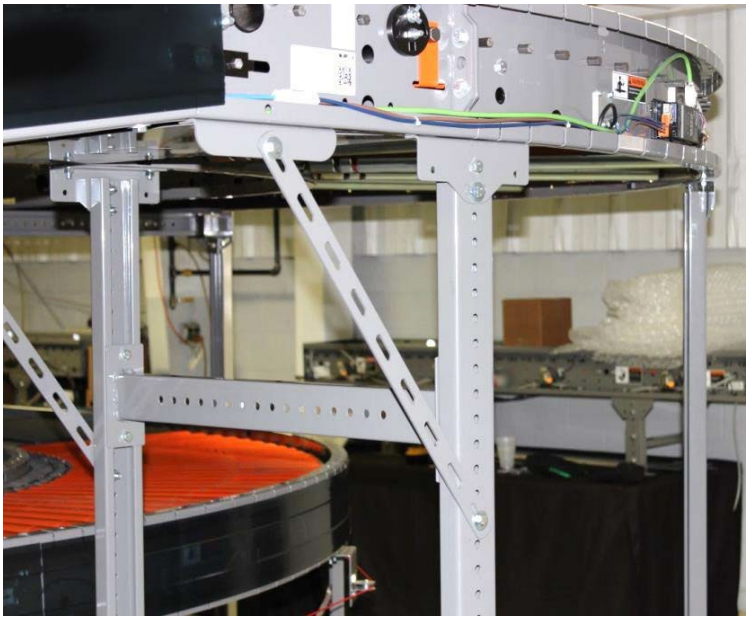

Installation, Operation, and Maintenance Manual

Support & Connections

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FORTNA •131 Griffin Way • Mt. Washington, KY 40047

FORTNA

Para la OIM española, seleccione aquí

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DOCUMENT VERSION HISTORY

REVISION DATE	CHAPTER AND DESCRIPTION	INITIALS
9/30/2021	Updated logo and format	MD AB
06/25/2024	Updated support lifts	MM MD
12/9/2024	Add basic installation chapter	MD AB
01/01/2026	Update logo, format, preface, safety, preliminary, disposal and receiving information	MD, AB

PREFACE

DISCLAIMER

It is the Customer's and the system user's responsibility to ensure that the system is operated only in safe conditions and in accordance with this document and any other documentation or instructions provided by FORTNA or its representatives. THIS DOCUMENT CONTAINS IMPORTANT WARNINGS AND SAFETY REQUIREMENTS. This document must be available to and accessible by any users or anyone with access to the system so that it may be regularly consulted.

ANY PERSON TO USE OR ACCESS THE SYSTEM IN ANY WAY MUST CAREFULLY READ AND UNDERSTAND THIS DOCUMENT. VISITORS OF ANY KIND, AUTHORIZED AND UNAUTHORIZED GUESTS, CHILDREN, ANIMALS AND ANY OTHER PERSON WHO HAS NOT FULLY READ AND UNDERSTOOD THIS DOCUMENT MUST BE KEPT AT A SUITABLE AND SAFE DISTANCE FROM THE SYSTEM. PHYSICAL CONTACT WITH THE SYSTEM MUST BE AVOIDED AT ALL TIMES. SUITABLE WORK CLOTHING AND PROTECTIVE GEAR ARE REQUIRED.

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You must contact FORTNA at usinfo@fortna-conveyor.com or (231) 798-4547 immediately with any questions or concerns about this document or the system.

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COPYRIGHT INFORMATION

TABLE OF CONTENTS

1 SAFETY

Failure to follow the instructions and cautions throughout this manual and warning label on the conveyor may result in injury to personnel or damage to the equipment.

Your FORTNA Conveyor is powered by a motor and can be stopped only by turning off electrical power to the motor. As with all powered machinery, the drive-related components – including sprockets, chains, shafts, universal joints, and pneumatic devices – can be dangerous. We have installed or provided guards to prevent accidental contact with these parts, along with warning labels to identify the hazards.

Special attention must be made to the following areas of this manual. Listed below are some symbols used throughout the manual to emphasize information of significant importance.

⚠DANGER	
	Indicates a high level potentially hazardous situation which, if not avoided, will result in death or serious injury.

⚠WARNING	
	Indicates a medium level potentially hazardous situation that, if not avoided, could result in death or serious injury.

⚠CAUTION	
	Indicates a low level potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices or for the protection of the equipment.

NOTICE	
	Failure to follow these instructions can result in property damage or equipment damage.

1.1 DANGER AND RISK INFORMATION

The purpose of this chapter is to inform the personnel of any possible dangers and risks as well as of general and specific recommendations to eliminate or minimize said risks.

This chapter has information and instructions regarding:

- Dangerous situations that can arise during use and maintenance of the partly completed machine.
- Guards and safety devices adopted and their correct use.
- Residual risks and conduct to adopt (general and specific recommendations to avoid or reduce them).

This installation operation maintenance (IOM) manual briefly summarizes these instructions in the sections where the described situations occur.

Protective Devices

It is forbidden to use the partly completed machine or completed machine with no guards or protection devices, or with guards or protection devices deactivated. Ignoring the above can cause serious damage and/or accidents.

Operation Manual Illustrations

Some illustrations representing the conveyor equipment are shown without the protection guards or with the guards removed to show specific details. This is necessary for the sake of clarity in the description.

Some drawings represented in this manual are for visual reference only and as such not all drawings contain completed drawing information such as dimensions, notes, conveyor labels, or safety symbols.

1.2 SAFETY WHILE WORKING WITH THIS PRODUCT

Failure to follow the instructions and cautions throughout this manual and warning label on the conveyor may result in injury to personnel or damage to the equipment.

Your FORTNA conveyor is powered by a motor and can be stopped only by turning off electrical power to the motor. As with all powered machinery, the drive-related components – including sprockets, chains, shafts, universal joints, and pneumatic devices – can be dangerous. We have installed or provided guards to prevent accidental contact with these parts, along with warning labels to identify the hazards.

Special attention must be made to the following areas of this manual. Listed below are some symbols used throughout the manual to emphasize information of significant importance.

Special attention must be given to the following areas of this manual.

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Wear appropriate personal protective equipment (PPE) and use proper Lockout/Tagout procedures.
- The equipment must be installed, operated, and serviced by properly trained and qualified personnel.
- Turn off power supplying the equipment before working on or inside the equipment.

Failure to follow these directions will result in death or serious injury.

⚠WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

- Do not eat food, drink, or smoke while operating or servicing the equipment/conveyor.
- Do not operate or service the equipment/conveyor if under the influence of drugs, alcohol, sedatives, or any other medication whether prescribed by a doctor or not.
- Do not operate or service the equipment/conveyor if sleep deprived or over fatigued.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
ELECTRICAL HAZARD
• Installation must be performed by a certified and licensed electrician. • Electrical service must conform to local and national electrical codes and regulations.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
ELECTRICAL HAZARD
Electrical service must be performed by properly trained, qualified, and licensed personnel.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HAZARD OF MOVING PARTS
• Make sure all personnel are clear of moving parts before starting the equipment/conveyor. • All starting and stopping devices, and all loading and unloading areas should be kept free of obstructions. • Keep hair, clothes, hands, and jewelry away from moving parts. • Do not operate the equipment/conveyor without all motor guards being in place. • Never touch, walk, ride, or climb on a moving belt or conveyor equipment. • Never clear jams while the equipment is running. • Do not pull-on equipment parts, such as belts, pulleys, or shafts, to assist slow-starting equipment.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HEAVY EQUIPMENT
• Follow site safety procedures while moving equipment. • Make sure to use moving equipment certified for the weight of the equipment.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HAZARD TO PERSONNEL
• Only qualified and trained personnel should operate this equipment. • All operating procedures must be followed.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HAZARD OF INJURY TO PERSONNEL
• Do not remove or tamper with safety devices. • Do not remove shields or panels, or bypass or otherwise disable interlocks while the unit is in operation.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠CAUTION
HAZARD OF INJURY TO PERSONNEL
• Wear PPE when using compressed air. • Do not direct compressed air toward yourself or another person. • Do not use compressed air to clean yourself or clothing. • Do not carry out practical jokes using compressed air.
Failure to follow these instructions can result in injury or equipment damage.

⚠CAUTION
HAZARD OF INJURY TO EQUIPMENT OR PERSONNEL
Keep away from equipment as it is lowered into place.
Failure to follow these instructions can result in injury or equipment damage.

⚠CAUTION
SHARP EDGES
• Never place hands or feet between the belt and guards. • Remove sharp edges, protruding objects, and safely replace broken or worn parts promptly.
Failure to follow these instructions can result in injury or equipment damage.

⚠CAUTION
HAZARD TO PERSONNEL AND EQUIPMENT
Follow site-specific safety guidelines.
Failure to follow these instructions can result in injury or equipment damage.

⚠CAUTION
SOUND HAZARD
Prolonged exposure to noise above 90 decibels may cause permanent hearing damage. Hearing protection must be worn by personnel exposed to noise of 90 decibels or greater.
Failure to follow these instructions can result in injury or equipment damage.

⚠CAUTION
HAZARD TO PERSONNEL OR EQUIPMENT
Troubleshooting must be performed by qualified and trained personnel.
Failure to follow these instructions can result in injury or equipment damage.

NOTICE
HAZARD OF EQUIPMENT DAMAGE
• The lifting and rigging equipment used to move the conveyors must be certified and rated to handle the load weight and must be maintained in proper working order. • Before lifting, attach the load lifting and rigging equipment so that the conveyors are supported about their center of gravity.
Failure to follow these instructions can result in property damage or equipment damage.

NOTICE

EQUIPMENT DAMAGE

- Do not load or use the conveyors beyond the specified design limits.
- Always place packages directly onto the conveyor surface.
- Do not drop packages onto the conveyor from a height greater than 30 cm (12 in.) above the conveying surface.

Failure to follow these instructions can result in property damage or equipment damage.

1.3 SYMBOLS USED IN THIS MANUAL

Symbols are used throughout the manual to emphasize information of significant importance.

Symbol	Type	Definition
	**ATTENTION**	Symbol is used to identify important warnings for the safety of the operator and/or conveyor equipment.
	**FORBIDDEN** **(MUST NOT / SHALL NOT)**	Symbol is used to identify operations that must not be performed or behaviors that must not be adopted as they could cause injury to personnel or damage to the conveyor equipment.
	**OBLIGATION** **(MUST DO / SHALL DO)**	Mandatory action symbols are used to draw attention to a supplementary sign for a specified mandatory action. The mandatory action symbol is used to identify particularly important information inside the manual. The information also regards the safety of personnel involved use of the conveyor equipment.
 	**OBLIGATION TO READ THE INSTRUCTION MANUAL** **OBLIGATION TO READ THE TECHNICAL MANUAL**	To use the conveyor equipment safely, it is mandatory to read and understand the manual and accompanying documentation in its entirety. To use the conveyor equipment safely, it is mandatory to read and understand the manual and accompanying documentation in its entirety. Before service to use the conveyor equipment safely, it is mandatory to read and understand the manual and accompanying documentation in its entirety.

1.4 OBLIGATIONS

Listed below are instructions and symbols used throughout the manual to emphasize information of significant importance.

Must Do/Shall Do to avoid hazard to personnel or equipment!

- Carry out maintenance operations with the conveyor equipment switched off.
- Parts over 18kg (40lbs) should be lifted by two people.
- A step ladder must be used when performing maintenance or cleaning on items that cannot be reached from floor level.

- Must tie up long hair or long beards, avoid wearing scarves or other clothes that may get trapped in the moving parts of the conveyor. All loose clothing, long hair, long beards, and jewelry must be kept away from moving equipment.
- Must remove jewelry such as bracelets, rings or necklaces that may get trapped in moving parts, thus creating a risk for the operator.

- Must always perform interventions on the electrical system components in the absence of voltage (main switch off).
- Must make sure that no-one is standing in the danger zones during the start-up and operation of the conveyor machine.
- Must use extreme caution to avoid injury or property damage during use of the conveyor equipment.
- Must know the location and operation of the stopping device.
- Must comply with instructions and provisions given by the employer, managers, or supervisors, to ensure personal and collective safety.
- Must make proper use of equipment, tools, substances, and dangerous products, means of transport and other working machinery, as well as safety devices.
- Shall make correct use of all personal protective equipment they have been properly trained and provided with.
- After maintenance, guards must be **REPLACE** immediately.
- Keep ALL warning labels clean and clear of any obstructions.
- Must be trained to never remove, deface, or paint over symbols or labels of any kind. Any damaged label can be replaced by FORTNA by contacting Lifecycle Performance Services.
- It is very important to instruct personnel in proper conveyor use, including the location and function of all controls.
- Special emphasis must be given to emergency stop procedures.
- It is important to establish work procedures and access areas, which do not require any part of a person to be under the conveyor.
- After the power source is turned off and locked out trained and qualified maintenance technicians are to remove blockage or jams from the conveyor equipment.
- Maintain enough clearance on each side of all conveyor units for safe adjustment and maintenance of all components.
- Provide crossovers or gates at sufficient intervals where needed to eliminate the temptation for personnel to climb over or under any conveyor.
- Use the conveyor equipment within the approved environmental conditions.

- **Must Do, BEFORE** performing maintenance on the conveyor, make sure the start-up controls are locked out and cannot be turned on by any person other than the one performing the maintenance.
- If more than one crew member is working on the conveyor, **EACH CREW MEMBER MUST HAVE A LOCK ON THE POWER LOCKOUT.**
- Maintain enough clearance on each side of all conveyor units for safe adjustment and maintenance of all components.
- All pneumatic devices must be de-energized, and air removed to prevent accidental cycling of the device while performing general maintenance.
- Make sure all personnel are clear of all conveyor equipment before restarting the system.
- Continuous handling equipment shall be kept in proper working conditions and maintained in accordance with the manufacturer's instructions.
- Inspection, adjustment, maintenance and cleaning of moving parts shall be carried out regularly in a safe manner according to the manufacturer's instructions.
- If possible, inspection and adjustment of continuous mechanical handling equipment, in motion or in use, shall only be carried out with guards in position.
- Displacing or removal of a guard and/or neutralization of a safety device shall be carried out in accordance with alternate safeguarding or lockout/tagout procedures (OSHA 29 CFR 1910.147 and 29 CFR 1910.333(b)(2) for further information visit https://www.osha.gov.
- Repairs and removal of protective enclosures or panels shall only be carried out after stopping the equipment and starting devices have been rendered inoperative by qualified and trained personnel.

- Watch for nip points or pinch points. A pinch point hazard is a common class of mechanical hazard where injury or damage may be done by one or more objects moving towards each other, crashing, or shearing whatever comes between them. A nip point is a type of pinch point involving rotating objects, such as gears and pulleys.

- **Must Do, BEFORE** restarting a conveyor, which has been stopped because of an emergency, an inspection of the conveyor must be made, and the cause of the stoppage determined. The starting device must be locked out before any attempt is made to correct the cause of stoppage.

- Make correct use of all personal protective equipment that they have been provided with.
- Know the workplace and traffic routes, and all required protection/guarding of nearby hazardous equipment.
- All employees that come in contact with the equipment must be warned of the dangers of an unexpected start.
- The user shall be careful to ensure a regular feed, avoiding overloading.
- All loading and working places, passageways, shall be kept clear.
- **Must Do, BEFORE** servicing or performing any work in the motor control panel, disconnect and padlock out air and the main incoming service. If ONLY the panel disconnect is off, the incoming side will still be hot.

- All safety rules must be observed when working with, on or at the conveyor system in whatever way. This includes reading all installation, operation, maintenance, or technical manuals.

- Know workplace and traffic routes may require additional protection/guarding if nearby hazardous equipment.
- Know that IntelliROL motorized rollers can become hot!
- Know IntelliROL equipment starts and stops without warning and can cause severe injury.

  - Employees that come in contact with the equipment must be warned of the dangers of an unexpected start. Hands can be crushed between products or products and channels.
- Before servicing or performing any work in the motor control panel, disconnect and lock out air and the main incoming service. If only the panel disconnect is off, the incoming side will still be hot.

1.5 PROHIBITIONS

Listed below are instructions and symbols used throughout the manual to emphasize information of significant importance. **Must Not Do/Shall Not Do** to avoid hazard to personnel or equipment!

Must Not, use the conveyor equipment improperly, i.e., for uses other than those indicated in the “Intended use” paragraph.

- **Must Not,** remove or modify the safety or signaling devices without authorization.
- **MUST Not,** use conveyor equipment with no guards or protection devices, or with guards or protection devices deactivated. Ignoring the above can cause serious damage and/or accidents.
- **Must Not,** remove, deface, or paint over symbols or labels of any kind. Any damaged label can be replaced by FORTNA by contacting Lifecycle Performance Services.
- **Must Not,** convey hazardous materials.

- **Must Not,** Walking or riding on a conveyor equipment /moving conveyor must be prohibited. No person shall ride, sit, or stand on a conveyor under any circumstances.

- **MUST Not,** remove or install heavy parts whilst anyone is working on the floor level below the parts to be moved. This will help stop accidental falling of heavy parts onto people.
- **Must Not** carry out, upon their own initiative, operations or maneuvers they are not in charge of and that can jeopardize their own safety and that of other workers.
- **Must Not,** wear bracelets, rings or necklaces that may get trapped in moving parts, thus creating a risk for the operator.
- **Must Not,** modification of the design or configuration of the equipment may lead to new hazards or higher risk that are not reduced adequately by the risk reduction measures of the manufacturer.
- **Must Not,** replace or modify the speed of the conveyor equipment components without being authorized by a manager.
- **Must Not,** modify the conveyor equipment operating cycle.
- **Must Not** modify the connections to exclude the internal safety devices.
- **Must Not,** use the conveyor equipment if not properly incorporated within the final line, according to current regulations.
- **Must Not** use the conveyor equipment or its components as point of support even if not operational (risk of falls and/or risk of damaging the components themselves).
- **Must Not,** use the conveyor equipment outside of the admitted environmental conditions.
- **Must Not** touch Motorized rollers as they can become **hot!**
- **Must Not,** touch any type of Motor as the motor may be **hot!**
- **Must Not,** clear jams while the equipment is running.
- **Must Not,** lubricate moving parts.
- **Must Not,** do not pull-on equipment parts, such as belts, pulleys, or shafts, to assist with slow starting equipment.

2 PRELIMINARY INFORMATION

2.1 INTENDED FOR

The manual is intended for the operators in charge of utilizing and managing the conveyor equipment in all its technical aspects. The manual provides information for the correct utilization of the conveyor equipment, to maintain its functional and qualitative characteristics unchanged over time. To include safety information and warnings for proper and safe use.

The manual is an essential part of the conveyor equipment and must always accompany it in every displacement or property transfer. The user must maintain this documentation and make it available for consultation during the entire duration of the conveyor equipment.

Failure to follow the instructions and cautions throughout this manual and warning label on the conveyor may result in injury to personnel or damage to the equipment.

Your FORTNA conveyor is powered by a motor and can be stopped only by turning off electrical power to the motor. As with all powered machinery, the drive-related components – including sprockets, chains, shafts, universal joints, and pneumatic devices – can be dangerous. We have installed or provided guards to prevent accidental contact with these parts, along with warning labels to identify the hazards.

2.2 SYMBOLS / FIGURES

The pictures and drawings in this manual are purely illustrative and may differ from the actual machine due to technical changes.

Note:

- Some illustrations representing the conveyor are shown without the protection guards or with the guards removed to show specific details. This is necessary for the sake of clarity in the description.
- Some drawings represented in this manual are for visual reference only and as such not all drawings contain completed drawing information such as dimensions, notes, conveyor labels, or safety symbols.

2.3 PROPRIETARY RIGHTS

2.4 SUPPLY AND PRESERVATION

The manual is supplied in paper and electronic format. All the additional documentation (plant diagrams, sub-supplier manuals, etc.) is supplied annexed to this manual.

Keep this manual close to the conveyor equipment, for easy consultation by the operator.

The manual is an integral part for the purpose of safety, therefore:

- If it is lost or ruined, you should immediately request a copy or scan the QR code on the bed tag or visit the following links.
- New or revised manuals are available at: Fortna-conveyor.com
- Legacy manuals are available at: Fortna-conveyor/support/legacy/manuals.
- The manual must follow the conveyor equipment until it is completed (even if relocated, sale, rental, lease, etc.). This manual is an integral part of conveyor equipment for safety purposes it must always accompany it.

The attached manual(s) are a part of this document, and the same recommendations/prescriptions contained in this manual are applied to them.

Manufacturer Updates

If the conveyor equipment requires functional modifications or replacements, the Manufacturer is responsible for revising or modifying the manual. The Manufacturer is responsible for delivering the manual update.

The user is also responsible for ensuring that, should this document be modified by the Manufacturer, only the updated manual versions are present in the points of use.

New or revised manuals are available at: Fortna-conveyor.com

Legacy manuals are available at: Fortna-conveyor/support/legacy/manuals.

2.5 LANGUAGE

The original language for this manual is written in English. All other translations must be done from the original instructions.

The manufacturer shall be responsible for the original information. Translations into different languages cannot be fully verified, inconsistency in translation may be detected, the text in the original language must be referred to or contact the Manufacturer.

2.6 QUALIFICATIONS OF AUTHORIZED PERSONNEL

For the purpose of professionalism, the following table establishes what skills and qualifications are required of the personnel in charge of the various duties (starting up, operating, and routine maintenance, etc.):

Operator Qualification

Definitions:

- Operators are authorized to use and operate the conveyor equipment for production purposes, for the activities it was constructed and supplied for.
- All operators must be capable of performing all the procedures required for good conveyor equipment operations, their personal safety, and the safety of other workers. Have proven experience in the correct use of this type of machine and be trained, informed, and instructed accordingly.
- Must report any irregularity to his/her superior in case of doubt.

Note!

- He/she is NOT authorized to perform any maintenance activity.

Mechanical Maintenance Engineer

Definitions:

- A qualified Mechanical Maintenance Engineer can carry out preventive/corrective maintenance activities on all the mechanical parts of the conveyor equipment subject to maintenance or repairs.
- A qualified Mechanical Maintenance Engineer can access all parts of the conveyor equipment for a visual analysis, inspect the equipment status, carry out adjustments, and calibrations.

The Qualified Maintenance Engineer is able to:

- Use the conveyor equipment as an operator.
- Intervene on the mechanical elements for adjustments, maintenance, and repairs.
- Read plant diagrams, technical drawings, and spare parts list.
- In exceptional cases, he/she is trained to run the conveyor equipment under reduced safety conditions.
- Where necessary, provide the operator with instructions for the proper use of the conveyor equipment for production purposes.

Note!

- He/she is NOT authorized to work on live electrical systems (if installed).

Electrical Maintenance Engineer

Definitions:

- A qualified Electrical Maintenance Engineer can carry out preventive/corrective maintenance activities on all the electrical parts of the conveyor equipment's subject to maintenance or repairs.
- A qualified Electrical Maintenance Engineer can access all parts of the conveyor equipment for a visual analysis, inspect the equipment status, carry out adjustments, and calibrations.

The Qualified Electrical Maintenance Engineer can:

- Use the conveyor equipment as an operator.
- Work on adjustments and on the electrical systems for maintenance purposes, repairs, and replacing worn parts.
- Reading wiring diagrams and checking the proper functional cycle.
- Where necessary, provide the operator with instructions for the proper use of the conveyor system for production purposes.
- Work while the electrical circuits in the electrical panel, junction boxes, control appliances, etc. live only if the technician is suitably qualified (PEI).

Note!

- They DO NOT perform software programming of systems such as: PLC (logic or safety) and cannot modify the system passwords.

Manufacturer Technician

Definitions:

- Technician qualified by the Manufacturer and/or by its distributor for complex operations and is aware of the constructive production cycle of the conveyor equipment.

Lift Equipment Operator

Definitions:

- A qualified operator of the lifting equipment is aware of the constructive production cycle of the conveyor equipment. The lifting operator lifts and moves the conveyor equipment per the user's requests.
- The qualifications stated fall within a category of people defined "as trained person."

Trained Personnel

Definitions:

- A person informed, educated, and trained in the work and on any dangers deriving from improper use. Also knows the importance safety devices, accident-prevention standards, and safe work conditions.

2.7 PERSONAL PROTECTIVE EQUIPMENT

When operating near the conveyor equipment for assembly and maintenance and/or adjustment operations strictly respect the main accident-prevention rules. For this purpose, it will be important to use the personal protective equipment (PPE) required for each individual operation.

Below is the full list of personal protective equipment (PPE) that may be required for the different procedures:

SYMBOL	DESCRIPTION
	**Obligation to use protective or insulating gloves.** Indicates a requirement for personnel to use protective or insulating gloves.
	**Obligation to wear eye protection.** Indicates a requirement for personnel to use approved safety eye protection.
	**Obligation to use safety shoes.** Indicates a requirement for personnel to wear work-safety footwear.
	**Obligation to use noise protection devices.** Indicates a requirement for personnel to use headphones or earplugs to protect hearing.
	**Obligation to use protective clothing.**
	**Obligation to use the safety harness.** Must use safety harness for work at elevated heights.
	**Obligation to use a protective helmet.** Indicates a requirement for personnel to wear head protection.

The clothing worn by individuals running the machine or performing maintenance on the conveyor equipment must comply with the essential safety requirements defined by regulations in force in the country where it is installed/used.

3 ABOUT THIS MANUAL

3.1 IOM PURPOSE

It is the intent of FORTNA, through this manual, to provide information that acts as a guide in the installation, operation, and maintenance of FORTNA conveyors.

3.2 MANUAL SCOPE

This manual describes basic installation practices, assembly arrangements, preventive maintenance, and assists in replacement parts identification.

3.3 DOCUMENT OVERVIEW

This service manual is intended for use by personnel who are knowledgeable of installation and safe working practices on conveyor systems.

Not all applications and conditions can be covered; therefore, this manual is to be used ONLY as a guide. Proper training of operating and maintenance personnel is required by the owner/operator of the equipment.

If additional copies of this manual are needed or if you have any question concerning the conveyor, please contact your FORTNA Distributor or FORTNA Lifecycle Performance Services at 231-798-4547 or visit FORTNA at fortna-conveyor.com for maintenance videos and other application information.

3.4 MANUAL STRUCTURE

You should receive separate documentation for each product line of FORTNA conveyor implemented in your installation. You can identify the respective product lines on the back of the folder or on the cover sheet of the IOM (Installation Operation Maintenance Manual).

