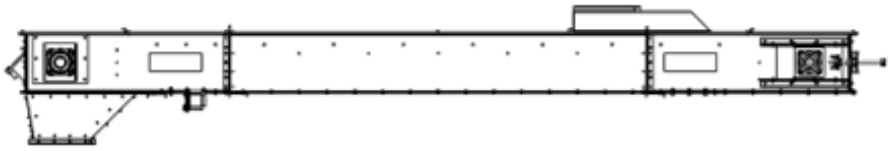
CHAIN CONVEYOR



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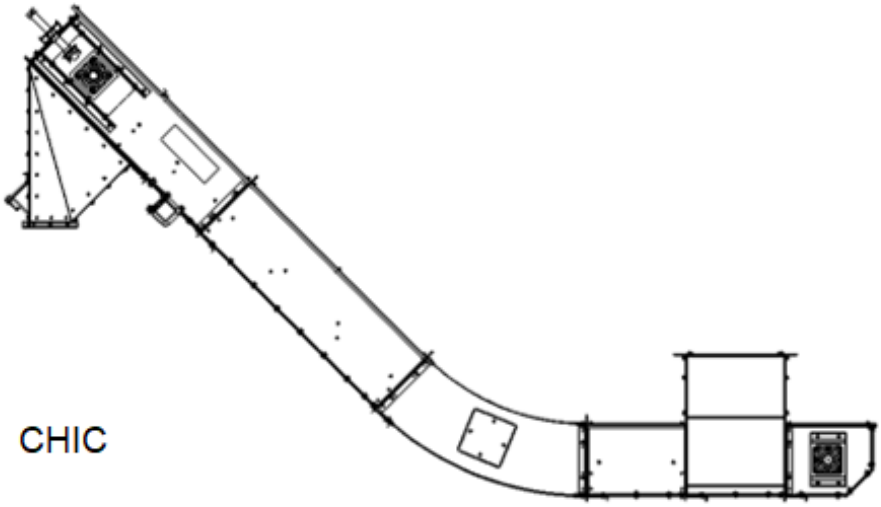

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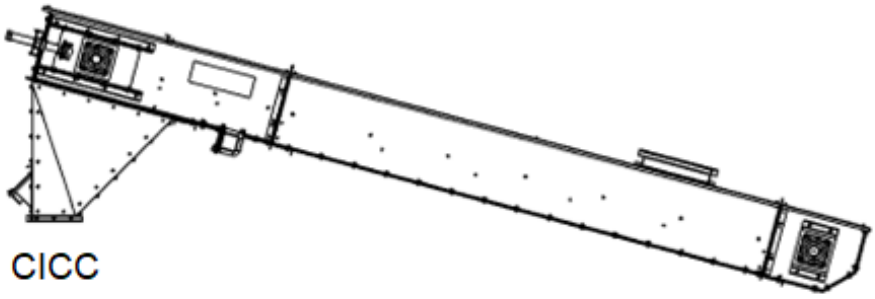

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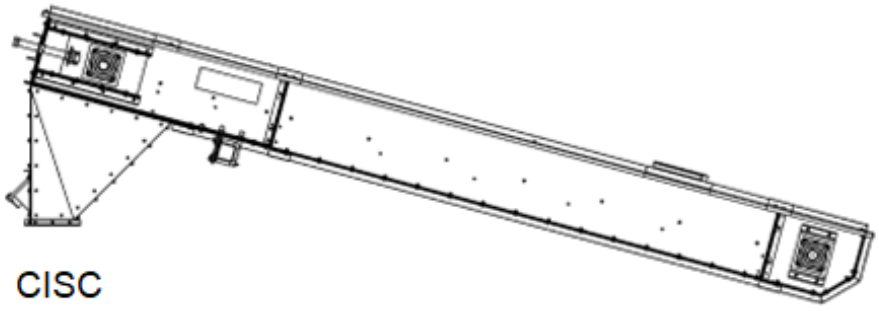


CISC

INSTALLATION AND OPERATION MANUAL

P/N 473801

CHIEF

Trusted. Tested. True

Chief Industries, Inc. – Agri/Industrial Division

Table of Contents

Manual Revisions

- 05-28-2014
  - Slack Chain
- 08-20-2014
  - Updated warranty information
- 01-01-2016
  - General formatting update
- 09-28-2023
  - General formatting updates.
  - Updated to include new design standards and correct existing information.
  - Removed redundant information on drive assembly.

4400 East 39th Street – PO Box 848
Kearney, NE 68847
Phone 800.359.760

For more information about Chief Industries, Inc. and additional products or services please visit our website.

wwx.agri.Chiefind.com

STANDARD LIMITED WARRANTY

Material Handling Product

1. **Definitions**. The following terms, when they appear in the body of this Standard Limited Warranty for Material Handling Products in initial capital letters shall have the meaning set forth below:
   A. Accepted Purchase Order shall mean the Purchase Order identified below.
   B. Chief shall mean Chief Agri/Industrial, a division of Chief Industries, Inc.
   C. Original Owner shall mean the original owner identified below.
   D. Product shall mean the Agri/Industrial Equipment as described in the Accepted Purchase Order.
   E. Reseller shall mean the authorized Chief Agri/Industrial Equipment dealer identified below.

2. **Limited Product Warranty**. Upon and subject to the terms and conditions set forth below, Chief hereby warrants to the Reseller, and, if different, the Original Owner as follows:
   A. All new Products delivered to the Reseller or the Original Owner by Chief pursuant to the Accepted Purchase Order will, when delivered, conform to the specifications set forth in the Accepted Purchase Order;
   B. All new Products delivered pursuant to the Accepted Purchase Order will, in normal use and service, be free from defects in materials or workmanship; and
   C. Upon delivery, Chief will convey good and marketable title to the Products, free and clear of any liens or encumbrances except for, where applicable, a purchase money security interest in favor of Chief.

3. **Duration of Warranty and Notice Requirements**. Subject to the **Exceptions, Exclusions and Limitations** set forth below, the warranties set forth in Section 2 above shall apply to all covered non-conforming conditions that are discovered within the first twenty-four (24) months following delivery of the Product to the carrier designated by the Reseller and/or the Original Owner at Chief's manufacturing facility in Kearney, Nebraska (the "Warranty Period") and are reported to the Chief as provided in Section 4 below within thirty (30) days following discovery (a "Notice Period").

4. **Notice Procedure**. In order to make a valid warranty claim, the Reseller and/or the Original Owner must provide Chief with a written notice of any nonconforming condition discovered during the Warranty Period within the applicable Notice Period specified in Section 3 above. Said notice must be in writing; be addressed to Chief Industries, Inc., Agri/Industrial Division, Customer Service Department, P.O. Box 848, Kearney, NE 68848; and contain the following information: (a) the Customer's name and address; (b) the Reseller's name and address; (c) the make and model of the Product in question; (d) the current location of the Product; (e) a brief description of the problem with respect to which warranty coverage is claimed; and (f) the date on which the Product was purchased.

5. **Exceptions and Exclusions**. Anything herein to the contrary notwithstanding, the warranties set forth in Section 2 above do **not** cover any of the following, each of which are hereby expressly excluded:
   A. Defects that are not discovered during the applicable Warranty Period;
   B. Defects that are not reported to the Chief Agri/Industrial Division Customer Service Department in conformity with the notice procedure set forth in Section 4 above within the applicable Notice Period specified in Section 3;
   C. Any used or pre-owned Products;
   D. Any Chief manufactured parts that are not furnished as a part of the Accepted Purchase

Order;

E. Any fixtures, equipment, materials, supplies, accessories, parts or components that have been furnished by Chief but are manufactured by a third party;
F. Any Products which have been removed from the location at which they were originally installed;
G. Any defect, loss, damage, cost or expense incurred by the Reseller or the Original Owner to the extent the same arise out of, relate to or result, in whole or in part, from any one or more of the following:
   (i) Usual and customary deterioration, wear or tear resulting from normal use, service and exposure;
   (ii) Theft, vandalism, accident, war, insurrection, fire or other casualty;
   (iii) Any damage, shortages or missing parts which result during shipping or are otherwise caused by the Reseller, the Original Owner and/or any third party;
   (iv) Exposure to marine environments, including frequent or sustained salt or fresh water spray;
   (v) Exposure to corrosive, chemical, ash, smoke, fumes, or the like generated or released either within or outside of the structure on which the Product is installed, regardless of whether or not such facilities are owned or operated by the Reseller, the Original Owner or an unrelated third party;
   (vi) Exposure to or contact with animals, animal waste and/or decomposition;
   (vii) The effect or influence the Product may have on surrounding structures, including, without limitation, any loss, damage or expense caused by drifting snow;
   (viii) Any Product or portion thereof that has been altered, modified or repaired by the Reseller, the Original Owner or any third party without Chief's prior written consent;
   (ix) Any Product or portion thereof that has been attached to any adjacent structure without Chief's prior written approval;
   (x) Any Product to which any fixtures, equipment, accessories, materials, parts or components which were not provided as a part of the original Accepted Purchase Order have been attached without Chief's prior written approval;
   (xi) The failure on the part of the Reseller, the Original Owner or its or their third party contractors to satisfy the requirements of all applicable statutes, laws, ordinances rules, regulations and codes, (including zoning laws and/or building codes);
   (xii) The use of the Product for any purpose other than the purpose for which it was designed; and/or
   (xiii) The failure of the Reseller, the Original Owner and/or any third party to:
      (a) properly handle, transport and/or store the Product or any component part thereof;
      (b) properly select and prepare a site that is adequate for the installation and/or operation of the Product or any component part thereof;
      (c) properly design and construct a foundation that is adequate for the installation and/or operation of the Product or any component part thereof;
      (d) properly set up, erect, construct or install the Product and/or any component part thereof; and/or
      (e) properly operate, use, service and/or maintain the Product and each component part thereof.

6. **Resolution of Warranty Claims**. In the event any nonconforming condition is discovered within the Warranty Period and Chief is notified of a warranty claim as required by Section 4 prior to the end of the applicable Notice Period set forth in Section 3 above, Chief shall, with the full cooperation of the Reseller and the Original Owner, immediately undertake an investigation of such claim. To the extent Chief shall determine, in its reasonable discretion, that the warranty claim is covered by the foregoing Limited Product Warranty, the following shall apply:

A. Warranty Claims With Respect to Covered Non-Conforming Conditions Discovered Within the First Three Hundred Sixty Five (365) Days and Reported to Chief Within Thirty (30) Days of Discovery. In the case of a warranty claim which relates to a covered non-conforming condition that is discovered during the first three hundred sixty five (365) days of the Warranty Period and is reported to Chief as required by Section 4 within thirty (30) days of discovery as required by Section 3, Chief will, as Chief's sole and exclusive obligation to the Reseller and the Original Owner, and as their sole and exclusive remedy, work in cooperation with the Reseller and the Original Owner to correct such non-conforming condition, and in connection therewith, Chief will ship any required replacement parts to the "ship to address" set forth in the Accepted Purchase Order FOB Chief's facilities in Kearney, Nebraska, and will either provide the labor or reimburse the Reseller or the Original Owner, as may be appropriate in the circumstances, for any out of pocket expense the Original Owner may reasonably and necessarily incur for the labor that is required to correct such non-conforming condition, provided that if work is to be performed by the Reseller or a third party contractor, Chief may require at least two competitive bids to perform the labor required to repair or correct the defect and reserves the right to reject all bids and obtain additional bids. Upon acceptance of a bid by Chief, Chief will authorize the necessary repairs.

