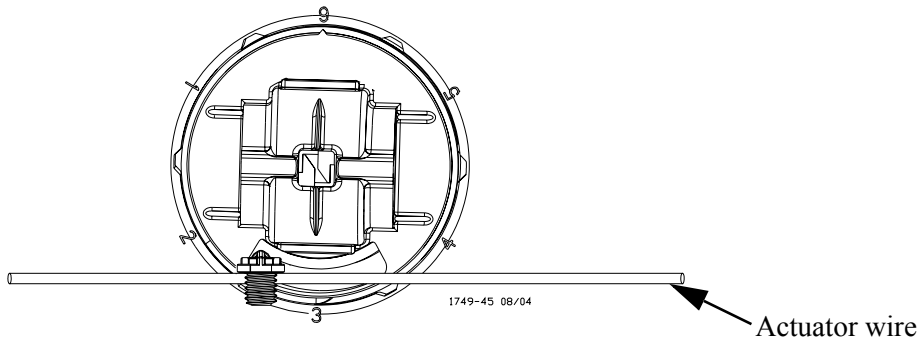


Figure 50. Lay pivot wire behind actuator bracket

Do NOT allow the wire to unroll from the side!!!

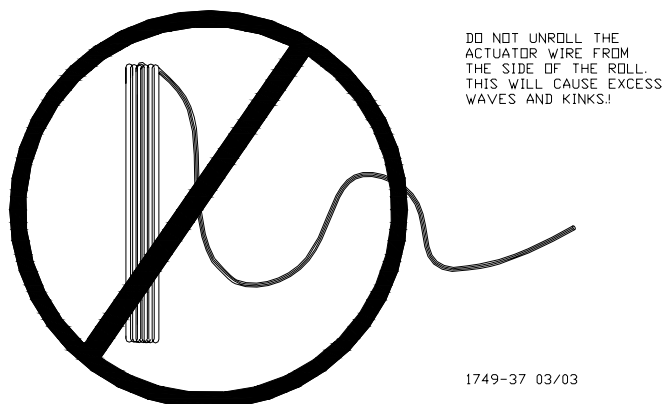


Figure 51. DO NOT feed from side

Do NOT allow the wire to unroll from the side!!!

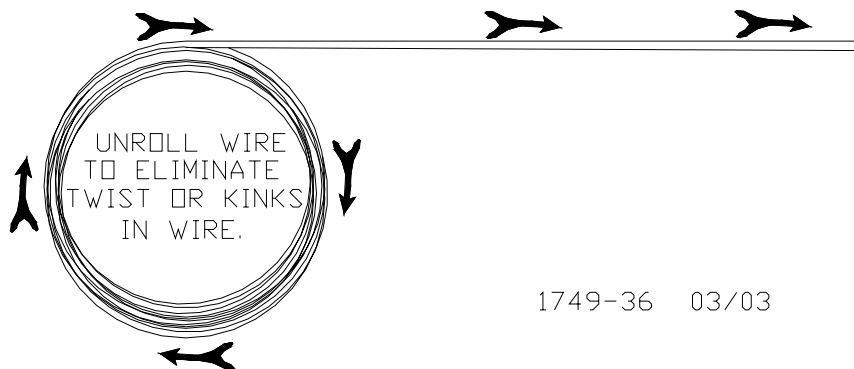


Figure 52. Proper way to unroll wire

This layout shows the correct way to unroll the actuator wire.

Installing actuator wire:

Beginning at the spring brackets. Slide the end of the actuator wire through the center of the intermediate spring and through the two holes in the bracket. **See Figure 53**

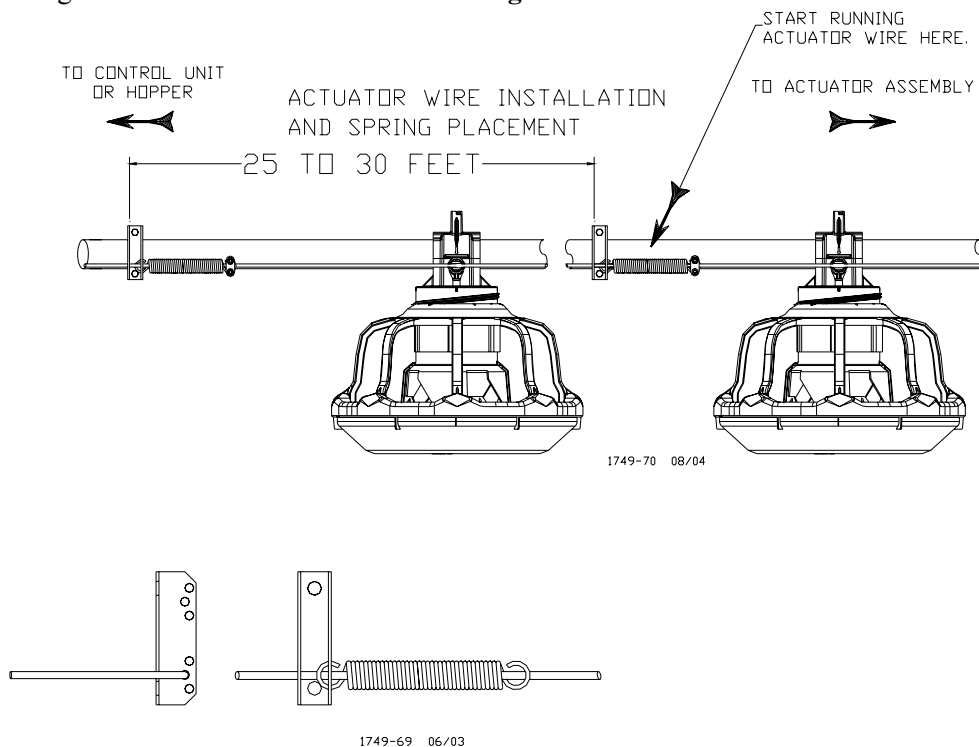


Figure 53. Installing actuator wire

Pull the wire through the spring and bracket until you reach the terminal spring and bracket. Slide the end of the wire through the center of the spring and through the two holes in the bracket (if a pusher pan is used slide the wire through the second bracket. Allow approx 12" of excess wire past the spring bracket. Clamp the springs to the actuator wire using an 1/8 inch cable clamp. **See Figure 54.**

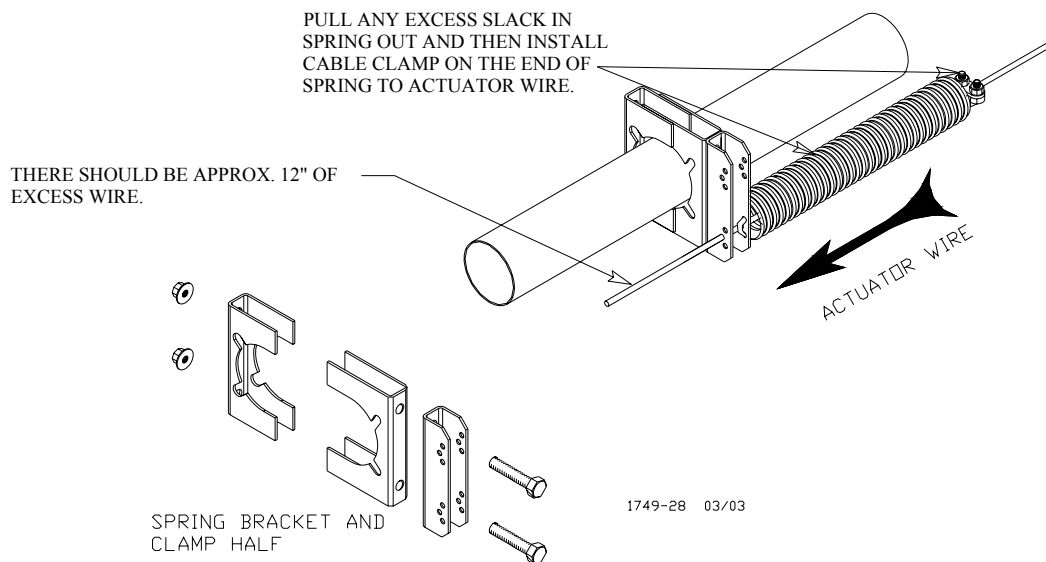


Figure 54. Terminal Bracket

Continue unrolling the actuator wire until you reach the actuator. (Lay the unrolled wire behind the picot bracket this will help to eliminate slack in the wire.)

Cut the wire approx in the center of the actuator base.

Important! Hold both ends of the actuator wire when cutting.

Slide the end of the wire through the two holes in the actuator base. See figure 55.

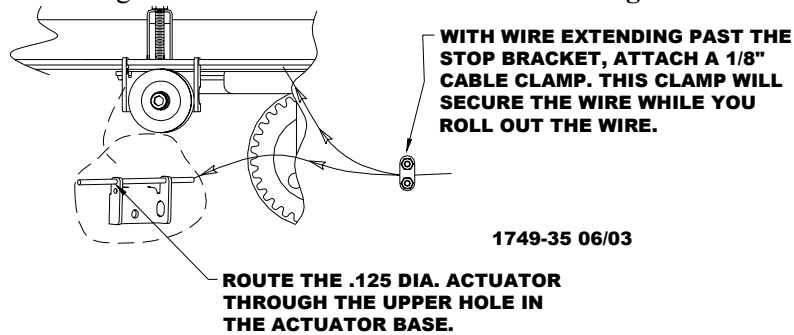


Figure 55. Installing Actuator wire.

Pull any excess slack from the wire and install an 1/8 inch cable clamp to hold the wire. Repeat the procedure for the remaining actuator wire installation.

Installing the actuator cable:

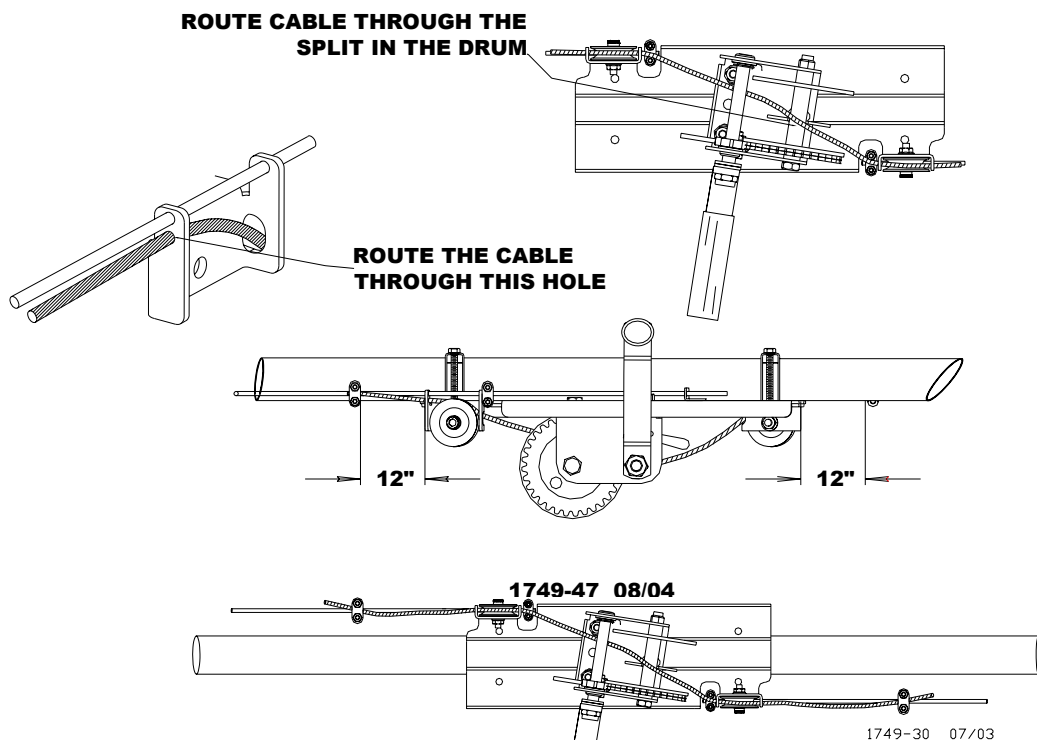


Figure 56. Actuator installation

Install the actuator handle and rotate the drum with the slot pointing down.

Locate the 3 feet of pre-cut cable supplied with the actuator. Lay the cable through the slot under the round bar on the actuator. Route the cable as shown in **Figure 56**.

Center the cable on the winch base and clamp the cable to the wire using one 1/8 inch cable clamp per end.

While holding the cable down in the slot rotate the handle and apply stretch to the springs. The springs should be stretched to approx 16 inches. **CHECK ALL SPRINGS!!** If a spring has slid on the wire, back off on the actuator and retighten all the clamps. Rotate the actuator handle until the springs are stretched to approx 16 inches.

Installing travel stops:

With the springs stretched, install a second cable clamp on each side of the actuator base. Slide the cable clamp up next to the base and tighten, the "CLOSE" stop has been set.

Using the first pan away from the actuator, close the brood opening and clamp the wire with a plastic clamp to the pivot bracket. See **Figure 57**.

After the plastic clamp has been tightened let the cable out slowly until the brood opening reaches the full open position.

Move the cable clamp that was installed on the wire up next to the actuator bracket. This will set the "OPEN" stop.

Operate the winch in and out to check for proper adjustment.

Adjust the stops if necessary.