Note:

- Pay attention to the safety instructions!
- Prior to working at or in the immediate vicinity of the system it is recommended that you make yourself familiar with the safety instructions included in the present document!

4 POLICIES

4.1 CONVEYOR EQUIPMENT WARRANTY

FORTNA warrants that the material and workmanship entering into its equipment is merchantable and will be furnished in accordance with the specifications stated.

FORTNA agrees to furnish the purchaser without charge any part proved defective within 2 years from date of shipment provided the purchaser gives FORTNA immediate notice in writing and examination proves the claim that such materials or parts were defective when furnished. There are no warranties which extend beyond the description on the face hereof. Consequential damages of any sort are wholly excluded.

The liability of FORTNA will be limited to the replacement cost of any defective part. All freight and installation costs, relative to any warranted part, will be at the expense of the purchaser. Any liability of FORTNA under the warranties specified above is conditioned upon the equipment being installed, handled, operated, and maintained in accordance with the written instructions provided or approved in writing by FORTNA.

The warranties specified above do not cover, and FORTNA makes no warranties which extend to damage to the equipment due to deterioration or wear occasioned by chemicals, abrasion, corrosion or erosion; Purchaser's misapplication, abuse, alteration, operation or maintenance; abnormal conditions of temperature or dirt; or operation of the above rated capacities or in an otherwise improper manner.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EXTENDING BEYOND THOSE SET FORTH IN THIS STATEMENT OF WARRANTY.

4.2 ENVIRONMENT STANDARDS

FORTNA conveyor equipment is designed to be installed in a clean, dry warehouse environment. Exposure to extreme humidity, direct sunlight, blowing dirt or rain can permanently damage some components of FORTNA Conveyor. In particular, the curing agents in concrete are known to attack and degrade the urethane conveyor components.

When installing conveyor on a new construction site, be sure that the concrete is properly cured before setting conveyor on it. In addition, if conveyors are stored in proximity to curing concrete, proper ventilation must be used to direct the curing agent fumes away from the conveyor.

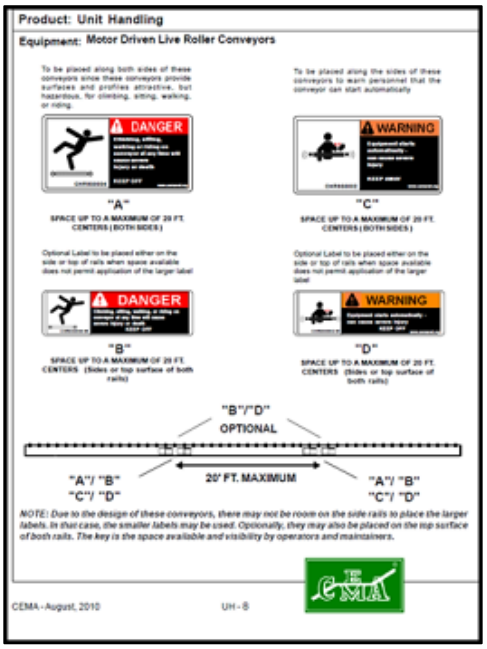
Failure to comply with these guidelines will void the FORTNA warranty on any failed components that result from these environmental issues.

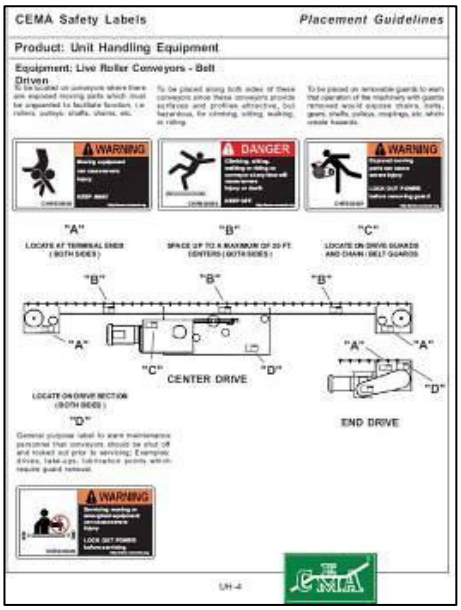
4.3 INDUSTRIAL ENVIRONMENT

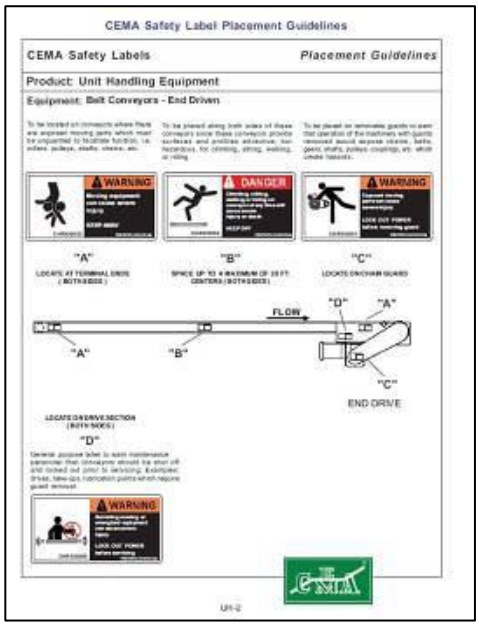
All technologies are designed to function in “normal” industrial environments. Chemical vapors, lubrication, excessive dust, high or low heat and moisture may affect their operation and void the equipment warranty. Some paint fumes, fresh concrete and other concentrations of airborne fumes have been known to adversely affect the life of many conveyor components and will void the equipment warranty.

4.4 PROPER LABELS FOR CONVEYOR

FORTNA recommends proper labels for conveyor types. Shown below are some samples of labels applicable to conveyor standards.







5 DESCRIPTION - INTENDED USE

5.1 INTENDED USE

Equipment intended for use by qualified and trained professionals in charge of using and managing the conveyor equipment in all its technical phases.

Roll Form (RF) supports applications that are defined in this manual and are designed to hold the FORTNA modules.

The application for anchoring, connecting, or ceiling hanging of the conveyor modules are illustrated in this Support & Connection manual. To include receiving and basic installation guidelines recommended by FORTNA Conveyor even though Business Partner may or may not purchase these supports and connections. This manual is a guide for this application and is designed for FORTNA conveyor assemblies. FORTNA conveyor is installed by business partners.

5.2 REASONABLY FORESEEABLE MISUSE

Reasonably foreseeable misuse is listed below:

- Conveying of people.
- Climbing, standing, walking on top of the conveyor.
- Placing hands between rollers.
- Using the conveyor equipment without having correctly incorporated it in the destination line.
- Using the conveyor equipment as a support.
- Using conveyor equipment to achieve greater production values than the required limits.
- Using the conveyor equipment to convey hazardous materials.
- Using the conveyor equipment differently than in the “intended use” paragraph.
- Not reading the Installation, Operation, Maintenance manual.

Use the conveyor equipment in a manner other than that indicated in the "intended use" paragraph.

Any use of the conveyor equipment that differs from the intended use must be authorized beforehand in writing by the Manufacturer. Without this written authorization, the use must be considered “**improper use**;” therefore, the Manufacturer declines any liability for eventual damage to persons or property and deems any kind of warranty on the conveyor equipment is void.

6 ROLL FORMED (RF) SUPPORT GUIDELINES

Roll Formed (RF) supports replace all existing FORTNA conveyor floor supports. This re-design accomplishes the following objectives:

- The standard floor support, heavy duty floor support, structural heavy duty floor support, multi-deck support, and the structural heavy duty multi-deck support have all been combined into a single roll formed shape configured to the respective applications.
- This “one fits all” approach makes the standard support more robust while dramatically reducing the cost compared to the existing heavy duty and heavy duty structural supports.
- In addition to the simplification of all our supports, the RF support features a modular bolt together design which allows for ease of adjustability and adding cross members to multi-deck supports. The roll formed shape also has a pattern of holes that give flexibility for knee bracing, sway bracing, running safety cables, and hanging of conduit.
- The standard RF support will go up to 17' – 7” top of support and the multi-deck up to 18' – 6”.
- Standard RF supports replace previous standard heavy- duty, and structural heavy-duty supports.

RF Heavy Duty (HD) Supports

- **RF Heavy Duty** supports are a newly designed category intended for possible dynamic load applications and conditions.
- **RF Heavy Duty** standard supports go up to 171 elevation heights.
- **RF Heavy Duty** Multilevel supports go up to 202 ¼” elevation heights.

Over all we are confident the RF support program will provide the traditional “**robust**” look and feel FORTNA Conveyor has always been known for while simplifying the selection process as well as making our heavy duty and tall supports much more competitive.

6.1 ROLL FORMED (RF) SUPPORT APPLICATION RULES

Application Rules – Cruz channels with welded butt bolt connectors:

Preferred supports at each bed joint.

Supports on 12' centers maximum.

No more than one unsupported joint on a drive bed.

Total load on the supports are to be FORTNA conveyors and systems live loads only. Added equipment weights to be considered by systems system integrator and approved by FORTNA Conveyor.

Multiple joints (2 max) on intermediate beds can be unsupported only when necessary and using the following guidelines:

- The beds adjacent to the joint are not drive beds.
- The support centers do not exceed 12'.

Application Rules – Channels without welded butt bolt connectors:

Supports at each bed joint.

Exceptions:

Exceptions allowed if approved under trussing or other connector kits are used.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

6.2 ROLL FORMED HEAVY DUTY (HD) SUPPORT APPLICATION RULES

Application Rules – Cruz channels with welded butt bolt connectors:

Preferred supports at each bed joint.

Supports on 12' centers maximum.

No more than one unsupported joint on a drive bed.

Total load on the supports are to be FORTNA conveyors and systems live loads only. Added equipment weights to be considered by systems system integrator and approved by FORTNA Conveyor.

Multiple joints (2 max) on intermediate beds can be unsupported only when necessary and using the following guidelines:

- The beds adjacent to the joint are not drive beds.
- The support centers do not exceed 12'.

Application Rules – Channels without welded butt bolt connectors:

Supports at each bed joint.

Exceptions:

Exceptions allowed only if approved by on site structural engineer.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

WARNING:

If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

6.3 RF SUPPORTS FEATURES & BENEFITS

Bolt-together construction

Allows installation flexibility

- Can remove & re-install upright or cross-member to fit around existing equipment
- Adjust cross-member heights to simplify mounting of cable trays, conduit, piping, etc.

Note!

Any changes or alterations must be in accordance with published application and safety guidelines.

Mount to options

Roll formed hole patterns on uprights and cross-members provide easy mounting for FORTNA Conveyor supplied parts such as knee braces and sway bracing.

Allows easy attachment of other components such as: conduit, safety cables, wiring, signage, small control boxes, etc.

Consult with FORTNA Conveyor engineering if there are any concerns with the size or configuration of add-on items.

Increased capacity

Replaces previous “heavy duty” style.

More capacity than “FS” style supports.

Evaluate case by case for applications outside standard application parameters.

Increased standard height range

- Up to 17'-7” for single
- Up to 18'-6” for multi-tier
- Replaces the need for ceiling hangars and additional decking in many cases

Decreased cost for tall supports and supports previously defined as “heavy duty” structural steel construction.

RF Heavy Duty Supports

Designed for dynamic load applications and conditions.

7 SAFETY — RECEIVING

⚠WARNING
HAZARD TO PERSONNEL
The Installation Supervisor must be experienced with conveyor, qualified in the mechanics of the equipment, and enforce safe working procedures for the protection of the crew, customer, and customer's property.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HAZARD OF MOVING PARTS
Before restarting a conveyor, which has been stopped because of an emergency, an inspection of the conveyor must be made, and the cause of the stoppage is determined. The starting device must be locked out before any attempt is made to correct the cause of stoppage**.**
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠CAUTION
HAZARD TO EQUIPMENT
TAKE CARE DURING THE REMOVAL OF EQUIPMENT FROM THE CARRIER. Remove small items and boxes first. Pull and lift only on the skid, not on the frame, crossmember or any part of the equipment.
Failure to follow these instructions can result in injury or equipment damage.

NOTICE

DAMAGE TO EQUIPMENT

TAKE CARE DURING THE REMOVAL OF EQUIPMENT FROM THE CARRIER. Remove small items and boxes first. Pull and lift only on the skid, not on the frame, crossmember or any part of the equipment.

Failure to follow these instructions can result in property damage or equipment damage.

7.1 RECEIVING & SITE PREPARATION

General

FORTNA Conveyor RF Supports units are shipped in subassemblies, and in their shortest elevation. These subassemblies are packaged to guard against damage in shipment, when handled properly.

Examination immediately following unloading will show if any damage was caused during shipment. If damage is evident, claims for recovery of expenses to repair damage or replace components must be made against the carrier immediately. While unloading, a check must be made against the Bill of Lading, or other packing lists provided, to confirm full receipt of listed items.

Preparation of Site

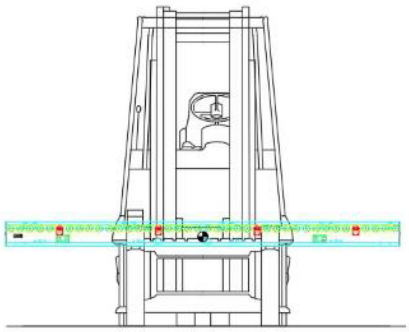
After the conveyor is received, move it to the installation site or designated dry storage area as soon as possible. Clean up all packing material immediately before parts get lost in it. Loose parts should remain in the shipping boxes until needed.

Prior to starting assembly of the conveyor, carefully check the installation path to be sure there are no obstructions that will cause interference. Check for access along the path needed to bring in bed sections and components closest to the point where they are needed. It is often necessary to give the area along the system path a general cleanup to improve installation efficiency, access, and accuracy.

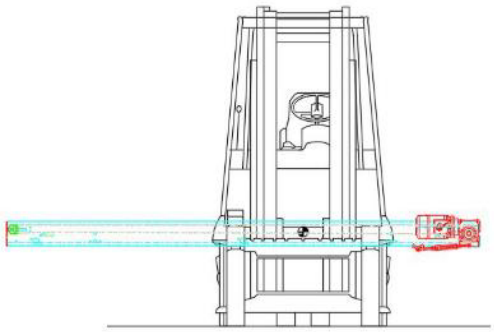
7.2 STAGING OR INSTALLING WITH A FORKLIFT

1) Make sure there is adequate space to move the conveyor equipment without interference or obstruction.
2) Before moving the conveyor equipment make sure to place the forklifts in the center of gravity of the load. If needed change position of the forking or lifting straps to find the center of gravity point. The center of gravity is typically at the center of the machine.

   Note: The motors will impact the center of gravity.



CONVEYOR CENTER OF GRAVITY IS TYPICALLY AT THE CENTER OF THE CONVEYOR.



ADJUST CENTER OF GRAVITY FOR CONVEYOR WITH MOTORS.

3) If possible, place fork truck forks under the conveyor equipment to lift. If not possible, align forks at bottom of conveyor equipment, at the center of gravity point. Then slide the conveyor equipment onto the forks. Slowly lift the load and perform a stability check.
4) Before moving the conveyor equipment make sure the load is balanced and secured with straps or clamps to prevent it from falling to the ground.
5) Position the conveyor on installed conveyor supports at installation point. Connect conveyor to supports before removing forks.

7.3 DISPOSAL OF PACKAGING

Packing is an integral part of the supply; its disposal is the purchaser’s responsibility.

The disposal or destruction must follow the regulations in force in the user's country, bearing in mind the nature of the materials:

Wood for the crates.
Plastic film for the protection of the conveyor equipment and adhesive tape for their fastening.
Absorbing bags for the moisture.

7.4 PARTS INVENTORY & IDENTIFICATION

Each subassembly is shipped completely assembled. Identify and separate components by type or tag number, for inventory and ease of locating during installation.

An identification label is attached to the outside of one side channel or on a cross member, close to one end of each conveyor bed and the RF support tag is located on the bottom side of the foot plate.

This label contains:

- Tag number
- Item number
- Description
- Job Number
- Mfg. Number
- Date of manufacture
- Tag number (if specified)
- Assembler's clock number
- QR (Quick Response) Label
    - Scan Code For IOM Manual

Scan the QR code to retrieve the IOM Manual, if nothing happens; check your scanner settings and make sure the QR Label setting is enabled.

On the supports, the tag is located on the bottom side of the foot.

On special devices, it is located on a convenient flat surface that is not offensive to the appearance of the equipment but is still accessible for viewing.

These numbers can be cross-referenced against the packing list.

Loose parts are boxed and shipped separately.

You should have all conveyor sections and supports for a particular conveyor prior to installation.

It is cost-effective to identify and procure any missing parts before they are needed for assembly.

Small items like nuts and bolts are weigh-counted and packaged by size and type.

8 BASIC INSTALLATION

1. Mark a line on the floor to locate the centerline of the conveyor frame using a chalk line. Refer to (Dimensional Reference Points) chapter.

   Position the frame supports (or ceiling hangers) to the proper elevation (If hanging conveyor modules). Attach the first conveyor section to its supports. Consult the manufacturer Applications Engineering for details with ceiling hanger applications.

2. Position the conveyor module according to the conveyor label information provided.
   a. **Note:** Each component is identified with an identification label and a flow arrow.
   b. Always check your conveyor module layouts and align the conveyor modules according to the layout positions.
3. Locate the center of the conveyor carrying surface, using a plumb-bob or laser, align the conveyor to the center line on the floor within a tolerance of (3mm) or 1/8 inch.
4. Level the conveyor section within a tolerance of (1.5mm) or 1/16 inch from the charge end to the discharge end and from side to side. Refer to (Elevations) chapter for details.
5. Measure across both frame section diagonals to confirm that it is square within (1.5mm) or 1/16 inch. Refer to the (Basic Squareness) chapter for details.
6. Anchor the conveyor section in place using the appropriate anchor bolts according to the layout requirements and codes.
7. Position the next frame supports the proper elevation for the next conveyor section to be installed.
8. Position the next conveyor section according to the conveyor tag information. Align the conveyor section to the previous conveyor section and to the center line of the floor as described in No. 4.
9. Repeat No. 5 and 6 Refer to (Basic Squareness) and (Elevations) chapters for more details.
10. Properly align and position the conveyor section, attach the appropriate connector kits, and anchor the sections in place.
11. Connect the 24VDC wiring harness and any other electrical connectors as necessary between the sections.
12. Repeat No. 8 through No. 13 for all additional sections.
13. Install all guard rails, if applicable.
14. Install the air piping and electrical services.
15. Install any required accessories.

8.1 DIMENSIONAL REFERENCE POINTS

The path of each conveyor in the system is determined by establishing a reference point at each end. The centerline of the conveyor is established, and a chalk line is snapped between these points.

Conveyors should be installed with the centerline of the bed matching the centerline of the conveyor path within 1/8" of true center. Locate and mark the center of the crossmembers at each end of the conveyor. Use a plumb line or other acceptable means to ensure accuracy to the chalk line.

Always carry out a thorough check for any obstructions such as building columns, manholes, etc. It may be necessary to reroute the conveyor to avoid the obstruction. In this case it would be advisable to begin installation at this point, using the obstruction as a reference point (Datum), and install the sections in either direction as required.

All conveyor sections must be checked for squareness prior to installation as "racking" or being knocked out of square may have occurred during shipping and handling.

8.2 BASIC SQUARENESS

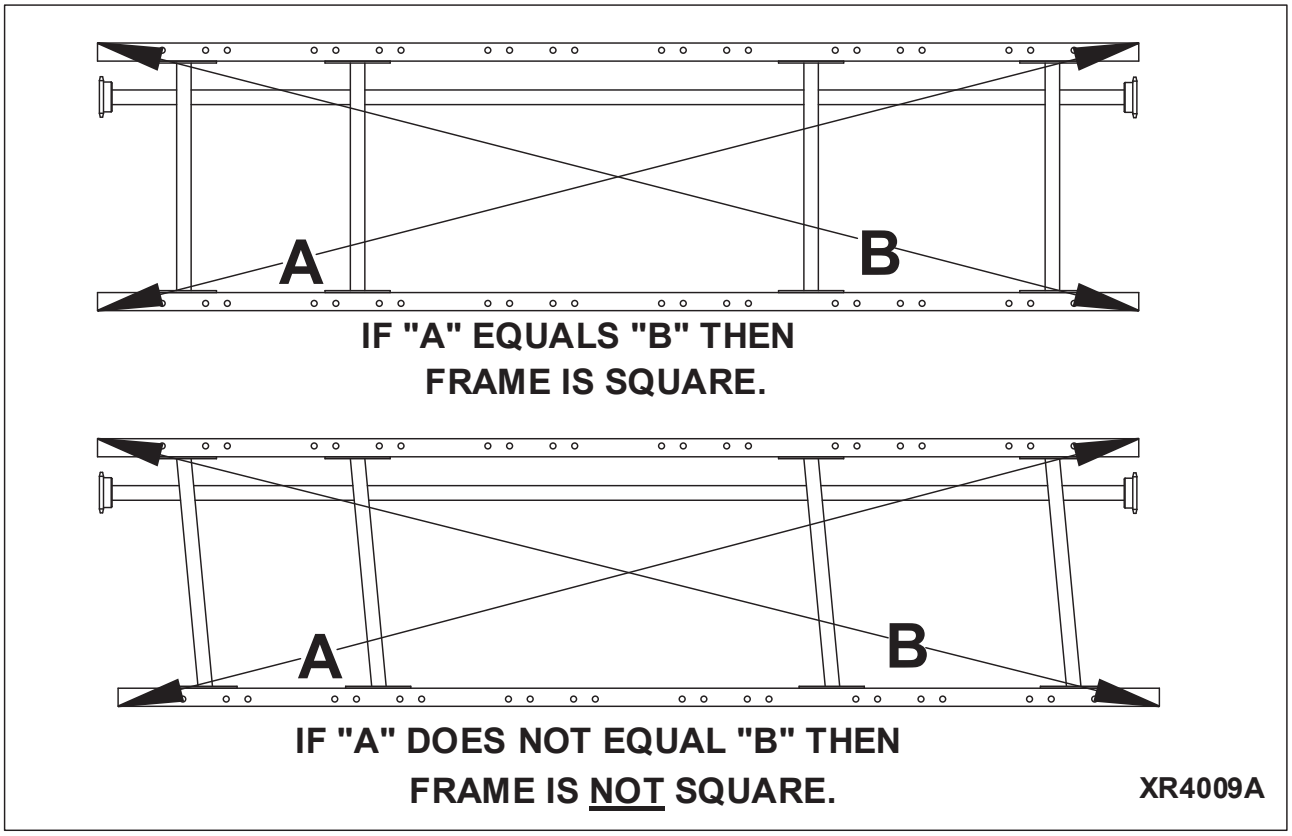
Squareness

IntelliROL conveyor may be installed using any of the supporting arrangements described under Support & Connections chapter of this manual. As each bed is installed in the system, level the conveyor from side to side using a bubble level on the roller at each support. The bubble location should be within the level indicator lines of the level. The centerline of the conveyor should not bow to the right or left more than 1/8" in either direction from a centerline drawn between the centers of the conveyor end assemblies.

A simple way to check this is to tie a nylon string around the center of the end roller, pull it taut, and tie it to the center of the roller at the opposite end. Put a wood spacer under the string at each end so it does not rest on the rollers. With the taut string centered on each end and suspended above the rollers, check the center of the rollers at each support relative to the string and adjust accordingly. (Note that this must be done after side-to-side leveling of the conveyor at each support.)

When joining bed frames, it is important to align the side channels. Care must be taken to make sure the rollers are level (carrying surfaces) from bed to bed.

All bed frames should be checked for squareness. To check, measure diagonally from corner to corner. Measure the opposite corners in the same manner. If the bed is square, the two measurements will be the same within 1/16".



8.3 ELEVATIONS

All conveyors should be installed in accordance with the elevations shown on the drawings. In addition, all conveyors must be level across the frame width and length (if horizontal). Leveling of the frames is best done using a rotating laser level or a builder's level.

After the first elevation is established at a critical point, the elevation of all other points shall be relative to this first point. Normal practice is to dimension the layout and measure elevations from the floor at each point of support.

As the conveyor system proceeds onto another floor or into another building or room, a new elevation will be measured from the floor at that point. This new elevation will then become the reference for subsequent elevations.

When installing an overhead system

The first elevation is measured from the floor and becomes the reference elevation point until a change in elevation is shown on the layout. Any new elevation is also measured from the floor and becomes the new reference point. The process is repeated each time an elevation change occurs.

⚠WARNING
HAZARD TO PERSONNEL OR EQUIPMENT
Consult the building architect or a structural engineer regarding ceiling loading or structural limitations of the building if any conveyor section is ceiling hung.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

8.4 COMPONENT ORIENTATION

Using your conveyor system layout drawing and the numbers on the I.D. tags on each component, position and align the conveyor sections, you must know:

- The direction of product flow
- The elevation height
- Charge and discharge end beds.

IMPORTANT!

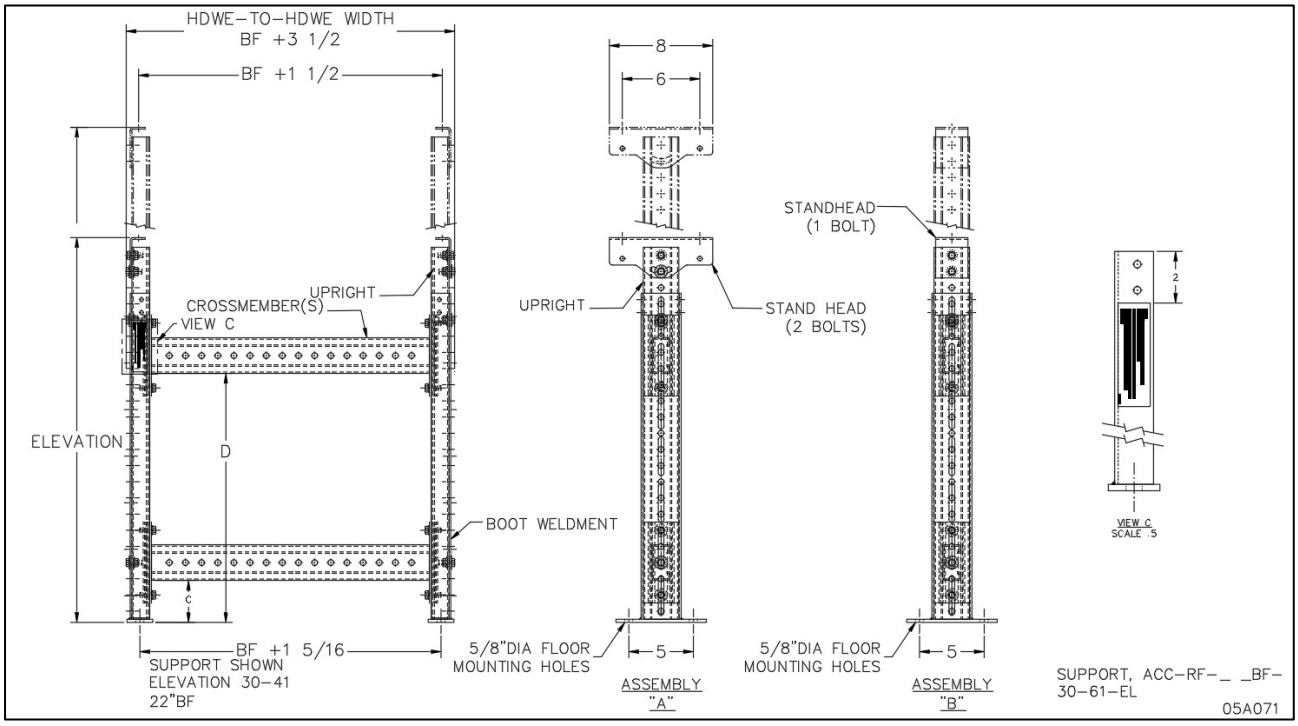
Do not make alterations to the equipment without consulting with the user's representative and FORTNA Conveyor. Unauthorized modifications to the equipment may impair its function, create a hazardous condition, affect its useful life, and/or void the warranty.