B. All Other Warranty Claims. Except as is otherwise provided in subsection 6A above, in the case of all other warranty claims which relate to covered non-conforming conditions that are discovered during the Warranty Period and are reported to Chief as required by Section 4 within thirty (30) days following discovery, Chief will, as Chief's sole and exclusive obligation to the Reseller and the Original Owner, and as the Reseller's and the Original Owner's sole and exclusive remedy, ship any required replacement parts to the Original Owner at the "ship to address" specified in the Accepted Purchase Order FOB Chief's facilities in Kearney, Nebraska; and **in such event, Chief shall have no responsibility or liability to either the Reseller or the Original Owner for the cost of any labor required to repair or correct the defect.**

7. **Warranty Not Transferable**. This Warranty applies only to the Reseller and the Original Owner and is **not transferable**. As such, this Warranty does **not** cover any Product that is sold or otherwise transferred to any third party following its delivery to the Original Owner.

8. **Limitation on Warranties, Liabilities and Damages**. The Reseller and the Original Owner expressly agree that the allocation of the risk, liability, loss, damage, cost and expense arising from any Product that does not conform to the limited warranty given in Section 2 above are fair and reasonable and acknowledge that such allocation was expressly negotiated by the parties and was reflected in the Purchase Price of the Product. Accordingly the Reseller and the Original Owner expressly agree as follows:

   A. **Disclaimer of Implied Warranties. EXCEPT AS IS OTHERWISE EXPRESSLY SET FORTH HEREIN, CHIEF MAKES NO OTHER REPRESENTATIONS OR WARRANTIES OF ANY KIND WHATSOEVER, WHETHER EXPRESS OR IMPLIED, BY OPERATION OF LAW, COURSE OF DEALING OR OTHERWISE WITH RESPECT TO THE PRODUCT, ANY COMPONENT PART THEREOF OR ANY OTHER GOODS OR SERVICES THAT CHIEF MANUFACTURES, FABRICATES, PRODUCES, SELLS OR PROVIDES TO THE DEALER OR THE ORIGINAL OWNER PURSUANT TO THE TERMS OF ANY ACCEPTED PURCHASE ORDER, INCLUDING WITHOUT LIMITATION ANY REPRESENTATION OR WARRANTY WITH RESPECT TO DESIGN, CONDITION, MERCHANTABILITY OR FITNESS OF THE PRODUCT OR ANY OTHER GOODS OR SERVICES FOR ANY PARTICULAR PURPOSE OR USE.**

   B. **Limitation on Liability. EXCEPT AS IS OTHERWISE EXPRESSLY SET FORTH**

IN SECTION 6 ABOVE, CHIEF'S LIABILITY TO THE DEALER AND/OR THE ORIGINALOWNER WITH RESPECT TO ANY DEFECTS IN ANY PRODUCTS OR FOR ANY OTHER GOODS OR SERVICES WHICH DO NOT CONFORM TO THE WARRANTIES SET FORTH ABOVE SHALL NOT, IN ANY EVENT, EXCEED THE ACTUAL COST OF SUCH NON-CONFORMING PRODUCT, GOODS OR SERVICES AS DETERMINED PURSUANT TO THE ACCEPTED PURCHASE ORDER; AND

C. **Limitation on the Nature of Damages. EXCEPT AS EXPRESSLY PROVIDED IN SECTION 6 ABOVE, CHIEF SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO THE DEALER, THE ORIGINAL OWNER OR ANY THIRD PARTY FOR ATTORNEY FEES COURT COSTS OR ANY OTHER SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, LIQUIDATED OR PUNITIVE DAMAGES OF ANY NAME, NATURE OR DESCRIPTION AS A RESULT OF THE FAILURE OF ANY PRODUCT OR ANY OTHER GOODS OR SERVICES PURCHASED BY THE DEALER OR THE ORIGINAL OWNER FROM CHIEF PURSUANT TO THE ACCEPTED PURCHASE ORDER TO CONFORM TO THE LIMITED WARRANTIES SET FORTH IN SECTION 2 ABOVE.**

8. **Applicable Law**. This Limited Product Warranty has been issued, accepted and entered into by the Reseller, the Original Owner and Chief in the State of Nebraska and shall be governed by, and construed in accordance with, the internal laws of the State of Nebraska. Any legal action or proceeding with respect to any goods or services furnished to the Original Owner by Chief in connection herewith, or any document related hereto shall be brought only in the district courts of Nebraska, or the United States District Court for the District of Nebraska, and, by execution and delivery of this Limited Product Warranty, the undersigned Original Owner hereby accept for themselves and with respect to their property, generally and unconditionally, the jurisdiction of the aforesaid courts. Further, the undersigned Original Owner hereby irrevocably waives any objection, including, without limitation, any forum non conveniens, which it may now or hereafter have to the bringing of such action or proceeding in such respective jurisdictions.

ACKNOWLEDGMENT OF RECEIPT

By its signature hereto, the undersigned Reseller represents and warrants to Chief that the Reseller has provided a true, correct and complete copy of this Standard Limited Warranty to the Original Owner at the time the product was purchased.

Reseller Name and Address: _____

_____

_____

Original Owner Name and Address: _____

_____

_____

Accepted Purchase Order No. _____

Original Jobsite Address: _____

_____

_____

RESELLER:

By: _____
Date

_____
Print name and title

4831-5139-8433, v. 1

Warning

Water Sensitive Materials - Read this notice carefully.

Items must be inspected, and the carrier advised immediately if damage is noted. White rust is a corrosion attack of the zinc coating resulting from the presence of water. Anywhere rust is found will result in a reduction of the life of the galvanized steel.

If water has entered a bundle or if condensation has formed between items, the bundle must be opened, the items separated and all surfaces dried.

If items are to be installed within 10 days:

Store bundled items off the ground high enough to allow air circulation beneath bundle and to prevent water from entering. Store one end at least 8" (20.32cm) higher than the opposite end. Support long bundles in the center. Prevent rain from entering the bundle by covering it with a tarpaulin, making provision for air circulation between the draped edges and the ground.

Do not wrap in plastic.

If items are not to be installed within 10 days:

Provide inside dry storage. Storage beyond 6 months is not recommended. If white rust is apparent upon receipt of shipment, notify Chief immediately. Damage to items resulting from improper storage is the responsibility of the receiver.

Before You Begin

Before starting the installation of the chain conveyor, take time to thoroughly study the construction methods in this manual, this will save you time and money.

Chief makes no warranty concerning components, accessories or equipment not manufactured by Chief.

When using a cutting torch or welding galvanized material, the possibility of developing toxic fumes will exist. Provide adequate ventilation and respiratory protection when using this type of equipment during installation.

Introduction

Thank you for purchasing a Chief chain conveyor. Proper installation and operation will ensure the best overall experience with your equipment.

This proprietary information is loaned with the expressed agreement that the drawings and information herein contained are the property of Chief Industries, Inc. and will not be reproduced, copied, or otherwise disposed of, directly or indirectly, and will not be used in whole or in part to assist in making or to furnish any information for the making of drawings, prints or other reproduction hereof, or for the making of additional products or equipment except upon written permission of Chief Industries, Inc. first obtained and specific as to each case. The acceptance of this material will be construed as an acceptance of the foregoing agreement.

The technical data contained herein is the most recent available at the time of publication and is subject to modification without notice. Chief Industries, Inc. reserves the right to modify the construction and method of operation of their products at any time without any obligation on their part to modify any equipment previously sold and delivered.

Important Note: If you are unable to remedy any service problem after thoroughly studying this manual, contact the dealer from whom you purchased the unit. Your dealer is your first line of service. The following information is required for service:

1. Chain conveyor model and serial number: _____
2. Sprocket size and number of teeth: _____
3. Overall length: _____
4. Motor RPM and HP: _____
5. Type of grain and capacity: _____
6. Dealer purchased from: _____
7. Dealer address and phone number: _____
8. Date purchased: _____
9. Service contractor:
    a. Name: _____
    b. Address: _____
    c. Phone: _____

Conveyor Description

The model nomenclature distinguishes the application of the chain conveyor. The information includes a designation of the applicable type, size, rated capacity, length(s), etc. The definition of the model number nomenclature is as follows:

Example: CHCC17X17 10000BPH 050'IO W/SHOE LH
(a) (b) (c) (d) (e) (f) (g)

(a) **Conveyor Type**
CHCC: Chief Horizontal Chain Conveyor
CHIC: Chief Horizontal Incline Conveyor
CICC: Chief Incline Chain Conveyor
CHSC: Chief Horizontal Self-Cleaning Conveyor
CISC: Chief Incline Self-Cleaning Conveyor

(b) **Nominal Conveyor Width**
09, 13, 15, 17, 21, 27, 33, 39

(c) **Nominal Conveyor Height**
09, 13, 15, 17, 21, 27, 33

(d) **Rated Capacity with Units**
BPH: Bushels per Hour
MTPH: Metric Tons per Hour
CFH: Cubic Feet per Hour
TPH: Tons per Hour

(e) **Conveyor Length**
X'IO: Inlet to Outlet
X'OAL: Overall Length
X'H: Horizontal X'I: Inclined Length

(f) **W/SHOE**
Horizontal conveyor with Shoe Section

(g) **Drive Shaft Projection**
-Viewed from Inlet looking toward Outlet
LH: Left-Handed
RH: Right-Handed

Accessory Equipment

All accessory equipment should be installed and maintained in accordance with each individual supplier's installation and operation instructions. However, if any modifications to the Chief standard design are required, contact Chief for special recommendations.

Important Note: Do not modify the chain conveyor design without Chief approval. It is the responsibility of the general contractor to verify that all equipment is properly installed, and that the equipment is compatible with the intended use. A qualified electrician should be contracted to complete all electrical wiring and servicing.

General Contractor Responsibilities

It is the responsibility of the general contractor to verify that the complete system (chain conveyor, and other accessory equipment) is constructed with quality workmanship and that all equipment is installed per the respective manufacturer's instructions.

In addition, the general contractor is responsible for the fitness of use of any system which he constructs. All accessory equipment incorporated into the system should be approved for the intended use by each respective equipment manufacturer.

Field Modifications and Installation Defects

Chief assumes no responsibility for field modifications or installation defects which result in damage or operational problems. If any field modifications are necessary which are not specifically covered by the contents of this installation manual or project specific installation drawings supplied by Chief, contact Chief for approval. Any unauthorized modification or installation defect which affects the operation of the chain conveyor will void the warranty.

Checking Shipment

For your convenience individual items will be labeled with an appropriate part number and packages labeled. Hardware, including bolts, nuts, screws and other small clips or brackets may be divided into smaller packages for ease of use and identification.

Check your shipment at the time of delivery against the packing list provided with the shipment. If any items are missing or any damaged material is evident, note such shortage or damage on the freight bill before you sign the shipment paperwork.

Claims of shortages will not be honored after 30 days from receipt of shipment. Parts that are missing or damaged are the responsibility of the delivering carrier, not the manufacturer or dealer.

It is advisable to reorder damaged or missing parts immediately so that there will be no delay in the installation. After receiving the invoice for the reordered material, file a claim with the delivering carrier immediately.

