



CONVEYX
SOLUTIONS, LLC

POWER ASSIST

INSTALLATION, OPERATION & MAINTENANCE MANUAL

PLEASE REVIEW MANUAL BEFORE OPERATING EQUIPMENT

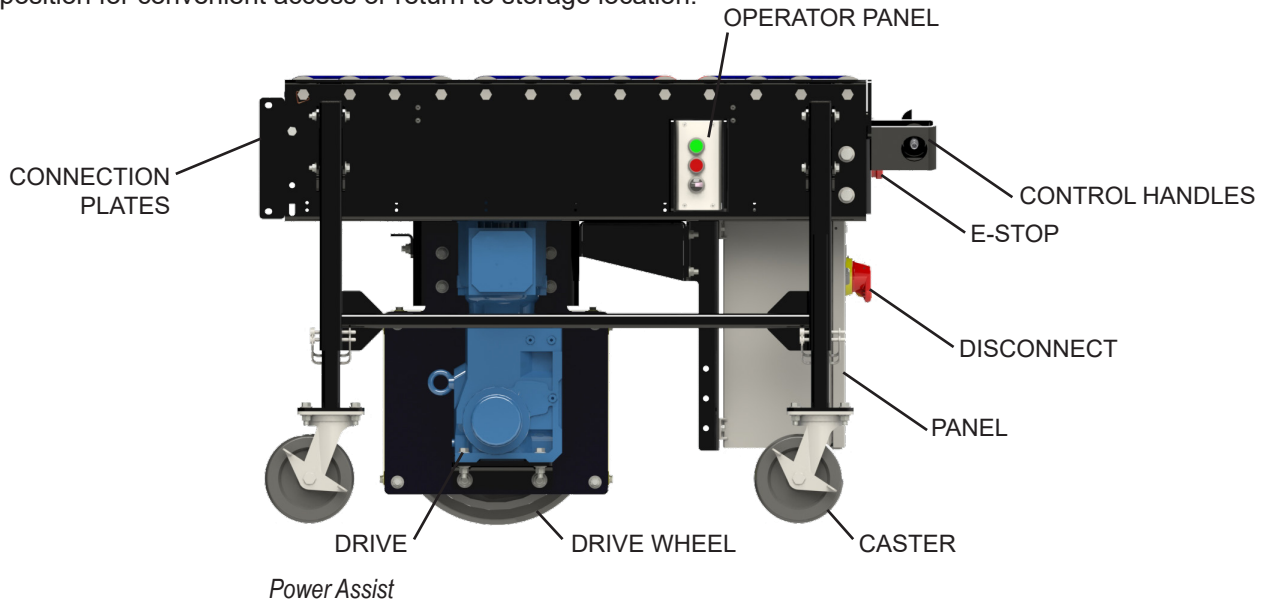


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GENERAL OVERVIEW

ConveyX Solutions, LLC Power Assist allows users to safely and easily move Powered Flex conveyors in and out of trailers, reposition for convenient access or return to storage location.

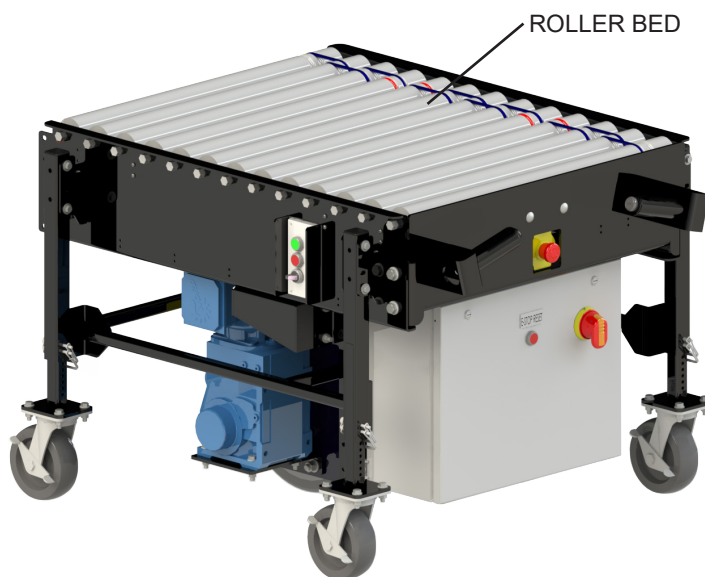


FEATURES

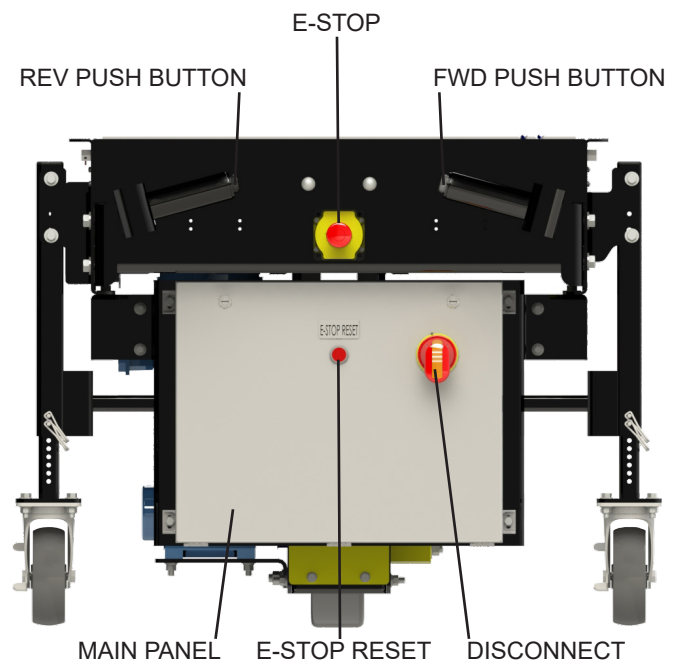
- Bolted and welded construction for ease of installation, maintenance, and durability.
- Can be attached/detached from Powered Flex Conveyor to service multiple conveyors and dock doors (OPTIONAL AND TOOLS REQUIRED).
- Utilizes a single point of contact to maximize maneuverability of the conveyor.
- Simple forward/reverse controls.
- Integrates with a Power Flex Conveyor for seamless controls and operation.

OPTIONS

- Powered or gravity roller conveyor deck.
- (1) or (3) E-Stops



Power Assist with powered conveyor deck, operator's end



Power Assist, operator's end

PRODUCT SPECIFICATIONS

GENERAL			
Bed Width (BF)	24"	30"	36"
Dimensions (W x L x H)	33.5" x 45.4" x 30"	39.5" x 45.4" x 30"	45.5" x 45.4" x 30"
Weight	375 pounds	450 pounds	525 pounds
Height (fixed)	30" or 36" top of roller		
Conveyor Deck Capacity	75 pounds per linear foot (PLF)		
Power	20 Amp, 24 Volts DC for Controls and Conveyance* 4 Amps, 230 Volts 3-Phase for Drive Motor		
Speed	User adjustable between 60 feet per minute (FPM) and 150 FPM conveyor bed* 25 - 50 FPM cart movement		

*For powered conveyor option only

MATERIALS	
Wheels	14" x 3.25" drive, 6" x 2" casters for support/steering
Rollers	2.5" diameter
Control Handle	Steel, push button enclosure
Enclosure	START, STOP push buttons, FWD/REV switch

INPUT POWER	
Amps	25 AMP
Voltage	115 VAC
Receptacle	Each Power Assist requires a grounded 115 VAC/30 Amp L5-30R receptacle

WARNINGS AND SAFETY INSTRUCTIONS

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

ConveyX Solutions, LLC's Power Assist is motor-powered and this motor can be stopped by turning off the motor's electrical power. As with all powered machinery, the drive-related components can be dangerous so safety guards and other optional devices have been installed to prevent accidental contact with these parts along with warning labels to identify potential hazards.

Special attention must be paid to the following areas of this manual:



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in property damage.

NOTE

Indicates helpful hints and information.

ENVIRONMENTAL STANDARDS

ConveyX Solutions, LLC's equipment is designed to be installed in a clean, dry environment. Exposure to extreme humidity, direct sunlight, blowing dirt or rain can permanently damage some components and equipment. Concrete curing agents are also known to attack and degrade the urethane conveyor components. Be sure that the concrete is properly cured at new sites before setting the conveyor on it and that proper ventilation is used to prevent curing agent fumes from impacting the conveyor. Equipment should be stored under cover to protect it from exposure to the weather and other adverse conditions from the dock door to the truck entrance. Failure to comply with these guidelines will void the warranty on any failed components that result from these environmental issues.

ANSI STANDARDS FOR CONVEYORS

It is essential for safe and efficient system operation that the safety information and guidelines presented here are properly understood and implemented. The American National Standard Institute (ANSI) booklet entitled Safety Standards for Conveyors and Related Equipment, for more information contact <https://webstore.ansi.org>.

With any piece of industrial equipment, conditions exist that might cause injury to workers. Because it is not possible to describe each potentially hazardous situation that might develop, workers must be alert at all times for unsafe conditions. To avoid injury, use maximum possible care and common sense and adhere to all safety standards.

Take special care while maintaining and inspecting electrical equipment and devices. All personnel working on or around the system should be aware of, and adhere to all CAUTION, DANGER and WARNING signs.

Labels or signs are posted to reduce the risk of injury to all personnel. Never assume that the signs and notices are applicable only to inexperienced personnel. Maintain signs in a legible condition. Contact a supervisor to post additional safety signs if necessary.

