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Installation and Service

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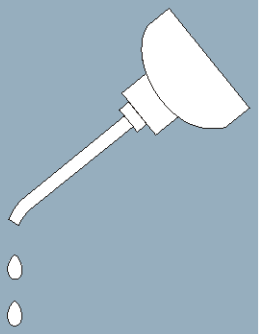

Read the separate safety manual before installing, operating, or servicing

PELLERIN MILNOR CORPORATION POST OFFICE BOX 400, KENNER, LOUISIANA 70063-0400, U.S.A.

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PELLERIN MILNOR CORPORATION
LIMITED STANDARD WARRANTY

We warrant to the original purchaser that MILNOR machines including electronic hardware/software (hereafter referred to as "equipment"), will be free from defects in material and workmanship for a period of one year from the date of shipment (unless the time period is specifically extended for certain parts pursuant to a specific MILNOR published extended warranty) from our factory with no operating hour limitation. This warranty is contingent upon the equipment being installed, operated and serviced as specified in the operating manual supplied with the equipment, and operated under normal conditions by competent operators.

Providing we receive written notification of a warranted defect within 30 days of its discovery, we will—at our option—repair or replace the defective part or parts, EX Factory (labor and freight specifically NOT included). We retain the right to require inspection of the parts claimed defective in our factory prior to repairing or replacing same. We will not be responsible, or in any way liable, for unauthorized repairs or service to our equipment, and this warranty shall be void if the equipment is tampered with, modified, or abused, used for purposes not intended in the design and construction of the machine, or is repaired or altered in any way without MILNOR's written consent.

Parts damaged by exposure to weather, to aggressive water, or to chemical attack are not covered by this warranty. For parts which require routine replacement due to normal wear—such as gaskets, contact points, brake and clutch linings, belts, hoses, and similar parts—the warranty time period is 90 days.

We reserve the right to make changes in the design and/or construction of our equipment (including purchased components) without obligation to change any equipment previously supplied.

ANY SALE OR FURNISHING OF ANY EQUIPMENT BY MILNOR IS MADE ONLY UPON THE EXPRESS UNDERSTANDING THAT MILNOR MAKES NO EXPRESSED OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE OR ANY OTHER WARRANTY IMPLIED BY LAW INCLUDING BUT NOT LIMITED TO REDHIBITION. MILNOR WILL NOT BE RESPONSIBLE FOR ANY COSTS OR DAMAGES ACTUALLY INCURRED OR REQUIRED AS A RESULT OF: THE FAILURE OF ANY OTHER PERSON OR ENTITY TO PERFORM ITS RESPONSIBILITIES, FIRE OR OTHER HAZARD, ACCIDENT, IMPROPER STORAGE, MIS-USE, NEGLECT, POWER OR ENVIRONMENTAL CONTROL MALFUNCTIONS, DAMAGE FROM LIQUIDS, OR ANY OTHER CAUSE BEYOND THE NORMAL RANGE OF USE. REGARDLESS OF HOW CAUSED, IN NO EVENT SHALL MILNOR BE LIABLE FOR SPECIAL, INDIRECT, PUNITIVE, LIQUIDATED, OR CONSEQUENTIAL COSTS OR DAMAGES, OR ANY COSTS OR DAMAGES WHATSOEVER WHICH EXCEED THE PRICE PAID TO MILNOR FOR THE EQUIPMENT IT SELLS OR FURNISHES.

THE PROVISIONS ON THIS PAGE REPRESENT THE ONLY WARRANTY FROM MILNOR AND NO OTHER WARRANTY OR CONDITIONS, STATUTORY OR OTHERWISE, SHALL BE IMPLIED.

WE NEITHER ASSUME, NOR AUTHORIZE ANY EMPLOYEE OR OTHER PERSON TO ASSUME FOR US, ANY OTHER RESPONSIBILITY AND/OR LIABILITY IN CONNECTION WITH THE SALE OR FURNISHING OF OUR EQUIPMENT TO ANY BUYER.

BMP720097/19036

BIUUUD19 (Published) Book specs- Dates: 20081231 / 20081231 / 20081231 Lang: ENG01 Applic: UUU

How to Get the Necessary Repair Components

This document uses Simplified Technical English.
Learn more at http://www.asd-ste100.org.

You can get components to repair your machine from the approved supplier where you got this machine. Your supplier will usually have the necessary components in stock. You can also get components from the Milnor® factory.

Tell the supplier the machine model and serial number and this data for each necessary component:

- The component number from this manual
- The component name if known
- The necessary quantity
- The necessary transportation requirements
- If the component is an electrical component, give the schematic number if known.
- If the component is a motor or an electrical control, give the nameplate data from the used component.

To write to the Milnor factory:

Pellerin Milnor Corporation
Post Office Box 400
Kenner, LA 70063-0400
UNITED STATES

Telephone: 504-467-2787
Fax: 504-469-9777
Email: parts@milnor.com

— End of BIUUUD19 —

Trademarks

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These words are trademarks of Pellerin Milnor® Corporation and other entities:

Table 1. Trademarks

AutoSpot™	GreenFlex™	MilMetrix®	PulseFlow®
CBW®	GearTrace™	MilTouch™	RAM Command™
Drynet™	GreenTurn™	MilTouch-EX™	Recirc*ONE*®
E-P Express®	Hydro-cushion™	MilRAIL®	RinSave®
E-P OneTouch®	Mentor®	Miltrac™	SmoothCoil™
E-P Plus®	Mildata®	MilVision™	Staph Guard®
Gear Guardian®	Milnor®	PBW™	

End of document: BNUUUU02

Safety Information 1

BIUUUS27 (Published) Book specs- Dates: 20051111 / 20051111 / 20060323 Lang: ENG01 Applic: VIP VSR VSL VSE VST VGU

Safety—Shuttle

1. General Safety Requirements—Vital Information for Management Personnel [Document BIUUUS04]

Incorrect installation, neglected preventive maintenance, abuse, and/or improper repairs, or changes to the machine can cause unsafe operation and personal injuries, such as multiple fractures, amputations, or death. The owner or his selected representative (owner/user) is responsible for understanding and ensuring the proper operation and maintenance of the machine. The owner/user must familiarize himself with the contents of all machine instruction manuals. The owner/user should direct any questions about these instructions to a Milnor® dealer or the Milnor® Service department.

Most regulatory authorities (including OSHA in the USA and CE in Europe) hold the owner/user ultimately responsible for maintaining a safe working environment. Therefore, the owner/user must do or ensure the following:

- recognize all foreseeable safety hazards within his facility and take actions to protect his personnel, equipment, and facility;
- work equipment is suitable, properly adapted, can be used without risks to health or safety, and is adequately maintained;
- where specific hazards are likely to be involved, access to the equipment is restricted to those employees given the task of using it;
- only specifically designated workers carry out repairs, modifications, maintenance, or servicing;
- information, instruction, and training is provided;
- workers and/or their representatives are consulted.

Work equipment must comply with the requirements listed below. The owner/user must verify that installation and maintenance of equipment is performed in such a way as to support these requirements:

- control devices must be visible, identifiable, and marked; be located outside dangerous zones; and not give rise to a hazard due to unintentional operation;
- control systems must be safe and breakdown/damage must not result in danger;
- work equipment is to be stabilized;
- protection against rupture or disintegration of work equipment;
- guarding, to prevent access to danger zones or to stop movements of dangerous parts before the danger zones are reached. Guards to be robust; not give rise to any additional hazards; not be easily removed or rendered inoperative; situated at a sufficient distance from the danger zone; not restrict view of operating cycle; allow fitting, replacing, or maintenance by restricting access to relevant area and without removal of guard/protection device;
- suitable lighting for working and maintenance areas;
- maintenance to be possible when work equipment is shut down. If not possible, then protection measures to be carried out outside danger zones;
- work equipment must be appropriate for preventing the risk of fire or overheating; discharges of gas, dust, liquid, vapor, other substances; explosion of the equipment or substances in it.

1.1. **Laundry Facility**—Provide a supporting floor that is strong and rigid enough to support–with a reasonable safety factor and without undue or objectionable deflection–the weight of the fully loaded machine and the forces transmitted by it during operation. Provide sufficient clearance for machine movement. Provide any safety guards, fences, restraints, devices, and verbal and/or posted restrictions necessary to prevent personnel, machines, or other moving machinery from accessing the machine or its path. Provide adequate ventilation to carry away heat and vapors. Ensure service connections to installed machines meet local and national safety standards, especially regarding the electrical disconnect (see the National Electric Code). Prominently post safety information, including signs showing the source of electrical disconnect.

WARNING 1: Collision, Crushing and Pinch Hazards—Serious bodily injury or death can result to personnel in proximity to machinery/systems that traverse, elevate, extend, pivot, and/or tilt. The following mandatory minimum safety requirements must be installed with the machinery system: • Safety fence inclosing machine movement areas, • Lockable electrical interlocks on all gates, properly interfaced as shown on machine schematics, to disable machine movement when any gate is opened, • Signs to alert personnel to these hazards, placed prominently around the fenced area. Local codes may require additional precautions.

1.2. **Personnel**—Inform personnel about hazard avoidance and the importance of care and common sense. Provide personnel with the safety and operating instructions that apply to them. Verify that personnel use proper safety and operating procedures. Verify that personnel understand and abide by the warnings on the machine and precautions in the instruction manuals.

1.3. **Safety Devices**—Ensure that no one eliminates or disables any safety device on the machine or in the facility. Do not allow machine to be used with any missing guard, cover, panel or door. Service any failing or malfunctioning device before operating the machine.

1.4. **Hazard Information**—Important information on hazards is provided on the machine safety placards, in the Safety Guide, and throughout the other machine manuals. **Placards must be kept clean so that the information is not obscured. They must be replaced immediately if lost or damaged. The Safety Guide and other machine manuals must be available at all times to the appropriate personnel.** See the machine service manual for safety placard part numbers. Contact the Milnor Parts department for replacement placards or manuals.

1.5. **Maintenance**—Ensure the machine is inspected and serviced in accordance with the norms of good practice and with the preventive maintenance schedule. Replace belts, pulleys, brake shoes/disks, clutch plates/tires, rollers, seals, alignment guides, etc. before they are severely worn. Immediately investigate any evidence of impending failure and make needed repairs (e.g., cylinder, shell, or frame cracks; drive components such as motors, gear boxes, bearings, etc., whining, grinding, smoking, or becoming abnormally hot; bending or cracking of cylinder, shell, frame, etc.; leaking seals, hoses, valves, etc.) Do not permit service or maintenance by unqualified personnel.

2. Safety Alert Messages—Internal Electrical and Mechanical Hazards [Document BIUUUS11]

The following are instructions about hazards inside the machine and in electrical enclosures.

WARNING 2: Electrocution and Electrical Burn Hazards—Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.

- Do not unlock or open electric box doors.

- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.
- Keep yourself and others off of machine.
- Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.

WARNING 3: Entangle and Crush Hazards—Contact with moving components normally isolated by guards, covers, and panels, can entangle and crush your limbs. These components move automatically.

- Do not remove guards, covers, or panels.
- Do not reach into the machine housing or frame.
- Keep yourself and others off of machine.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion.

3. Safety Alert Messages—External Mechanical Hazards [Document BIUUUS12]

The following are instructions about hazards around the front, sides, rear or top of the machine.

CAUTION 4: Strike and Crush Hazards—A traveling machine such as a shuttle can strike, crush, or entrap you if you ride on it or enter its path. Traveling machines or their components can move automatically in any direction. Placing a system machine on line by energizing the machine control may immediately summon a shuttle or other traveling machine.

- Keep yourself and others off of machine.
- Keep yourself and others clear of movement areas and paths.
- Understand the consequences of placing a system machine on line.
- Know the location of all emergency stop switches, pull cords, and/or kick plates and use them in an emergency to stop machine motion.
- Know the location of the main machine disconnect and use it in an emergency to remove all electric power from the machine.

CAUTION 5: Crush and Entrap Hazards—A traveling machine such as a shuttle can crush or entrap you if the bed or bucket descends while you are under it. The bed or bucket can descend with power off or on.

- Keep yourself and others clear of movement areas and paths.

WARNING 6: Fall, Entangle, and Strike Hazards—Machine motion can cause you to fall or become entangled in or struck by nearby objects if you stand, walk, or ride on the machine. Shuttles and conveyor belts move automatically.

- Keep yourself and others off of machine.

4. Safety Alert Messages—Unsafe Conditions [Document BIUUUS14]

4.1. Damage and Malfunction Hazards

4.1.1. Hazards Resulting from Inoperative Safety Devices

WARNING 7: Multiple Hazards—Operating the machine with an inoperative safety device can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.

- Do not tamper with or disable any safety device or operate the machine with a malfunctioning safety device. Request authorized service.

WARNING 8: Electrocution and Electrical Burn Hazards—Electric box doors—Operating the machine with any electric box door unlocked can expose high voltage conductors inside the box.

- Do not unlock or open electric box doors.

WARNING 9: Entangle and Crush Hazards—Guards, covers, and panels—Operating the machine with any guard, cover, or panel removed exposes moving components.

- Do not remove guards, covers, or panels.

4.1.2. Hazards Resulting from Damaged Mechanical Devices

WARNING 10: Multiple Hazards—Operating a damaged machine can kill or injure personnel, further damage or destroy the machine, damage property, and/or void the warranty.

- Do not operate a damaged or malfunctioning machine. Request authorized service.

WARNING 11: Crush Hazards—Chain and hoist—A broken chain or a malfunctioning hoist can permit the belt/bucket assembly to fall or descend.

- Do not operate the machine with any evidence of damage or malfunction.

4.2. Careless Use Hazards

4.2.1. Careless Operation Hazards—Vital Information for Operator Personnel (see also operator hazards throughout manual)

WARNING 12: Multiple Hazards—Careless operator actions can kill or injure personnel, damage or destroy the machine, damage property, and/or void the warranty.

- Do not tamper with or disable any safety device or operate the machine with a malfunctioning safety device. Request authorized service.
- Do not operate a damaged or malfunctioning machine. Request authorized service.
- Do not attempt unauthorized servicing, repairs, or modification.
- Do not use the machine in any manner contrary to the factory instructions.
- Use the machine only for its customary and intended purpose.
- Understand the consequences of operating manually.

CAUTION 13: Goods Damage and Wasted Resources—Entering incorrect cake data causes improper processing, routing, and accounting of batches.

- Understand the consequences of entering cake data.

WARNING 14: Strike and Crush Hazards—Carelessly moving the machine with manual controls can cause it to strike, crush, entrap, or entangle personnel. You have total control of machine movement immediately after setting the Manual/Automatic switch to manual.

- Keep yourself and others clear of movement areas and paths.
- Understand the consequences of operating manually.

4.2.2. Careless Servicing Hazards—Vital Information for Service Personnel (see also service hazards throughout manuals)

WARNING 15: Electrocution and Electrical Burn Hazards—Contact with electric power can kill or seriously injure you. Electric power is present inside the cabinetry unless the main machine power disconnect is off.

- Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.
- Abide by the current OSHA lockout/tagout standard when lockout/tagout is called for in the service instructions. Outside the USA, abide by the OSHA standard in the absence of any other overriding standard.

WARNING 16: Entangle and Crush Hazards—Contact with moving components normally isolated by guards, covers, and panels, can entangle and crush your limbs. These components move automatically.

- Do not service the machine unless qualified and authorized. You must clearly understand the hazards and how to avoid them.
- Abide by the current OSHA lockout/tagout standard when lockout/tagout is called for in the service instructions. Outside the USA, abide by the OSHA standard in the absence of any other overriding standard.

WARNING 17: Crush and Entrap Hazards—A traveling machine such as a shuttle can crush or entrap you if the bed or bucket descends while you are under it. The bed or bucket can descend with power off or on.

- Secure both red safety pins in accordance with the instructions furnished, then lock out and tag out power at the main machine disconnect before working under bed or bucket.

WARNING 18: Strike and Crush Hazards—A traveling machine such as a shuttle can strike, crush, or entrap you if you ride on it or enter its path. Traveling machines or their components can move automatically in any direction. Placing a system machine on line by energizing the machine control may immediately summon a shuttle or other traveling machine.

- Lock out and tag out power to the traveling machine at the main machine disconnect if you must work in the path of the traveling machine.

— End of BIUUUS27 —

Proximity Safeguarding for Automatic Shuttle Conveyors

Proximity safeguarding—a means of preventing personnel from entering the path of a machine, such as an industrial robot, that moves within a large area.

1. Applicability

This document—

applies to Milnor® automated laundering systems with shuttle conveyors that move without operator intervention (automatic operation),

does *not* apply to shuttles that require operator input continually, such as directing all shuttle movements (manual operation).

2. References for Proximity Safeguarding

ANSI Z8.1-2016 “American National Standard for Commercial Laundry and Drycleaning Equipment and Operations - Safety Requirements”

OSHA Standard 29 CFR § 1910.212 “General Requirements for All Machines”

OSHA Directive STD 01-12-002 - Pub 8-1.3 “Guidelines for Robotic Safety”

ANSI/RIA R15.06-2012 “American National Standard for Industrial Robots and Robot Systems- Safety Requirements”

ANSI/ASME B15.1-2000 “Safety Standard for Mechanical Power Transmission Apparatus”

OSHA Publication 3067 “Concepts and Techniques of Machine Safeguarding”

ISO 10472-1 “Safety Requirements for Industrial Laundry Machinery”

3. Hazards To Personnel in Proximity to Shuttle Conveyors

Milnor automated laundering systems use automatic shuttle conveyors to transport goods among the processing machines in the system. Depending on model, an automatic shuttle conveyor may move in any of the following ways, in addition to running its conveyor belt(s):

- It may travel along (traverse) a line of machines (typically dryers).
- Its conveyor bed(s) may ascend and descend (elevate) within the machine frame.
- Its conveyor bed(s) may extend and retract within the machine frame.
- The conveyor bed and frame may pivot.
- Wet goods shuttles have a bucket that elevates and tilts.

These motions pose strike, crush, sever, and entrapment hazards to personnel in proximity to the shuttle. **For the safety of personnel, owner/users must provide proximity safeguarding that protects personnel from the moving shuttle.**

A common method of proximity safeguarding is safety fencing with interlocked gates that disable the shuttle when a gate is opened. When a shuttle is disabled, this will eventually cause other machines in the system to hold (wait for action from another machine), but it will not necessarily cause them to immediately stop moving. In the case of a tunnel system, the press or centrifugal extractor can pose additional hazards to personnel in proximity to the equipment. **Hence, the safeguards must also disable any presses or extractors.** Tunnels and dryers do not pose a significant hazard to personnel merely because they are in proximity to the equipment, and need not be automatically disabled.

WARNING 1: Multiple Hazards—Proximity safeguarding provides only partial protection and only against injury resulting from entering the shuttle path. It is not a substitute for proper

lockout/tagout procedures and good safety practices.

- Always lockout/tagout any individual machine (or follow the published maintenance procedures) when performing maintenance or clearing a fault on that machine.
- Ensure that all personnel understand the safeguards and do not attempt to defeat them.
- Inspect safeguards weekly to ensure that they are not mechanically or electrically circumvented.

4. How Milnor Accommodates Proximity Safeguarding

Milnor provides connection points on shuttles, presses and centrifugal extractors for interfacing with devices such as gate interlock switches. These connection points are tagged for easy identification. When Milnor provides equipment layout drawings for an automated laundering system, it indicates on the drawing, the perimeter of the shuttle movement area that must be guarded. The following hazard statement is displayed on connection point tags as well as equipment layout drawings prepared by Milnor:

WARNING 2: Strike, Crush, Sever, and Entrapment Hazards—Serious bodily injury or death can result to personnel in proximity to machinery/systems that traverse, elevate, extend, pivot, and/or tilt. The following mandatory minimum safety requirements must be installed with the machinery system (local codes may require additional precautions):

- Safety fence enclosing machine movement areas,
- Lockable electrical interlocks on all gates, properly interfaced as shown on machine schematics, to disable machine movement when any gate is opened,
- Signs to alert personnel to these hazards, placed prominently around the fenced area.

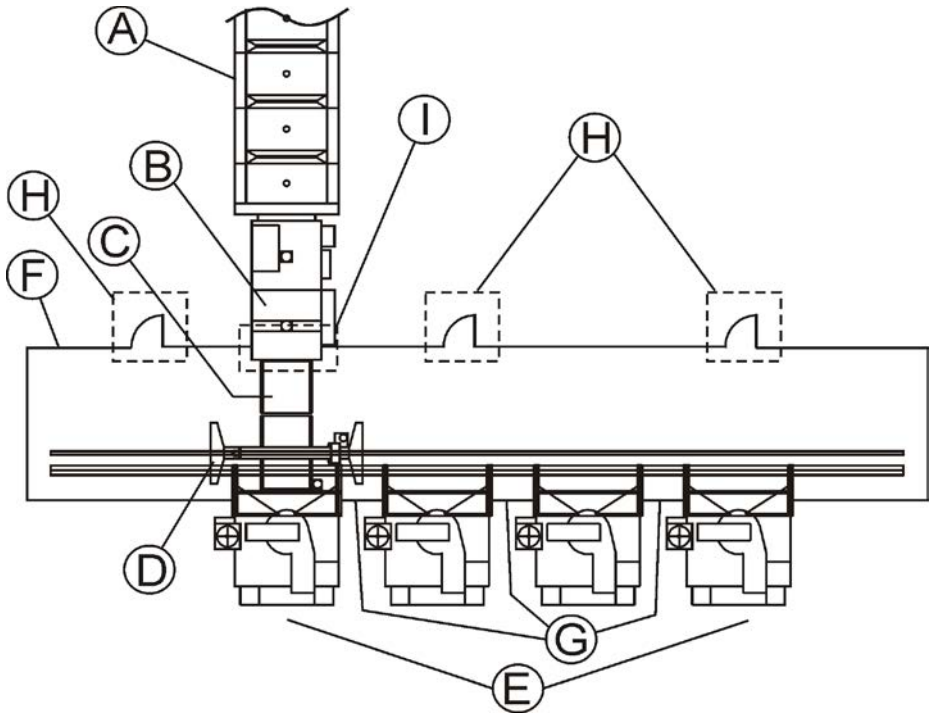
Although the objectives of proximity safeguarding are the same anywhere, design requirements vary with local codes (which occasionally change) and with the plant layout. For this reason, Milnor does not provide detailed designs or materials for proximity safeguarding. If the necessary expertise does not exist within the owner/user's organization, consult appropriate sources such as local engineers or architects specializing in industrial facility design.

5. Examples of Safety Fencing With Interlocked Gates

Fencing with interlocked gates like that depicted in Figure 1 and Figure 2, may be used to meet the proximity safeguarding requirement. Should the owner/user choose this method, the following information may be useful. However, **this information may not satisfy current or local code requirements. The owner/user must determine its suitability for his particular facility.**

Figure 1: Example Fence Layout for Automated Laundering System Where One Tunnel Serves a Bank of Dryers

Plan View of Laundering System

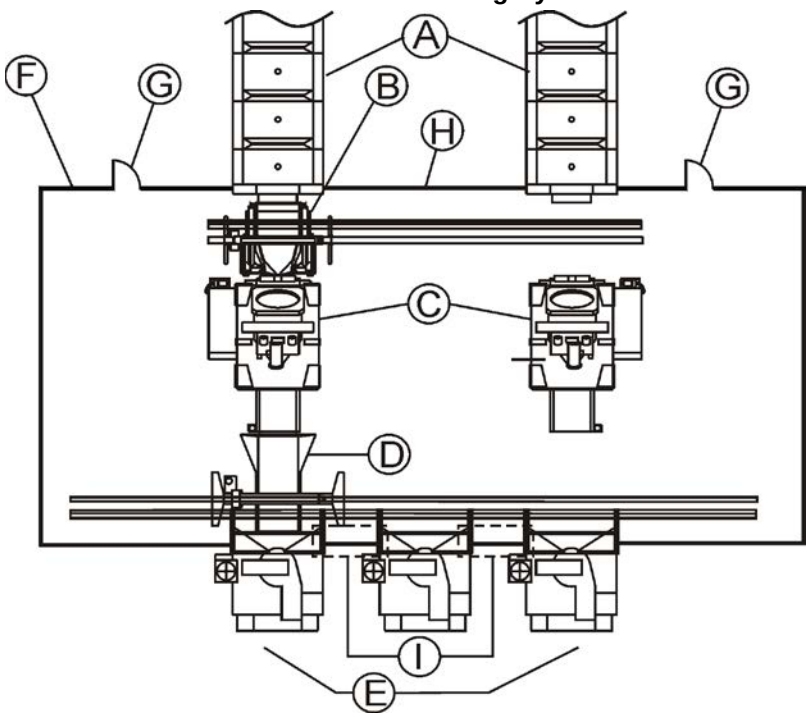


Legend

- **A.** Continuous Batch Washer (tunnel)
- **B.** Press extractor
- **C.** COINC inclined conveyor
- **D.** Traversing and elevating shuttle conveyor for pressed cakes
- **E.** Bank of dryers
- **F.** Fence enclosing path of shuttle
- **G.** Fence segments between dryers
- **H.** Electrically interlocked gates. Gates swing outward at least 90 degrees and swing area is marked on floor. Provide multiple gates for long fence runs.
- **I.** Fence restricts access to unload end of press, but does not obstruct access to press controls.

Figure 2: Example Fence Layout for Automated Laundering System Where Two Tunnels Serve a Bank of Dryers

Plan View of Laundering System



Legend

- **A.** Continuous Batch Washers (tunnels)
- **B.** Traversing and elevating shuttle conveyor for wet goods
- **C.** Centrifugal extractors
- **D.** Traversing and elevating shuttle conveyor for loose goods
- **E.** Bank of dryers
- **F.** Fence enclosing paths of both shuttles and both centrifugal extractors
- **G.** Gates interlocked with both shuttles and both centrifugal extractors.
- **H.** Fence segment between tunnels.
- **I.** Fence segments between dryers.

5.1. Fence Dimensions—The fence must discourage climbing over and prevent crawling under.

5.2. Fence Materials and Setback—The fence must be constructed of materials and located so as to prevent personnel from reaching through gaps in the fence and contacting the enclosed machinery.

5.3. Gates—Personnel gates must be held firmly closed but permit personnel to easily pass through when necessary. Gates must be equipped with a positive latching arrangement to prevent accidental opening. Adequate floor space must be provided to allow the gate to swing at least 90 degrees when fully open. Gates must open outward; that is, away from the fenced perimeter. The floor must be permanently marked to show the gate's swing area, to discourage obstructing its movement.

5.4. Control Circuitry—All gates must be electrically interlocked with any shuttle conveyors within the fenced area and with any presses or centrifugal extractors that the fence either encloses or intersects. Opening any gate must have the following effects:

1. Shuttle(s), press(es), and/or centrifugal extractor(s) stop moving immediately.
2. An audible alarm sounds.
3. Shuttle(s), press(es), and/or centrifugal extractor(s) cannot be restarted merely by closing the gate(s), but must be restarted at the machine control panel once the gate(s) are closed.

Milnor shuttles, presses and centrifugal extractors provide such functionality when properly interfaced with gate interlock switches.

5.5. System Emergency Stop Switches—The laundry must establish rules and procedures that prohibit personnel from remaining within the fenced area with machine(s) enabled, except in accordance with published maintenance procedures. System emergency stop switches (panic buttons) should be provided inside and outside the fenced perimeter. Emergency stop switches should be located so that personnel anywhere inside the fenced perimeter are only a short distance from a switch, and they should be clearly marked as to their locations and function. Connect switches in series with the gate interlocks so that pressing an emergency stop switch performs the same control function as opening a gate.

5.6. Isolating Individual Machine Controls—The interlock circuitry for each machine must be electrically isolated from that of the other machines. Hence, each gate interlock switch must provide as many pairs of dry contacts as there are machines to interface to. A pair of switch contacts must never be shared by two or more machines.

5.7. Recommended Signage—Safety placards should be posted along the fence and at each gate, alerting personnel to the hazards within. At minimum, the size of lettering and distance between placards should be such that anyone contemplating entering the fenced area will likely see and read the placard first. Wording should be provided in each native language spoken by laundry personnel.

— End of BISUUI01 —

Use the Red Safety Supports for Maintenance — CA_, CG_, COEL_, COLF_, COSH_

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1. What Safety Supports are Provided and Why

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These machines are provided with two safety pins. After the bed is raised, the pins are inserted in holes in both sides of the frame. The safety pins provide protection against the unpowered descent of the bed during maintenance. A mechanical problem such as a broken chain can cause the bed to fall. Use the safety support(s) whenever the maintenance to be performed requires you to place any part of your body in or near the path of the vertically moving portion of the machine.

WARNING: **Incorrect use of the safety supports** — can cause the machine to descend and crush you.

- Never work near the path of the vertically moving portion of the machine unless the safety supports are deployed and power is removed from the machine.
- Do not use power to close a small gap between the machine and the safety supports. Use care not to lower the machine with the safety supports deployed.
- Where a pair of safety supports is provided, always use both supports.
- Maintain the safety support(s) in good condition.
- When not in use, stow the safety support(s) in the location(s) provided on the machine or in a convenient, designated location.

2. How to Deploy the Safety Pins

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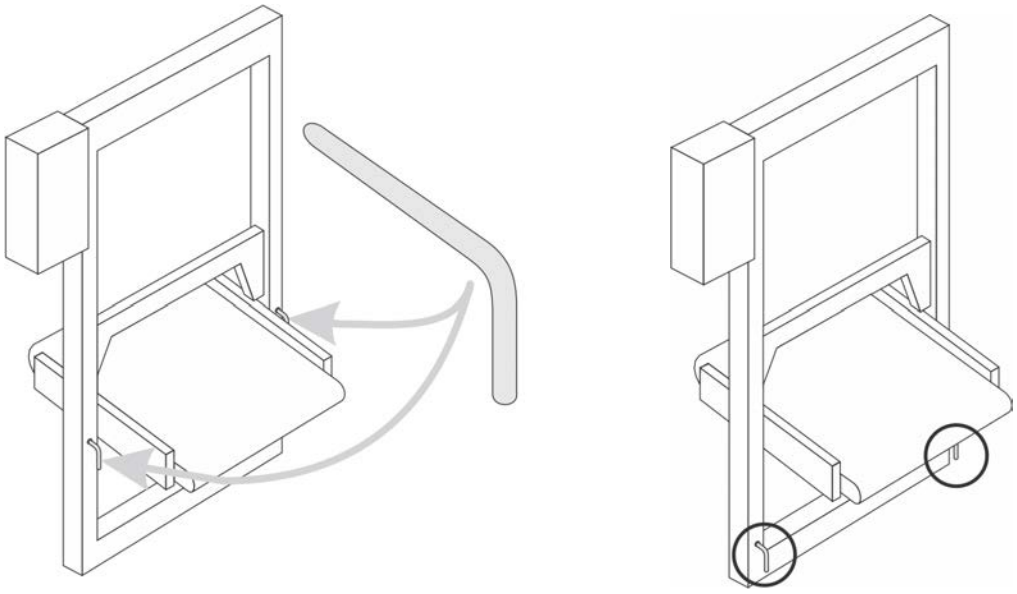
1. Use the Manual mode to raise the bed or bucket carrier only as far as needed to insert the pins at one of the receptacle holes.
2. The illustrations below show the safety pins deployed (at left) and stowed (at right). Install the safety pins into the receptacle holes in the frame.



3. Remove electric power from the machine.

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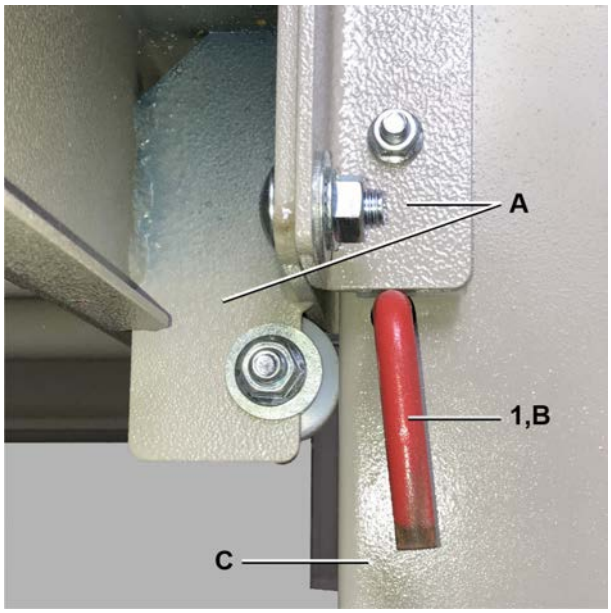
Safety Pin

All Elevating Shuttles and Pivoting Elevators.



Legend

A . . . Side Slider
B . . . Safety Pin, 2 instances, left and right
C . . . Vertical frame member

Table 1. Parts List—Safety Pin

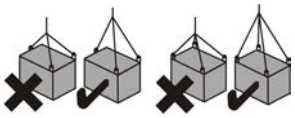
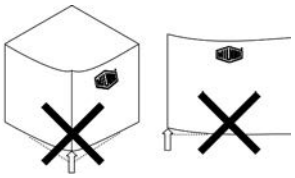
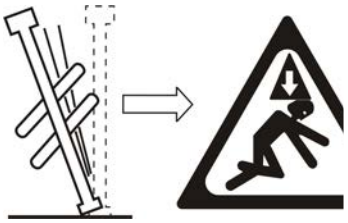
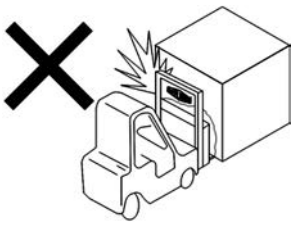
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Components				
all	1	04 21496	SAFETY PIN-COSHA	

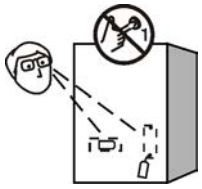
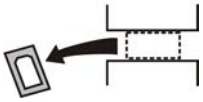
Understanding the Tag Guidelines for the Models Listed Below

COELD111 COELF111 COELF112 COELF113 COELF121 COELF122 COLFB111 COLFB112 COLFK111 COLFK112 COLFM111 COLFM112 COLFP111 COLFP112 COLFQ111 COLFQ112 COLFR111 COLFR112 COSAT111 COSAT112 COSAT121 COSHA111 COSHA112 COSHA113 COSHA114 COSHA121 COSHA122 COSHB111 COSHB112 COSHE122 COSHJ112 COSHJH12 COSHK111 COSHK112 COSHM111 COSHM112 COSHP111 COSHP112 COSHQ111 COSHQ112 COSHR111 COSHR112 COSTA112 COSTA113 COSTA114 COSTA121 COSTA122 COSTA123 COSTA124 COSTE112 COSTE113 COSTE114 COSTE122 COSTE123 COSTE124 COSTQ114 COSTR112

Several installation guidelines and precautions are displayed symbolically, on tags placed at the appropriate locations on the machine. Some are tie-on and others are adhesive tags. Tie-on tags and white, adhesive tags may be removed after installation. Yellow adhesive tags must remain on the machine.

Most tags contain only symbols (no words). A few are worded. The explanations below, start with the tag part number (displayed on the tag). If a tag contains no words, the meaning of the tag is explained below. If the tag contains words, the explanation below simply repeats the wording.

Display or Action	Explanation
	Read the manual before proceeding. This symbol appears on most tags. The machine ships with a complete set of manuals. The safety, installation, and electrical schematic manuals are particularly important to installers.
	B2TAG88005: This carefully built product was tested and inspected to meet Milnor® performance and quality standards by
	B2TAG94078: Do not forklift here; do not jack here; do not step here—whichever applies.
	B2TAG94079: Rig for crane lifting (either 3-point or 4-point, depending on the number of lifting eyes provided) using a steep angle on the chains (closer to vertical than horizontal).
	B2TAG94084: Do not lift from one corner of the machine, as this can cause the frame to rack, damaging it.
	B2TAG94089: Do not attempt to balance the shuttle on the lower shipping brackets. Always suspend and lift the shuttle from the lifting eyes at the top of the machine.
	B2TAG94118: Do not strike shipping container during fork-lifting. Fragile components inside.

Display or Action	Explanation
	B2T2001028: Look for tags inside the machine. These tags may identify shipping restraints to be removed or components to be installed. Do not start the machine until these actions are completed.
 	B2T2002013: Do not start the machine until shipping restraints are removed. This tag will appear on the outside of the machine to alert you to the presence of internal shipping restraints. A tag will also appear on the restraint to help identify it. Most, but not all shipping restraints display the color red. Some shipping restraints are also safety stands. Do not discard these.
	B2T2007003: Install the shuttle rail in accordance with this instruction and the installation manual.
	B2T2010001: Mount festoon tow bar this way. (Used only on COSHM, COSHP, COSHQ & COSHR models.)

— End of BIUUUI02 —

Safety Placard Use and Placement

ALL ELEVATING CONVEYORS

Pellerin Milnor Corporation
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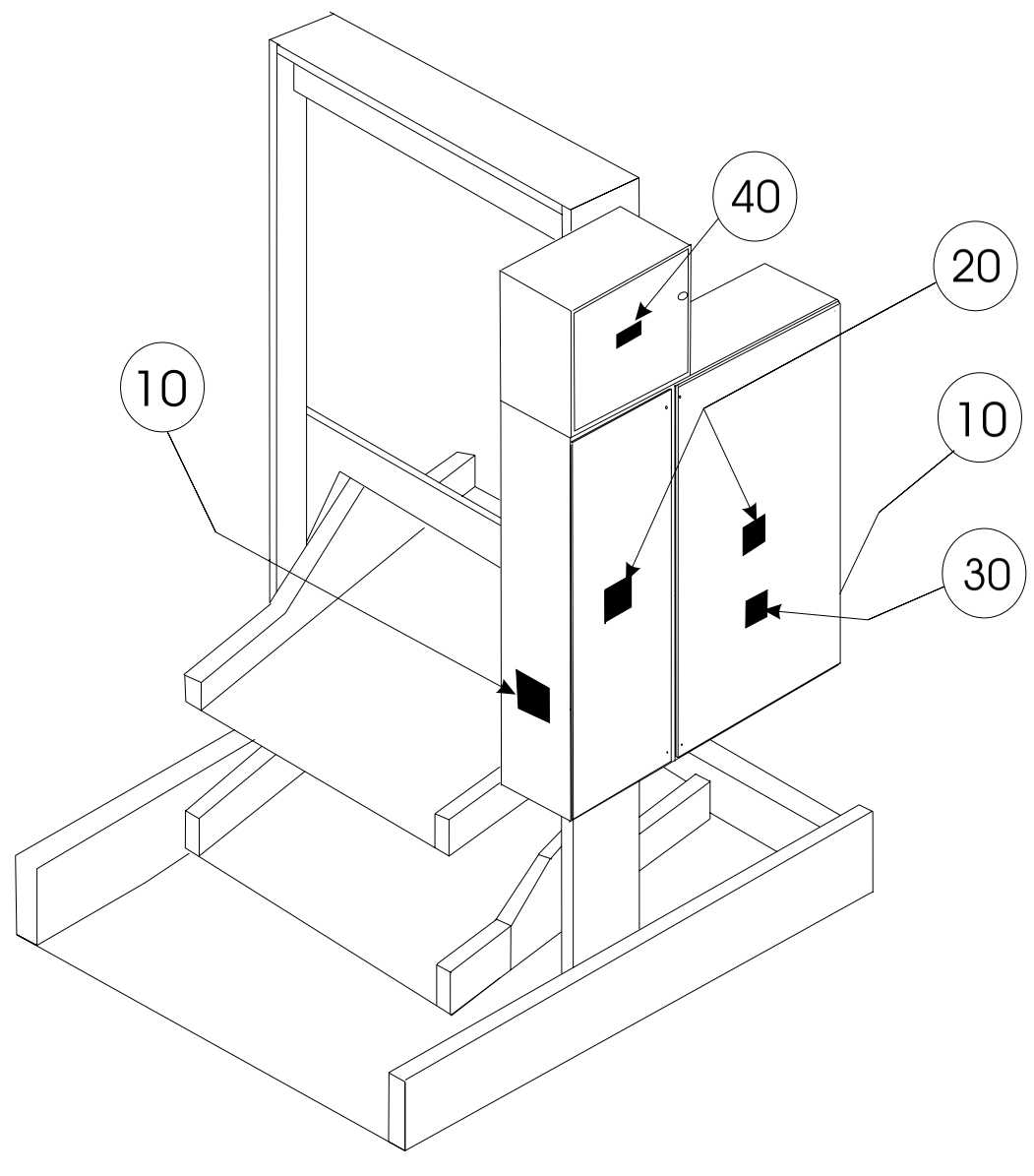
Litho in U.S.A.