Suggested Equipment

Chief recommends the following equipment and tools needed for installation. Individual installations may vary.

- Impact wrenches and sockets
- End wrenches
- Crescent wrenches
- Vise grip pliers
- Alignment punches
- Rubber mallets
- Level
- Drill and drill bits
- Screw Guns
- Metal Saw
- Extension cords

Hardware Torque

The following table contains recommended torque values for installation.

When installing hardware, the torque values shown below must be followed. All hardware must seat tight against the corresponding conveyor component.

Bolt Diameter	Torque
5/16” (.79cm)	16 ft.-lbs.
3/8” (.95cm)	29 ft.-lbs.
7/16” (1.11cm)	46 ft.-lbs.
1/2" (1.27cm)	70 ft.-lbs.
5/8” (1.59cm)	140 ft.-lbs.
3/4" (1.91cm)	250 ft.-lbs.
7/8” (2.22cm)	400 ft.-lbs.
1” (2.54cm)	600 ft.-lbs.
1 1/8” (2.86cm)	750 ft.-lbs.
1 1/4" (3.18cm)	1100 ft.-lbs.

Chain Conveyor Safety

The following decals are installed at appropriate locations. Keep the decals clean at all times. If decals are no longer readable or missing, they must be replaced. Contact Chief Industries for replacement decals.

Located on the belt guard cover:

Located on belt guard back panel:

Located on all covers:

Pre-Installation Planning Information

Chain conveyors should be preplanned to meet the project requirements. Dealer/customer planning drawings will simplify the installation and should include the following:

- Site Layout
- Capacities
- Location and Orientation of Chain Conveyor
- Location of Accessories

The general installation of the chain conveyor components will be in the following order.

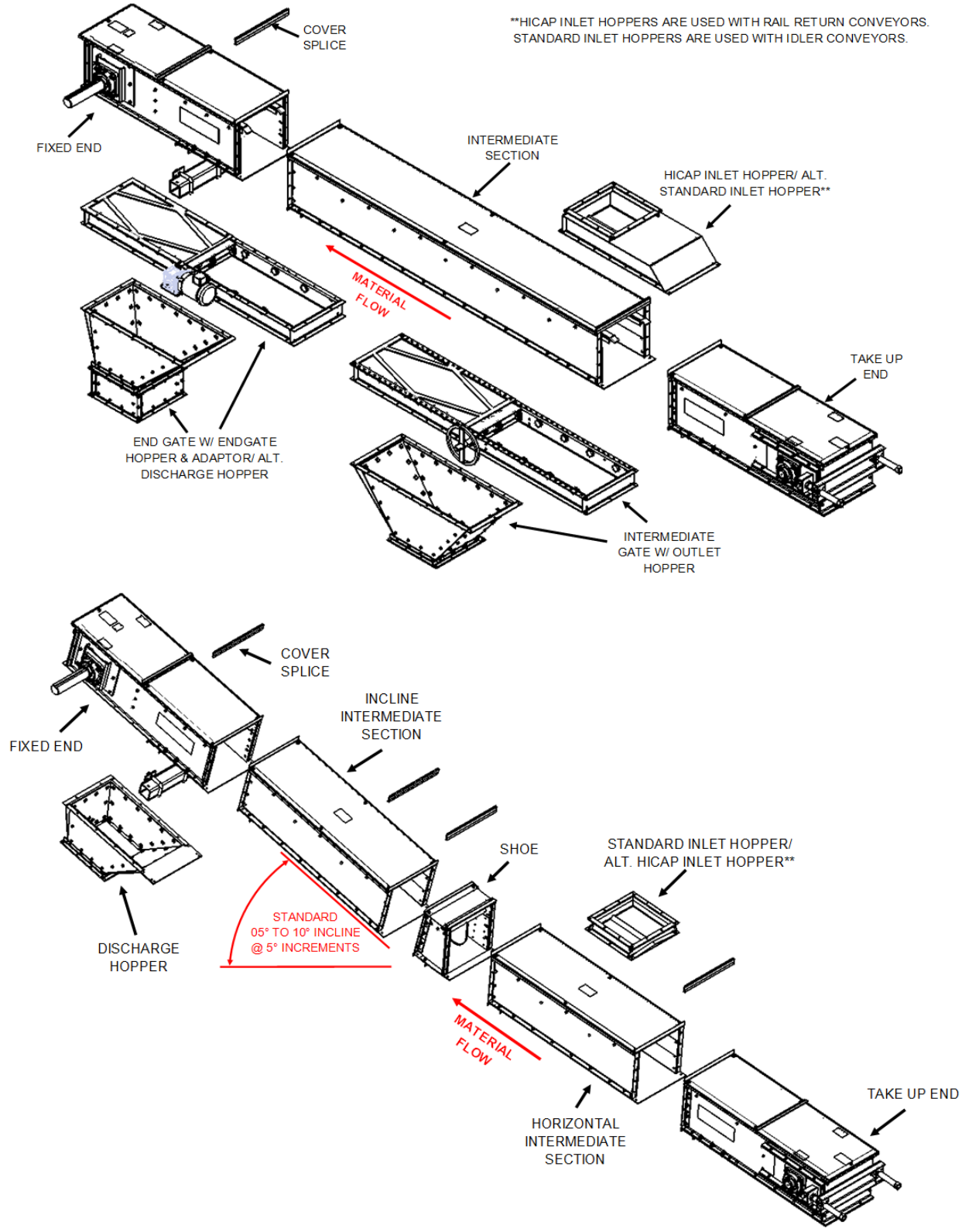
1. Install Head Section
2. Install Intermediate Sections
3. Install Tail Section

Important Note: Never weld the conveyor to the support structures. Bolting allows for realignment of sections and replacement if necessary.

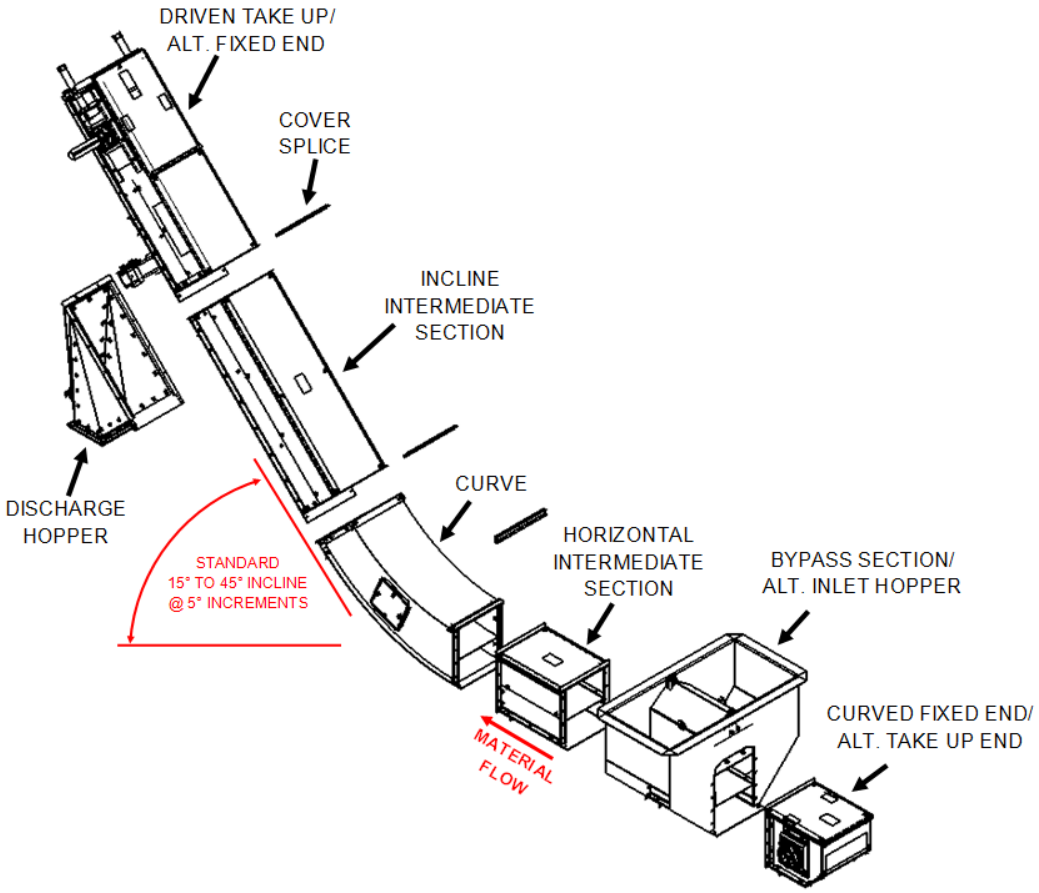
Component Identification

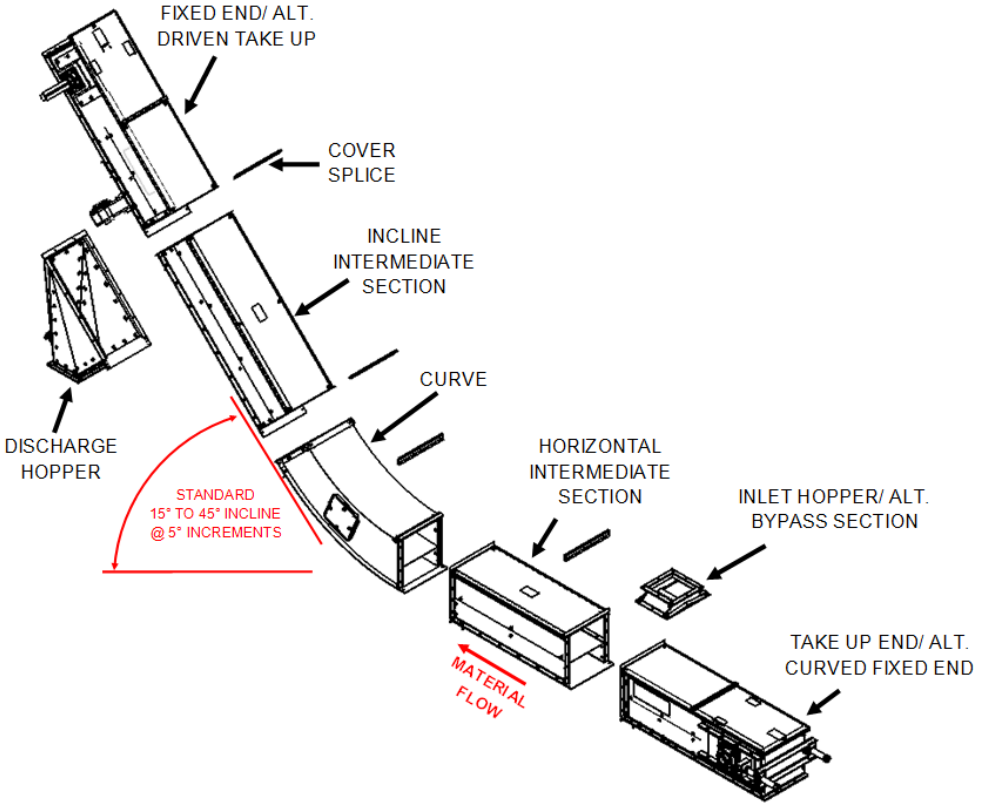
Chief does not assume any responsibility for parts damaged due to faulty or improper installation procedures.