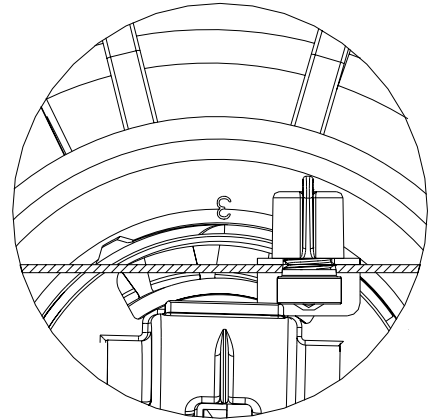


Figure 57. 13057 clamp installed

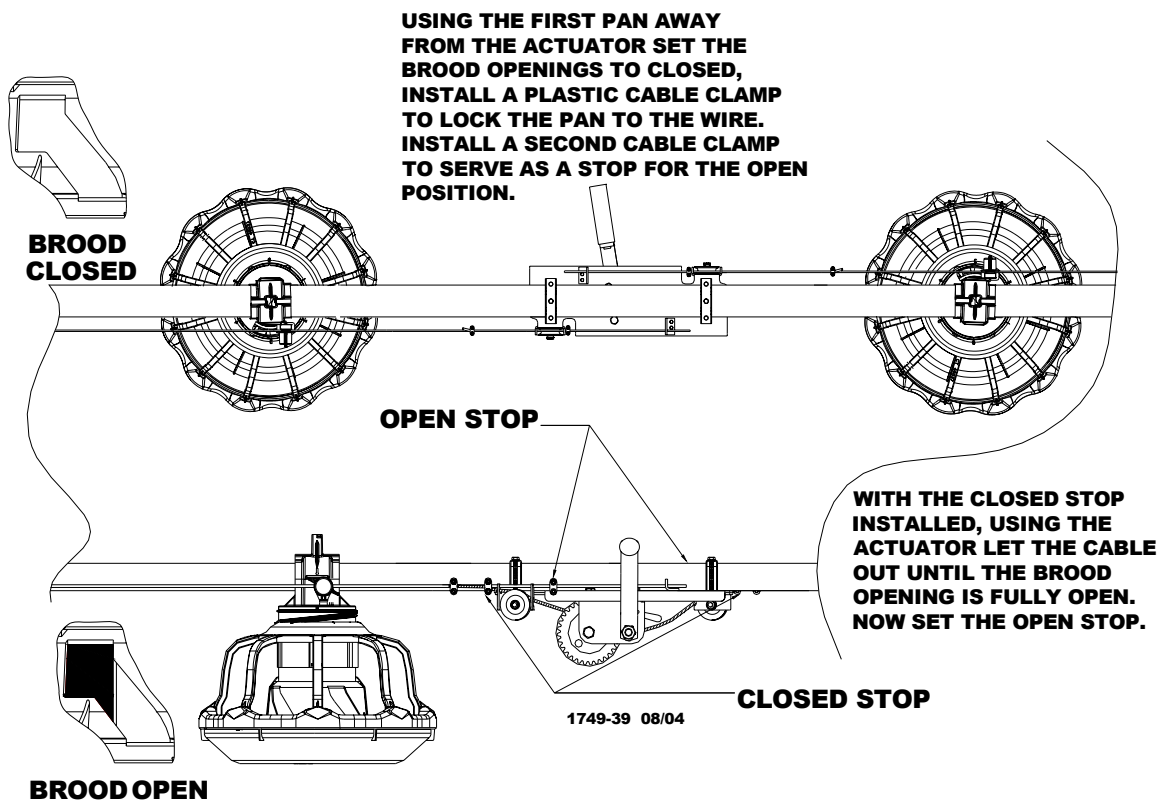


Figure 58. Adjusting the Vari-Brood opening

With the stops adjusted, now install the remaining plastic cable clamps.

With the Brood in the Closed position. Locate the feed level adjustment decal on top of the actuator. Install a cable clamp to be **In-line with feed level 10**. See **Figure 59**. When operating the actuator three clicks will equal 1 feed level.

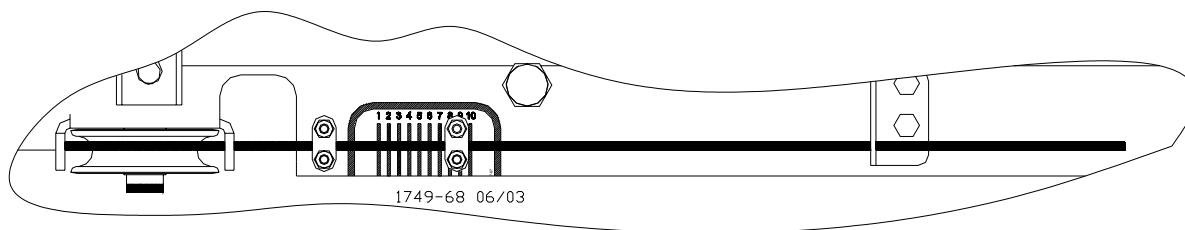


Figure 59. Closed position actuator end

With the Brood still in the Closed position. Go to the control unit or hopper end to trim the actuator wire. Leave **1 inch** of excess wire past spring bracket. See **Figure 60**.

Repeat procedure for the remaining actuators.

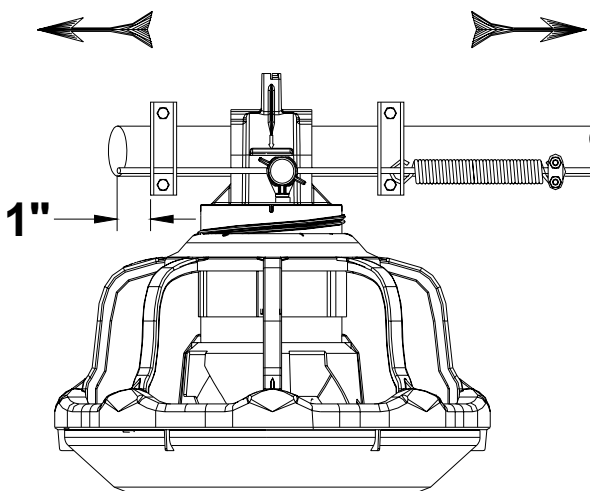


Figure 60. Closed position control/hopper end

Anti-Roost Installation

1. Unroll the bulk anti-roost cable. Note: If the cable is unrolled as shown in **Figure 61**, taking 5 loops of the coil with one hand, then changing hands to remove 5 loops as it is unrolled, it will lie flat during installation.

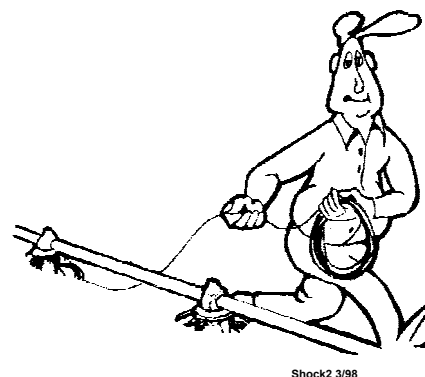


Figure 61. Unrolling the Cable

2. Start at the hopper end of the line and form a loop around the anti-roost bracket. For best results, make a double loop around the anti-roost insulator in the center groove of the insulator and fasten with a 1/16" cable clamp as shown in **Figure 62**.
3. Insert the cable in the insulator on the top of each Grill Support between the hopper and the next anti-roost bracket.
4. Attach a spring in the center groove at the second anti-roost bracket and cut the cable at this point. See **Figure 63**.
5. Thread the ends of the cable through the end of the spring. Pull the cable tight so that there is 3/4" to 1" [20 to 25 mm] of stretch in the spring. Clamp the cable to form a loop and cut off any excess. See **Figure 63**.
6. Attach the cable to the insulator. For best results, make a double loop around the anti-roost insulator in the center groove of the insulator and fasten with a 1/16" cable clamp as shown in **Figure 63**.
7. Run the cable to the next insulator, attach a spring in the center groove at the anti-roost bracket and cut the cable at this point. The cable should be positioned in the insulator built into the top of each grill support along the feeder line.
8. Repeat this installation until the anti-roost cable is installed along the entire feeder line.
9. At the control unit, after clamping the cable to the spring, cut the cable about 8" to 10" [200 to 250 mm] longer than necessary. Feed the end of the cable through the center of the spring, around the first insulator on the control unit, and clamp the cable using the cable clamp supplied with the control unit. See **Figure 64**.
10. Install the wire form on the control unit insulators. Be sure the guard snaps into the retainers molded into the insulators. See **Figure 64**.

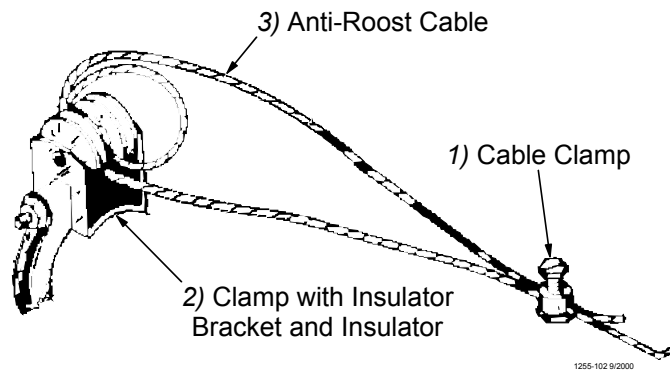


Figure 62. Anti-Roost Cable at the Hopper

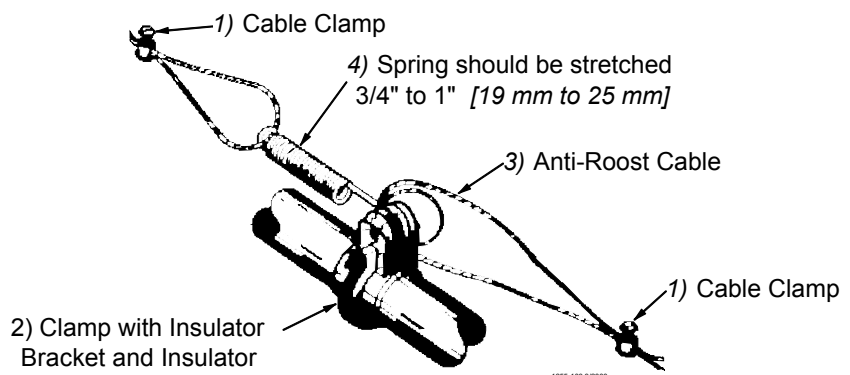


Figure 63. Anti-Roost Cable Mid-Line Connection

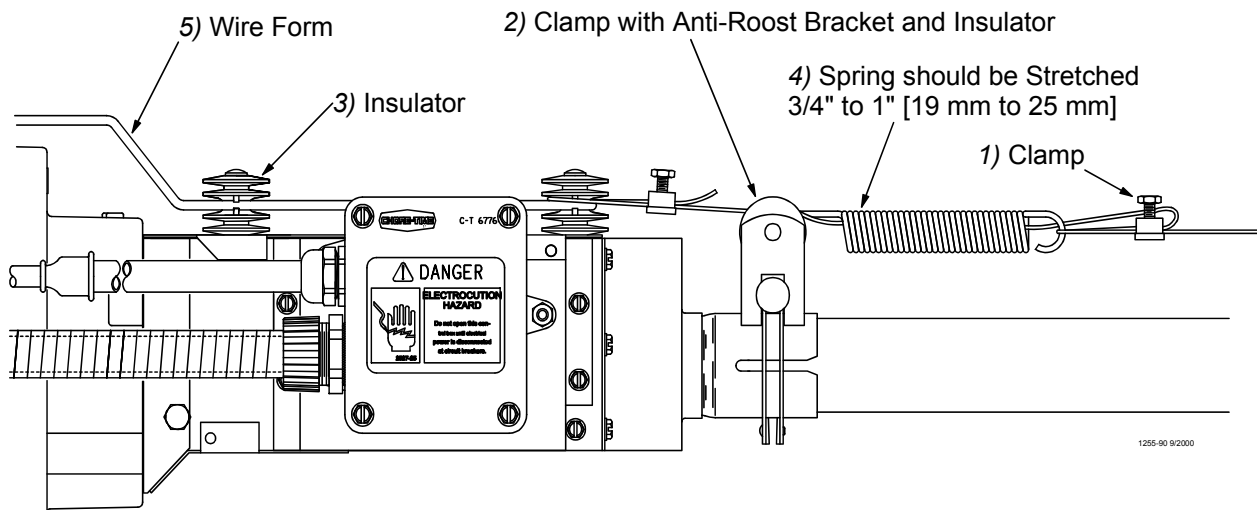


Figure 64 Anti-Roost Installation at the Control Unit

11. Install the Poultry Trainer or Line Charger, as shown in **Figure 65** or **66**.

The Poultry Trainer is used to power all Anti-Roost lines in a house. See **Figure 65**.

The Line Charger is used to power individual Anti-Roost lines in a house. See **Figure 66**.

Route the charger wire from the Poultry Trainer or Line Charger to the Anti-Roost system. Secure the Charger Wire to the Anti-Roost cable, using a cable clamp.