Establishing conveyor flow

Standard IntelliROL beds are supplied as either RH or LH flow. Looking across from the side of the IntelliROL bed the O-rings away from you and the product conveying to the right, the bed is considered a right hand (RH) flow bed. Using the same position as noted above and with the product conveying to the left, the bed is considered a left hand (LH) flow bed. The identification label described under Parts Inventory & Identification has all of the information required to identify the piece of equipment.

9 APPLICATIONS

9.1 ROLL FORMED (RF) FLOOR SUPPORTS



Standard Equipment

Consists of (2) standheads, (2) legs upright with bolt in crossmember(s), and (2) boot weldments with footplates.

RF Support on ITR Curve

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Capacity:

1500 lbs., typical

Welded butt joints:

FORTNA conveyor with welded butt joints has been designed to be supported on 12' centers maximum. Drive Beds must be supported at bed joints. For other support locations contact Applications Engineering for assistance.

Bolted butt joints:

FORTNA conveyor with bolted butt joints has been designed to be supported at every bed joint.

If unable to support at bed joints, order connection kits for bed joints or approved trussing (priced & available separately). Contact Applications Engineering for assistance.

Note:

Block or support bed while adjusting heights.

Total load on supports is to be FORTNA conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

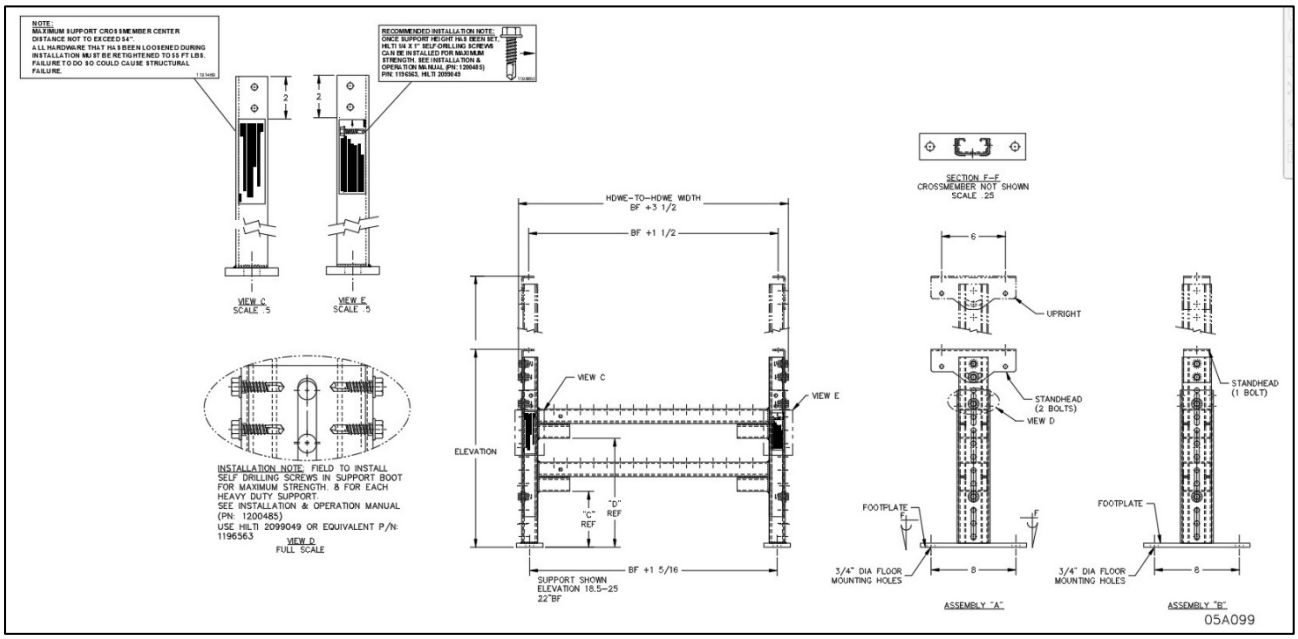
Height range shown is to top of support:

Add 4-7/8” for top of roller when conveyor has 4.5” Channels.

Add 6-3/8” for top of roller when conveyor has 7.5” CRUZ or C6 channel.

Add 9-3/8” for top of roller when conveyor has 9” Channels.

9.2 RF HD FLOOR SUPPORT 11.5 THROUGH 31 ELEVATIONS



Standard Equipment

Consists of (2) standheads, (2) legs upright with welded H-frame crossmember(s), and (2) boot weldments with footplates.

Note:

All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Static Capacity:

1500 lbs., typical

Dynamic Capacity:

To be determined by local Structural Engineer

Dynamic Load Testing

Note:

To be determined by local Structural Engineer

WARNING:

If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Welded butt joints:

FORTNA conveyor with welded butt joints has been designed to be supported on 12' centers maximum. Drive Beds must be supported at bed joints. For other support locations contact Applications Engineering for assistance.

Bolted butt joints:

FORTNA conveyor with bolted butt joints has been designed to be supported at every bed joint.

If unable to support at bed joints, order connection kits for bed joints or approved trussing (priced & available separately). Contact Applications Engineering for assistance.

Note:

Block or support bed while adjusting heights.

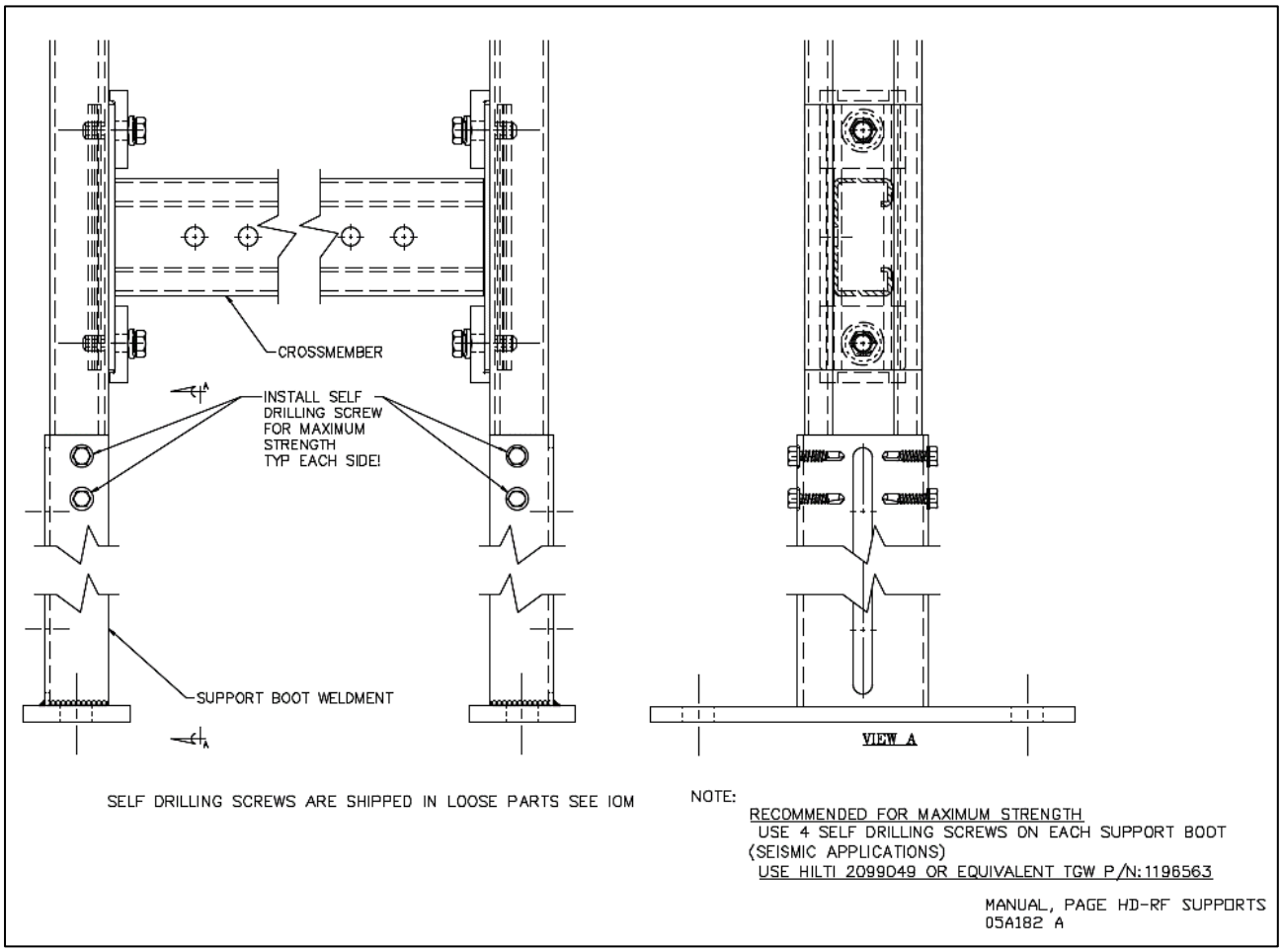
Total load on supports is to be FORTNA conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

9.3 RF HD APPLICATION FOR MAXIMUM STRENGTH



WARNING:

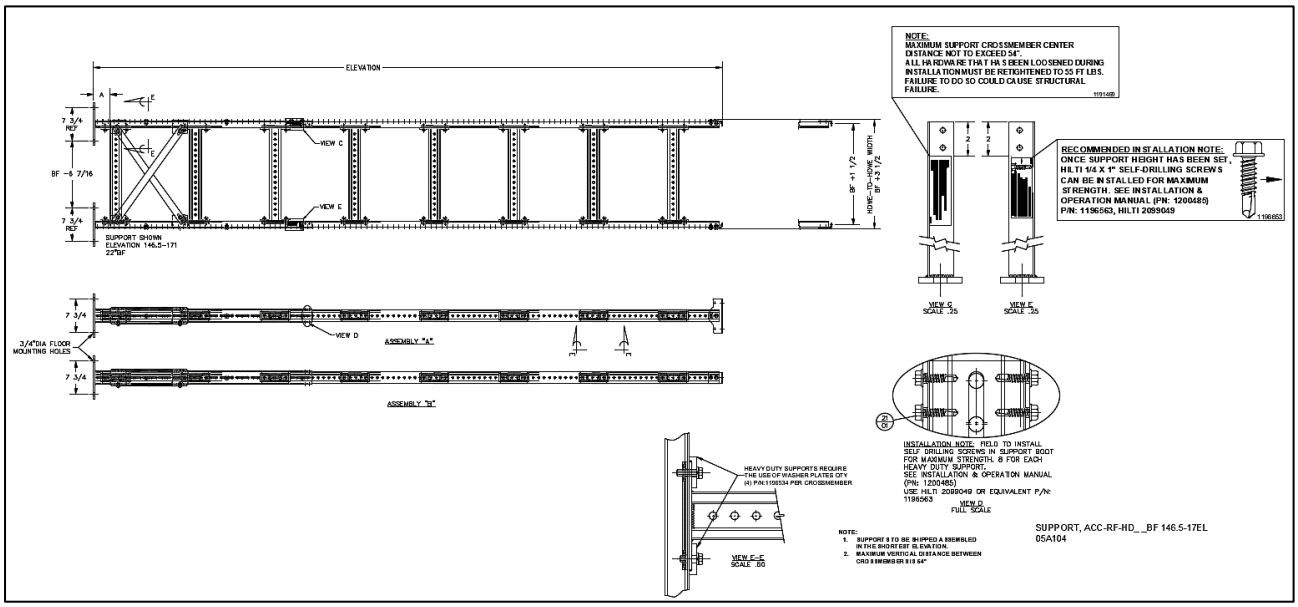
If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

9.4 RF HD FLOOR SUPPORT 30 THRU 171 ELEVATIONS



Standard Equipment

Consists of (2) standheads, (2) legs upright with bolt in 30 through 171 EL (Elevation) use bolt in crossmember(s), and (2) boot weldments with footplates.

Painted according to the job color specification.

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Static Capacity:

1500 lbs., typical

Dynamic Capacity:

To be determined by local Structural Engineer

Dynamic Load Testing

Note:

To be determined by local Structural Engineer

WARNING:

If RF Heavy Duty supports are used for "Seismic" conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Welded butt joints:

FORTNA conveyor with welded butt joints has been designed to be supported on 12' centers maximum. Drive Beds must be supported at bed joints. For other support locations contact Applications Engineering for assistance.

Bolted butt joints:

FORTNA conveyor with bolted butt joints has been designed to be supported at every bed joint.

If unable to support at bed joints, order connection kits for bed joints or approved trussing (priced & available separately). Contact Applications Engineering for assistance.

Note:

Block or support bed while adjusting heights.

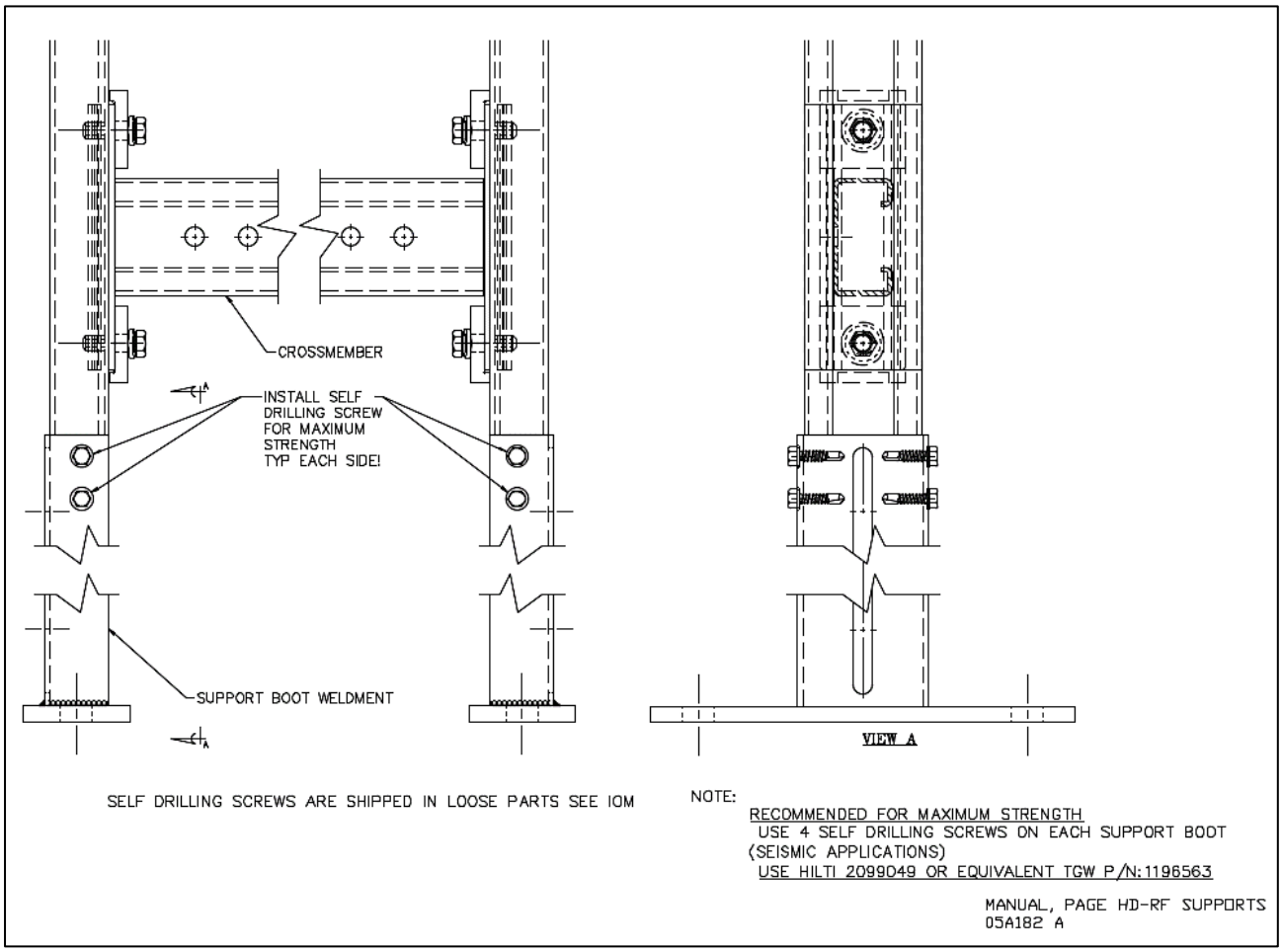
Total load on supports is to be FORTNA Conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

9.5 RF HD APPLICATION FOR MAXIMUM STRENGTH



WARNING:

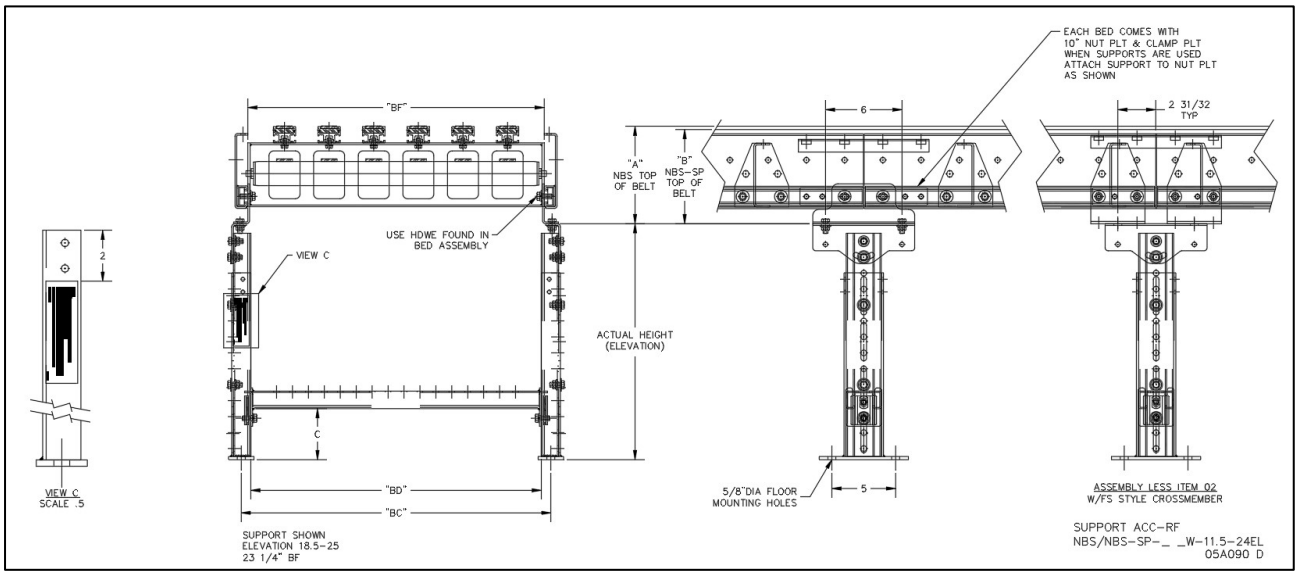
If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

9.6 RF NBS / NBS-SP / NBS POLYSORT



Standard Equipment

Consists of (2) standheads, (2) leg uprights with bolt in crossmember(s), and (2) boot weldments with footplates.

	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION
NBS CONVEYOR	"A"
NBS INT	7 5/8"
NBS 5' AIR TAKEUP	7 5/8" (OAL DEPTH 22")
NBS 5' END DRIVE	22 3/4"
NBS 6' END DRIVE	23 7/8"
	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION
NBS-SP CONVEYOR	"B"
NBS-SP INT	7 3/8"

05A090

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

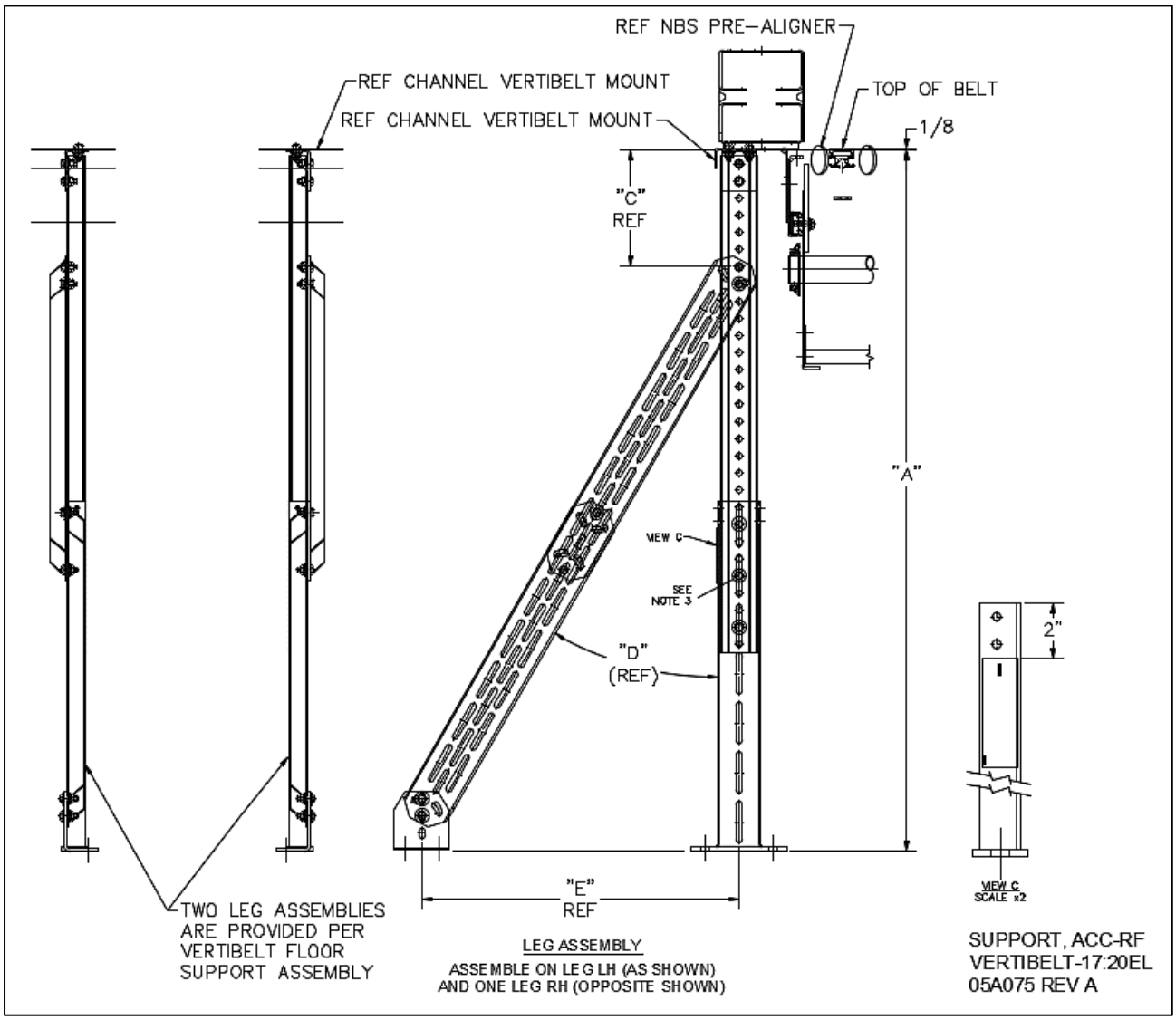
Capacity:

1500 LBS., typical

Shipping:

All floor supports are shipped assembled at lowest factory heights.

9.7 NBS VERTIBELT RF SUPPORTS



Drawing Notes:

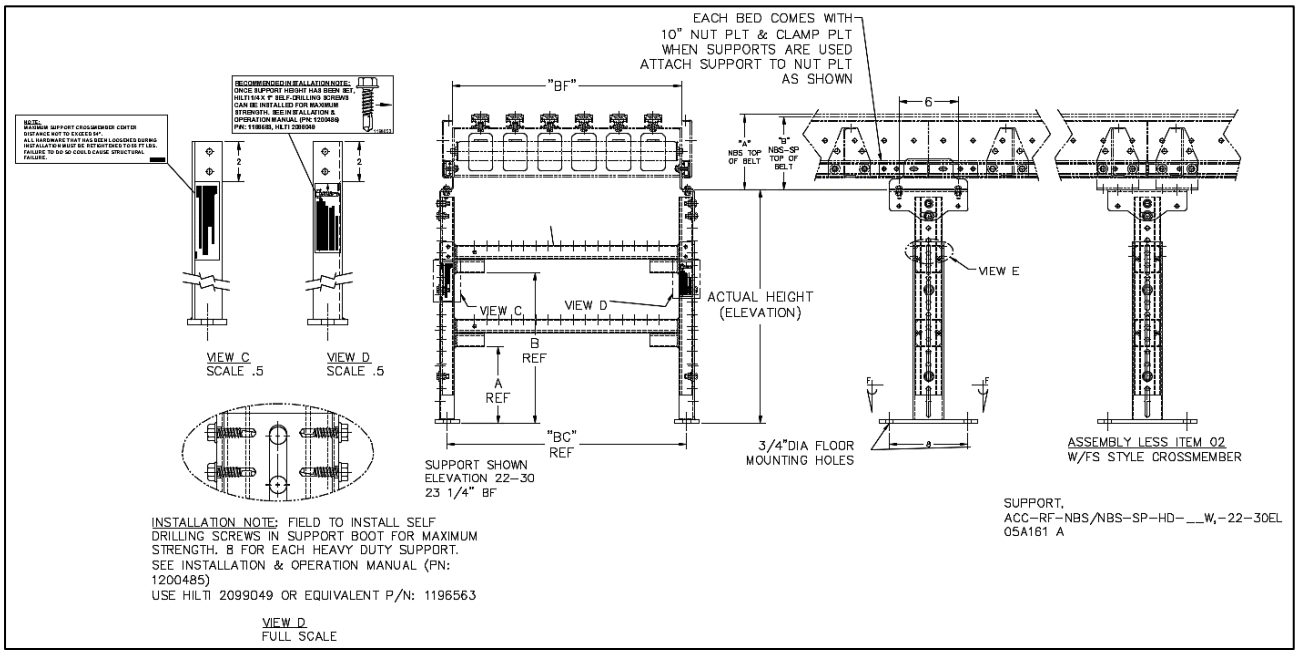
1. Support consists of two leg assemblies (one right hand & one left hand).