Chief Horizontal Chain Conveyors

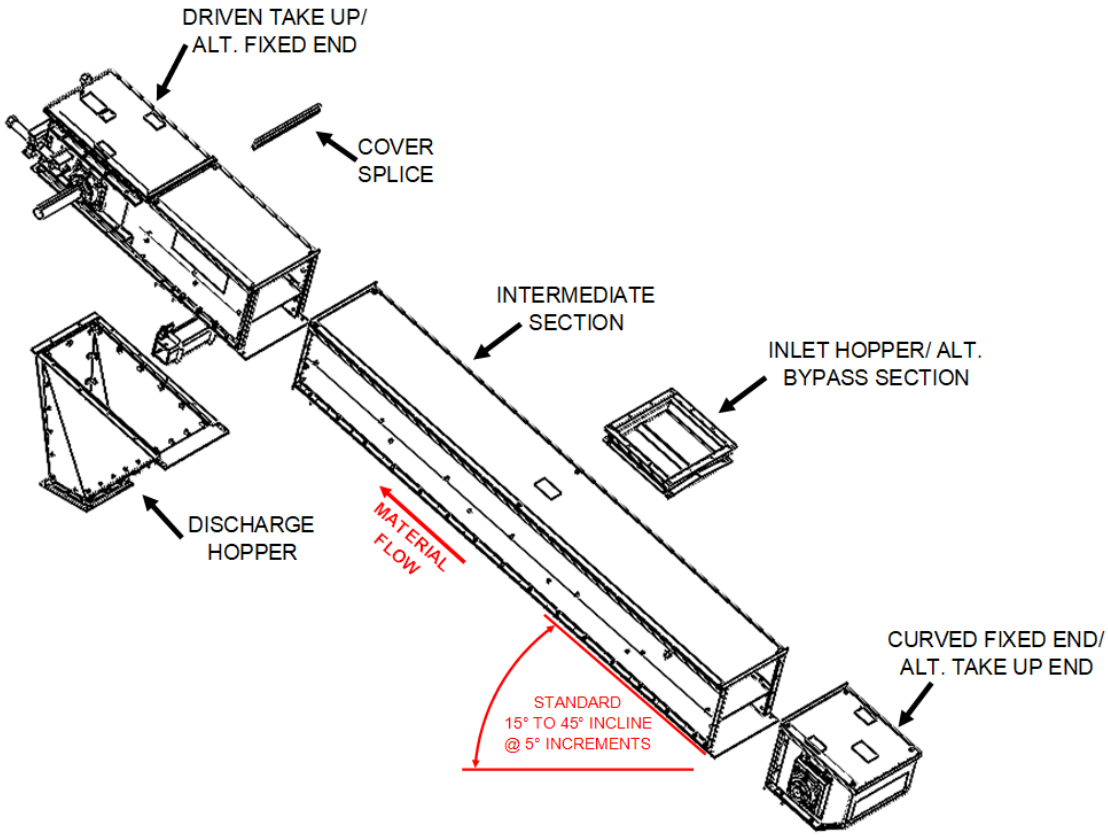


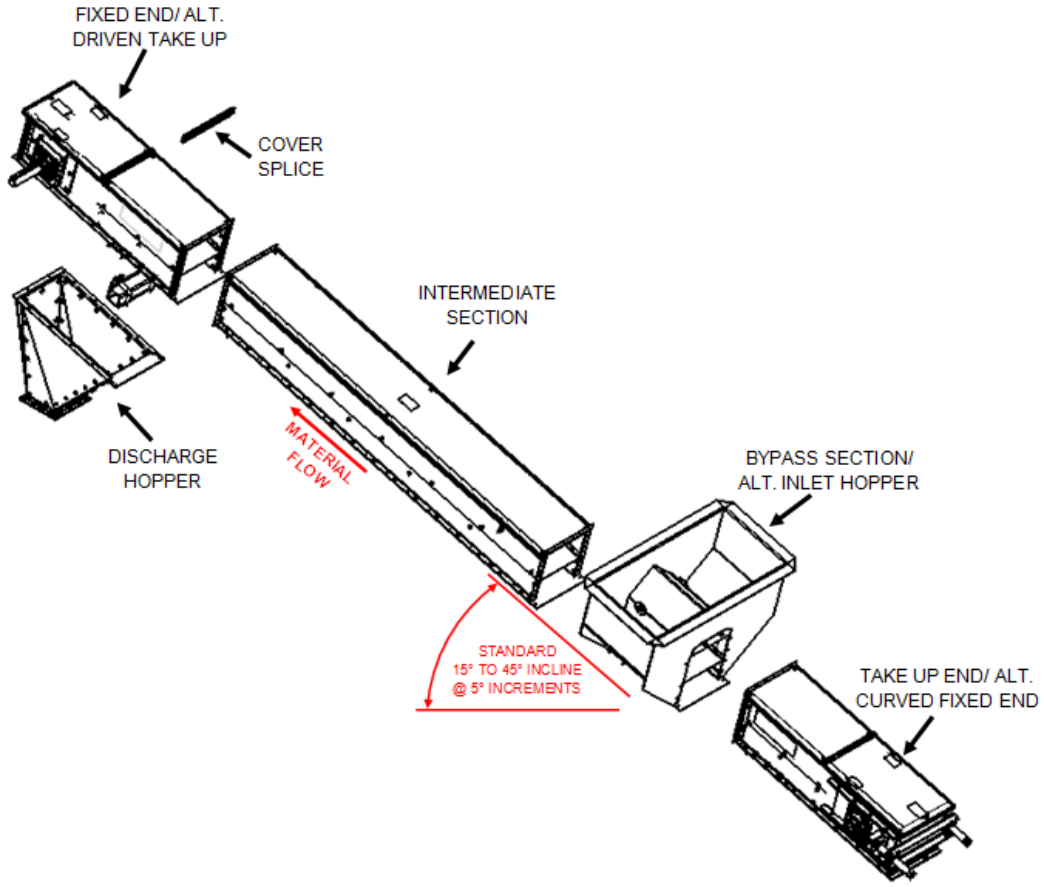
Chief Horizontal Incline Conveyors



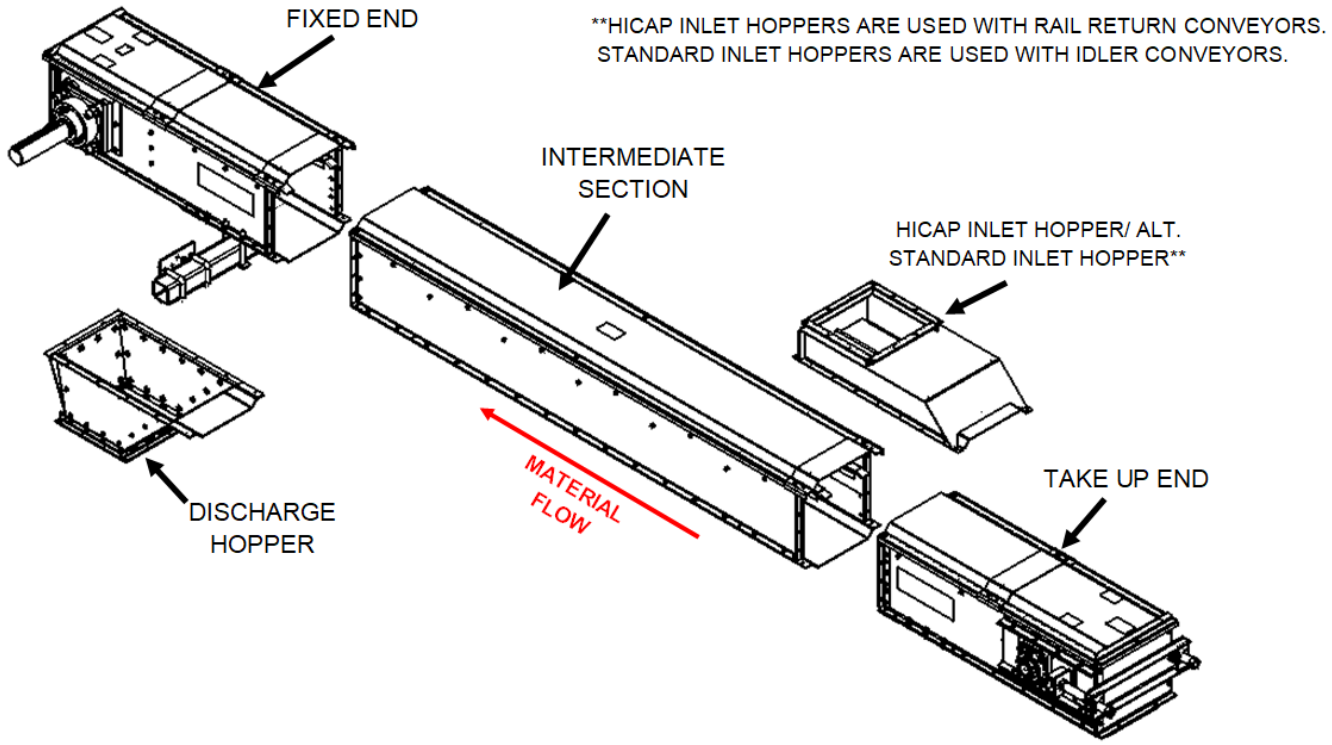


Chief Incline Chain Conveyors

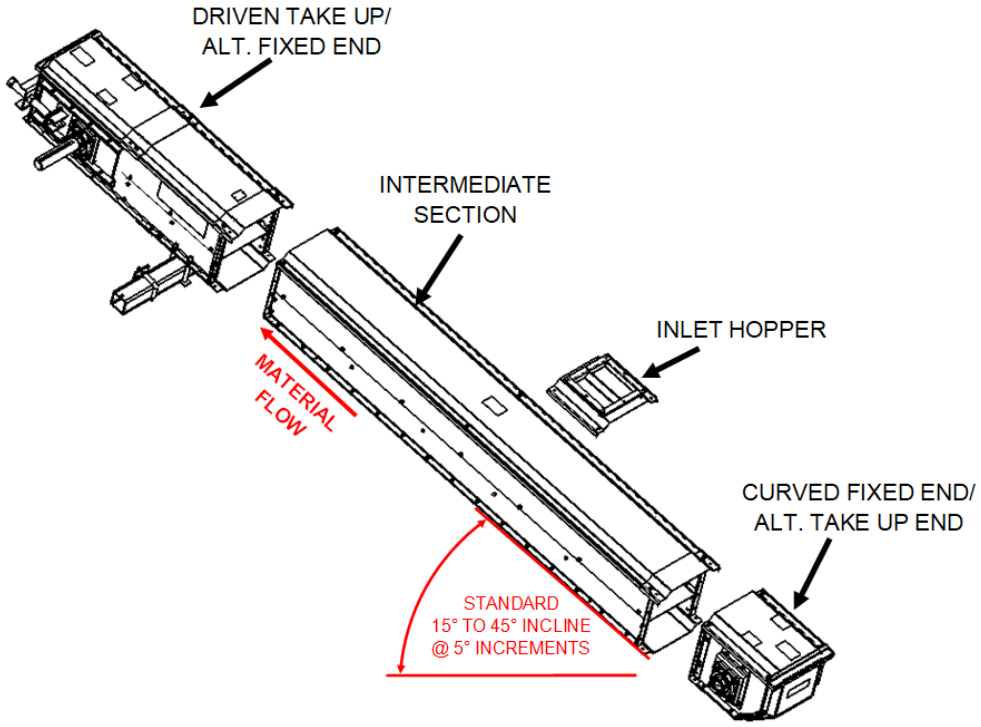




Chief Horizontal Self-Cleaning Conveyor



Chief Incline Self-Cleaning Conveyor

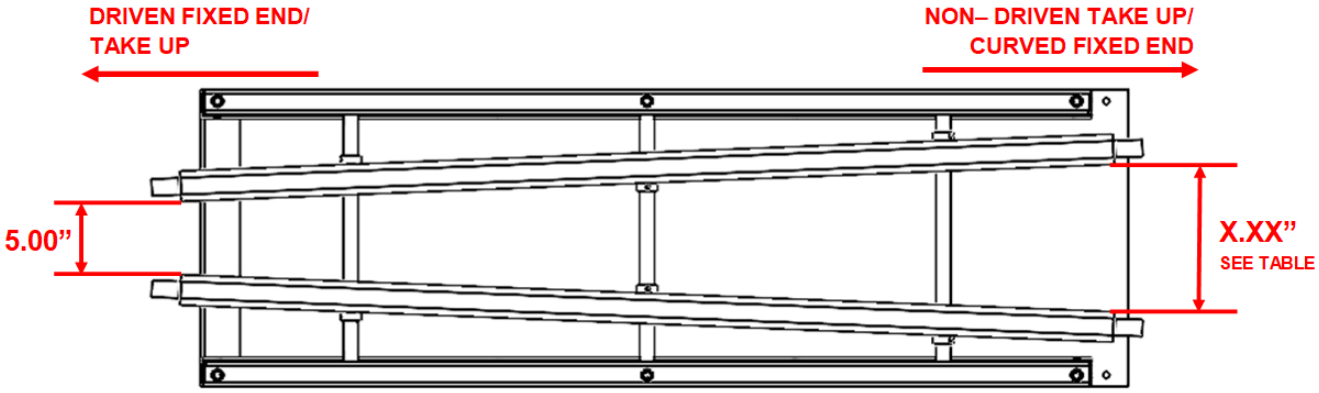


Conveyor Installation

Covers must be removed during section installation for chain installation. Store the removed covers in a protected area to minimize risk of damage. Retain factory installed cover hardware for final installation.

Assemble the conveyor sections using 3/8X1.25 hex head bolts and whiz nuts supplied in conveyor crate. Refer to unit specific customer drawing for part numbers and descriptions of sections as well as their placement in the final assembly.

Attach all sections and only hand tighten during initial installation. Verify that all surfaces at the joint locations are flush, including center panel alignment in CHIC, CICC, and CISC units.
Bolt heads are to be located on the bottom of the conveyor and at the bottom splices.