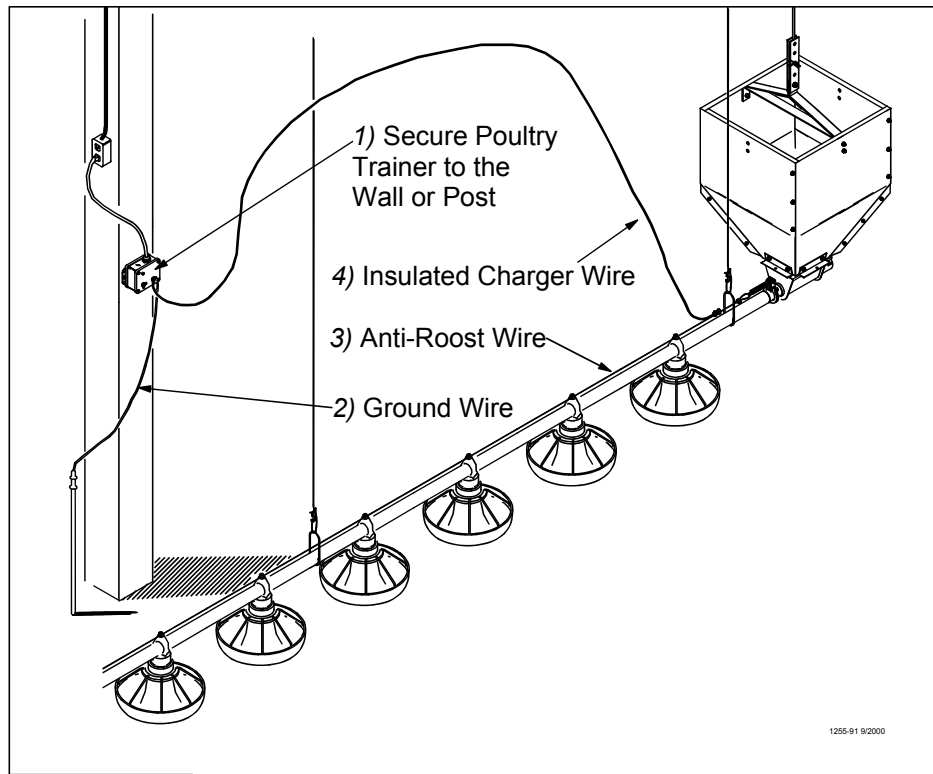


Figure 65 Poultry Trainer Installation

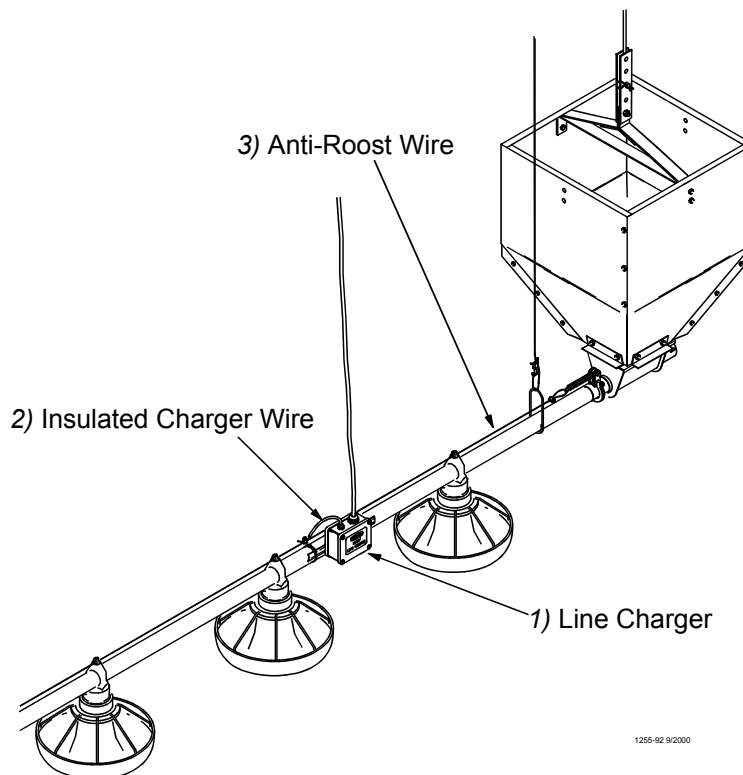


Figure 66 Line Charger Installation

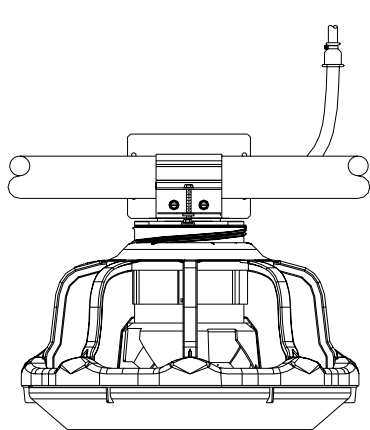
12. The **anti-roost system** *must* be on a **separate electrical circuit, allowing the system to be disconnected by a switch near the door.**
Remember, the anti-roost system should be **grounded through the poultry trainer.**

Electro-guard Operation

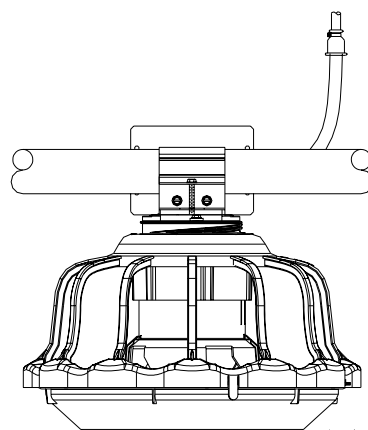
The electro-guard chargers should be operated on a separate electrical circuit so the anti-roost system can be shut off using a switch next to the entrance door when someone enters the building. Birds are less likely to become wild and flighty if the anti-roost is off when people are in the building.

Mid-Line Control

Mid-Line Control Units are available for the Rev. 8 & 12 Feeders. The Mid-Line Controls are shown in **Figure 67**.



**Rev. 8 Mid-Line Control with Sensor
Plus Proximity Switch**



**Rev. 12 Mid-Line Control with Sensor
Plus Proximity Switch**

Figure 67 Mid-Line Controls

The Mid-Line Control makes it possible to operate the feeding system when birds are confined away from the End Control Unit. Chore-Time recommends placing the Mid-Line Control Feeder at least 2 pans away from the curtain or partition. See **Figure 68**.

1. **New Feeder Lines:** Leave one feeder pan assembly off the feeder control tube at the point where the Mid-Line Control needs to be placed. The feeder line can be assembled and suspended before attaching the Mid-Line Control; or the Mid-Line Control may be attached to the feeder tube when the other pans are installed.

Existing Feeder Lines: Cut the Grill Support and remove the feeder pan at the location where the Mid-Line Control will be installed.

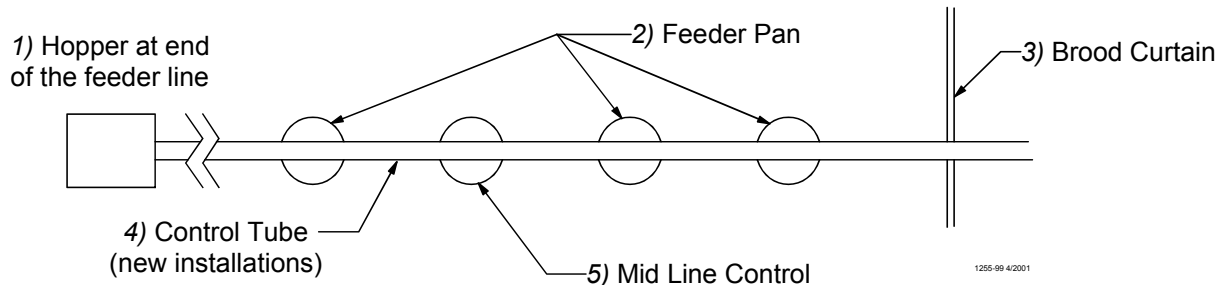
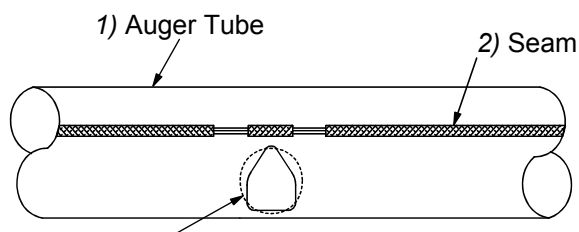


Figure 68 Mid-Line Control Location Diagram

2. **New Feeder Lines:** Go to step 3.

Existing Feeder Lines: Enlarge the outlet hole to approximately 1" [2.5 cm] diameter for the Mid-Line Control, plus enlarge (2) outlet holes in front (to the hopper end) of the Mid-Line Control. Use unibit to enlarge hole size. Be sure there are no burrs inside the tube to catch the auger.



- 3) Use a Unibit to enlarge outlet holes on existing feeder lines

Figure 69. Enlarging Outlet Holes

Sensor Plus Switch:

- Assemble the Mid-Line Control over the outlet hole in Tube as shown in **Figure 70**.
 - Attach the Mid Line Control to the tube using the clamp on lid , and secure with the 10-24 screw supplied..
- Install a toggle switch, out of reach of the birds, to disconnect power to the Mid-Line Control. This allows the Mid-Line Control to serve as standard feeder when not used as a control feeder.
 - Wire the Mid-Line Control as shown in the wiring diagram section of this manual.

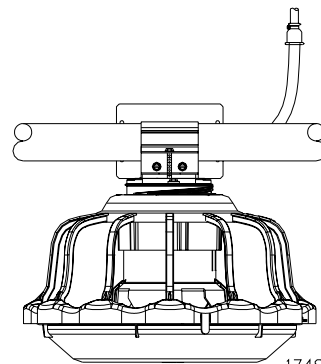


Figure 70 Installing the Sensor Plus Mid Line Control

Feeder Management and Operation

This section provides you with valuable information concerning feeder operation and management. It is important that you read this information and understand how the feeding system was designed to operate. Once you become familiar with the system, you may *custom operate* it to fit your individual needs.

Initial Start-up of the Feeding System

The Feeding System should be operated prior to birds being housed to make sure the installation is correct, the switches function properly, and to fill the feeder lines with feed.

There are two typical layouts for the feeding system that was determined prior to the installation. Normally if the building is 400' [122 m] or over, a center house hopper set-up is used. See **Figure 71**. For buildings under 400' [122 m], the hopper is placed at one end and the control pan/power unit at the other end. See **Figure 72**.

It is common practice to use partial house brooding during the early days of broiler production. For buildings that have the feeder split in the center (center hopper set-up), normally only the feeders that are in the brood area are used during brood time. For buildings that have the hopper at one end, brooding can be done on the motor end or an optional mid line control pan(s) can be placed on the feeder line.

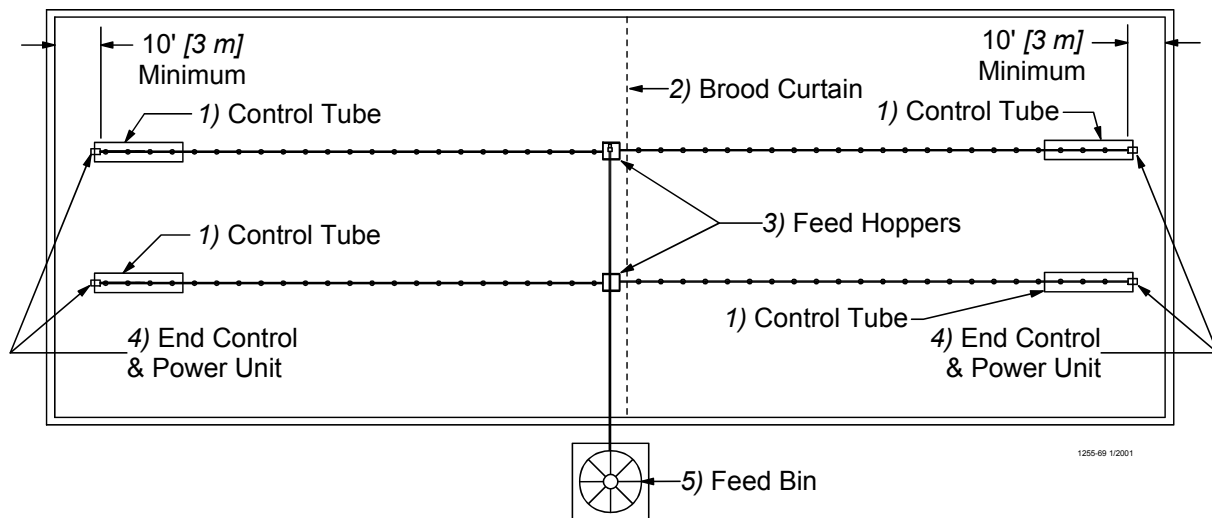


Figure 71. Component location diagram for systems over 400 feet [122 m]. (Top View).

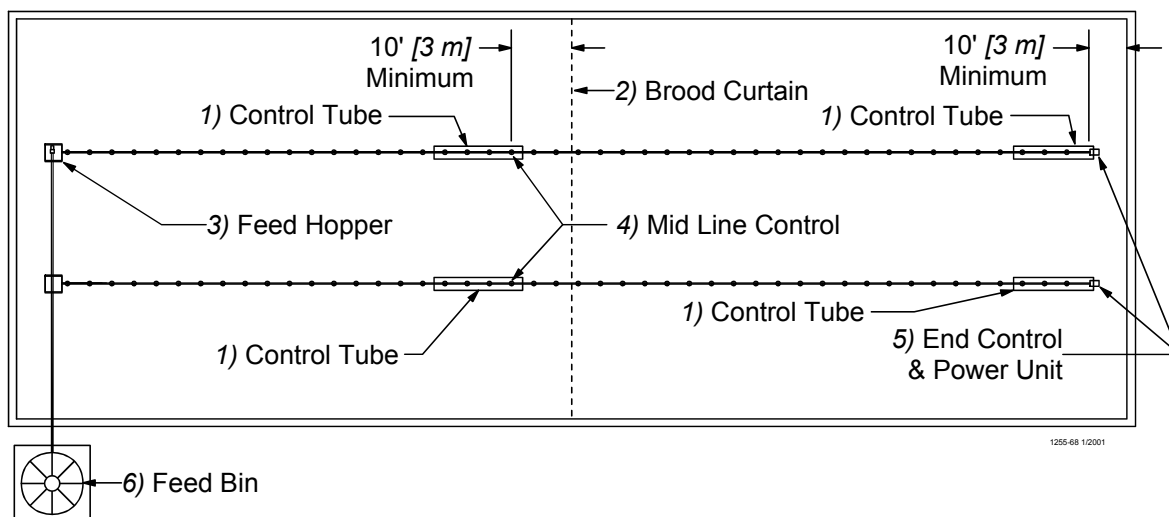


Figure 72. Component location diagram for systems up to 400 feet [122 m]. (Top View).

