
HILMOT

A **TREW** Company

MoveIT-Max Gen 2 Speed Control with Accumulation and E-stops

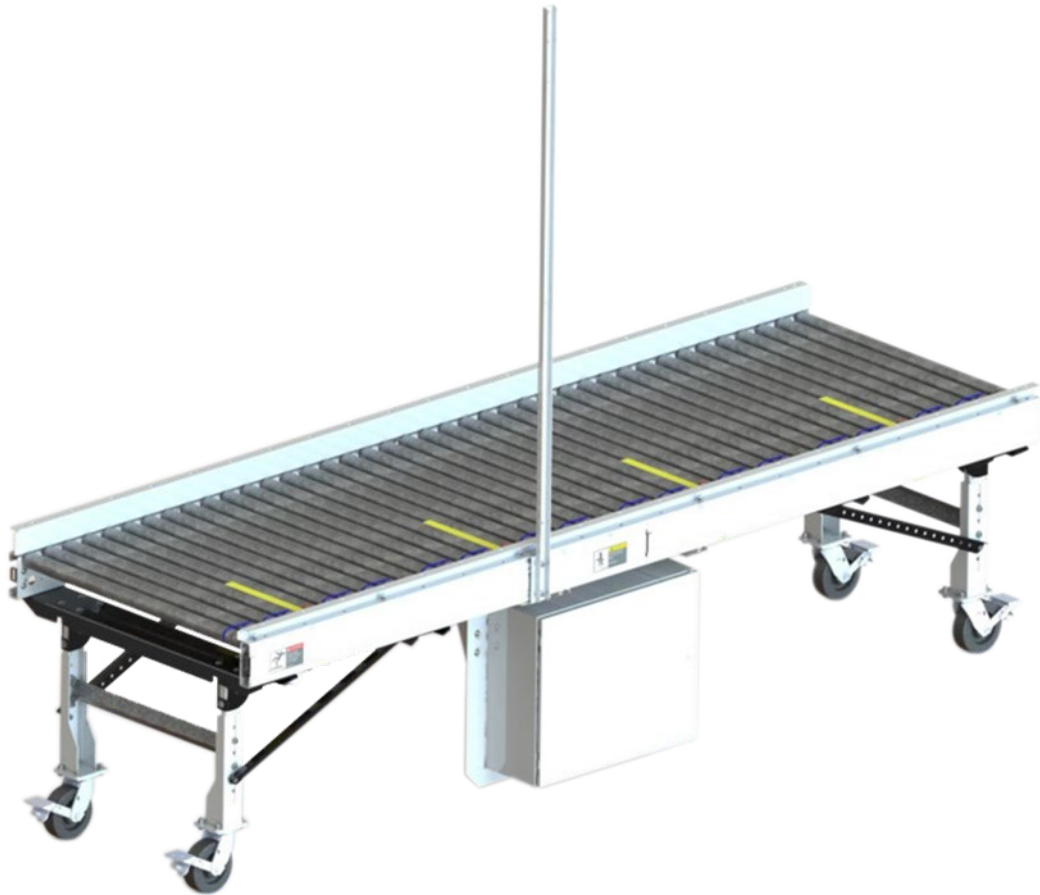


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INSTALLATION & MAINTENANCE MANUAL

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1.1 MoveIT-Max™ Overview

MoveIT-Max™ (Figure 1) is a quick to install, quick to re-configure, mobile modular transportation conveyor line that can expand the operational readiness and functionality of a given system.

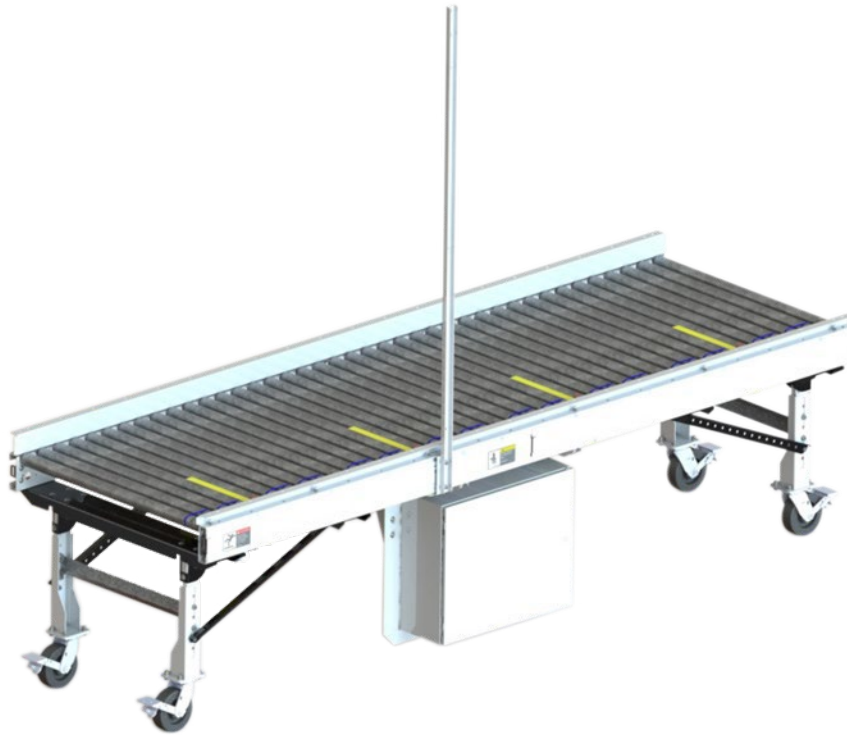


Figure 1: MoveIT-Max

Based on Trew Hilmot's popular Series 1500 Motorized Roller, MoveIT-Max™ adds special built-in factory features that simplify and speed-up installation while providing flexible system layouts.

- Robust structural design.
- Wheeled leg supports for mobility.
- Quick section connects allow for rapid assembling, disassembling, and re-assembling.
- 24VDC motors provide quiet, reliable operation.
- Electrically pre-wired and connectorized for easy installation.

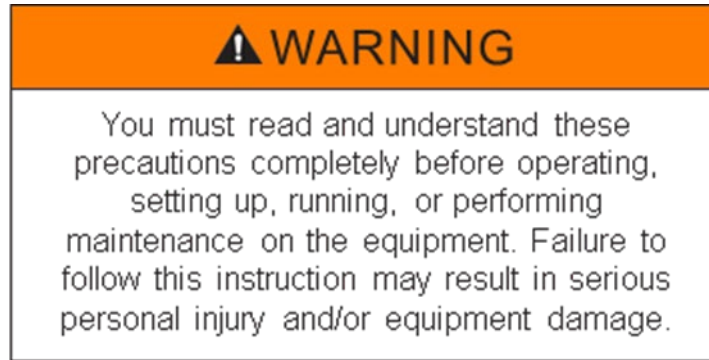
Table 1: Specifications

GENERAL CONVEYOR	
Width (BF)	36", 48"
Types	Powered, Gravity
Height	32" Top of roller
Speed	65 FPM (45-175)
Capacity	30 lbs./Ft
Supports	Attached, 6" locking wheel
Power	
Amps	2
Volts	24VDC Input power
Sections	8= 1 parent, 7 children per power supply
Maximum	36 Motors per power supply
Shipping	
36" BF Straights	2000 lbs. per pallet, (4) 10' Sections per Pallet

WARNING & SAFETY INFORMATION

2.1 Warning & Safety Introduction

The preventative maintenance instructions in this document contain important warning messages. To mitigate the risk of injury, critical warnings will be boxed with a warning label. An example of a critical warning message is shown below:



Special attention to all **WARNING, DANGER and CAUTION** signs is strongly recommended.

Other information on Warning and Safety information can be found in The American National Standard Institute (ANSI) website: <https://webstore.ansi.org>. The Conveyor Equipment and Manufacturers Association (CEMA) also provides useful information and can be found at www.cemanet.org.

Note: Emphasis is placed on the latest edition of the Occupational Safety and Health Standards, which is available from the Department of Labor, Washington, D.C. These standards (found in Part 1910, Title 29 of the Code of Federal Regulations) contain the current, general industry occupational safety and health regulations set forth by federal legislation. Also, some of the information contained in this section has been reprinted from ASME, B20.1--2000 by permission of The American Society of Mechanical Engineers. All rights reserved.

The safety precautions in this manual are intended to compliment the following:

- 1 Federal and State safety laws, regulations, and codes.
- 2 Facility safety rules and practices.

2.2 General Warning and Safety Rules and Practices

General conveyor safety rules are as follows:

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

2.3 Guards & Headroom

2.3.1 Guards & Guarding

All exposed moving machinery parts that present a hazard to employees shall be mechanically or electrically guarded for personnel safety. Other guarding practices, means and exceptions can be found below:

2.3.2 Interfacing of Equipment

When two or more pieces of conveying equipment have the potential to cause injury, special attention (warning labels and physical guards) should be used to mitigate the risk of injury.

2.3.3. Guarded by Location or Position

Remoteness from frequent presence of public or employed personnel shall constitute guarding by location. Overhead conveyors, such as trolley conveyors and hanger suspended tray conveyors, for which guarding would render the conveyor unusable or would be impracticable, shall have prominent and legible warnings posted in the area or on the equipment, and, where feasible, lines shall be painted on the floor delineating the danger area.

When a conveyor passes over a walkway, roadway, or workstation, it is considered guarded by location if all moving parts are at least 8 ft. (2.00 m) above the floor or walking surface or are otherwise located so that the employee cannot inadvertently meet hazardous moving parts.

Although overhead conveyors may be guarded by location, spill guard, pan guards, or equivalent shall be provided if the product may fall off the conveyor for any reason and endanger personnel.

2.3.4 Guarding Exceptions

Wherever conditions prevail that would require guarding under these standards, but such guarding would render the conveyor unusable, prominent warning means such as signs or warning lights shall be provided in the area or on the equipment in lieu of guarding.

2.3.5 Headroom

If the conveying equipment is installed above exit passageways, aisles, or corridors, there shall be provided a minimum clearance of 6 ft. 8 in. (2.00 m) measured vertically from the floor or walking surface to the lowest part of the conveyor or guards. If the conveying functionality is impaired by the minimum clearance, it is permissible to allow passage under conveyors with less than minimum standard if suitable warning indicates the low headroom space.

2.4 Controls

2.4.1 Control Stations

Control stations should be located such that the operation of the relevant equipment is visible from its operator. Control stations shall be clearly marked or labeled to indicate the function controlled.

2.4.2 Start/ Stop Controls

Conveyors with the potential of causing injury when started shall not be started until all personnel are alerted by a signal or by a designated person that the conveyor is about to start.

Where safety is adversely affected by other situations (i.e., a work area with many different conveyors using various warning devices), a clear, concise, and legible warning sign shall be provided. These additional warning measures should indicate that a known danger exists, and that personnel must keep clear. These warning signs shall be provided along the conveyor at areas not guarded by position or location.

2.4.3 Remote and Automatic Controls

Conveyors with the potential of causing injury when remotely started must have an audible and/or an optical (i.e., a flashing light) device such that personnel may be clearly warned.

Manned areas that are beyond voice or visual contact from hazardous areas such as drive areas, loading areas, transfer points, or areas not guarded by location or position, or guards, shall be furnished with emergency stop buttons, pull cords, limit switches, or similar emergency stop devices. All such emergency stop devices shall be easily identifiable in the immediate vicinity of such locations unless guarded by location,

position, or by guards.

Where the design, function, and operation of such conveyor clearly is not hazardous to personnel, and emergency stop device is not required. The emergency stop device shall act directly on the control of the conveyor concerned and shall not depend on the stopping of any other equipment. The emergency stop devices shall be installed so that they cannot be overridden from other locations.

Inactive and unused actuators, controllers, and wiring should be removed from control stations and panel boards, together with obsolete diagrams, indicators, control labels, and other material which may confuse the operator.

2.4.4 Safety Devices

All safety devices, including wiring of electrical safety devices, shall be arranged to operate such that a power failure or failure of the device itself will not result in a hazardous condition.

2.4.5 Stops and Restarts

Conveyor controls shall be so arranged that, in case of emergency stop, manual reset or start at the location where the emergency stop was initiated, shall be required of the conveyor(s) and associated equipment to resume operation.

Before restarting a conveyor, which has been stopped because of an emergency, an

An inspection of the conveyor shall be made, and the cause of the stoppage determined. The starting device shall be locked or tagged out before any attempt is made to remove the cause of the stoppage unless operation is necessary to determine the cause or to safely remove the stoppage. Refer to ANSI Z244.1--1982, American National Standard for Personnel Protection-- Lockout/Tagout of Energy Sources -- Minimum Safety Requirements, and OSHA Standard 29 CFR 1910.147, "The Control of Hazardous Energy (Lockout/Tagout)".

2.4.6 Operation Safety Precautions

Only trained personnel shall be permitted to operate a conveyor. Training shall include instruction in operation under normal conditions and emergency situations. General Safety Precautions are as follows:

- Where safety is dependent upon stopping devices or starting devices or both, they shall be kept free of any obstructions that prevent their intended use.

- The area around loading and unloading points shall be kept clear of obstructions that could endanger personnel.
- No person shall ride on a conveyor unless that person is specifically authorized by the owner or employer. Under those circumstances, such employee shall only ride a conveyor which incorporates within its supporting structure, platforms or control stations specifically designed for carrying and controlling such events.
- Personnel working on or near a conveyor shall be instructed as to the location and operation of pertinent stopping devices.
- A conveyor shall be used to transport only the material it is designed to carry.
- Under no circumstances shall the safety features of the conveyor be altered if such alterations would endanger any personnel.
- Routine inspections and preventive or corrective maintenance actions shall be conducted to ensure that all guards and safety features and devices are retained and function properly.
- Personnel should be alerted to all potential entanglement hazards in the conveying equipment. Items such as long hair, loose clothing or jewelry are examples of entanglement hazards.
- Conveyors shall not be maintained or serviced while in operation unless proper maintenance or service requires the conveyor to be in motion. In these events, personnel shall be made aware of the hazards and how the tasks may be safely accomplished.

2.5 Maintenance Safety

Maintenance and service shall be performed only by qualified and trained personnel. It is important to establish a maintenance program to ensure that all conveyor components are maintained in a condition which does not constitute a hazard to personnel. Additional Maintenance Safety Precautions are as follows:

- When a conveyor is stopped for maintenance or service, starting devices or power accessories shall be locked or tagged out in accordance with a formalized procedure designed to protect all personnel in the event of an unexpected start.
- Personnel shall be alerted to the hazard of stored energy, which may exist after the power source is locked out. Refer to ANSI Z244.1—1982, American National Standard for Personnel Protection – Lockout/Tagout of Energy Sources – Minimum Safety Requirements, and OSHA Standard 29 CFR 1910.147, “The Control of Hazardous Energy (Lockout/Tagout).”
- Replace all safety devices and guards before starting equipment for normal operation.

- Conveyors shall not be lubricated while in operation unless it is impractical to shut the equipment down for lubrication. Only trained and qualified personnel who are aware of the hazards of the conveyor in motion shall be allowed to lubricate a conveyor that is operating.
- Guards and safety devices shall be maintained in a serviceable and operational condition. Warning signs shall be maintained in a legible and operational condition. Examples of warning signs are shown later in this section.
- It is the responsibility of the owner/user to add any additional protective components that may be needed whenever changes or modifications are made to any of the equipment or in its operational characteristics.

2.6 Lockout / Tagout Procedure

Effective January 8, 1990, O.S.H.A. has designated the need for a 'positive, lockable' means to remove all energy sources from equipment prior to service or maintenance.

The electrical power to your equipment can be locked out at the main plug for each enclosure. When this is done, residual energy remains for some time in the capacitors associated with the electrical system. This residual energy is automatically depleted by features built into the equipment. After locking out the main disconnecting plug, wait at least 60 seconds before beginning any maintenance procedures. This allows the residual energy to diminish. If an equipment-mounted plate indicates that you should wait longer than 60 seconds, one should wait for that given time before beginning any maintenance work.

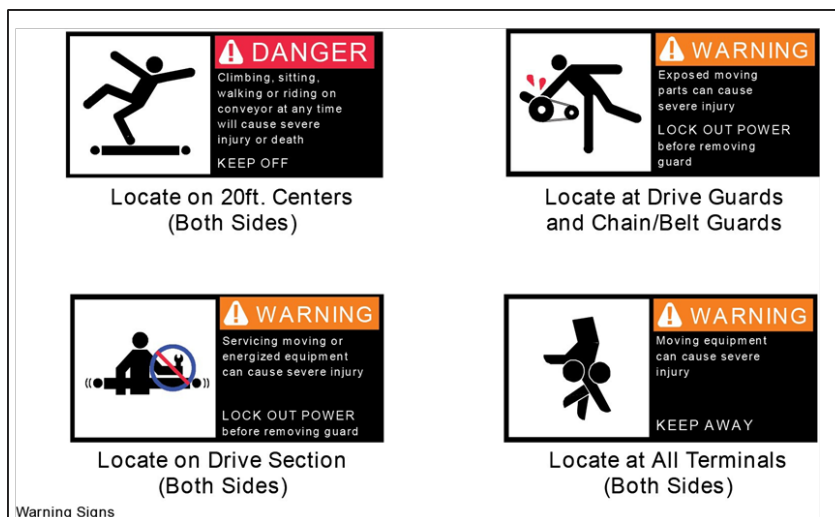
Whenever you need to perform maintenance on the equipment, or whenever you need to shut it down for any other reason, a lockout procedure must be followed. Your employer is required by O.S.H.A. to develop a written lockout/tagout procedure for this equipment. The following items should be considered in developing this procedure.

- Notify everyone who normally operates, sets up, or performs maintenance on the equipment that it will be shut down.
- Turn off all electric MDRs.
- Unplug power disconnect from area being worked.
- Use proper locking device for plug end. Lock the main disconnect switch in position and place a tag on the switch to indicate that work is being performed on the equipment.
- If there is any auxiliary equipment associated with the equipment, make sure the main electrical disconnect switch is also turned off for each piece of auxiliary equipment. Then lock each disconnect switch in the 'Off' position and tag each switch to indicate that work is being performed on the equipment.
- Verify that no sources of residual energy (capacitors, suspended equipment components, etc.) are present on the equipment or any piece of auxiliary

equipment. If any such energy sources are located, make sure they are neutralized. If necessary, manually discharge air pressure and capacitor voltage from charged components. Also, block all suspended or spring-loaded mechanical parts to prevent movement.

- Verify that electrical power has been disconnected from the equipment, and from any auxiliary equipment, by trying to energize the equipment and any auxiliaries with the appropriate control switches. If any piece of equipment is found to be operational, locate the electrical circuit(s) supplying the power and disconnect all such power sources. Then lock and tag these power sources.
- Before you begin any work on the equipment or any auxiliary equipment, make sure that at least 60 seconds have elapsed since you unplugged the main power plug. (If an equipment-mounted plate indicates that you should wait longer than 60 seconds, wait the recommended period before beginning any maintenance work.)
- Verify that any equipment which may have been added, and which is not covered by steps above, is considered for the lockout/tagout procedure.
- After you have completed your work on the equipment, make sure all guards, gates and other safety related devices are in place and functioning properly.
- When the equipment is completely ready to resume operation, remove your lock and tag from the main electrical disconnect plug. If someone else has placed a lock and/or tag on the main disconnect power plug, do not remove the additional, it may be reconnected to the electrical drop. Turn power back on to the MDRs and perform the daily safety checks.

2.7 Safety Signs



RECEIVING AND PRE-INSTALLATION

3.1 Unstacking Shipments

- 1 Prior to and during the unstacking process (Figure 2), look for any damage or out of place wiring or components. Take pictures of any questionable concerns and contact Hilmot for support.



Figure 2: Stacked Conveyor Beds

- 2 The sections of conveyor will typically be stacked with their support legs folded beneath them. There is enough space between them in the stack to safely remove one at a time using a typical fork truck. We suggest padding the fork surface to avoid damage to the finish of the equipment (Figure 3).



Figure 3: Unloading with padded fork surface

NOTE: Do not place forks directly beneath the junction box located on the bottom side of the conveyor.

- 3 Carefully cut loose the straps containing the folded supports, be prepared to

gently drop them downward. Use the supplied 3/8" x 1.00" lg hex bolts, washers, and whiz nuts to secure the leg in the upright position (Figures 4–7). Make sure the height is correct, it should be 32" from floor to top of roller surface.



Figure 4: Unfolding Supports Figure 5: Unfolding Supports



Figure 6: Securing Supports Figure 7: Securing Supports

Install the sway brace kit components to the conveyor at each support leg prior to traveling in the facility on the casters (Figures 8–9).



Figure 8: Installing Sway Brace Kit

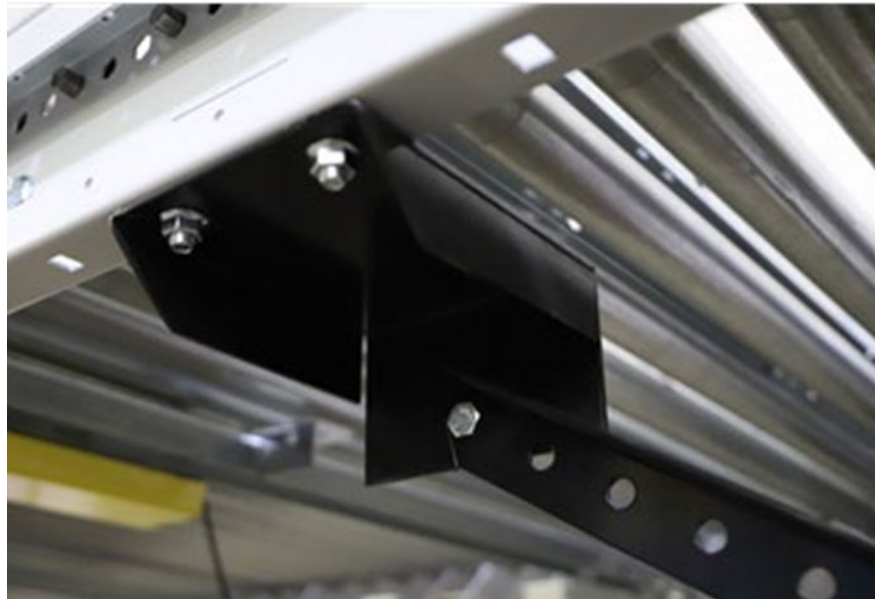


Figure 9: Installed Sway Bracket

- 1 Inspect the conveyor for overall proper condition prior to placing into its service location:
 - a. Ensure the rollers are not damaged during shipping and handling. If the rollers are dented or bent, they should be removed and replaced. Instructions for removal are in Replacing Rollers Section (6.8).

- b. Visually inspect the o-belts for any damage. There are spare o-belts attached to each bed which can be used as needed for replacements.
- c. Inspect the ZPA MOTOR CONTROL MODULES to ensure that they are properly secured, and their wiring connections are not loose.
- d. Inspect the MDR bottom guarding and check whether its connections are loose. Do not apply power if any wiring or components appear to be out of place or damaged.

Installation and Set-Up

4.1 Installation and Setup

4.1.1 Parent vs. Child Conveyor Identification

Conveyor segments are either “Parent” or “Child” conveyors, where there is one Parent to several Child conveyors. They will have many of the same components as shown in Figure 10. Parent conveyors will have power supplies installed beneath them that distribute power to Child conveyors.

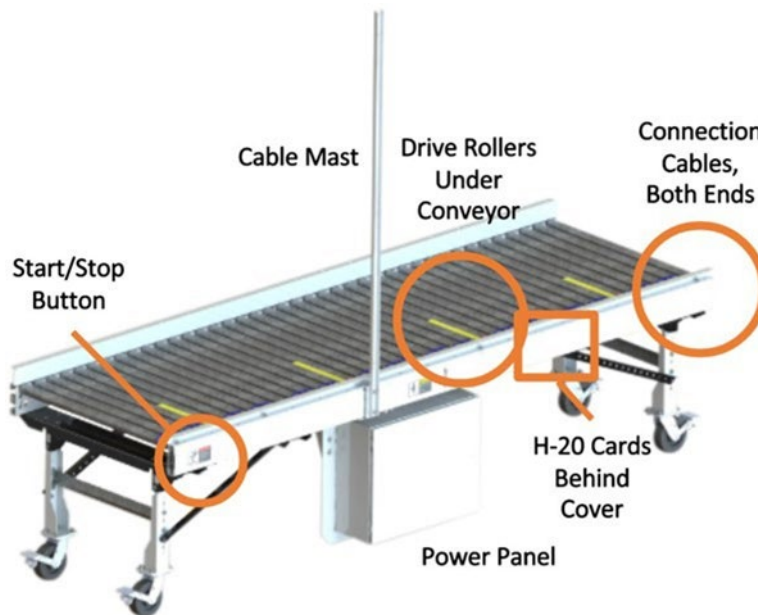


Figure 10: Parent Conveyor Segment

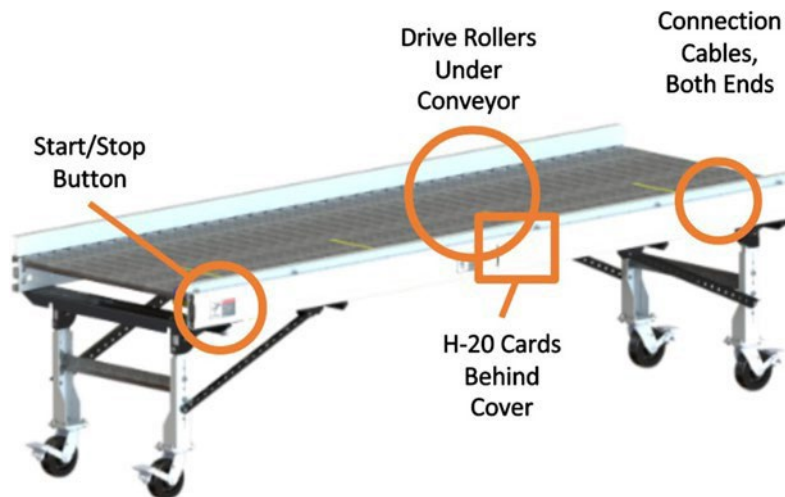


Figure 11: Child Conveyor Segments

Before the power supplies and mast are field mounted to the conveyor, Parent beds can be identified by their “wire containment cord grip” found on control side of the conveyor as shown in Figure 12. This is the most visible difference between a Parent and a Child conveyor as they arrive for installation.



Figure 12: Wire Containment Cord Grip

4.1.2 Installation

With the caster wheels unlocked, roll the conveyor to the intended location within the system according to the project layout (Figures 13–14). Note, make sure to determine the correct direction of product flow.

4.1.3 Connecting Beds

Once the conveyor is positioned into the intended location, align the coupling brackets at the ends of the beds with adjoining conveyor beds, then lock all the caster wheels.



Figure 13: Unlocking Casters



Figure 14: Casters Unlocked

Fasten together at each corner using 3/8 x 3/4" length carriage bolts and flange nuts (Figure 15).

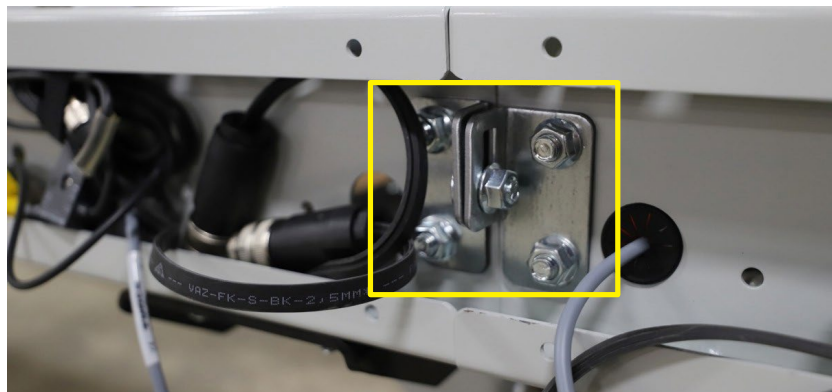


Figure 15: Carriage Bolts and Flange Nuts

- Parent bed should reside at the beginning of the children conveyor run intended to be powered by it.
- A total of 8 beds (36 motors) can be powered off a power supply (7 children and 1 parent).
- Each bed has a female connection on the discharge and a male connection on the infeed inside the rail for the smaller control circuit M12 plug.
- The larger plugs located on the underside of the conveyor are for carrying 24VDC and do not have a connection gender (plugs are the same on both sides).
- Each plug carries a circuit of the power supply enclosure.
- There is a maximum of 4 beds (18 MDRs) allowed on a single circuit.
- The smaller control circuit connection can be chained to multiple groupings of conveyor to stop full groups. An M12 Y-split is to be used to interconnect all groups in the system. One of these Y-splits will be used to connect the safety enclosure into the larger chain. This will allow all stop signals to go back to the safety enclosure to be properly handled during a startup.

(The whole parent/child conveyor run can be turned off, not individual sections within that run)



Figure 16

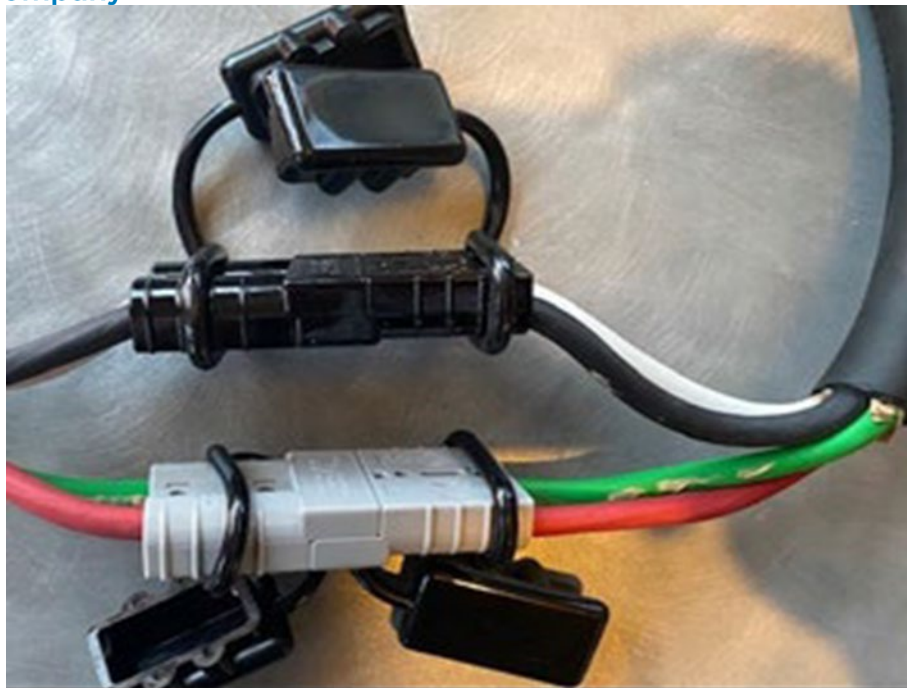


Figure 17



Figure 18 Large Connection Cables

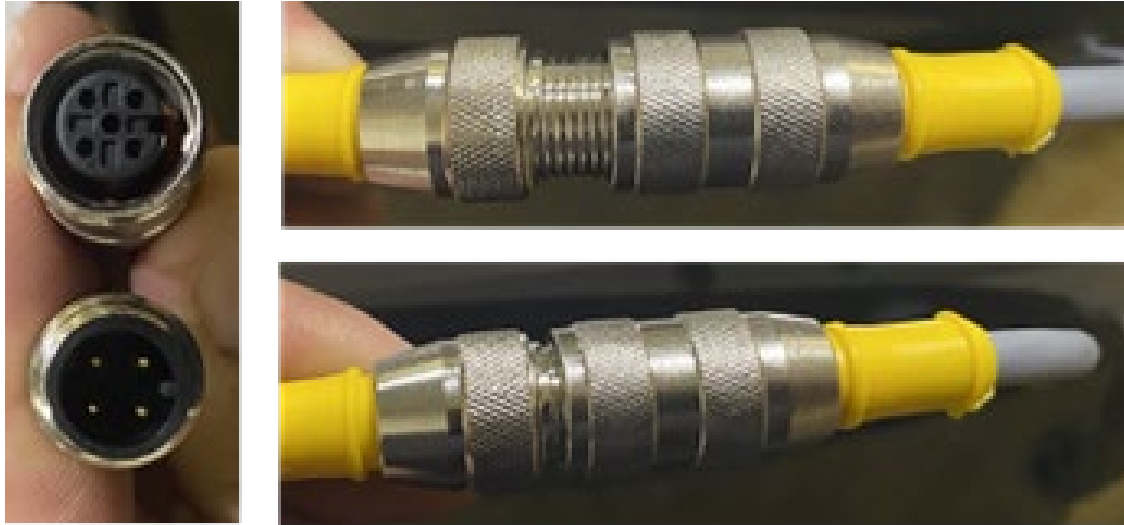


Figure 19 Smaller Connection Cables

4.2 Mounting Guide Rails

Install the guide rails to the top flange of the conveyor beds where indicated on the layout drawing.

The guide rails are typically the same length as the conveyor section (Figures 20-21).



Figure 16: Guide Rails

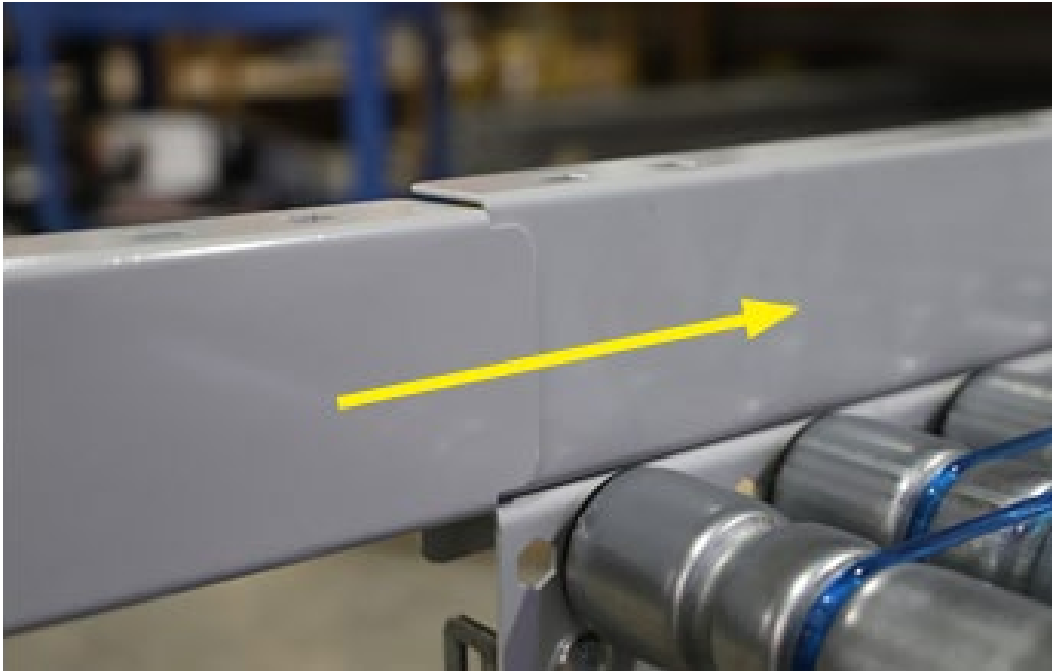


Figure 17: Guide rails and Conveyor Beds

Place the guide rail on the flange and loosely assemble $3/8'' \times 3/4''$ length carriage bolts and flange nuts in the holes provided near each of the ends of the rail (Figure 18).



Figure 18: Placement of Guide Rail on Flange

Position the guide rail in a shingled manner with the adjoining conveyor guide rail so that the tabs overlap in the direction that provides smooth product flow transition from conveyor to conveyor (Figure 19).



Figure 19: Overlapping Guide Rails

Place additional 3/8" x 3/4" length carriage bolts and flange nuts in the holes provided so that there are at minimum (1) per 24" of distance. Tighten the fasteners.

4.3 Estop Pull Cord Kit Installation

The MoveIT-Max conveyor will not be shipped with e-stop pull cords attached to the conveyor. The e-stop pull cord kit will include the right number of components to run two 120-foot pull cords on either side of the e-stop pull cord switch, for a total of a 240-foot run. The e-stop pull cord kit also includes M12 8-pin connecting cables and a t-split that allows a max of four pull cords in a series.

Included in a single kit:

- Qty: 1 - Estop Pull Cord Switch w/hardware.
Base estop pull cord switch.
- Qty: 1 - M12 T-Split
Used for chaining multiple switches in a series.
- Qty: 1 - 0.91M male to female 8-pin M12 cable
Used for connecting switch to M12 T-split.
- Qty: 1 - 7.62M male to female 8-pin M12 cable
Used for connecting M12 T-split to M12 T-split.
- Qty: 4 - Turnbuckle
Used for tensioning pull cord on either end.
- Qty: 2 - 220mm safety spring
Used at the end of each pullcord prior to the turnbuckle.
- Qty: 8 - Cable clamp
Two (2) Cable clamps are used on each end of the pull cord to create the end loop.

- Qty: 4 - Thimble
Used on each end to create a loop to attach to, along with cable clamps.
- Qty: 26 - Eye bolts w/hardware
Used in between run of cable for support.
- Qty: 8 - 3-wheel pulley w/hardware
Used at any corner or bend of cable run.
- Qty: 10 - B-Bracket
Brackets used for mounting switch and pulleys. (2) per switch (1) per pulley.

4.3.1 Mounting Estop Switch/Accessories

The estop switch will be mounted to the bottom of the conveyor rail by two (2) B-brackets. The 3-wheel pulleys will be mounted to the bottom of the conveyor rail by a single B-bracket. The Eye bolts are secured to the bottom of the conveyor rail with flange nuts. See Figures 20-22.

TYPICAL EYE BOLT MOUNTING

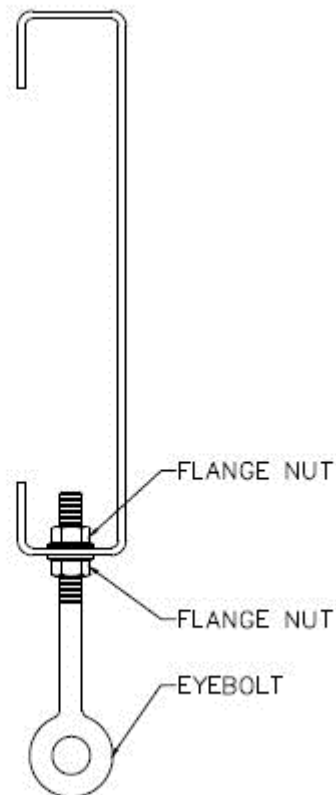


Figure 20: Eye-bolt Mounting



Figure 21: Pulley Mounting



Figure 22: E-Stop Switch Mounting

4.3.2 Running Red Pull Cord Cable

A red 3/16" PVC coated cable will be installed along the length of the conveyor and will function as the pull cord. The cable will be installed through a series of eyebolts and 3-wheel pulleys according to the approval drawings supplied from the client.

Please follow the below ruleset for best mechanical installation of the red pull cord cable:

- 1 Cable length with tensioners/springs cannot exceed 100M (328ft)
- 2 Pulleys are needed at any bend/corner throughout the red pull cord installation.
- 3 Cable may not cross in front of any enclosure opening or switch front.
- 4 An eyebolt must be installed within 500mm (19.68 inches) of the estop switch.
- 5 All other eyebolts throughout the red pull cord's installation, should be equally spaced no further than 3M (9.84 feet) center to center apart for best mechanical operation.

BI-DIRECTIONAL TYPE EMERGENCY STOP INSTALLATION

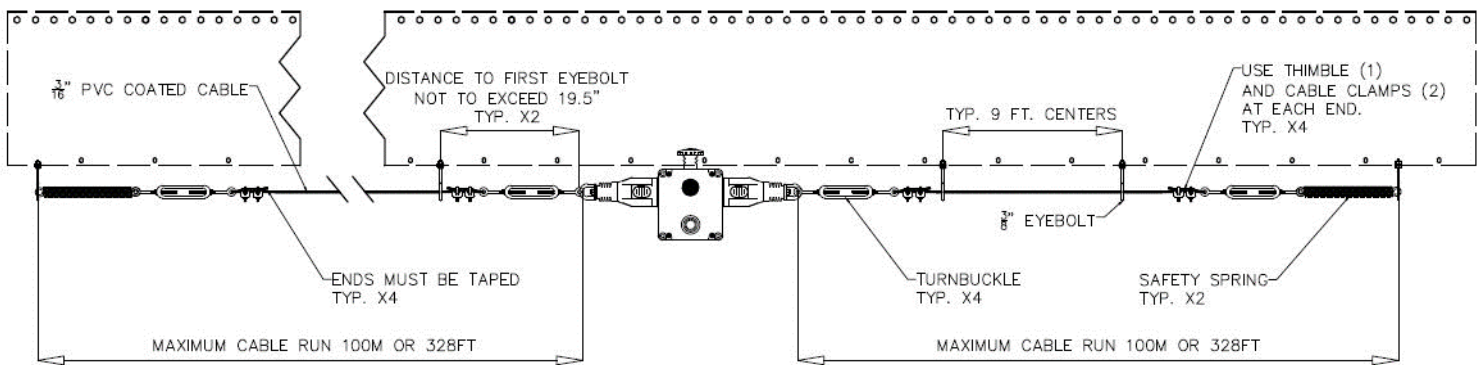


Figure 23: E-Stop Mechanical Parts – Callouts – Part 1

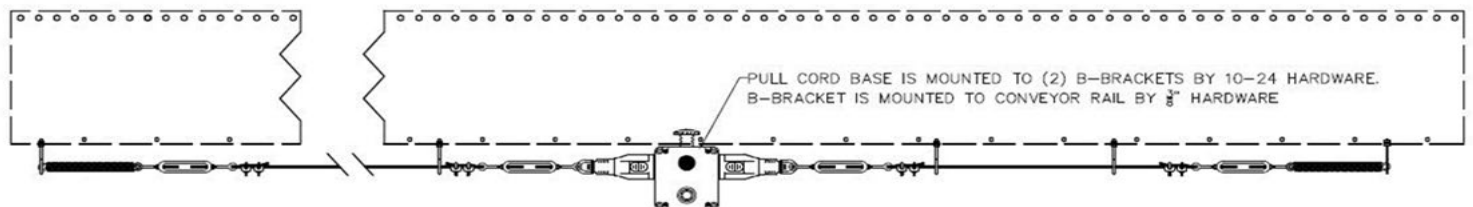


Figure 24: E-Stop Mechanical Parts - Callouts - Part 2

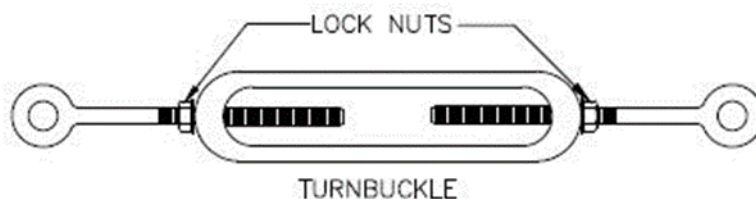


Figure 25: Turnbuckle Installation

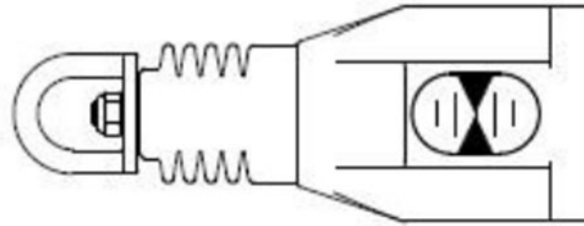


Figure 26: E-Stop Tensioning

Note: Upon installation, tension the cable to the mid-position as indicated by the red arrows in the viewing window of each switch.

4.3.3 Electrically Connecting Estop Pull Cord Switches

All e-stop pull cord switches need to be connected in series in the system meaning if one e-stop pull cord is actuated, the entire system shuts down. This is accomplished by M12 8-pin cordsets and T-splits. The T-split will have a single male connection and two (2) female connections. **Note: The connections used for the main conveyor line run between switches are labeled “A” and “B” for easy identification.** The male end labeled “B” will be the start of the main conveyor line run connecting to the safety enclosure or upstream switches if further down the conveyor line run. The female side with no label is for the connection of the switches. The very last t-split in the main conveyor line run will receive the “MoveIT-Max Estop Circuit Termination Plug” on the female “A” port.



Figure 27: T-Split Cable



Figure 28: T-Split Cable

The following rules need to be followed when connecting the e-stop pull cord switches in series:

- Cables need to be routed in a way that keeps them from being damaged by users working in the area.
- A total of four estop devices can be ran in series without Trew engineering approval.

4.4 Power Supply/Safety Enclosure Mounting

Once safety enclosure is installed under the conveyor; it will need to have four connections made before the 120VAC twist lock plug is plugged in.

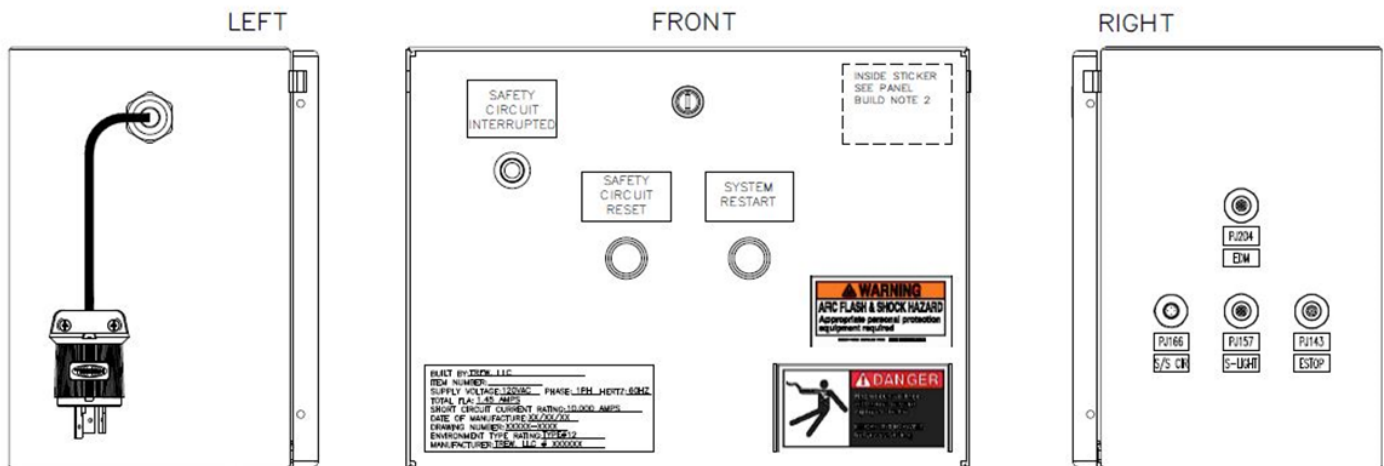


Figure 29: Safety Enclosure (Left/right/front)

- PJ204 (EDM) – This female 5-pin receptacle will receive the trunk run from the power supply enclosures (see “Power Supply Electrical Power Connections”)

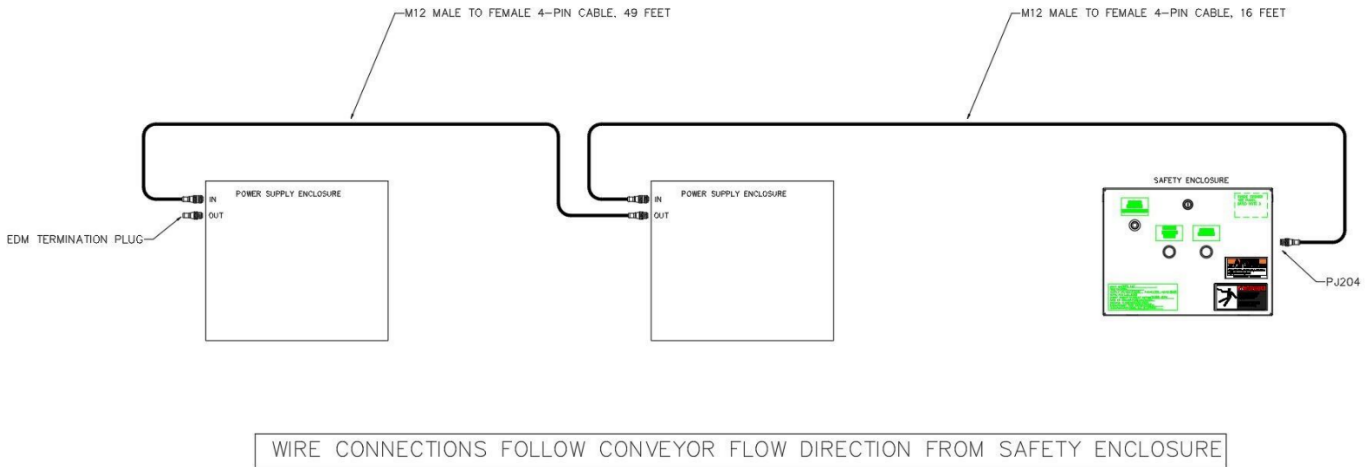


Figure 30: Power Supply Electrical Power Connections

- PJ166 (S/S Cir) – This male 4-pin receptacle will receive a connection into the start/stop circuit ran throughout the system. (see “Connecting Beds”)

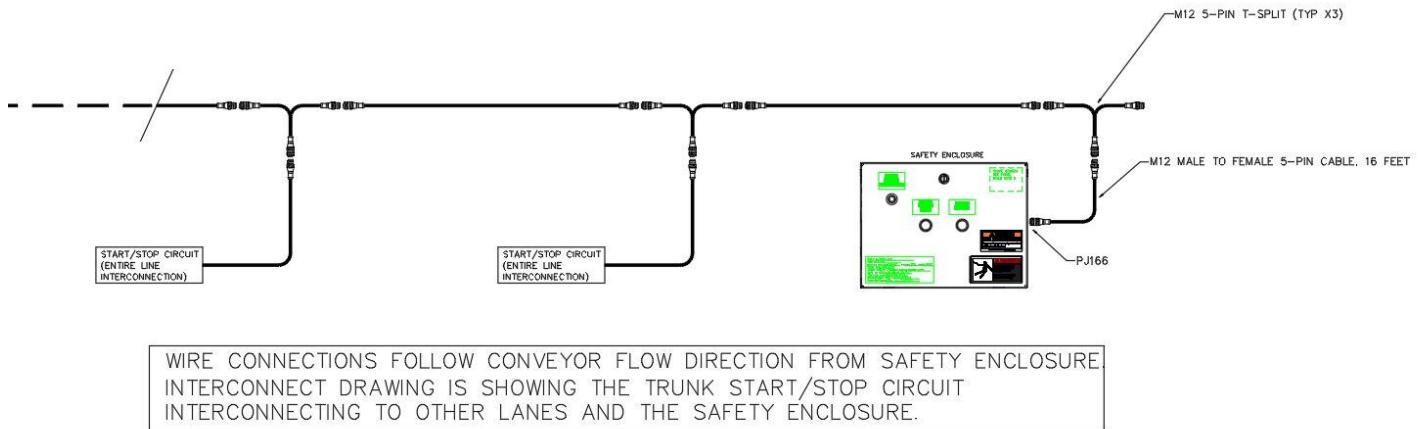


Figure 31: Bed Connection

- PJ157 (S-LIGHT) – This female 5-pin receptacle will receive the 5M cable from the stack light mounted above this enclosure. (see “Stack Light Installation”)

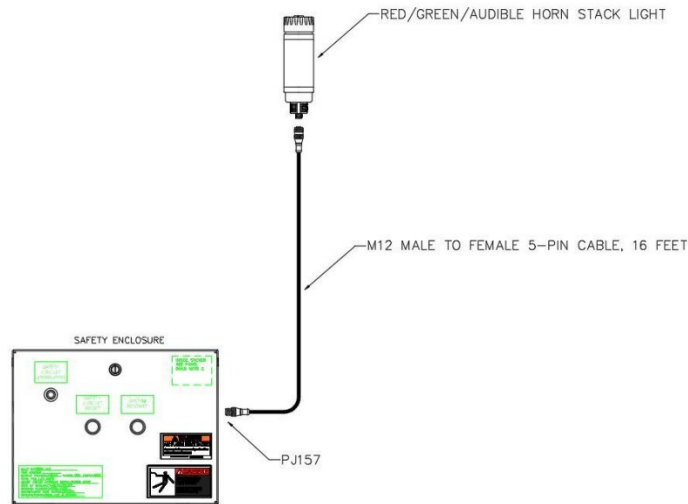
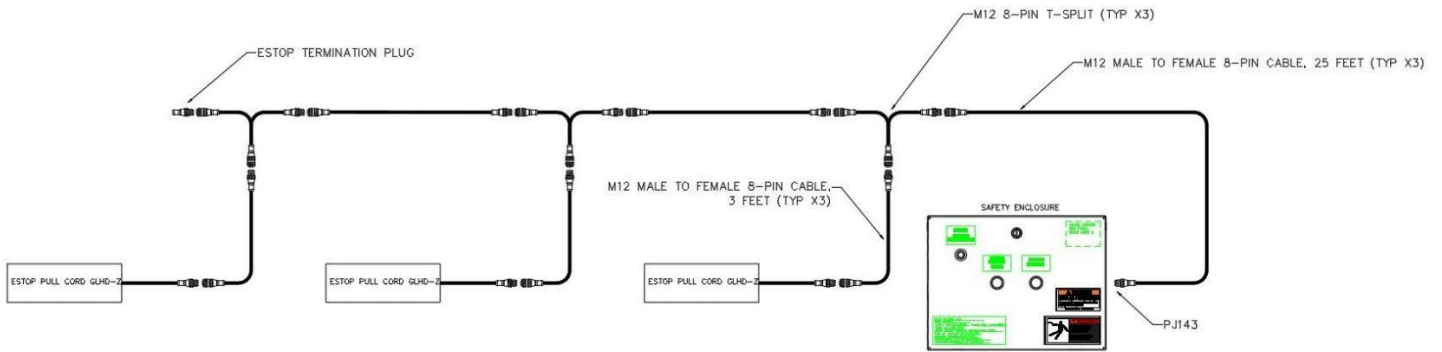


Figure 32: Stack Light Installation

- PJ143 (ESTOP) – This female 8-pin receptacle will receive the trunk run of the estop pull cord switches. (see “Electrically Connecting Estop Pull Cord Switches”)



WIRE CONNECTIONS FOLLOW CONVEYOR FLOW DIRECTION FROM SAFETY ENCLOSURE

Figure 33: Electrically Connecting Estop Pull Cord Switches

The power cable with a twist lock is located on the left side of the power supply and safety enclosure. A qualified person should install this to a 120VAC 30A connection (Figure 34).



Figure 34: Twist Lock

4.5 Cable Mast Mounting

Install cable mast kit #1000533 to the left side of the power supply and safety enclosure assemblies. Use (4) 3/8" x 3/4" length carriage bolts and flange nuts to secure the mast mounting channel to the conveyor frame channel. The mast assembly should be installed after the guardrail is in place (Figures 35-36).



Figure 35: Cable Mast Mounting



Figure 36: Secured Cable Mast

The conveyor supply cable will follow down the mast to the power supply and safety enclosures. Fasten the power wire into the mast post using cable ties in the provided holes.

4.6 Power Supply Electrical Power Connections

(Figures 37-39) Once the power supply is installed on the intended parent bed; it will need to have connections made before the 120VAC twist lock plug is plugged in. All parent beds come with an M12 cable coiled up on the backside of the rail. This will need to be plugged into the right side of the enclosure. Insert by aligning the plug, pushing in, and twisting it down to seat it.

Each power supply enclosure will have (2) M12 4-pin cordsets going into the left side receptacles. The port labeled "IN" will come from the upstream power supply or safety enclosure, depending on where it is located in the chain. The port labeled "OUT" will go to the next available power supply. The last one will receive a MoveIT-Max EDM Circuit Termination Plug on the "OUT" port.

The parent beds main 24VDC harness located underneath the conveyor will need to have the infeed side of the cable taken down off the hooks and plugged into the cable on the right side of the enclosure.

The colors of the plugs should match after connections are made. To make connections simply push them together.



Figure 37



Figure 38



Figure 39

4.7 Safety Enclosure Electrical Connections

4.8 Twist Lock Connector Instructions

Twist Lock Connector Instructions:

- Align the connector blades with plug inlets.
- Insert blades into inlets.
- Twist connectors to lock in place.

4.9 Stack Light Mounting

Each safety enclosure ordered per site will receive a stack light kit (HA5-138 - MoveIT-Max Stack Light Assembly). These kits will be installed at site and should be mounted to the cable mast supporting the power cable to the safety enclosure. Note: this would normally be mounted around operator eye level to easily notify workers of the safety circuit status. A 5-meter long M12 5-pin cordset is supplied for connection to the safety enclosure. The female end of the cordset screws into the bottom of the stack light. The male end plugs into port “PJ157” on the safety enclosure. See Figures 40 and 41.

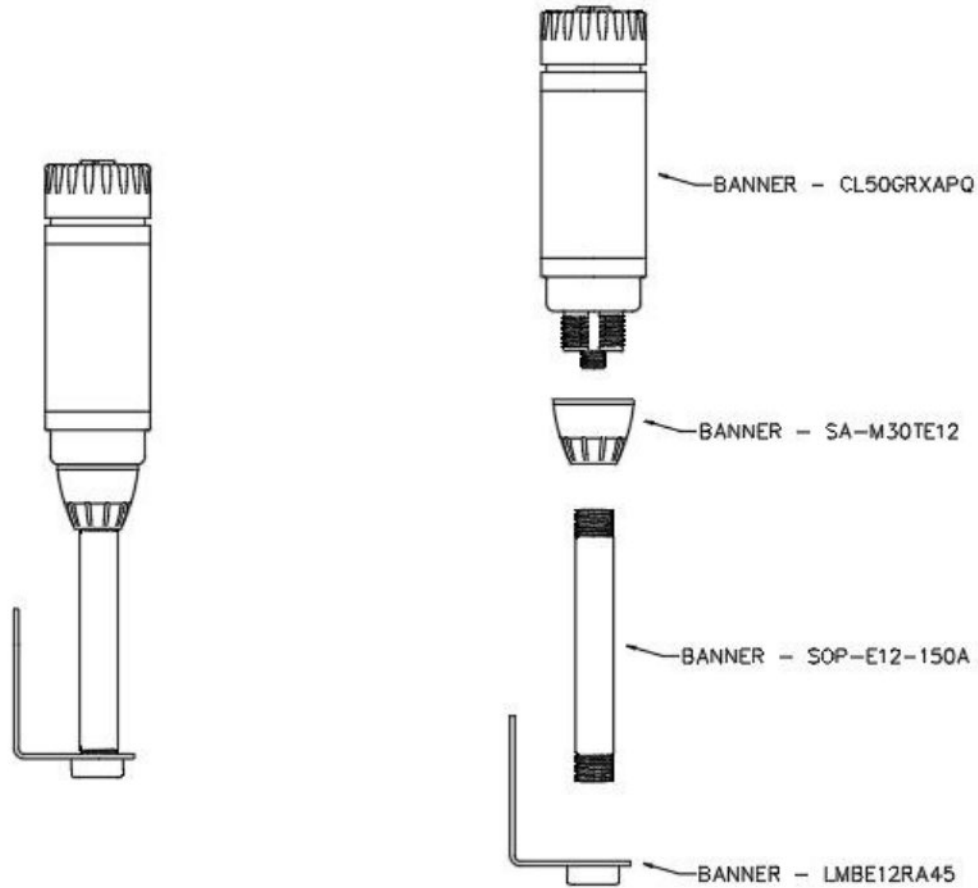


Figure 40: Stack Light Assembly

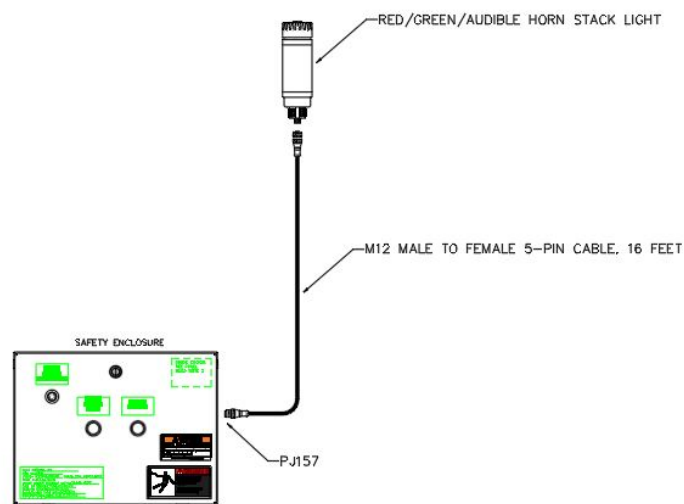


Figure 41: Stack Light Installed on Cable Mast

4.10 Jumper for 24VDC Circuit

Every bed has a junction box located on the bottom side of it (Figure 42). Open Using a screwdriver and undo the clasp holding it closed. Inside each enclosure is a terminal jumper that will need to be placed to decide if the power for that bed is coming from circuit 1 or 2. No more than 4 beds (18 MDRs) can be powered off a single circuit.

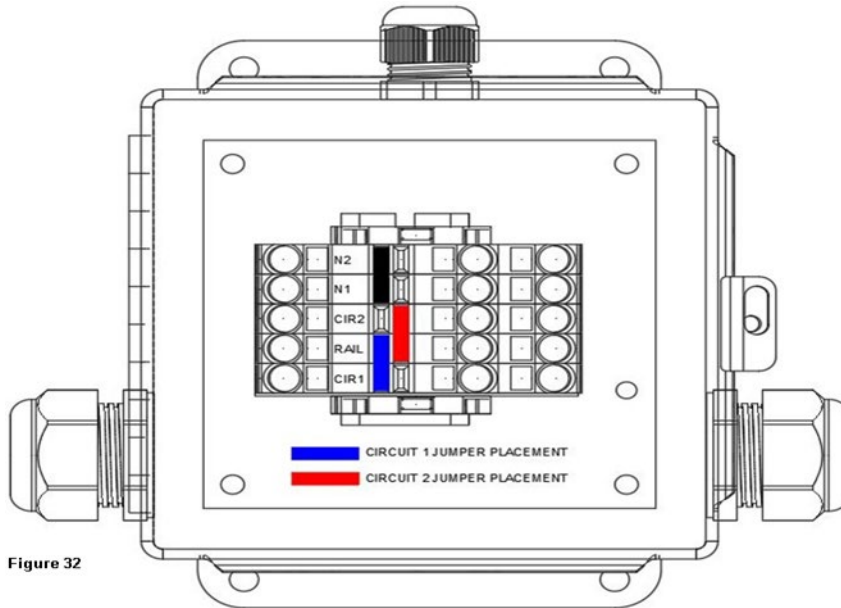


Figure 32

Figure 42: Junction Box

⚠ WARNING

Before performing any maintenance or lubrication services, follow the lockout/tagout procedure in the Safety section to ensure that the equipment is safe to work on. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

4.11 Electrically Connect Infeed Beds

Infeed beds will be grouped with one parent and one child. DC bus power will run from the discharge of the parent bed to the discharge of the child bed via a DC power extension cable.

The parent bed will have its control power plugged into the M12 receptacle on the right side of the enclosure labeled "PJ-154". The parent bed will have its circuit set to circuit 1 in the junction box located underneath it. Refer to "Jumper For 24VDC Circuit" for jumper placement.

The child bed will have its control power plugged into the M12 receptacle on the right side of the

enclosure labeled “PJ-156”. The child bed will have its circuit set to circuit 2 in the junction box located underneath it. Refer to chapter” Jumper For 24VDC Circuit” for jumper placement.

Inside the enclosure the wire labeled “JMPR” connecting terminals 1621 and 1641 will need to be removed to separate the control/power circuits.

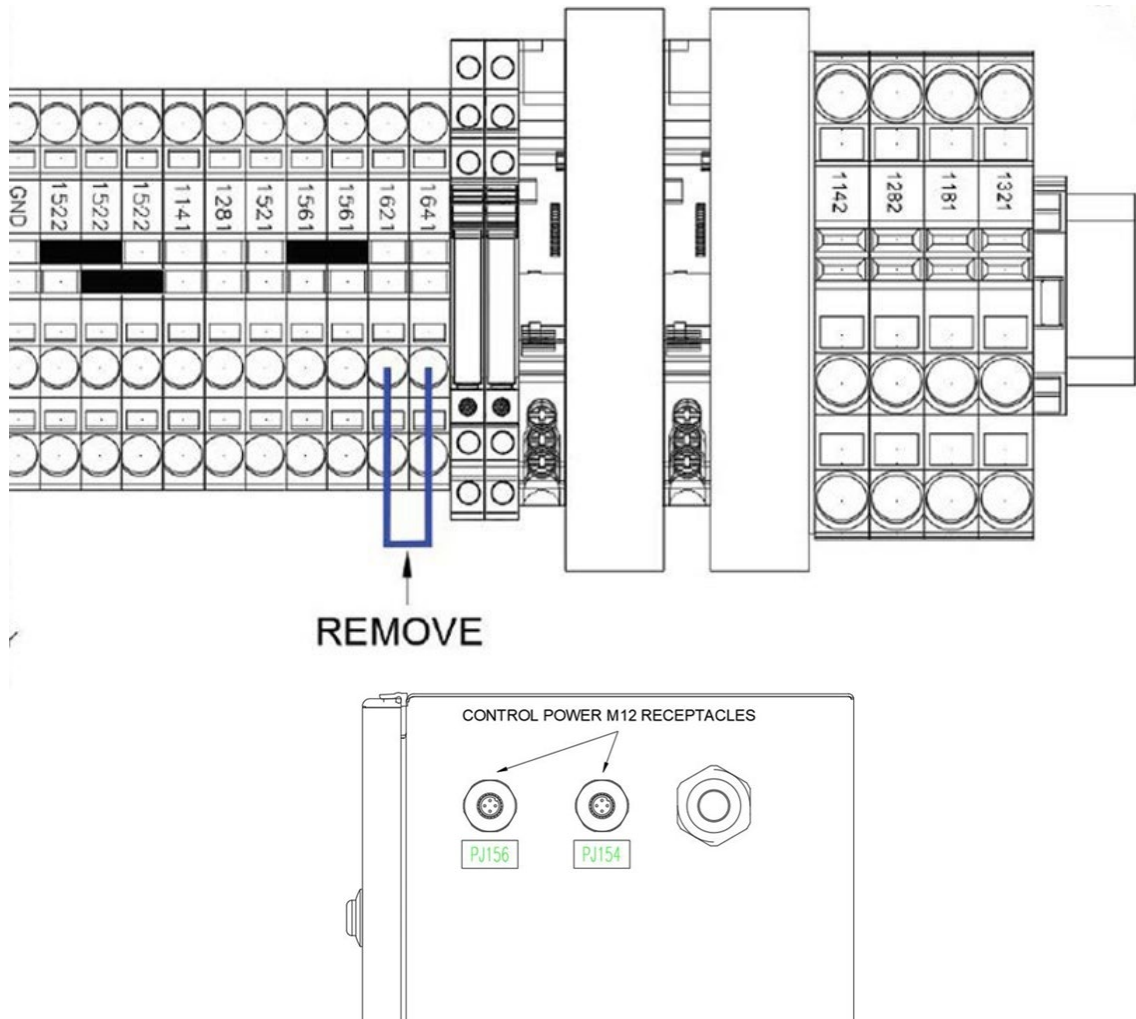


Figure 43

4.12 Configuring Conveyor Speed

The speed setting on Figure 44 will have been preset at Hilmot. If the conveyor arrives on site and needs to be adjusted to meet other requirements, there is a dial located on the back of each card.

This dial can be reached by looking behind the rail of the card where a cut out is located. Use the tables below and adjust the speed of each card in your system. Table 1 for EC5000 Rollers, and Table 2 for V24 Rollers

Once this is accomplished, power will need to be removed for 30 seconds from all cards. Simply hitting a stop button in each area will accomplish this.



Figure 44: Speed Setting

Table 2: Speed Settings

EC5000 Straights			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	4	148	128-169
66 FPM	4	169	148-189
131 FPM	7	134	114-154
Default Setting from Hilmot			

EC5000 Curves			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	3	189	174-105(speed dial 4)
66 FPM	4	105	189(speed dial 3)-122
131 FPM	6	109	192(speed dial 5)-127
Default Setting from Hilmot			

EC5000 Inclines			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	4	127	109-146
66 FPM	4	146	127-167
131 FPM	6	188	169-109(speed dial 7)
Default Setting from Hilmot			

V24 Straights			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	4	109	100-123
66 FPM	4	123	109-137
131 FPM	6	100	191(speed dial 5)-114
Default Setting from Hilmot			

V24 Curves			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	3	138	127-149
66 FPM	3	149	138-160
131 FPM	4	166	155-177
Default Setting from Hilmot			

V24 Inclines			
Speed	Dial Setting	Firmware Version	+/-5 FPM Firmware Range
61 FPM	3	193	182-104(speed dial 4)
66 FPM	4	104	193(speed dial 3)-115
131 FPM	5	159	147-170
Default Setting from Hilmot			

4.13 Electrical Accessories for Accumulation

4.13.1 HA1-049 - Start Photo Eye Kit

The start photo eye kit is intended to be installed on the infeed of any straight motorized roller section. The intent is to have a photo eye, that when triggered, will start up the first zone of a conveyor bed preventing product from trying to move onto deenergized rollers. Refer to electrical drawing HA1-049 for proper wiring and dial settings of the motor card.

4.13.2 HA3-030 Momentary Footswitch

The momentary footswitch kit is intended to be installed in areas that need employee interaction for product manipulation. The product will stop at the last photo eye of a connected zone until the footswitch is engaged and will keep releasing product until it is disengaged. Refer to electrical drawing HA3-030 for proper wiring and dial settings of the motor card.

4.13.3 HA2-033 - Line Full Photo Eye Kit

The line full photo eye kit is intended to be installed on the gravity roller conveyor after the motorized roller beds. The intent is to have a delayed sensing photo eye that will allow product to transition through but if backed up for a certain length of time will shut down conveyor feeding it. Refer to electrical drawing HA2-033 for proper wiring and dial settings of the motor card.

4.13.4 Setting Line Full Sensor Delay

The Conveyor section that the line full eye is being installed on must be powered up to use timing function. Unscrew the M12 connection between the card and the smart plug and install the programming button by matching genders on M12 connections. Verify the sensor is still communicating to the card by activating sensor and verifying the input light on the motor card is illuminating. Follow these steps to set an on-delay setting to the smart plug.

- Hold down programming button.
- Activate photo eye (Hold box or hand over a sensor)
- Deactivate photo eye after time desired (Remove box or hand)
- Release programming button

An on-delay setting is now in the smart plug. This setting can be adjusted by following the above steps.

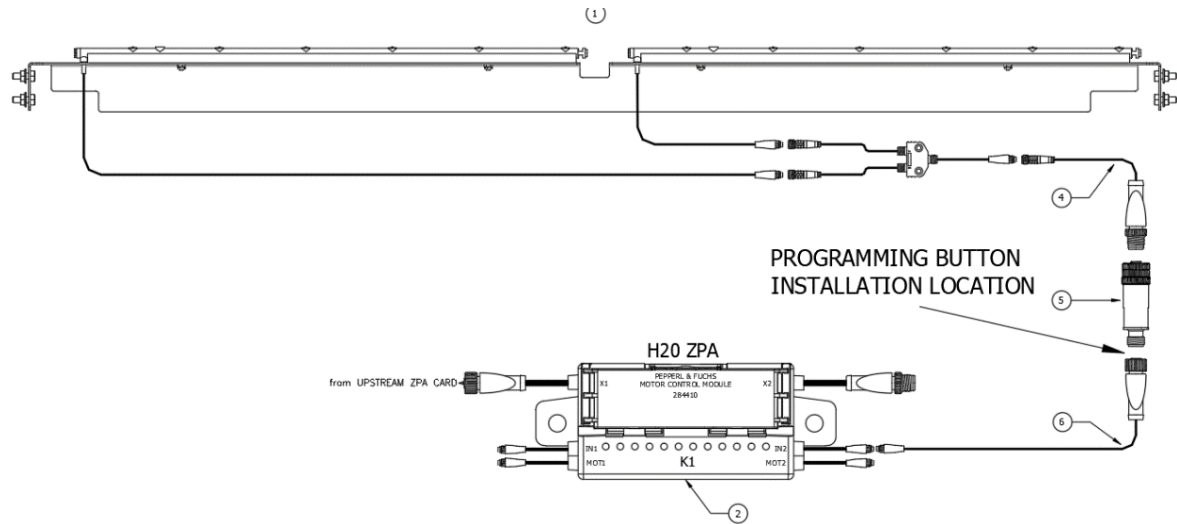


Figure 45

4.13.5 First Time Power-On Checking

Check that all connections are fully tightened, and any unused connections on control or buss have end caps on them.

- 1 Remove all items from conveyor surface before first startup.
- 2 Plug in each power supply & safety enclosure (twist lock connection - Figure 27). The power supply should have the blue pilot light /illuminated on the front after plugging it in. Verify all estop pull cords are not activated and have green LEDs illuminated on all of them.
- 3 Test the functionality of each estop pull cord switch. Follow the reset procedure to test each switch. (see "Recovering from Estop Condition)
- 4 Test the functionality of each start/stop button in the group.
- 5 Test the functionality of each estop pull cord switch. Follow the reset procedure to test each switch. (see "Recovering from Estop Condition)
- 6 Repeat for all parent/child groups.

4.13.6 Side Covers

The conveyor's side dust covers should be located on the frame rail channels on the "power" side of the MDR conveyors.

OPERATING INSTRUCTIONS

5.1 Operating Instructions

5.1.1 Turning Power On & Off

Before working on any conveyor, the main twist lock of the power supply in the parent/child group must be disconnected. To do this simply twist the plug and pull it apart. If multiple groups are connected, the M12 control cable will need to be unplugged from the power supply as well. Verify front pilot light goes out before servicing equipment.

5.1.2 How to Start / Stop Conveyor (Figures 46 and 47)

All conveyor beds will have a switch on the discharge electrical side and infeed non-electrical side. This gives the operator the ability to start/stop conveyor from both sides. All switches in a parent/child group need to be illuminated green for the conveyor group to operate. The system will have a startup delay and audible horn once all switches in the parent/child group are switched to green after one set to red (stop).



Figure 46: Starting Conveyor

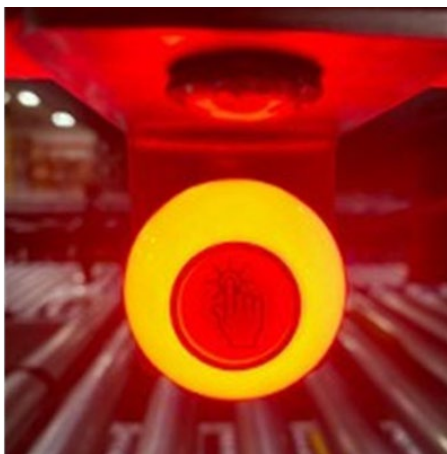


Figure 47: Stopping Conveyor

5.1.3 Stack Light Horn and Light Description

The stack light supplied for each kit has two colors and an audible horn in the enclosed lens.

Green

Solid – Normal operation

Flash 1s – System has a start/stop button currently stopping the system.

Off – Estop actuated or faulted and zone currently cannot be restarted.

Red

Solid – Estop Actuated

Flash 1s – Safety circuit is ready to be reset locally at safety enclosure.

Off – No estops or faults detected.

Green/Red Alternating

Flash 1s – System Restart button on safety enclosure needs to be pressed. (Only occurs after and estop has been activated, not normal start/stop)

Horn

2 Second Interval (2s on, 2s off) – Safety circuit interrupted.

5 Second Startup (3s on, 2s off) - 5 second startup procedure after SR button is pressed.

Off – Normal operation

5.1.4 Gate Operation

The gate controls consist of a proximity sensor, alignment photo eyes, and LED lights mounted in the rail. If the gate is in the up position, it will shut down the motor group feeding into the gate until the gate is closed again. If the downstream conveyor is in a “stopped” condition or not aligned with the gate it will shut the gate and upstream conveyor off. In this condition it will also turn off the LED lights in the rail to show that something downstream is keeping this area from running. In a normal condition the LED lights will be illuminated amber, and all motors will be running.

5.1.5 Package Jam Clearance

For safety purposes, all product jams should only be cleared when the conveyor is powered down. In general, the following steps should be taken to clear a product jam:

- 1 Determine the source of the jam, clear items that may have become wedged between rollers or entangled in the o-bands.
- 2 If the items involved are conveyable, place them back downstream of the incident.
- 3 Prior to returning power to the conveyor, inspect the affected area for any damage to rollers, o-bands, or other conveyor parts. Refer to the “Parts Reference” area of the manual to assist if parts replacement is necessary.
- 4 Once the conveyor is safe to return power, turn the power on and watch the area for a few minutes to assure there is not an unfound cause for creating the jam.

5.1.6 Recovering from Estop Condition

In the event of an estop, please follow the steps below for restarting the system.

The e-stop pull cord that was triggered will need to be reset locally at the switch once everything is safe. This will change the LED on the switch from red to green.

The “SAFETY CIRCUIT RESET” LED will start to flash on the safety enclosure once all e-stops are cleared. This “SAFETY CIRCUIT RESET” button should be pressed.

Upon pressing the “SAFETY CIRCUIT RESET” push button, the “SYSTEM RESTART” push button should be pushed to start the delayed startup of the system.

Note: If the audible horn is not heard during this step and the stack light is illuminated solid green, there is a start/stop button set to red that will need to be switched to green.

5.1.7 Safety System Operation (Bulleted)

Use the following order of operations bulleted list to help in troubleshooting the safety system:

- Estop Pull Cord (ESPC) is actuated.
 - Safety relay inside safety enclosure will de-energize.
 - Safety contactors in remote power supply enclosures will de-energize.
 - Red stack light will illuminate.
 - Horn will sound in two second intervals (2s on, 2s off)
 - SAFETY CIRCUIT INTERRUPTED (SCI) pilot light will illuminate.
 - The LED of the ESPC that was actuated will switch to red.
 - Stop command is sent from PLC (normal stop command through start/stop circuit)
- ESPC is locally reset, after clearing the emergency condition.
 - The LED of the ESPC that was actuated, and was now reset, will switch back to green.
 - Red stack light will flash at 1 second intervals (1s on, 1s off)
 - SAFETY CIRCUIT RESET (SCR) push button will flash at 1 second intervals (1s on, 1s off)
- SCR push button is pressed at safety enclosure (Only functions if SCR is flashing)
 - Safety relay energizes.
 - Safety contactors in remote power supply enclosures will energize.
 - SCI (safety circuit interrupted) pilot light will turn off.
 - Red stack light will continue to flash at 1 second intervals.
 - Green stack light will flash at 1 second intervals (1s on, 1s off)
 - SCR push button pilot light will turn off.
 - Horn turns off.
- SR (system restart) push button is pressed at safety enclosure (Only functions if green stack light is flashing)
 - Horn will sound for 3 seconds.
 - Startup occurs after 5 seconds.
 - Green stack light goes to steady illuminated.
 - Stop signal is released from PLC.
 - Conveyor is back in normal operation.

PREVENTATIVE MAINTENANCE

6.1 Preventative Maintenance

The performance and reliability of the equipment described in this document is dependent upon the implementation of a Preventive Maintenance (PM) routine and operating the equipment with the defined performance specifications.

A PM routine should consist of equipment service operations performed by qualified maintenance specialists.

These service operations include periodic cleaning, lubrication, and various mechanical adjustments. This program also educates and instructs specialists to identify and to correct any abnormal operating conditions such as whining or screeching sounds, burning smells, or any visual obstruction or component damage.

Service operation details can be found in subsequent sections in this document. Preventive maintenance consists of regular service (lubrication, adjustments, cleaning, etc.) and a commonsense application philosophy of "keeping your eyes, ears, and nose open."

- Use your eyes to see potential component failure.
- Use your ears to listen for abnormal or louder than normal noises.
- Use your nose to smell a motor running abnormally warm in time to prevent its burnout.

These sights, noises, and smells can be indicators of lack of lubrication, misalignment, or other potential trouble.

Only qualified maintenance specialists should maintain the mechanical, electrical, and pneumatic portions of the conveyor.

The likelihood of future equipment operational failures will be low if a regular maintenance program is followed. However, some failures will inevitably occur. To minimize these anticipated future issues, it is suggested that the following maintenance records be kept for each type of equipment so that Hilmot's service desk can be of assistance:

- a. Date of Inspection
- b. Inspection Results
- c. Equipment Services
- d. Repair History
- e. Part Replacement
- f. All operational anomalies

6.2 Maintenance Precautions

WARNING

You must read and understand these precautions completely before operating, setting up, running, or performing maintenance on the equipment. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

- 1 When testing operating performance, do not start the equipment until all operations and maintenance personnel are notified and clear of the unit being tested.
- 2 Be certain that the required safety guards are properly installed. Never run the equipment under production conditions without guards.
- 3 Do not make any equipment repairs while the conveyor is running.
- 4 Keep hands, hair, and clothing clear of any moving parts.
- 5 Never attempt to clear load jams while equipment is running.
- 6 Always use appropriate tools when making repairs or adjustments.
- 7 Observe all warning labels and follow plant safety rules.
- 8 Make sure all connectors are secure and all wires are free from interference, obstruction, and any moving parts.

6.3 Cleaning and Inspection

Proper equipment maintenance (cleaning) will allow the equipment to function properly for longer periods of time. Performing regular inspections on the equipment to identify potential problems before they occur should decrease any unexpected conveyor down times.

Cleaning schedules may be modified as experience is gained. Equipment areas that are prone to excessive debris buildup should have its cleaning frequency increased. It is recommended that a general inspection that will ensure a thorough examination of each component and assembly contained in the system be done at least once for each thirty-day period of operation. The results of these general inspections should be documented in the conveyor record of the unit inspected.

The probability of mechanical/electrical problems increases during periods of heavy usage, so an additional inspection before and after these periods is recommended.

6.4 Inspections

Daily Inspection

Walk the entire length of conveyor system and observe the following:

- ✓ Check with Conveyor Running
 - Listen for abnormal noises coming from rollers, O-belts or other moving parts that could indicate worn or misaligned parts.
- ✓ Check with Conveyor Shut Down
 - Look for string or other foreign material wrapped around rollers. Remove all foreign material immediately.
 - Look for shavings or belt dust if belted under conveyor, transfer, merge, or divert mechanisms that could indicate misaligned or damaged conveyor, transfer, merge, or divert components.
 - Inspect all O-belts for damage. Replace worn or damaged O-belts. Color changes mean they are expanding and should be replaced soon.

Weekly Inspection

- ✓ Check with Conveyor Running
 - Watch the transfer, merge, and divert mechanisms for at least 5 operations to verify that they are operating correctly.

Monthly Checklist

- ✓ Check with Conveyor Running
 - Check operation of all photo-eyes. Make sure yellow and green lights are solid on the Retro-Reflective Photo eyes.
- ✓ Check with Conveyor Shut Down
 - Clean all sensor lenses by gently wiping the emitter/receiver lens with a damp soft cloth.
 - Visually inspect the condition of the carrier roller side frame hex holes.
 - Carrier rollers should have 1/16 to 1/8 in. end play.
 - Check that all guards, side covers, and safety devices are in place, and devices are working properly.
 - Check O-belt tension by rotating rollers. If roller moves freely, replace the O-belt.
 - Visually inspect all wiring and connections.
 - Remove foreign materials and dirt with a simple cleaning brush (not a wire brush) by brushing gently.
 - Remove smaller amounts of dirt with a damp cloth. When doing this, make sure that wetting of the Roller Drive is no more than slightly damp.
 - Check the torque on motor nuts on to the motorized drive roller shaft, they should be a torque of: With the conveyor running, listen for abnormal noises that could indicate:

Safety Maintenance Checks

The following checks will need to be performed monthly for the safety system:

- Look for mechanical damage to switch casing.
- Look for damage to red e-stop pull cord.
- Verify pulleys are not jammed.
- Check cables connecting switches for damage.
- Check each pull cord switch for proper operation.
- Verify the lights on the switch are illuminating correctly.
- Each pull cord shuts down the safety relay properly.
- Check that the system cannot be restarted with any pull cords activated.

Never repair any device/cable in the safety circuit, always replace it with new parts.

WARNING

Before performing any maintenance or lubrication services, follow the lockout/tagout procedure in the Safety section to ensure that the equipment is safe to work on. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

6.5 Changing O-Bands

Over time the O-bands will exhibit wear and will relax (stretch). Over time, the relaxation will cause the O-Band to slip on the roller and the conveyor speed will begin to decrease. At that time, the O-bands should be replaced.

The replacement of O-bands is accomplished by following instructions:

- 1 The O-Bands can become worn or damaged and need to be replaced.
 - a. To replace these, first ensure that the conveyor is powered off and locked out.
 - b. At the o-band end of the roller, lift out the rollers that contain the o-band. This is typically done by carefully pushing the axle end with a tool such as a screwdriver tip to shift the axle clear of the frame rail, then lift the end of the roller slightly upward. Do not force lifting the roller, as damage to the roller or side channel with the opposite end hex can occur.
 - c. Remove the o-band from the roller and replace it with a new one of the same color.

- d. Re-install the roller by depressing the axle end on the near side using a putty knife style of thin flat blade, slip the blade part way down the frame rail, while holding the roller in location of the hex hole, remove the blade to allow the axle spring force to push the axle into the hex hole.



Figure 48



Figure 49



Figure 50

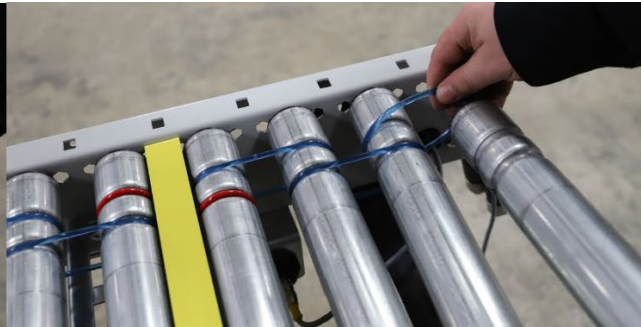


Figure 51



Figure 52



Figure 53



Figure 54



Figure 55

- 2 For o-band replacement at the MDR powered roller, first assure that the conveyor is powered off and locked out.
 - a. Remove the upper roller(s) that are belted to the powered roller.
 - b. Remove the bottom guard of the roller,
 - c. Loosen the mounting nut that contains the powered roller.
 - d. Push the opposite (spring) end axle of the powered roller to disengage from the frame channel. Lower the end of the roller enough to slip the o-band off the open end.
 - e. Replace it with new o-band(s) of the same color.
 - f. Reinstall the spring end of the powered roller into the hex hole using the flat blade putty knife.
 - g. Retighten the axle mounting nut at the other end of the powered roller.

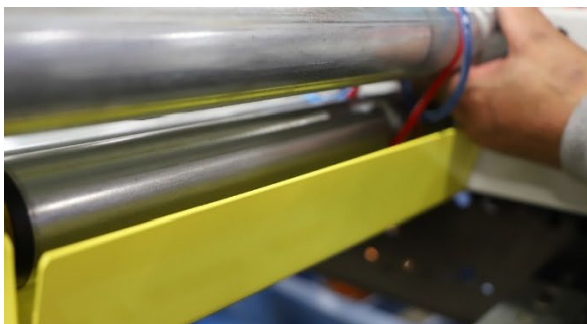


Figure 56



Figure 57



Figure 58

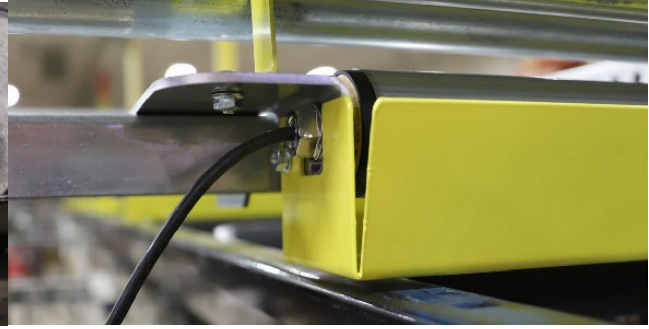


Figure 59



Figure 60

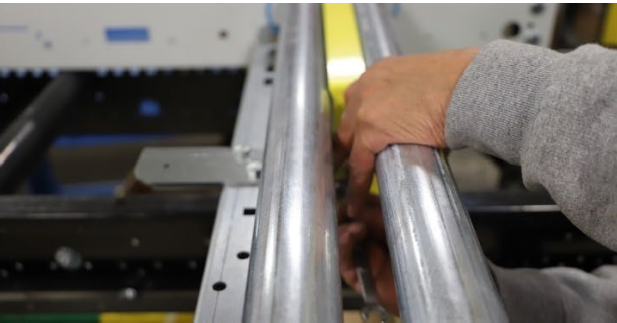


Figure 61

- 1 Turn off and Lockout/Tagout all power to the conveyor.
- 2 Use a tool to push in the spring-loaded axle on the roller to free one end of the axle from the frame of the conveyor.
- 3 Carefully disengage the opposite end of the roller from the frame and remove. Make sure the axle is not pinched on the frame causing damage during removal.
- 4 Insert the axle of the replacement roller through the hole on the conveyor frame.
- 5 Use tool to compress the spring-loaded axle on the roller and lower the roller into its proper position.

- 6 Release the spring-loaded axle and make sure it fully engages in the hole in the frame.



Figure 62



Figure 63



Figure 64

⚠ WARNING

Before performing any maintenance or lubrication services, follow the lockout/tagout procedure in the Safety section to ensure that the equipment is safe to work on. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

⚠ WARNING

Before attempting to repair or replace a drive roller, drive card, controller device, or any other device connected to these components, be sure that power to the controls is locked out to prevent premature or accidental start-up. Failure to follow this instruction may result in serious personal injury, and/or equipment damage.

6.6 Motor Control Card Replacement - H-20 Auto Motor Control Module

- 1 Turn off and lock out the power supply to the conveyor.
- 2 Remove the auxiliary power cable from the card.
- 3 Remove the drive roller cable connector and the control cable or com-link from the drive card.
- 4 Remove drive card and mounting bracket from the conveyor.
- 5 Remove drive card from mounting bracket and inspect for Red LED.
- 6 Inspect the original card and observe the jumper and switch settings.
- 7 Set the switches and jumpers on the new card to match the old one.

- 8 Replace old drive card with spare drive card.
- 9 Carefully connect the control cable or com-link and drive roller cable to the card.
- 10 Reconnect the auxiliary power cable to the card.
- 11 Unlock the power supply and turn the conveyor on.



Figure 65



Figure 66



Figure 67



Figure 68



Figure 69



Figure 70

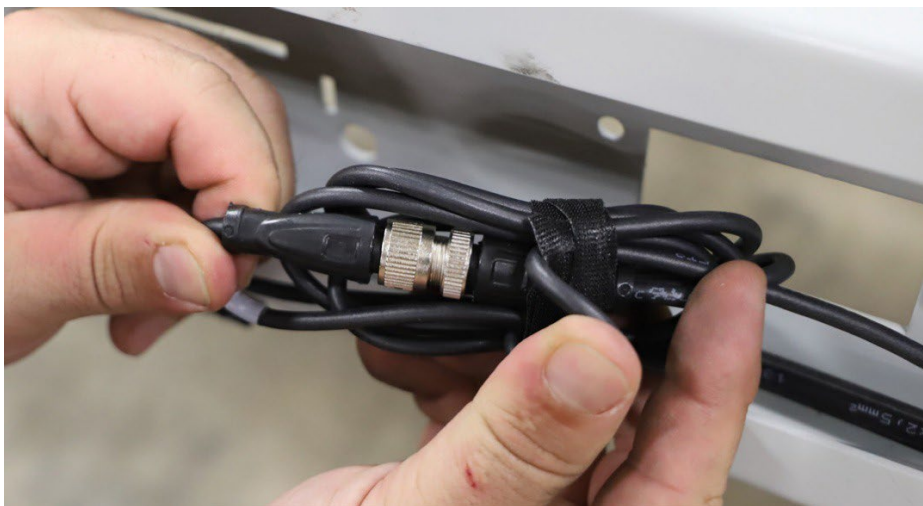


Figure 71



Figure 72



Figure 73

6.7 Motorized Drive Roller (MDR)

The motorized drive roller (MDR) is the muscle of the conveyor zone. It provides the torque and speed required to move the product to the next zone. The MDR has a motor and gearing encapsulated inside the roller tube.

6.8 Replacement of EC5000 MDR

- 1 Turn off and Lockout / Tag-out all power to the conveyor section.
- 2 Remove the bottom guard of the roller.
- 3 Make sure that the Gear Ratio matches that of the roller that is being replaced. Standard Gear Ratios would include: 16:1, 20:1, 24:1, 36:1, 64:1, and 96:1. This is important if the conveyor system is comprised of more than one speed.
- 4 The replacement roller should include:
 - i. Motorized Drive Roller
 - ii. Hardware Kit
 - a. motor nut
 - b. motor instructions
- 5 Insert the MDR connector into the hex hole and gently pull the cable extending from the motor through.
- 6 Insert the threaded hex shaft into the hex hole. Push the spring-loaded idler shaft inwards and line the roller up with the hole. Release the idler shaft and allow it to pop into the hole in the frame.

- 7 The motor nut threads on to the motorized drive roller shaft and should be to the proper torque. **50 ft-lbs. +/- 5 ft-lbs. (67.8 N-m +/- 6 N-m).**
- 8 Tools required to achieve proper torque can be seen below.

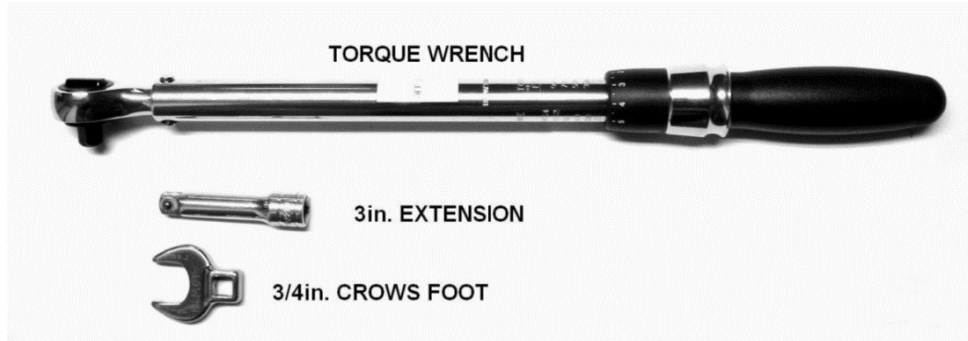


Figure 74

- 10 Check to see if roller operates by passing your hand in front of the photo eye sensor of the zone that is being serviced or the photo eye sensor located upstream with respect to flow.
- 11 If the MDR does not operate review the Troubleshooting Section.

⚠ WARNING

These checks must be performed with the power to the conveyor section turned "ON" Only qualified electricians should be allowed to perform these checks. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

6.9 V24 Motor Replacement

6.9.1 V24 Motor Removal

- 1 Lock-Out Power
- 2 Unplug Motor from Commutator Board
- 3 Remove slave roller from one side of the V24 motor.
- 4 Remove slave roller from the other side of the V24 motor.
- 5 Remove top finger guard.
- 6 Remove bottom finger guard.
- 7 Remove shaft retainer.
- 8 Remove hex clamp plate.
- 9 Remove V24 motor bracket.
- 10 Remove V24 motor.
- 11 Remove o-bands from motor.

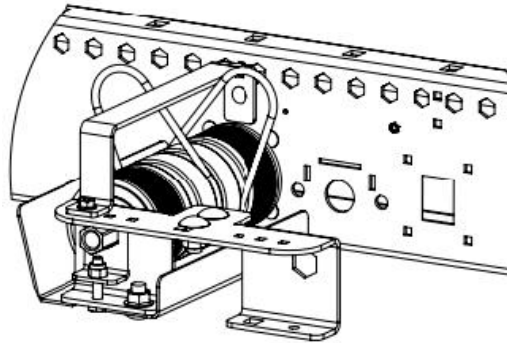


Figure 75

6.9.2 V24 Motor Installation

- 1 Place o-bands on motor
- 2 Place V24 motor into conveyor frame
- 3 Mount V24 motor bracket
- 4 Mount hex clamp plate with nuts finger tight
- 5 Mount shaft retainer
- 6 Adjust V24 motor to assure 1/16" to 1/8" gap between V24 motor and conveyor frame and hex tighten clamp.
- 7 Mount bottom finger guard
- 8 Mount top finger guard.
- 9 Install slave roller on one side of the V24 motor placing the o-band on roller from V24 motor.
- 10 Install slave roller on other side of the V24 motor placing the o-band on roller from V24 motor.
- 11 Plug-in Motor to Commutator Board
- 12 Turn on Power.

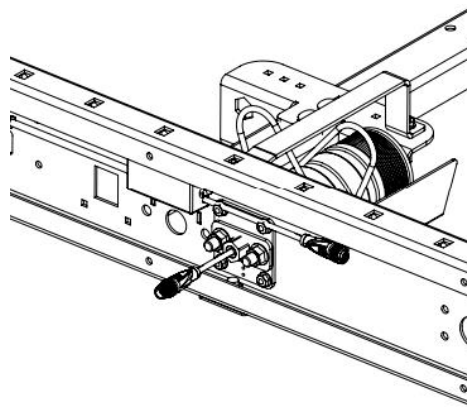


Figure 76

TROUBLESHOOTING

7.1 Troubleshooting

When troubleshooting equipment problems, it is essential to completely understand how the system functions during normal operation. Thoroughly review the operational description, the circuit drawings, and the electrical diagrams sent with your equipment to completely understand how the equipment operates. Once the system operation is understood, it is usually best to start at the problem, and then work back to the source. General trouble shooting instructions are as follows:

1. Locate the problem.
2. Listen and observe.
3. Identify problem as electrical, mechanical, or pneumatic.
4. Determine symptoms through observations.
5. Think and act with caution and clear thinking.
6. List short- and long-term solutions.
7. Select a solution or possible solutions.
8. Implement and document one solution at a time.

7.2 Troubleshooting a Dead Zone

Perform the following visual checks prior to any troubleshooting:

- 1 Visually check and confirm that all wires are plugged in, intact and all connectors are secure.
- 2 Visually check and confirm that there are no obstructions to the rollers.

WARNING

These checks must be performed with the power to the conveyor section turned "ON" Only qualified electricians should be allowed to perform these checks. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

7.3 Controller Check

The controller typically controls 2 zones. If the 2 zones are not functional, check individual M12 cables. Unplug and plug in the MDR and PE.

If the circuit breaker is functional, check the power supply. Unplug and plug in black cable. Replace drive card.

7.4 Power Supply Check

The power supply typically supplies voltage to multiple zones. If the power supply is defective, all zones supplied will be inoperative. If only one or two zones are inoperative, check the individual connection cables and connectors going to each card. Check the input voltage into the power supply. Check the power supply circuit breaker. Replace if defective.

7.5 Motor Control Card / Motorized Drive Roller Checks

This check determines if the motor control card and the motorized drive roller are functional and must be done with power to the conveyor turned on.

7.6 Motor Control Card / Motorized Drive Roller Checks

This check determines if the motor control card and the motorized drive roller are functional and must be done with power to the conveyor turned on.

WARNING

These checks must be performed with the power to the conveyor section turned "ON"
Only qualified electricians should be allowed to perform these checks. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

- 1 Determine if red fault light is on the drive card.
- 2 Unplug and plug black auxiliary cable into ZPA card.
- 3 Remove drive card and make sure rotary dials are the same as the previous card.

If the motorized drive roller rotates, the motor control card is defective. Replace the motor control card using the procedure Motor Control Card section of this manual. If the motorized drive roller still does not rotate, the motorized drive roller is defective. Replace the motorized drive roller using the procedure in the Motorized Drive Roller (MDR) section of this manual.

WARNING

These checks must be performed with the power to the conveyor section turned "ON"
Only qualified electricians should be allowed to perform these checks. Failure to follow this instruction may result in serious personal injury and/or equipment damage.

7.7 No Voltage to the Motor Control Card

This check determines if there is power being supplied to the motor control card and must be done with the power to the conveyor turned on.

- 1 Determine which motor control card is being used at the zone location.
- 2 If the voltage is not between 24-26VDC, check the downstream zone motor control card for voltage. If the same condition exists (Voltage is not between 24-26VDC), check the Power Supply with a Multi-Meter.
- 3 If the voltage is between 24-26VDC, check the M12 and M8 connectors.

The Troubleshooting Appendix gives a general guide for some of the common problems that might be seen with Motorized Drive Roller Conveyor.

7.8 Power Supply Enclosure Troubleshooting

Each power supply enclosure has a blue pilot light located on the front for quick verification that all fuses and breakers are in proper working order. If the pilot light is out, a qualified person should verify which breakers and fuses are tripped/blown or if the pilot light is burned out. If found to be tripped/blow, the qualified person should verify all wiring is in correct order before replacing/resetting the problem item.

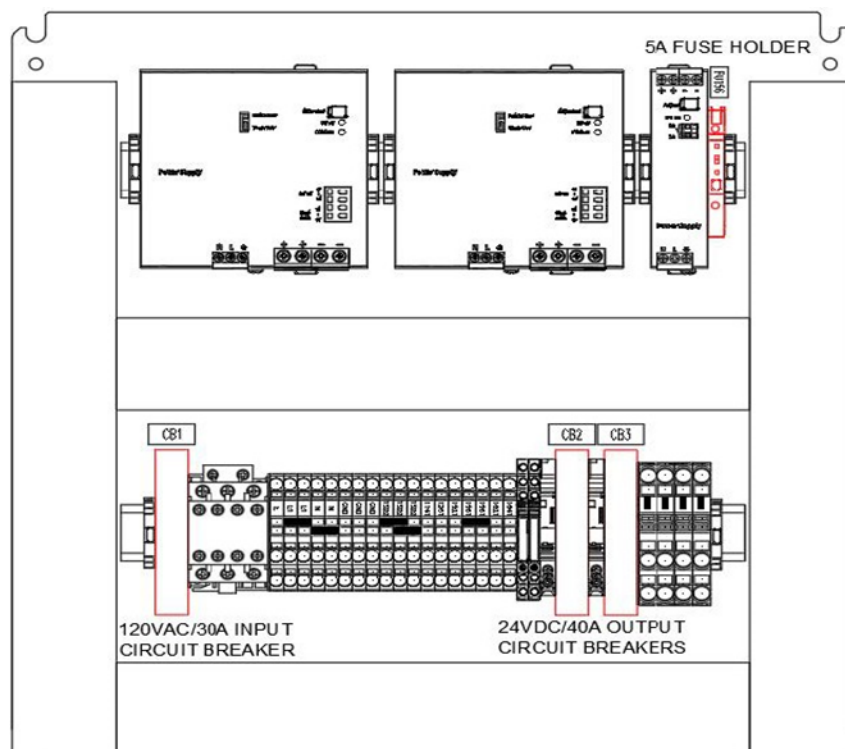


Figure 77

7.9 Safety Enclosure Troubleshooting

Each safety enclosure is tied to the main stack light of the system for easy identification of system status. If for any reason the stack light is not illuminated, this would indicate that the power source inside this panel has been shut off. An employee qualified to work with higher voltage should verify if the circuit breaker is tripped. If the breaker is tripped, the same employee should verify all wiring before resetting the breaker.