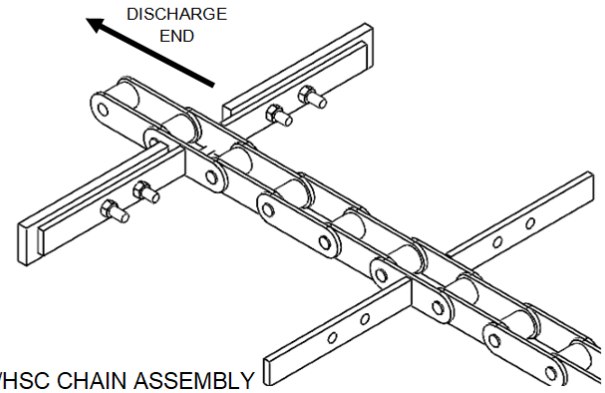


Conveyor Width	Max Distance
09-15	N/A
17	10.00”
21	13.00”
27-33	15.00”
Intrm 03’ and shorter	10.00”

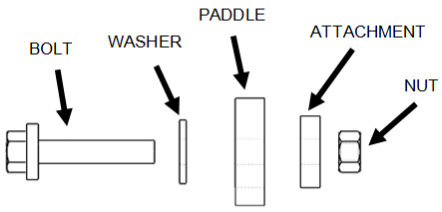
Chain Installation

Important Note: The chain may be installed at any time during the assembly process. The paddles must be attached prior to the chain installation, with paddles bolted to every attachment.

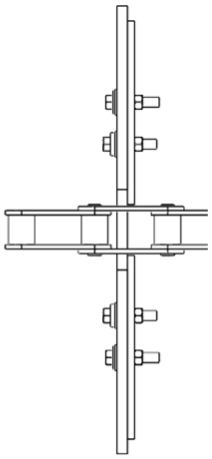
Prior to the chain installation, install the paddles and backup angles (supplied when needed) to each chain attachment using 5/16” hardware supplied in paddle bolt package inside crate.



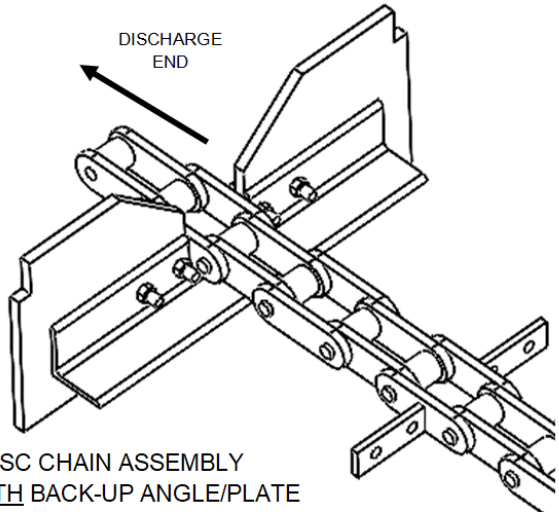
CEM/HSC CHAIN ASSEMBLY



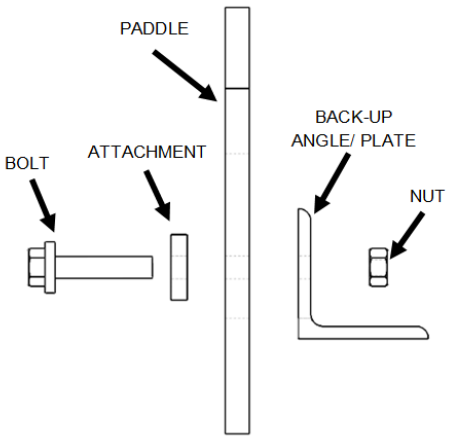
SIDE VIEW (CHAIN HIDDEN)



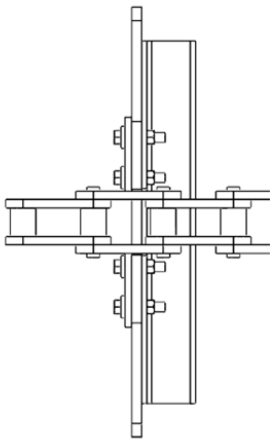
TOP VIEW



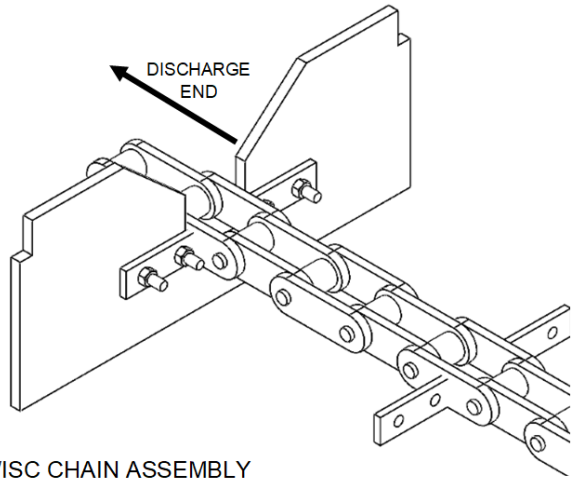
IC/ISC CHAIN ASSEMBLY
WITH BACK-UP ANGLE/PLATE



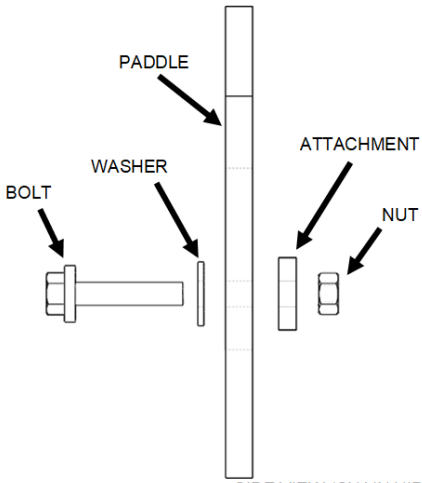
SIDE VIEW (CHAIN HIDDEN)



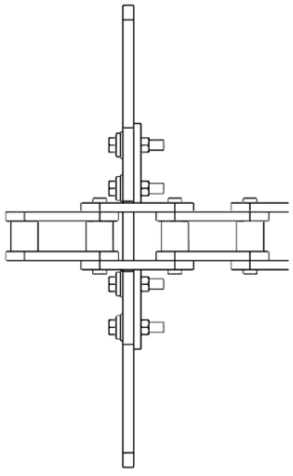
TOP VIEW



IC/ISC CHAIN ASSEMBLY
WITHOUT BACK-UP ANGLE/PLATE

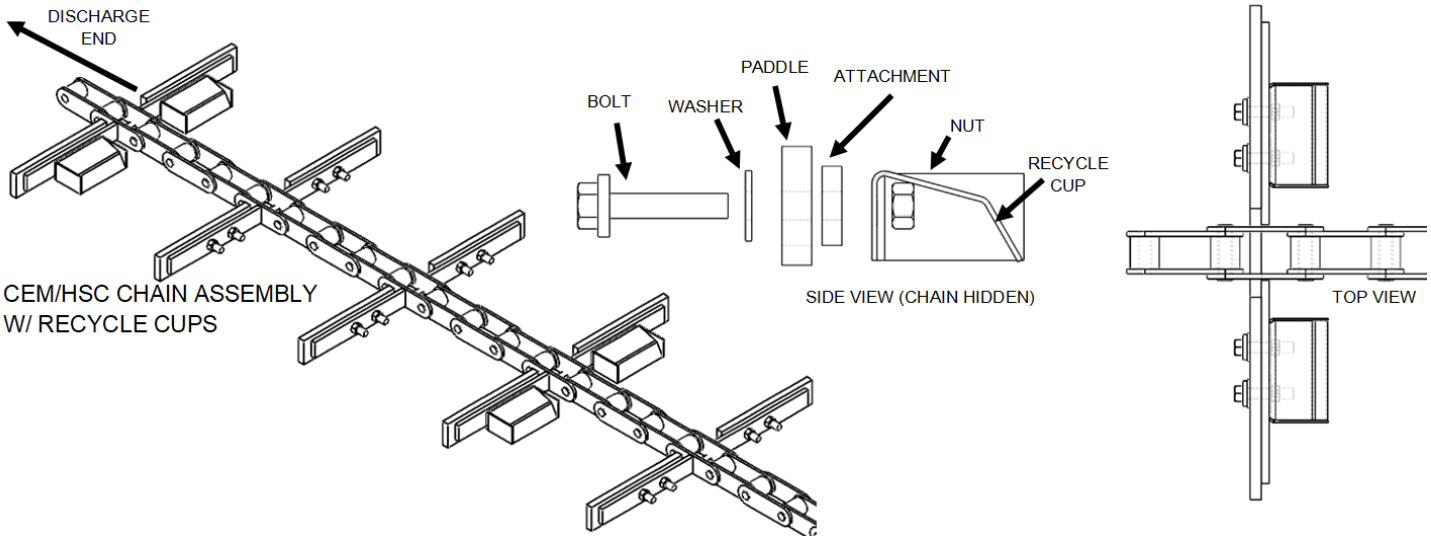


SIDE VIEW (CHAIN HIDDEN)