The feeder tubes and auger are supplied from the factory with a protective oil coating that will cause the system to deliver feed at a reduced rate. The oil coating will also create a larger load on the power unit (motor) until the system has been initially purged with feed, and becomes broken in.

To operate

1. Lower feeder lines so the feed pans are resting on the floor and the feed flood windows are completely open. Although the major weight of the feeder lines will be on the floor, do not remove all the weight from the suspension system and allow the cables to become slack.

2. Apply power to the feeder lines to check the operation. Allow to operate empty for 1-2 minutes.

NOTE: For feeder lines that have mid line controls, the recommended bypass switch(s) are wired into the system for selection of partial or full house control. Select the switch so the mid line control is functional. As the feeder operates, the feed will stop at the mid line control pan.

3. With the shut-off slide on the feed bin boot closed, energize the Flex-Auger® fill system. After operation of approximately 1-2 minutes, open the boot slide 1/2 way to allow feed to be conveyed to the feeders.
4. Once feed begins to be dispensed into the feed hopper(s), manually shut-off the fill system.
5. Apply power again to the feeder lines. Operate the fill system manually to dispense approximately 50 lb. [23 kg] increments of feed into the feed hopper(s). Allow the feed hopper to become empty for 30 seconds between each increment to reduce load on the feeder motor. Continue this procedure until feed has been dispensed to all the feeder pans. When the feed reaches the control pan, the feeder line will be shut-off.
6. Once the feeder lines have been initially filled with feed, manually dispensing feed in 50 lb. [23 kg] increments will no longer be necessary. The shut-off slide on the Flex-Auger® fill system may be completely opened. Refer to the Flex-Auger fill system Operator's Manual for information when multiple feed bins are used.

General Operation of the Rev. 8 and 12 Feeders

These recommendations are the guideline to aid producers with the use of the feeding system. With experience a feeding program will be developed to enhance the feeding systems performance. Several factors such as feed content, type of birds, climate, lighting programs, and etc. may dictate change from these recommendations.

The Rev 8 and 12 feeders have a variable brood feed opening which allows the feeder pan, to be filled with a height feed level, to start the young birds. Start young birds with the brood fully open. Although the major weight of the feeder lines will be on the floor, do not remove all the weight from the suspension system and allow the cables to become slack.

It is advisable to provide supplemental feed during the first few days for the young birds. This is especially true when partial house brooding is used (refer to page 38). Supplemental feeders such as the CHORE-TIME® E-Z START™ Chick Feeder, provide extra feeding space and access to the feed.

With the feeders lowered to the floor and the brood openings, the operation of the feeder will allow a high level of feed to be placed into the feed pans making it easy for the birds to find feed, adapt to the feeder, and begin to eat.

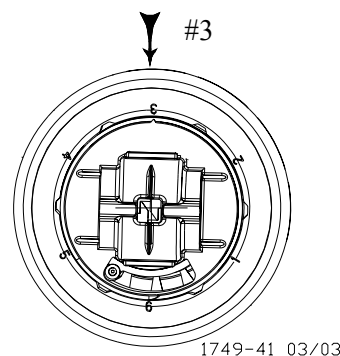
The VariBrood should be operated on a time clock. Chore-Time recommends the brood opening be fully open for the first 2 days. The setting should be reduced on the 3rd, 5th, 11th then closed on the 14 to 17 day. Again on the 5 daytime clock should be utilized to limit the number of times and length of time the feeder can operate. Failure to do one of the above will create the possibility of an excessive high feed level in the feed pans and the birds to waste feed.

As the birds grow and become acclimated to the feeder pans, the feeder will need to be raised to the grow-out position. Before moving the brood opening, it is recommended to allow the birds to eat the feed level down below the feed fin. This will ease the process of the feed flood windows closing properly.

Use the suspension system to raise the feeder(s) line. Raising the feeder will not affect the brood opening. Continue raising the feeder lines until the feed pans just begin to clear the floor or litter.

The VariBrood feature will operate whether the feed pan is on the floor or is suspended.

The feeder should be set on the #3 position for most applications. The adjustment settings are easy to understand and change. Setting numbers are embossed on the top of the grill so they may be easily seen. See **Figure 73**.



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Figure 73 Feeder Pan Assembly adjustment

Feed texture and consistency, type of bird, or other variables may make it necessary to change to another feed setting position. The combination of proper pan height, feeder setting, and feeder operation will result in optimum feeder performance (refer to **Figure 74** for pan height information). The operator will learn what performs best for his/her situation with experience.

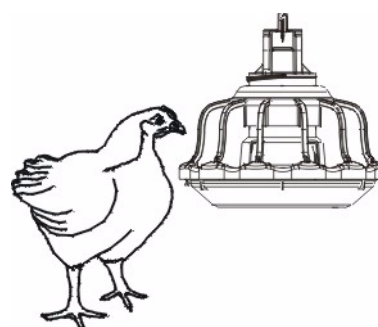


Figure 74. Feeder Pan Assembly height adjustment

REVOLUTION™ Feeding System Operation Guide

One - two days prior to housing chicks

1. Lower feeding system so pans are resting on the litter.
2. Completely open all feed windows using winch actuators.
3. Operate feeding system on brood end of building to fill feed pans and chick trays.

Day one - Day 4

1. Observe feed level in feeder pans approximately 6 hours after birds were housed. Activate the feeder control pan manually to allow feeder to refill feed pans (if needed).
2. At day 2, observe feed level in feed pans, if the birds have not activated the control pan(s), do so manually.
3. At day 3-4, close feed windows from setting 1 to 3 (6 clicks of the winch).

Day five - Day 7

1. Depending on feed level and bird activity, close windows from setting 3 to setting 5.

Day 10 – 12

1. If litter under feeders becomes concave and the birds are reaching over to get feed, raise feeder lines to where the pans just clear the litter.
2. Prior to opening the grow-out end of building to move the birds, operate the feeders (windows open).
3. Once the birds have been released to grow end of the building, close feed windows on grow-end feeders to equal the setting of the Brood-end (setting #5).

Day 16

1. Raise feeders so pan/grill edge lip is approximately 4 inches off the litter.
2. Close feed windows to setting #7.

Day 18 - 20

1. Close all feed windows

Day 20 – end of flock

1. Raise feeders as needed.

This is a general operation guideline for the REVOLUTION™ Feeding System. Bird activity and feed flowability will have a direct effect on the feed level with-in the feeder pans. Operator judgement of actual on site conditions may require modification to the operation guideline.

End Control and Mid Line Control Pans

At installation time, the end control pan of the feeder was placed to be 10 feet [3 m] from the end of the building to allow the birds access around the end of the feeder line. It is important the feed setting of the end control pan be the same as the rest of the feeder pans so the birds activate the feeder (**see page 40 for adjustment of the control**).

The Mid Line Control is placed on the feeder line when partial house brooding is desired. It is important the mid line control be installed at least 2 feeder pans away from the curtain or partition so the birds will activate the feeder line. The feed setting for the mid line control should be the same as the rest of the feeder pans on the feeder line (**see page 40 for adjustment information**). A toggle switch or disconnect is used to bypass the power to the mid line control. This allows the mid line control to serve as a standard feeder after brooding. The feeder can be changed from full house operation to partial house brooding with the activation of the switch.

Controlling the Feeders (optional equipment)

A time clock control is used with the feeding system to reduce excessive feeder operation time and limit feed wastage. The basic use of a time clock control is to allow periods of time during the day for the birds to reduce the feed level in the feeder pans and to limit the possibility of the birds creating a high feed level and wasting feed. This is not to be confused with lighting programs that have become very common place. If lighting or intermittent lighting programs are to be used, the use of the time clock control will be limited to just the light period. **Caution should be used to not restrict the feed from the birds during the light period.** Experience with the feeding system will determine how the time clock control is used.

The Rev. 8 and 12 Feeding Systems may be controlled by the #34385 Control Panel or the #34574 Time Clock Control. Refer to the instructions supplied with each control for information.

Maintenance

Floor Feeding System Maintenance

The Rev. 8 and 12 Feeders require minimum maintenance. However, a routine periodic inspection of the equipment will prevent unnecessary problems.

Maintenance should be done by a qualified technician.

ALWAYS DISCONNECT POWER TO THE SYSTEM WHEN SERVICING OR MAINTAINING THE EQUIPMENT. FAILURE TO DISCONNECT POWER MAY CAUSE INJURY OR DEATH.

Gear Head Maintenance

Refer to **Figure 75**.

Check the oil level in the gear heads at installation and every 6 months. The Pipe Plug, on the side of the gear head, indicates proper oil level. Add SAE 40W oil when necessary.

The oil in the gearheads should be replaced every 12 months with new SAE 40W oil

- A. Remove the bottom Pipe Plug to drain the oil. Discard used oil in accordance with local and national codes.
- B. Wipe any debris off the magnet on the bottom Pipe Plug and reinstall. Remove the side Pipe Plug and (top) Vent Plug.
- C. Set the power unit in the horizontal position.
- D. 2-Stage Gearheads: Add approximately 9 oz. (266 ml) of SAE 40W oil through top hole. This should be just enough oil to reach the side Pipe Plug.
3-Stage Gearheads (3261-9, 3261-12, 3261-14): Add approximately 13 oz. (384 ml) of SAE 40W oil through top hole. This should be just enough oil to reach the side Pipe Plug.
- E. Install the side Pipe Plug and (top) Vent Plug.

1)Vent/Oil Fill Plug



2)Oil Drain Plug

Check the oil level in the gear head at installation

Check the oil level every 6 months

3)Check the oil level at the side plug
If oil is needed use SAE 40W oil

Oil capacity for the 2 stage gear head is 9 oz [266 ml]

Oil capacity for the 3 stage gear head is 13 oz [384 ml]

The oil should be changed every 12 months

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Figure 75 Gearhead Maintenance

Check equipment for loose hardware after the first flock and then every 6 months--including the Anchor Block. Tighten if necessary.

SENSOR PLUS™ Sensor Switch Adjustment for Control Units

The SENSOR PLUS™ Pan Half Round Sensor Switch is adjusted at the factory to a sensitivity of .25" [6 mm] from the face of the sensor and a time delay of 15 seconds. The time delay adjustment is 0 seconds to 600 seconds.

To adjust the Time Delay: Refer to **Figure 76**.

- For less time — turn Time Delay Adjustment Screw counter-clockwise (Light blinks fast)
- For more time — turn Time Delay Adjustment Screw clockwise (Light blinks slow)

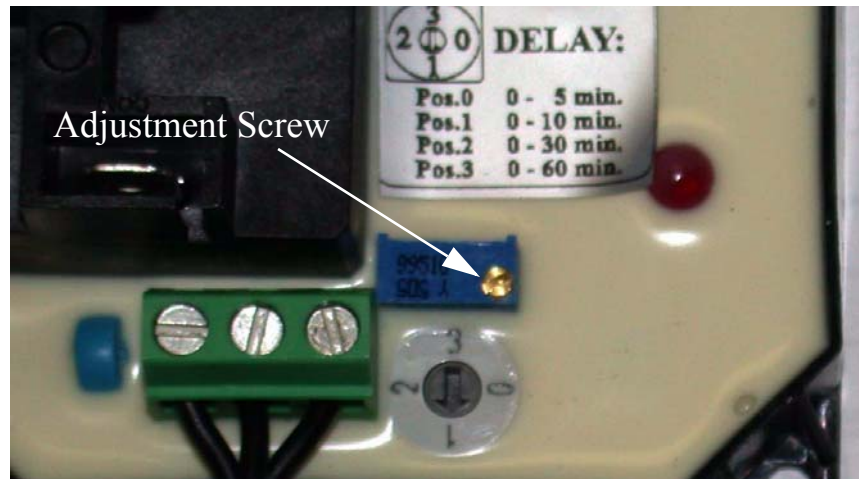


Figure 76 Adjusting the SENSOR PLUS Proximity Switch

Feeder Line

Keep anti-roost cables tightly stretched. This increases the effectiveness of the electro-guard anti-roost system and keep the pans from being tilted when birds push against them.

Remove all feed from the feeder when there are no birds in the house and when the building is washed and disinfected.

Turn the feeders off prior to removing the birds from the house. This will allow them to clean the feed out of the pans.

If the system is not to be used for an extended period of time, remove all the feed from the feeder lines and feeder pans.

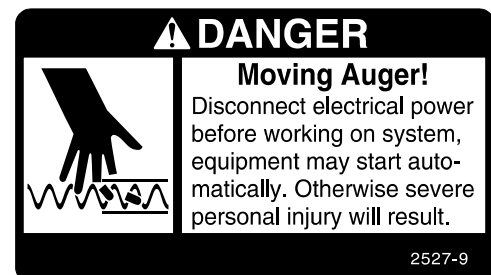
Disconnect power to the system to prevent accidentally starting the system.

If the system must be disassembled, extreme caution must be used to prevent injury from springing auger.

1. Disconnect power to the entire system.
2. Loosen the Tube Clamp on the bearing at the hopper end of the system. Remove the Tube Clamp and Bearing Retainer.
3. Pull the Anchor and Bearing Assembly and approximately 18" [45 cm] of auger out of the boot.