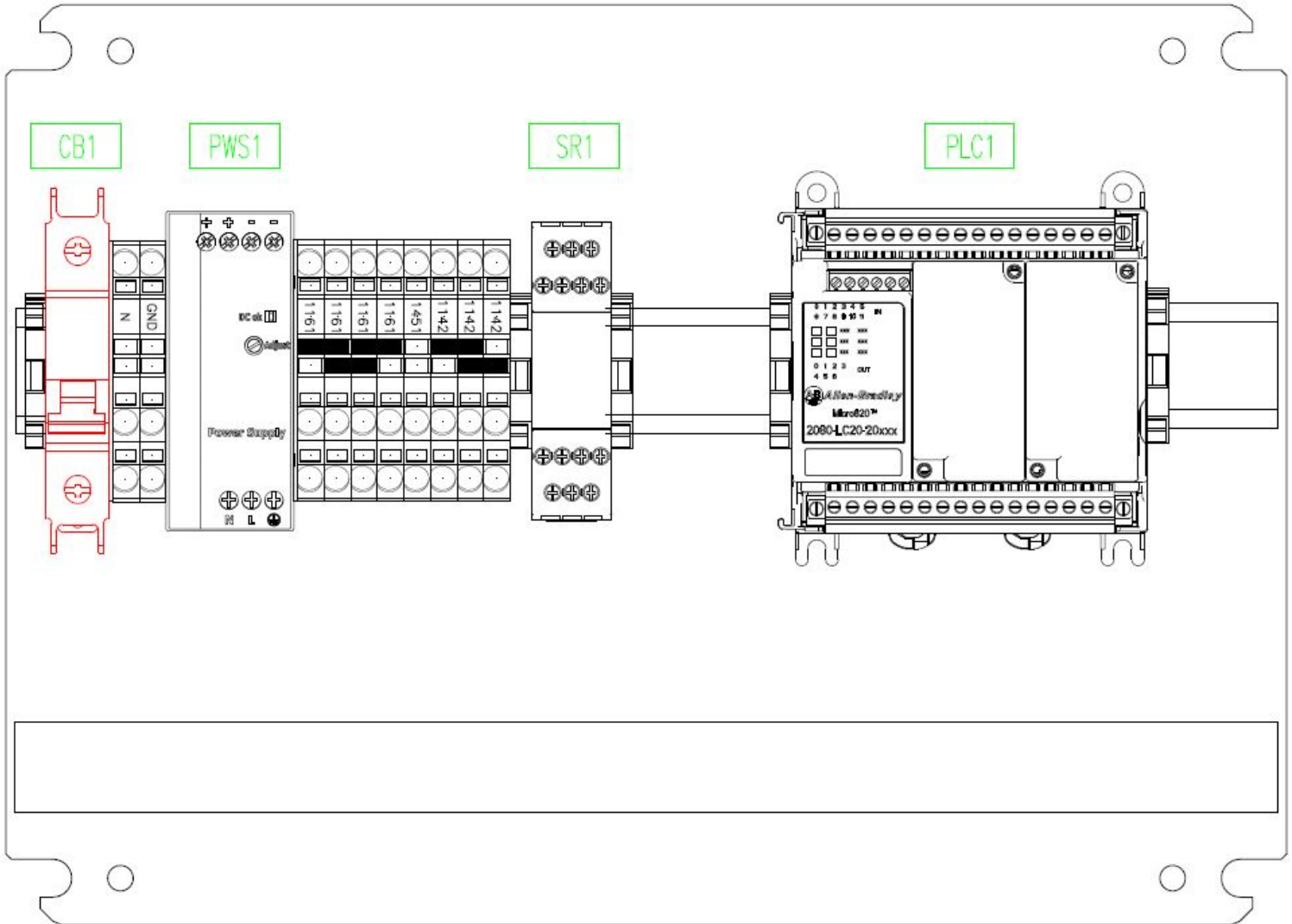


Figure 78: Sub-panel with Breaker Highlighted

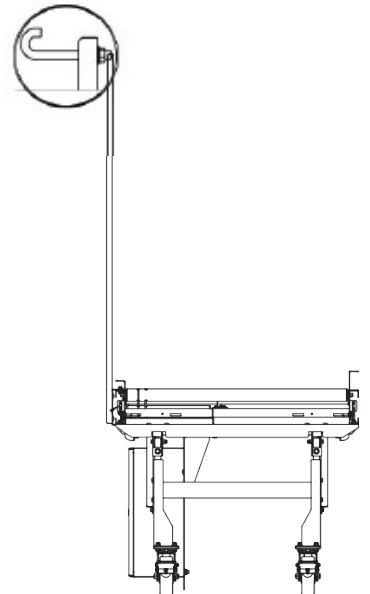
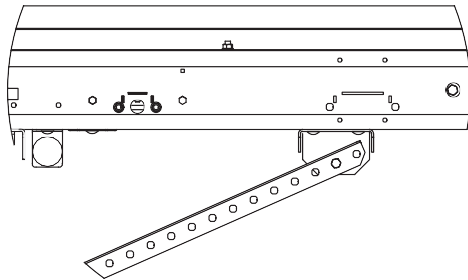
Table 3: Troubleshooting

Issue	Probable Cause	Fix
Single zone not running	<ol style="list-style-type: none"> 1. Motor failure 2. Motor card failure 3. Damaged cabling 	<ol style="list-style-type: none"> 1. Replace Motor 2. Replace motor card 3. Replace damaged cabling
Multiple zones not running	<ol style="list-style-type: none"> 1. Power supply circuit is off 2. Damaged cabling 	<ol style="list-style-type: none"> 1. Check power supply for tripped breakers 2. Replace damaged cabling
Start/Stop button not functioning	<ol style="list-style-type: none"> 1. Button has malfunctioned 2. Damaged cabling 3. Fuse blown in power supply enclosure 	<ol style="list-style-type: none"> 1. Replace button 2. Replace damaged cabling 3. Replace fuse in power supply
Grinding noise coming from motor	<ol style="list-style-type: none"> 1. Damaged motor 2. Motor rubbing on metal 	<ol style="list-style-type: none"> 1. Replace motor 2. Clear obstruction to motor
PWR light is off on motor card	<ol style="list-style-type: none"> 1. No power to motor card 2. Defective motor card 	<ol style="list-style-type: none"> 1. Check power supply for tripped breaker 2. Replace motor card
ERR1/ERR2 illuminated on motor card	<ol style="list-style-type: none"> 1. Motor has become unplugged 2. Motor has an internal failure 3. Defective motor card 	<ol style="list-style-type: none"> 1. Plug motor into motor card 2. Replace Motor 3. Replace motor card
Light on outside of power supply enclosure (PSE) is not illuminated	<ol style="list-style-type: none"> 1. Circuit breaker has tripped 2. No power to the PSE 3. Fuse has blown inside PSE 4. Pilot light has malfunctioned 	<ol style="list-style-type: none"> 1. Check for tripped breaker 2. Check incoming power from power drop 3. Replace fuse 4. Replace pilot light
Red stack light is on	<ol style="list-style-type: none"> 1. Pull cord switch is not reset somewhere in the system 2. Pull cord is defective somewhere in the system 	<ol style="list-style-type: none"> 1. Reset all pull cords 2. Replace defective pull cord and reset
Safety Circuit Reset (SCR) is pressed while flashing but does not stop flashing	<ol style="list-style-type: none"> 1. Contactor in remote power supply is defective and not pulling in 2. Cable damaged running to remote power supply enclosure (IN, OUT) 3. SCR push button is defective 4. Safety relay in safety enclosure is defective 	<ol style="list-style-type: none"> 1. Replace contactor/check wiring at contactor 2. Check cables for damage and replace 3. Replace push button 4. Replace safety relay
System Restart (SR) is pressed but no audible horn is heard	<ol style="list-style-type: none"> 1. System is not ready to be restarted (no flashing green stack light) 2. Start/Stop button is set to stop somewhere in system 3. Defective horn 	<ol style="list-style-type: none"> 1. Reset safety circuit prior to pushing SR button 2. All Start/Stop buttons must be in a green (ready) state 3. Replace stack light tower
Estop pullcord switch LED is not illuminating	<ol style="list-style-type: none"> 1. No power to Estop 2. Defective switch 	<ol style="list-style-type: none"> 1. Check breaker and power supply at safety enclosure 2. Replace switch

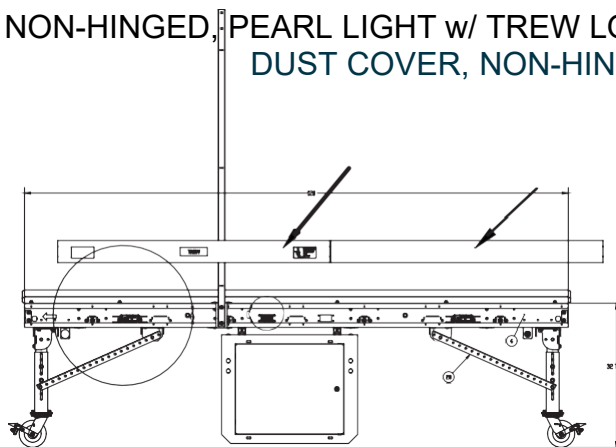
PARTS

8.1 Parts

Intermediate (Parent) Drawings



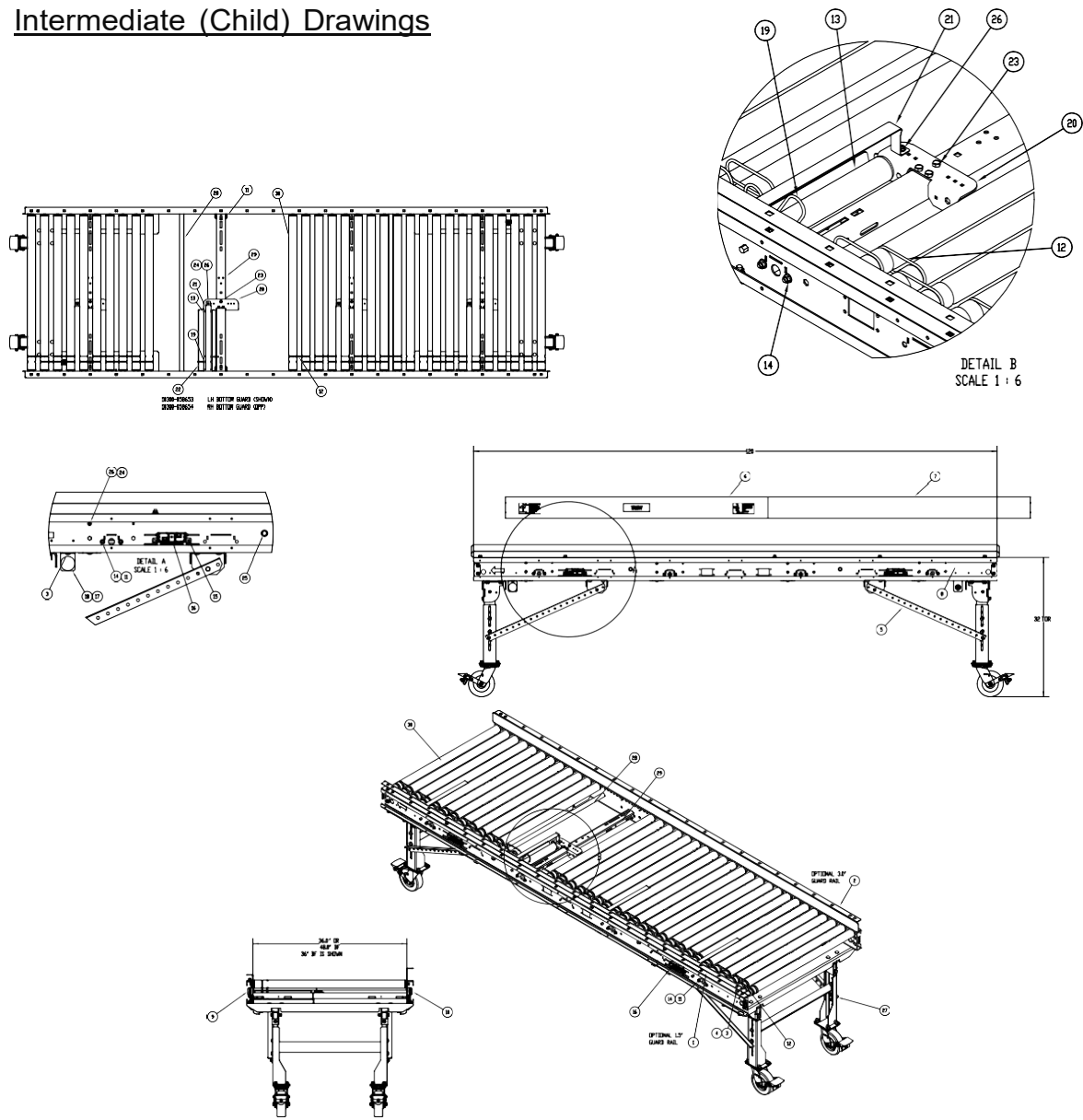
COVER, NON-HINGED, PEARL LIGHT w/ TREW LOGO
DUST COVER, NON-HINGED, NO LOGOS

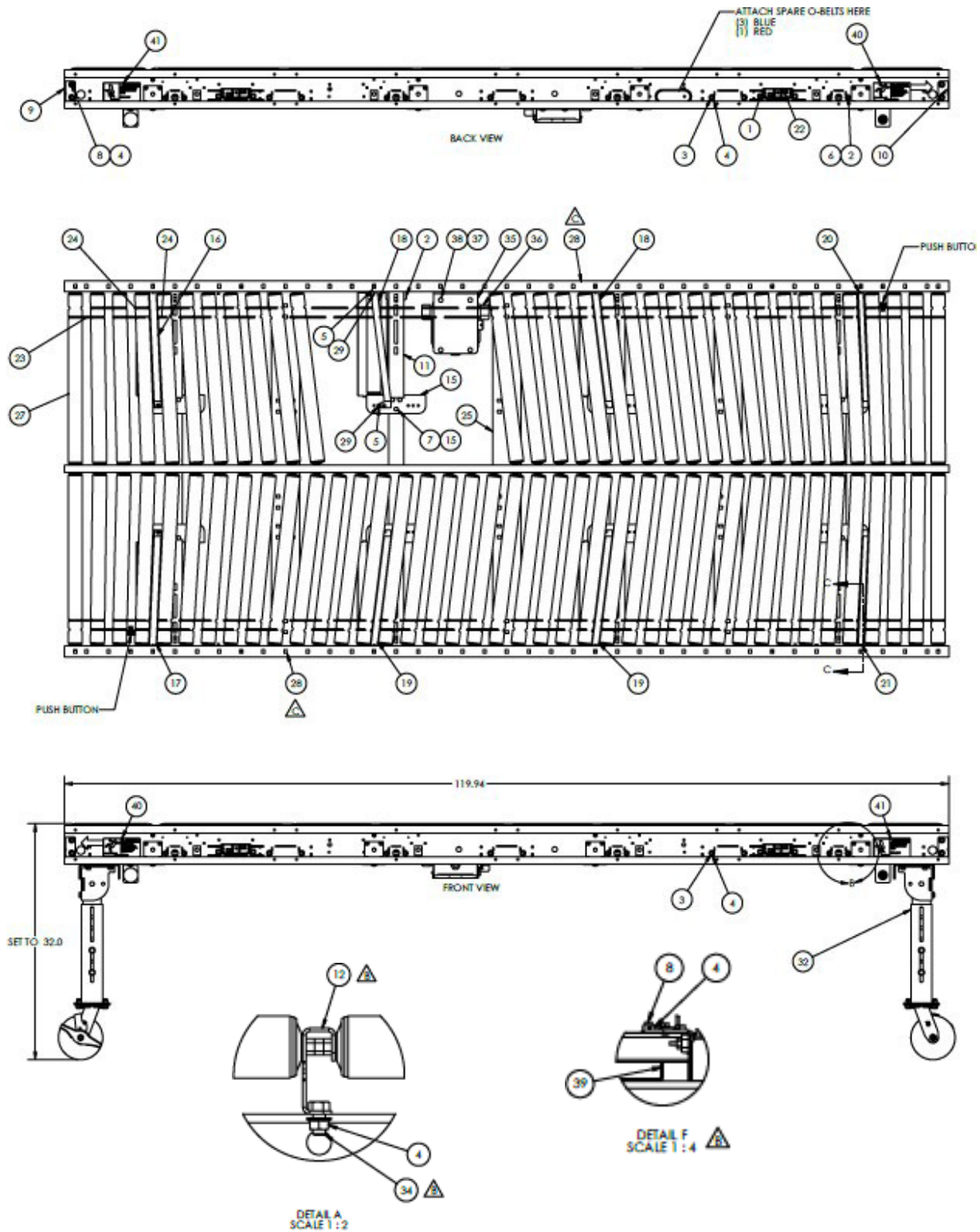


WIDTH COMPONENTS			
36.0' WIDTH PN	48.0' WIDTH PN	QTY	DESCRIPTION
1000466-36-F7035	1000466-48-F7035	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE
10200-012072	10200-015172	2	CROSSTIE TUBE, ___ BF, 1IN DIA
10300-057345-3600	10300-057345-4800	4	___ BF STANDARD CROSSMEMBER
20560-051185-3600	20560-051185-4800	40	CARRIER ROLLER, ___ " BF, 1.9" OD, 16GA, GALV, 7/16" HEX
10800-058661	10800-058661	1	POWER SUPPLY KIT, ___ BF

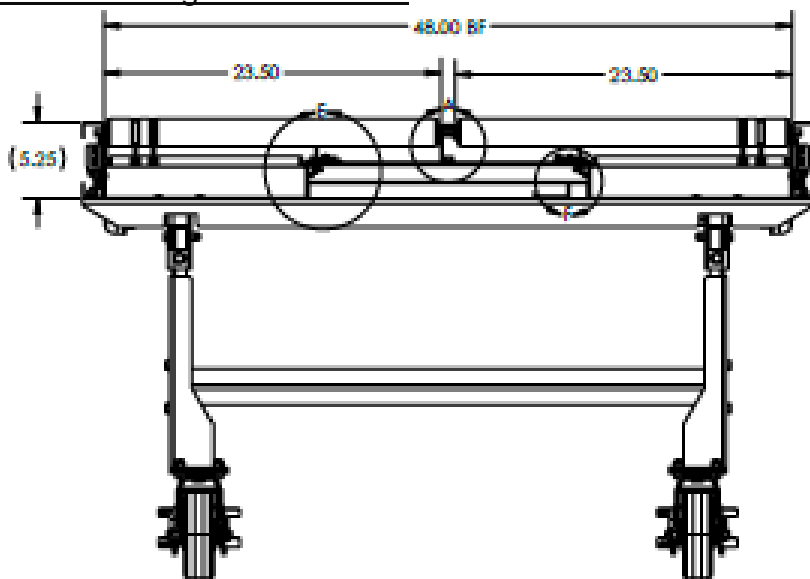
PART NUMBER	QTY.	DESCRIPTION
1000533	1	CABLE MAST KIT
10704-058237	2	BANNER K50 PUSH BUTTON
10300-058331	2	BANNER K50 SWITCH BRACKET
10300-058652	4	INTERMEDIATE TOP FINGER GUARD
10300-058653	4	INTERMEDIATE BOTTOM FINGER GUARD
10800-058666	1	RAYMOND SPECIFIC RAIL CORD GRIP GLAND
53500-058663	2	SWAY BRACE KIT

Intermediate (Child) Drawings

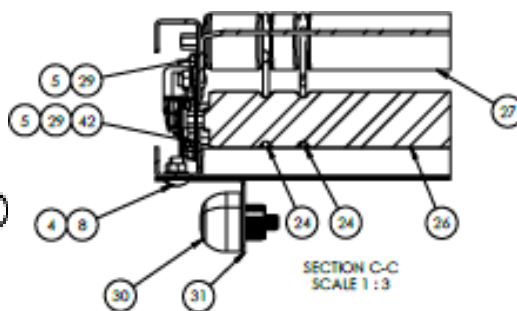
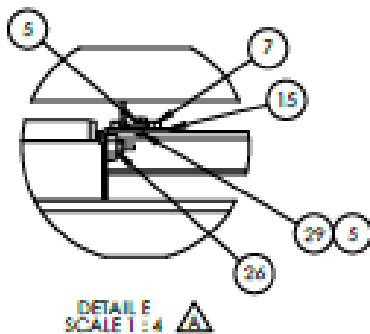
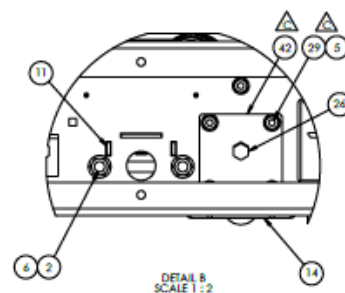




Mechanical Drawings N01-1439-01



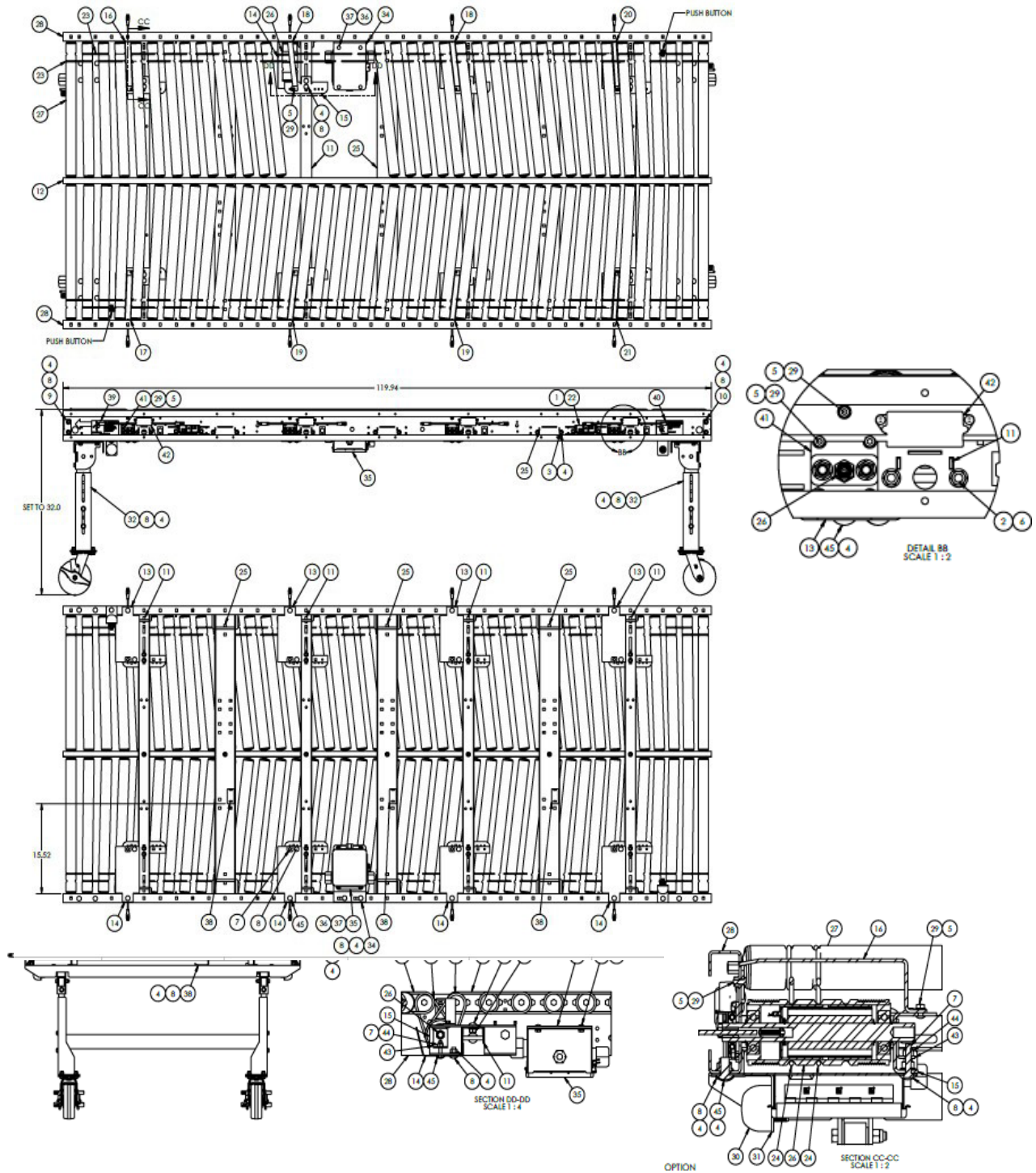
ASST NUMBER	POWER/CONTROL
N01-1439	DC2000 HO SPEED CNTR
N01-1439-01	DC2000 WITH SPEED CNTR
N01-1439-02	VSH WITH SPEED CNTR



Mechanical Drawings N01-1439-01

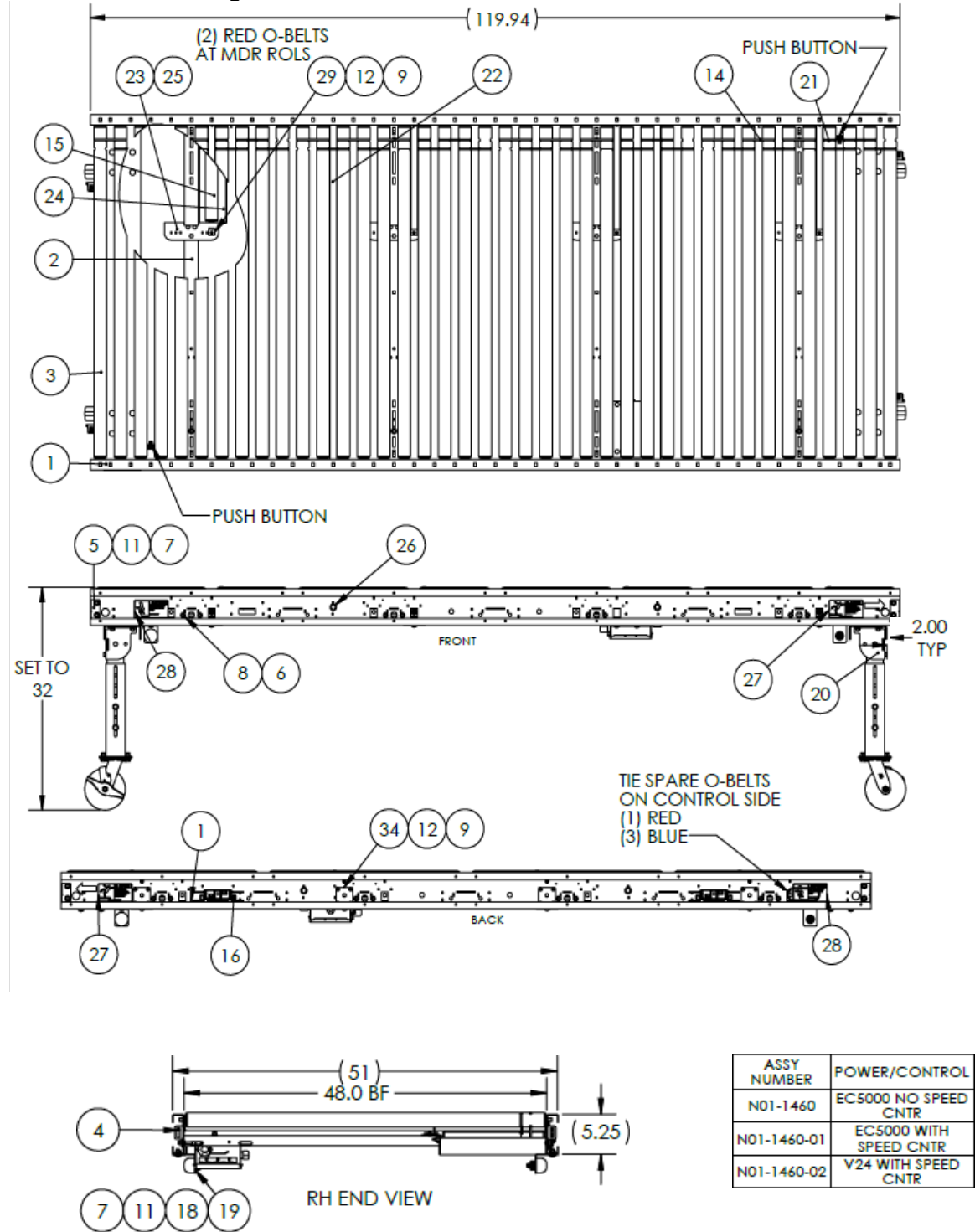
	ITEM	PART NUMBER	QTY.	DESCRIPTION
	1	10201-001545	8	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
	2	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
	3	10201-001547	6	U-BOLT, 3/8" -16 UNC X 4.38" STD.
	4	10201-010200	42	3/8 - 16 UNC HEX FLANGE NUT
△C	5	10201-010203	70	10 - 24 UNC HEX FLANGE NUT
	6	10201-010204	34	5/16 - 18 UNC HEX FLANGE NUT
	7	10201-010404	24	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
	8	10201-010800	31	3/8-16 UNC X 0.75 CARRIAGE SCREW
	9	10300-005198	2	COUPLER BRACKET (SM) - RH
	10	10300-005199	2	COUPLER BRACKET (SM) - LH
	11	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
△B	12	10300-059095	1	HERRINGBONE INTERMEDIATE ROLLER J-RAIL, 120IN
	13	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH
	14	10300-058654	4	INTERMEDIATE, BOTTOM FINGER GUARD, RH
	15	10300-058655	8	UNDER ROLLER MDR BRACKET
	16	10300-059215	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, 0.94W, LH
	17	10300-059216	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, 0.94W, RH
△B	18	10300-059217	2	TOP FINGER GUARD EC5000 UNDER ROLLER, 7.1DEG, 0.91W, LH
	19	10300-059218	2	TOP FINGER GUARD EC5000 UNDER ROLLER, 7.1DEG, 0.91W, RH
	20	10300-059219	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, 0.69W, LH
	21	10300-059220	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, .69W, RH
	22	10714-037753	4	H-20 AUTO MOTOR CONTROL MODULE
	23	11212-001541	67	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
	24	11212-049123	17	SUPER RED OBAND, 5mm X 10.00 IN 90A
	25	12300-028026	3	48IN BF CROSSMEMBER SERIES 2000-3000
	26	20250-057175-1400	8	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
	27	20560-051185-2316	80	CARRIER ROLLER, 23.50" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
△C	28	1002193	2	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
	29	10201-010818	70	10 - 24 UNC X 0.50 CARRIAGE SCREW
	30	10704-058237	2	BANNER K50 PUSH BUTTON
	31	10300-058331	2	BANNER K50 SWITCH BRACKET
	32	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
	34	10201-010419	7	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
	35	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
	36	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
△B	37	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
	38	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
	39	1000851	3	ELECTRICAL CABLE CARRIER
	40	10200-051823	2	SAFETY LABEL, KEEP OFF
	41	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
△C	42	10301-058371	8	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

Mechanical Drawings N01-1439-02

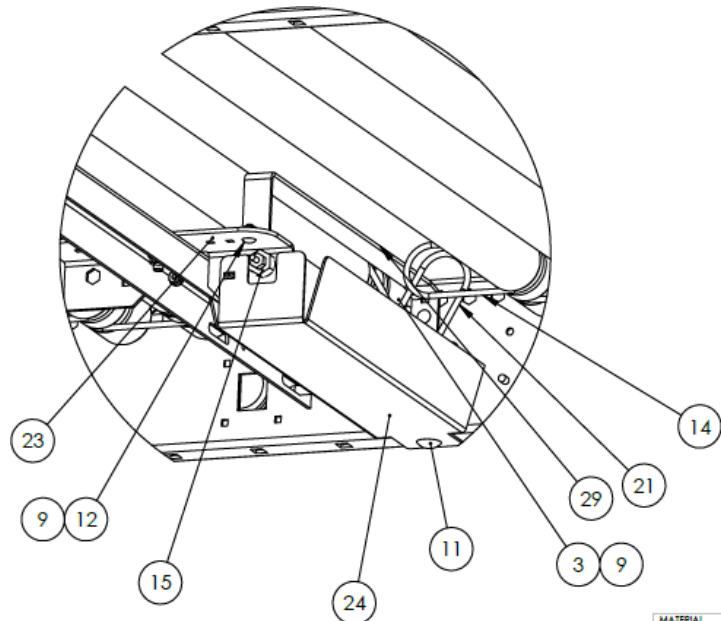
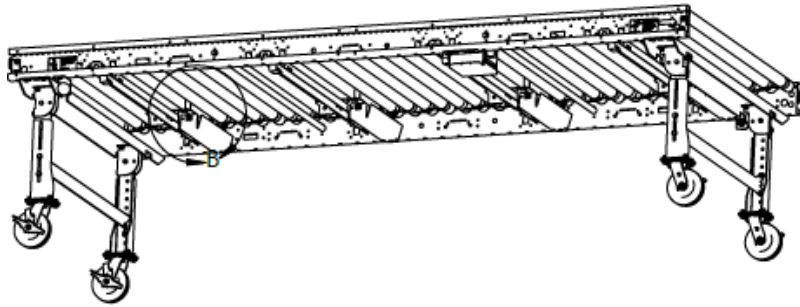


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10201-001545	8	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
2	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
3	10201-001547	6	U-BOLT, 3/8" -16 UNC X 4.38" STD.
4	10201-010200	72	3/8 - 16 UNC HEX FLANGE NUT
5	10201-010203	48	10 - 24 UNC HEX FLANGE NUT
6	10201-010204	16	5/16 - 18 UNC HEX FLANGE NUT
7	10201-029679	8	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
8	10201-010800	47	3/8-16 UNC X 0.75 CARRIAGE SCREW
9	10300-005198	2	COUPLER BRACKET (SM) - RH
10	10300-005199	2	COUPLER BRACKET (SM) - LH
11	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
12	10300-059095	1	HERRINGBONE INTERMEDIATE ROLLER J-RAIL, 120IN
13	1002509	4	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
14	1002512	4	INTERMEDIATE, BOTTOM FINGER GUARD V24, RH
15	1002469	8	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
16	1002778	1	TOP FINGER GUARD V24, 2.5DEG, 0.94W, LH
17	1002779	1	TOP FINGER GUARD V24, 2.5DEG, 0.94W, RH
18	1002780	2	TOP FINGER GUARD V24, 7.1DEG, 0.91W, LH
19	1002781	2	TOP FINGER GUARD V24, 7.1DEG, 0.91W, RH
20	1002782	1	TOP FINGER GUARD V24, 4DEG, 0.69W, LH
21	1002783	1	TOP FINGER GUARD V24, 4DEG, .69W, RH
22	10714-037753	4	H-20 AUTO MOTOR CONTROL MODULE
23	11212-001541	67	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
24	11212-040328	17	SUPER RED OBAND, 5mm X 11.63IN 90A
25	12300-028026	3	48IN BF CROSSMEMBER SERIES 2000-3000
26	10500-049804	8	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES
27	20560-051185-2316	80	CARRIER ROLLER, 23.50" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
28	1002193	2	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
29	10201-010818	48	10 - 24 UNC X 0.50 CARRIAGE SCREW
30	10704-058237	2	BANNER K50 PUSH BUTTON
31	10300-058331	2	BANNER K50 SWITCH BRACKET
32	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
33	10201-010419	7	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
34	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
35	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
36	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
37	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
38	1000851	3	ELECTRICAL CABLE CARRIER
39	10200-051823	2	SAFETY LABEL, KEEP OFF
40	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
41	10500-043560	8	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
42	10805-059992	8	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
43	10300-046090	8	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
44	10201-010219	8	1/4 - 20 UNC HEX NYLON LOCK NUT
45	10201-010800	8	3/8-16 UNC X 0.75 CARRIAGE SCREW

Mechanical Drawings N01-1460-01/02

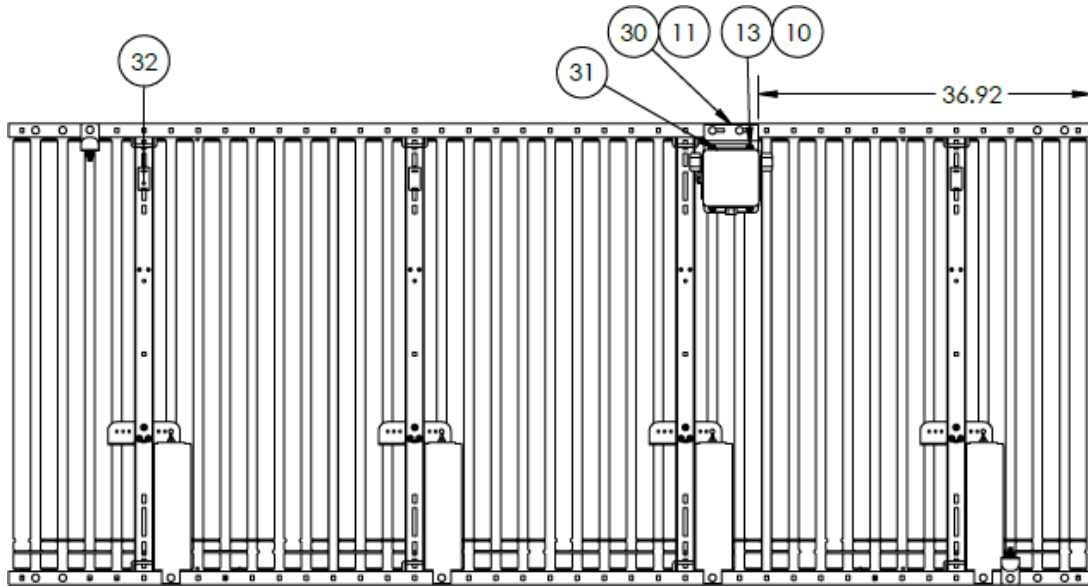


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	1/20IN INTERM, SERIES T500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
3	20560-051185-4800	40	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
4	10300-005199	2	COUPLER BRACKET (SM) - LH
5	10300-005198	2	COUPLER BRACKET (SM) - RH
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT
9	10201-010203	28	10 - 24 UNC HEX FLANGE NUT
10	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
11	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW
12	10201-010818	24	10 - 24 UNC X 0.50 CARRIAGE SCREW
13	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
14	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
15	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
16	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
17	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
18	10704-058237	2	BANNER K50 PUSH BUTTON
19	10300-058331	2	BANNER K50 SWITCH BRACKET
20	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BE, XXIN BE LEG SUPPORT
21	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
22	10200-015172	2	48"BF CROSS TIE TUBE
23	10300-058655	4	UNDER ROLLER MDR BRACKET
24	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH
25	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
26	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
27	10200-051823	2	SAFETY LABEL, KEEP OFF
28	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
29	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
30	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
31	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
32	1000851	3	ELECTRICAL CABLE CARRIER
34	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE



DETAIL B
SCALE 1 : 4

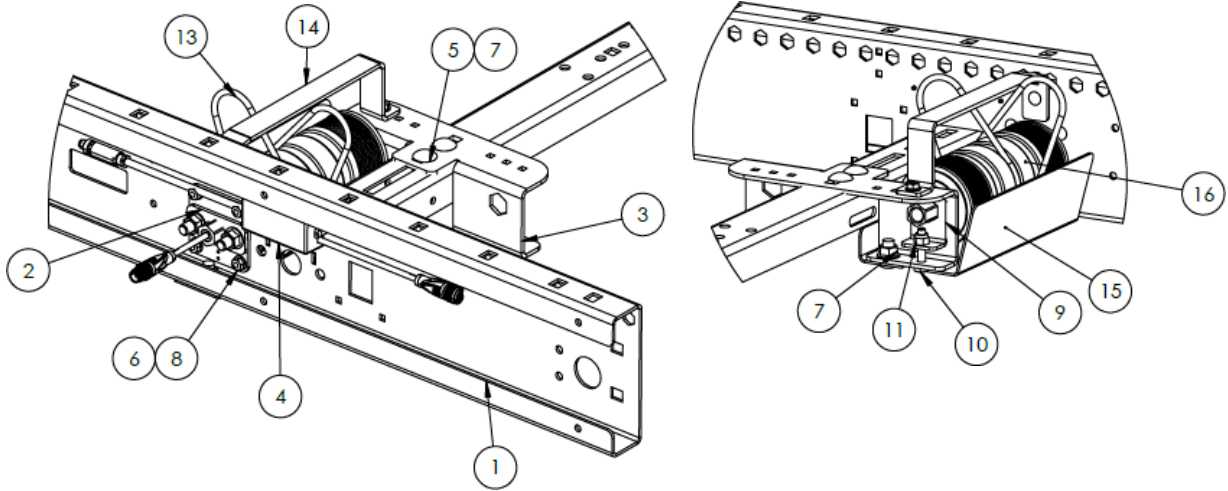
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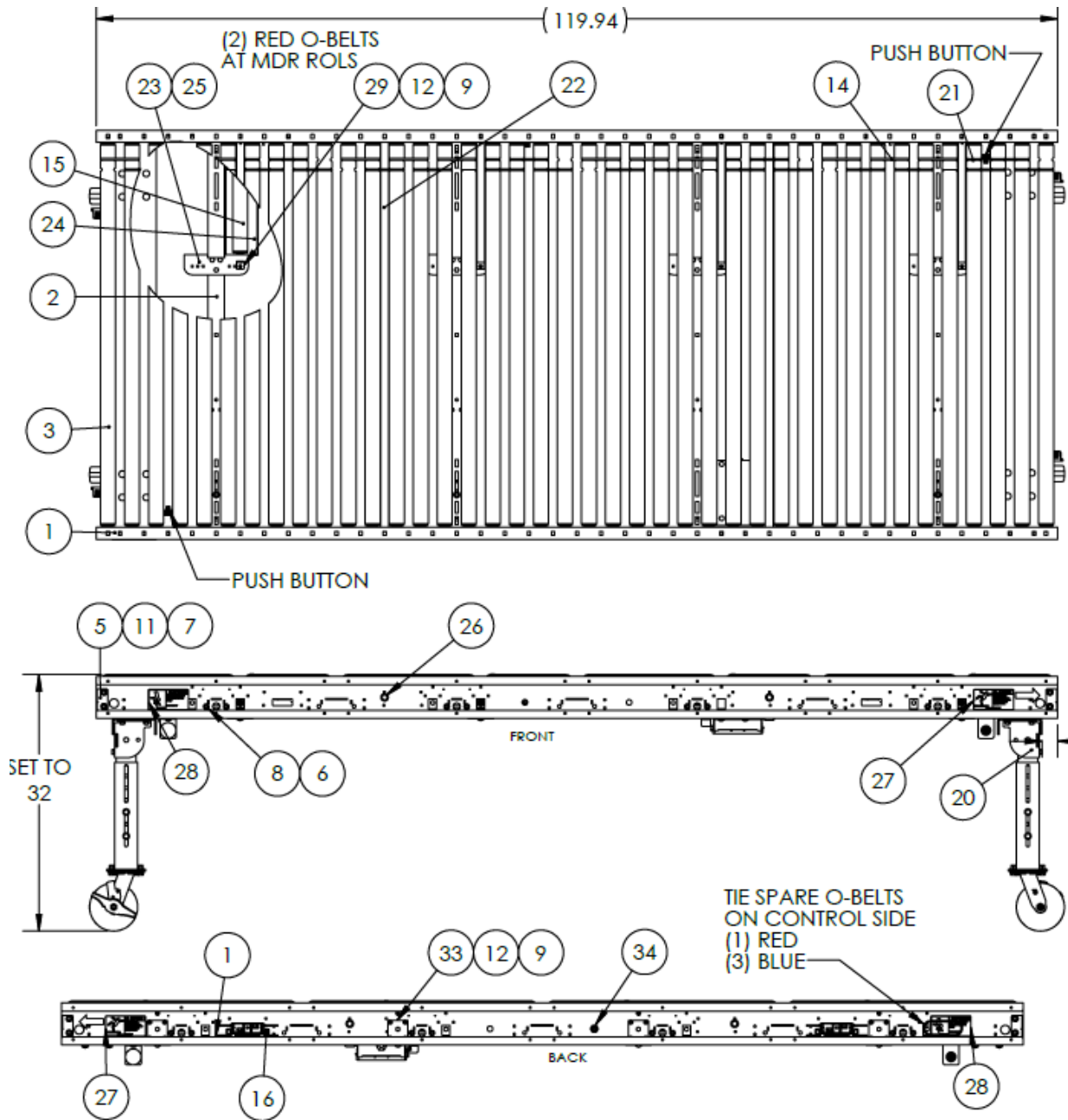
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Mechanical Drawings N01-1460-02

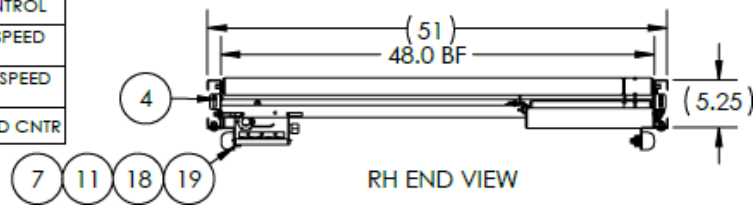


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	1	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
3	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
4	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85195 FPM-3A-FSK
5	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
6	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
7	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
9	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
10	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
11	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
12	10300-057345_00	1	___" BF STANDARD CROSSMEMBER
13	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
14	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
15	1002509	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
16	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES

Mechanical Drawings N01-1461-01/02



ASSY NUMBER	POWER/CONTROL
N01-1461	EC5000 NO SPEED CNTR
N01-1461-01	EC5000 WITH SPEED CNTR
N01-1461-02	V24 WITH SPEED CNTR



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Mechanical Drawings N01-1461- 01/02

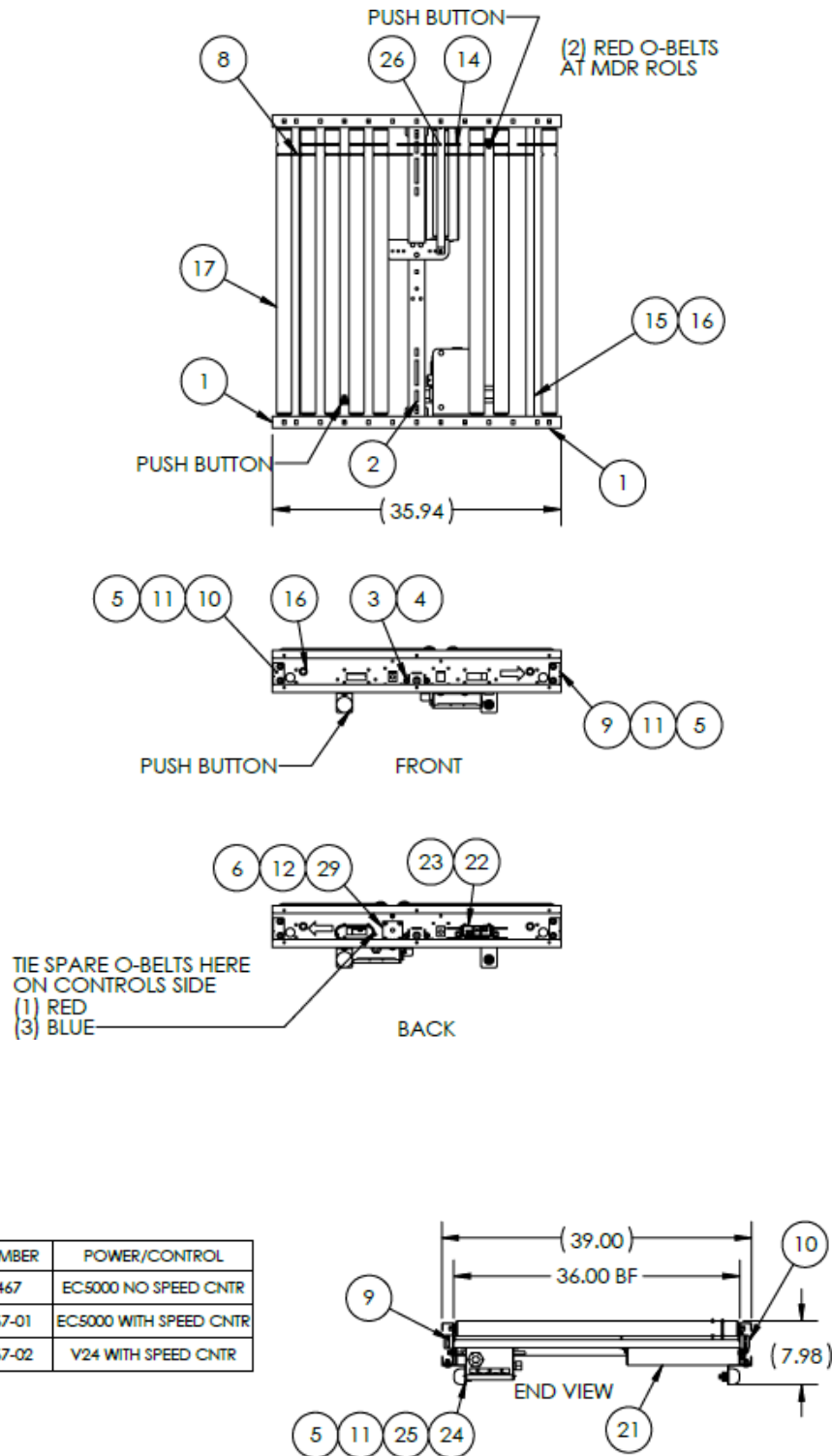
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	120IN INTERM, SERIES T500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
3	20560-051185-4800	40	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
4	10300-005199	2	COUPLER BRACKET (SM) - LH
5	10300-005198	2	COUPLER BRACKET (SM) - RH
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT
9	10201-010203	28	10 - 24 UNC HEX FLANGE NUT
10	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
11	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW
12	10201-010818	24	10 - 24 UNC X 0.50 CARRIAGE SCREW
13	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
14	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
15	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
16	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
17	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
18	10704-058237	2	BANNER K50 PUSH BUTTON
19	10300-058331	2	BANNER K50 SWITCH BRACKET
20	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
21	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
22	10200-015172	2	48"BF CROSSTIE TUBE
23	10300-058655	4	UNDER ROLLER MDR BRACKET
24	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH
25	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
26	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
27	10200-051823	2	SAFETY LABEL, KEEP OFF
28	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
29	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
30	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
31	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
32	1000851	3	ELECTRICAL CABLE CARRIER
33	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE
34	10716-059137	1	QVT SPLIT CABLE GLAND



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Mechanical Drawings N01-1467- 01

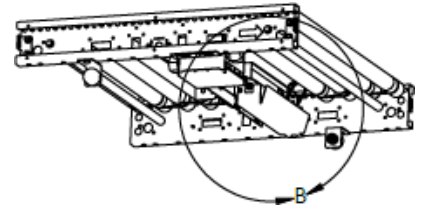
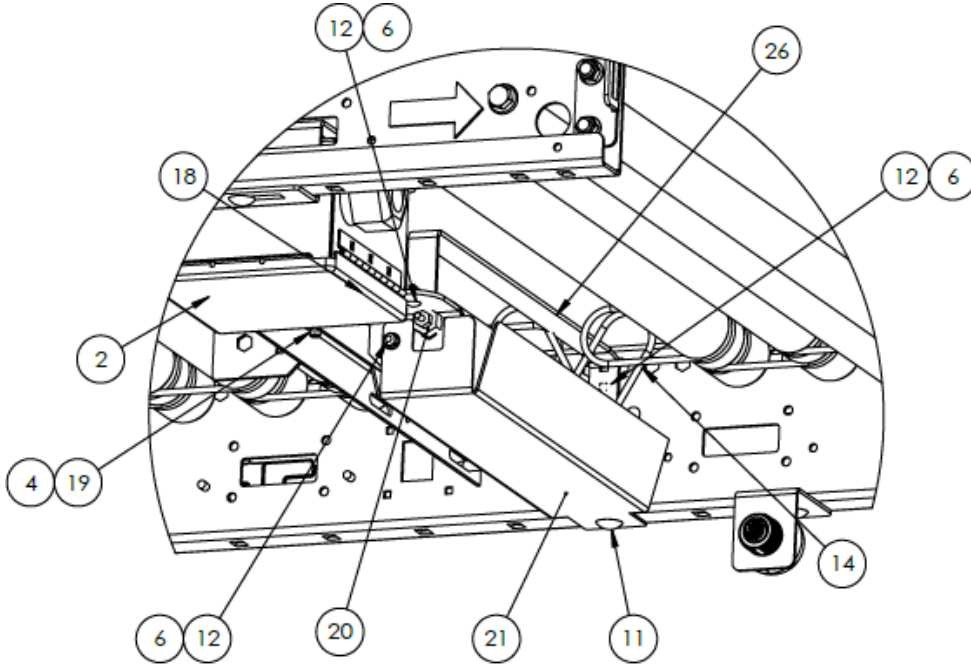


ASSY NUMBER	POWER/CONTROL
N01-1467	EC5000 NO SPEED CNTR
N01-1467-01	EC5000 WITH SPEED CNTR
N01-1467-02	V24 WITH SPEED CNTR

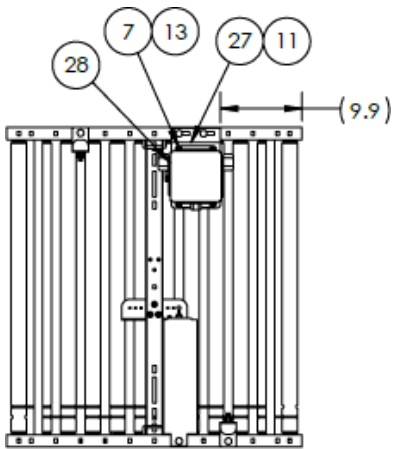
Mechanical Drawings N01-1467- 01

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002585	2	36IN INTERMEDIATE, SERIES 1500, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-3600	1	36" BF STANDARD CROSSMEMBER
3	10201-001546	2	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
4	10201-010204	7	5/16 - 18 UNC HEX FLANGE NUT
5	10201-010200	13	3/8 - 16 UNC HEX FLANGE NUT
6	10201-010203	8	10 - 24 UNC HEX FLANGE NUT
7	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
8	11212-001541	12	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
9	10300-005199	2	COUPLER BRACKET (SM) - LH
10	10300-005198	2	COUPLER BRACKET (SM) - RH
11	10201-010800	13	3/8-16 UNC X 0.75 CARRIAGE SCREW
12	10201-010818	8	10 - 24 UNC X 0.50 CARRIAGE SCREW
13	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
14	11212-049123	3	SUPER RED OBAND, 5mm X 10.00 IN 90A
15	10200-012072	2	36"BF CROSSTIE TUBE
16	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
17	20560-051185-3600	12	CARRIER ROLLER, 36" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
18	10300-058655	1	UNDER ROLLER MDR BRACKET
19	10201-010404	3	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
20	20250-057175-1400	1	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
21	10300-058653	1	INTERMEDIATE, BOTTOM FINGER GUARD, LH
22	10714-037753	1	H-20 AUTO MOTOR CONTROL MODULE
23	10201-001545	2	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
24	10300-058331	2	BANNER K50 SWITCH BRACKET
25	10704-058237	2	BANNER K50 PUSH BUTTON
26	10300-059022	1	INTERMEDIATE, TOP FINGER GUARD
27	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
28	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
29	10301-058371	1	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

Mechanical Drawings N01-1467-01



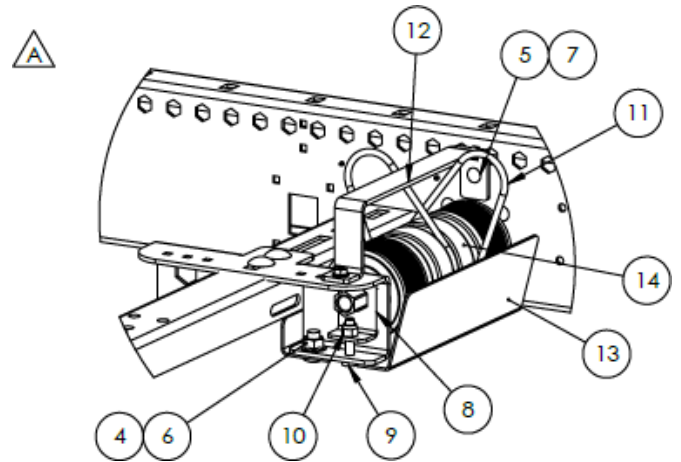
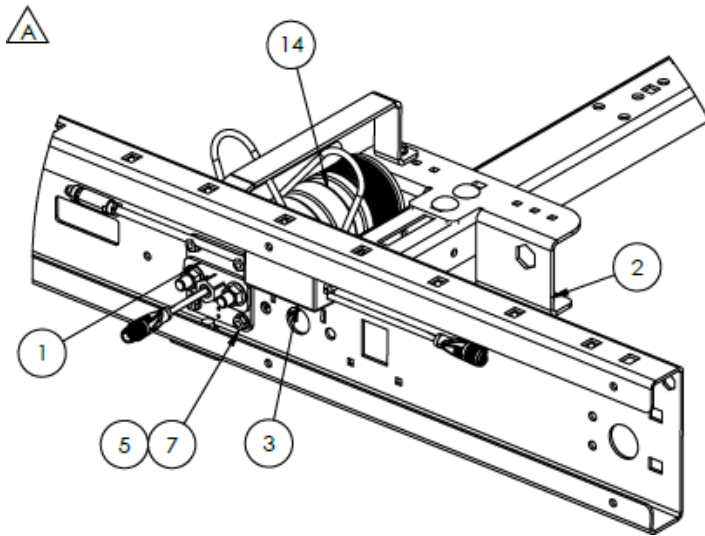
DETAIL B
SCALE 1 : 4



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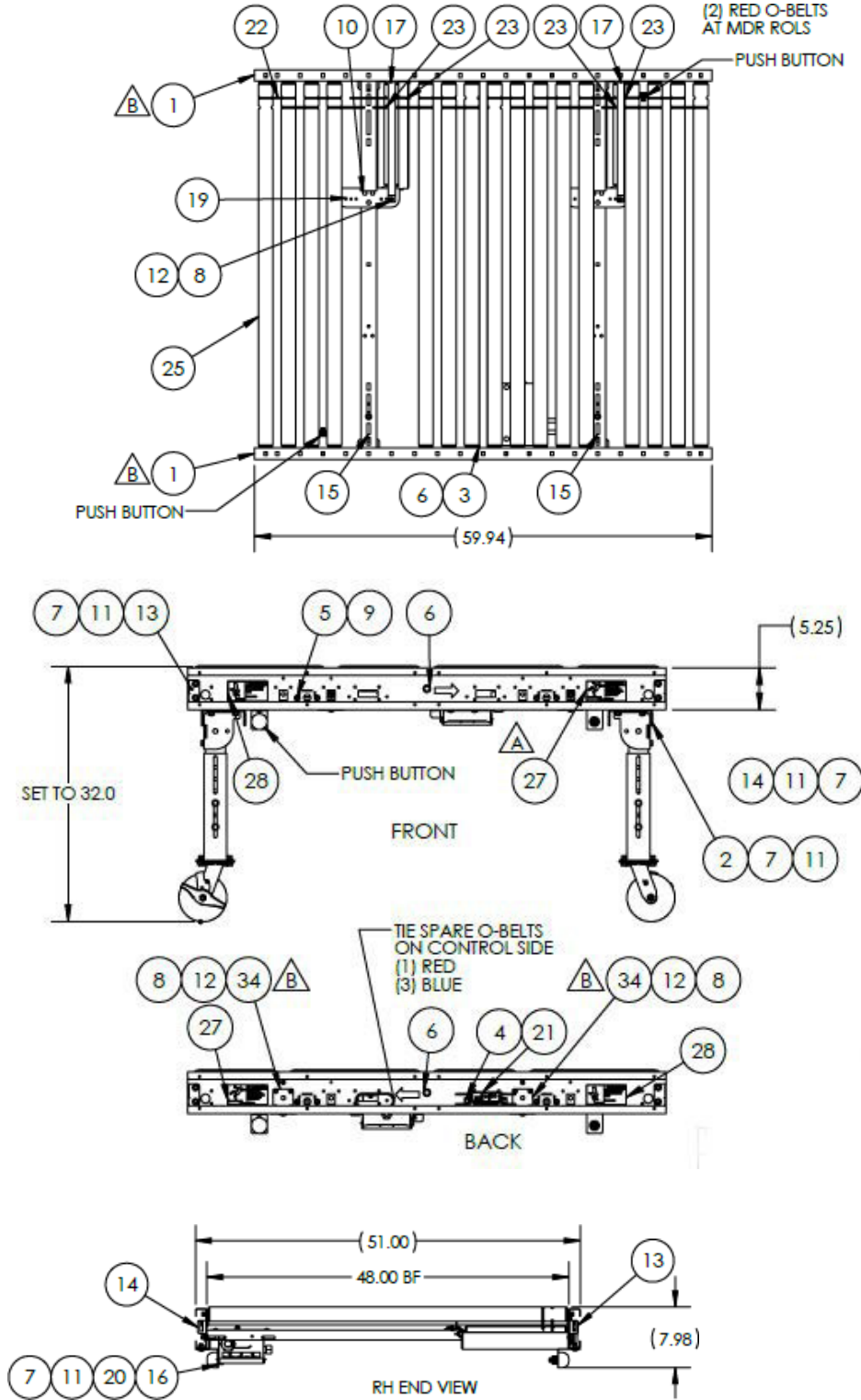
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Mechanical Drawings N01-1467-02



ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
2	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
3	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
4	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
5	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
6	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
7	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
8	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
9	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
10	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
11	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
12	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
13	1002509	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
14	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES

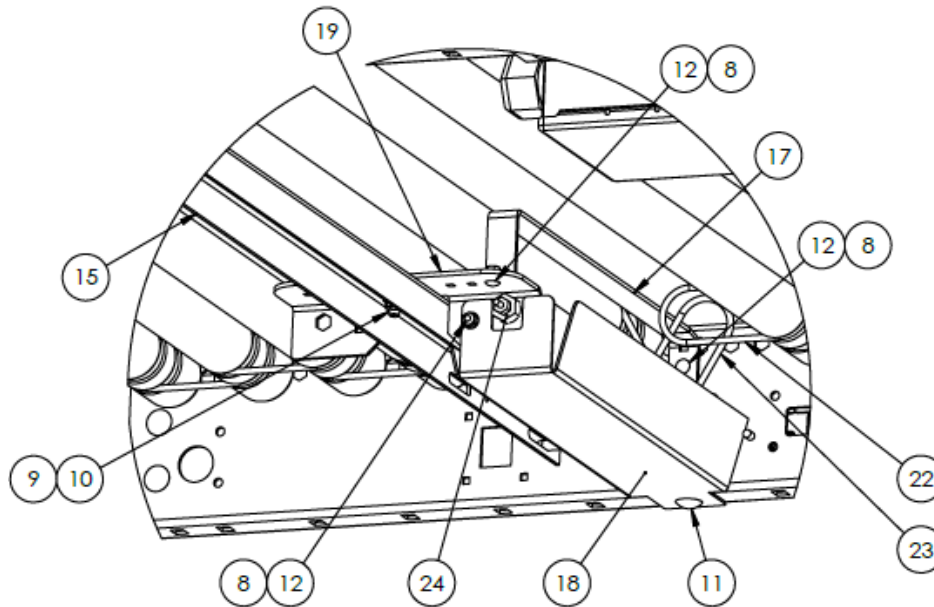
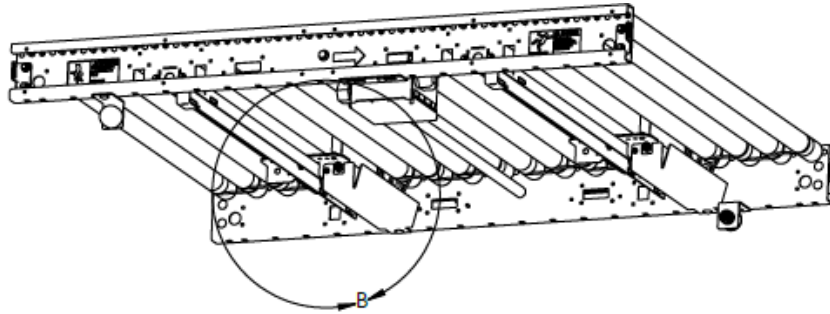
Mechanical Drawings N01-1476-01/02



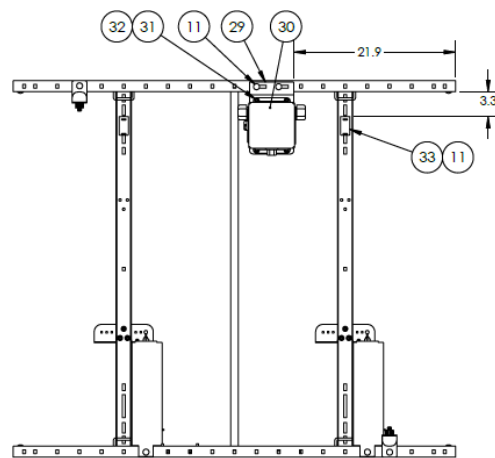
Mechanical Drawings N01-1476-01/02

	ITEM	PART NUMBER	QTY	DESCRIPTION
B	1	1002583	2	60IN INTERMEDIATE, SERIES 1500, 30IN ZONE, RSH 5.25IN, 12GA
	2	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
	3	10200-015172	1	48"BF CROSSTIE TUBE
	4	10201-001545	2	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
	5	10201-001546	4	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
	6	10201-010010	2	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
	7	10201-010200	24	3/8 - 16 UNC HEX FLANGE NUT
	8	10201-010203	14	10 - 24 UNC HEX FLANGE NUT
	9	10201-010204	14	5/16 - 18 UNC HEX FLANGE NUT
	10	10201-010404	6	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
	11	10201-010800	24	3/8-16 UNC X 0.75 CARRIAGE SCREW
	12	10201-010818	14	10 - 24 UNC X 0.50 CARRIAGE SCREW
	13	10300-005198	2	COUPLER BRACKET (SM) - RH
	14	10300-005199	2	COUPLER BRACKET (SM) - LH
	15	10300-057345-4800	2	48" BF STANDARD CROSSMEMBER
	16	10300-058331	2	BANNER K50 SWITCH BRACKET
	17	10300-059022	2	INTERMEDIATE, TOP FINGER GUARD
	18	10300-058653	2	INTERMEDIATE, BOTTOM FINGER GUARD, LH
	19	10300-058655	2	UNDER ROLLER MDR BRACKET
	20	10704-058237	2	BANNER K50 PUSH BUTTON
	21	10714-037753	1	H-20 AUTO MOTOR CONTROL MODULE
	22	11212-001541	19	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
	23	11212-049123	5	SUPER RED OBAND, 5mm X 10.00 IN 90A
	24	20250-057175-1400	2	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
25	20560-051185-4800	20	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD	
A	27	10200-051823	2	SAFETY LABEL, KEEP OFF
	28	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
	29	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
A	30	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
	31	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
	32	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
	33	1000851	2	ELECTRICAL CABLE CARRIER
B	34	10301-058371	2	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

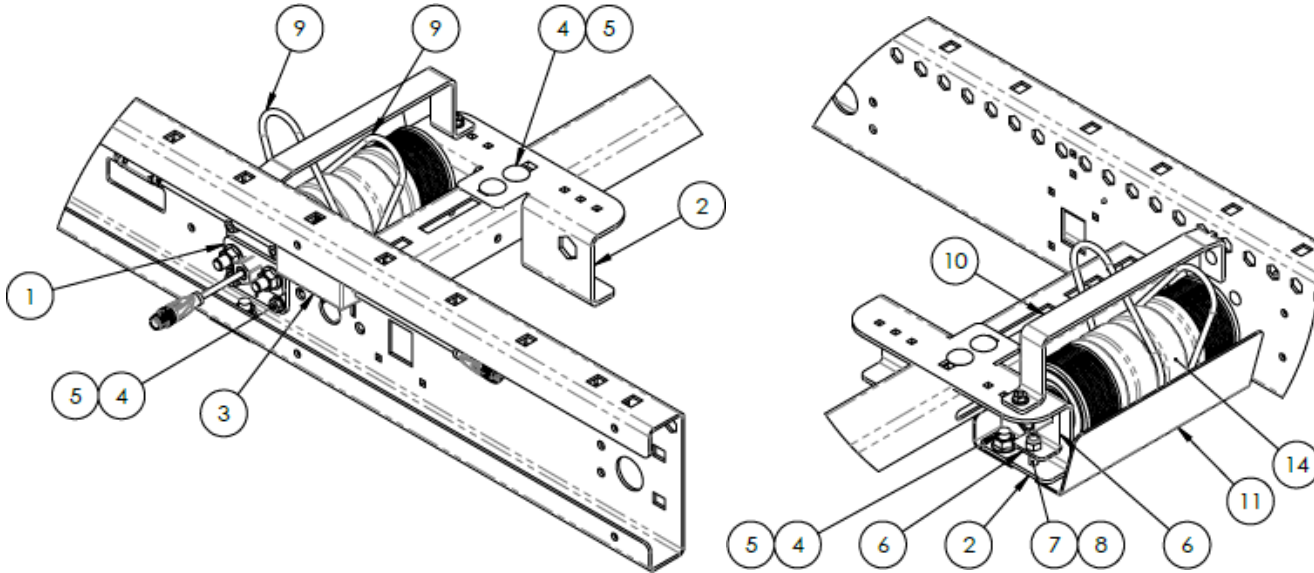
Mechanical Drawings N01-1476-01



DETAIL B
SCALE 1 : 4

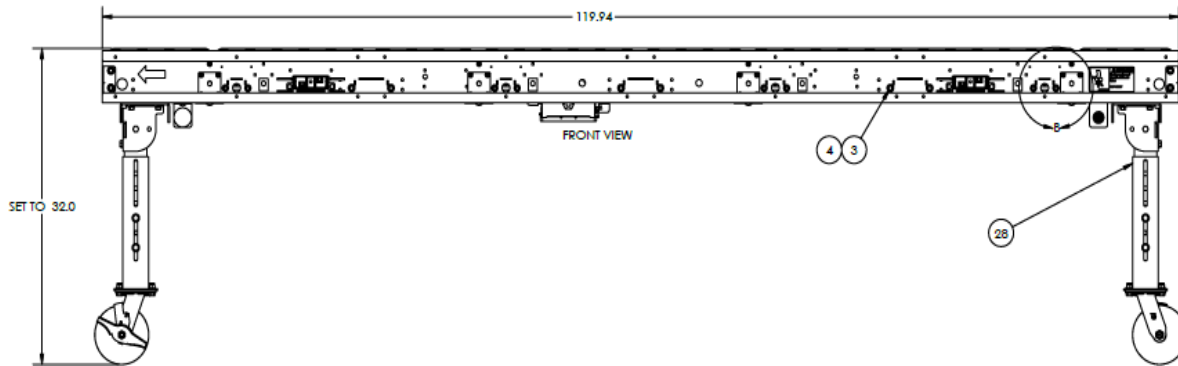
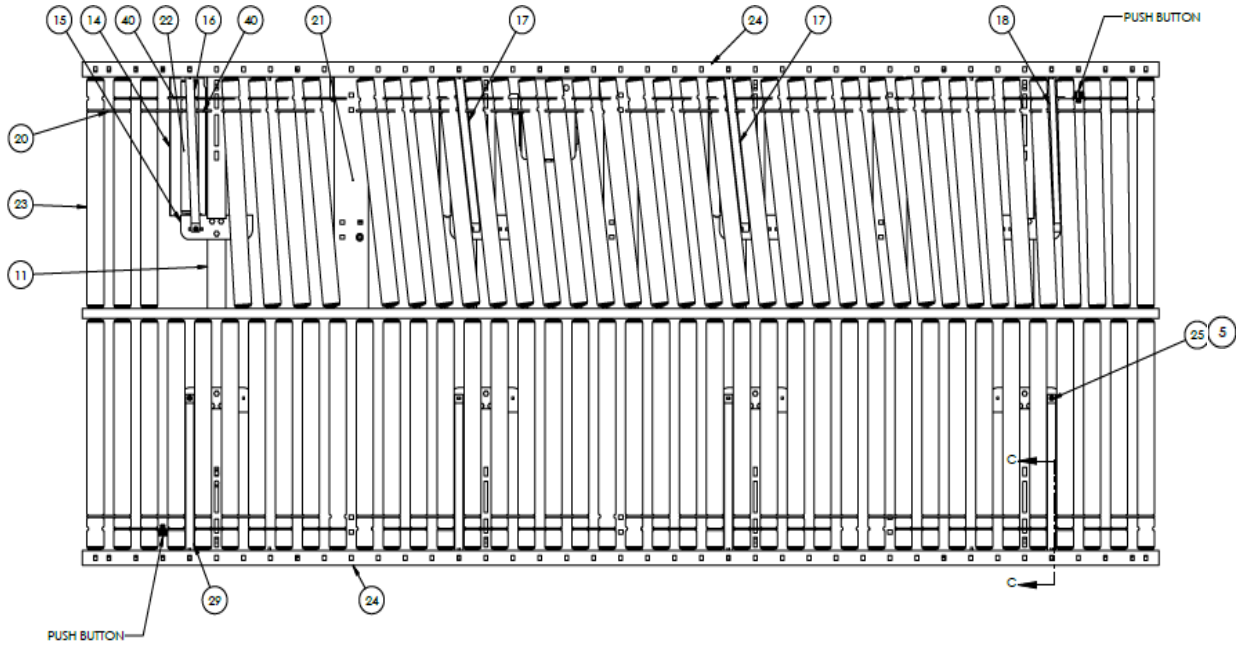
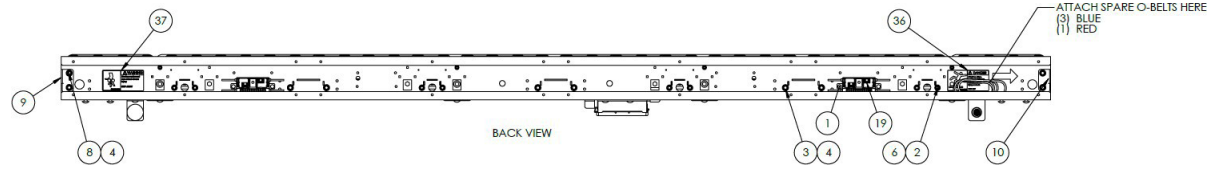


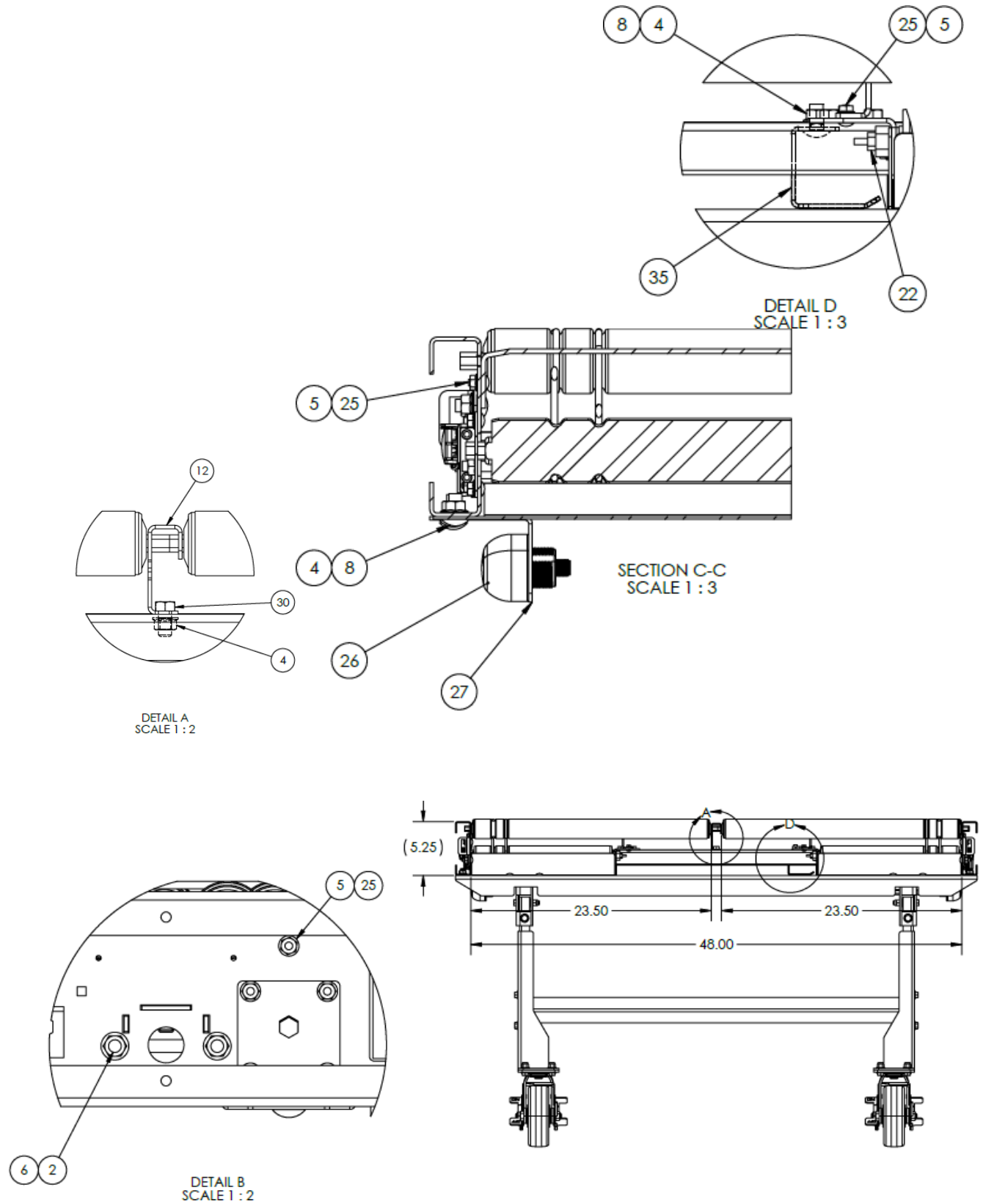
Mechanical Drawings N01-1476-02



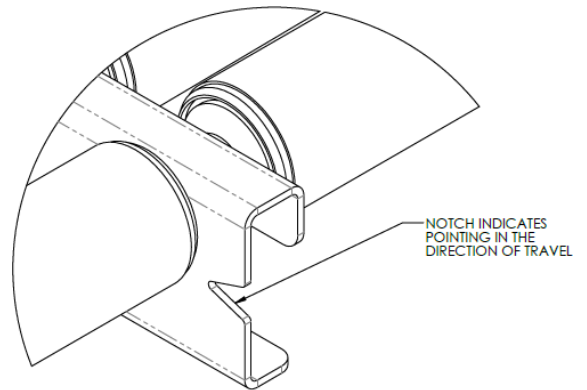
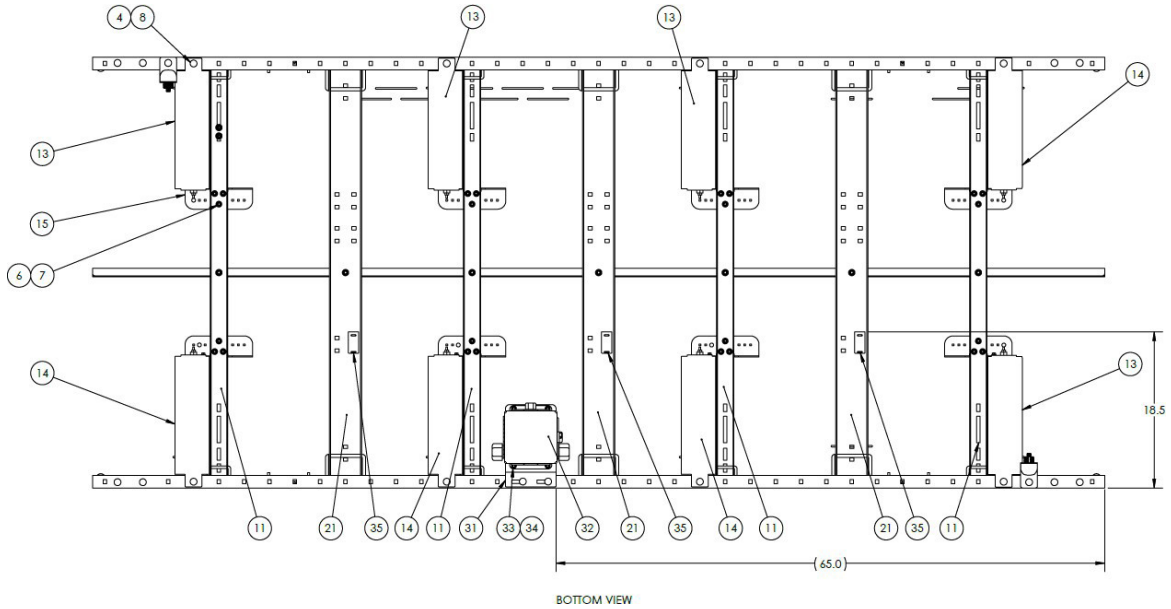
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
2	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
3	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
4	10201-010818	10	10 - 24 UNC X 0.50 CARRIAGE SCREW
5	10201-010203	10	10 - 24 UNC HEX FLANGE NUT
6	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
7	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
8	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
9	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
10	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
11	1002509	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
14	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES

Mechanical Drawings N01-1480-01/02

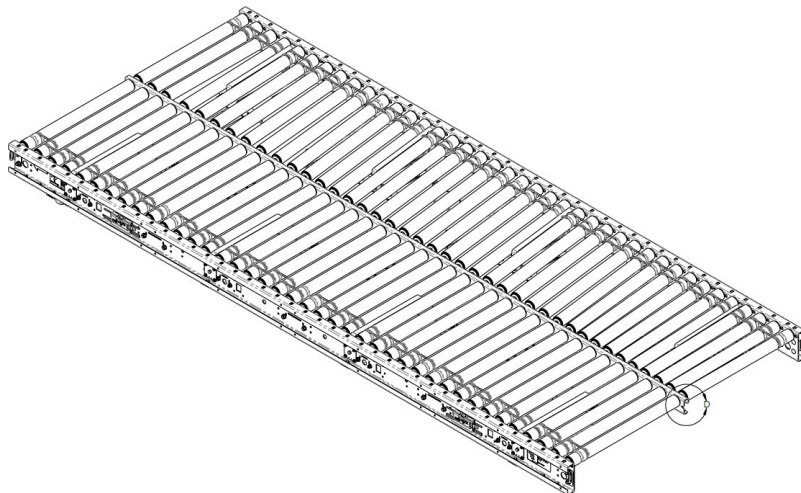




Mechanical Drawings N01-1480-01/02



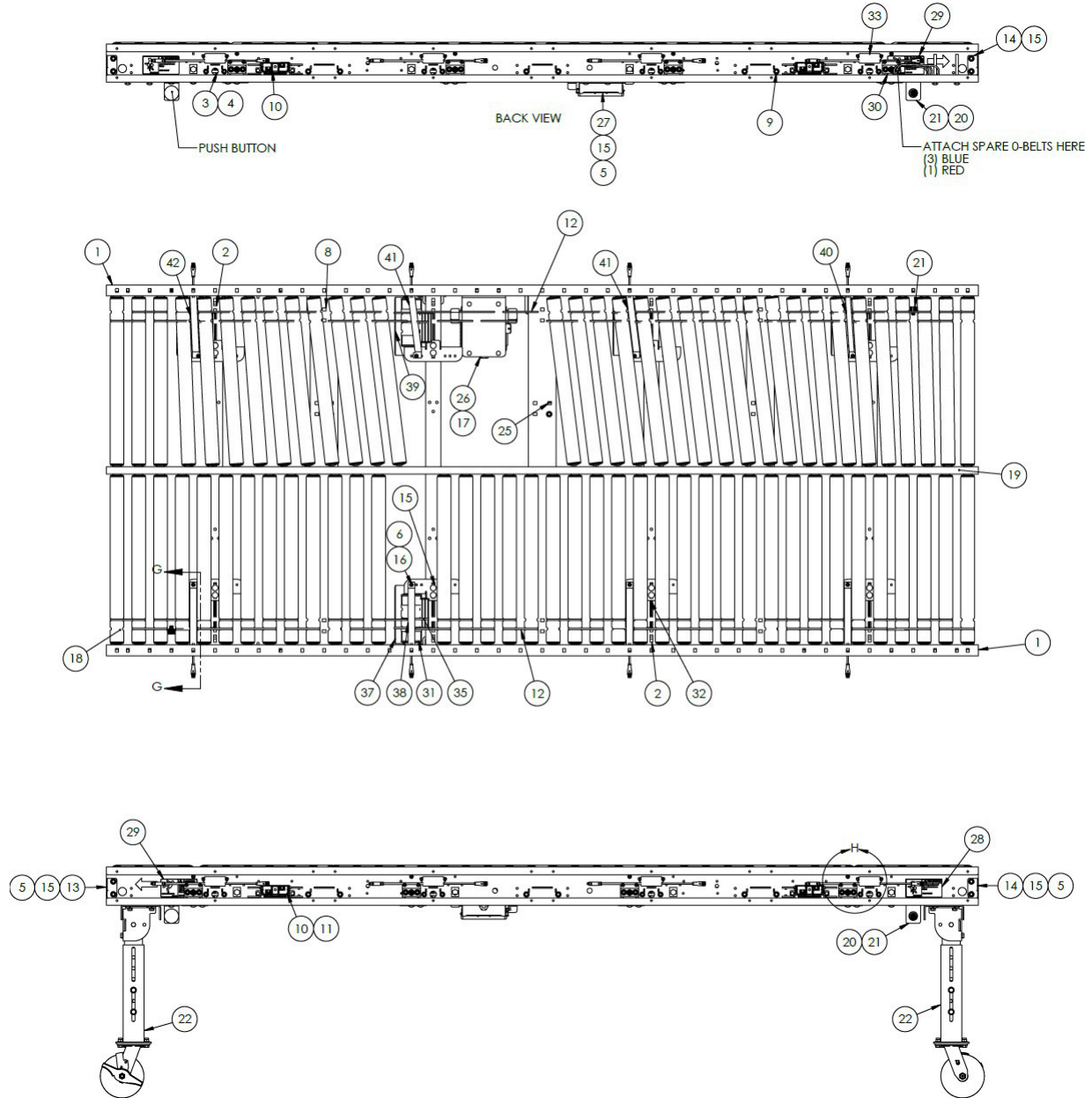
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SCALE 1 : 1

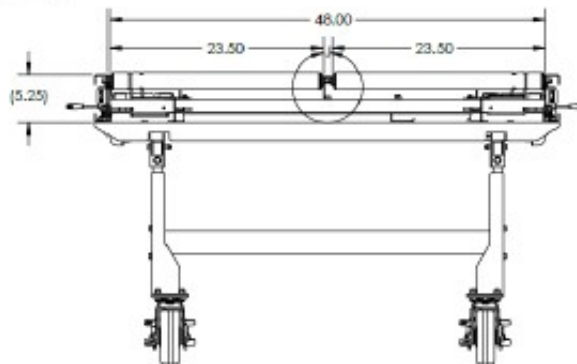
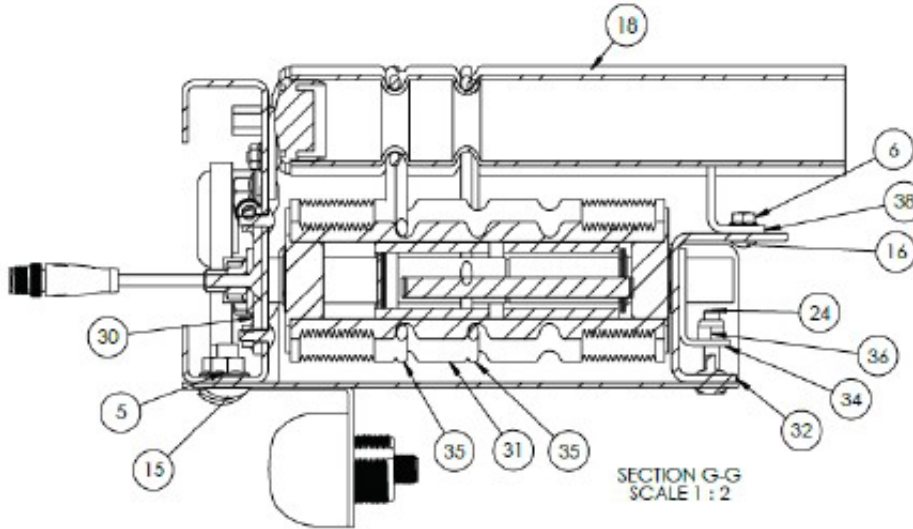
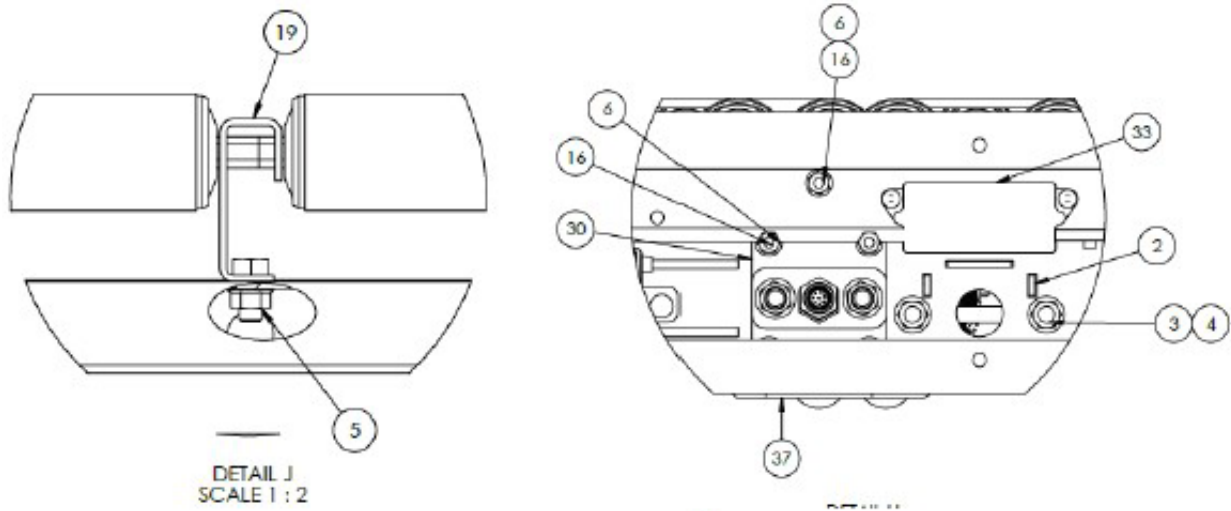


Mechanical Drawings N01-1480-01/02

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10201-001545	8	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
2	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
3	10201-001547	6	U-BOLT, 3/8" -16 UNC X 4.38" STD.
4	10201-010200	50	3/8 - 16 UNC HEX FLANGE NUT
5	10201-010203	52	10 - 24 UNC HEX FLANGE NUT
6	10201-010204	34	5/16 - 18 UNC HEX FLANGE NUT
7	10201-010404	24	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
8	10201-010800	33	3/8-16 UNC X 0.75 CARRIAGE SCREW
9	10300-005198	2	COUPLER BRACKET (SM) - RH
10	10300-005199	2	COUPLER BRACKET (SM) - LH
11	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
12	10300-059096	1	SKEW TO LH INTERMEDIATE ROLLER J-RAIL, 120IN
13	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH
14	10300-058654	4	INTERMEDIATE, BOTTOM FINGER GUARD, RH
15	10300-058655	8	UNDER ROLLER MDR BRACKET
16	10300-059215	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, 0.94W, LH
17	10300-059217	2	TOP FINGER GUARD EC5000 UNDER ROLLER, 7.1DEG, 0.91W, LH
18	10300-059219	1	TOP FINGER GUARD EC5000 UNDER ROLLER, 2.5DEG, 0.69W, LH
19	10714-037753	4	H-20 AUTO MOTOR CONTROL MODULE
20	11212-001541	69	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
21	12300-028026	3	48IN BF CROSSMEMBER SERIES 2000-3000
22	20250-057175-1400	8	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
23	20560-051185-2316	80	CARRIER ROLLER, 23.50" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
24	1002193	2	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
25	10201-010818	52	10 - 24 UNC X 0.50 CARRIAGE SCREW
26	10704-058237	2	BANNER K50 PUSH BUTTON
27	10300-058331	2	BANNER K50 SWITCH BRACKET
28	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
29	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
30	10201-010419	7	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
31	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
32	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
33	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
34	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
35	1000851	3	ELECTRICAL CABLE CARRIER
36	10200-051823	2	SAFETY LABEL, KEEP OFF
37	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
38	10301-058371	8	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE
39	11212-040328	1	SUPER RED OBAND, 5mm X 11.63IN 90A
40	11212-049123	16	SUPER RED OBAND, 5mm X 10.00 IN 90A

Mechanical Drawings N01-1480-02





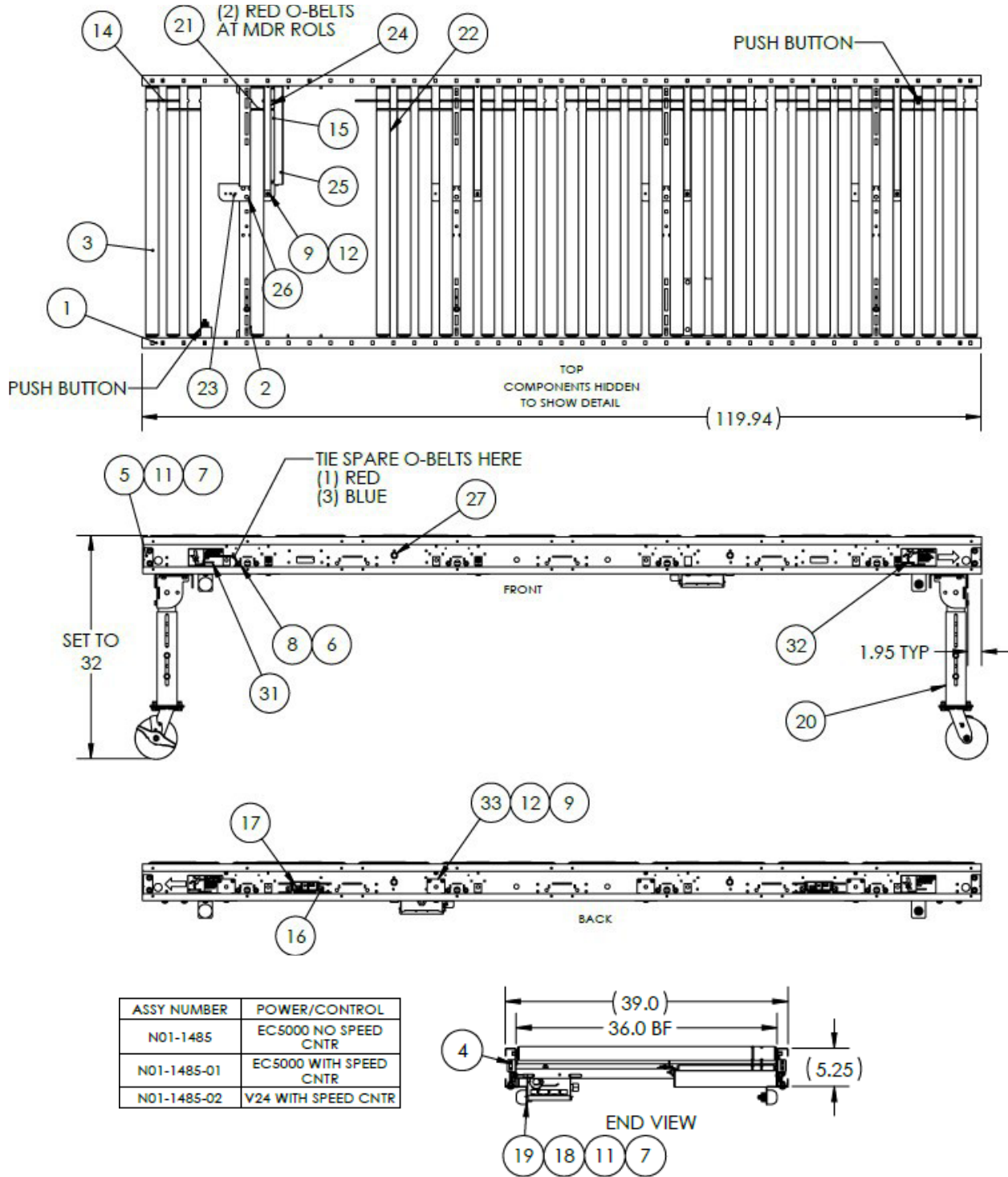
Mechanical Drawings N01-1480-02

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
3	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
4	10201-010204	16	5/16 - 18 UNC HEX FLANGE NUT
5	10201-010200	73	3/8 - 16 UNC HEX FLANGE NUT
6	10201-010203	48	10 - 24 UNC HEX FLANGE NUT
7	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
8	12300-028026	3	48IN BF CROSSMEMBER SERIES 2000-3000
9	10201-001547	6	U-BOLT, 3/8" - 16 UNC X 4.38" STD.
10	10714-037753	4	H-20 AUTO MOTOR CONTROL MODULE
11	10201-001545	8	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
12	11212-001541	67	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
13	10300-005198	2	COUPLER BRACKET (SM) - RH
14	10300-005199	2	COUPLER BRACKET (SM) - LH
15	10201-010800	56	3/8-16 UNC X 0.75 CARRIAGE SCREW
16	10201-010818	48	10 - 24 UNC X 0.50 CARRIAGE SCREW
17	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
18	20560-051185-2316	80	CARRIER ROLLER, 23.50" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
19	10300-059096	1	SKEW TO LH INTERMEDIATE ROLLER J-RAIL, 120IN
20	10704-058237	2	BANNER K50 PUSH BUTTON
21	10300-058331	2	BANNER K50 SWITCH BRACKET
22	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
23	10201-010419	7	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
24	10201-029679	8	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
25	1000851	3	ELECTRICAL CABLE CARRIER
26	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
27	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
28	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
29	10200-051823	2	SAFETY LABEL, KEEP OFF
30	10500-043560	8	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
31	10500-049804	8	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250, 3.9IN STACK, 6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES
32	1002469	8	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
33	10805-059992	8	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
34	10300-046090	8	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
35	11212-040328	17	SUPER RED OBAND, 5mm X 11.63IN 90A
36	10201-010219	8	1/4 - 20 UNC HEX NYLON LOCK NUT
37	1002509	4	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
38	1002508	4	INTERMEDIATE, TOP FINGER GUARD V24
39	1002512	4	INTERMEDIATE, BOTTOM FINGER GUARD V24, RH
40	1002782	1	TOP FINGER GUARD V24, 4DEG, 0.69W, LH
41	1002780	2	TOP FINGER GUARD V24, 7.1DEG, 0.91W, LH
42	1002778	1	TOP FINGER GUARD V24, 2.5DEG, 0.94W, LH

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Mechanical Drawings N01-1485-01/02



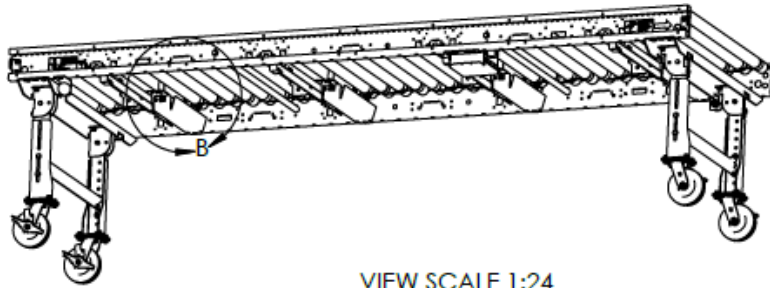
Mechanical Drawings N01-1485-01/02

A	ITEM	PART NUMBER	QTY.	DESCRIPTION
	1	1002193	2	120IN INTERM, SERIES T500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-3600	4	36" BF STANDARD CROSSMEMBER	
3	20560-051185-3600	40	CARRIER ROLLER, 36" BF, 1.9" OD, T6GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD	
4	10300-005199	2	COUPLER BRACKET (SM) - LH	
5	10300-005198	2	COUPLER BRACKET (SM) - RH	
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)	
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT	
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT	
9	10201-010203	28	10 - 24 UNC HEX FLANGE NUT	
10	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT	
11	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW	
12	10201-010818	28	10 - 24 UNC X 0.50 CARRIAGE SCREW	
13	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW	
14	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE	
15	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED	
16	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE	
17	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE	
18	10704-058237	2	BANNER K50 PUSH BUTTON	
19	10300-058331	2	BANNER K50 SWITCH BRACKET	
20	1000466-36	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT	
21	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A	
22	10200-012072	2	36"BF CROSSTIE TUBE	
23	10300-058655	4	UNDER ROLLER MDR BRACKET	
24	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD	
25	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH	
26	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW	
27	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED	
28	1000851	3	ELECTRICAL CABLE CARRIER	
29	1000856	1	ELECTRIC ENCLOSURE MTG BRKT	
30	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP	
31	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY	
32	10200-051823	2	SAFETY LABEL, KEEP OFF	
33	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE	

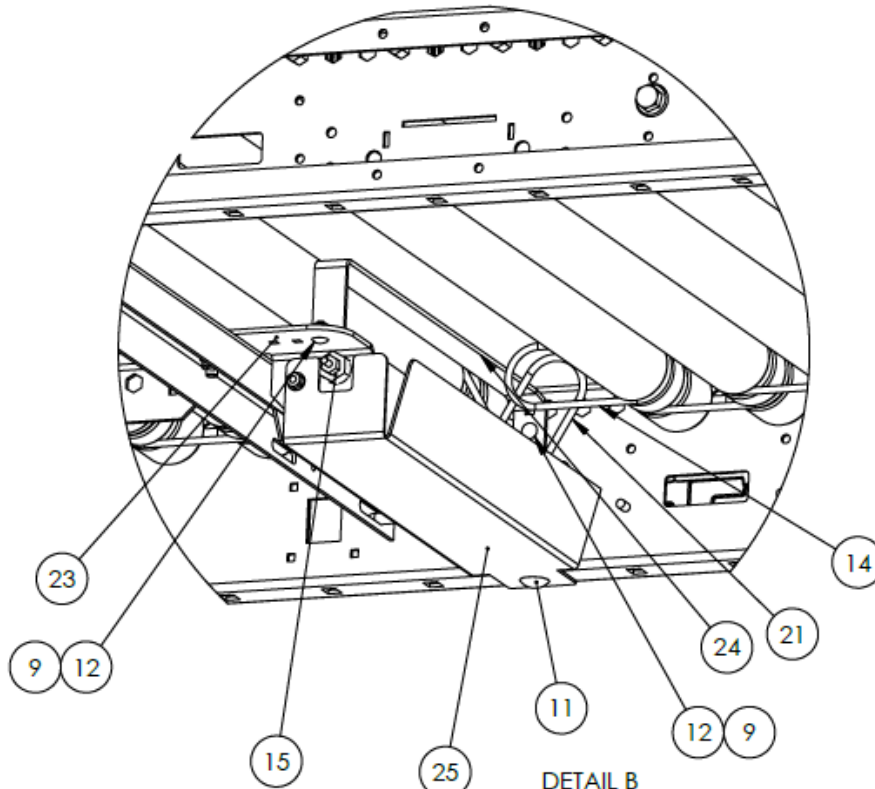
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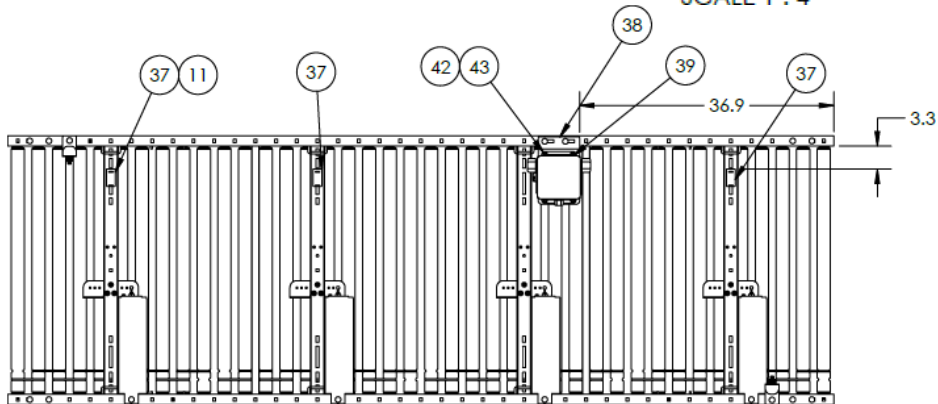
Mechanical Drawings N01-1485-01