2. Two leg assemblies are provided per Vertibelt floor support assembly.

3. Leg supports 86.5-111 thru 186.5-131 require (3) fasteners evenly spaced securing the boot and the leg.

	MODEL NUMBER	ASSEMBLY PART NUMBER	"A" ACTUAL HEIGHT	ITEM 01 LEG HEIGHT	ITEM 02 BOOT HEIGHT	"C" @ MAX ELEVATION	"C" @ MIN ELEVATION	"D" @ MAX ELEVATION	"D" @ MIN ELEVATION	"E" @ MAX ELEVATION	"E" @ MIN ELEVATION
	17-20	1195982	16 1/2 MIN 20 3/4 MAX	13 3/4	11.05	4 3/4	7 1/4	47°	48°	13 13/16	7 15/16
	18.5-24	1195983	17 7/8 MIN 24 1/2 MAX	15	14.65	4 3/4	4 3/4	33°	45°	12	10 9/16
	22-30	1195984	27 7/16 MIN 30 5/8 MAX	20	18.25	4 3/4	4 11/16	34°	39°	15 9/16	11 7/8
	29.5-41	1195985	28 5/8 MIN 41 1/2 MAX	26 1/4	25.45	9 3/4	12 1/4	31°	41°	17 7/8	12 1/4
	38-51	1195986	37 1/4 MIN 51 1/2 MAX	36 1/4	25.45	8 1/2	13 1/2	29°	34°	22 3/16	14 1/8
	48-61	1195987	47 1/4 MIN 61 1/2 MAX	46 1/4	25.45	7 1/4	11	29°	32°	28 3/4	20 3/4
	58-71	1195988	57 1/4 MIN 71 1/2 MAX	56 1/4	32.65	7 1/4	4 3/4	29°	30°	34 1/2	28 9/16
	68-81	1195989	67 1/4 MIN 81 1/2 MAX	66 1/4	32.65	8/12	4 3/4	29°	30°	39 9/16	34 11/16
	76.5-91	1195990	76 MIN 91 1/2 MAX	75	32.65	6	6	29°	27°	46 3/4	33 7/8
SEE NOTE 3	86.5-111	1195991	86 MIN 111 1/2 MAX	85	50.65	13 1/2	6	24°	23°	42 1/2	32 13/16
	106.5-131	1195992	106 MIN 131 1/2 MAX	102	50.65	9 3/4	12 1/4	20°	25°	42 1/2	42 1/4
	REF DWG# 05A075 A										

9.8 RF HD NBS / NBS-SP/NBS POLYSORT, 11.5 THROUGH 31 ELEVATIONS



Standard Equipment

Consists of (2) standheads, (2) leg uprights with bolt in crossmember(s), and (2) boot weldments with footplates.

Painted according to the job color specification.

NBS 25W - 25-3/8" OAW, 23-1/4"BF

NBS 32W - 32-3/8" OAW, 30-1/4"BF

NBS-SP 11W

NBS-SP 14W

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Boot:

Steel channel boot upright welded to footplate. Two 5/8" diameter holes in footplates for permanent floor mounting. Vertical slots for bolting to leg uprights.

ASSEMBLY NOTES:
REFERENCE DRAWING 11980

NOTES:
1. ITEM 02 NOT USED ON NBS-SP 4" END PULLEY OR END DRIVE ASSEMBLIES.
2. ITEM 02 IS USED ON NBS END DRIVE ASSEMBLIES BUT, IT IS CALLED OUT IN THE END DRIVES STRUCTURE.
3. MINIMUM HEIGHT FOR NBS 3' END DRIVE TO TOP OF BELT IS 34-3/16 (USING MODEL NO. 11.5-14).
4. SEE DWG. 05A086 FOR MINIMUM HEIGHT SUPPORT. SEE CHART "C" FOR HEIGHT RANGES USING DWG. 05A086.
5. MINIMUM HEIGHT FOR NBS-SP 8" EDR & NBS-SP 4" END PULLEY TO TOP OF BELT ON THIS DWG. IS 20-3/4 (USING MODEL NO. 11.5-14).
6. SUPPORTS TO BE SHIPPED ASSEMBLED IN THE SHORTEST ELEVATION.
7. MAXIMUM VERTICAL DISTANCE BETWEEN CROSSMEMBERS IS 54"

CONVEYOR MODEL	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION "A"
NBS-I	7 5/8
NBS 5' END DRIVE	22 3/4
NBS 6' END DRIVE	23 7/16
NBS 3' END DRIVE	13 1/16

CONVEYOR MODEL	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION "B"
NBS-SP-I	7 3/8

CHART "C"

CONVEYOR MODEL	HEIGHT RANGES WHEN USING MIN. HEIGHT SUPPORT ON DWG. 05A086 (TO TOP OF BELT)
NBS 3' END DRIVE*	23-3/4" - 35"

*INCLUDES CLEARANCE FOR 5' TAKEUP BED

Elevation range:

11.5"-14", 13"-16.5", 15.5"-20", 18.5"-25", 22"-30"

Static Capacity:

1500 lbs., typical

Dynamic Capacity:

To be determined by local Structural Engineer

Dynamic Load Testing

Note:

To be determined by local Structural Engineer

WARNING:

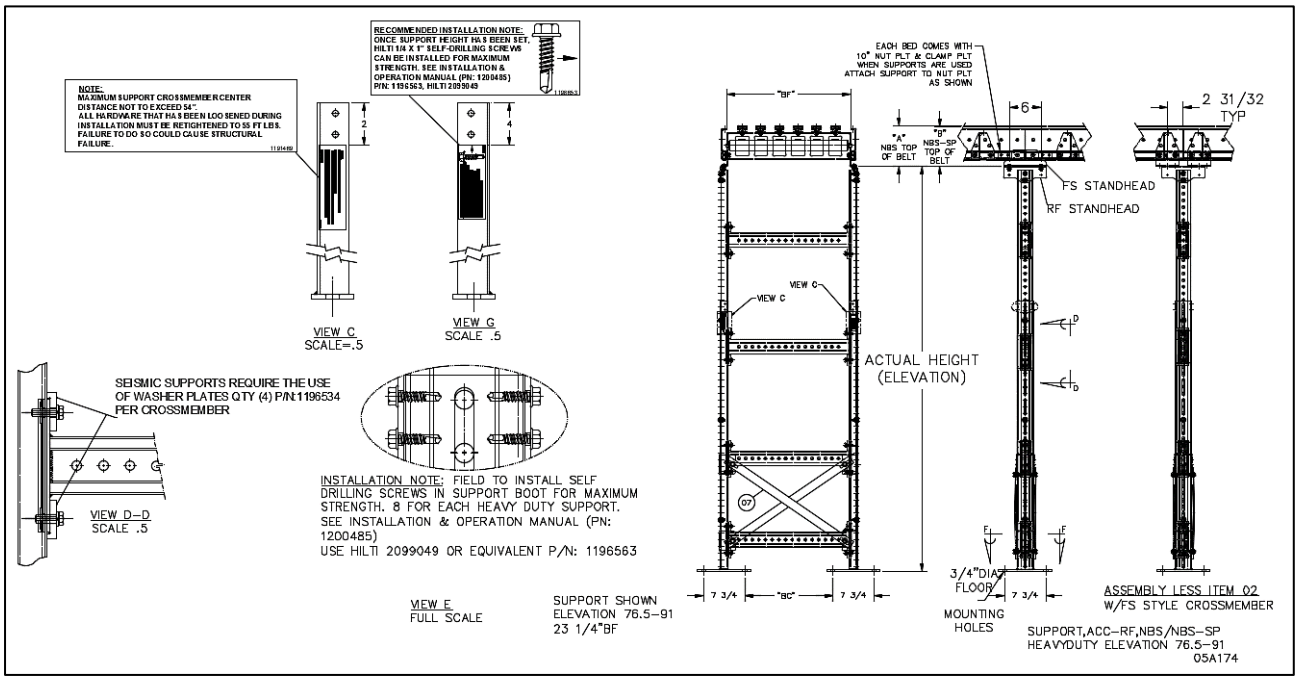
If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

9.9 RF HD NBS / NBS-SP/NBS POLYSORT, 30 THROUGH 131 ELEVATIONS



Standard Equipment

Consists of (2) standheads, (2) leg uprights with bolt in crossmember(s), and (2) boot weldments with footplates. May also have cross braces depending on elevation.

NOTES:
1. ITEM 02 NOT USED ON NBS-SP 4" END PULLEY OR END DRIVE ASSEMBLIES.
2. ITEM 02 IS USED ON NBS END DRIVE ASSEMBLIES BUT, IT IS CALLED OUT IN THE END DRIVES STRUCTURE.
3. SUPPORTS TO BE SHIPPED ASSEMBLED IN THE SHORTEST ELEVATION.
4. MAXIMUM VERTICAL DISTANCE BETWEEN CROSSMEMBERS IS 54"

CONVEYOR MODEL	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION "A"
NBS-I	7 5/8
NBS 5° END DRIVE	22 3/4
NBS 6° END DRIVE	23 7/16
NBS 3° END DRIVE	13 1/16

CONVEYOR MODEL	AMOUNT TO ADD TO ACTUAL HEIGHT FOR TOP OF BELT DIMENSION "B"
NBS-SP-I	7 3/8

Static Capacity:

1500 lbs., typical

Dynamic Capacity:

To be determined by local Structural Engineer

Dynamic Load Testing

Note:

To be determined by local Structural Engineer

WARNING:

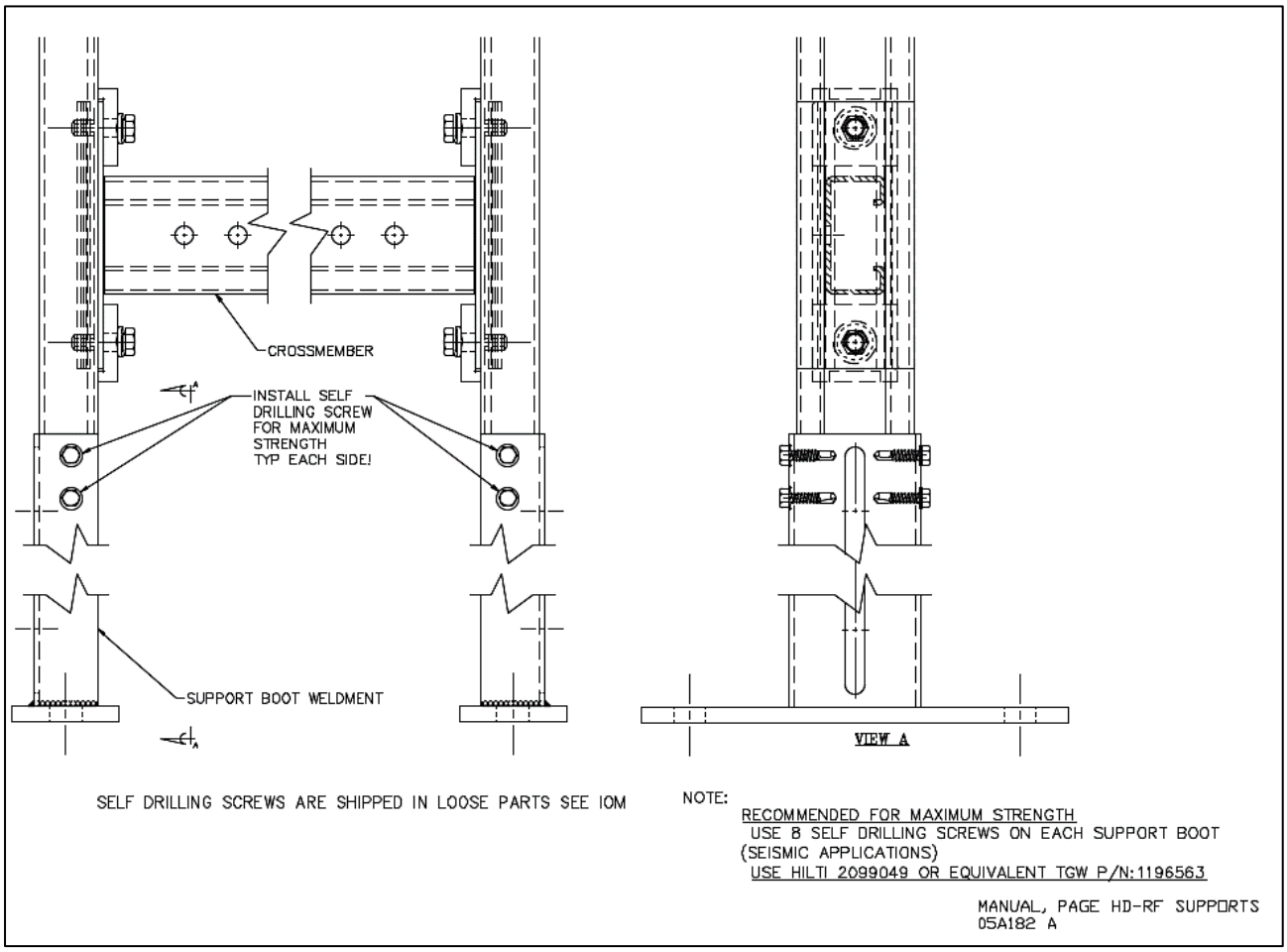
If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

9.10 RF HD APPLICATION FOR MAXIMUM STRENGTH



WARNING:

If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

9.11 RF CURVE CENTER SUPPORT

Single leg RF support on 90° ITR curve.

RF CCS Support

Standard Equipment

Consists of (1) standhead, (1) boot weldment with footplate, and (1) leg upright (less crossmembers) to support outside channel of curves.

Single leg supports should be used on 90° and 60° curves.

Curves over 34BF should install a standard floor support with crossmember, located in center location of curve.

Note:

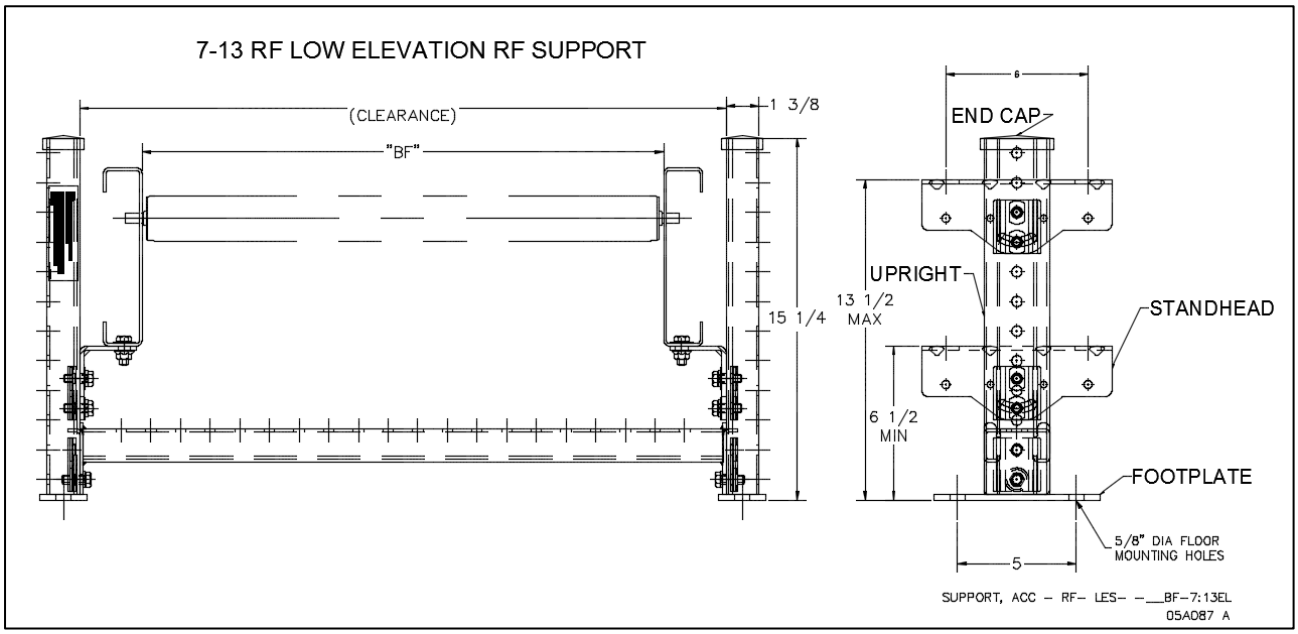
All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Block or support bed while adjusting heights.

Total load on supports is to be FORTNA conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

9.11.1 7-13 RF LOW ELEVATION SUPPORT

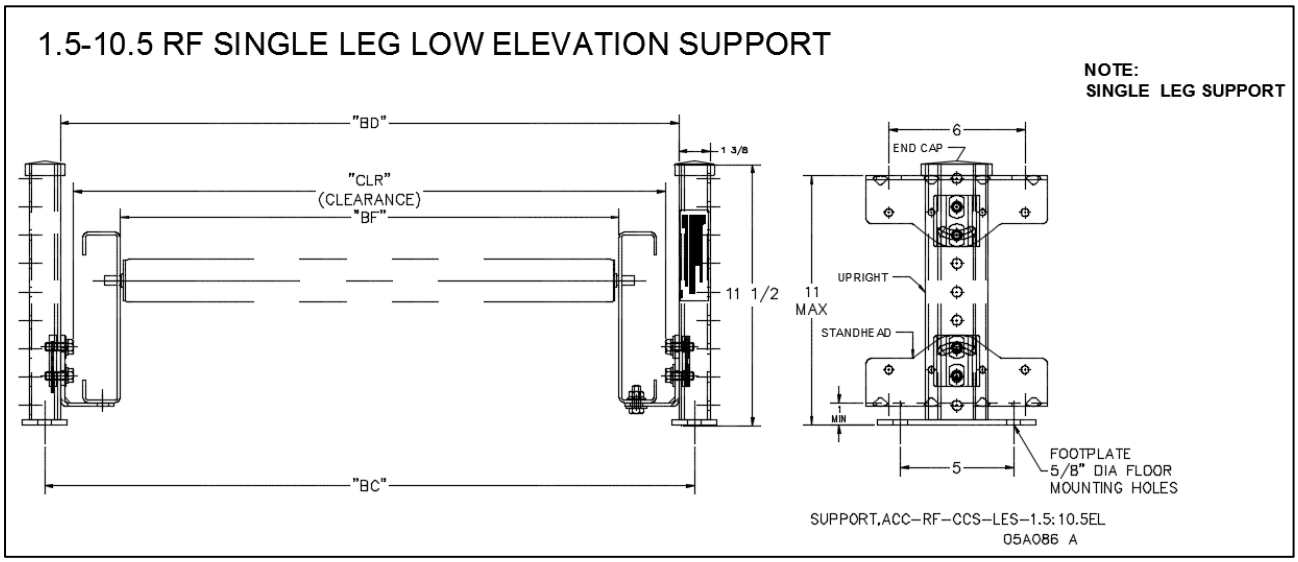


Low elevation supports consist of (2) standheads, (2) leg upright weldments with footplate, (1) crossmember, (2) end caps, and hardware.

Capacity:

750 lbs., typical

9.11.2 SINGLE LEG 1.5-10.5 LOW ELEVATION SUPPORTS



Single Leg Low Elevation Supports consist of (1) standhead, (1) leg upright weldment with footplate, (1) end cap, and hardware.

Locations:

Bracing the conveyor to other structures may be required since the (1.5”-10.5”) low elevation support **does not include crossmembers.**

Capacity:

700 lbs., typical

Elevation ranges:

Measured from bottom of footplate to top of conveyor.

1.5-10.5 RF SINGLE LEG LOW ELEVATION SUPPORT			
Conveyor Type		Top of Conveyor Elevation (INCHES)	
	Channel Type	Minimum	Maximum
XenoROL®	4.5"	8-1/2"	15"
XenoROL®	9"	13"	19-1/2"
XenoROL®	CRUZchannel	*8-3/4"	17"
XenoPRESSURE®	CRUZchannel	*8-3/4"	17"
CRUZbelt	CRUZchannel	*8-3/4"	17"
IntelliROL®	CRUZchannel	*8-3/4"	17"
Gravity Roller	2.5"	*3-3/4"	13"
Gravity Wheel	3.5"	* 5"	14"
NBC	CRUZchannel	*8-3/4"	17"
* Turn over standhead			
Ref Drawing # 05A086			

7-13 RF LOW ELEVATION SUPPORT			
Conveyor Type		Top of Conveyor Elevation (INCHES)	
	Channel Type	Minimum	Maximum
XenoROL®	4.5"	11-1/2"	17-3/4"
XenoROL®	9"	15-3/4"	22-1/4"
XenoROL®	CRUZchannel	13"	19-1/4"
XenoPRESSURE®	CRUZchannel	13"	19-1/4"
CRUZbelt	CRUZchannel	13"	19-1/4"
IntelliROL®	CRUZchannel	13"	19-1/4"
Gravity Roller	2.5"	* 6-1/4"	15-1/2"
Gravity Wheel	3.5"	* 7-3/8"	16-3/4"
NBC	CRUZchannel	13"	19-1/4"
* Turn over standhead			
Ref Drawing # 05A087			

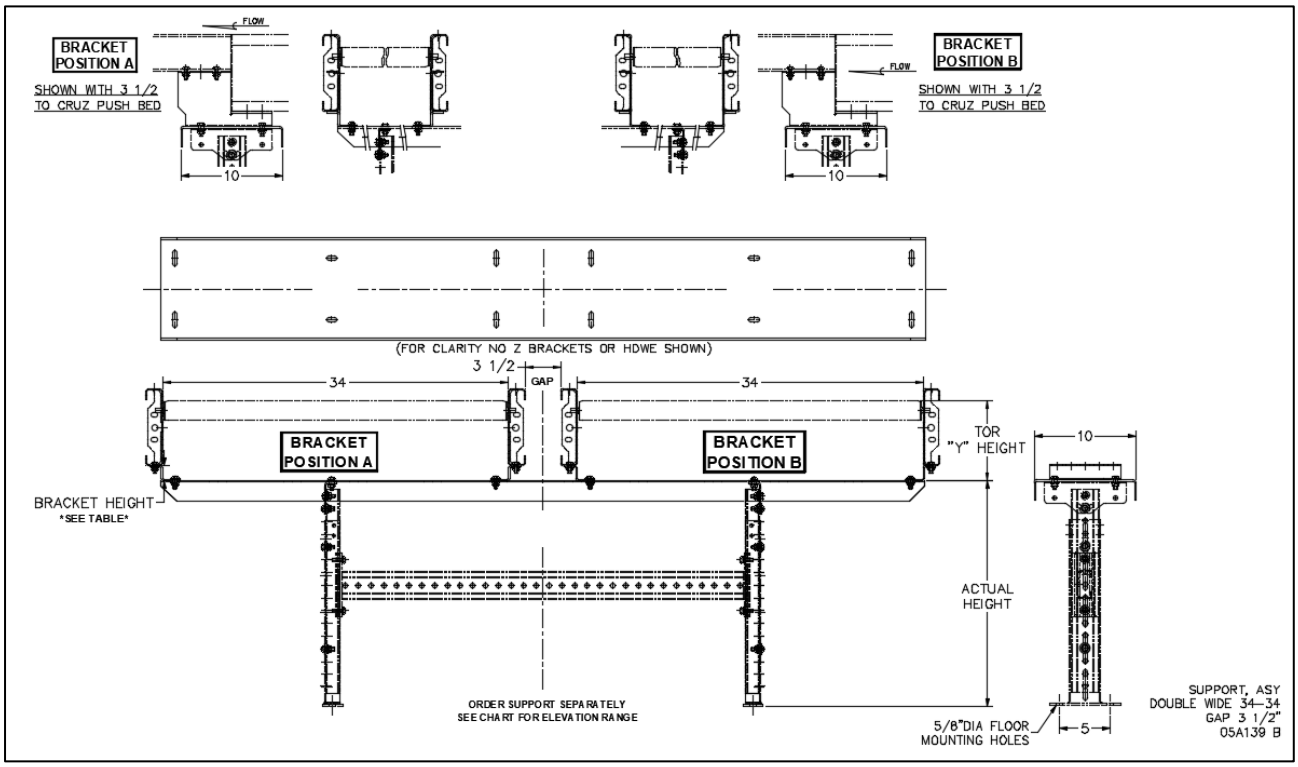
Shipping:

All floor supports are shipped assembled at lowest factory default heights.

Note:

Consider the depth of the drive when selecting the correct low elevation support.

9.12 RF DOUBLE-WIDE SUPPORT



The standard Roll Formed (RF) floor support is also preassembled but not attached to the channel for shipping.