ANSI CONVEYOR SAFETY RULES

Below are the conveyor safety rules, as well as specific regulations and guidelines listed in this publication:

- DO NOT touch moving Conveyor parts.
- DO NOT walk, ride or climb on the Conveyor.
- DO NOT operate the Conveyor with chain guards or other protective guards removed.
- Keep jewelry, clothing, hair, etc., away from the Conveyor.
- Know the location and function of all start/stop devices and keep those devices free from obstruction.
- Clear all personnel from the equipment before starting the Conveyor.
- DO NOT attempt to clear product jams while the Conveyor is running.
- Allow only trained and authorized personnel to maintain or repair Conveyor equipment.
- DO NOT load the Conveyor beyond specified design limits.
- DO NOT attempt to make repairs to the Conveyor while it is running.
- DO NOT modify equipment without checking with the manufacturer.
- DO NOT operate or perform maintenance on equipment when taking any type of drug or sedative, when under the influence of alcohol or when over-fatigued.
- Report any unsafe condition to your supervisor or maintenance staff.

CEMA STANDARDS FOR CONVEYOR

The Conveyor Equipment Manufacturers Association (CEMA) provides safety information related to conveyor systems. To learn more about CEMA visit website, www.cemanet.org.

CEMA produces various Conveyor safety videos and posters, and it is recommended that the videos be made available for training and education purposes as part of a safe working environment around conveyor equipment. The videos introduce awareness of operations, personnel, maintenance technicians and safety hazard management commonly associated with the automated material-handling conveyor equipment.

The safety posters review important safety labels and are intended to be posted in public places as a day-to-day reinforcement of good safety practices. These posters can be downloaded from the CEMA website at: <https://cemanet.org/safety-posters-with-labels/>.

SAFETY INSTRUCTIONS



WARNING

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Move conveyor only by grasping the handles located on the sides or at each end of the conveyor. ■ When expanding or compressing the conveyor, keep hands, clothing and other items clear of the sidebars. ■ Do not exceed the conveyor load capacity, as it may result in possible operator injury or conveyor damage. ■ Avoid wearing excessively loose clothing when working with moving equipment. ■ Keep long hair pulled up to prevent it from becoming caught in moving parts. | <ul style="list-style-type: none"> ■ Broken or worn parts must be replaced immediately. ■ Power Assist must only be serviced by properly trained and qualified technicians. ■ Conveyor's power cord must be connected to a grounded receptacle that is protected by an overcurrent device rated at no more than 30 Amps, unless otherwise specified. ■ Never service a conveyor with the power applied. Always disconnect power before servicing equipment and use the company's machine specific lockout/tag out procedures. ■ Never operate conveyor with an electrical enclosure open or any guards removed. |
|--|--|

INSPECTING THE EQUIPMENT



WARNING

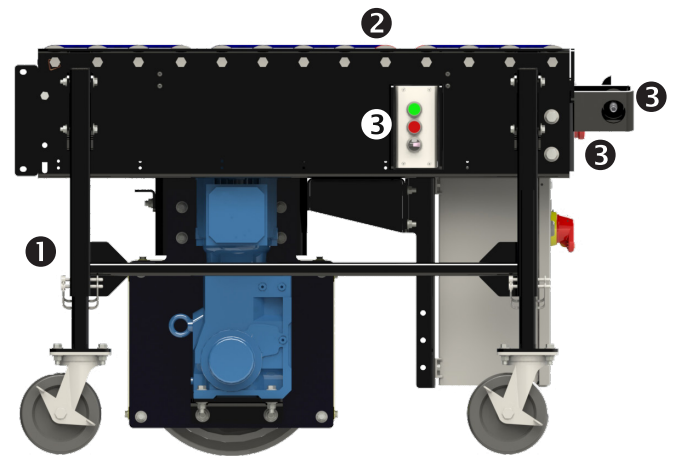
Follow all proper safety precautions and plant installation procedures.

Upon inspection, if damage or loose wires are found, contact the factory **BEFORE** applying power to the unit.

INSPECTION CHECKLIST

The checkboxes below ensure all items have been inspected for safety:

✓	Chart Reference	Description
	1	Ensure no wires are pulled loose or damaged. Check that power cords and communication cables are secure, not tight and not loose.
	2	Verify that rollers are not bent.
	3	Test all Control Handle functions and E-Stops to ensure the Power Assist and safety functions are operational.



Power Assist

1. Unpack the Power Assist and inspect for any possible damage that may have occurred during shipping. Pay particular attention to the wiring to ensure that no wires are pulled loose or damaged. Inspect all electrical cables and connectors to ensure they did not loosen during transportation. If a connection or wire is loose, inspect for damage. If no damage is found, reconnect and contact the factory as needed. If there is any physical or electrical damage to the conveyor upon inspection, contact the factory **BEFORE** applying power to the conveyor.
2. Inspect the rollers and photo eye sensors to ensure they were not damaged during shipping. If the rollers are bent, the Power Assist will not move products or operate properly resulting in poor performance. The Power Assist rollers will need to be replaced. Contact the factory for parts and further instruction.
3. Test all Control Handle functions to ensure the Power Assist operates correctly. Test all E-Stop and E-stop Reset buttons to ensure safety functions operate correctly.

NOTE

Power Assists with the gravity deck option will not have an operator switch panel.

4. All warning labels and stickers are installed and correct.

INSTALLATION

1. Unpack and inspect the Power Assist following the instructions in this manual.
2. Move the Power Assist into place within close proximity to the Powered Flex Conveyor it will be paired with.

NOTE

Check that the roller height of the Powered Flex Conveyor and Power Assist are level and top of roller on both units match. Adjust the height of the Power Assist to match the Powered Flex Conveyor if needed.



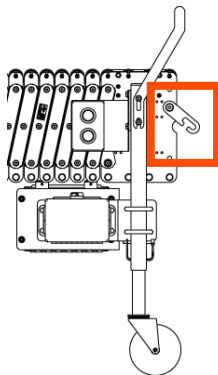
WARNING

Equipment must be installed in accordance with all local, city, state and national code.

3. Make sure all STOP push buttons are depressed and the main disconnect is in the OFF position.
4. Move the Power Assist unit towards the desired end of the Powered Flex Conveyor leaving approximately 12" between the flexible conveyor and the connection plates of the Power Assist.

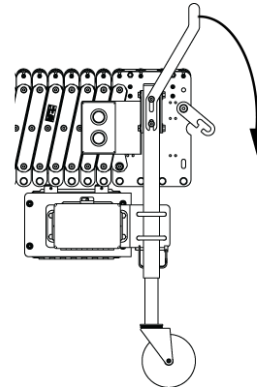
ATTACHING THE POWER ASSIST TO THE POWERED FLEX CONVEYOR

1. If connecting to either the discharge or infeed end of a Powered Flex Conveyor, remove the shoulder bolts and locking latches used for connecting to other Flex Conveyors. Store the bolts and hooks in a secure place for later use.



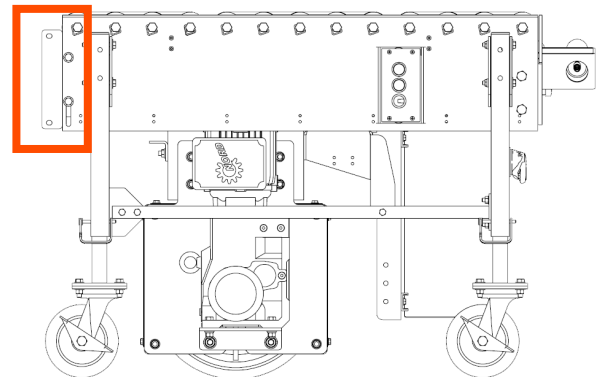
Remove locking latches from Powered Flex Conveyor

2. Move the flex handle into the downward position by lifting the handle and then pivoting it out away from the conveyor and downwards.



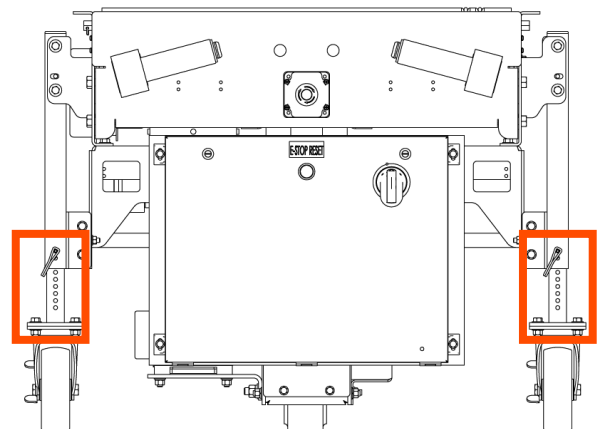
Move Powered Flex Conveyor handle down

3. Locate the connection plates on the Power Assist.



Find connection plates on Power Assist

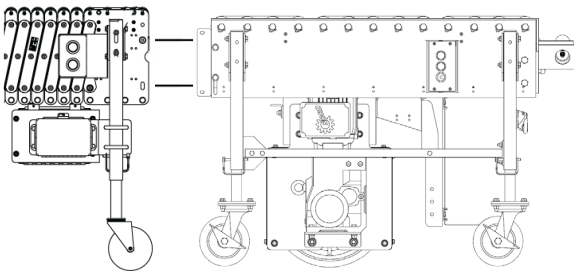
4. Ensure that the Power Assist is level with the Flex Conveyor and that six holes are showing on all four of the adjustable caster legs. If unlevel, adjust the legs accordingly on the front and rear ends of the Power Assist until it is level with the Flex Conveyor.