Notes:

1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. Use #8 self-tapping screws.**



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Parts List—Safety Placard Placement

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
.				
			----------ASSEMBLIES----------	
			none	
			----------COMPONENTS----------	
all	10	01 10564A	NPLT:COSHA HAZARDS-TCATA	
all	20	01 10377A	NPLT:ELEC HAZARD LG-TCATA	
all	30	01 10699A	NPLT:SERV HZRD-PLYEST-TCATA	
all	40	01 10375B	NPLT:ELEC HAZARD SMALL-TCATA	

Safety Placard Use and Placement ISO

ALL ELEVATING CONVEYORS

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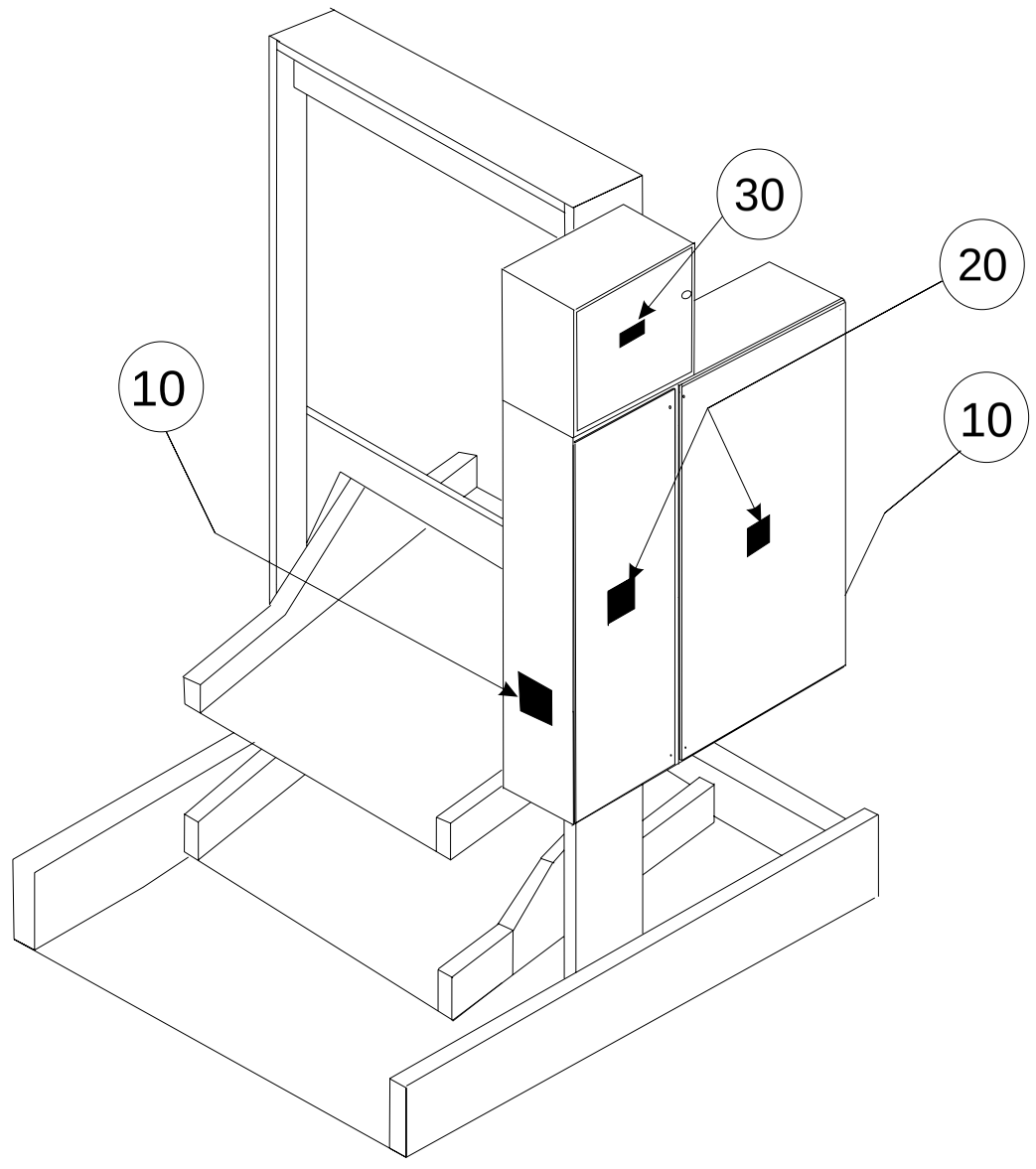
ISO Placards
shown on this page

Notes:
1. **Replace placard immediately, if removed or unreadable.**
2. **Approximate locations of placards are shown. Mounting holes are provided on machine. Use #8 self-tapping screws.**



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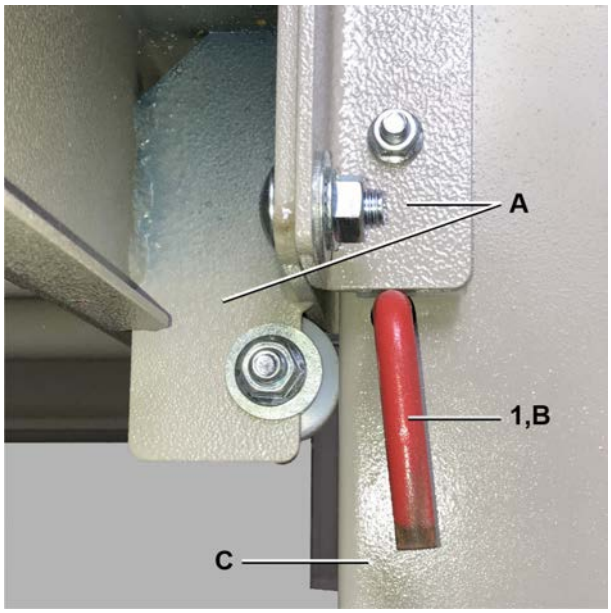
Parts List—Safety Placard Placement

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
.				
----------ASSEMBLIES----------				
			none	
----------COMPONENTS----------				
all	10	01 10564X	WARNINGS:SHUTTLE ISO	
all	20	01 10377	NPLT:"WARNING" 4X4	
all	30	01 10375	NPLT:"WARNING" 2X2	

Safety Pin

All Elevating Shuttles and Pivoting Elevators.



Legend

A . . . Side Slider
B . . . Safety Pin, 2 instances, left and right
C . . . Vertical frame member

Table 1. Parts List—Safety Pin

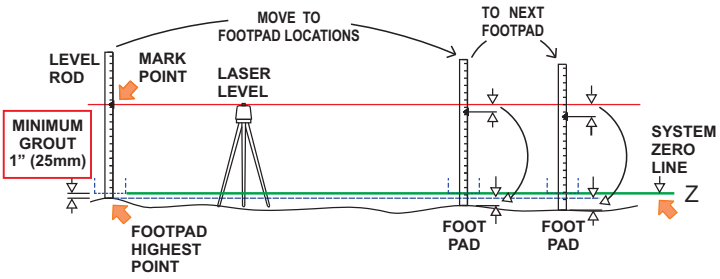
Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Components				
all	1	04 21496	SAFETY PIN-COSHA	

Installation 2

ATTENTION INSTALLERS!

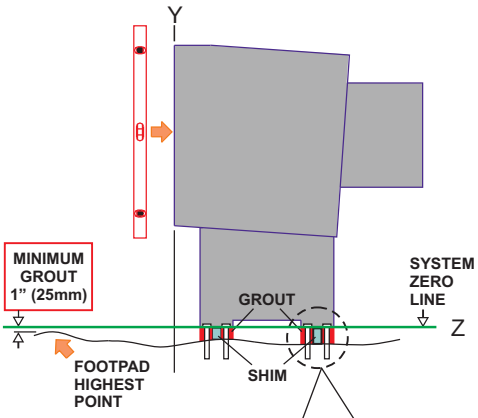
FLOOR IS UNEVEN

- Establish System Zero Line or Z.
- Find highest point in factory floor where footpads will be located.
- System Zero Line or Z is 1" above highest point.



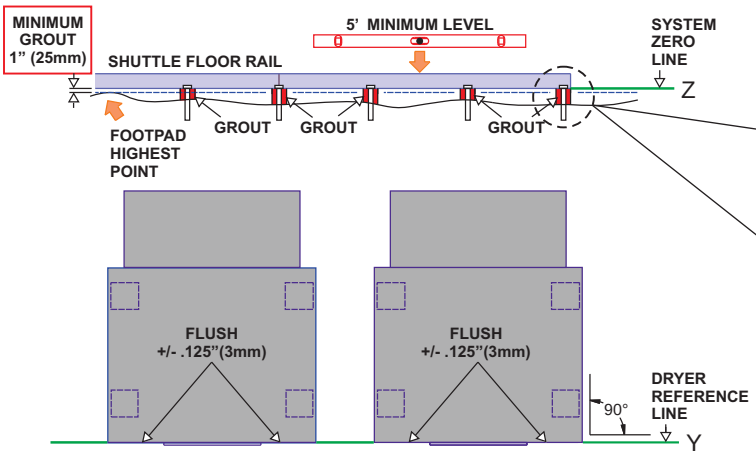
DRYER FEET MUST BE GROUTED

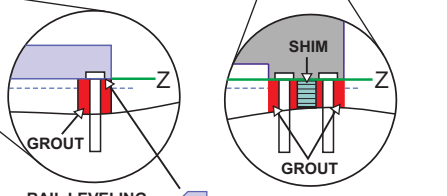
- Shim & level to System Zero Line or Z.
- Grout & anchor all brackets.



SHUTTLE RAIL BRACKETS MUST BE GROUTED TO Z

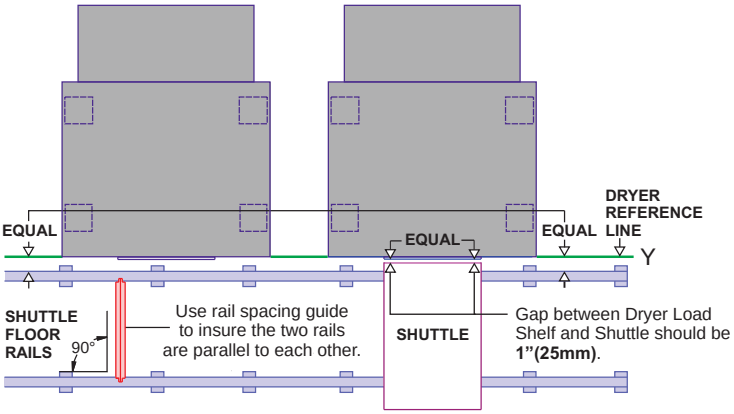
- Shim & level to System Zero Line or Z.
- Grout & anchor all brackets.

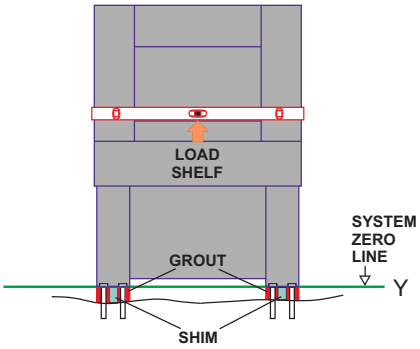




RAIL LEVELING PLATES ARE ALSO PROVIDED FOR FINE ADJUSTMENT OF RAIL.

DRYER FACES MUST BE FLUSH





DRYER MUST BE LEVEL

SHUTTLE RAILS MUST BE PERFECTLY PARALLEL TO DRYER FACES

- Floor rails must be parallel, level, and square along entire length of rail.

B2T2007003/2019193A

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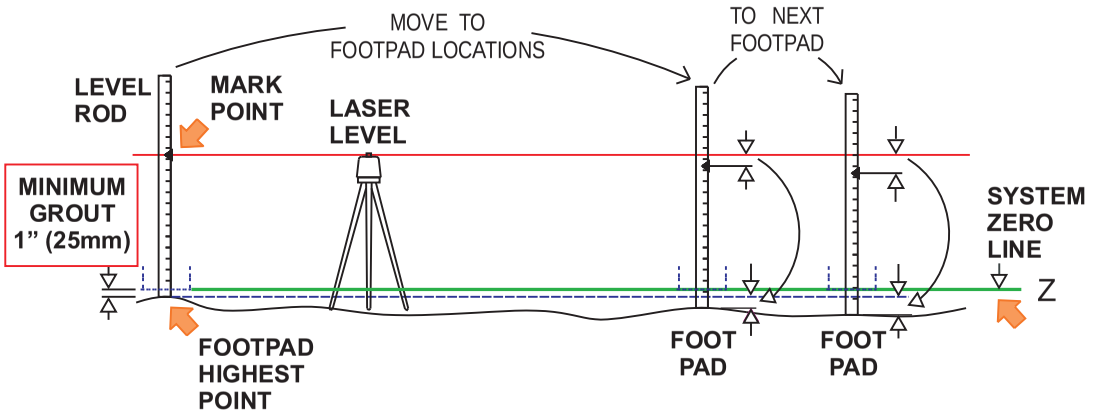
FLOOR IS UNEVEN

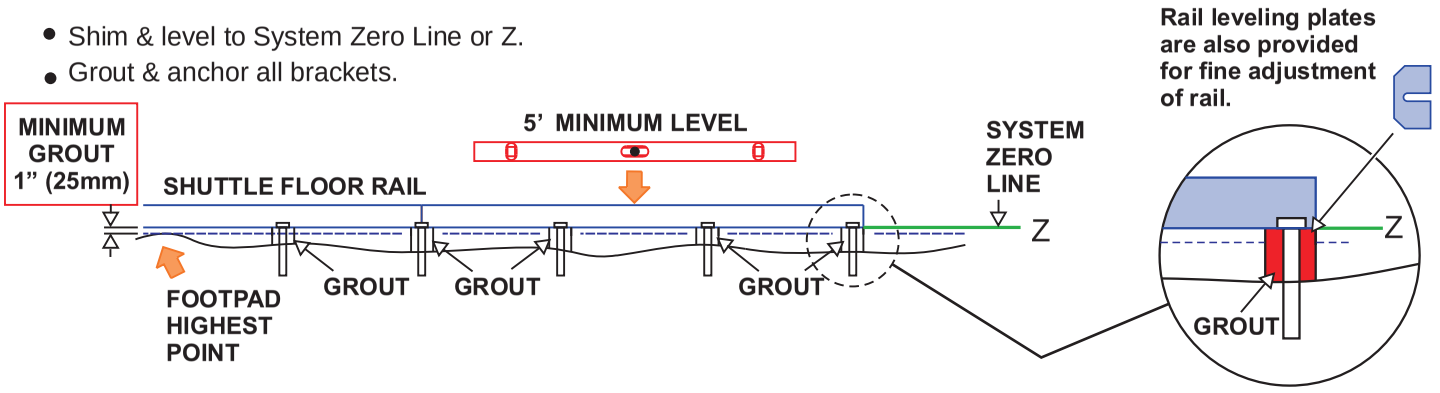
- Establish System Zero Line or Z.
- Find highest point in factory floor where footpads will be located.
- System Zero Line or Z is 1" above highest point.



Rail Installation:
Floor Rails

SHUTTLE RAIL BRACKETS MUST BE GROUTED TO Z

- Shim & level to System Zero Line or Z.
- Grout & anchor all brackets.



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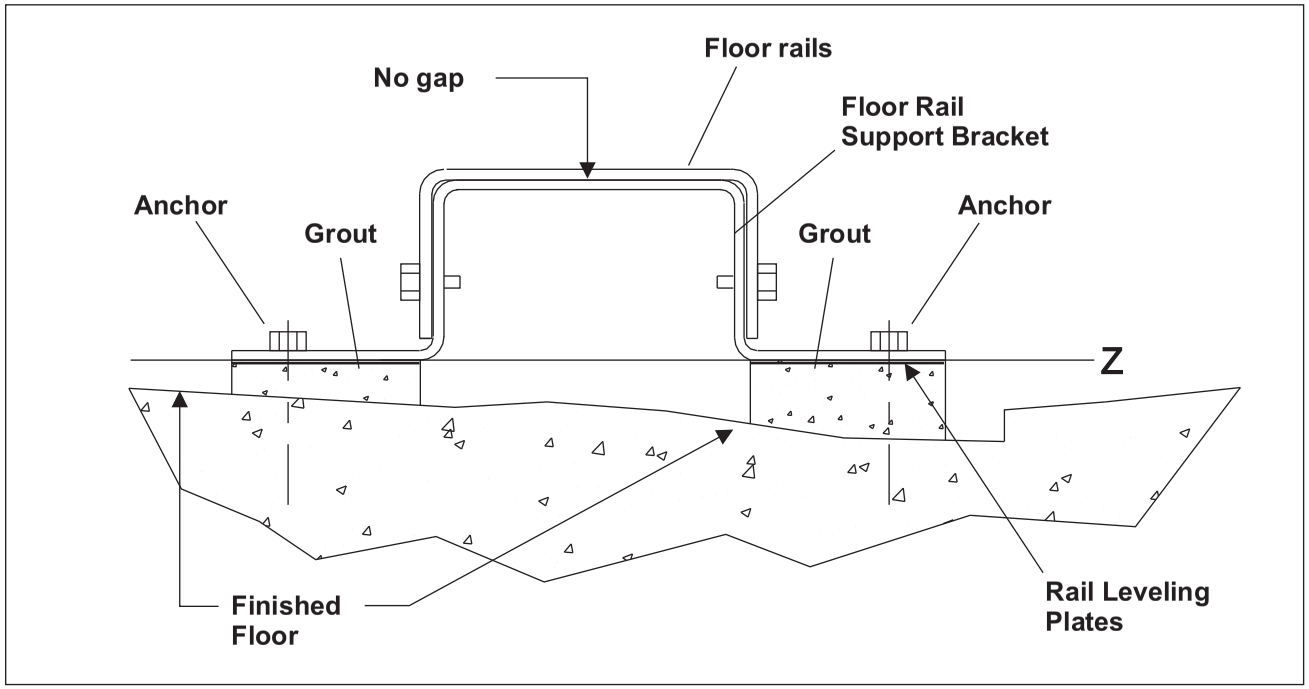
Rail Installation:

Floor Rails



- Shim & level to System Zero Line or Z.
  All floor rails must be level and square along the entire length of rail.
  Locate each rail support bracket and level uneven finished floor with grout, with a minimum of 1”(25MM) of grout, under and around all floor rail support brackets. Use rail leveling plates to fill the gap and level the rail.
  CAUTION: Make sure there is no gap between floor rails and floor rail support brackets.
  Grout & anchor all brackets.
- Anchor the rail at all floor rail support brackets, both sides.

See (Page 4 of 11) and Dimensional Drawing for proper placement of floor rails.

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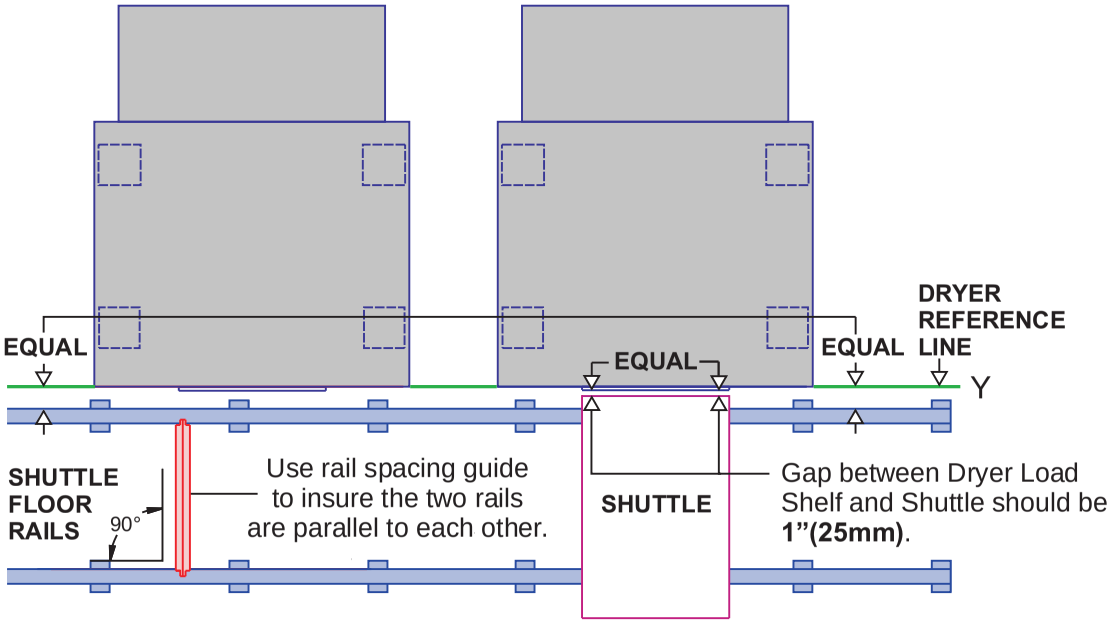
Rail Installation:

Floor Rails



SHUTTLE RAILS MUST BE PERFECTLY PARALLEL TO DRYER FACES

- Floor rails must be parallel, level, and square along entire length of rail.

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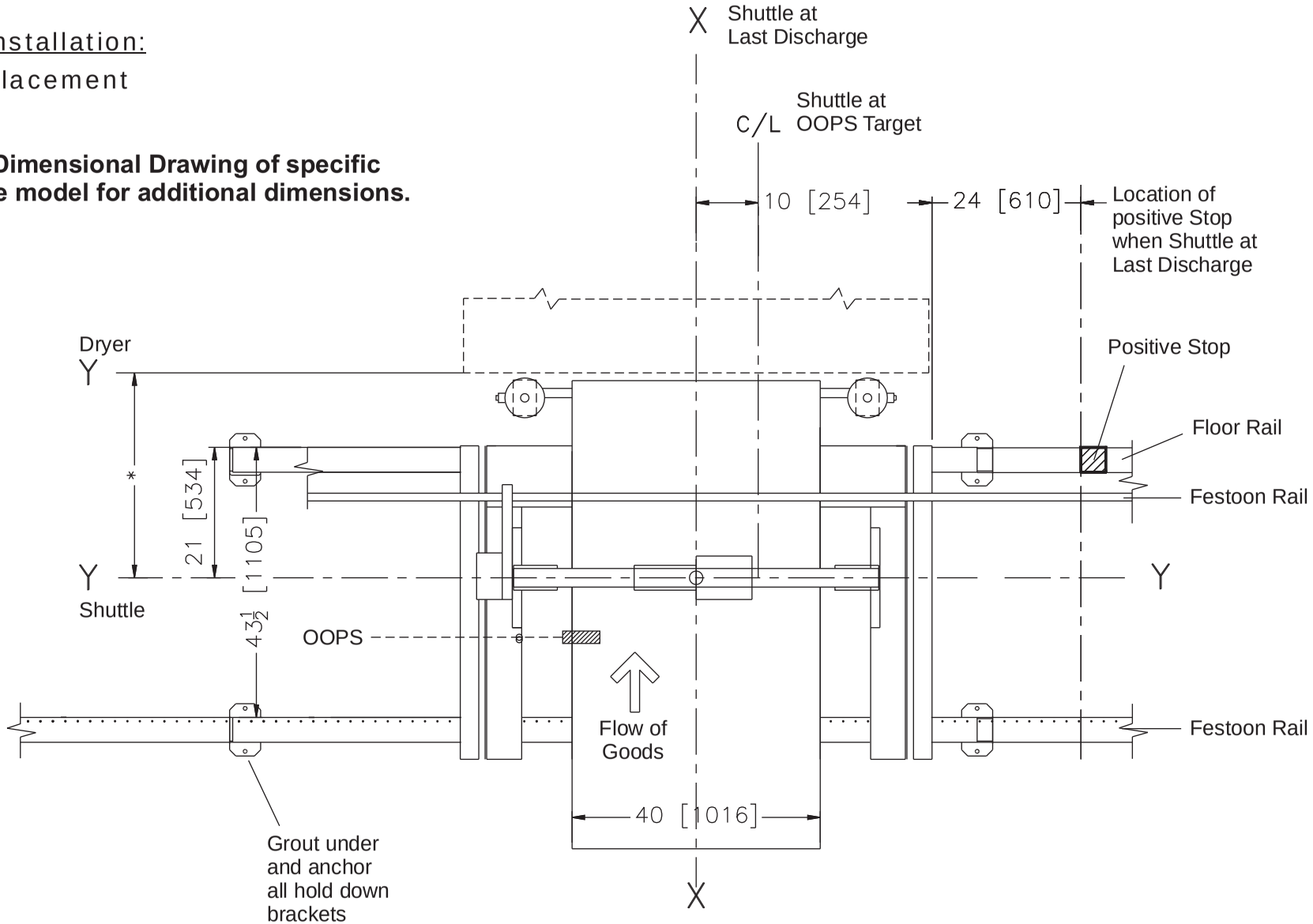
Rail Installation:

Rail Placement

*** See Dimensional Drawing of specific Shuttle model for additional dimensions.**



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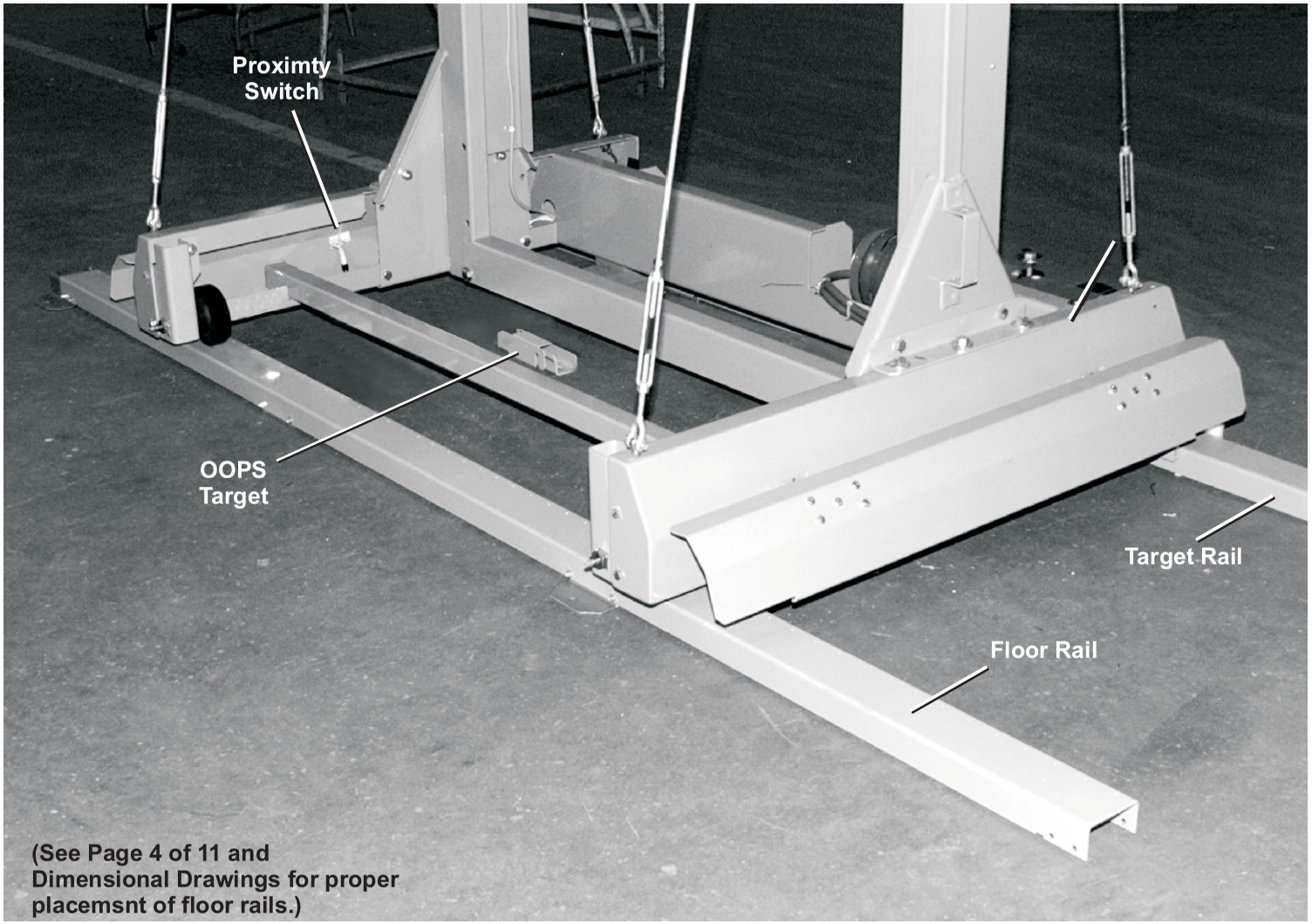
Rail Installation:

Floor Rail



(See Page 4 of 11 and Dimensional Drawings for proper placemsnt of floor rails.)

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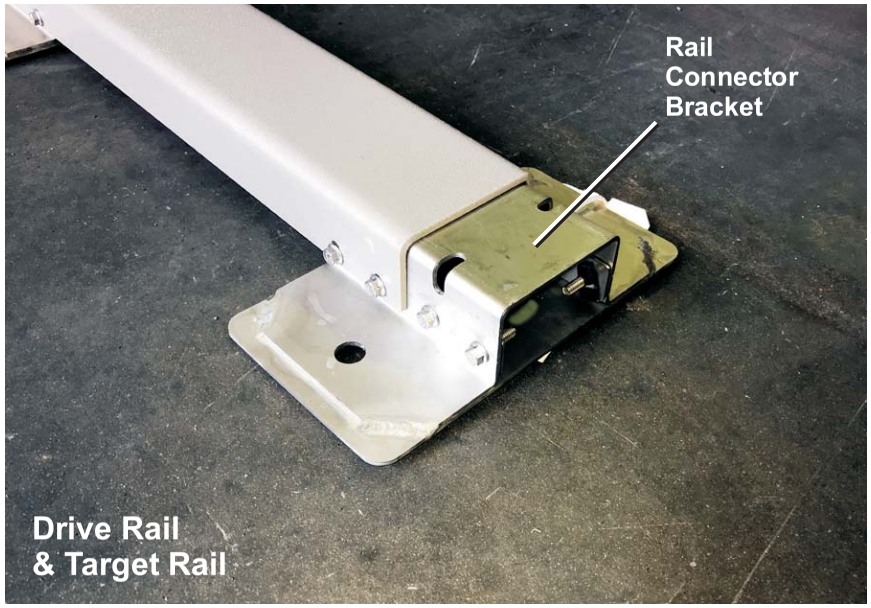
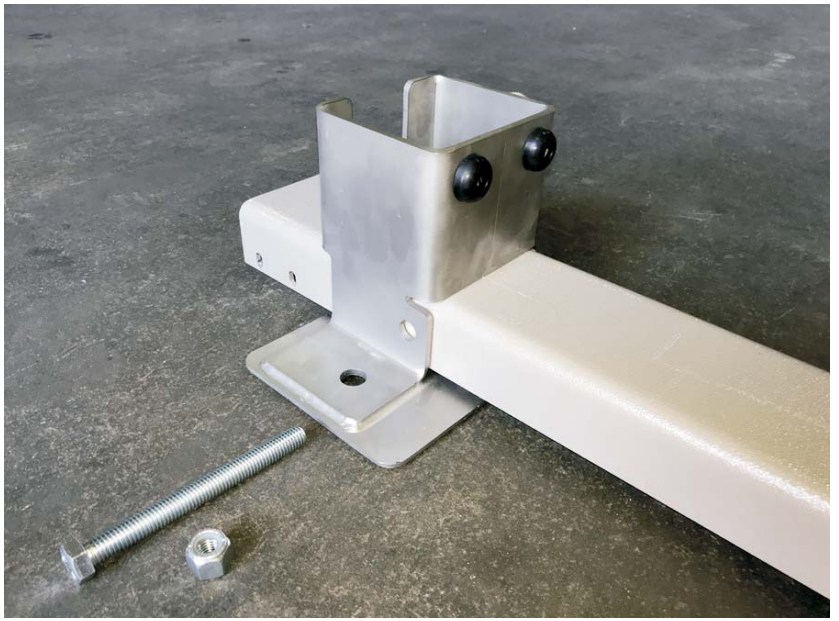


Rail Installation

Positive Stop



Bring Shuttle to the Last Discharge. Locate the Positive Stop 24" away from the kick plate. (See Page 4 of 11.)

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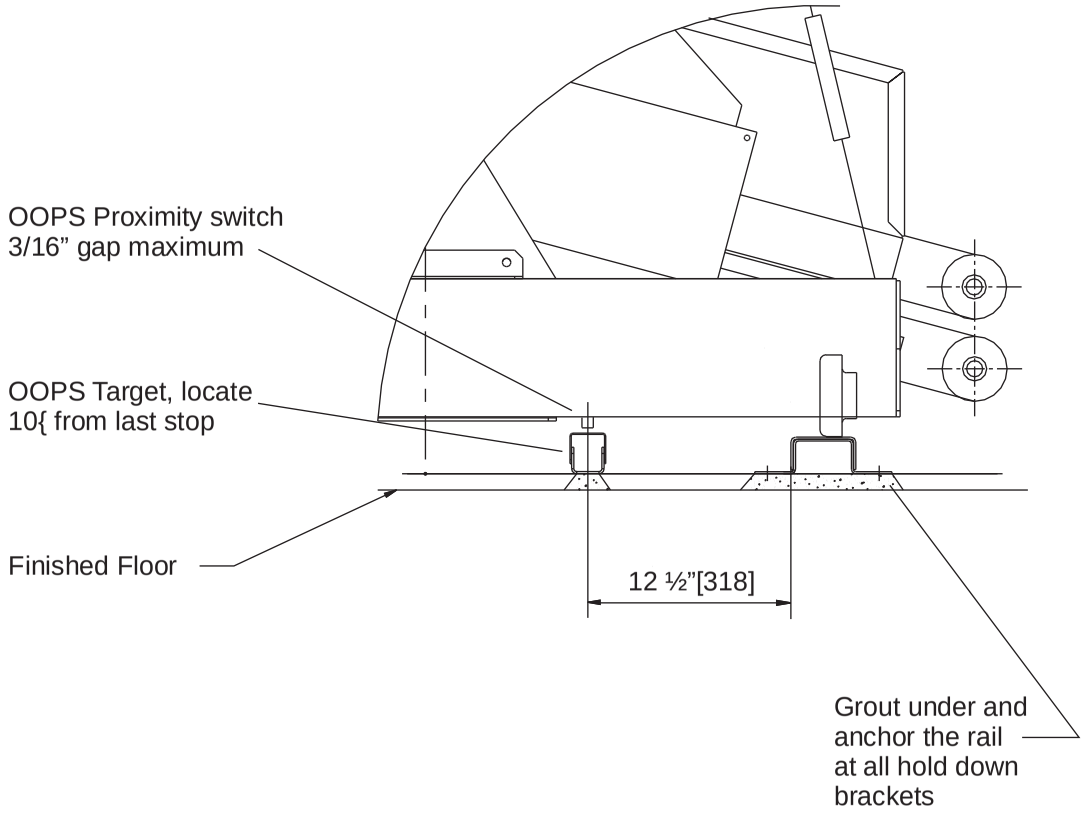
Rail Installation:

Switch & Target Settings



Switch & Target Installation

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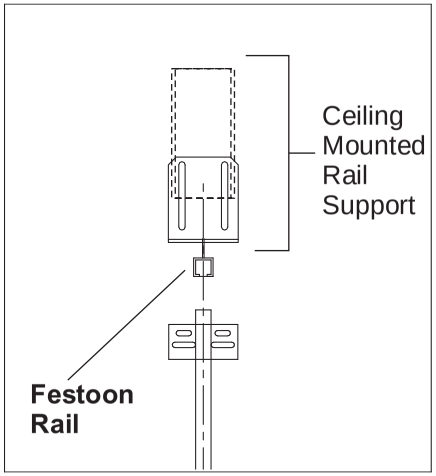
Rail Installation:

Festooning Rail

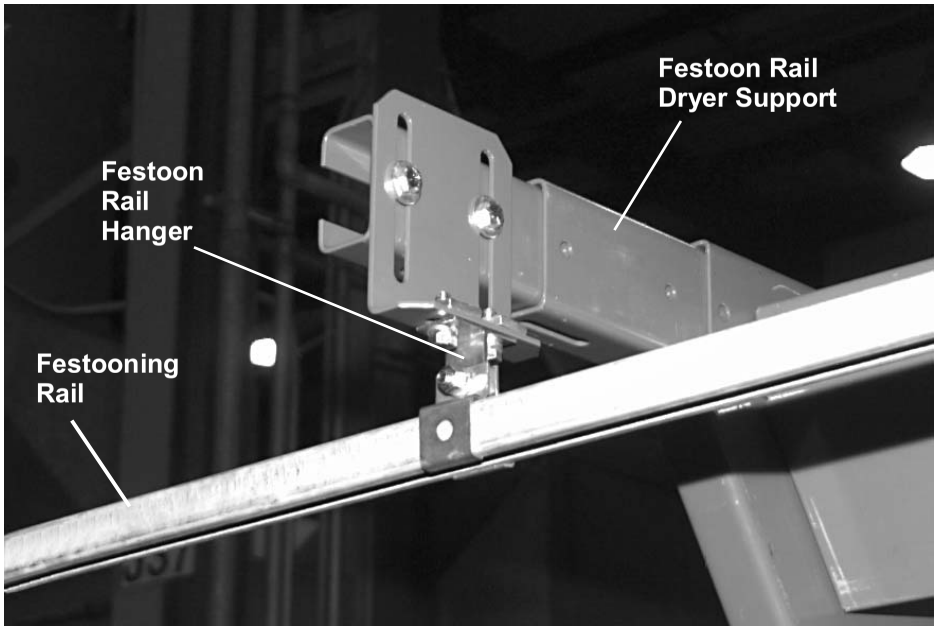
Upper Rail Hanger 12ga



Ceiling Mounted

Supporting the festoon rail properly is the responsibility of others. Ceiling mounted rail supports are available from Milnor. Festoon rail hanger may also be used to support rail from ceiling. Field innovation is required. See Dimensional Drawing for proper location of festoon rail.

Festoon rail connector



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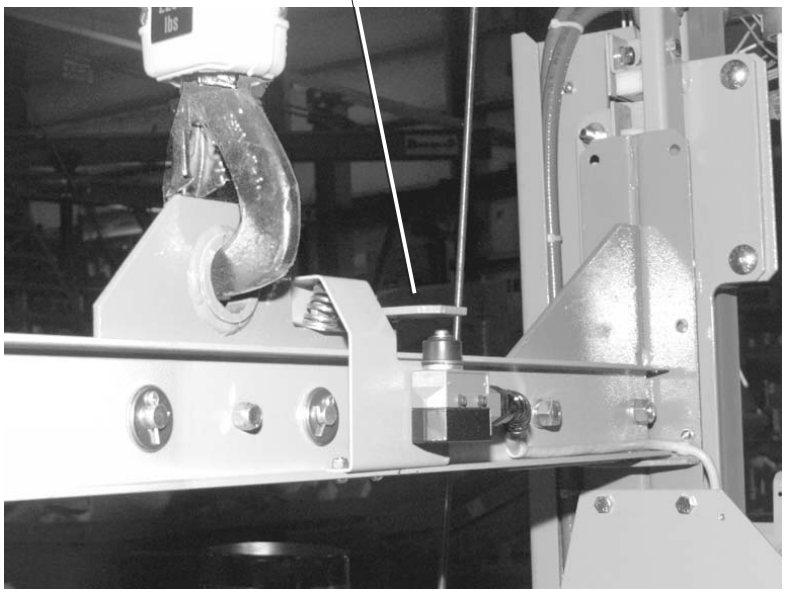
Hoist Installation:

Mounting
Chain Lubrication
Electrical Connection

Check the chain to insure it is not twisted.

Lubricate the chain per the Maintenance Guide. See also, the hoist manufacture's manual.