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Capacity:

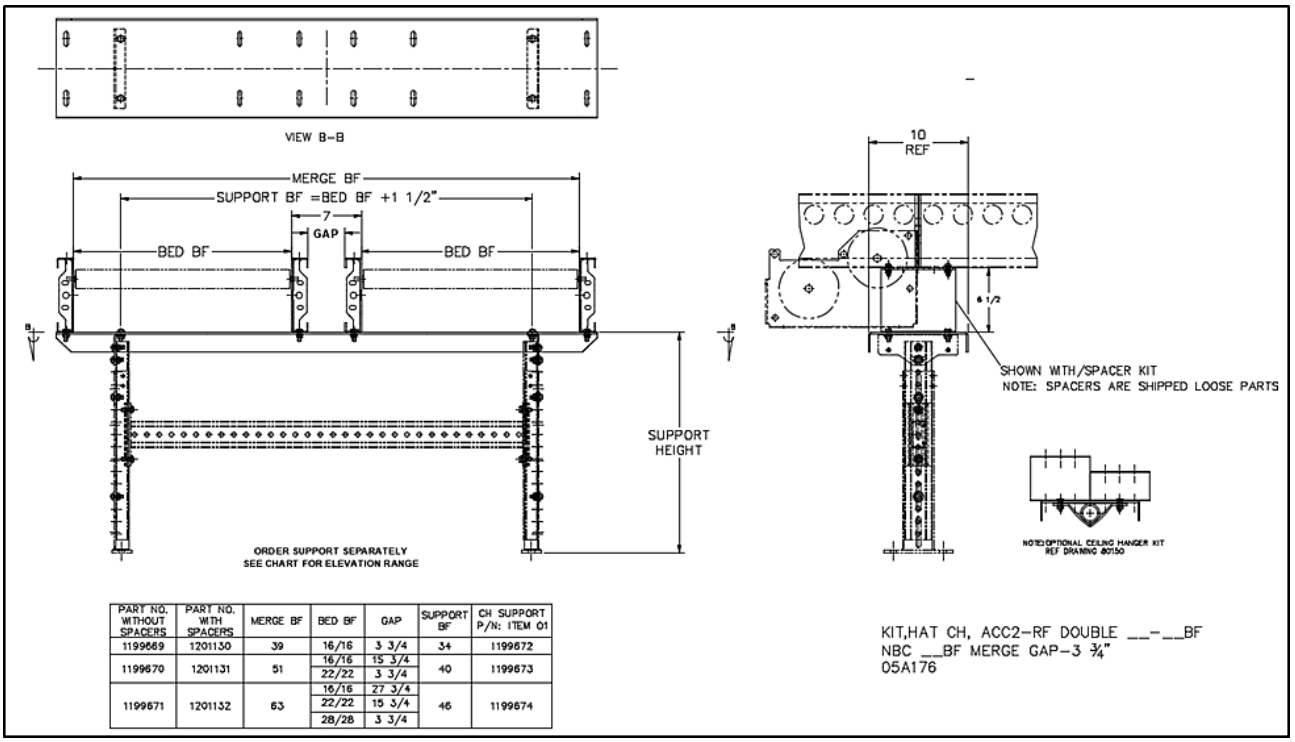
1500 lbs., typical

RF Channel Spacer Z Bracket for Double Wide:

Consists of 10 ga. formed steel brackets and mounting hardware. Mounting bolts secure bracket to web of side channel. Additional holes may need to be drilled.

	FOR POSITION A & B		ITEM 02
BRACKET HEIGHT	FOR USE WITH CHANNEL TYPE	Z BRACKET	Z BRACKET ASSEMBLY SEE NOTE 4
1 1/2	CZ, C6	1196689	1197761
1 3/4	CZ LINE SHAFT	1197757	1197762
3	9" CH	1197758	1197763
3 3/4	GRAV 3 1/2" DP PICK ZONE MOD	1200810	1201235
4	GRAV 3 1/2" CH	1196701	1197764
4 1/2	XR LINE SHAFT, NBS END W/O ENC	1197759	1197765
6 1/2	NBC END, NBS ENC	1197760	1197766
NOTES:			
1. CZ CHNLS SHOWN IN BOTH POSITIONS AS REFERENCE ONLY			
2. BEDS ALWAYS REQUIRE BRACKETS.			
3. Z BRACKET ASSEMBLY INCLUDES (2) BRACKETS WITH MOUNTING HARDWARE.			
REF DWG# 15A136-15A143			

9.13 RF HAT CHANNELS DOUBLE - NBC MERGE



PART NO. WITHOUT SPACERS	PART NO. WITH SPACERS	MERGE BF	BED BF	GAP	SUPPORT BF	CH SUPPORT P/N: ITEM 01
1199669	1201130	39	16/16	3 3/4	34	1199672
1199670	1201131	51	16/16	15 3/4	40	1199673
			22/22	3 3/4		
1199671	1201132	63	16/16	27 3/4	46	1199674
			22/22	15 3/4		
			28/28	3 3/4		

Hat Channel Double Merge Kit:

Consists of 10ga steel channel with hardware; ordered with or without spacers. Supports are ordered separate. Mounting bolts secure spacer channels to bottom flange of bed and either the standhead of the floor support or ceiling hanger. The standard Roll Formed (RF) floor support is also preassembled but not attached to the channel for shipping.

NBC MERGE SUPPORT SELECTION CHART				
MERGE BF	SUPPORT BF	PART NO.	ELEVATION RANGE	ACTUAL SUPPORT HEIGHT
39	34	1191962	13-16.5	12 3/8" TO 17 1/8"
		1191976	15.5-20	14 7/8" TO 20 7/8"
		1191990	18.5-25	18" TO 25"
		1192004	23.5-31	23 1/2" TO 31"
51	40	1191963	13-16.5	12 3/8" TO 17 1/8"
		1191977	15.5-20	14 7/8" TO 20 7/8"
		1191991	18.5-25	18" TO 25"
		1192005	23.5-31	23 1/2" TO 31"
63	46	1191964	13-16.5	12 3/8" TO 17 1/8"
		1191978	15.5-20	14 7/8" TO 20 7/8"
		1191992	18.5-25	18" TO 25"
		1192006	23.5-31	23 1/2" TO 31"
REF DWG#05A176				

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

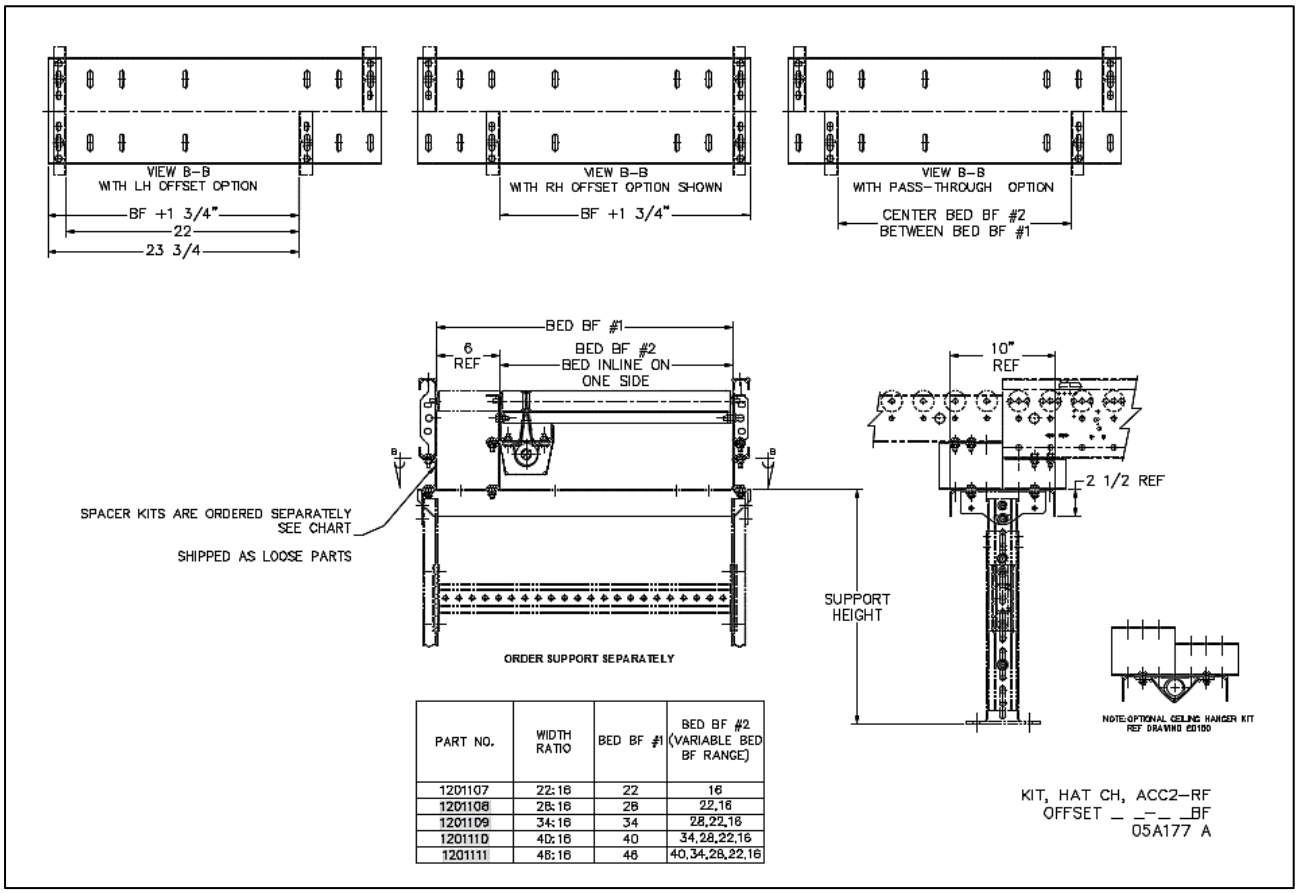
Capacity:

1500 lbs., typical

Note:

Spacers are shipped loose parts.

9.13.1 HAT CHANNELS - OFFSET



PART NO.	WIDTH RATIO	BED BF #1	BED BF #2 (VARIABLE BED BF RANGE)
1201107	22:16	22	16
1201108	28:16	28	22,16
1201109	34:16	34	28,22,16
120111D	40:16	40	34,28,22,16
1201111	46:16	46	40,34,28,22,16

Hat Channel Offset Kit:

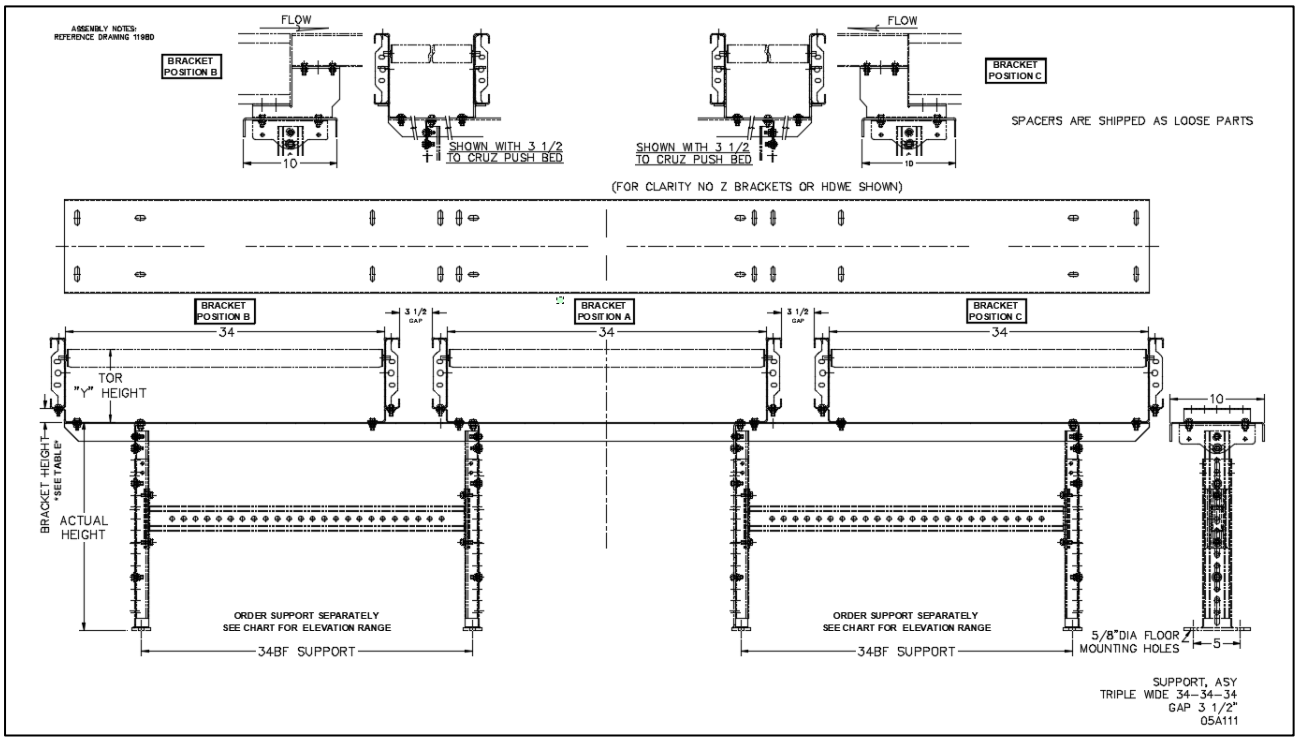
Consists of 10ga steel channel with hardware. Supports and spacer kits are ordered separate. Mounting bolts secure spacer channels to bottom flange of bed and either the standhead of the floor support or ceiling hanger. The standard Roll Formed (RF) floor support is also preassembled but not attached to the channel for shipping

Note:

Spacers are shipped lose parts.

KIT, SPACER TRANSITION 1" HIGH THROUGH 6-1/2" HIGH			
KIT, SPACER TRANSITION CH	**FRAME TYPES**	**SPACER CH P/N**	**SPACER HEIGHT "A"**
1198730	4.5 CH TO 3.5 GRAV	1198690	1"
1198731	4.5 CH TO CZ / C6 PUSH TO CZ / C6 MERGE TO CZ / C6	1198692	1 1/2"
1198732	4.5 CH TO 2.5 GRAV	1198693	2"
1198733	CZ / C6 TO 3.5 GRAV	1198694	2 1/2"
1198735	CZ / C6 TO 9 CH	1198695	3"
1198737	CZ / C6 TO 2.5 GRAV	1198696	3 1/2"
1198956	PUSH TO 3.5 CRAV	1198953	4"
1198738	4.5 CH TO 9 CH	1198697	4 1/2"
1198957	PUSH TO 2.5 GRAV	1198954	5"
1198739	9 CH TO 3.5 GRAV	1198698	5 1/2"
1198740	9 CH TO 2.5 GRAV	1198700	6 1/2"
			DWG#05A121 C

9.14 RF TRIPLE-WIDE SUPPORT



Consists of channel with spacers installed on channel. The standard Roll Formed (RF) floor support is preassembled but not attached to the channel for shipping.

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Capacity:

1500 lbs., typical per standard Roll Formed floor support.

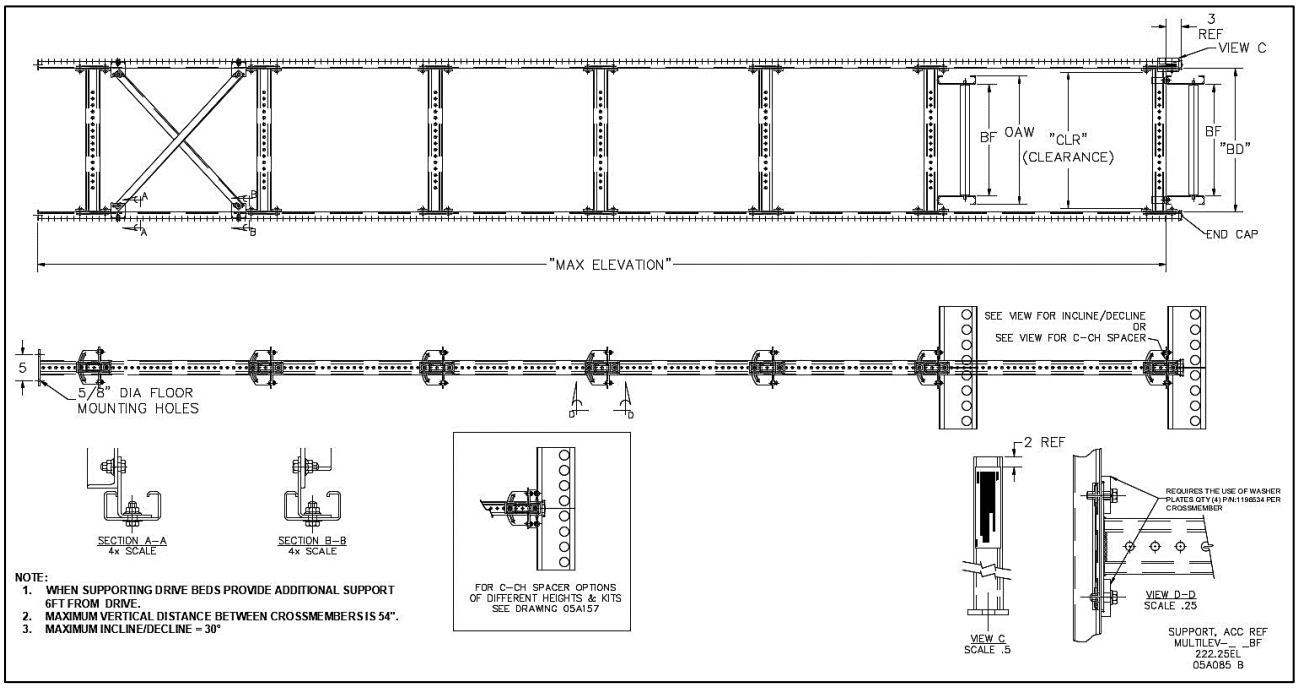
RF Channel Spacer Z Bracket for Triple Wide:

Consists of 10 ga. Formed steel brackets and mounting hardware.

	FOR POSITION A & B & C		ITEM 02
BRACKET HEIGHT	**FOR USE WITH CHANNEL TYPE**	**Z BRACKET**	**Z BRACKET ASSEMBLY SEE NOTE 4**
1 1/2	CZ, C6	1196689	1197761
1 3/4	CZ LINE SHAFT	1197757	1197762
3	9" CH	1197758	1197763
3 3/4	GRAV 3 1/2" DP PICK ZONE MOD	1200810	1201235
4	GRAV 3 1/2" CH	1196701	1197764
4 1/2	XR LINE SHAFT, NBS END W/O ENC	1197759	1197765
6 1/2	NBC END, NBS ENC	1197760	1197766
NOTES:			
1. CZ CHNLS SHOWN IN ALL POSITIONS AS REFERENCE ONLY			
2. IF BRACKETS FOR THAT BED LOCATION, WING BEDS ALWAYS REQUIRE BRACKETS			
3. Z BRACKET ASSEMBLY INCLUDES (2) BRACKETS WITH MOUNTING HARDWARE.			
REF DWG# 05A108-05A115			

Mounting bolts secure bracket to web of side channel. Additional holes may need to be drilled.

9.15 RF MULTI-LEVEL SUPPORT



Standard Equipment

Consists of (2) leg weldments with footplate and crossmembers (quantity varies by elevation), (4) mounting straps, and mounting hardware. May also have cross braces (dependent on elevation).

C-channel spacers (if needed) sold separately.

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

BF	"CLR"
16	20 5/8
22	26 5/8
28	32 5/8
34	38 5/8
40	44 5/8
46	50 5/8
52	56 5/8
Ref DWG# 05A085	

Clearance Between Uprights:

BF + 4-5/8"

Conveyor Mounting:

Formed steel strap.

Two holes in mounting strap flange for bolting to bottom of bed channels or appropriate C-channel spacers (see C-channel spacer section for more details).

Capacity:

1,200 lbs. per level. Limited to two levels.

Welded butt joints:

FORTNA conveyor with welded butt joints has been designed to be supported on 12' centers maximum. Drive Beds must be supported at bed joints. For other support locations contact Applications Engineering for assistance.

Bolted butt joints:

FORTNA conveyor with bolted butt joints has been designed to be supported at every bed joint.

If unable to support at bed joints, order connection kits for bed joints or approved trussing (priced & available separately). Contact Applications Engineering for assistance.

Note:

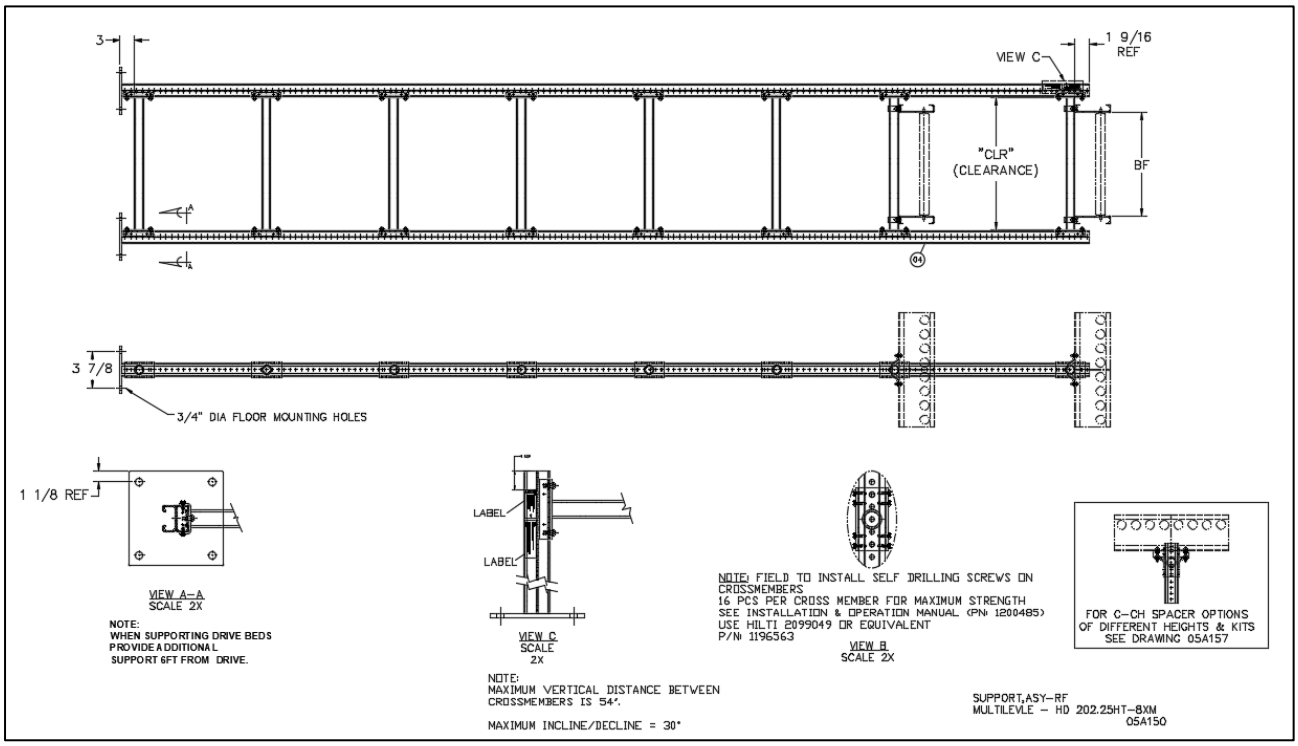
Block or support bed while adjusting heights.

Total load on supports is to be FORTNA conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

All floor supports are shipped assembled.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

9.16 RF MULTI-LEVEL HEAVY DUTY SUPPORT



Standard Equipment

Consists of (2) leg weldments with footplate and crossmembers (quantity varies by elevation), (4) mounting straps, and mounting hardware. May also have cross braces (dependent on elevation).

BF	"CLR"
16	21 7/8
22	27 7/8
28	33 7/8
34	98 7/8
40	45 7/8
46	51 7/8
52	57 7/8
Ref DWG# 05A150	

C-channel spacers (if needed) sold separately.

Painted according to the job color specification.

Note:

Maximum support crossmember center distance not to exceed 54". All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

Clearance Between Uprights:

BF + 5-7/8"

Conveyor Mounting:

Formed steel strap.

Two holes in mounting strap flange for bolting to bottom of bed channels or appropriate C-channel spacers (see C-channel spacer section for more details).

Static Capacity:

1,500 lbs. per level. Limited to two levels.

Dynamic Capacity:

To be determined by local Structural Engineer

Dynamic Load Testing

Note:

To be determined by local Structural Engineer

WARNING:

If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Crossmembers:

Bolted to leg uprights in lengths to match bed widths (fixed floor support width for each bed, width is not adjustable).

Note:

Maximum support crossmember center distance not to exceed 54”.

Welded butt joints:

FORTNA conveyor with welded butt joints has been designed to be supported on 12' centers maximum. Drive Beds must be supported at bed joints. For other support locations contact Applications Engineering for assistance.

Bolted butt joints:

FORTNA conveyor with bolted butt joints has been designed to be supported at every bed joint.

If unable to support at bed joints, order connection kits for bed joints or approved trussing (priced & available separately). Contact Applications Engineering for assistance.

Note:

Block or support bed while adjusting heights.

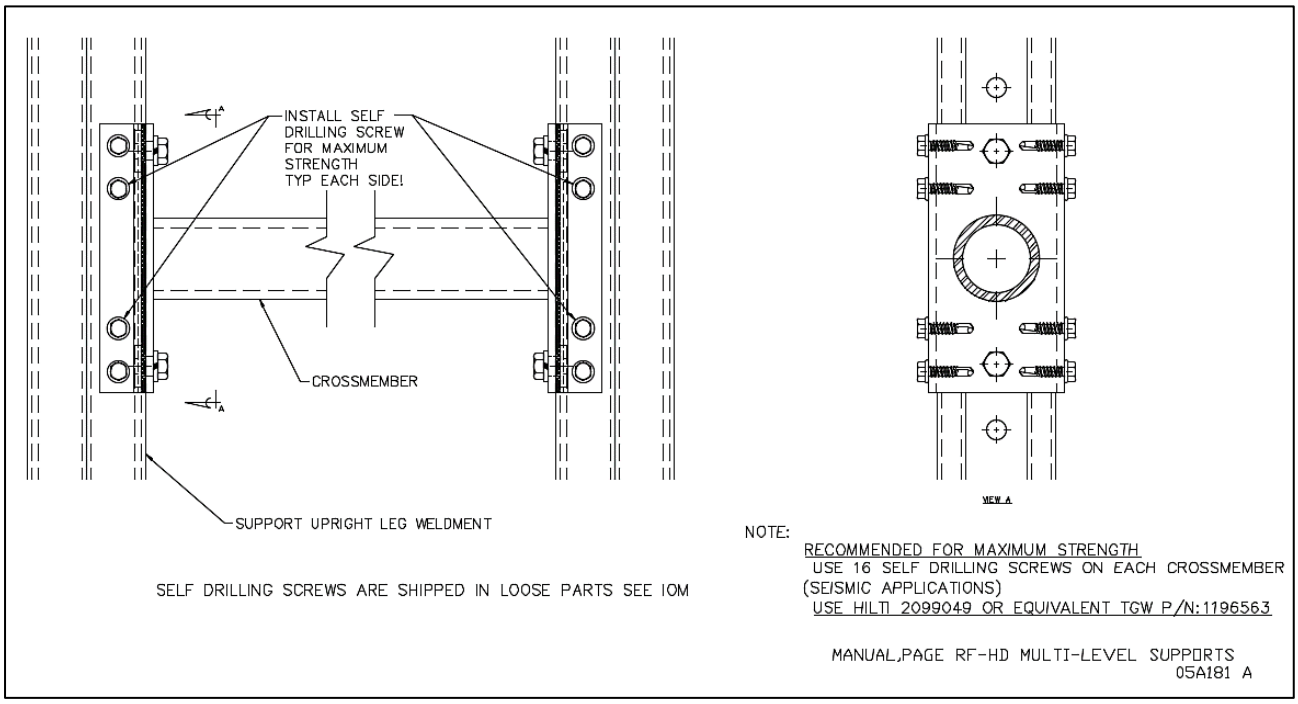
Total load on supports is to be FORTNA conveyor and system live load only. Added equipment weights to be considered by System Integrator and approved by FORTNA Conveyor.