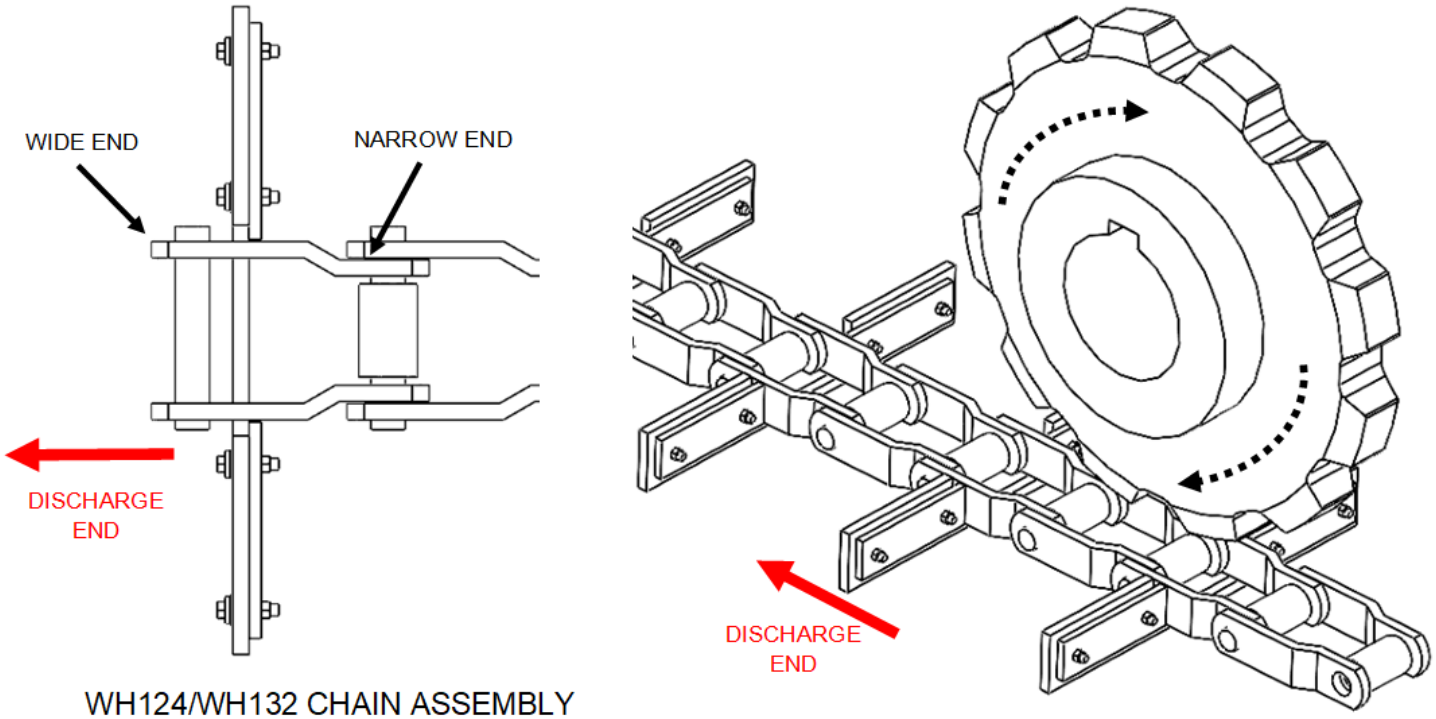


TOP VIEW

Important Note: When recycle cups are used, install 2 recycle cups per paddle on every third paddle.



Important Note: When installing WH124 and WH132 roller chain verify that the relationship between sprocket revolution, discharge direction, and chain orientation (chain narrow end - chain wide end) is correct.



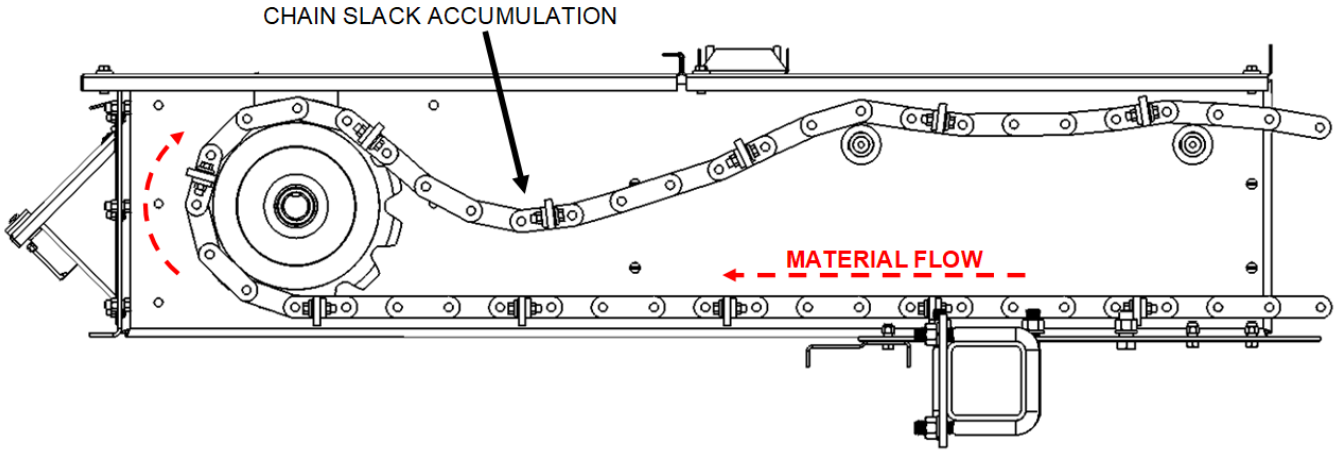
WH124/WH132 CHAIN ASSEMBLY

Chain Tension

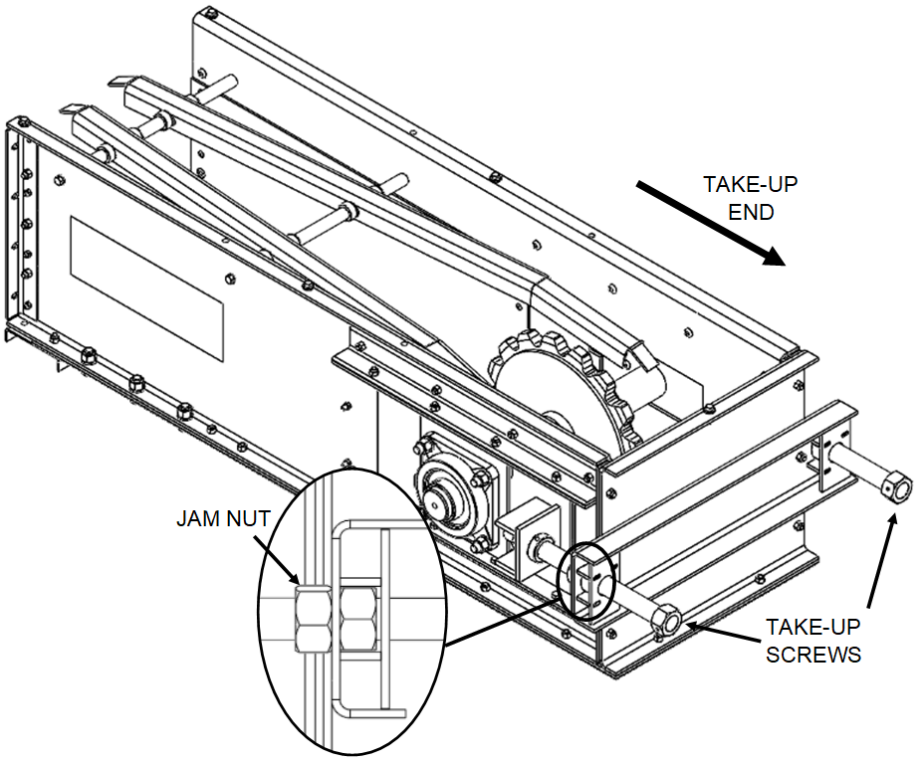
The amount of chain tension required will vary with each conveyor. Conveyor capacity, conveyor length, characteristics of the conveyed product, and chain speed will factor into the chain tension required for a conveyor.

The chain tension will need to be tight enough, so it does not jump a sprocket tooth or accumulate enough slack on the return side at the driven sprocket to cause the chain to catch an additional tooth as the chain continues to wrap around the sprocket.

Correct tension will prevent either a loose condition or excessive tension resulting in premature failure of the chain and sprocket.



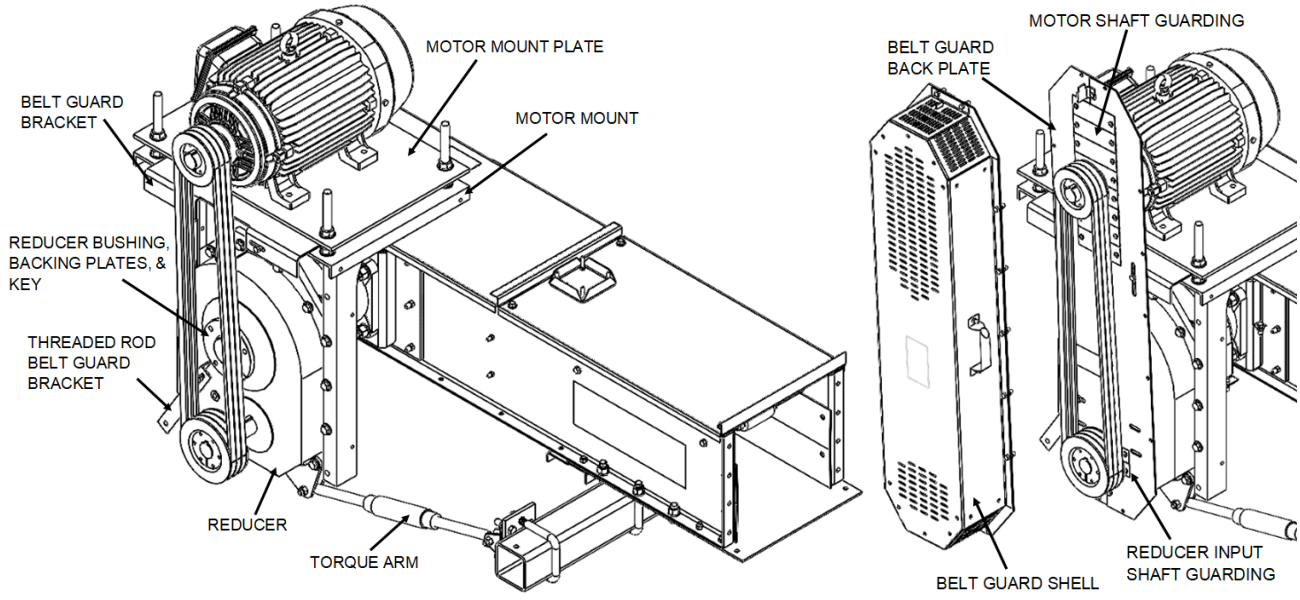
To tighten the chain, adjust the take up screws evenly to reduce the center distance between the conveyor shafts as shown in the following illustration. Eliminate the slack in the chain using a take-up device. Remove any extra chain links and rejoin chain. Then re-adjust the take-up screws evenly to achieve the required chain tension. Once proper chain adjustment is achieved, torque the jamb nuts to prevent loosening of the chain.