VIEW SCALE 1:24



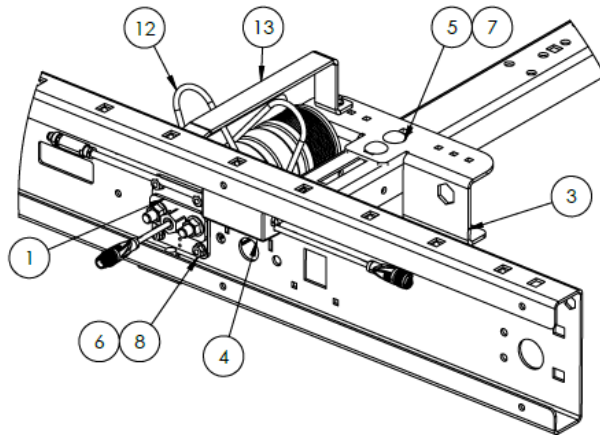
DETAIL B
SCALE 1 : 4



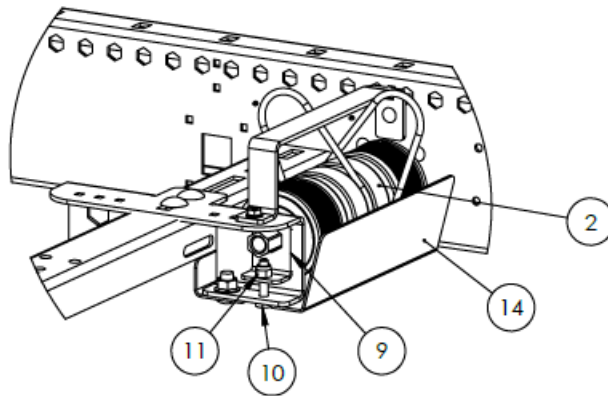
BOTTOM VIEW

Mechanical Drawings N01-1485-02

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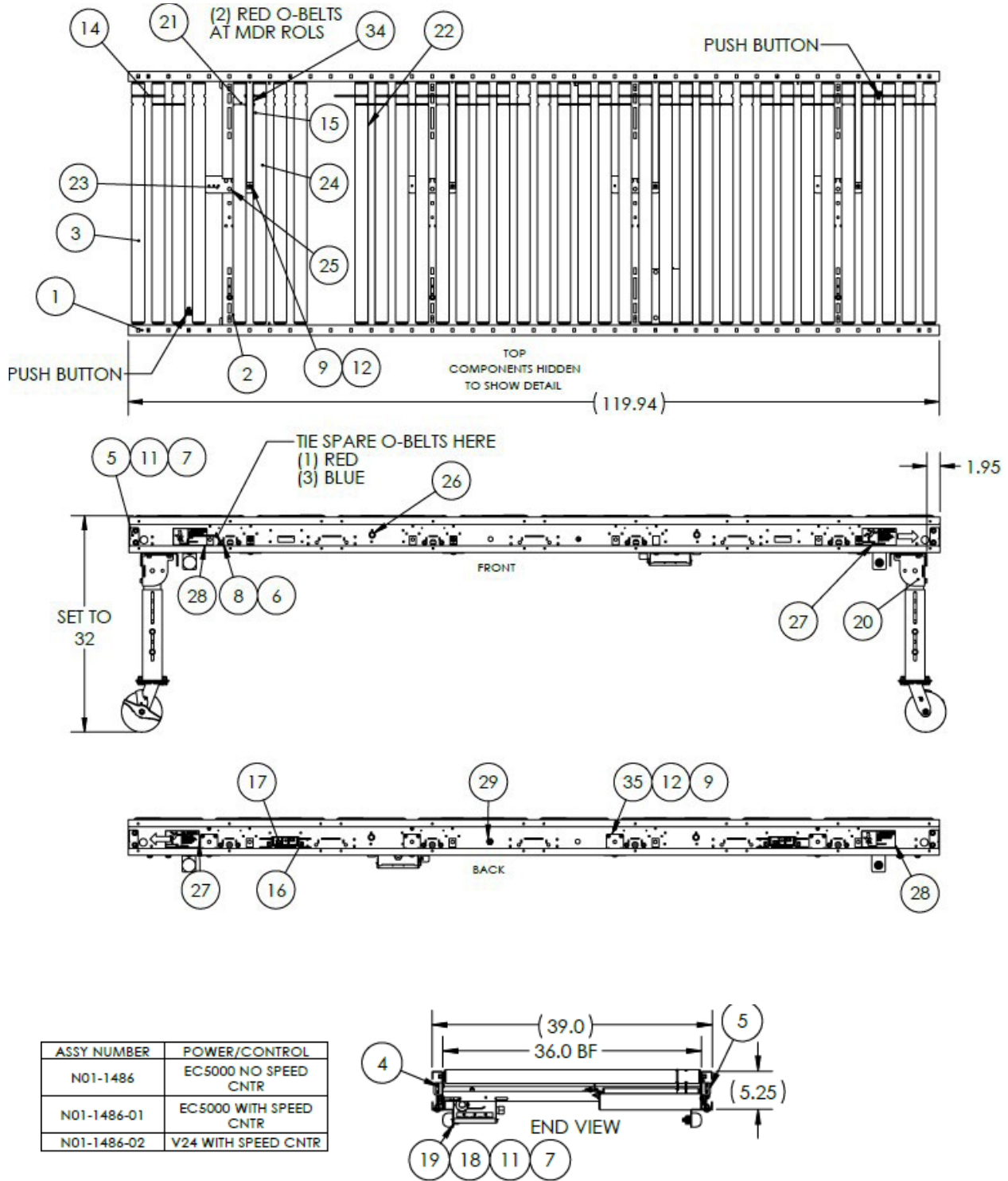


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
2	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250.3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES
3	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
4	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
5	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
6	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
7	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
9	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
10	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
11	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
12	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
13	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
14	1002509	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH

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Mechanical Drawings N01-1486- 01/02

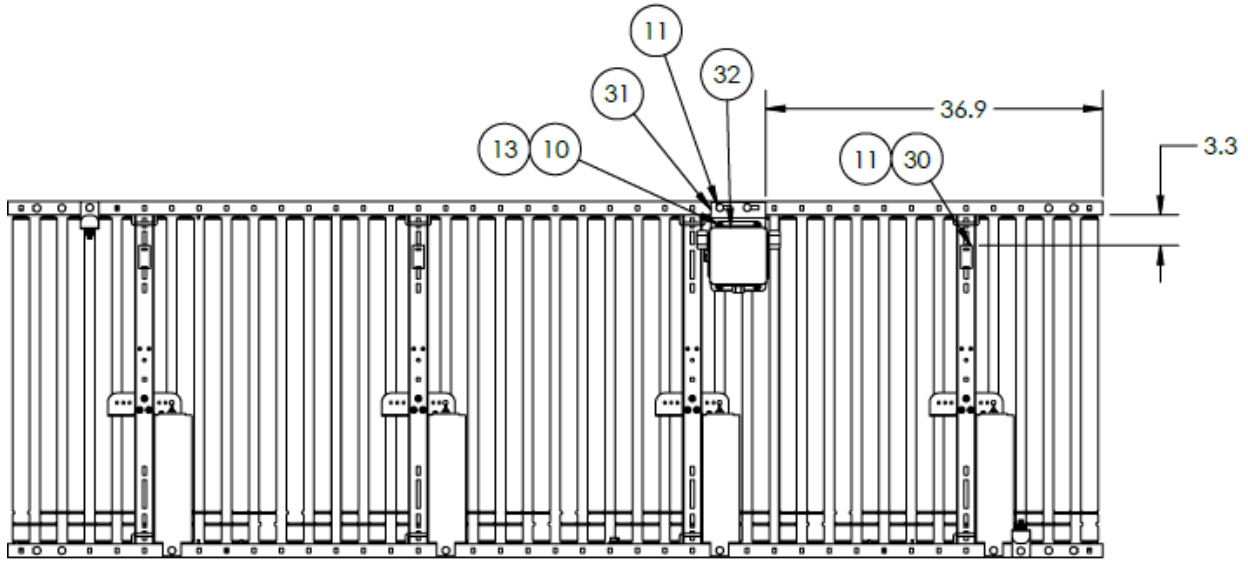


ASSY NUMBER	POWER/CONTROL
N01-1486	EC5000 NO SPEED CNTR
N01-1486-01	EC5000 WITH SPEED CNTR
N01-1486-02	V24 WITH SPEED CNTR

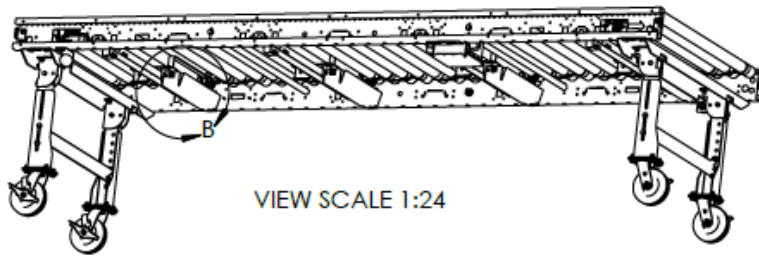
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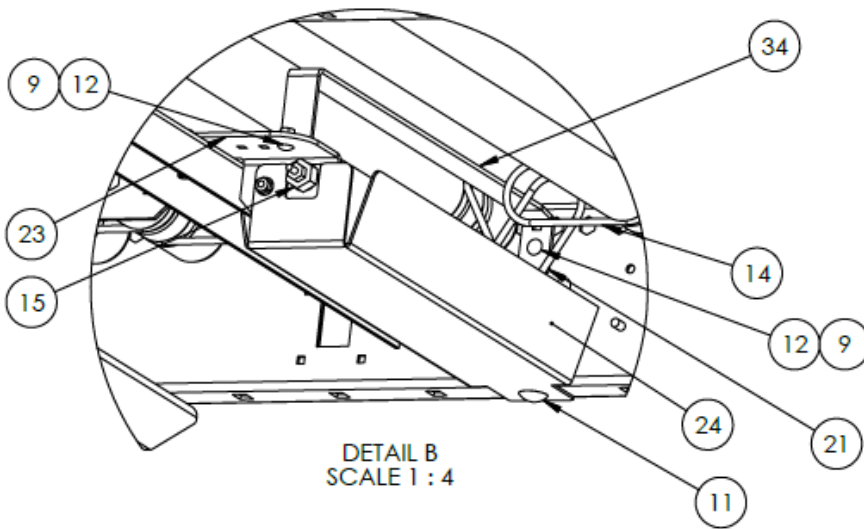
Mechanical Drawings N01-1486- 01/02



BOTTOM VIEW



VIEW SCALE 1:24



DETAIL B
SCALE 1 : 4

Mechanical Drawings N01-1486- 01/02

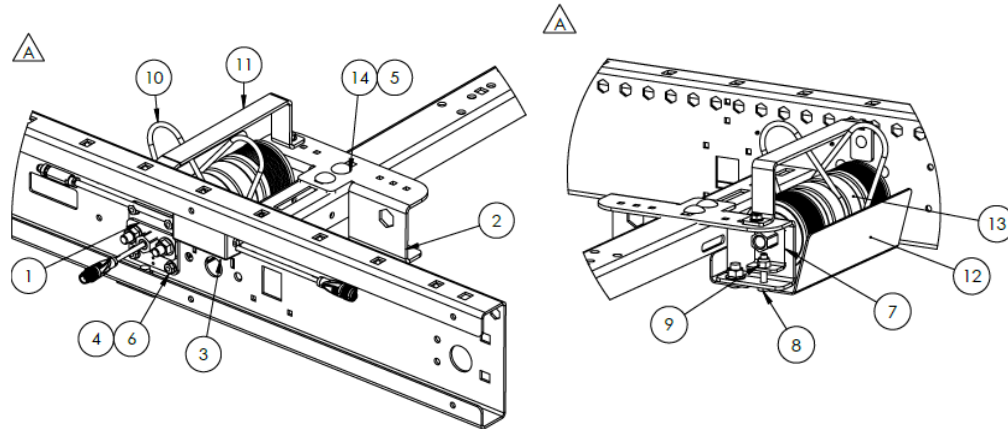


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-3600	4	36" BF STANDARD CROSSMEMBER
3	20560-051185-3600	40	CARRIER ROLLER, 36" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
4	10300-005199	2	COUPLER BRACKET (SM) - LH
5	10300-005198	2	COUPLER BRACKET (SM) - RH
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT
9	10201-010203	28	10 - 24 UNC HEX FLANGE NUT
10	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
11	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW
12	10201-010818	28	10 - 24 UNC X 0.50 CARRIAGE SCREW
13	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
14	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
15	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
16	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
17	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
18	10704-058237	2	BANNER K50 PUSH BUTTON
19	10300-058331	2	BANNER K50 SWITCH BRACKET
20	1000466-36	2	3D LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
21	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
22	10200-012072	2	36"BF CROSSTIE TUBE
23	10300-058655	4	UNDER ROLLER MDR BRACKET
24	10300-058653	4	INTERMEDIATE, BOTTOM FINGER GUARD, LH
25	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
26	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
27	10200-051823	2	SAFETY LABEL, KEEP OFF
28	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
29	10716-059137	1	QVT SPLIT CABLE GLAND
30	1000851	3	ELECTRICAL CABLE CARRIER
31	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
32	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
34	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
35	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

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Mechanical Drawings N01-1486-02

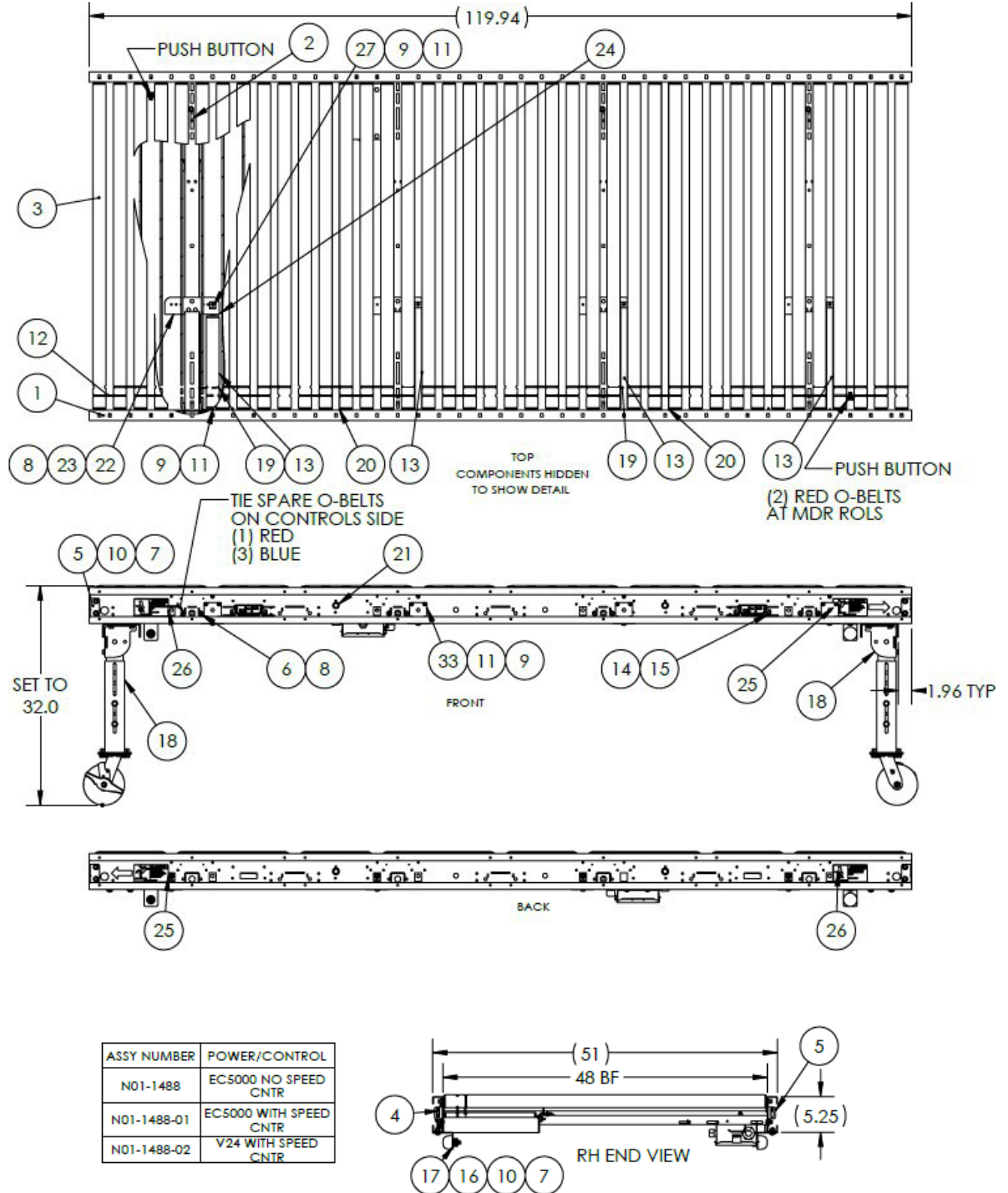


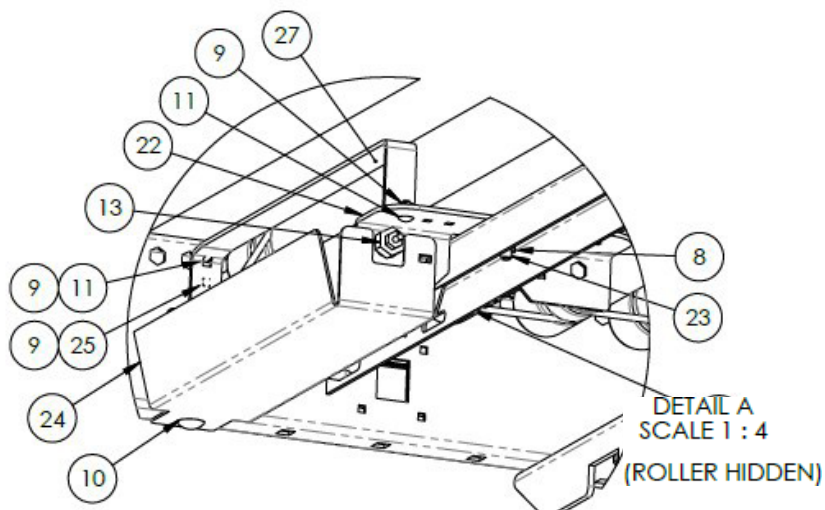
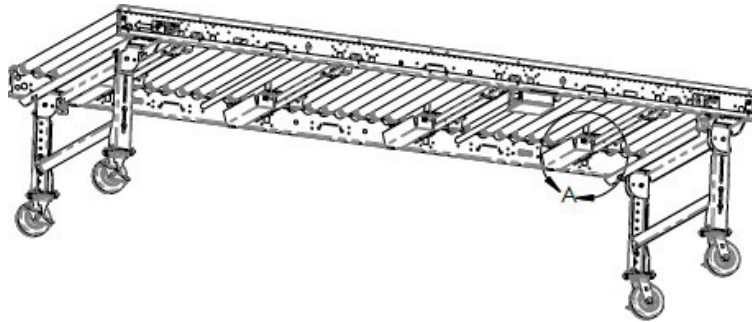
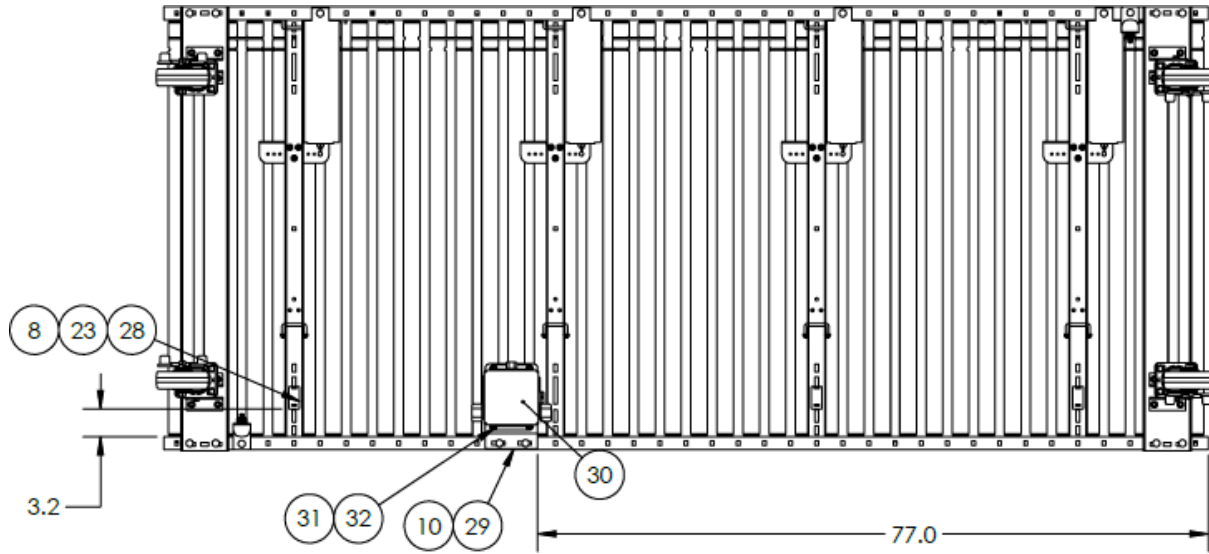
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
2	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
3	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
4	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
5	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
6	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
7	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
8	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
9	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
10	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
11	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
12	1002509	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, LH
13	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250, 3.9IN STACK, 6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES
14	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW

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Mechanical Drawings N01-1488-01/02





Mechanical Drawings N01-1488-01/02



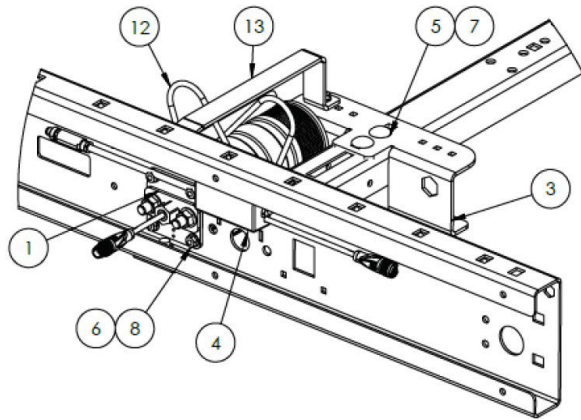
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	1/20IN INTERM, SERIES T500, SKEW RH, 368F, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
3	20560-051185-4800	40	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
4	10300-005199	2	COUPLER BRACKET (SM) - LH
5	10300-005198	2	COUPLER BRACKET (SM) - RH
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT
9	10201-010203	28	10 - 24 UNC HEX FLANGE NUT
10	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW
11	10201-010818	28	10 - 24 UNC X 0.50 CARRIAGE SCREW
12	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
13	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
14	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
15	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
16	10704-058237	2	BANNER K50 PUSH BUTTON
17	10300-058331	2	BANNER K50 SWITCH BRACKET
18	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
19	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
20	10200-015172	2	48"BF CROSSTIE TUBE
21	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
22	10300-058655	4	UNDER ROLLER MDR BRACKET
23	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
24	10300-058654	4	INTERMEDIATE, BOTTOM FINGER GUARD, RH
25	10200-051823	2	SAFETY LABEL, KEEP OFF
26	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
27	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
28	1000851	3	ELECTRICAL CABLE CARRIER
29	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
30	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
31	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
32	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
33	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

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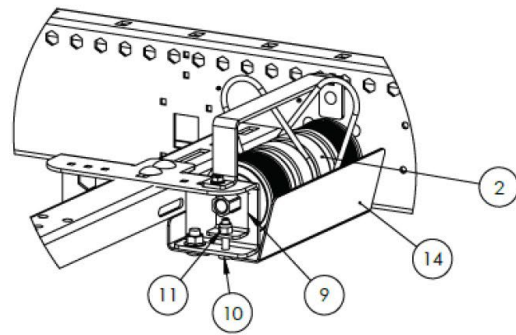
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Mechanical Drawings N01-1488-02

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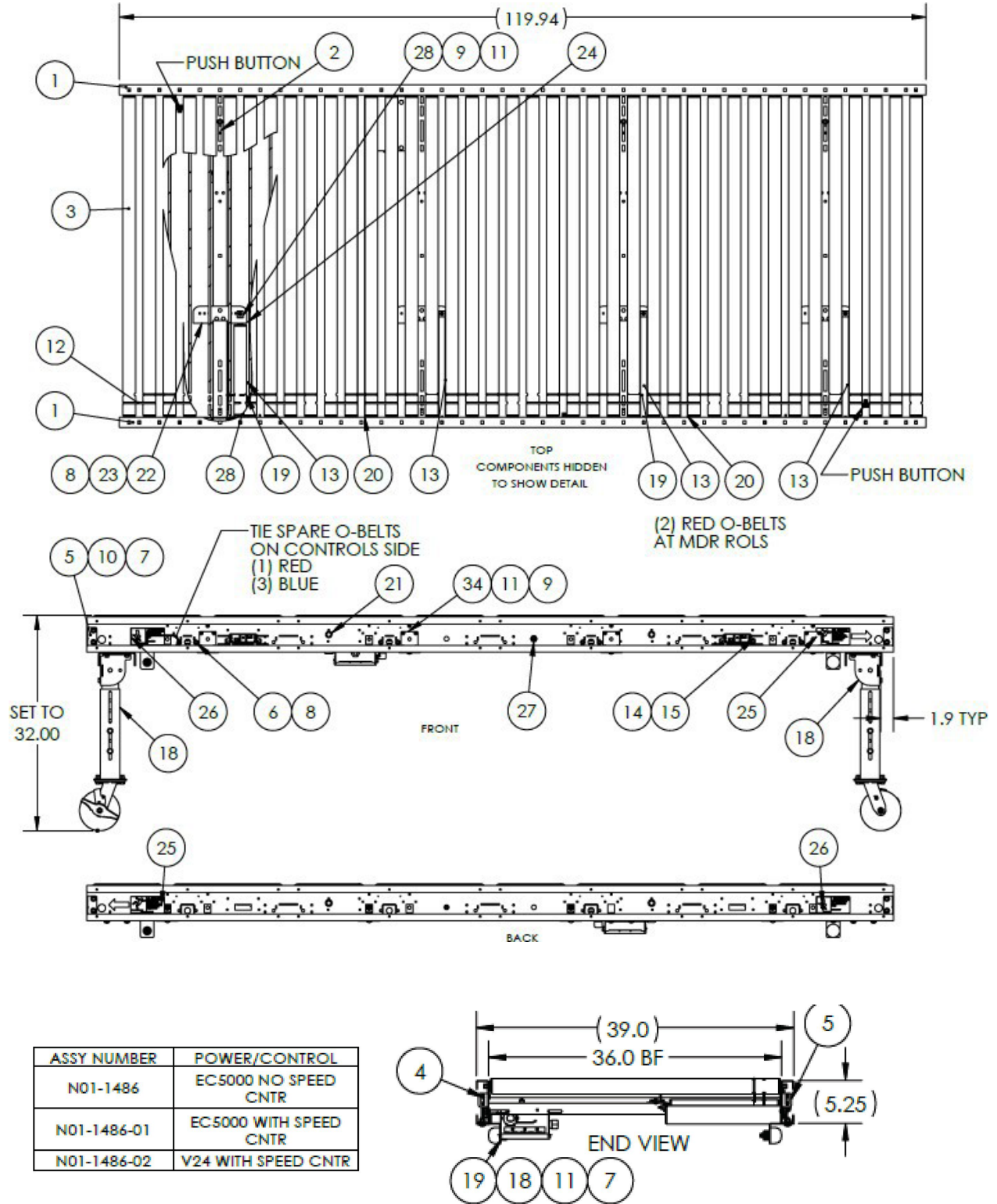


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	1	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
3	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
4	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
5	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
6	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
7	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
9	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
10	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
11	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
12	10300-057345-00	1	__" BF STANDARD CROSSMEMBER
13	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
14	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
15	1002512	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, RH
16	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES

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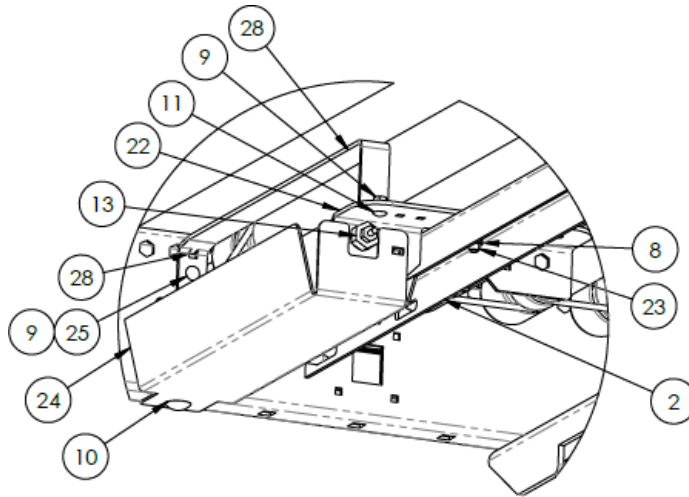
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Mechanical Drawings N01-1489-01/02

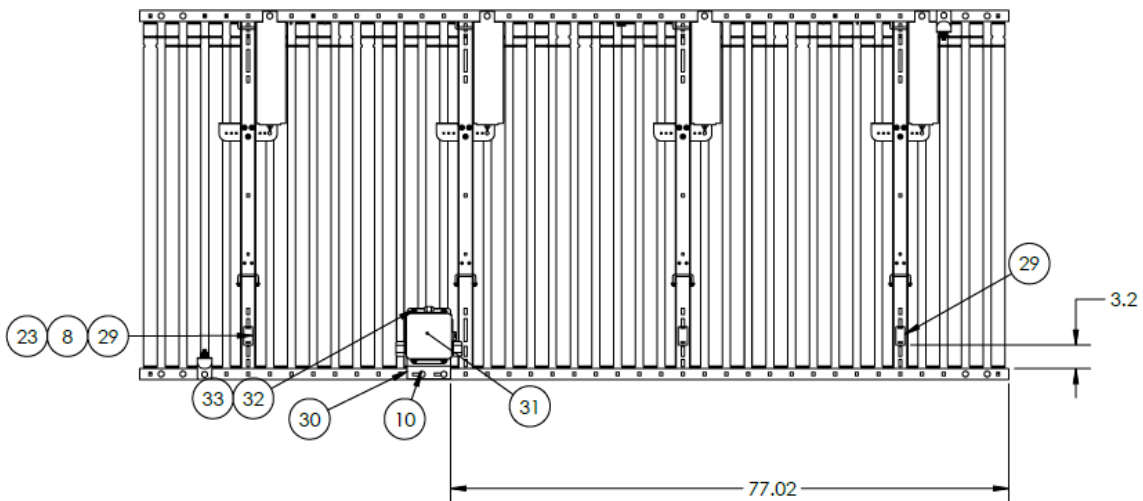
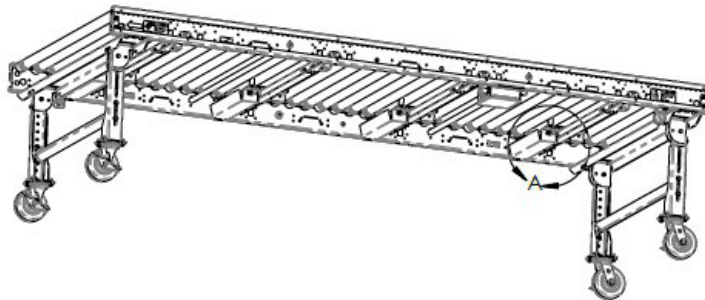


ASSY NUMBER	POWER/CONTROL
N01-1486	EC5000 NO SPEED CNTR
N01-1486-01	EC5000 WITH SPEED CNTR
N01-1486-02	V24 WITH SPEED CNTR

Mechanical Drawings N01-1489-01/02



DETAIL A



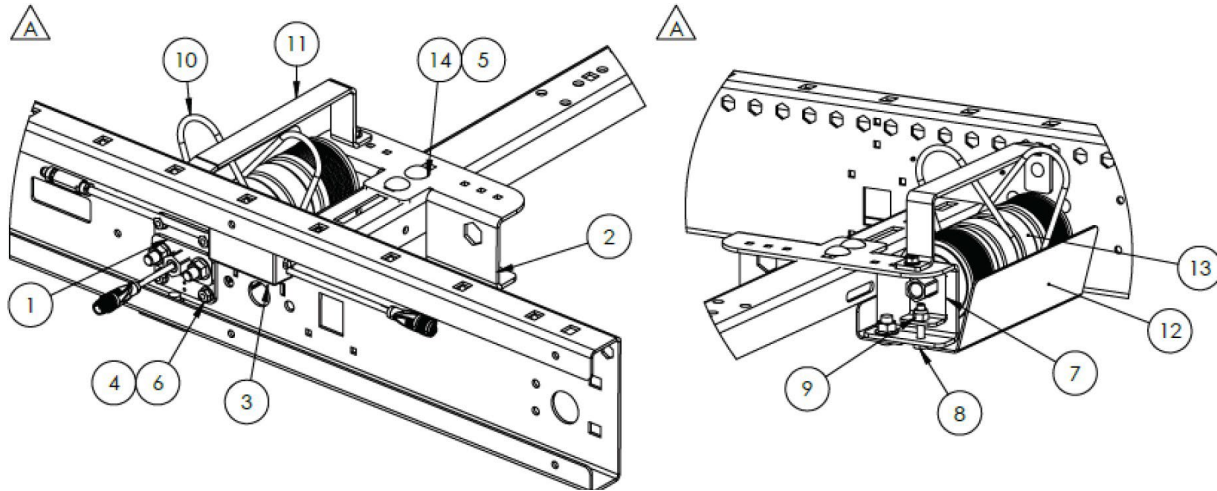
Mechanical Drawings N01-1489-01/02

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	2	120IN INTERM, SERIES T500, SKEW RH, 3&8BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
3	20560-051185-4800	40	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
4	10300-005199	2	COUPLER BRACKET (SM) - LH
5	10300-005198	2	COUPLER BRACKET (SM) - RH
6	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT
8	10201-010204	28	5/16 - 18 UNC HEX FLANGE NUT
9	10201-010203	24	10 - 24 UNC HEX FLANGE NUT
10	10201-010800	27	3/8-16 UNC X 0.75 CARRIAGE SCREW
11	10201-010818	24	10 - 24 UNC X 0.50 CARRIAGE SCREW
12	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
13	20250-057175-1400	4	MDR, EC5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
14	10201-001545	4	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
15	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
16	10704-058237	2	BANNER K50 PUSH BUTTON
17	10300-058331	2	BANNER K50 SWITCH BRACKET
18	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BE LEG SUPPORT
19	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
20	10200-015172	2	48"BF CROSSTIE TUBE
21	10201-010010	4	7/16-14 UNC X 1.00 HEX FLANGE BOLT, SERRATED
22	10300-058655	4	UNDER ROLLER MDR BRACKET
23	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
24	10300-058654	4	INTERMEDIATE, BOTTOM FINGER GUARD, RH
25	10200-051823	2	SAFETY LABEL, KEEP OFF
26	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
27	10716-059137	1	QVT SPLIT CABLE GLAND
28	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
29	1000851	3	ELECTRICAL CABLE CARRIER
30	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
31	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
32	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
33	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
34	10301-058371	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.453HEX HOLE

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Mechanical Drawings N01-1489-02

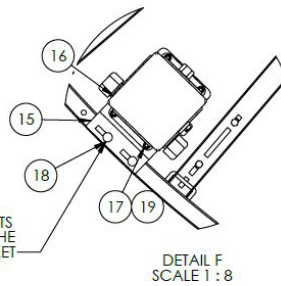
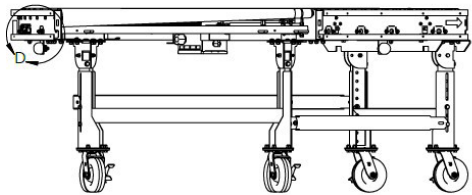
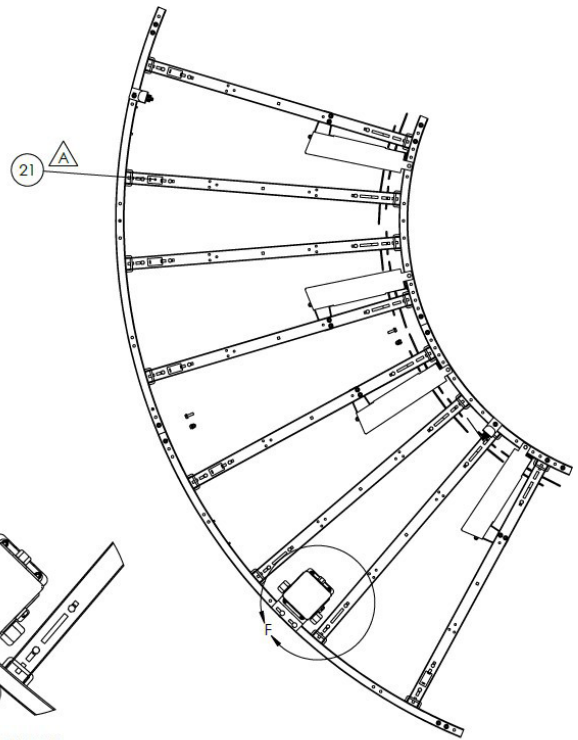
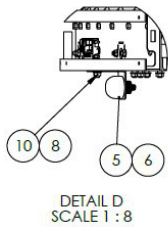
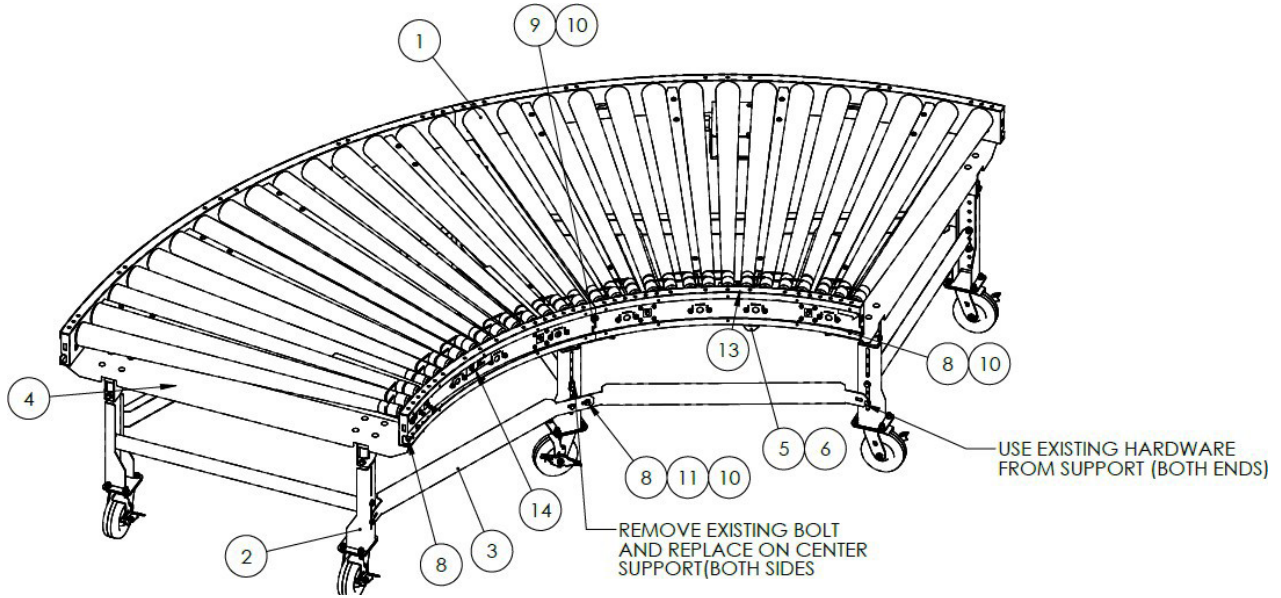


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1002193	1	120IN INTERM, SERIES 1500, SKEW RH, 36BF, 30IN ZONE, RSH 5.25IN, 12GA
2	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
3	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
4	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
5	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
6	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
7	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
8	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
9	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
10	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
11	10300-057345-__00	1	__" BF STANDARD CROSSMEMBER
12	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
13	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
14	1002512	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, RH
15	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
16	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES

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Mechanical Drawings N02-1474-01/02



Mechanical Drawings N02-1474-01/02

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	S0275-NC045048N-M6C046	2	45DEG CURVE, ST1500 TRANSPORTATION, TT, 48IN BF, RSH, 48IR, CURVE, UNDER ROLLER EC5000.35W
2	1000466-48	3	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
3	1000663	2	CASTER BRACE ANGLE, 45DEG INSIDE
4	1000664	2	CASTER BRACE ANGLE, 45DEG OUTSIDE
5	10704-058237	2	BANNER K50 PUSH BUTTON
6	10300-058331	2	BANNER K50 SWITCH BRACKET
7	HBOLT 0.3750-16x1.25x1-N	2	3/8 - 16 UNC X 1.25 HEX HEAD
8	10201-010419	15	3/8 - 16 UNC X 0.75 HEX HEAD CAP SCREW
9	10201-010800	8	3/8-16 UNC X 0.75 CARRIAGE SCREW
10	10201-010200	26	3/8 - 16 UNC HEX FLANGE NUT
11	10201-010600	2	3/8 WASHER-A
12	10201-010419	1	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
13	10200-051823	2	SAFETY LABEL, KEEP OFF
14	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
15	1000856	1	ELECTRIC ENCLOSURE MTG BRKT
16	10800-059125	1	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
17	10201-010205	4	1/4 - 20 UNC HEX FLANGE NUT
18	10201-010820	2	3/8-16 UNC X 1.25 CARRIAGE SCREW
19	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
20	10201-010218	2	1/2-13 UNC HEX NUT
21	1000851	6	ELECTRICAL CABLE CARRIER

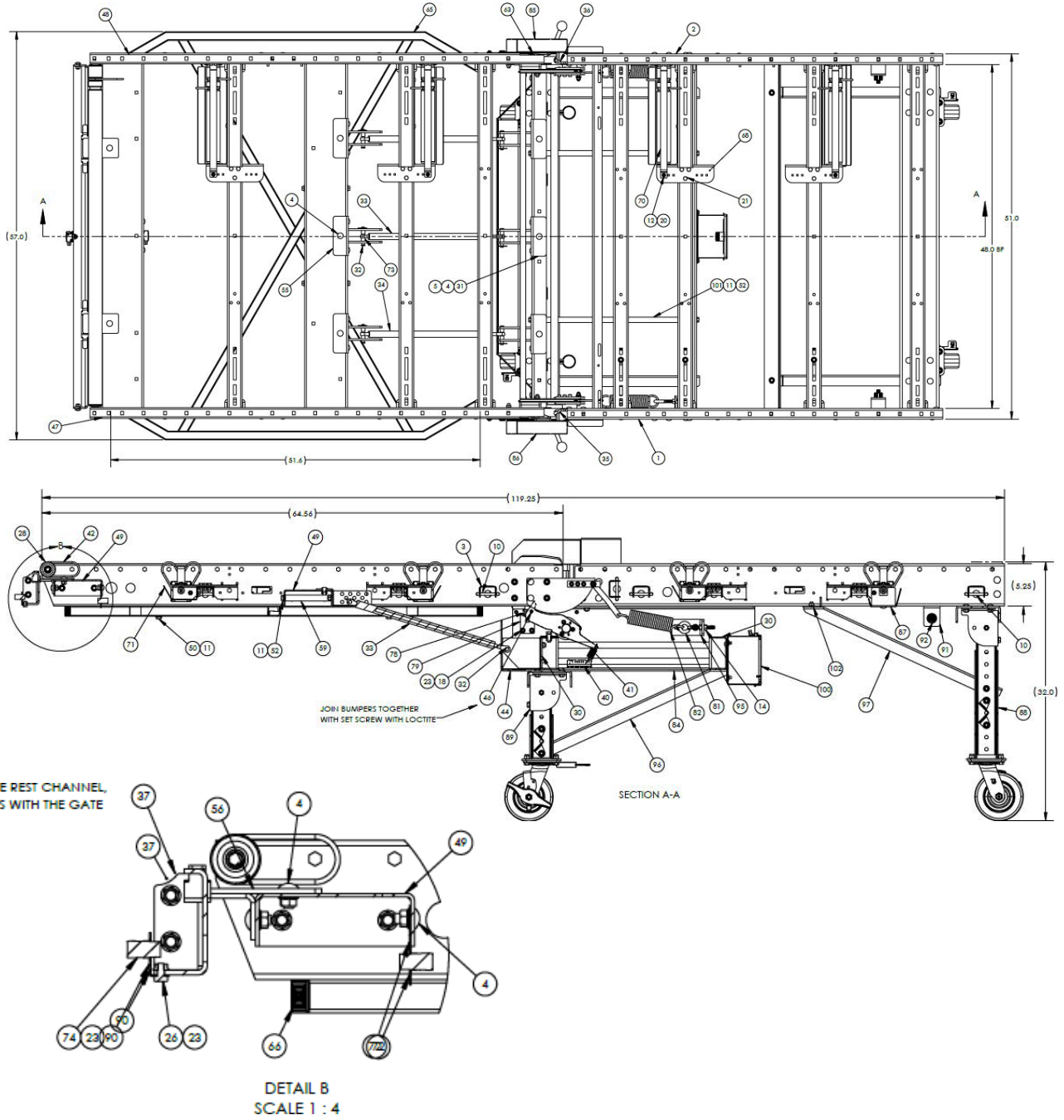
A

A

B

ASSY NUMBER	POWER/CONTROL
N02-1474-01	EC5000 WITH SPEED CNTR
N02-1474-02	V24 WITH SPEED CNTR

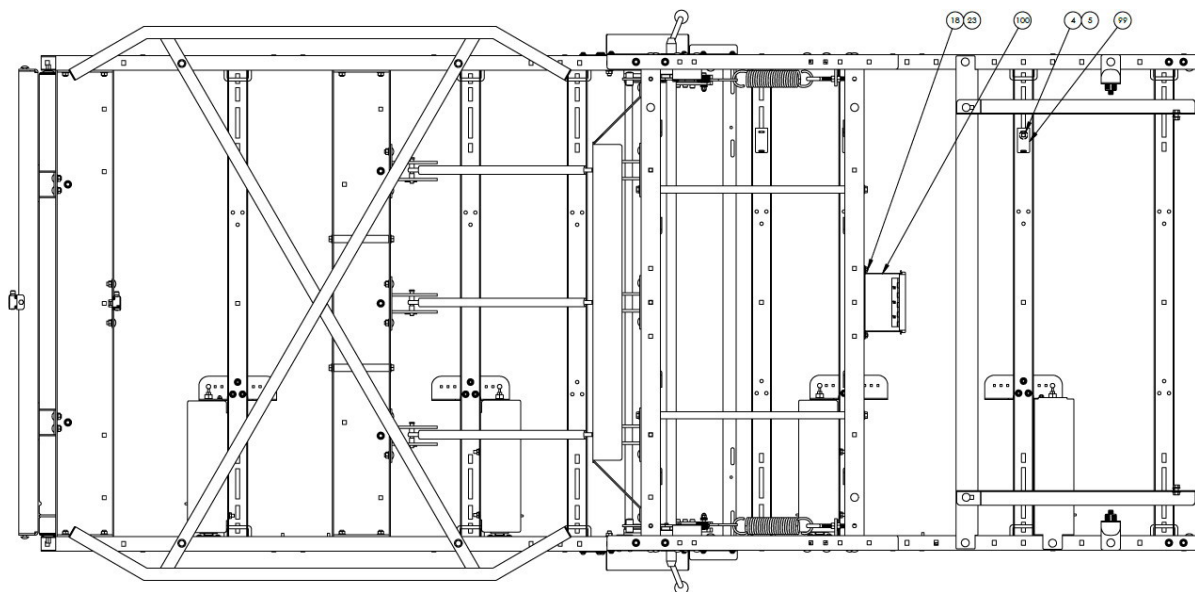
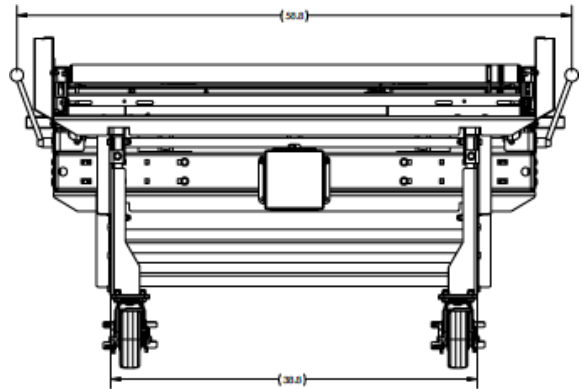
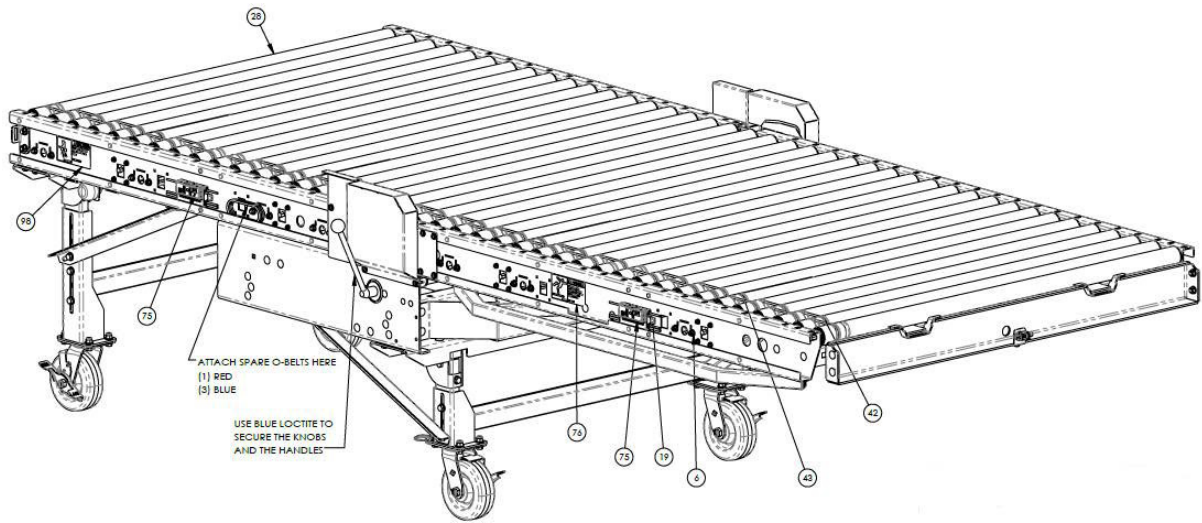
Mechanical Drawings N04-1431-01/02



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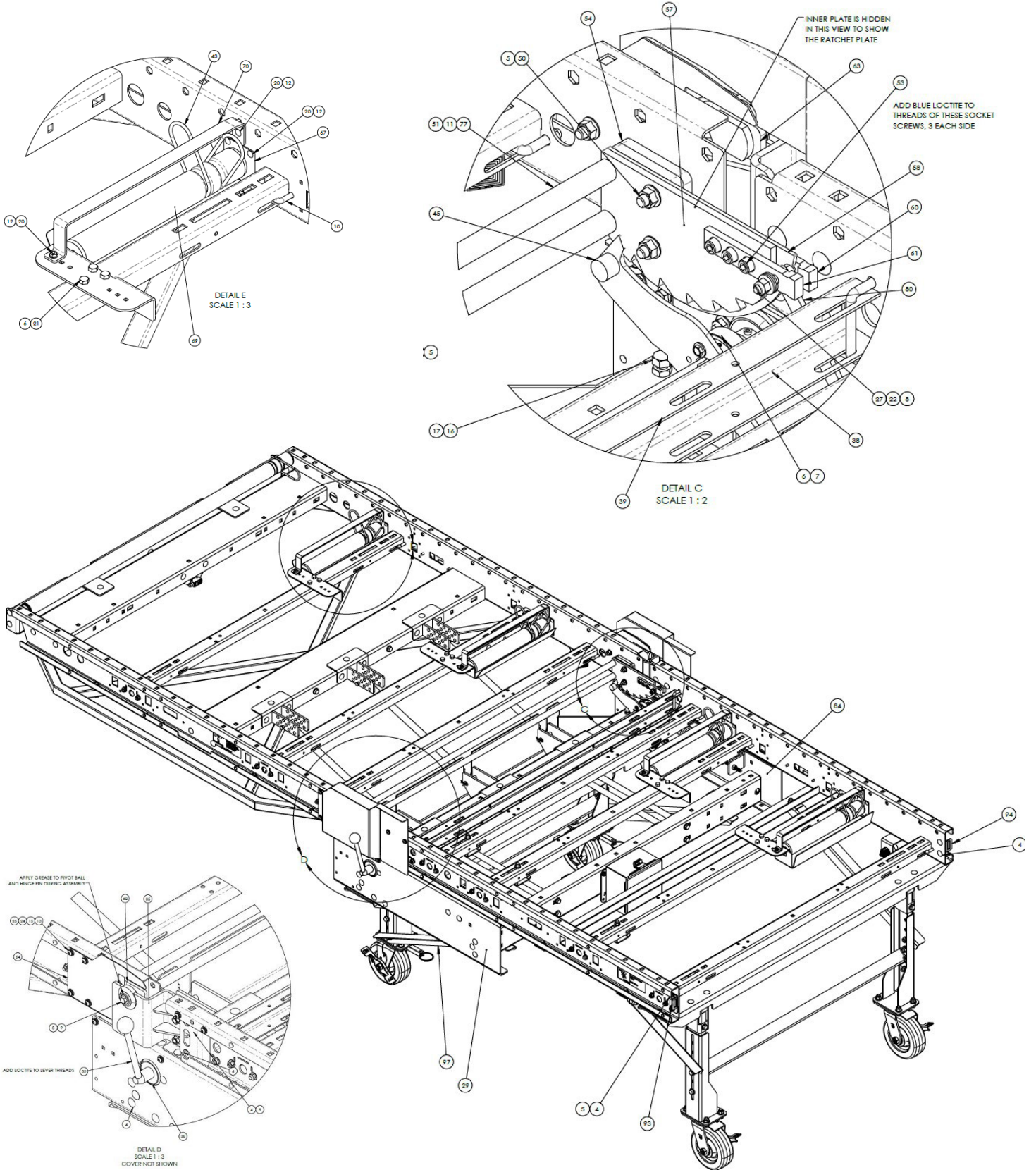
Mechanical Drawings N04-1431-01/02




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



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Mechanical Drawings N04-1431-01




Mechanical Drawings N04-1431-01/02

 QTY CHANGED FOR ITEMS: 5, 11, 12, 16, 50

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1000892	1	53.25IN GATE INTERMEDIATE TANGENT - LH, RSH
2	1000889	1	53.25IN GATE INTERMEDIATE TANGENT WELDMENT- RH, RSH
3	10300-057345-4800	8	48" BF STANDARD CROSSMEMBER
4	10201-010800	103	3/8-16 UNC X 0.75 CARRIAGE SCREW
	10201-010200	116	3/8 - 16 UNC HEX FLANGE NUT
6	10201-010204	54	5/16 - 18 UNC HEX FLANGE NUT
7	10201-010801	10	5/16-18 UNC X 0.75 CARRIAGE SCREW
8	10201-010601	8	5/16 WASHER - A
9	10201-010442	2	5/16 - 18 UNC X 0.625 HEX HEAD CAP SCREW
10	10201-001546	16	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
	10201-010600	34	3/8 WASHER-A
12	10201-010203	28	10 - 24 UNC HEX FLANGE NUT
13	10201-010005	16	1/4-20 UNC X 0.75 HEX SOCKET BUTTON HEAD CAP SCREW
14	10201-010216	4	3/8-16 UNC HEX NUT
15	10201-034515	16	1/4 - 20 UNC, AK SERIES,STEEL KNURLED THREADED INSERT, GRIP RANGE 0.027 TO 0.165
	10201-010402	6	3/8 - 16 UNC X 1.00 HEX HEAD CAP SCREW
17	10201-010248	4	3/8-16 UNC HEX JAM NUT
18	10201-010814	4	1/4 - 20 UNC X 0.50 CARRIAGE SCREW
19	10201-001545	44	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE
20	10201-010818	26	10 - 24 UNC X 0.50 CARRIAGE SCREW
21	10201-010404	12	5/16-18 UNC X 0.75 HEX HEAD CAP SCREW
22	10201-010219	2	1/4 - 20 UNC HEX NYLON LOCK NUT
23	10201-010205	3	1/4 - 20 UNC HEX FLANGE NUT
24	10201-010655	16	1/4 LOCK WASHER
25	10201-010602	16	1/4 WASHER - A
26	10201-010407	1	1/4 - 20 UNC X 0.50 HEX HEAD CAP SCREW
27	10201-058964	2	SOCKET HEAD SHOULDER SCREW, 5/16IN DIA, 1-1/4IN LG SHOULDER, 1/4-20 THREAD
28	20560-051185-4800	40	CARRIER ROLLER, 48" BF, 1.9" OD, 16GA, GALV, 7/16" HEX, ABEC BEARINGS, 2 GROOVE STD
29	1000438	1	HD GATE MOUNTING CHANNEL LH
30	1000573	2	GATE WELDED SPREADER
31	1001553	3	GATE SPRING WELDMENT LARGE SET LOW
32	10200-001995	6	CLEVIS PIN, W/ HAIRPIN COTTER PIN
33	10200-057989	1	Gas Spring with Threaded Ends 250lb Force, 33.94IN Extended Length, 16.14IN Stroke
34	10200-001998	2	Gas Spring with Threaded Ends 200lb Force, 33.94IN Extended Length, 16.14IN Stroke
35	1000272	1	GATE, PIVOT BALL WELDMENT LH
36	1000275	1	GATE, PIVOT BALL WELDMENT RH
37	1000263	1	GATE LANDING SPREADER WELDMNT
38	10220-058803	2	2 BOLT FLANGE BEARING, LIGHT DUTY, STAMPED HOUSING, 1IN BORE
39	1000585	1	GATE RATCHET SHAFT ASSY
40	1000254	2	GATE RATCHET SPRING BRACKET
41	1000253	2	SPRING EXT .75 X 2.5- LEE, LE 069G 03 M
42	11212-001541	35	HT BLUE OBANDS, 3IN C-C, 3/16IN x 9.50IN, 85A HT BLUE
43	11212-049123	9	SUPER RED OBAND, 5mm X 10.00 IN 90A
44	1000318	1	GATE SPRING GUARD 48IN BF
45	1000331	4	RUBBER BUMPER, 3/4 OD X 5/8 H X 5/16-18, MCMASTER 9546K43
46	1000332	2	5/16 - 18 UNC X 0.625 HEX SOCKET SET SCREW - FLAT TIP
47	1000267	1	GATE FRAME RAIL 64.5IN, RSH, LH
48	1000268	1	GATE FRAME RAIL 64.5IN, RSH, RH
49	10407-057817	2	HD GATE CROSSCHANNEL WELDMENT, 48IN BF
	HBOLT 0.3750-16x2x1-N	8	

Mechanical Drawings N04-1431-01/02

 QTY CHANGED FOR ITEMS 52, 96, 97

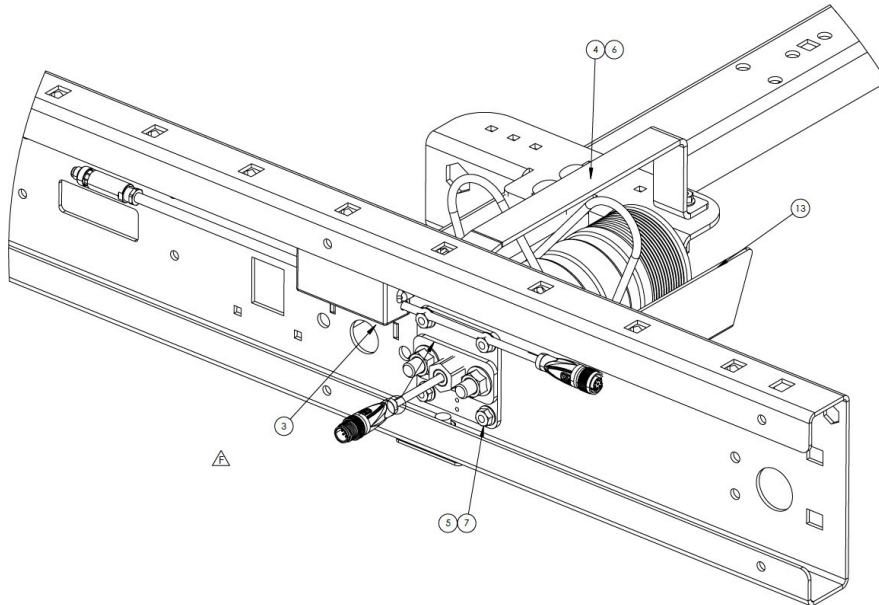
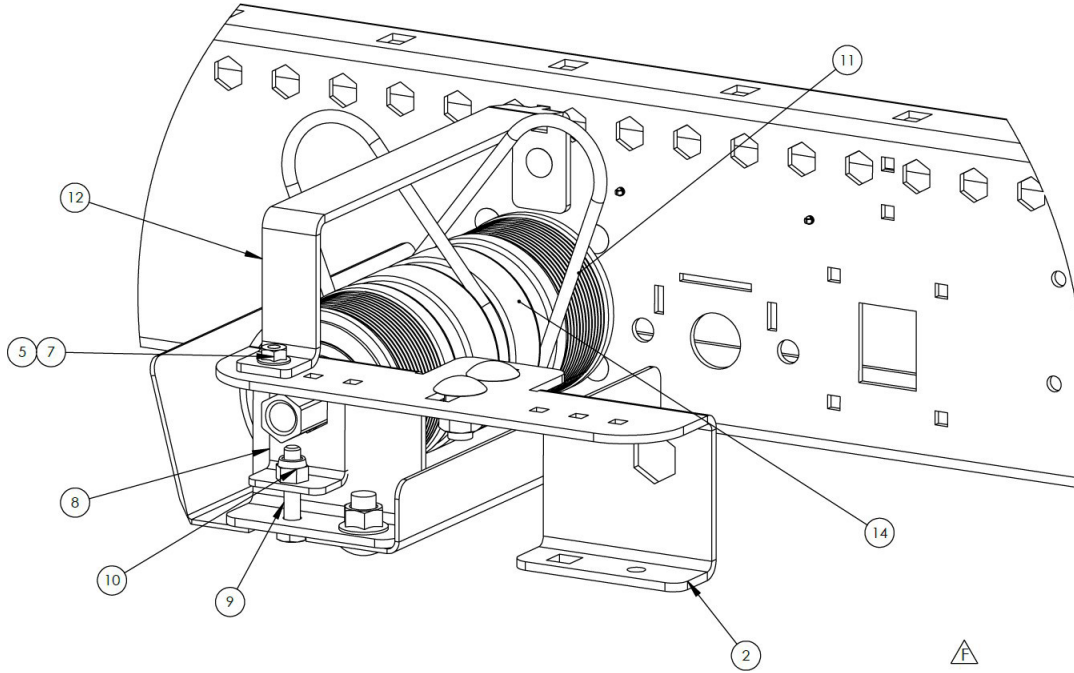


51	10201-010427	4	3/8-16 UNC X 2.25 HEX HEAD CAP SCREW
52	10201-010419	14	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
53	10201-010029	6	HX-SHCS 0.3125-18x1x1-C
54	10307-057860	4	GATE LATCH BAR SHIM PLATE
55	11407-001872	3	GATE SPRING WELDMENT SET LOW
56	1000260	2	GATE STOP BRKT WELDMNT
57	1000250	2	GATE RATCHET PLATE
58	1000251	4	GATE RATCHET SIDE PLATE
59	1000279-5.688	2	BAR SPREADER, 5.688IN LENGTH
60	1000328	2	GATE, HARD STOP NUT BLOCK
61	1000329	2	GATE, HARD STOP BLOCK
62	1000276	1	GATE, HINGE PIN BRKT WELDMNT LH
63	1000277	1	GATE, HINGE PIN BRKT WELDMNT RH
64	1000552	2	GATE PINCH POINT GUARD ROTATING COVER
65	1000618	1	GATE LIFT HANDLE WELDMENT 48IN BF
66	1000695	4	PUSH IN SQUARE PLUG 1.25 X 1.25 956K28
67	10301-041733	4	UNDER ROLLER MOUNTING MDR BRACKET, 0.469 HEX HOLE
68	10300-058655	4	UNDER ROLLER MDR BRACKET
69	20250-057175-1400	4	MDR, EC-5000, 14IN BF, 1.9IN DIA, 18:1, 35W, 2 GROOVE, 7/16IN HEX, IP54, GALVANIZED
70	10300-059022	4	INTERMEDIATE, TOP FINGER GUARD
71	1000673	3	GATE FINGER GUARD LOW PROFILE
72	1000694	1	GATE ALIGNMENT PE BRKT
73	10200-001843	12	3/8IN DIA X 1/2IN NYLON SPACER
74	10707-057803	1	THROUGH-BEAM PHOTOELECTRIC SENSOR, PNP
75	10714-037753	2	H-20 AUTO MOTOR CONTROL MODULE
76	10200-051823	2	SAFETY LABEL, KEEP OFF
77	1000279-45.5	2	BAR SPREADER, 45.47IN LENGTH
78	10707-034011	1	Inductive sensor NBN12-18GM35-E2-V1
79	1000504	1	GATE PROX SWITCH BRKT
80	1000364	2	GATE TENSION LINK PLATE
81	10201-010114	2	EYE BOLT W/ NUT, 3/8-16 UNC X 1IN FULL LENGTH THREAD, STAINLESS STEEL
82	10200-059133	2	SPRING EXT 1.75 X 8, LEE LE 207H 07 M
83	1000632	2	LEVER HANDLE WITH BALL KNOB 8"LG, 3/8-16 THD
84	1000517	1	HD GATE MOUNTING CHANNEL RH
85	1000626	1	GATE PINCH POINT GUARD WELDMENT, RH
86	1000629	1	GATE PINCH POINT GUARD WELDMENT, LH
87	10300-058653	1	INTERMEDIATE, BOTTOM FINGER GUARD, LH
88	1000466-48	1	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
89	1000685-48	1	GATE LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
90	10300-058616	1	PHOTO EYE BRACKET, 2.25IN GUARDRAIL MOUNT, SINGLE BOLT
91	10300-058331	2	BANNER K50 SWITCH BRACKET
92	10704-058237	2	BANNER K50 PUSH BUTTON
93	10300-005199	1	COUPLER BRACKET (SM) - LH
94	10300-005198	1	COUPLER BRACKET (SM) - RH
95	10300-058426	2	GATE TENSION MTG BRACKET
96	1000919	2	GATE DIAGONAL ANGLE BRACE RH
97	1000922	2	GATE DIAGONAL ANGLE BRACE LH
98	10200-051824	2	SAFETY LABEL, MOVING EQUIPMENT KEEP AWAY
99	1000851	3	ELECTRICAL CABLE CARRIER
100	10800-058934	1	MODULAR GATE ENCLOSURE
101	1000279-22.688	4	BAR SPREADER, 22.688IN LENGTH
102	1001323-48	1	BRACE SUPPORT BAR 48BF

Mechanical Drawings N04-1431-01/02

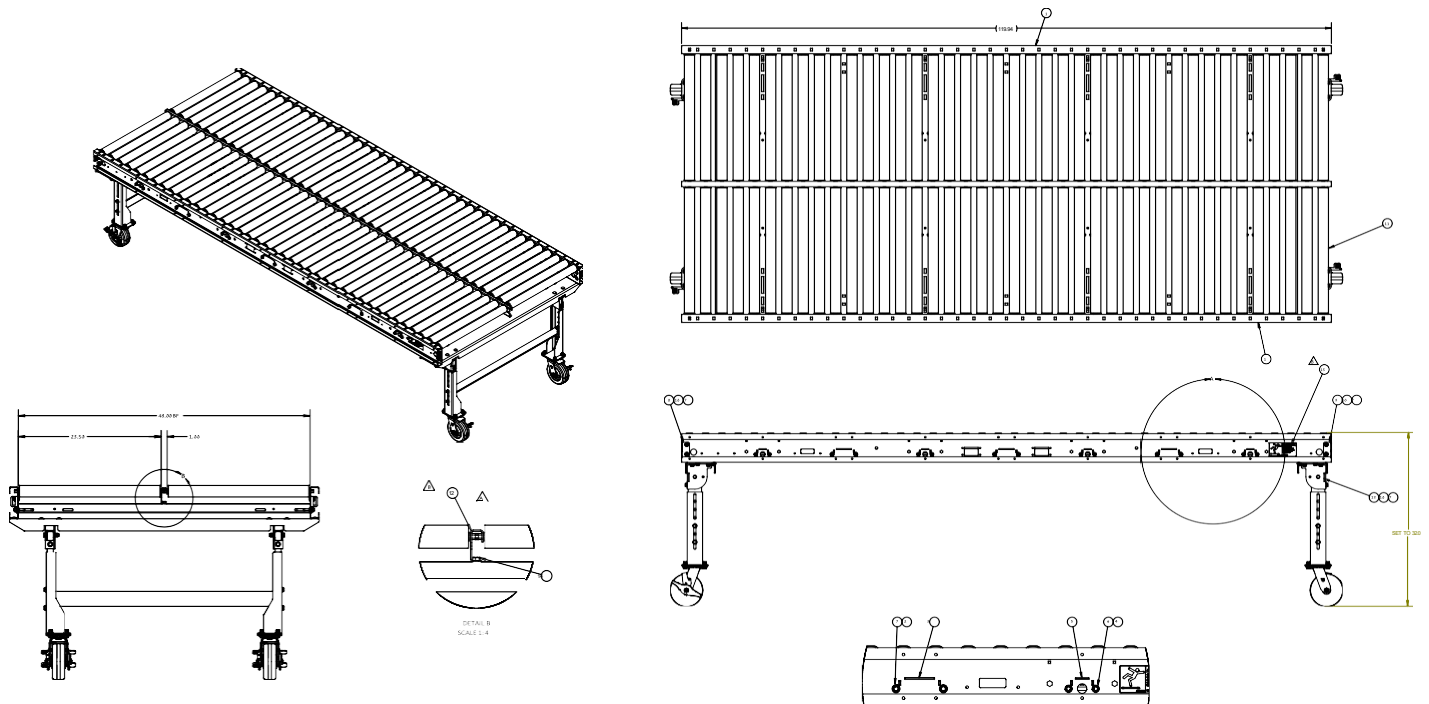


Mechanical Drawings N04-1431-02



Mechanical Drawings N04-1431-02

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	10500-043560	1	BOLT-IN UNDER-ROLLER MDR BRACKET SUBASSEMBLY, OFFSET-HEX CLAMPING, FOR 11/16IN HEX
2	1002469	1	MOTOR BRACKET FOR GEARLESS MDR, HEX PROFILE
3	10805-059992	1	V24 MDR CONTROLLER ASSY, 2.85 195 FPM-3A-FSK
4	10201-010800	4	3/8-16 UNC X 0.75 CARRIAGE SCREW
5	10201-010818	6	10 - 24 UNC X 0.50 CARRIAGE SCREW
6	10201-010200	4	3/8 - 16 UNC HEX FLANGE NUT
7	10201-010203	6	10 - 24 UNC HEX FLANGE NUT
8	10300-046090	1	SHAFT RETAINER, HEX POINT VERT GEARLESS MDR
9	10201-029679	1	1/4 - 20 UNC X 1.25 HEX HEAD CAP SCREW
10	10201-010219	1	1/4 - 20 UNC HEX NYLON LOCK NUT
11	11212-040328	2	SUPER RED OBAND, 5mm X 11.63IN 90A
12	1002508	1	INTERMEDIATE, TOP FINGER GUARD V24
13	1002512	1	INTERMEDIATE, BOTTOM FINGER GUARD V24, RH
14	10500-049804	1	V24, MDR ASSY, CLEAR ZINC PLATED, SERIES 250,3.9IN STACK,6.50 TUBE, 8.890 SHAFT, POLY-V, 3 GROOVES



ITEM	PART NUMBER	QTY.	DESCRIPTION
1	25301-058635	2	120IN INTERMEDIATE, SERIES 1500, 30IN ZONE, RSH 5.25IN, 12GA
2	10201-001547	6	U-BOLT, 3/8" -16 UNC X 4.38" STD.
3	12300-028026	3	48IN BF CROSSMEMBER SERIES 2000-3000
4	10201-001546	8	UBOLT, 5/16IN - 18 UNC X 2.50IN (STD.)
5	10300-057345-4800	4	48" BF STANDARD CROSSMEMBER
6	10201-010204	16	5/16 - 18 UNC HEX FLANGE NUT
7	10201-010200	27	3/8 - 16 UNC HEX FLANGE NUT

HILMOT

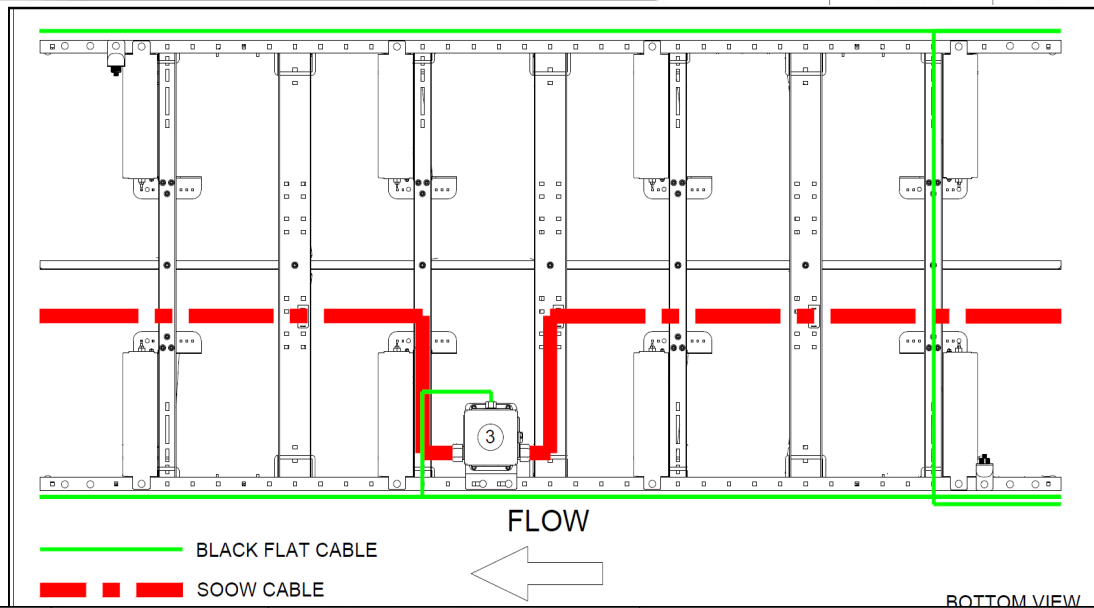
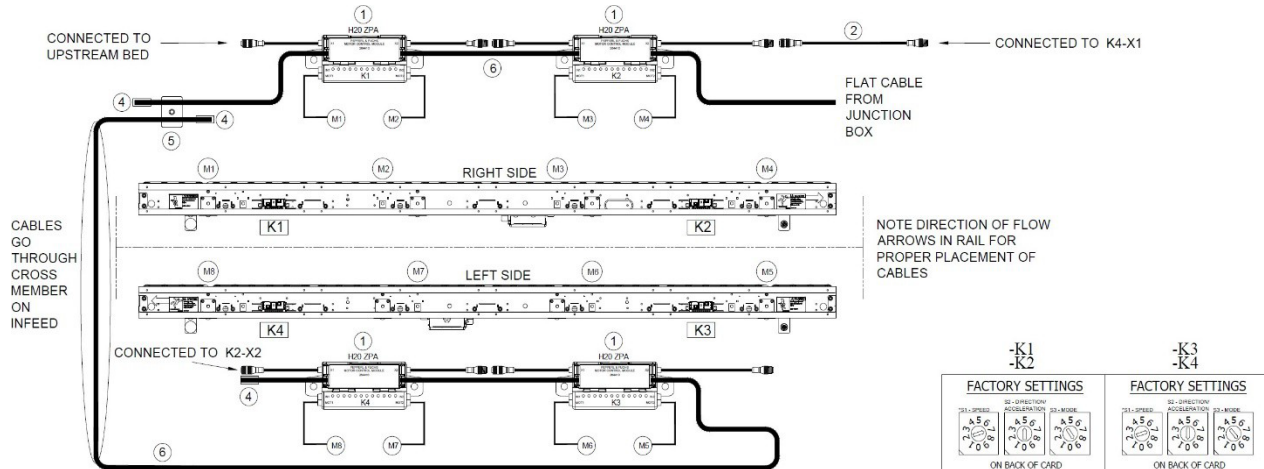
A TREW Company

8	10300-005198	2	COUPLER BRACKET (SM) - RH
9	10300-005199	2	COUPLER BRACKET (SM) - LH
10	10201-010800	16	3/8-16 UNC X 0.75 CARRIAGE SCREW
11	51263-058834	80	23.50" BF GRAVITY ROLLER, 1.9" OD, 16GA, GALVANIZED, 7/16" HEX, COMMERCIAL BEARINGS, NO GROOVES
12	10300-059099	1	GRAVITY ROLLER J-RAIL, 120IN
13	1000466-48	2	SD LEG & CASTER SUPPORT ASSEM W CUSTOM TOP PLATE XXIN BF, XXIN BF LEG SUPPORT
14	10201-010419	7	3/8-16 UNC X 0.75 HEX HEAD CAP SCREW
15	10200-051823	2	SAFETY LABEL, KEEP OFF

HILMOT

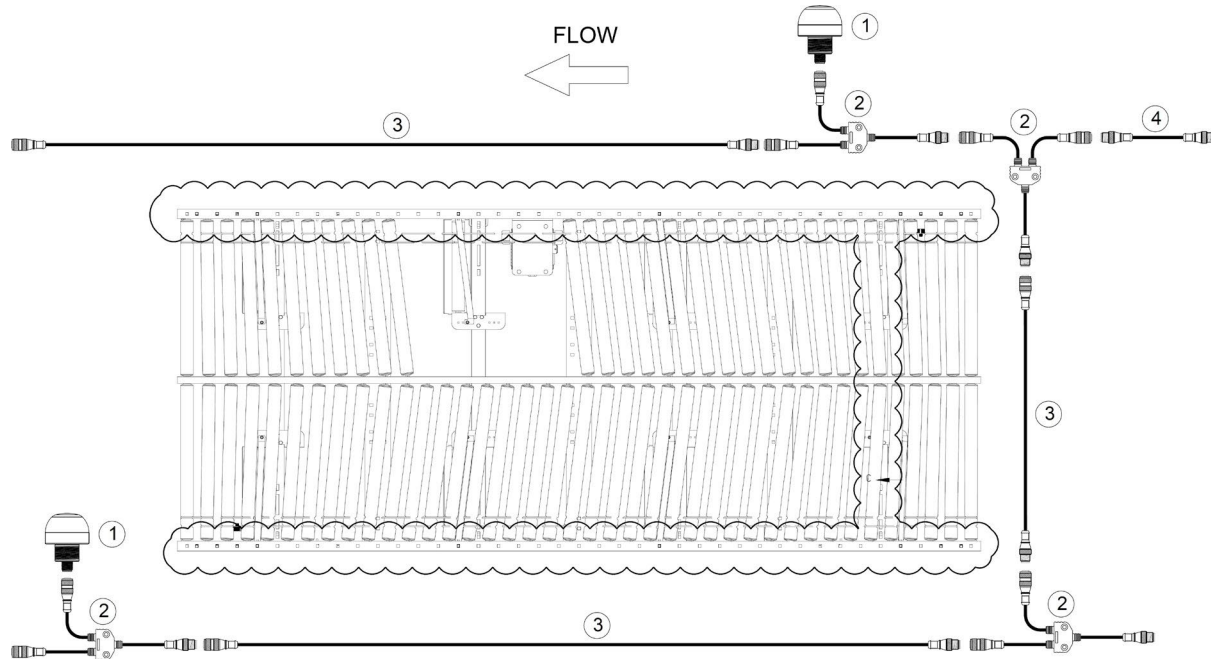
A TREW Company

Electrical Drawings N01-1439-01



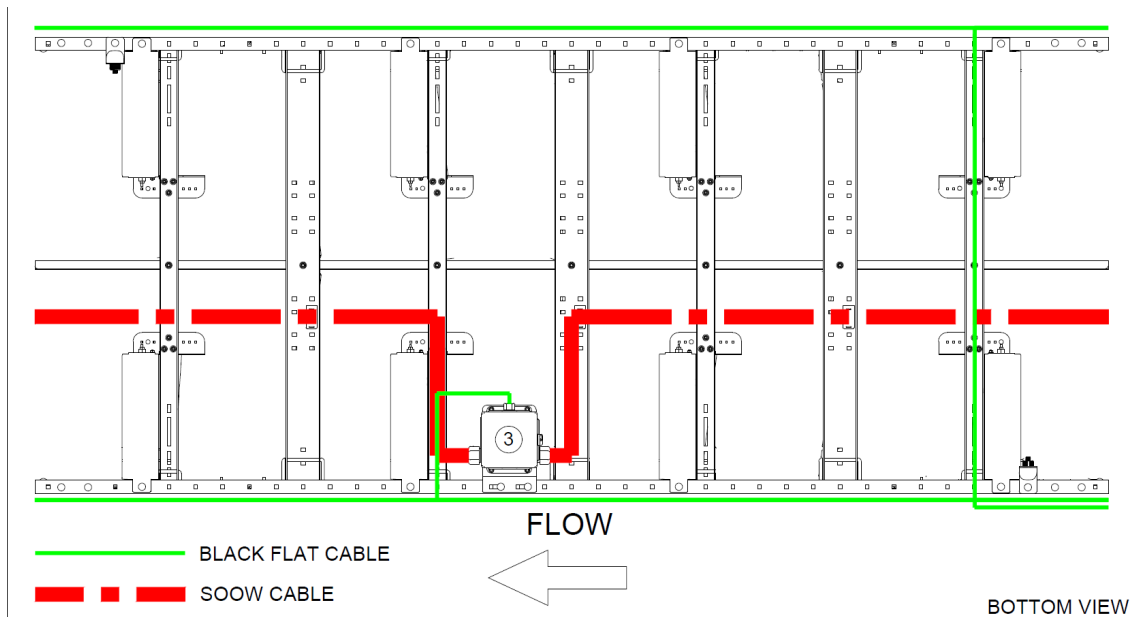
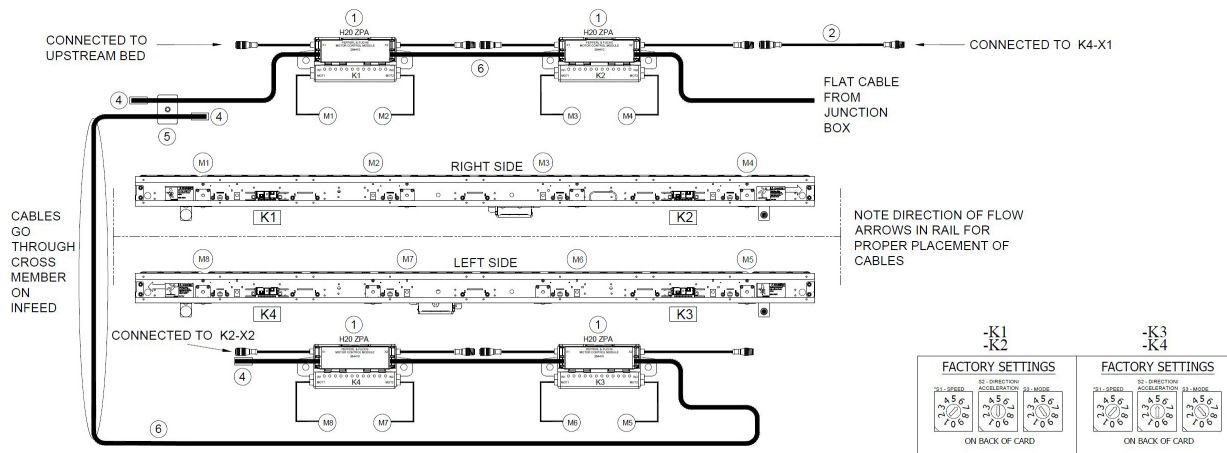
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	4	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
3	1	HILMOT	10802-059131	Under Roller Power Harness for Skew Beds, 48" BF
4	3	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	PEPPERL & FUCHS	10710-033467 VAZ-2FK-G10-BRIDGE	Splitter box G10, flat cable to flat cable
6	168"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating

Electrical Drawings N01-1439-01



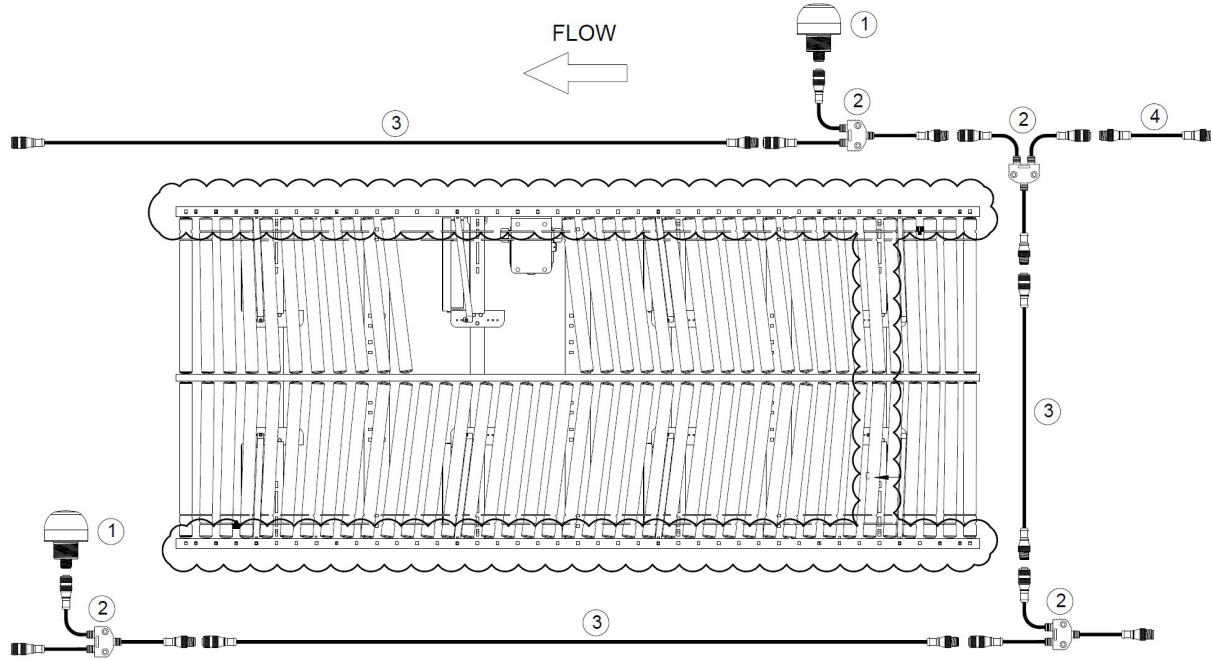
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	4	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray

Electrical Drawings N01-1439-02



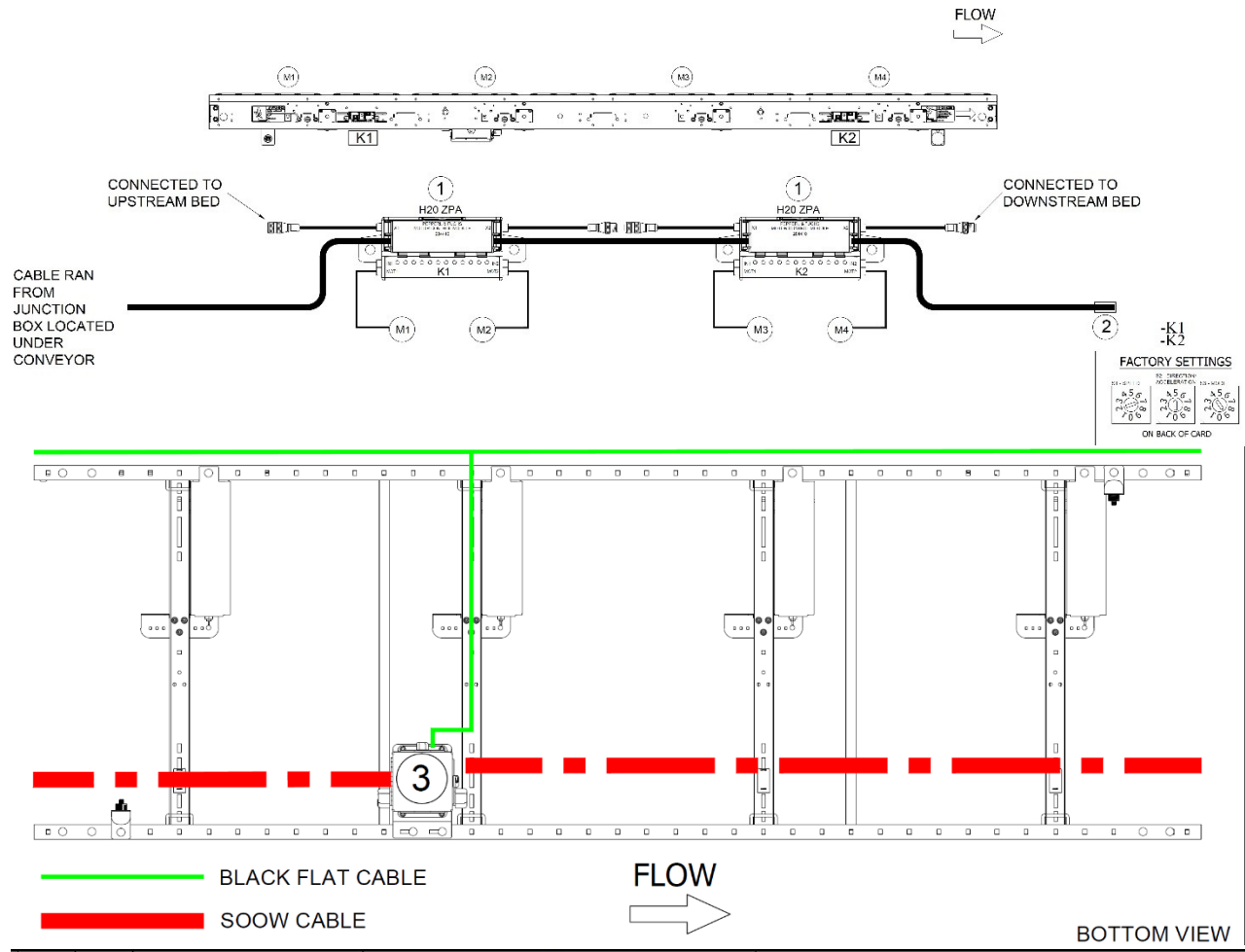
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	4	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
3	1	HILMOT	10802-059131	Under Roller Power Harness for Skew Beds, 48" BF
4	3	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	PEPPERL & FUCHS	10710-033467 VAZ-2FK-G10-BRIDGE	Splitter box G10, flat cable to flat cable
6	168"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating

Electrical Drawings N01-1439-02



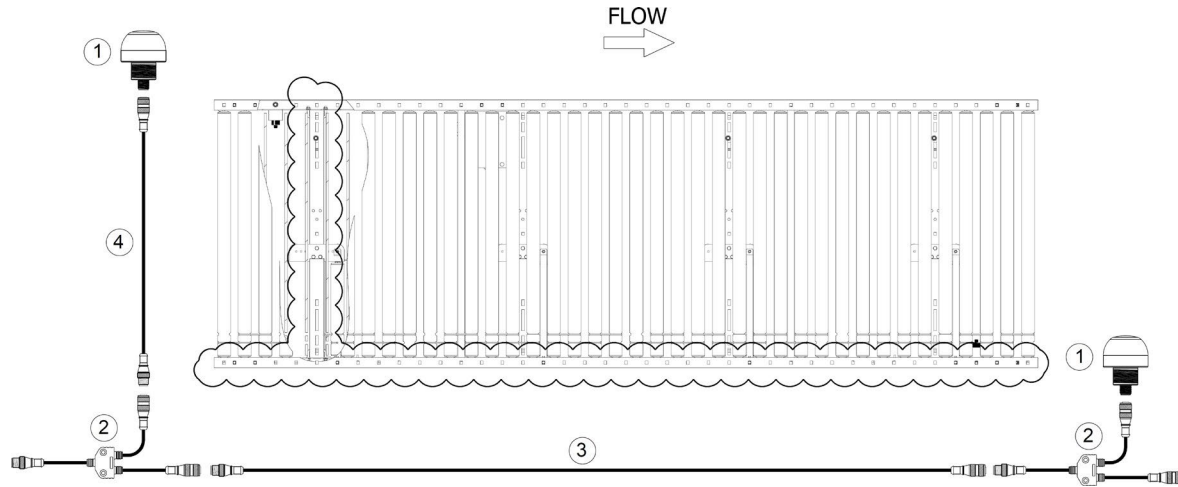
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	4	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray

Electrical Drawings N01-1457-01



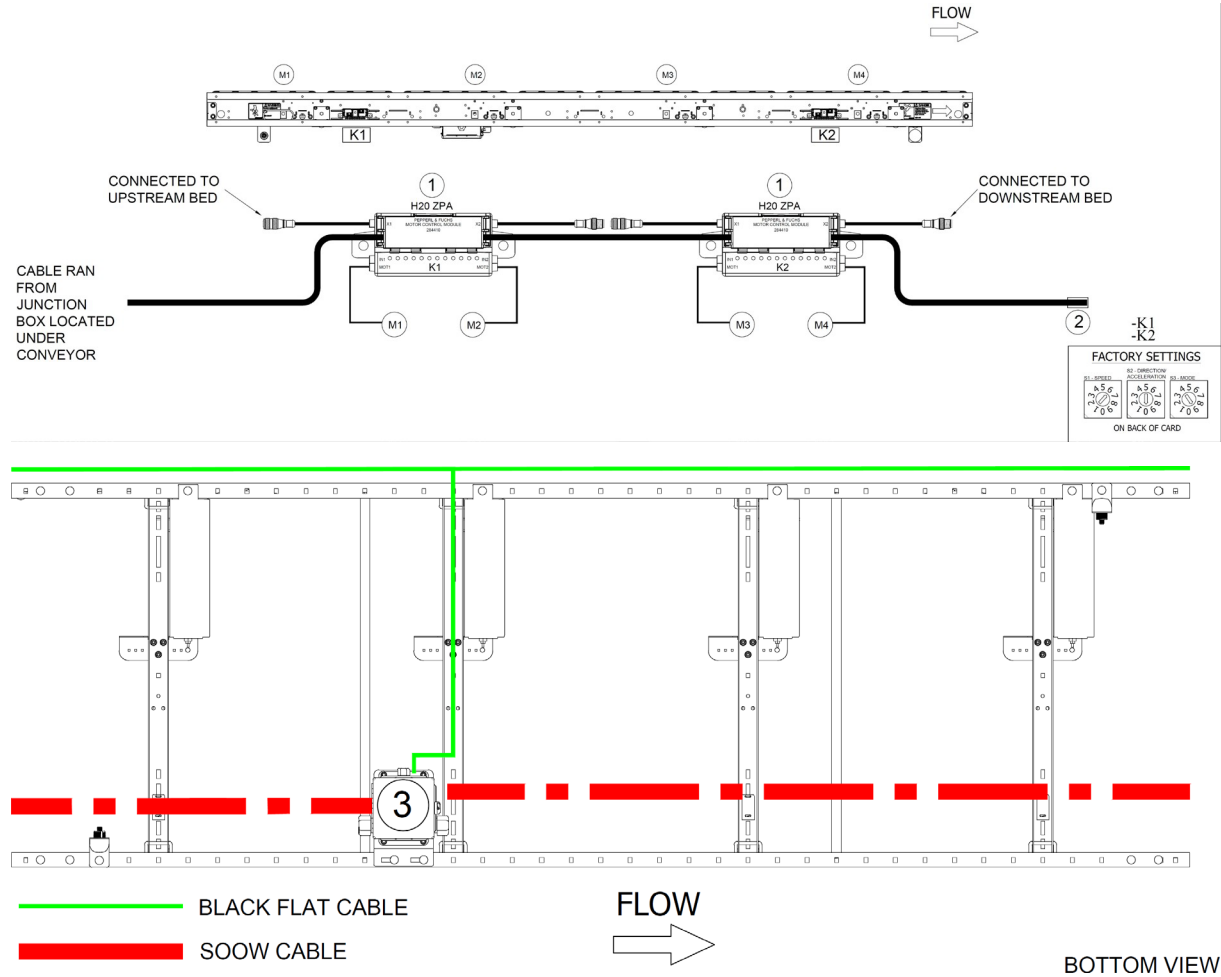
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1457-01



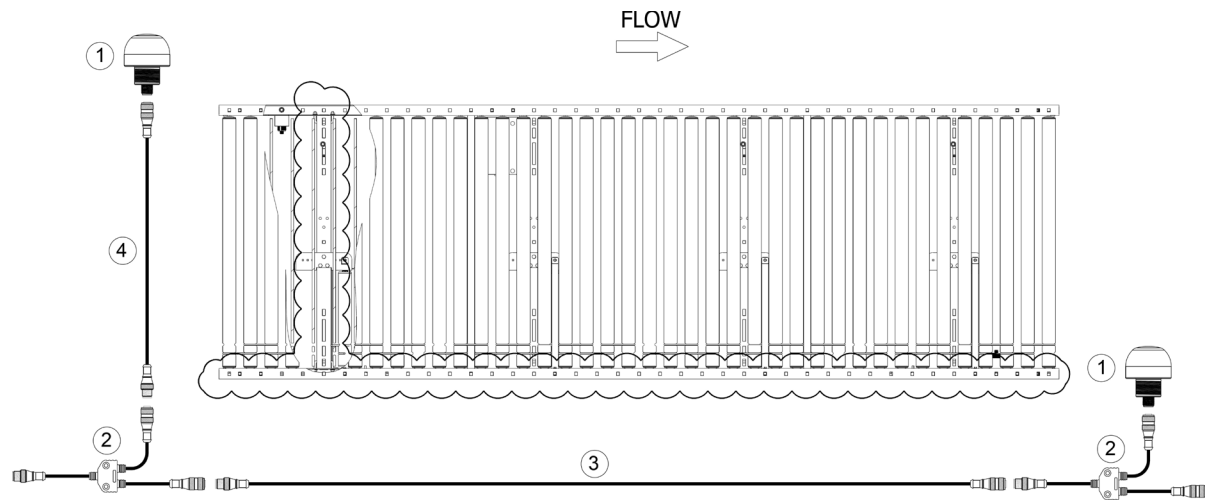
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1457-02



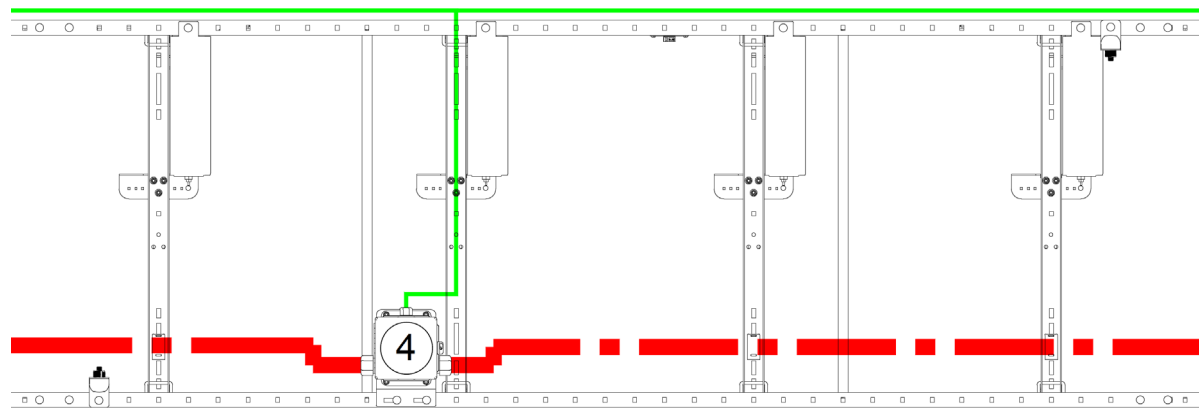
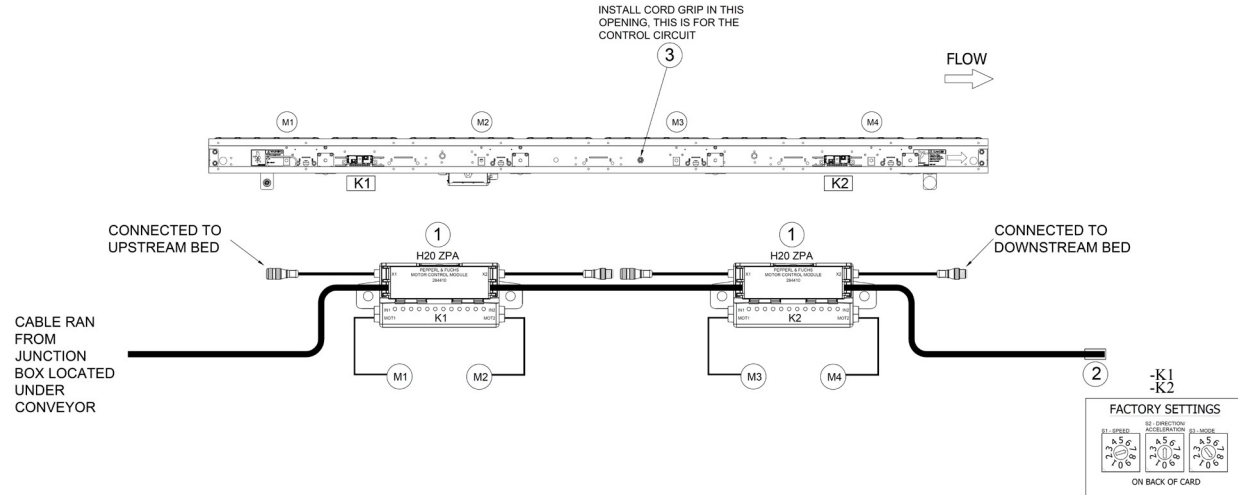
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1457-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1458-01