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities.

Shipping:

All floor supports are shipped assembled at lowest factory default heights.

9.17 RF HD MULTI LEVEL APPLICATION FOR MAXIMUM STRENGTH



WARNING:

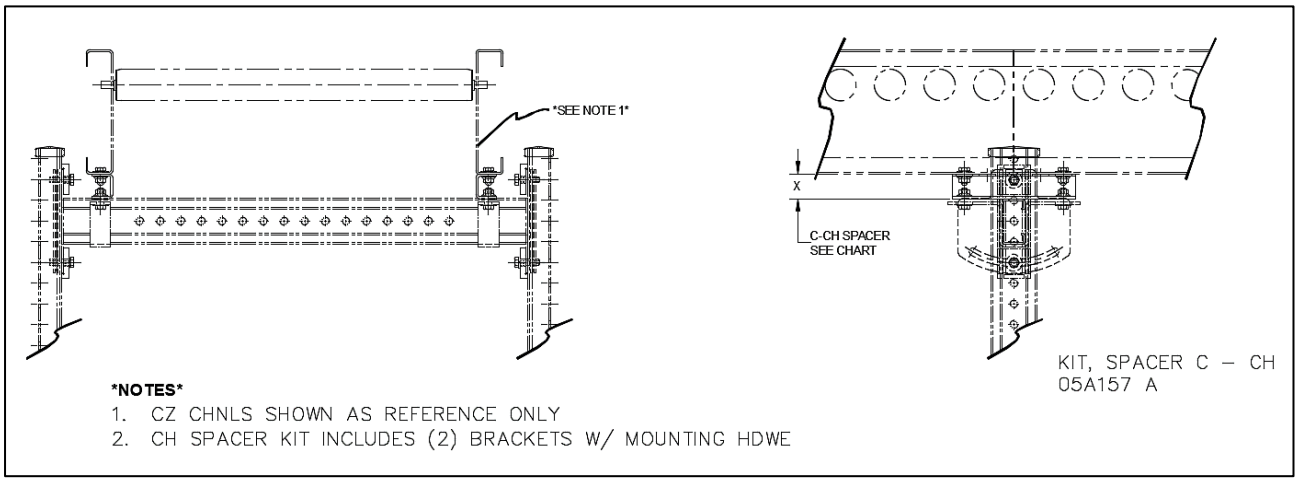
If RF Heavy Duty supports are used for “Seismic” conditions or ratings it shall be noted:

- Compliance assurance per all application codes and requirements is by others.
- FORTNA Conveyor can provide drawings as needed to Systems Integrator for proper evaluation and approval by their Structural Engineer.

Note:

Maximum support crossmember center distance not to exceed 54”. All hardware that has been loosened during installation must be retightened to 55 ft. Lbs. Failure to do so could cause structural failure.

9.18 C-CHANNEL SPACERS



C-channel spacer options used for different heights and kits.

C-channel spacers kits includes (2) brackets with mounting hardware.

KIT, SPACER C-CH			
C-CH SPACER KIT	**C-CH SPACER**	**FOR USE WITH CHANNEL TYPE**	**CH SPACER HEIGHT "X"**
1197888	1197883	CZ, C6	1 1/2
1197890	1197885	CZ LINE-SHAFT	3
1197892	80700112	4.5"CH LINE-SHAFT	4 1/2
1197893	1197887	NBC END, NBS ENC	6 1/2
1198045	E0001582	NBS, NBS-SP	1 1/16
NOTE: **1. CZ CHNLS SHOWN AS REFERENCE ONLY.** **2. CH SPACER KIT INCLUDES (2) BRACKETS W/MOUNTING HDWE.**			
DWG#05A157			

9.19 KNEE BRACES

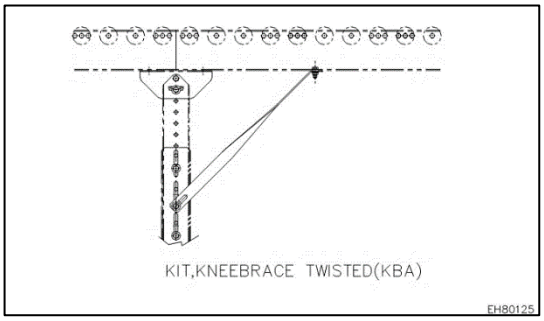
9.19.1 STANDARD KNEE BRACES

Stability along the conveyor length is achieved with knee braces. Braces resist stresses caused by direction of product flow, stops, and starts. Not every support requires bracing. Braces are used at the ends of straight runs and approximately every 30' in between.

Note:

For multilevel see Multilevel Knee Braces.

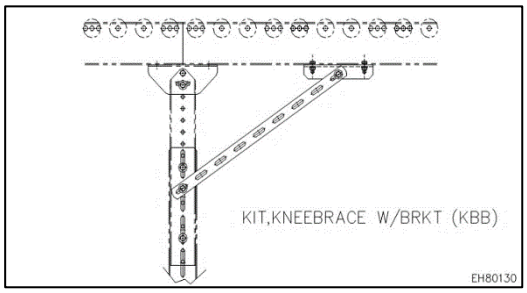
STANDARD KNEE BRACES	
Part Number	Description
80400002	KIT,ACC-KNEE BRACE-KBA-TWISTED
80400003	KIT,ACC-KNEE BRACE-KBB-W/BRKT
80400004	KIT,ACC-KNEE BRACE-KBC-DBL-W/BRKT



TYPE A (KBA): 10 ga. x 1-1/4” x 23” formed steel, bolts to leg upright of floor support and bottom flange of bed section, painted.

Knee Brace Kits Include: (2) Knee Braces and Hardware.

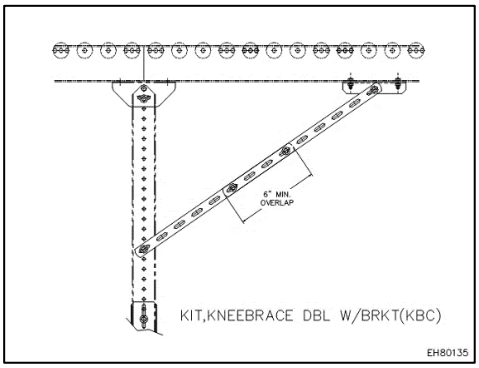
Standard use with supports 11.5”-50” elevation.



TYPE B (KBB): 1/4” x 1-1/4” x 24” steel plate bolts to support upright and 7 ga. x 2-1/2” x 8” steel angle bracket bolted to bottom flange of bed, painted.

Knee Brace Kits Include: (2) Knee Braces each containing (1) Knee Brace Strip, and Hardware.

Optional use with supports 11.5”-50” elevation



TYPE C (KBC): Same as Type “B” with two 24” long steel plates.

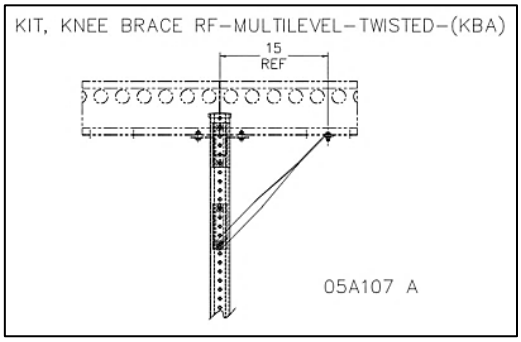
Knee Brace Kits Include: (2) Knee Braces each containing (2) Knee Brace Strips, and Hardware.

Standard use with supports above 50” elevation.

9.19.2 MULTILEVEL KNEE BRACES

Multilevel knee braces require brackets for attaching knee braces to support uprights. These brackets are included in the Multilevel Knee Brace kits.

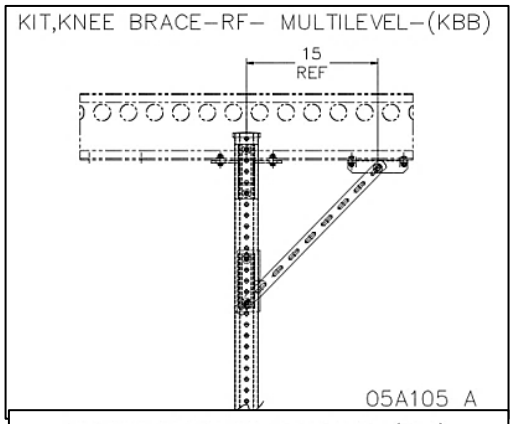
MULTILEVEL KNEE BRACES	
Part Number	Description
1196401	KIT,ACC2-RF-KNEE BRACE-ML-KBA-TWISTED
1196345	KIT,ACC2-RF-KNEE BRACE-ML-KBB-W/BRKT
1196346	KIT,ACC2-RF-KNEE BRACE-ML-KBC-DBL W/BRKT



Type A (KBA): 10 ga. X 1-1/4” x 23” formed steel, bolts to leg upright of floor support and bottom flange of bed section, painted.

Knee Brace Kits Include: (2) Knee Braces, (2) Angle Brackets, (2) Nut Plates, and Hardware.

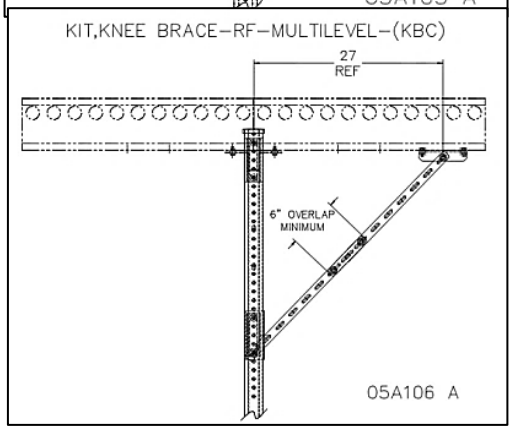
Standard use with supports up to 50” elevation



Type B (KBB): 1/4” x 1-1/4” x 24” steel plate bolts to support upright and 7 ga. X 2-1/2” x 8” steel angle bracket bolted to bottom flange of bed, painted.

Knee Brace Kits Include: (2) Knee Brace Strips, (4) Angle Brackets, Knee Brace, (2) Nut Plates, and Hardware.

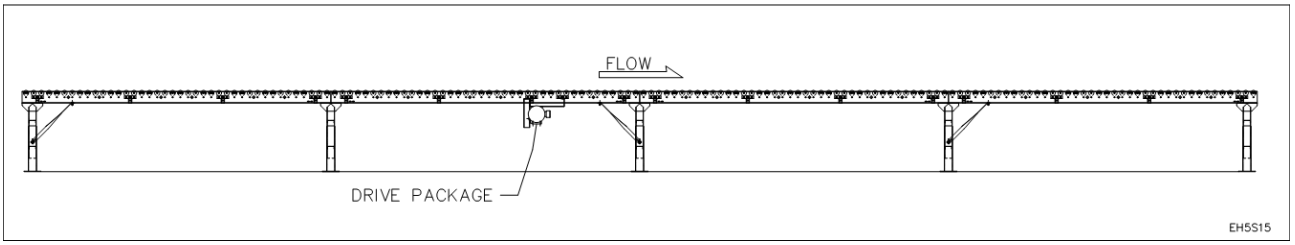
Optional use with supports up to 50” elevation.



Type C (KBC): same as type “**B**” with two 24” long steel plates.

Knee Brace Kits Include: (4) Knee Brace Strips, (4) Angle Brackets, Knee Brace, (2) Nut Plates and Hardware.

Standard use with supports above 50” elevation.



Mounted in tension on downstream side of support (except at drive) to resist imposed stresses caused by flow direction, starts, and stops. Recommended angle is 45°, bottom of bed to support upright.

9.20 SUPPORT ARRANGEMENTS

9.20.1 FLOOR SUPPORTS

All conveyor bed side channels are punched to match hole spacing for FORTNA Conveyor standard floor supports. Install bolts used to attach the standhead to the frame so the nut is on the bottom. Standhead bolts should be left finger tight while the conveyor is being assembled and aligned.

Floor supports are ordered by nominal height range, which is the dimension from the floor to top of the support. Conveyor elevations are shown on the layout by top-of-roller elevations. This difference must be recognized when setting the support elevations. IntelliROL conveyor is 6 3/8” from top-of-support to top-of-rollers with a 7 1/2” deep channel. (Rollers mounted low in frame.)

It is important that conveyor frames be installed level. Floor supports will accommodate normal irregularities in the floor surface. Adjustment for elevation in floor supports is accomplished with metal-on-metal bolt clamping force. To achieve the support’s stated load rating, it is necessary to tighten the elevation adjustment bolts (3/8” diameter) to 38 ft. lbs. of torque.

⚠WARNING
HAZARD TO EQUIPMENT OR PERSONNEL
All hardware that has been loosened during installation must be retightened to 55 ft. lbs.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

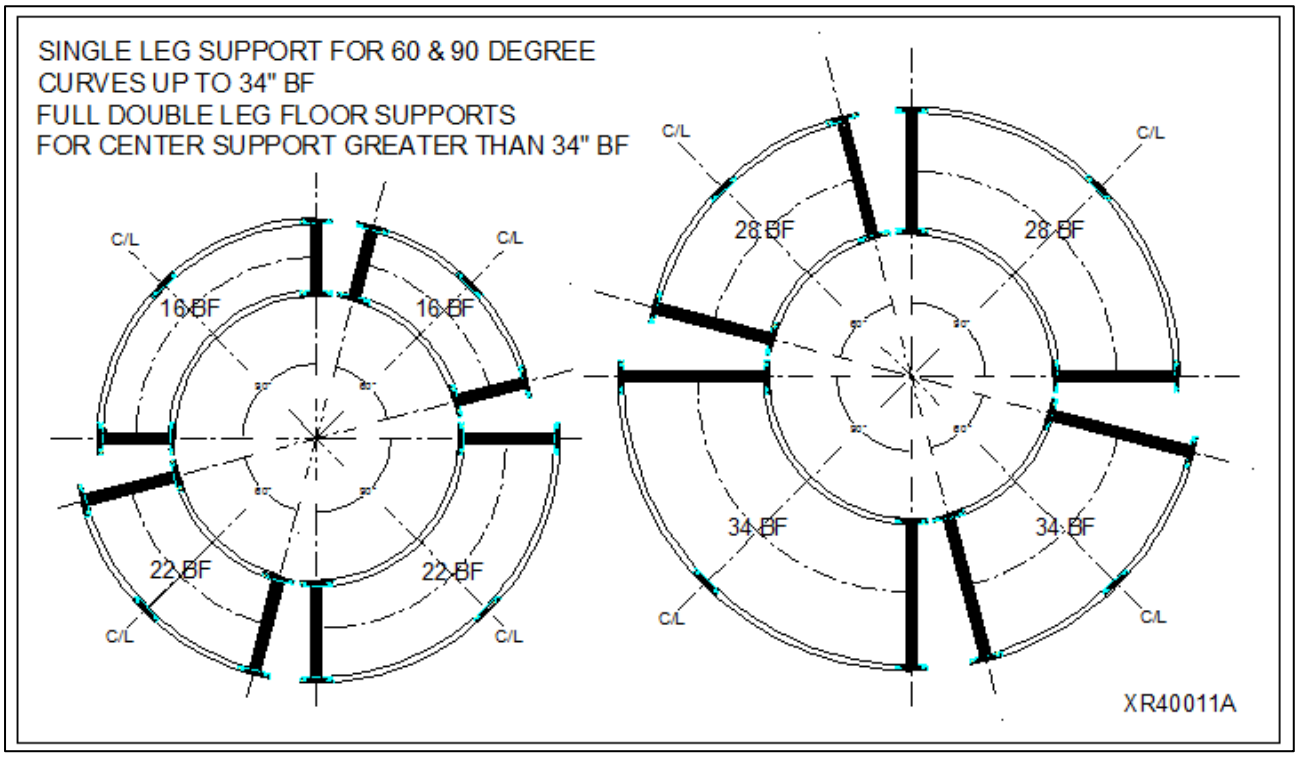
Supports should always be installed in the vertical position, and any variations due to conveyor pitch or floor slope will be compensated for in the pivoting standhead of the support.

9.20.2 ANCHORING

Anchoring in concrete floors is accomplished by drilling into the floor and inserting the suitable anchor bolt. The hole diameter and depth must be in accordance with the anchor bolt manufacturer’s instructions, and all applicable codes and requirements.

Anchor intermediate floor supports with two anchor bolts, one through each support foot plate using minimum 3/8” diameter anchor bolts. Stagger anchors from front hole on one side to rear hole on opposite side. For floor supports, over 5’ minimum use 1/2” diameter anchor bolts. Anchor bolts for equipment subject to impact loads should be a minimum of 1/2” diameter or as superseded by any other applicable code.

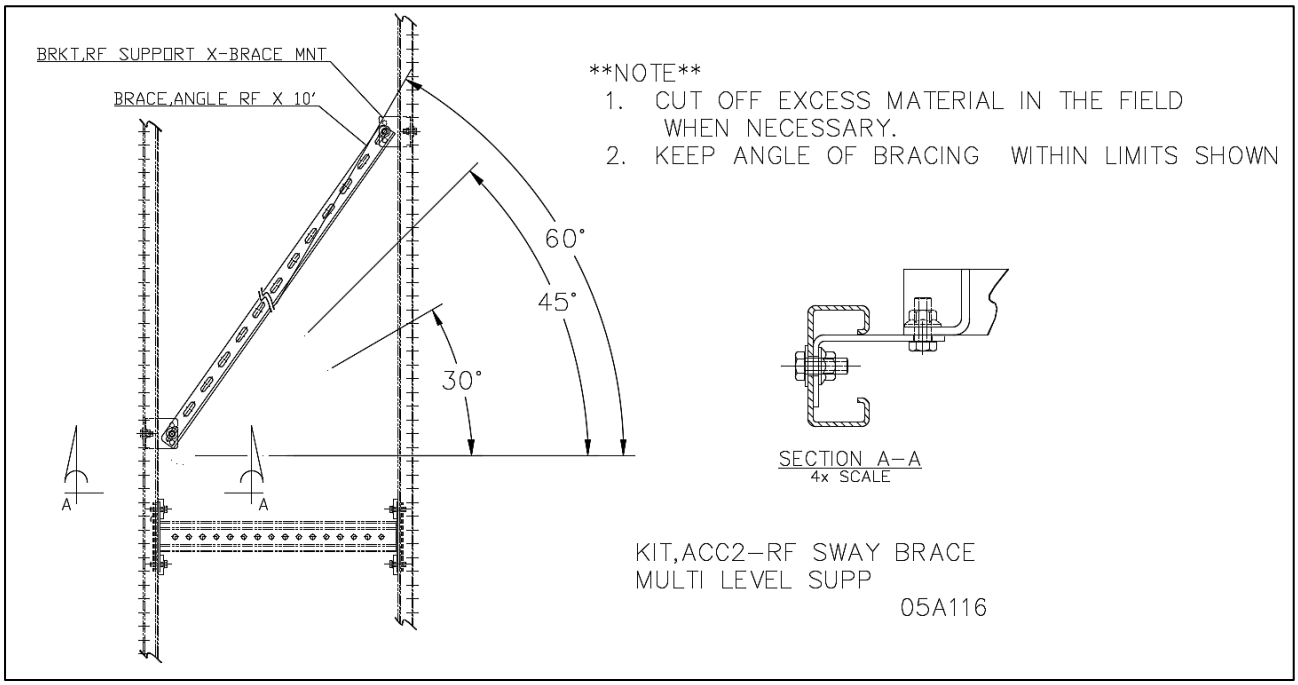
9.20.3 CURVE SUPPORT POINTS



This curve illustration indicates proper support locations for curves of various degrees and widths. The dark lines indicate a full width support. A single dark line on the outside center of the curve indicates that the outer curve rail is supported with either a ceiling hanger drop or a single leg floor support.

If a full width support with crossmember is supplied where only a dark line is indicated, use the full support.

9.20.4 RF SWAY BRACE



Consists of (2) X-Brace Mounts, (1) Brace10', and hardware. (Kit P/N#1198461)

There is a tendency for some side-to-side movement in conveyor under certain conditions.

A diagonal sway brace has been designed to reduce side movement through the standard floor support. Side movement is most prevalent in long straight lines which are not side braced by adjoining conveyors, curves, etc., or where they cannot be braced to columns, machinery, or other conveyors. Side forces from different conveyor applications may increase this movement.

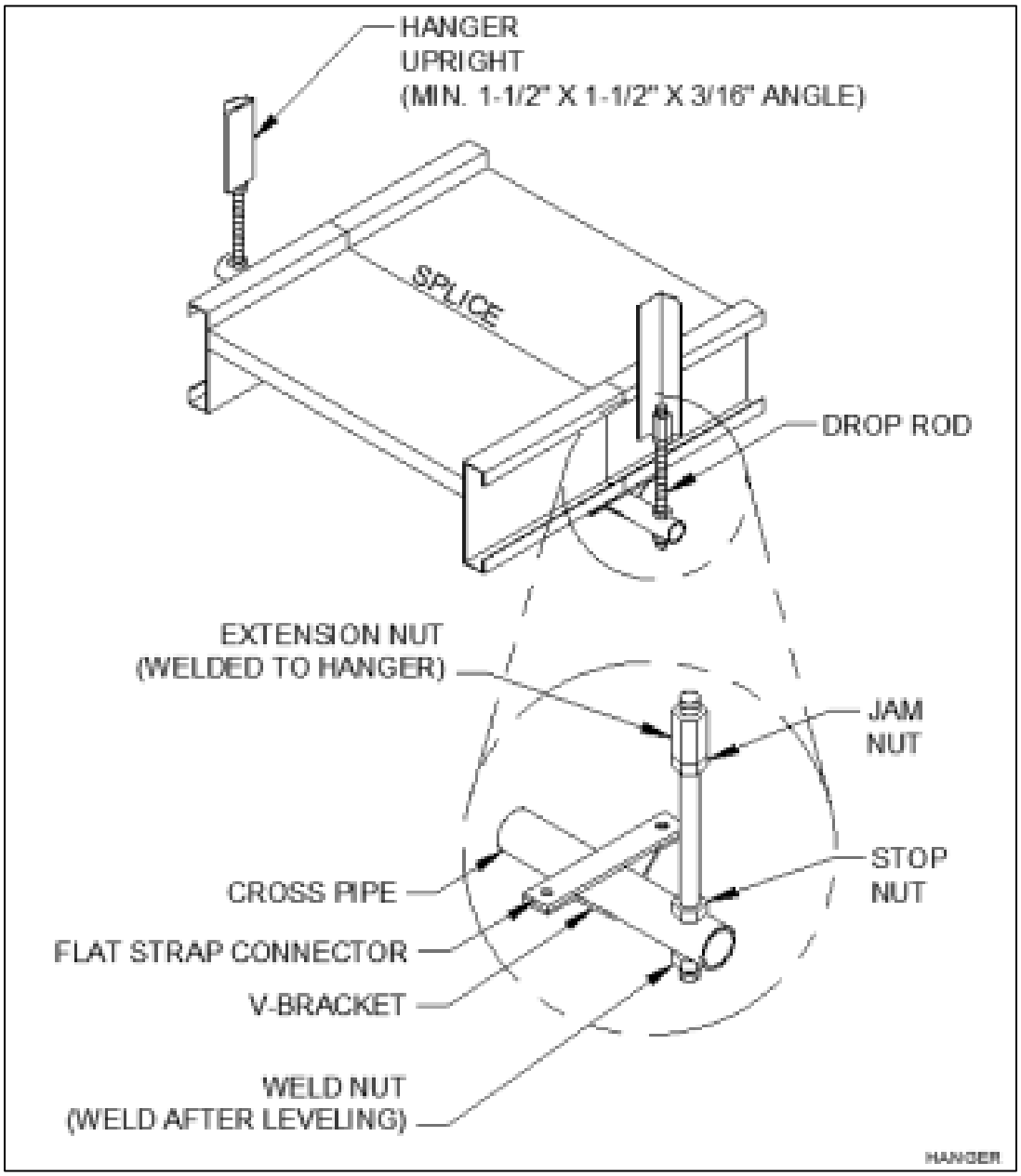
One brace can be mounted to every third or fourth support diagonally across the support with the low end on the opposite side of every other brace.

Experience has shown this harmonic condition is most likely to occur between 85 and 120 fpm (on line-shaft for example). If excessive oscillation persists after sway bracing is installed, the conveyor speed may be changed by either increasing or decreasing approximately 15 percent.

Note:

All standard supports are designed with cross bracing already included where needed. Additional sway bracing is considered optional and may be added as needed.