Level Power Assist with Flex Conveyor

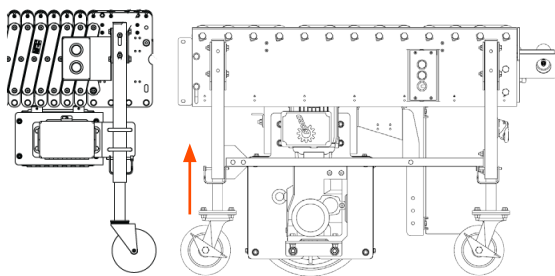
INSTALLATION

- Align the Flex Conveyor frame so that it may be pulled inward between the two connection plates on the Power Assist. Carefully pull the Conveyor in to place avoiding any pinch points and making sure all connection cords are out of the way.
- On each side, horizontally align the holes on the Flex Conveyor (that the shoulder bolts were removed from in Step 1) and the slot below it with the two holes on the Power Assists connection plates. Once aligned insert and tighten four 5/16"-18 x 1" shoulder bolts with the bolt heads facing outwards to complete the connection.



Align connection holes on Power Assist and Flex Conveyor



- Once the connection is made, raise the adjustable caster legs on the flex conveyor side of the power assist into the furthest upward positions. Do this by removing both pins in each leg and sliding the inner tube all the way upwards. Utilize the bottom two pin holes to reinsert both pins.



Raise front legs on Power Assist

PROVIDING POWER TO THE POWER ASSIST

Each Power Assist is equipped with the following:

Qty	Description	Image
1	Unmarked, 10/3 SJOOW 12-foot power cable with twist lock L5-30P plug at the conveyor end opposite the control handles.	
2	Yellow 6-PIN MINI cables, 1 female and 1 male, that provides communication with the Powered Flex Conveyor for operation and protocol. Connect the yellow interface cable as needed, see COMMUNICATION CONNECTION .	

NOTE

When operating a Power Assist in Transportation Mode or a Power Assist with gravity deck option, there is no need to connect the 6-PIN MINI cables to anything. Transportation Mode and/or gravity conveyor is not dependent on communication.

PREPARING FOR START-UP

POWER UP PROCEDURE

1. Plug the black male power cord into a 30 AMP twist lock receptacle.
2. Turn the RED disconnect to the ON position. The E-STOP buttons will turn solid red. If any are flashing, they will need to be reset prior to proceeding. Press the E-STOP RESET button on the face of the panel. The Main Power Light will illuminate green and the individual E-STOP buttons will go dark. If at any time the E-STOP buttons are illuminated, the condition will need to be cleared before being able to operate the Power Assist.
3. The Power Assist is now ready for use.

USING THE POWER ASSIST TO MOVE CONVEYORS

1. Ensure the brake on the gearmotor is disengaged before driving the Power Assist.
2. Press the FORWARD or REVERSE button located in the ends of the handle to use the Power Assist to move conveyors from one location to another.
 - REVERSE moves the Power Assist away from the flex conveyor.
 - FORWARD moves the Power Assist towards the flex conveyor.
3. Always ensure the gearmotor brake is engaged when Power Assist operation is finished.

USING THE POWER ASSIST WITH CONVEYANCE TO MOVE MATERIAL

1. Attach to conveyor. This is the only step required for a Power Assist with gravity deck option.
2. Connect the appropriate YELLOW 6-pin QD cable labeled INFEED or DISCHARGE to the flex based on the attachment chosen. If being used with non-accumulation conveyance or if the Power Assist has the gravity deck option, no cable connection is required. Set the operational mode selector switch (located on the right-hand side of the panel) to TRANSPORTATION (TX). This switch is not present on a Power Assist with gravity deck option.

NOTE

The Drive Power ON light indicates the drive system is powered and ready. The Conveyance Power ON light indicates the conveyance portion of the Power Assist is on and ready (light is not required to be ON when moving conveyor with Power Assist).

3. Set selector switch (not present on Power Assist with gravity deck option) to desired operational mode based on the attachment point or type of conveyance. Modes are INFEED, TRANSPORTATION (TX), DISCHARGE.

When using the Power Assist in either INFEED or DISCHARGE mode, continue with Step 4. When using the Power Assist in TRANSPORTATION mode, skip to Step 5.

NOTE

For the remaining instructions DC1 is the driver card nearest the operator end. DC2 is the driver card nearest the conveyor attachment point.

USING THE POWER ASSIST IN INFEED OR DISCHARGE MODE

4. Remove the (4) rollers from center to the conveyor attachment point.
 - A. When attaching to the INFEED end of the conveyor:
 - DC1 DIP switches 2 and 3 need to be ON, all others OFF.
 - DC2 DIP switch 2 needs to be ON, all others OFF.
 - The communication cable between DC1 and DC2 needs to connect to upstream on DC2 and downstream on DC1.
 - Reinstall the rollers.
 - Set selector switch to INFEED.
 - B. When attaching to the DISCHARGE end of the conveyor:
 - DC2 DIP switch 1, 2, and 3 need to be ON, all others OFF.
 - DC1 DIP switch 1 and 2 need to be ON, all others OFF.
 - The communication cable between DC1 and DC2 needs to connect to downstream on DC2 and upstream on DC1.
 - Reinstall the (3) center rollers.
 - Set selector switch to DISCHARGE.
5. Press the START button when ready for conveyance to begin.

COMMUNICATION CONNECTION

(THIS SECTION DOES NOT APPLY TO POWER ASSISTS WITH GRAVITY DECK OPTION OR TRANSPORTATION ONLY OPERATION)

The Power Assist is equipped with (2) yellow 6-PIN mini-connector QD cables to connect at either end of the Powered Flex Conveyor.

To provide communication from the Powered Flex Conveyor with the Power Assist, connect the male or female end of the cable on the Powered Flex Conveyor with the male or female end on the Power Assist depending on whether the connection is at the infeed or discharge end of the conveyor. Once the yellow interface cable is connected, and the appropriate mode is chosen on the selector switch, the units should begin operating as one unit.

OPERATING INSTRUCTIONS

NOTE

Do not exceed the rated capacity of the conveyor 50 lbs (22.5 kg) per linear foot. Overloading the conveyor could cause damage to the conveyor or components and could void the equipment warranty.

MOVING THE POWER ASSIST

When maneuvering the Power Assist into position, always have both hands placed on the control handles. Use the control buttons on the ends of the left and right handles to move the Power Assist forward and backward. Depress the right-side button to move the Power Assist forward and depress the left-side button to move the Power Assist in reverse.

Once the Power Assist has been positioned to the desired location, engage the gearmotor brake to prevent the Power Assist from moving.

Disengage the gearmotor brake to continue moving the Power Assist.

When pulling the Flex Conveyor in reverse turn from a collapsed position for optimized turning. Turning abilities will be limited when fully extended due to the nature of the flex conveyor mobility. In the case of a fully extended Flex Conveyor drive the Power Assist reverse slightly collapsing some of the Flex and then proceed to turn and move forward.

Additionally, the yellow side handles on the Flex Conveyor may be used to reposition the direction of the Power Assist.

When pushing a Flex Conveyor turning from a collapsed position will provide optimized turning. Use the yellow side handles to reposition the direction of the Flex as needed.

CAUTION

Turning will be limited by the maximum allowable radius of the Flex Conveyor, once this limit is reached do not force the Flex anymore as this may cause damage to the Flex frame.

CAUTION

Impact loading or dropping packages is not recommended and can cause damage as well as void the equipment warranty.

GENERAL PREVENTATIVE MAINTENANCE

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

Follow general maintenance safety procedures and review safety material prior to performing maintenance on any equipment.

Regular inspections are recommended by the manufacturer for the Powered Flex Conveyor to ensure proper operation of mechanical, electrical, and safety systems.



WARNING

- **Prohibit riding on conveyor by anyone.**
- **Think before making any adjustments. It may prevent an injury. Remember, all moving components are potentially dangerous.**
- **Protect yourself from unexpected starts when working on a stopped unit by locking the control panel or disconnect switch that supplies power to the unit.**
- **Lock-Out/Tag-Out procedures must be followed for every energy source of the conveyor.**

DAILY MAINTENANCE

- Listen to everything for unusual noises or vibration.
- Visually inspect the Power Assist to make sure it is free of debris.
- Inspect wires and cables for damage.
- Inspect belts for wear (not present on Power Assist with gravity deck option).
- Inspect casters and caster mount tubes for damage or missing parts.
- Inspect for loose fasteners or missing parts.
- Verify all Start/Stop push buttons operate properly.

WEEKLY MAINTENANCE

- Check all warning labels are still legible and properly placed.
- Check for unrestrained/pinched wiring, loose wiring connectors, nip points and other hazards.
- Check Mech-Drive Controller drive card for any warning lights (not present on Power Assist with gravity deck option).

- Check ends of photo eye sensors for damage and proper location.
- Check roller screws are tightened, replace any missing screws.

MONTHLY MAINTENANCE

- Check for consistent belt tension between rollers (not present on Power Assist with gravity deck option).
- Verify drive sheave set screws are tight (not present on Power Assist with gravity deck option).

QUARTERLY MAINTENANCE

- Check motor and ensure that motor is operating within its proper heat and noise range and verify the motor card does not indicate a problem.
- Check Mech-Drive controller drive card has power (not present on Power Assist with gravity deck option).
- Check Mech-Drive controller drive card does not show errors (not present on Power Assist with gravity deck option).