— BLACK FLAT CABLE

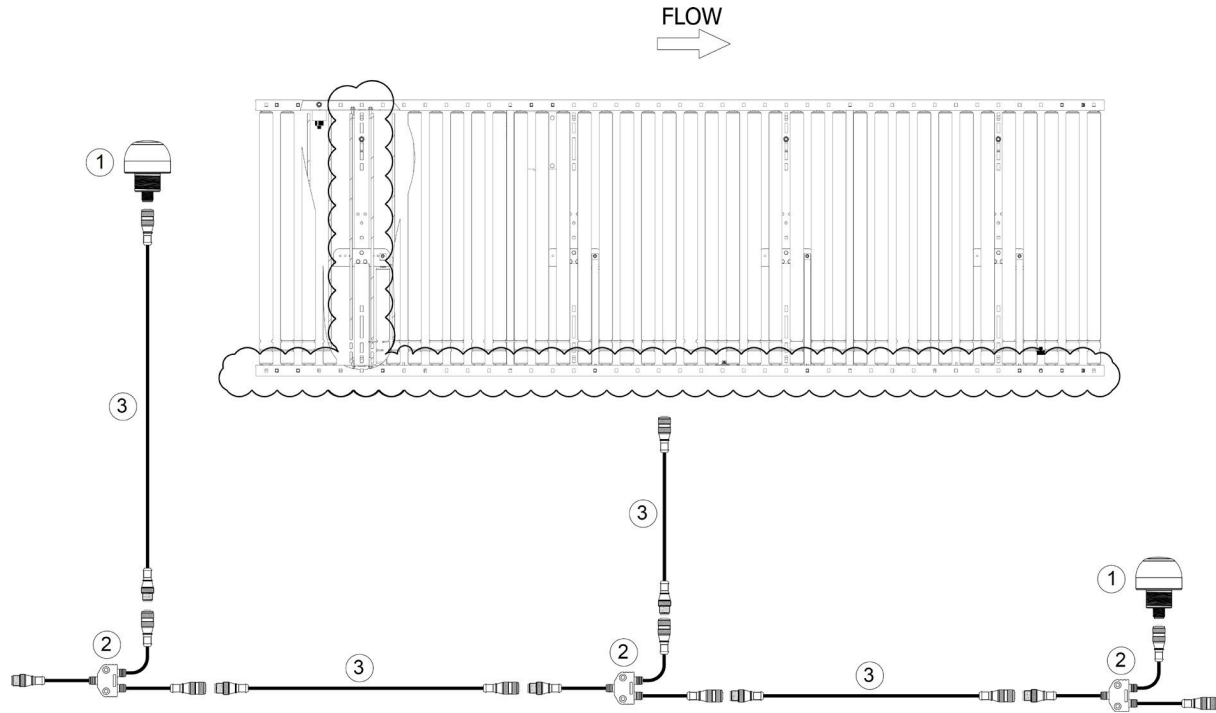
— SOOW CABLE

FLOW

BOTTOM VIEW

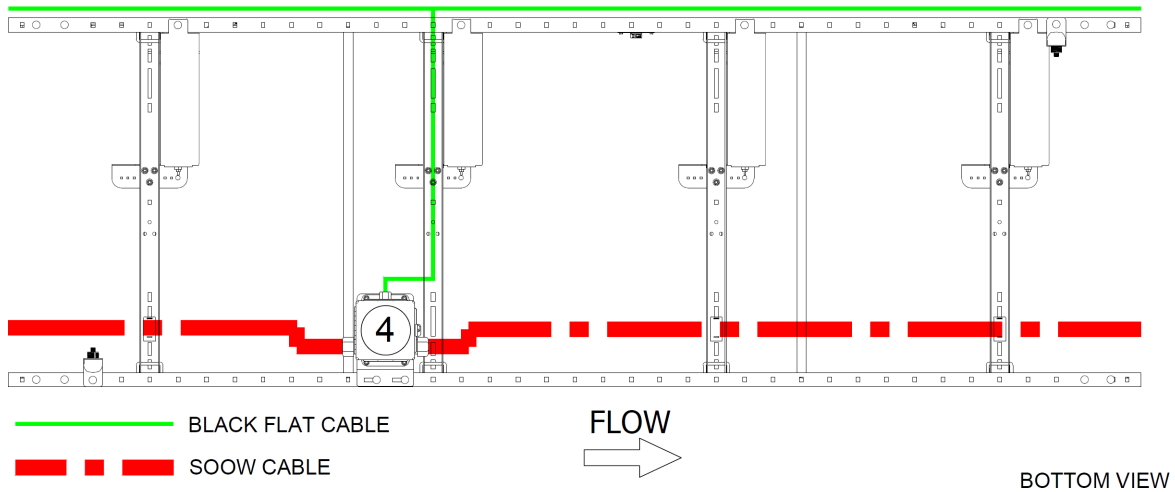
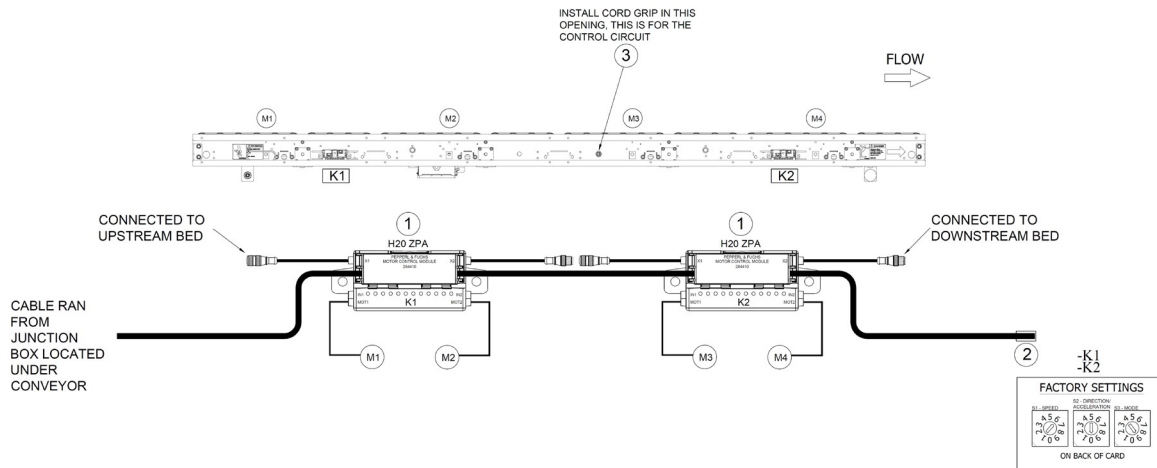
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1458-01



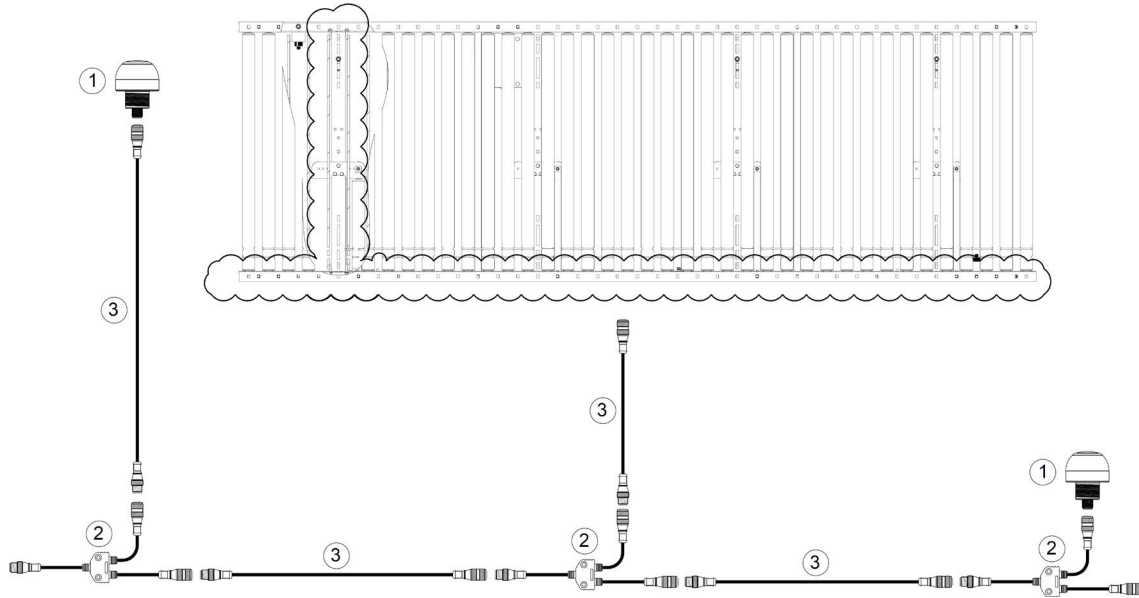
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1458-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1458-02

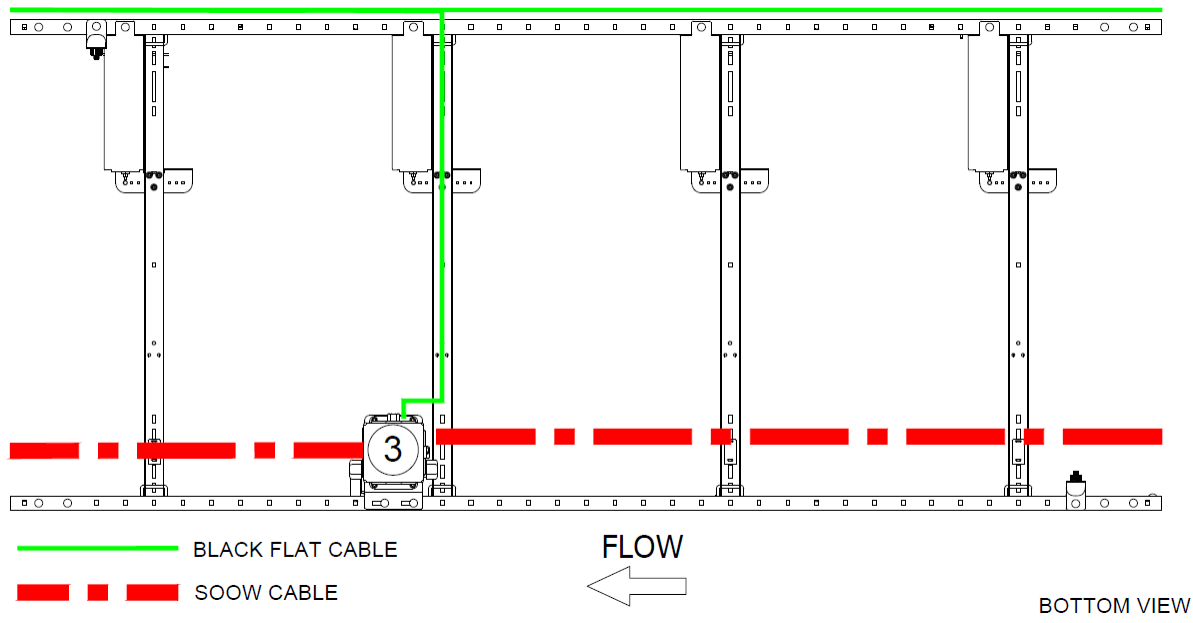
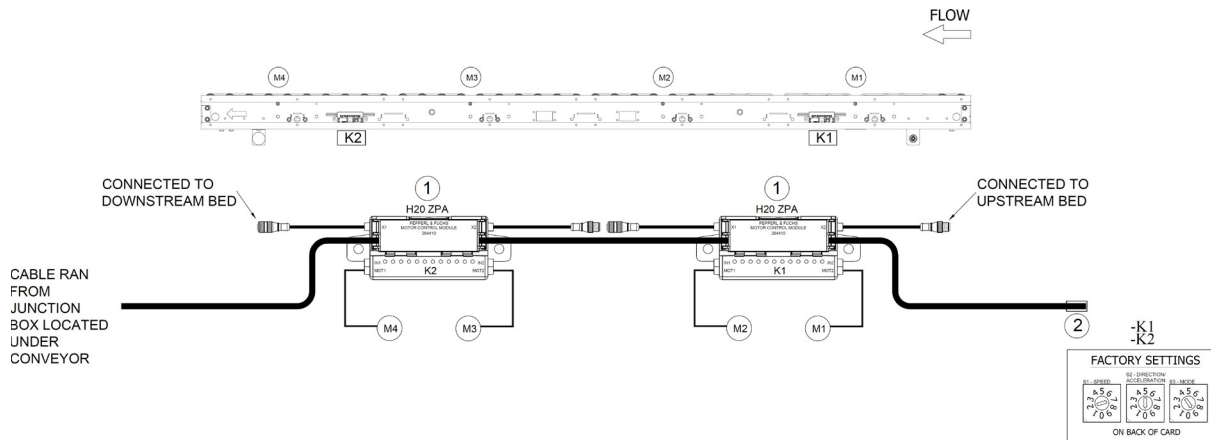


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

HILMOT

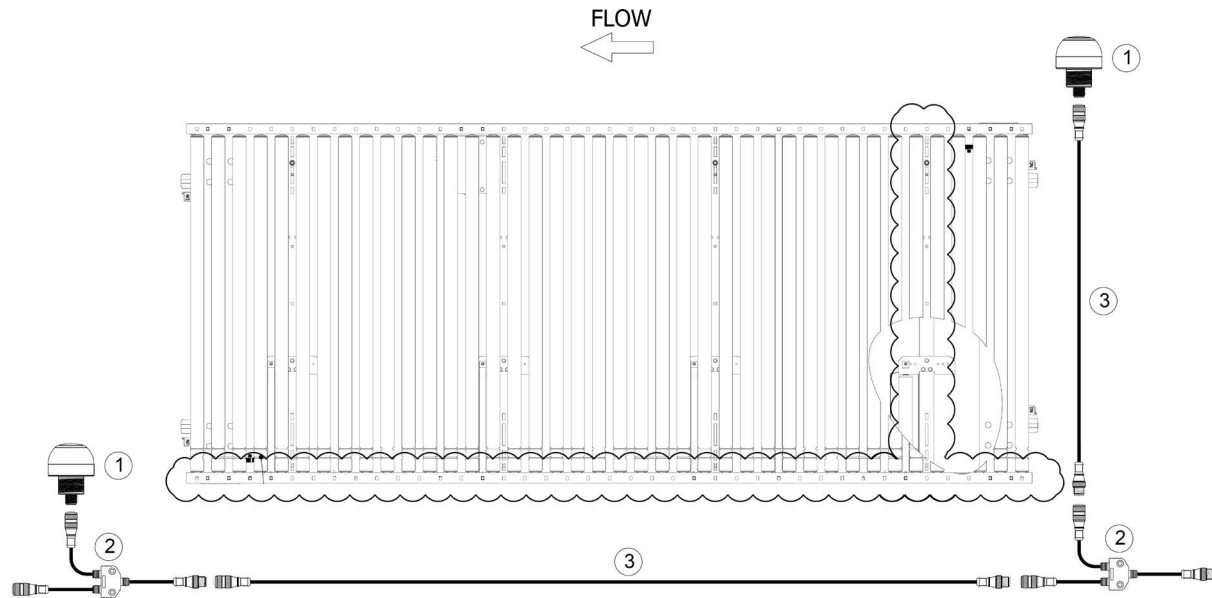
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Electrical Drawings N01-1460-01



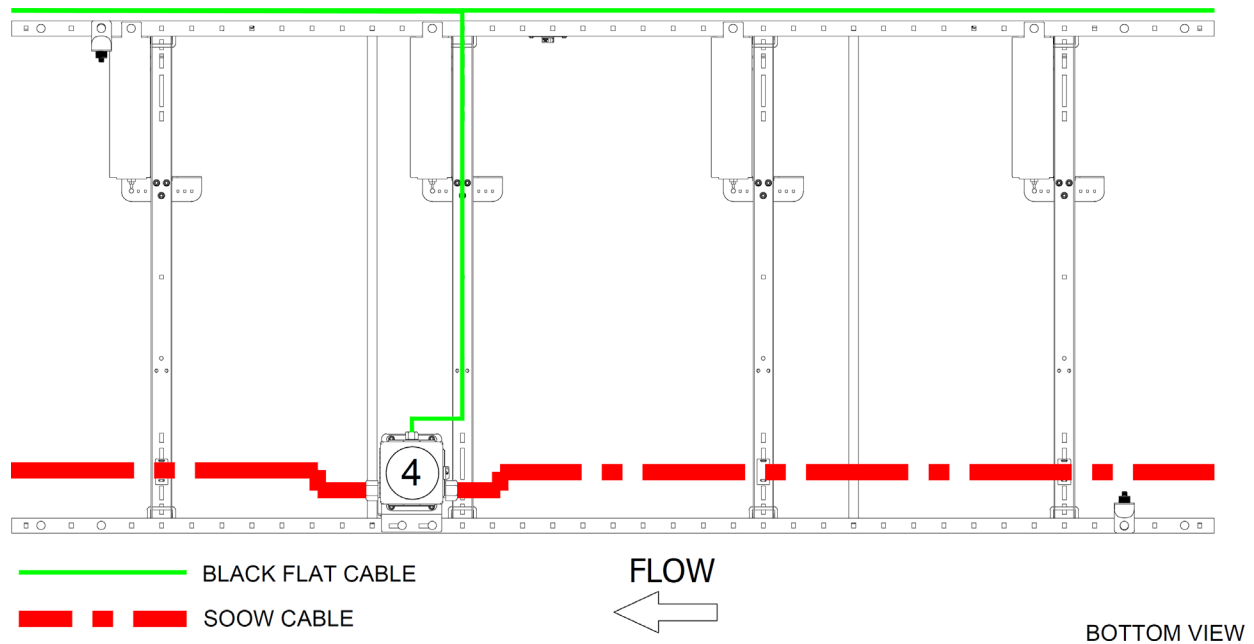
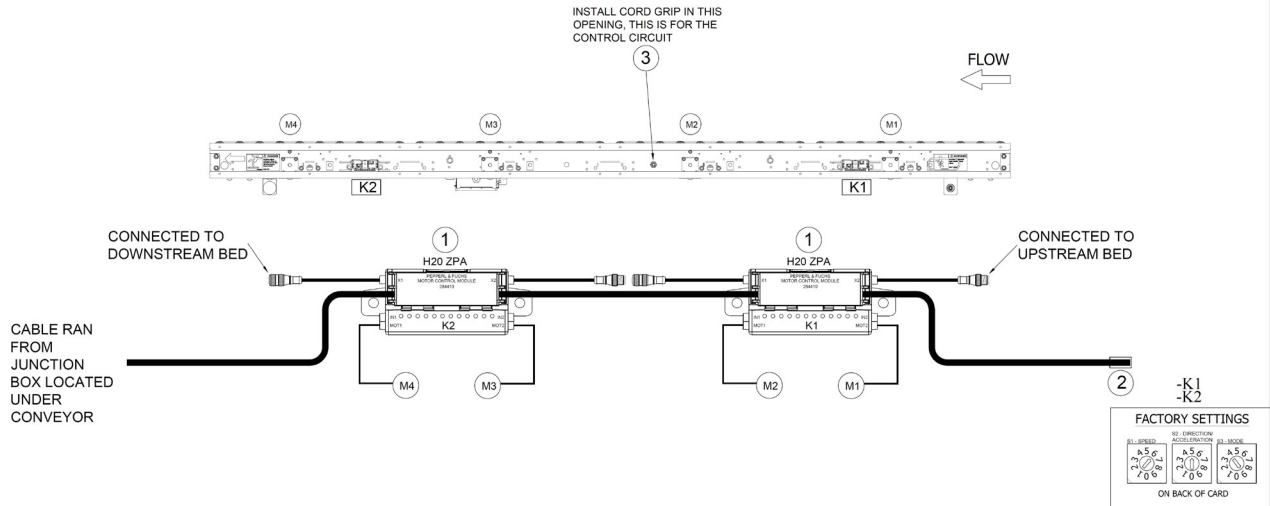
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1460-01



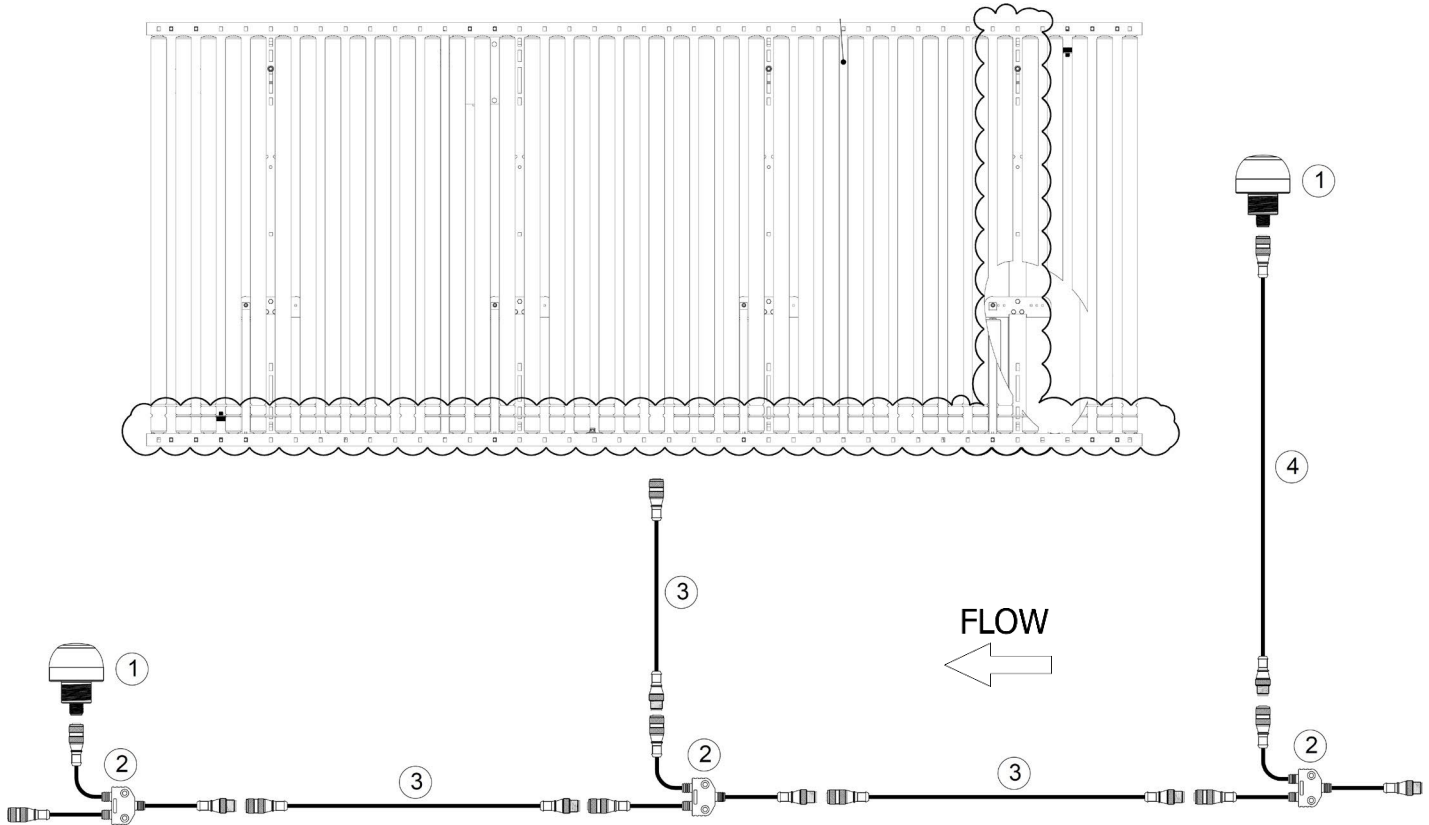
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1460-02



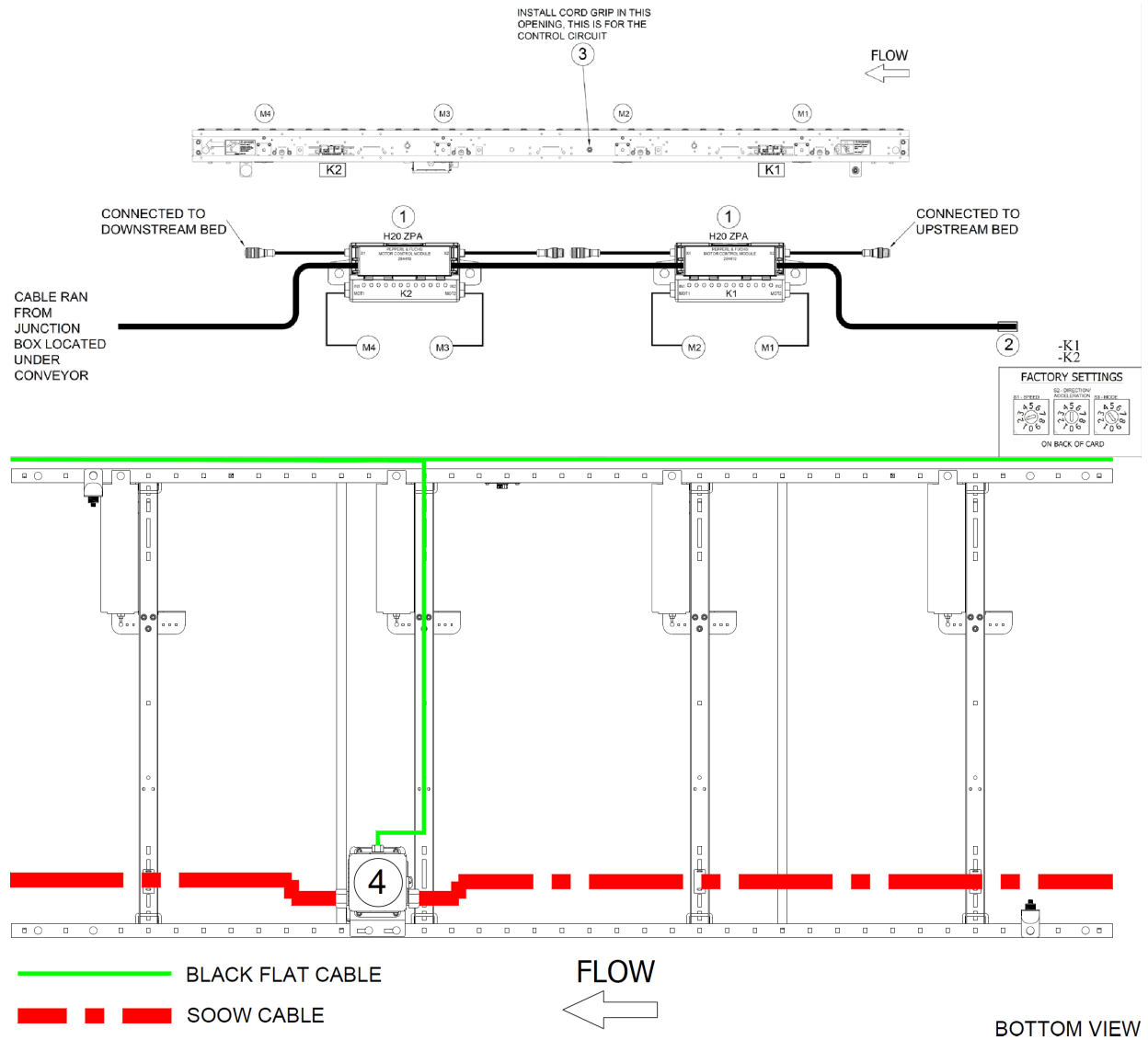
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-145-02



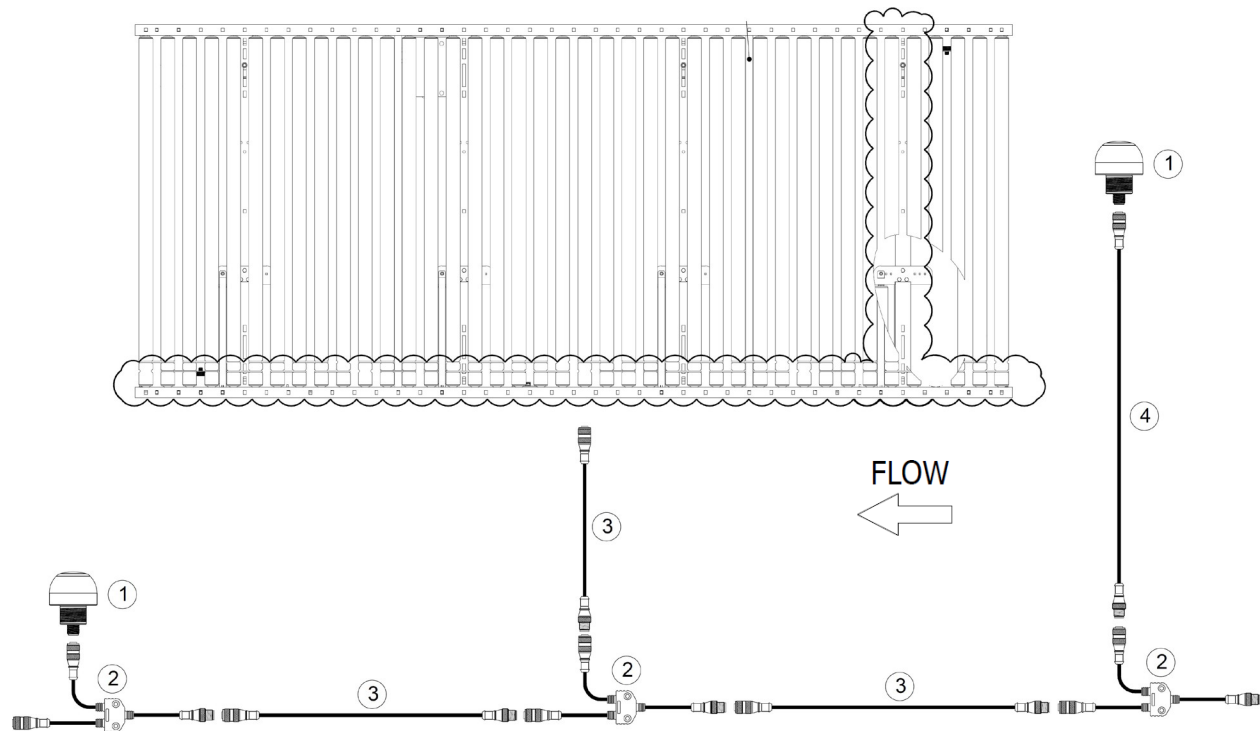
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1461-01



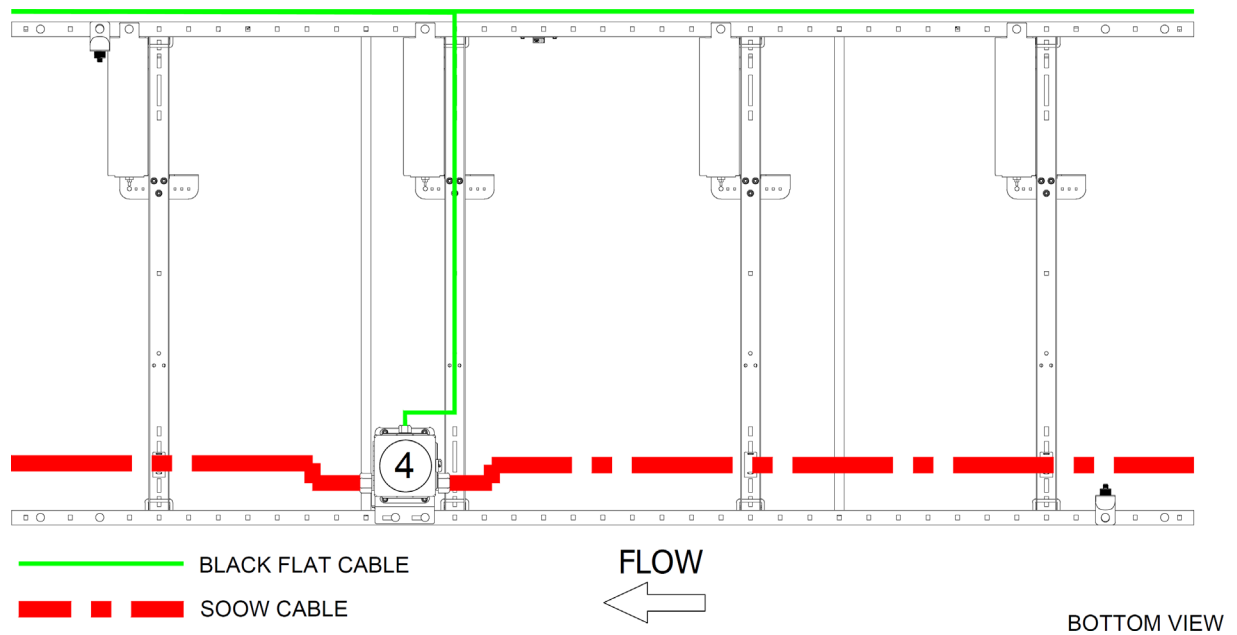
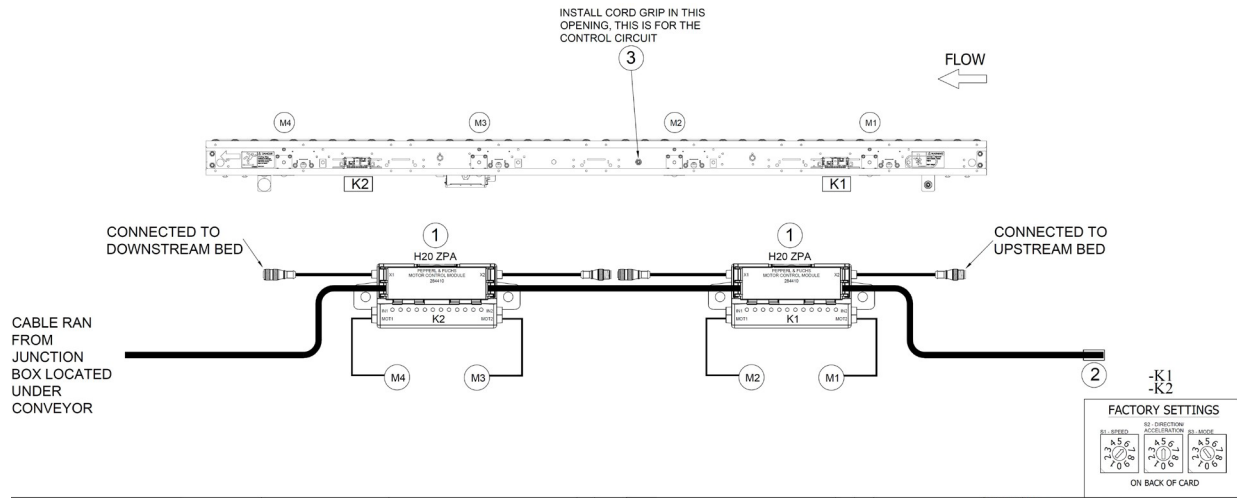
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1461-01

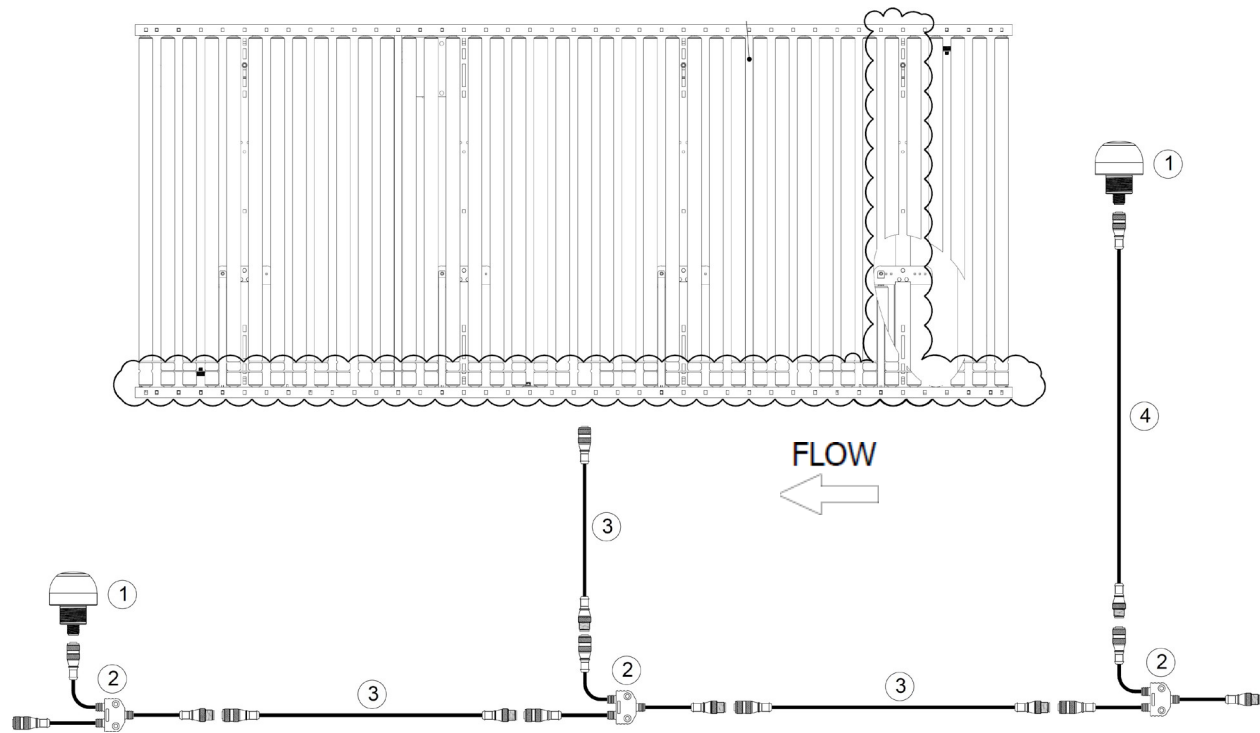


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1461-02

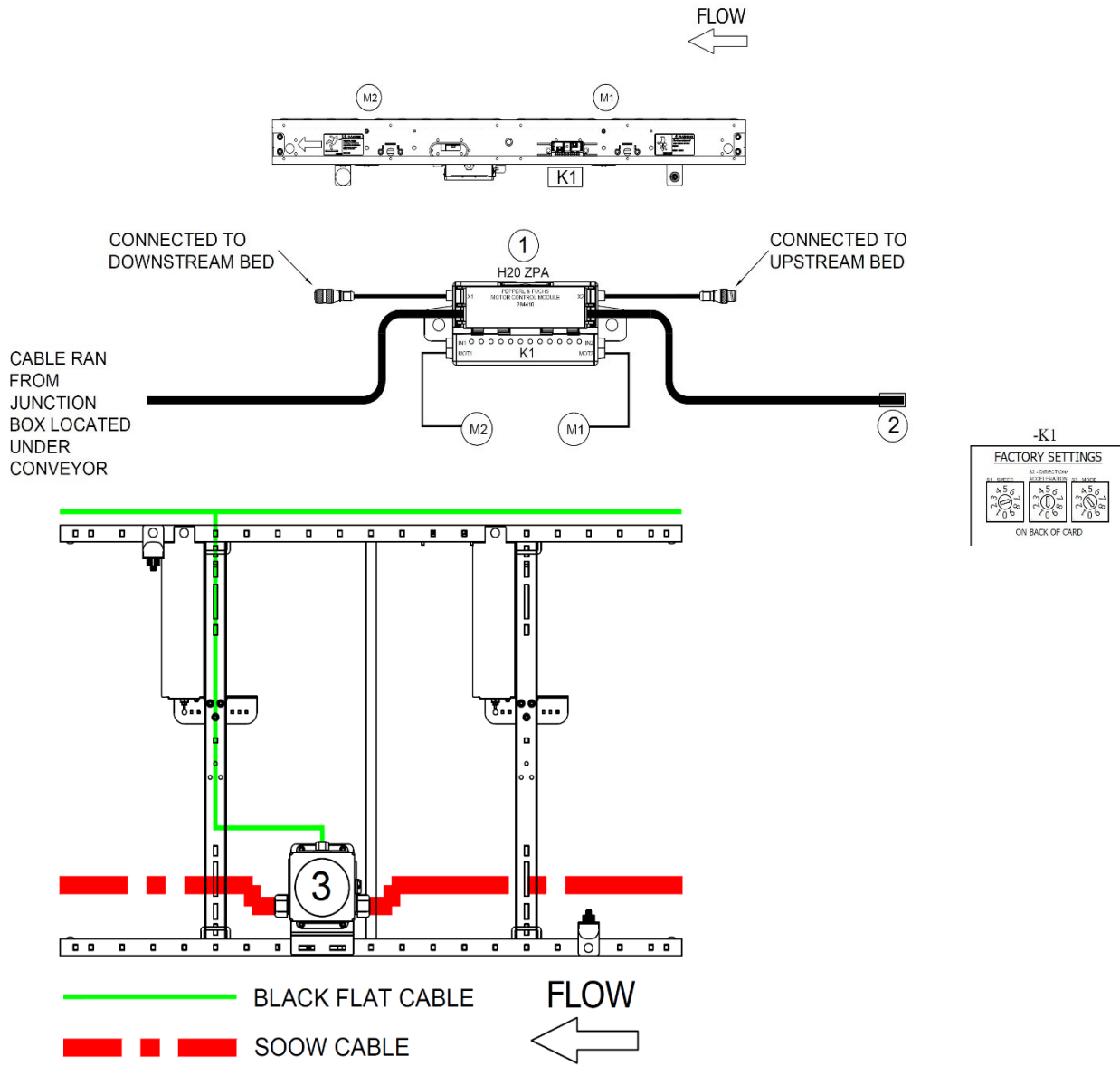


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF



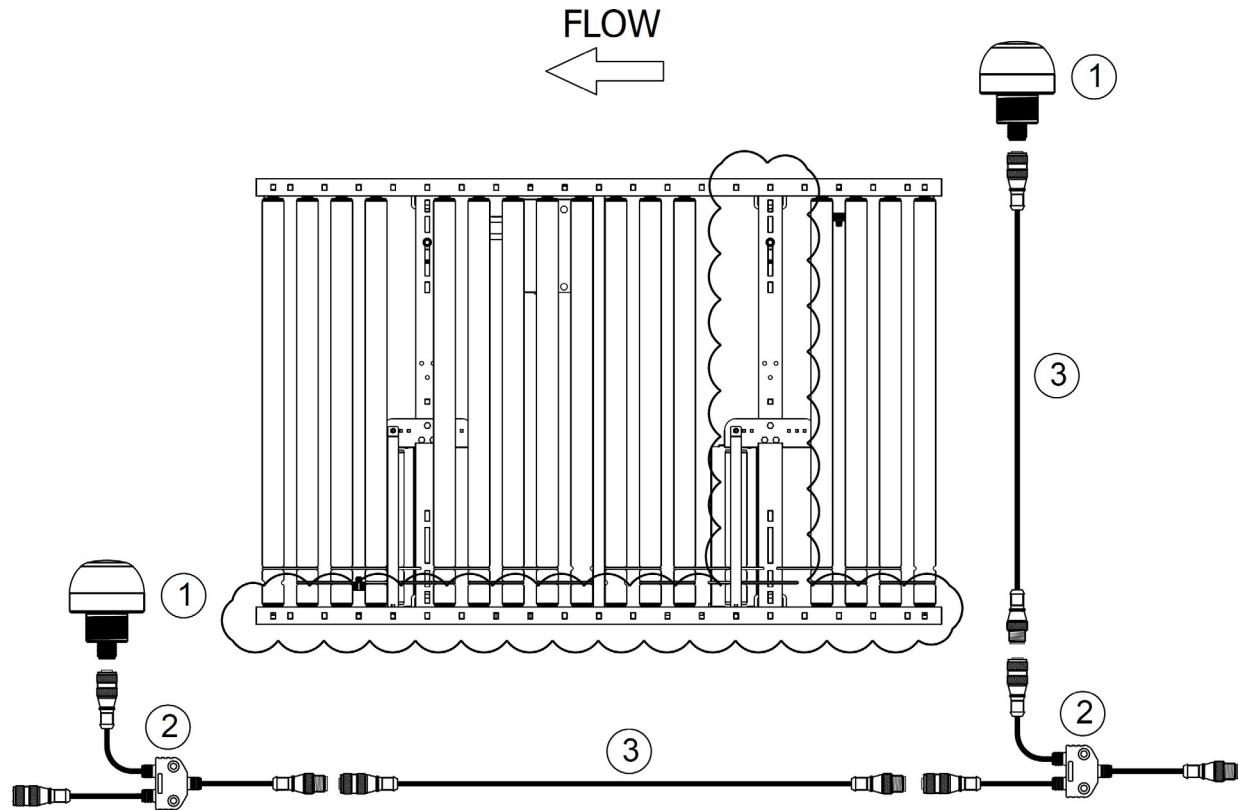
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1465-01



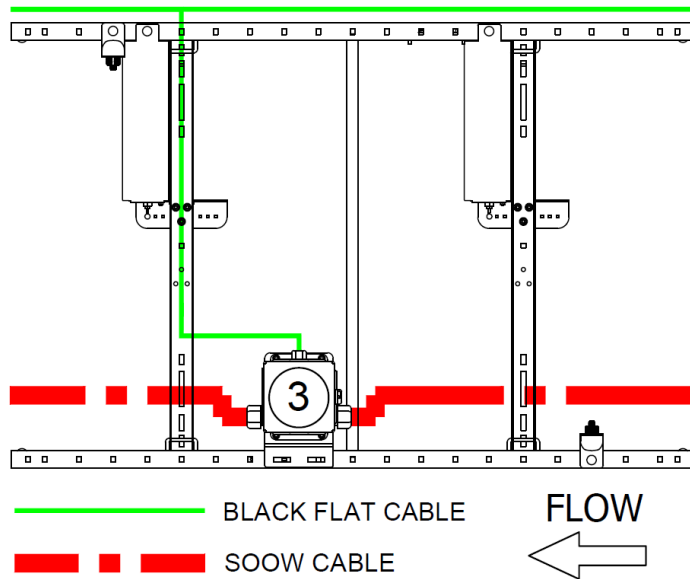
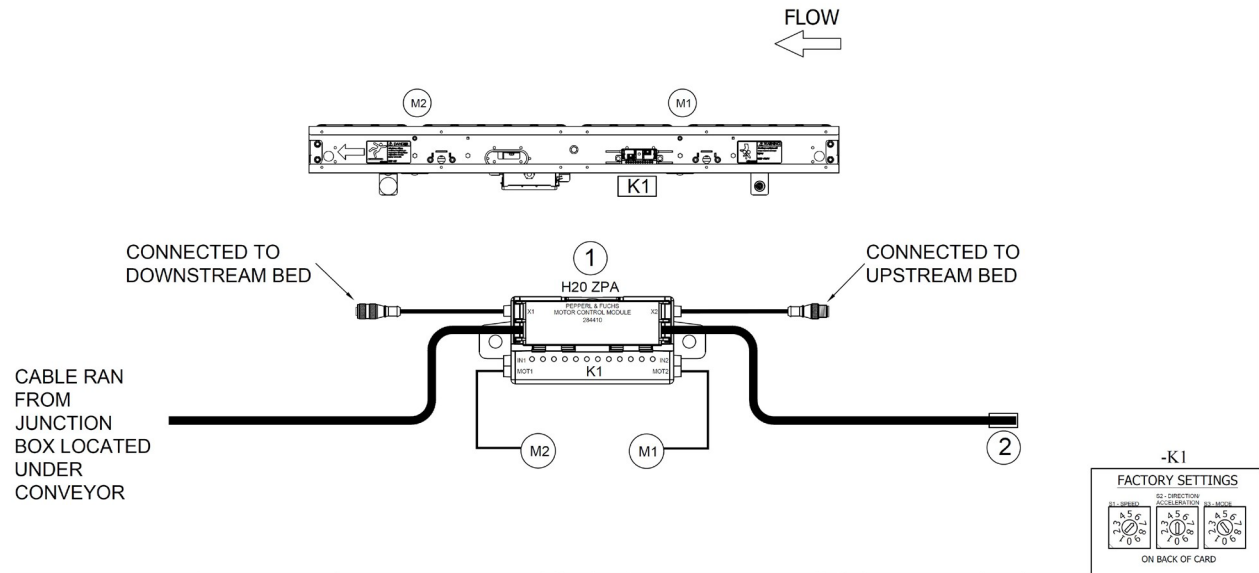
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059124	Under Roller Power Harness 5' length, 36" BF

Electrical Drawings N01-1465-01



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

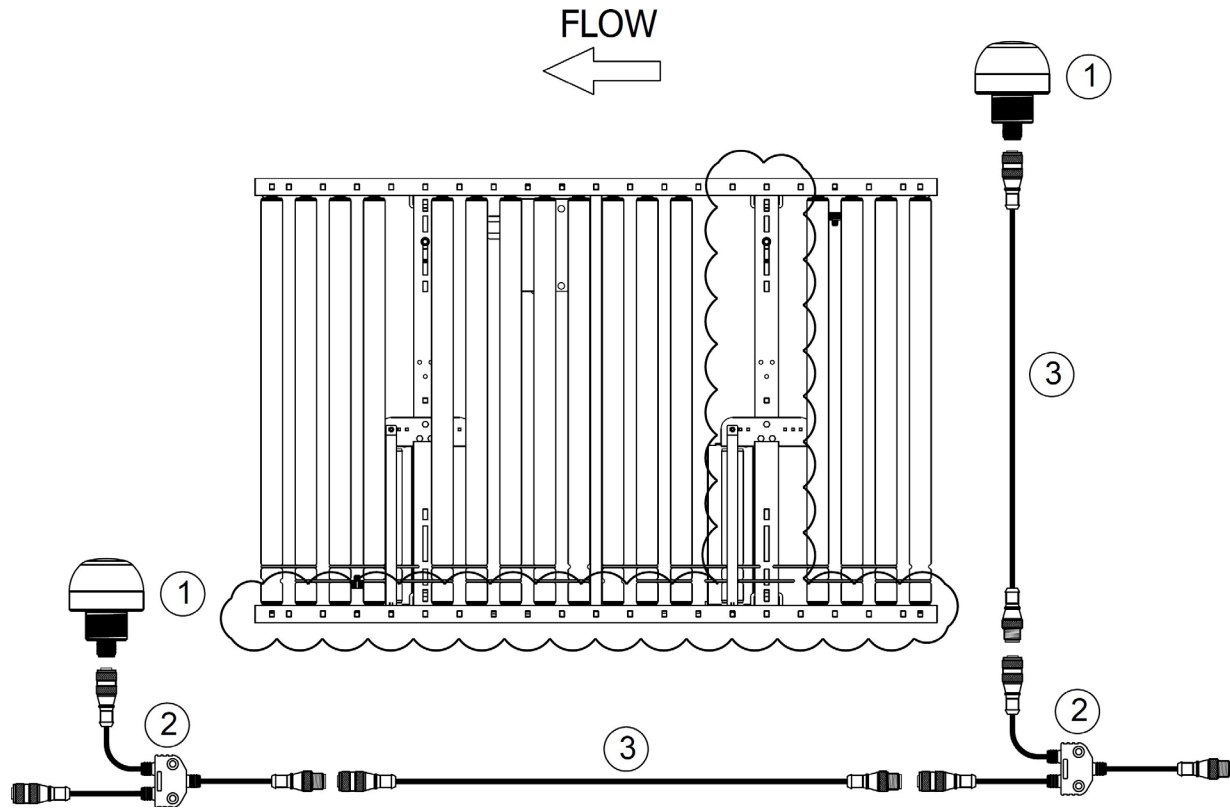
Electrical Drawings N01-1465-02



Electrical Drawings N01-1465-02

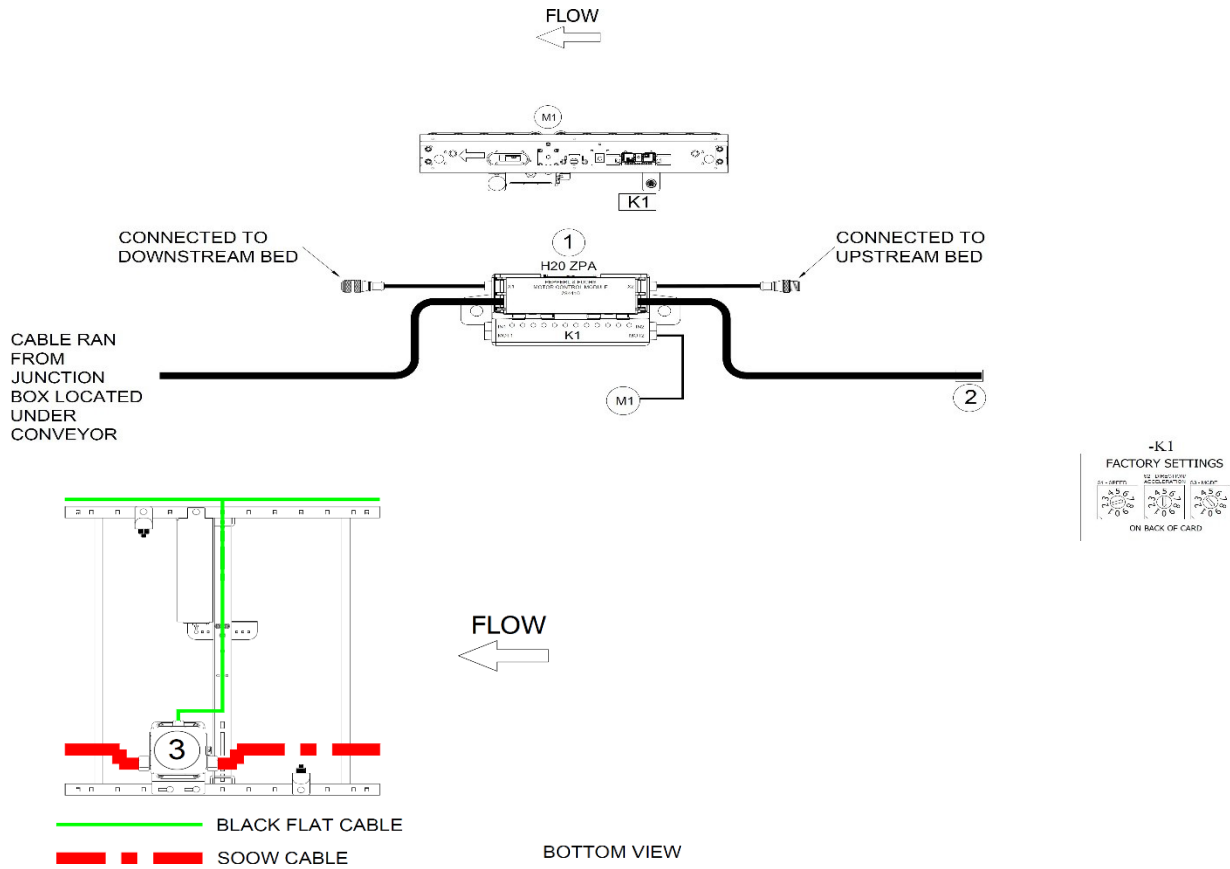
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059124	Under Roller Power Harness 5' length, 36" BF

Electrical Drawings N01-1465-02

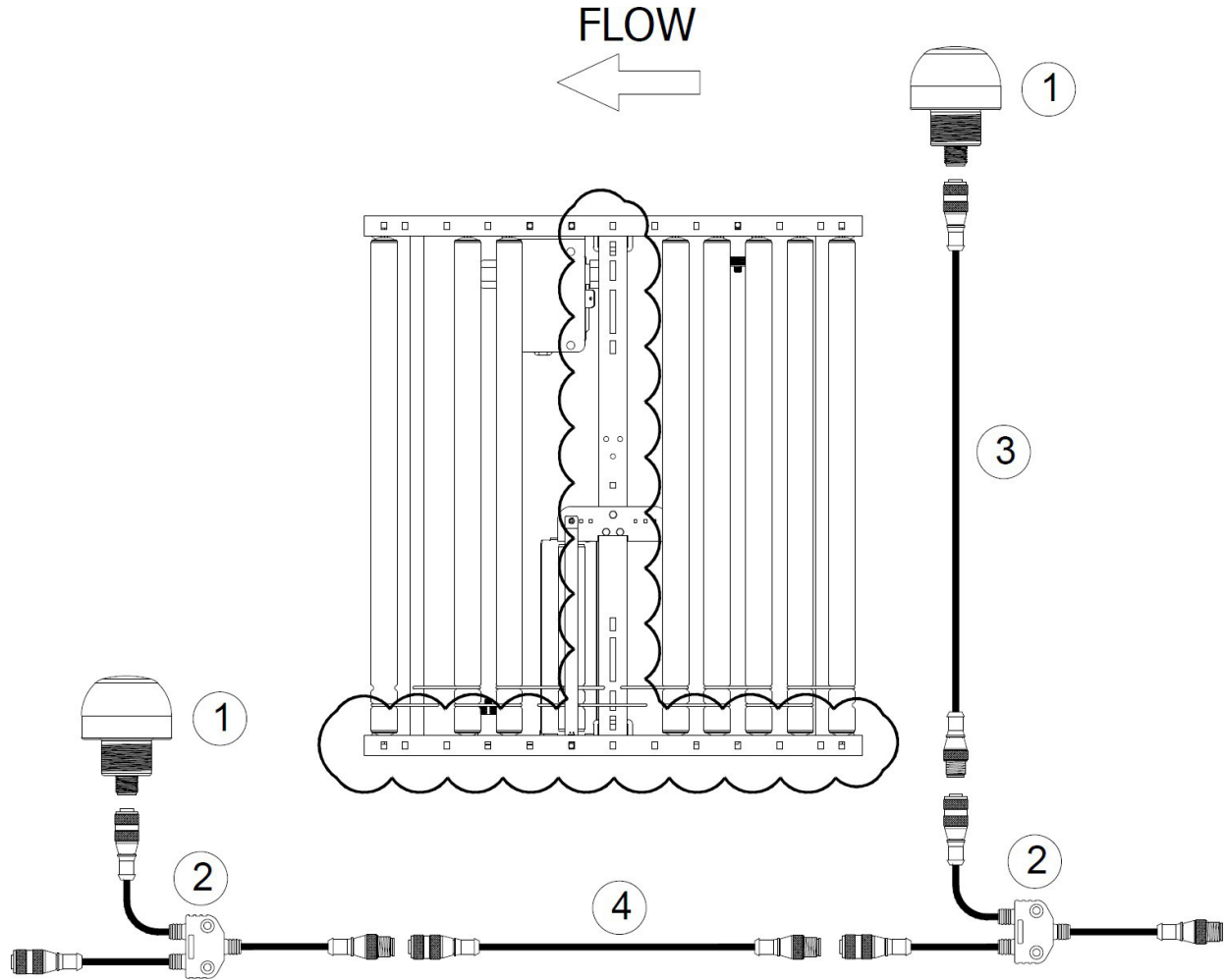


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1467-01

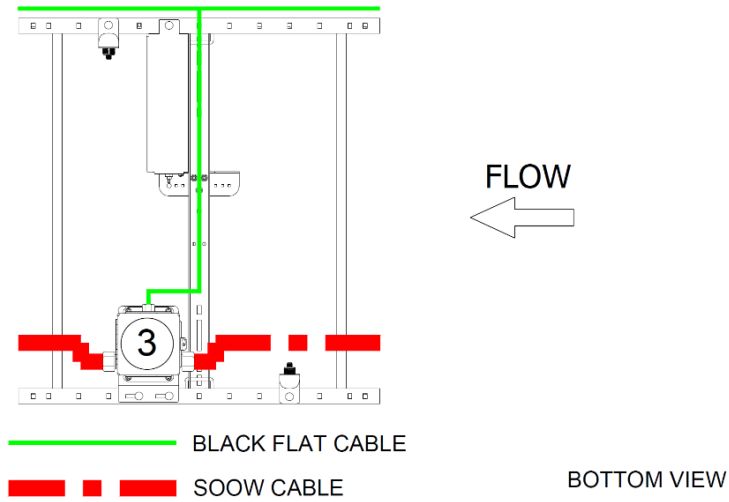
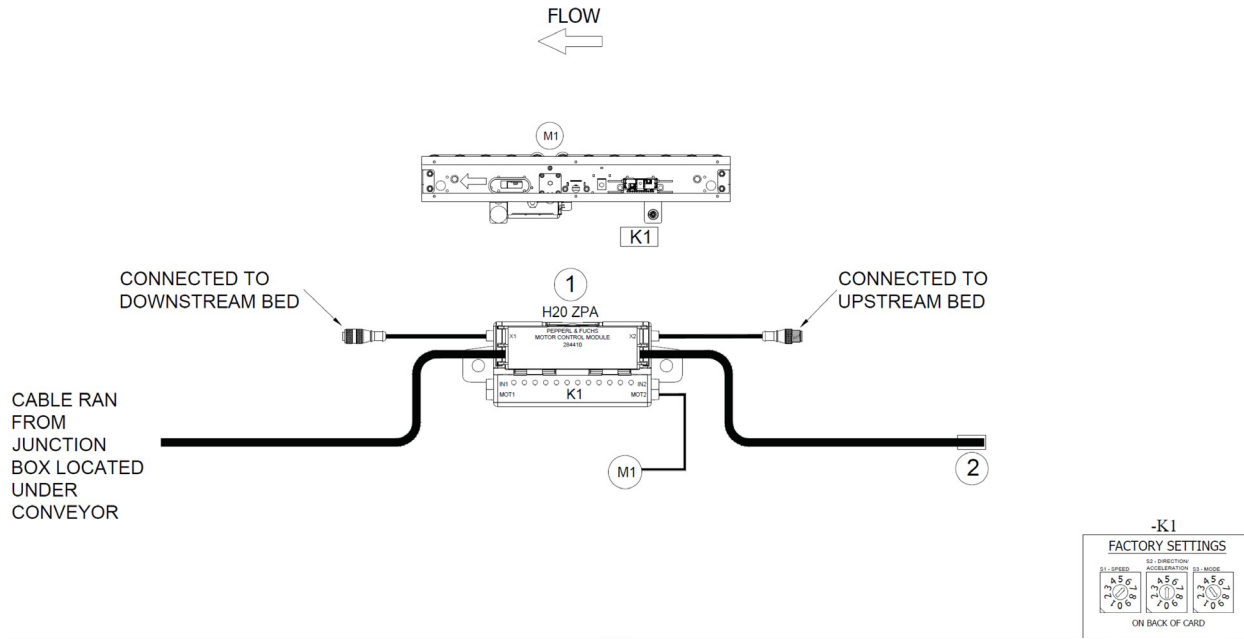


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059127	Under Roller Power Harness 3' length, 36" BF



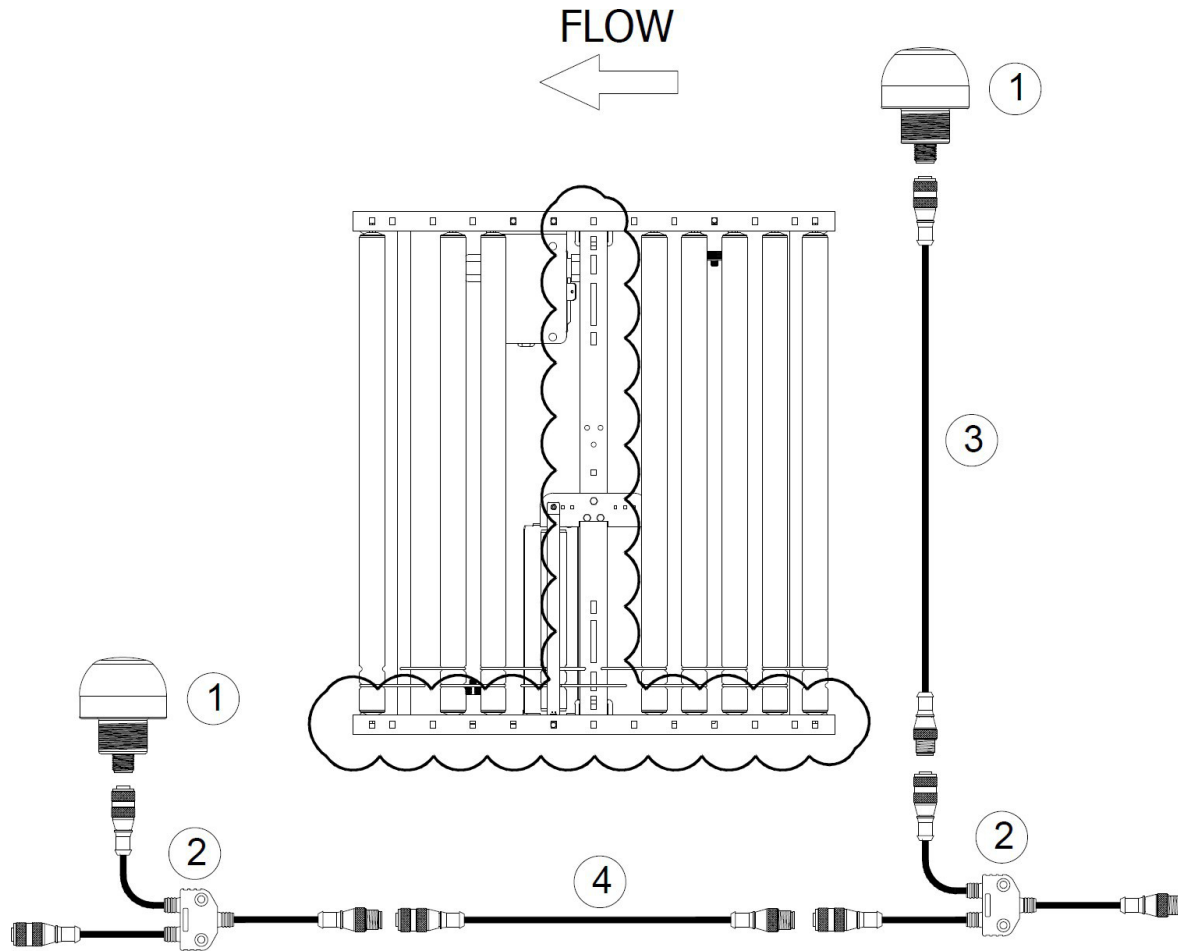
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

Electrical Drawings N01-1467-02



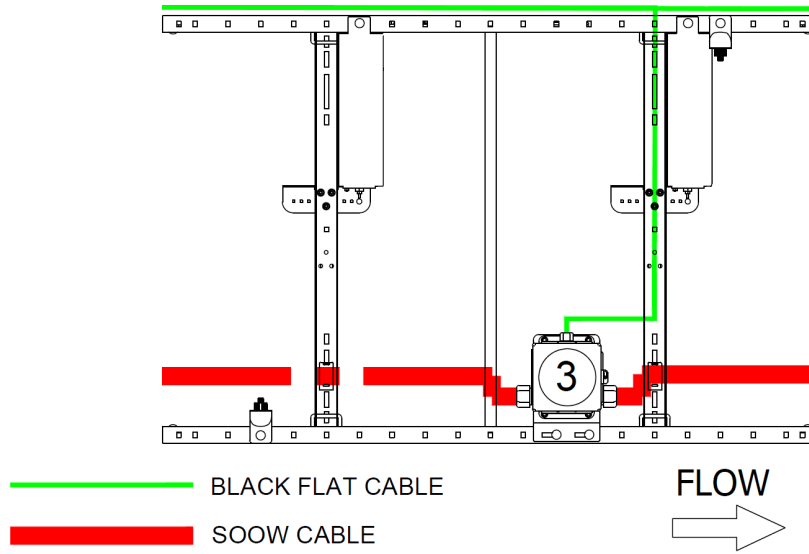
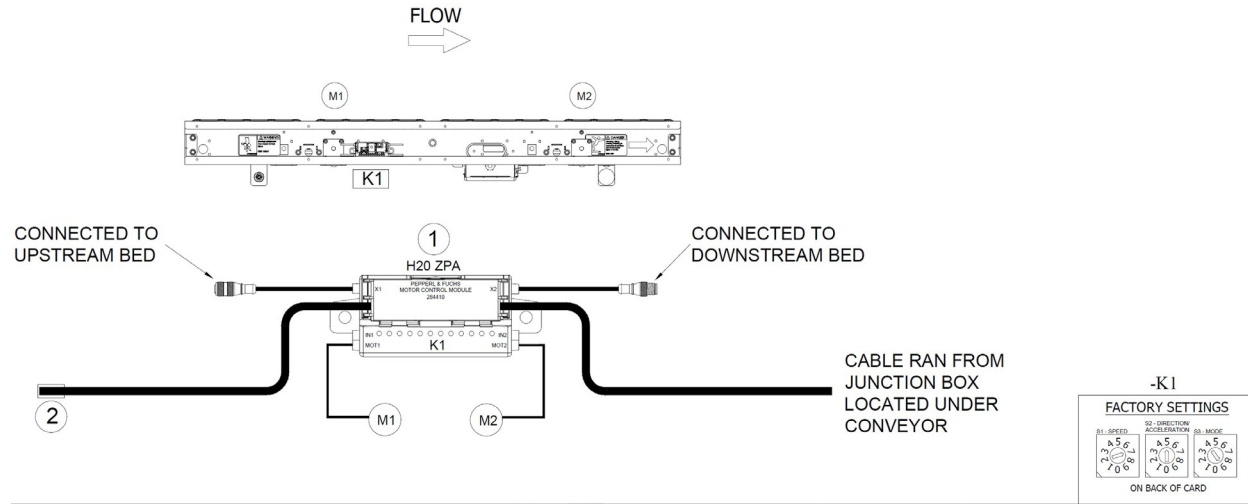
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059127	Under Roller Power Harness 3' length, 36" BF

Electrical Drawings N01-1467-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

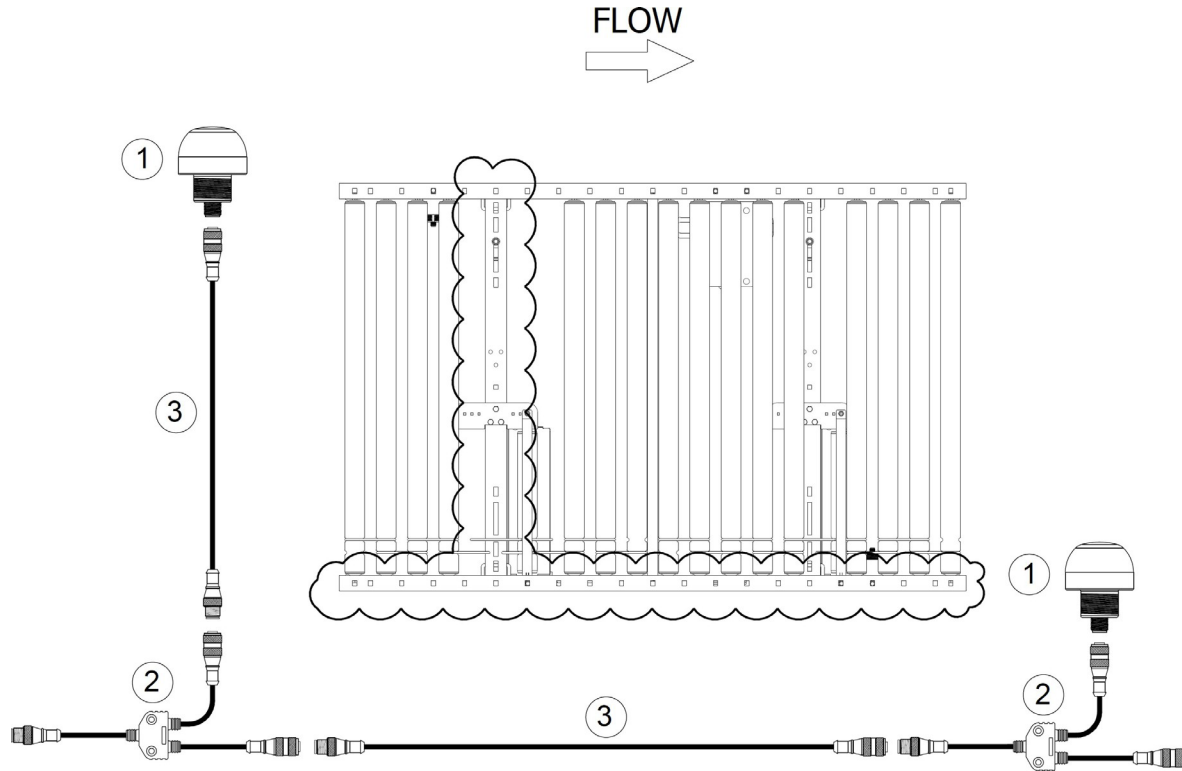
Electrical Drawings N01-1472-01



BOTTOM VIEW

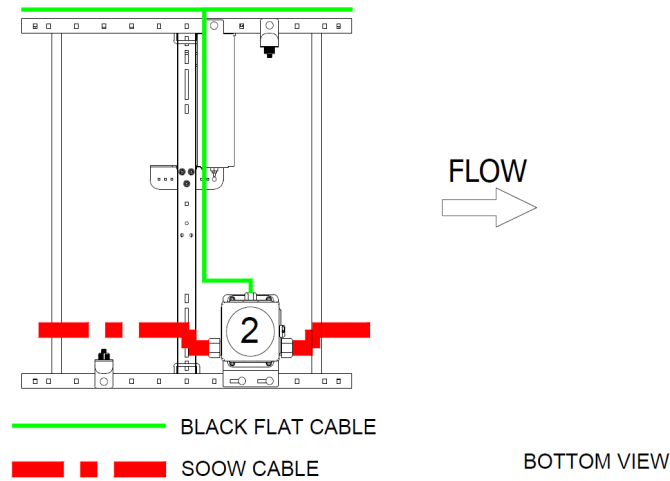
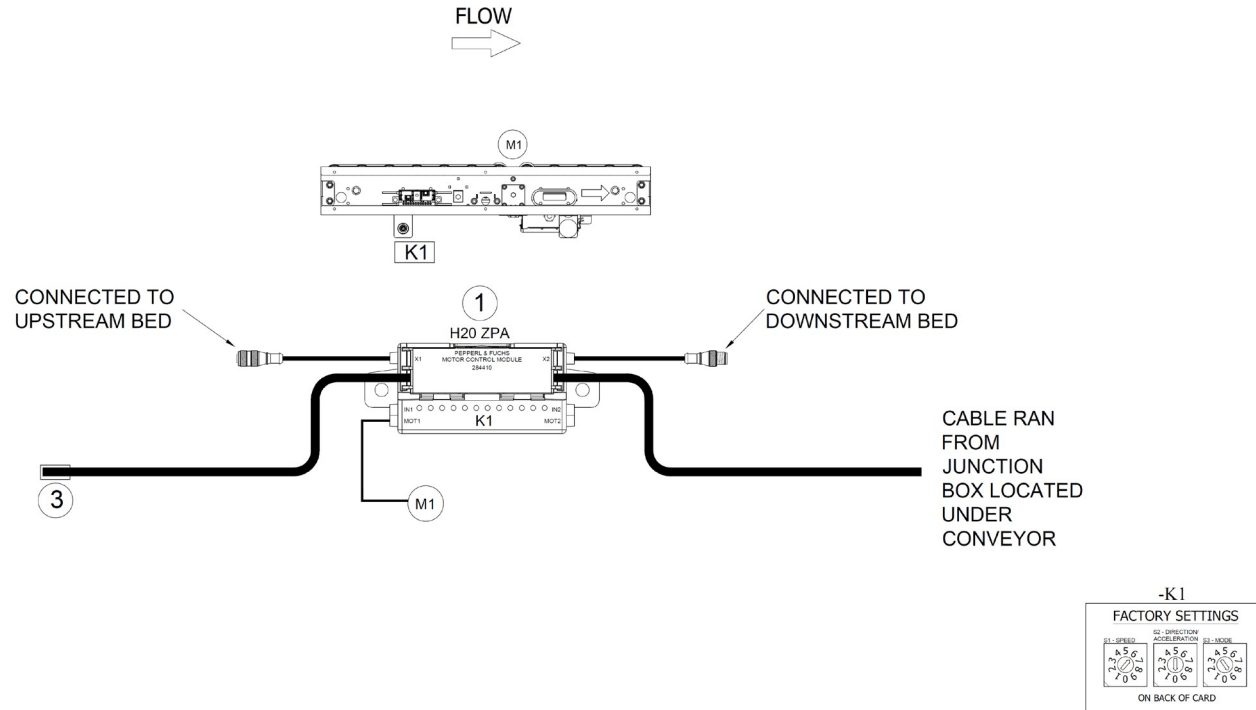
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-060042	Under Roller Power Harness 5' length, 36" BF, RH

Electrical Drawings N01-1472-01



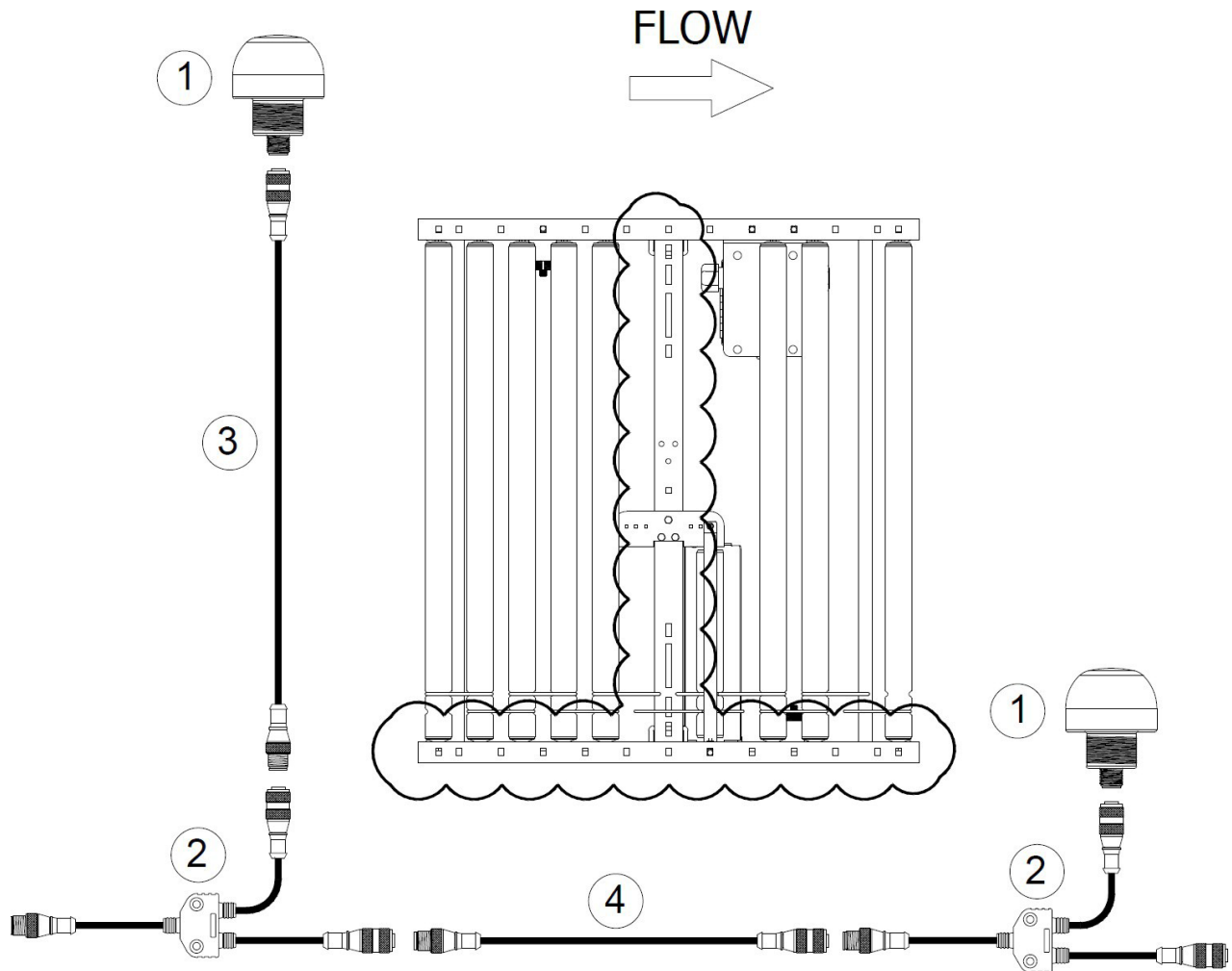
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1472-02



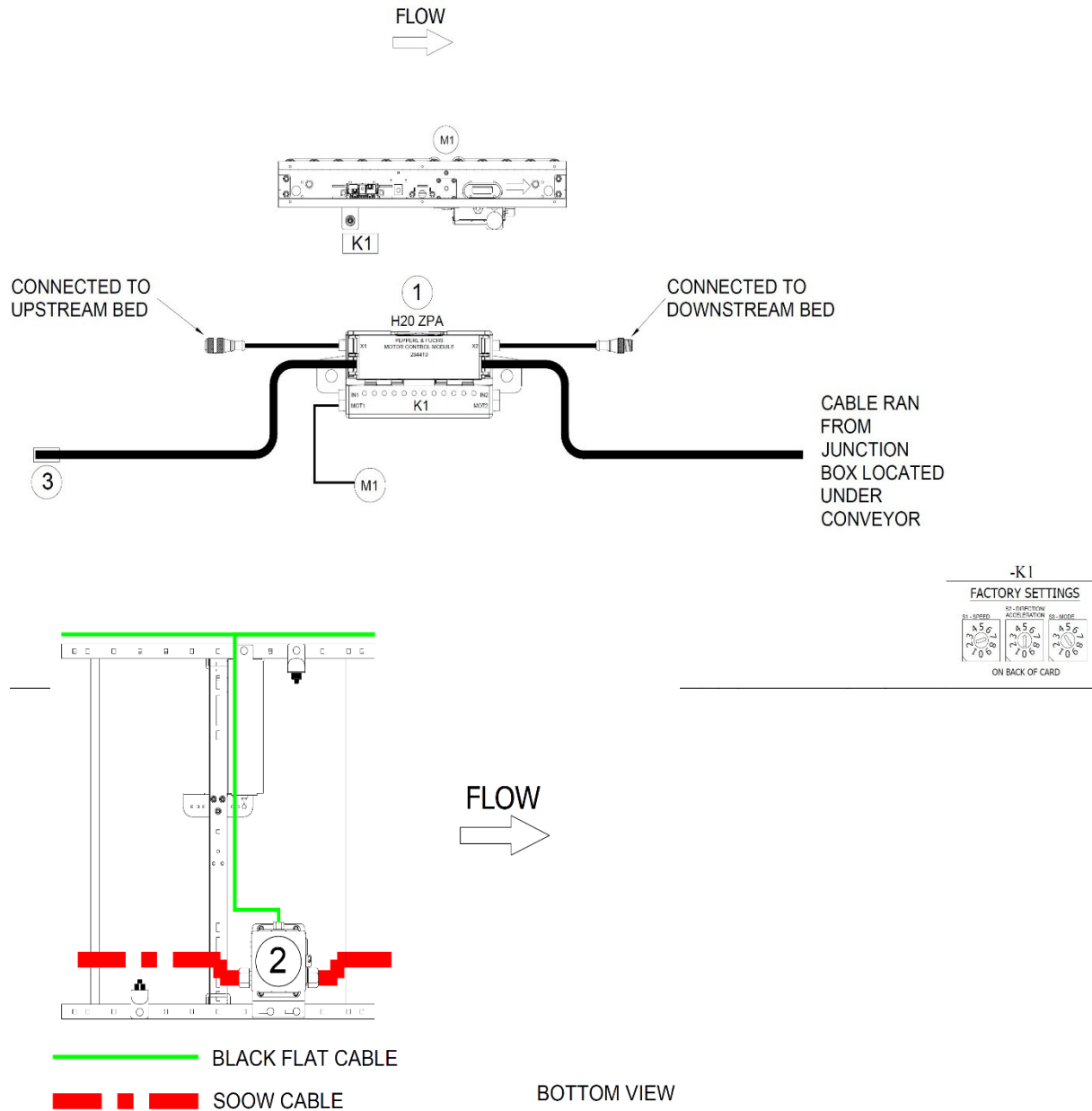
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	HILMOT	10802-059451	Under Roller Power Harness 3' length, 36" BF, RH
3	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N01-1472-02



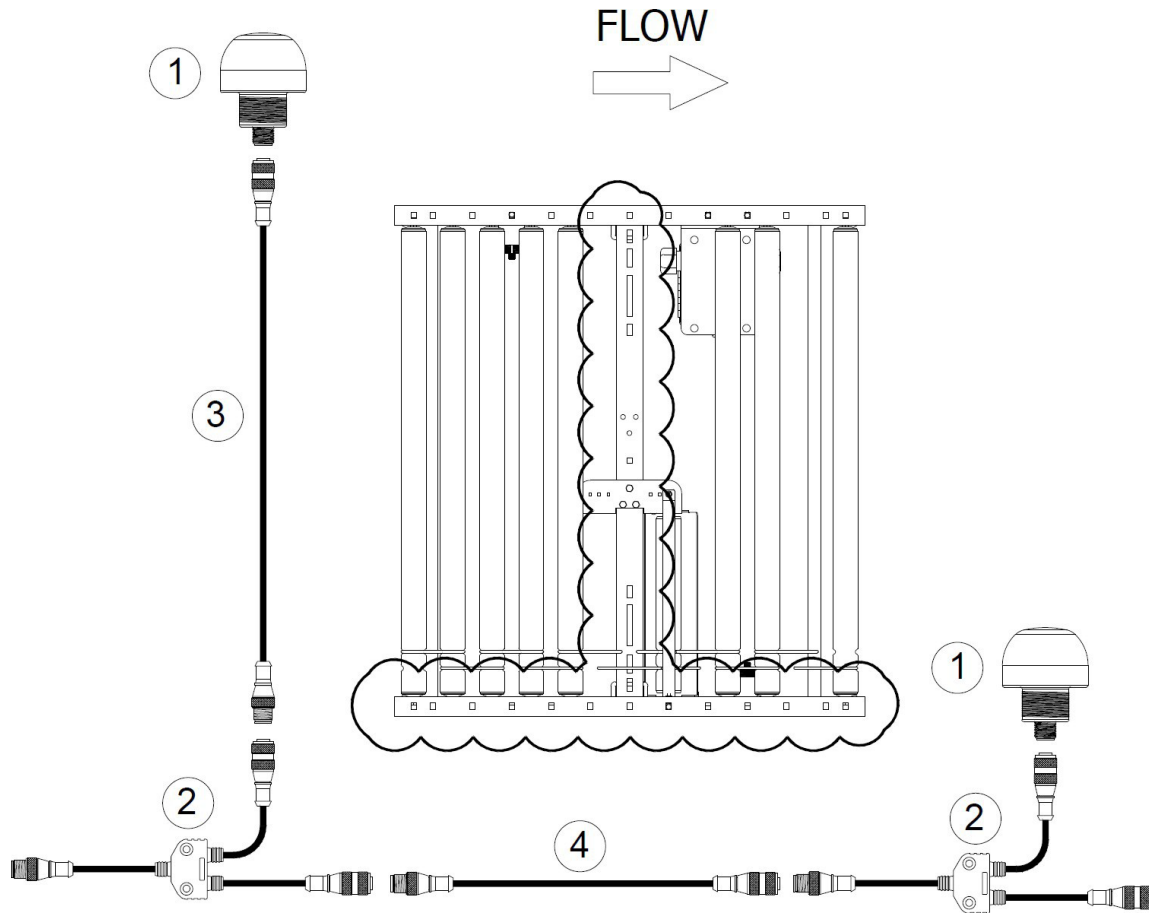
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

Electrical Drawings N01-1473-01



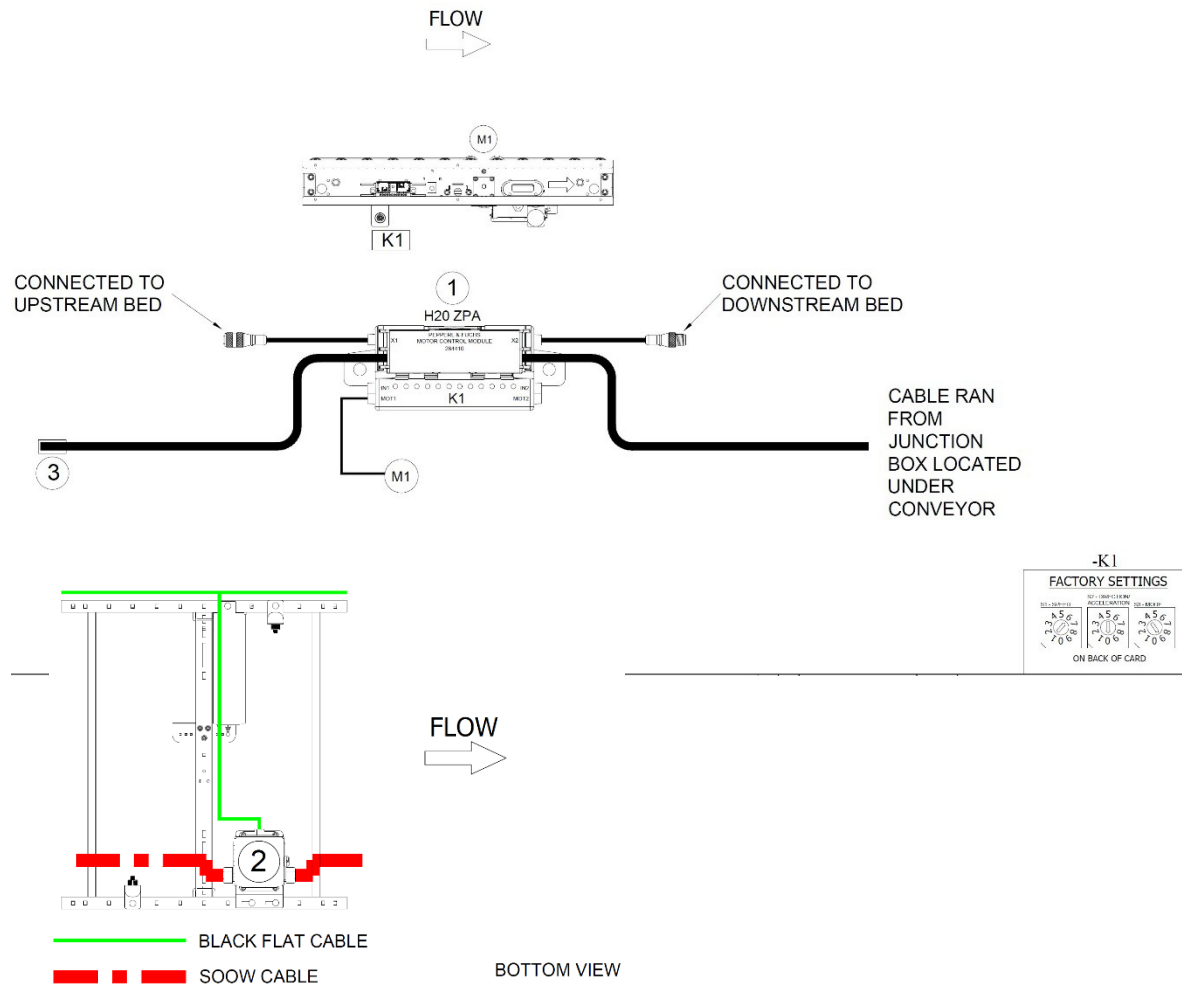
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	HILMOT	10802-059451	Under Roller Power Harness 3' length, 36" BF, RH
3	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N01-1473-01



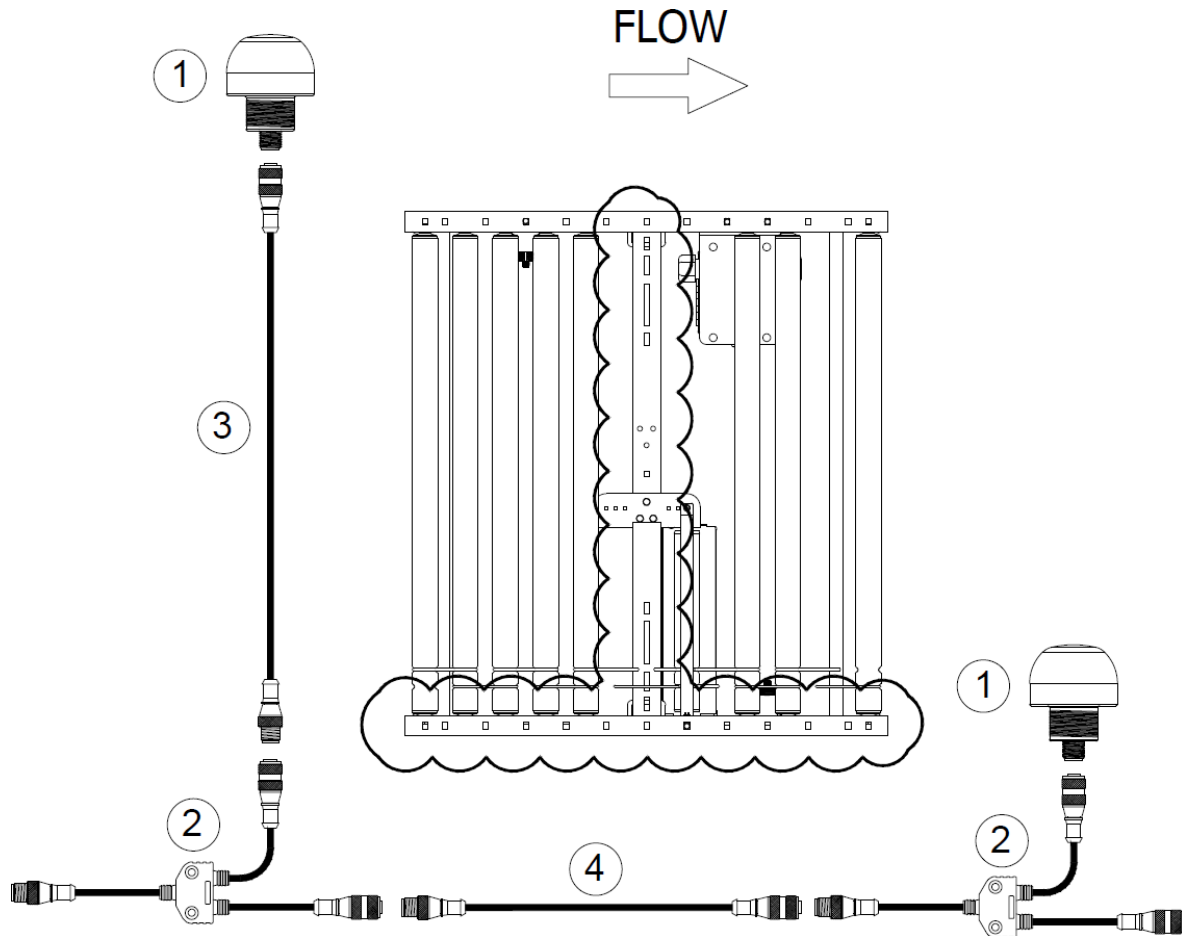
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

Electrical Drawings N01-1473-02



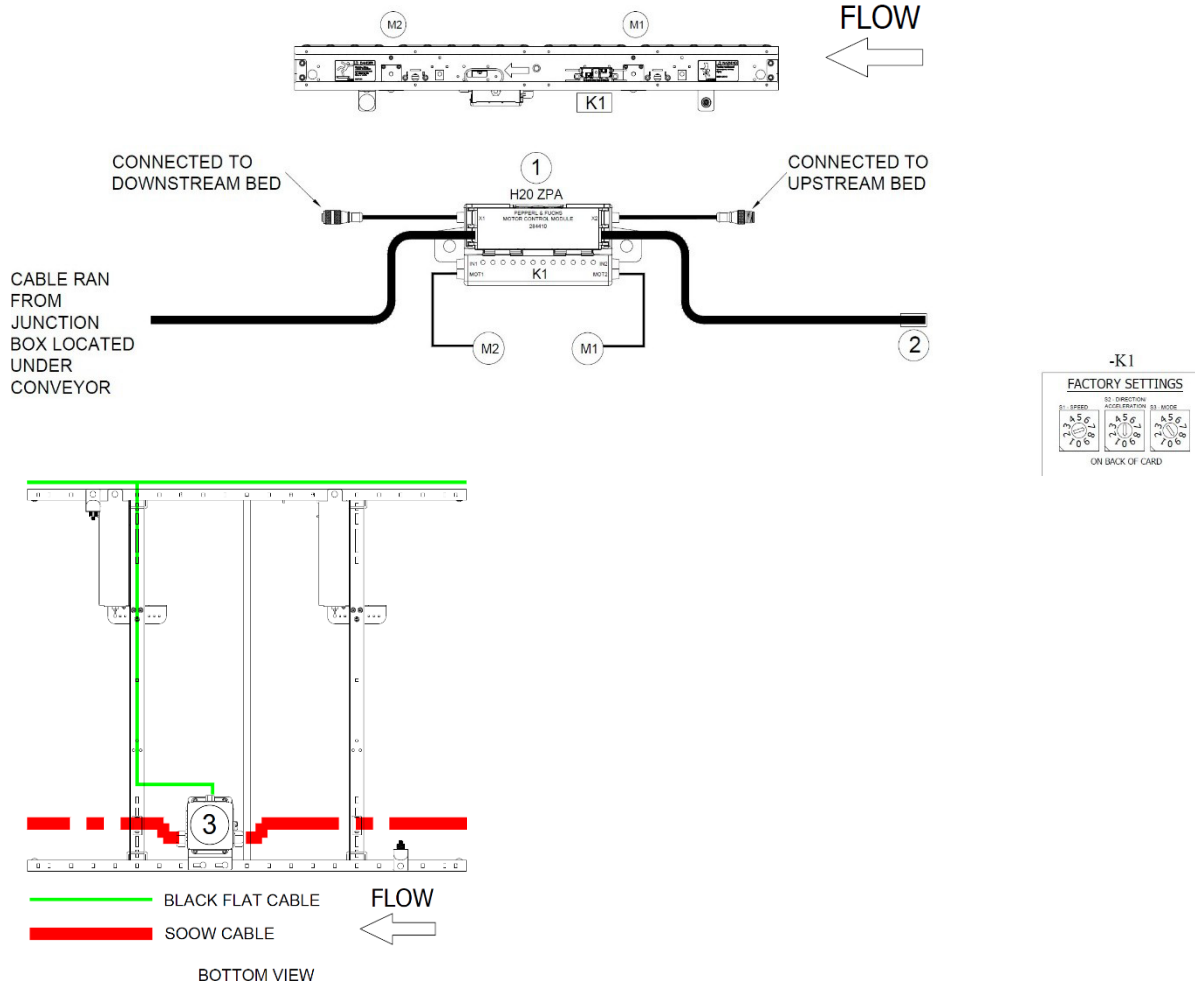
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	HILMOT	10802-059451	Under Roller Power Harness 3' length, 36" BF, RH
3	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N01-1473-02



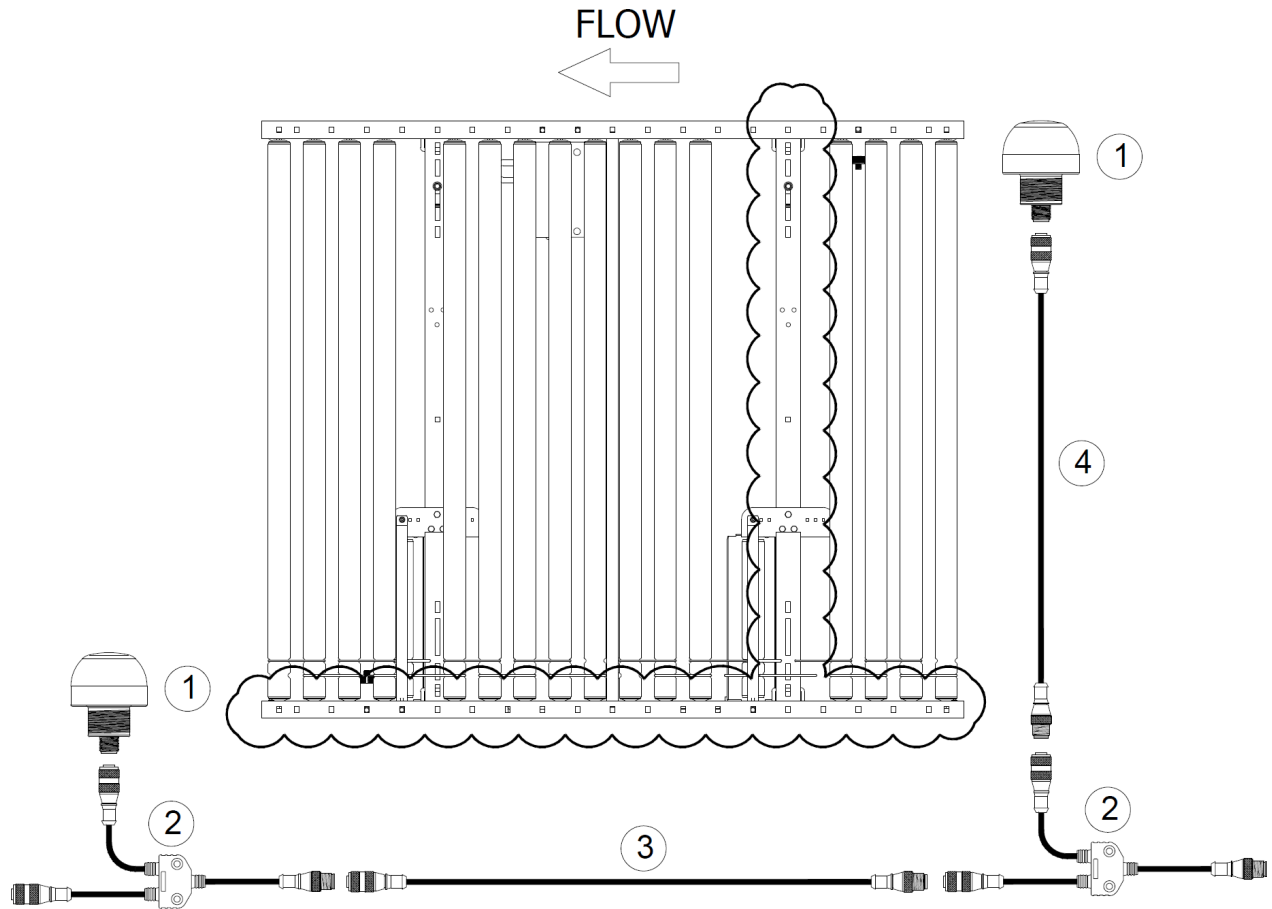
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