CAUTION: Stand clear...the auger may spring back into the tube.

4. Place a clamp or locking pliers securely on the auger to prevent it from springing back into the auger boot.
5. Loosen the setscrew in the bearing assembly shaft and remove the Anchor and Bearing Assembly from the auger.



To reinstall the Anchor and Bearing Assembly:

1. Insert the Anchor Assembly into the auger until it touches the washer at the back of the anchor. Tighten the setscrews in the center of the anchor until they touch the auger, then tighten a maximum of 1/2 turn. See **Figure 77**.
2. **DO NOT OVERTIGHTEN THE SET SCREWS.**
3. **Carefully** remove the locking pliers while holding onto the Anchor and Bearing Assembly and auger securely.
Slowly ease the auger back into the tube. Use caution. If the auger is allowed to spring back, the bearing race may crack.



Figure 77 Auger and Anchor Bearing Connection

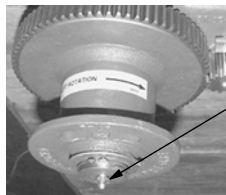
Install the Bearing Retainer and fasten with a tube clamp. Keep the Bearing Retainer flush with the end of the anchor for safety.

Power Lift Winch Maintenance

Refer to **Figure 78**.

Grease the winch every 6 months with 1 to 2 shots of common industrial or automotive grease.

DO NOT OVER GREASE THE WINCH.



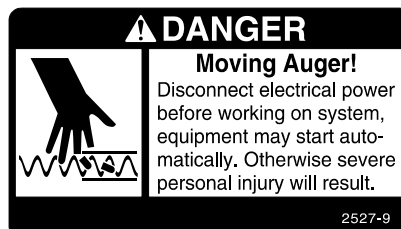
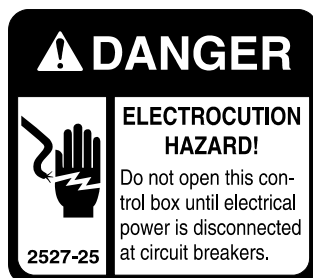
1) Grease the Power Lift Winch every 6 months with 1 to 2 shots of common industrial or automotive grease
DO NOT OVER GREASE THE POWER LIFT WINCH

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Figure 78 Maintenance to the Power Lift Winch

Remove any feed build-up in the Safety Switch Boxes in the Control Units.

It may be necessary to periodically retighten the shocker cable. Be sure to disconnect power to the shocker before servicing the equipment.



Trouble Shooting the Floor Feeding System

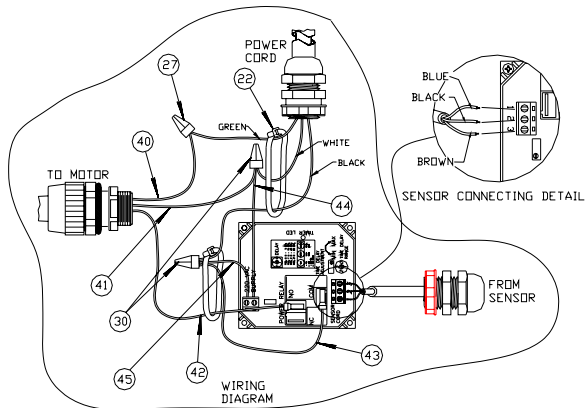
ALWAYS DISCONNECT POWER TO THE SYSTEM WHEN SERVICING OR MAINTAINING THE EQUIPMENT. FAILURE TO DISCONNECT POWER MAY CAUSE INJURY OR DEATH.

Service and maintenance work should be done by a qualified technician only.

Problem	Possible Cause	Corrective Action
None of the feeder lines will operate	No power supplied to equipment	Replace burned fuses or reset circuit breaker Make sure voltage required is supplied
	Time Clock or relay defective	Replace Time Clock or relay
	Time Clock improperly programmed	Refer to Programming the Time Clock section and reprogram the Time Clock
Feeder line will not operate	Power unit cord not plugged in sufficiently to make contact	Check motor cord plug at control unit and control unit plug at outlet for connection
	Motor cord wires are broken at plug or where cord enters motor	Check cord for continuity Replace if defective
	Power Units thermal overload tripped	Push motor overload reset button to reset
	Control unit switch defective or out of adjustment	Adjust switch according to the Switch Adjustment Procedure in the maintenance section
Motor overloads frequently	Oil on new auger loads motor excessively when feed is carried for first time	Polish auger by running 50 lb (20 kg) increments of feed out to pans
	Inadequate power reaching motors	Check line voltage at the motors Check starting current draw at motors Wiring of adequate size is essential to feeder operation
	Object caught in the auger; motor runs, stalls, then auger spins in reverse	Check hopper boot, control unit and pan outlet holes for foreign objects Remove obstruction
Auger runs erratically	Frozen or cracked bearing at boot anchor	Replace bearing Slowly ease auger back into tube Be careful not to damage the bearing when reinserting the auger
	Insufficient stretch in auger	Shorten the auger
	Obstruction in the auger	Remove obstruction
Auger tube or boot wears out rapidly (Noisy feeder operation)	Auger is bent or kinked	Repair or replace damaged auger
	End of auger is riding up on anchor weldment	Auger must not be positioned over weld on anchor Check for bent or damaged auger
Oil leaking out of seals on power unit	Gearhead vent plug not installed	Replace plastic shipping plug with vent plug
	Defective gear head seal	Replace seal
Not enough feed supplied to the feeder pans	Insufficient time programmed on the time clock	Add more operating time to feeding period
Brood openings will not stay in sync Actuator will not move cones One pan will not operate Control pan does not function	Feeder line control unit switch out of adjustment	Adjust switch according to the Switch Adjustment Procedure in the maintenance section
	Loose plastic cable clamp	Tighten the plastic cable clamps
	Cable loose	Tighten cable
	Loose or missing Pivot bracket	Tighten loose parts
	Check operation of sw, check time delay check time delay selector	clean off any buildup make sure time delay is working select position 0 for control

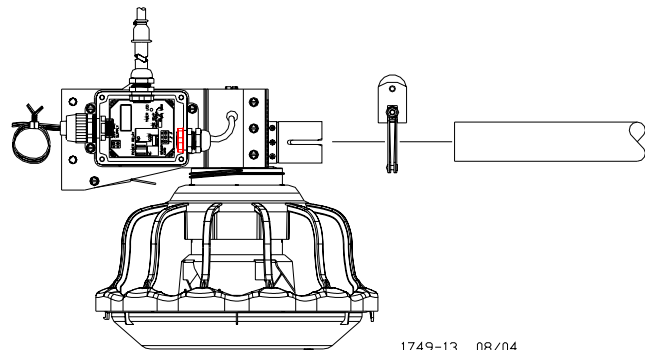
Wiring Diagrams

Internal Wiring End Control

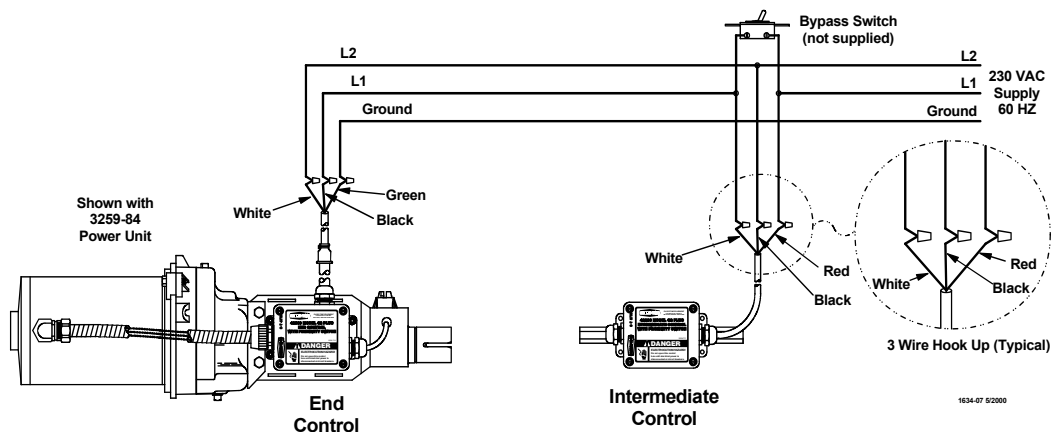


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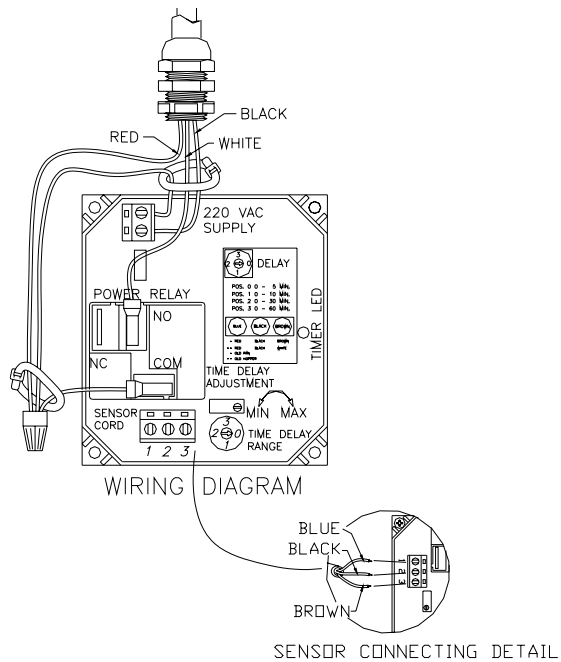
Sensor Plus End Control



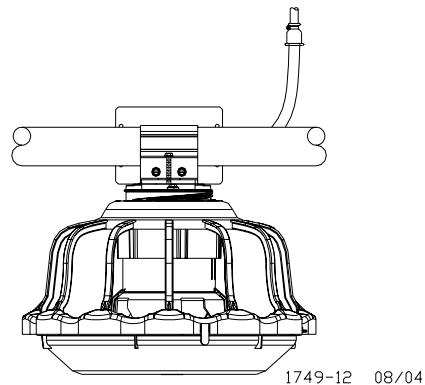
SENSOR PLUS Control Wiring Diagram



Mid Line control internal wiring



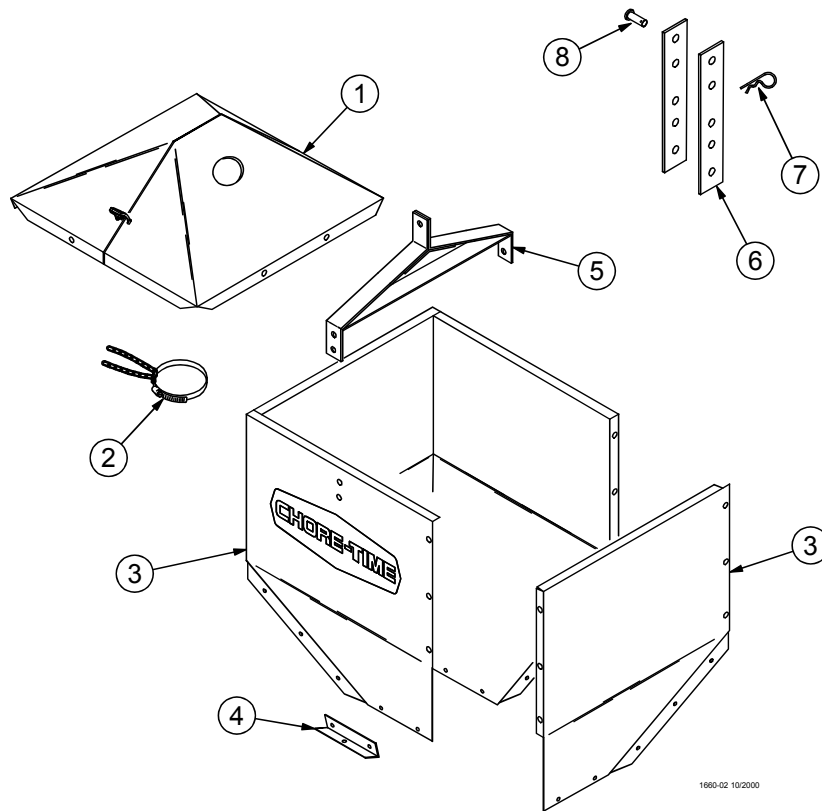
Sensor Plus Mid Line Control



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Parts Listing

200# Hopper Components

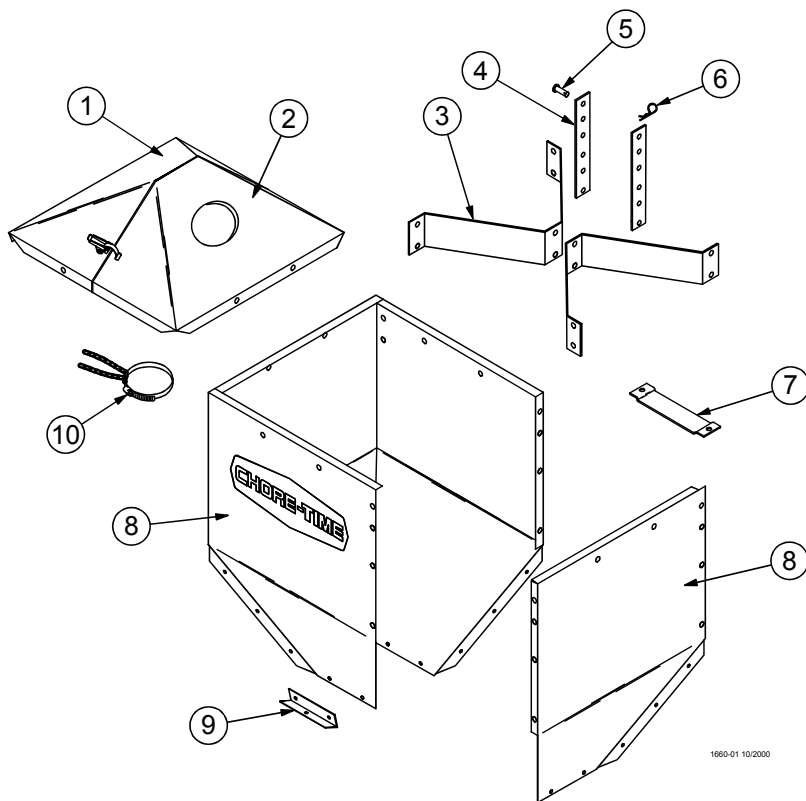


Item	Description	Part No.
1*	Hopper Cover (optional)	28206
2	Tube Support Assembly	14367
3	Hopper Side	2680
4	Boot Hanger	2671
5	Hanger Bracket Assembly	2681
6	Adjustment Bracket	2706
7	Hair Pin	2664
8	Clevis Pin, 5/16 x 1"	2797-1

*Hopper Cover not included. Must be ordered separately.