PHOTO EYE SENSORS

Photo eye sensors can be damaged or dislocated due to side loading and other operational activities where product being loaded/unloaded on the Conveyor comes in direct contact with the sensors. These types of activities should be avoided to prevent damage to the Conveyor's normal operation. However, the photo eyes should be inspected on a weekly basis, or more often depending on the hours in service, to prevent further damage or interruption to the Conveyor's operation.

- Check photo eyes for damage and/or dislocation.
- If damaged, replace as needed.
- If dislocated, reposition to normal operating position and secure in place.

CONTROLLER DRIVE CARD

Controller can be damaged or have loose connection from improper movement or tension to the wiring/cabbling through movement of the Conveyor. Motor cards should be routinely checked for proper power and errors. Motor cards are not present on Power Assists with gravity deck option.

- Inspect the motor cards.
- Check wiring and ensure proper contact with the driver card pins.
- Loosen or tighten wires as needed. Follow procedures for cabling wires.
- Repair and/or replace any driver cards with errors.

GENERAL TROUBLESHOOTING

Troubleshooting is a structured process of analyzing equipment abnormalities and relating these symptoms to the most probable cause, thus helping to correct the component failure. By carefully analyzing the deficiency, the experienced troubleshooter can efficiently isolate and take the appropriate steps to correct concerns that may arise.

Equipment malfunctions or failures may occur at any time. Following a regularly scheduled preventative maintenance program can help to minimize conveyor down time. Scheduled maintenance can lessen the frequency of equipment repairs by keeping components running more efficiently and in a better working environment.

Prior to performing any maintenance or replacement procedures, the ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

The disassembly or repair of equipment under warranty may void such warranty (motor, reducer, cable reel, etc.). Check to be sure that the warranty has not expired or will not be voided prior to performing disassembly or repair.

The troubleshooting information contained on the following pages is general in nature and is intended to provide an efficient means of pinpointing a correct solution in a timely manner. If additional information is required for repairs and is not covered in this manual, refer to the Technical Assistance information located at the front of this manual.



WARNING

Lock-out/tag-out power following your company's machine specific lock-out/tag-out procedure before cleaning, lubricating, maintaining, removal of any guard, and after conveyor operation is complete.

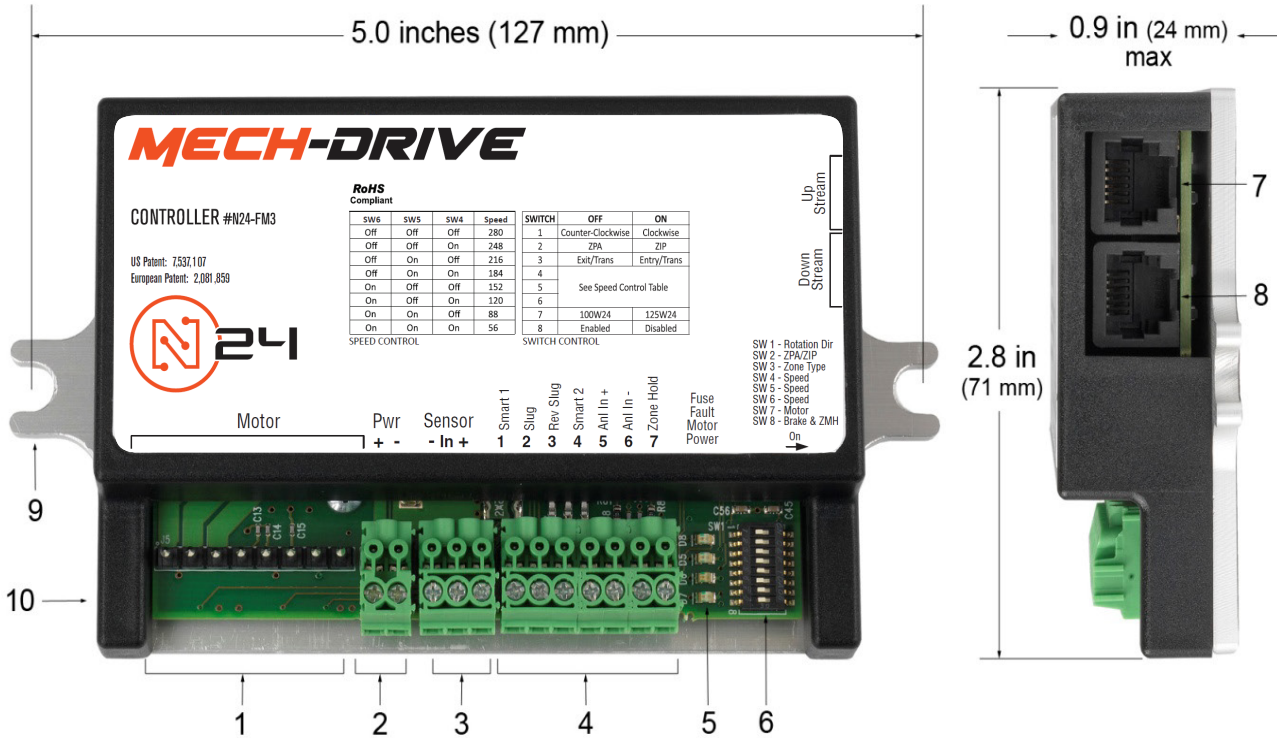
Replace all safety devices, guards, and guarding prior to equipment start up.

PROBLEM	CAUSE	SOLUTION
None of the zones will run (powered conveyor option only).	Disconnect on the power supply is off.	Turn on disconnect.
	Power supply is not receiving AC power.	Check AC power.
	Circuit breaker is tripped.	Check for faulty breaker or fault condition.
	No power to flat motor drive card.	Verify 24V from output side of DC power supply.
	Power supply output voltage too high or too low.	Replace power supply.
Entry zone will not turn on (powered conveyor option only).	Entry zone photo eye not sensing.	Check to see if status light on photo eye illuminates. If not, replace photo eye.
	Incorrect handshaking.	Check operational mode selector switch.
	Incorrect DIP switch setting.	Check DIP switches.
	No power to drive card.	Check power connections.
	Motor cable not connected to drive card.	Check motor connections.

GENERAL TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Transport zone will not turn on (powered conveyor option only).	Communication wiring not plugged in.	Check upstream and downstream communication wiring.
	Photo eye is not sensing.	Check to see if status light on photo eye illuminates. If not, replace photo eye.
	Incorrect DIP switch setting.	Check DIP switches.
	No power to drive card.	Check power connections.
Transport zone will not turn off (powered conveyor option only).	Motor cable not connected to drive card.	Check motor connections.
	Upstream zone is attempting to send product.	Check photo eye in upstream zone.
Entry zone or transport zone will not discharge product (powered conveyor option only).	Upstream zone is attempting to send product.	Check for jammed product in upstream zone.
	Communication wiring not plugged in.	Check communication wiring.
	Downstream zone is full.	Remove product from downstream zone.
Exit zone will not discharge product (powered conveyor option only).	Downstream zone photo eye not sensing.	Check to see if status light on photo eye illuminates. If not, replace photo eye.
	Incorrect handshaking.	Check operation mode selector switch.
	Downstream device not sending a release signal.	Check connection to downstream device.
Power Assist not driving.	DIP switch not configured properly.	Check DIP switches.
	Drive wheel not engaged with ground.	Adjust drive wheel height until contact with ground is made.
	Power is not ON.	Check for system power, unit is plugged in, and disconnect is ON.
	Drive error.	Check for VFD faults.

CONTROLLER TECHNICAL INFORMATION



Mech-Drive Controller Drive Card

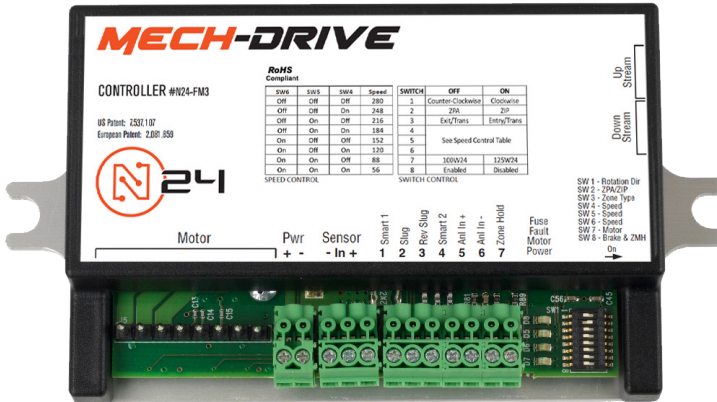
Reference Mech-Drive Drawing	Description
1	Motor Connection Header
2	+24VDC Power Input Header (plug included)
3	PNP Sensor Connection Header (plug included)
4	Smart/User Input-Output Connection Header (plug included)
5	Feedback LED Indicators
6	Configuration Switches
7	Upstream Peer-to-Peer PNP RJ-12 Connection
8	Downstream Peer-to-Peer PNP RJ-12 Connection
9	Mounting Plate/Heat Sink
10	Cover

CONTROLLER SETTINGS

ATTACHING TO INFEED END OF CONVEYOR

DRIVE CARD 1 SETTINGS

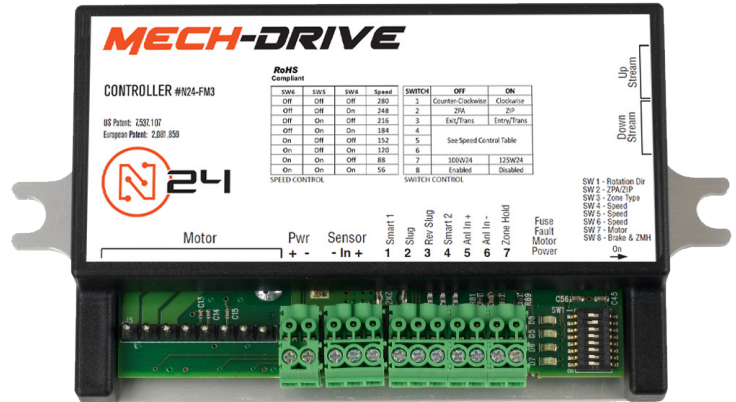
When attaching Power Assist to the INFEED end of the conveyor Drive Card 1 DIP switches 2 and 3 need to be ON, all others OFF. Connect communication cable on downstream.