Electrical Drawings N01-1476-01



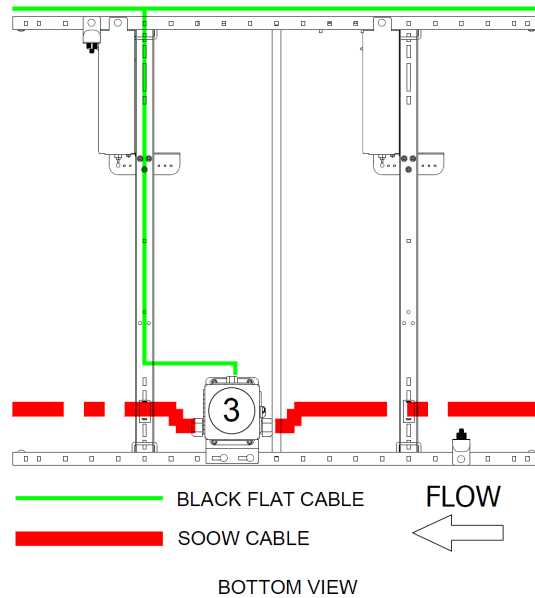
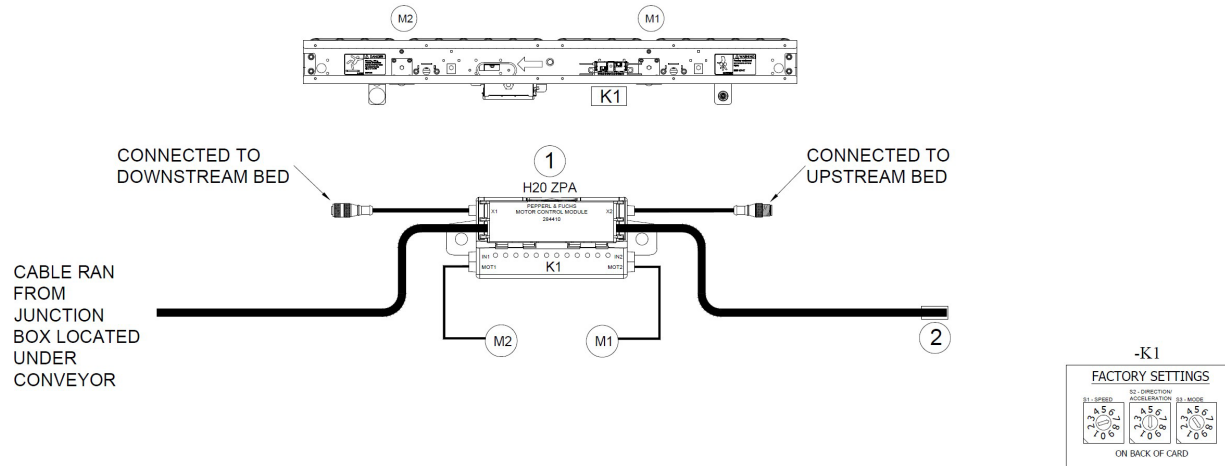
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059126	Under Roller Power Harness 5' length, 48" BF

Electrical Drawings N01-1476-01

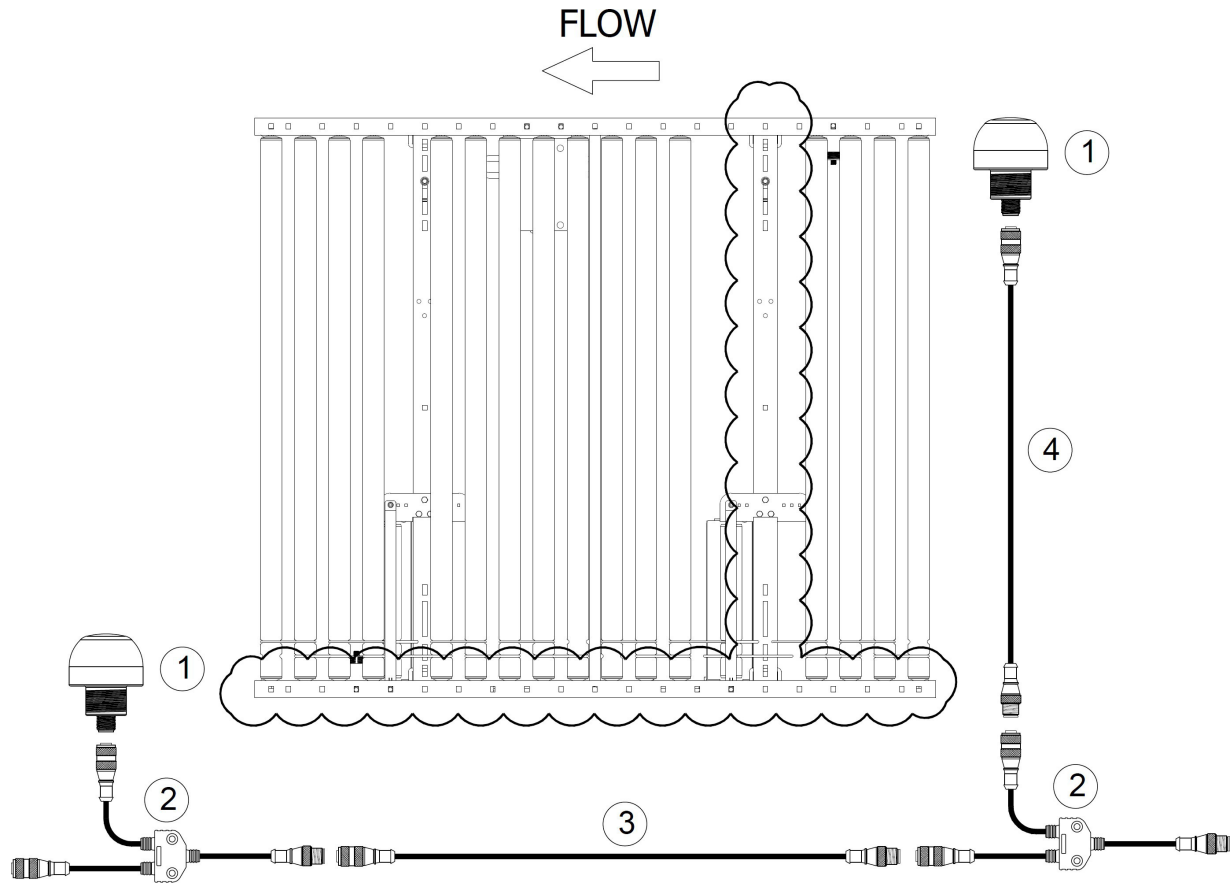


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1476-02

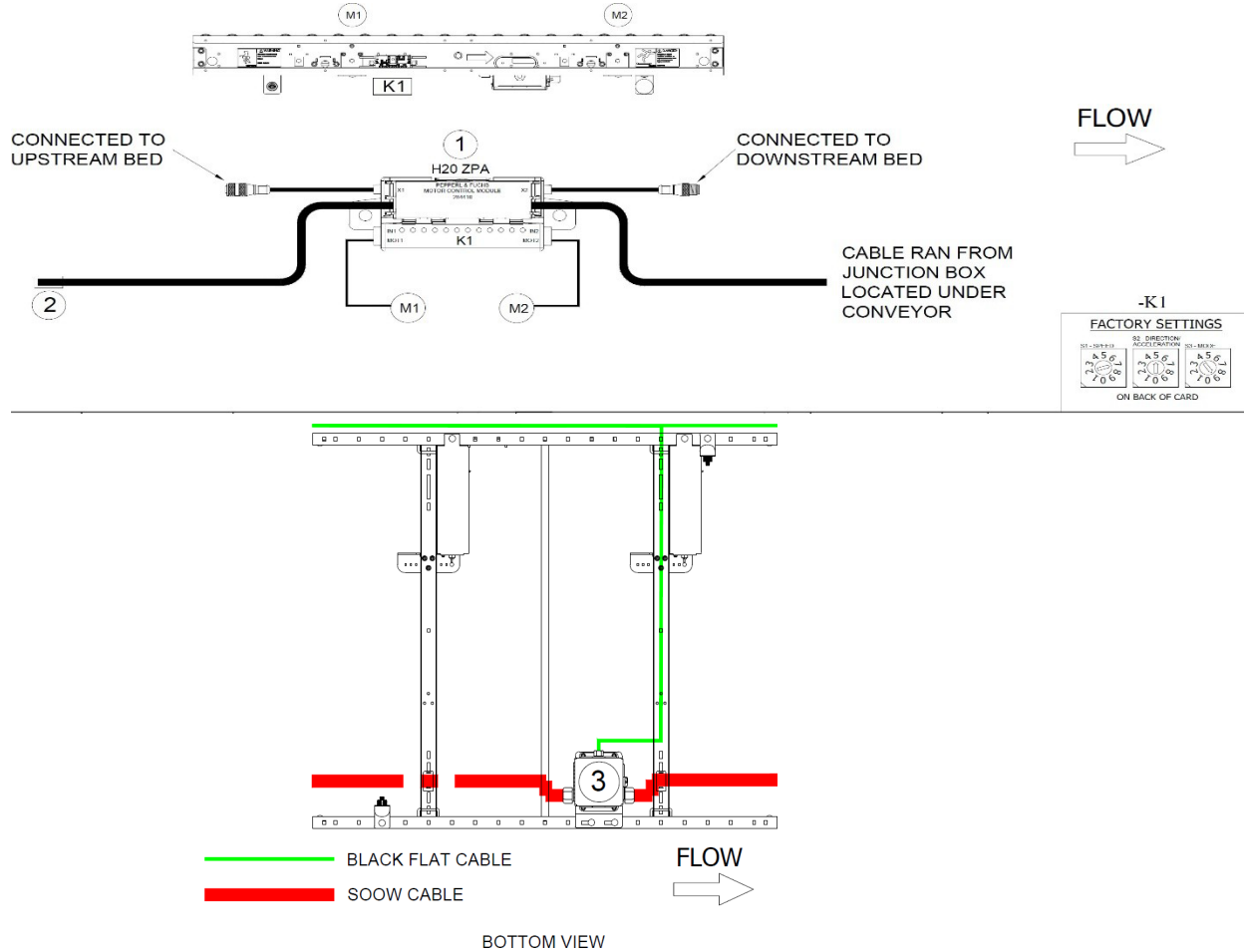


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059126	Under Roller Power Harness 5' length, 48" BF



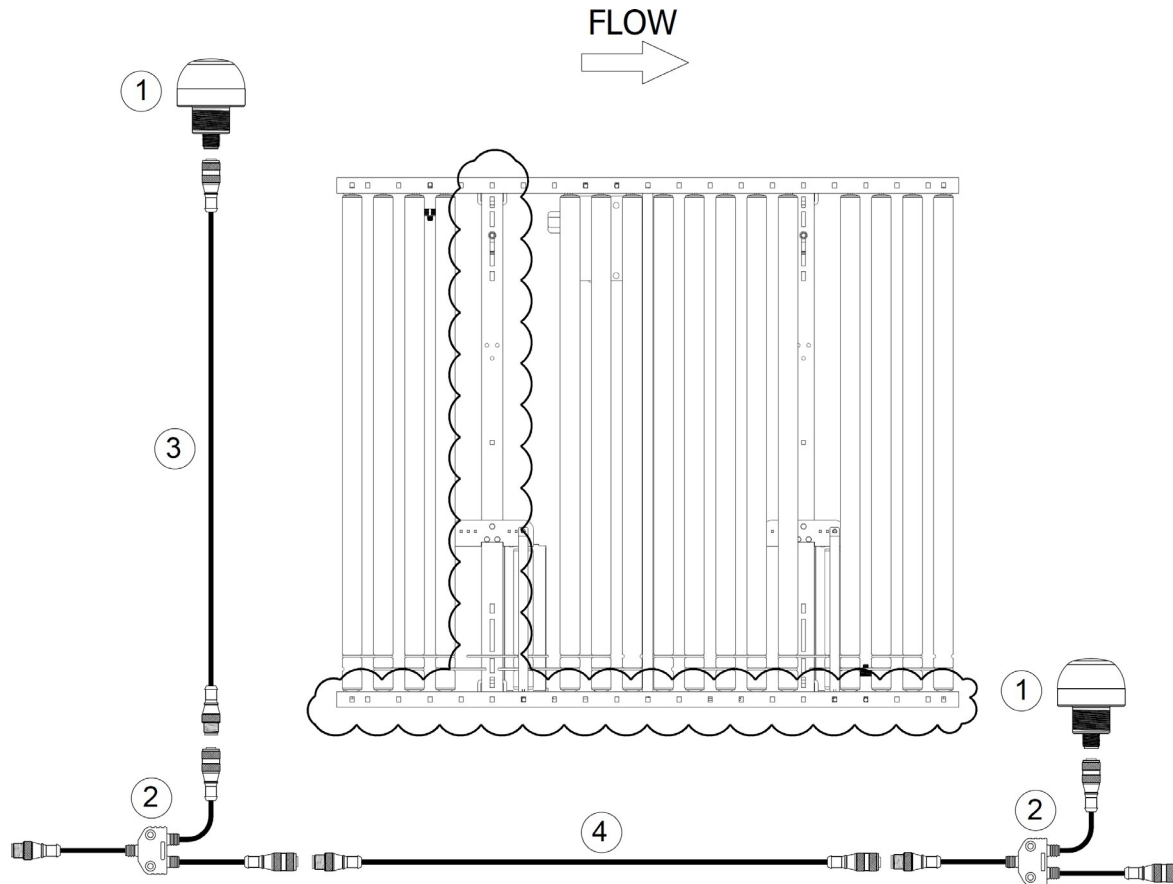
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1477-01



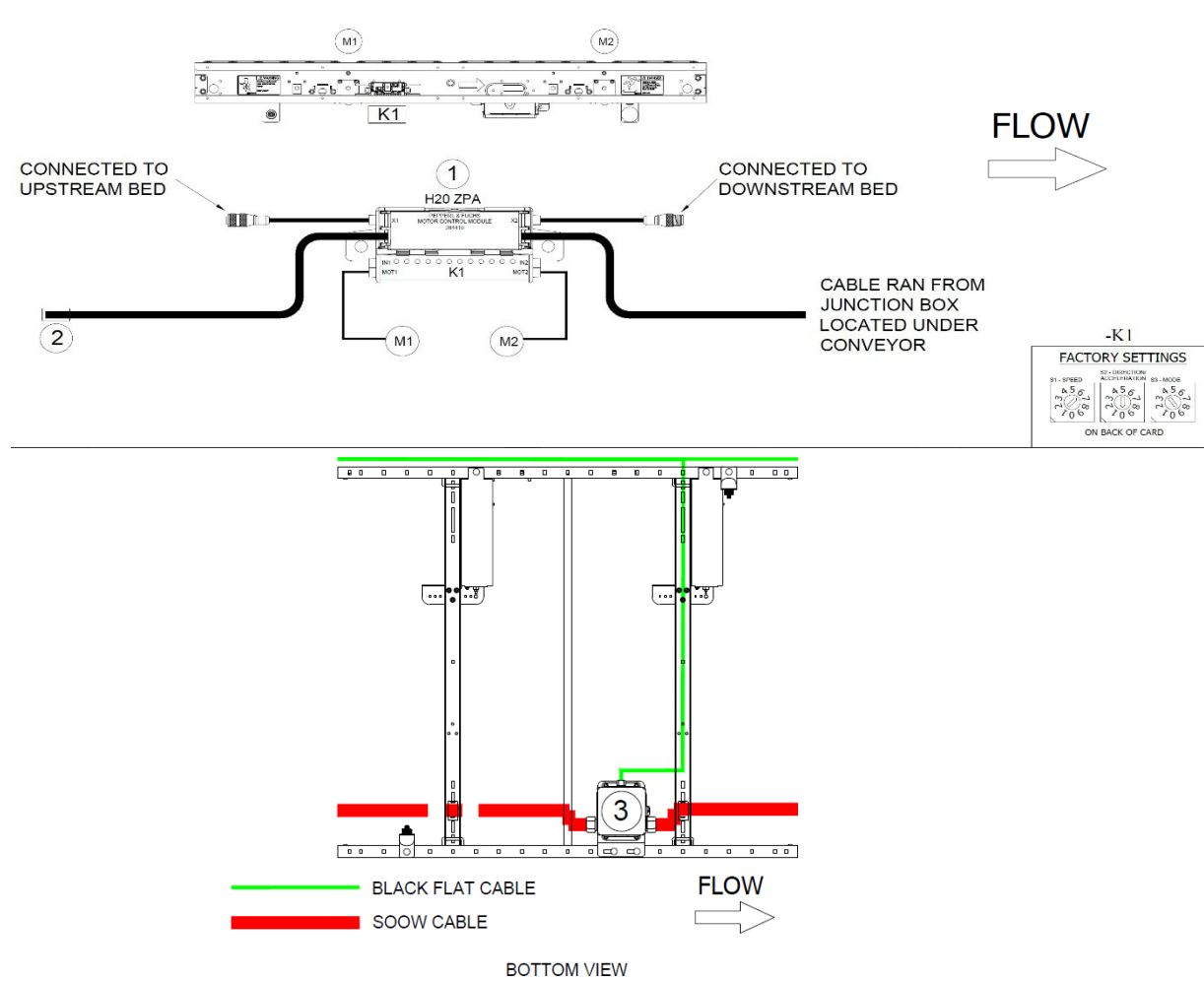
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-060046	Under Roller Power Harness 5' length, 48" BF, RH

Electrical Drawings N01-1477-01



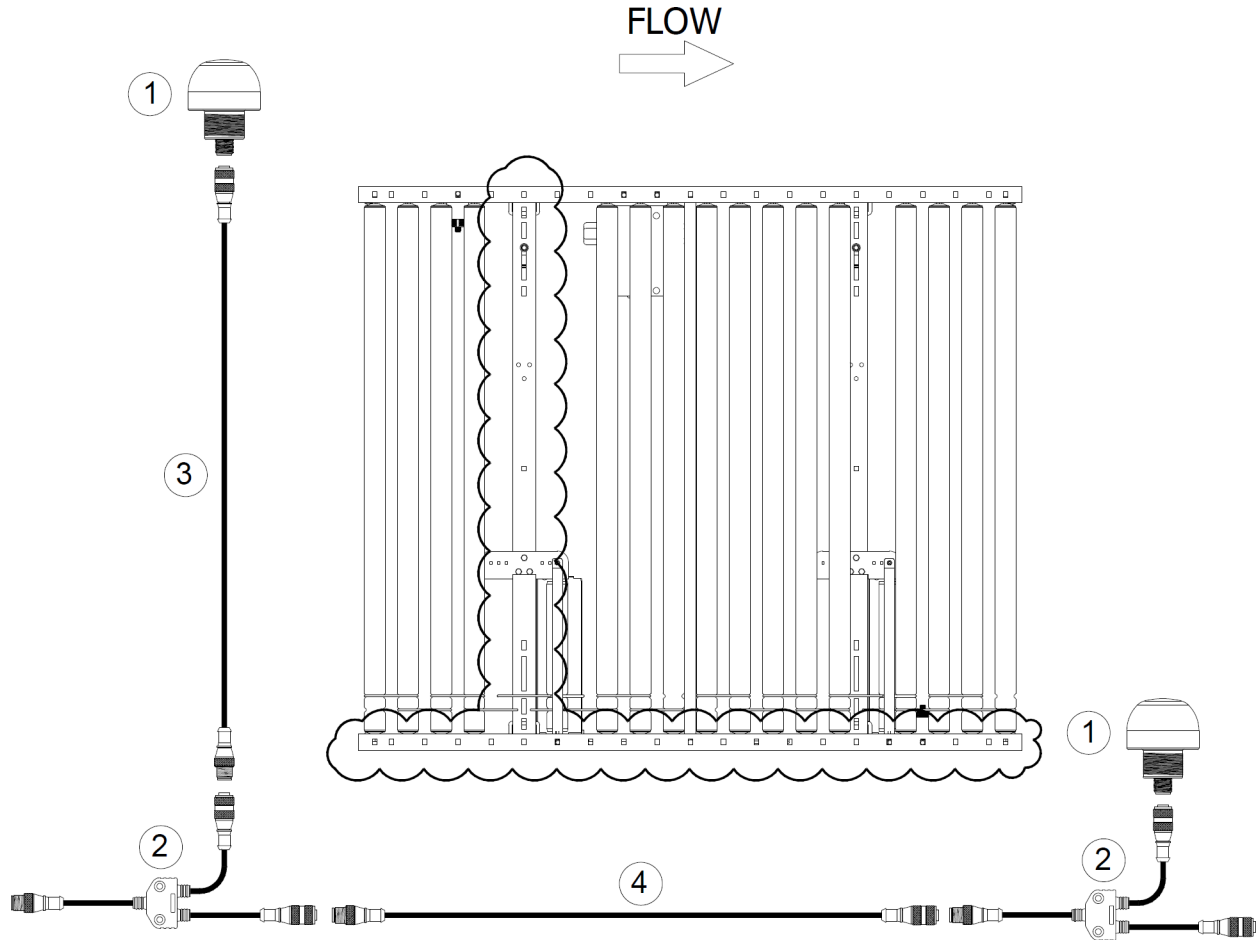
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1477-02



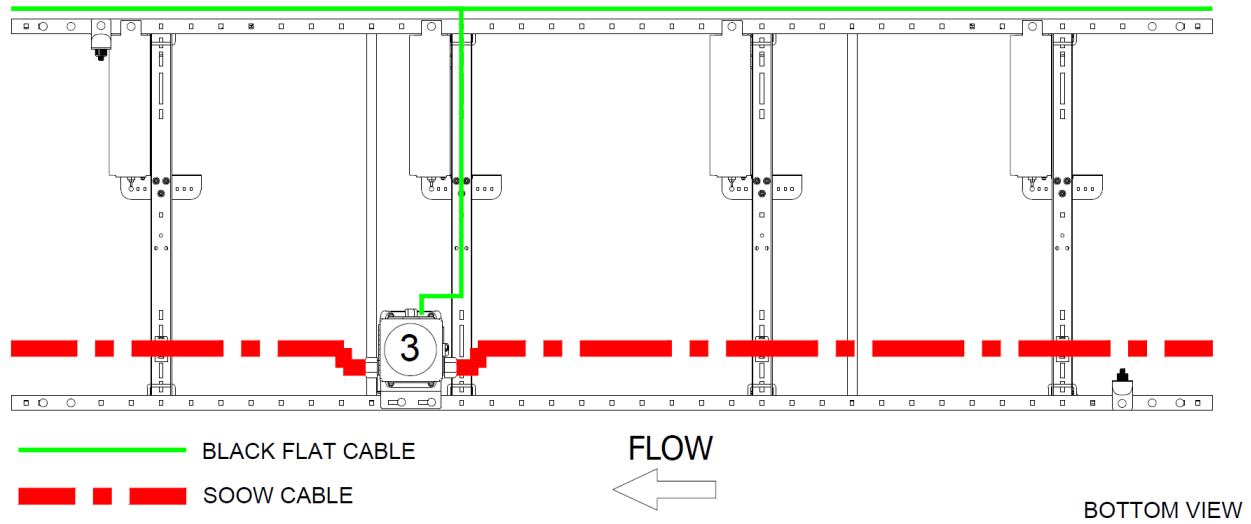
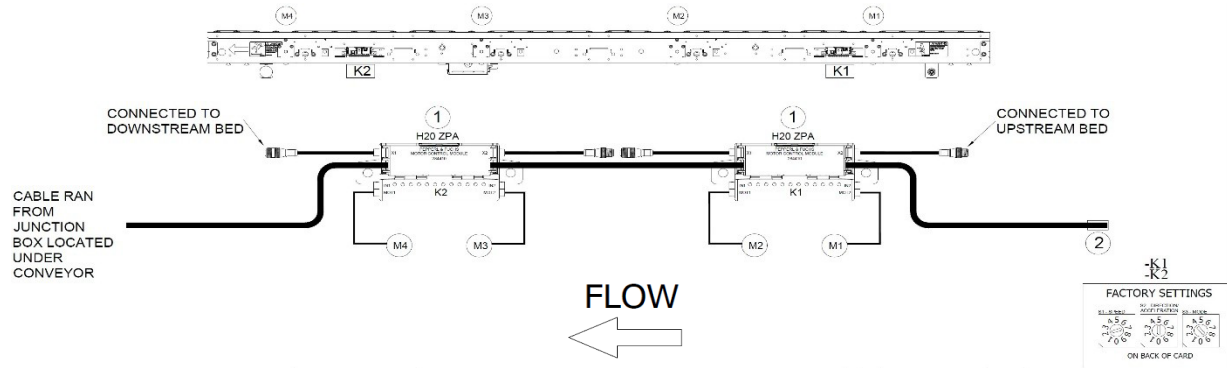
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-060046	Under Roller Power Harness 5' length, 48" BF, RH

Electrical Drawings N01-1477-02



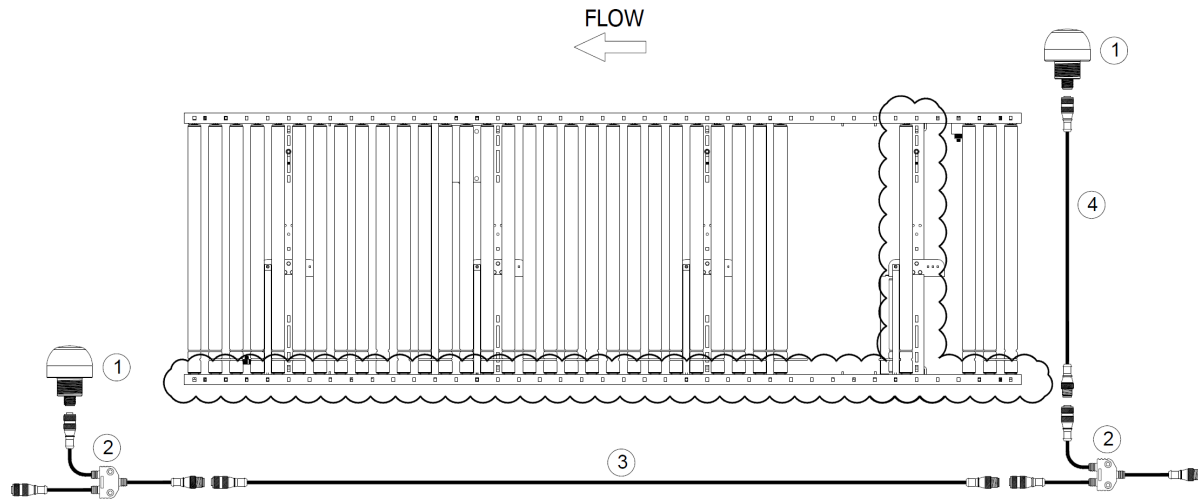
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1485-01



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1485-01

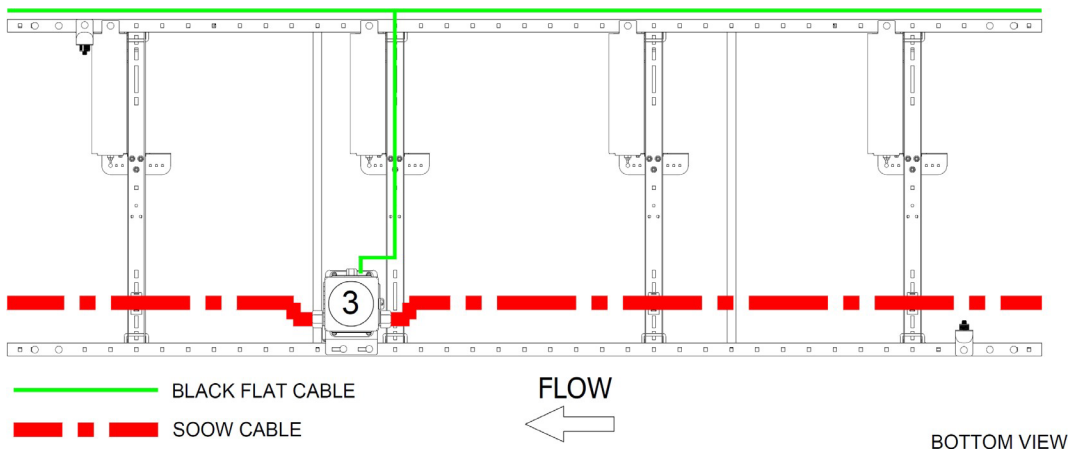
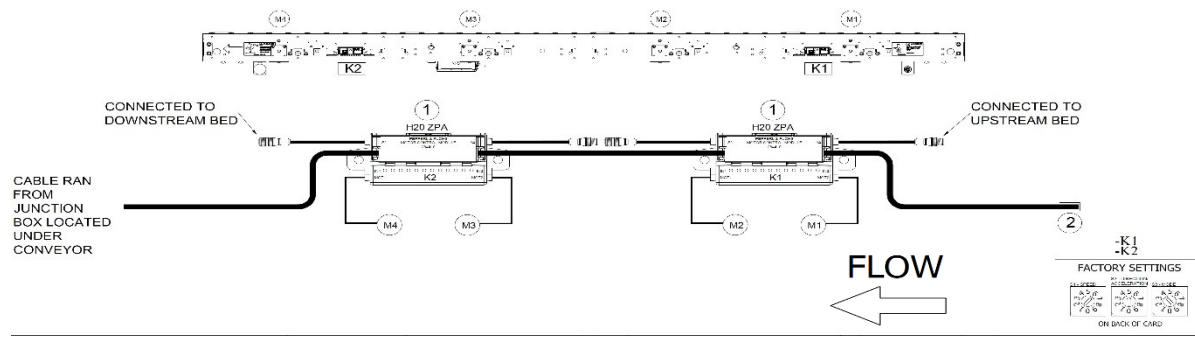


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

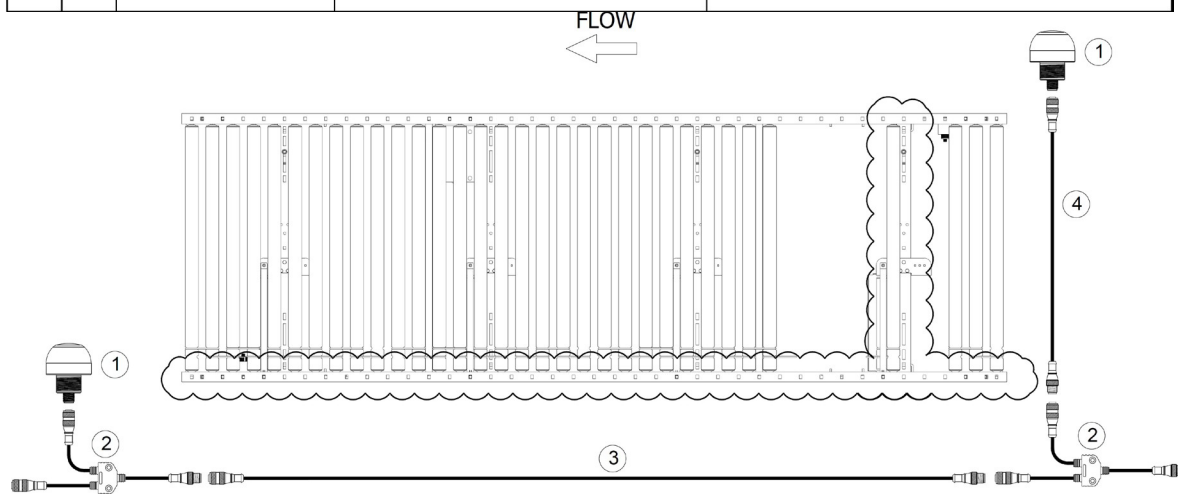
HILMOT

A TREW Company

Electrical Drawings N01-1485-02

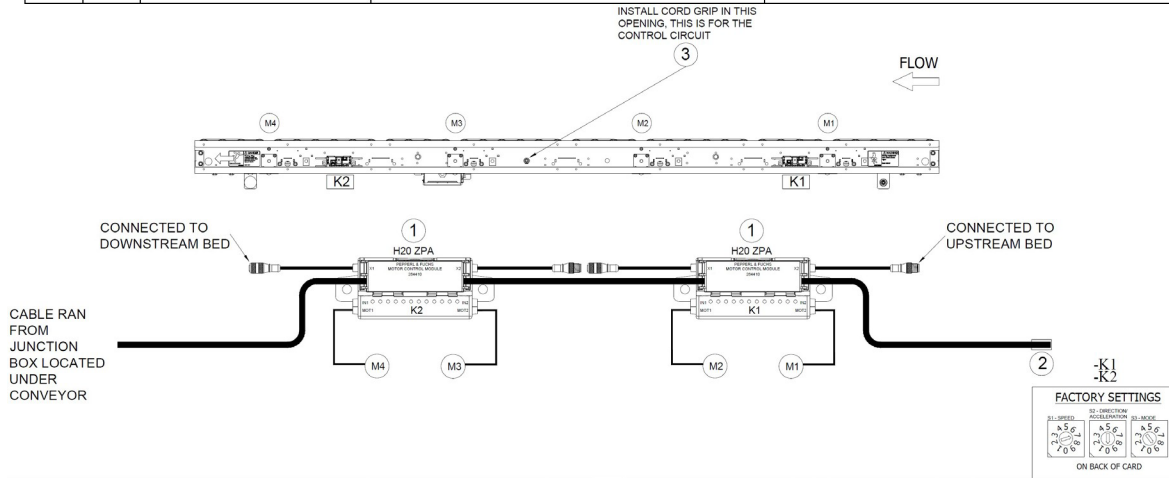


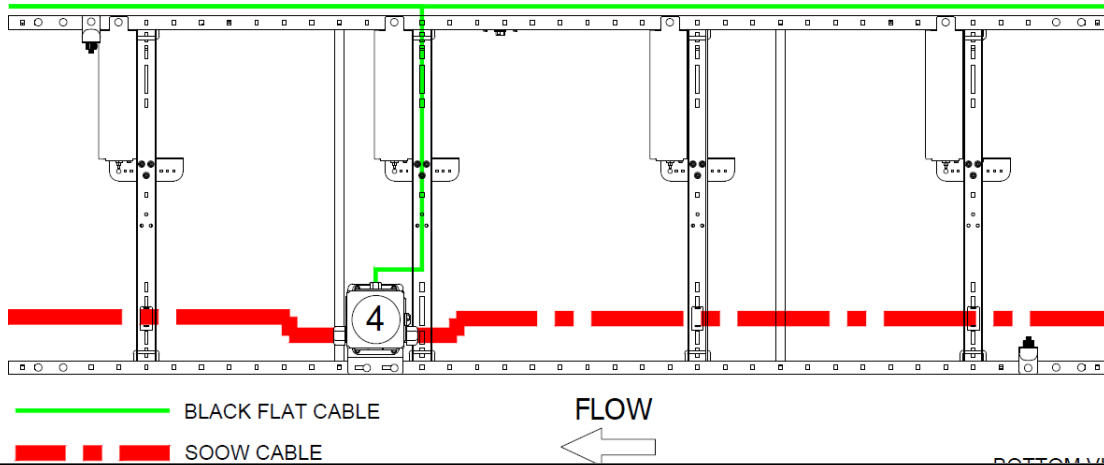
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF



Electrical Drawings N01-1486-01

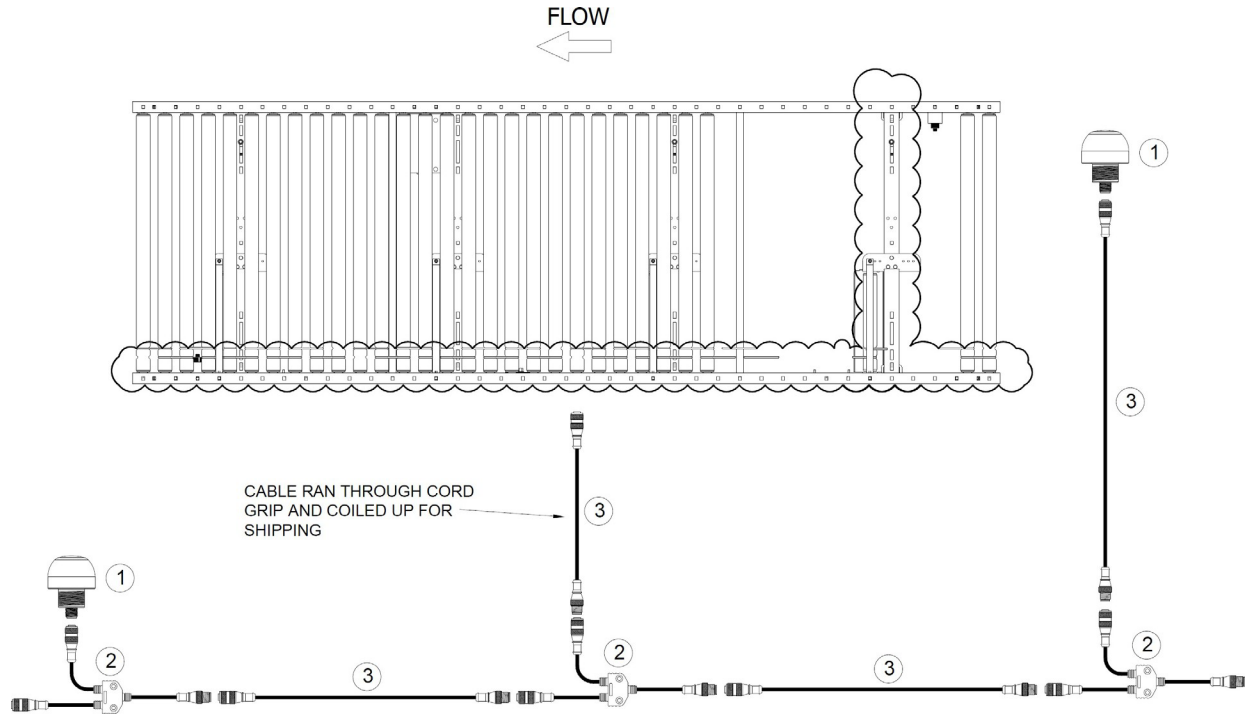
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray





ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1486-01

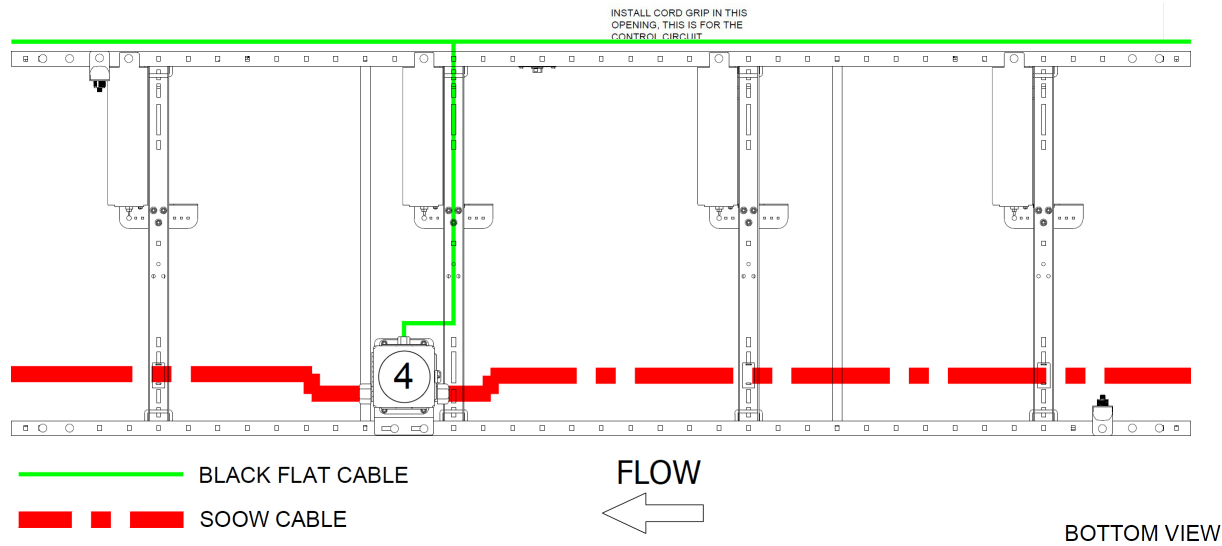


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

HILMOT

A TREW Company

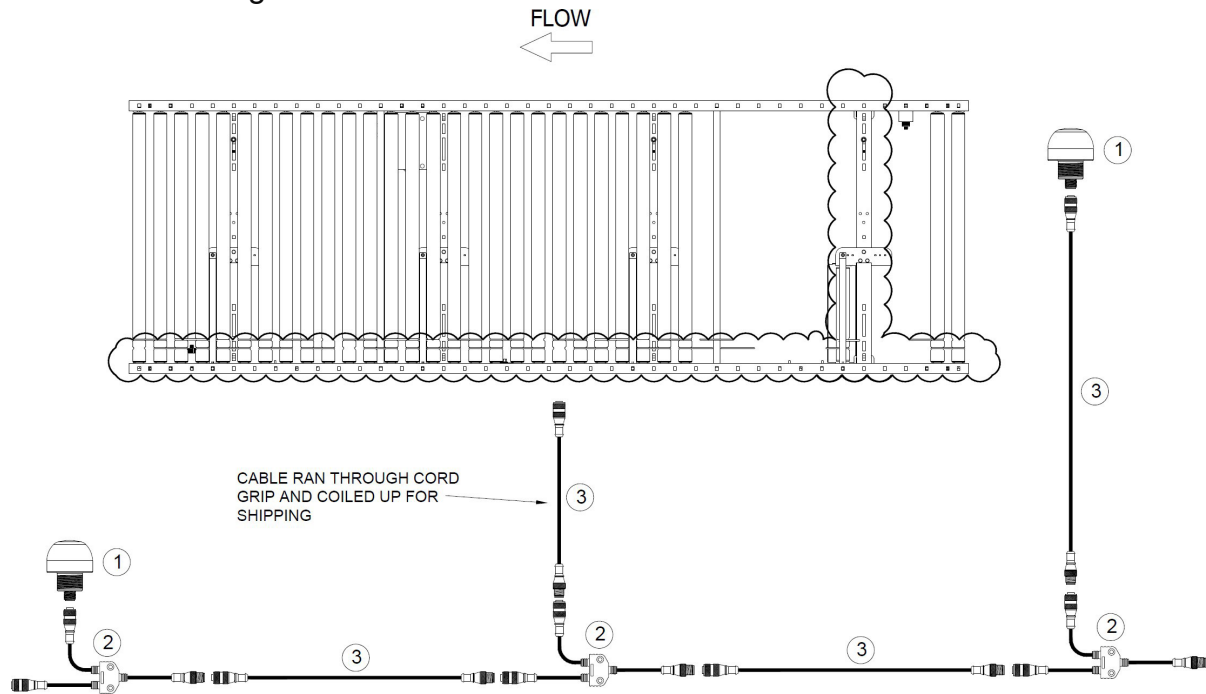
Electrical Drawings N01-1486-02



Electrical Drawings N01-1486-02

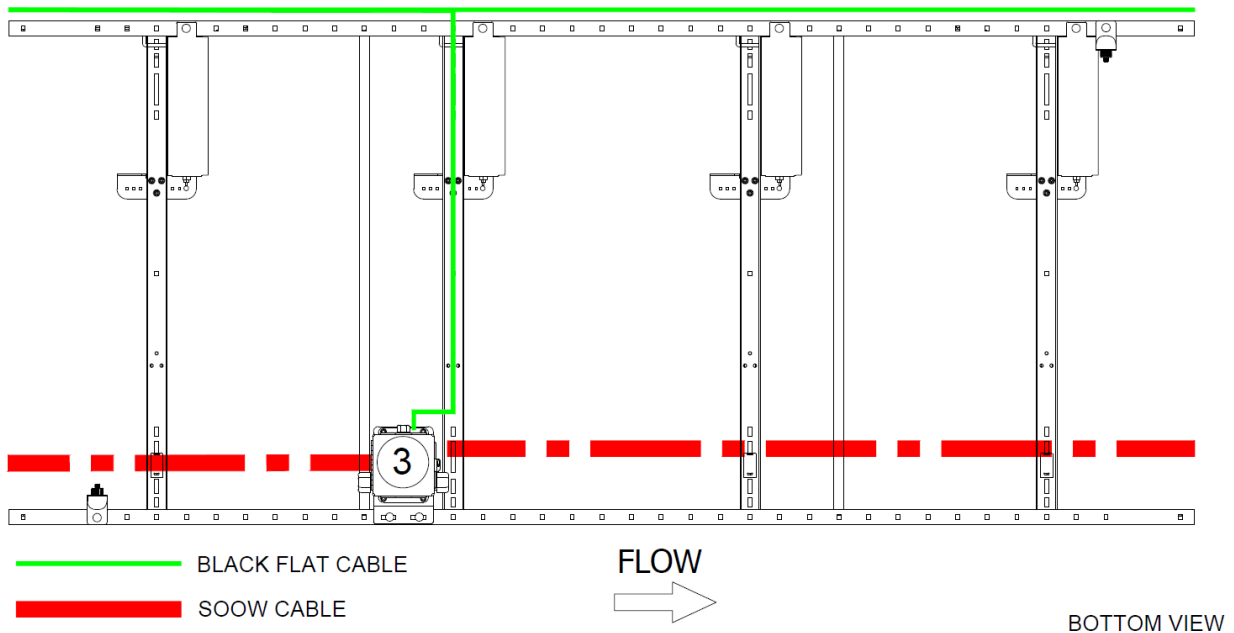
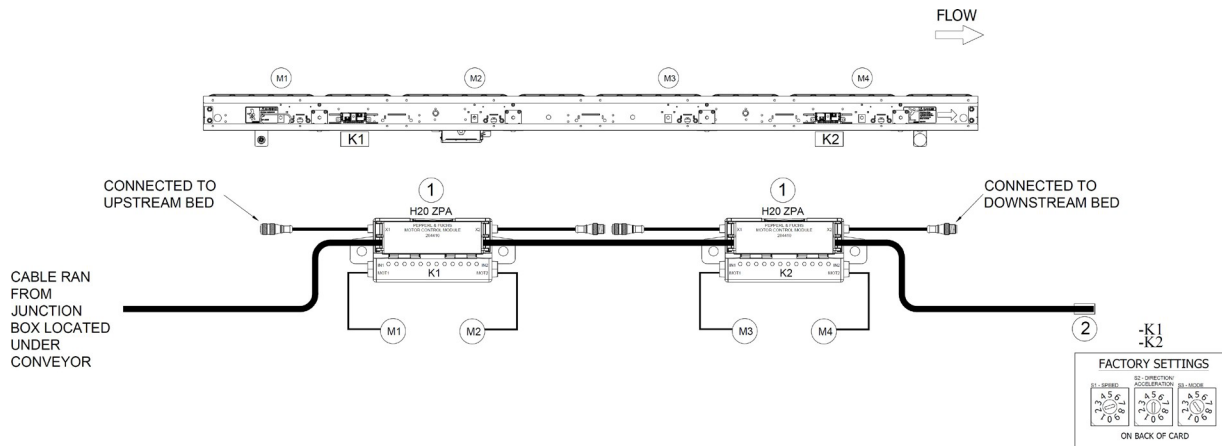
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1486-02



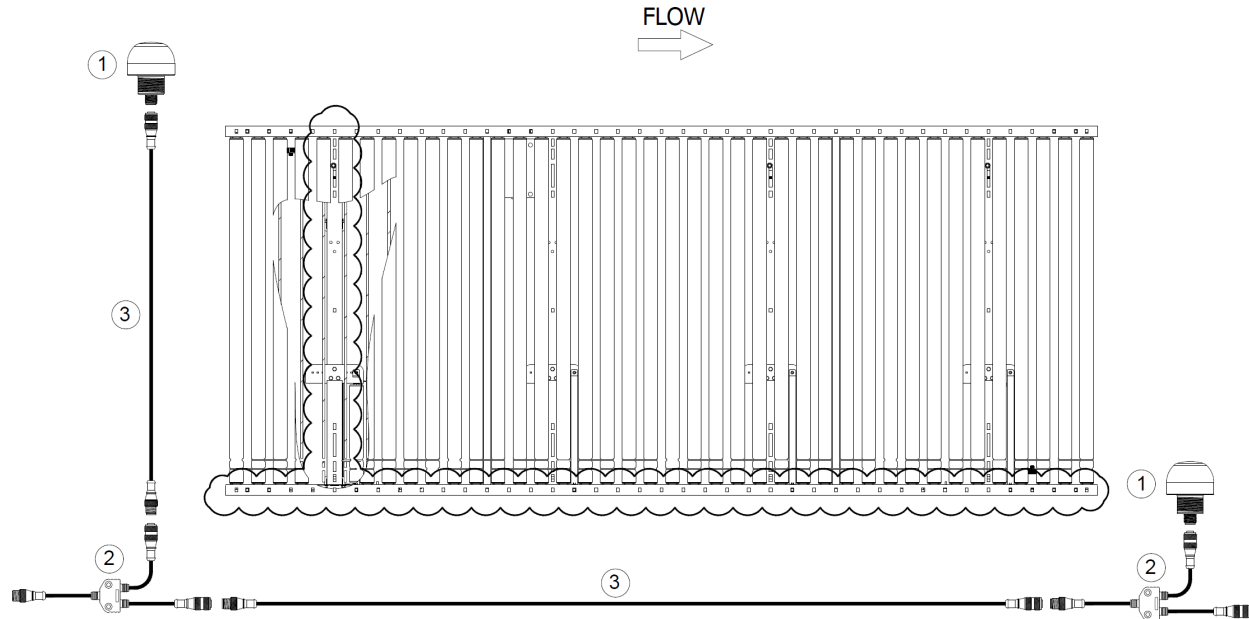
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1488-01



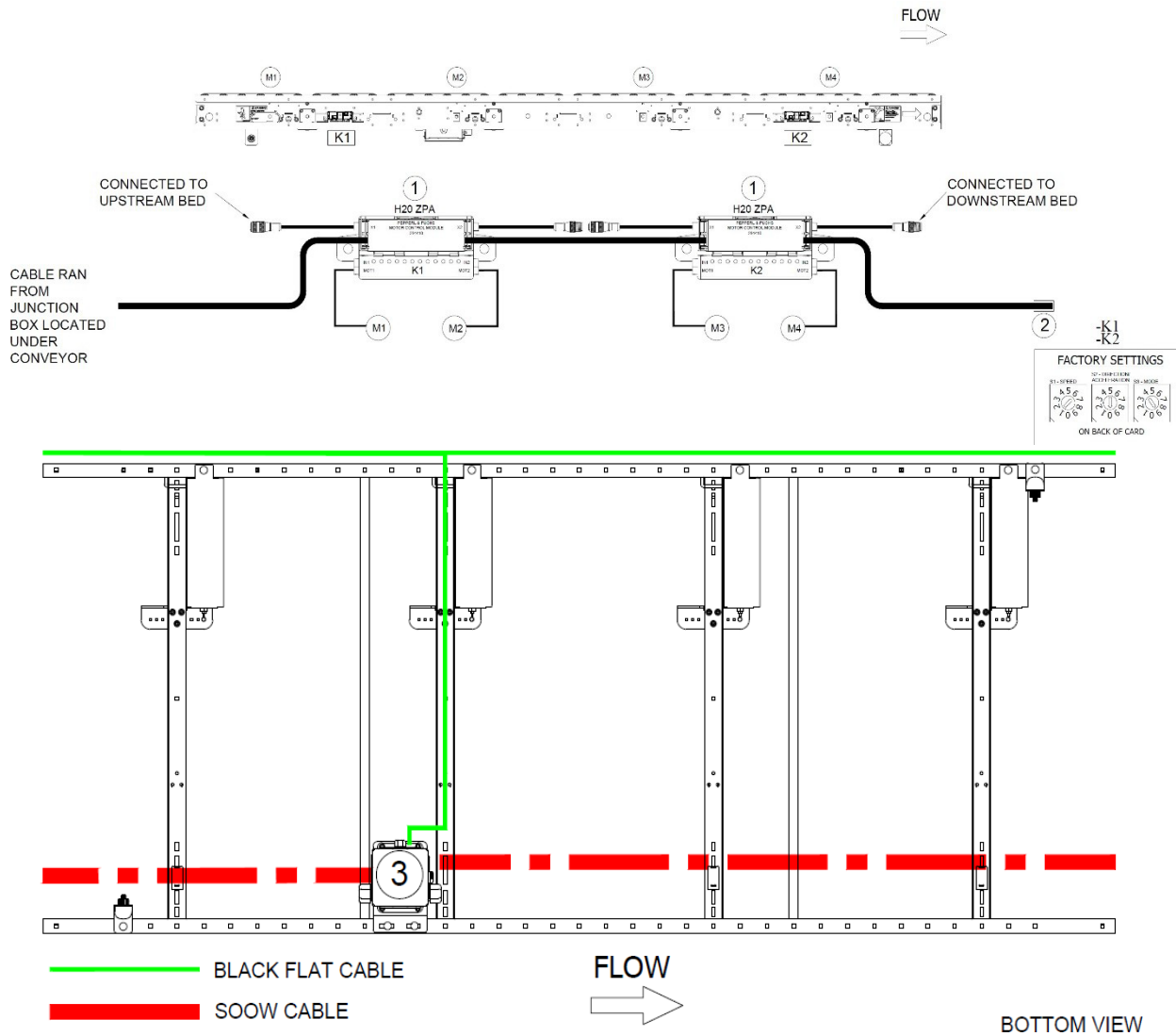
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1488-01



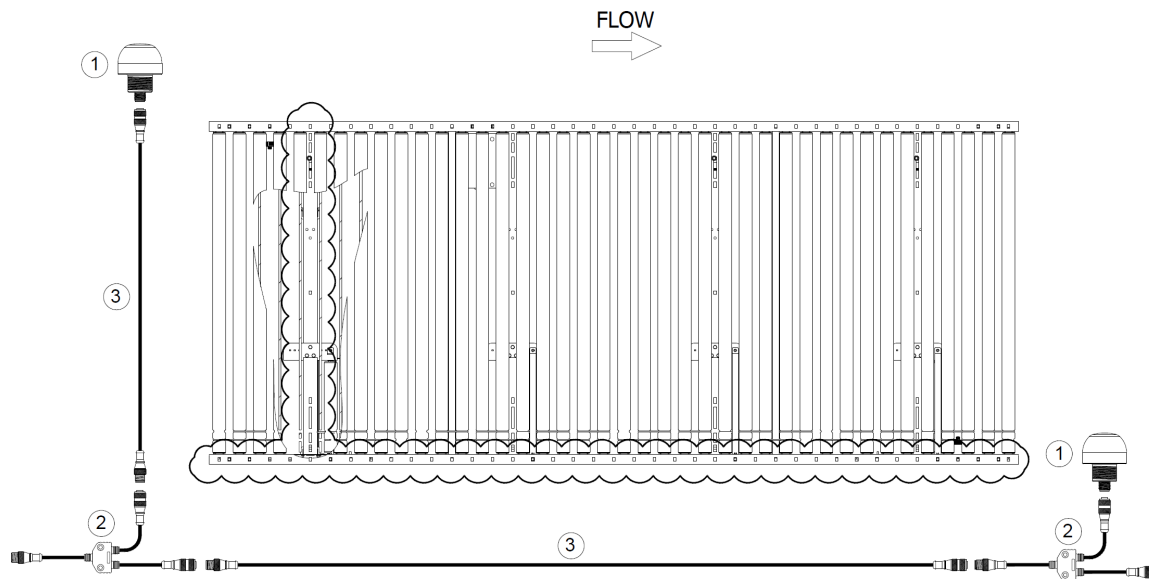
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1488-02



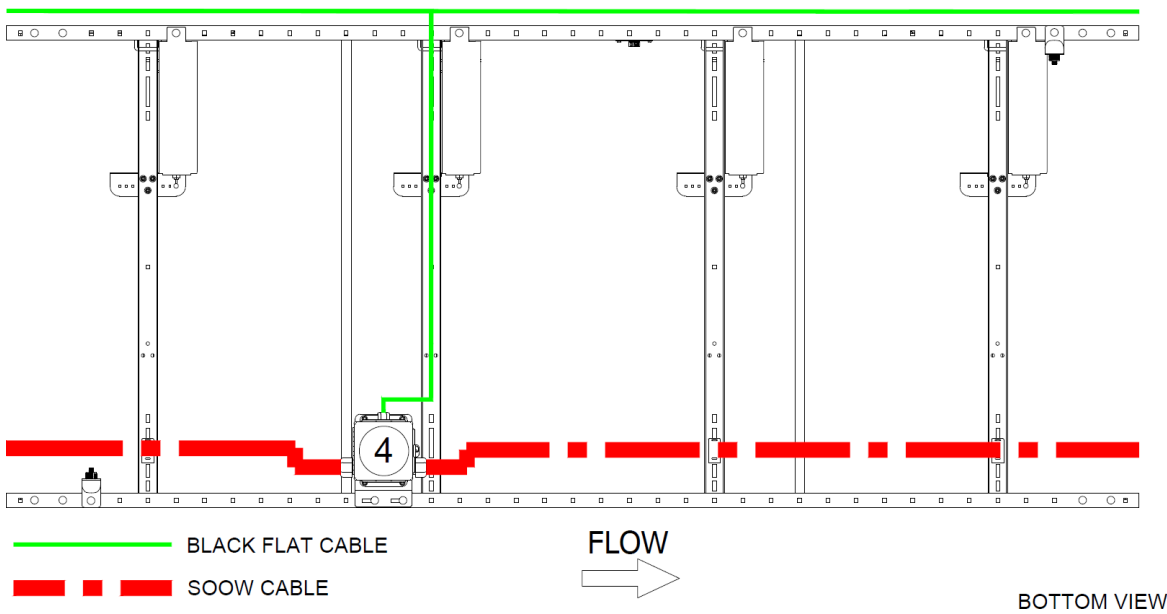
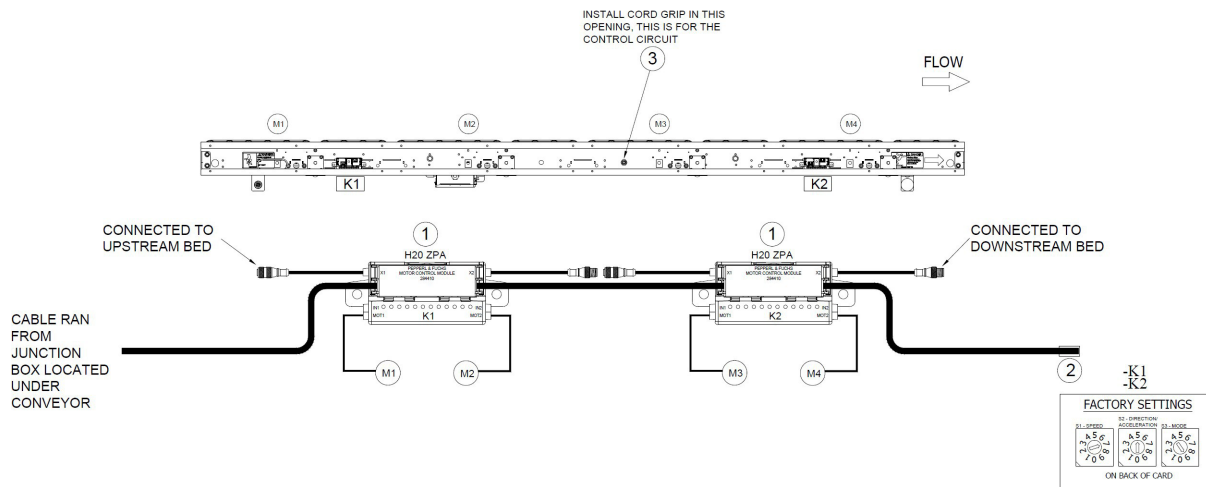
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1488-02



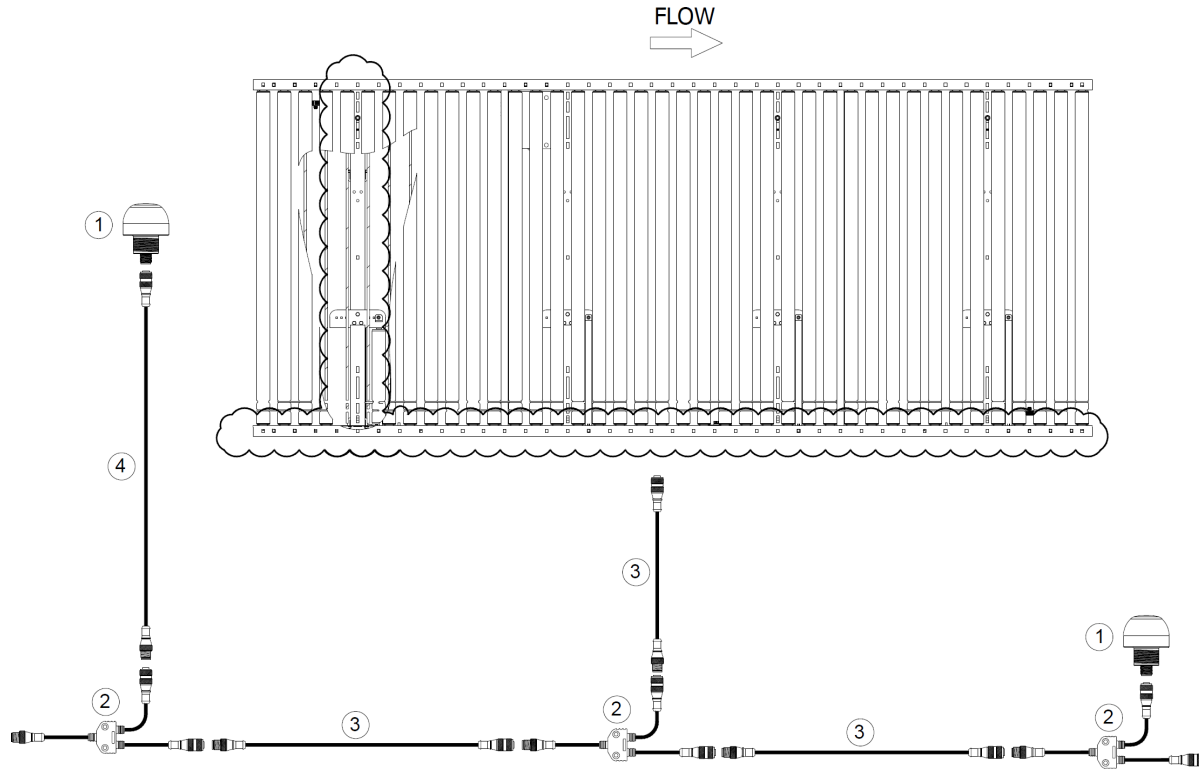
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1489-01



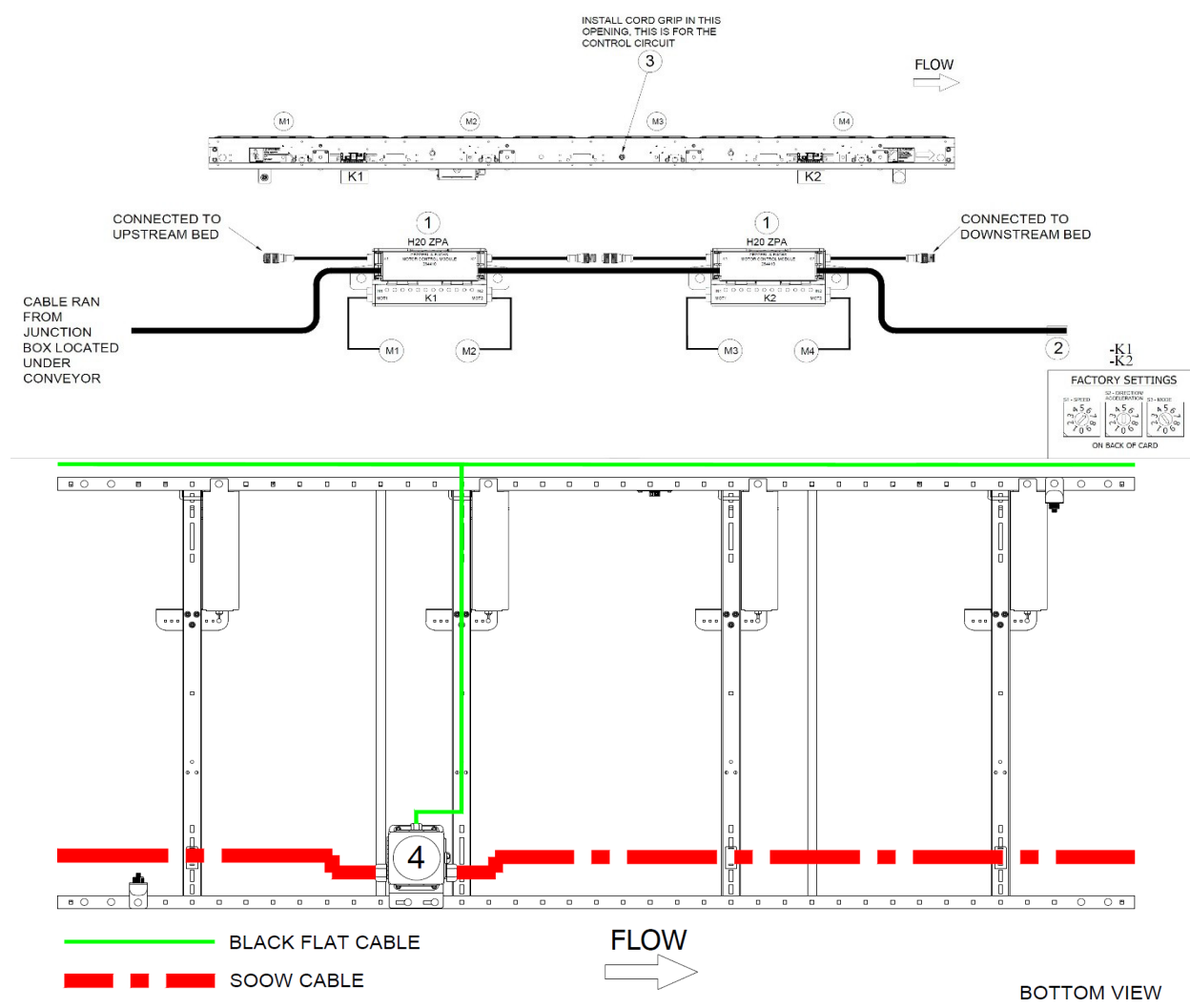
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1489-01



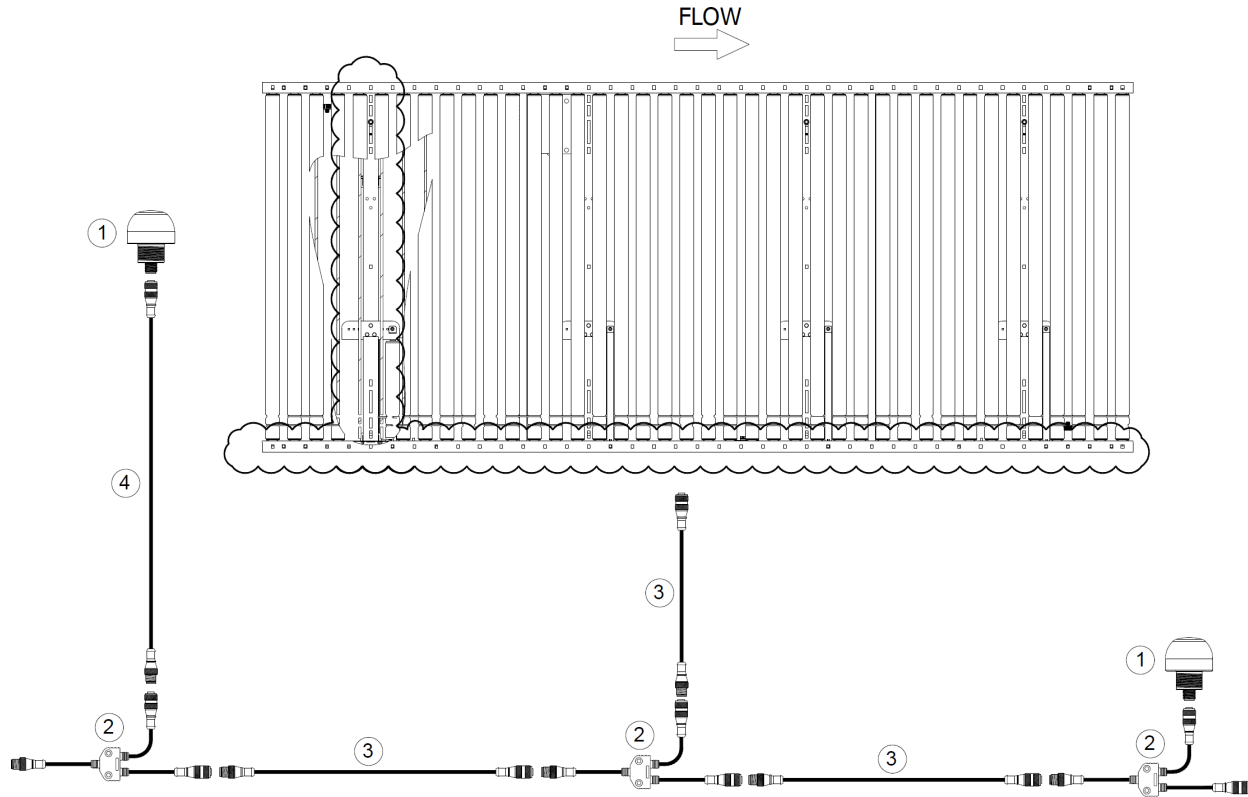
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1489-02



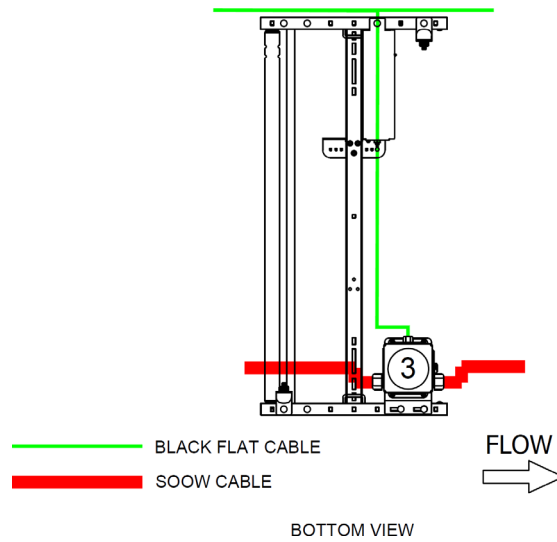
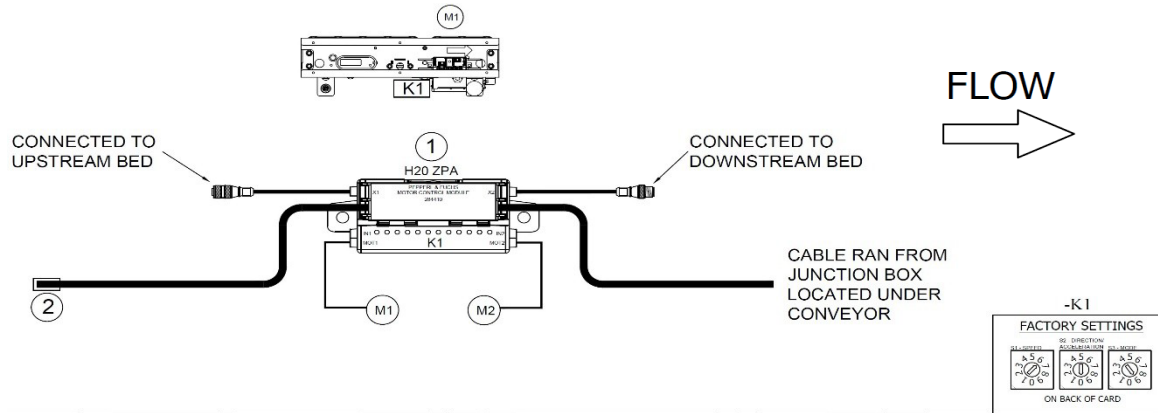
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1489-02



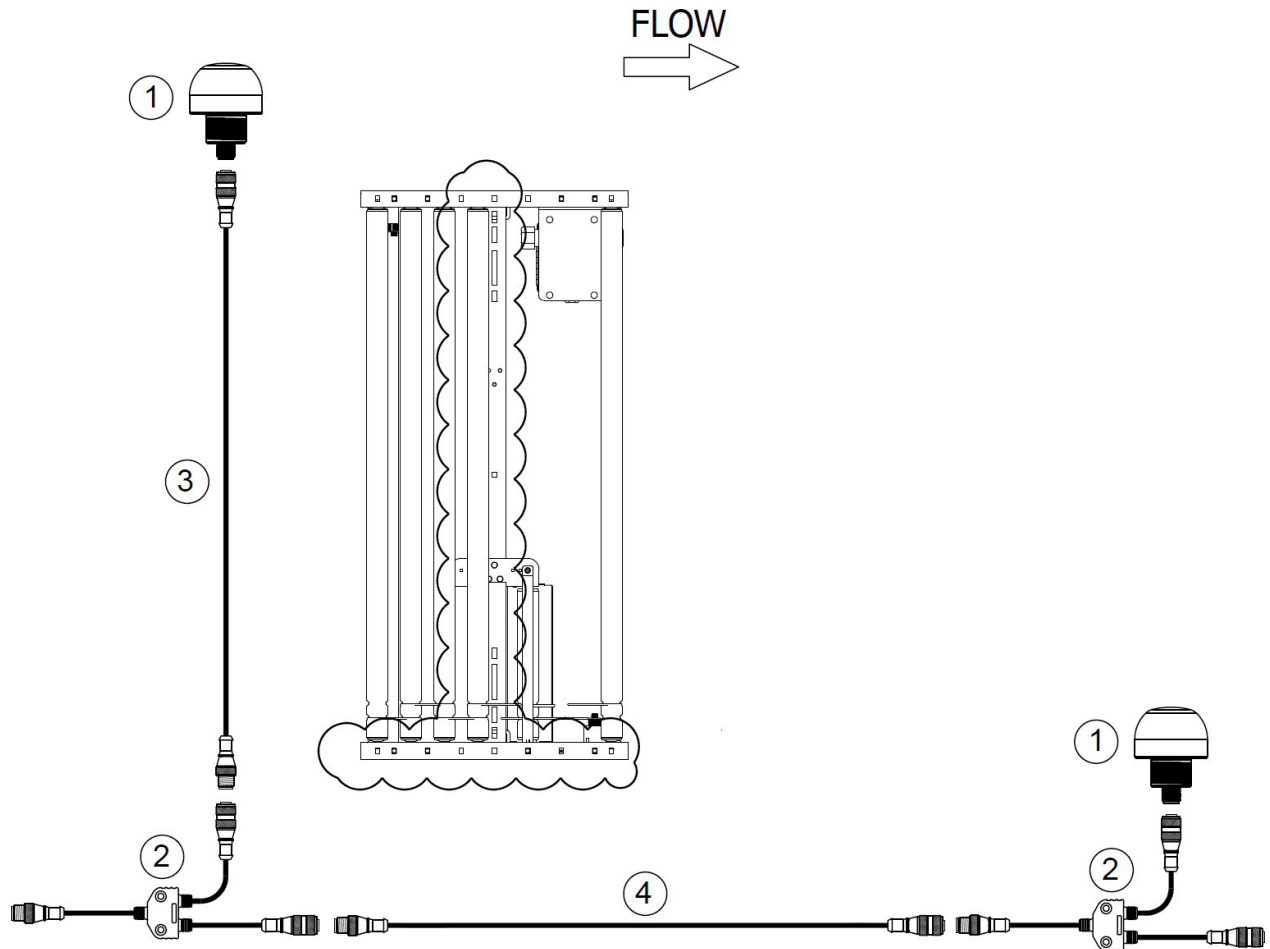
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1496-02



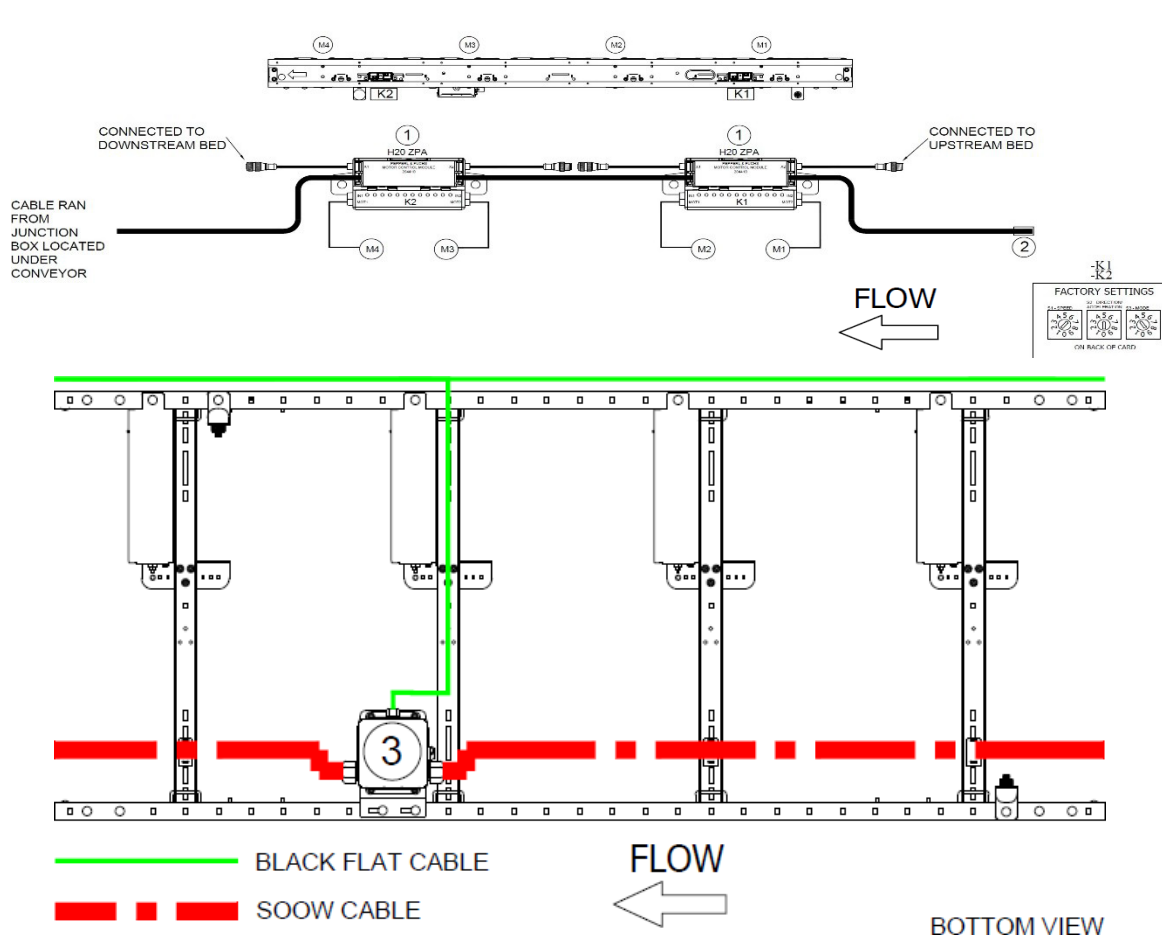
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-060046	Under Roller Power Harness 5' length, 48" BF, RH

Electrical Drawings N01-1496-02



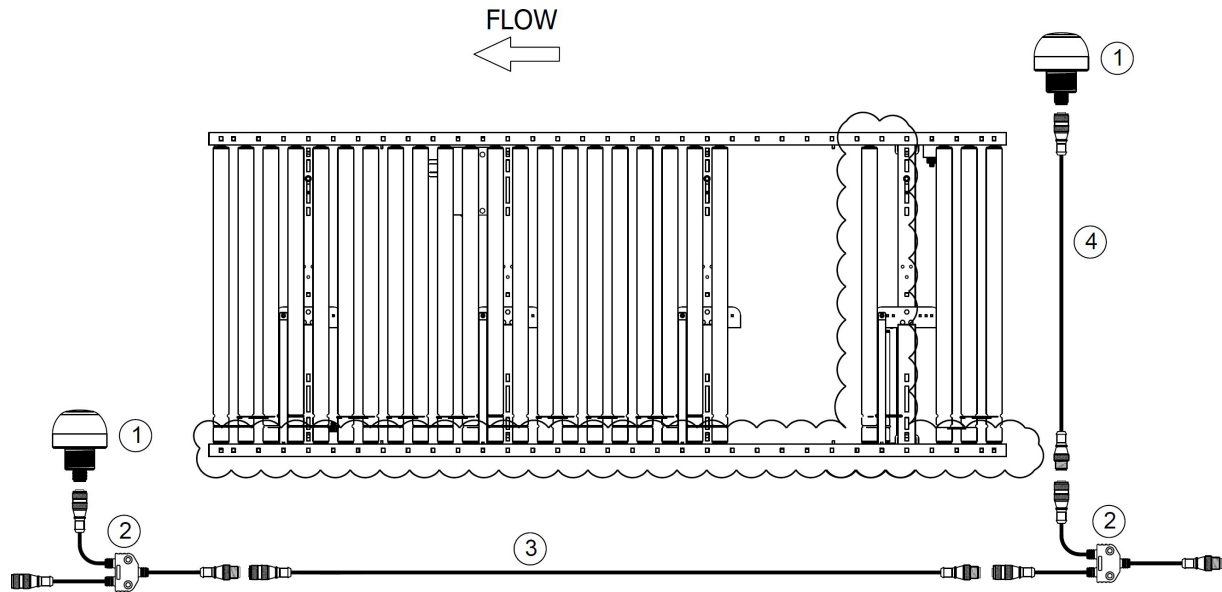
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1497-02



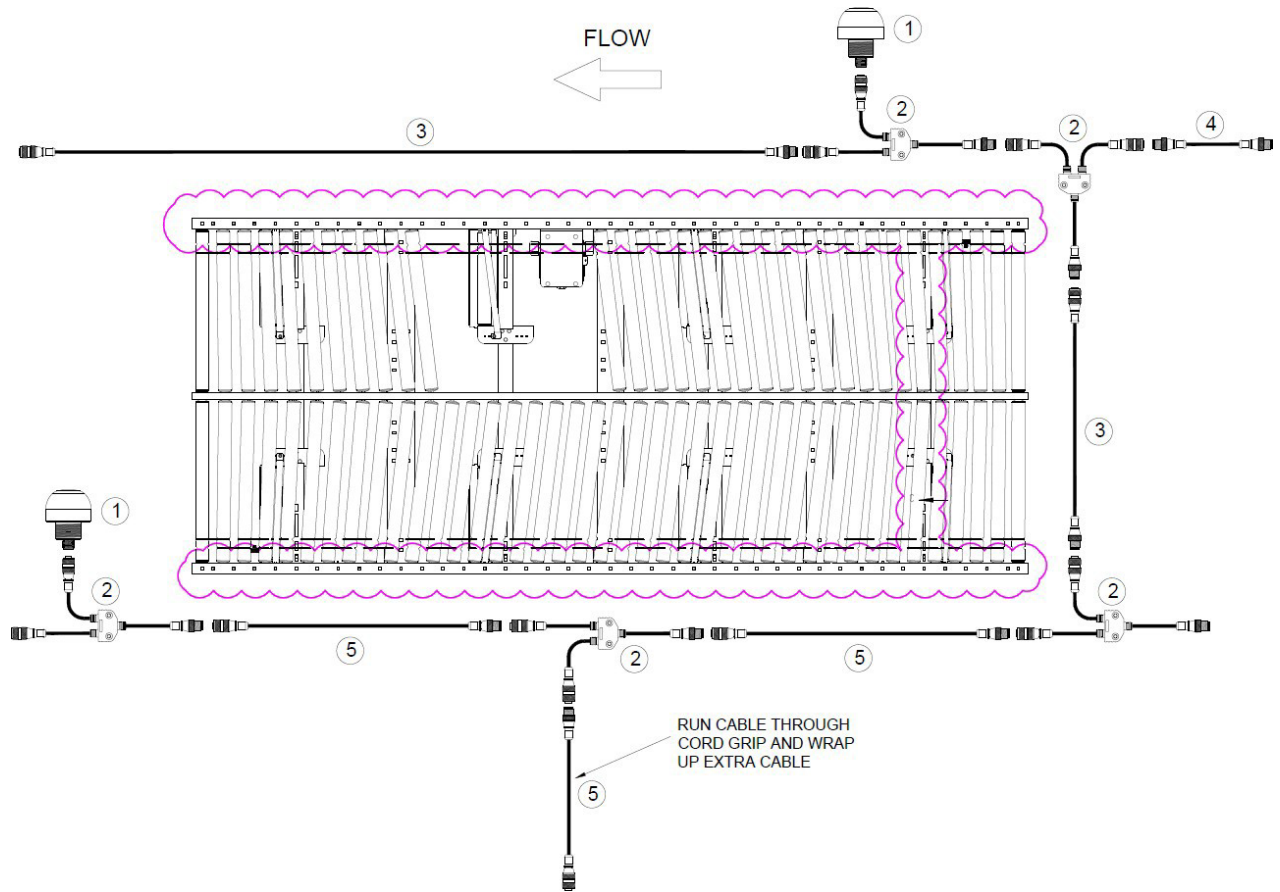
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059606	Under Roller Power Harness 96" length, 36" BF

Electrical Drawings N01-1497-02



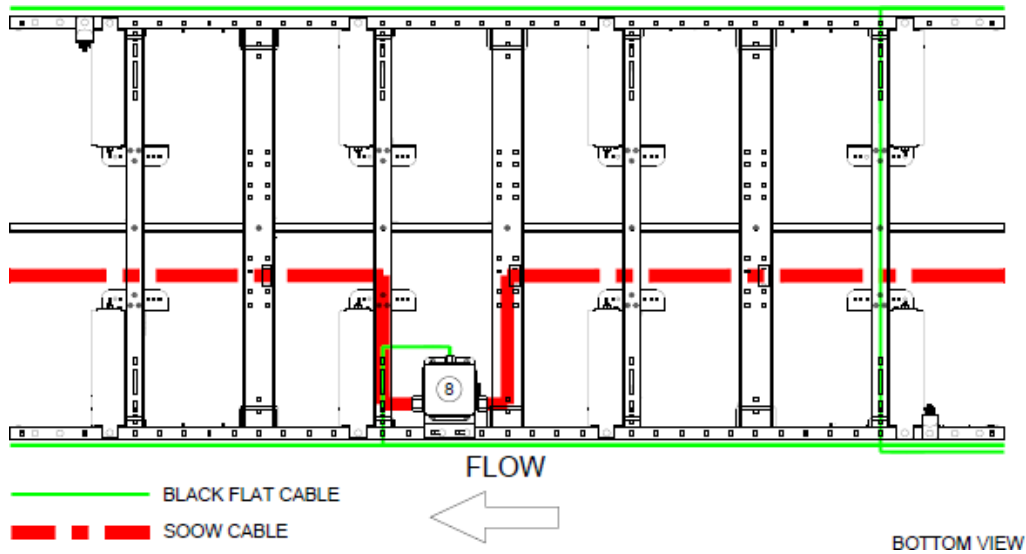
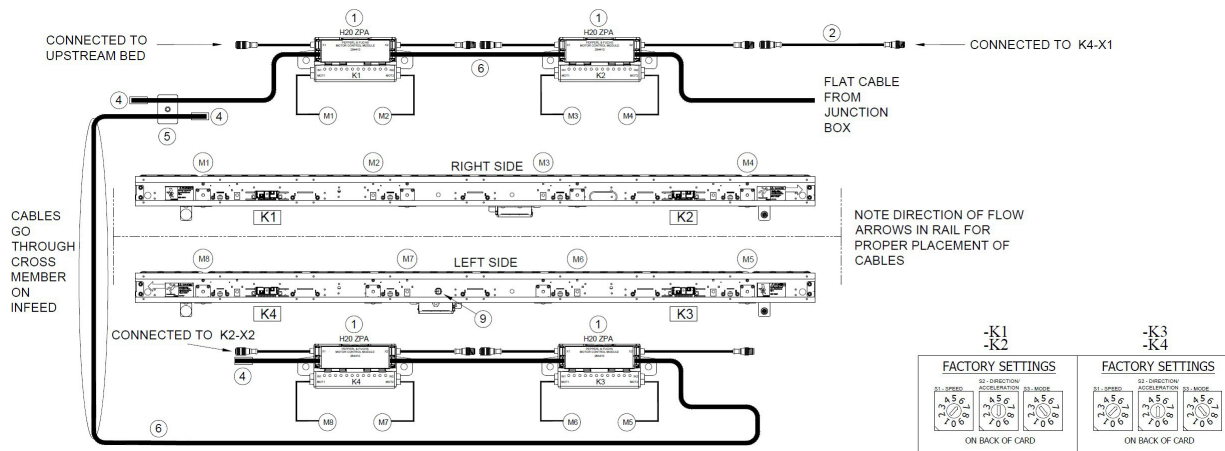
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1511-01



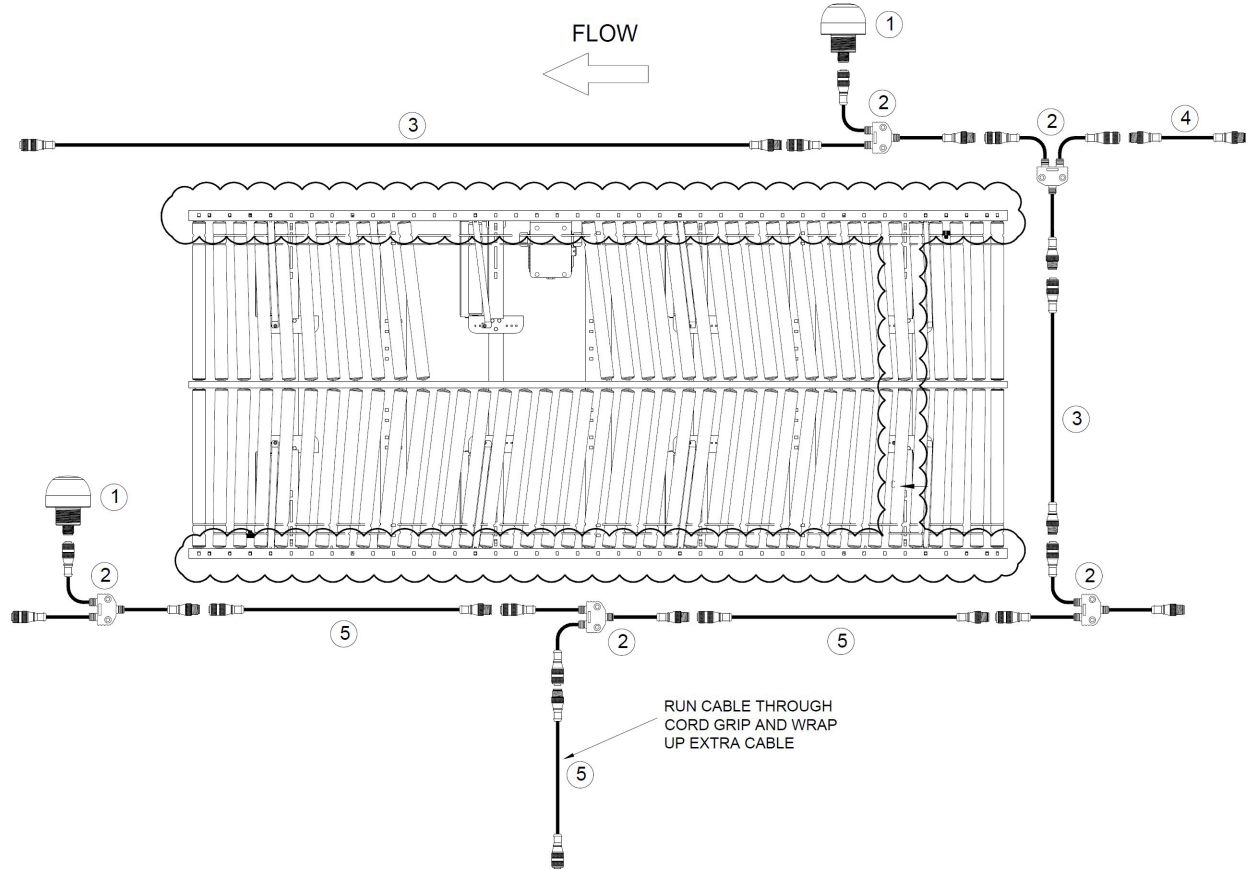
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	5	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray
5	3	TURCK	10707-057763 U2444-1	M12, Straight Male to Straight Male, 1m length, Gray

Electrical Drawings N01-1511-02



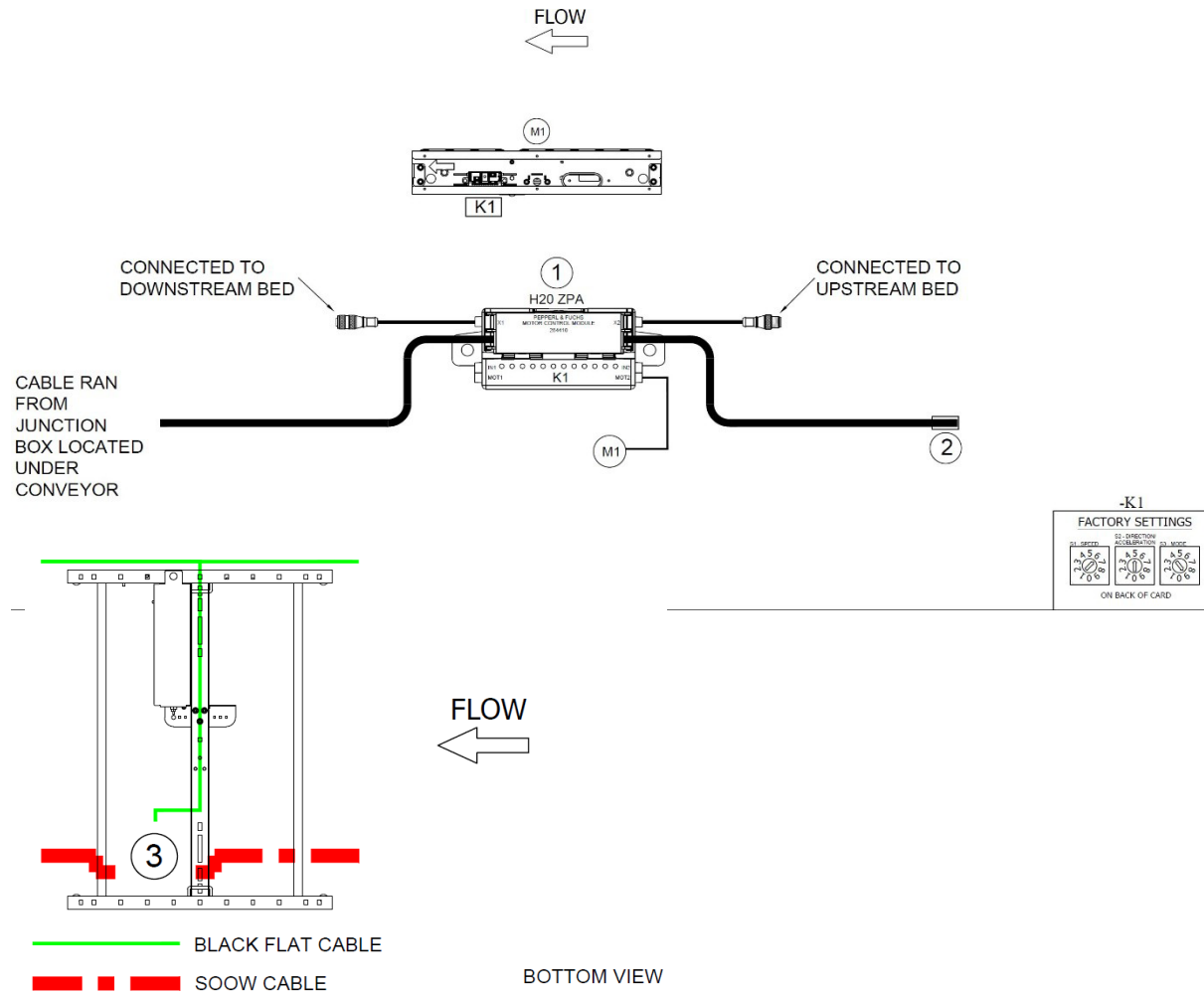
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	4	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
3	1	HILMOT	10802-059131	Under Roller Power Harness for Skew Beds, 48" BF
4	3	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	PEPPERL & FUCHS	10710-033467 VAZ-2FK-G10-BRIDGE	Splitter box G10, flat cable to flat cable
6	168"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating

Electrical Drawings N01-1511-02

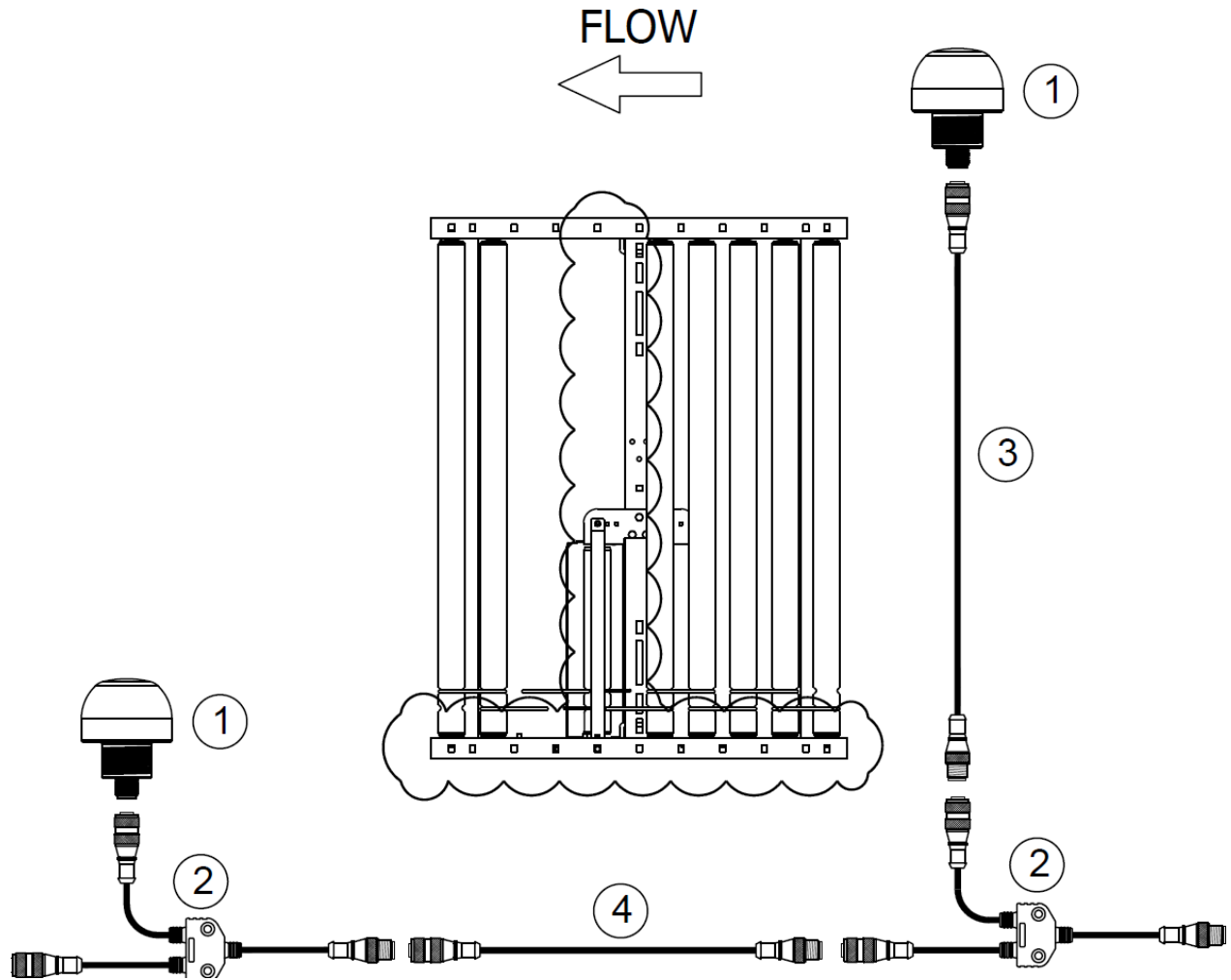


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	5	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray
5	3	TURCK	10707-057763 U2444-1	M12, Straight Male to Straight Male, 1m length, Gray

Electrical Drawings N01-1514-02

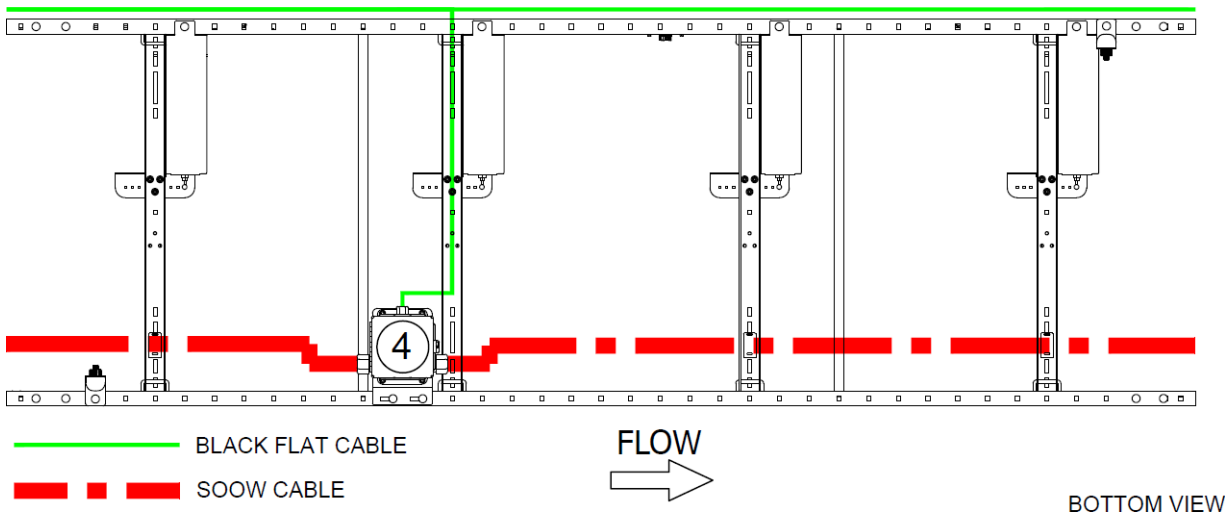
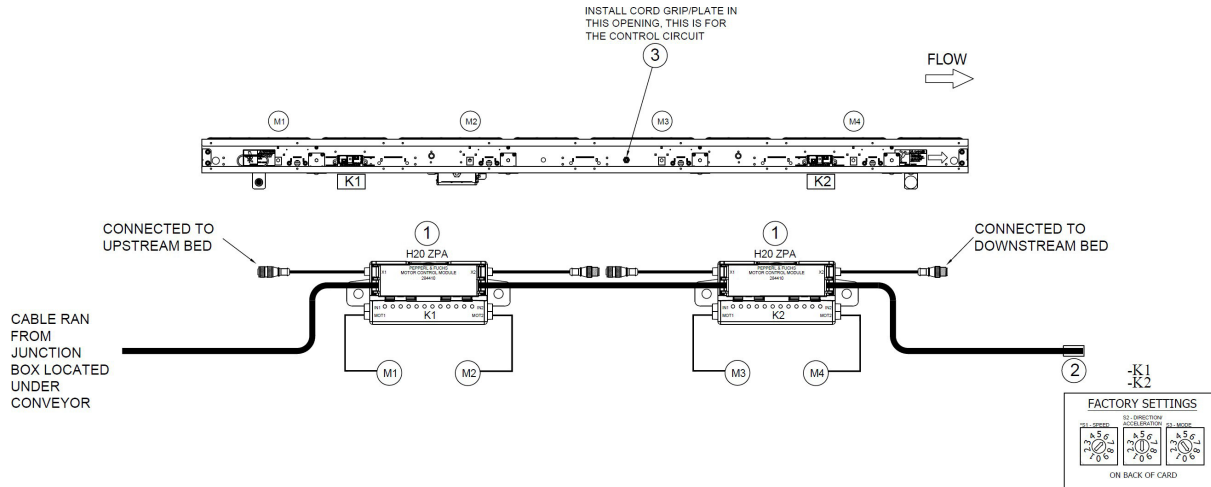