Check lift plate to see if it properly actuates.
Loose chain switch



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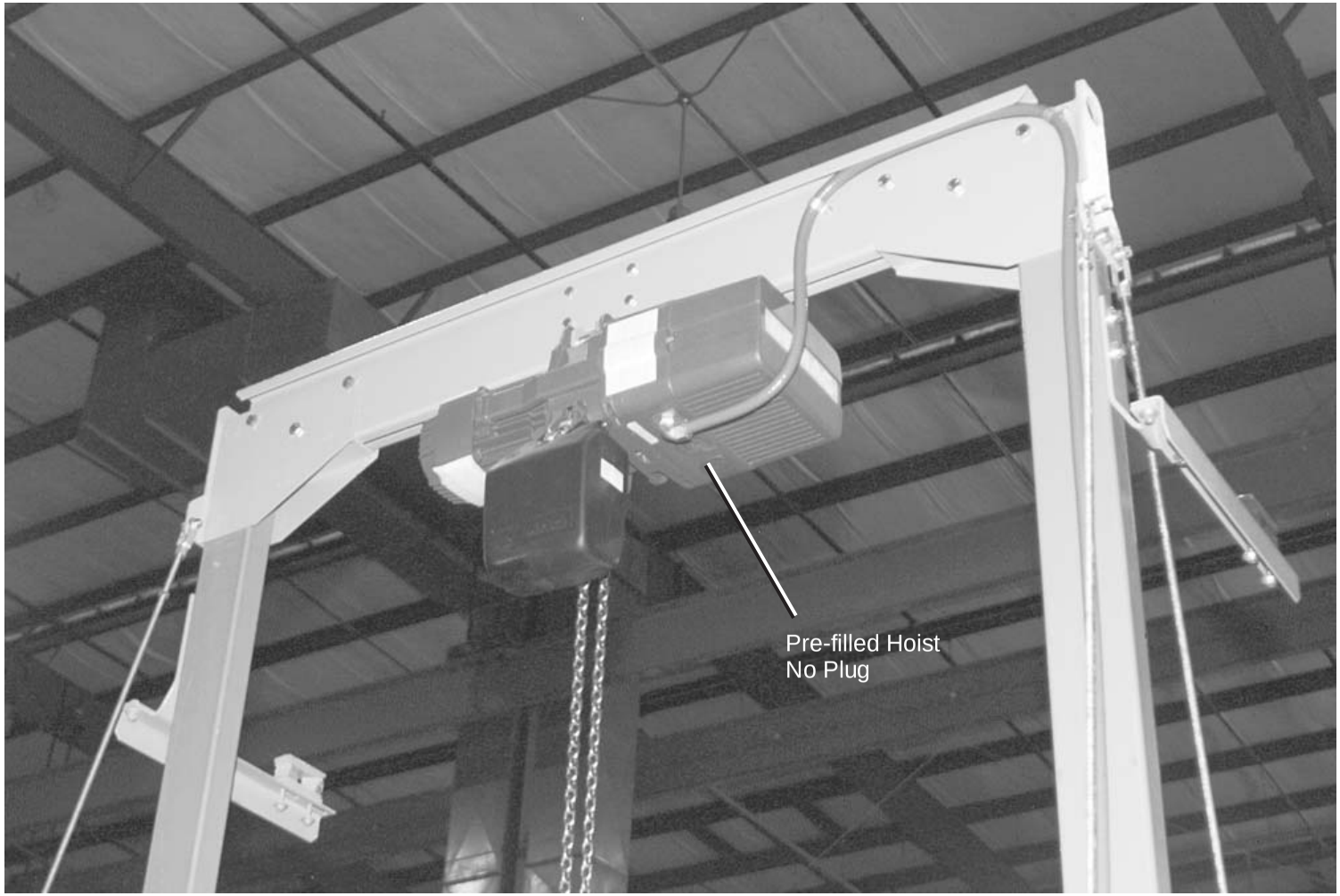
Hoist Installation:



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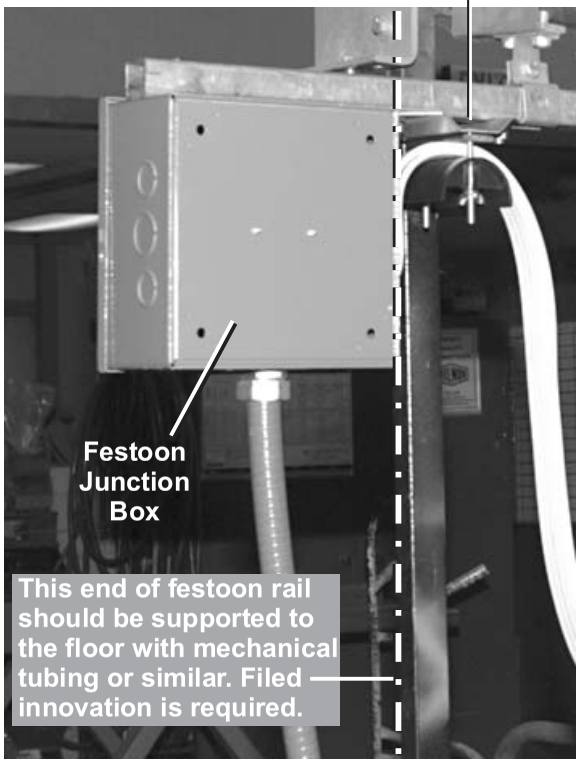
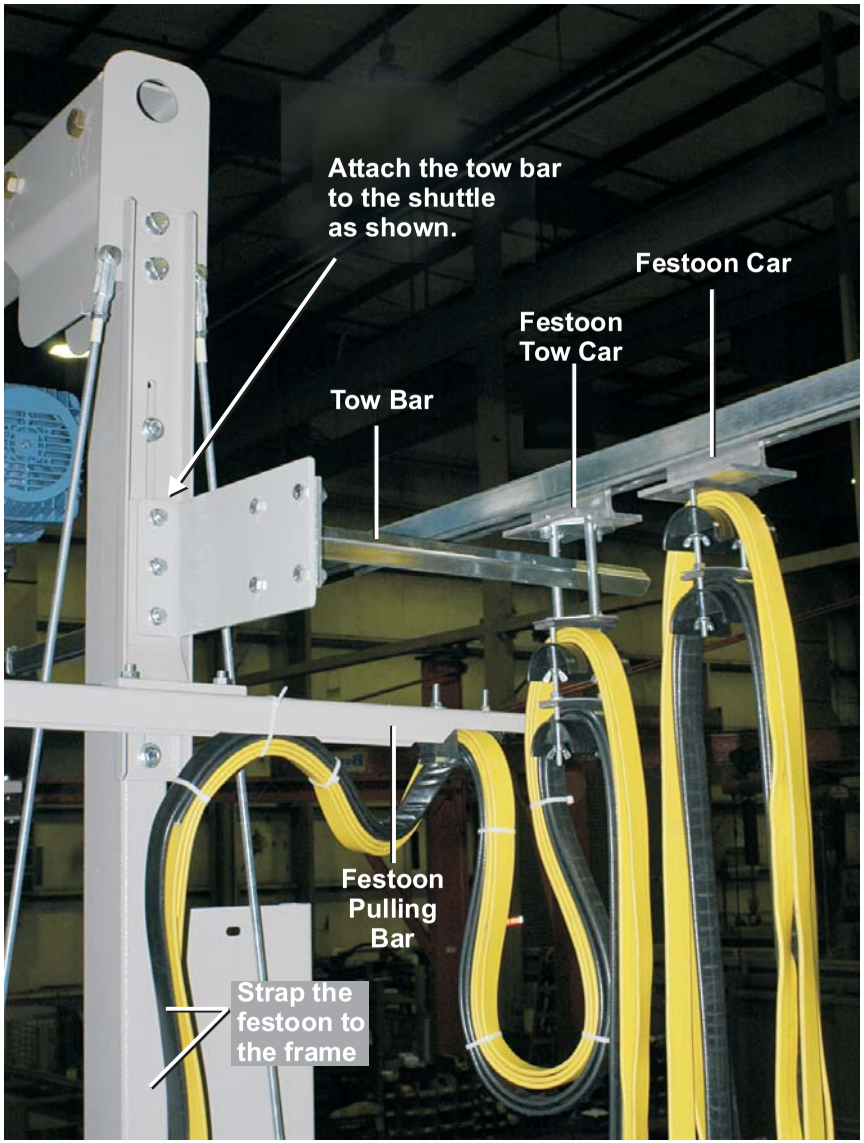
Festoon Installation:

Shuttle - Festoon Connection





Installation of the Laser Positioner for Traversing Shuttles

NOTICE P1: "Remove power from the machine" means use the necessary safety procedure for your location. In the USA, this is the OSHA lockout/tagout (LOTO) procedure. More local requirements can also apply.

Milnor traversing shuttles manufactured after December 2010 are provided with a laser system to control shuttle travel along the rail (traverse) and the positions at which the shuttle stops. An older shuttle can be retrofitted with this system if it meets the following criteria:

- The system has, or is upgraded to Dryer/Shuttle controller (Drynet) software version 21010 or later and shuttle software with a matching date code.
- The shuttle has, or is upgraded to the microprocessor board with part number 08BSPE2T (2004 to current). The 08BSPE1T (circa 2000) and 08BSPET (circa 1994) will not work.
- The shuttle manual controls are housed in a stationary cabinet, not a shuttle-mounted box.

The laser positioner replaces the switches, targets, and mounting hardware previously used for this purpose. The laser positioner system uses the Banner L-Gage LT7 Laser.

1. Hardware Installation

WARNING 1: Strike and Crush Hazards—A traveling machine such as a shuttle can strike, crush, or entrap you if you ride on it or enter its path. Traveling machines or their components can move automatically in any direction. Placing a system machine on line by energizing the machine control may immediately summon a shuttle or other traveling machine.

- Except where specified in this instruction, remove power from the machine to work in or near the shuttle path.

The laser beam must be parallel with the axis of shuttle travel. Typically the laser and target are mounted approximately 7 feet (1.8 meters) above the floor and and horizontally centered on the shuttle frame, but this can be modified to suit the individual circumstances. The beam must be unobstructed at all times. Locate the hardware with respect to the shuttle as follows:

Stationary laser support post—in proximity to the stationary shuttle control cabinet.
Reflector—on the shuttle frame. Detailed mounting instructions follow.

Install the hardware as shown in the figures below. It is necessary to install the laser on the support post but not anchor the post until the laser is aligned with the target.

CAUTION 2: Risk of Costly Damage—Until the laser support post is anchored, it can fall if it or the cable is hit by an object such as a fork lift. This will likely destroy the laser.

- Use care to keep clear of the post except to intentionally reposition it during alignment.
- Route the cable away from any interference and secure it.

Figure 1: Laser to Post

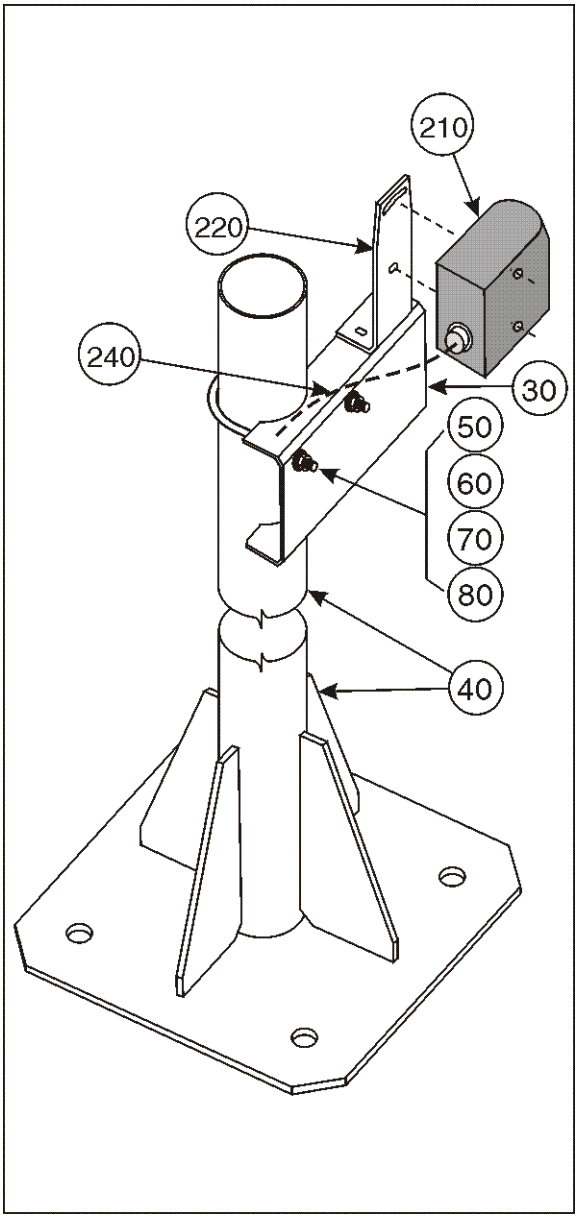


Figure 2: Reflector to Shuttle (Tube or J-rail frame)

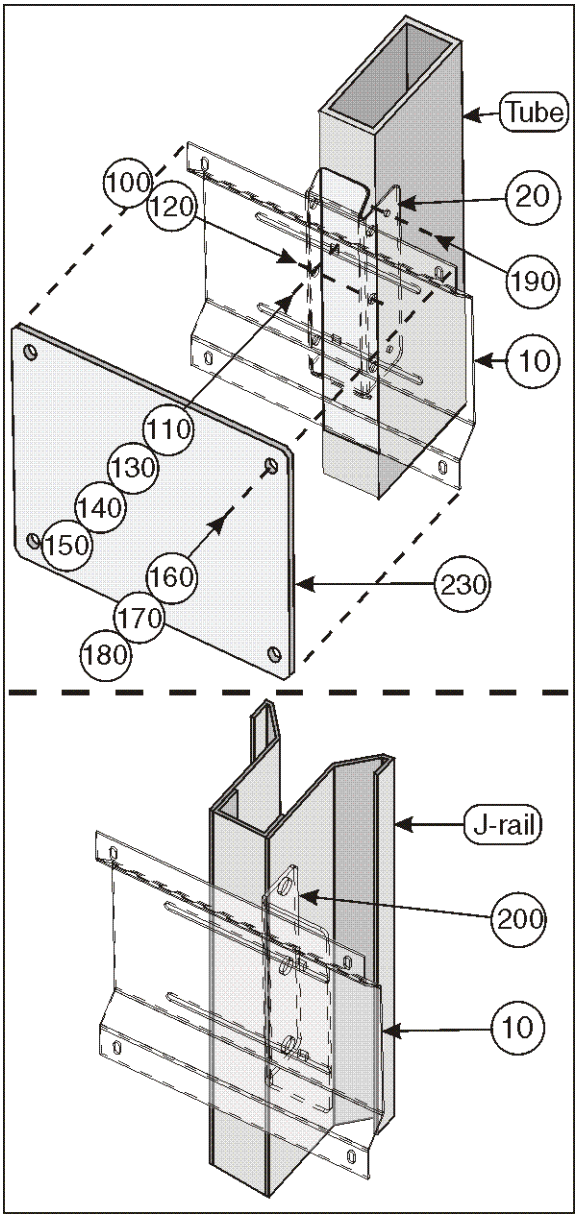


Table 1: Parts List for Figure 1 and Figure 2

Find the assembly for your machine and the letter shown in the "Item" column. The components for your machine will show this letter or the word "all" in the "Used In" column. The numbers shown in the "Item" column are those shown in the illustrations.				
Used In	**Item**	**Part Number**	**Description/Nomenclature**	**Comments**
Assemblies				
all	A	ALC420223	All mounting hardware except laser manufacturer components.	
Components				
A	10	04 24176	LASER TARGET FRAME	
A	20	04 24177	LASER TARGET TUBE RAIL MTG	Use with tubing type vertical frame member.
A	30	04 24146	LASER MTG CHANNEL	
A	40	W4 24180	LASER MOUNTING POST WLMT	
A	50	27A035C	U-BOLT 3/8-16X5.36 #0127316	
A	60	15U246	FLATWASHER 1"ODX25/64IDX1/8"30	
A	70	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
A	80	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
A	100	15A002A	CARBOLT 1/4-20UNC2X3/4 ZINC GR	
A	110	15K046	HXCAPSCR 1/4-20 UNC2A X 2"GR5	
A	120	17N058	HEXRIVNUT 1/4-20 UNC-2B #2520-	
A	130	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
A	140	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
A	150	15G178	1/4"-20 HEXFLANGE NUT ZINC	
A	160	15N125	RDMACSCR 10-24UNC2AX1/2 ZC GR2	
A	170	15U135	FLATWASH#10 .4370DX.203IDX.04T	
A	180	15G126SZ	HXLOCKNUT 10-24 UNC STL/ZNC	
A	190	15P011	TRDCUT-F PANHD 10-24X1/2 NIKST	
A	200	04 24178	LASER TARGET J-RAIL MTG	Use with J-rail vertical frame member.
all	210	09RLE0001	Banner L-Gage LT7 Laser and mounting bracket	
all	220	09RLE0001B	Mounting Bracket and included fasteners	
all	230	09RLE0001R	50 meter Retro Reflector	
all	240	09RLE0001C	Multi-conductor cable and connector—30 foot (7.6 meters) length	
	Tube	--	A type of frame used on certain shuttles	
	J-rail	--	A type of frame used on certain shuttles	

2. Electrical Connections

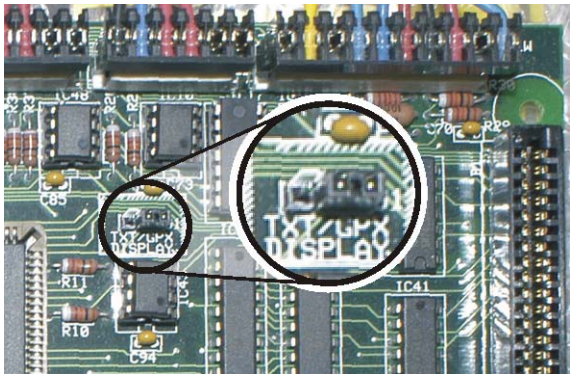
The electrical cable provided with this system has a pre-wired connector on one end that attaches to the laser. Shuttles manufactured after February 2011 have the control box end of the cable pre-wired also. The cable is secured to the control box. If the shuttle was not provided with the cable pre-wired, make connections as explained below. **Do not connect the cable to the laser until the wiring in the electric cabinet is completed.**

1. Determine the best route for the cable. Ensure that:
   - objects cannot strike the cable,
   - there is sufficient slack on each end to reach the connection points.

2. Route the cable and secure the center portion to protect against accidental movement. If not pre-wired, route the cable into the shuttle processor box through the hole in the box shown in Figure 3.
3. Set jumper J1 on the shuttle processor board to the GPX position as shown in Figure 4.

Figure 3: Hole in Shuttle Processor Box for Cable

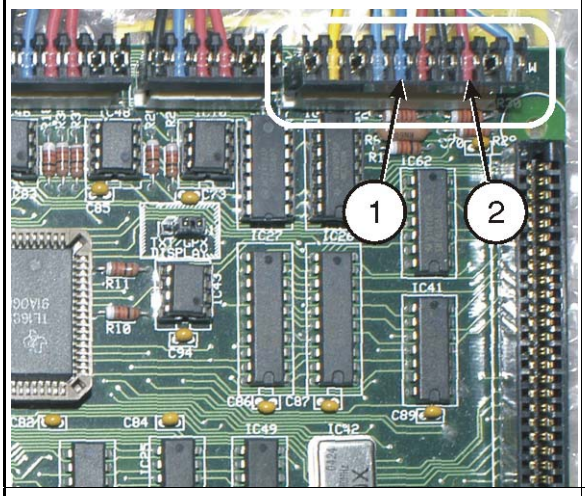
Figure 4: Jumper Position



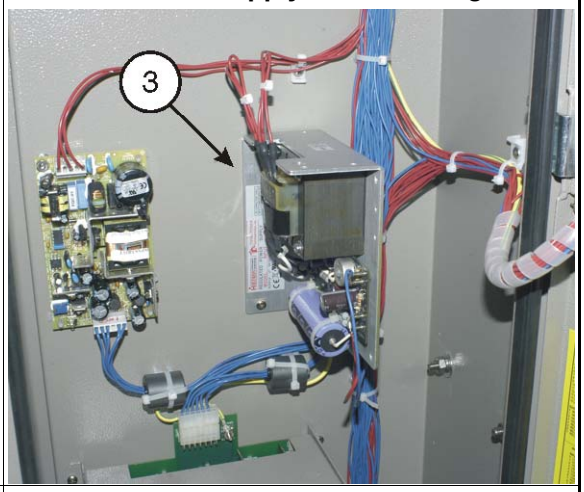
Only four of the conductors (the green, white, red, and blue wires) and the cable shield are used for this application. If the cable must be field-wired, make electrical connections as shown in Figure 5.

Figure 5: Connections—Previously Installed Shuttle

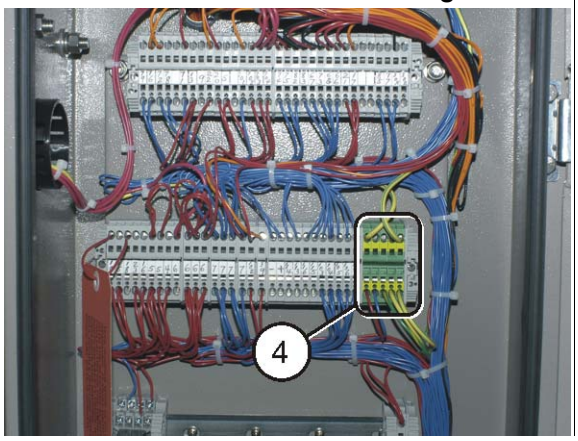
Connection Points in Processor Box



24 VDC Power Supply in Low Voltage Box



Ground Terminals in Low Voltage Box



Legend

1. MTA30, pin 5—connection point for White wire (TX+)
2. MTA30, pin 8—connection point for Gray/Pink wire (TX-)
3. 24VDC power supply—The 24VDC side is wire #102. Trace this wire to an available terminal and connect the red wire (Vcc) at this location.
4. Ground terminals—connect blue wire (Gnd) and cable shield to any available ground terminal.

3. Configure, Align, and Program

These instructions apply specifically to Banner L-Gage LT7 laser device. You received a manual with this device. **Review the safety information in this manual.** The manual provides more information than necessary to implement the laser positioner system for the shuttle. The following sections give the pertinent instructions. You can find detailed information in the Banner manual.

Display or Action	Explanation
	Energize the shuttle (at the MultiTrac or Drynet console). This will also apply power to the laser.
	Set the shuttle to the Manual mode (at the stationary shuttle control panel). This will take the shuttle off line.

Perform the procedures in this section with shuttle power on, but with the machine off line. **Use extreme care when you work in or near the shuttle path.**

3.1. Laser Configuration—Required configuration settings:

Serial interface: RS422

Baud rate: 19,200
Data Bits: 8
Stop Bits: 1
Data method: REPEAT

At the laser device:

Display or Action	Explanation
DIST mm >250000	This or a similar display indicates the laser run mode. The laser displays distance in hundredths of units.
	Accesses the laser program mode. This also activates the visible pilot laser used for alignment.
QuickSet <ENTER>	This is the first sub-menu in the Program menu.
	Scrolls the sub-menus. Select "UNIT".
UNIT <mm>	This display indicates the laser is configured for millimeter units. You can choose millimeters or inches (<inch>). If you want to change units:
	Accesses the *UNIT* field.
UNIT >mm	You can now select inch units.
	Toggles between *mm* and *inch* each time the key is pressed.
	Locks in the selected value.
UNIT <inch>	Indicates that the laser is configured for inch units. When the laser is properly aligned, the Run display will show the distance between the laser and target in hundredths of **inches**.
	Scrolls the sub-menus. Select the "SERIAL" sub-menu.
SERIAL <RS422>	This is the display you should see and indicates that the currently configured interface type is RS422. If you see any other value on the bottom line, access this field as follows.
	Accesses the field to select the type of interface.
SERIAL >RS422	You can now select another type of interface.
	Scrolls the interface types, which are: RS422, SSI 1/8, SSI1/10, and EXT.BUS. Select RS422.
	Locks in the selected value.
SERIAL <RS422>	Indicates that the laser is configured for an RS422 interface.
	Advances to the RS422 sub-menu.
RS422	Because the RS422 selection has it's own sub-menu, this display appears. This

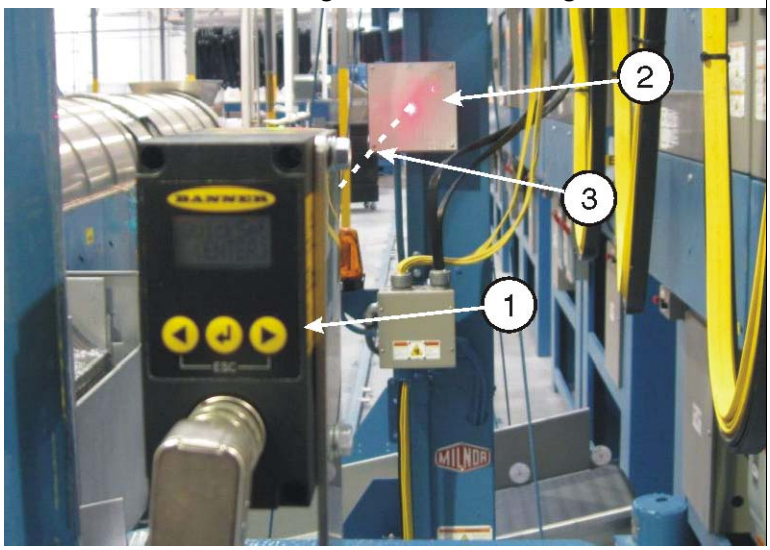
Display or Action	Explanation
<ENTER>	sub-menu has four data fields: baud rate, data bits, stop bit, and data method.
▶	Advances to the first field in the RS422 sub-menu: baud rate.
RS422 <19k2Bd>	19k2Bd is the correct value. If a different value appears on the bottom line, access this field and correct the value in the same manner as above. Otherwise, proceed to the Data Bits field.
▶	Advances to the next field in the RS422 sub-menu: data bits.
RS422 <8DATAb>	8DATAb is the correct value. If <7DATAb> appears on the bottom line, access this field and correct the value. Otherwise, proceed to the Stop Bits field.
▶	Advances to the next field: stop bits.
RS422 <1STOPb>	1STOPb is the correct value. If <2STOPb> appears on the bottom line, access this field and correct the value. Otherwise, proceed to the data method field.
▶	Advances to the next field: data method.
RS422 <REPEAT>	REPEAT is the correct value. If <SINGLE> appears on the bottom line, access this field and correct the value. Otherwise, return to the Run mode.
◀ + ▶, ◀ + ▶...	Returns to each higher-level menu, then the Run mode.

3.2. Laser and Reflector Alignment

1. At the laser device, access the program mode as previously explained. This activates the visible pilot laser used for alignment.
2. Adjust the orientation of the laser on its mounting brackets to place the beam at the center of the target.
3. Operate the shuttle in manual mode to move it along the shuttle path. Find manual operation instructions for the shuttle in the Drynet Dryer/Shuttle operator guide. As the shuttle traverses, observe the position of the beam on the target.
4. Move the laser post, and adjust the orientation of the laser and target to achieve the alignment described in Figure 6.
5. When alignment is achieved, anchor the laser post to the floor.
6. When the laser post is securely anchored, check the alignment again and make final adjustments.
7. Tighten the laser and target bracketry.

Figure 6: Laser and Reflector Alignment

View Looking from Laser to Target

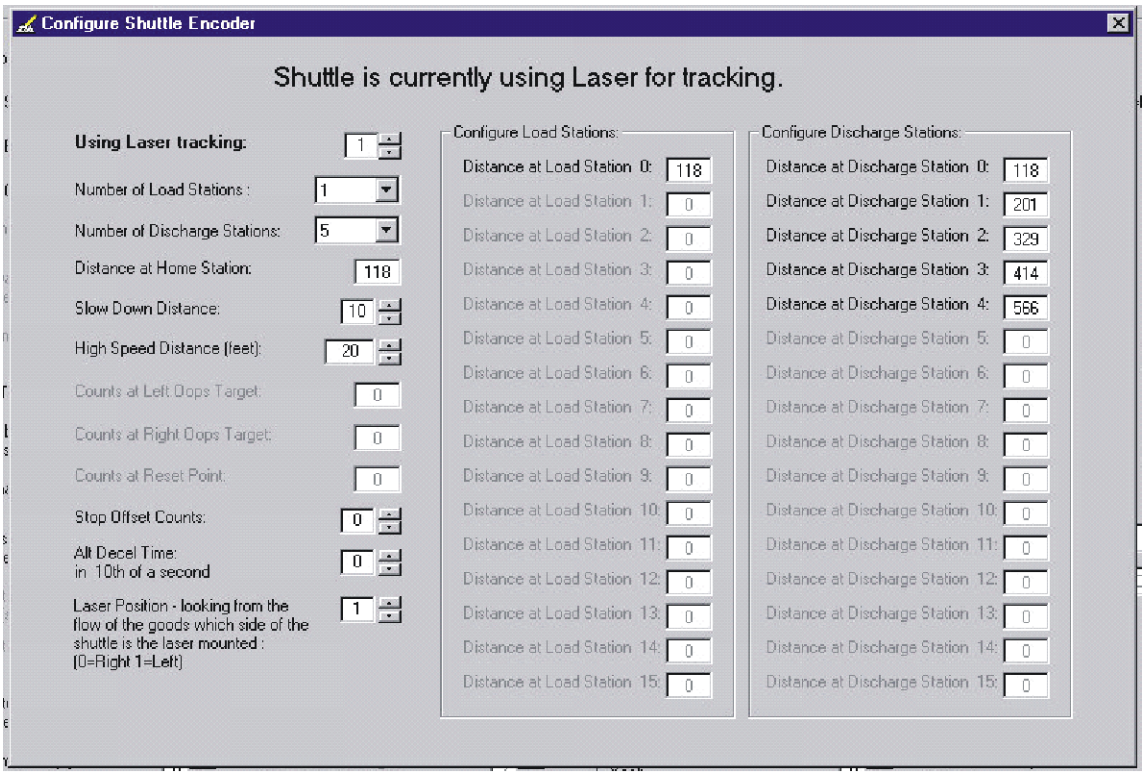


Legend

1. Laser device
2. Target
3. Laser beam. Align the laser device and the target so that the laser beam is parallel to the path of the shuttle and the beam remains centered in the target as the shuttle traverses. The reflector must be perpendicular to the laser beam and reflect the beam back to the laser. Otherwise, the laser will not register changes in distance in the run mode.

3.3. **Drynet Configuration and Programming of Shuttle Stop Positions**—The Drynet Dryer/Shuttle controller requires configure data to use the laser positioner. For example, it must know the distance between the laser and the target, as detected by the laser device, for each position at which the shuttle stops. Determine these values at the laser device. Enter this data at the Drynet or MultiTrac console, in the *Configure Shuttle Encoder* form (Figure 7).

Figure 7: *Configure Shuttle Encoder* **Form Configured for a Laser Device**



1. At the MultiTrac or Drynet console, access the shuttle Encoder form:
   a. In the Dryer/Shuttle Controller (DevComm Setup) window, select *Configure, Shuttles and Cobucs* on the menu. This displays one or more tabbed forms—one for each shuttle device in the system.
   b. Select the tab corresponding to the shuttle with the new laser device. This displays the main configuration form for this shuttle.
   c. Near the bottom right of the form, find the field *Shuttle has an Encoder.* Select (or re-select) the value 1. This displays the *Configure Shuttle Encoder* form (Figure 7).
2. Enter values in the fields on the left column of the encoder form in accordance with Table 2.
3. Do this procedure for each position at which the shuttle stops:
   a. At the stationary shuttle control box, manually move the shuttle to the stop position. Ensure that the shuttle is precisely aligned with the interfacing device.
   b. At the laser device, read the distance value in hundredths of units (inches or millimeters as previously configured). Hence, read the displayed value 26147 as 261 inches or millimeters.
   c. At the Drynet controller, enter this value (whole inches or millimeters) in the appropriate field:
      - Distance at Home Station
      - Distance at Load Station ___
      - Distance at Discharge Station ___

Table 2: Guidelines for Encoder Values for Laser Device

Data Field	Required Value or Guideline
Using laser tracking	1
Number of Load Stations	Per physical layout
Number of Discharge Stations	Per physical layout
Distance at Home Station	See Item 3 below.
Slow Down Distance	Between 6 and 10 inches (152 and 254 mm) recommended
High Speed Distance (feet)	Not currently implemented
Counts at Left Oops Target	Disabled and not applicable to laser device.
Counts at Right Oops Target	
Counts at Reset Point	
Stop Offset Counts	0
At Decel Time: in 10ths of a second	0
Laser Position	Face the direction that goods move as they are loaded onto the shuttle bed. If the post-mounted laser is located to the right of the shuttle, enter 0. If to the left of the shuttle, enter 1.

4. Testing

When you have entered all shuttle stop positions in the Drynet controller, test each position as explained in document BIVSRC01 "How to Test Traversing Shuttle Stop Positions."

— End of BIVSVI01 —

BIVSRC01 (Published) Book specs- Dates: 20110301 / 20110301 / 20110301 Lang: ENG01 Applic: VSR

How to Test Traversing Shuttle Stop Positions

This instruction is for technicians responsible for setup and adjustment of traversing shuttles. This procedure requires the technician to work within the shuttle travel area while operating the shuttle in manual and automatic mode. The shuttle travel area is normally guarded and off limits to personnel while the shuttle has power. This instruction assumes specially qualified and authorized personnel who fully understand the hazards. Use extreme care when you enter the shuttle travel area.

WARNING 1: Strike and Crush Hazards—A traveling machine such as a shuttle can strike, crush, or entrap you if you ride on it or enter its path. Traveling machines or their components can move automatically in any direction. Placing a system machine on line by energizing the machine control may immediately summon a shuttle or other traveling machine.

- Do not attempt this procedure unless qualified and authorized.
- Ensure that bystanders do not enter the shuttle travel area.

Every shuttle installation is unique with regard to the positions at which the shuttle stops to receive and discharge goods. Each stop position must align with the device it receives from (typically a press) or discharges to (typically a dryer). After you configure the laundering system in the Miltrac, or other system controller and you initially define each stop position, use this procedure to test and adjust each stop position.

Supplement 1

How Shuttle Stop Positions are Controlled

To initially define each stop position, you manually move the shuttle to that position, visually align it with the transferring device, then set the target. Shuttles manufactured prior to December 2010 use physical targets along the rail or shuttle path. Newer shuttles and some older, retrofitted shuttles, use a laser device that measures the distance between the stationary laser and a single target located on the moving shuttle. In the newer type, you read a distance value displayed on the laser and enter this value for that stop position in the Drynet software. The procedure described in this document applies to both the older and the newer technologies.

1. Prepare the Laundering System

This procedure involves:

- the shuttle to be tested,
- any device(s) that load(s) the shuttle, such as a:
  - » press (cake shuttle)
  - » washer-extractor (loose goods shuttle)
  - » storage belt (cake or loose goods)
  - » tunnel (wet goods shuttle)
- any device that receives goods from the shuttle, such as a:
  - » dryer (cake or loose goods conveyor)
  - » no-dry station
  - » storage belt.

For safety and to maintain the necessary control of the devices involved in the test, set the devices per Table 1.

Table 1: Initial Device Settings

Device	Initial Setting		Comments
	Symbol	Description	
Shuttle to be tested	①	Start	Manual operation enabled
		Manual mode	
Any other shuttles that share this path	⊗	Master switch off.	Shut down. Ensure no movement.
Device(s) the shuttle receives goods from	⊗		Shut down. Not needed except to test this stop position
Device(s) the shuttle discharges to	①	Start	Not allowed to receive goods from the shuttle.
	or	Load Not Allowed or Manual mode	

2. Test the Home Position and Aligned Stop Positions

Every shuttle installation has a home position. This is true regardless of how the shuttle is configured to act after it discharges goods (*Always return home*, *Homeless—return home when empty*, or *Homeless*). If there is only one position that loads the shuttle, this always coincides with the home position. The home position may also coincide with a position that receives from the shuttle. Whenever the machine (the shuttle) is stopped (⓪) in Automatic mode ( ) and you start it (①), the shuttle returns home as part of the initialization procedure. To test the home position and any stop positions that coincide with it:

1. Move the shuttle manually ( ) away from the home position, if it is at home.
2. Set the shuttle to the automatic mode ( ).
3. Stop, then start the machine (⓪, ①). The shuttle will seek the home position.
4. When the shuttle stops at the home position, set the shuttle to the manual mode ( ).
5. Check shuttle alignment and adjust as required.
6. Repeat these steps as necessary.

3. Test Stop Positions Where the Shuttle Discharges Goods

Choose a position (a device that receives goods from the shuttle) to test. The shuttle will go to this position if:

- this is the only available position to receive goods and
- the shuttle is encoded with batch codes that this position can accept.

With the shuttle at the home position, cause the shuttle to go to the test position as follows:

1. Set the device at the test position so it can receive a load (and). All other devices that can receive from the shuttle must be set so they cannot receive a load (or).
2. Set the shuttle to the automatic mode ( ), then stop the machine (⓪).
3. Place a rag or similar object large enough to block the photo eye in the center of the top bed of the shuttle.
4. Start the machine (①). The shuttle bed will run until the photo eye is blocked. The *Cake Data* prompt will appear on the Drynet display or the 2 x 20 display.

5. Enter cake data for a dry code that the device at the test position can receive. Typically, a dryer can receive all but the no-dry code and a no-dry station can only receive the no-dry code. The shuttle will move toward the test position.
6. As soon as the shuttle stops at the test position and before a transfer can occur, stop the machine (⓪).
7. Remove the object from the shuttle bed.
8. Set the shuttle to the manual mode (✍) and start the machine (①).
9. Check shuttle alignment and adjust as necessary.
10. Set the shuttle to automatic mode (⇄). The shuttle will return to the home position.
11. Repeat as necessary.

4. Test a non-Home Position Where the Shuttle Receives Goods

If an installation has two loading positions for the shuttle, at least one of these will not coincide with the home position. In such a case, the shuttle will likely be loaded by a storage device such as an elevating shuttle. To cause the traversing shuttle to move to the non-home loading position:

1. Set the traversing shuttle to the automatic mode (⇄).
2. Place a rag or similar object in the center of the top belt of the device at the test position (the non-home device that loads the traversing shuttle).
3. Energize and start this device (⊛, ①). The storage device bed will run until the photo eye is blocked. The *Cake Data* prompt will appear on the display for this device.
4. Enter cake data. This will summon the traversing shuttle.
5. As soon as the traversing shuttle stops at the test position and before a transfer can occur, stop the loading device (⓪).
6. Remove the object from the loading device bed.
7. Set the traversing shuttle to the manual mode (✍) and start the machine (①).
8. Check shuttle alignment and adjust as necessary.
9. Set both the loading device and the traversing shuttle to automatic mode (⇄). The traversing shuttle will return to the home position.
10. De-energize the loading device (⊗).
11. Repeat as necessary.

— End of BIVSRC01 —

Service and Maintenance 3

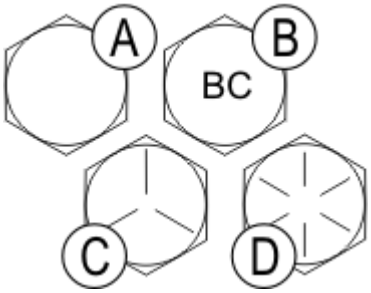
BIUUUM04 (Published) Book specs- Dates: 20180109 / 20180109 / 20180109 Lang: ENG01 Applic: UUU

Torque Requirements for Fasteners

This document uses Simplified Technical English. Learn more at http://www.asd-ste100.org.

The document about the assembly gives the torque requirements for other fasteners. **If fastener torque specifications or threadlocker requirements in an assembly document are different from this document, use the assembly document.**

Figure 1: The Bolts in Milnor® Equipment

The Marks on Bolt Heads	Legend
	**A.** SAE Grades 1 and 2, ASTM A307, and stainless steel **B.** Grade BC, ASTM A354 **C.** SAE Grade 5, ASTM A449 **D.** SAE Grade 8 and ASTM A354 BD

1. Torque Values

These tables give the standard dimension, grade, threadlocker, and torque requirements for fasteners frequently used on Milnor® equipment.

Note 1: Data from the Pellerin Milnor® Corporation "Bolt Torque Specification" (bolt_torque_milnor.xls/2002096).

1.1. Fasteners Made of Carbon Steel

1.1.1. Without a Threadlocker

Table 1: Torque Values for Standard Fasteners with Maximum 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	66	7	101	11	143	16	126	14
1/4 x 28	76	9	116	13	163	18	--	--
5/16 x 18	136	15	209	24	295	33	258	29
5/16 x 24	150	17	232	26	325	37	--	--

Table 2: Torque Values for Standard Fasteners Larger Than 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/8 x 16	20	27	31	42	44	59	38	52
3/8 x 24	23	31	35	47	50	68	--	--
7/16 x 14	32	43	49	66	70	95	61	83
7/16 x 20	36	49	55	75	78	105	--	--
1/2 x 13	49	66	75	102	107	145	93	126
1/2 x 20	55	75	85	115	120	163	--	--
9/16 x 12	70	95	109	148	154	209	134	182
9/16 x 18	78	106	121	164	171	232	--	--
5/8 x 11	97	131	150	203	212	287	186	252
5/8 x 18	110	149	170	231	240	325	--	--
3/4 x 10	172	233	266	361	376	510	329	446
3/14 x 16	192	261	297	403	420	569	--	--
7/8 x 9	167	226	429	582	606	821	531	719
7/8 x 14	184	249	473	641	668	906	--	--
1 x 8	250	339	644	873	909	1232	796	1079
1 x 12	274	371	704	954	994	1348	--	--
1 x 14	281	381	723	980	1020	1383	--	--
1 1/8 x 7	354	480	794	1077	1287	1745	1126	1527
1 1/8 x 12	397	538	891	1208	1444	1958	--	--
1 1/4 x 7	500	678	1120	1519	1817	2464	1590	2155
1 1/4 x 12	553	750	1241	1682	2012	2728	--	--
1 3/8 x 6	655	888	1469	1992	2382	3230	2085	2827
1 3/8 x 12	746	1011	1672	2267	2712	3677	--	--
1 1/2 x 6	869	1178	1949	2642	3161	4286	2767	3751
1 1/2 x 12	979	1327	2194	2974	3557	4822	--	--

Table 3: Torque Values for Plated Fasteners with Maximum 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	49	6	76	9	107	12	95	11
1/4 x 28	56	6	88	10	122	14	--	--
5/16 x 18	102	12	156	18	222	25	193	22
5/16 x 24	113	13	174	20	245	28	--	--

Table 4: Torque Values for Plated Fasteners Larger Than 5/16-inch Diameters and No Lubricant

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/8 x 16	15	20	23	31	33	44	29	38
3/8 x 24	17	23	26	35	37	49	--	--
7/16 x 14	24	32	37	50	52	71	46	61
7/16 x 20	27	36	41	55	58	78	--	--
1/2 x 13	37	49	56	76	80	106	70	93
1/2 x 20	41	55	64	85	90	120	--	--
9/16 x 12	53	70	81	110	115	153	101	134
9/16 x 18	59	79	91	122	128	174	--	--
5/8 x 11	73	97	113	150	159	212	139	186
5/8 x 18	83	110	127	172	180	240	--	--
3/4 x 10	129	173	200	266	282	376	246	329
3/14 x 16	144	192	223	297	315	420	--	--
7/8 x 9	125	166	322	430	455	606	398	531
7/8 x 14	138	184	355	474	501	668	--	--
1 x 8	188	250	483	644	682	909	597	796
1 x 12	205	274	528	716	746	995	--	--
1 x 14	210	280	542	735	765	1037	--	--
1 1/8 x 7	266	354	595	807	966	1288	845	1126
1 1/8 x 12	298	404	668	890	1083	1444	--	--
1 1/4 x 7	375	500	840	1120	1363	1817	1192	1590
1 1/4 x 12	415	553	930	1261	1509	2013	--	--
1 3/8 x 6	491	655	1102	1470	1787	2382	1564	2085
1 3/8 x 12	559	758	1254	1672	2034	2712	--	--
1 1/2 x 6	652	870	1462	1982	2371	3161	2075	2767
1 1/2 x 12	733	994	1645	2194	2668	3557	--	--

1.1.2. With a Threadlocker

Table 5: Threadlocker by the Diameter of the Bolt (see Note 2)

	Dimension			
LocTite Product	1/4-inch	1/4- to 5/8-inch	5/8- to 7/8-inch	1-inch +
LocTite 222	OK			
LocTite 242		OK		
LocTite 262			OK	
LocTite 272			High temperature	
LocTite 277				OK

Note 2: The acceptable bolt size ranges for various LocTite® threadlocking products is the LocTite manufacturer's **general** recommendation. Specific applications sometime require that a LocTite product is applied to a bolt size outside the ranges shown here. For example, Milnor specifies LocTite 242 for use on certain 1" bolt applications and has confirmed this usage with the LocTite manufacturer. You may see variances such as this in the documentation for specific machine assemblies.