Mech-Drive Controller Drive Card 1 (INFEED)

DRIVE CARD 2 SETTINGS

When attaching Power Assist to the INFEED end of the conveyor Drive Card 2 DIP switch 2 needs to be ON, all others OFF. Connect communication cable on upstream.

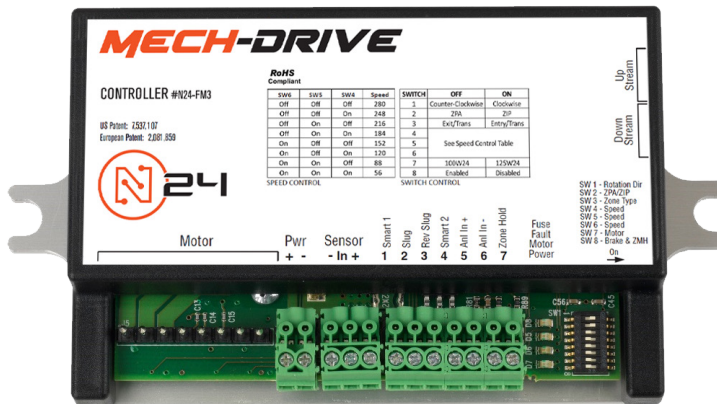


Mech-Drive Controller Drive Card 2 (INFEED)

ATTACHING TO DISCHARGE END OF CONVEYOR

DRIVE CARD 1 SETTINGS

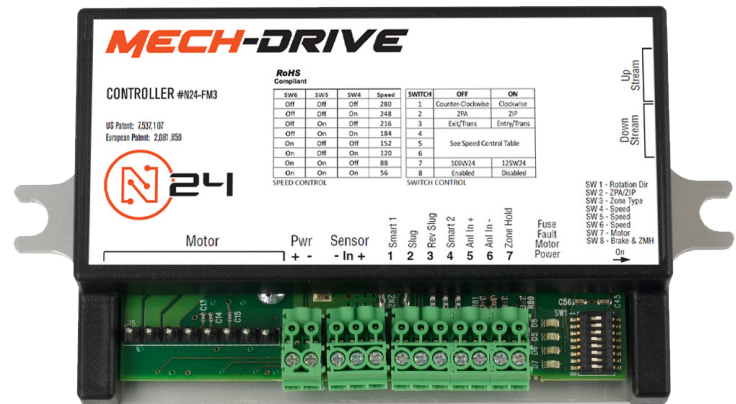
When attaching Power Assist to the DISCHARGE end of the conveyor Drive Card 1 DIP switches 1 and 2 need to be ON, all others OFF. Connect communication cable on upstream.



Mech-Drive Controller Drive Card 1 (DISCHARGE)

DRIVE CARD 2 SETTINGS

When attaching Power Assist to the DISCHARGE end of the conveyor Drive Card 2 DIP switches 1, 2, and 3 need to be ON, all others OFF. Connect communication cable on downstream.



Mech-Drive Controller Drive Card 2 (DISCHARGE)

TROUBLESHOOTING: CONTROLLER

The Mech-Drive N24-FM3 provides four (4) LED indicators shown as item 5 in Figure 22: Mech-Drive N24-FM3 Controller Components. These LEDs are often useful in diagnosing various wiring and connection problems. If power is connected there will always be at least one LED illuminated or flashing.

PROBLEM	CAUSE	SOLUTION
No LED's On	No power to the system	Check power supply
FUSE LED (RED) is On	Fuse is blown	Check wiring
		Replace fuse
FAULT LED 5.1 (RED) - Constantly On	Stalled motor or blocked photoeye	Check for mechanical obstructions
FAULT LED 5.1 (RED) - 1 Flash in 4 Seconds	ZPA module problem	Replace ZPA module
FAULT LED 5.1 (RED) - 2 Flashes in 4 Seconds	Input voltage too high	Check power supply
FAULT LED 5.1 (RED) - 3 Flashes in 4 Seconds	Input voltage too low	Check power supply
FAULT LED 5.1 (RED) - 4 Flashes in 4 Seconds	Problem with motor cable connection	Check motor cable for damage and secure connection to ZPA module
FAULT LED 5.1 (RED) - 5 Flashes in 4 Seconds	Control over temperature	Allow card to cool. Check for ambient temperature and heat sources. Check for proper motor function and wiring. Cycle power to reset.
FAULT LED 5.1 (RED) - 6 Flashes in 4 Seconds	Extreme over current	Check for proper motor function and damaged wiring. Allow unit to cool. Cycle power to reset.
MOTOR LED 5.2 (AMBER) - Constantly On	ZPA module is current limiting the flat motor	If condition persists, check for obstructions
MOTOR LED 5.2 (AMBER) - Flickering	Flat motor is drawing significant current during startup, ZPA module is current limiting	No action required
		Motor may not reach full speed
MOTOR LED 5.2 (AMBER) - 4 Flashes in 4 Seconds	ZPA module has overheated and current limiting the flat motor to about 1/2 normal operation	Check for mechanical obstruction
		Allow ZPA module to cool, before restarting
POWER LED 5.3 (GREEN) - Constantly On	Power is properly applied and fuse is not blown	Normal operation

POWER ASSIST PARTS REPLACEMENT AND PROCEDURES



WARNING

Before starting any maintenance procedure, the **ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.**



WARNING

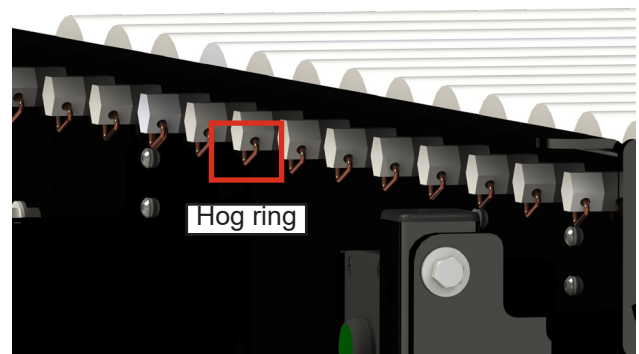
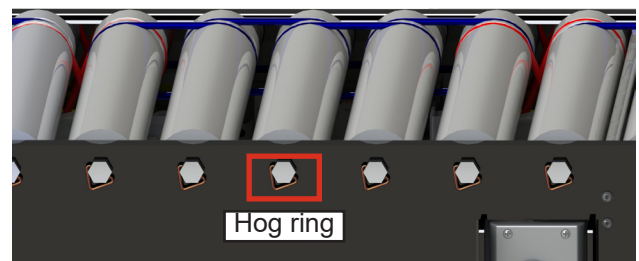
Replace all safety devices and guarding prior to equipment start-up.

3. Apply upward force on the roller body until the roller shaft lifts out of the frame completely. It is recommended to place a putty knife or similar flat surface tool between the shaft and the inside of the frame to protect the finish on the inside of the conveyor frame.
4. Place the new roller's shaft into the hole in the conveyor frame.
5. Press on spring-loaded shaft using putty knife and slide roller into place, so that shaft sets in the opening in the opposite conveyor frame.
6. Replace hog ring(s) in roller axle(s).

ROLLER REPLACEMENT (POWERED CONVEYOR)

Regularly scheduled preventative maintenance will ensure maximum component life. In the event of excessive wear or damage to a roller, complete the following procedure.

1. Remove the hog ring from the pin hole in the roller axle.
2. Using a small diameter punch or similar tool, apply linear pressure to the roller shaft on the hog ring end until the shaft clears the inside of the frame.
3. Apply upward force on the roller body until the roller shaft lifts out of the frame. It is recommended to place a putty knife or similar flat surface tool between the shaft and the inside of the frame to protect the finish on the inside of the frame.
4. Remove roller from urethane round belts. Remove roller from conveyor.
5. If replacing urethane round belts, place one or two around roller, depending on roller's position in banding pattern. Otherwise, insert roller into adjacent roller's round belt ensuring shaft sets into the hole in the frame.
6. Press on spring-loaded shaft using putty knife and slide roller into place, so that shaft sets in the opening in the conveyor frame.
7. Replace hog ring(s) in the roller axle(s).



Roller axle retention

ROLLER REPLACEMENT (GRAVITY CONVEYOR)

Regularly scheduled preventative maintenance will ensure maximum component life. In the event of excessive wear or damage to a roller, complete the following procedure.

1. Remove hog ring from the pin hole in the roller axle.
2. Using a small diameter punch or similar tool, apply linear pressure to the shaft on the hog ring end until the shaft clears the inside of the frame.

POWER ASSIST PARTS REPLACEMENT AND PROCEDURES



WARNING

Before starting any maintenance procedure, the **ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.**



WARNING

Replace all safety devices and guarding prior to equipment start-up.

ROUND BELT REPLACEMENT (NOT PRESENT ON POWER ASSIST WITH GRAVITY DECK OPTION)

Regularly scheduled preventative maintenance will ensure maximum component life. In the event of excessive wear or damage to a round belt, complete the following procedure.