The 200# Hopper Assembly may be ordered under Part No. 7941. Hopper Cover must be ordered separately.

100 # Hopper Components



Key	Description	Part No.
1*	Hopper Cover (w/o hole)	28211
2*	Hopper Cover (w/ hole)	28212
3	Hopper Hanger	28165
4	Adjustment Bracket	2706
5	Clevis Pin, 5/16" x 1"	2797-1
6	Hair Pin	2664
7	H.L.C Mounting Bracket	28267
8	Hopper Side (w/ hole)	24241
9	Boot Hanger	28168
10	Tube Support Assembly	14367

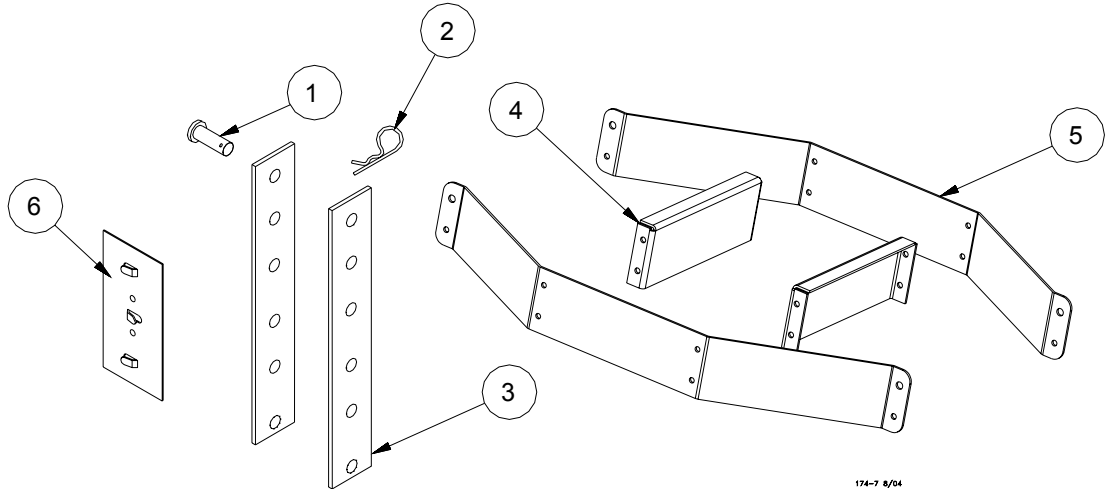
*These components may be ordered as an assembly under Part No. 28210.

The 100# Hopper Assembly may be ordered under Part No. 28220.

The 100# Hopper Assembly, including the Cover, may be ordered under Part No. 28240.

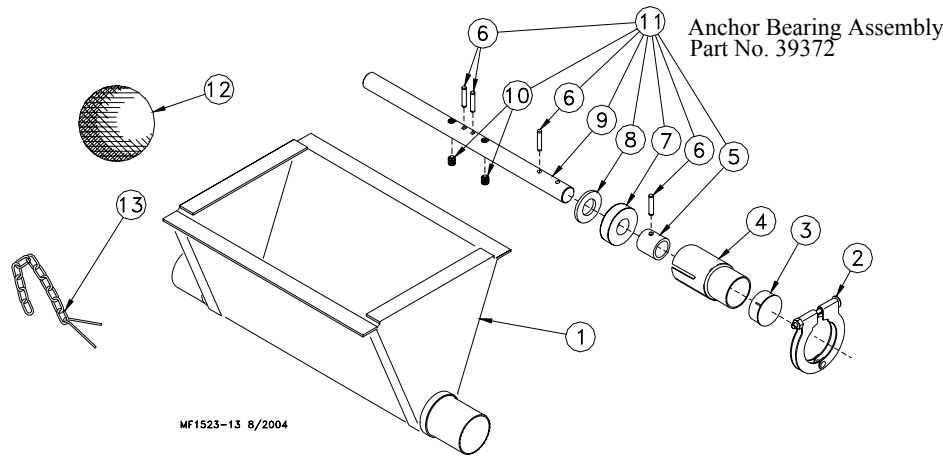
Hopper Mount Bracket (Optional)

Part Number 49358-Hopper Suspension Kit



Item	Description	Part No. Single Boot Kit	Part No. Twin Boot Kit
1	Clevis Pin, 5/16" x 1"	2797-1	2797-1
2	Adjustment Bracket	2706	2706
3	Hair Pin	2664	2664
4	Suspension Brace	48680	48680
5	Suspension Angle	48679	48679
6	Cable Guide	34573	34573

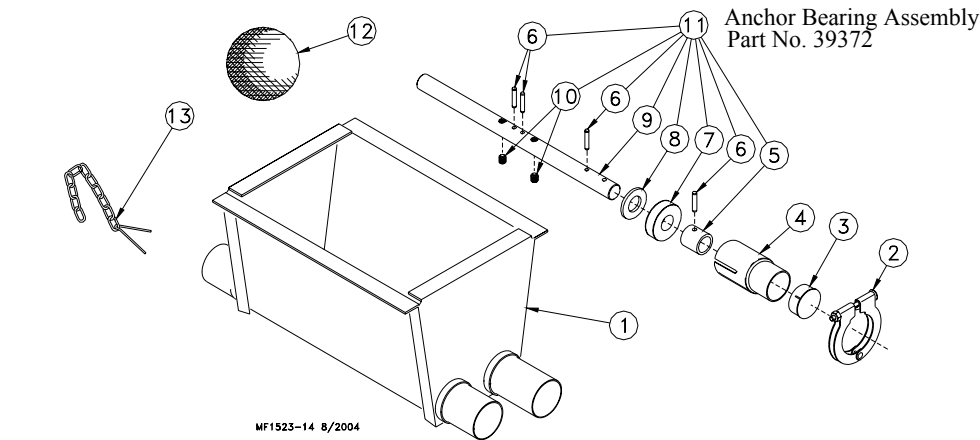
Single Boot Components Part No. 6822



Item	Description	Part No.
1	Boot Weldment	3760
2	Tube Clamp	24063
3	Cap	29373
4	Outlet Tube	4556
5	Sleeve	5648
6	3/16 x 1" Pin	2960-1
7	Bearing	2689
8	Washer	2955-14

Item	Description	Part No.
9	Anchor	38540
10	Setscrew	47867
11	Anchor and Bearing Ass'y	39372
12	Cannonball	3531
13	Latch Pin Ass'y	2683
--	Danger Decal	2527-9

Twin Boot Components Part No. 6824

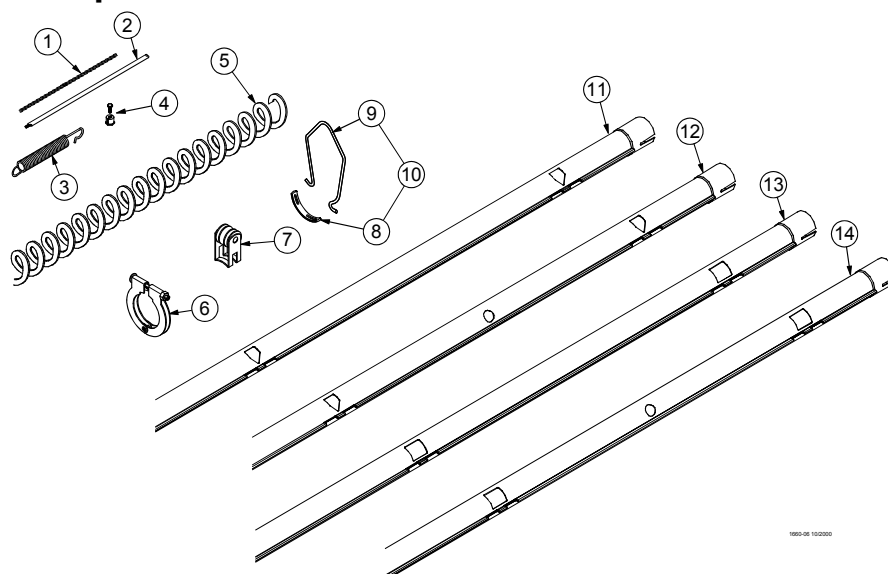


Item	Description	Part No.
1	Boot Weldment	3932
2	Tube Clamp	24063
3	Cap	29373
4	Outlet Tube	4556
5	Sleeve	5648
6	3/16 x 1" Pin	2960-1
7	Bearing	2689
8	Washer	2955-14
9	Anchor	38540

Item	Description	Part No.
10	Setscrew	47867
11	Anchor and Bearing Ass'y	39372
12	Cannonball	3531
13	Latch Pin Ass'y	2683
--*	Jumper Wire Kit	5960
--	Danger Decal	2527-9

*The Jumper Wire Kit includes an insulated piece of High-Voltage Wire (part no. 28994) and (2) cable clamps.

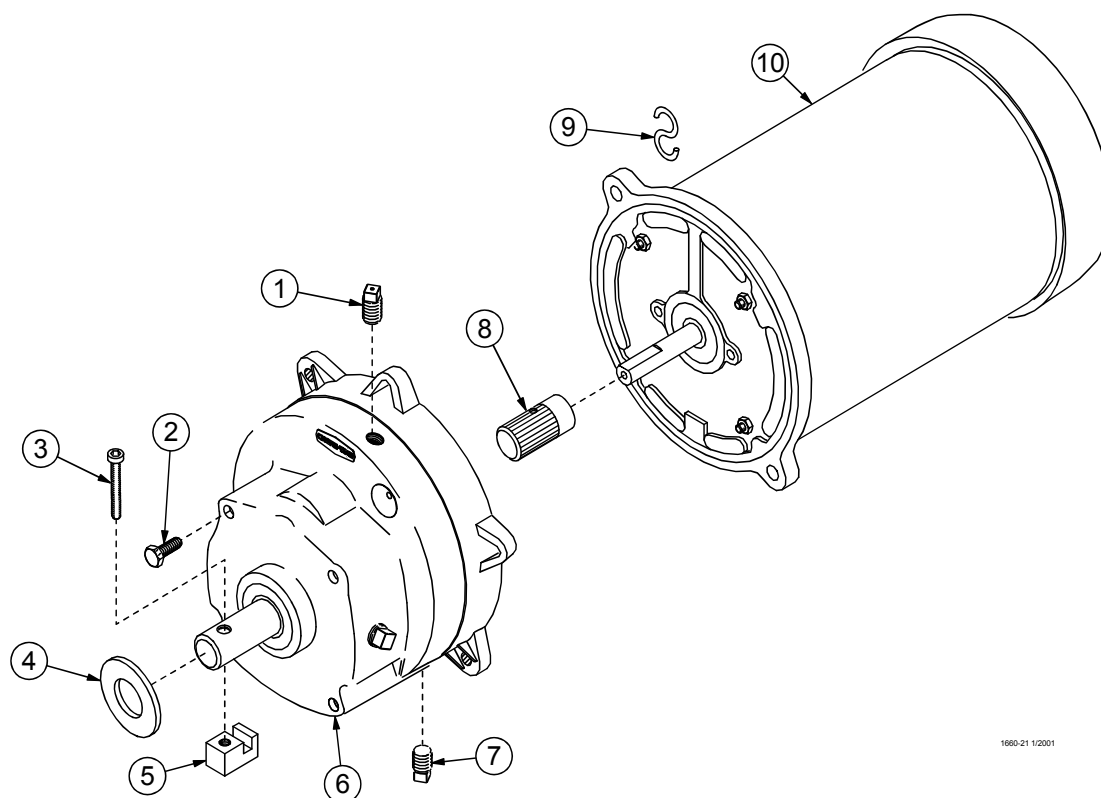
Feeder Line Components



Item	Description	Part No.
1	1/16" Cable	1922
2	Charger Wire (165') Charger Wire (330')	28994-165 28994-330
3	Spring	7551
4	1/16" Cable Clamp	1826
5*	Auger	6820-0
6	Tube Clamp	24063
7	Anti-Roost Bracket	24060
8	Hanger Bracket	7297
9	Hanger Strap	7298
10	Hanger Kit	7299
11	Standard Feeder Tube-1 3/4" Roll Form - 9', 4 Hole Tube - 10', 3 Hole Tube - 10', 4 Hole Tube - 12', 3 Hole Tube - 12', 4 Hole Tube - 12', 5 Hole Tube	6854-1 6854-5 6854-4 6854-8 6854-7 6854-6
12	Standard Feeder Tube-1 3/4" with Chick Holes (EZ. Holes) - 9', 4 Hole, 4 EZ. Holes - 10', 4 Hole, 4 EZ. Holes - 12', 4 Hole, 4 EZ. Holes - 12', 5 Hole, 5 EZ. Holes - 10', 3 Hole, 3 EZ. Holes - 9', 4 Hole, 2 EZ. Holes - 10', 4 Hole, 2 EZ. Holes - 12', 4 Hole, 2 EZ. Holes	6854-15 6854-16 6854-17 6854-18 6854-19 6854-20 6854-21 6854-22
13	Control Feeder Tube-1 3/4" Roll Form - 9', 4 Hole Tube - 10', 4 Hole Tube - 10', 3 Hole Tube - 12', 3 Hole Tube - 12', 4 Hole Tube - 12', 5 Hole Tube	43006-1 43006-4 43006-5 43006-8 43006-7 43006-6
14	Control Feeder Tube-1 3/4" with Chick Holes (EZ. Holes) - 9', 4 Hole, 4 EZ. Holes - 10', 4 Hole, 4 EZ. Holes - 12', 4 Hole, 4 EZ. Holes - 12', 5 Hole, 5 EZ. Holes	43006-15 43006-16 43006-17 43006-18

*Round up to the nearest 10'. Auger lengths from 50' to 500'. Example: 6820-200 would be a 200' roll of 6820 Auger.