9.21 CEILING HANGERS

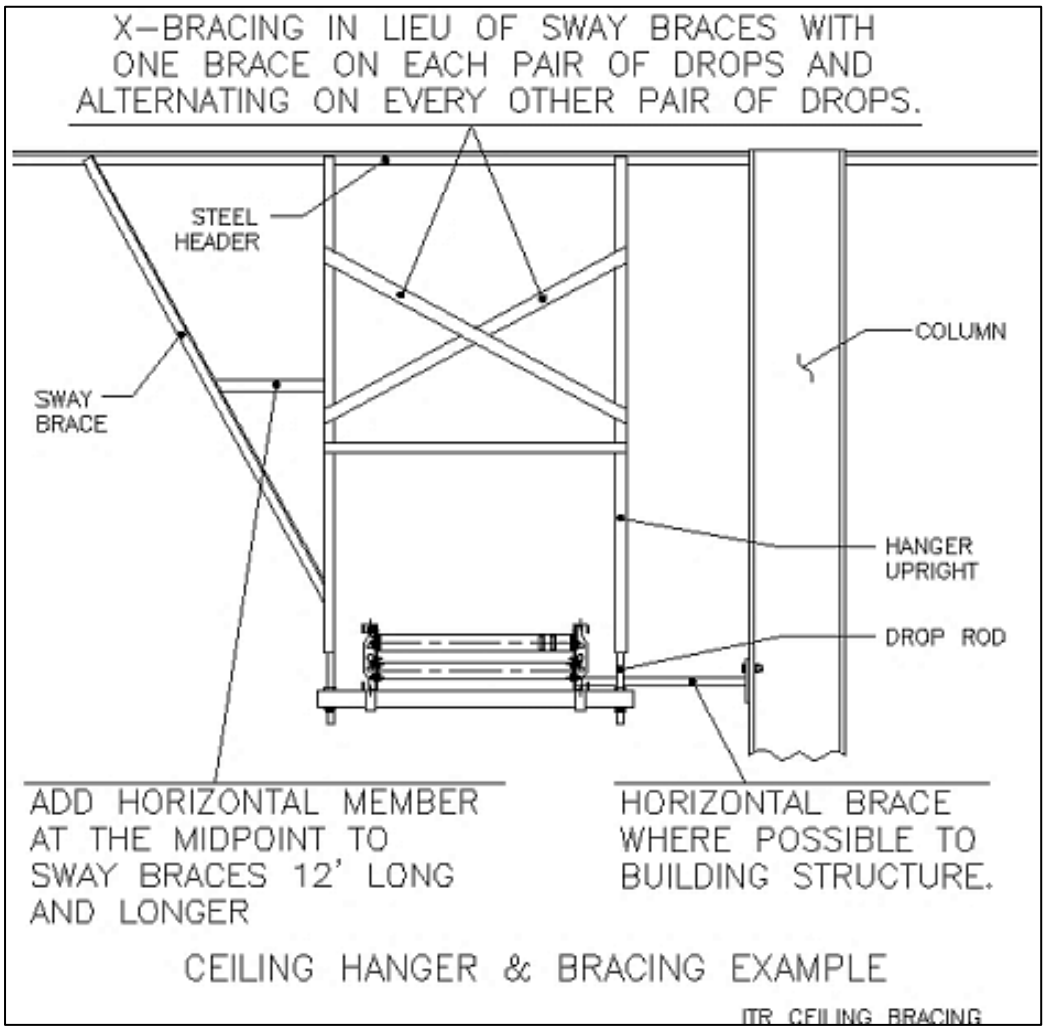


Drop rods and nuts are optionally available. The extension nut is welded into the angle hanger upright during installation.

Cross pipes and V brackets are provided with ceiling hangers. Flat Strap (Used at CRUZchannel belt joints) connectors and 3/4” threaded rod and attaching nuts are available as an option. If hanger uprights are field fabricated, they should be a minimum of 1-1/2” x 1-1/2” x 3/16” angle.

⚠WARNING
HAZARD TO EQUIPMENT OR PERSONNEL
• Consult the building architect or a structural engineer regarding ceiling loading or structural limitations of the building for sizing header steel. • Consult your distributor or a structural engineer to determine what size hangers should be used to support your maximum anticipated load.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

After hanger, uprights are installed and the heavy extension nuts welded to angle hangers, thread the drop rods into the extension nuts. Thread the jam nuts and stop nuts on the drop rods far enough up the rods to allow installation and adjustment of the cross pipe.



9.21.1 FOR C CHANNEL CONVEYORS

Drop rods and cross pipes should already be installed in the ceiling before lifting conveyor beds into place. Host the bed sections into place on the cross pipes and bolt end flanges to each other.

It is important to align the side channels, care must be taken to make sure the rollers are level (carrying surfaces) from bed to bed.

Level the bed lengthwise and side to side by threading the drop rods up or down by using a wrench on the weld nuts. Tighten the jam nuts against the extension nuts and the stop nuts against the cross-pipe. Continue for the length of the conveyor.

⚠CAUTION
HAZARD TO PERSONNEL AND EQUIPMENT
Before adding X-braces between uprights, check for adequate product clearance.
Failure to follow these instructions can result in injury or equipment damage.

9.21.2 SWAY BRACE (CEILING HANGER)

1. Sway bracing should be a minimum of 1-1/2” x 1-1/2” x 3/16” angle.

2. Sway bracing is secured to the hanger upright near the conveyor support and extended upward at an angle of approximately 30 degrees from the hanger upright. The sway brace angle should not be over 45 degrees to the upright. When hangers are installed adjacent to building columns, a horizontal brace may be installed securely to the column with the customer permission.

3. Hanger uprights over 12’-0” in length must have horizontal bridging angles connected between the upright and the sway brace at approximately the half-way point.

4. Sway bracing should be installed on every third hanger (maximum of 30’-0” centers).

5. If sway bracing cannot be placed on the outside of the uprights, alternate X-bracing between every other pair of uprights.

6. Additional bracing should be used:

- Before and after curves
- At product start – stop locations (Accumulations beds)
- At product diverting points

9.22 ANCHORING CEILING HANGERS

⚠WARNING

HAZARD TO EQUIPMENT OR PERSONNEL

- Do not use explosive type anchors.
- Consult a Structural Engineer to determine which method should be used for your load requirements.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Open Building Steel

The following references are from the American Institute for Steel Construction manual (AISC). http://www.aisc.org/

Welding of auxiliary steel (stringers or headers) to building steel is prohibited.

Drilling and bolting to building steel is not recommended and will be done only with the customer's written permission.

Clamping of stringers or headers to building trusses will normally be done only at panel points. Specific customer permission and load calculations by a qualified engineer are necessary to safely clamp between panel points.

Headers when used for short spans, such as between roof purlins, will be securely clamped to building steel. Stringers, when used between headers, may be welded or bolted to the headers directly or with suitable angle clips.

9.22.1 CONCRETE CEILINGS

Accomplish anchoring by drilling into the concrete ceiling and inserting suitable anchor bolts. The hole diameter and depth must be in accordance with the bolt manufacturer's instructions. Anchor each hanger with four bolts (two per upright) minimum size 1/2” diameter. Consult your distributor or structural engineer to determine your needs.

For heavier concentrated loads where movement or vibration can occur, use 5/8” diameter through bolts with backup plates. If this is not permissible or possible, then header steel must be installed using several anchor bolts to spread the load.

9.22.2 CONCRETE/MASONRY WALLS

Equipment may be supported from concrete walls through use of suitable bolts and anchors or by bolting through the wall if the condition of the wall or load dictates it. A 1/2” diameter through bolt should be used with a backing plate.

Ceiling-hung conveyor header steel should be installed well ahead of the conveyor frame installation to minimize congestion.

9.22.3 WOOD JOISTS/BEAMS

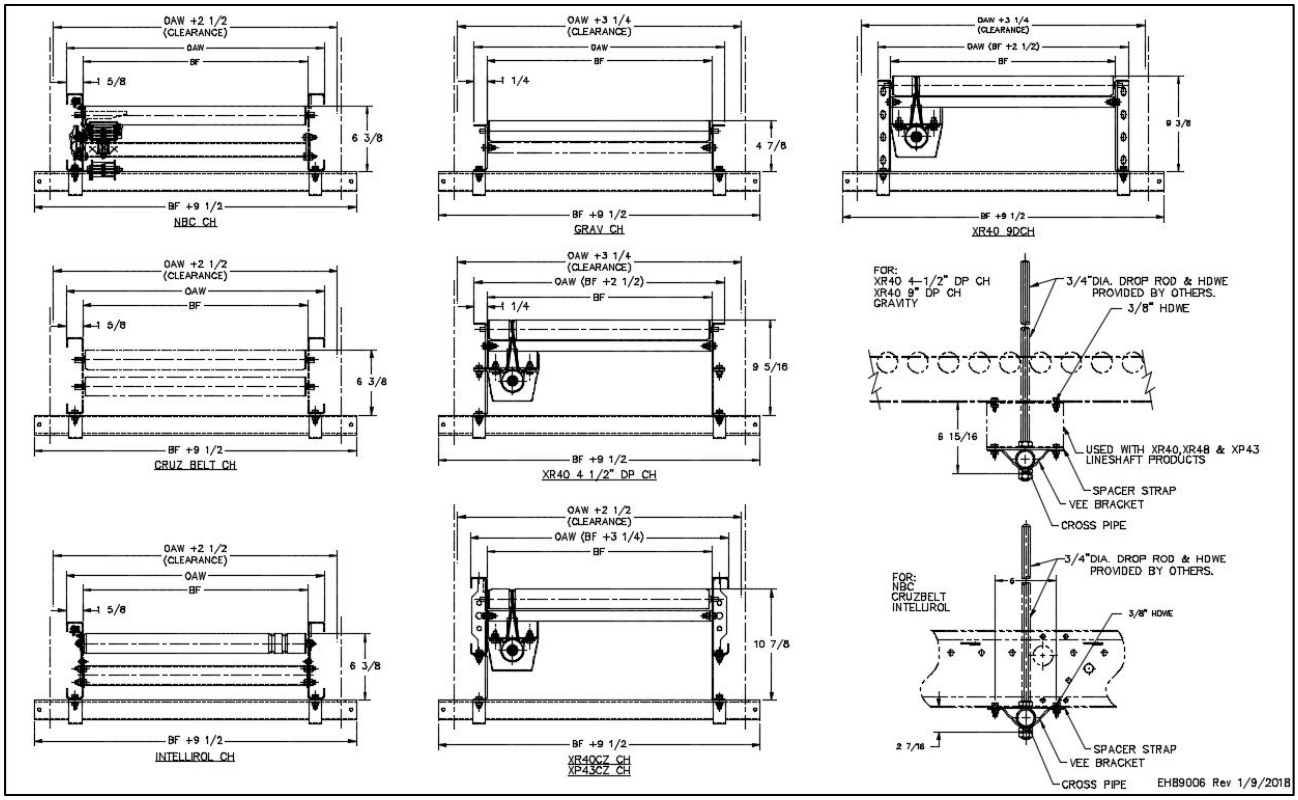
Hangers may be attached directly to the joists providing the load rating of the building will permit. Attach hangers to the vertical side of the joist in two places, one above the other, on each hanger upright. Anchoring is accomplished by drilling through the joist in the upper position and using a 1/2” diameter through bolt with a backup plate or heavy washer. A 1/2” diameter lag screw may be used in the lower position.

When a header is required to support the load, it must bridge across two or more joists. This header will be attached to each joist in the manner specified in paragraph above. Hanger uprights should then be bolted or welded securely to the headers.

9.22.4 CEILING HANGER KITS

Includes one 1-1/2” Schedule 40 (1.90D) crosspipe, two “V” brackets, 4-1/2” spacer channels for XenoROL beds, or two strap connectors for Gravity, CRUZbelt, IntelliROL and NBC conveyors, and mounting hardware. Hanger steel not included. The 3/4-10 UNC drop rod is priced separately. Spacer channels are not required with 9” deep frames, CRUZbelt, Gravity, IntelliROL, or NBC. Use the next width hanger if more clearance is required.

Extra holes to the ceiling hanger crossmembers are added, as service to our customers, to help attached safety netting to the bottom of an overhead conveyor. This is currently an OSHA/MIOSHA requirement to put up guarding where conveyors are passing over work areas or aisles. FORTNA Conveyor does not provide or sell safety netting.



The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities. Ceiling hanger capacity may also be reduced due to the limits of the drop rods and ceiling fasteners.

Cross Pipe Capacity (Max. Lbs.)								
Between Frame	Support Description	Centerline Distance Between Uprights						
		18-3/8	21-3/8	27-3/8	33-3/8	39-3/8	45-3/8	50-3/8
16	17CLR X 72	1400	1400	1075	725	525	425	325
22	20CLR X 72		1400	1400	875	625	475	425
28	26CLR X 72			1400	1400	875	625	475
34	32CLR X 72				1400	1400	875	625
40	38CLR X 72					1400	1400	875
46	44CLR X 72						1400	1400

Hanger steel and drop rods are not included. A 3/4-10 UNC drop rod priced separately.

Bed connectors are recommended with ceiling hanger support.

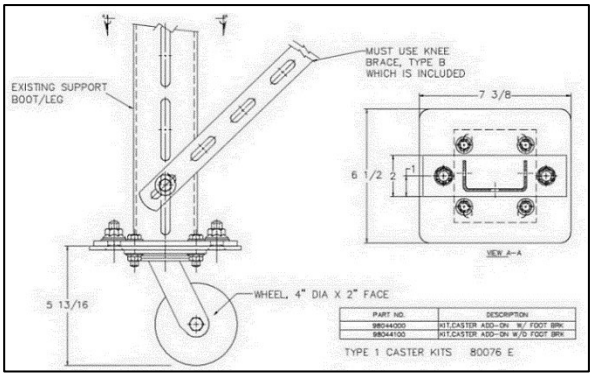
9.23 CASTER ADD-ON KITS

9.23.1 TYPE 1 CASTER ADD-ON KIT

Portable support kit - developed to add casters to any floor support, see floor support. Addition of casters will increase top of roller (TOR) approximately 6”. The kit is available with or without floor locks. Knee braces are included. This kit requires simple field bolting to the support footpad.

Type 1 Kit:

Two individual mounting adapter plates for each support footplate. Swivel caster wheels are 4” diameter and 2” wide urethane face, and are available with or without brake. Mounting hardware included.



Caution:

The stability of a mobile unit must be considered when using caster add-on kits. Stability is principally achieved by constructing a safe height to width ratio.

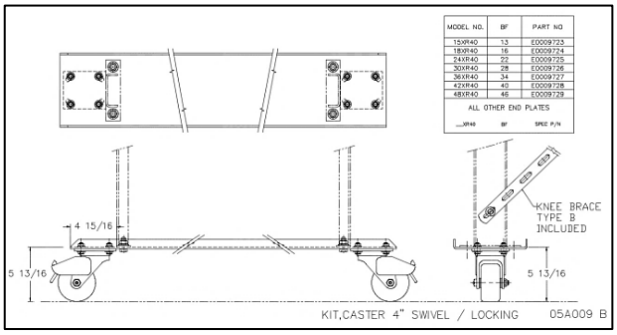
A 2:1 ratio is considered maximum for a type 1 caster add-on kit.

The width of the conveyor is multiplied by two to obtain the safe maximum TOR. If the height to width ratio is greater than 2:1, use the type 2 caster add-on kit.

9.23.2 TYPE 2 CASTER ADD-ON KIT

Type 2 Kit:

One common mounting channel, sized to the width of the conveyor. Wheels are 4” diameter, 2” wide urethane face. Casters have 2” offset swivel and a toggle wheel lock.



Caution:

The stability of a mobile unit must be considered when using caster add-on kits. Stability is principally achieved by constructing a safe height to width ratio.

A 2.5:1 ratio is considered maximum for a type 2 caster add-on kit.

The width of the conveyor is multiplied by two and one-half to obtain the safe maximum TOR. If the height to width ratio is greater than 2.5:1, consult applications engineering.

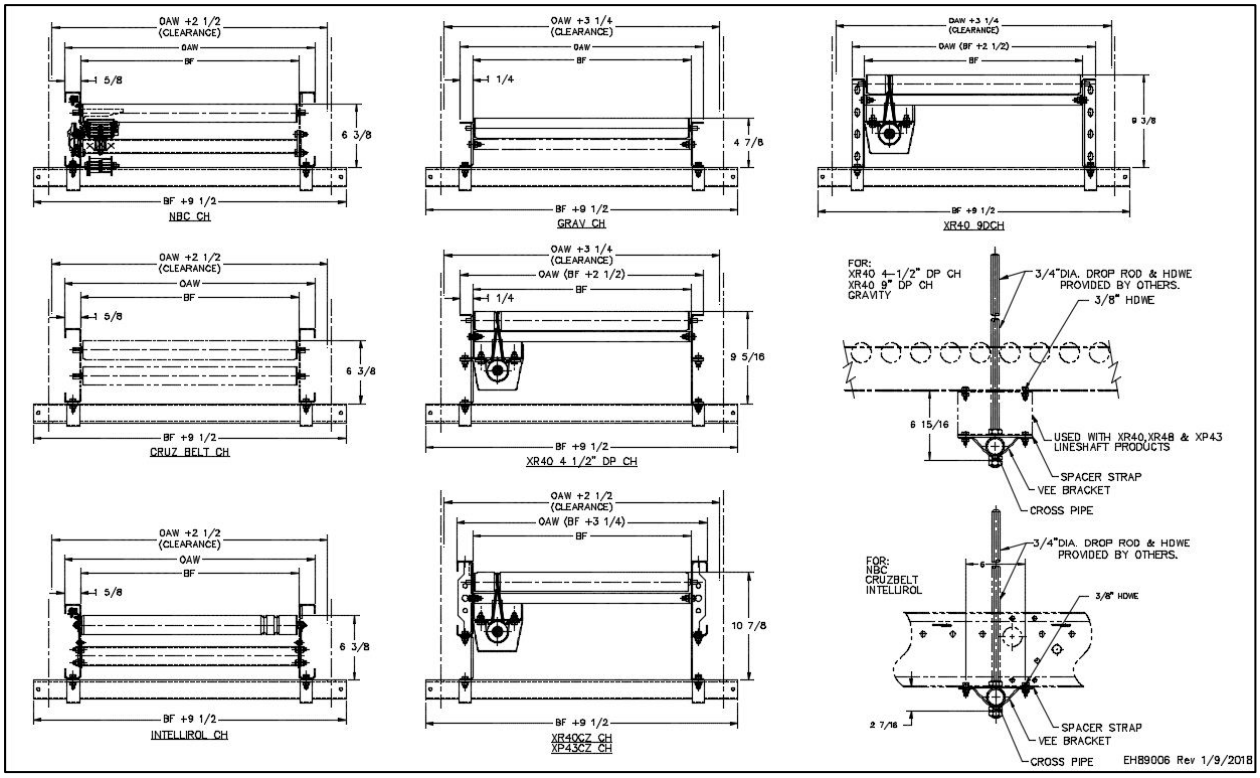
CASTER ADD-ON KIT		
PART NUMBER	DESCRIPTION	TYPE
98044000	KIT,CASTER ADD-ON W/BRAKE	1
98044100	KIT,CASTER ADD-ON W/FOOT BRAKE	1
E0009723	KIT,CASTER 15 XR40	2
E0009724	KIT,CASTER 18 XR40	2
E0009725	KIT,CASTER 24 XR40	2
E0009726	KIT,CASTER 30 XR40	2
E0009727	KIT,CASTER 36 XR40	2
E0009728	KIT,CASTER 42 XR40	2
E0009729	KIT,CASTER 48 XR40	2

Note: Addition of caster kit will increase top of roller (TOR) approximately 6”.

9.24 CEILING HANGER KIT

Includes one 1-1/2” schedule 40 (1.90d) crosspipe, two “v” brackets, 4-1/2” spacer channels for XenoROL beds, or two strap connectors for gravity, CRUZbelt, IntelliROL and NBC conveyors, and mounting hardware. Hanger steel not included. The 3/4-10 UNC drop rod is priced separately. Spacer channels are not required with 9” deep frames, CRUZbelt, gravity, IntelliROL, or NBC. Use the next width hanger if more clearance is required.

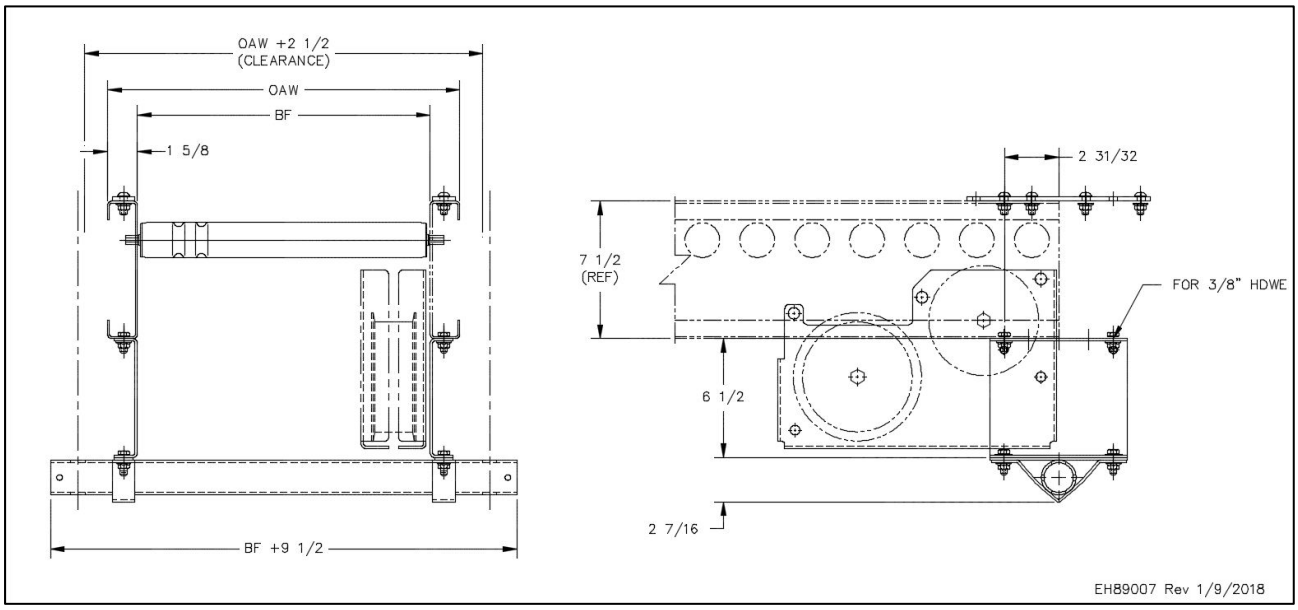
Extra holes to the ceiling hanger crossmembers are added, as service to our customers, to help attached safety netting to the bottom of an overhead conveyor. This is currently an OSHA/MIOSHA requirement to put up guarding where conveyors are passing over work areas or aisles. FORTNA Conveyor does not provide or sell safety netting.



Cross Pipe Capacity (Max. Lbs.)								
Between Frame	Support Description	Centerline Distance Between Uprights						
		18-3/8	21-3/8	27-3/8	33-3/8	39-3/8	45-3/8	50-3/8
16	17CLR X 72	1400	1400	1075	725	525	425	325
22	20CLR X 72		1400	1400	875	625	475	425
28	26CLR X 72			1400	1400	875	625	475
34	32CLR X 72				1400	1400	875	625
40	38CLR X 72					1400	1400	875
46	44CLR X 72						1400	1400

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities. Ceiling hanger capacity may also be reduced due to the limits of the drop rods and ceiling fasteners.

9.25 NBC TERMINAL END CEILING HANGER KIT

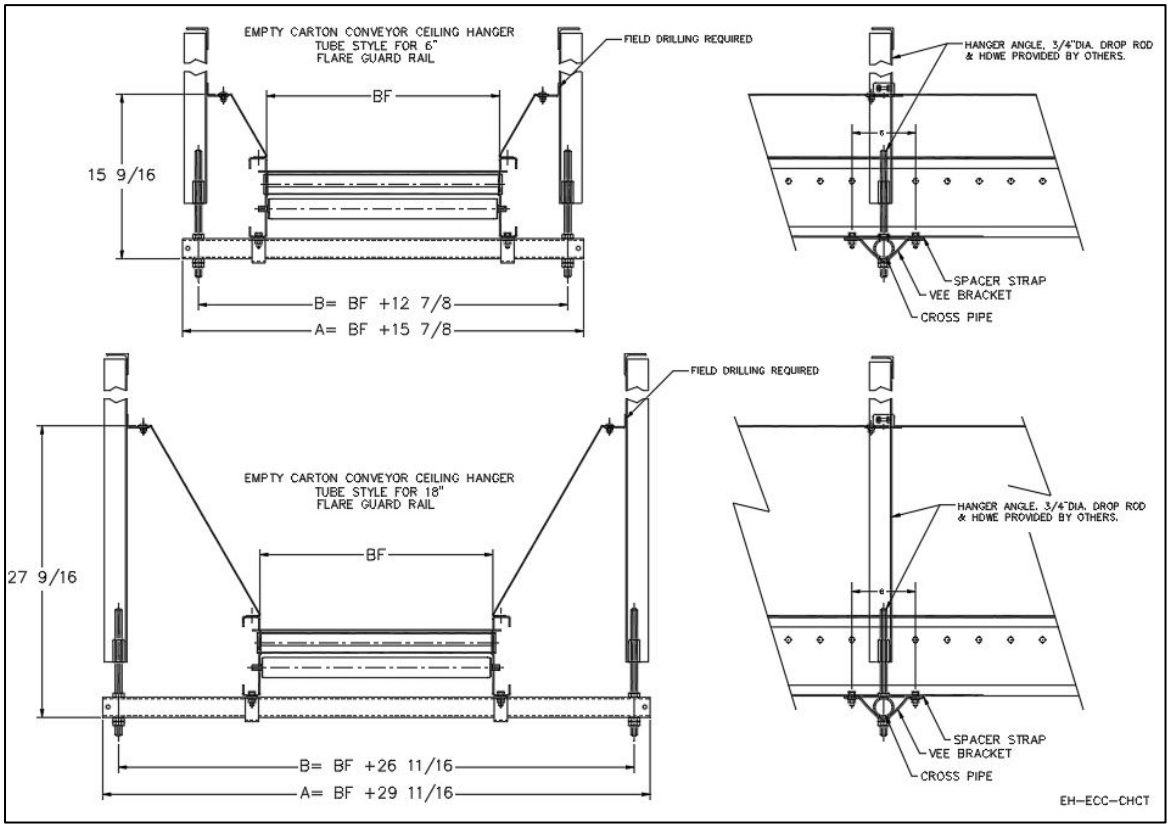


Includes one 1-1/2” schedule 40 (1.90d) crosspipe, two “v” brackets, and two strap connectors for top of channel connection between conveyors, spacer channels, and mounting hardware. Hanger steel not included. The 3/4-10 UNC drop rod is priced separately.

9.26 EMPTY CARTON CONVEYOR (ECC) CEILING HANGER KIT

Ceiling hanger kit:

Includes one 1-1/2” schedule 40 (1.90d) crosspipe, two “v” brackets, two strap connectors for ECC conveyors, and mounting hardware. Hanger steel not included. The 3/4-10 UNC drop rod is priced separately. Note: maximum distance between supports is 12'. Supports are not required at the bed joint with CRUZchannel.