Drive Installation

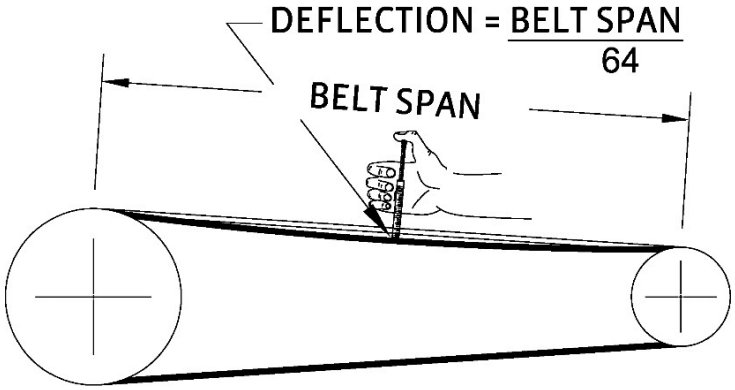
For specific details, refer to the drive assembly drawing provided with each unit. Shown is the standard left-hand configuration. General drive installation steps are:

1. Install motor mount to reducer, reference position dimension on drive assembly drawing.
2. Install motor to motor mount plate.
3. Install backing plates onto each side of reducer hub, install snap rings to secure backing plates.
4. Slide taper bushing onto conveyor shaft, flange end first, and install key on shaft.
5. Slide reducer onto shaft over key, seat bushing from step 4 into reducer. Maintain recommended gap for bushing screw removal.
6. Install the second taper bushing onto conveyor shaft.
7. Insert bolts through untapped holes on tapered bushings on both sides, tighten bolts evenly to torque specified on drive assembly drawing.
8. Remove fastener from reducer flange and replace it with threaded rod belt guard bracket provided for belt guard attachment.
9. Bolt torque arm to reducer flange Note: Torque arm mounting position may vary.
10. Attach belt guard bracket to Motor Mount.
11. Adjust motor mount height for shaft center distance.
12. Bolt torque arm to tube provided, or as specified on approval drawing.
13. Bolt the belt guard back plate to flange of threaded rod bracket.
14. Install bushings, sheaves, and belts.
15. Bolt motor mount bracket to belt guard back panels.
16. Install shaft guarding components.
17. Install Belt Guard Shell.



Important Note: Unless noted otherwise, reducers are shipped without lubricant. Do not operate the chain conveyor until the reducer has been filled with an approved lubricant as described in the manufacturer's instructions.

Install the drive belts and adjust belt tension. Using a belt tension checker adjust the belts so that a force in the middle of each belt will deflect the belt 1/64" for each inch of distance between the sheave centers.

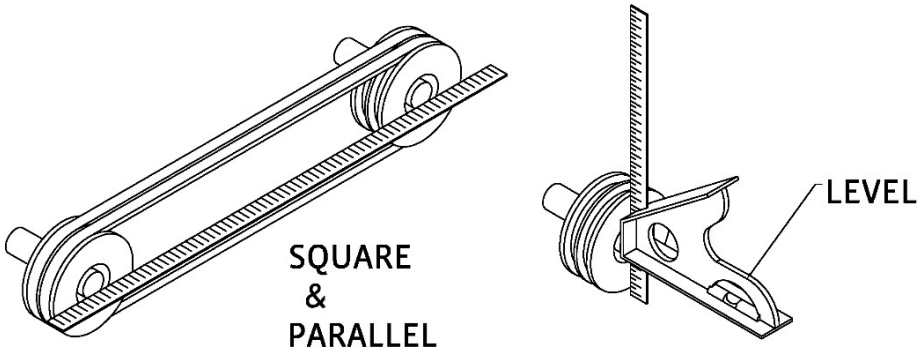


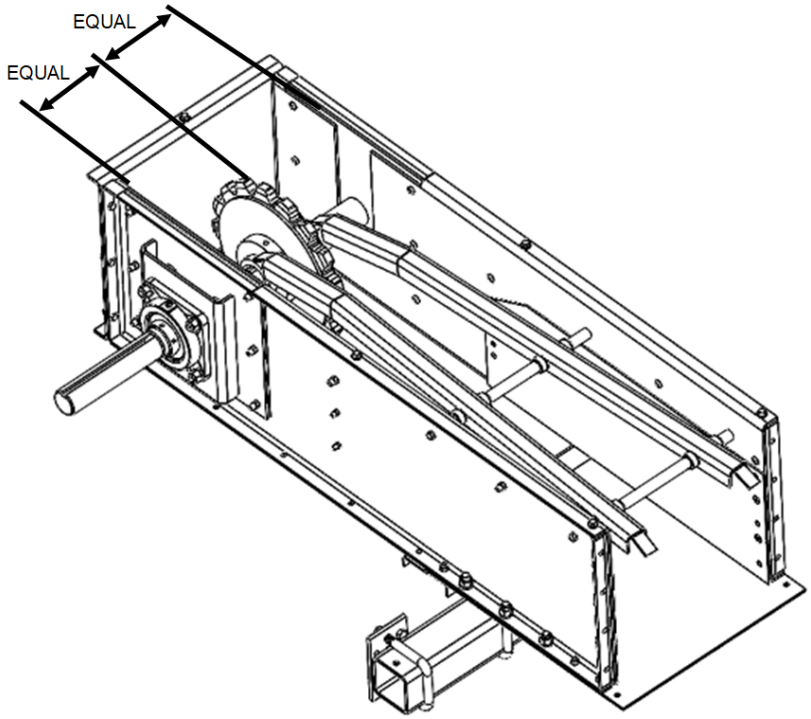
Important Note: Compare the force you have applied with the values in the following chart. The force should be between the minimum and maximum shown. The maximum value shown is for a "New Belt", and new belts should be tensioned at this value to allow for expected tension loss. Used belts should be maintained at the minimum value.

Cross Section	Smallest Sheave Diameter Range (in)	RPM Range	Belt Deflection Force (lbs)			
			Super Gripbelt		Gripnotch Belt	
			Min	Max	Min	Max
3V	2.2-2.4	1000-2500	-	-	3.3	4.9
	2.65-3.65	1000-2500	3.6	5.1	4.2	6.2
	4.12-6.90	1000-2500	4.9	7.3	5.3	7.9
5V	4.4-6.7	500-1749	-	-	10.2	15.2
		1750-3000	-	-	8.8	13.2
	7.1-10.9	500-1740	12.7	18.9	14.8	22.1
		1741-3000	11.2	16.7	13.7	20.1
	11.8-16.0	500-1740	15.5	23.4	17.1	25.5
		1741-3000	14.6	21.8	16.8	25.0

The ideal tension is the lowest tension at which the belt will not slip under peak load conditions (over tensioning shortens belt and bearing life). Check tension frequently during the first 24 hours to 48 hours of operation.

Important Note: All sheaves, sprockets, and drive components should be checked for alignment, centered, and tightened prior to operation and at regular operating intervals.



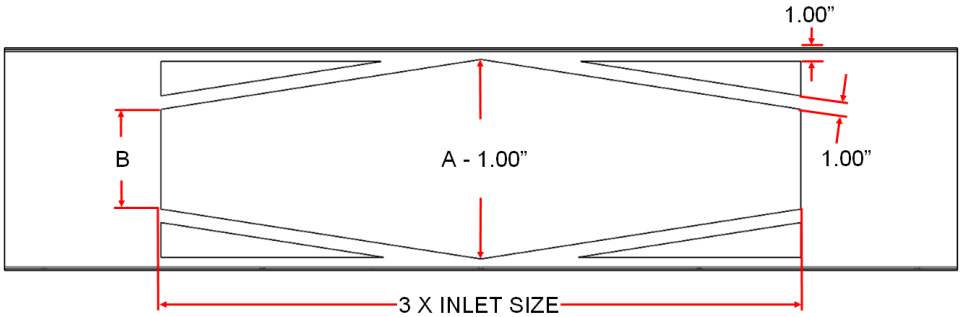


Important Note: Do not operate the chain conveyor without a correctly installed belt guard assembly.

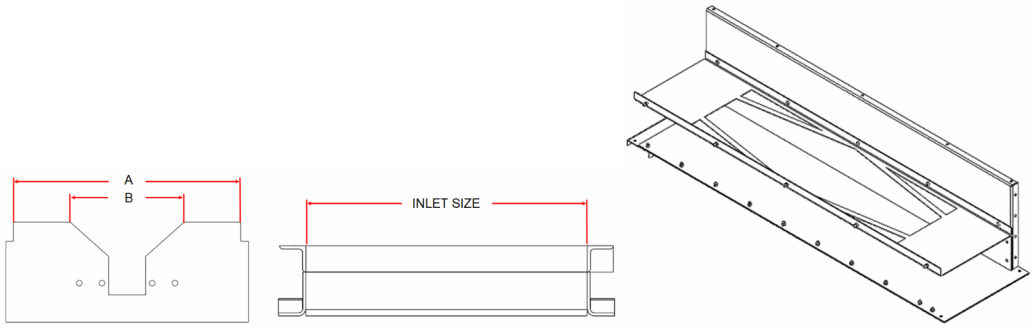
Important Note: Explosion proof electrical equipment must be used whenever a chain conveyor is located in an explosive environment. A safety disconnect switch should be installed on the fixed end section to prevent accidental motor operation when servicing any components.

Incline Inlet Installation

CHIC, CICC, CISC conveyors that use inlets require a cutout in the center panel to allow material through.



CENTER PANEL CUT DETAIL



Intermediate Gate Installation

Intermediate bottom panel and bottom cover** must be trimmed to noted dimensions to allow for proper sealing between the intermediate section and the gate. Trim bottom panel and bottom cover** then install gate shims and intermediate gate as shown in the following illustration.