1. Remove the hog ring from the pin hole in the roller axle.
2. Using a small diameter punch or similar tool, apply linear pressure to the roller shaft on the hog ring end until the shaft clears the inside of the frame.
3. Apply upward force on the roller body until the roller shaft lifts out of the frame. It is recommended to place a putty knife or similar flat surface tool between the shaft and the inside of the frame to protect the finish on the inside of the frame.
4. Remove the old urethane round belt(s) from the rollers.
5. Replace belt(s) around rollers, ensuring the belt(s) slip into the groove(s) on the rollers.
6. Press on spring-loaded shaft using putty knife and slide roller into place, so that shaft sets in the opening in the conveyor frame.
7. Replace hog ring(s) in the roller axle(s).

WARRANTY STATEMENT

The Seller warrants that the Equipment will be free of defects in workmanship and material (if properly installed, operated and maintained) for a period of one year or 2080 hours of use, whichever is sooner, from date of shipment to Customer, subject to the limitations hereunder set forth. If within the one year warranty period, the Seller receives from the Customer written notice of any alleged defects in the Equipment and if the Equipment is not found to be in conformity with this warranty (the Customer having provided the Seller a reasonable opportunity to perform any appropriate tests thereon) Seller will, at its option, either repair the Equipment or supply a replacement therefore.

The Seller under either option shall have the right to require Customer to deliver the Equipment to Seller's designated service center and the Customer shall pay all charges for in-bound and out-bound transportation and for services of any kind, diagnostic or otherwise, excepting only the direct and actual costs of repairing or replacing the Equipment. If after reasonable effort the Seller cannot correct said deficiencies, the Seller will make an equitable price adjustment based on actual performance, provided that such adjustment shall under no circumstances exceed the purchase price. The Seller further warrants that the parts, and components supplied by the Seller and forming a part of the Equipment will be free from defects in material and workmanship for a period of one year or 2080 hours of use, whichever is sooner, from date of shipment to the Customer. The Seller's liability shall be solely limited to the supplying of replacement parts and materials.

For a copy our full warranty included in our Terms and Conditions of Sale, contact ConveyX Solutions, LLC.

RETURN AUTHORIZATION PROCEDURES

If the component in question is included in the replacement parts package, the following procedure will apply:

- Identify the part number from the manual
- If part is indicated as wear part
 - Replace the damaged or defective part from parts inventory
 - Order additional parts as required
- If the part is indicated as a warranty part
 - Replace the damaged or defective part from parts inventory
 - Contact ConveyX Solutions, LLC for a Return Merchandise Authorization (RMA) number
 - Have conveyor serial number available when contacting CXL.
 - Send the part to the following address

ConveyX Solutions, LLC.
2380 US 23 South
Docks C, D, E
Alpena, MI 49707
 - Include the conveyor serial number and RMA number on the packaging and the packing slip
 - CXL will inspect the part and make a warranty determination
 - If the part is under warranty, CXL will...
 - Ship a replacement to Customer to replenish parts stock
 - Issue a credit for the freight

If the component in question is not included in the replacement parts package, the following procedure will apply:

- Identify the part number from the manual
- Contact CXL for an initial review to establish if part is covered under warranty and to provide a quote if needed.
 - Have conveyor serial number available when contacting CXL
- Issue a purchase order for a replacement part
- CXL will issue a Return Merchandise Authorization (RMA) number for the part to be returned.
- Send the part to the following address

ConveyX Solutions, LLC.
2380 US 23 South
Docks C, D, E
Alpena, MI 49707
- Include the conveyor serial number and RMA number on the packaging and the packing slip
- CXL will inspect the part and make a warranty determination
- If the part is under warranty, CXL will Issue a credit to Customer for the purchased part and associated freight charges

PARTS REFERENCE CHART AND DRAWINGS

POWER ASSIST REPLACEMENT PARTS - POWERED CONVEYOR		
1	111471	BEARING: 4-BOLT FLANGE, 1 15/16" BORE
2	111465	BEARING: 4-BOLT FLANGE, 1 3/16" BORE
3	DUR014X1358	URETHANE BELT: 1/4" DIA. X 13 5/8" LONG, CYCLOTHANE-A 83A DUROMETER, HIGH TENSION RED, WELDED LOOP
4	DUR014X1158	URETHANE BELT: 1/4" DIA. X 11 5/8" LONG, CYCLOTHANE-A 83A DUROMETER, HIGH TENSION BLUE, WELDED LOOP
5	CXC-100102	DRIVER CARD (24V DC): MECH-DRIVE #N24-FM3 ASSEMBLY
6	CXC-100010	CABLE (COMMUNICATION): RJ-12, FLAT SILVER SATIN, 6P6C, REVERSE PINOUT, 7 FT
7	BANSSAEB1PL212ED1Q8	E-STOP (FLUSH-MOUNT): BANNER #SSA-EB1PL2-12ED1Q8, ILLUMINATED EMERGENCY STOP PUSH BUTTON, FLUSH-MOUNT ENCLOSURE, M12 8-PIN QD, 2NC/1NO
8	CXC-100200	ROLLER SENSOR: 762MM, PNP, 2M CABLE
9	CXC-100600	GEARMOTOR WITH BRAKE: NORD #SK9012.1AXB-80LP/4CUSBRE.10HLTW, 1.1875" HOLLOW KEYED SHAFT, 20 RPM OUTPUT SPEED, 86:1 RATIO, 1 HP, 230/460VAC/60HZ, MOUNTING POSITION 'M4', TERMINAL BOX '1', CONDUIT ENTRY 'I', 10NM 24VDC BRAKE, BRAKE LEVER 'HL2'
10	HAMW1430RL11516KX2SS	DRIVE WHEEL: HAMILTON #W-1430-RL-1-15/16-XK-2SS, 14" DIA. X 3" FACE, 3 1/4" HUB LENGTH, 1 15/16" BORE, KEYWAY
11	CXC-100056B	CASTER: SWIVEL WITH BRAKE, 6" X 2" BLACK POLYOLEFIN WHEEL, 4" X 4 1/2" PLATE MOUNT, 700# CAPACITY
12	CXC-100100	MOTOR (BRUSHLESS DC FLAT): 24VDC, 4.0 AMP, 100W, CE, ROHS, 'D' TYPE SHAFT 2 1/2" LONG, (1) BEARING, 22" LONG CABLE
13	FXMCM	MOTOR SUB ASSEMBLY
14	FX24-MCHD-RO-30	GROOVED ROLLER: 2 1/2" OD X 10 GA. (FLO-COAT GALV.), 30" BF, (2) GROOVES
15	FXDS2	SHEAVE (DRIVE): 2 5/8" HUB OD, 1/2" BORE, 2" LTB, (2) NARROW GROOVES ON 1" C/C

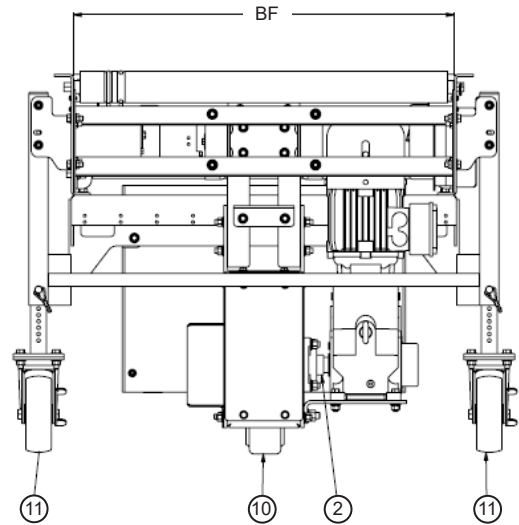
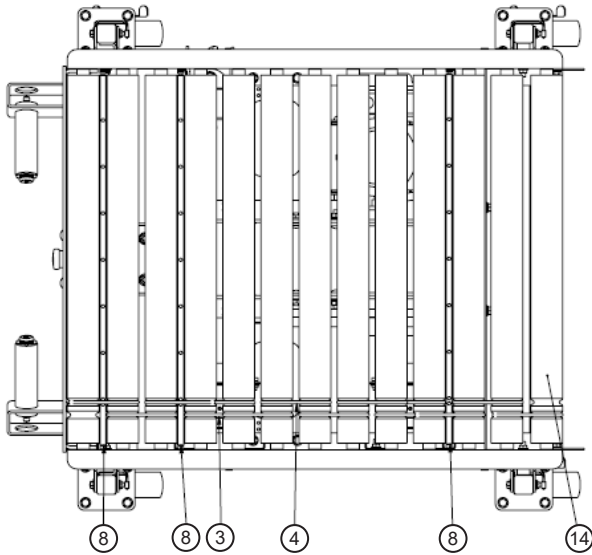
POWER ASSIST REPLACEMENT PARTS - GRAVITY CONVEYOR		
A	111471	BEARING: 4-BOLT FLANGE, 1 15/16" BORE
B	111465	BEARING: 4-BOLT FLANGE, 1 3/16" BORE
C	CXC-100600	GEARMOTOR WITH BRAKE: NORD #SK9012.1AXB-80LP/4CUSBRE.10HLTW, 1.1875" HOLLOW KEYED SHAFT, 20 RPM OUTPUT SPEED, 86:1 RATIO, 1 HP, 230/460VAC/60HZ, MOUNTING POSITION 'M4', TERMINAL BOX '1', CONDUIT ENTRY 'I', 10NM 24VDC BRAKE, BRAKE LEVER 'HL2'
D	HAMW1430RL11516KX2SS	DRIVE WHEEL: HAMILTON #W-1430-RL-1-15/16-XK-2SS, 14" DIA. X 3" FACE, 3 1/4" HUB LENGTH, 1 15/16" BORE, KEYWAY
E	CXC-100056B	CASTER: SWIVEL WITH BRAKE, 6" X 2" BLACK POLYOLEFIN WHEEL, 4" X 4 1/2" PLATE MOUNT, 700# CAPACITY
F	MCHD-RO-30	GRAVITY ROLLER: 2 1/2" OD X 11 GA. (GALV.), 30" BF