Table 6: Torque Values if You Apply LocTite 222

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-inches	N-m	Pound-inches	N-m	Pound-inches	N-m	Pound-inches	N-m
1/4 x 20	60	7	96	11	132	15	108	12
1/4 x 28	72	8	108	12	144	16	--	--

Table 7: Torque Values if You Apply LocTite 242

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
5/16 x 18	11	15	17	23	25	34	22	30
5/16 x 24	13	18	19	26	27	37	27	37
3/8 x 16	20	27	31	42	44	60	38	52
3/8 x 24	23	31	35	47	50	68	--	--
7/16 x 14	32	43	49	66	70	95	61	83
7/16 x 20	36	49	55	75	78	106	--	--
1/2 x 13	49	66	75	102	107	145	93	126
1/2 x 20	55	75	85	115	120	163	--	--
9/16 x 12	70	95	109	148	154	209	134	182
9/16 x 18	78	106	121	164	171	232	--	--
5/8 x 11	97	132	150	203	212	287	186	252
5/8 x 18	110	149	170	230	240	325	--	--

Table 8: Torque Values if You Apply LocTite 262

Dimension	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
3/4 x 10	155	210	240	325	338	458	296	401
3/4 x 16	173	235	267	362	378	512	--	--
7/8 x 9	150	203	386	523	546	740	477	647
7/8 x 14	165	224	426	578	601	815	--	--

Table 9: Torque Values if You Apply LocTite 272 (High-Temperature)

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
1 x 8	350	475	901	1222	1272	1725	1114	1510
1 x 12	383	519	986	1337	1392	1887	--	--
1 x 14	393	533	1012	1372	1428	1936	--	--
1-1/8 x 7	496	672	1111	1506	1802	2443	1577	2138
1-1/8 x 12	556	754	1247	1691	2022	2741	--	--
1-1/4 x 7	700	949	1568	2126	2544	3449	2226	3018
1-1/4 x 12	774	1049	1737	2355	2816	3818	--	--
1-3/8 x 6	917	1243	2056	2788	3335	4522	2919	3958
1-3/8 x 12	1044	1415	2341	3174	3797	5148	--	--
1-1/2 x 6	1217	1650	2729	3700	4426	6001	3873	5251
1-1/2 x 12	1369	1856	3071	4164	4980	6752	--	--

Table 10: Torque Values if You Apply LocTite 277

	The Grade of the Bolt							
	Grade 2		Grade 5		Grade 8		Grade BC	
Dimension	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m	Pound-feet	N-m
1 x 8	325	441	837	1135	1181	1601	1034	1402
1 x 12	356	483	916	1242	1293	1753	--	--
1 x 14	365	495	939	1273	1326	1798	--	--
1-1/8 x 7	461	625	1032	1399	1674	2270	1464	1985
1-1/8 x 12	516	700	1158	1570	1877	2545	--	--
1-1/4 x 7	650	881	1456	1974	2362	3202	2067	2802
1-1/4 x 12	719	975	1613	2187	2615	3545	--	--
1-3/8 x 6	851	1154	1909	2588	3097	4199	2710	3674
1-3/8 x 12	970	1315	2174	2948	3526	4781	--	--
1-1/2 x 6	1130	1532	2534	3436	4110	5572	3597	4877
1-1/2 x 12	1271	1723	2852	3867	4624	6269	--	--

1.2. Stainless Steel Fasteners

Table 11: Torque Values for Stainless Steel Fasteners 5/16-inch and Smaller

	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
Dimension	Pound-Inches	N-m	Pound-Inches	N-m	Pound-Inches	N-m
1/4 x 20	79	9	76	9	45	5
1/4 x 28	100	11	94	11	56	6
5/16 x 18	138	16	132	15	79	9
5/16 x 24	148	17	142	16	85	10

Table 12: Torque Values for Stainless Steel Fasteners Larger Than 5/16-inch

	316 Stainless		18-8 Stainless		18-8 Stainless with Loctite 767	
Dimension	**Pound-feet**	**N-m**	**Pound-feet**	**N-m**	**Pound-feet**	**N-m**
3/8 x 16	21	28	20	27	12	16
3/8 x 24	23	31	22	29	13	18
7/16 x 14	33	44	31	42	19	25
7/16 x 20	35	47	33	45	20	27
1/2 x 13	45	61	43	58	26	35
1/2 x 20	47	64	45	61	27	37
9/16 x 12	59	81	57	77	34	46
9/16 x 18	66	89	63	85	38	51
5/8 x 11	97	131	93	125	56	75
5/8 x 18	108	150	104	141	62	84
3/4 x 10	132	179	128	173	77	104
3/4 x 16	130	176	124	168	75	101
7/8 x 9	203	275	194	263	116	158
7/8 x 14	202	273	193	262	116	157
1 x 8	300	406	287	389	172	233
1 x 14	271	367	259	351	156	211
1-1/8 x 7	432	586	413	560	248	336
1-1/8 x 12	408	553	390	529	234	317
1-1/4 x 7	546	740	523	709	314	425
1-1/4 x 12	504	683	480	651	288	390
1-1/2 x 6	930	1261	888	1204	533	722
1-1/2 x 12	732	992	703	953	422	572

2. Preparation

WARNING 2: Fire Hazard—Some solvents and primers are flammable.

- Use threadlocker and primers with sufficient airflow.
- Do not use flammable material near ignition sources.

1. Clean all threads with a wire brush or a different tool.
2. Remove the grease from the fasteners and the mating threads with solvent. Make the parts dry.

   Note 3: LocTite 7649 Primer™ or standard solvents will remove grease from parts.

3. Apply a spray of LocTite 7649 Primer™ or equal on the fasteners and the mating threads. Let the primer dry for one minute minimum.

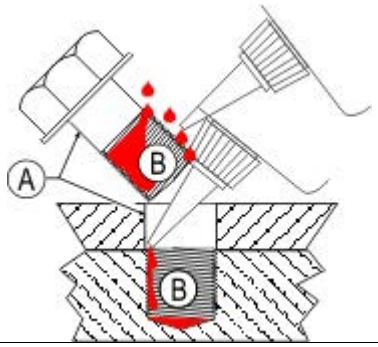
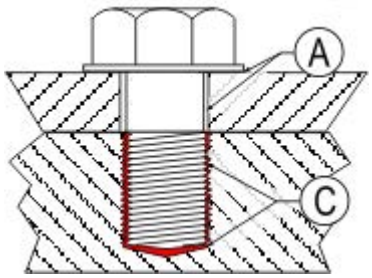
3. How to Apply a Threadlocker

CAUTION 3: Malfunction Hazard—Heat, vibration, or mechanical shocks can let the fasteners loosen if you do not apply the threadlocker correctly. Loose fasteners can cause malfunctions of the equipment.

- Read the threadlocker manufacturer's instructions and warnings. Obey these instructions.

Apply the threadlocker only to the areas where the fastener threads and the mating threads engage.

Figure 2: Blind Hole

Application	Coverage
	

Legend

A. No threadlocker here
B. Apply here
C. Fill all space with threadlocker

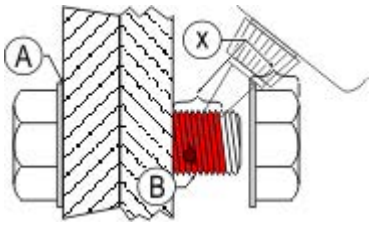
3.1. Blind Holes

1. Apply the threadlocker down the threads to the bottom of the hole.
2. Apply the threadlocker to the bolt.
3. Tighten the bolt to the value shown in the correct table (Table 5 to Table 11).

3.2. Through Holes

1. Put the bolt through the assembly.
2. Apply the threadlocker only to the bolt thread area that will engage the nut.
3. Tighten the bolt to the value shown in the correct table (Table 5 to Table 11).

Figure 3: Through Hole

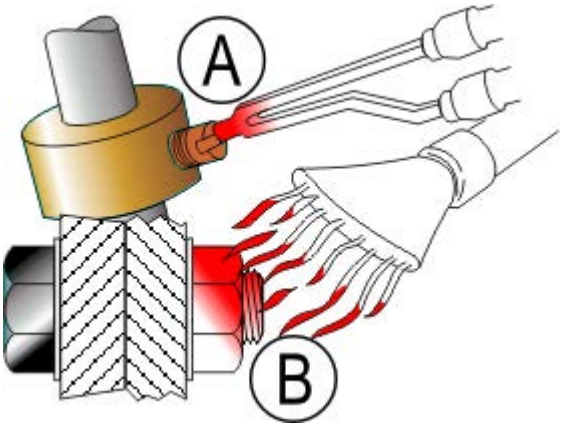
Application	Legend
	**A.** No threadlocker here **B.** Apply the threadlocker to this area **x.** Nut depth

3.3. Disassembly—For high-strength threadlocker, apply heat for five minutes. Disassemble with hand tools while the parts are hot.

For low-strength and moderate-strength threadlocker, disassemble with hand tools.

Figure 4: Disassembly

Apply Heat to a Small Area



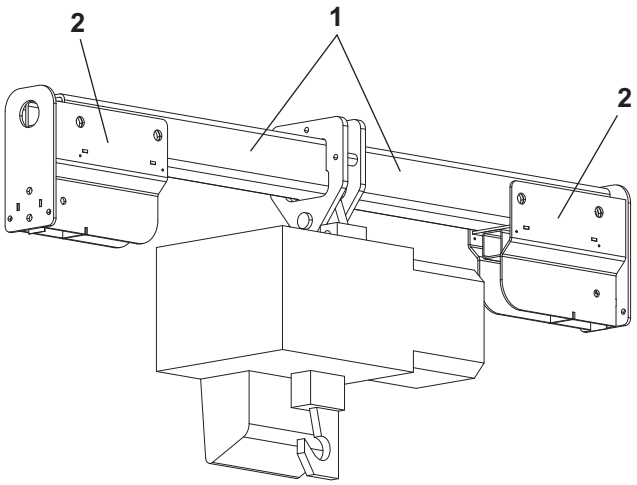
Legend

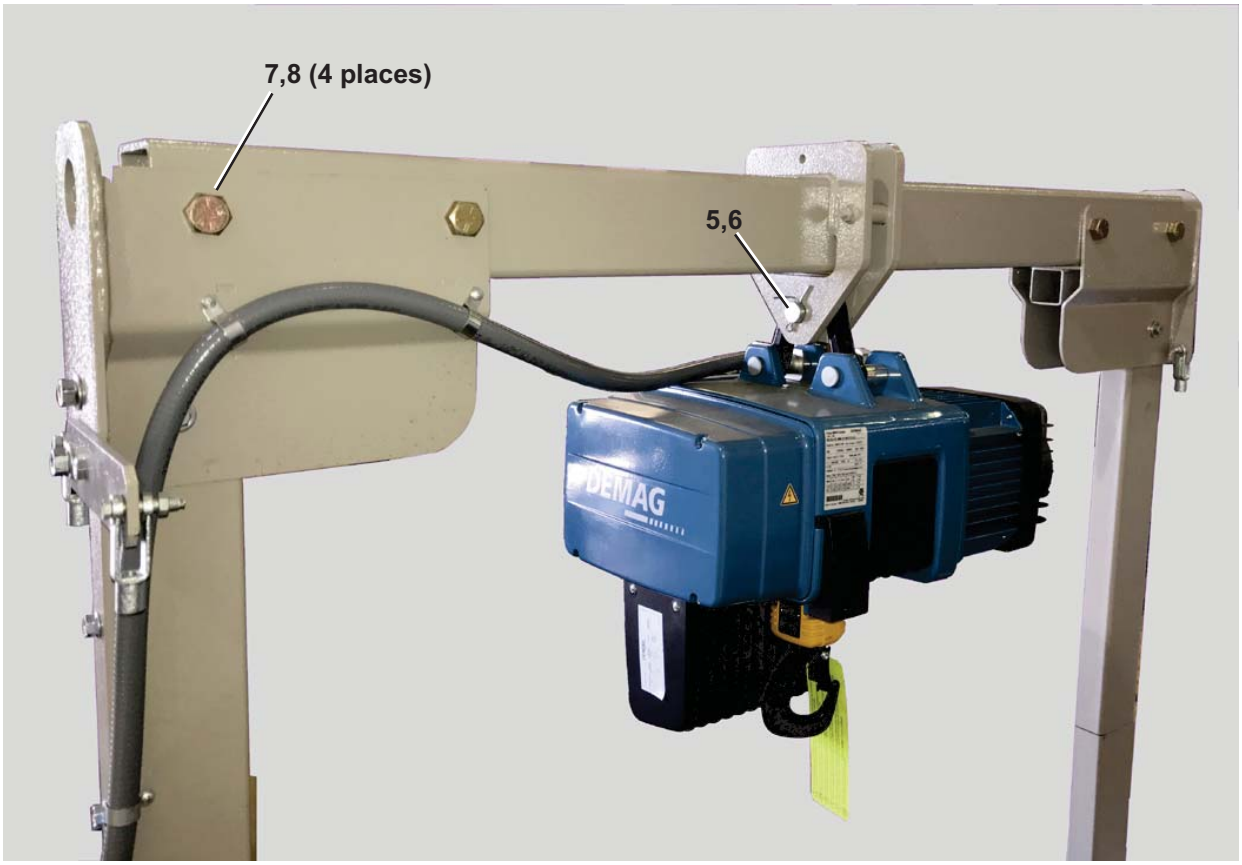
A. How to apply heat to a small fastener
B. How to apply heat to a large fastener

— End of BIUUUM04 —

Top Beam Assembly

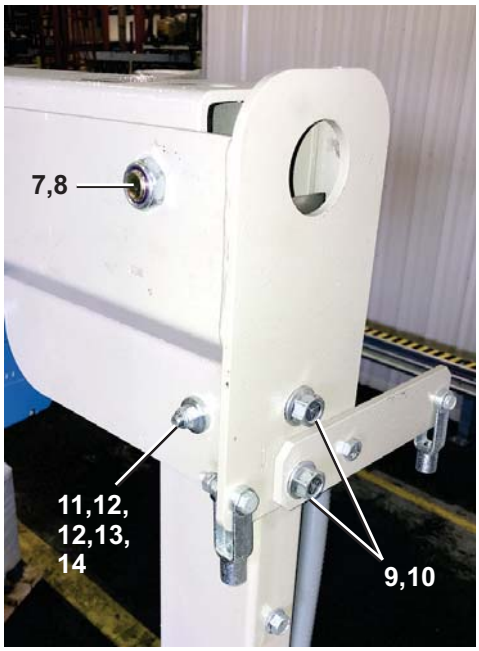
COLFM111/112, COLFP111/112, COLFQ111/112, COLFR111/112
COSHM111/112, COSHP111/112, COSHQ111/112, COSHR111/112





Top Beam Assembly

COLFM111/112, COLFP111/112, COLFQ111/112, COLFR111/112
COSHM111/112, COSHP111/112, COSHQ111/112, COSHR111/112



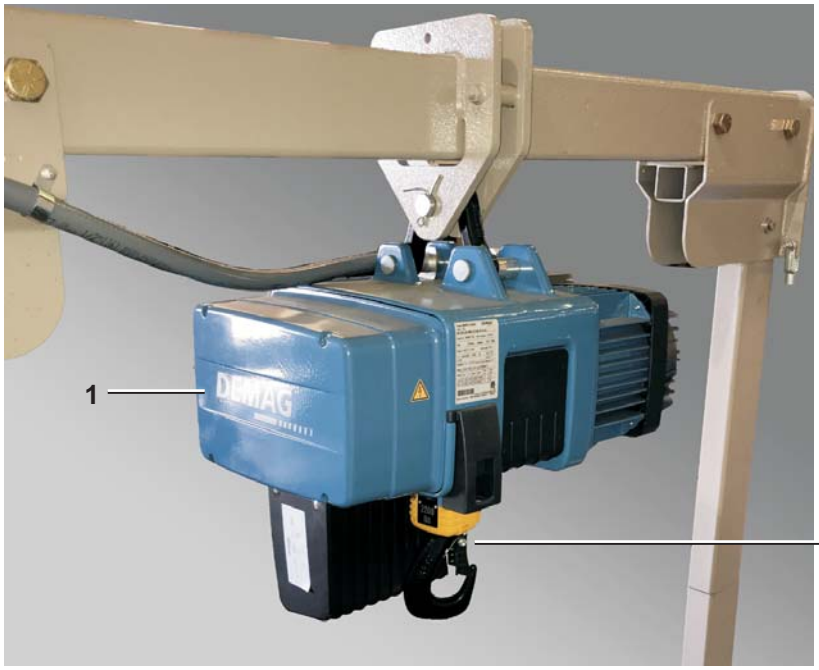
Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC420001P	TOP BEAM ASSEMBLY-COSHM/P/Q	
	B	ALC420001R	TOP BEAM ASSEMBLY-COSHR	
			----------COMPONENTS----------	
A	1	W4 23484	TOP BEAM WLMT-COSHM/P/Q	
B	1	W4 22745	TOP BEALM WLMT-COSHR	
all	2	W4 22730	TOP BEAM SUPPORT WLMT-COSHR	
all	3	04 21159	HOIST CABLE STRAP	
all	4	12P11CSB	SNAPBUSH 1.093"MH X .94"ID HEYCO#2166	
all	5	X4 24646	CLEVIS PIN 1"X3.13LG 304 SS	
all	6	15H060	STDCOTTERPIN 3/16X2 ZINCPL	
all	7	15K235G	HEXCAPSCR 3/4-10UNC2AX5" GR8	
all	8	15G246NT	HEXTHINNUT 3/4-10 STL/ZNC W/NY	
all	9	15K151	HXCAPSCR 1/2-13UNC2AX1.25 GR5	
all	10	17N080	1/2-13 GRIPNUT ZINC #C7968-121	
all	11	15K198	HEXCAPSCR 1/2-13UNC2AX3 GR5 ZI	
all	12	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	13	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	14	15G234N	HXLOCKNUT NYL 1/2-13UNC2 STL/Z	

Hook Mounted Chain Hoist

Shuttles & Elevators



Check the chain to insure it is not twisted. Lubricate the chain per the Maintenance Guide. See also, the hoist manufacturer's manual.

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------COMPONENTS----------	
all	1	27KH050A83	DEMAGHOIST 2TON 24FPM 380V60	
all	1	27KH050A89	DEMAGHOIST 1TON48FPM 460V60	
all	1	27KH050A88	DEMAGHOIST 1 TON 24FT/MIN 460V	
all	1	27KH050A92	DEMAGHOIST 1TON39FPM 380-415V/3/50	
all	1	27KH050A81	DEMAGHOIST 2TON 24FPM 460V	
all	1	27KH04816	HOIST 1TON 48FPM 230V60 COFF#EC2048-2-20	
all	1	27KNER010A	HOIST 1TON 28FPM 230/460V	

Bed Lifting Frame & Cross Member

COLFM111, COLFM112, COSHM111, COSHM112

Figure 1: Bed Lifting Frame for One Bed

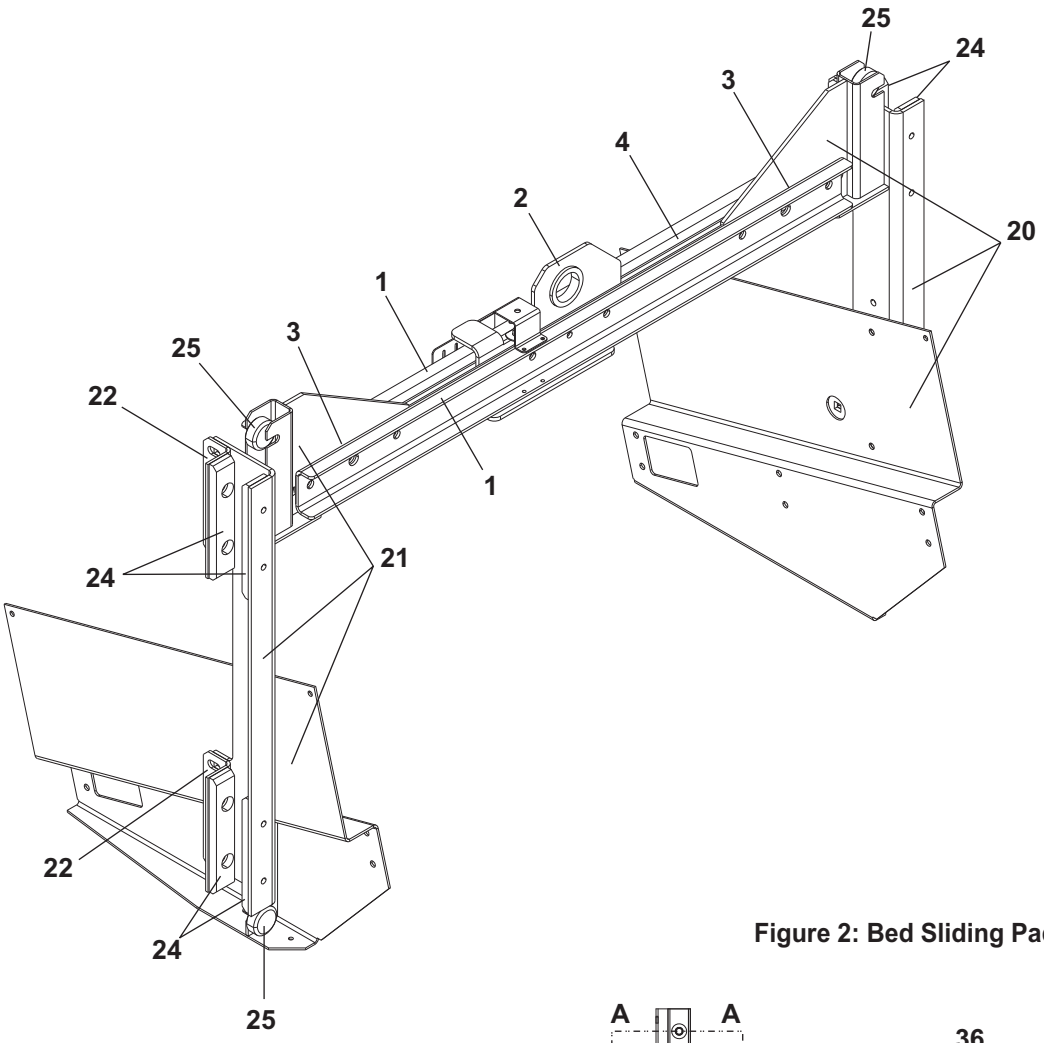
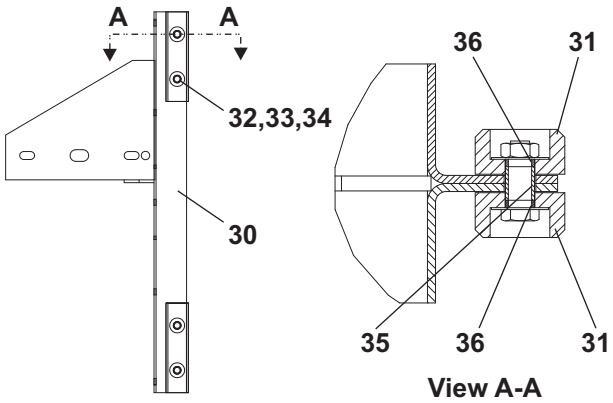


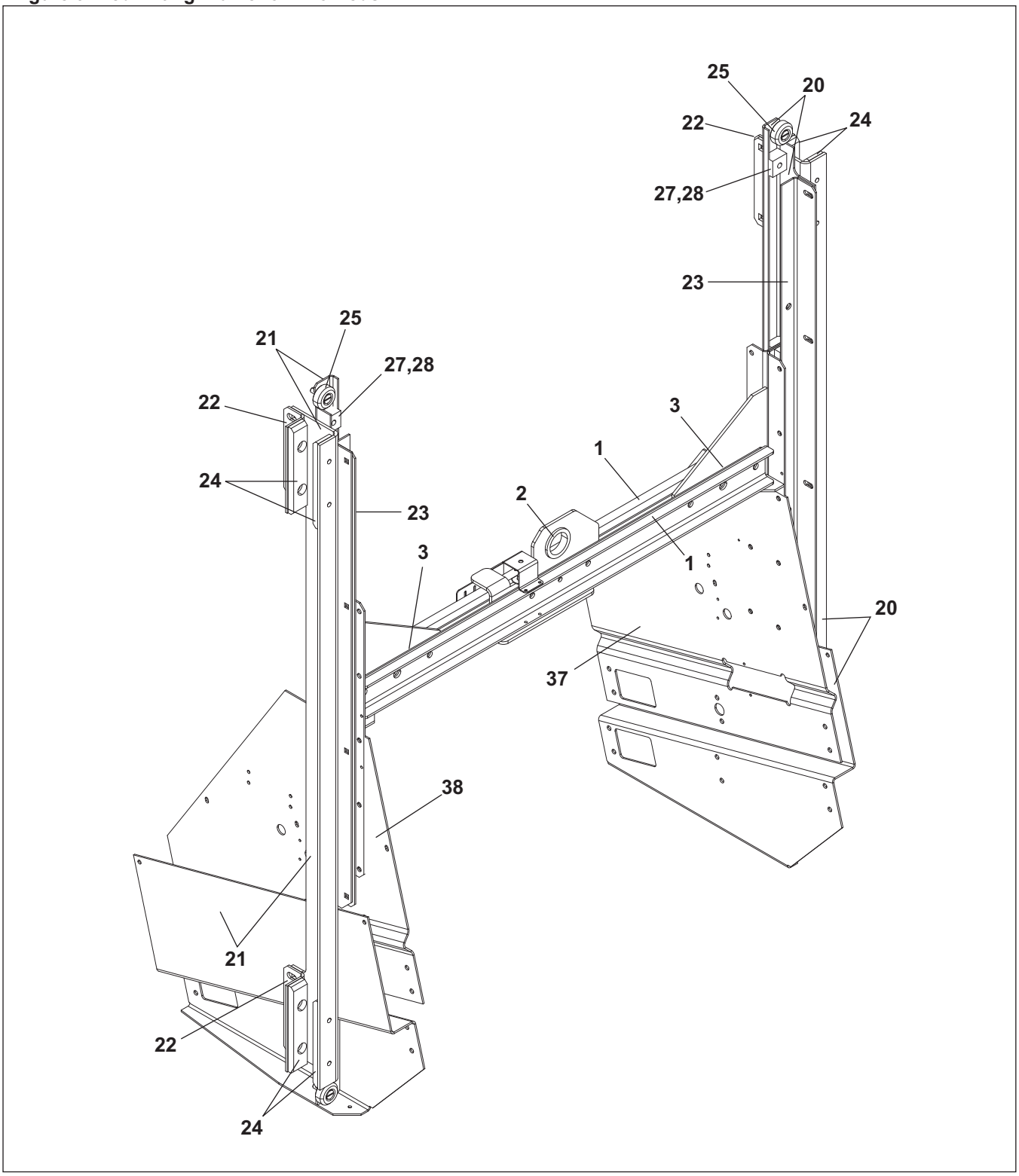
Figure 2: Bed Sliding Pads



Bed Lifting Frame & Cross Member

COLFM111, COLFM112, COSHM111, COSHM112

Figure 3: Bed Lifting Frame for Two Beds



Bed Lifting Frame & Cross Member

COLFM111, COLFM112, COSHM111, COSHM112

Figure 4: Bottom View of Cross Member, Side Slides, Wheels and Stops

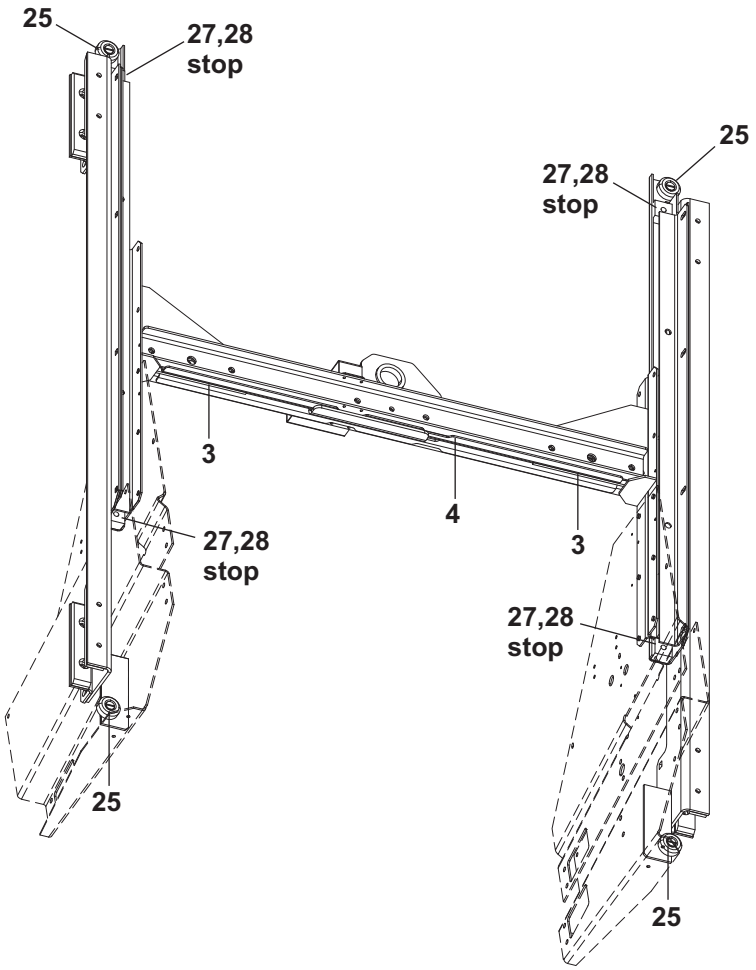
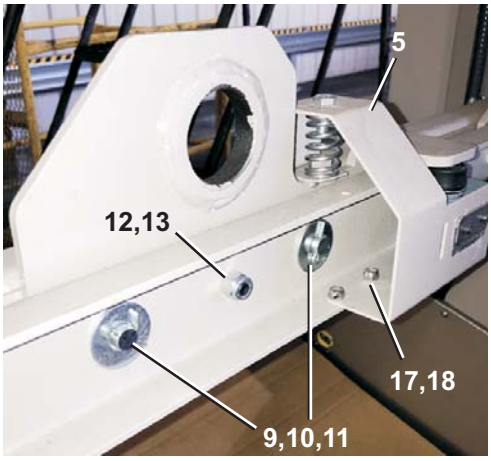
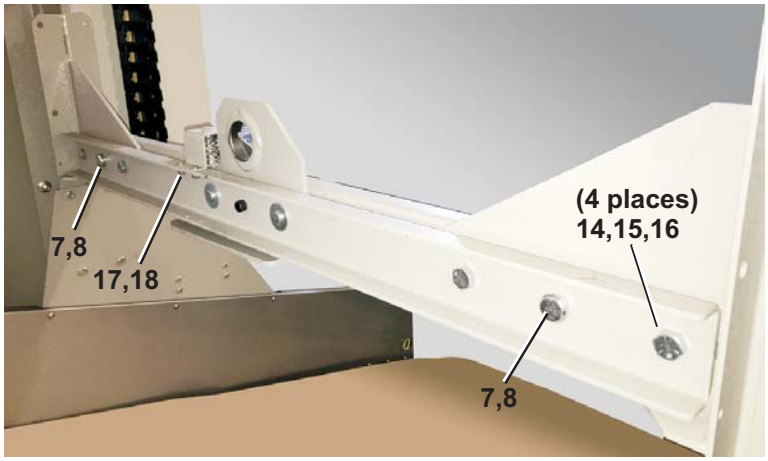


Figure 5: Lifting Cross Member

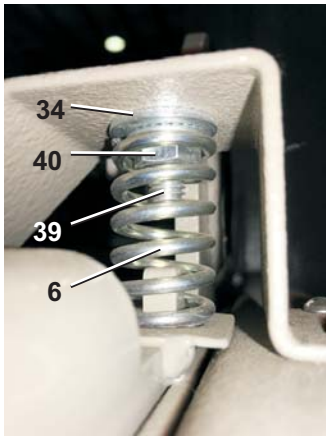


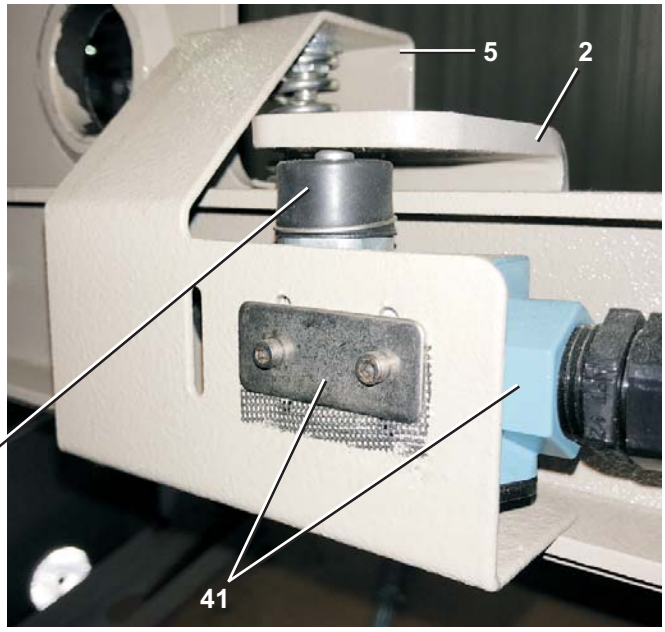


Bed Lifting Frame & Cross Member

COLFM111, COLFM112, COSHM111, COSHM112

Figure 6: Slack Chain Switch





Slack Chain Switch With no load on the lifting assembly, position the slack chain proximity switch to look as shown in this photo, touching the target. The slotted holes allow for vertical adjustment.

The slack chain switch is actuated when the beds reach full down. When the switch is actuated, the beds rise to load.

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC420002T	BED LIFTING FRAME	COLFM111, COSHM111
	B	ALC420002M	BED LIFTING FRAME	COLFM112, COSHM112
	C	ALC50088	LF/RT SIDE SLIDER	COLFM111, COSHM111
	D	ALC50082	LF/RT SIDE SLIDER	COLFM112, COSHM112
	E	ALC50055	BED ASSY 44WX62L	REFERENCE
			----------COMPONENTS----------	
all	1	04 23375	BED LIFTING CHANNEL	
all	2	W4 23347	BED LIFT PLATE WLMT	
all	3	04 23482	LIFTING X-MEMBER SHIM	
all	4	04 23376	BED LIFTING CHAN SPACER	
all	5	04 23373A	SLACKCHAIN SW BRKT-COSHM	
all	6	02 18187	SPRING=OUTER DOOR 60 WEHU	
all	7	X4 24647	CLEVIS PIN 3/4"X1.75LG 304SS	
all	8	15H060	STDCOTTERPIN 3/16X2 ZINCPL	
all	9	X4 24648	CLEVIS PIN 1/2"X1.50LG 304 SS	

Bed Lifting Frame & Cross Member

COLFM111, COLFM112, COSHM111, COSHM112

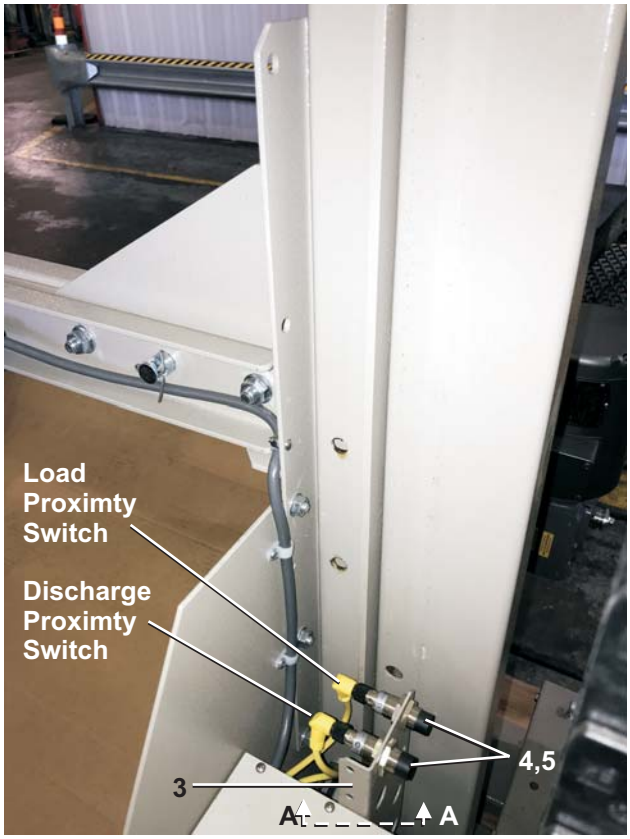
Parts List

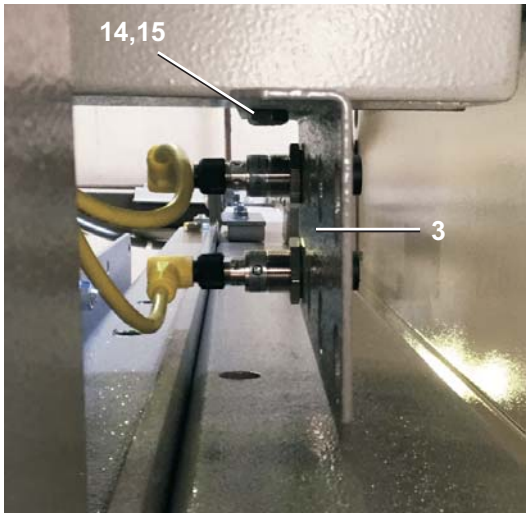
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
all	10	15H040	STDCOTTERPIN 1/8X3/4 ZINCPL	
all	11	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	12	15K111	SKCPSC3/8-16 UNC3 X 1.5 BLK	
all	13	15G207	HEXLIGHTLOKNUT 3/8-16 18-8SS N	
all	14	15K171B	HEXCAPSCR 1/2-13X1+3/4 GR8 ZIN	
all	15	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	16	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	17	15N141	RDMACSCR 10-24NCX3/4 SLOTTED S	
all	18	15G126	HXLOCKNUT NYLON 10-24 UNC SS N	
A	20	W4 22263	SIDE SLIDER -LF	
B	20	W4 22248	SIDE SLIDER -LF	
A	21	W4 22263A	SIDE SLIDER -RT	
B	21	W4 22248A	SIDE SLIDER -RT	
all	22	04 22243	MAIN SLIDER ADJ ANGLE	
all	23	04 22245	UPPER BED SLIDER ADJ ANGLE	
all	24	X4 23391	TRACK SLIDER UHMW BAR	
all	25	ALC50155	BED LIFT GUIDE WHEEL ASSY	
all	26	X4 23326	BED SLIDE UHMW PAD	
all	27	02 19283	NUT=1/2-13UNCX1+1/2SQ SPEC	
all	28	15K153H	INDHEXFLGSCR1/2-13X1+1/4GR8ZN W/LOCTITE	
all	30	W4 23308	UPPER BED SLIDER WLMT (COLOR=AZURE BLUE)	
all	31	04 23322	UPPER BED SLIDER PAD	
all	32	15K105	HXCAPSCR 3/8-16UNC2A1.25 GR5 P	
all	33	15G218	HXLOKNUT NYL 3/8-16 STL/ZNC	
all	34	15U200	FLATWASHER(USS STD) 5/16"ZNC P	
all	35	27B2100G0L	SPCRROLL.39ID.562L.048T STLZNC	
all	36	27B25002SZ	SPCRROLL.39ID.125L.048T STLZNC	
all	37	04 23304	TOP BED MTG 15DEG-LF	
all	38	04 23304B	TOP BED MTG 15DEG-RT	
all	39	15K065	HEXCAPSCR 5/16-18UNC2AX1 GR5 Z	
all	40	15G196	HXFLGNUT 5/16-18 ZINC	
all	41	09R012STDG	* 09R012 +MOUNTING HDWRE+INST	

Bed Stop Targets and Switches

COLFM111/112, COLFP111/112, COLFQ111/112
COSHM111/112, COSHP111/112, COSHQ111/112





View A-A: (Bottom View)

Bed Stop Targets and Switches

COLFM111/112, COLFP111/112, COLFQ111/112
COSHM111/112, COSHP111/112, COSHQ111/112

Parts List

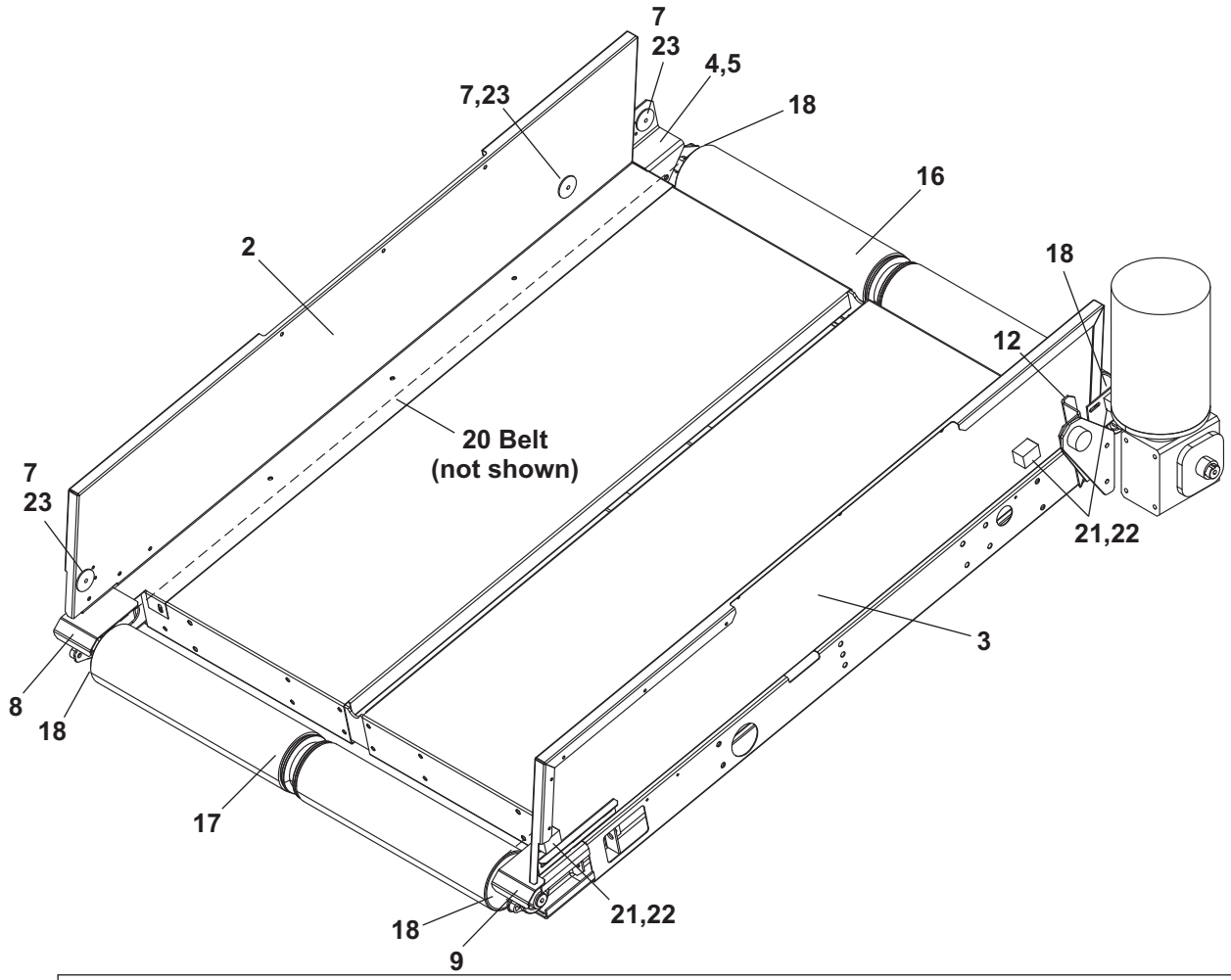
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC50079	LOAD TARGET ASSY-COSHM	REFERENCE
	B	ALC50080	DISCHARGE TARGET ASSY-COSHM	REFERENCE
	C	ES112PXA	FEST/PROX/COUNTER ASSY	REFERENCE
			----------COMPONENTS----------	
all	1	04 23344	BED STOP TARGET-LOAD	
all	2	04 23344A	BED STOP TARGET-DISC	
all	3	04 23360	BED STOP SW MTG	
all	4	09RPM18ADU	PRXSW QD CONN 18M NO-DC UNSHLD	
all	5	09RPMCD902	CONN.90-DEG FEMLE DC 3A300V 2M	
all	6	09RPMCD905	CONN 90-DEG FEMLE DC 3A300V 5M	
all	7	15K047	HXCAPSCR 1/4-20UNCX2+1/2 ZINC	
all	8	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	9	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
all	10	17N058	HEXRIVNUT 1/4-20 UNC-2B #2520-	
all	11	17M010	#8-32X3/8" FPHMSUC ZINC	
all	12	15U210	LOKWASHER MEDIUM 5/16 ZINCPL	
all	13	15G100	HXMACHSCRNUT 8-32UNC2B ZINC GR	
all	14	15K038C	1/4-20X 3/4 HEXFLANGE SCRW SS	
all	15	15G178	1/4"-20 HEXFLANGE NUT ZINC	

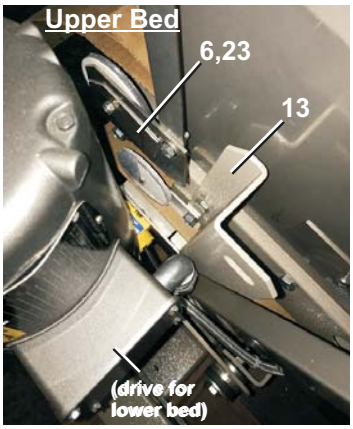
Single Bed or Upper Bed 44 x 62

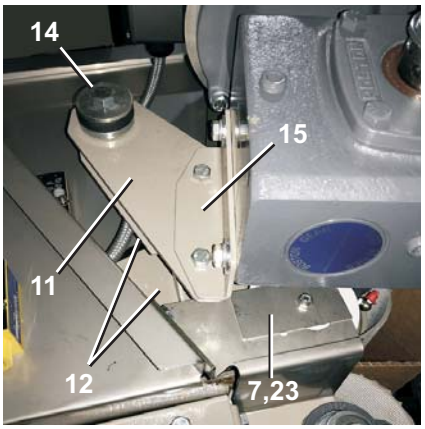
COLFM111, COLFM112, COSHM111, COSHM112

Figure 2: Single Bed or Upper Bed (44” x 62”)



N1	To order gear reducers, supply the parts department with your gear reducer’s serial number and gear ratio. See the gear reducer’s nameplate.