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059127	Under Roller Power Harness 3' length, 36" BF



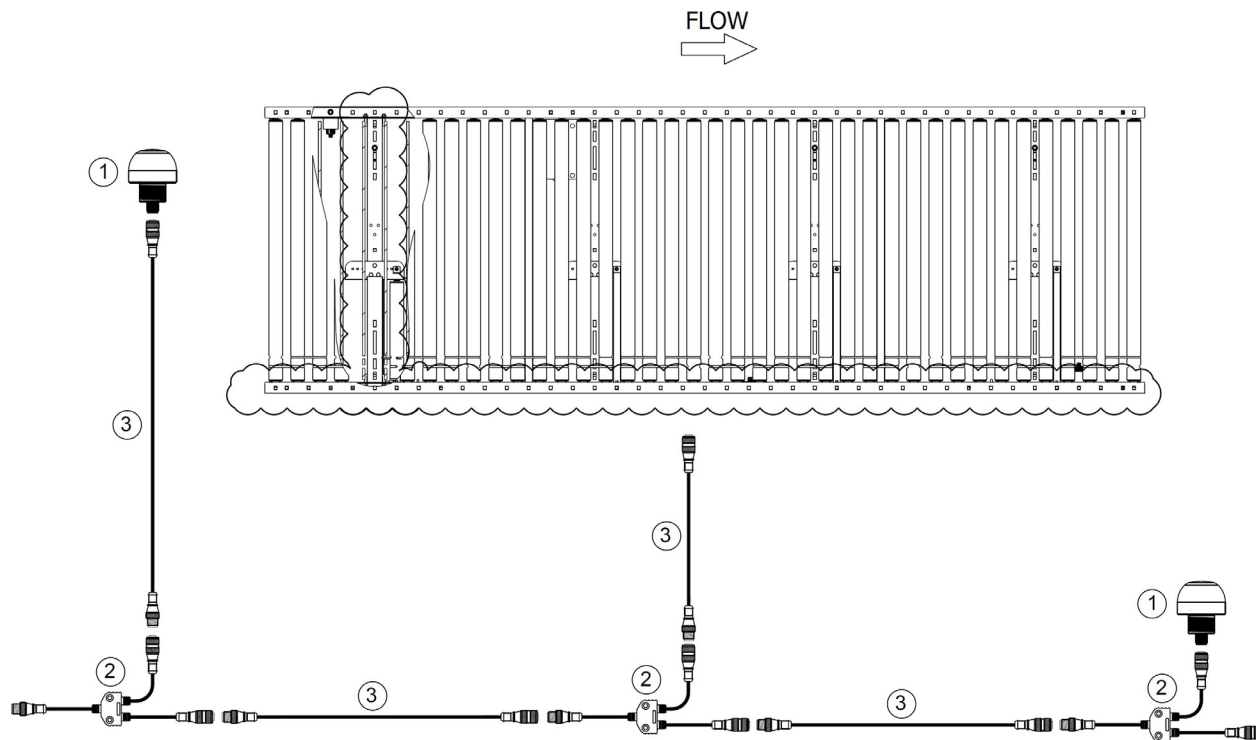
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057762 U2444-0	M12, Straight Female to Straight Male 0.5m length, Gray

Electrical Drawings N01-1514-02



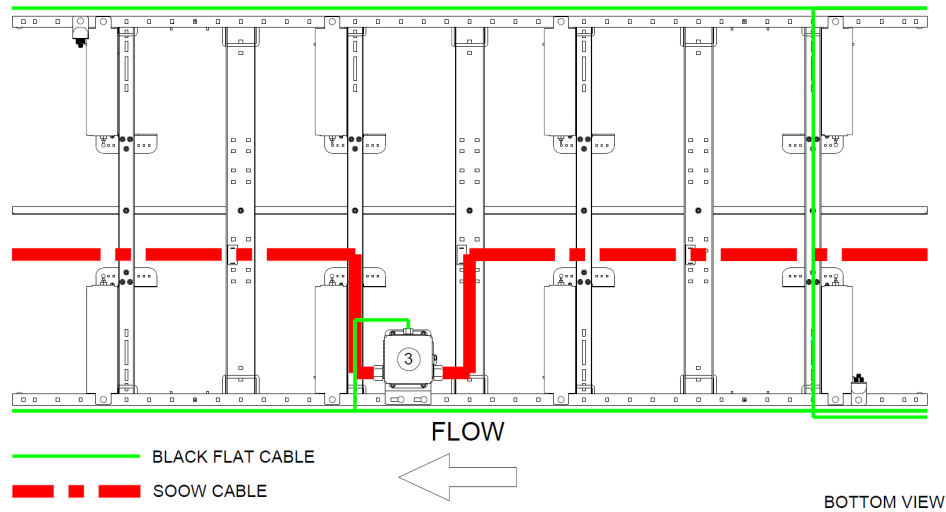
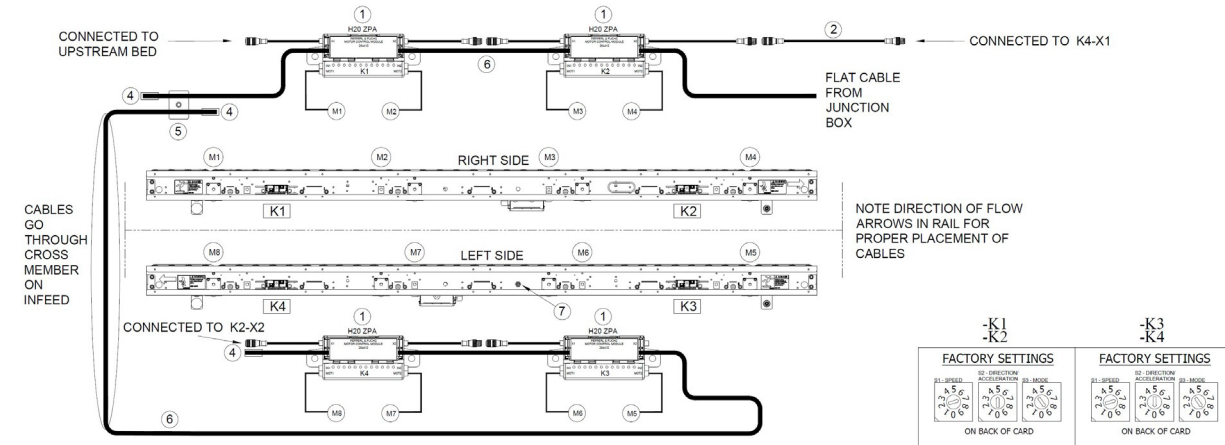
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1514-02



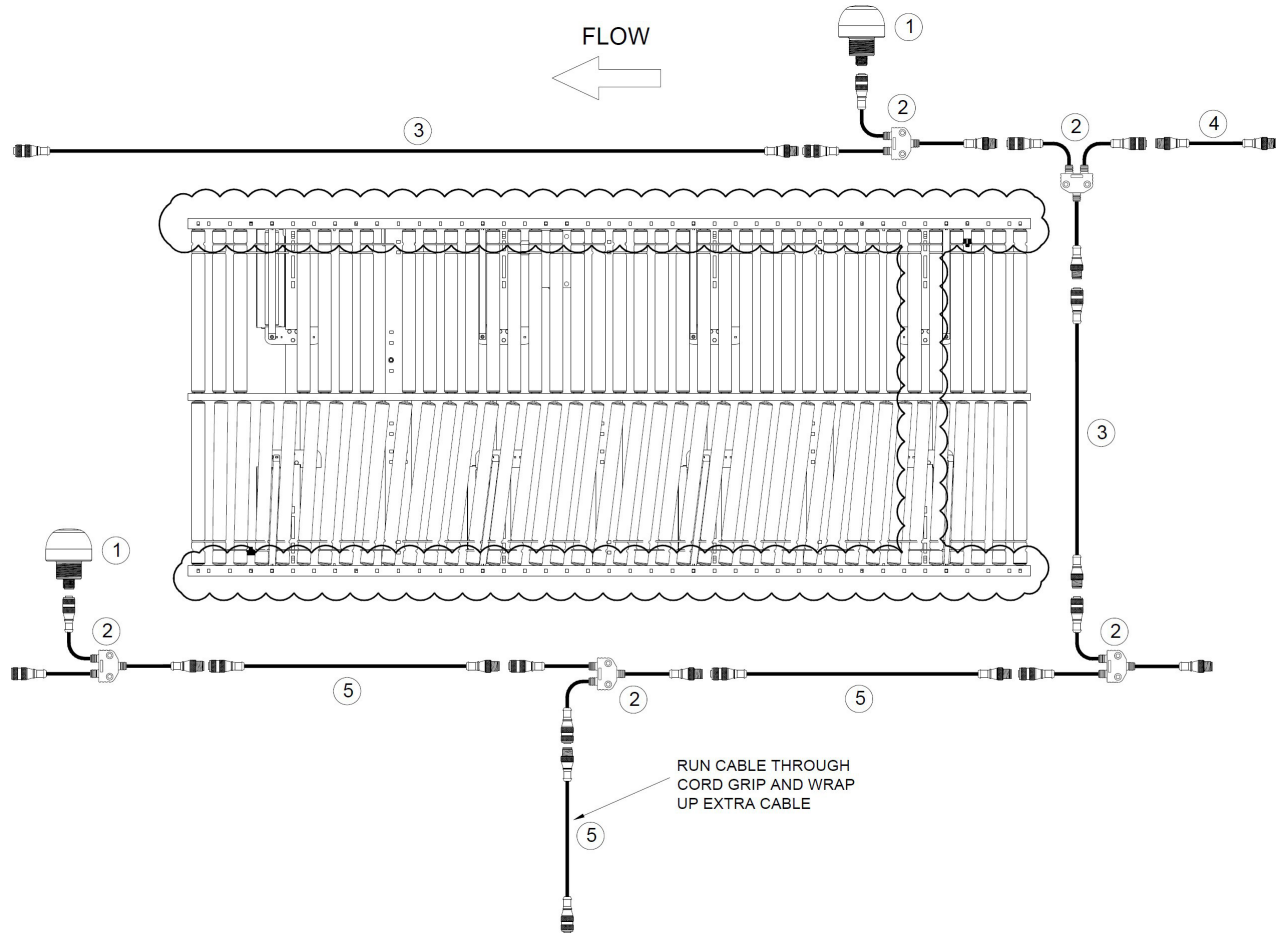
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1535-01



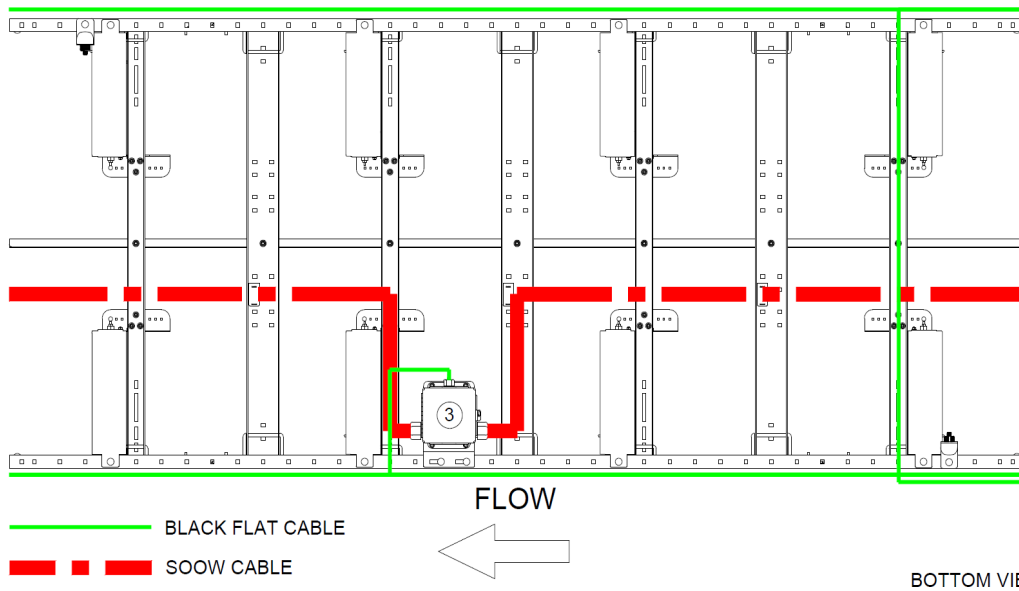
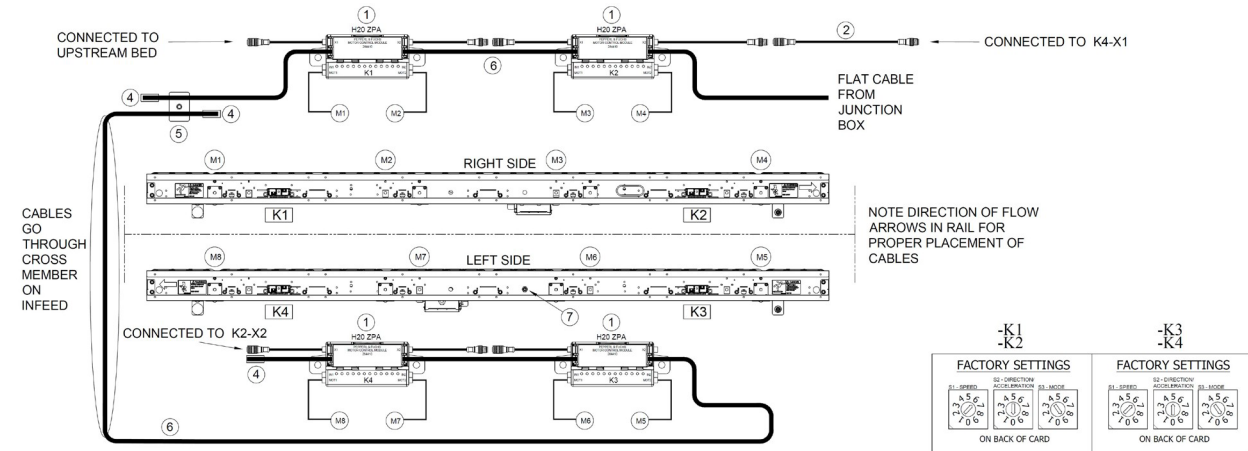
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	4	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
3	1	HILMOT	10802-059131	Under Roller Power Harness for Skew Beds, 48" BF
4	3	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	PEPPERL & FUCHS	10710-033467 VAZ-2FK-G10-BRIDGE	Splitter box G10, flat cable to flat cable
6	168"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating
7	1	ICOTEK	10800-059719	QVT Split Cable Gland with 5mm Cable Grommet

Electrical Drawings N01-1535-01



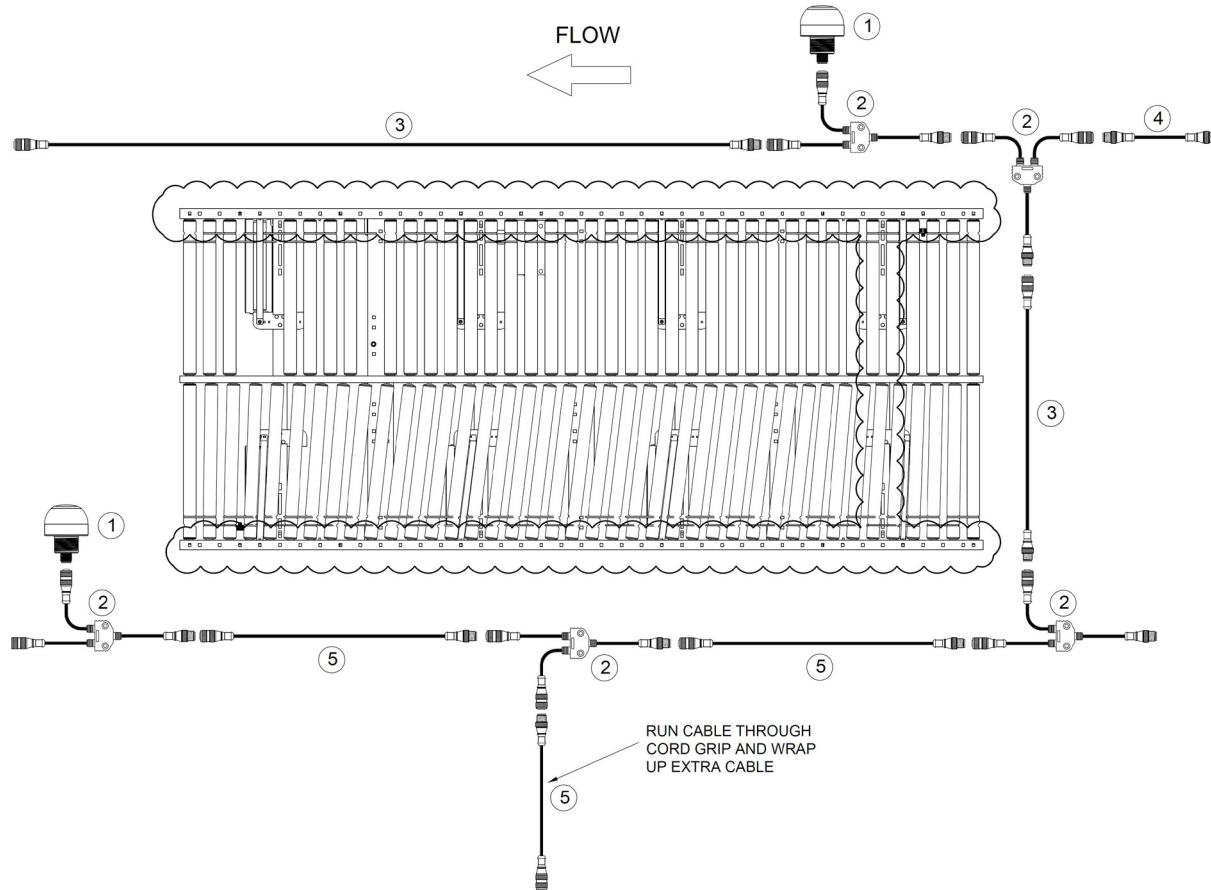
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	5	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray
5	3	TURCK	10707-057763 U2444-1	M12, Straight Male to Straight Male, 1m length, Gray

Electrical Drawings N01-1535-02



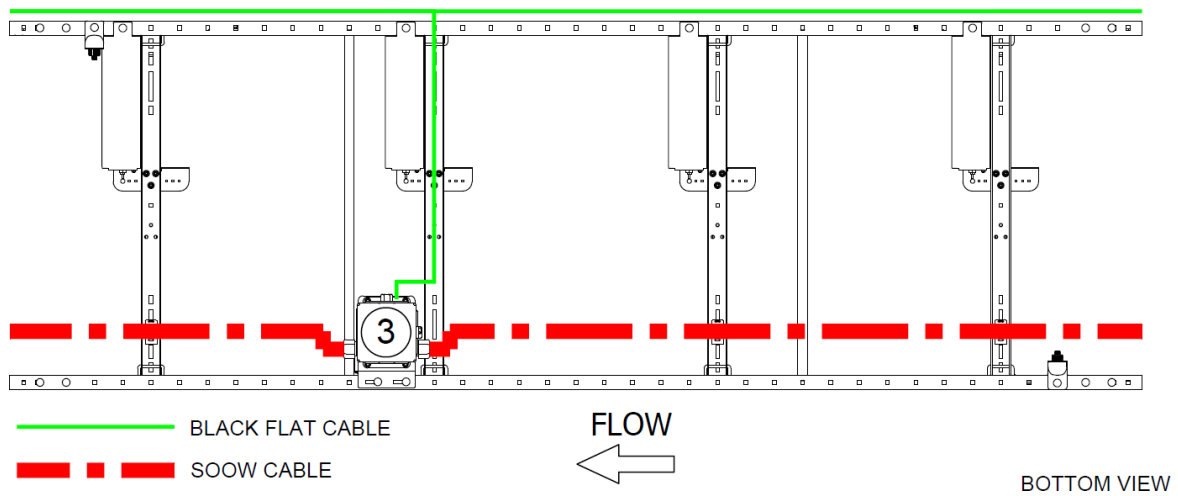
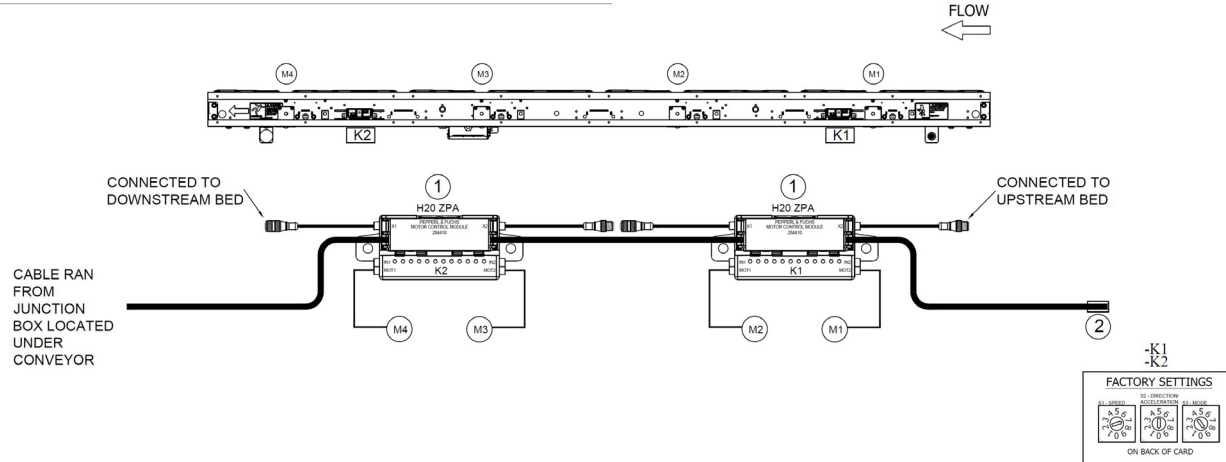
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	4	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
3	1	HILMOT	10802-059131	Under Roller Power Harness for Skew Beds, 48" BF
4	3	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	PEPPERL & FUCHS	10710-033467 VAZ-2FK-G10-BRIDGE	Splitter box G10, flat cable to flat cable
6	168"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating
7	1	ICOTEK	10800-059719	QVT Split Cable Gland with 5mm Cable Grommet

Electrical Drawings N01-1535-02



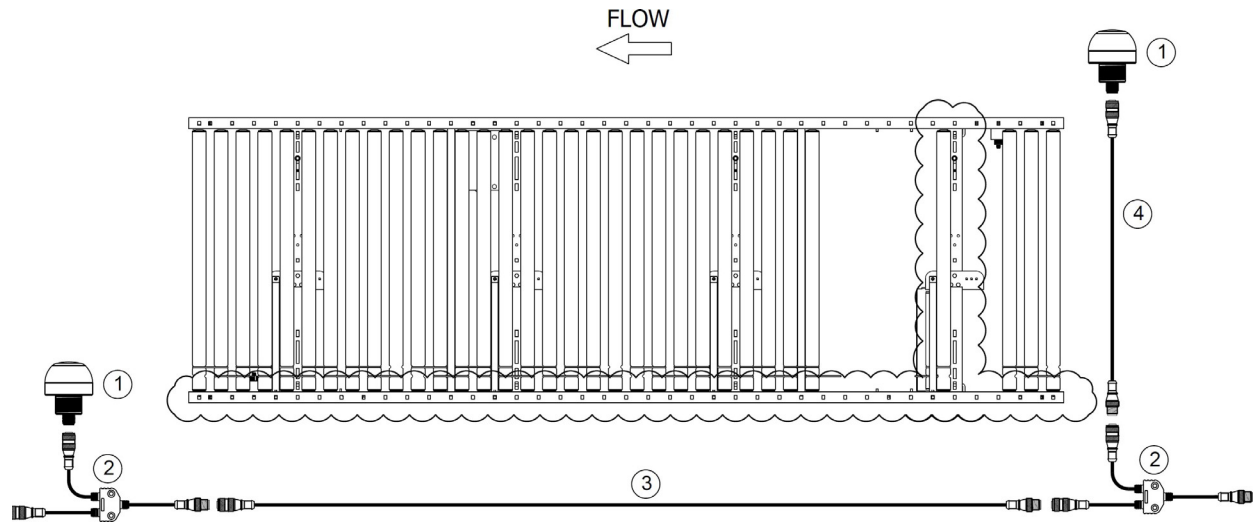
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	5	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male, 2m length, Gray
4	1	TURCK	10715-058927 RS 4.4T-0.5-RS 4.4T	M12, Straight Male to Straight Male, 0.5m length, Gray
5	3	TURCK	10707-057763 U2444-1	M12, Straight Male to Straight Male, 1m length, Gray

Electrical Drawings N01-1542-01



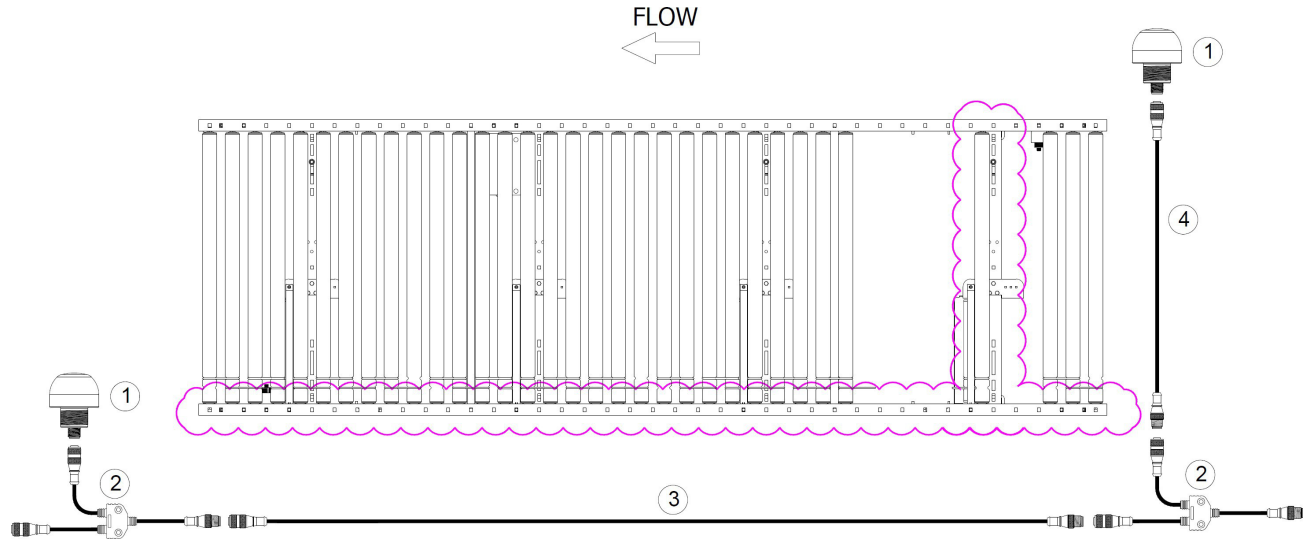
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1542-01



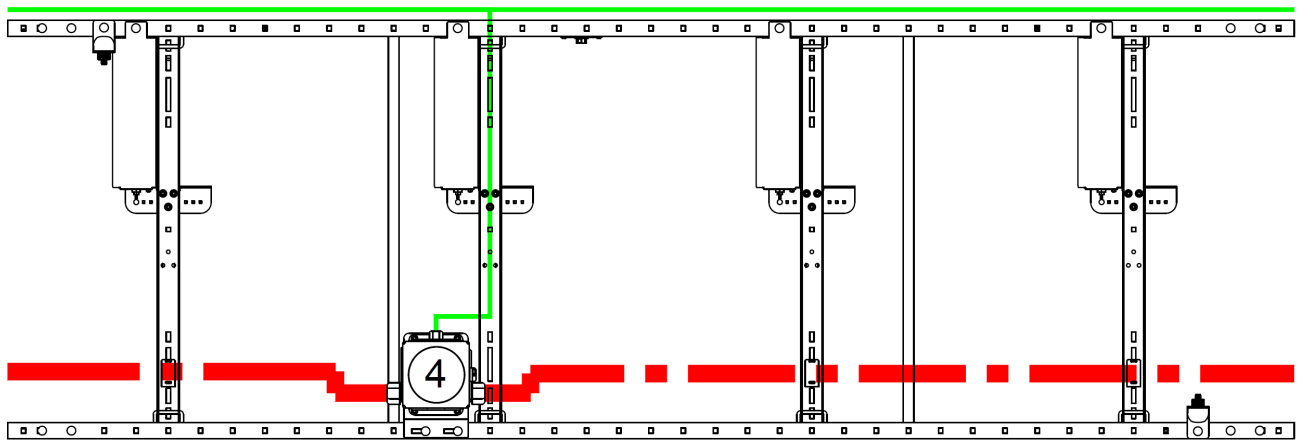
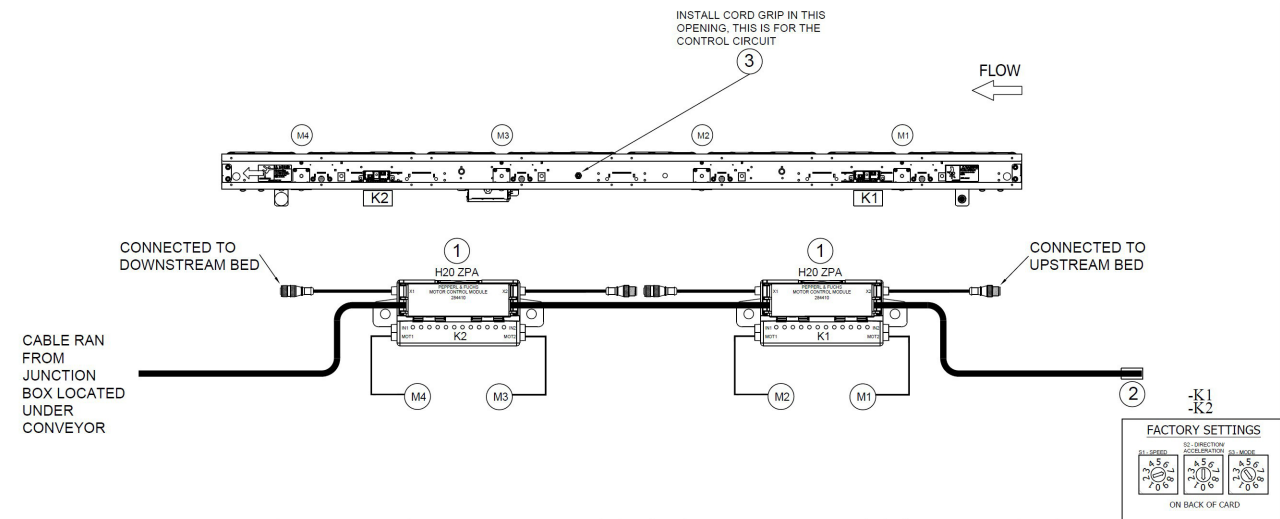
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1542-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1543-01



— BLACK FLAT CABLE

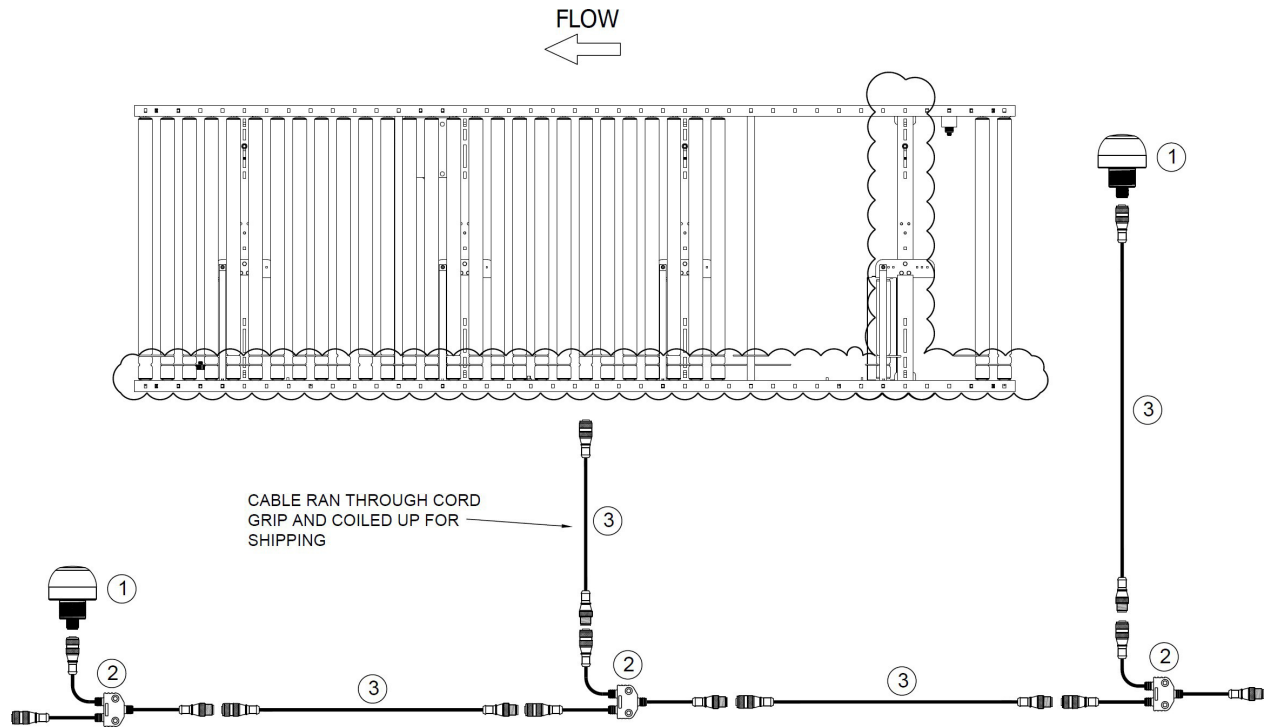
- - - SOOW CABLE

FLOW

BOTTOM VIEW

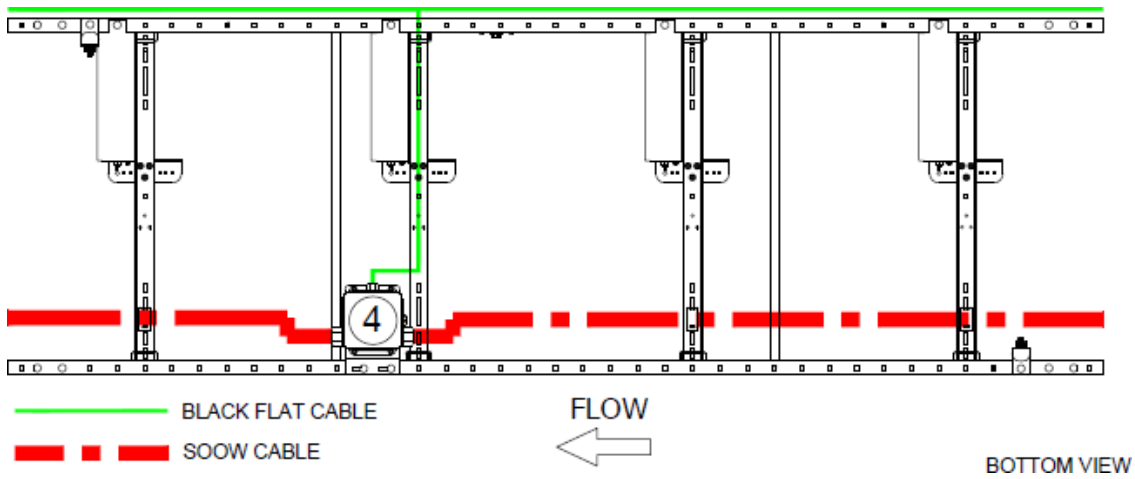
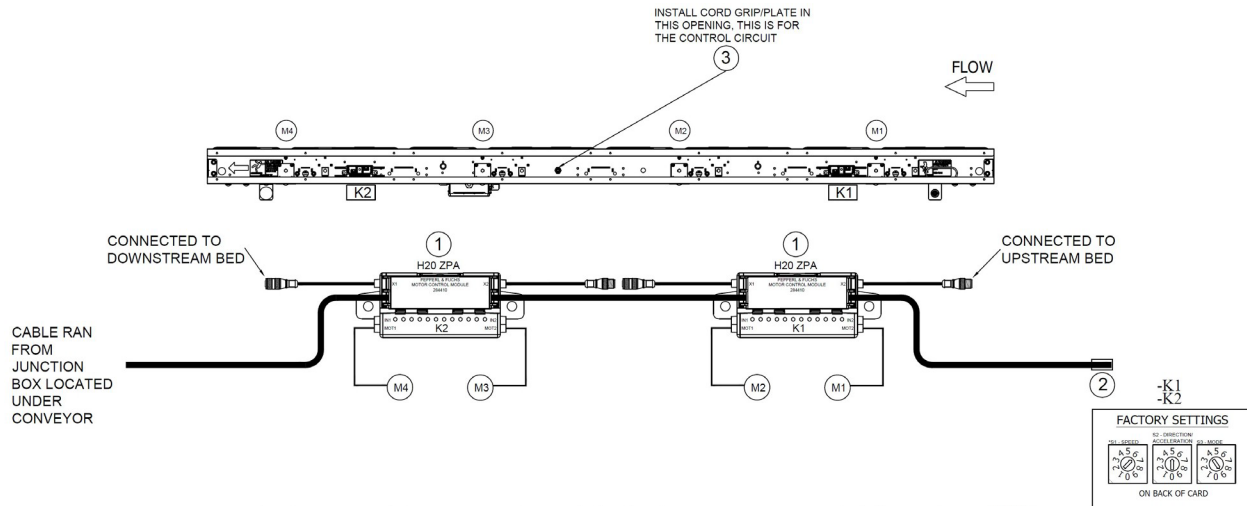
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1543-01

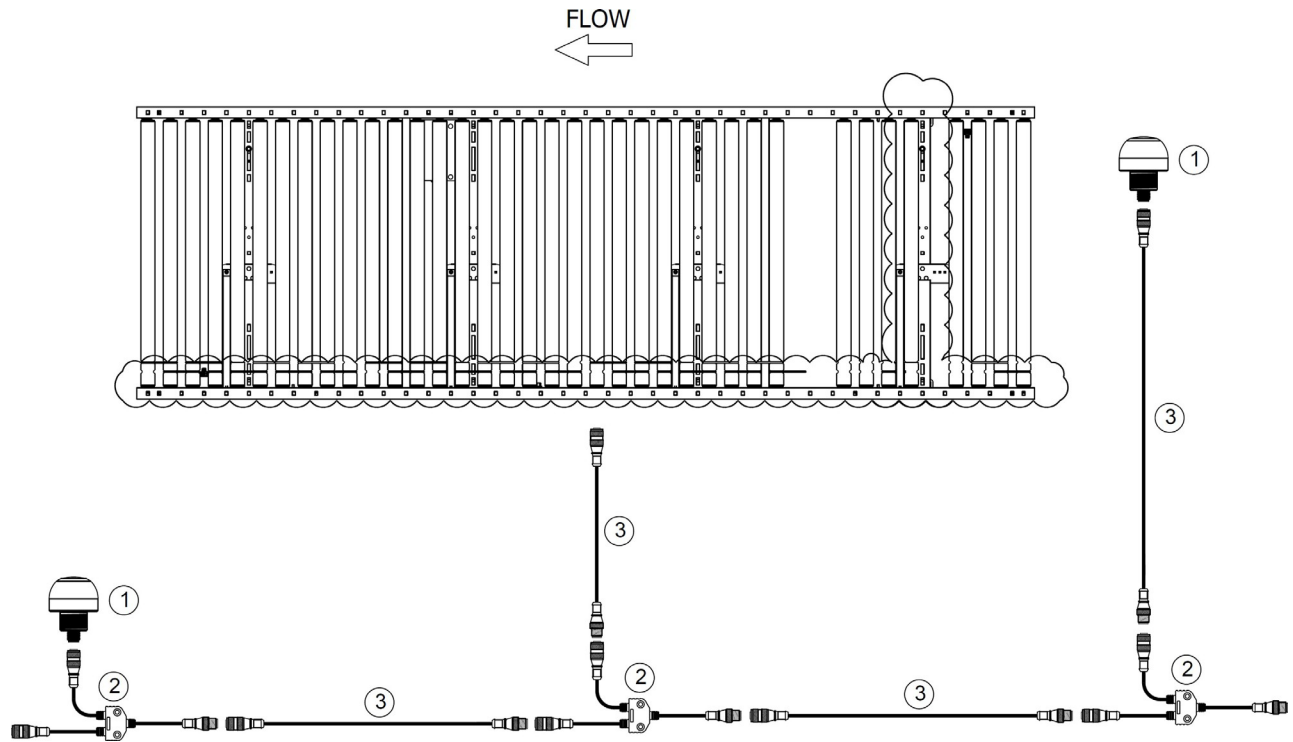


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1543-02

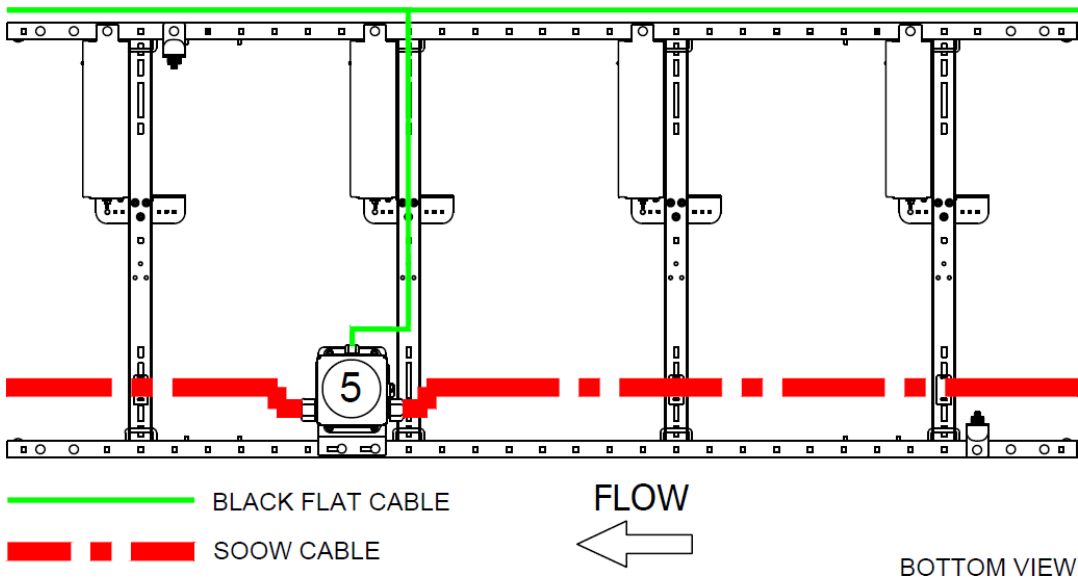
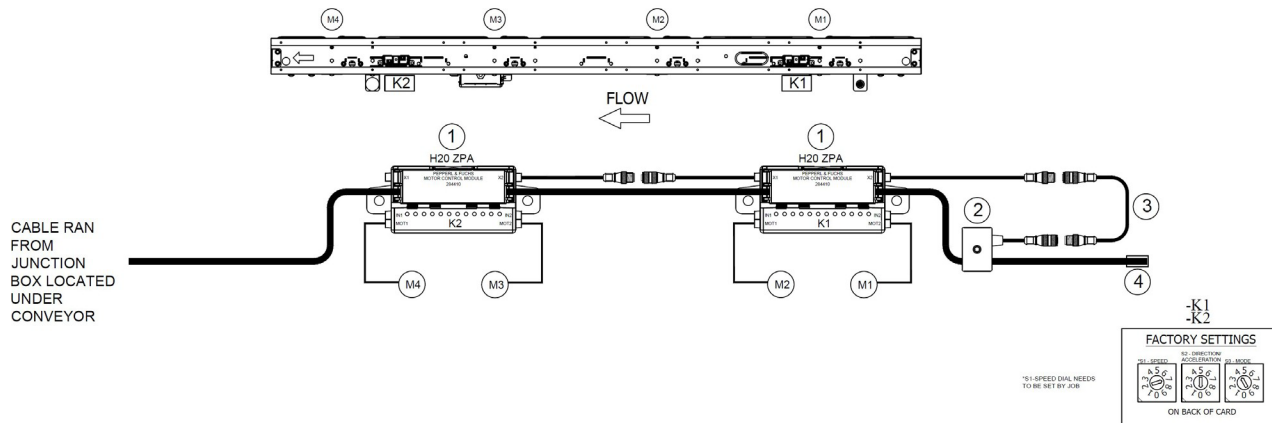


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-080002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

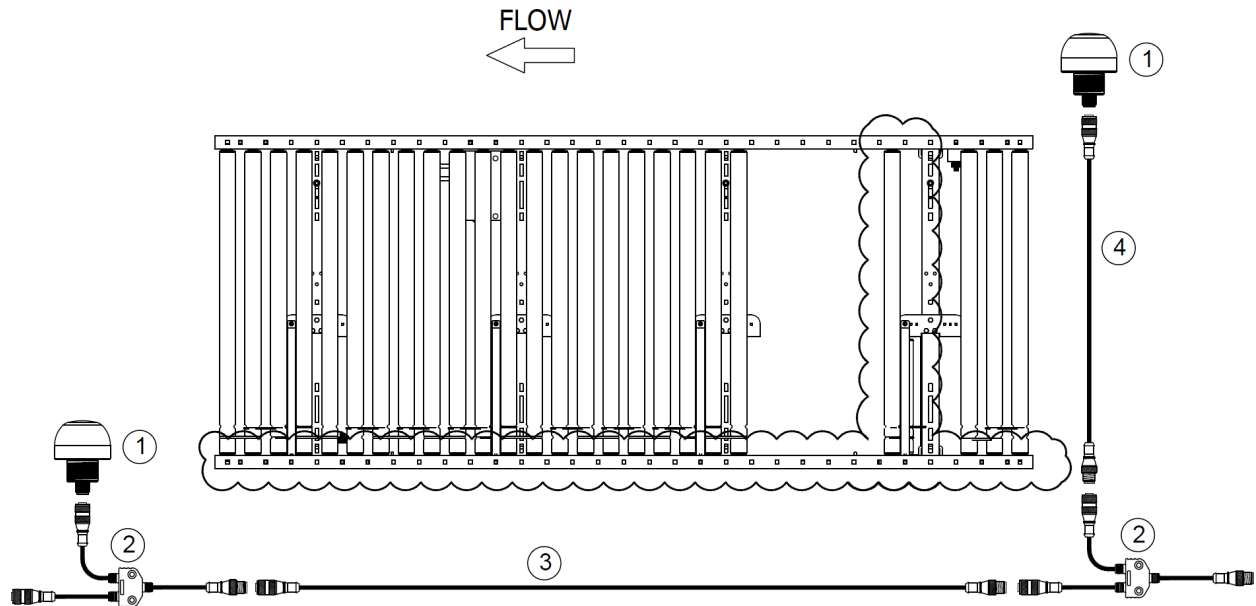
Electrical Drawings N01-1544-01



Electrical Drawings N01-1544-01

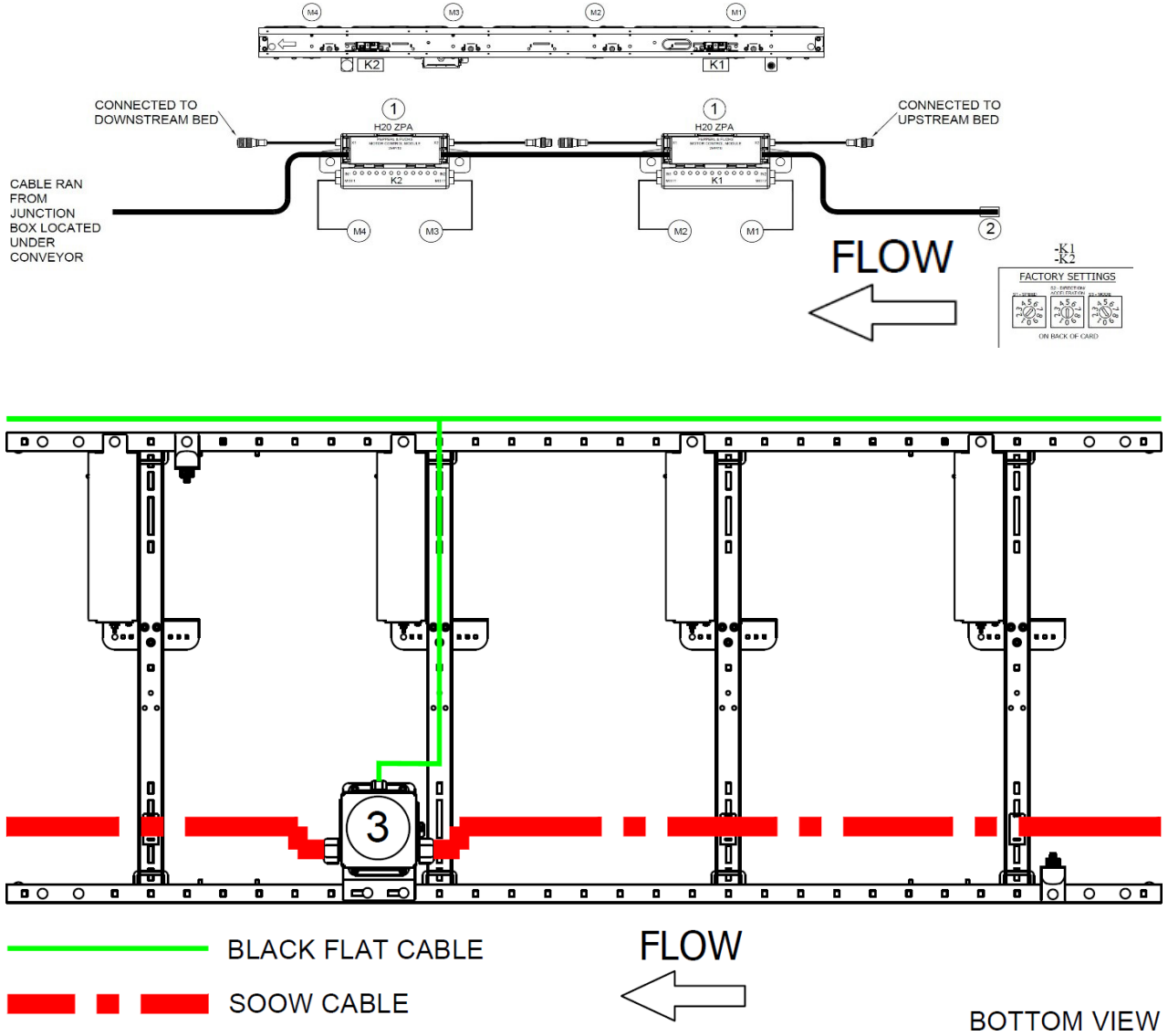
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-037753 284410	H-20 Auto Motor Control Module
2	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector
3	1	TURCK	10707-058596 RK4.21T-0.2-RS4.22T/CS***	X2 Connection Cable From P&F G10 Block
4	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	HILMOT	10802-059606	Under Roller Power Harness 96" length, 36" BF

Electrical Drawings N01-1544-01



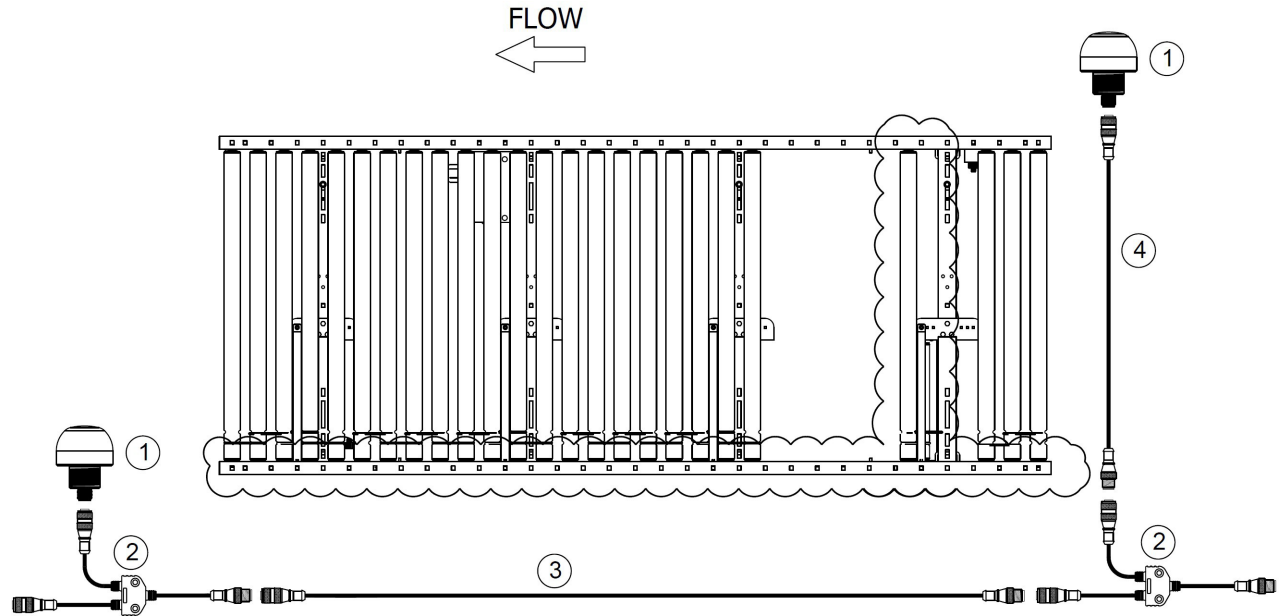
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1544-02



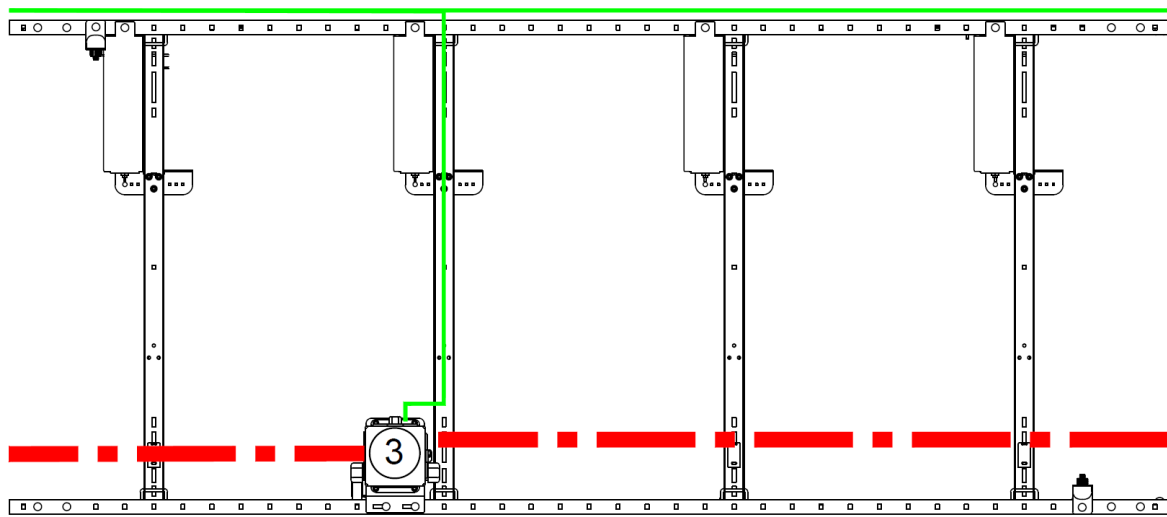
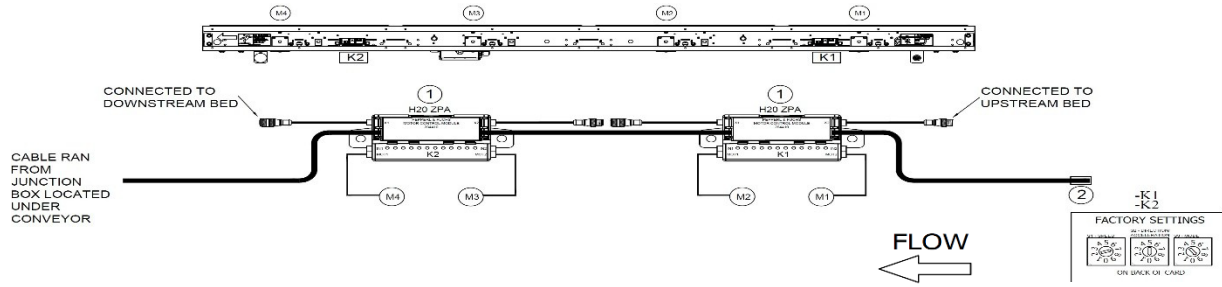
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059606	Under Roller Power Harness 96" length, 36" BF

Electrical Drawings N01-1544-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1545-01

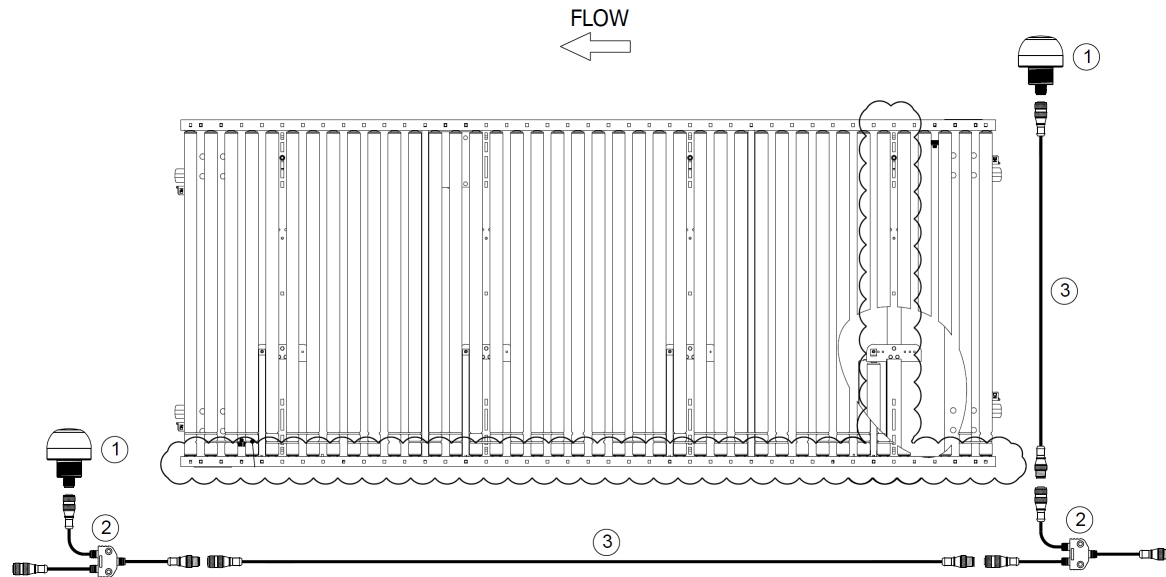


- BLACK FLAT CABLE
- - - SOOW CABLE

BOTTOM VIEW

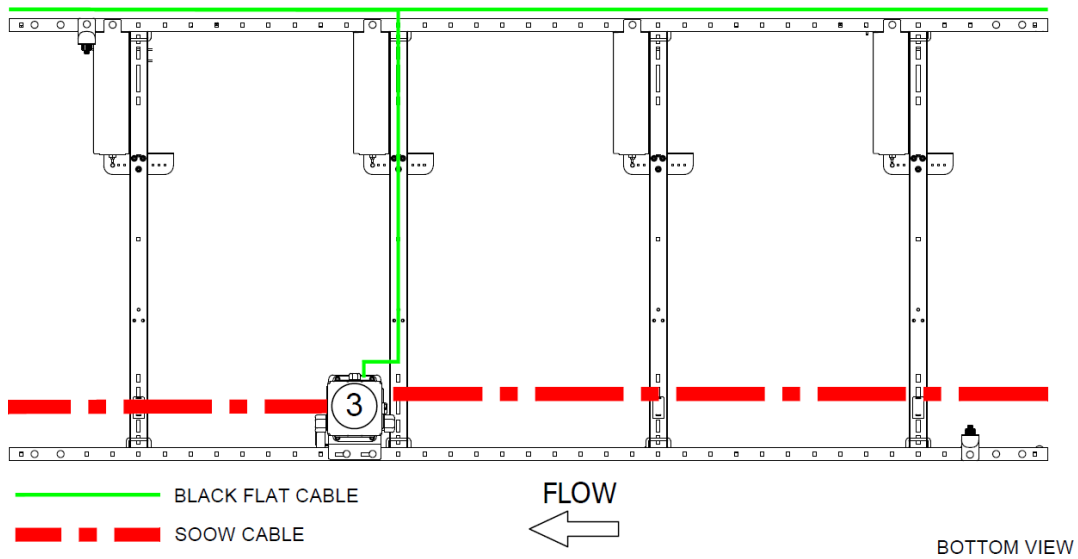
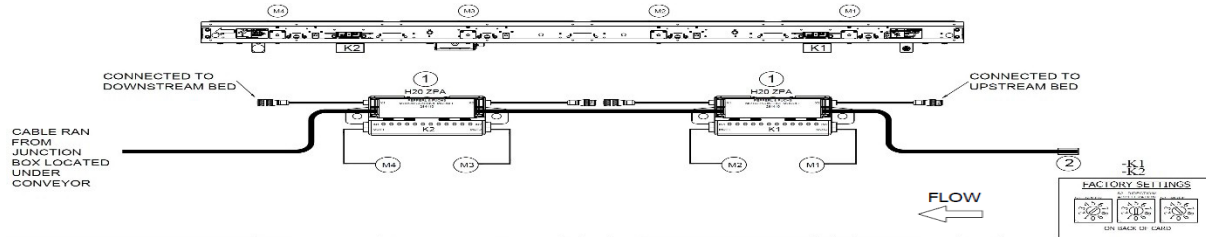
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1545-01



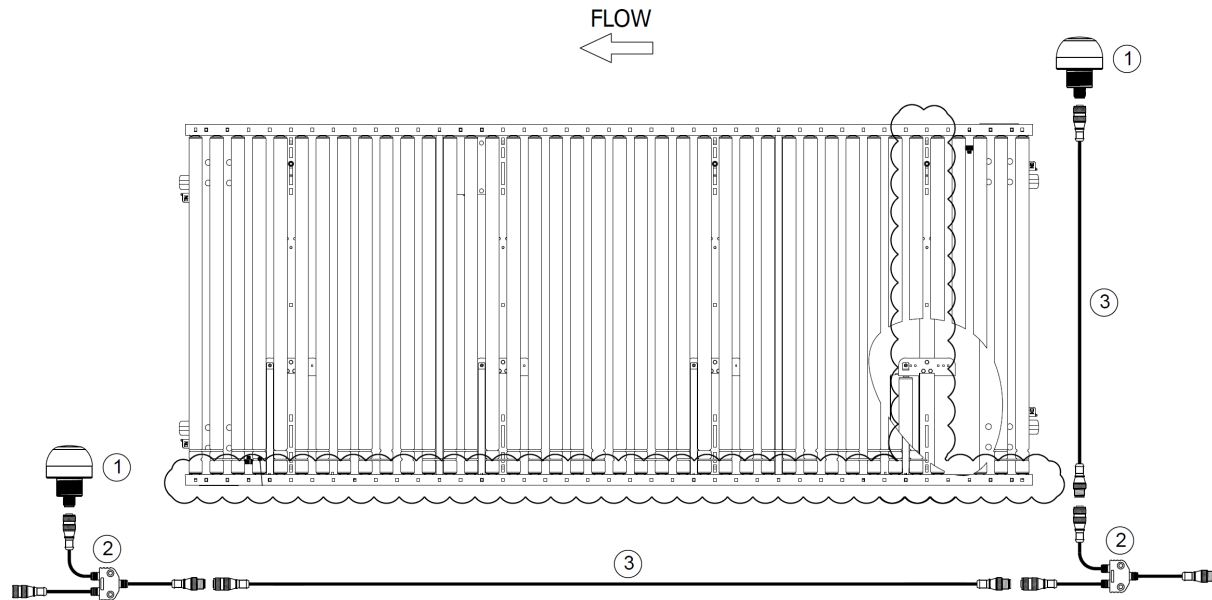
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1545-02



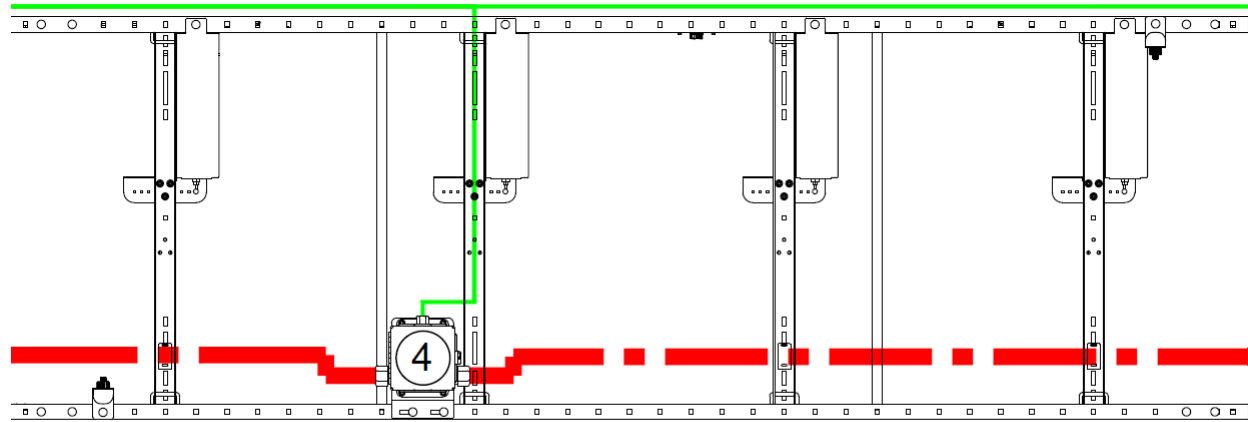
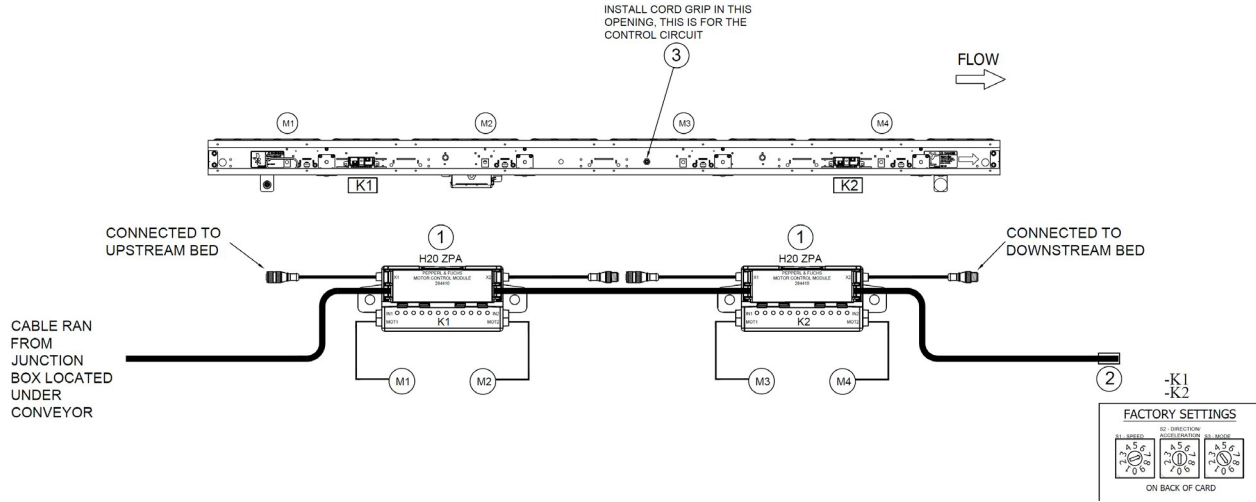
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1545-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N01-1548-01



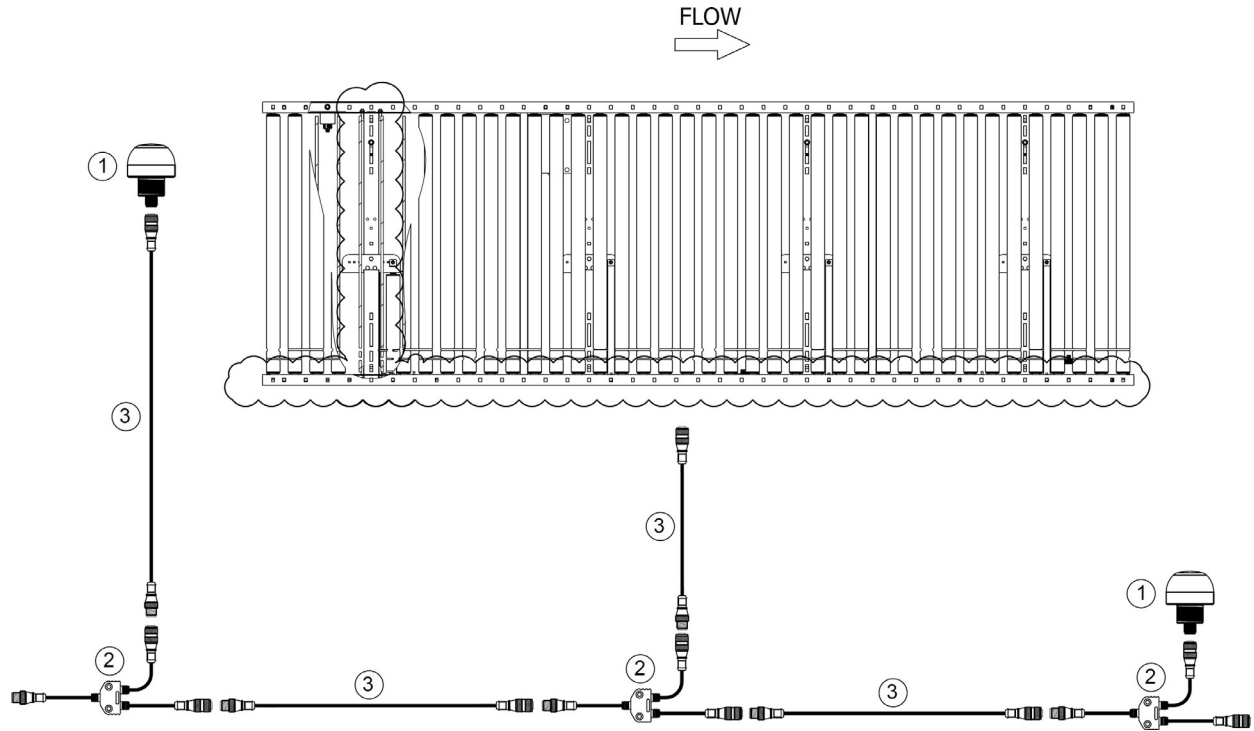
— BLACK FLAT CABLE

- - - SOOW CABLE

BOTTOM VIEW

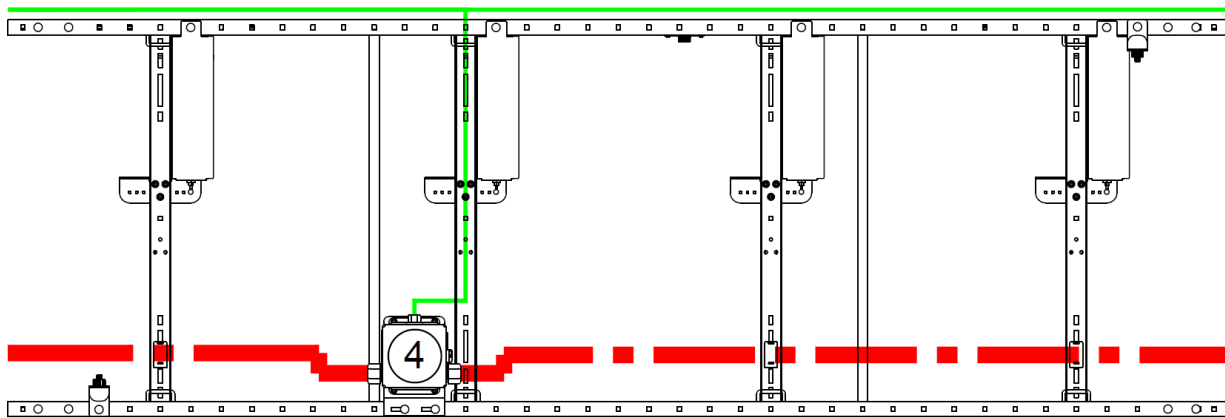
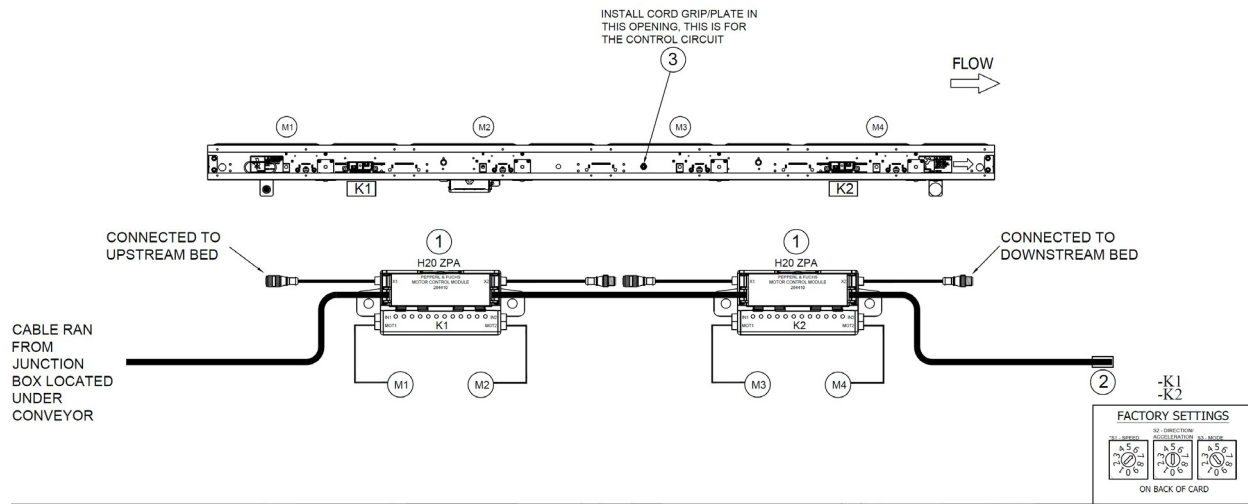
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1548-01



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1548-02



— BLACK FLAT CABLE

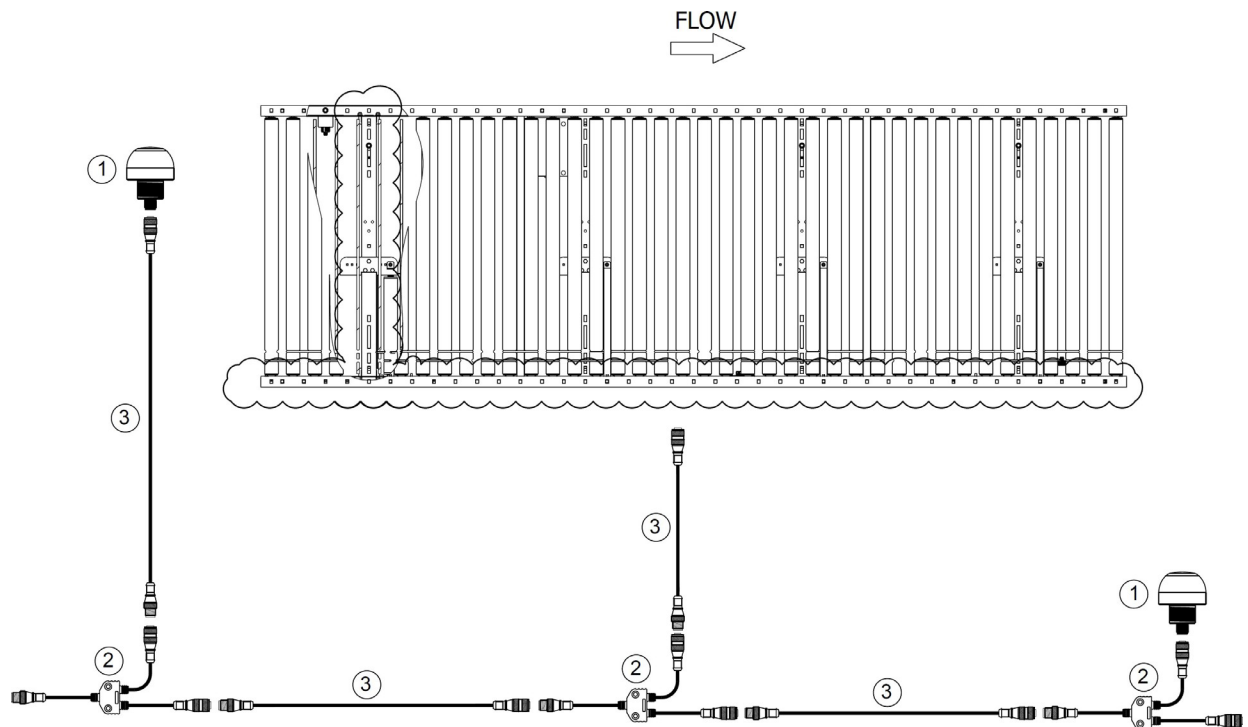
— SOOW CABLE

FLOW

BOTTOM VIEW

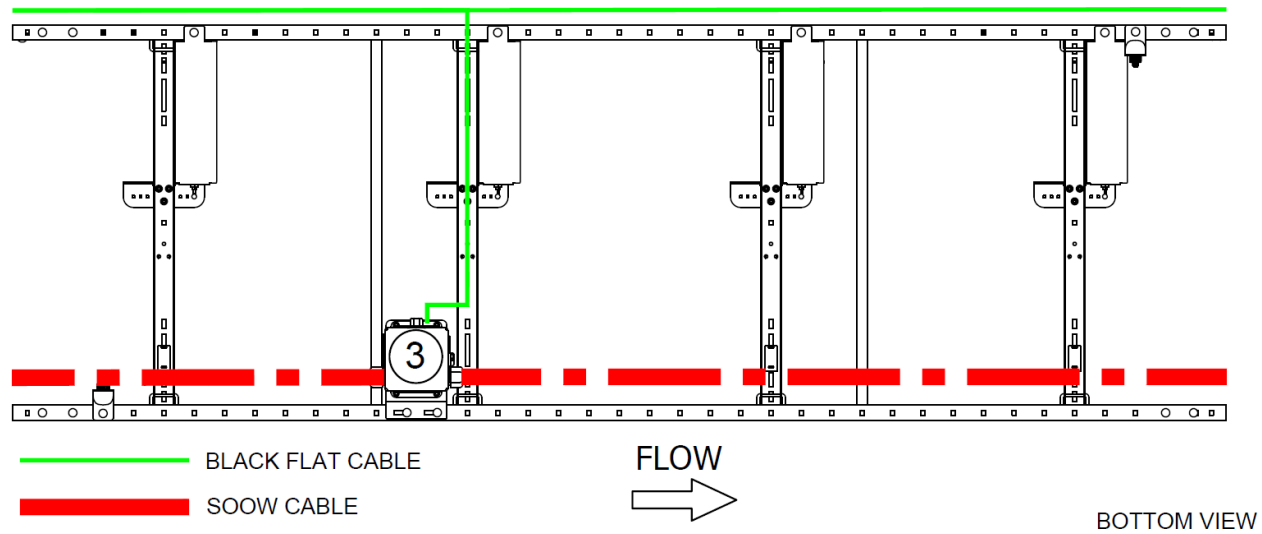
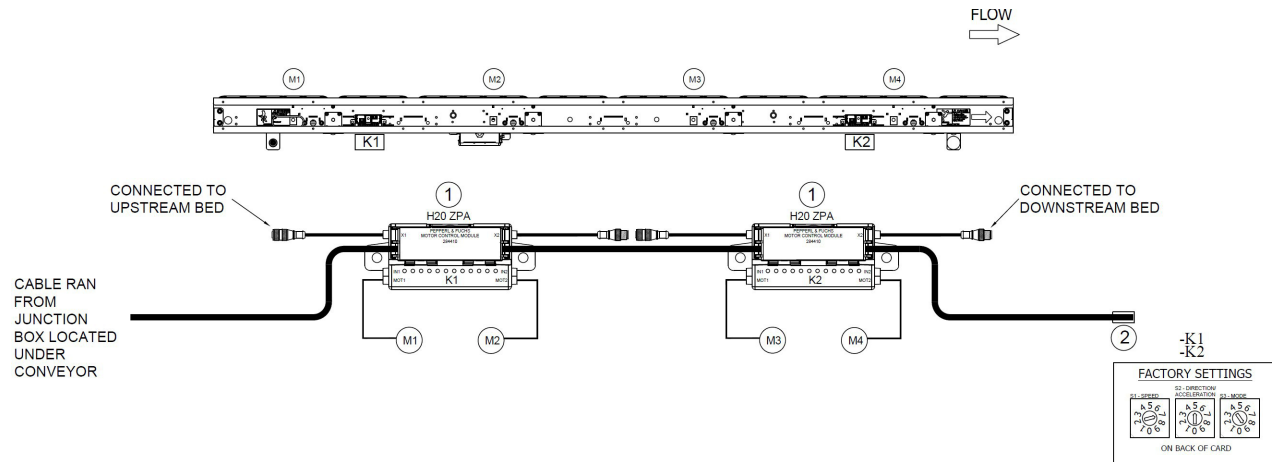
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet
4	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1548-02



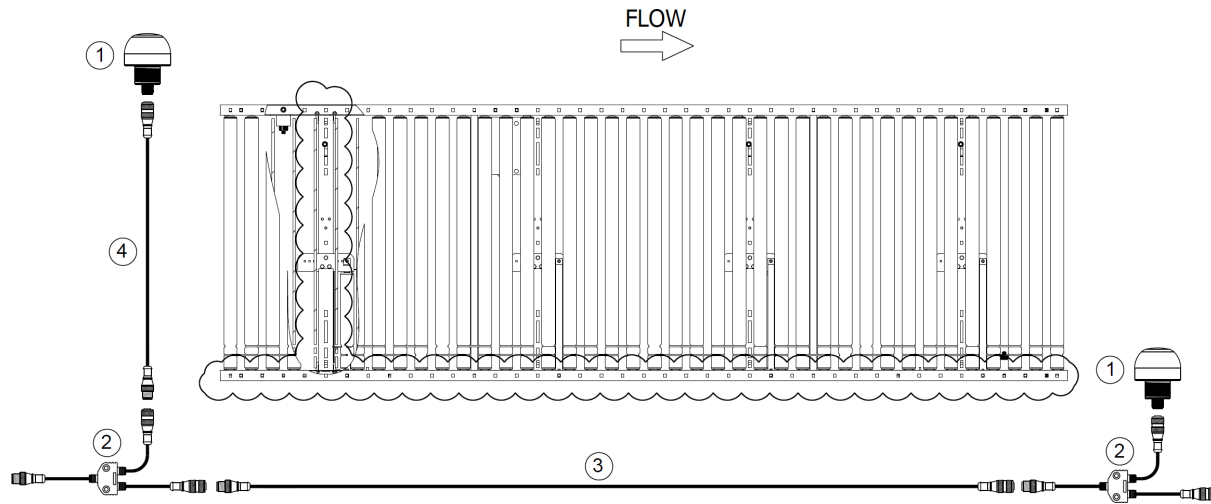
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	4	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1573-01



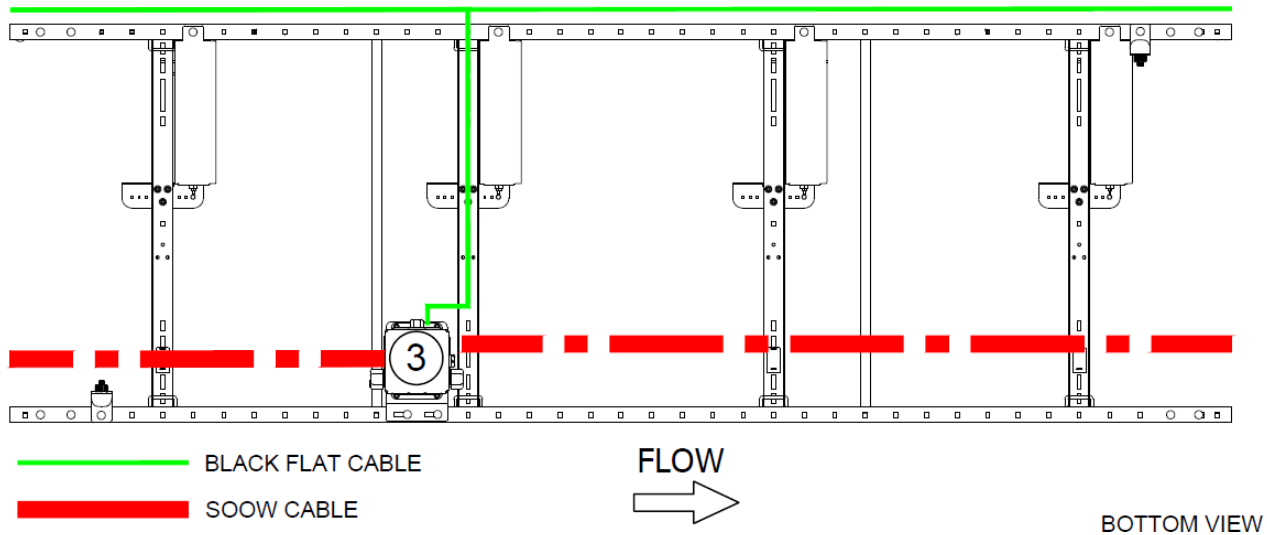
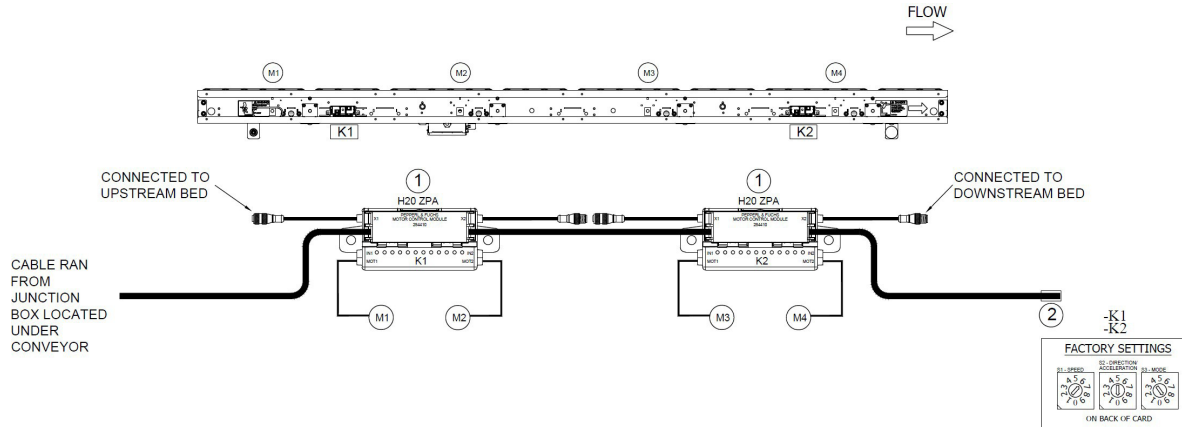
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1573-01



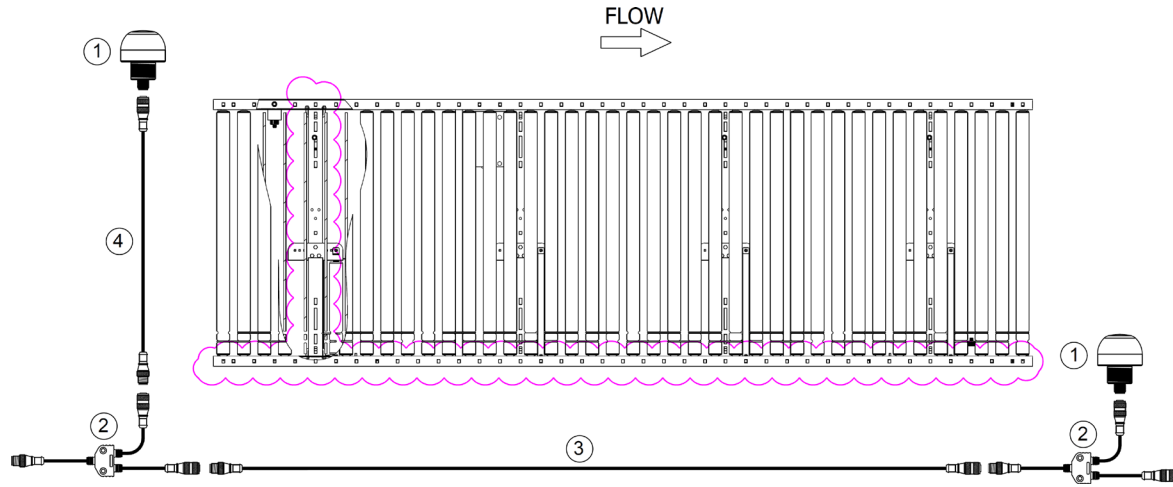
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1573-02



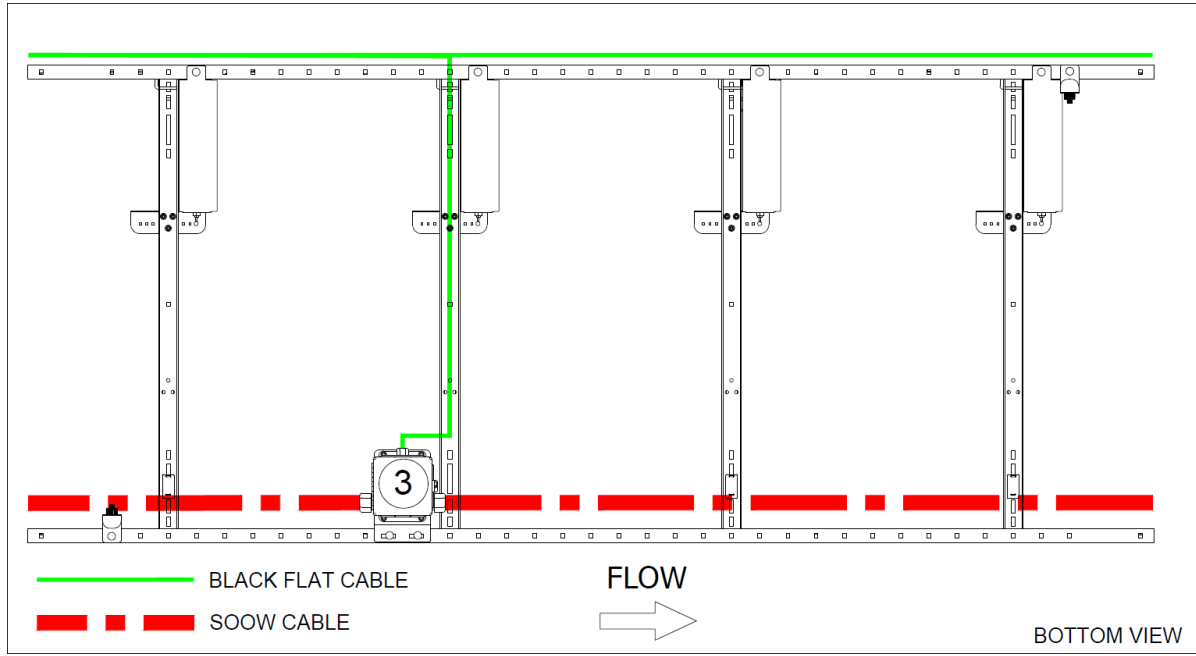
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059129	Under Roller Power Harness 10' length, 36" BF

Electrical Drawings N01-1573-02



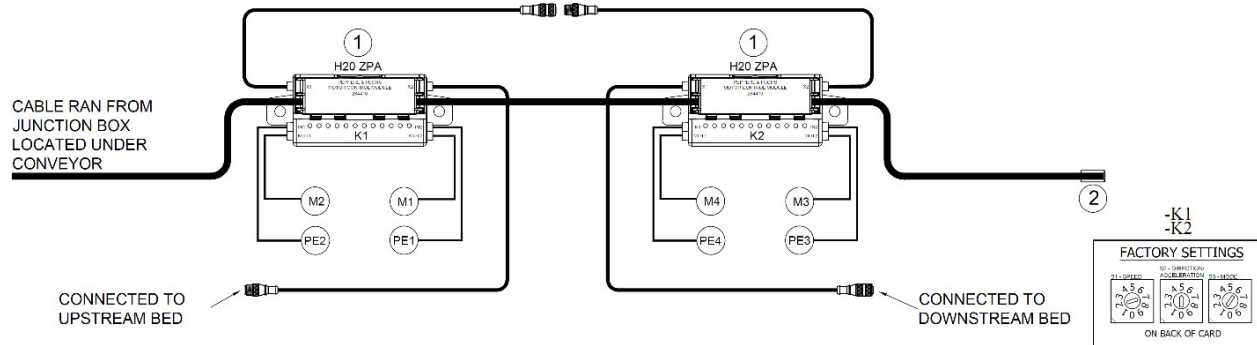
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
4	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray

Electrical Drawings N01-1608-01

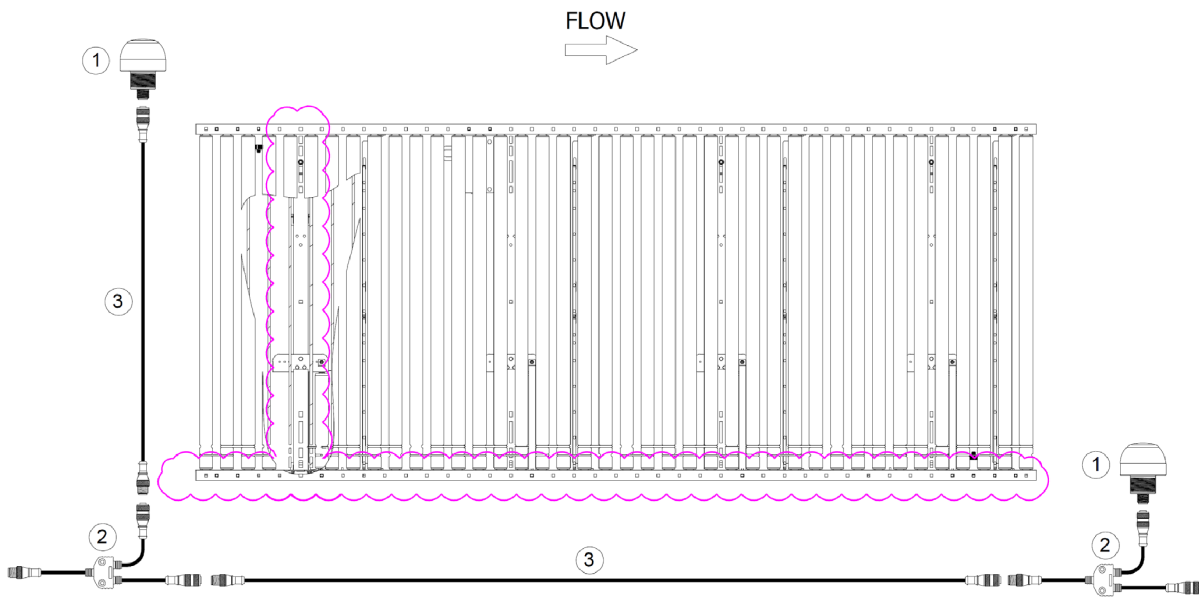


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

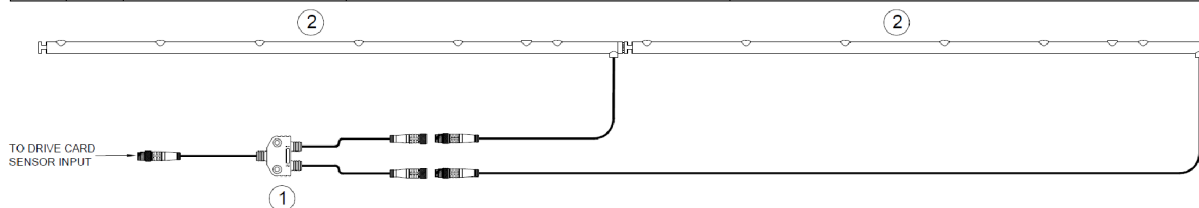
Electrical Drawings N01-1608-01



Electrical Drawings N01-1608-01

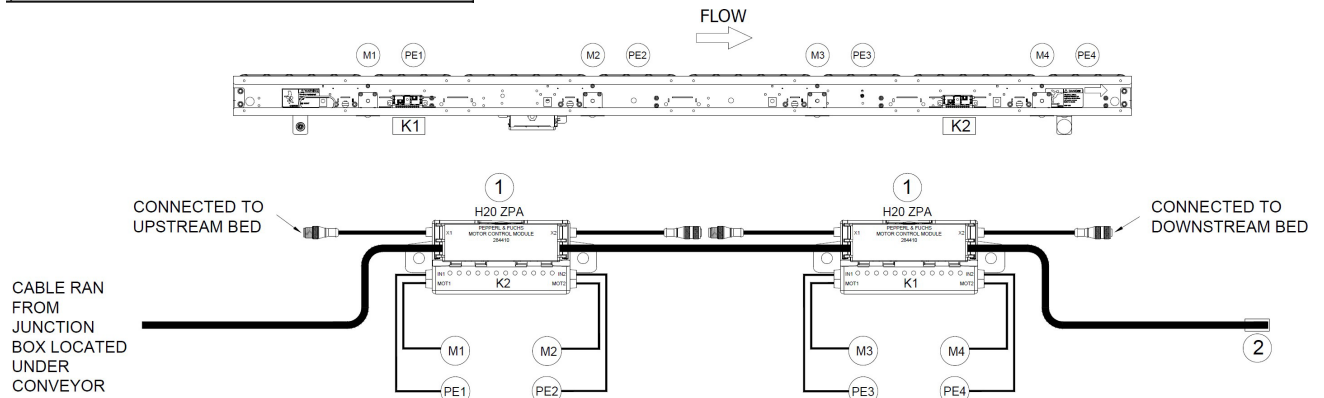
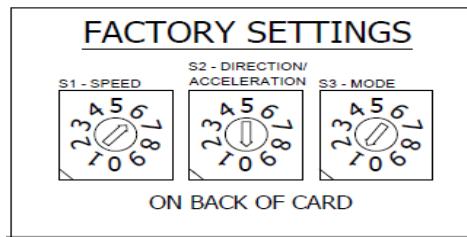
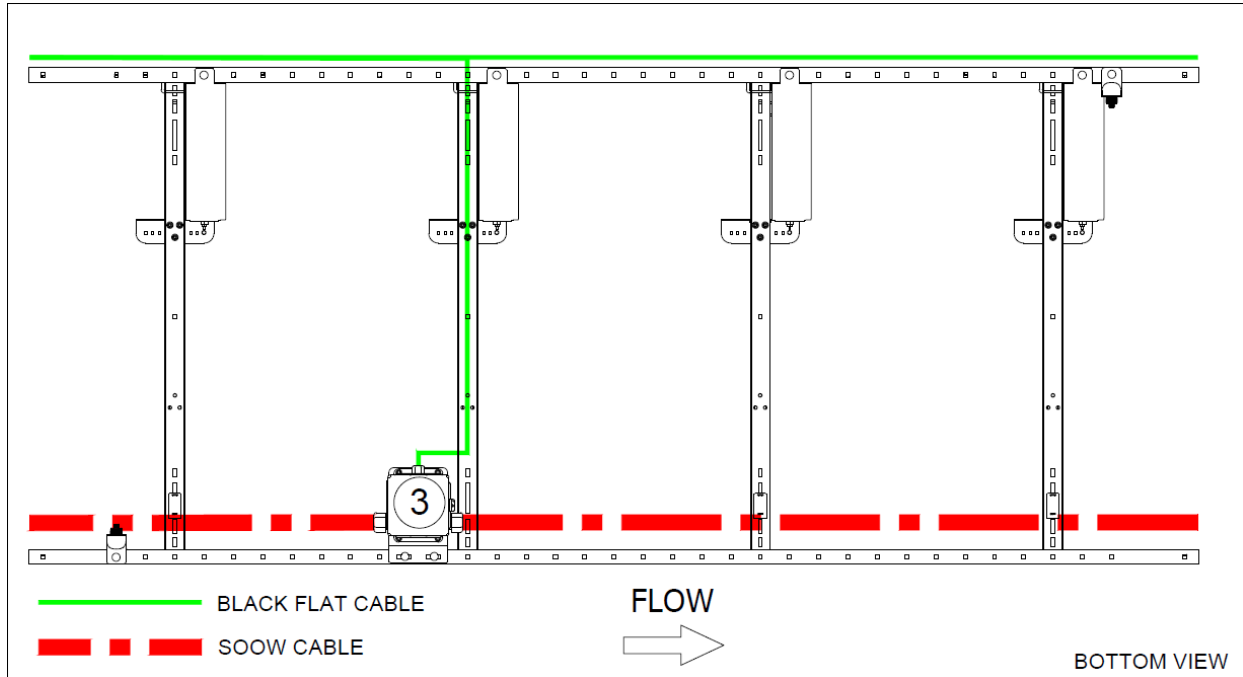