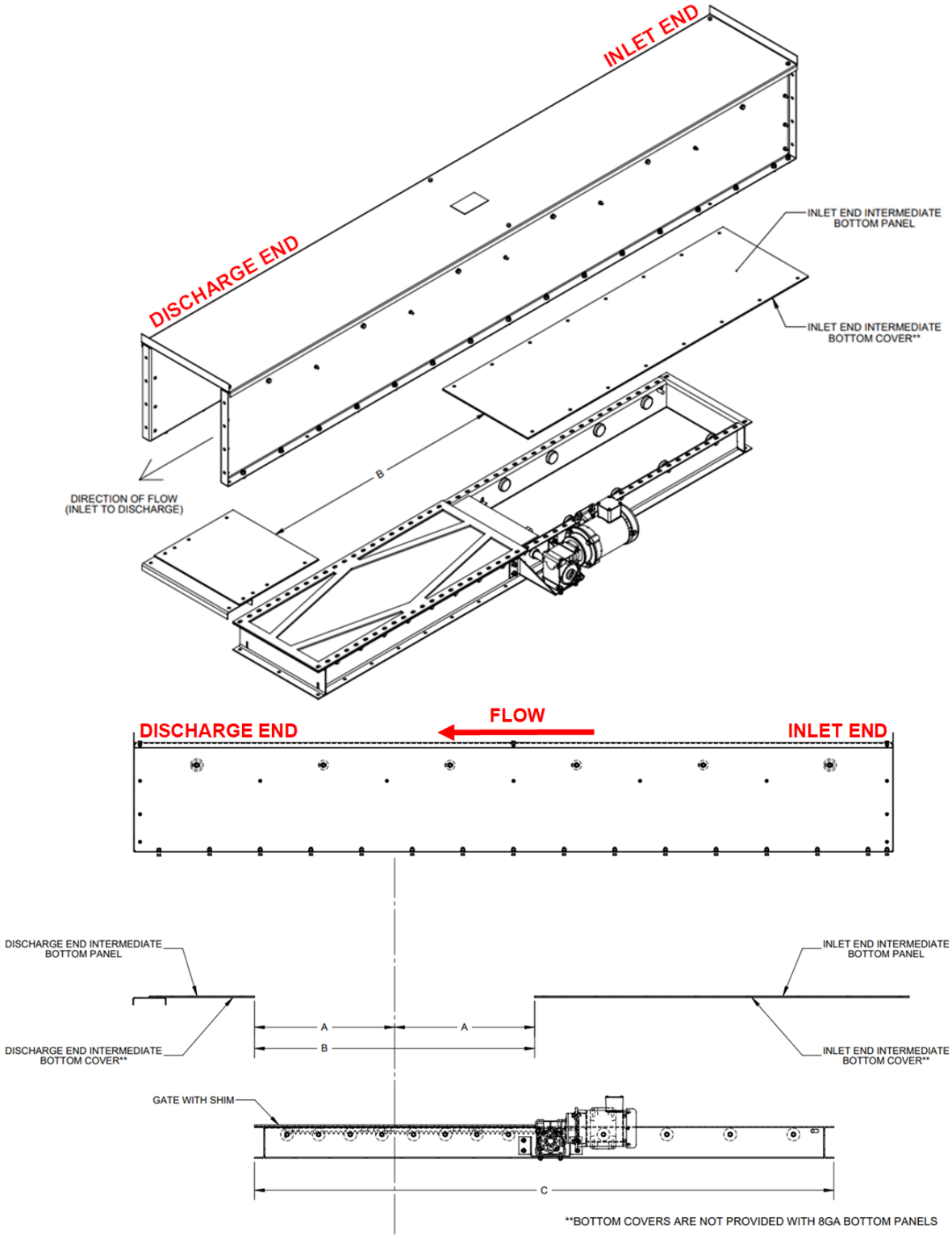
First locate the bolts in the bottom of the conveyor closest to the center of the intermediate gate inlet. Verify that the existing intermediate bottom panel bolts align with the slots in the gate top flange.

Next mark the gate centerline on the intermediate bottom panel and bottom cover**. Remove and cut the intermediate bottom panel and bottom cover** according to the following dimensions.

Gate Length	A	B	C
30”	17.125” (43.50cm)	34.25” (87.00cm)	71.50” (181.61cm)
40”	22.125” (56.20cm)	44.25” (112.40cm)	91.50” (232.41cm)
50”	27.125” (68.90cm)	54.25” (137.80cm)	111.5” (283.21cm)

Next reinstall the intermediate bottom panel and bottom cover** on the discharge end of the gate. Install the inlet end bottom panel, bottom cover**, and gate. Reuse all hardware from the intermediate bottom panel and bottom cover**.

**Bottom Covers are not provided with 8GA Bottom Panels.



Sensor Installation

With the gate fully closed, mount the closed position sensor in the frame hole located near the gate center panel. Shift sensor flag (located on the bottom of the gate slide) until sensor activates. Tighten mount screws of flag.

Move the gate into the fully open position then mount the rear sensor in the frame slot. Shift in slot until the sensor activates and tighten the sensor in place.

Start up and Operation

Prior to operating the conveyor, check all areas for safety issues and machine damage which could occur during operation. Follow all manufacturers' pre-start up instructions for each individual component provided with your conveyor. In addition, verify the following:

- All debris is removed from the conveyor.
- Conveyor sections are properly aligned and square.
- Return idler rollers turn freely.
- Paddles do not interfere with the sides of the conveyor.
- All hardware is in place with correct torque.
- Drive and take up sprockets are centered across the width of the conveyor and square with the conveyor housing.
- Secure set screws in bearings, drive sheaves, head and tail shafts, and gear reducers and ensure drive sprocket key is secured in place.
- Sheaves properly aligned and V-belts properly tensioned.
- Bushing bolts in sheaves and reducer are torqued to manufacturer specifications.
- Chain tension is correct.
- Drive guard and other safety devices installed.
- Inspection section panels in place and properly secured.
- Discharge area free of obstructions.
- Reducer installed to manufacturer specifications.
- Reducer has lubricant and is filled to proper level.
- Safety restrictions on electric controls.
- Electrical equipment is installed to meet national electric code and/ or local safety codes, including explosion proof equipment where required.

After an initial pre-start inspection, operate the chain conveyor empty under power for a period to verify the chain is tracking correctly on the sprockets and idlers. If there is excess slack in the chain, adjust the take up evenly. Monitor the drive belts and sheaves for correct belt tension and sheave alignment.

Verify all gates and accessories for proper operation and monitor conveyor for unusual operation. Complete any necessary adjustments and verify all covers are installed correctly.

To complete a conveyor system, material feed and discharge connections must be made to the chain conveyor. Complete these connections prior to placing the chain conveyor into service.

Since the conveyor has been previously operated without material, it may now be tested under load. It is suggested that the flow systems be verified next. Allow only a small amount of material to enter the conveyor while it is running. Verify that the material can flow through the system connections, gates, etc. for proper operation. Once all flow paths have been verified, the conveyor may be gradually loaded to capacity. When the conveyor is operating at full capacity verify the following:

- Correct movement of material
- Electrical current draw on the motor (amperage)

After the first 8-10 hours of operation inspect the following:

- Verify all paddle attachment bolts are tight.
- Verify that the tracking of the chain is correct.
- Check the drive components.
- Check gear reducer for overheating or oil leakage.

Set Screw Diameter	Socket Size	Ball Bearing Torque		Roller Bearing Torque	
		In.-lb.	Kg.-M.	In.-lb.	Kg.-M.
#10	3/32”	30	.3	-	-
1/4”	1/8”	70	.8	-	-
5/16”	5/32”	140	1.6	125	1.4
3/8”	3/16”	220	2.5	225	2.6
7/16”	7/32”	350	4.0	325	3.7
1/2"	1/4"	-	-	475	5.5
5/8”	5/16”	-	-	1150	13.2
3/4"	3/8”	-	-	1600	18.4

Important Note: Some elongation of the chain will occur after the chain is in operation. The elongation will occur over the life of the chain. There will be some elongation in the first few hours of operation as the chain seats itself. Check the chain after the first hour of operation, then daily for the first week of running operation, making adjustments as necessary. Continue with checks as recommended in periodic maintenance section. As the conveyor is operated it will probably become necessary to remove one or more of the chain links as the chain elongates to the extent that the take-up travel has been used up.

Important Note: Monitor bearings during the first 48 hours for unusual vibration or temperature. Operate bearings under full load for several days to permit seating of bearing and sleeve on the shaft then shutdown the system and re-tighten hardware on all bearings.

Periodic Maintenance

The following are guidelines for maintaining the conveyor. Operators will have to determine what inspection and service intervals are necessary for their application. Factors to consider are the frequency of operation and the operating environment of the equipment.

1. Daily
    a. Always be aware of the normal operating sounds. If any abnormal sounds occur, stop the conveyor, find the source of the noise, then lock out the power to the conveyor and repair the problem.

2. Weekly
    a. Lubricate bearings according to manufacturer specifications.

3. Monthly
    a. Check V-belt tension and overall condition. Replace if worn, frayed, or cracked.
    b. Check that set screws in sprockets and bearings are tight. If necessary, tighten to manufacturers' specifications.
    c. Check for missing or damaged paddles. Replace if necessary. Check paddle bolts for tightness. Check attachments to chain. If attachments are slightly bent and do not appear to be in danger of separating from the chain and the attachments are not having an adverse effect upon the capacity, replacement is not necessary.
    d. Check that the conveyor chain is properly tensioned and is tracking correctly.
    e. Check oil level in gearbox and inspect seals for signs of leakage. Follow manufacturer's specifications for oil level and oil change periods.
    f. Check that the motor is clean and properly ventilated.
    g. Lubricate motor according to manufacturer's specifications and intervals.

4. Quarterly
    a. Check all conveyor components for loose or missing fasteners.
    b. Check safety guards for interference with moving parts.

Troubleshooting

The items shown below are an aid to troubleshooting when a problem is encountered. Some causes can be corrected by reviewing certain areas of the assembly instructions.

1. **Problem:** Measured Capacity is Reduced from the Rated Capacity
    a. Possible cause: Incorrect Shaft RPM
        i. *Possible reason or solution*: Incorrect sheave orientation. Consult drive drawing for correct placement.
    b. Possible cause: Loose Chain
        i. *Possible reason or solution*: Adjust chain tension.
    c. Possible cause: Incorrect feed.
        i. *Possible reason or solution*: Review Inlet spouting for flow restrictions and make corrections.
    d. Possible cause: Conveyor Incline Level
        i. *Possible reason or solution*: Consult order documentation and unit-specific customer drawing for design incline angle.
    e. Possible cause: Conveyor Plugging
        i. *Possible reason or solution*: Check and clear discharge opening.

2. **Problem:** Noisy Operation
    a. Possible cause*:* Loose Paddles
        i. *Possible reason or solution*: Tighten or replace fasteners.
    b. Possible cause: Conveyor Bottoms Not Aligned
        i. *Possible reason or solution*: Check intermediate bottom joints and verify they are flush.
    c. Possible cause: Damaged Chain Attachments
        i. *Possible reason or solution*: Replace or repair attachments.
    d. Possible cause: Worn Idler Roller or Rail Return
        i. *Possible reason or solution*: Replace worn components.
    e. Possible cause: Drive Components
        i. *Possible reason or solution*: Check oil level.

3. **Problem:** Uneven Paddle Wear
    a. Possible cause: Conveyor misalignment.
        i. *Possible reason or solution*: Align conveyor sections from head to tail.
    b. Possible cause: Sprocket slipped.
        i. *Possible reason or solution*: Check set screws on sprocket.
        ii. *OR*: Center and square sprocket in opening and tighten set screws.

4. **Problem:** Excessive Carry-Over of Material
    a. Possible cause: Chain Riding Over Material
        i. *Possible reason or solution*: Check chain tension.
    b. Possible cause: Gates Not Fully Open
        i. *Possible reason or solution*: Check gate operation.

5. **Problem:** Uneven Sprocket Wear
    a. Possible cause: Worn Chain
        i. *Possible reason or solution*: Replace chain.
    b. Possible cause: Incorrect Sprocket Alignment
        i. Possible reason or solution: Center and square sprocket in opening and tighten set screws.