PARTS REFERENCE CHART AND DRAWINGS

PANEL COMPONENTS - POWERED AND GRAVITY CONVEYOR		
16	18-0265	CIRCUIT BREAKER: 25 AMP, 1-POLE, UNIVERSAL VOLTAGE, AC/DC, UL489, C TRIP CURVE, WEIDMULLER #BR1C25UC
17	36-0510	CIRCUIT BREAKER: 8 AMP, 1-POLE, UNIVERSAL VOLTAGE, AC/DC, UL489, C TRIP CURVE, WEIDMULLER #BR1C8UC
18	36-0512	MINIATURE CIRCUIT BREAKER: 20 AMP, 1-POLE, UNIVERSAL VOLTAGE, AC/DC, UL489, C TRIP CURVE, WEIDMULLER #BR1C20UC
19	86107	POTENTIOMETER ASSEMBLY: 24V DC IN, 0 - 2.5V DC OUT, 0 - 5V DC OUT, 0 - 10V DC OUT, INDEPENDENT 10V REFERENCE, UL LISTED, NTC #NZ-SC-100-R10
20	26-0106	DISCONNECT: MERSEN #M403, NON-FUSED, 30 AMP
21	26-0107	DISCONNECT SHAFT: MERSEN #SPA290, SHAFT PISTOL HANDLE 6X6X290MM
22	26-0108	DISCONNECT HANDLE: MERSEN #HR45, FOR NON-FUSED 30 AMP DISCONNECT
23	36-0580	FREQUENCY INVERTER: I550, SINGLE PHASE, 120V, 0.75 KW, 0 - 599 HZ, STANDARD IO, IP20, 4.2A, LENZE #I550AE175A10V0100S
24	36-0505	PLUG: 2-POLE, 3-WIRE GROUNDING, LOCKING PLUG, MALE, LEVITRON #2611
25	27-0143.5	POWER SUPPLY: PRO TOP, 20 AMP, 480W, 85-277V-1PH-60HZ INPUT, 24V DC OUTPUT, WEIDMULLER #2466890000
26	DEE2R-810D	QUICK DISCONNECT CABLE: 8-PIN, M12 MICRO, STRAIGHT FEMALE TO STRAIGHT MALE, 22 AWG, 3M LONG, BANNER #DEE2R-810D

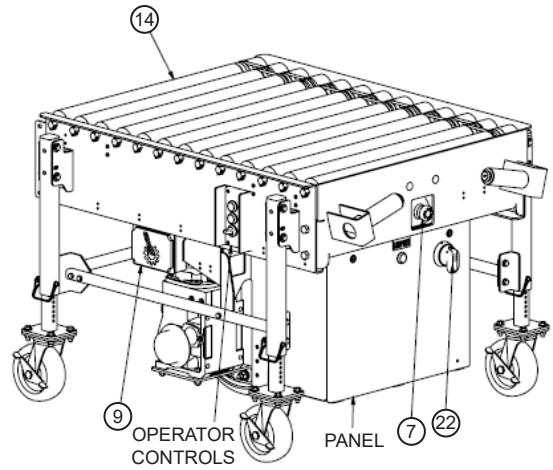
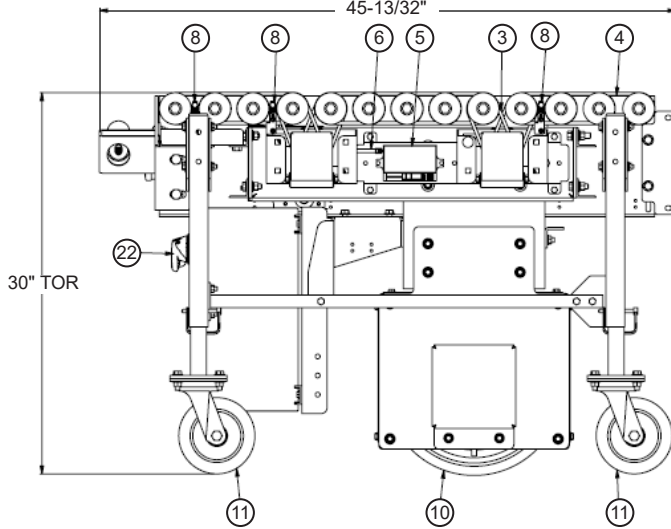
PARTS REFERENCE CHART AND DRAWINGS

POWER ASSIST WITH POWERED CONVEYOR



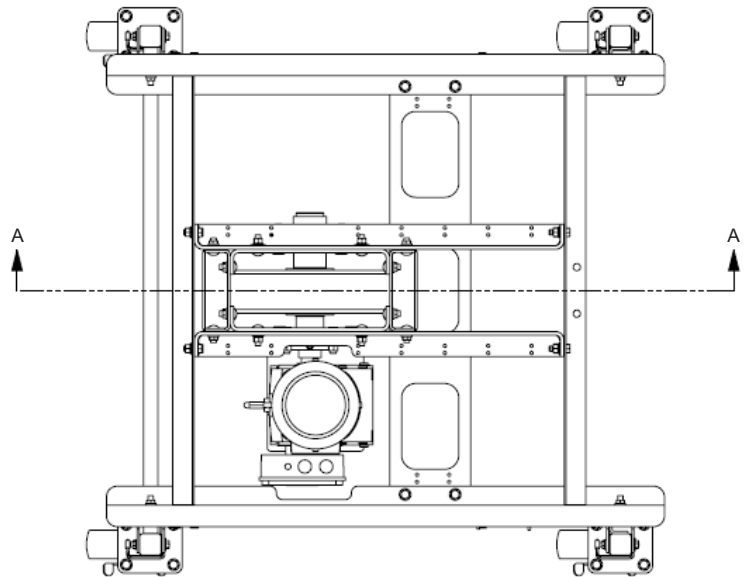
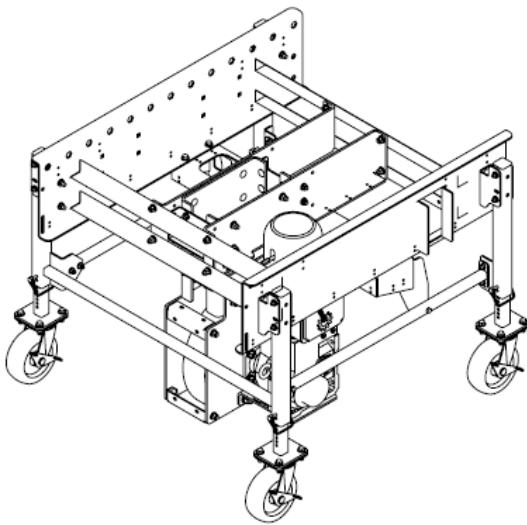
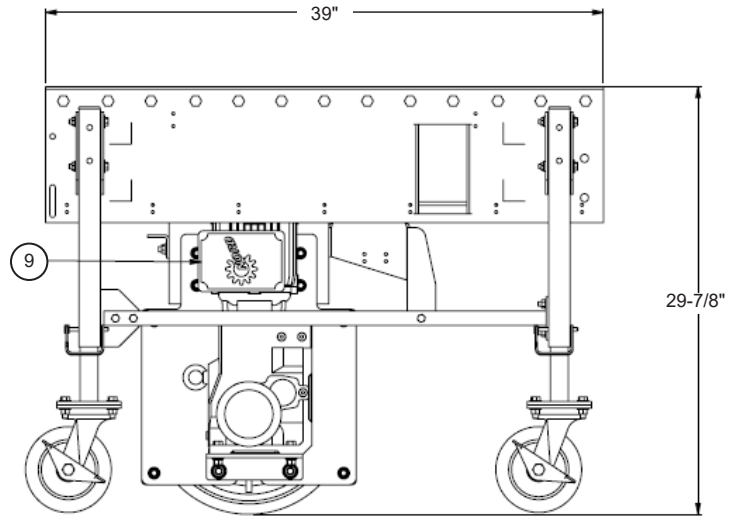
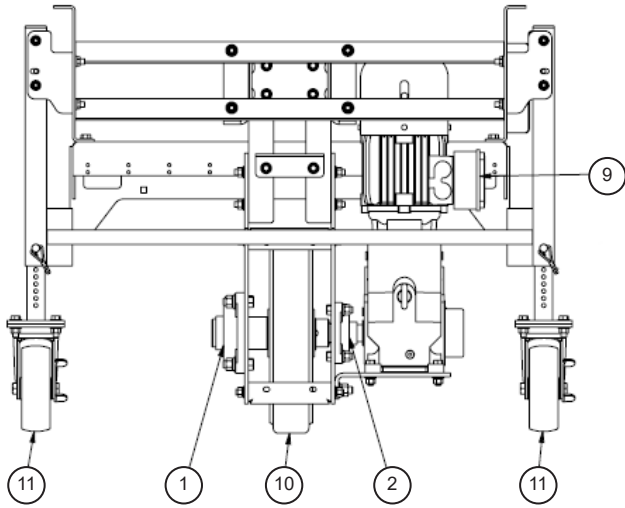
SIDE FRAME HIDDEN FOR CLARITY