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray



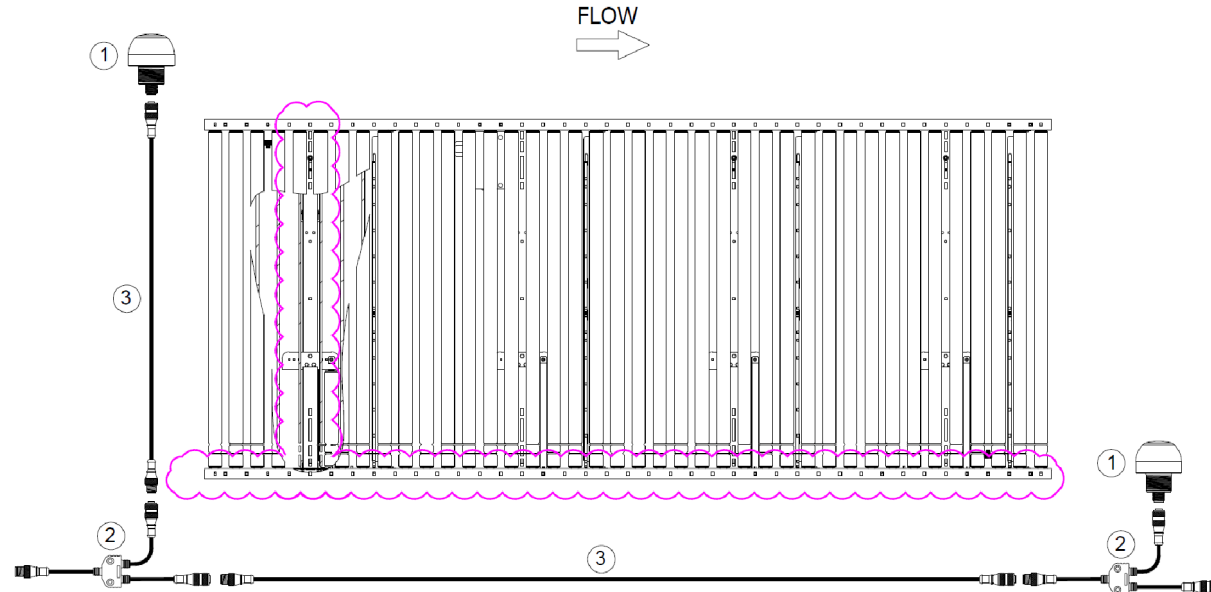
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

Electrical Drawings N01-1608-02

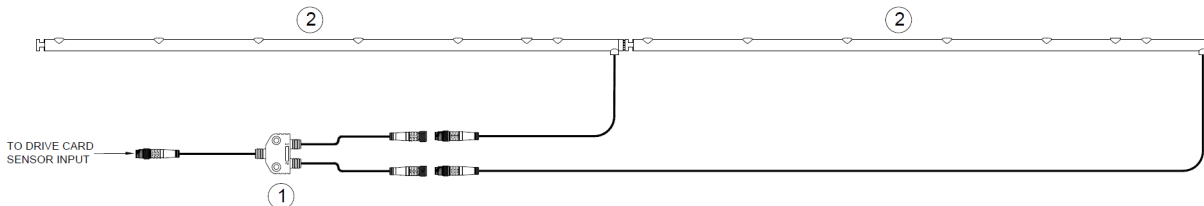


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1608-02

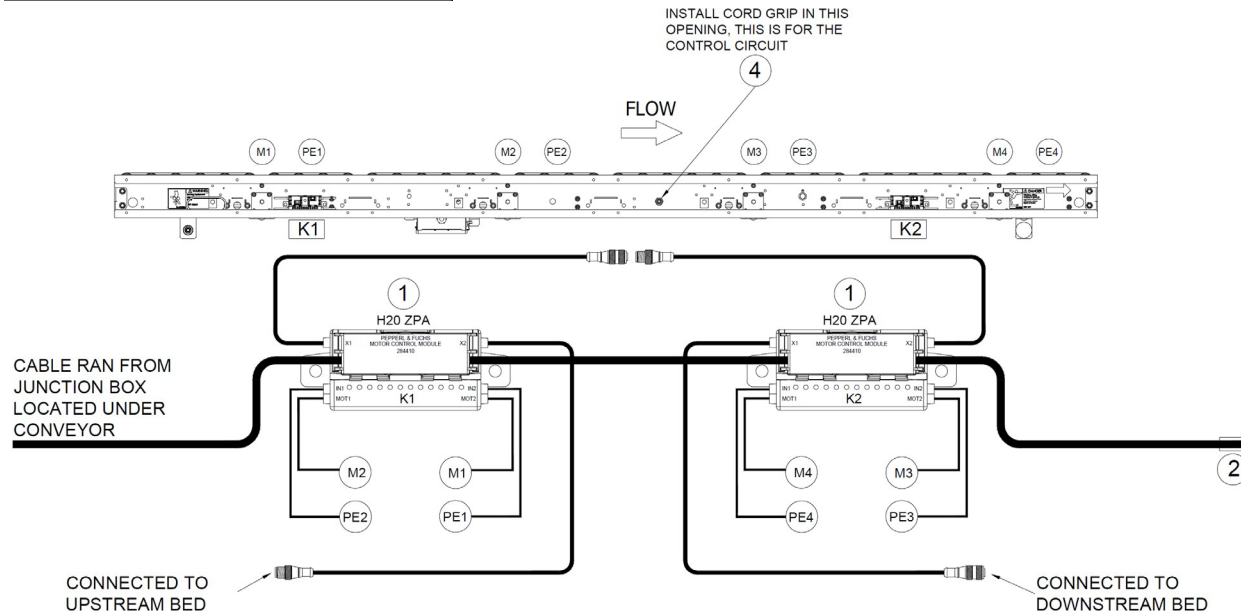
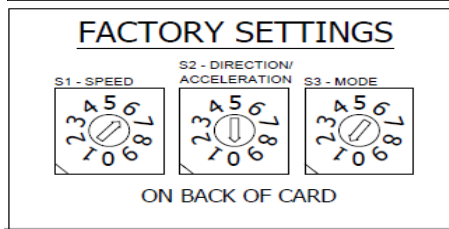
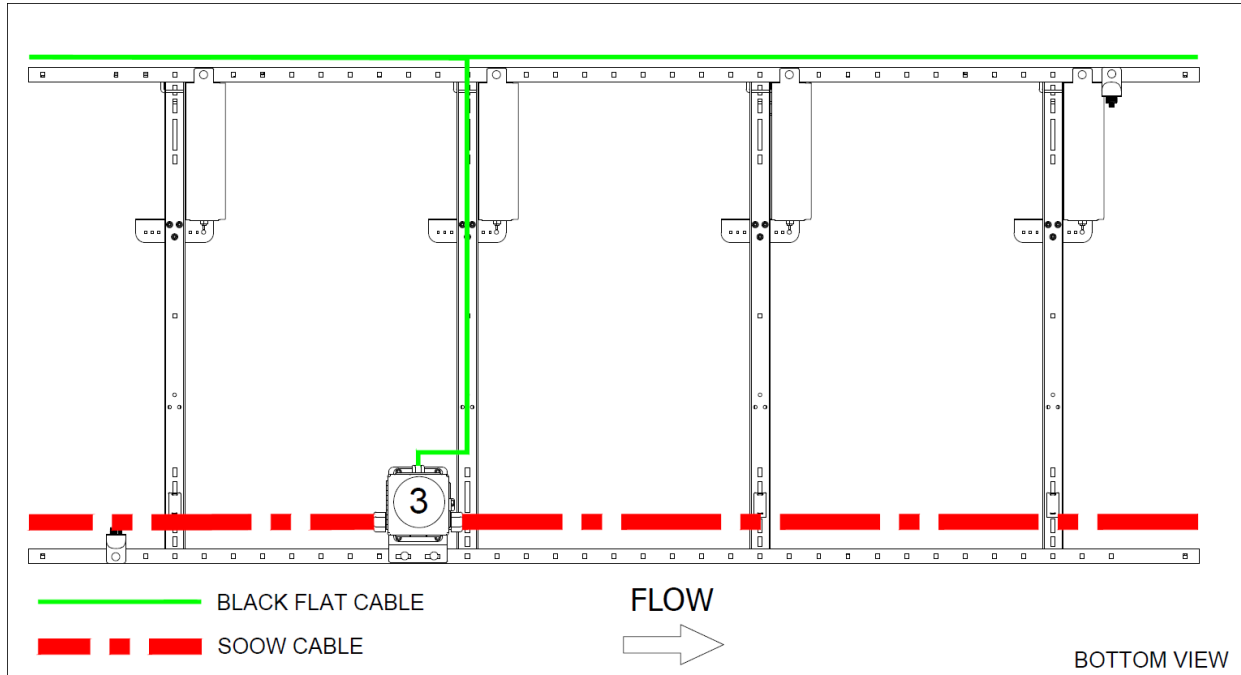


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

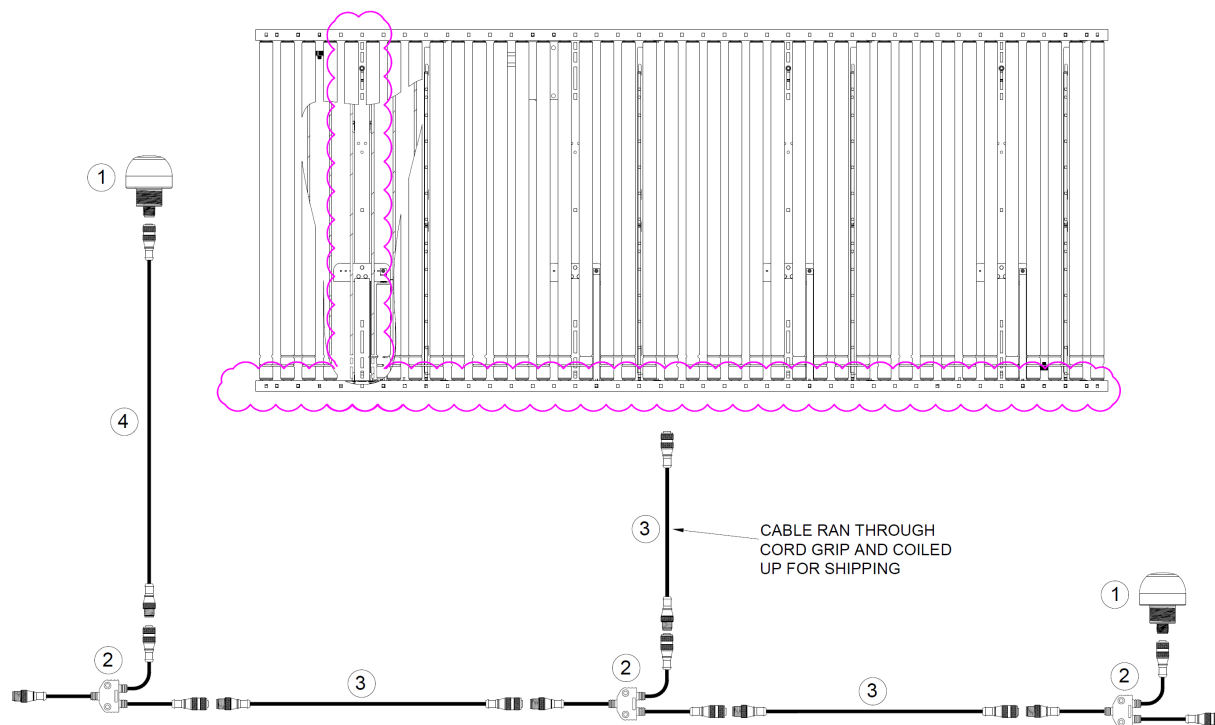
Electrical Drawings N01-1609-01



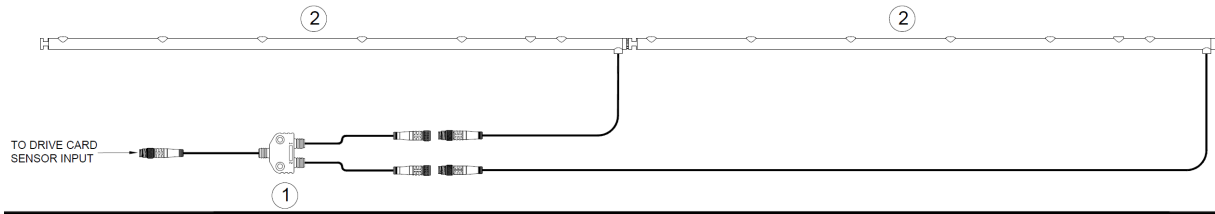
Electrical Drawings N01-1609-01

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF
4	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

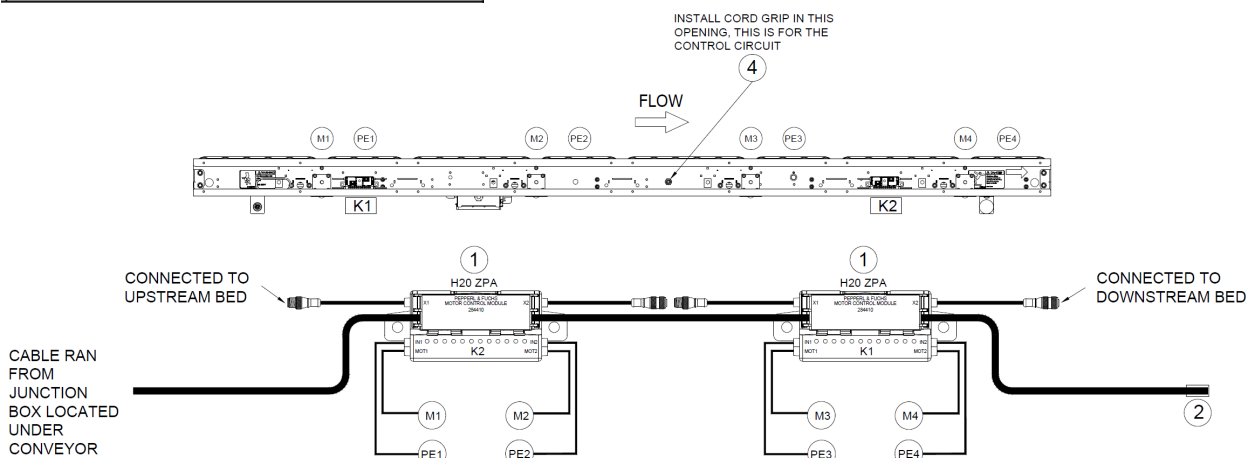
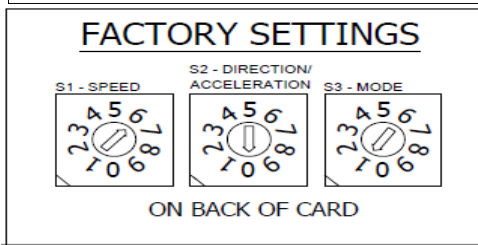
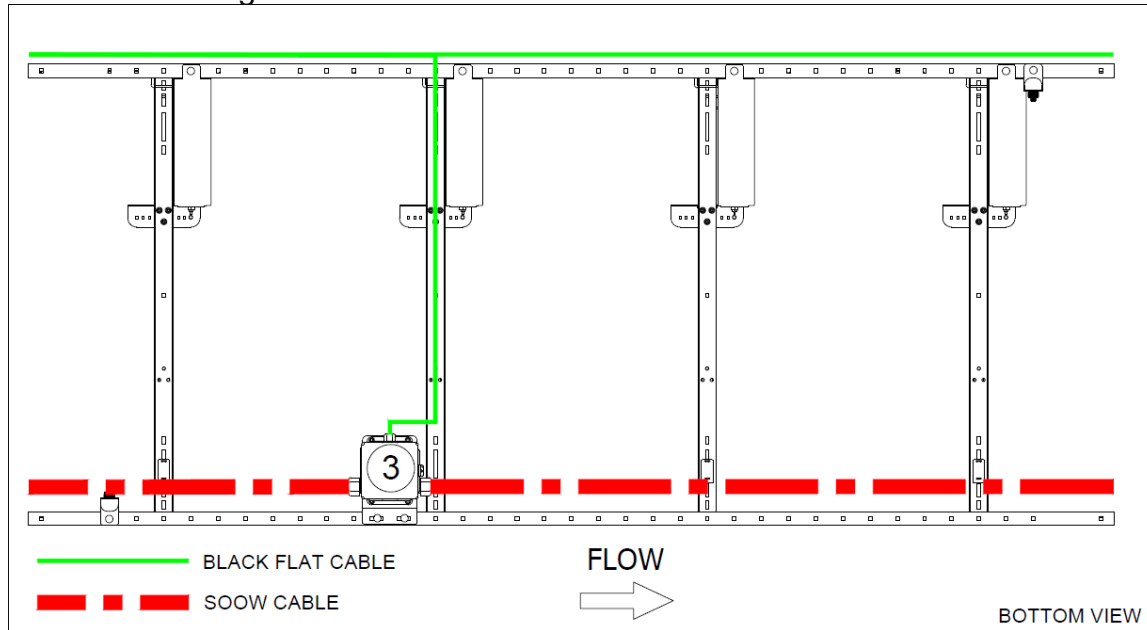


Electrical Drawings N01-1609-01



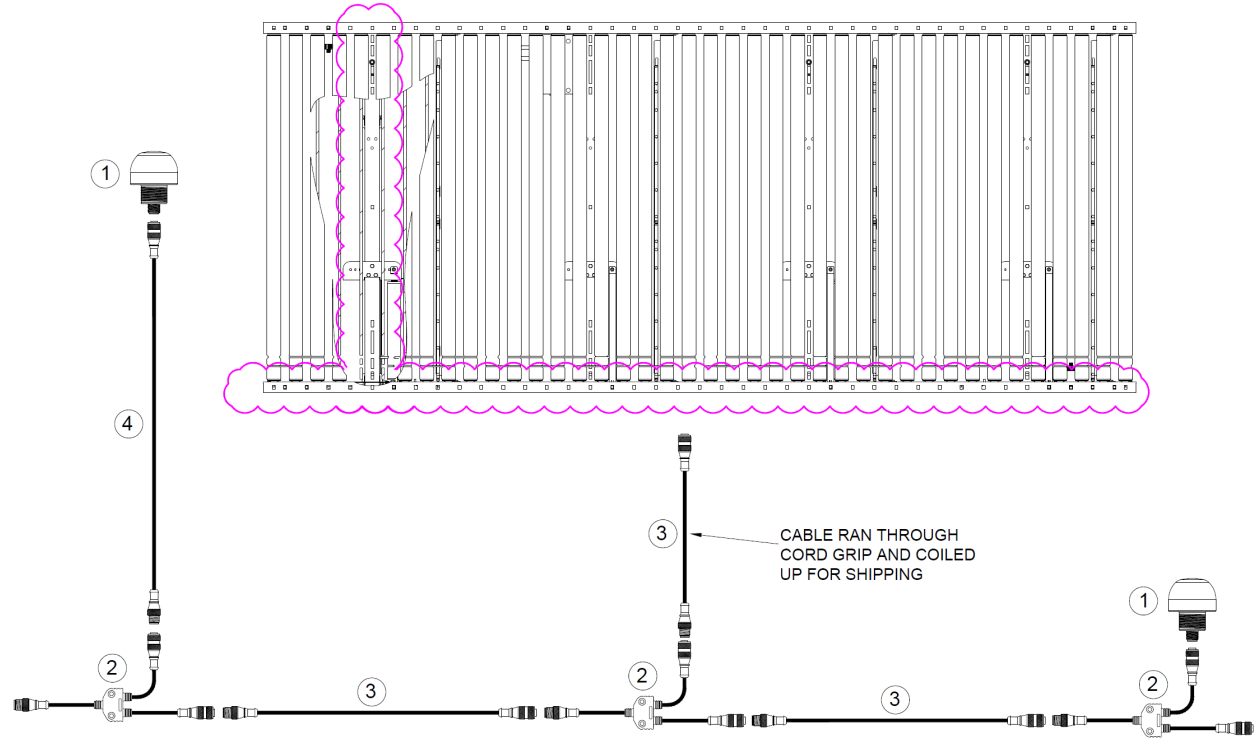
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

Electrical Drawings N01-1609-02

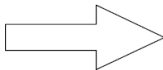


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF
4	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet

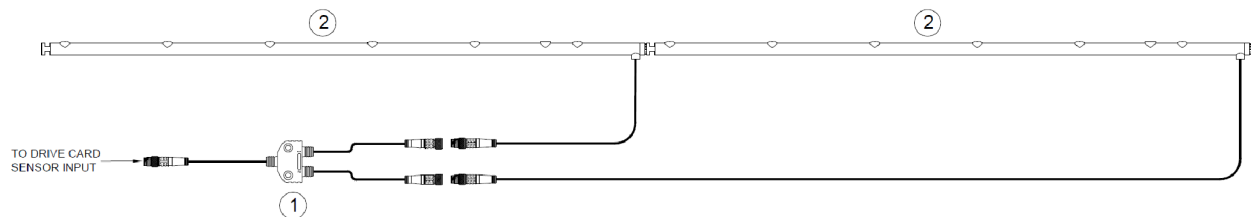
Electrical Drawings N01-1609-02



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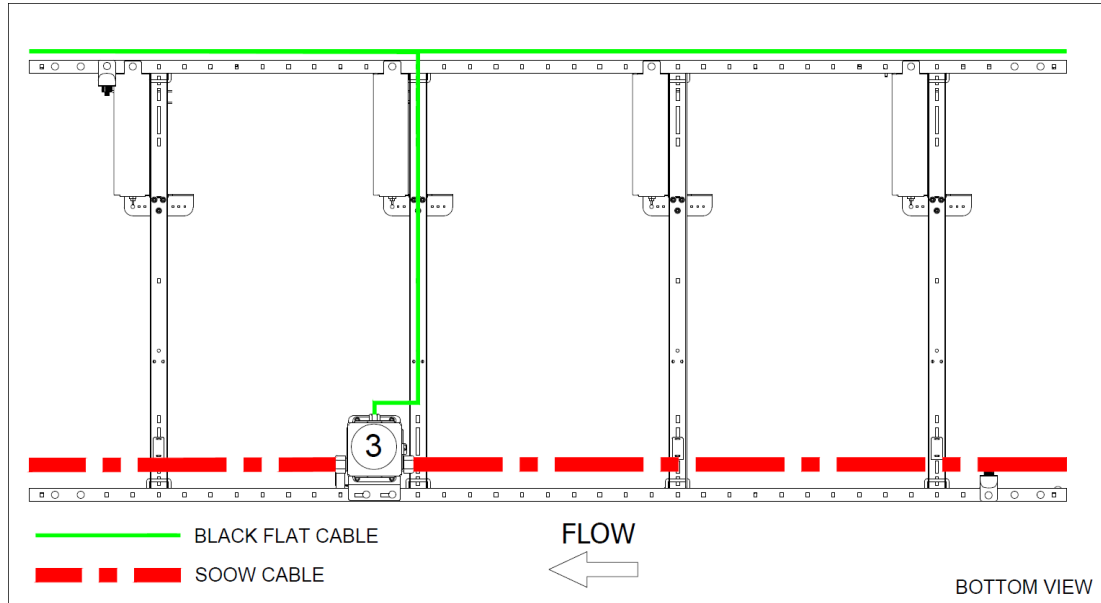


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

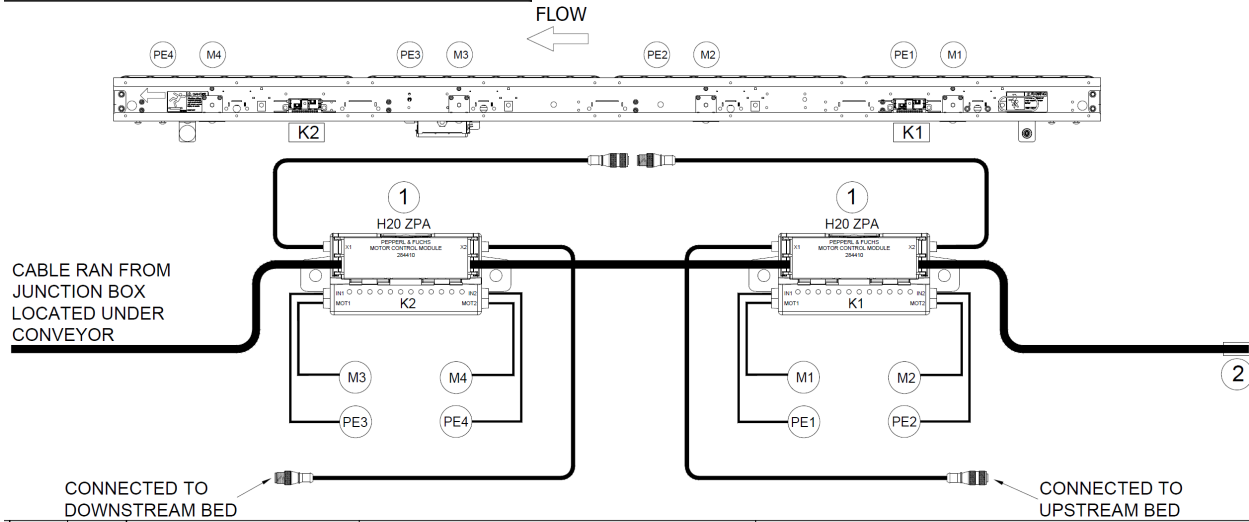
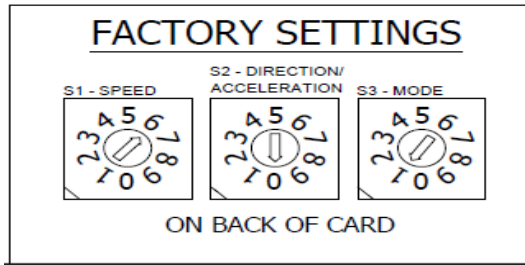


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

Electrical Drawings N01-1610-01

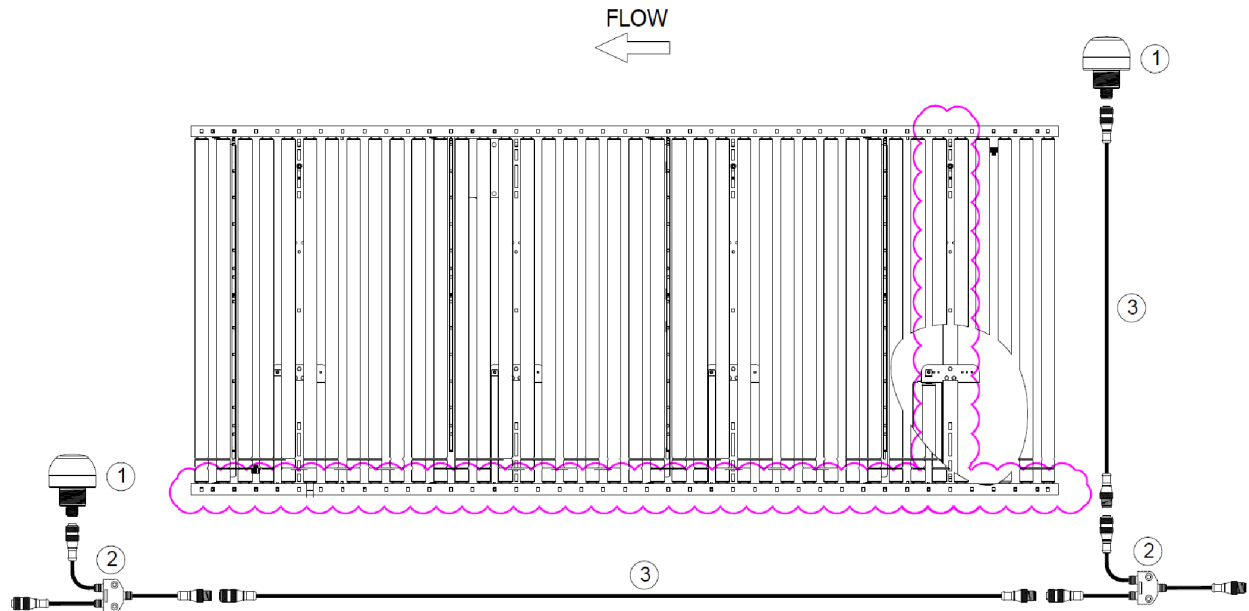


Electrical Drawings N01-1610-01

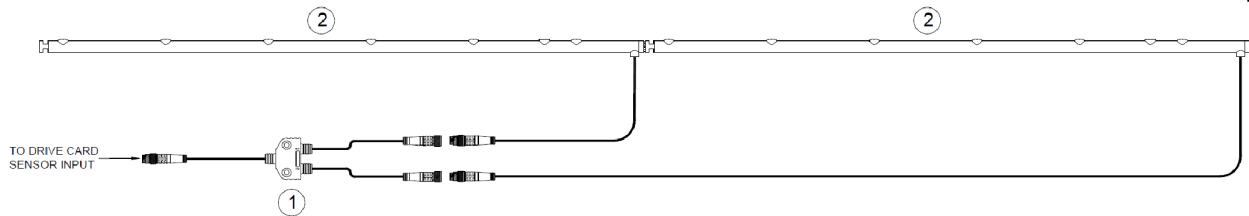


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1610-01

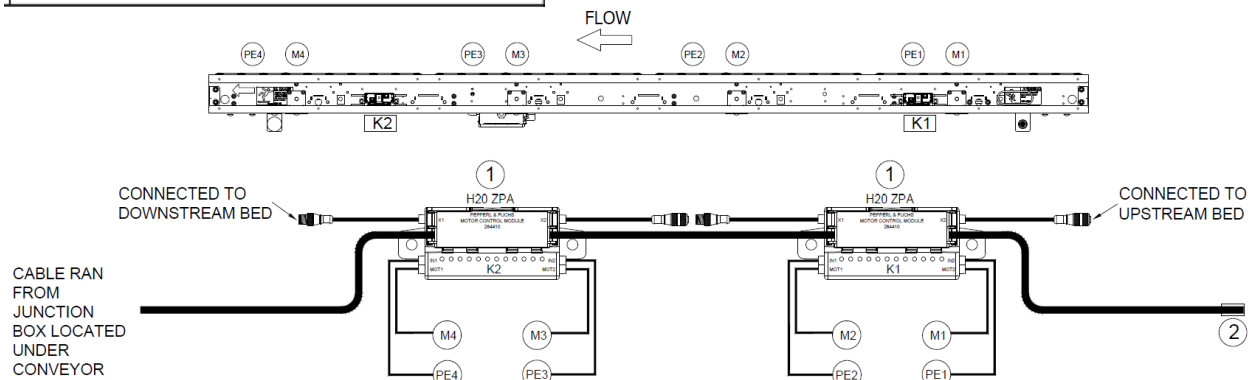
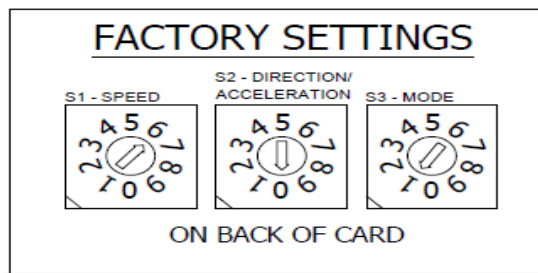
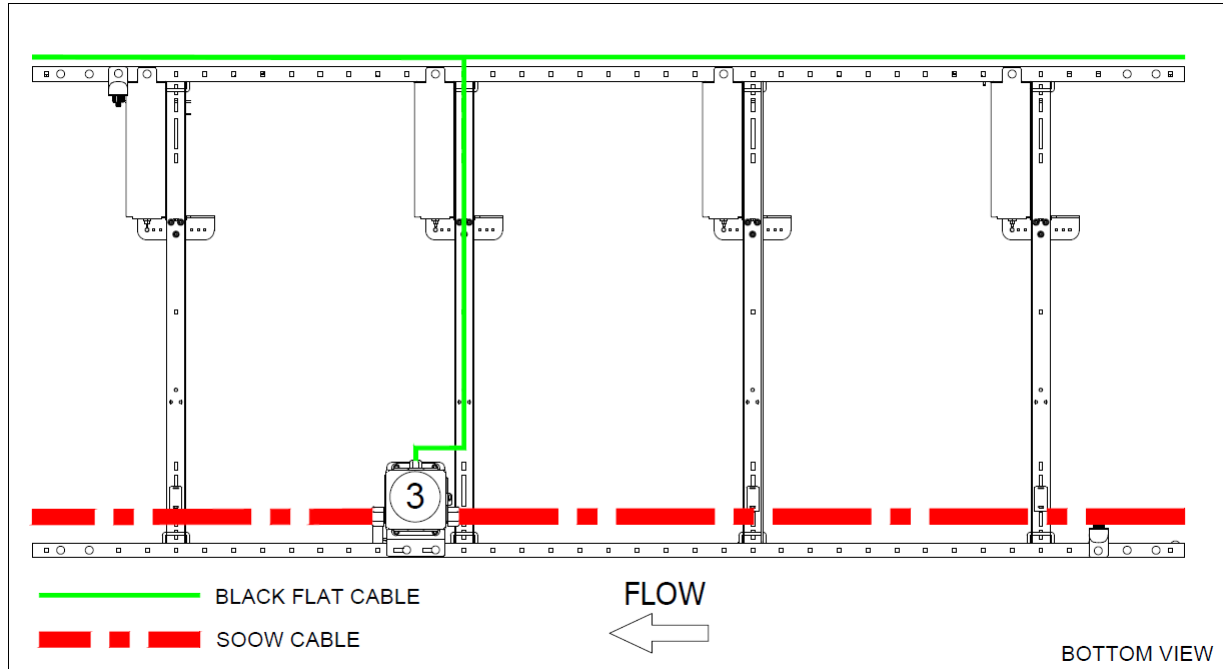


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray



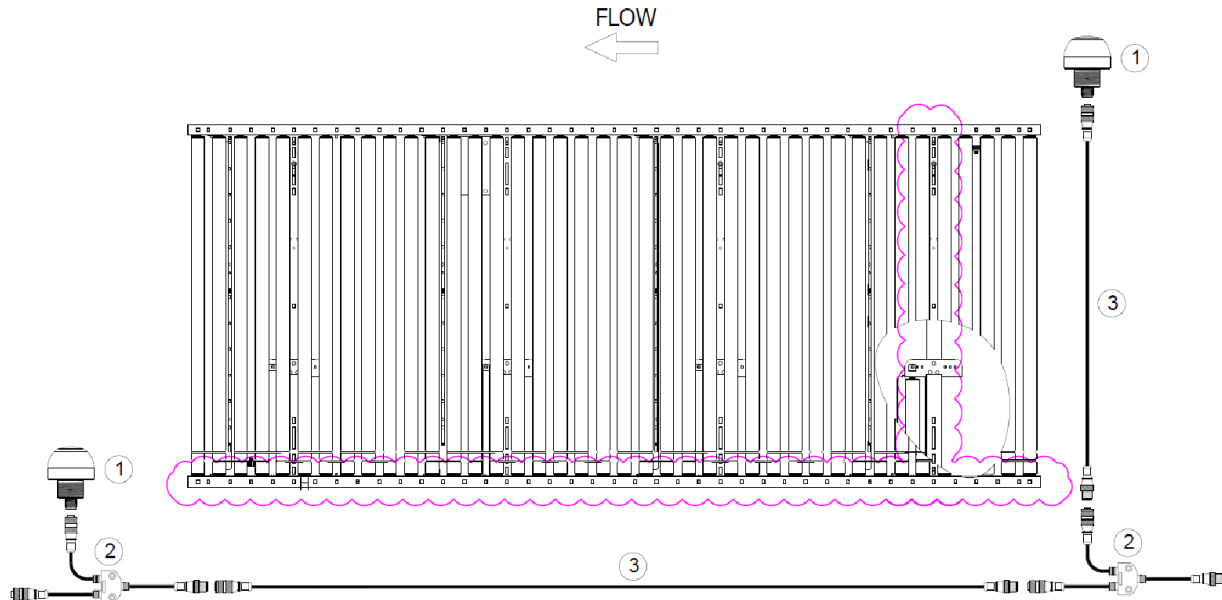
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

Electrical Drawings N01-1610-02

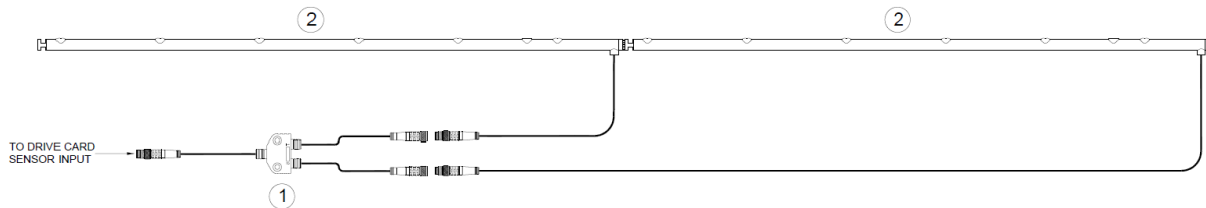


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF

Electrical Drawings N01-1610-02

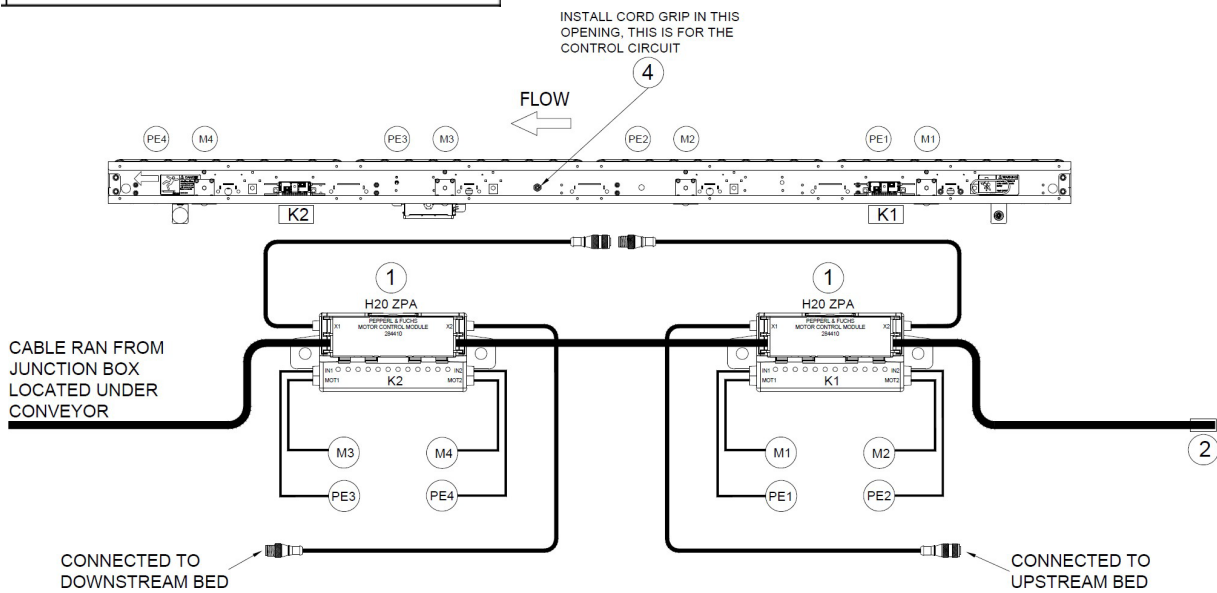
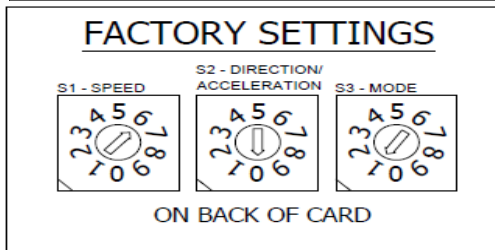
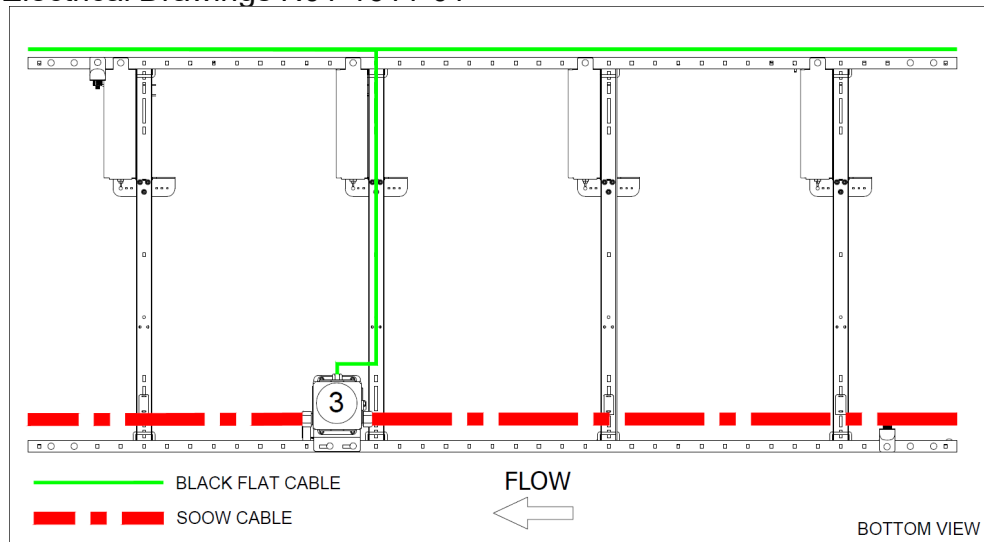


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

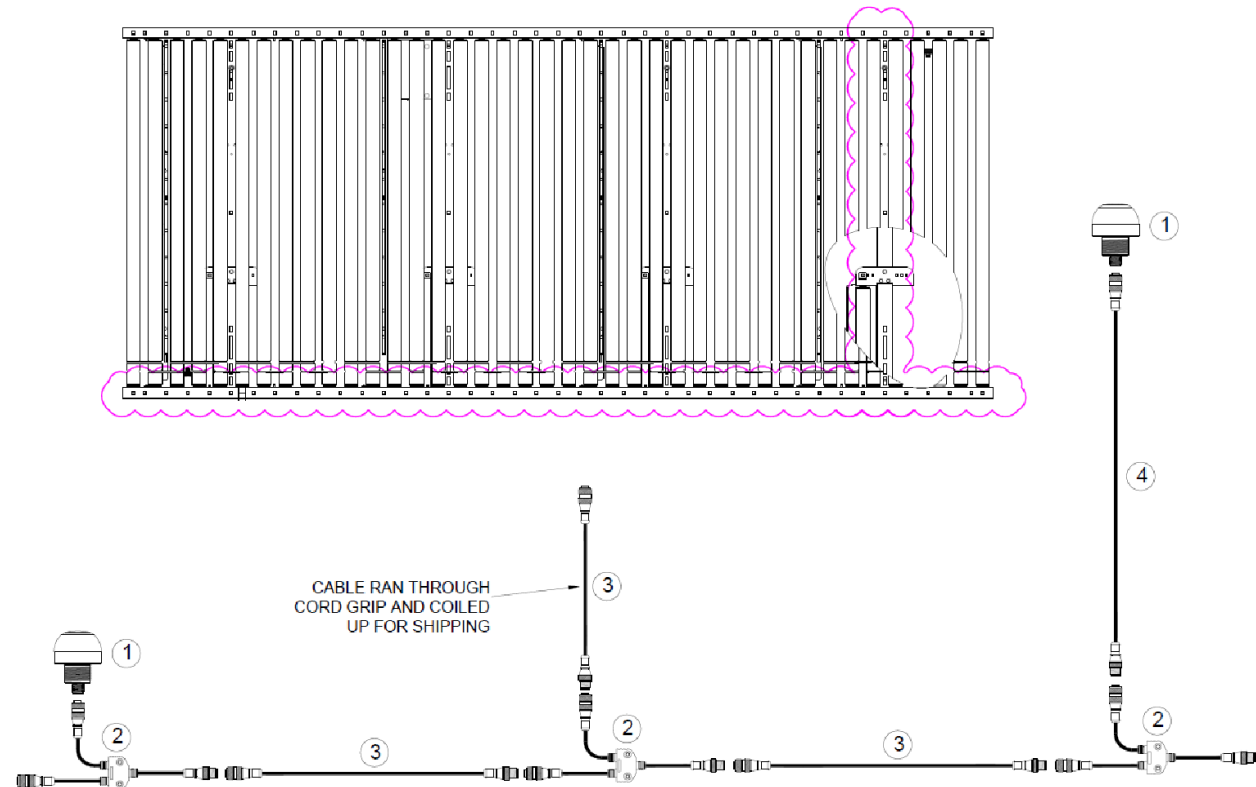
Electrical Drawings N01-1611-01



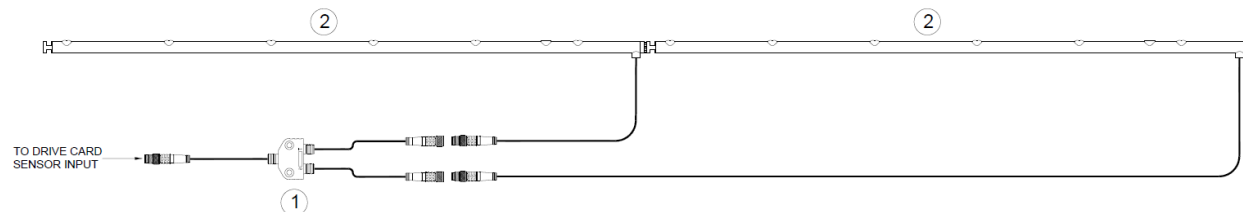
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF
4	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet

Electrical Drawings N01-1611-01

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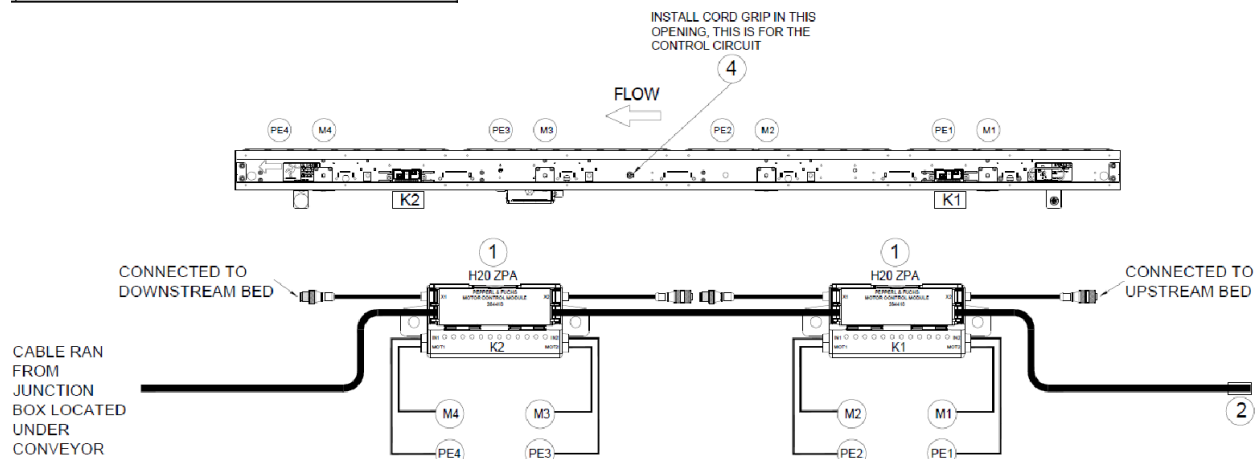
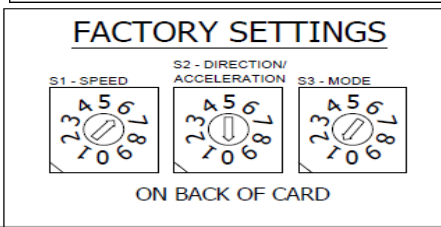
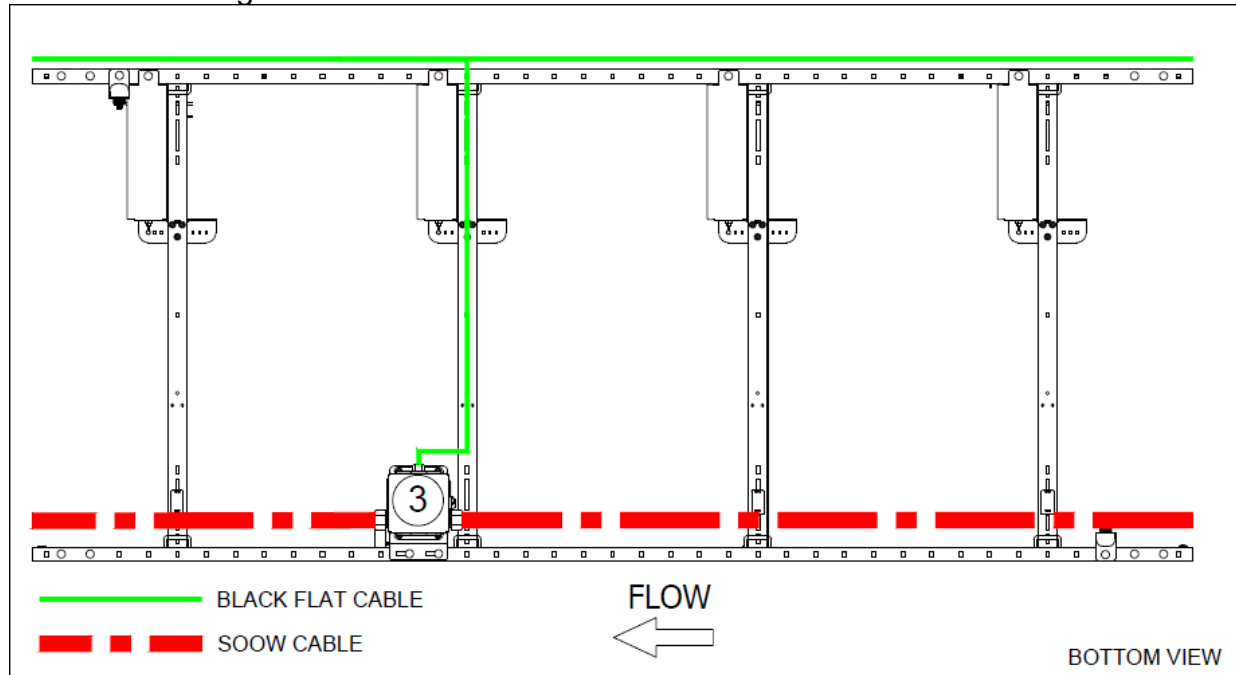


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray



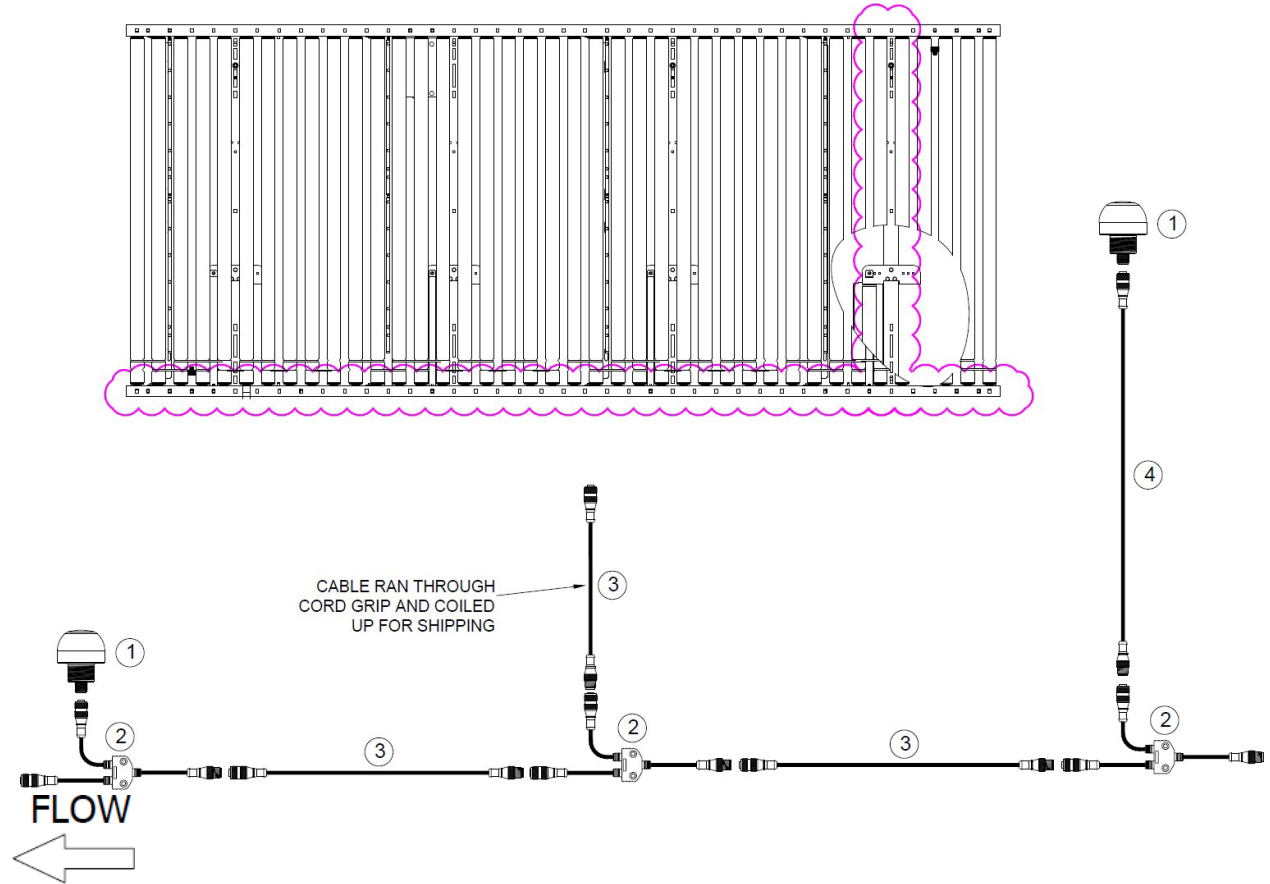
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector

Electrical Drawings N01-1611-02

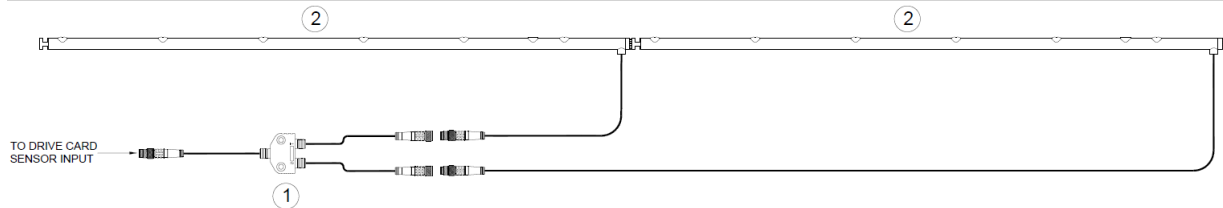


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
3	1	HILMOT	10802-059130	Under Roller Power Harness 10' length, 48" BF
4	1	ICOTEK	10800-059719	QVT split cable gland with 5mm Cable Grommet

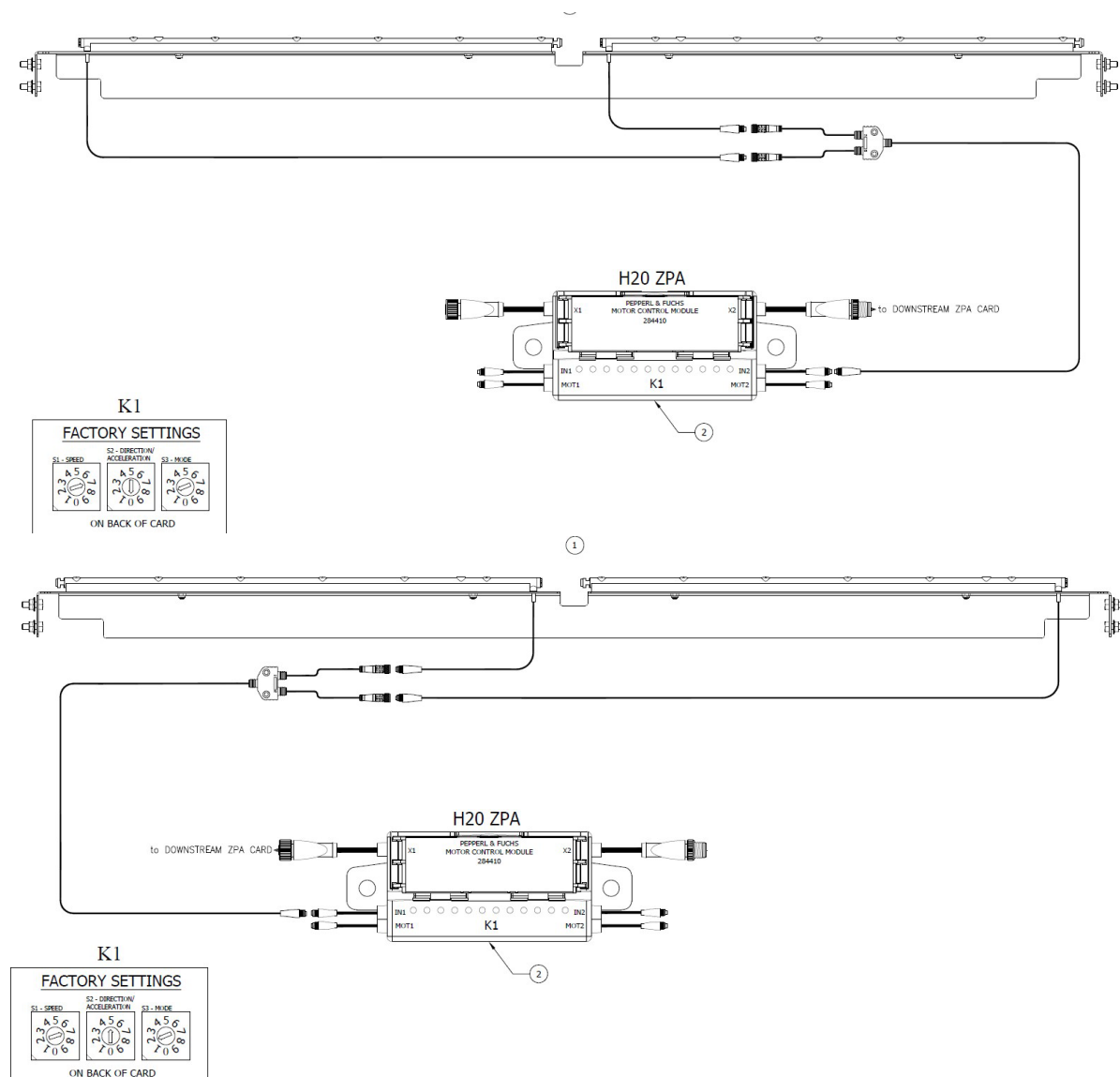
Electrical Drawings N01-1611-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	3	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

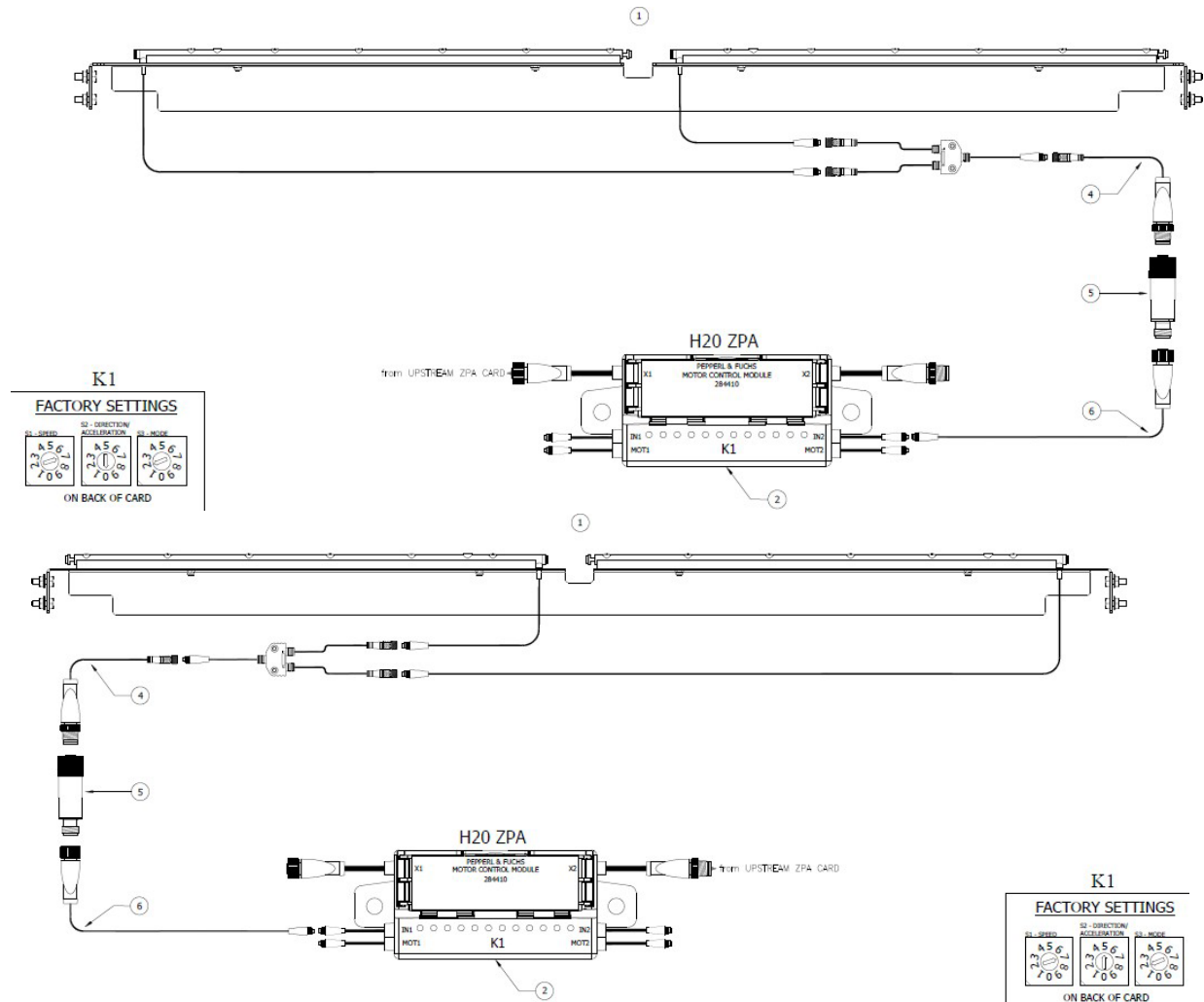


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-060058 VB2-PSG4M-0.3/2PKG4M-0.3/0.3/S651	M8, 4-pin Parallel Splitter, 2-Female to 1-Male, Yellow, VB2 Body
2	2	BANNER	10707-059784 TTR558APSB6T-2.0Q3-061	Banner Sensor Bar, 21.7IN Length, PNP, 6 Sensor Eyes, 93.1MM Spacing Centered, M8 Connector



Item	Description	Hilmot Part Number	QTY
1	PE SENSOR BAR START UP/LANE FULL ASSY 48BF	1002936	1
2	H-20 Auto Motor Control Module	10714-037753	1
3	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE	10201-001545	2
4	M12, Straight Female to Straight Male, 2m length, Gray	10707-057764	1
5	Splitter box G10, flat cable to flat cable	10710-033467	1
6	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating, 500 m	10715-046538	72
7	AS-Interface end seal for flat cable	10716-034891	1

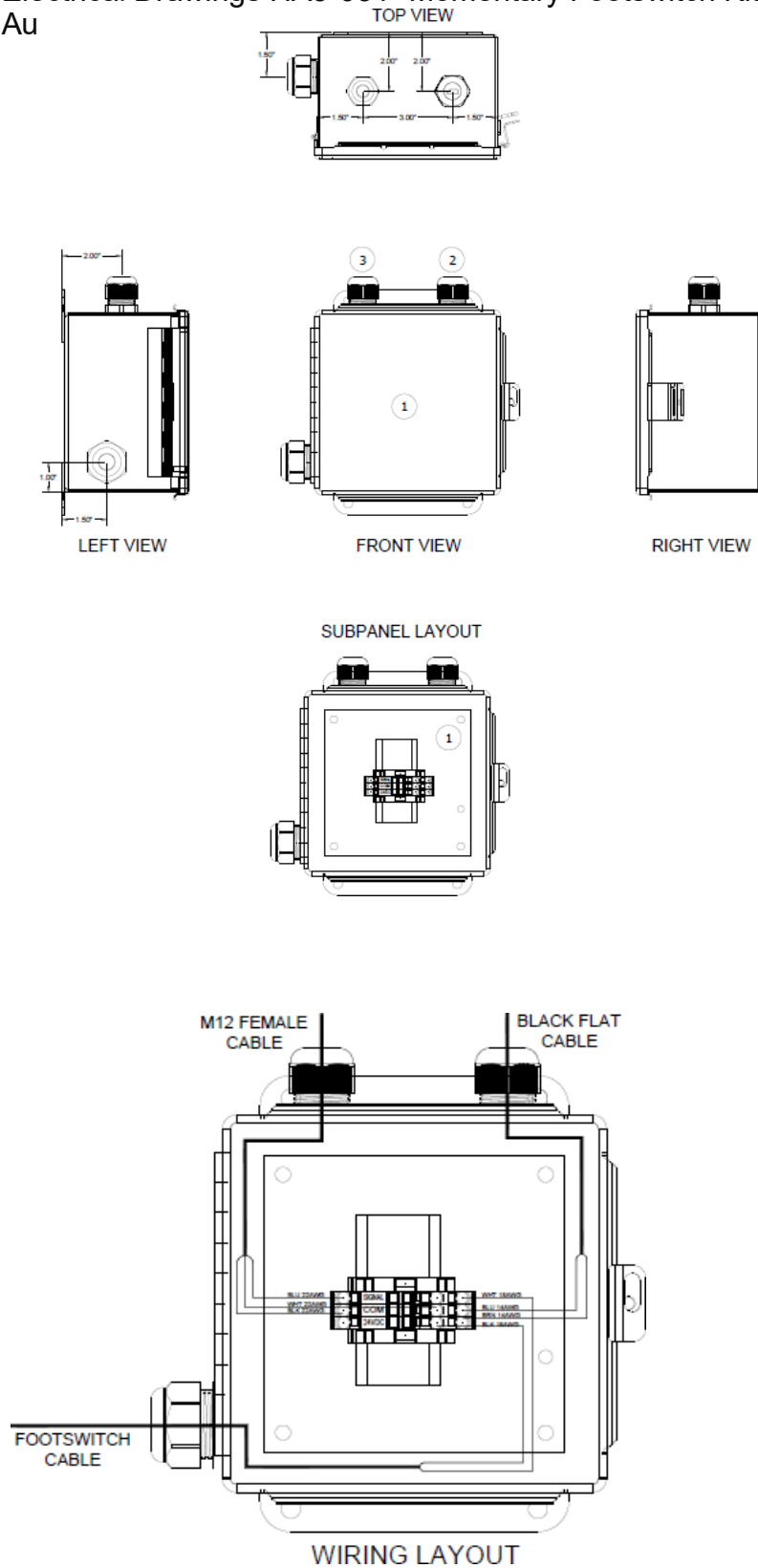
PHOTO EYE SHALL CONNECT TO DOWNSTREAM INPUT OF ZPA CARD
 REFERENCE H20 ZPA AUTO MANUAL FOR ROTARY DIAL SETTINGS
 LINE ITEMS 4-7 ARE USED FOR MOUNTING CARD AT A GREATER DISTANCE



Item	Description	Hilmot Part Number	QTY
1	PE SENSOR BAR START UP/LANE FULL ASSY 48BF	1002936	1
2	H-20 Auto Motor Control Module	10714-037753	1
3	REMOVABLE RIVET, NYLON, BLACK, FOR 0.25IN HOLE	10201-001545	2
4	M12 Male A-coded to M8 Female A-coded, 0.3M Length	10707-060077	1
5	M12 Inline On/Off Delay Timer	10707-060060	1
6	M12 Female A-coded to M8 Male A-coded, 0.6M Length	10707-060076	1
7	M12, Straight Female to Straight Male, 2m length, Gray	10707-057764	1
8	Splitter box G10, flat cable to flat cable	10710-033467	1
9	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating, 500 m	10715-046538	72
10	AS-Interface end seal for flat cable	10716-034891	1

PHOTO EYE SHALL CONNECT TO DOWNSTREAM INPUT OF ZPA CARD
 REFERENCE H20 ZPA AUTO MANUAL FOR ROTARY DIAL SETTINGS
 LINE ITEMS 7-10 ARE USED FOR MOUNTING CARD AT A GREATER DISTANCE

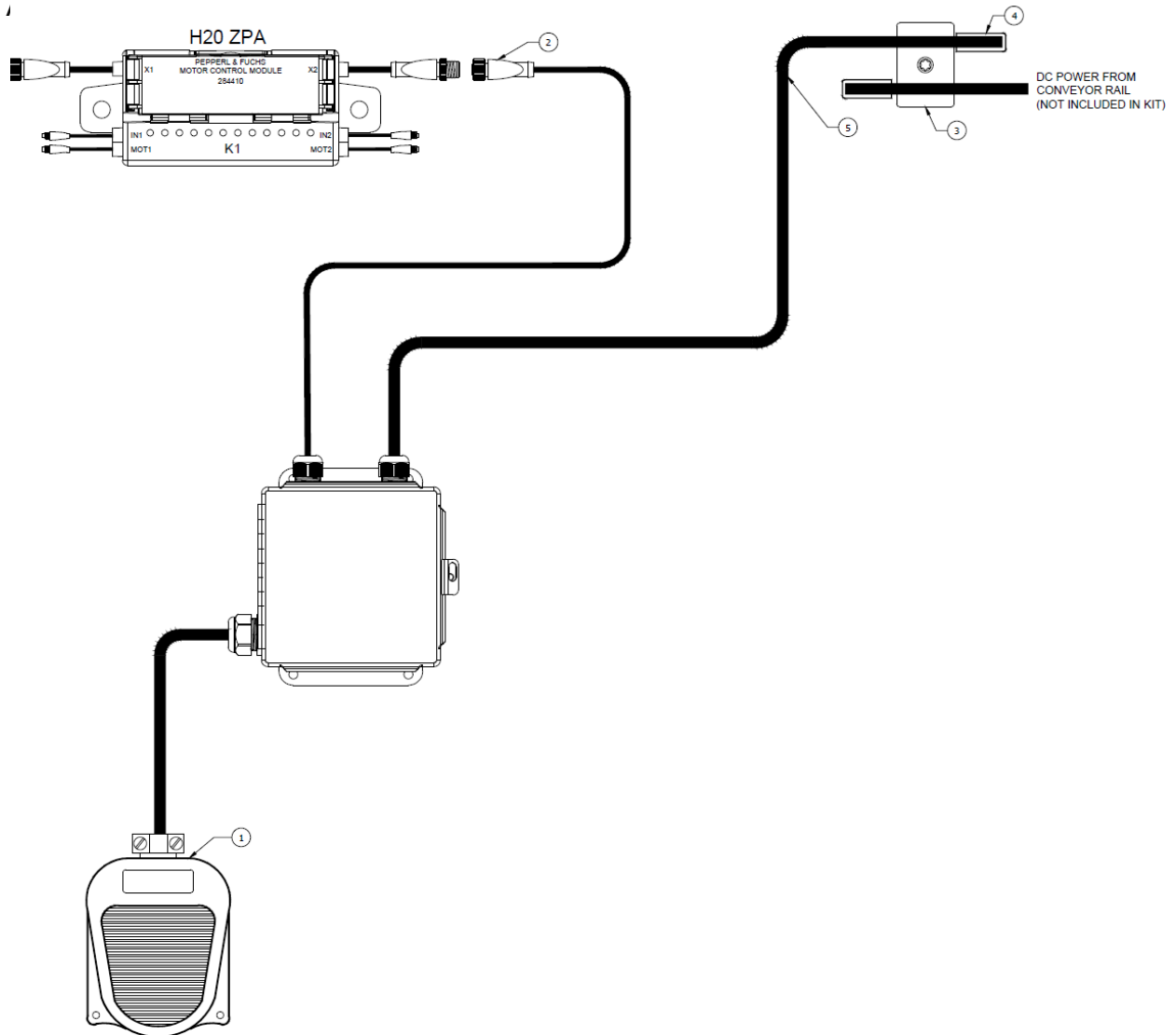
Electrical Drawings HA3-031- Momentary Footswitch Kit – Au



Electrical Drawings HA3-031- Momentary Footswitch Kit –

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	HOFFMAN	10700-053065	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP
2	1	HOFFMAN	10700-053066	ENCLOSURE, SUB PANEL, SMALL, JBOX, SUB PANEL FOR A606CH
3	3	WAGO	10710-027535	TOP JOB 2002 - 3 Conductor Through Terminal Block; 22-12AWG; Din Rail Mount
4	1	WAGO	10710-031397	Series 2002; End and intermediate plate; 1 mm thick, GRAY
5	3"	WAGO	10709-009425	Din Rail - 2 meter Strip
6	2	WAGO	10710-000445	SCREWLESS END STOP; 6 MM / 0.236 IN WIDE; CARRIER RAIL DIN 35
7	1	MENCOM	10709-058273	CABLE ENTRY, BLACK, ASI/AUX CABLE GLAND, 1/2 NPT, SINGLE ENTRY (SINGLE FLAT CABLE)
8	2	HUBBELL	10716-009495	CORD GRIP PLASTIC NUT, 1/2IN K.O.
9	2	HUBBELL	10716-025350	CORD GRIP - 0.17IN TO 0.45IN CABLE RANGE, 1/2IN K.O., NON-METALLIC
10	1	FABRICATED	1000856	ELECTRIC ENCLOSURE MTG BRKT
11	2	AMERICAN BOLT	10201-010200	3/8 - 16 UNC HEX FLANGE NUT
12	2	AMERICAN BOLT	10201-010800	3/8 - 16 UNC X 0.75 CARRIAGE SCREW
13	4	AMERICAN BOLT	10201-010205	1/4 - 20 UNC HEX FLANGE NUT
14	4	AMERICAN BOLT	10201-010814	1/4 - 20 UNC X 0.50 CARRIAGE SCREW

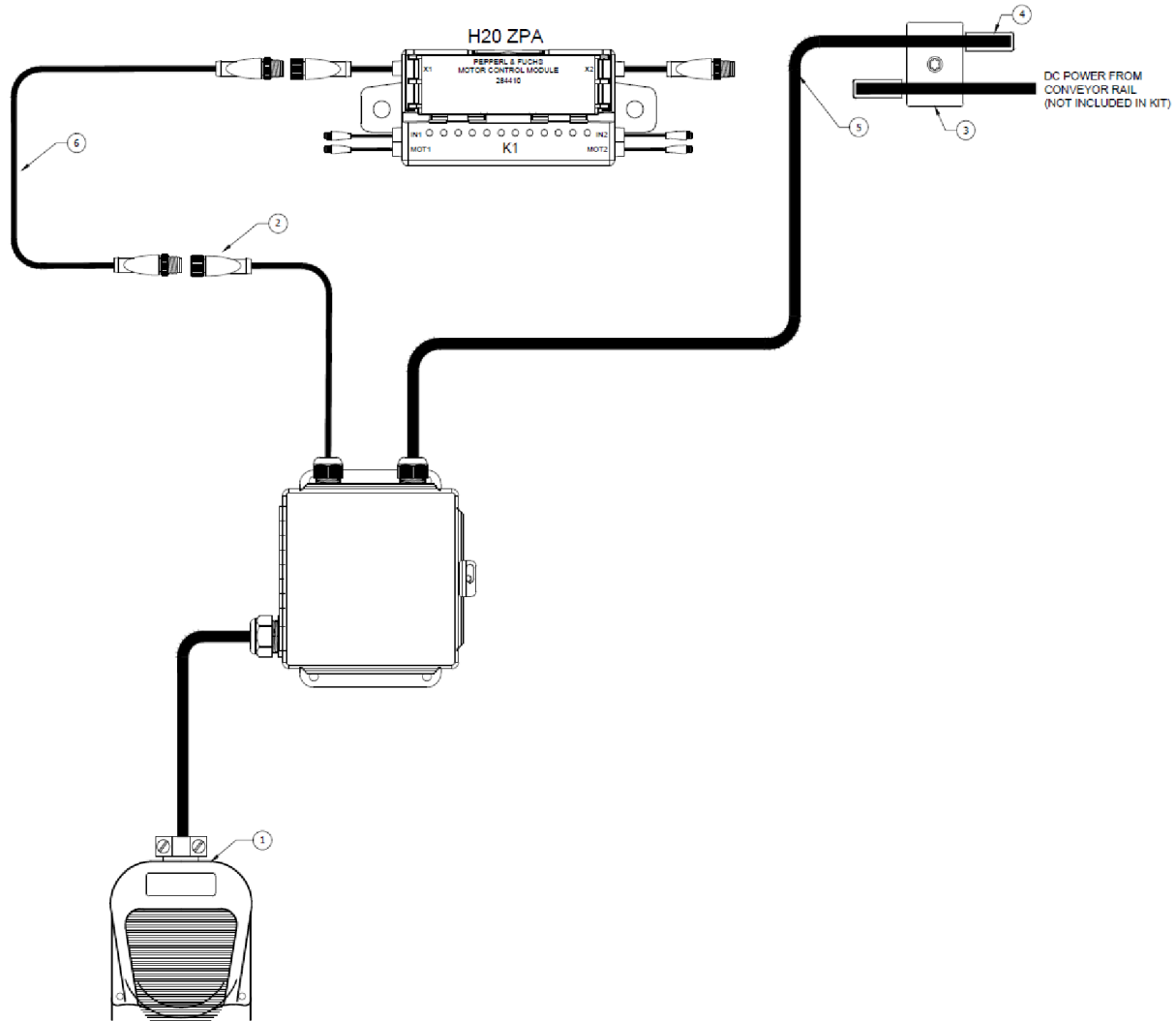
Electrical Drawings HA3-031- Momentary Footswitch Kit –



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	HILMOT	10500-020109	MOMENTARY FOOTSWITCH SUB-ASSEMBLY
2	1	TURCK	10707-059135	M12, Straight Female to Flying Leads, 2m length, Gray
3	1	PEPPERL & FUCHS	10710-033467	Splitter box G10, flat cable to flat cable
4	1	PEPPERL & FUCHS	10716-034891	AS-Interface end seal for flat cable
5	78"	PEPPERL & FUCHS	10715-029103	Black AS-Interface Power Flat Cable; 2 Cond. 14AWG Wire; Rubber Compound Outer Coating

H20 ZPA AUTO CARD NOT INCLUDED IN KIT
 REFERENCE H20 ZPA AUTO MANUAL FOR ROTARY DIAL SETTINGS

Electrical Drawings HA3-031- Momentary Footswitch Kit –



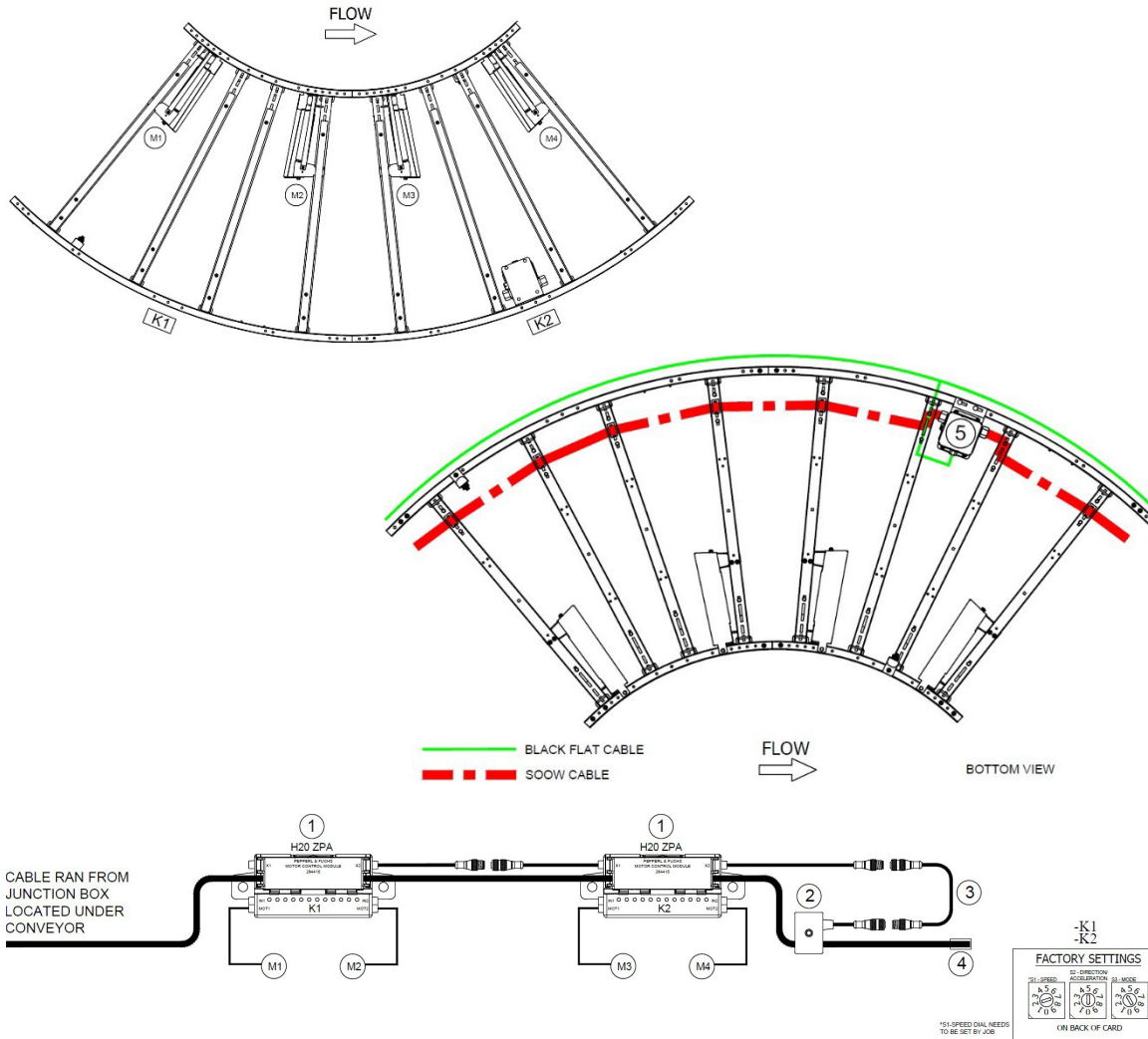
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	HILMOT	10500-020109	MOMENTARY FOOTSWITCH SUB-ASSEMBLY
2	1	TURCK	10707-059135	M12, Straight Female to Flying Leads, 2m length, Gray
3	1	PEPPERL & FUCHS	10710-033467	Splitter box G10, flat cable to flat cable
4	1	PEPPERL & FUCHS	10716-034891	AS-Interface end seal for flat cable
5	78"	PEPPERL & FUCHS	10715-029103	Black AS-Interface Power Flat Cable; 2 Cond. 14AWG Wire; Rubber Compound Outer Coating
6	1	PEPPERL & FUCHS	10715-040379	H20 ZPA Male to Male Crossover Cable, 0.75m Length

H20 ZPA AUTO CARD NOT INCLUDED IN KIT
 REFERENCE H20 ZPA AUTO MANUAL FOR ROTARY DIAL SETTINGS

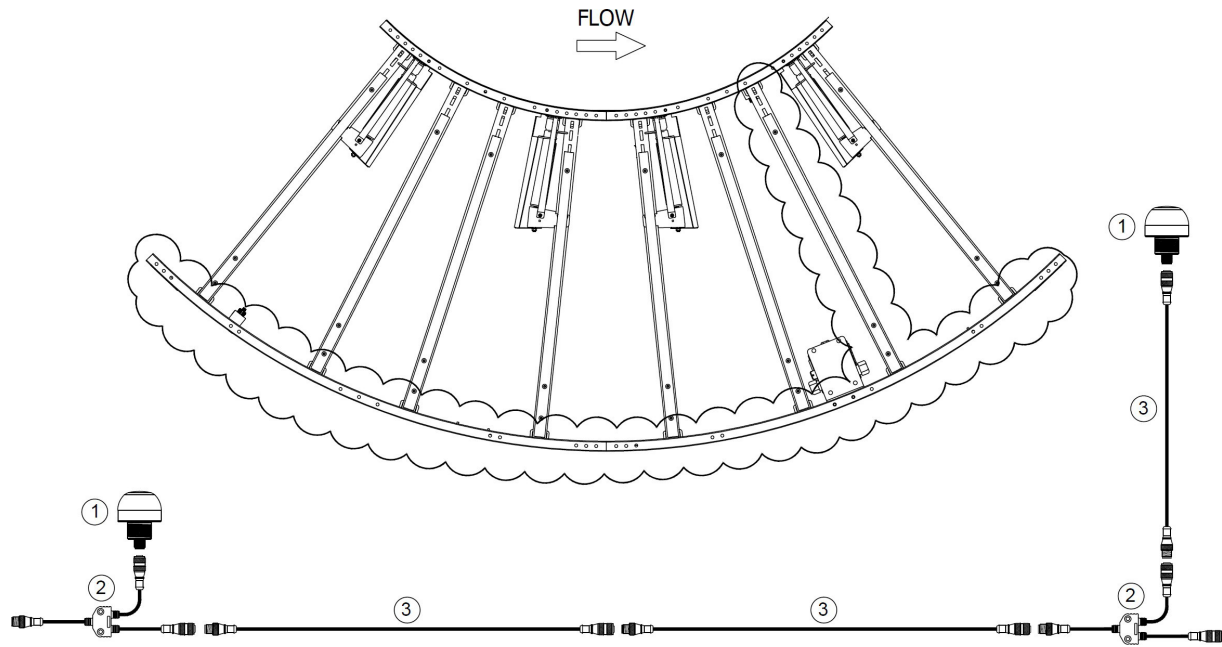
HILMOT

A TREW Company

Electrical Drawings N02-1470-01

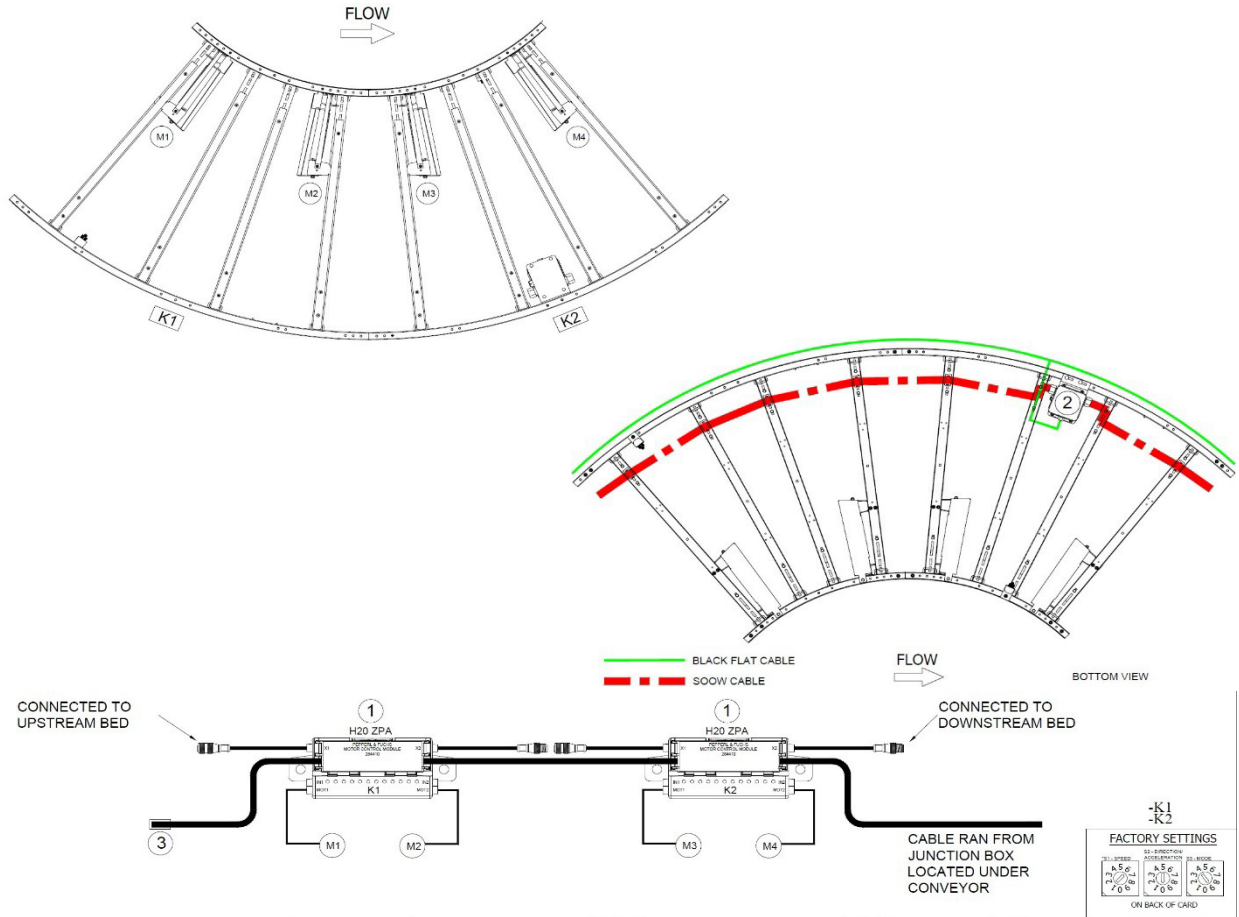


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-037753 284410	H-20 Auto Motor Control Module
2	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector
3	1	TURCK	10707-058596 RK 4.2T-0.2-RS 4.22T/CS17492	X2 Connection Cable From P&F G10 Block
4	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	HILMOT	10802-059151	Under Roller Power Harness for 90 Degree LH Curves, RH Electrical, 48" BF



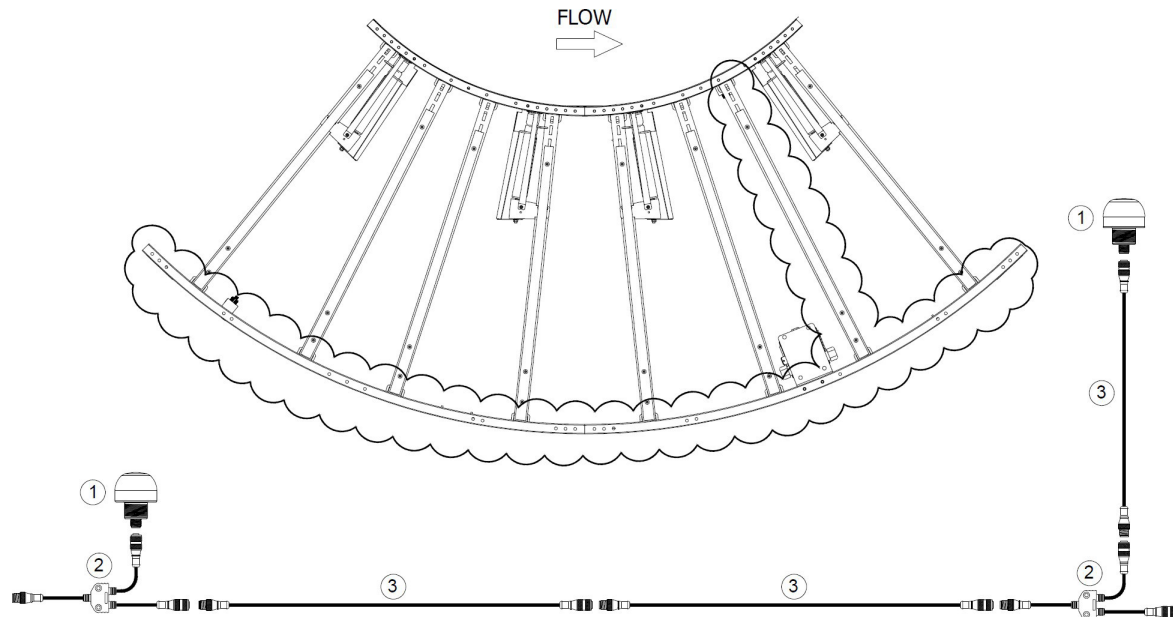
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1470-02



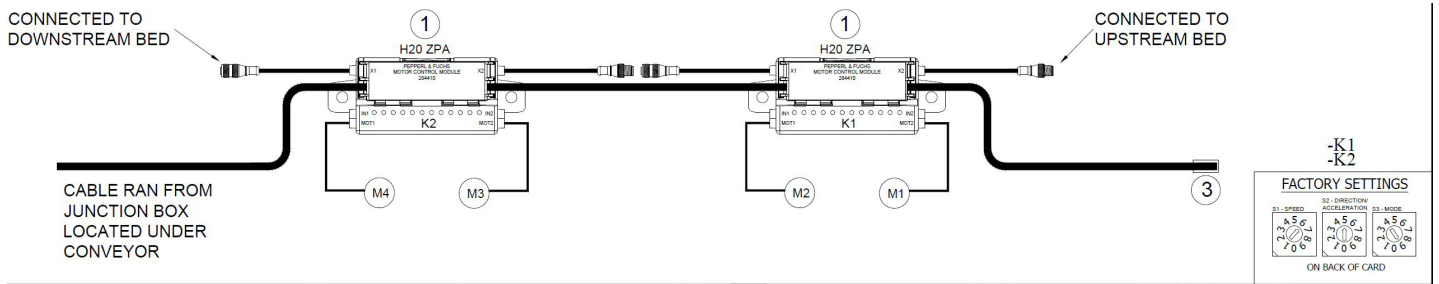
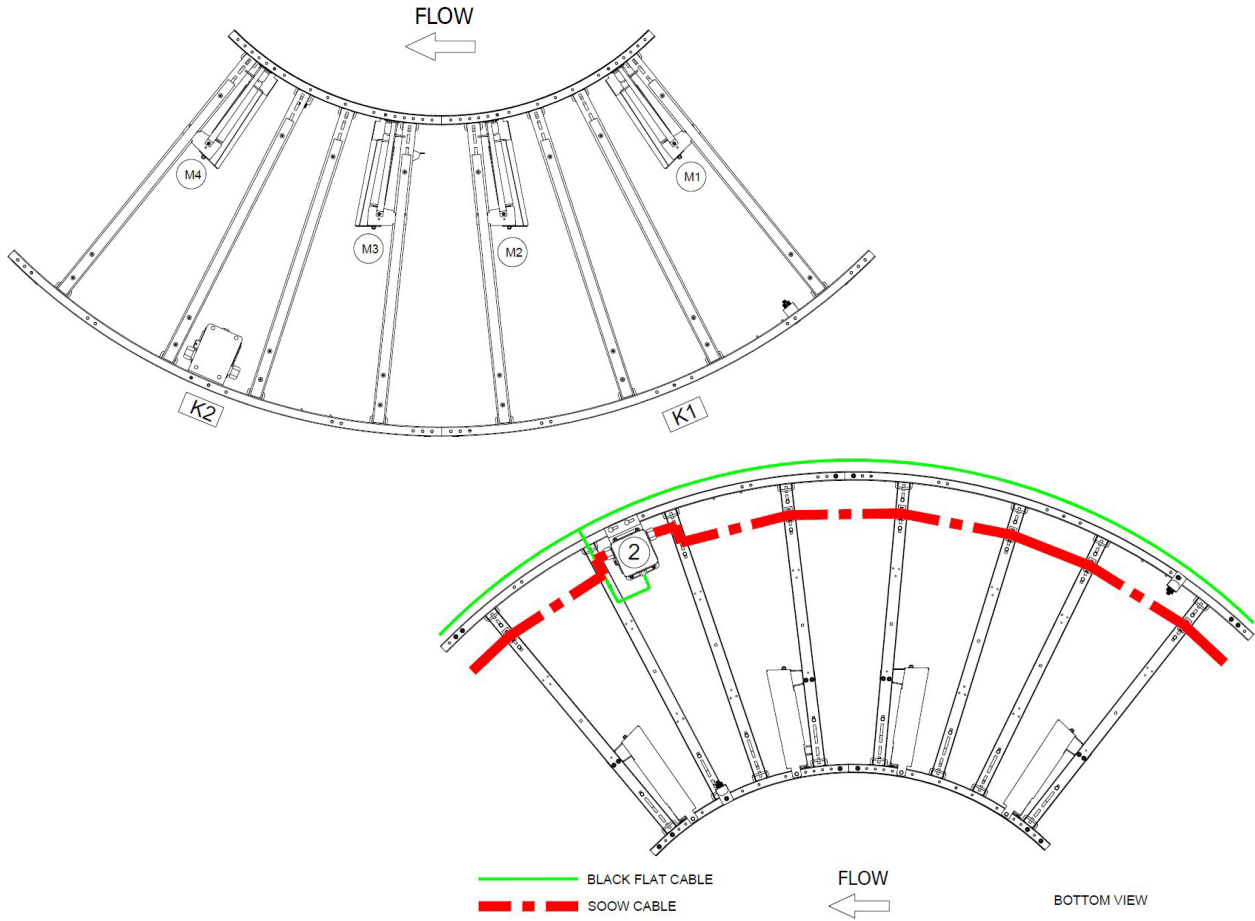
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059989	H-20 Auto Motor Control Module for EC5000 Curves, 131 FPM
2	1	HILMOT	10802-059151	Under Roller Power Harness for 90 Degree LH Curves, RH Electrical, 48" BF
3	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N02-1470-02

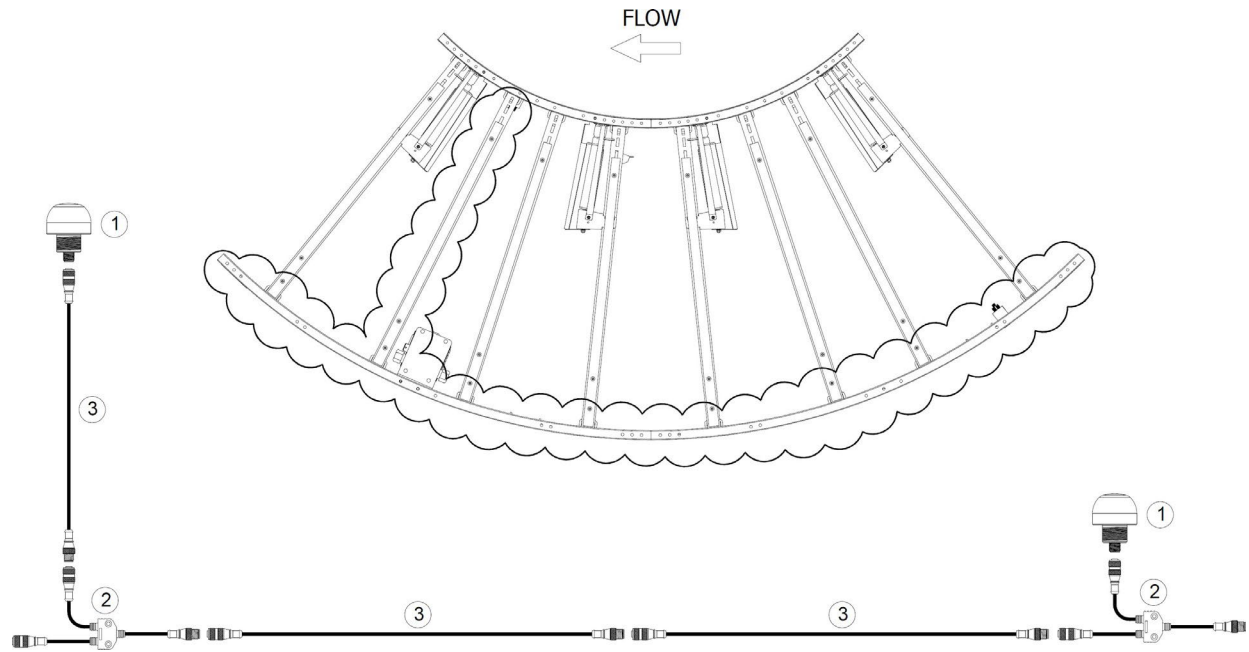


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1474-01

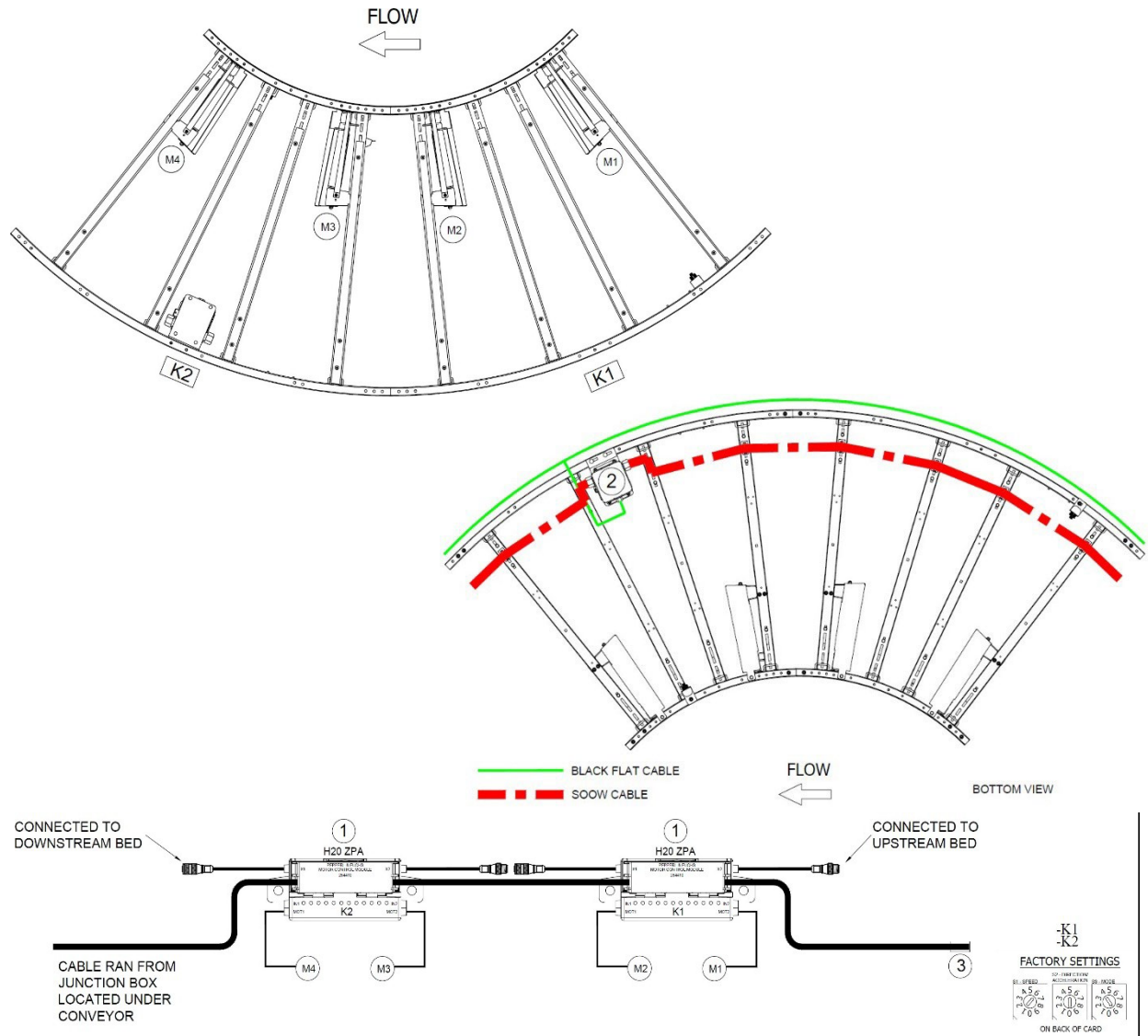


ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059989	H-20 Auto Motor Control Module for EC5000 Curves, 131 FPM
2	1	HILMOT	10802-059452	Under Roller Power Harness for 90 Degree RH Curves, LH Electrical, 48" BF
3	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable