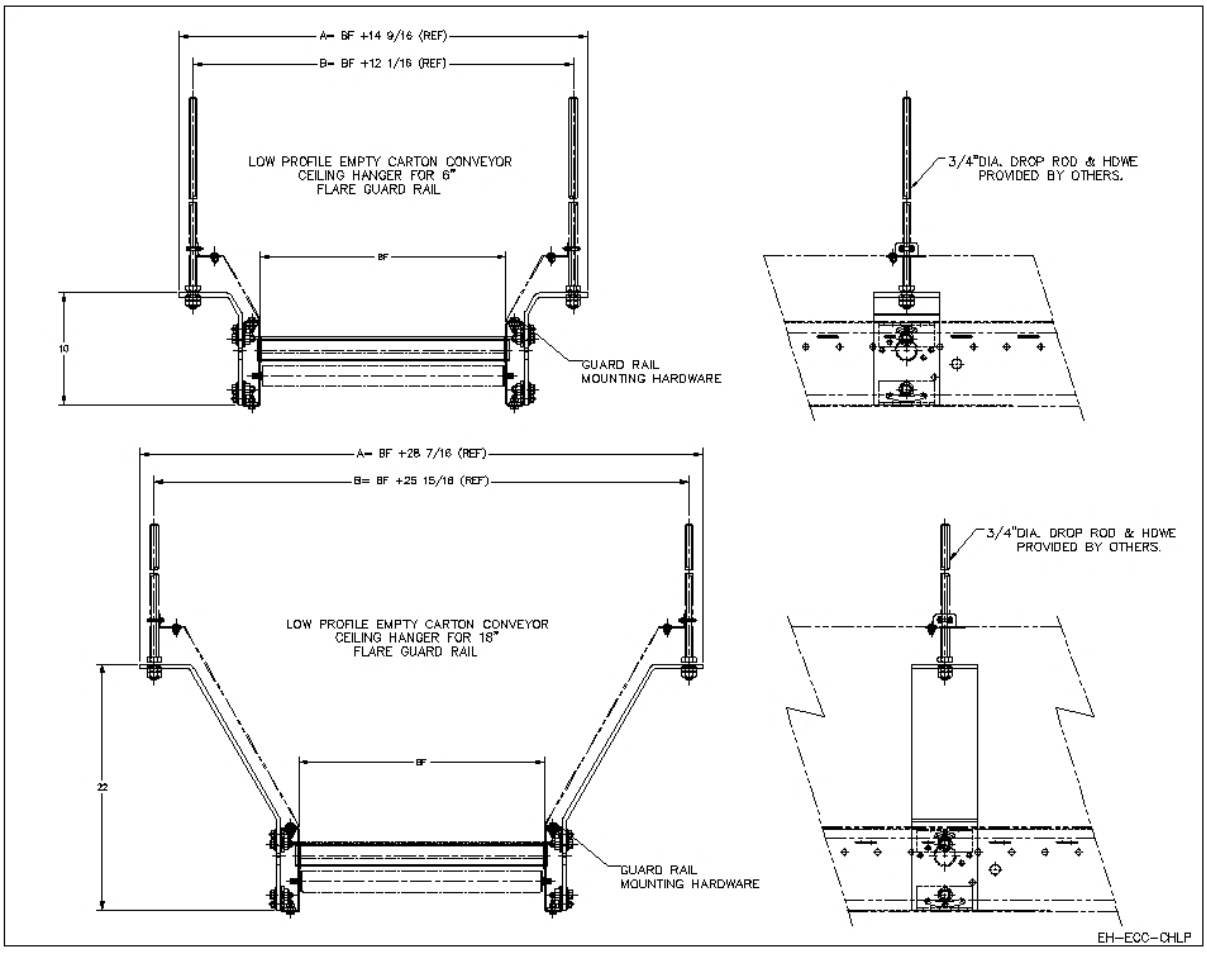
ECC Ceiling Hanger Cross Pipe Capacity (lbs) With 6" Flare Guard Rail						
Between Frames	Center Line Distance Between Drop Rods					
	28	34	40	46	52	58
16	1200	750	550	450	350	300
22		1200	750	500	450	350
28			1200	750	500	450
34				1200	750	500
40					1200	750
46						1200
Based on 3/4-10 UNC Drop Rod						

ECC Ceiling Hanger Cross Pipe Capacity (lbs) With 18" Flare Guard Rail						
Between Frames	Center Line Distance Between Drop Rods					
	42	48	54	60	66	72
16	500	400	350	300	250	225
22		500	400	350	300	250
28			500	400	350	300
34				500	400	350
40					500	400
46						500
Based on 3/4-10 UNC Drop Rod						

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities. Ceiling hanger capacity may also be reduced due to the limits of the drop rods and ceiling fasteners.

9.27 LOW PROFILE ECC CEILING HANGER KIT

Includes two formed steel brackets, two strap connectors for ECC belt conveyors, and mounting hardware. Hanger steel not included. The 3/4-10 UNC drop rod is priced separately. **Note**: maximum distance between supports is 12'. Supports are not required at the bed joint with CRUZchannel.



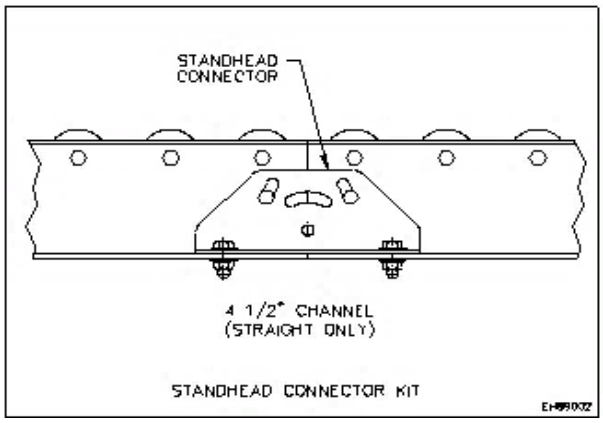
Low Profile ECC Ceiling Hanger Cross Pipe Capacity (lbs) With 6" Flare Guard Rail						
Between Frame	Center Line Distance Between Drop Rods (Approx)					
	28	34	40	46	52	58
16	750					
22		750				
28			750			
34				750		
40					750	
46						750
Based on 3/4-10 UNC Drop Rod						

Low Profile ECC Ceiling Hanger Cross Pipe Capacity (lbs) With 18" Flare Guard Rail						
Between Frame	Center Line Distance Between Drop Rods (Approx)					
	42	48	54	60	66	72
16	300					
22		300				
28			300			
34				300		
40					300	
46						300
Based on 3/4-10 UNC Drop Rod						

The capacities listed are based on both the weight of the conveyor and the product load. Weights that are not centered will reduce the capacities. Ceiling hanger capacity may also be reduced due to the limits of the drop rods and ceiling fasteners.

9.28 CONNECTOR KITS

Floor Support Standhead Connector Kit:

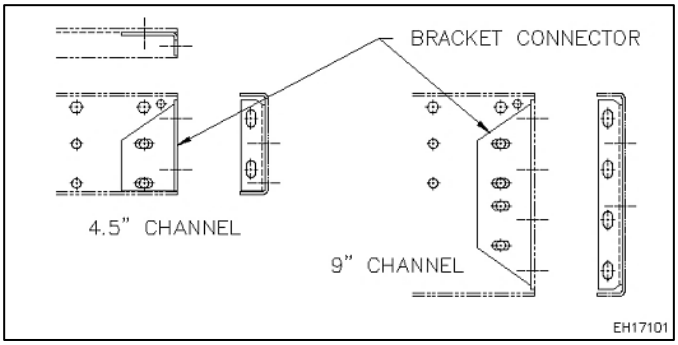


Consists of two 10 ga. Formed steel angles and mounting hardware. Mounting bolts secure standhead connector to bottom flange and web of side channel in existing holes. Standhead connector used to connect straight beds only.

Standhead

FLOOR SUPPORT STANDHEAD CONNECTOR KIT	
Part No.	Description
99000001	KIT,ACC-STANDHEAD CONN
KIT INCLUDES (2) STANDHEADS AND HARDWARE	

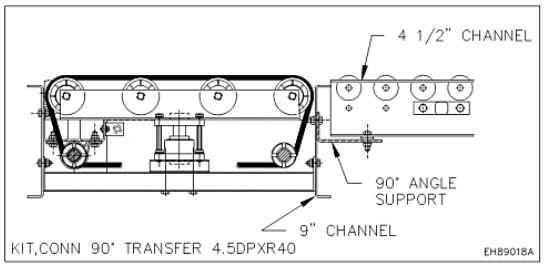
Bracket Connector Kit

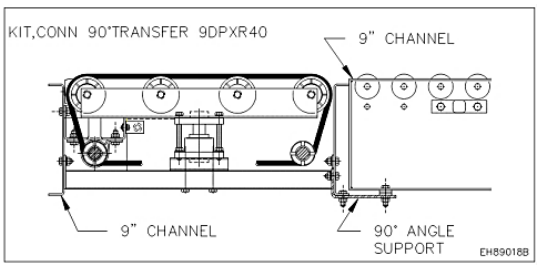


Consists of 10 ga. formed steel brackets and mounting hardware. Mounting bolts secure brackets to web of side channel. Additional holes may need to be drilled.

90° Transfer Connector Kit

BRACKET CONNECTOR KIT	
Part No.	Description
94000017	KIT, ACC-BRKT CONN 4.5CH
94000057	KIT, ACC-BRKT CONN 9CH
KITS INCLUDES: (4) BRACKETS AND HARDWARE	

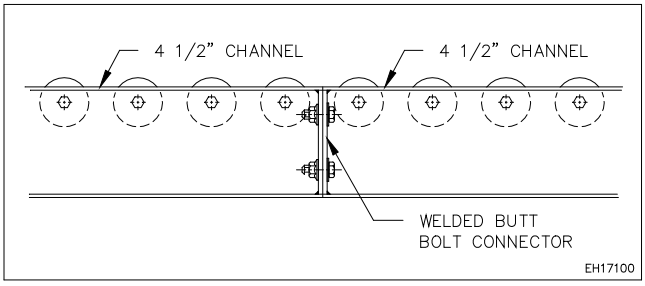




Consists of two 3/16” thick-formed steel angles and mounting hardware. Mounting bolts secure angle to bottom flange of attaching bed and web of 9” deep transfer side channel.

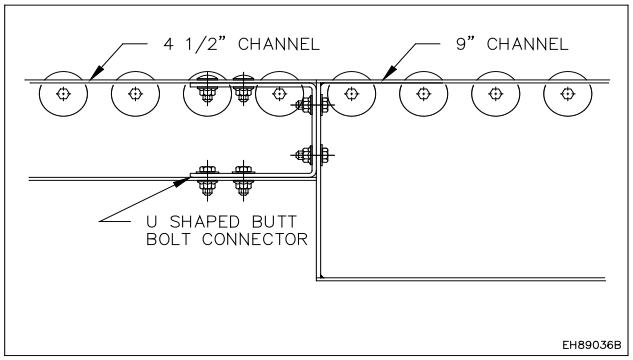
90° TRANSFER CONNECTOR KIT	
Part No.	Description
94000091	KIT, CONN 90 DEG UBT 4.5" DP XR40
94000092	KIT, CONN 90 DEG UBT 4.5" DP GRAV
94000093	KIT, CONN 90 DEG UBT 9" DP XR40
KITS INCLUDES: (2) ANGLE SUPPORTS AND HARDWARE	

9.29 BOLT CONNECTOR KITS



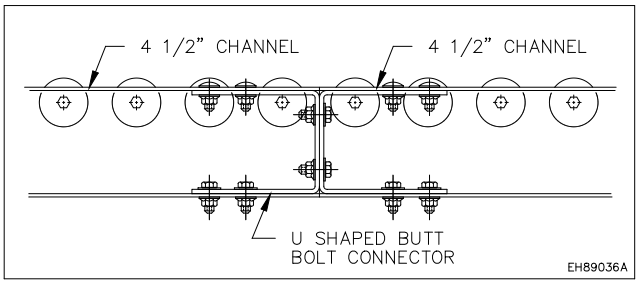
Welded butt bolt connector

Available for 4-1/2” deep frames, standard with 9” deep frames. Additional description given on their respective conveyor bed pages.



U-shaped butt bolt connector

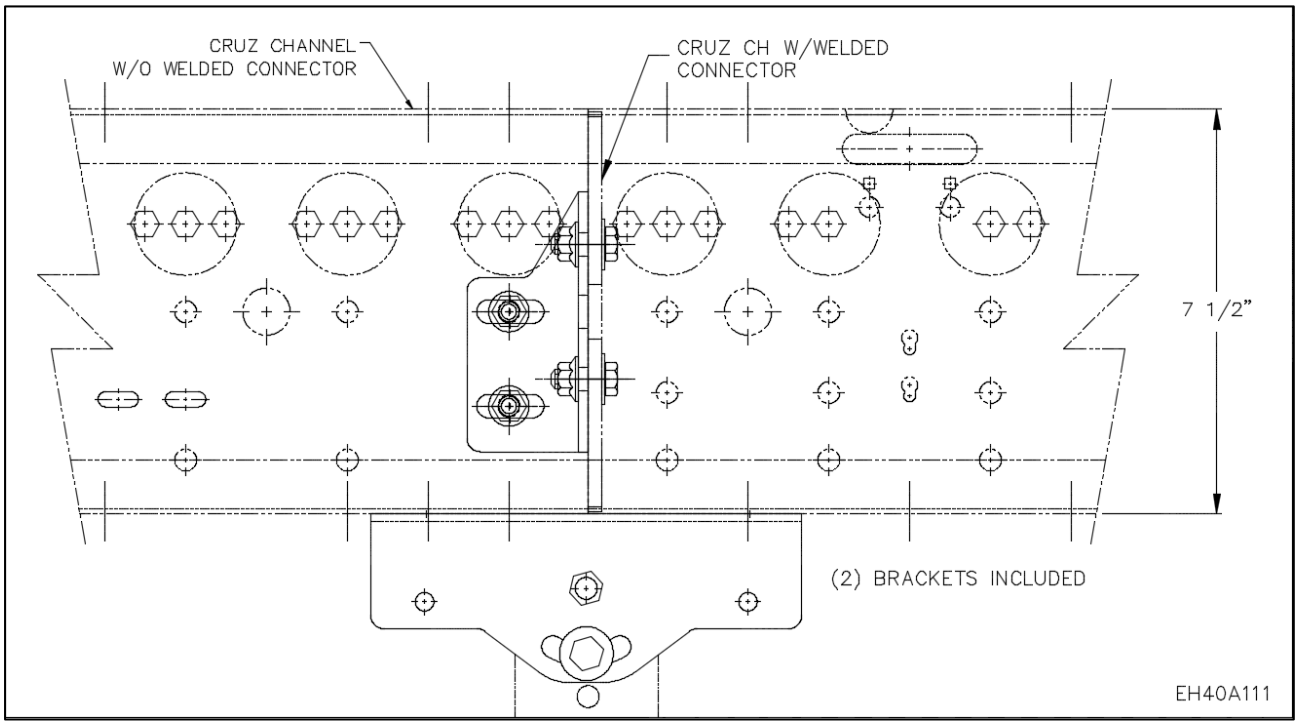
Consists of a 3/16” x 1” formed steel strap and mounting hardware. One kit includes two u-shaped brackets, which is suited for connecting to 9” deep channels (i.e., UBTs). Not for use with curves.



Another kit, which includes four brackets, is set up for connecting two 4-1/2” deep beds together. Mounting hardware includes truss head screws for along the top flange of the side channel and hex head screws with flat washers throughout the other bolt locations.

KIT, CONN U-SHAPED (4-BRKTS)	
Part No.	Description
94000014	KIT, ACC-U BUTT BOLT CONN-4.5CH-2BRKTS
94000016	KIT, ACC-U BUTT BOLT CONN-4.5CH-4 BRKTS
KITS INCLUDES: (2) U BUTT BOLTS BRACKETS AND HARDWARE	

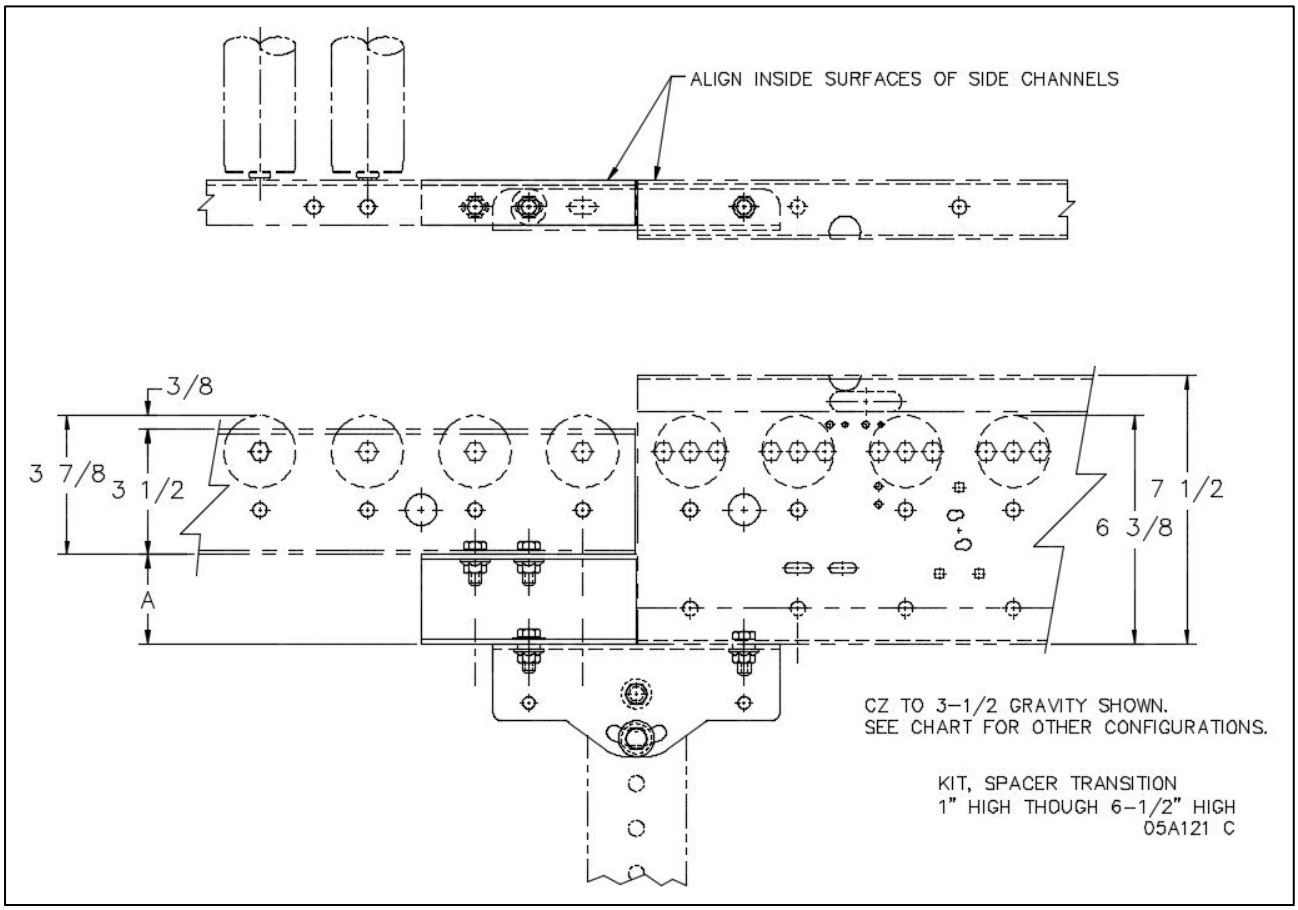
9.30 7.5” CRUZCHANNEL BOLT CONNECTOR



Consists of two formed steel angles and mounting hardware. Mounting bolts secure bed connectors to the web of side channel and connects to the welded connector on the adjacent bed. This kit is used for straight bed connections only.

7.5" DP BOLT-IN CONNECTOR KIT	
Part No.	Description
1131905	KIT,ACC-BOLT IN CONN-CZ
KIT INCLUDES (2) BRACKETS AND HARDWARE	

9.31 CRUZCHANNEL CONNECTORS



CRUZchannel connector to 4.5” channel kit:

Consists of two formed steel channels with mounting hardware. Mounting bolts secure spacer channels to the bottom flange of bed and either the standhead of the floor support of a ceiling hanger. Flat washers used at supports adjust roller height between beds.

CRUZchannel connector to 9” channel kit:

Consists of two formed steel channels with mounting hardware. Mounting bolts secure spacer channels to the bottom flange of bed and either the standhead of the floor support or a ceiling hanger. Flat washers used at supports adjust roller height between beds.

KIT, SPACER TRANSITION 1" HIGH THROUGH 6-1/2" HIGH			
KIT, SPACER TRANSITION CH	FRAME TYPES	SPACER CH P/N	SPACER HEIGHT "A"
1198730	4.5 CH TO 3.5 GRAV	1198690	1"
1198731	4.5 CH TO CZ / C6 PUSH TO CZ / C6 MERGE TO CZ / C6	1198692	1 1/2"
1198732	4.5 CH TO 2.5 GRAV	1198693	2"
1198733	CZ / C6 TO 3.5 GRAV	1198694	2 1/2"
1198735	CZ / C6 TO 9 CH	1198695	3"
1198737	CZ / C6 TO 2.5 GRAV	1198696	3 1/2"
1198956	PUSH TO 3.5 GRAV	1198953	4"
1198738	4.5 CH TO 9 CH	1198697	4 1/2"
1198957	PUSH TO 2.5 GRAV	1198954	5"
1198739	9 CH TO 3.5 GRAV	1198698	5 1/2"
1198740	9 CH TO 2.5 GRAV	1198700	6 1/2"
			DWG#05A121 C

Deep Spacer Channel Connector Kit

Consists of two 10 ga. Formed steel channels with mounting hardware. Mounting bolts secure spacer channels to the bottom flange of bed and either the standhead of the floor support or a ceiling hanger. Flat washers used at supports adjust roller height between beds.

Pipe Spacer Connector Kits:

Mounting bolts secure pipe spacer to bottom flange of side channel and standhead of floor supports or ceiling hanger. Flat washers used at support to adjust roller height between beds.

10 PREVENTIVE MAINTENANCE

⚠WARNING
HAZARD TO EQUIPMENT OR PERSONNEL
• Care should be taken when servicing any conveyor to prevent accidental injury. • Check the loosened parts have been retightened and all guards reinstalled.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠WARNING
HAZARD TO EQUIPMENT OR PERSONNEL
• After maintenance, REPLACE guards immediately. • Keep ALL warning labels clean and clear of any obstructions. • Never remove, deface, or paint over WARNING or CAUTION labels. Any damaged label will be replaced by FORTNA at no cost by contacting Lifecycle Performance Services. • Ensure all re-located or new installed fasteners are set to proper torque settings per manufacture recommendations.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

10.1 SCHEDULED MAINTENANCE

Periodic maintenance intervals shown may vary with load, speed, hours of daily operation, ambient temperature, humidity, etc. Intervals can be established by fairly frequent maintenance at first; then lengthen the intervals as justified by observation of need based on history. The following is based on 5 days per week, 8 hours per day under normal conditions.

General

Preventive maintenance will save expensive downtime, wasted energy costs, and increase life of components. An accurate record keeping system will track component servicing history.

Periodic maintenance intervals may vary with load, speed, hours of operation, ambient temperature, humidity, etc. Intervals can be established by fairly frequent maintenance at first, and then lengthens the intervals as justified by observation of need based on history. The following schedule is based on 5 days per week, 8 hours per day operation under normal conditions.

10.2 DAILY INSPECTION

DAILY (VISUAL & LISTEN INSPECTION)	ACTION
Listen to everything for unusual noises or vibration.	Isolate noise or vibration and repair as needed.
Visually inspect to see that conveyor sections are clear and free of debris.	Remove any build-up.
Check to see that all safety guards, covers or netting are in place.	Reinstall any missing safety guards, covers or netting.
Check for loose bolts or parts.	Tighten any loose hardware.
Visually inspect for loose or hanging wires.	Reconnect or remount wires.

11 DECOMMISSIONING AND DISPOSAL

Caution!

Decommissioning and dismantling must be entrusted to personnel specializing in such activities.

Only those in charge of the dismantling and final waste disposal phase can perform the following activities:

- Mechanical and electric disconnection of parts according to disassembly instructions and design diagrams.
- Transporting parts from the position of use to the waste disposal facility for separation of parts.

Caution!

The conveyor equipment does not contain components or hazardous substances which require special removal procedures.

If the conveyor equipment is not to be used for a long time, it must be set safely and stored in a closed, dry, and clean environment to preserve all the parts that include it as best as possible.

Proceed as follows to decommission the conveyor equipment:

Step 1.

1. Turn off and lock/out the main power supply panel.
2. Turn off and lock out the power supply to the conveyor equipment power box.
3. Disconnect the electrical connection such as the driver cards, air lines, or power harness connections from the conveyor equipment and the adjacent conveyor equipment.
4. Clean all the components of the conveyor equipment (refer to the “Maintenance” chapter).
5. Secure the conveyor equipment before you unanchored it.
6. Move conveyor equipment to designated storage location.

11.1 DISPOSAL

When you wish to dispose of the conveyor equipment, secure it.

To dispose of the conveyor equipment, proceed as described below:

Step 2.

1. Turn off and lock/out the main power supply panel.
2. Disconnect the power supply to the conveyor equipment.
3. Disconnect the electrical connection such as the driver cards, air lines, or power harness connections from the conveyor equipment and the adjacent conveyor equipment.
4. Clean all the components of the conveyor equipment (refer to the “Maintenance” chapter).
5. Secure the conveyor equipment before you unanchored it.
6. Prepare a spacious working area, free from obstacles, to safely dismantle the conveyor equipment.
7. Remove all the cables and electrical components, adopting the safety measures required for such interventions.

8. Disassemble all the components, separating the resulting material into groups, for differentiated disposal.

Caution!

The conveyor equipment does not contain components or hazardous substances which require special removal procedures.

Caution!

Always comply with the laws in force in the country of installation/incorporation regarding conveyor equipment disposal.

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GENERAL INFORMATION

For additional manuals, videos, and other resources visit our website at:

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.