Power Unit Assemblies



1690-21 1/2001

Item	Description	3259-8 Part No.	3259-25 Part No.	3259-84 Part No.	3259-85 Part No.	3259-98 Part No.	3259-100 Part No.	3259-128 Part No.
1	Vent Plug	3516	3516	3516	3516	3516	3516	3516
2	5/16-18x5/8 Hex Hd Screw	4412-1	4412-1	4412-1	4412-1	4412-1	4412-1	4412-1
3	1/4-20x1-1/2 Socket Hd Screw	5083-8	5083-8	5083-8	5083-8	5083-8	5083-8	5083-8
4	Flat Washer	1484	1484	1484	1484	1484	1484	1418
5	Driver Block	4642	4642	4642	4642	4642	4642	4642
6	Gearhead	3261-5	3261-5	3261-5	3261-5	3261-11	3261-11	3261-5
7	Pipe Plug (magnetic)	30160	30160	30160	30160	30160	30160	30160
8	Pinion Assembly	5046	5046	5046	5046	5046	5046	5046
9	"S" Hook	2805	2805	2805	2805	2805	2805	2805
10	Motor	4229	5703	4229	5703	5977	28031	24624
--	Cord Assembly	4685	8299	----	----	28028	----	----
--	Connector (Romex)	1317	1317	----	----	----	----	----
--	Connector (90 Degree)	----	----	----	----	4228	----	----

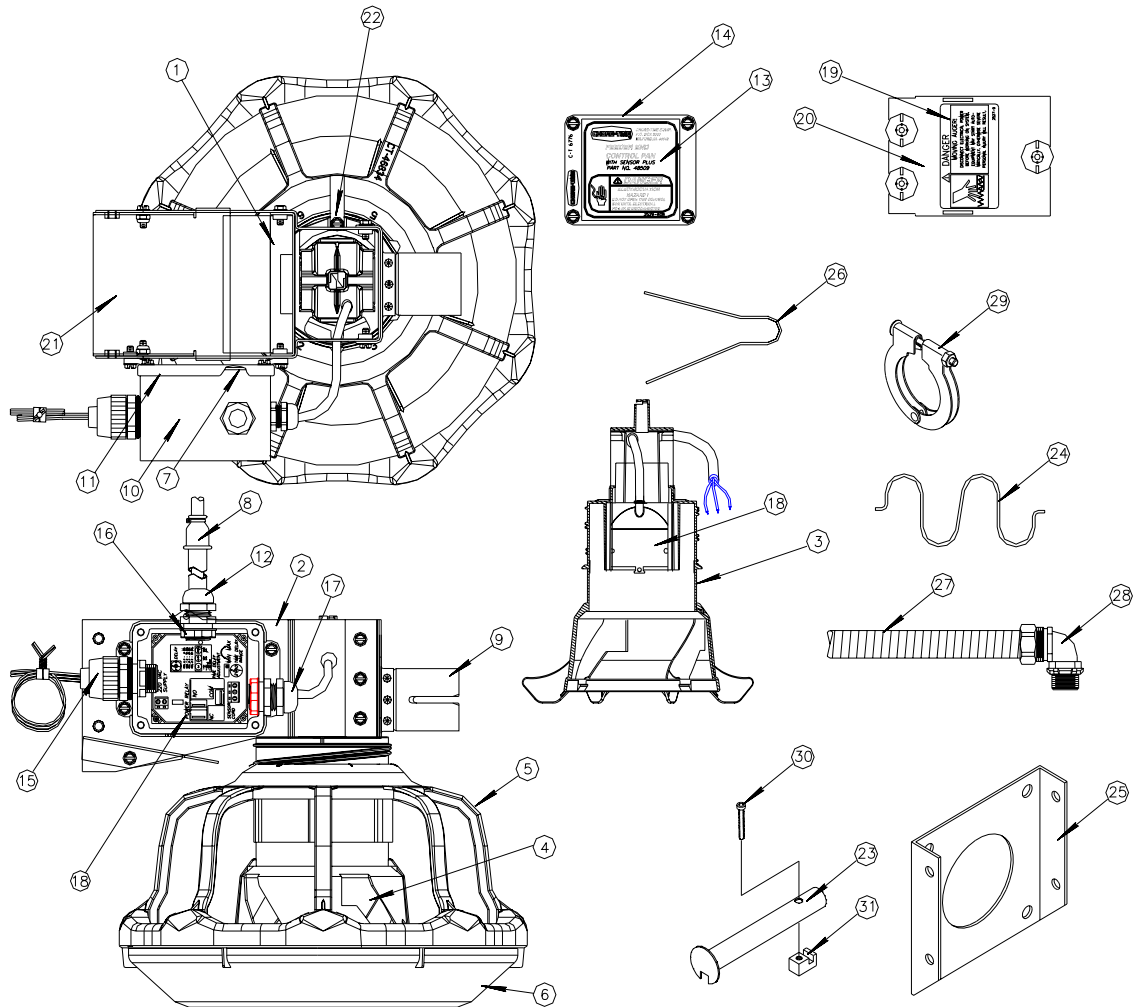
Power Unit Assembly Part Numbers:

Part No.	HP	RPM	Phase	Hz	Voltage	Usages
3259-8	1/3 HP	348 RPM	Single Phase	60 Hz	230	Use with 1878-8 Control Unit ONLY
3259-25	1/2 HP	348 RPM	Single Phase	60 Hz	230	Use with 1878-8 Control Unit ONLY
3259-84	1/3 HP	348 RPM	Single Phase	60 Hz	230	Use with all Control Units except 1878 Control Units
3259-85	1/2 HP	348 RPM	Single Phase	60 Hz	230	Use with all Control Units except 1878 Control Units
3259-98	1/2 HP	348 RPM	Single Phase	50 Hz	230	Use with all Control Units
3259-100	1/2 HP	348 RPM	Three Phase	50 Hz	220/380	Use with all Control Units
3259-128	1/2 HP	348 RPM	Three Phase	60 Hz	230	Use with all Control Units

Sensor Plus End Control

Part No. 48047 Rev. 12 END CONTROL

Part No. 48509 Rev. 8 END CONTROL



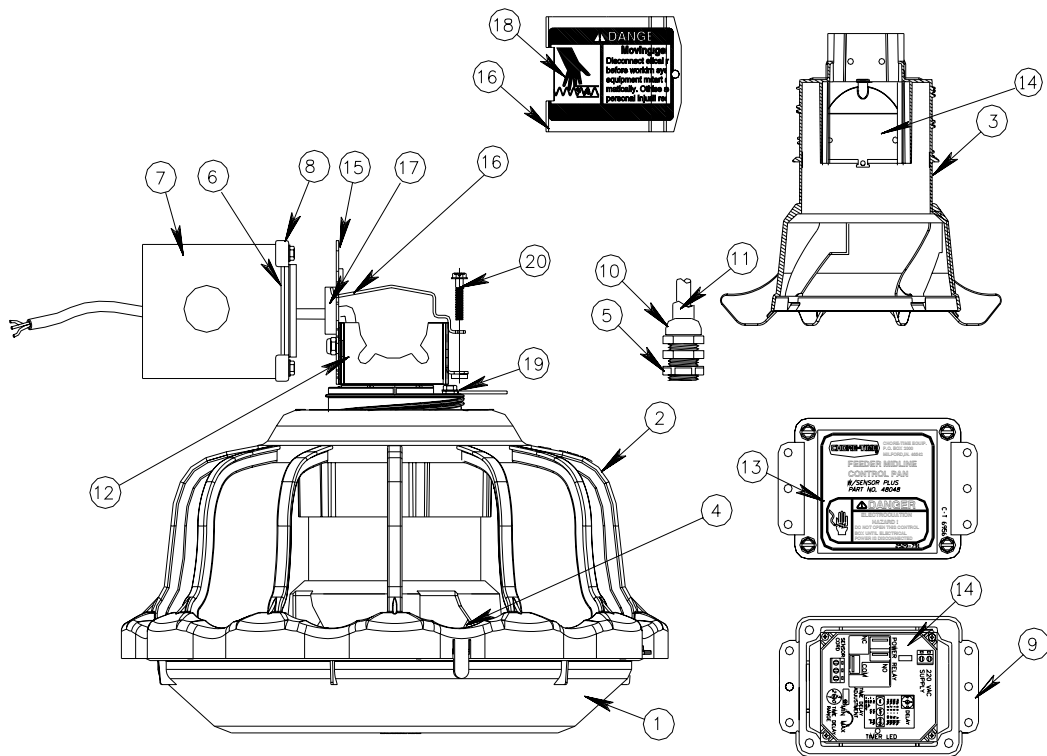
1749-18 08/04

Item	Description	Rev. 12 Feeder end control Part # 48047	Rev. 8 Feeder end control part #48509
1	SUPPORT BRACKET	48081	48081
2	FEEDER CONTROL BODY	48080	48080
3	SUPPORT CONE MACHINED	48490	48490
4	INNER CONE MACHINED	48533	48533
5	FEEDER GRILL	46837	46834
6	FEEDER PAN	46840	46840
7	SWITCH BOX GASKET	6777	6777
8	CORD ASSEMBLY	4999-100	4999-100
9	TUBE WELDMENT	48082	48082
10	GENERAL PURPOSE BOX	42627-3	42627-3
11	TERMINAL BOX MOUNT COVER	6956	6956
12	LIQUID TIGHT CONNECTOR	24685	24685
13	END CONTROL DECAL	2529-790	2529-808
14	SWITCH BOX COVER	6776	6776
15	LIQUID TIGHT CONNECTOR	26980	26980
16	CONDUIT NUT PLASTIC	43662	43662
17	LIQUID TIGHT CONNECTOR	23779	23779
18	PAN SENSOR	48200	48200
19	DANGER DECAL ROTATION	2527-9	2527-9
20	INSULATOR COVER	48491	48491
21	END CONTROL BOTTOM COVER	48086	48086
22	LOCK ARM CONTROL	48525	48525
23	DRIVE TUBE WELDMENT	44794	44794
24	SPRING LOCK	48511	48511
25	ANCHOR PLATE	4188	4188
26	ANTI ROOST GUARD	2798	2798
27	1/2" FLEX CONDUIT PLASTIC	26982-1	26982-1
28	1/2" LIQUID TIGHT CONNECTOR	23810	23810
29	HARDWARE KIT FOR END CONTROL	43233	43233
30	1/4-20 x 1.75 SOCKET HEAD	5083-8	5083-8
31	DRIVE BLOCK	4642	4642
32			
33			
34			
35			
36			
37			
--			
--			