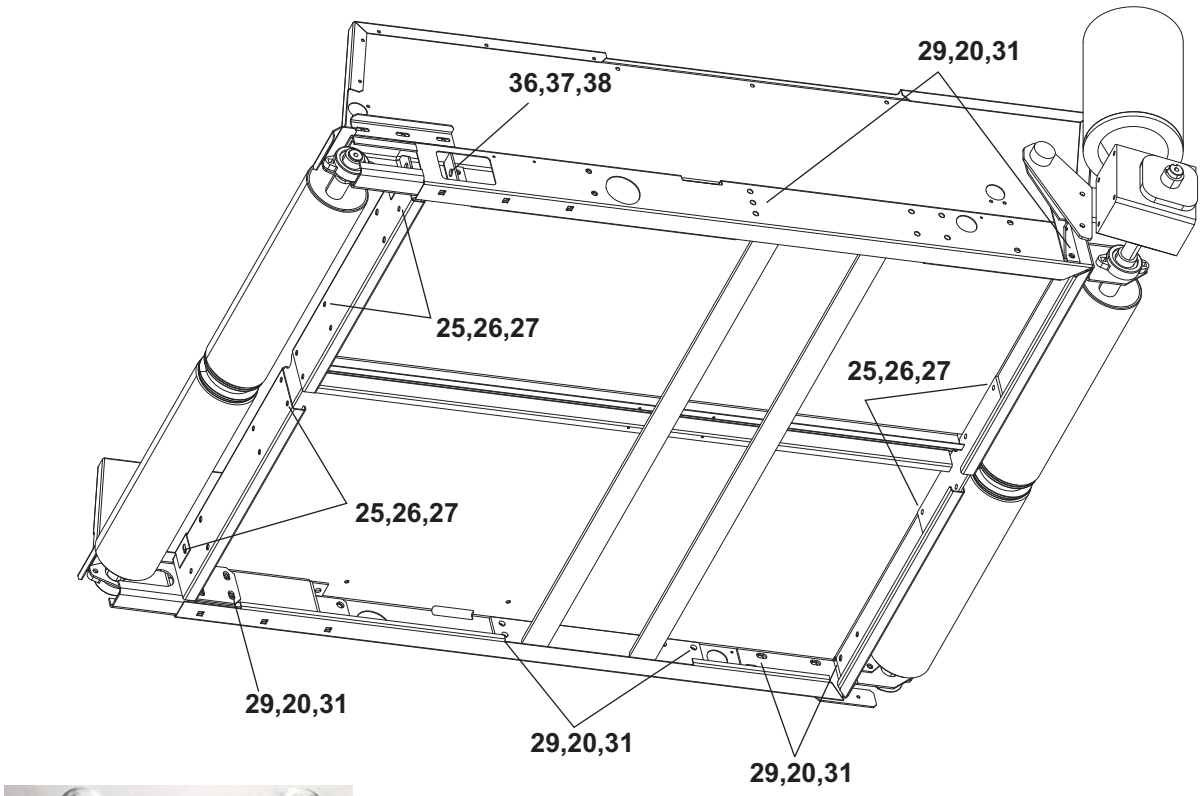


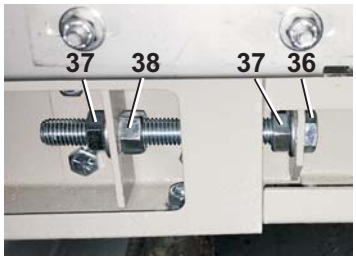


Single Bed or Upper Bed 44 x 62

COLFM111, COLFM112, COSHM111, COSHM112

Figure 2: Typical Hardware





Single Bed or Upper Bed 44 x 62

COLFM111, COLFM112, COSHM111, COSHM112

Parts List

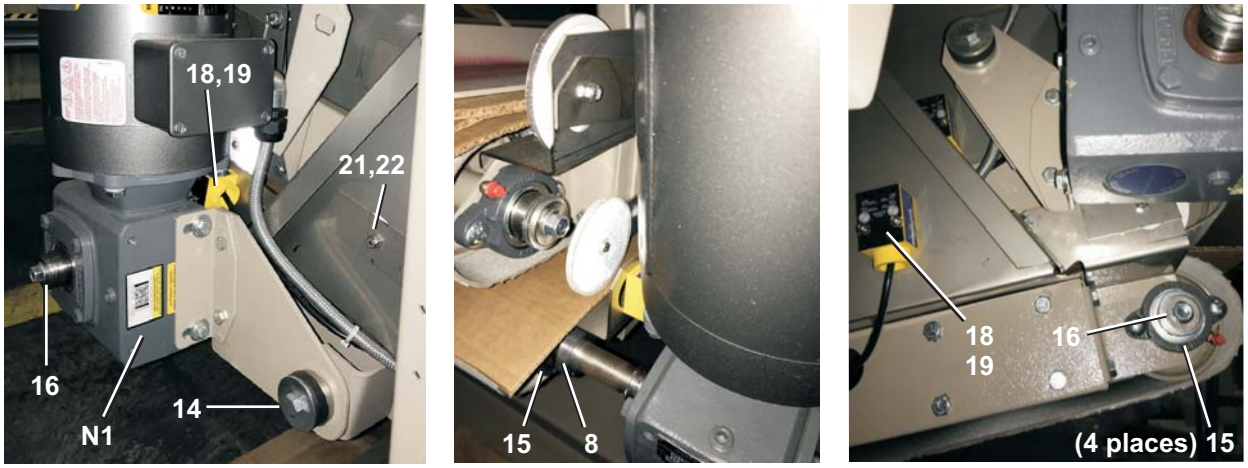
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			ASSEMBLIES	
	A	ALC50066	BED ASSY 44WX62LG-COSHM112	
			COMPONENTS	
all	1	ALC50081	BED FRAME 44WX62LG ASSEMBLY	
all	2	04 22256	SIDE UPPER 62L BED-RT	
all	3	04 22256A	SIDE UPPER 62L BED-LF	
all	4	04 22283	UNLOAD BRNG COVER 44W-RT	
all	5	04 22283A	UNLOAD BRNG COVER 44W-LF	
all	6	04 22287	REFLECTOR MOUNTING PLATE	
all	7	09RPE001A	REFLECTOR 3"DIA CLEAR	
all	8	04 22285	ROLLER BRNG COVER 44W BED-RT	
all	9	04 22285A	ROLLER BRNG COVER 44W BED-LF	
all	10	54JH11000A	SHAFTCOLLAR 1" CLPTYPE CFG#16A	
all	11	04 22258	TORQARM-12DEG UPPER BED-RT	
all	12	04 22259A	TORQARM BRKT UPPER BED-LF	
all	13	04 22259	TORQARM BRKT UPPER BED-RT	
all	14	ALC420063	TORQUE ARM BUSHING ASSEMBLY	
all	15	04 22260B	TORQARM ADP ANGLE-SF718	
all	16	Y4 20832E	DRVROLLER 4.50D X 53" OAL	
all	17	Y4 20832G	IDLER ROLLER 4.50D X 44.5" OAL	
all	18	54AF10001	FLG BRG 1" BROWN#VF2S-116M (2BOLT FLG)	
all	20	ALC50164	BELT+LACING FOR 'M' BED	
all	21	09RPE011	PHOTOEYE VALU-BEAM 10-30DC	
all	22	03 BL1X2V	BRKT:Q40 SERIES PHOTOEYE MNT	
all	23	03 BF2X4W	MOUNT PLT=PHOTO REFLECTOR	
all	25	15K065	HEXCAPSCR 5/16-18UNC2AX1 GR5 Z	
all	26	15U210	LOKWASHER MEDIUM 5/16 ZINCPL	
all	27	15G185	HXNUT 5/16-18UNC2B SAE ZINC GR	
all	28	15A008C	CARRBOLT 5/16-18NCX1"ZINC GR-	
all	29	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	30	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	31	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	32	15K091H	HEXFLGSCR 3/8-16X3/4 ZN GRD.5	
all	33	15U245A	FLTWASH 25/64IDX1.25ODX3/32 S/	
all	34	15U241MB	FLAT WASHER-1.50D 1+1/32ID 10G	
all	35	15U343	FLATWASH 1X25/64X1/8 ZINC	
all	36	15K203	HXTAPSCR TFL 1/2-13X5 GR5 ZINC	
all	37	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	38	15G222B	HEXFLGNUT 1/2-13 ZINC SERRATED	

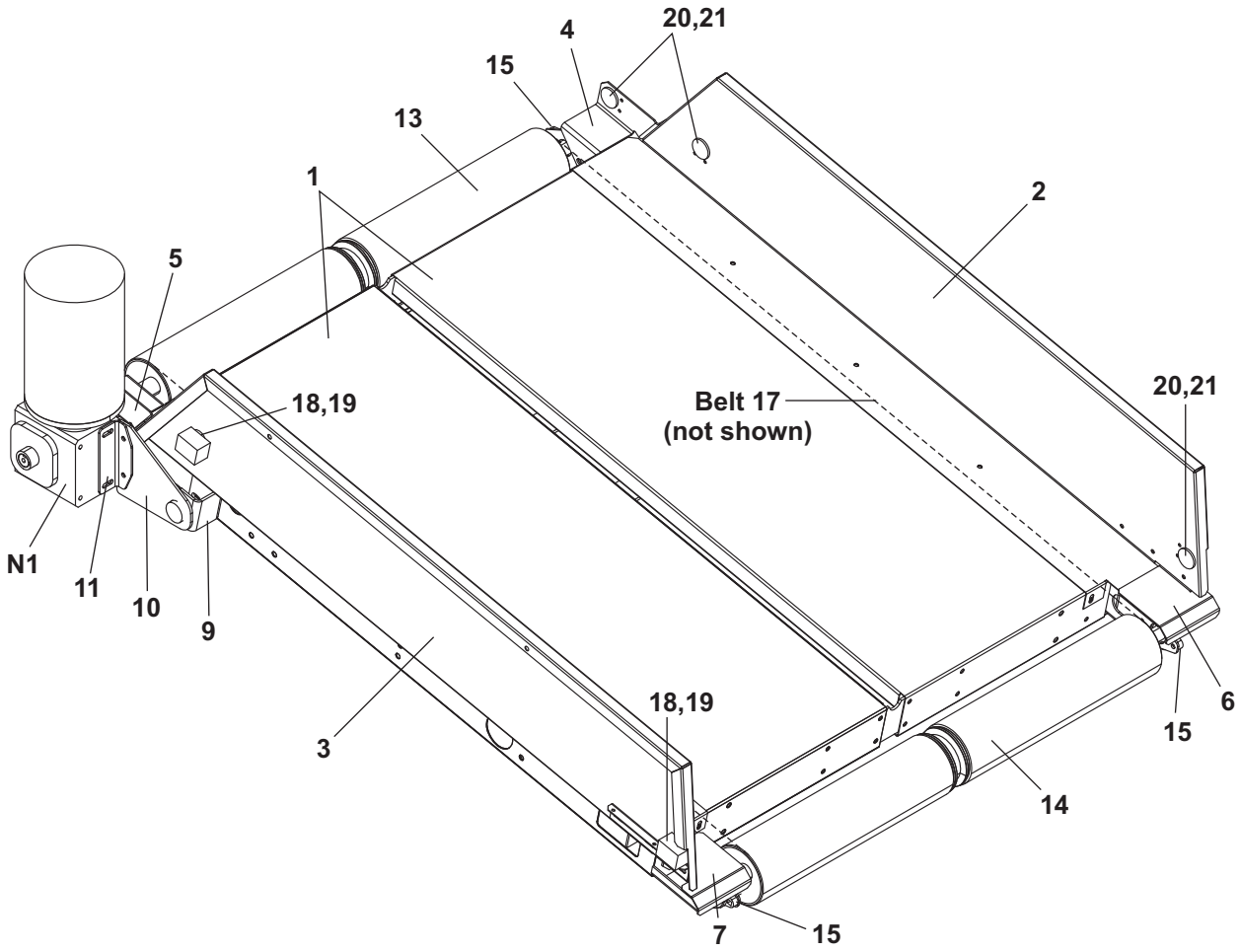
Lower Bed 48 x 62

COLFM112, COSHM112

Figure 1: Lower Bed (48" x 62")



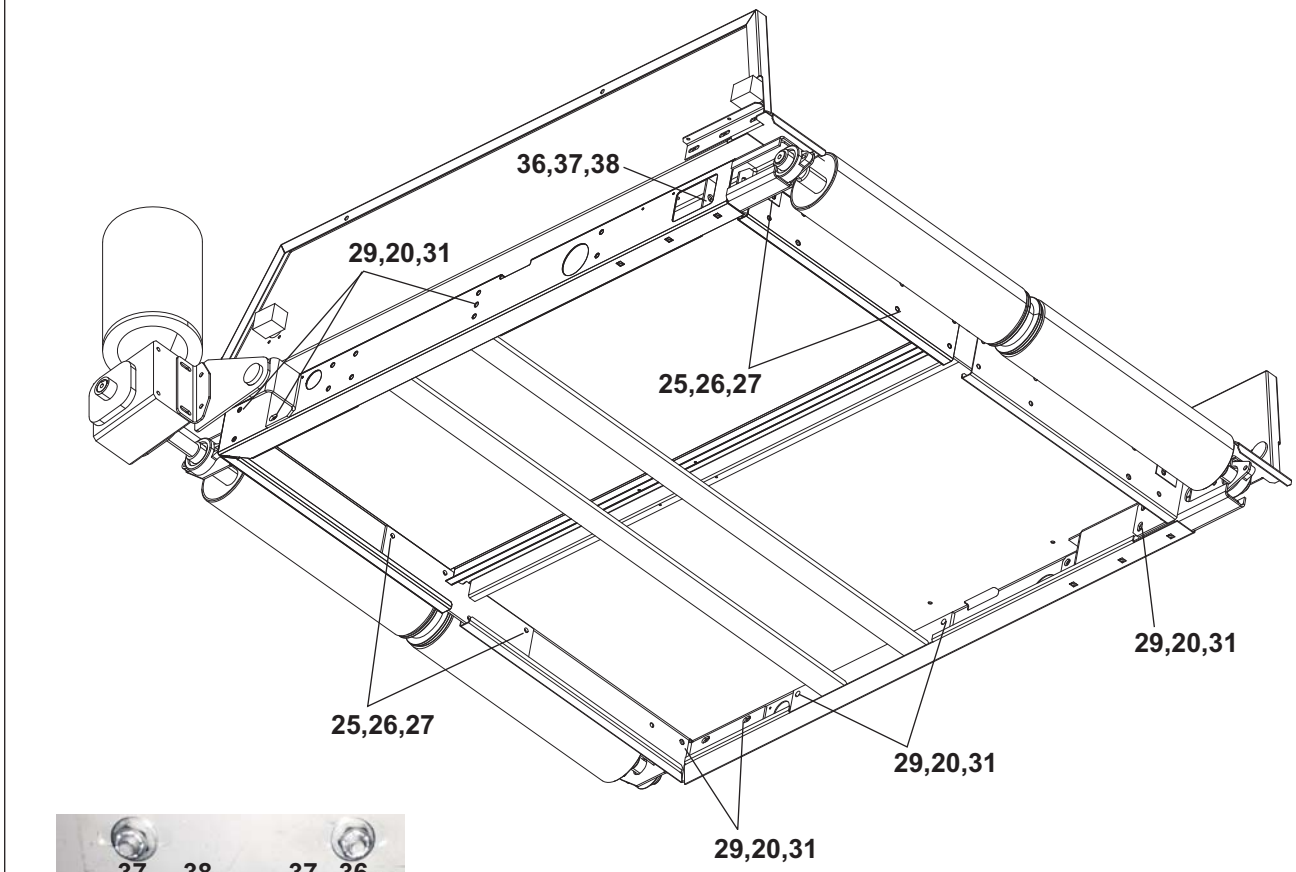
N1	To order gear reducers, supply the parts department with your gear reducer's serial number and gear ratio. See the gear reducer's nameplate.

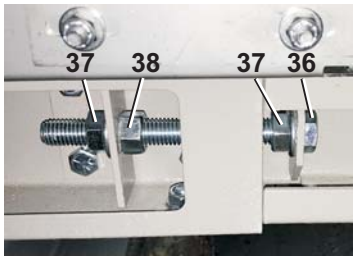


Lower Bed 48 x 62

COLFM112, COSHM112

Figure 2: Typical Hardware





Lower Bed 48 x 62

COLFM112, COSHM112

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC50067	BED ASSY 48WX62LG-COSHM112	
			----------COMPONENTS----------	
all	1	ALC50081	BED FRAME 44WX62LG ASSEMBLY	
all	2	04 22257	SIDE LOWER 62L BED-RT	
all	3	04 22257A	SIDE LOWER 62L BED-LF	
all	4	04 22282	UNLOAD BRNG COVER 48W-RT	
all	5	04 22282A	UNLOAD BRNG COVER 48W-LF	
all	6	04 22286	ROLLER BRNG COVER 48W BED-RT	
all	7	04 22286A	ROLLER BRNG COVER 48W BED-LF	
all	8	54JH11000A	SHAFTCOLLAR 1" CLPTYPE CFG#16A	
all	9	04 22233	TORQUE ARM GROMET MTG BRKT	
all	10	04 22260	TORQARM-12DEG LOWER BED	
all	11	04 22260B	TORQARM ADP ANGLE-SF718	
all	12	ALC420063	TORQUE ARM BUSHING ASSEMBLY	
all	13	Y4 20832E	DRVROLLER 4.50D X 53" OAL	
all	14	Y4 20832G	IDLER ROLLER 4.50D X 44.5" OAL	
all	15	54AF10001	FLG BRG 1" BROWN#VF2S-116M (2BOLT FLG)	
all	17	ALC50164	BELT+LACING FOR 'M' BED	
all	18	09RPE011	PHOTOEYE VALU-BEAM 10-30DC	
all	19	03 BL1X2V	BRKT:Q40 SERIES PHOTOEYE MNT	
all	20	09RPE001A	REFLECTOR 3"DIA CLEAR	
all	21	03 BF2X4W	MOUNT PLT=PHOTO REFLECTOR	
all	25	15K065	HEXCAPSCR 5/16-18UNC2AX1 GR5 Z	
all	26	15U210	LOKWASHER MEDIUM 5/16 ZINCPL	
all	27	15G185	HXNUT 5/16-18UNC2B SAE ZINC GR	
all	28	15A008C	CARRBOLT 5/16-18NCX1"ZINC GR-	
all	29	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	30	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	31	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	32	15K091H	HEXFLGSCR 3/8-16X3/4 ZN GRD.5	
all	33	15U245A	FLTWASH 25/64IDX1.25ODX3/32 S/	
all	34	15U241MB	FLAT WASHER-1.50D 1+1/32ID 10G	
all	35	15U343	FLATWASH 1X25/64X1/8 ZINC	
all	36	15K203	HXTAPSCR TFL 1/2-13X5 GR5 ZINC	
all	37	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	38	15G222B	HEXFLGNUT 1/2-13 ZINC SERRATED	

Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

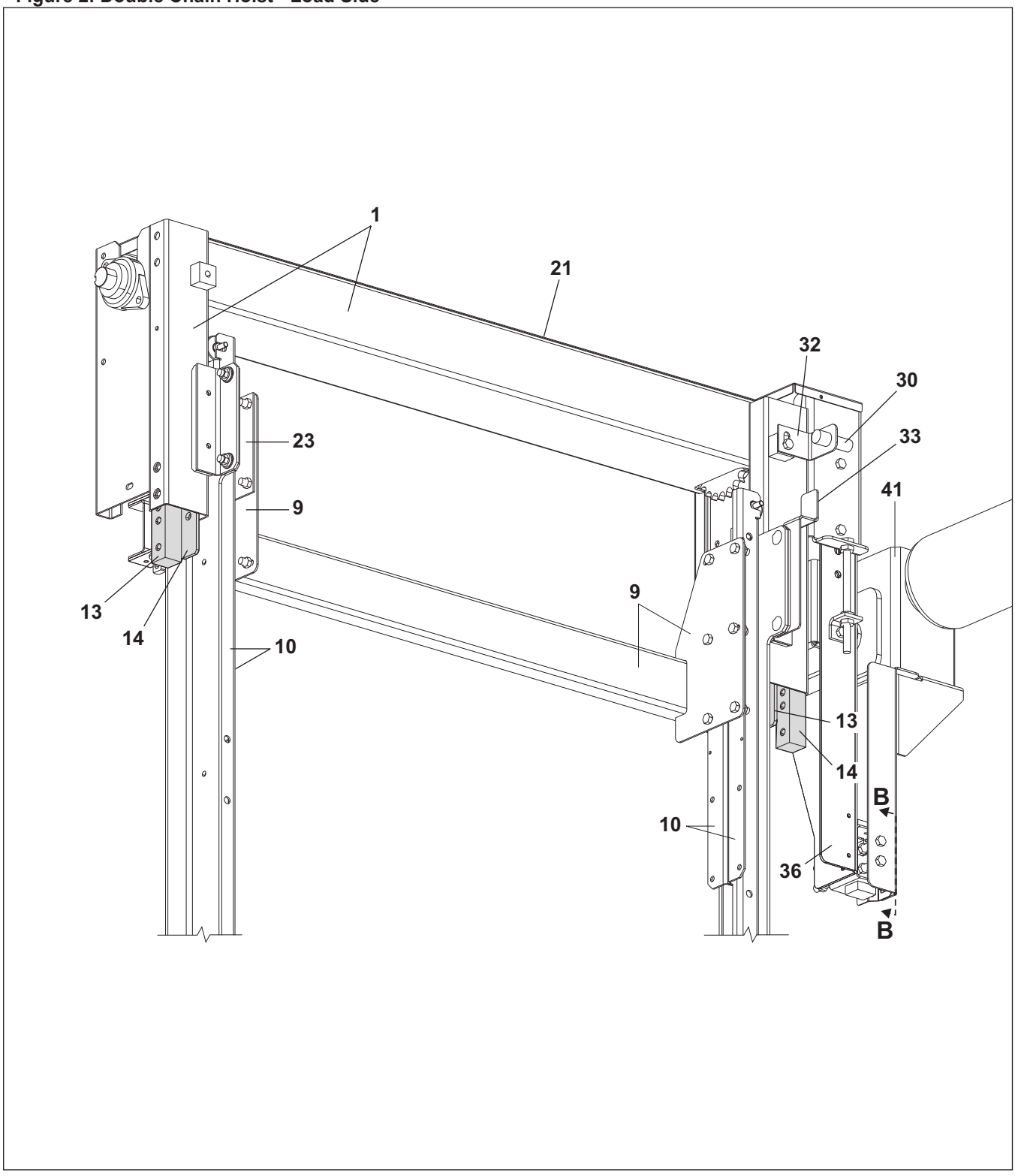
Figure 1: Low Headroom Double Chain Hoist Shuttle

COSHQ112
Shown

Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

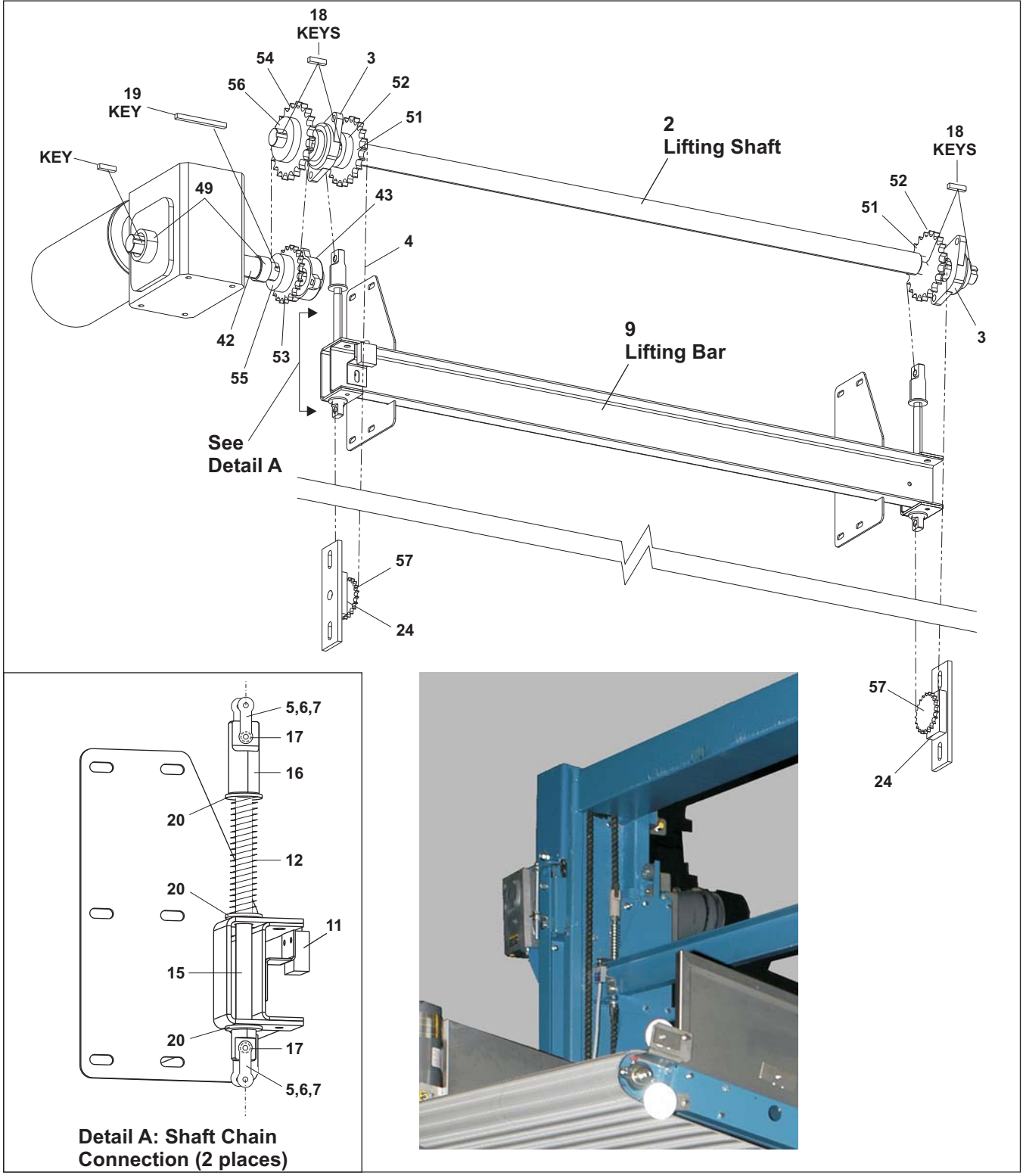
Figure 2: Double Chain Hoist - Load Side



Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

Figure 3: Hoist Drive Components

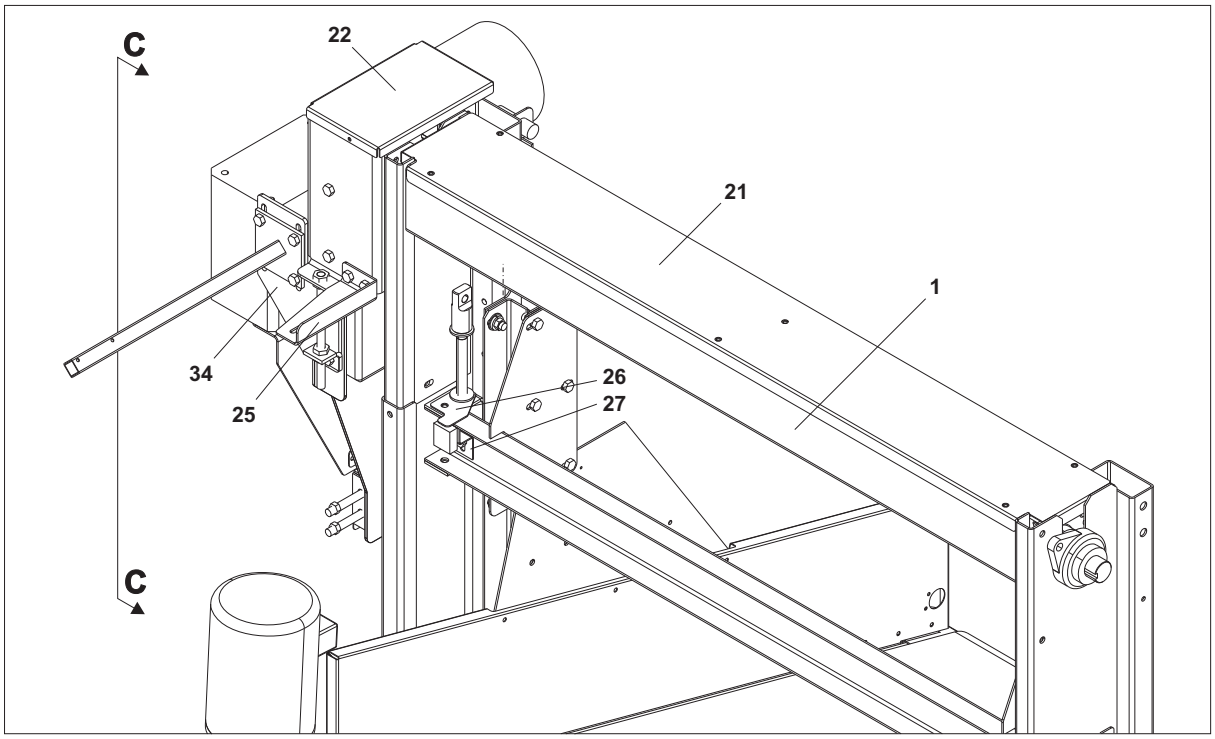


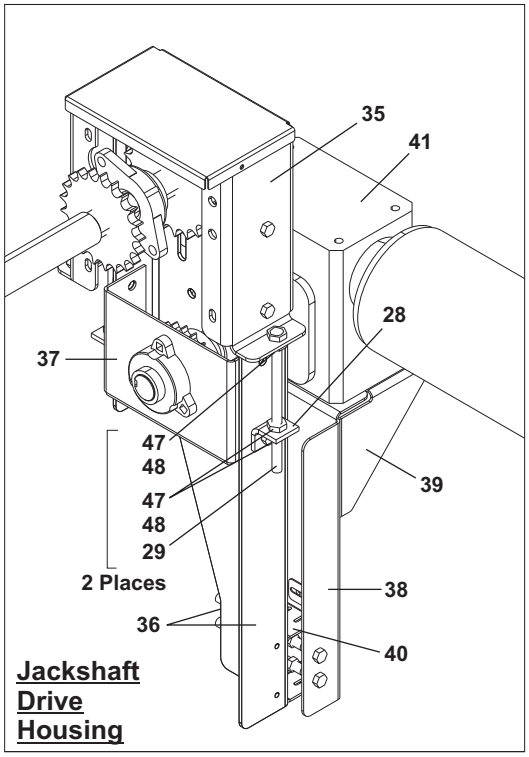
Detail A: Shaft Chain Connection (2 places)

Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

Figure 4: Double Chain Hoist Views

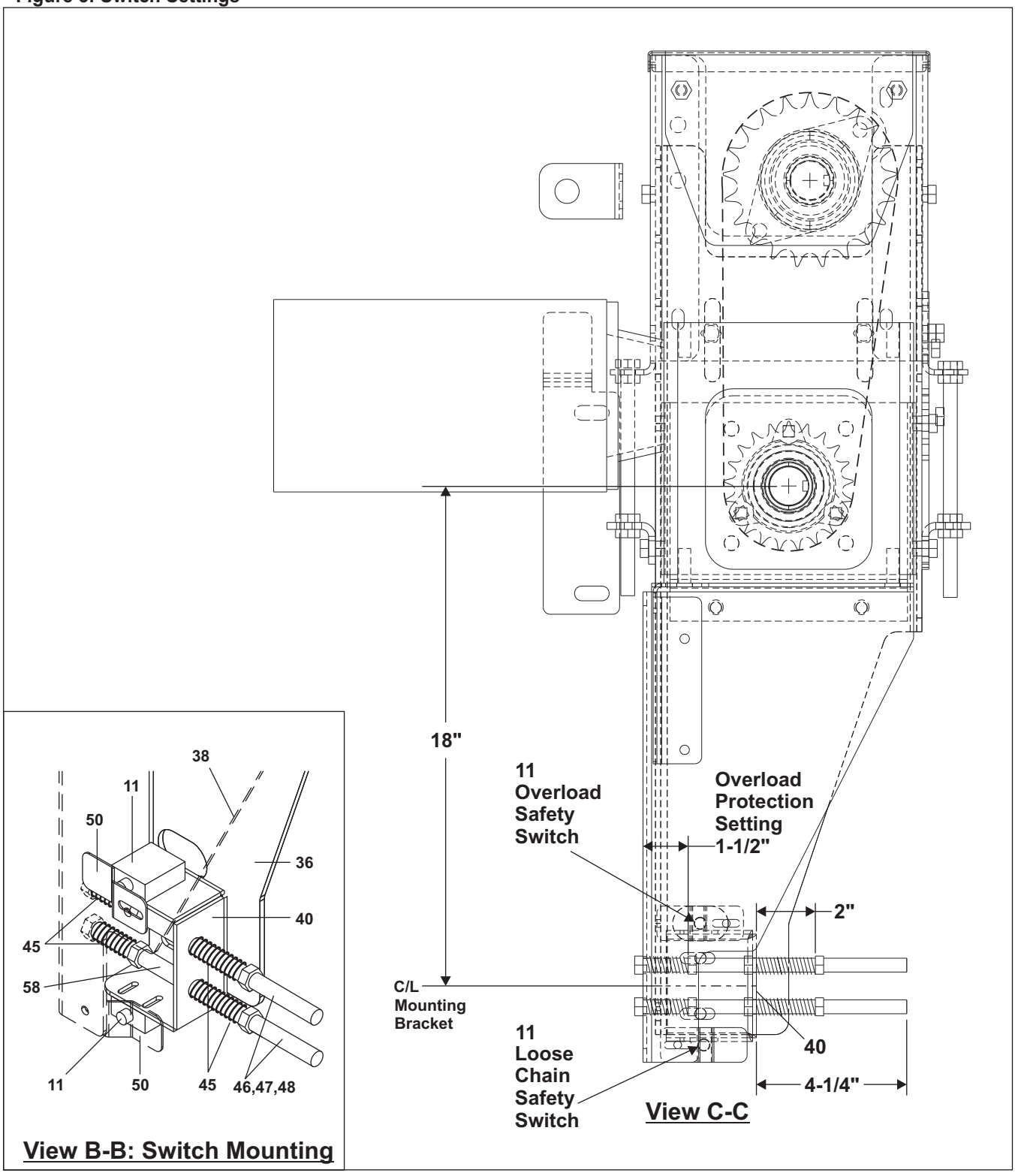




Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

Figure 5: Switch Settings



Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

Parts List—Double Chain Hoist

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			-------ASSEMBLIES----------	
	A	ALC420001T	DOUBLE CHAINS HOIST ASSY	
	B	ALC420153	JACK SHAFT DRIVE ASSEMBLY	
			-------COMPONENTS----------	
all	1	W4 22329	TOP BEAM WLMT-DBLCHAIN HOIST	
all	2	X4 22340	CHAIN HOIST LIFTING SHAFT	
all	3	56F1H2CS	FLGBRG REXNORD BS228336 1+7/16" (2 BOLT)	
all	4	54G050C	ROLCHN ANSI 50-1R 5/8"P EA=1FT	
all	5	54G050A	C0NN LINK ANSI 2050 EXT PITCH	
all	6	54G080C	ROLLCHAIN ANSI 80-1R 1"P (50FT REELS ONLY)	
all	7	54G080	CONN LINK ANSI 80 SPRING CLIP	
all	9	W4 22333	LIFTING BAR WLMT-DBLCHAIN	
all	10	04 23305	VERT SLIDER ANGLE	
all	11	09RM01212G	CAPSW 12FT 180DEG ROLLER GOLD	
all	12	03 06211A	SPRING=.154"WIREX4.56LG	
all	13	X4 23342	TUBE CONNECTING BAR	
all	14	04 23331	VERT TUBE ALIGN BAR	
all	15	X4 22341	BED LIFTING SHAFT-DBLCHAIN	
all	16	X4 22342	LIFTING SHAFT CHAIN CONN =	
all	17	54E001	DRILLBUSHING FOR #50 CHAIN	
all	18	15E225	SQMACHKEY 3/8X1+1/2 NOTAPER-NO	
all	19	15E229	MACHINE KEY .375X.375X7.00LG	
all	20	15U316	FLTWASH 5/8 HARD ASTM F436	
all	21	04 22735	TOP BEAM COVER =	
all	22	04 22736	SPROCKET HOUSING COVER	
all	23	04 22737	UPPERBED SLIDER SPACER	
all	24	W4 22738	IDLER SPROCKET MTG WLMT	
all	25	04 22739	FESTOON PULL BRKT	
all	26	04 22740	SLACKCHAIN TARGET-DBLCHN HOIST	
all	27	04 22184	KICKPLATE SW MTG BRKT	
all	28	02 19288	BRACKET=ADJUSTING-1.5X1.75	
all	29	15K203	HXTAPSCR TFL 1/2-13X5 GR5 ZINC	
all	30	09RPS40AAS	PROXSW 40M NO/NC-AC-RECT	
all	32	04 24374	UPPER LIMIT PROX. BRKT	
all	33	04 24375	UPPER LIMIT TARGET	
all	34	04 24376	TOW BAR MTG BRKT-DBL CHAIN	

Low Headroom Double Chain Hoist - Option

COSHM111/112, COSHP111/112, COSHQ111/112

Parts List—Double Chain Hoist

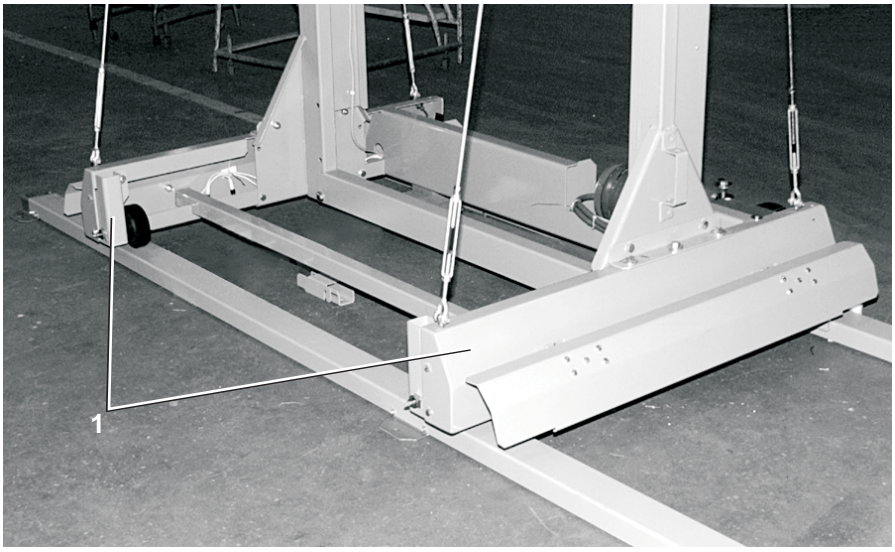
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

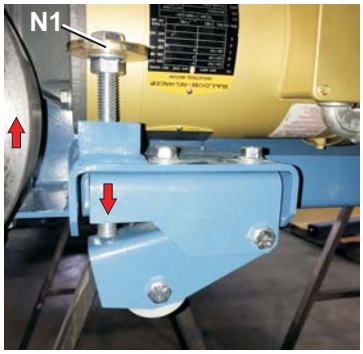
Used In	Item	Part Number	Description	Comments
all	35	04 22327	HOIST DRV SPROCKET HOUSING	
all	36	04 22334	CHAIN TENSIONING CHANNEL	
all	37	04 22335	JACK SHAFT BRNG SUPPORT	
all	38	04 22336	DBLCHAIN HOIST TORQARM	
all	39	04 22336B	DBLCHAIN TORQARM GUSSET	
all	40	04 22337	TORQARM OVERLOAD SW MTG	
all	41	54STB33260	REDUCER 60:1 SF732-60T-B7-G	
all	42	X4 22339	CHAIN HOIST JACK SHAFT	
all	43	54AF1437	FLGEBRG.HUBCITY 3-BOLT FB150URX1-7/16 (DURALINE#1002-07201)	
all	44	27B270	SPCRROLL.5ID 2.5L.062T STL ZNC	
all	45	02 18187S	SPRING=DOOR STAINLESS STEEL	
all	46	15D122C	HEXTAPSCR 1/2-13UNCK 8.5 FLTHD	
all	47	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	48	15G231	HXFINJAMNUT 1/2-13UNC2B ZINC G	
all	49	54JH11437C	SHAFTCOLLAR 1.4375 CFG #23S	
all	50	04 22338	TORQUE LIMIT SW TARGET	
all	51	54N050B16	SPRKT 50BTL16H-1610#100534	
all	52	56Q1HTB	1+7/16"TAPRLOCKBUSH1610#119226	
all	53	54N080B13	SPRKT 80BTL13H-1615 #100596	
all	54	54N080B18	SPRKT 80BTL18H-2012 #100601	
all	55	56Q1HTB1	1+7/16"TAPRLOCKBUSH1615#119055	
all	56	56Q1HTB2	1+7/16"TAPRLOCKBUSH2012#119256	
all	57	54N050B15B	SPRKT, IDLER 51E15 #102054	
All	58	27B32024SS	SPACER ROLL .5IDX1.5LX.062T SS	

Cart with Floor Drive

COSHM111/112, COSHP111/112, COSHQ111/112

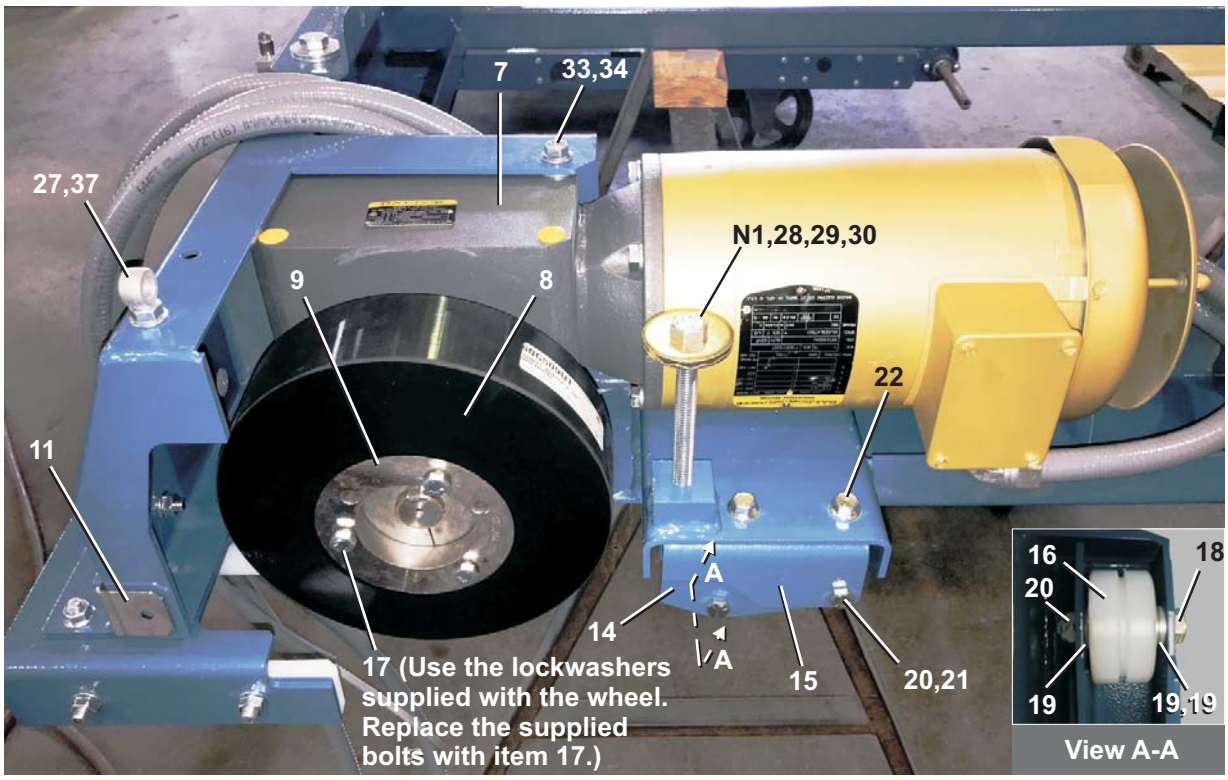
Figure 1: Cart, Drive Lifting Wheel, Drive





Drive Lifting Wheel Lowered

N1 - Before moving a shuttle (that is out-of-service, without power, or requires servicing the drive roller) use a wrench to *lower* the drive lifting wheel and *raise* the drive roller.