45-13/32"



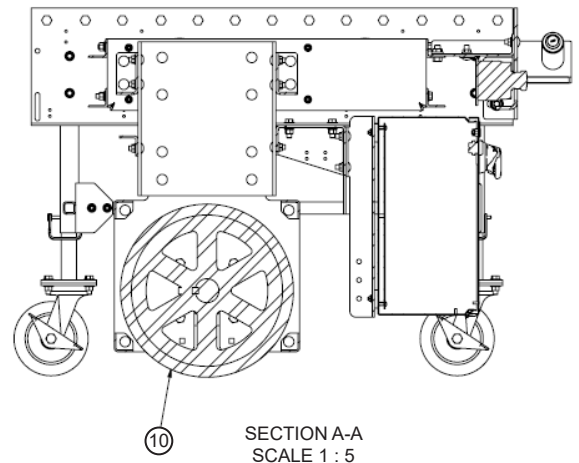
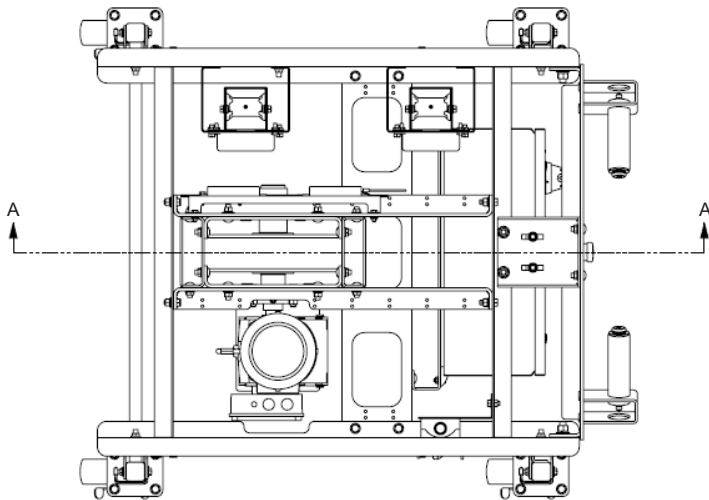
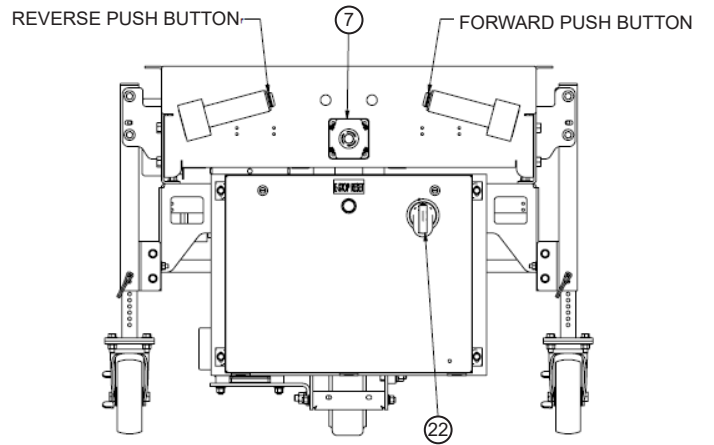
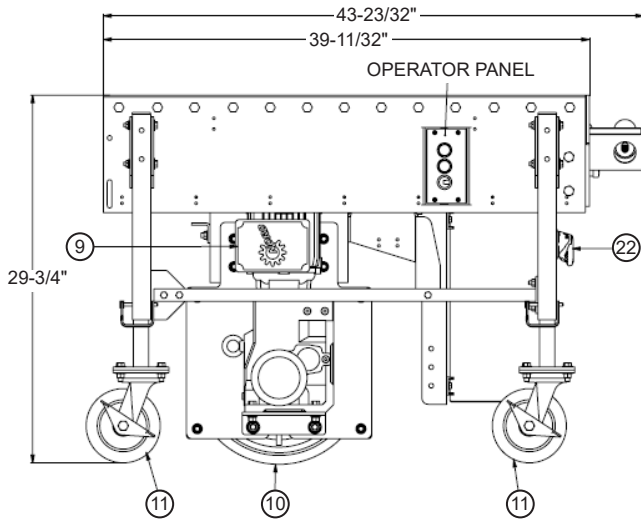
PARTS REFERENCE CHART AND DRAWINGS

POWER ASSIST WITH POWERED CONVEYOR



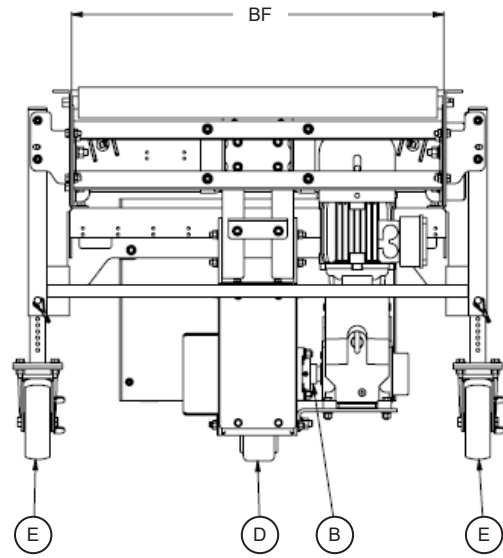
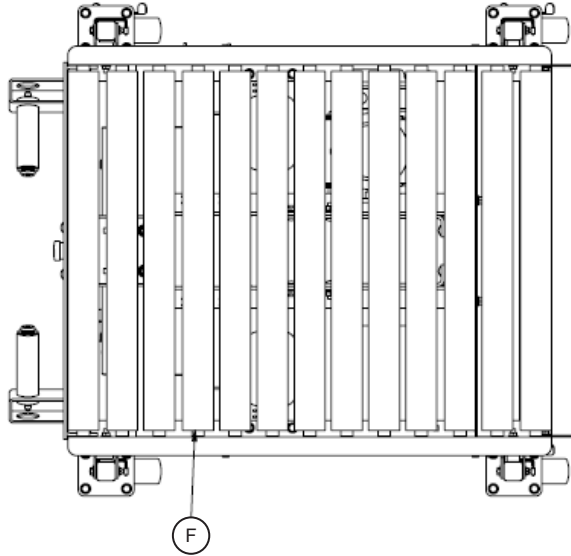
PARTS REFERENCE CHART AND DRAWINGS

POWER ASSIST WITH POWERED CONVEYOR

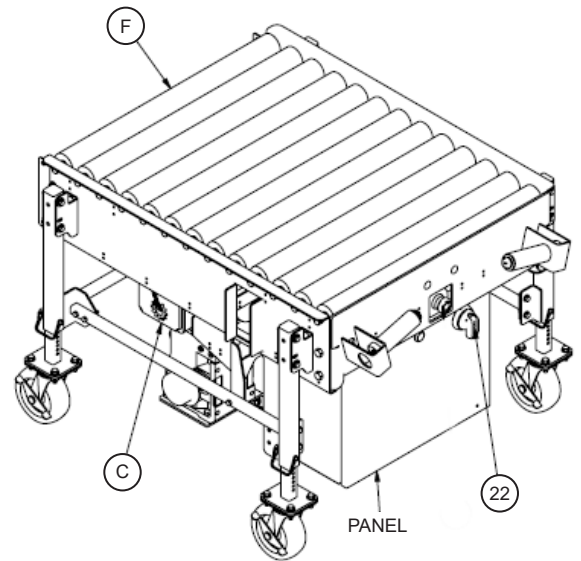
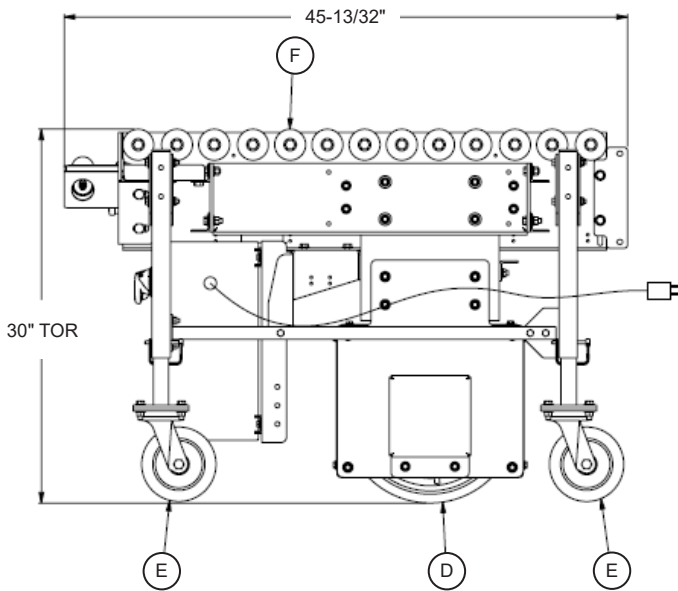


PARTS REFERENCE CHART AND DRAWINGS

POWER ASSIST WITH GRAVITY CONVEYOR



SIDE FRAME HIDDEN FOR CLARITY



FORWARD PUSH BUTTON



ConveyX Solutions, LLC strives to be the leading dock door conveyor solutions manufacturer in North America. Our load and unload material handling equipment is designed for unit handling applications delivering operational improvements and energy efficiency.

We build to our customers' specifications to enhance their processes with quality equipment and components. We specialize in rapid product development to exceed lead time and volume requirements.