Sensor Plus Mid Line Control

Part No. 48048 Rev. 12 MID LINE CONTROL

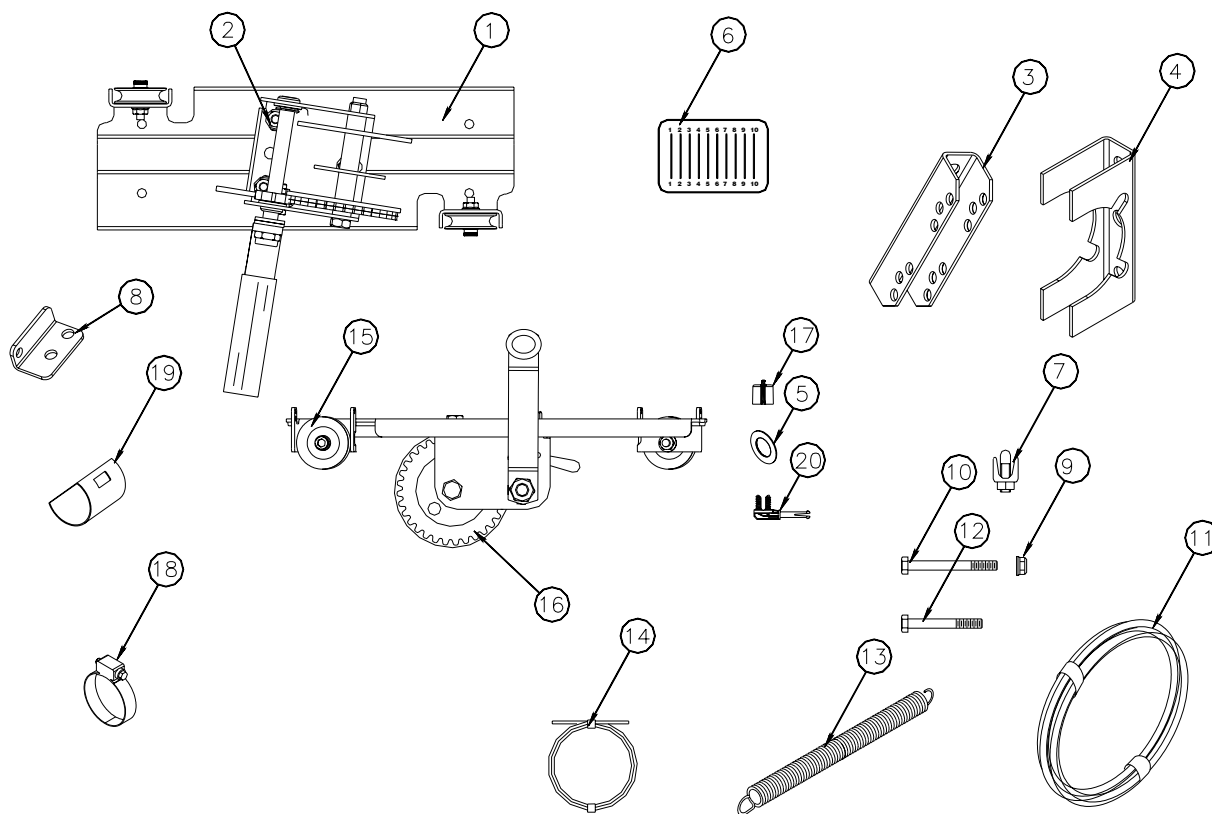
Part No. 48510 Rev. 8 MID LINE CONTROL



1749-20 08/04

Item	Description	Rev. 12 Mid line control Part no. 48048	Rev. 8 Mid line control Part # 48510
1	FEEDER PAN	46840	46840
2	FEEDER GRILL	46837	46834
3	SUPPORT CONE MACHINED	48492	48492
4	INNER CONE MACHINED	48533	48533
5	NYLON LOCK NUT CONDUIT	43662	43662
6	SWITCH BOX GASKET	6777	6777
7	GENERAL PURP BOX	42627-1	42627-1
8	MOUNTING COVER MACHINED	48503	48503
9	MOUNTING COVER	6956	6956
10	LIQUID TIGHT CONNECTOR	24685	24685
11	CORD ASSEMBLY	4999-103	41999-103
12	MID LINE CONTROL BODY	48087	48087
13	MID LINE CONTROL DECAL	2529-791	2529-809
14	PAN SENSOR	48200	48200
15	REAR PANEL	48088	48088
16	MID LINE CONTROL COVER	48089	48089
17	GASKET	6968-1	6968-1
18	DANGER DECAL ROTATION	2527-9	2527-9
19	CONTROL LOCK ARM	48525	48525
20	#10-24 X 1.25 SCREW	4416-9	4416-9
21*			
22			
23			
24			
25			
26			
27			

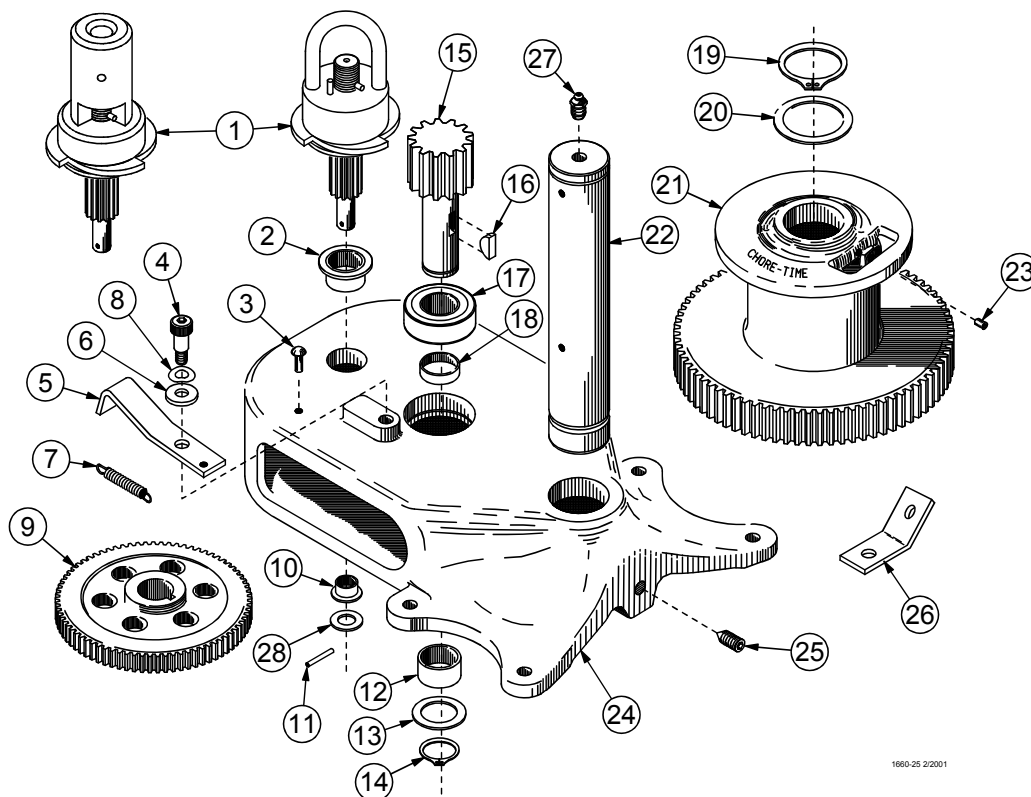
Actuator system



Item	Part No.	Description
1	48531	Winch base assembly
2	8490	5/16" Serrated nut
3	48049	Spring mount bracket
4	48487	Clamp half
5	2499	.518 X .875 X .048 Washer
6	2527-67	Feed level decal
7	14898	1/8" Cable clamp
8	48486	pivot bracket
9	46298	1/4-20 Flange nut serrated
10	4404-24	1/4-20 X 3.00 Hex bolt
11	48530	.125 Dia. wire (500' roll)
12	4404-4	1/4-20 X 2.50 Hex bolt
13	24302	.62 X 11" Spring
14	48575	7 X 19 Galv. cable
15	2452	1.75 Dia sheave
16	43391	Split drum winch
17	40788	Split Bolt Cap
18	*3527	Adjustment clamp
19	*9126	Tube closure
20	48767	Pivot Post

* These parts may be ordered as a kit under Part No. 14585.

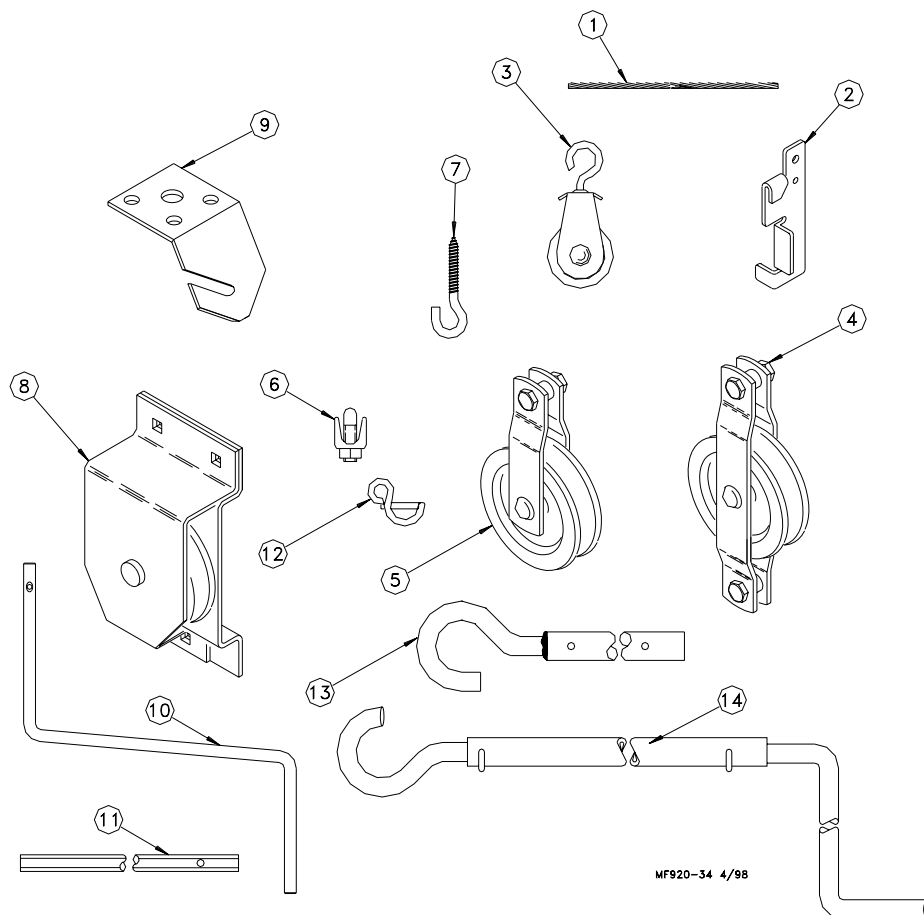
2883 Power Winch



Item	Description	Part No.
1	Input Shaft Assembly Manual Electric	42665 42666
2	Flange Bushing	2967-2
3	Drive Stud	4128-1
4	Shoulder Bolt	4022-2
5	Pawl	6672
6	5/16" Flat Washer	2255-44
7	Spring	1543
8	Spring Washer	4023
9	Intermediate Gear	2890
10	Flange Bushing	3252
11	Spirol Pin	2960-3
12	Bushing	2967-4
13	Washer	2955-1
14	Retaining Ring	2958-1

Item	Description	Part No.
15	Drive Pinion	2962
16	Woodruff Key	2959
17	1" Bearing	4937
18	Spacer	4936
19	Retaining Ring	3556
20	Washer	2955-2
21	Winch Drum	3723
22	Drum Shaft	3637
23	Setscrew	603
24	Winch Frame	3719
25	Setscrew	3727
26	Cable Hook	2985
27	Grease Zerk	24499
28	Washer	2499

Miscellaneous Suspension Components



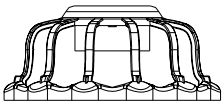
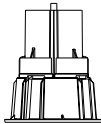
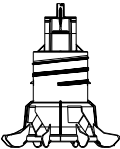

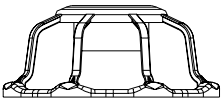
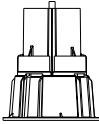
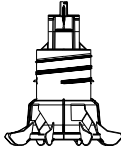
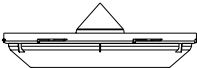
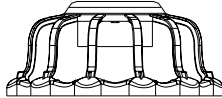
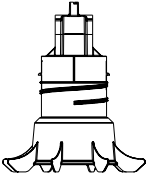
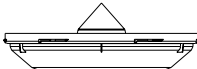
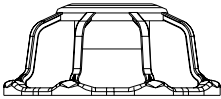
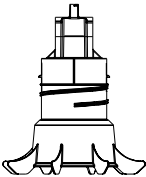
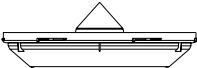


Item	Description	Part No.
1	3/32" Cable 3/16" Cable 1/8" Cable	4973 1213 27975
2	Cable Lock	14337
3	Pulley with Swivel	3004
4	Double Eye Pulley	2501
5	Pulley	2500
6	3/16" Cable Clamp 1/8" Cable Clamp	732 14898
7	Standard Screw Hook Large Screw Hook	1214 2041

Item	Description	Part No.
8	Pulley Assembly	28429
9	Suspension Bracket Suspension Bracket with Screws	28550 28832
10	Handle Shank	3148
11	Drill Adapter Shaft	3151
12	Winch Handle Pin	3761
13	Winch Drive Tube (4') Winch Drive Tube (8') Winch Drive Tube (2')	2884-1 2884-2 2884-4
14	Telescoping drive handle 5 to 8 foot	47638

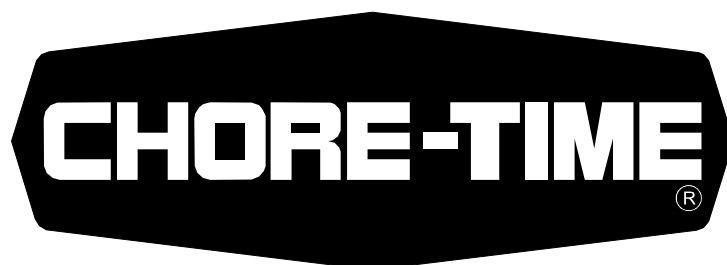
Item 10 and Item 12 may be ordered as a kit under part no. 2885.

Item 11 and Item 12 may be ordered as a kit under part no. 2886.

Feeder Components

REVOLUTION FEEDER COMPONENTS	
<div><div>REVOLUTION 12 FEEDER With VariBrood 47678</div><div><div>46837</div><div><div></div>48547</div><div>46840</div></div></div>	<div><div>REVOLUTION 8 FEEDER With VariBrood 47676</div><div><div>46834</div><div><div></div>48547</div><div>46840</div></div></div>
<div><div>REVOLUTION 12 FEEDER NON BROOD 47677</div><div><div>46837</div><div><div>46835</div></div><div>46840</div></div></div>	<div><div>REVOLUTION 8 FEEDER NON BROOD 47675</div><div><div>46834</div><div><div>46835</div></div><div>46840</div></div></div>
<div><div>LOCK POST & CAP 40788 2499 48767</div><div></div></div>	<div><div>OPTIONAL: REPAIR CAP 47632</div><div>47632</div></div>

1749-22 08/04



Made to work.

Built to last.SM

Contact your nearby Chore-Time distributor or representative for additional parts and information.

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