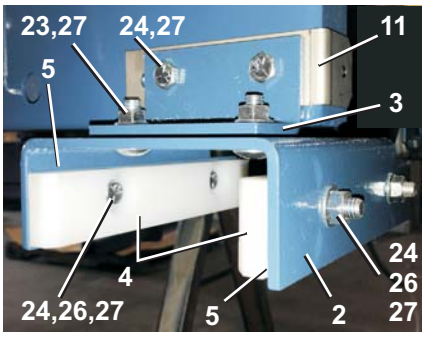
Drive Roller, Motor, Gear Reducer

Cart with Floor Drive

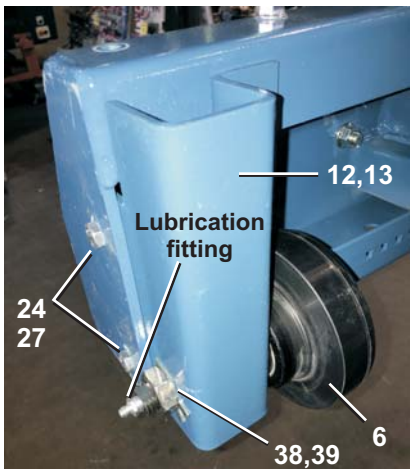
COSHM111/112, COSHP111/112, COSHQ111/112

Figure 2: Non-Drive Roller, Track Guide

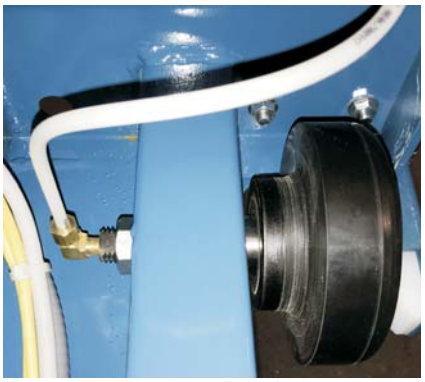
Track Guide Assembly - Position the slider pads (item 4) as shown. The pads should be flush to the bottom of the bracket (item 2) with a gap above the pads.



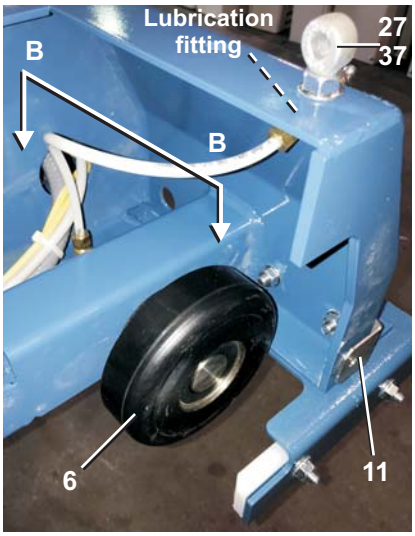
Track Guide Assembly



5 Inch Roller Non-Drive Side

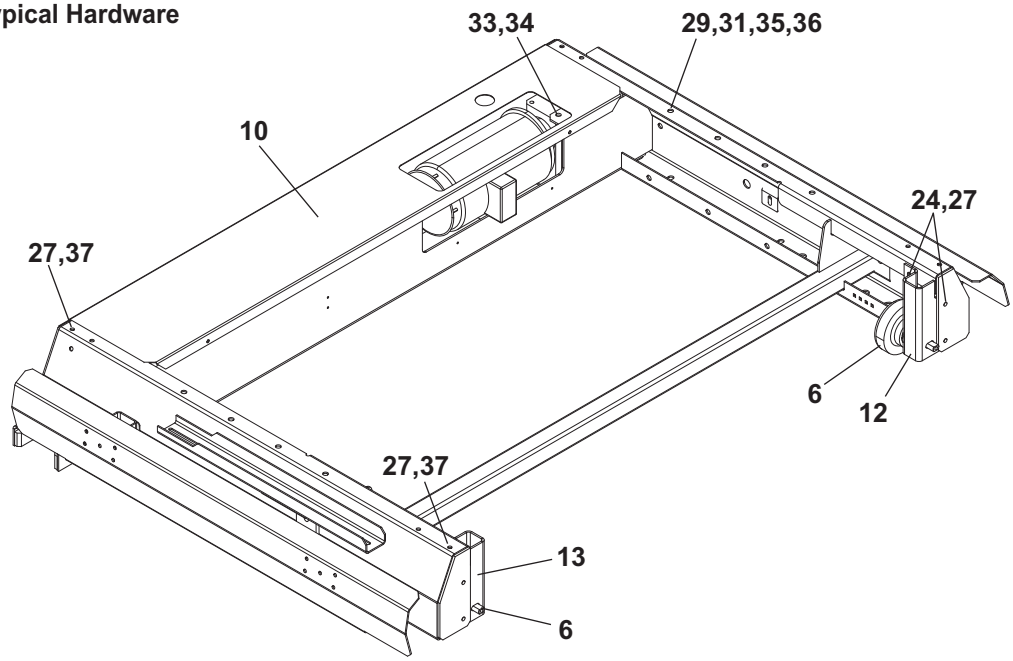


View B-B



5 Inch Roller Drive Side

Figure 3: Typical Hardware



Cart with Floor Drive

COSHM111/112, COSHP111/112, COSHQ111/112

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

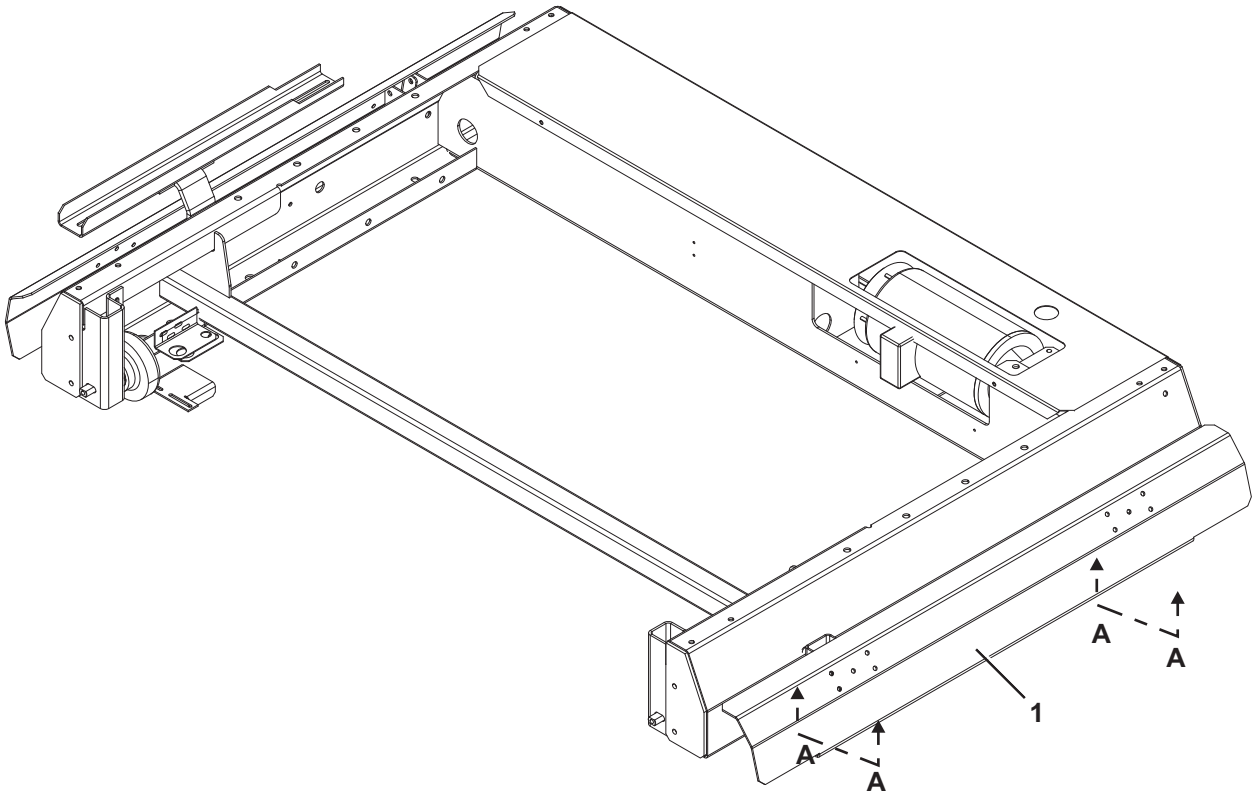
Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC420047D	CART FLOORDRIVE-COSHM/P	
			----------COMPONENTS----------	
all	1	W4 23333	CART FRAME WLMT	
all	2	04 20235	TRACK GUIDE CHANNEL-CARTDRIVE	
all	3	04 20236	TRACK GUIDE MTG BRKT	
all	4	X4 23391	TRACK SLIDER UHMW BAR	
all	5	04 20850S	SHIM-SLIDE PAD COSHA	
all	6	ALC420010B	POLYURETHANE ROLLER 5"DIA-SS SHAFT	
all	7	54STB42660	REDUCER 60:1 GF6026AG	
all	8	60C509UT	WHEEL SINGLE 9"OD URETHANE	
all	9	56Q1CSK	1+1/8" BUSH VPUL QD TYPE SK	
all	10	04 23330	DRIVE WHEEL COVER	
all	11	04 20718	WHEEL COVER BOTTOM CATCH	
all	12	04 23387	IDLER WHEEL MTG BRKT-RT	
all	13	04 23387A	IDLER WHEEL MTG BRKT-LF	
all	14	04 23365	LIFTING WHEEL CHANNEL	
all	15	04 23366	DRIVE WHEEL LIFTING BRKT	
all	16	X4 21946	LIFTING WHEEL-CART DRIVE	
all	17	15K081	HXTAPSCR 5/16-18NCX3TFL GR5 ZC	
all	18	15K120	HXCAPSCR 3/8-16UNC2AX2 GR5 ZIN	
all	19	15U312	HARD FWASH 3/4ODX33/64IDX.115	
all	20	15G207	HEXLIGHTLOKNUT 3/8-16 18-8SS N	
all	21	15K125	HEXCAPSCR 3/8-16UNC2AX2.5 GR5-	
all	22	15K091H	HEXFLGSCR 3/8-16X3/4 ZN GRD.5	
all	23	15A011	CARBOLT 3/8-16UNC2X1 ZINC GR2	
all	24	15K095	HXCPSCR 3/8-16UNC2AX1 GR5 ZINC	
all	25	15U240	FLATWASHER(USS STD) 3/8" ZNC P	
all	26	27B25002SZ	SPCRROLL.39ID.125L.048T STLZNC	
all	27	15G198	HXFLGNUT 3/8-16 ZINC	
all	28	15K203	HXTAPSCR TFL 1/2-13X5 GR5 ZINC	
all	29	15U286	FLATWASHER 2"0DX17/32"IDX1/4"	
all	30	15G222B	HEXFLGNUT 1/2-13 ZINC SERRATED	
all	31	15K154A	HEXCAPSCR 1/2-13X1.5 G8 ZN	
all	32	15K147	HXCAPSCR 1/2-13UNC2X1 GR5 ZINC	
all	33	15K146A	1/2-13 X 1 FLGBOLT NON-SERR ZN	
all	34	15U280	FL+WASHER(USS STD)1/2 ZNC PL+D	
all	35	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	36	15G230	HXNUT 1/2-13UNC2B SAE ZINC GR2	
all	37	17A061	EYE END 3/8-16X1.5 ZINC	
all	38	15G245	HXFINJAMNUT 3/4-10UNC2 SS18-8	
all	39	06 20070	LOCKING WASHER ROLLER SHAFT	

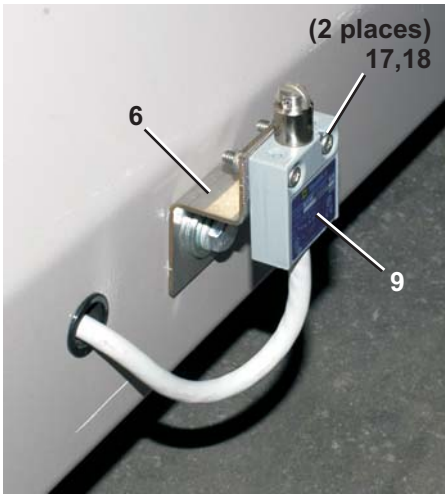
Kickplate Assembly

COSHM111/112, COSHP111/112, COSHQ111/112

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

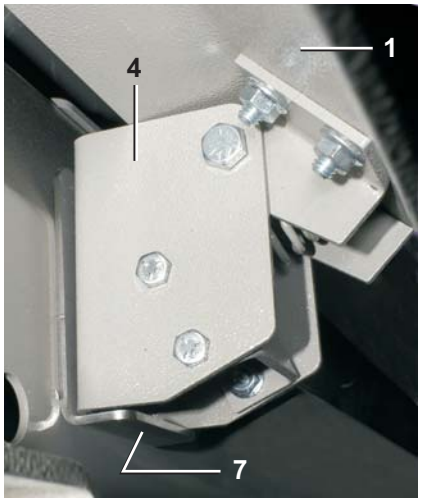
Litho in U.S.A.



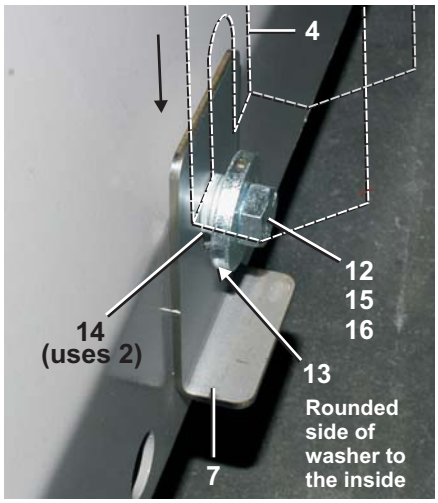


Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

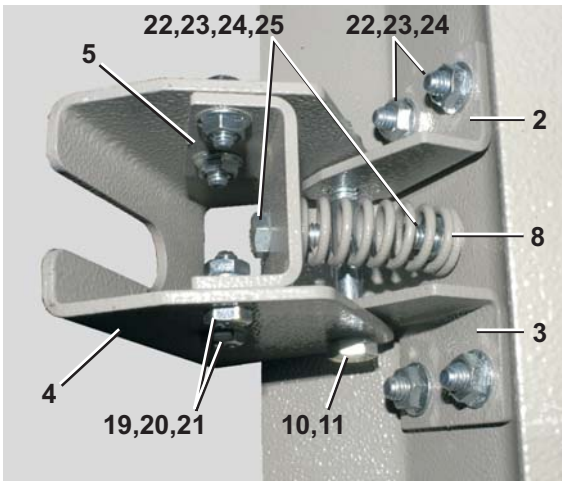
Litho in U.S.A.



View A-A: Kickplate spring assembly on hanger



Kickplate mounting hanger



Detail: Kickplate spring assembly

Kickplate Assembly

COSHM111/112, COSHP111/112, COSHQ111/112

Pellerin Milnor Corporation
P. O. Box 400, Kenner, LA 70063-0400

Litho in U.S.A.

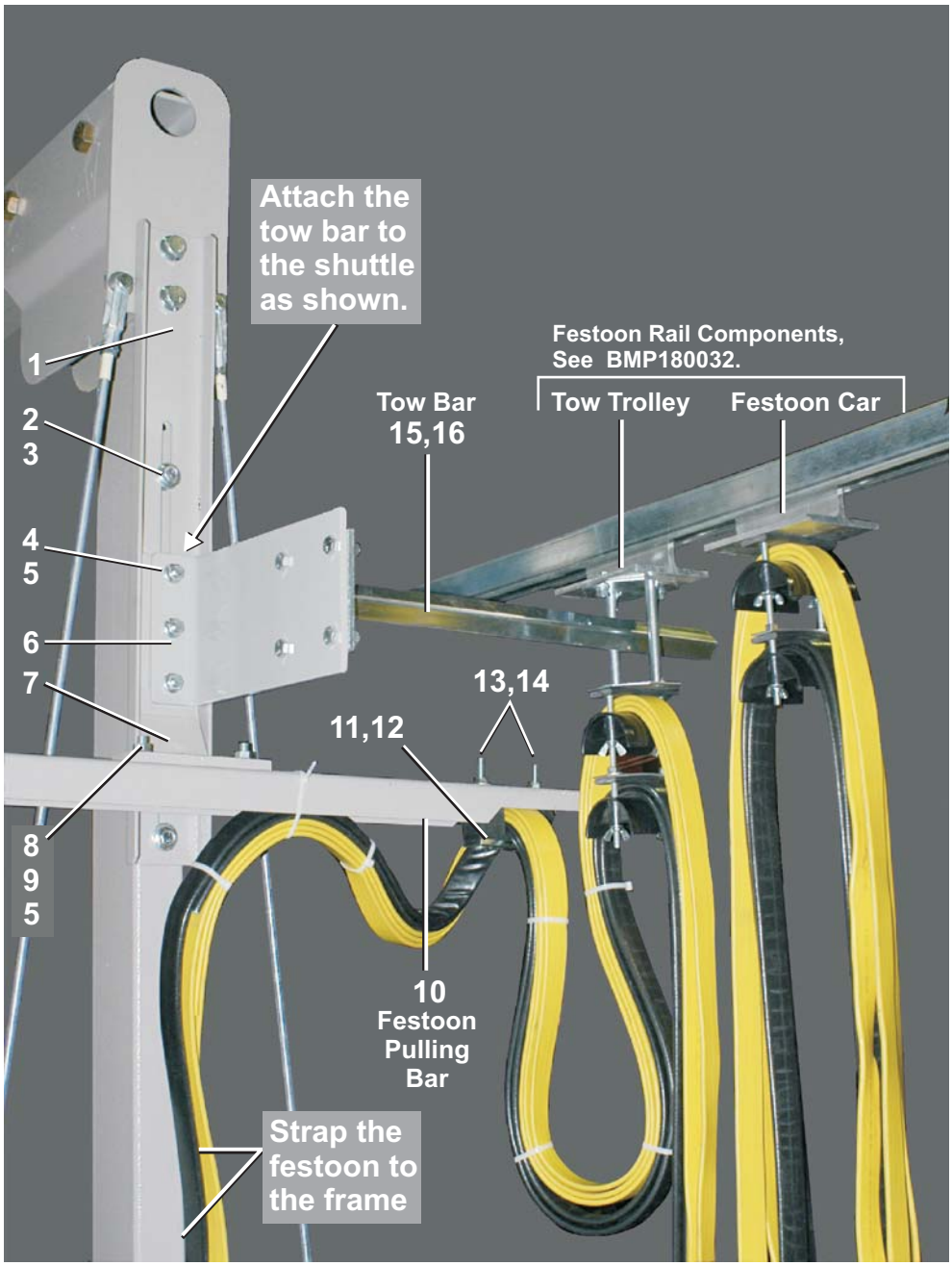
Parts List—Kickplate Assembly

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
----------			----------ASSEMBLIES----------	----------
	A	ALC50069	KICKPLATE ASSY-COSHM/P	
----------			----------COMPONENTS----------	----------
all	1	04 23367	SHUTL STOP KICKPLATE	
all	2	04 23367A	KICKPLATE GUSSET-RT	
all	3	04 23367B	KICKPLATE GUSSET-LF	
all	4	04 23370	KICKPLATE MTG BRKT	
all	5	04 23371	KICKPLT SPRING SUPPORT	
all	6	04 22184	KICKPLATE SW MTG BRKT	
all	7	04 22183	KICKPLATE HIGHT ADJ BRKT	
all	8	01 09028	SPRING=BRAKE.88OD2.5FL95#/"	
all	9	09RM01312S	CAPSW 12FT 90DEG ROLLER SILVER	
all	10	15K133	HXCAPSCREW 3/8-16UNC2AX3 GR5 Z	
all	11	15G218	HXLOKNUT NYL 3/8-16 STL/ZNC	
all	12	15K147	HXCAPSCR 1/2-13UNC2X1 GR5 ZINC	
all	13	15U286	FLATWASHER 2"0DX17/32"IDX1/4"	
all	14	15U312	HARD FWASH 3/4ODX33/64IDX.115	
all	15	15U300	LOKWASHER REGULAR 1/2 ZINC PLT	
all	16	15G228	HXCPNUT 1/2-13 UNC GR-2	
all	17	15N140	RDMACSCR 10-24UNC2AX3/4 ZINC G	
all	18	15G126SZ	HXLOCKNUT 10-24 UNC STL/ZNC	
all	19	15K039	HXCAPSCR 1/4-20UNC2AX3/4 GR5 Z	
all	20	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	21	15G165	HXNUT 1/4-20UNC2BSAE ZC GR2	
all	22	15K060	HXCAPSCR 5/16-18UNCAX3/4 GR5 Z	
all	23	15U210	LOKWASHER MEDIUM 5/16 ZINCPL	
all	24	15G185	HXNUT 5/16-18UNC2B SAE ZINC GR	
all	25	15U200	FLATWASHER(USS STD) 5/16"ZNC P	

Festoon Pulling Bar

COSHM111/112, COSHP111/112, COSHQ111/112



Festoon Pulling Bar

COSHM111/112, COSHP111/112, COSHQ111/112

Parts List

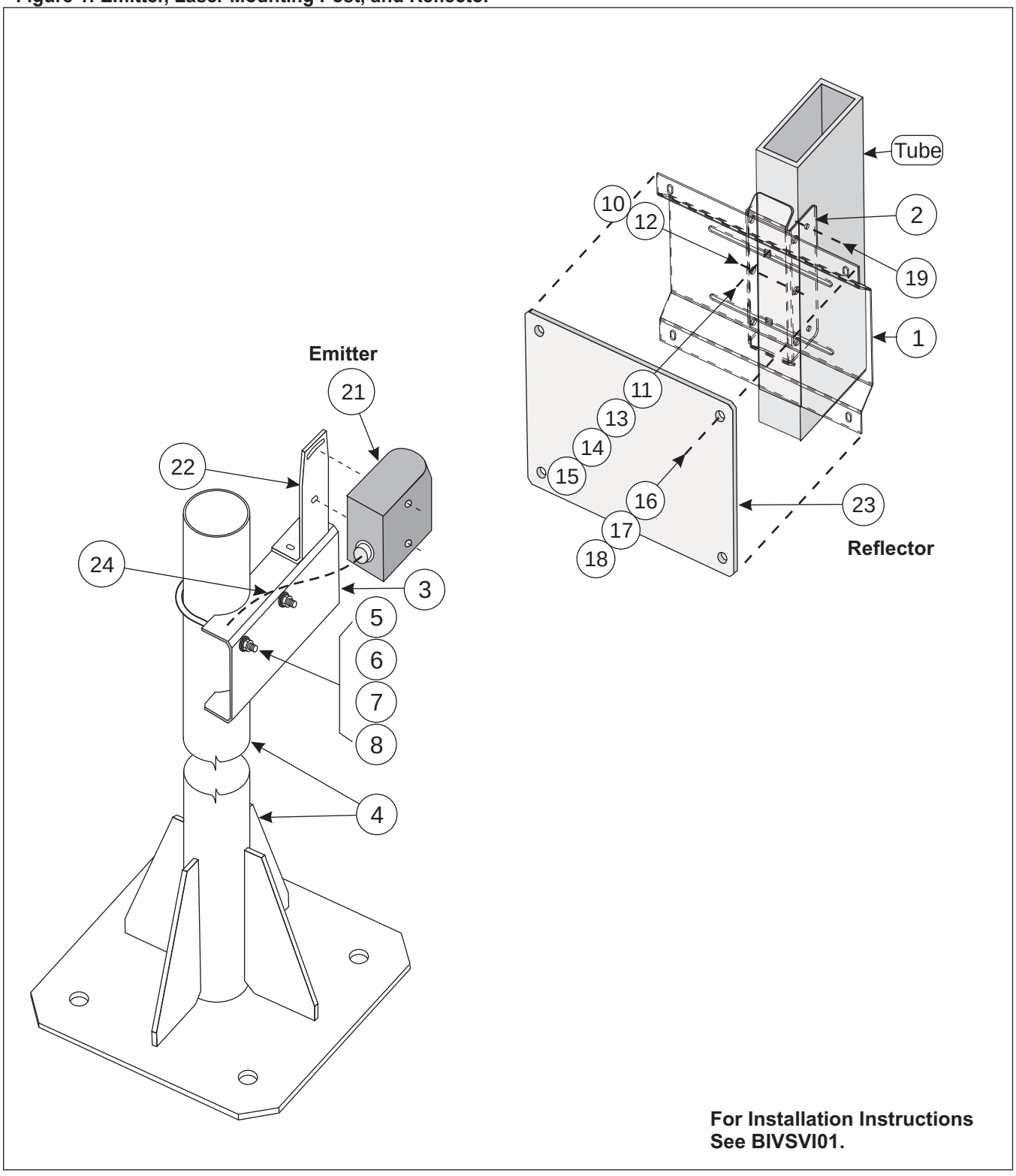
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC50074	FESTOON PULLING ASSEMBLY	
			----------COMPONENTS----------	
all	1	04 22317	FESTOON ARM MTG RAIL	
all	2	15K085	HEXCAPSCR 3/8-16UNC2AX3/4 GR5	
all	3	15U266	FLATWASHER 1"0DX7/16"IDX3/16"	
all	4	15A012	CARBOLT 3/8-16UNC2AX1+1/4 ZNC	
all	5	15G198	HXFLGNUT 3/8-16 ZINC	
all	6	04 24156	TOW BAR BRKT FOR TUBING RAILS	
all	7	04 22409	SHUTL FESTOON MTG BRKT	
all	8	15A021	CARRBOLT 3/8-16 X1.5 ZNC GR 5	
all	9	15U246	FLATWASHER 1"ODX25/64IDX1/8"30	
all	10	04 22410	FESTOON PULL CHANNEL	
all	11	04 20750	PAD=FESTOON CABLE CLAMP	
all	12	04 20750B	CHANNEL=PAD CLAMP FESTOON	
all	13	15A009	CARBOLT 5/16-18NC2X3.5 FULTHD	
all	14	15G193	HEXLOKNUT 5/16-18UNC2A NYL STL	
all	15	X4 24297	FESTOON TOW BAR-TAP	
all	16	04 24298	FESTOON TOW BAR EXTENSION	

Laser Target

COSHM111/112, COSHP111/112, COSHQ111/112

Figure 1: Emitter, Laser Mounting Post, and Reflector



For Installation Instructions See BIVSVI01.

Laser Target

COSHM111/112, COSHP111/112, COSHQ111/112

Parts List

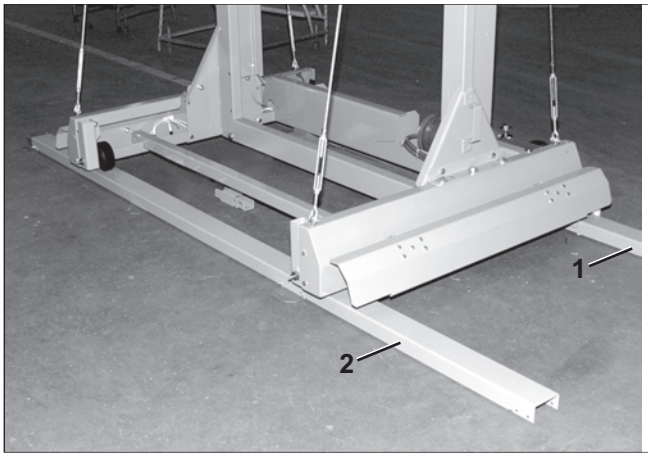
Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

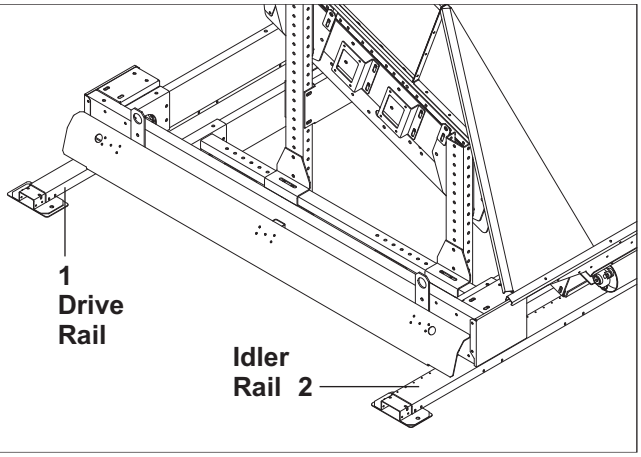
Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
	A	ALC420223	SHUTTLE LASER TARGETING ASSY	
			----------COMPONENTS----------	
all	1	04 24176	LASER TARGET FRAME	
all	2	04 24177	LASER TARGET TUBE RAIL MTG	
all	3	04 24146	LASER MTG CHANNEL	
all	4	W4 24180	LASER MOUNTING POST WLMT	
all	5	27A035C	U-BOLT 3/8-16X5.36 #0127316	
all	6	15U246	FLATWASHER 1"ODX25/64IDX1/8"30	
all	7	15U255	LOCKWASHER MEDIUM 3/8 ZINCPL	
all	8	15G205	HXNUT 3/8-16UNC2B ZINC GR2	
all	10	15A002A	CARBOLT 1/4-20UNC2X3/4 ZINC GR	
all	11	15K046	HXCAPSCR 1/4-20 UNC2A X 2"GR5	
all	12	17N058	HEXRIVNUT 1/4-20 UNC-2B #2520-	
all	13	15U185	FLATWASHER(USS STD) 1/4" ZNC P	
all	14	15U180	LOCKWASHER MEDIUM 1/4 ZINCPL	
all	15	15G178	1/4"-20 HEXFLANGE NUT ZINC	
all	16	15N125	RDMACSCR 10-24UNC2AX1/2 ZC GR2	
all	17	15U135	FLATWASH#10 .4370DX.203IDX.04T	
all	18	15G126SZ	HXLOCKNUT 10-24 UNC STL/ZNC	
all	19	15P011	TRDCUT-F PANHD 10-24X1/2 NIKST	
all	21	09RLE0001	LIGHT GAGE LONG RANGE TIME-OF-FLIGHT LASER SENSOR	
all	22	09RLE0001C	QUICK DISCONNECT CABLE 30'	
all	23	09RLE0001R	50 METER RETRO REFLECTOR	
all	24	09RLE0001B	MOUNTING BRACKET	

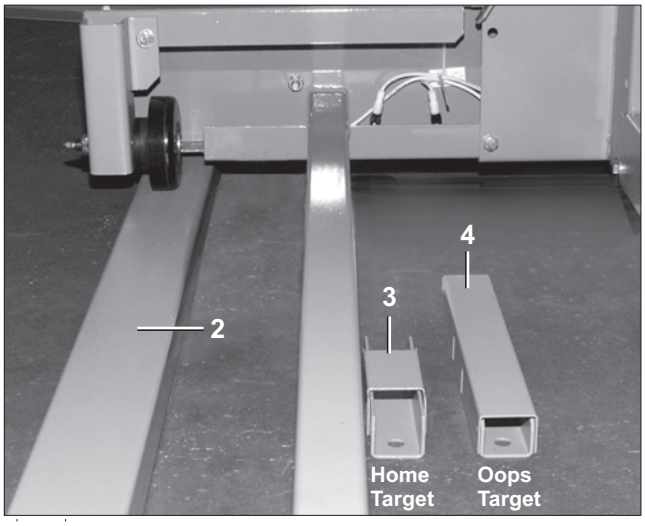
Rail Components

All Translating Cart Shuttles

Figure 1: Bottom Rail



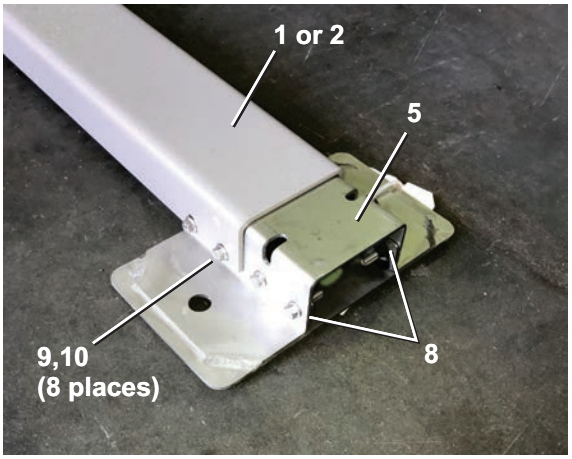


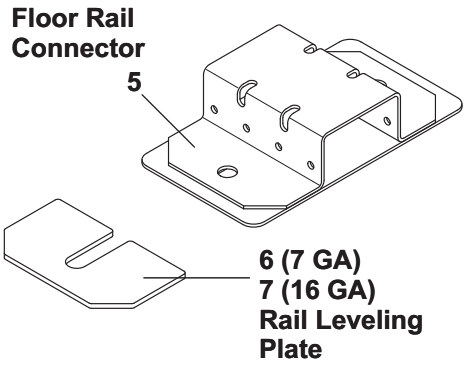


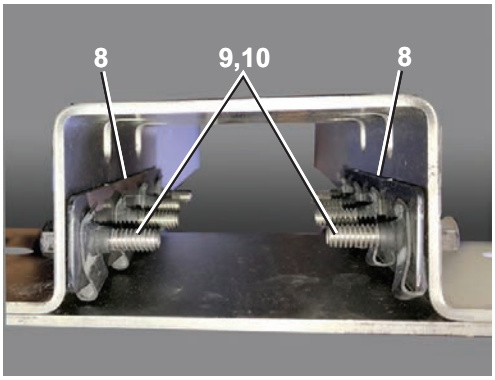
Rail Components

All Translating Cart Shuttles

Figure 2: Bottom Rail Connectors







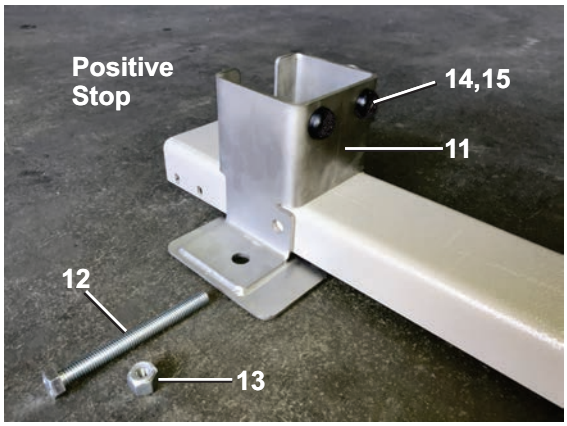
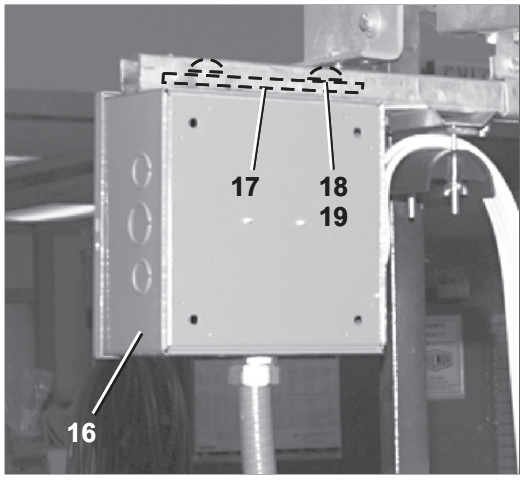
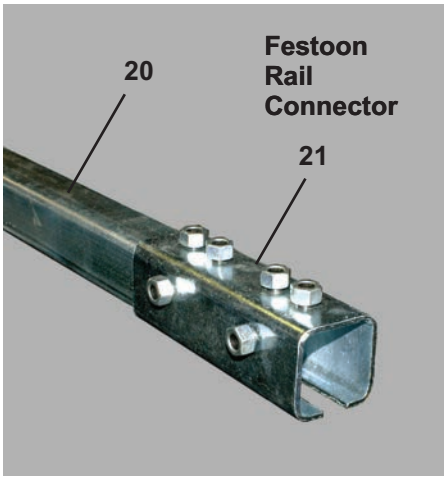


Figure 3: Festoon Rail Components



Festoon Rail Electric Box

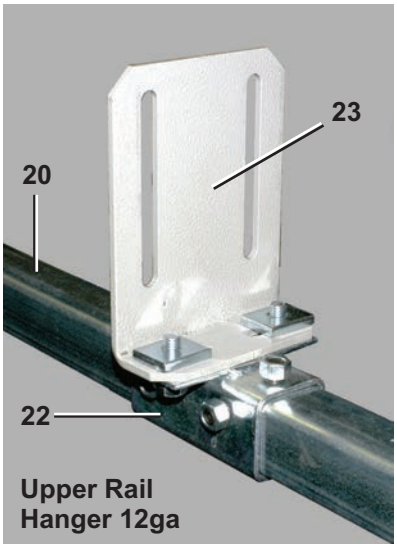


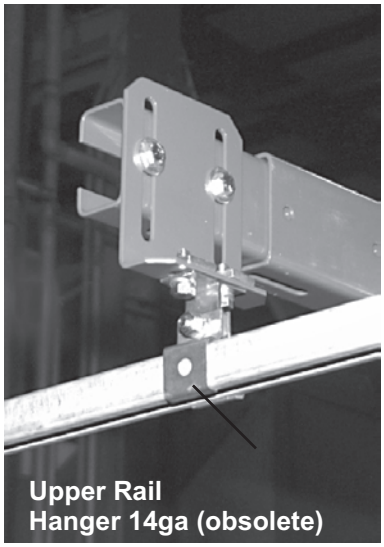
Festoon Rail

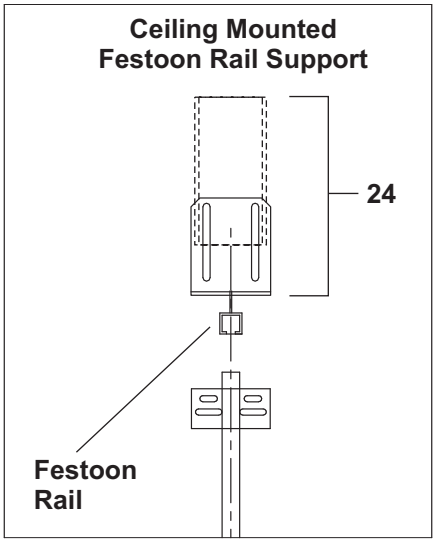
Rail Components

All Translating Cart Shuttles

Figure 4: Festoon Rail Hanging Brackets



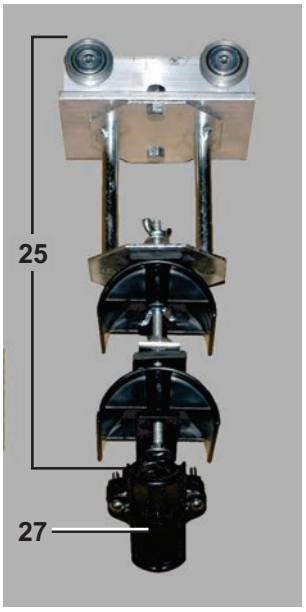




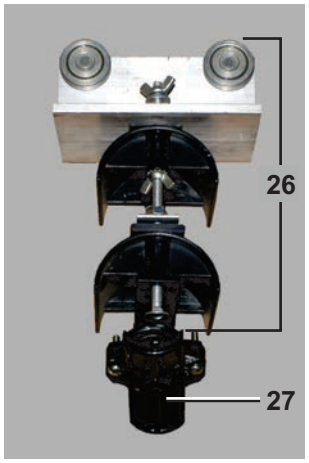
Festoon Rail Supports

Figure 5: Festoon Cars

Festoon Tow Car, no air **Festoon Car no air**



Festoon Tow Car, with air



Festoon Car with Air

Rail Components

All Translating Cart Shuttles

Parts List

Find the correct assembly first, then find the needed components. The item letters (A, B, C, etc.) assigned to assemblies are referred to in the "Used In" column to identify which components belong to an assembly. The item numbers (1, 2, 3, etc.) assigned to components relate the parts list to the illustration.

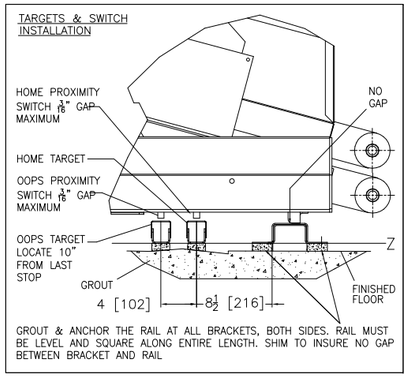
Used In	Item	Part Number	Description	Comments
			----------ASSEMBLIES----------	
			----------COMPONENTS----------	
all	1	04 20712A	GUIDE RAIL 2WD CART=10FT	DRIVE RAIL 4”
all	2	04 20712	TARGET RAIL 2-DRV CART=10FT	IDLER RAIL 5.12”
all	3	ALC420106	HOME TARGET FLOOR MTG ASSY	
all	4	ALC420107	OOPS TARGET FLOOR MTG ASSY	
all	5	W4 23487	RAIL SUPP WLMT-CARTDR SHUTL	
all	6	04 21664B	RAIL LEVELING PLATE=7GA	
all	7	04 21664C	RAIL LEVELING PLATE=16GA	
all	8	04 20245	USHORT NUT HOLDER STRIP	
all	9	15K038D	1/4-20X 1" HEXFLANGE SCRW SS	
all	10	15G004HD	1/4-20 USHORT NUT P/R .025-.15	
all	11	W4 24641	SHTLRAIL END SUPPORT WLMT	
all	12	15K203D	HEXCAPSCR 1/2-13X5.5 GR5 ZINC	
all	13	15G234N	HXLOCKNUT NYL 1/2-13UNC2 STL/Z	
all	14	60C001	RUBBER BUMPER-BLKW/WASHER #698	
all	15	15P010	TRDCUT PHILPANHDSCR 10-24X1/2S	
all	16	ALC420015A	FESTOON RAIL ELEC BOX ASSY	
all	17	04 22847B	FIXED FESTOON MTG FLATBAR	
all	18	15A011	CARBOLT 3/8-16UNC2X1 ZINC GR2	
all	19	15G198	HXFLGNUT 3/8-16 ZINC	
all	20	27A765	12GA FESTOON PARA-TRACK	
all	21	27A765A	12GA PARA-TRACK JOINT CLAMP	
all	22	27A765B	TRACK HANGER CLAMP ASSY	
all	23	ALC420070B	UPPER RAIL HANGER ASSY 3.8T	
all	24	ALC420070C	UPPER RAIL CEILING SUPP-3.8T	
all	25	27A768	12GA FESTOON TOW TROLLEY/2SADDLES	
all	26	27A767	12GA FESTOON TROLLEY/2 SADDLES	
all	27	27A756B	SWIVEL ADP. FOR HOSE 1.25"DIA	

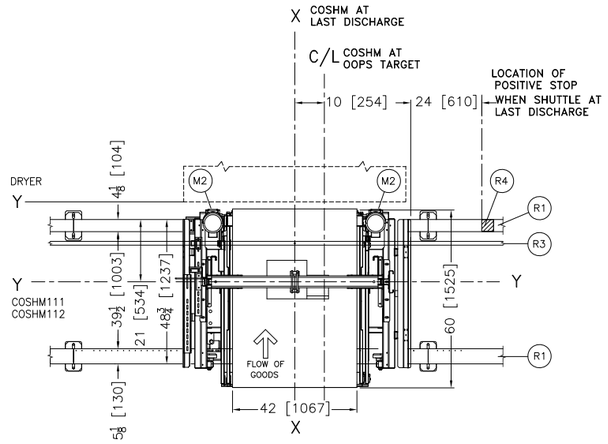
Dimensional Drawings

4

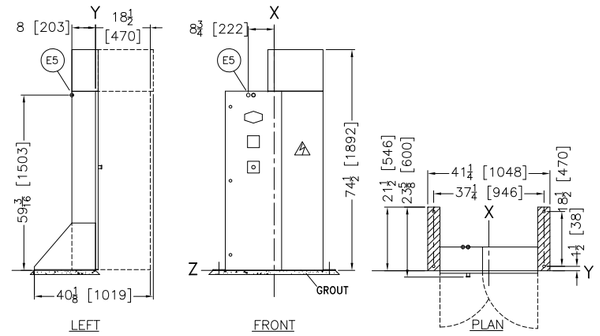
WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5880,8282		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE RAIL EXTENDER COSHM111/112		RESULTING COSHM111/112 DIMENSIONS						DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880,8282 LOAD HEIGHT	
												DIMENSION "A"		DIMENSION "B"		DIMENSION "C"													
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0	48	1219	141 1/2	3594	116	2946	63	1600	57	1449	57 1/2	1460			58 1/2	1486			59	1499
–	–	–	–	–	–	−7	−178	3 1/2	89	51 1/2	1308	145	3683	119 1/2	3035	66 1/2	1689	60 1/2	1537	61	1549			62	1575			62 1/2	1588
–	–	–	–	−7	−178	0	0	10 1/2	267	58 1/2	1486	152	3861	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	62	1575	155 1/2	3950	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
–	–	3 1/2	89	0	0	7	178	17 1/2	445	65 1/2	1664	159	4039	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
0	0	7	178	3 1/2	89	10 1/2	267	21	533	69	1753	162 1/2	4128	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	72 1/2	1842	166	4216	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	79 1/2	2019	173	4394	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	86 1/2	2197	180	4572	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	90	2286	183 1/2	4661	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE



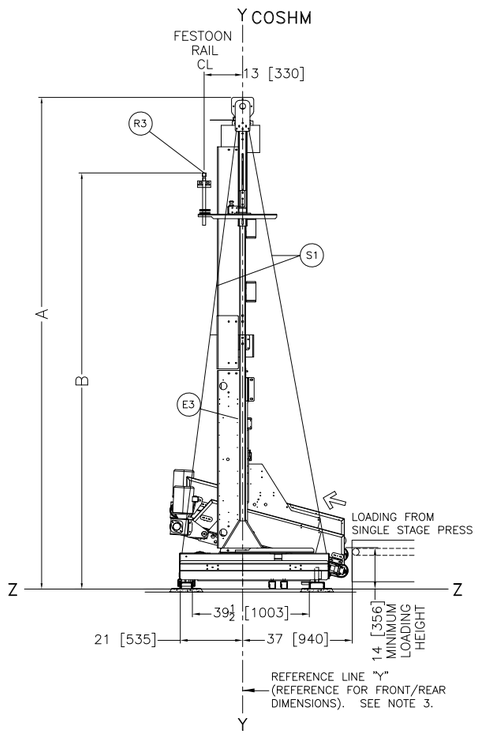


PLAN VIEW

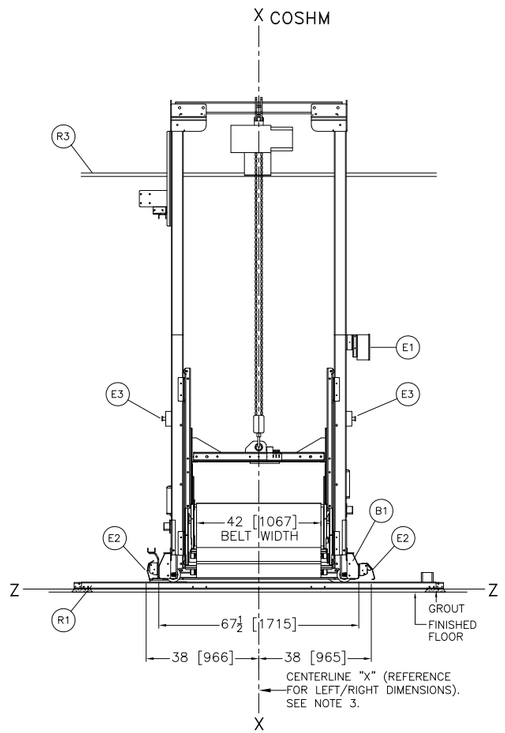


REMOTE MOUNT SHUTTLE CONTROL BOX

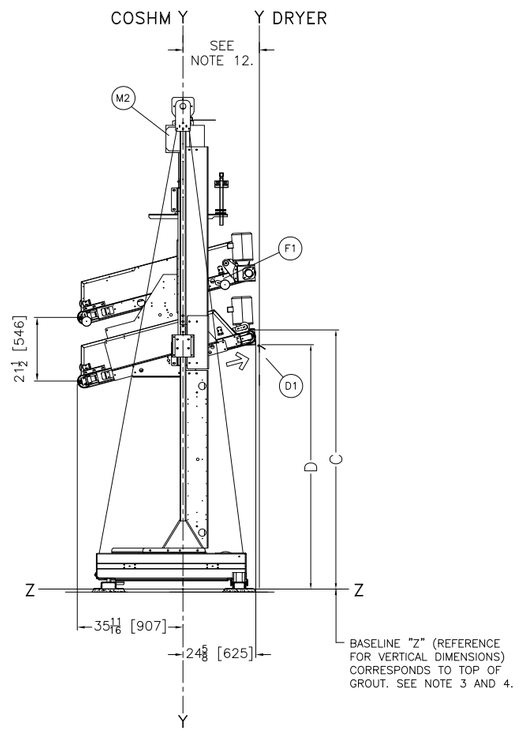
SEE NOTE 10.



LEFT VIEW



FRONT VIEW



RIGHT VIEW

ITEM	LEGEND
S1	TIE RODS, SUPPLIED ONLY FOR SHUTTLES WITH 48"
	[1624] EXTENDERS OR LONGER.
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR AND WINCH.
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR
	REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	DRYER LOAD SHELF
B1	CART FRAME WELDMENT
@	PRECEDES OBSOLETE MODELS SHOWN FOR REFERENCE ONLY

NOTES

12 FOR THE DIMENSION FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

11 THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT. THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

10 CONTROLS FOR THE COSHM SHUTTLE ARE CONTAINED IN THIS REMOTELY MOUNTED SHUTTLE CONTROL BOX WHICH MUST BE PLACED IN THE EQUIPMENT LAYOUT.

9 DIMENSION VARIES WITH HEIGHT OF EXTENDERS WHEN ADDED.

8 EMERGENCY STOPS ARE REQUIRED ON BOTH LEFT AND RIGHT SIDES OF THE SHUTTLE. A THIRD EMERGENCY STOPS IS INSTALLED INTO THE DOOR OF THE REMOTE SHUTTLE CONTROL BOX.

7 AFTER MACHINE HAS BEEN COMMISSIONED, BELT MAY STRETCH SLIGHTLY REQUIRING ADJUSTMENT OF BELT ROLLERS AND SLIGHT LENGTHENING OF CONVEYOR.

6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

2 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE-PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE CONSULTED FOR DIMENSIONS IF MACHINE IS TO BE MOVED THROUGH NARROW OR LOW CORRIDORS OR OPENINGS.

ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

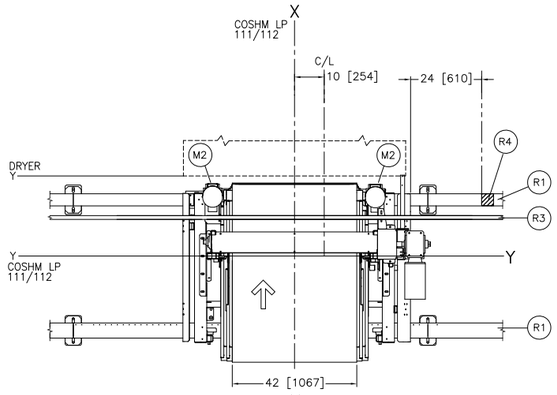
COSHM 111/112 (68K Cakes)

DM 0 0.5M
INCHES 0 12 24
DWG# BDCOSHM2EE 2023313D

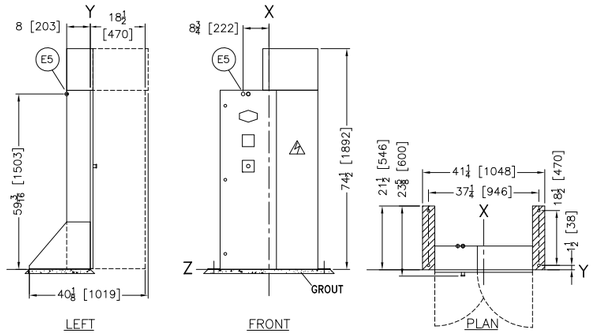
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @58080TG1/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858TG2/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE COSHM111/112 LP RAIL EXTENDER				RESULTING COSHM111/112 LP DIMENSIONS								DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880 LOAD HEIGHT		DIMENSION "E"			
										INCLINED BEDS		HORIZONTAL BEDS		DIMENSION "A" INCLINED BEDS		DIMENSION "A" HORIZONTAL BEDS		DIMENSION "B"		DIMENSION "C"														COSHM111 LP INCLINED BEDS		COSHM112 LP INCLINED BEDS	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0													57	1449	57 1/2	1460			58 1/2	1486			59	1499	13 1/2	343	24	610
–	–	–	–	–	–	−7	−178	3 1/2	89													60 1/2	1537	61	1549			62	1575			62 1/2	1588				
–	–	–	–	−7	−178	0	0	10 1/2	267	23 1/2	597	30 1/2	775	132 1/2	3366	139 1/2	3543	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765	HORIZONTAL BEDS		HORIZONTAL BEDS	
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	27	686	34	864	136	3454	143	3632	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854	INCHES	mm	INCHES	mm
–	–	3 1/2	89	0	0	7	178	17 1/2	445	30 1/2	775	37 1/2	953	139 1/2	3543	146 1/2	3721	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943	28 1/2	724	39	991
0	0	7	178	3 1/2	89	10 1/2	267	21	533	34	864	41	1041	143	3632	150	3810	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032				
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	37 1/2	953	44 1/2	1130	146 1/2	3721	153 1/2	3899	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121				
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	44 1/2	1130	51 1/2	1308	153 1/2	3899	160 1/2	4077	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299				
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	51 1/2	1308	58 1/2	1486	160 1/2	4077	167 1/2	4255	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477				
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	55	1397	62	1575	164	4166	171	4343	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565				

@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE

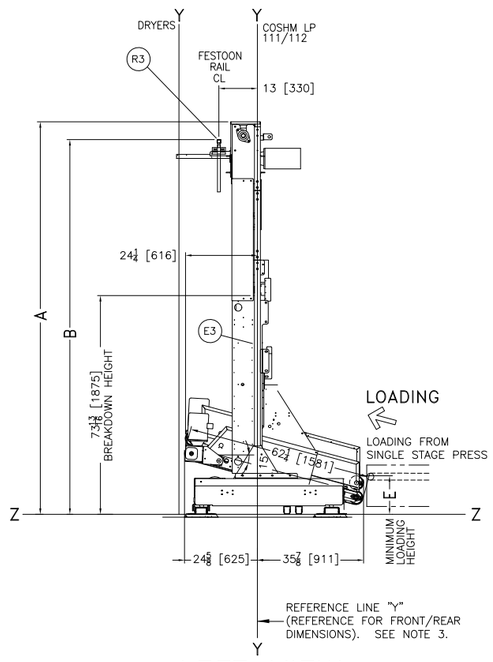


PLAN VIEW

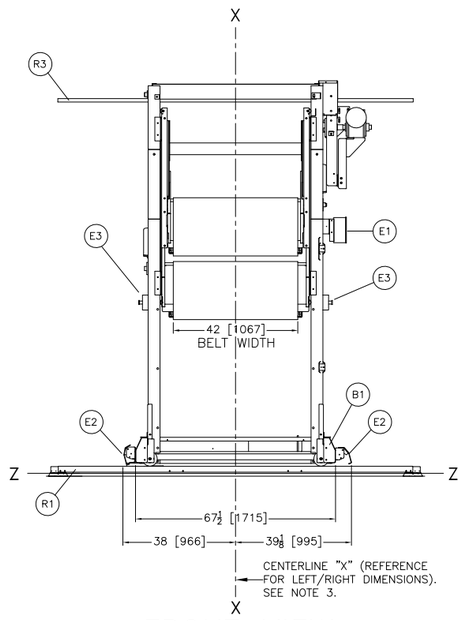


REMOTE MOUNT SHUTTLE CONTROL BOX

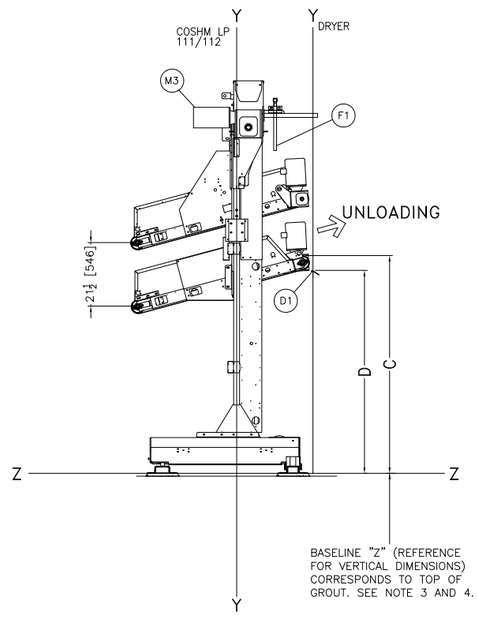
SEE NOTE 11.



LEFT VIEW



FRONT VIEW



RIGHT VIEW

ITEM	LEGEND
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF
B1	CART FRAME WELDMENT

NOTES

13 FOR THE DIMENSION FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

12 * THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT, THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

11 CONTROLS FOR THE COSHM SHUTTLE ARE CONTAINED IN THIS REMOTELY MOUNTED SHUTTLE CONTROL BOX WHICH MUST BE PLACED IN THE EQUIPMENT LAYOUT.

10 DIMENSION VARIES WITH HEIGHT OF EXTENDERS WHEN ADDED.

8 EMERGENCY STOPS ARE REQUIRED ON BOTH LEFT AND RIGHT SIDES OF THE SHUTTLE. A THIRD EMERGENCY STOPS IS INSTALLED INTO THE DOOR OF THE REMOTE SHUTTLE CONTROL BOX.

7 AFTER MACHINE HAS BEEN COMMISSIONED, BELT MAY STRETCH SLIGHTLY REQUIRING ADJUSTMENT OF BELT ROLLERS AND SLIGHT LENGTHENING OF CONVEYOR.

6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

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ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

COSHM111/112 LP Double Chain (68K Cakes)

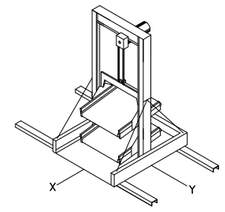
DM 0 0,5M
INCHES 0 12 24

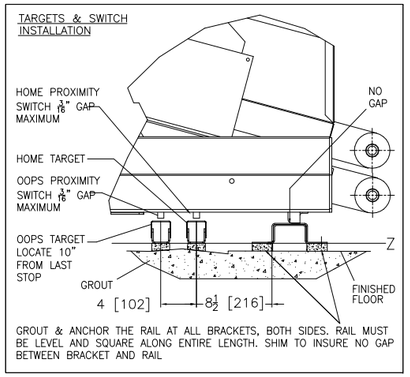
DWG# BDCOSHM2EB 2022204D

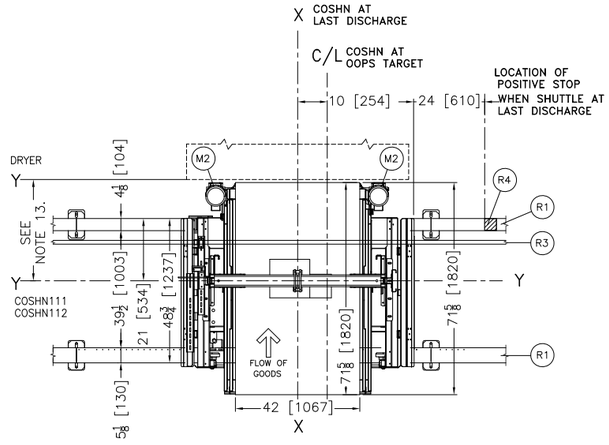
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5880,8282		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE RAIL EXTENDER COSHN111/112		RESULTING COSHN111/112 DIMENSIONS						DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880,8282 LOAD HEIGHT	
												DIMENSION "A"		DIMENSION "B"		DIMENSION "C"													
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0	48	1219	141 1/2	3594	116	2946	63	1600	57	1449	57 1/2	1460			58 1/2	1486			59	1499
–	–	–	–	–	–	−7	−178	3 1/2	89	51 1/2	1308	145	3683	119 1/2	3035	66 1/2	1689	60 1/2	1537	61	1549			62	1575			62 1/2	1588
–	–	–	–	−7	−178	0	0	10 1/2	267	58 1/2	1486	152	3861	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	62	1575	155 1/2	3950	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
–	–	3 1/2	89	0	0	7	178	17 1/2	445	65 1/2	1664	159	4039	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
0	0	7	178	3 1/2	89	10 1/2	267	21	533	69	1753	162 1/2	4128	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	72 1/2	1842	166	4216	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	79 1/2	2019	173	4394	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	86 1/2	2197	180	4572	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	90	2286	183 1/2	4661	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

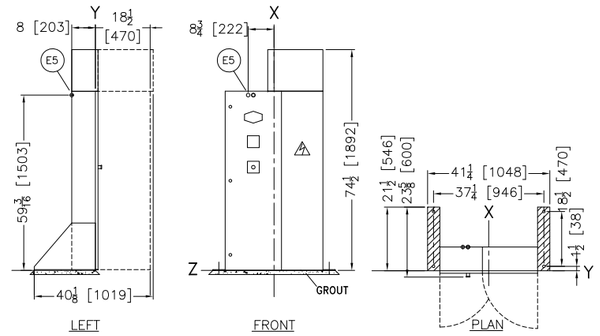
@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE







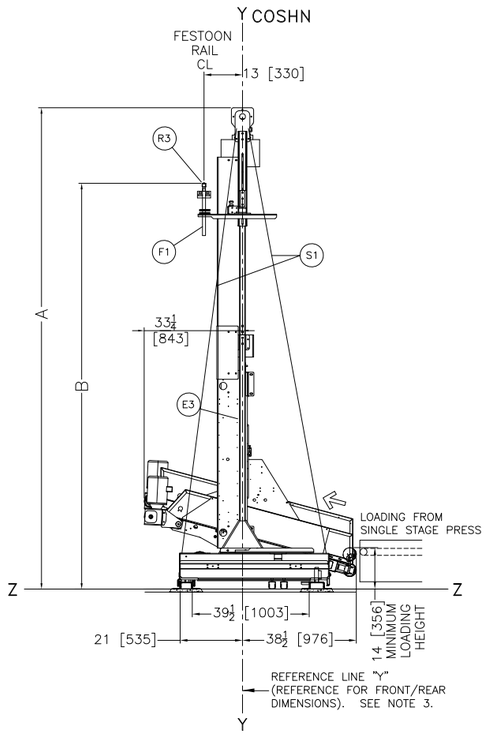
PLAN VIEW



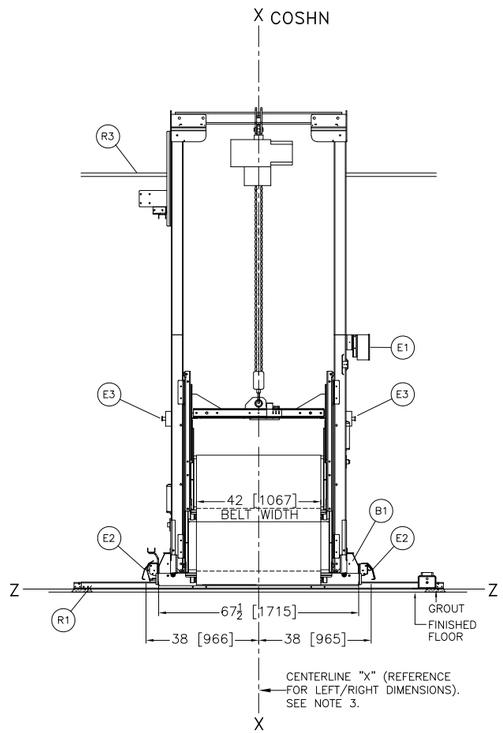
REMOTE MOUNT SHUTTLE CONTROL BOX

SEE NOTE 11.

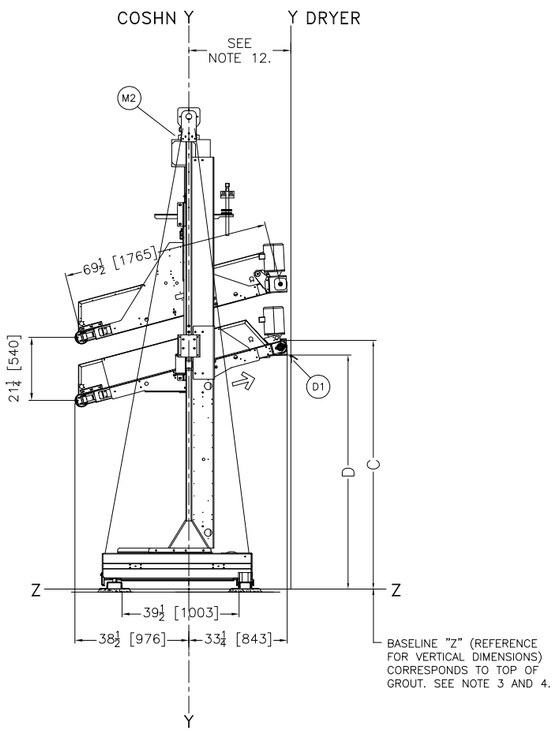
S1	TIE RODS, SUPPLIED ONLY FOR SHUTTLES WITH 48"
	[1624] EXTENDERS OR LONGER.
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR AND WINCH.
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR
	REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF, 5840/58/80
B1	CART FRAME WELDMENT
@	PRECEDES OBSOLETE MODELS SHOWN FOR REFERENCE ONLY
ITEM	LEGEND



LEFT VIEW



FRONT VIEW



RIGHT VIEW

NOTES

12 FOR THE DIMENSION FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

11 THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT, THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

10 CONTROLS FOR THE COSHM SHUTTLE ARE CONTAINED IN THIS REMOTELY MOUNTED SHUTTLE CONTROL BOX WHICH MUST BE PLACED IN THE EQUIPMENT LAYOUT.

9 DIMENSION VARIES WITH HEIGHT OF EXTENDERS WHEN ADDED.

8 EMERGENCY STOPS ARE REQUIRED ON BOTH LEFT AND RIGHT SIDES OF THE SHUTTLE. A THIRD EMERGENCY STOPS IS INSTALLED INTO THE DOOR OF THE REMOTE SHUTTLE CONTROL BOX.

7 AFTER MACHINE HAS BEEN COMMISSIONED, BELT MAY STRETCH SLIGHTLY REQUIRING ADJUSTMENT OF BELT ROLLERS AND SLIGHT LENGTHENING OF CONVEYOR.

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36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

2 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE-PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE CONSULTED FOR DIMENSIONS IF MACHINE IS TO BE MOVED THROUGH NARROW OR LOW CORRIDORS OR OPENINGS.

ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

COSHN111/112 (68K Cakes)

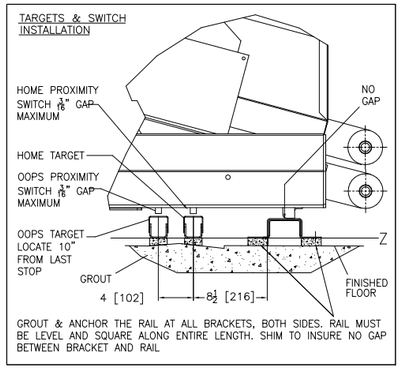
DM 0 0.5M
INCHES 0 12 24

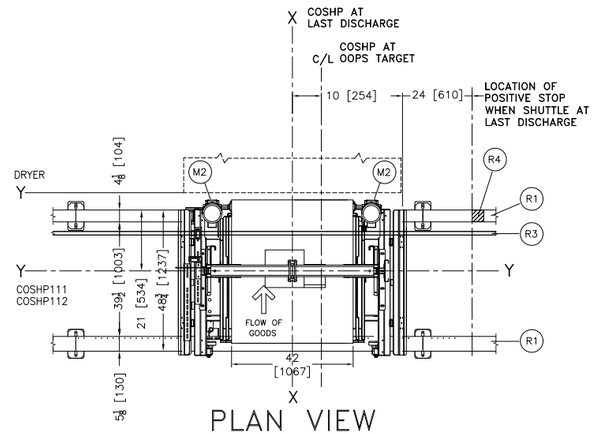
DWG# BDCOSHN2AE 2023283D

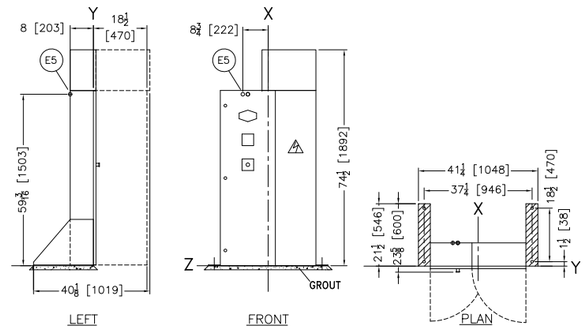
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5880,8282		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE RAIL EXTENDER COSHP111/112		RESULTING COSHP111/112 DIMENSIONS						DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880,8282 LOAD HEIGHT	
												DIMENSION "A"		DIMENSION "B"		DIMENSION "C"													
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0	48	1219	141 1/2	3594	116	2946	63	1600	57	1449	57 1/2	1460			58 1/2	1486			59	1499
–	–	–	–	–	–	−7	−178	3 1/2	89	51 1/2	1308	145	3683	119 1/2	3035	66 1/2	1689	60 1/2	1537	61	1549			62	1575			62 1/2	1588
–	–	–	–	−7	−178	0	0	10 1/2	267	58 1/2	1486	152	3861	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	62	1575	155 1/2	3950	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
–	–	3 1/2	89	0	0	7	178	17 1/2	445	65 1/2	1664	159	4039	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
0	0	7	178	3 1/2	89	10 1/2	267	21	533	69	1753	162 1/2	4128	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	72 1/2	1842	166	4216	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	79 1/2	2019	173	4394	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	86 1/2	2197	180	4572	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	90	2286	183 1/2	4661	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

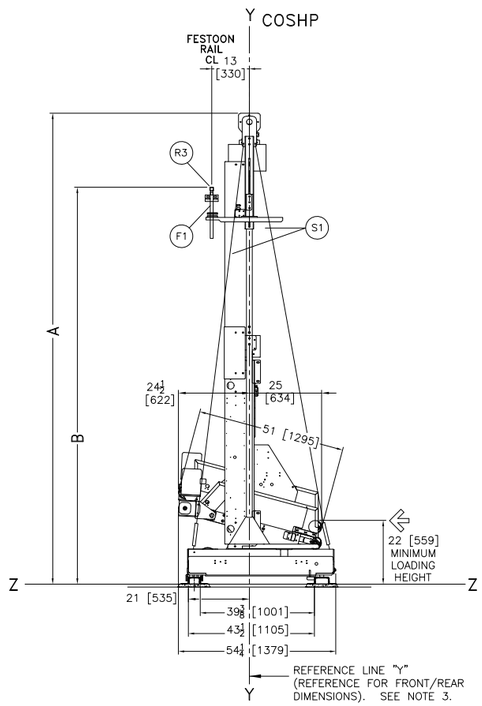
@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE

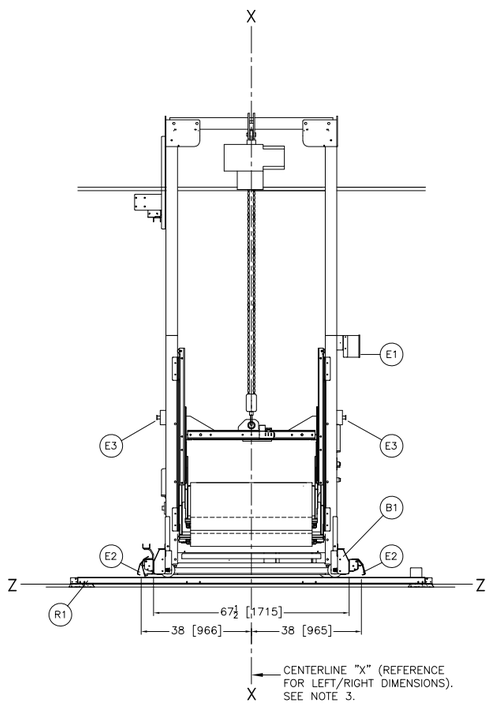


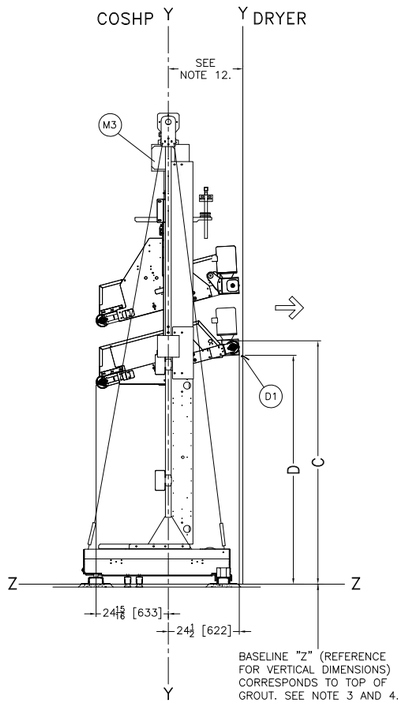




S1	TIE RODS, SUPPLIED ONLY FOR SHUTTLES WITH 60"
	[1624] EXTENDERS OR LONGER.
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR AND WINCH.
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR
	REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF
B1	CART FRAME WELDMENT
@	PRECEDES OBSOLETE MODELS FOR REFERENCE ONLY
ITEM	LEGEND







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10 DIMENSION VARIES WITH HEIGHT OF EXTENDERS WHEN ADDED.

9 IF DRYER HAS LOAD ROLLER-BELT END ROLLER MUST BE 1 [25] ABOVE DRYER ROLLER WHEN CAKE IS DISCHARGED INTO THE DRYER. IF BELT IS SET TOO LOW, THE DRYER ROLLER WILL LIFT THE CAKE, CAUSING IT TO BREAK UP AND SOME PIECES MAY DROP ON THE FLOOR.

8 EMERGENCY STOPS ARE REQUIRED ON BOTH LEFT AND RIGHT SIDES OF THE SHUTTLE. A THIRD EMERGENCY STOP IS INSTALLED INTO THE DOOR OF THE REMOTE SHUTTLE CONTROL BOX.

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COSHP 111/112 (50K Cakes)

DM 0 0.5M
INCHES 0 12 24

DWG# BDCOSHP2CE 2023313D

PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

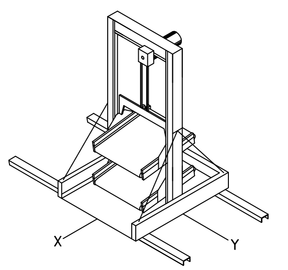
WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @58080TG1/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858TG2/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE COSHP2LP RAIL EXTENDER INCLINED BEDS		HORIZONTAL BEDS	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0				
–	–	–	–	–	–	−7	−178	3 1/2	89				
–	–	–	–	−7	−178	0	0	10 1/2	267	23 1/2	597	30 1/2	775
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	27	686	34	864
–	–	3 1/2	89	0	0	7	178	17 1/2	445	30 1/2	775	37 1/2	953
0	0	7	178	3 1/2	89	10 1/2	267	21	533	34	864	41	1041
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	37 1/2	953	44 1/2	1130
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	44 1/2	1130	51 1/2	1308
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	51 1/2	1308	58 1/2	1486
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	55	1397	62	1575

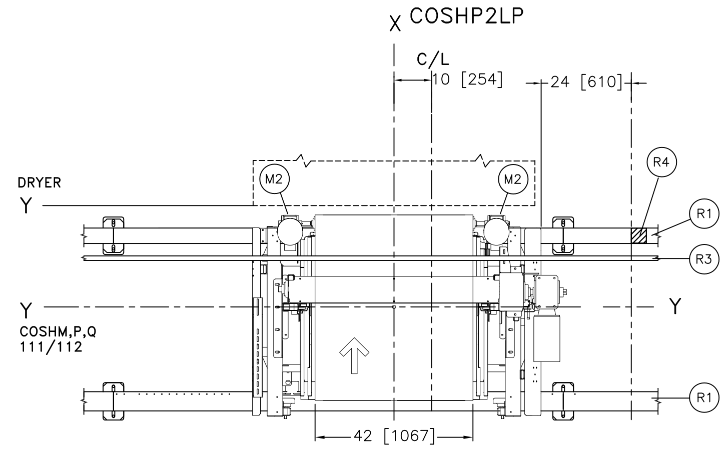
RESULTING COSHP2LP DIMENSIONS: DIMENSION "A" INCLINED BEDS		DIMENSION "A" HORIZONTAL BEDS		DIMENSION "B"		DIMENSION "C"	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
132 1/2	3366	139 1/2	3543	126 1/2	3213	73 1/2	1867
136	3454	143	3632	130	3302	77	1956
139 1/2	3543	146 1/2	3721	133 1/2	3391	80 1/2	2045
143	3632	150	3810	137	3480	84	2134
146 1/2	3721	153 1/2	3899	140 1/2	3569	87 1/2	2222
153 1/2	3899	160 1/2	4077	147 1/2	3747	94 1/2	2400
160 1/2	4077	167 1/2	4255	154 1/2	3924	101 1/2	2578
164	4166	171	4343	158	4013	105	2667

DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880 LOAD HEIGHT	
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
57	1449	57 1/2	1460			58 1/2	1486			59	1499
60 1/2	1537	61	1549			62	1575			62 1/2	1588
67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

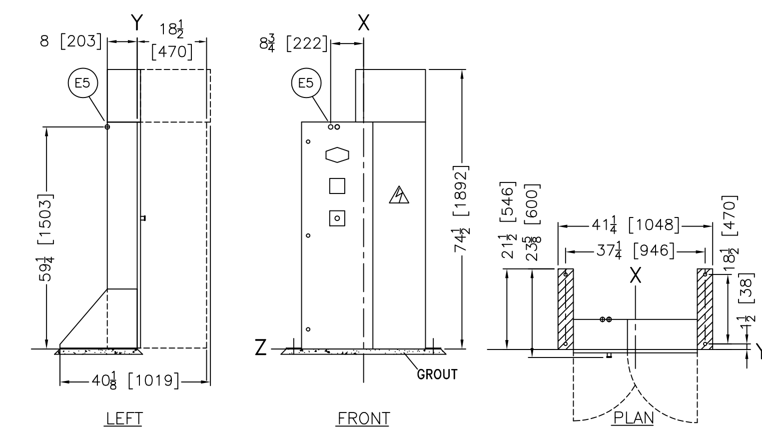
DIMENSION "E"	
INCLINED BEDS	
INCHES	mm
22	559
HORIZONTAL BEDS	
INCHES	mm
34	864

@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE





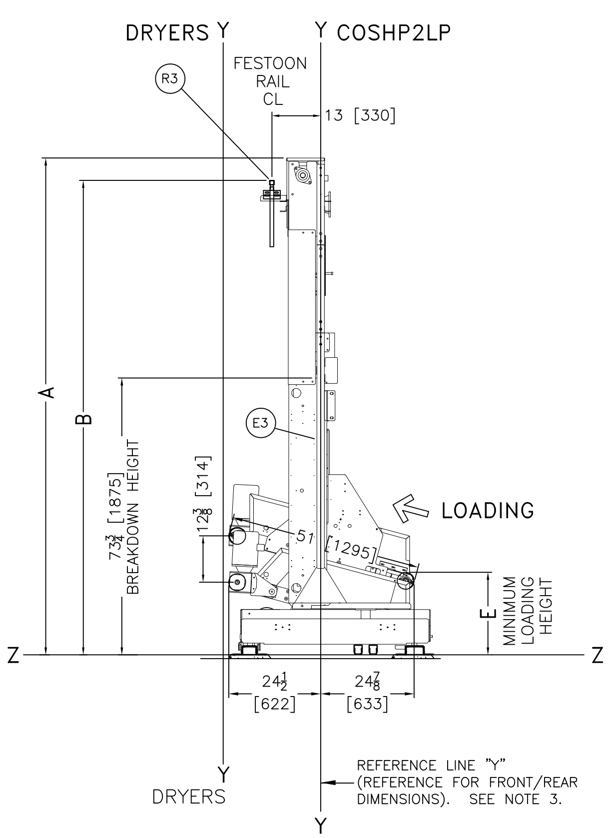
PLAN VIEW



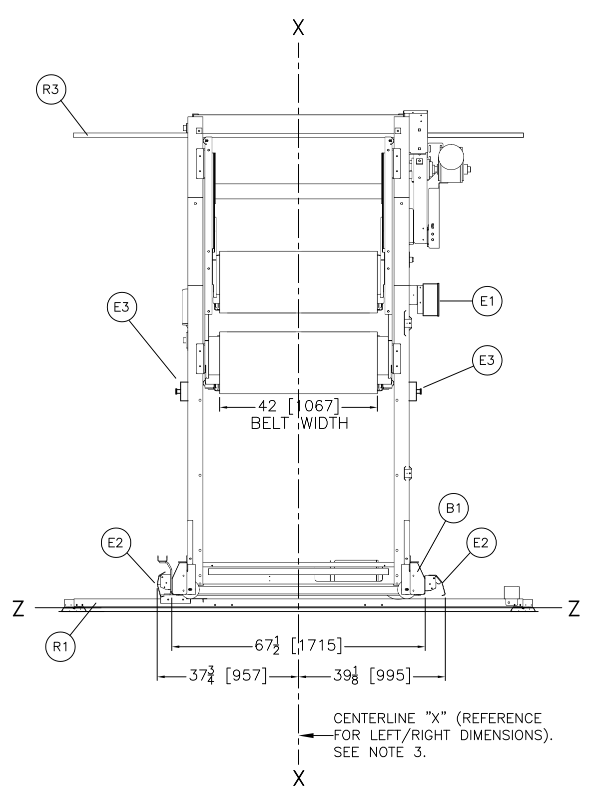
REMOTE MOUNT SHUTTLE CONTROL BOX

SEE NOTE 11.

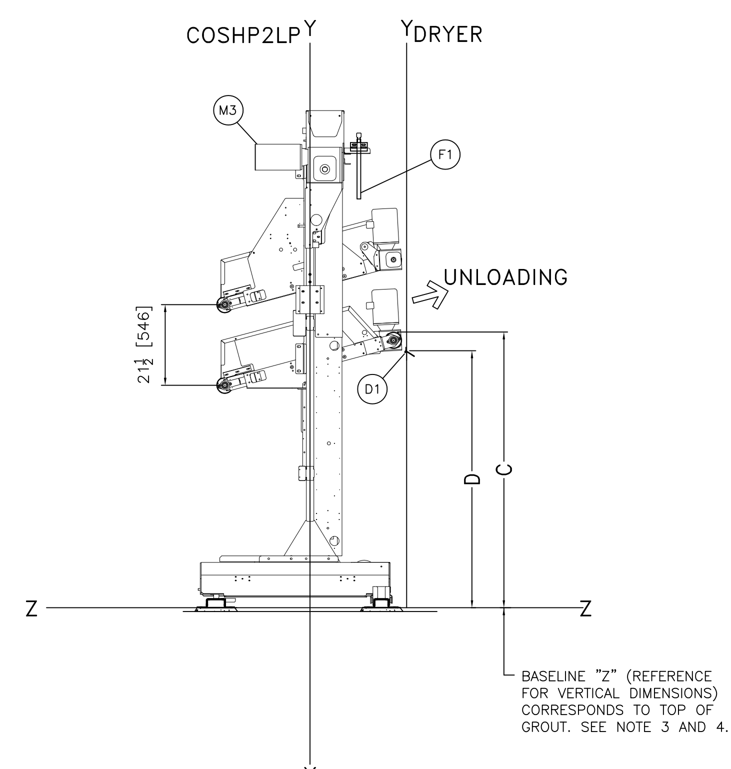
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF
B1	CART FRAME WELDMENT
ITEM	LEGEND



LEFT VIEW



FRONT VIEW



RIGHT VIEW

NOTES

14 FOR THE DIMENSION FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

13 * THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT, THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

12 ** THE 6458 DRYER LOAD HEIGHT AT "ZERO PEDESTAL" IS 65 11/16"[1668] FROM BASELINE "Z". THE CHART ABOVE SHOWS THE DIMENSION ROUNDED OFF TO 66"[1676] TO MATCH THE AVAILABLE SHUTTLE SIDE RAIL EXTENDERS.

11 CONTROLS FOR THE COSHP SHUTTLE ARE CONTAINED IN THIS REMOTELY MOUNTED SHUTTLE CONTROL BOX WHICH MUST BE PLACED IN THE EQUIPMENT LAYOUT.

10 DIMENSION VARIES WITH HEIGHT OF EXTENDERS WHEN ADDED.

9 IF DRYER HAS LOAD ROLLER—BELT END ROLLER MUST BE 1 [25] ABOVE DRYER ROLLER WHEN CAKE IS DISCHARGED INTO THE DRYER. IF BELT IS SET TOO LOW, THE DRYER ROLLER WILL LIFT THE CAKE, CAUSING IT TO BREAK UP AND SOME PIECES MAY DROP ON THE FLOOR.

8 EMERGENCY STOPS ARE REQUIRED ON BOTH LEFT AND RIGHT SIDES OF THE SHUTTLE. A THIRD EMERGENCY STOP IS INSTALLED INTO THE DOOR OF THE REMOTE SHUTTLE CONTROL BOX.

7 AFTER MACHINE HAS BEEN COMMISSIONED, BELT MAY STRETCH SLIGHTLY REQUIRING ADJUSTMENT OF BELT ROLLERS AND SLIGHT LENGTHENING OF CONVEYOR.

6 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1219] IF OBJECT IS ANY LIVE PART.
CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE SAME FOR ALL MILNOR MACHINES AND IS SHOWN ON ALL DIMENSIONAL DRAWINGS. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR MAY VARY (WITH CHANGES IN FLOOR HEIGHT) AS REQUIRED TO INSURE THAT BASELINE "Z" IS HORIZONTAL AND ALL COMPONENTS REQUIRING GROUT ARE SET ON A MINIMUM 1" [25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

2 NUMBERS IN BRACKETS [] DENOTE DIMENSIONS IN MILLIMETERS.

1 ALL DIMENSIONS SHOWN ARE APPROXIMATE, SUBJECT TO NORMAL MANUFACTURING TOLERANCES, AND TO OCCASIONAL CHANGES WITHOUT NOTICE THROUGH REDESIGN AND/OR RELOCATION OF COMPONENTS, ETC. DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED, AND IN NO EVENT PRE—PIPE CLOSER THAN FIVE FEET FROM MACHINE. FACTORY MUST BE CONSULTED FOR DIMENSIONS IF MACHINE IS TO BE MOVED THROUGH NARROW OR LOW CORRIDORS OR OPENINGS.

ATTENTION

MOST REGULATORY AUTHORITIES (INCLUDING OSHA IN THE USA) HOLD THE OWNER/USER ULTIMATELY RESPONSIBLE TO MAINTAIN A SAFE WORKING ENVIRONMENT. ACCORDINGLY, THE OWNER/USER MUST RECOGNIZE ALL FORESEEABLE SAFETY HAZARDS, FURNISH SAFETY INSTRUCTIONS AND GUIDANCE TO ALL PERSONNEL WHO MAY COME IN CONTACT WITH THE INSTALLATION, AND PROVIDE ALL NECESSARY ADDITIONAL SAFETY GUARDS, FENCES, RESTRAINTS, DEVICES, ETC., NOT FURNISHED BY THE EQUIPMENT MANUFACTURER OR VENDOR.

ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

COSHP2LP112 Double Chain (50K Cakes)

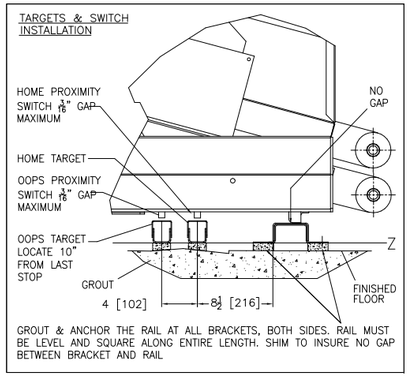
DM 0 0.5M
INCHES 0 12 24

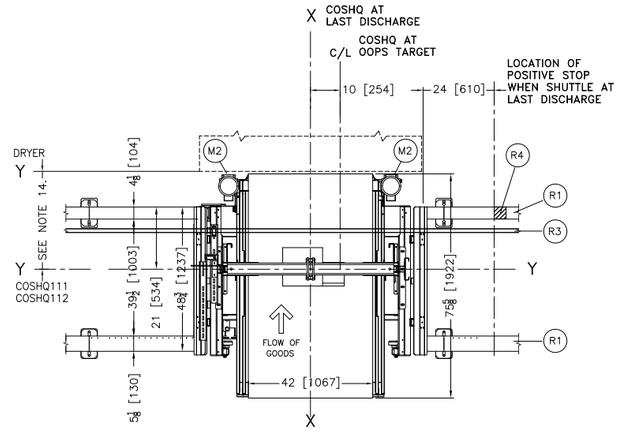
DWG# BDCOSHP2LPAE
2022204D

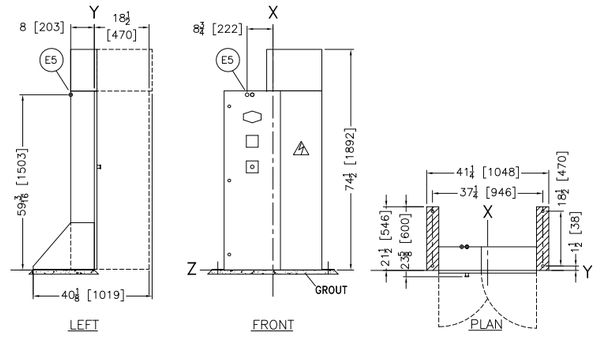
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5880,8282		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE RAIL EXTENDER COSHQ111/112		RESULTING COSHQ111/112 DIMENSIONS						DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880,8282 LOAD HEIGHT	
												DIMENSION "A"		DIMENSION "B"		DIMENSION "C"													
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0	48	1219	141 1/2	3594	116	2946	63	1600	57	1449	57 1/2	1460			58 1/2	1486			59	1499
–	–	–	–	–	–	−7	−178	3 1/2	89	51 1/2	1308	145	3683	119 1/2	3035	66 1/2	1689	60 1/2	1537	61	1549			62	1575			62 1/2	1588
–	–	–	–	−7	−178	0	0	10 1/2	267	58 1/2	1486	152	3861	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	62	1575	155 1/2	3950	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
–	–	3 1/2	89	0	0	7	178	17 1/2	445	65 1/2	1664	159	4039	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
0	0	7	178	3 1/2	89	10 1/2	267	21	533	69	1753	162 1/2	4128	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	72 1/2	1842	166	4216	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	79 1/2	2019	173	4394	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	86 1/2	2197	180	4572	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	90	2286	183 1/2	4661	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE

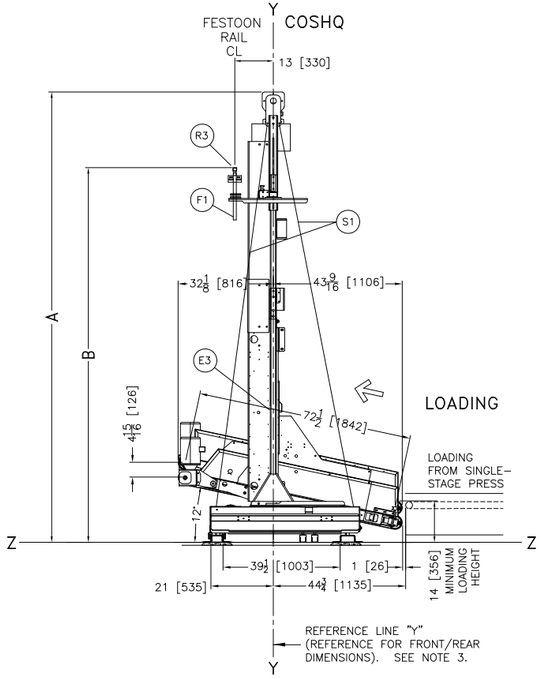


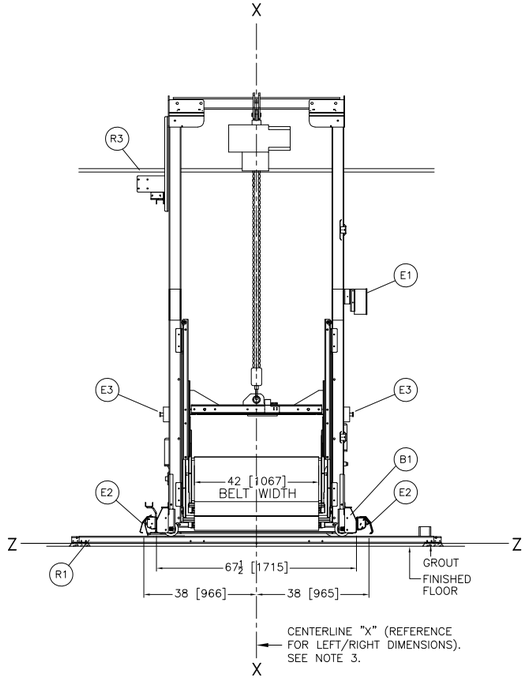


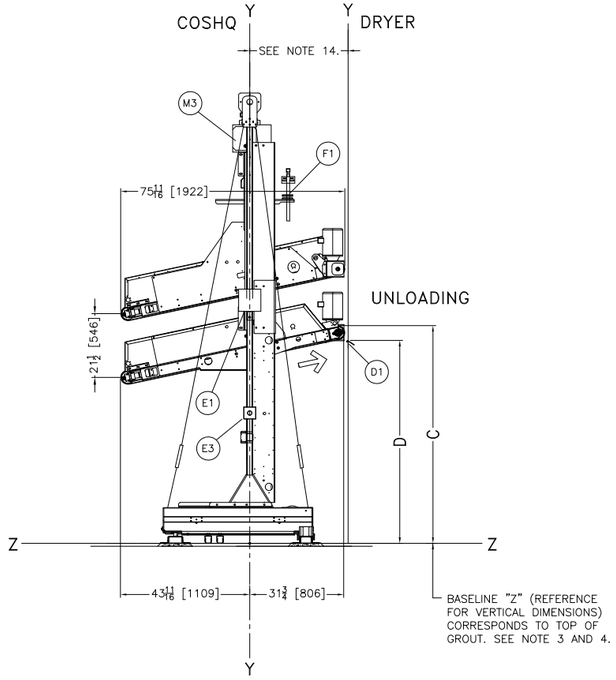


REMOTE MOUNT SHUTTLE CONTROL BOX

SEE NOTE 11.







ITEM	LEGEND
S1	TIE RODS, SUPPLIED ONLY FOR SHUTTLES WITH 48"
	[1624] EXTENDERS OR LONGER.
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR AND WINCH.
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR
	REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF
B1	CART FRAME WELDMENT

NOTES

12 FOR THE DIMENSION FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

11 THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT. THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

10 CONTROLS FOR THE SHUTTLE ARE CONTAINED IN THIS REMOTELY MOUNTED SHUTTLE CONTROL BOX WHICH MUST BE PLACED IN THE EQUIPMENT LAYOUT.

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CHECK LOCAL ELECTRIC CODES FOR FURTHER RESTRICTIONS.

5 CUSTOMER TO SUPPLY CIRCUIT BREAKER OR FUSED BRANCH CIRCUIT DISCONNECT (SAFETY) SWITCHES WITH LAG TYPE FUSES FROM POWER SOURCE TO MACHINE. A SEPARATE GROUND WIRE MUST BE CONNECTED FROM DISCONNECT TO EQUIPMENT.

4 BASELINE "Z" IS THE REFERENCE FOR ALL VERTICAL DIMENSIONS. ON MACHINES WITH FIXED BASE PADS, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE BASE PAD. ON MACHINES WITH ADJUSTABLE FEET, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE FEET WHEN ADJUSTED SO THAT THE MACHINE IS AT ITS MINIMUM ACCEPTABLE HEIGHT. ON TRAVERSING SHUTTLES, BASELINE "Z" CORRESPONDS TO THE BOTTOM OF THE BOTTOM RAIL. THE DISTANCE BETWEEN BASELINE "Z" AND THE FINISHED FLOOR WILL VARY AS REQUIRED TO ENSURE BASELINE "Z" IS HORIZONTAL AND ANY INTERFACING MACHINES REQUIRING GROUT ARE SET ON A MINIMUM 1"[25] THICK GROUT BED.

3 USE REFERENCE LINES "X", "Y", AND "Z" TO LOCATE ALL SERVICE CONNECTIONS.

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ATTENTION

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COSHQ111/112 (68K Cakes)

DM 0 0.5M
INCHES 0 12 24

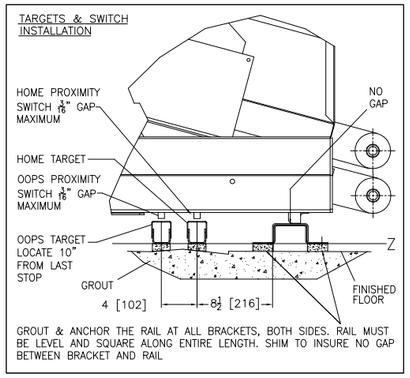
DWG# BDCOSHQ2BE 2023313D

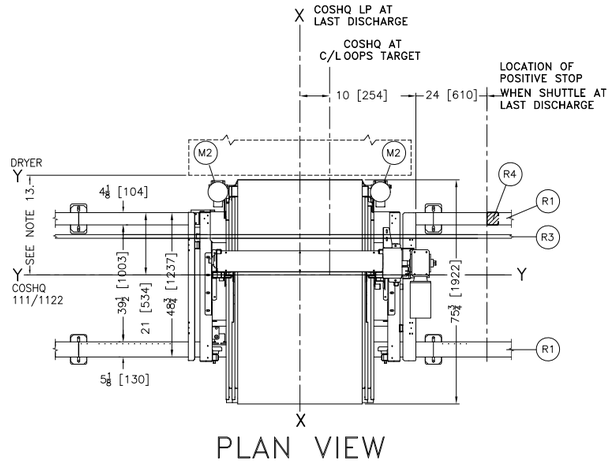
PELLERIN MILNOR CORPORATION
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com

WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @58080TG1/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5858TG2/TS1		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @7272,7676		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER 6450,6458,6464		WHEN THIS DRYER PEDESTAL EXTENDER IS USED WITH DRYER @5840,@5040,5050		USE THIS SIDE COSHQ111/112 LP RAIL EXTENDER				RESULTING COSHQ111/112 LP DIMENSIONS								DIMENSION "D" 6450 DRYERS LOAD HEIGHT		DIMENSION "D" @5840,@5040,@7272 LOAD HEIGHT		DIMENSION "D" 6458,6464 LOAD HEIGHT		DIMENSION "D" 5050 LOAD HEIGHT		DIMENSION "D" 7676 DRYERS LOAD HEIGHT		DIMENSION "D" @5858,@5880 LOAD HEIGHT	
										INCLINED BEDS		HORIZONTAL BEDS		DIMENSION "A" INCLINED BEDS		DIMENSION "A" HORIZONTAL BEDS		DIMENSION "B"		DIMENSION "C"													
INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm	INCHES	mm
–	–	–	–	–	–	−10 1/2	267	0	0													57	1449	57 1/2	1460			58 1/2	1486			59	1499
–	–	–	–	–	–	−7	−178	3 1/2	89													60 1/2	1537	61	1549			62	1575			62 1/2	1588
–	–	–	–	−7	−178	0	0	10 1/2	267	23 1/2	597	30 1/2	775	132 1/2	3366	139 1/2	3543	126 1/2	3213	73 1/2	1867	67 1/2	1715	68	1727	68 1/2	1740	69	1753	69 1/2	1765	69 1/2	1765
–	–	0	0	−3 1/2	−89	3 1/2	89	14	356	27	686	34	864	136	3454	143	3632	130	3302	77	1956	71	1803	71 1/2	1816	72	1829	72 1/2	1842	73	1854	73	1854
–	–	3 1/2	89	0	0	7	178	17 1/2	445	30 1/2	775	37 1/2	953	139 1/2	3543	146 1/2	3721	133 1/2	3391	80 1/2	2045	74 1/2	1892	75	1905	75 1/2	1918	76	1930	76 1/2	1943	76 1/2	1943
0	0	7	178	3 1/2	89	10 1/2	267	21	533	34	864	41	1041	143	3632	150	3810	137	3480	84	2134	78	1981	78 1/2	1994	79	2007	79 1/2	2019	80	2032	80	2032
3 1/2	89	10 1/2	267	7	178	14	356	24 1/2	622	37 1/2	953	44 1/2	1130	146 1/2	3721	153 1/2	3899	140 1/2	3569	87 1/2	2222	81 1/2	2070	82	2083	82 1/2	2096	83	2108	83 1/2	2121	83 1/2	2121
10 1/2	267	17 1/2	445	14	356	21	533	31 1/2	800	44 1/2	1130	51 1/2	1308	153 1/2	3899	160 1/2	4077	147 1/2	3747	94 1/2	2400	88 1/2	2248	89	2261	89 1/2	2273	90	2286	90 1/2	2299	90 1/2	2299
17 1/2	445	24 1/2	622	21	533	28	711	38 1/2	978	51 1/2	1308	58 1/2	1486	160 1/2	4077	167 1/2	4255	154 1/2	3924	101 1/2	2578	95 1/2	2426	96	2438	96 1/2	2451	97	2464	97 1/2	2477	97 1/2	2477
21	533	28	711	24 1/2	622	31 1/2	800	42	1067	55	1397	62	1575	164	4166	171	4343	158	4013	105	2667	99	2515	99 1/2	2527	100	2540	100 1/2	2553	104 1/2	2654	101	2565

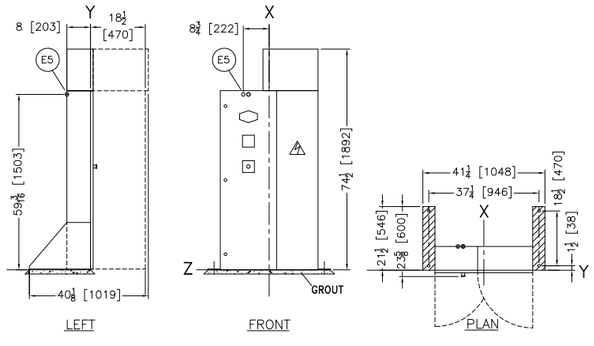
DIMENSION "E"			
COSHQ111 LP INCLINED BEDS		COSHQ112 LP INCLINED BEDS	
INCHES	mm	INCHES	mm
13 1/2	343	24	610
HORIZONTAL BEDS		HORIZONTAL BEDS	
INCHES	mm	INCHES	mm
28 1/2	724	39	991

@ = OBSOLETE MODEL INCLUDED ON THIS DRAWING FOR REFERENCE



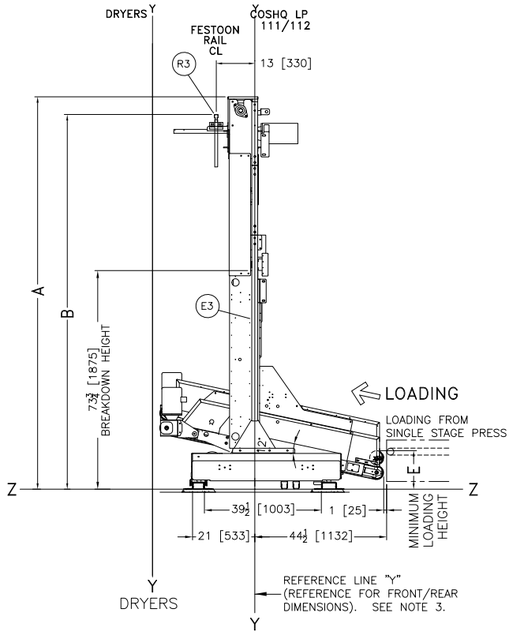


PLAN VIEW

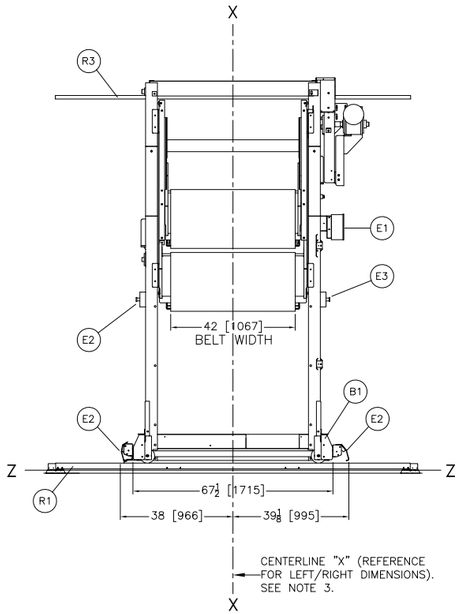


REMOTE MOUNT SHUTTLE CONTROL BOX

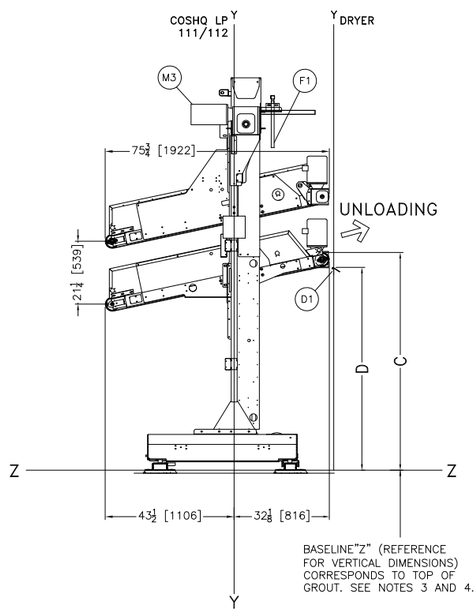
SEE NOTE 11.



LEFT VIEW



FRONT VIEW



RIGHT VIEW

ITEM	LEGEND
R4	POSITIVE STOP
R3	FESTOON RAIL. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
R1	FLOOR DRIVE RAILS. RAIL SUPPLIED BY MILNOR AND MAY BE
	PRICED SEPARATELY. SEE PRICE LIST.
M3	HOIST MOTOR AND WINCH.
M2	BELT MOTORS, ALTERNATES LEFT/RIGHT PER LEVEL.
M1	DRIVE MOTOR, UNDER CART FRAME, NOT VISIBLE.
F1	FESTOON CABLE
E5	ELECTRICAL & CONTROL CABLE CONNECTIONS FOR
	REMOTE SHUTTLE CONTROL BOX
E3	EMERGENCY STOP BUTTON
E2	EMERGENCY STOP KICK PLATE
E1	JUNCTION BOX
D1	LOAD DOOR SHELF
B1	CART FRAME WELDMENT

NOTES

14 DIMENSION "H" IS FROM "Y" OF THE SHUTTLE TO "Y" OF THE DRYER. SEE DRYER DIMENSIONAL DRAWING

13 * THE 6458 DRYER AT "ZERO PEDESTAL" HAS A 41"[1041] HIGH BASE. THE DRYER MAY BE ORDERED TO INCREASE OR DECREASE THE MACHINE HEIGHT, THEREFORE, NEGATIVE PEDESTAL HEIGHTS ARE POSSIBLE. CONSULT MILNOR FACTORY.

12 ** THE 6458 DRYER LOAD HEIGHT AT "ZERO PEDESTAL" IS 65 11/16"[1668] FROM BASELINE "Z". THE CHART ABOVE SHOWS THE DIMENSION ROUNDED OFF TO 66"[1676] TO MATCH THE AVAILABLE SHUTTLE SIDE RAIL EXTENDERS.

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ATTENTION

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ATTENTION

THE FLOOR AND/OR OTHER SUPPORT COMPONENTS MUST HAVE SUFFICIENT STRENGTH (AND RIGIDITY WITH DUE CONSIDERATION FOR NATURAL OR RESONANT FREQUENCY THEREOF) TO WITHSTAND THE FULLY LOADED WEIGHT OF THE MACHINE INCLUDING THE GOODS, THE WATER, AND ANY REPEATED SINUSOIDAL (ROTATING) FORCES GENERATED DURING ITS OPERATION. WRITE THE FACTORY FOR ADDITIONAL MACHINE DATA FOR USE BY A COMPETENT SOIL AND/OR STRUCTURAL ENGINEER.

COSHQ111/112 Double Chain (68K Cakes)

DM 0 0.5M
INCHES 0 12 24

DWG# BDCOSHQ2BB 2022204D

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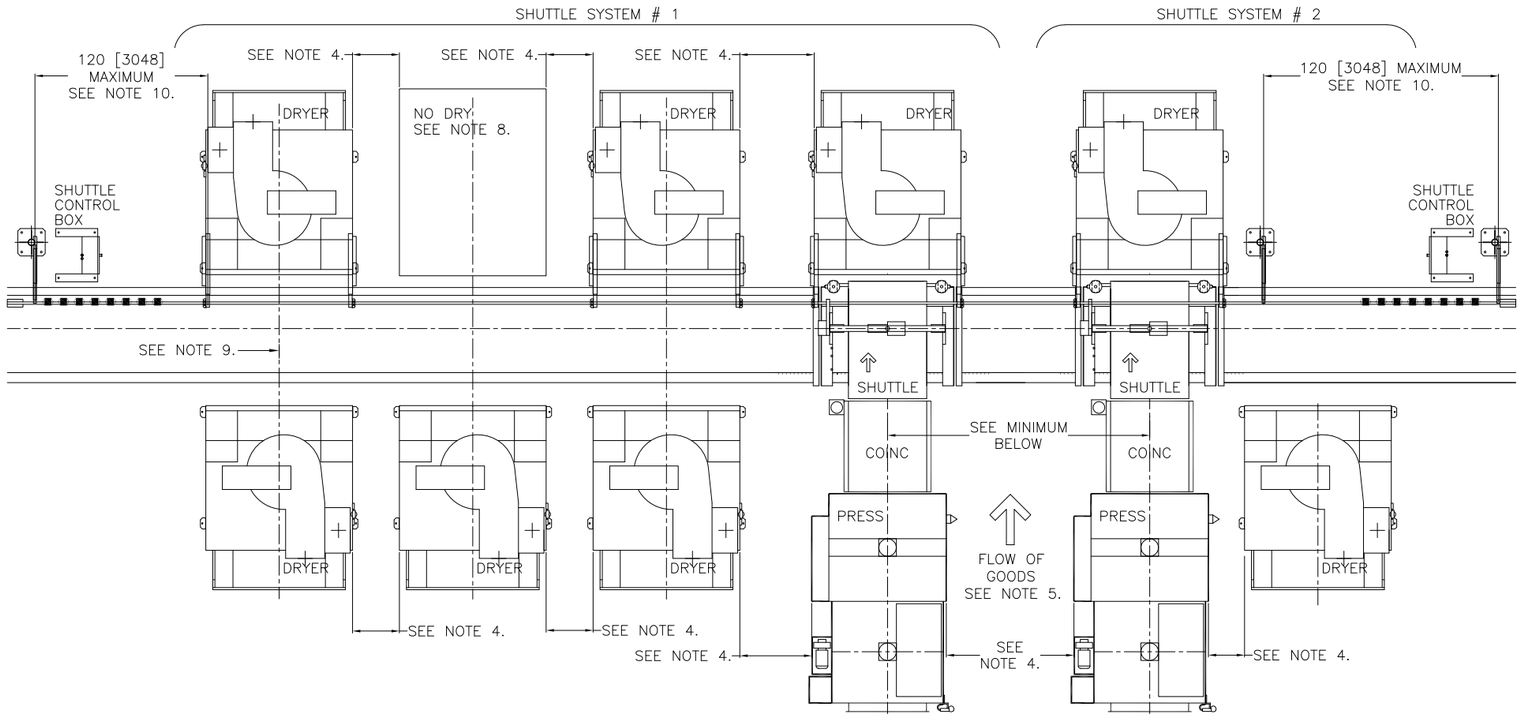
P.O. Box 400 Kenner, LA 70063, USA, Phone 504/467-9591,
FAX 504/468-3094, Email: milnorinfo@milnor.com



PLAN VIEW – EXAMPLE COMPONENT PLACEMENT

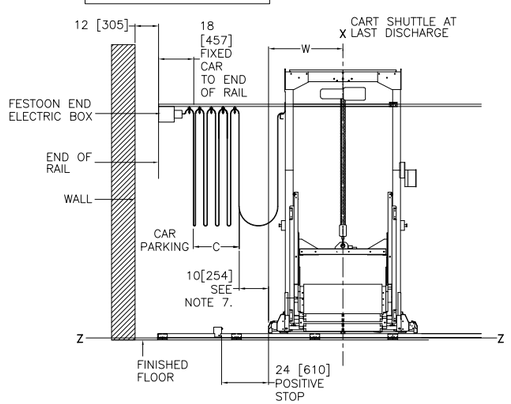
HOW TO CALCULATE THE PARKING LENGTH FOR FESTOON CARS:

C = N X 8"[203]

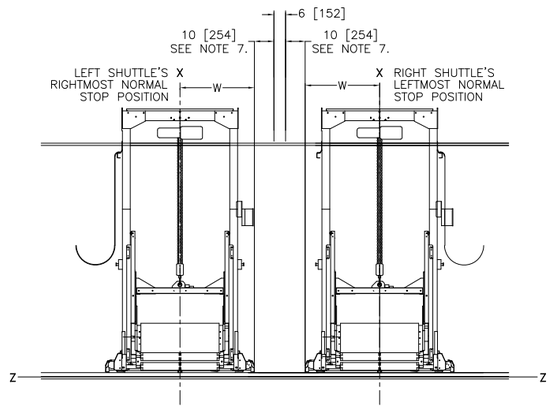
N = LENGTH OF RAIL / 120"[3048]

N = # OF FESTOON RAILS

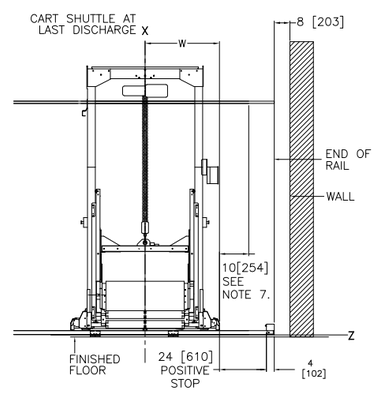
N = # OF FESTOON CARS



MINIMUM DIMENSIONS FESTOON END TO END OF RAIL & WALL



MINIMUM DIMENSIONS BETWEEN TWO CART SHUTTLES WHEN FESTOONING FROM OPPOSITE ENDS



MINIMUM DIMENSIONS NON–FESTOON END TO END OF RAIL & WALL

W = WIDTH DIMENSION FROM "X" TO OUTERMOST PART OF SHUTTLE.
(SEE DRAWING OF YOUR SPECIFIC SHUTTLE FOR THIS DIMENSION)

NOTES

10 FESTOON RAIL FREESTAND SUPPORTS, DRYER MOUNTED SUPPORTS, OR CEILING MOUNTED RAIL SUPPORTS MUST BE LOCATED A MAXIMUM OF 120"[3048] APART ALONG THE ENTIRE LENGTH OF RAIL.

9 IT IS PREFERRED THAT LOAD AND DISCHARGE POSITIONS ACROSS FROM EACH OTHER ON THE RAIL BE EXACTLY ALIGNED. IF DISCHARGE POSITION ARE NOT ALIGNED, BUT ARE VERY CLOSE, CONSULT MILNOR FACTORY.

8 WHENEVER POSSIBLE, NO–DRY POSITIONS SHOULD BE ALLOCATED THE SAME SPACE AND CLEARANCE AS A DRYER TO ACCOMMODATE THE FUTURE ADDITION OF A DRYER.

7 TO ACCOMMODATE THE SHUTTLE "OOPS SWITCH" AND THE POSITIVE STOPS, THE TOTAL RAIL LENGTH AT EACH END MUST PERMIT THE SHUTTLE TO TRAVEL AT LEAST 10" [254] BEYOND ITS LAST NORMAL STOP PLACE. THERE MUST BE SUFFICIENT ADDITIONAL RAIL LENGTH TO PARK ALL THE FESTOON CABLE SUPPORT CARS, DIMENSION "C". FESTOON CARS REQUIRE 6"[152] EACH, SEE FORMULA.

6 ALL MINIMUM DIMENSIONS ARE ABSOLUTE MINIMUMS AND DO NOT NECESSARILY ALLOW FOR EASE OF MAINTENANCE. GREATER CLEARANCE SHOULD BE ALLOWED WHERE DESIRED.

5 ALL REFERENCES TO LEFT AND RIGHT ARE, WHEN VIEWED, IN THE DIRECTION OF THE FLOW OF GOODS FROM THE PRESS ONTO THE SHUTTLE.

4 AS OF THIS WRITING, THE MINIMUM CLEARANCE REQUIRED BY U.S. NATIONAL ELECTRIC CODES, FROM ELECTRIC BOX TO ANY OBJECT IS:
36 [914] IF OBJECT IS AN UNGROUNDED (INSULATED) WALL.
42 [1067] IF OBJECT IS A GROUNDED WALL (ie. BARE CONCRETE, BRICK, ETC.)
48 [1209] IF OBJECT IS ANY LIVE PART.
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MINIMUM CLEARANCE–CART SHUTTLE RAIL

NOT TO SCALE

DWG# BDCTRAILAE 2020302D

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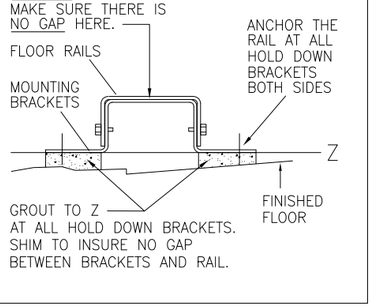
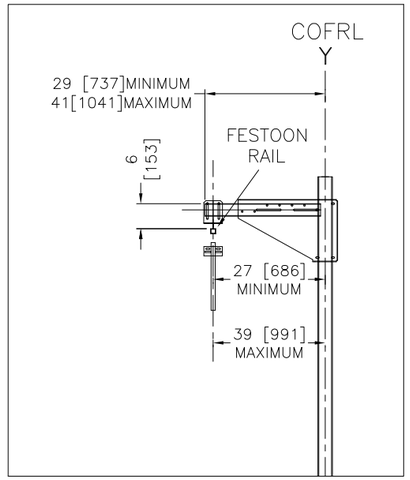
FESTOON RAIL SUPPORTS

FLOOR RAIL INSTALLATION

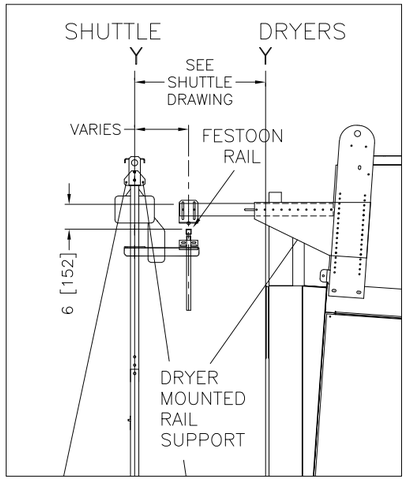
ALL FLOOR RAILS MUST BE LEVEL AND SQUARE ALONG THE ENTIRE LENGTH.

CAUTION:
MAKE SURE THERE IS NO GAP HERE.

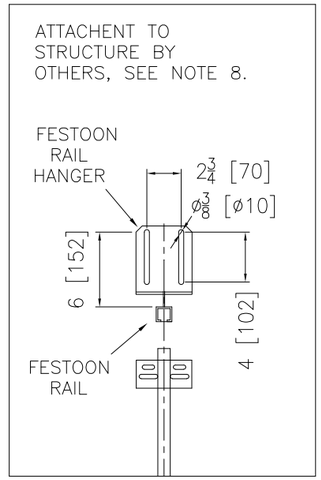




FREESTANDING



DRYER MOUNTED



CEILING MOUNTED

RAIL INSTALLATION PLAN VIEW

ITEM	LEGEND
R9	CEILING MOUNTED RAIL SUPPORT, BY OTHERS.
R8	DRYER MOUNTER RAIL SUPPORT
R7	POSITIVE STOP
R6	FLOOR RAIL CONNECTORS/MOUNTING BRACKETS
R5	FLOOR RAIL MOUNTING BRACKETS
R4	FRESTANDING FESTOON RAIL SUPPORT
R3	FESTOON RAIL
R2	TARGET RAIL
R1	FLOOR RAIL

NOTES

8 CEILING MOUNTED RAIL SUPPORTS MAY BE USED TO SUPPORT RAIL FROM CEILING. FIELD INNOVATION IS REQUIRED, INCLUDING VERIFICATION BY COMPETENT OTHER PERSONS THAT THE CEILING IS ADEQUATE TO SUPPORT THE LOAD. THIS IS NOT THE RESPONSIBILITY OF PMC.

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CART RAIL INSTALLATION

DM 0 0.5M
INCHES 0 12 24

DWG# BDCTRAILAB 2020302D

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