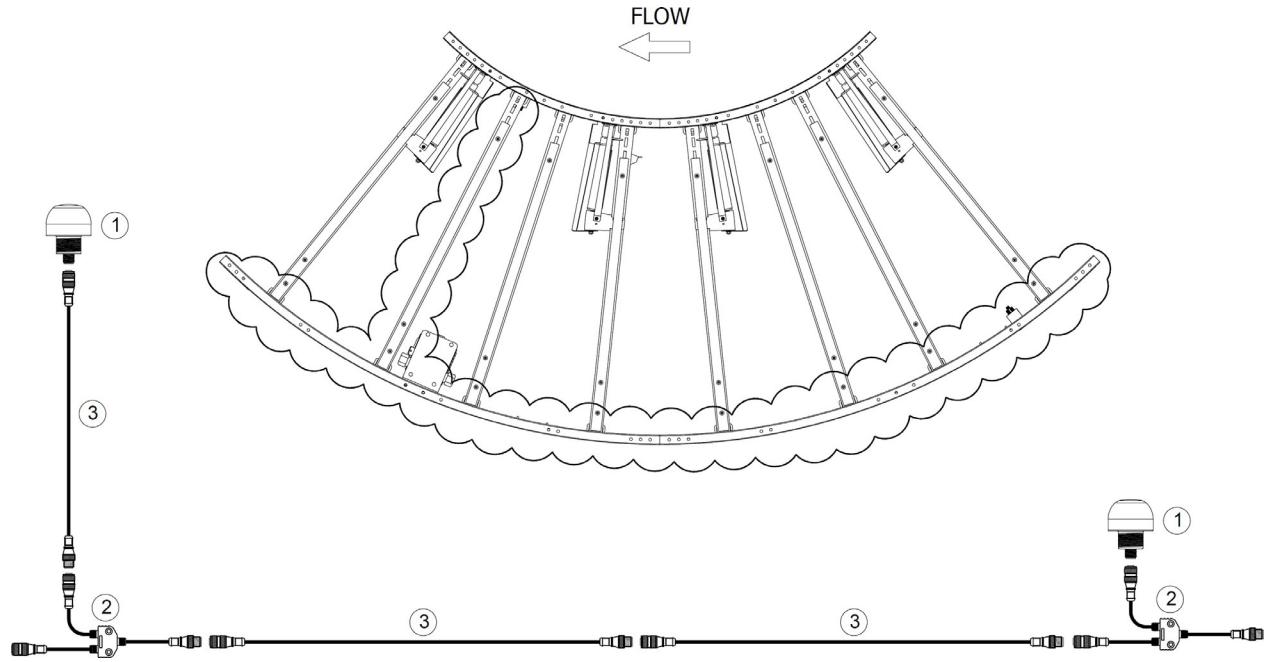
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1474-02



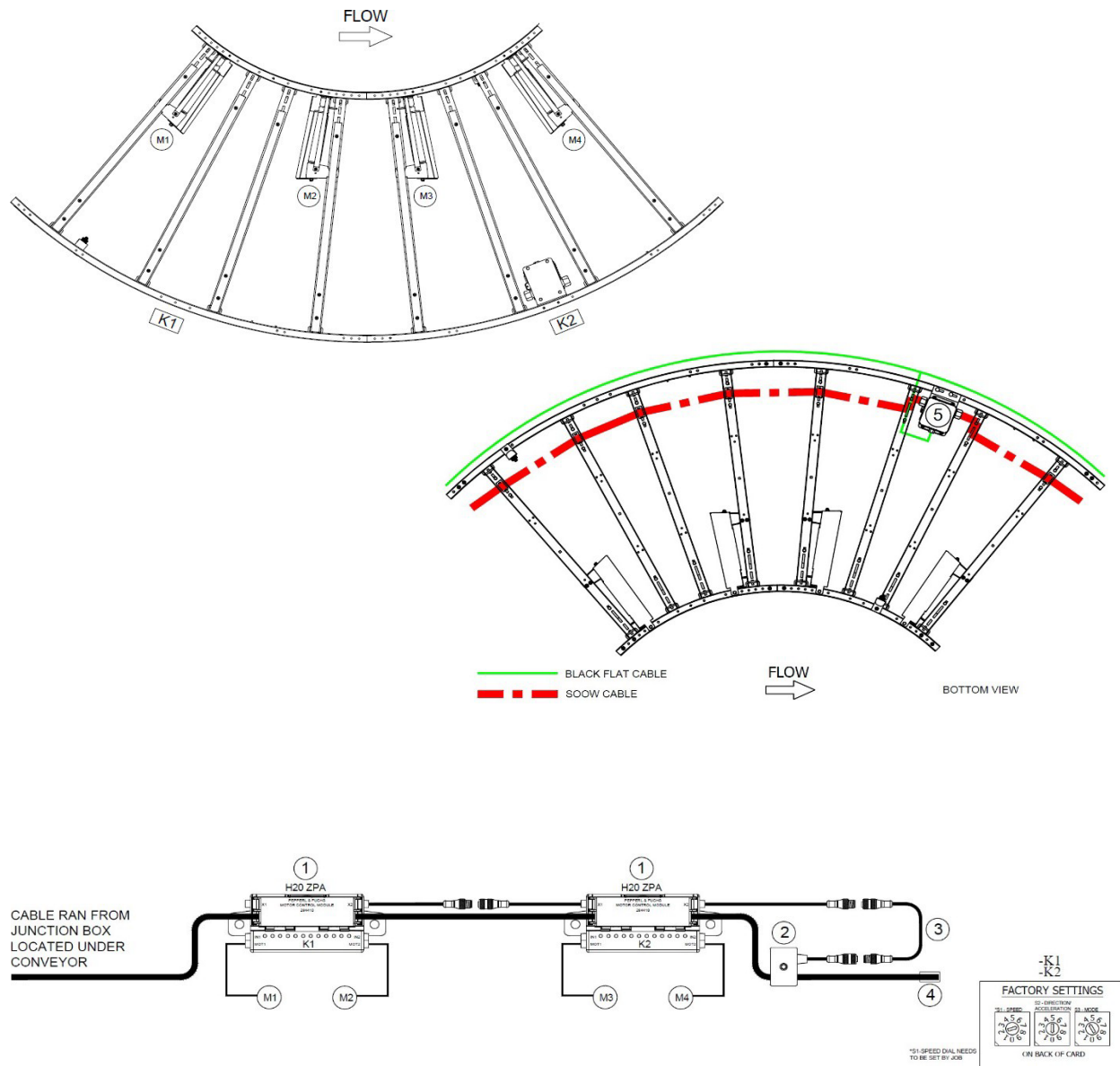
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060001	H-20 Auto Motor Control Module for V24 Series 250 Curves, 131 FPM
2	1	HILMOT	10802-059452	Under Roller Power Harness for 90 Degree RH Curves, LH Electrical, 48" BF
3	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N02-1474-02



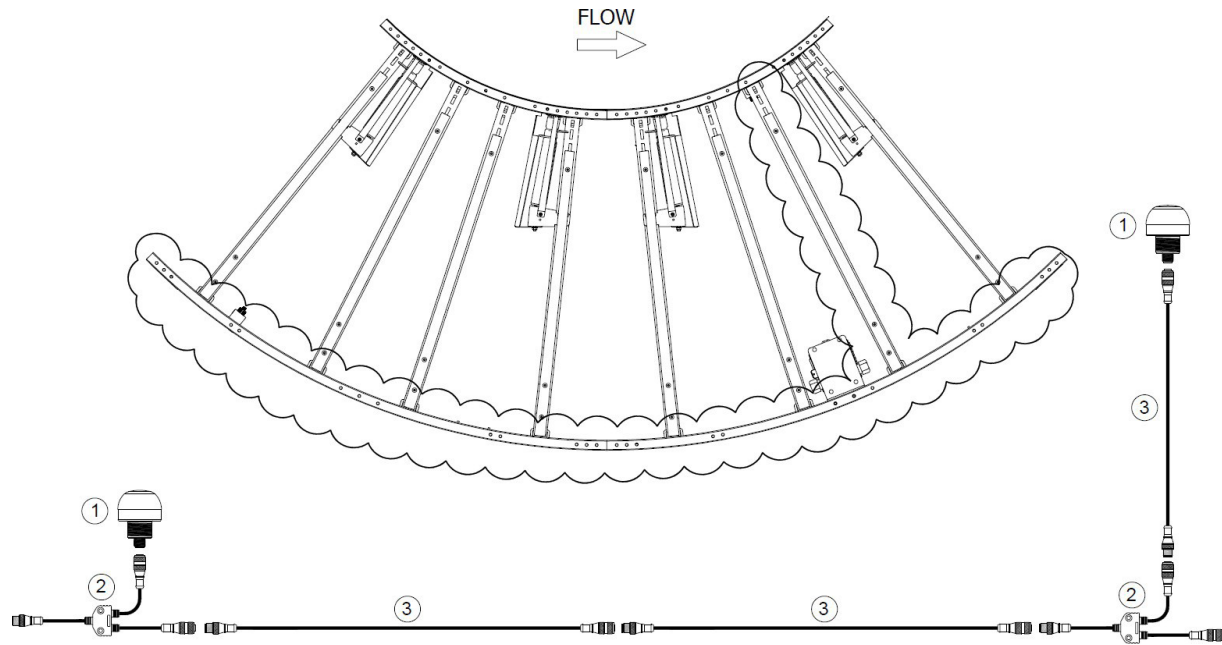
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1546



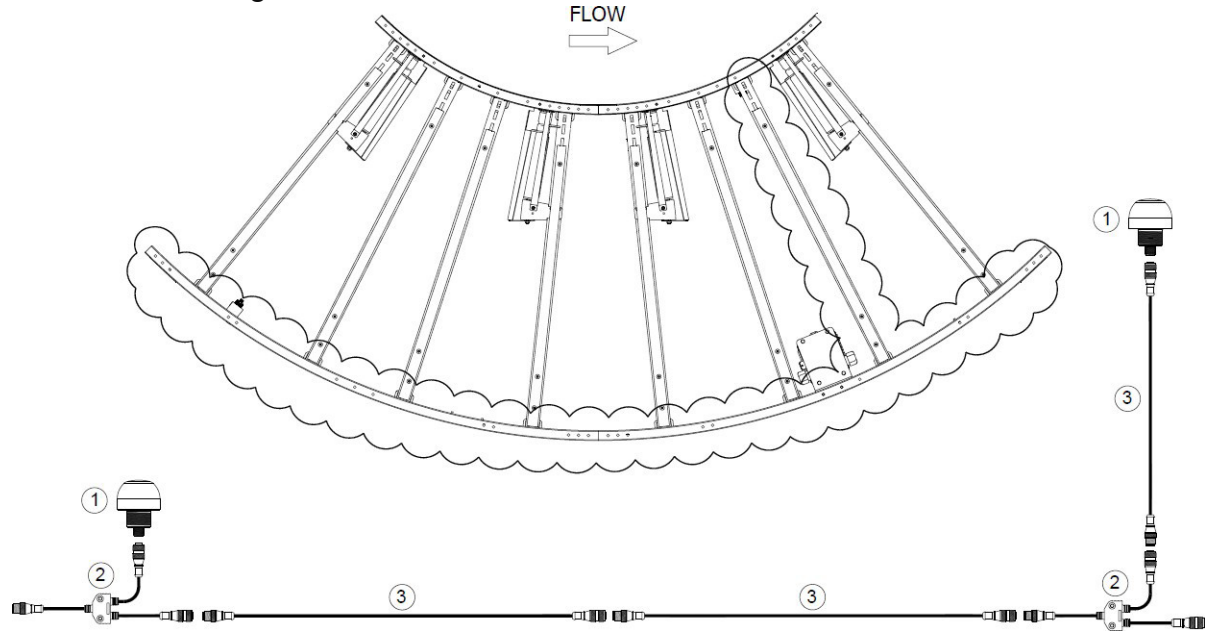
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-037753 284410	H-20 Auto Motor Control Module
2	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector
3	1	TURCK	10707-058596 RK 4.2T-0.2-RS 4.22T/CS17492	X2 Connection Cable From P&F G10 Block
4	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	HILMOT	10802-059151	Under Roller Power Harness for 90 Degree LH Curves, RH Electrical, 48" BF

Electrical Drawings N02-1546



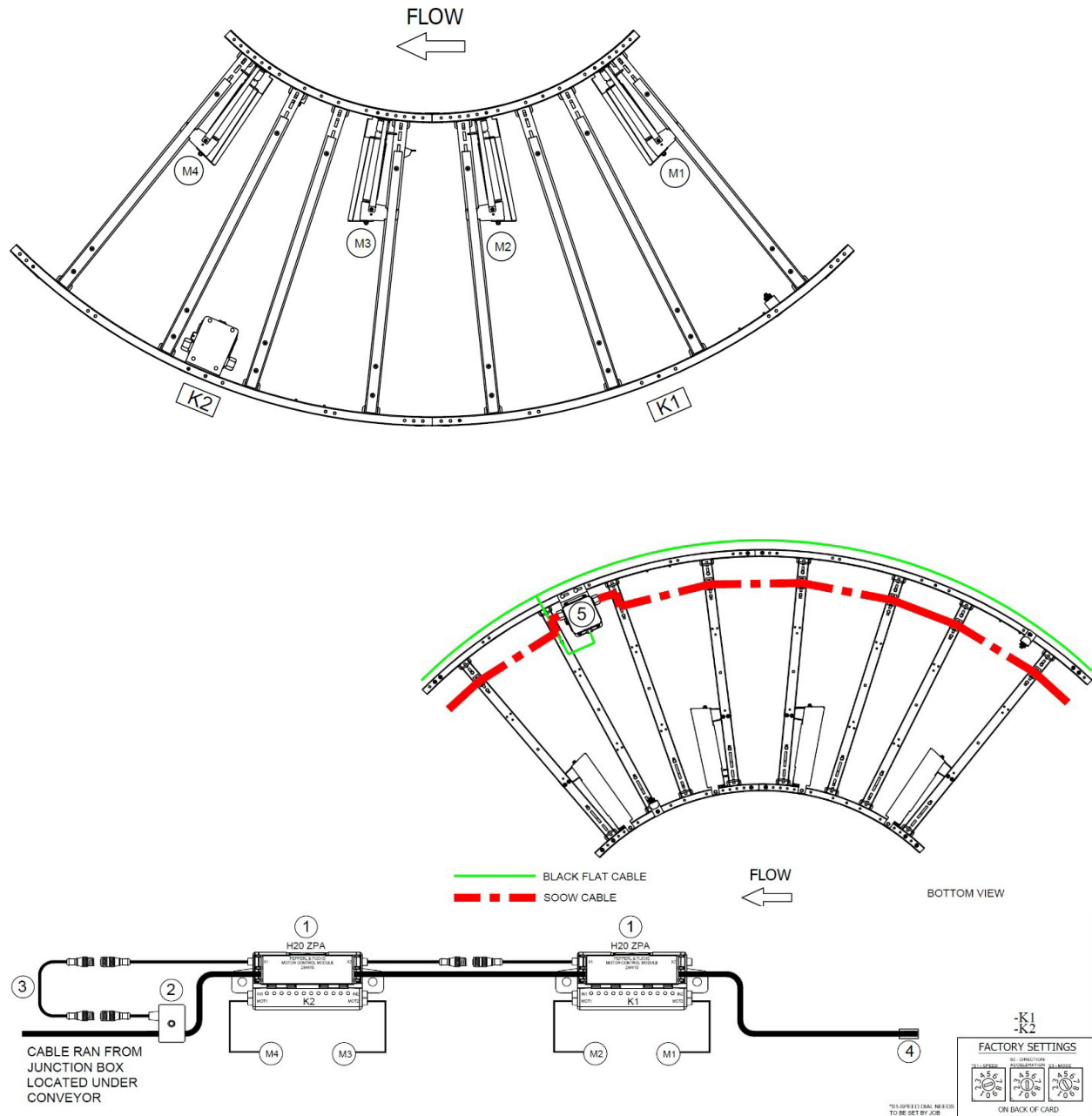
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1546-02



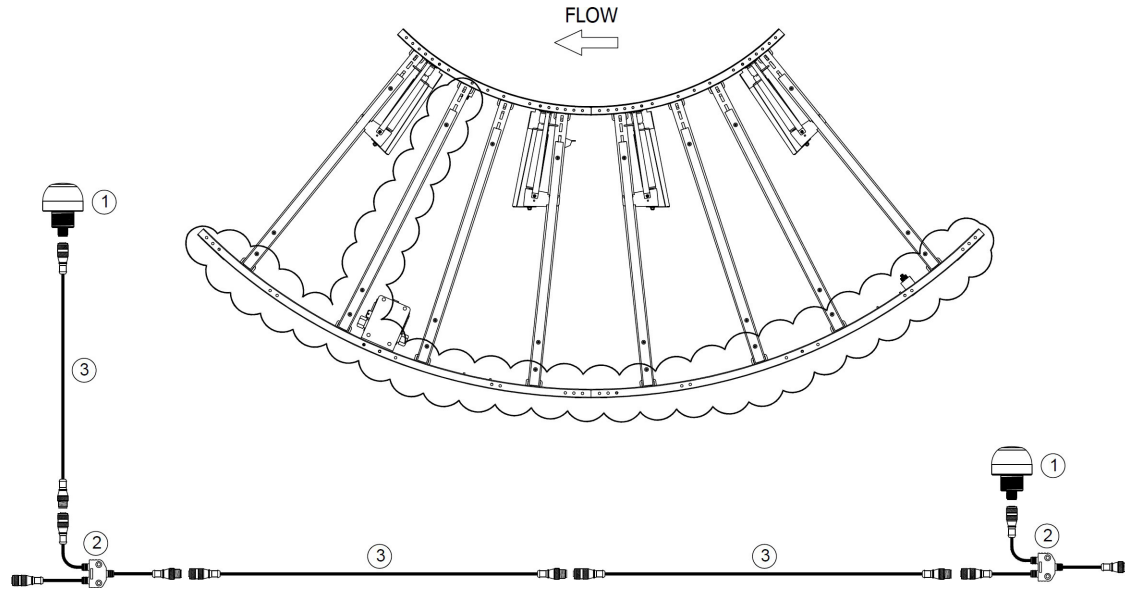
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1547-01



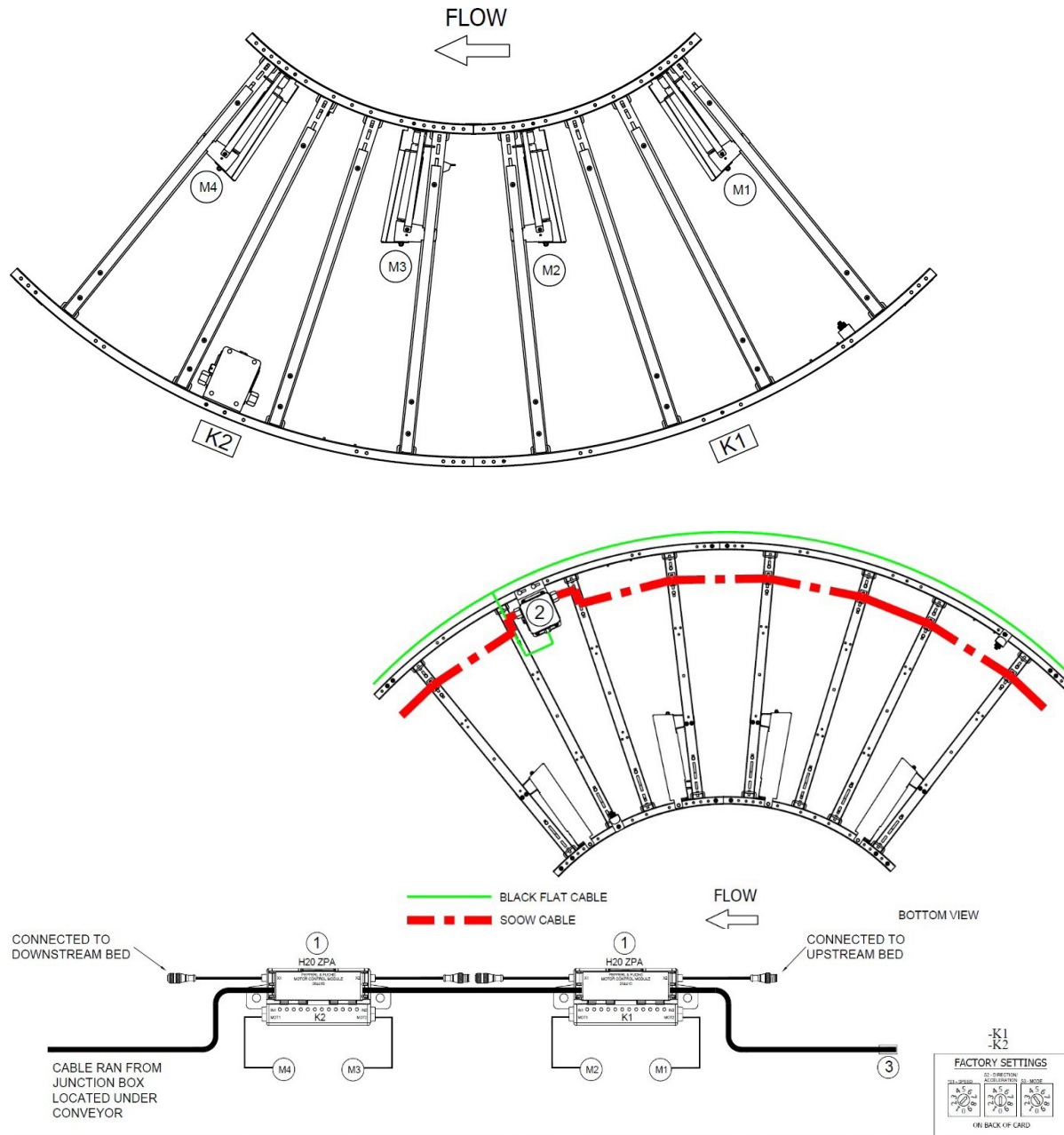
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-037753 284410	H-20 Auto Motor Control Module
2	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector
3	1	TURCK	10715-058597 RS 4.21T-0.2-RS 4.22T/CS17493	X1 Connection Cable From P&F G10 Block
4	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable
5	1	HILMOT	10802-059452	Under Roller Power Harness for 90 Degree RH Curves, LH Electrical, 48" BF

Electrical Drawings N02-1547-01



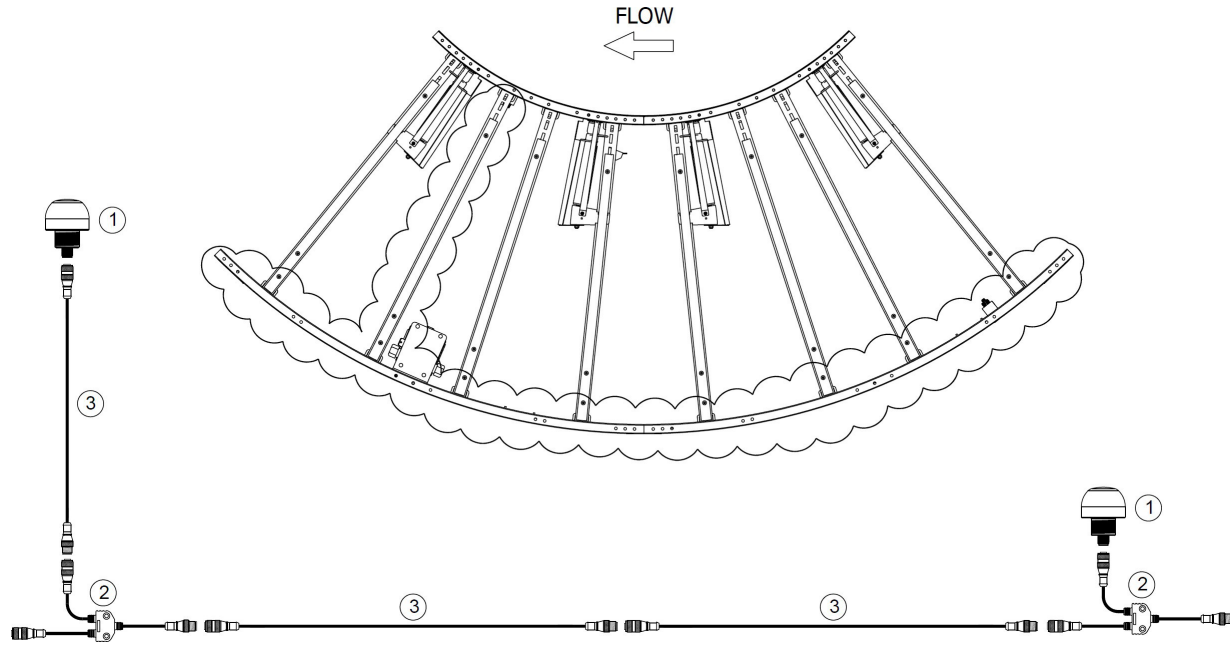
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N02-1547-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060001	H-20 Auto Motor Control Module for V24 Series 250 Curves, 131 FPM
2	1	HILMOT	10802-059452	Under Roller Power Harness for 90 Degree RH Curves, LH Electrical, 48" BF
3	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

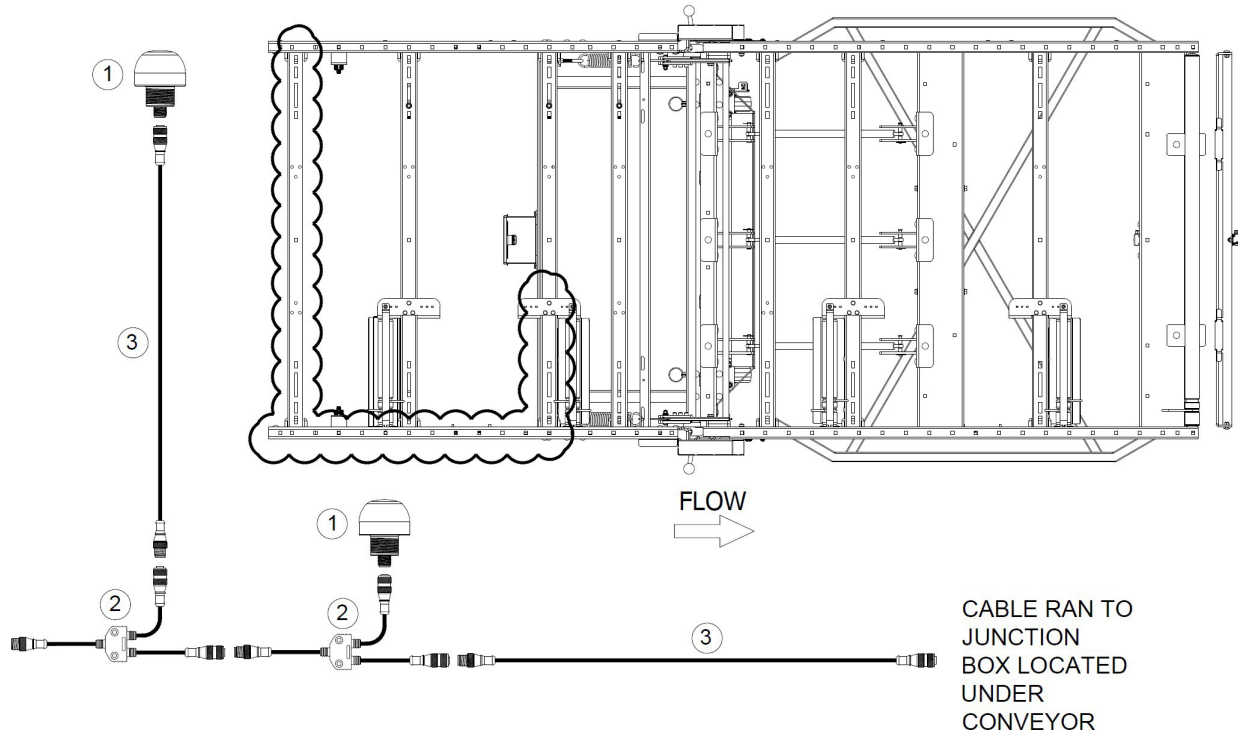
Electrical Drawings N02-1547-02



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	3	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N04-1431-01

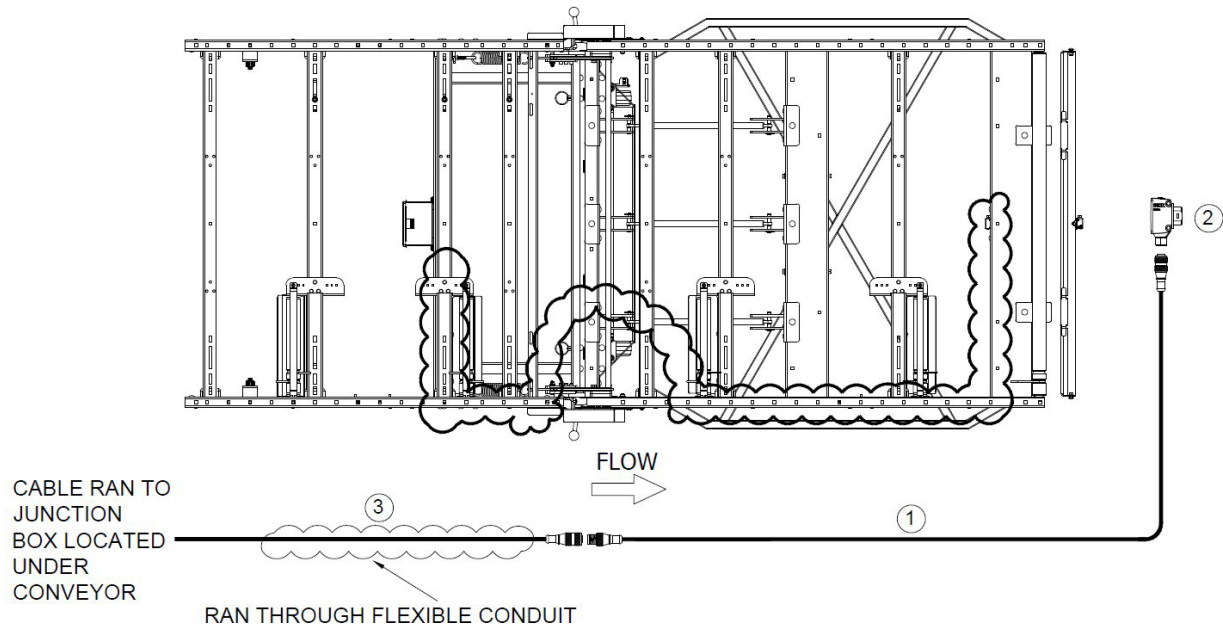
CONTROL CIRCUIT WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

Electrical Drawings N04-1431-01

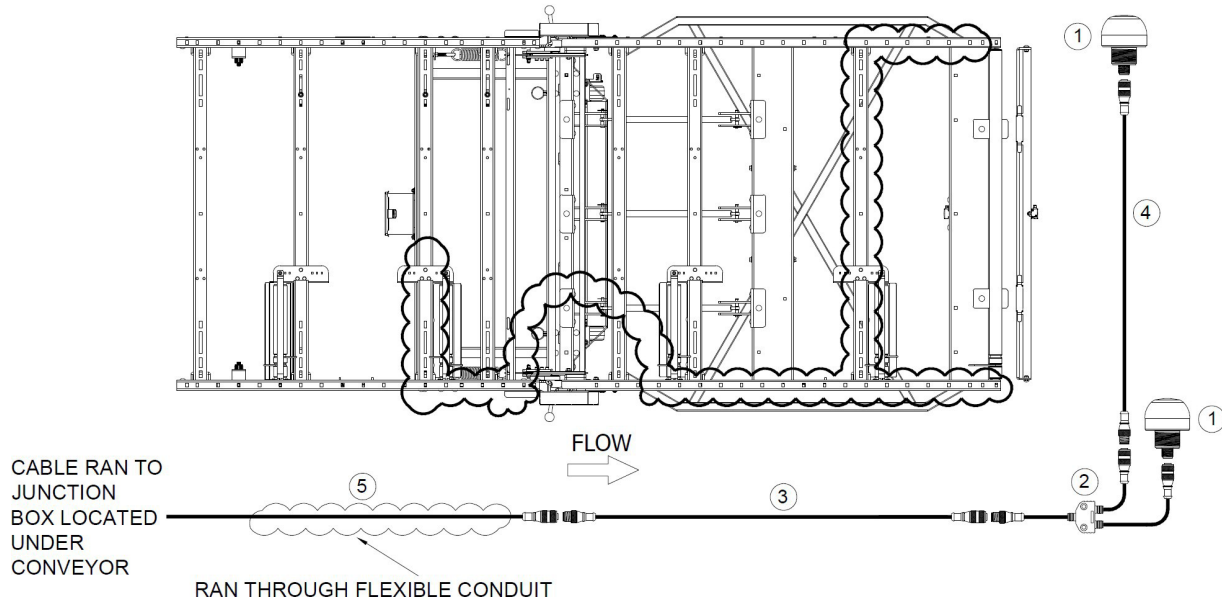
PHOTO EYE WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male, 1m length, Gray
2	1	SICK	10707-057803 1078934	Through-beam Photoelectric Sensor, PNP (RECIEVER)
3	1	TURCK	10707-059136 RK 4.4T-5	M12, Straight Female to Flying Leads, 5m length, Gray

Electrical Drawings N04-1431-01

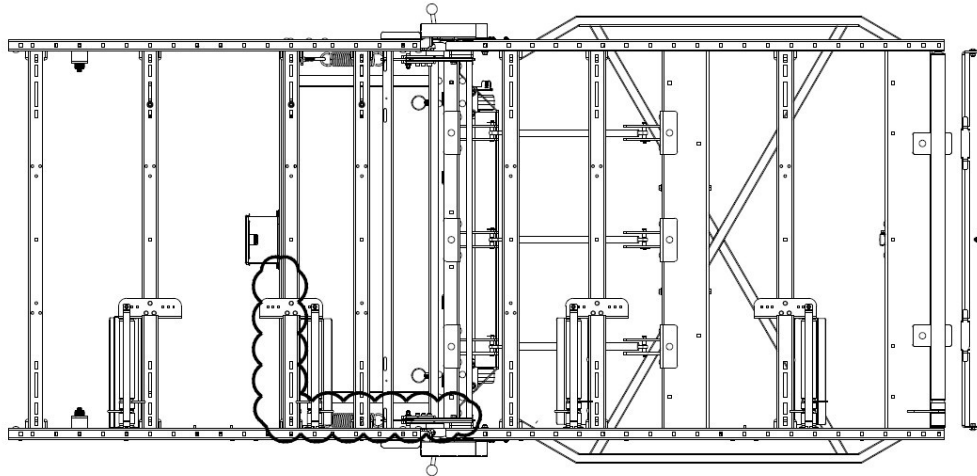
ALIGNMENT LIGHTS WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058569 K50LGRYPQ	K50 CORE SERIES 50 MM GENERAL PURPOSE LED INDICATOR
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male, 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
5	1	TURCK	10707-059136 RK 4.4T-5	M12, Straight Female to Flying Leads, 5m length, Gray

Electrical Drawings N04-1431-01

PROXIMITY SENSOR WIRING



CABLE RAN TO
JUNCTION
BOX LOCATED
UNDER
CONVEYOR

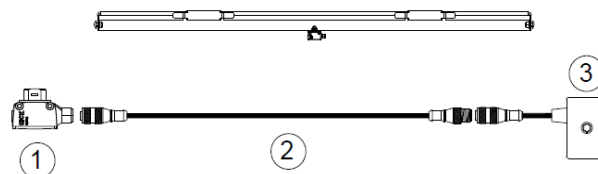
①

FLOW
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②

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-059135 RK 4.4T-2	M12, Straight Female to Flying Leads, 2m length, Gray
2	1	PEPPERL & FUCHS	10707-059717 NBB8-18GM30-E3-V1	Inductive Sensor, DC, 8mm Detect, NC Contact, M18 Threads, PNP

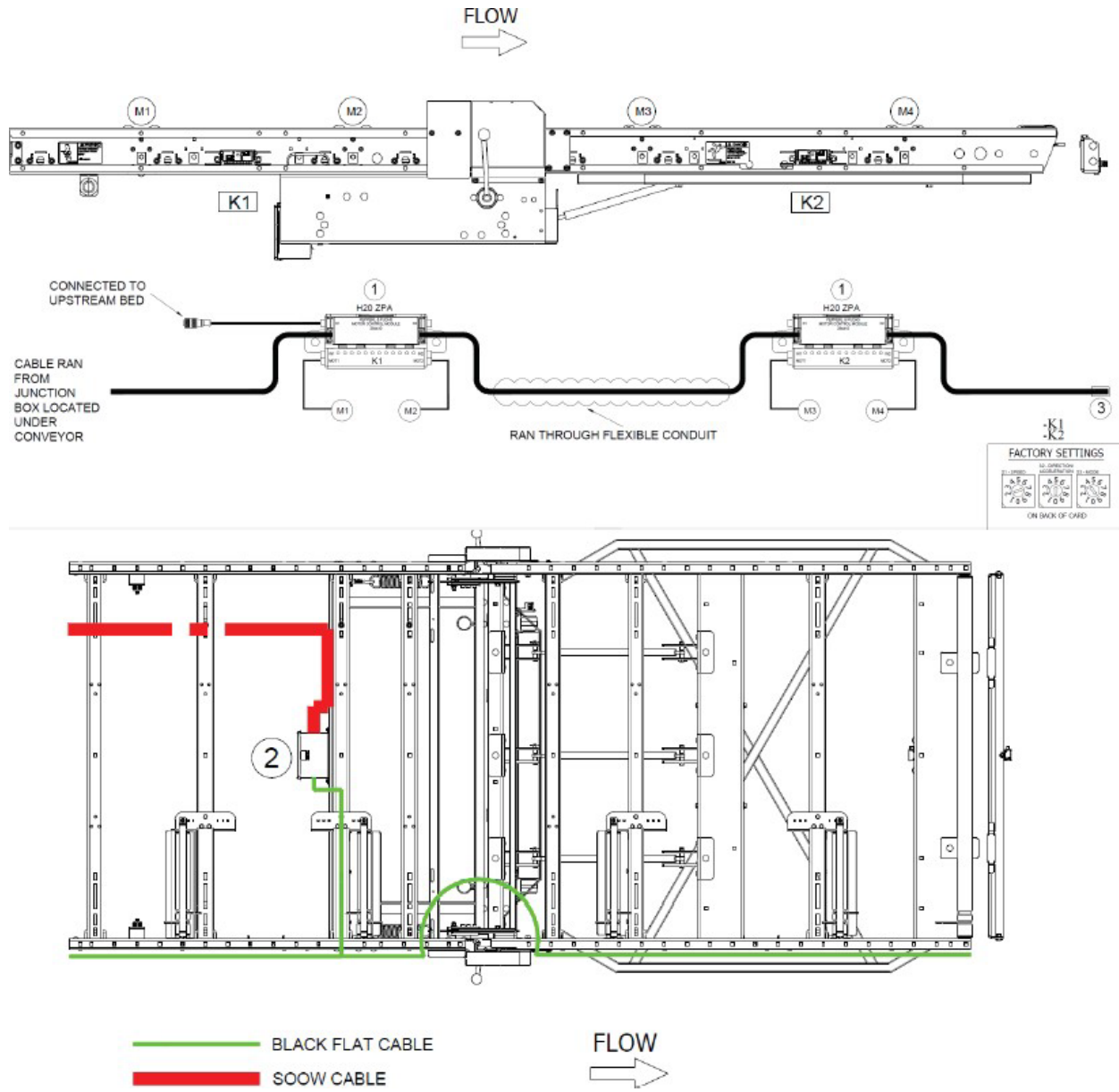
GATE REST PHOTO EYE CABLING



*MOUNT PHOTO EYE ON GATE REST AND SECURE ALL CABLING FOR
SHIPMENT WITH GATE*

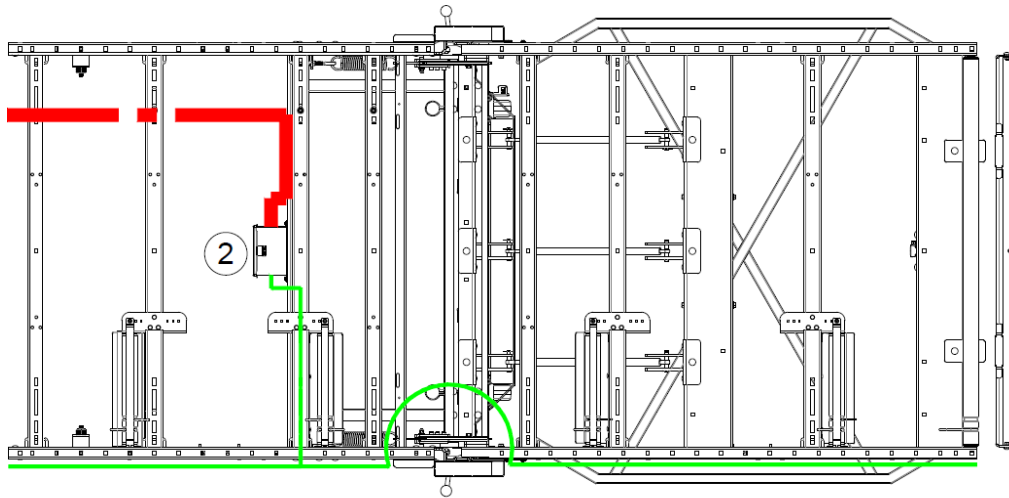
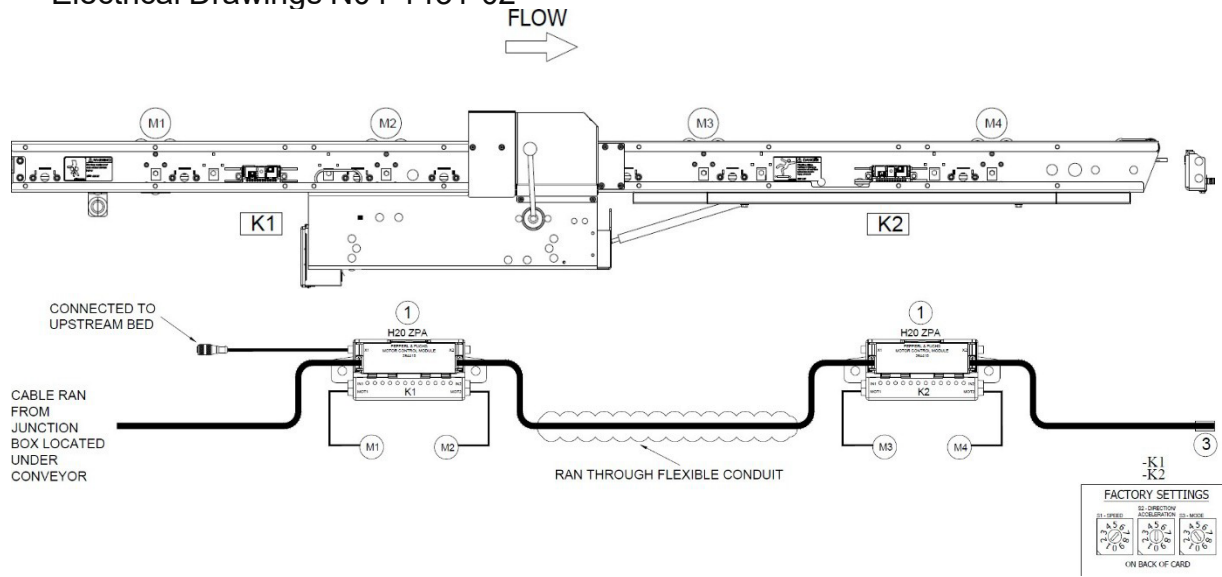
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	SICK	10707-057803 1078934	Through-beam Photoelectric Sensor, PNP (TRANSMITTER)
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
3	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector

Electrical Drawings N04-1431-01



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-059988	H-20 Auto Motor Control Module for EC5000 Straights, 131 FPM
2	1	HILMOT	10800-058934	MoveIT-Max Gate Enclosure
3	1	PEPPERL AND FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N04-1431-02



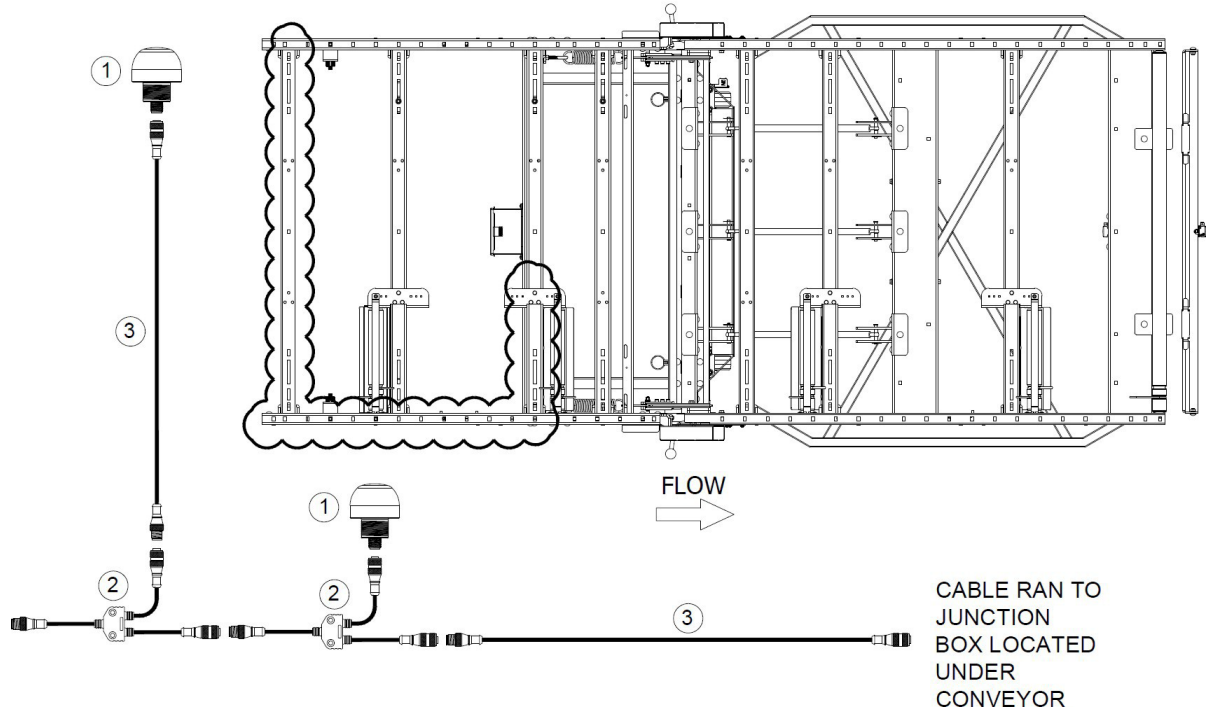
— BLACK FLAT CABLE
 — SOOW CABLE

FLOW
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ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	PEPPERL & FUCHS	10714-060002	H-20 Auto Motor Control Module for V24 Series 250 Straights, 131 FPM
2	1	HILMOT	10800-058934	MoveIT-Max Gate Enclosure
3	1	PEPPERL & FUCHS	10716-034891 VAZ-FK-ED3	AS-Interface end seal for flat cable

Electrical Drawings N04-1431-02

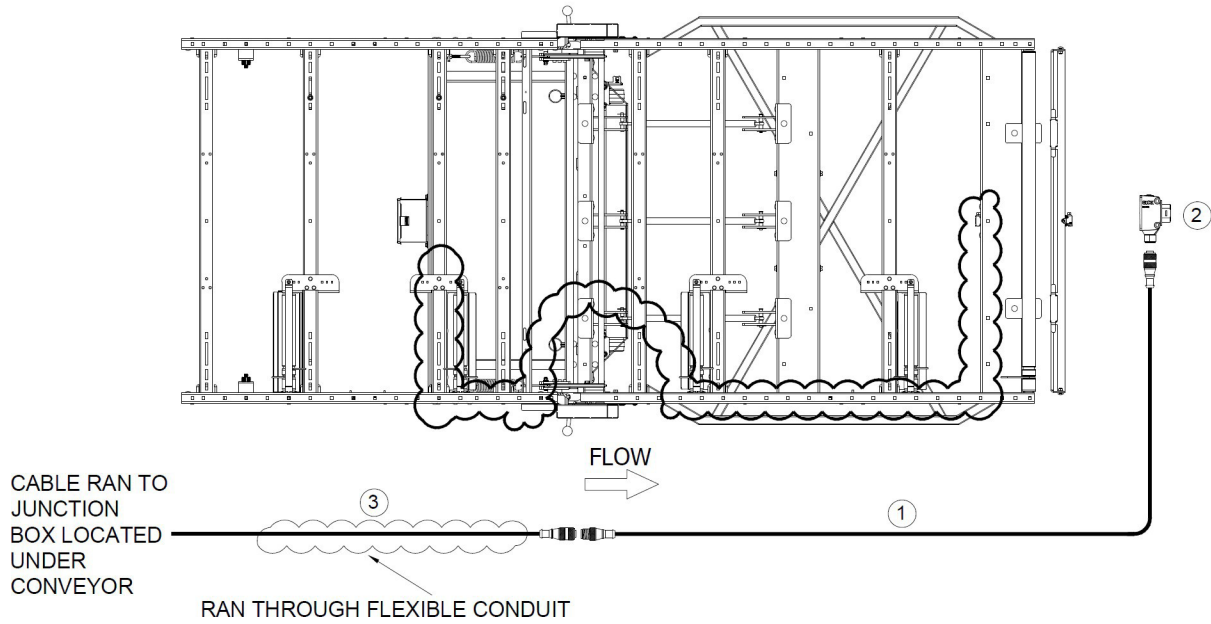
CONTROL CIRCUIT WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058237 K50ALBT2GRHQ	K50 Series EZ-LIGHT
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	2	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray

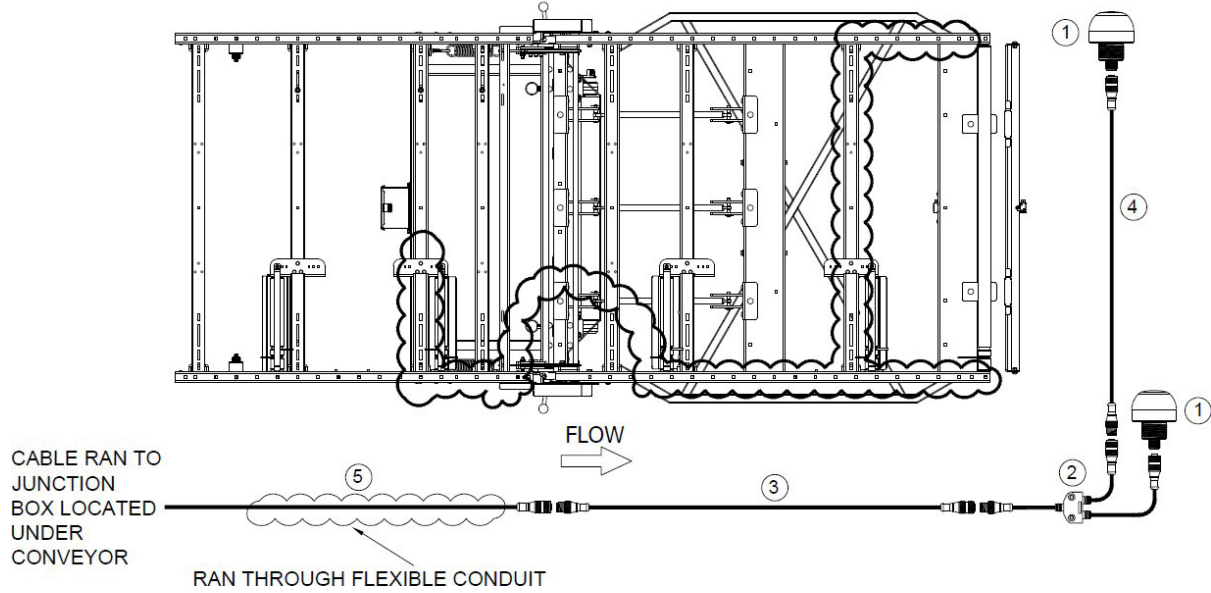
Electrical Drawings N04-1431-02

PHOTO EYE WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male, 1m length, Gray
2	1	SICK	10707-057803 1078934	Through-beam Photoelectric Sensor, PNP (RECIEVER)
3	1	TURCK	10707-059136 RK 4.4T-5	M12, Straight Female to Flying Leads, 5m length, Gray

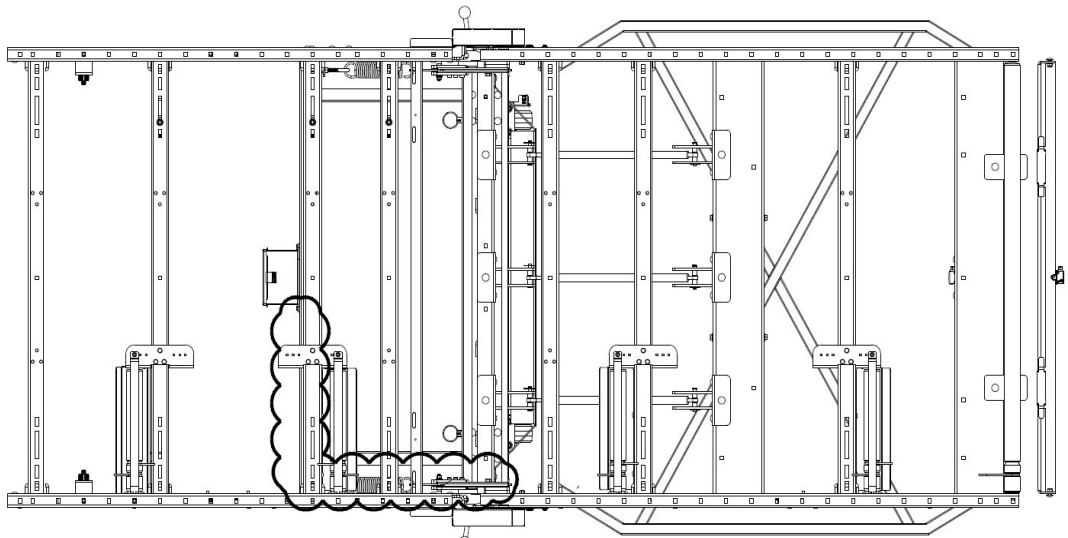
Electrical Drawings N04-1431-02
ALIGNMENT LIGHTS WIRING



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	2	BANNER	10704-058569 K50LGRYPQ	K50 CORE SERIES 50 MM GENERAL PURPOSE LED INDICATOR
2	2	TURCK	10707-058573 VB2-RS4.4T-0.5/2RK4.4T-0.5/0.5/S651	2-Branch Splitter, M12, Straight Through, Male to (2) Female M12
3	1	TURCK	10707-057763 U2444-1	M12, Straight Female to Straight Male, 1m length, Gray
4	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
5	1	TURCK	10707-059136 RK 4.4T-5	M12, Straight Female to Flying Leads, 5m length, Gray

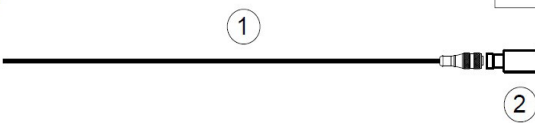
Electrical Drawings N04-1431-02

PROXIMITY SENSOR WIRING



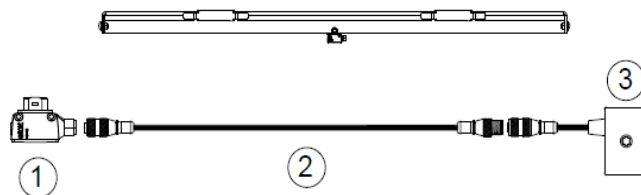
FLOW
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CABLE RAN TO
JUNCTION
BOX LOCATED
UNDER
CONVEYOR



ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	TURCK	10707-059135 RK 4.4T-2	M12, Straight Female to Flying Leads, 2m length, Gray
2	1	PEPPERL & FUCHS	10707-059717 NBB8-18GM30-E3-V1	Inductive Sensor, DC, 8mm Detect, NC Contact, M18 Threads, PNP

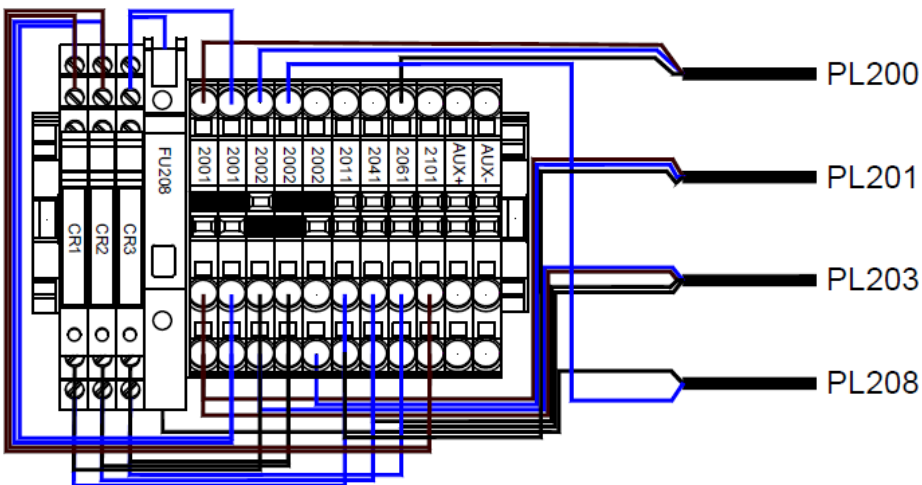
GATE REST PHOTO EYE CABLING



MOUNT PHOTO EYE ON GATE REST AND SECURE ALL CABLING FOR SHIPMENT WITH GATE

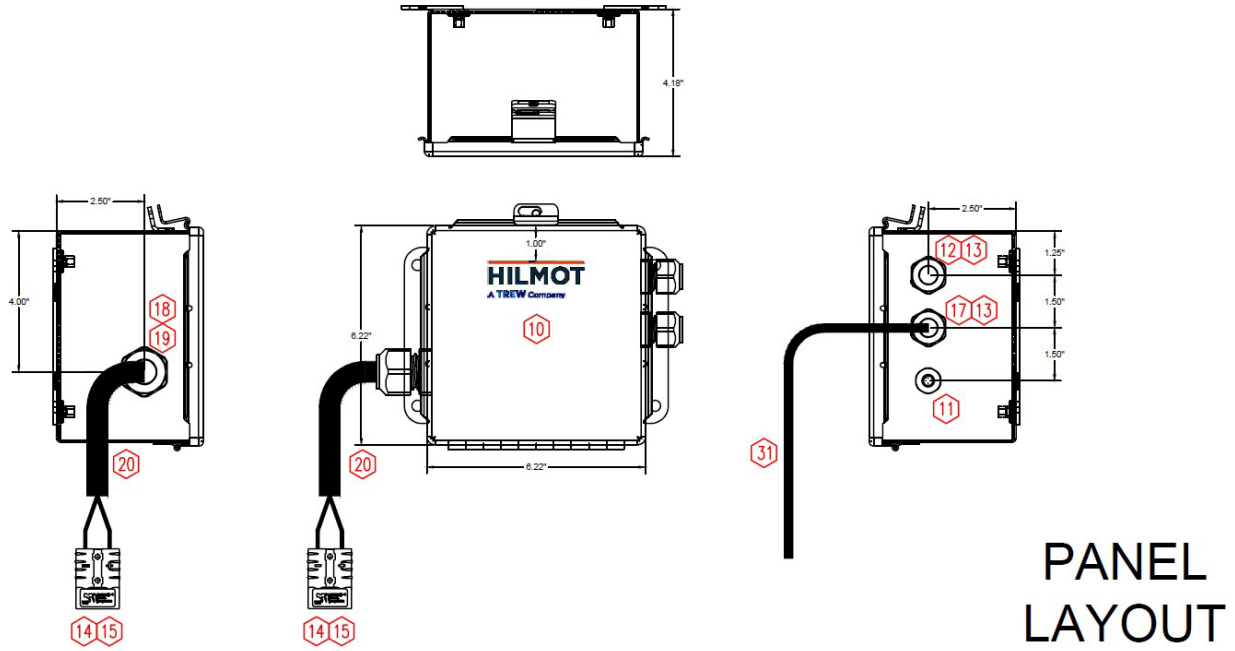
ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION
1	1	SICK	10707-057803 1078934	Through-beam Photoelectric Sensor, PNP (TRANSMITTER)
2	1	TURCK	10707-057764 U2445	M12, Straight Female to Straight Male 2m length, Gray
3	1	PEPPERL & FUCHS	10707-044329 VAZ-T1-FK-G10-0,3M-PUR-V1-G	Splitter Box G10, AS-Interface to M12 Female Straight Connector

MoveIT-Max Gate Enclosure 10800-058934 - REV D

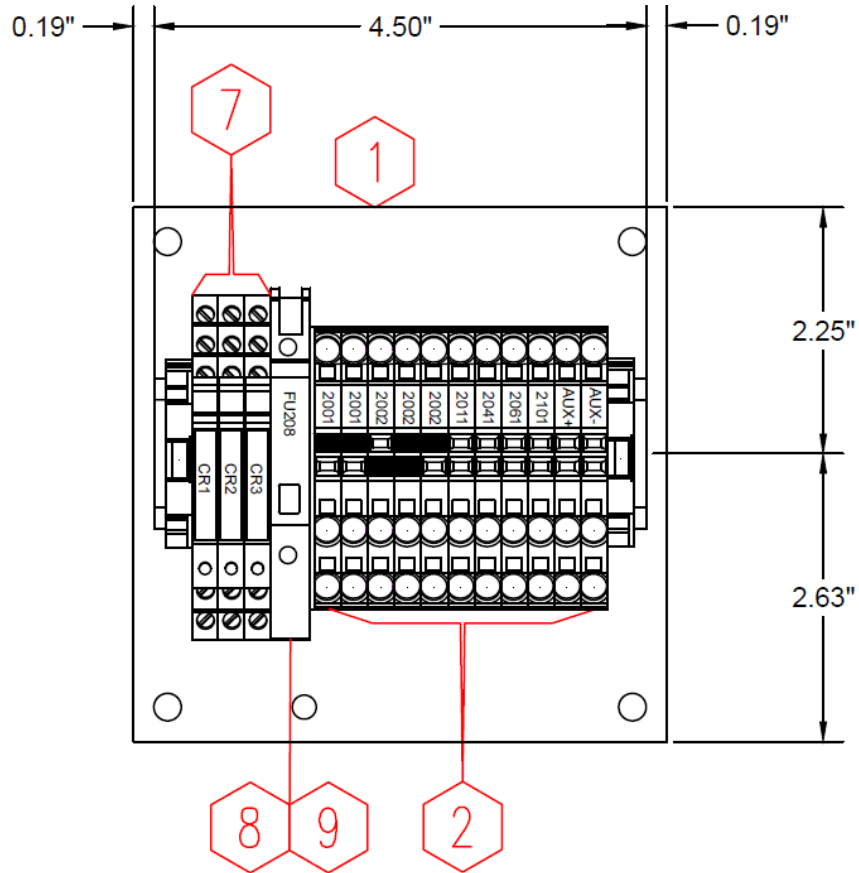


Control Wiring

INPUT VOLTAGE RANGE	24VDC
INPUT CURRENT	1A
INPUT PHASE / WIRE	1PH
INPUT FREQUENCY	-
SCCR	-
OUTPUT VOLTAGE	24.0 VDC
OUTPUT CURRENT	1A



PANEL
LAYOUT

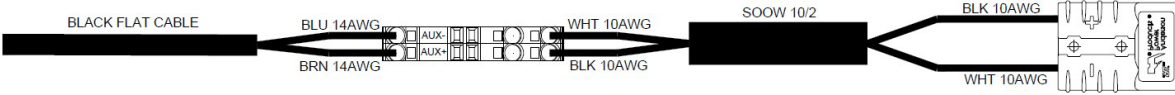
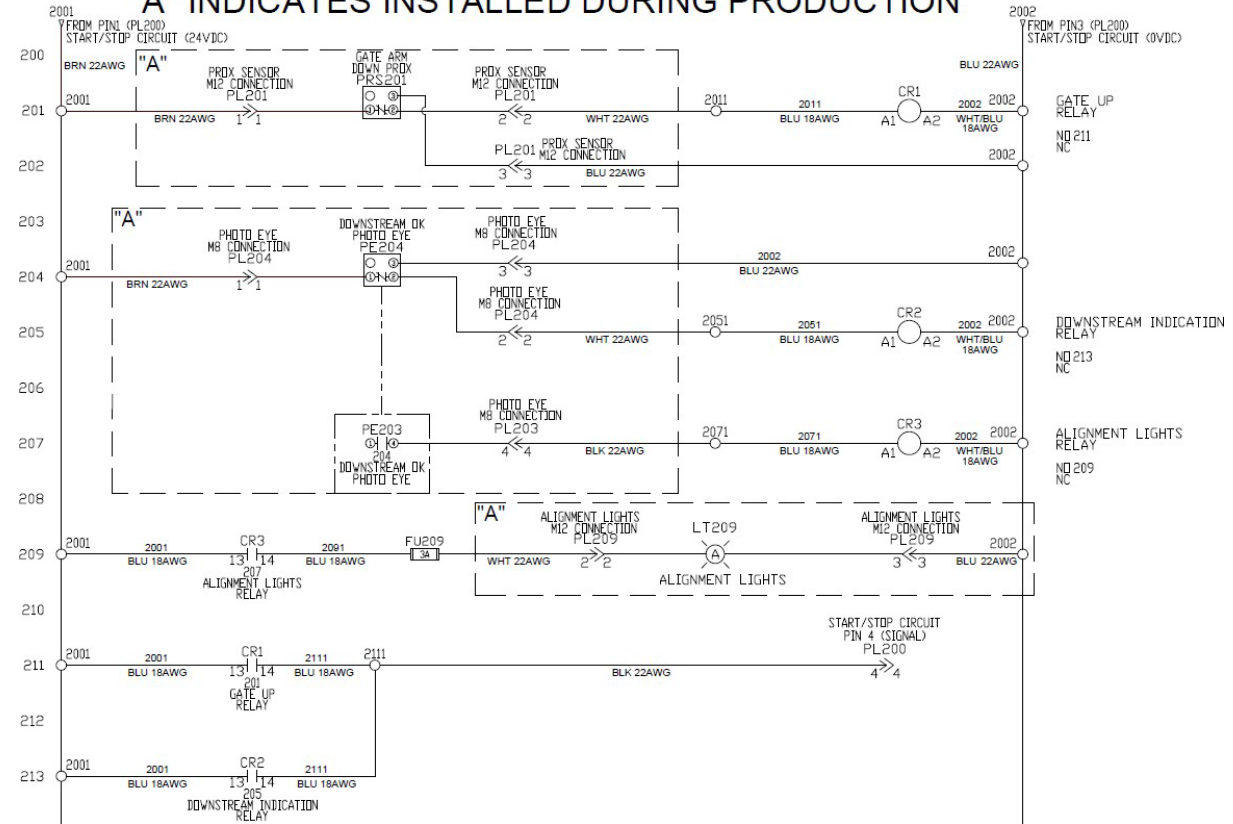


SUBPANEL LAYOUT

WIRING SPECIFICATIONS	
480VAC PANEL WIRING	
COLOR	BLACK
WIRE TYPE	THHN OR MTW
MIN. AWG	12

CONTROL PANEL WIRING COLORS	
120VAC HOT1	RED
120VAC SIGNAL1	RED
120VAC NEUTRAL1	WHITE
24VDC POSITIVE1	DARK BLUE
24VDC NEGATIVE1	WHITE W/BLE TRACER
GROUND1	GREEN
INTERLOCK1	ORANGE
WIRE TYPE1	THHN OR MTW
MINIMUM AWG1	18

"A" INDICATES INSTALLED DURING PRODUCTION



POWER WIRING

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION	PRINT ITEM NUMBER	NOTES
1	1	HOFFMAN	10700-053066 A6P6	ENCLOSURE, SUB PANEL, SMALL, JBOX, SUB PANEL FOR A606CH		
2	11	WAGO	10710-000802 2004-1301	3 Conductor Through Terminal Block; Center Marking Front Entry; Cage Clamp Connection; 10A		
3	2	WAGO	10710-000445 249-116	SCREWLESS END STOP; 6 MM / 0.236 IN WIDE; CARRIER RAIL DIN 35		
4	1	WAGO	10710-058933 2004-1391	End and intermediate plate; 1 mm thick, gray		
5	3	WAGO	10710-000804 2004-402	2 WAY Adjacent Jumper; Nominal Current 32Amps; Insulated		SHALL BE INSTALLED IN THE EXACT LOCATION, AS SHOWN ON THE LAYOUT
6	4.5"	WAGO	10709-009425 210-112	TERMINAL, MOUNTING RAIL, 35mm DIN RAIL, NOT HIGH RISE, 2 METER STRIP		
7	3	ALLEN BRADLEY	10712-056409 700-HLS1Z24	□ 700-HL Solid State Relay Output w/ Screw Terminal 24V DC, Touch Safe Terminal Construction	SCR1, CR2, CR3	
8	1	WAGO	10702-058999 2002-1611	Fuse, Terminal Block, Wago	FU208	
9	1	BUSSMANN	10702-059708 GMA-3-R	3A 5 mm x 20 mm Fast-acting glass tube fuse	FU208	
10	1	HOFFMAN	10700-053065 A606CH	ENCLOSURE, SMALL, JBOX, CONTINUOUS HINGE, 6" WIDE, 6" TALL, 4" DEEP		
11	1	TURCK	10707-057782 U0890-18	Male M12 Receptacle, Panel Mount, 0.5m Leads		
12	1	HUBBELL	10716-025350 SEC50BA	CORD GRIP - 0.17IN TO 0.45IN CABLE RANGE, 1/2IN K.O., NON-METALLIC		
13	2	PRO-INDUSTRIAL	10716-009495 NN-13-BK	CORD GRIP PLASTIC NUT, 1/2IN K.O.		
14	1	POWERWERX	10710-059435 SB50-10-GRY	SB50 SB Series 50 Amp, 10AWG, Anderson Powerpole Kit (GRAY)		
15	1	POWERWERX	10708-059107 DUST-SB50	Dust Cover for SB50 SB Series 50 Amp Housings		
16	204"	PEPPERL & FUCHS	10715-046538 VAZ-FK-S-BK-2.5MM	Black AS-Interface Power Flat Cable; 2 Conductor 14AWG Cable; Rubber Compound Outer Coating, 500 m		
17	1	PEPPERL & FUCHS	10716-029425 VAZ-FK-GLAND-12NPT	Cord Grip, 1/2" NPT Cable Gland, For AS-Interface Flat Cable		
18	1	HUBBELL	10716-025351 SEC75BA	CORD GRIP - 0.45IN TO 0.71IN CABLE RANGE, 3/4IN K.O., NON-METALLIC		
19	1	PRO-INDUSTRIAL	10716-025317 NN-21-BK	CORD GRIP PLASTIC NUT, 3/4IN K.O.		
20	84"	ALLIED WIRE & CABLE	10715-059434 SOOW 10/2	SOOW 10/2 10 Gauge Portable and Power Cable		

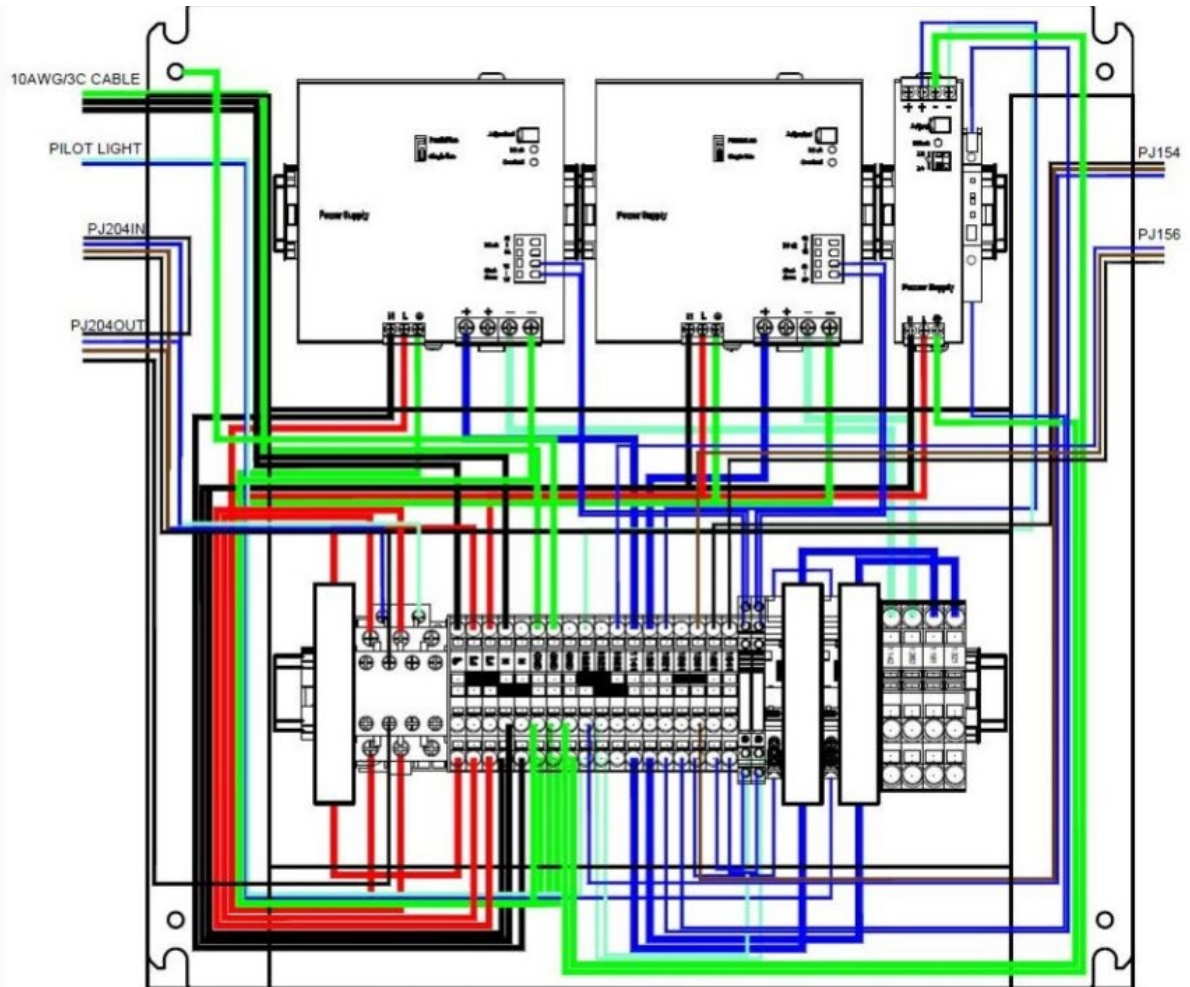
INSTALLATION NOTES:

- INSTALLER SHALL INSTALL EQUIPMENT GROUNDING AND BONDING JUMPERS IN ACCORDANCE WITH THE LATEST ISSUE OF NEC, LOCAL CODES AND CLIENT'S STANDARDS AND SHALL INTEGRATE THE NEW GROUNDING SYSTEM INTO EXISTING GROUNDING SYSTEM.
- INSTALL GROUNDING BUS/LUG IN THE PANEL AND CONNECT TO IT ALL GROUNDING CONDUCTORS.
- INTEGRATE THE GROUNDING PANEL BUS INTO THE PLANT GROUNDING SYSTEM.
- OWNER SHOULD PROCURE ARC FLASH STUDY WHICH SHOULD BE PERFORMED AS IDENTIFIED IN NFPA 70E, 1995 AND IEEE STD. 1584.
- THE ARC FLASH STUDY WILL STIPULATE PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS.
- WIRING SHALL CONFORM TO ALL NEC AND LOCAL CODES.
- 24VDC CIRCUITS SHALL BE RUN IN SEPARATE CONDUIT OR WIREWAY FROM AC WIRING.
- COLOR OF GROUNDING CONDUCTOR SHALL BE GREEN THROUGHOUT ITS LENGTH
- COLOR OF NEUTRAL CONDUCTOR SHALL BE WHITE THROUGHOUT ITS LENGTH
- FOR POWER AND CONTROL WIRING, USE TYPE THHN OR MTW CONDUCTOR.
- ALL EQUIPMENT AND TERMINATIONS SHALL BE RATED FOR 75 DEGREES CENTIGRADE.
- ALL OTHER DIFFERENCES IN INSTALLATION SHALL BE INDICATED ON THE PLAN AND CATALOG CUT SHEETS SHALL BE PROVIDED.
- CONSULT INSTALLATION MANUAL FOR SUGGESTED WIRING PRACTICES OF MDR CONVEYOR

PANEL BUILD NOTES:

- PANEL TO BE BUILT TO U.L. 508A SPECIFICATIONS
- UL LABELING TO BE APPLIED AFTER CHECKOUT TO INSIDE OF PANEL TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING: COMPANY, PANEL #, ENCLOSURE TYPE, DIAGRAM, SUPPLY, FLA, LARGEST MOTOR, WIRE TYPE.
- PANEL BUILDER TO SUPPLY ALL
- PANEL BUILDER TO PERFORM INSPECTION
- PANEL BUILDER TO SUPPLY ALL REQUIRED HARDWARE, WIRE, DUCT, AND ASSOCIATED MATERIAL SHOWN ON THE BOM
- ITEMS MARKED WITH "A" IN SCHEMATICS ARE INSTALLED BY TREW PRODUCTION

Power Supply Drawings - 10801-059178



WIRING DIAGRAM

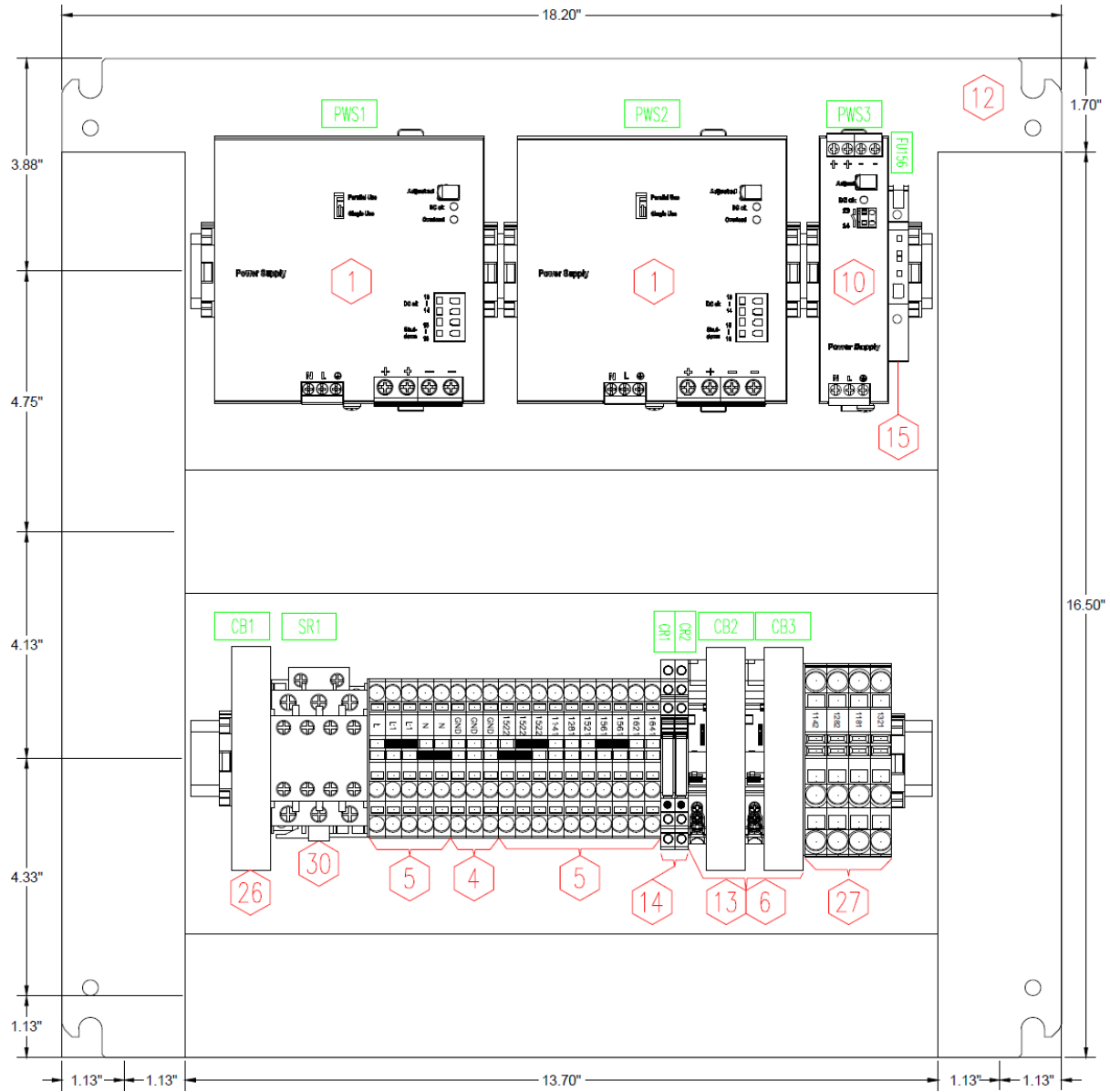
WIRING SPECIFICATIONS	
480VAC PANEL WIRING	
COLOR	BLACK
WIRE TYPE	THHN OR MTW
MIN. AWG	12

CONTROL PANEL WIRING COLORS	
120VAC HOT:	RED
120VAC SIGNAL:	RED
120VAC NEUTRAL:	WHITE
24VDC POSITIVE:	DARK BLUE
24VDC NEGATIVE:	WHITE W/BUE TRACER
GROUND:	GREEN
INTERLOCK:	ORANGE
WIRE TYPE:	THHN OR MTW
MINIMUM AWG:	8

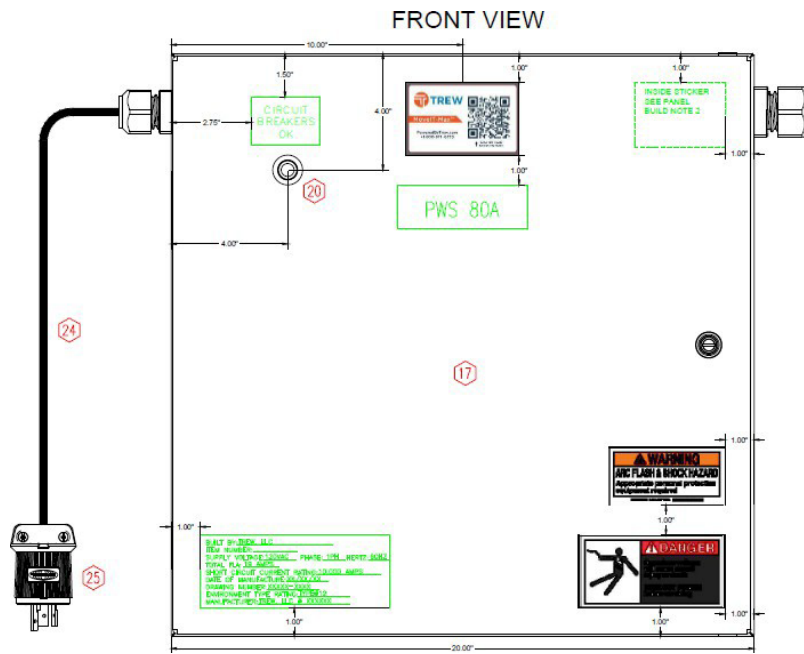
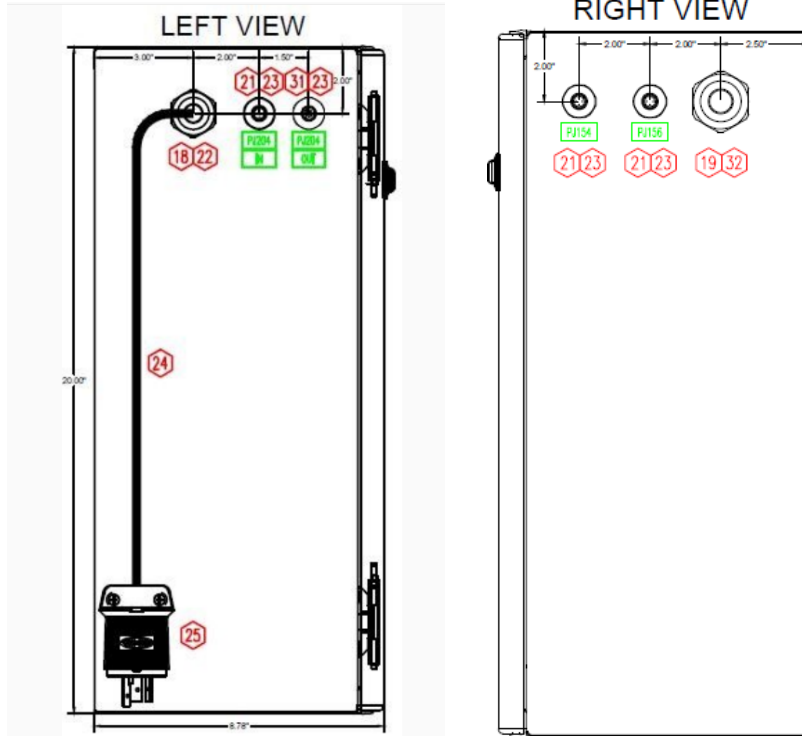
INPUT VOLTAGE RANGE	100–240 VAC/1PH
INPUT CURRENT	19 FLA AT 120VAC
INPUT PHASE / WIRE	1PH
INPUT FREQUENCY	60 Hz
SCCR	10 kA
OUTPUT VOLTAGE	24.0 VDC
OUTPUT CURRENT	80 A
CONTROL VOLTAGE	24.0 VDC
CONTROL OUTPUT	5 A

ITEM	QTY	MANUFACTURER	HILMOT PART NUMBER MANUFACTURER PART NUMBER	DESCRIPTION	PRINT ITEM NUMBER	NOTES
1	2	PULS	10701-028004 0245-281	100-240VAC Single Phase input; 24VDC 40A High efficiency power supply	PWS1, PWS2	
2	27	WAGO	10708-009425 210-112	TERMINAL, MOUNTING RAIL, 35mm DIN RAIL, NOT HIGH RISE, 2 METER STRIP		
3	8	WAGO	10710-000445 349-118	SCREWLESS END STOP, 6 MM / 0.238 IN WIDE, CARRIER RAIL DIN 35		
4	3	WAGO	10710-029589 2006-1307	3 Conductor Top Job Terminal Block, Green/Yellow, Center Marking; Top Entry; Cage Clamp Connection		
5	13	WAGO	10710-000493 2006-1301	3 Conductor Top Job Terminal Block, Center Marking; Top Entry; Cage Clamp Connection		
6	2	SCHNEIDER	10702-051833 M9F42140	CIRCUIT BREAKER, 40 AMP 1 POLE, MULTI 0 C80 MINIATURE, 120/240 VAC, 60VDC MAX	CB2, CB3	
7	1	WAGO	10710-057054 2006-1391	TOPJOB End and intermediate plate; 1 mm thick, GRAY		
8	80.5'	PANDUIT	10709-059030 52X2L98	Wire Duct 2" x 2", Gray, Wide Slot, 6' length, PVC		
9	4	WAGO	10710-000494 2006-402	Push-in type Jumper; 2 Way; 41A Max.		SHALL BE INSTALLED IN THE EXACT LOCATION, AS SHOWN ON THE LAYOUT
10	1	PULS	10701-059109 PIC 120.2410	Power Supply; 24V-28DC; 5.0 AMPS; 115VAC Input; Plano Series	PWS3	
11	16			ENGRAVING, ENGRAVED SELF ADHESIVE LABEL		
12	1	HOFFMAN	10700-053059 CP2020	ENCLOSURE, CONCEPT, SUBPANEL		
13	2	SCHNEIDER	10702-058594 M9A29924	Circuit Breaker - Side Mount Auxiliary Contacts for Multi 9 - 1 N.O.; 1 N.C.		
14	2	WAGO	10712-059106 857-714	Relay Module, Solid State 24VDC 2A, 1 NO contact, WAGO	CR1, CR2	
15	1	WAGO	10702-058999 2002-1611	Fuse, Terminal Block, Wago	FU156	
16	1	BUSSMANN	10702-059001 GMA-5	5A 5 mm x 20 mm Fast-acting glass tube fuse		
17	1	HOFFMAN	10700-063060 C3000208	ENCLOSURE, CONCEPT, TYPE 12, 20x20x8		
18	1	HUBBELL	10716-025351 SEC798A	CORD GRIP - 0.45IN TO 0.71IN CABLE RANGE, 3/4IN K.O., NON-METALLIC		
19	1	HUBBELL	10716-059001 SEC1008A	Cord Grip, European Style, .59-1.0", 1", Black		
20	1	BANNER	10704-040094 S22LBXXPT	Pilot Light, Blue; S22 EZ; 22 mm; IP67; 10-30 VDC PNP Input; 4-screw Terminal Wiring		
21	3	TURCK	10715-058987 FS 4.4-1/14.5NPT/S613	M12 Male Receptacle, Front Mount, 1M, 18AWG, 1/2" NPT		
22	1	HUBBELL	10716-025317 NH-21-BK	CORD GRIP PLASTIC NUT, 3/4IN K.O.		
23	4	CROUSE HINDS	10716-000678 11	1/2IN Conduit Locknut		
24	5'	IEWC	10715-057750 SO10030W-090C	UL SOOW Portable Cord, 10 AWG, 104 Strand, 3C, CPE, Black		
25	1	HUBBELL	10707-057751 HBL2011	Locking Devices, Twist-Lock®, Industrial, Male Plug, 30A 125V, 2-Pole 3-Wire Grounding		
26	1	SCHNEIDER	10702-053399 M9F42130	CIRCUIT BREAKER, 30 AMP 1 POLE, MULTI 0 C80 MINIATURE, 120/240 VAC 60 VDC MAX	CB1	
27	4	WAGO	10710-059025 2010-1301	TOPJOB®S feedthrough terminal block, rail mount; 3-conductor; 10 mm wide; gray		
28	1	WAGO	10710-059026 2010-1391	TOPJOB®S end/intermediate plate; for 2010-13xx series terminal blocks; 1.0 mm wide; gray		
29	1	HUBBELL	10716-059062 31822009LPK50	Cord Grip Accessories, Non-Metallic Locknut, 1"		
30	1	ALLEN BRADLEY	10708-059929 1005-C30EJ22C	Safety Contactor, 30A, 3 N.O. Line Side Poles, 2 N.O. / 2 N.C. Auxiliary Contacts		
31	1	TURCK	10715-061549 FK 4.4-1/14.5NPT/S613	M12 Female Receptacle, Front Mount, 1M, 18AWG, 1/2" NPT		
32	3	WAGO	10710-000458 221-413	3 Pole Wire Nuts with Fingers; 18-12GA; 20Amp MAX		USED FOR PJ204 CONNECTIONS

*PANEL BUILDER TO SUPPLY ALL REQUIRED HARDWARE INCLUDING WIRE, HARDWARE, TERMINAL MARKING STRIPS, ENGRAVINGS, PANEL STICKERS, ETC.
 *PANEL STICKERS SHOWN INCLUDE MOVEIT-MAX LABEL, BRADY #101519, AND BRADY #96157
 *ALL WIRES 12 AWG AND SMALLER WILL HAVE FERRULES INSTALLED



INTERIOR



Power Supply Drawings - 10801-059178 (continued)

INSTALLATION NOTES:

1. INSTALLER SHALL INSTALL EQUIPMENT GROUNDING AND BONDING JUMPERS IN ACCORDANCE WITH THE LATEST ISSUE OF NEC, LOCAL CODES AND CLIENT'S STANDARDS AND SHALL INTEGRATE THE NEW GROUNDING SYSTEM INTO EXISTING GROUNDING SYSTEM.
2. INSTALL GROUNDING BUS/LUG IN THE PANEL AND CONNECT TO IT ALL GROUNDING CONDUCTORS.
3. INTEGRATE THE GROUNDING PANEL BUS INTO THE PLANT GROUNDING SYSTEM.
4. OWNER SHOULD PROCURE ARC FLASH STUDY WHICH SHOULD BE PERFORMED AS IDENTIFIED IN NFPA 70E, 1995 AND IEEE STD. 1584.
5. THE ARC FLASH STUDY WILL STIPULATE PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS.
6. WIRING SHALL CONFORM TO ALL NEC AND LOCAL CODES.
7. 24VDC CIRCUITS SHALL BE RUN IN SEPARATE CONDUIT OR WIREWAY FROM AC WIRING.
8. COLOR OF GROUNDING CONDUCTOR SHALL BE GREEN THROUGHOUT ITS LENGTH
9. COLOR OF NEUTRAL CONDUCTOR SHALL BE WHITE THROUGHOUT ITS LENGTH
10. FOR POWER AND CONTROL WIRING, USE TYPE THHN OR MTW CONDUCTOR.
11. ALL EQUIPMENT AND TERMINATIONS SHALL BE RATED FOR 75 DEGREES CENTIGRADE.
12. ALL OTHER DIFFERENCES IN INSTALLATION SHALL BE INDICATED ON THE PLAN AND CATALOG CUT SHEETS SHALL BE PROVIDED.
13. CONSULT INSTALLATION MANUAL FOR SUGGESTED WIRING PRACTICES OF MDR CONVEYOR
14. REMOVE JUMPER WIRE IF SEPARATE POWER CONTROL IS NEEDED DURING INSTALLATION

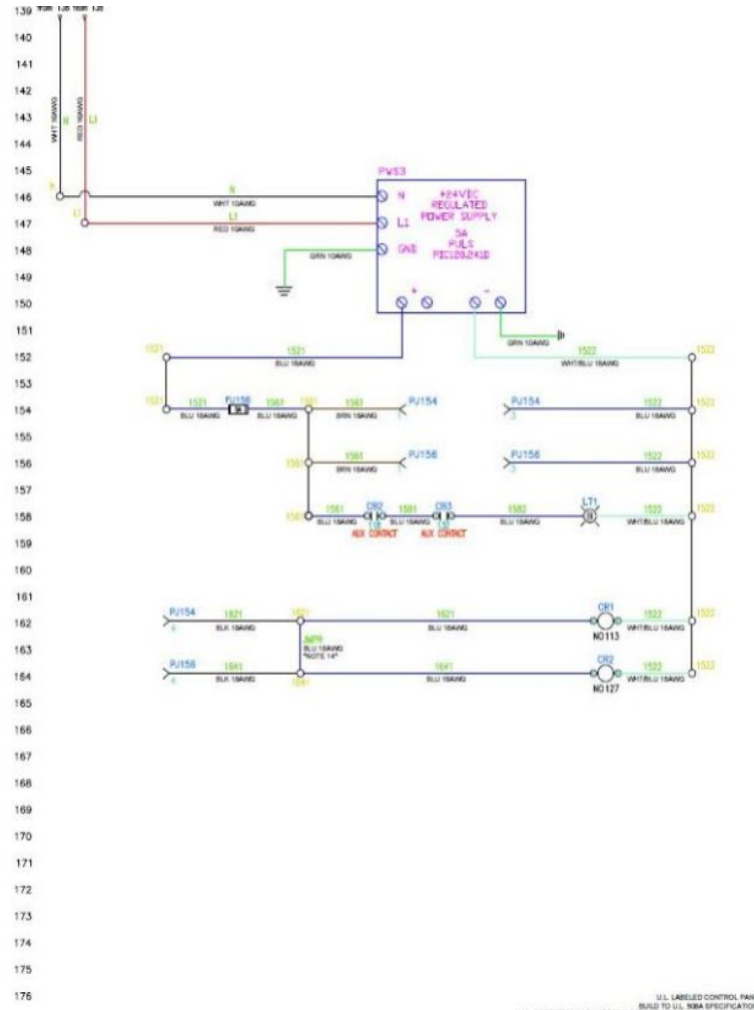
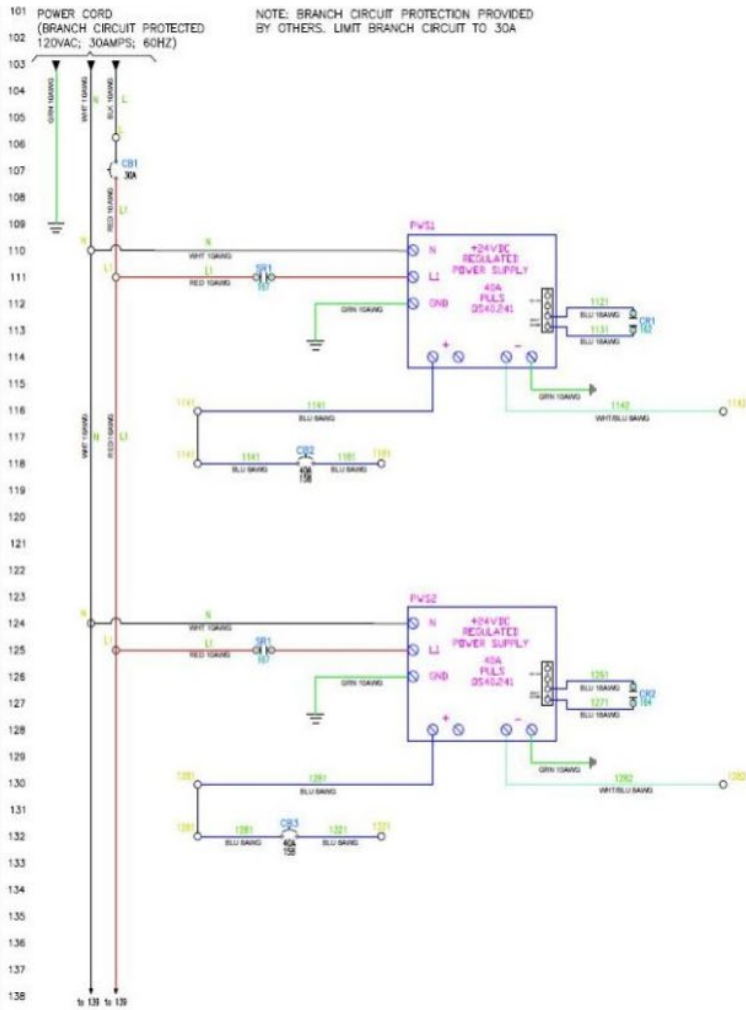
PANEL BUILD NOTES:

1. PANEL TO BE BUILT TO U.L. 508A SPECIFICATIONS
2. UL LABELING TO BE APPLIED AFTER CHECKOUT TO INSIDE OF PANEL
TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING: COMPANY, PANEL #,
ENCLOSURE TYPE, DIAGRAM, SUPPLY, FLA, LARGEST MOTOR, WIRE TYPE,
3. PANEL BUILDER TO SUPPLY ALL REQUIRED HARDWARE, WIRE, DUCT, AND ASSOCIATED MATERIAL SHOWN ON THE BOM
4. PANEL BUILDER TO PERFORM INSPECTION
5. PANEL BUILDER TO INCLUDE DRAWING IN ENCLOSURE UPON SHIPMENT
6. SET OUTPUT VOLTAGE (IF ADJUSTABLE) TO 24.0 VDC
7. INTERIOR ENGRAVINGS 0.5"H x 1"W. TEXT HEIGHT: 0.25"
8. THIS POWER SUPPLY IS INTENDED TO BE INSTALLED ON A PORTABLE CONVEYOR SYSTEM
9. FERRULES ARE TO BE INSTALLED ON ALL WIRES 12AWG AND SMALLER

HILMOT

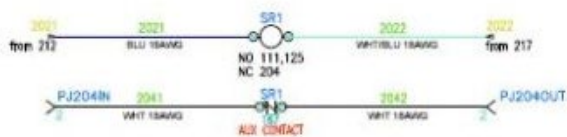
A TREW Company

Power Supply Drawings - 10801-059178 (continued)

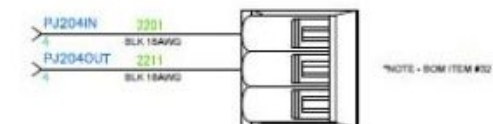
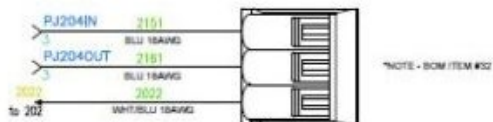
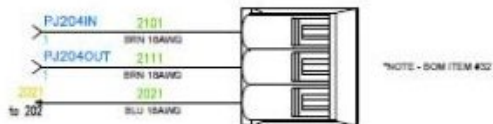


ALL LABELED CONTROL PANELS
BUILT TO UL, NEMA SPECIFICATION
ALL INSPECTION AND LABELING PERFORMED AT FINAL PANEL TEST

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Item #	Qty	Manufacturer	Trew Part # / Manufacturer Part #	Description	Drawing Item #	Notes
1	1	Puls	10701-061550 PIM90.245-L1	Power Supply, 24V-28DC; 3.8 AMPS; 100-208VAC Input; Piano Series; NEC Class 2	PW51	DO NOT GROUND DC NEGATIVE TO CHASSIS/EARTH GROUND
2	1	Banner	10704-061551 S22DLRXXPT	Pilot Light, Red; S22 EZ; 22 mm; IP67; 10-30 VDC PNP Input; 4-screw Terminal Wiring	LT130	
3	1	Hoffman	10700-055871 CP1612G	Sub Panel 16" x 12"; Used for CSD1612BLG		
4	1	Hoffman	10700-059628 CSD1612B	Concept Enclosure; 16"H x 12"W x 8"D, Type 4 and 12		
5	1	Square D	10702-051830 MGF42104	CIRCUIT BREAKER,4 AMP 1 POLE, MULT 9 MINIATURE,120/240 VAC, 60VDC MAX	CB1	
6	1	Hubbell	10707-057751 HBL2611	Locking Devices, Twist-Lock, Industrial, Male Plug, 30A 125V, 2-Pole 3-Wire Grounding		
7	1	Turck	10707-061529 FK 8-1/14.5/NPT	M12 8-Pin Female Receptacle, Front Mount, 1M, 24AWG, 1/2" NPT	PJ143	ESTOP CIRCUIT
8	1	Banner	10708-045649 UM-FA-11A	Universal Input Safety Module - Solid-State 2 NO 1 NC Contacts	SR1	
9	14"	Wago	10709-009425 210-112	TERMINAL, MOUNTING RAIL, 35mm DIN RAIL, NOT HIGH RISE, 2 METER STRIP		
10	5	Wago	10710-000445 249-116	SCREWLESS END STOP; 6 MM / 0.236 IN WIDE; CARRIER RAIL DIN 35		
11	10	Wago	10710-000493 2006-1301	3 Conductor Top Job Terminal Block; Center Marking; Top Entry; Cage Clamp Connection		
12	5	Wago	10710-000494 2006-402	Push-in type Jumper; 2 Way; 41A Max.		SHALL BE INSTALLED IN THE EXACT LOCATION, AS SHOWN ON THE LAYOUT
13	1	Wago	10710-029589 2006-1307	3 Conductor Top Job Terminal Block; Green/Yellow; Center Marking; Top Entry; Cage Clamp Connection		
14	2	Wago	10710-057054 2006-1391	TDPJOB End and intermediate plate; 1 mm thick, GRAY		
15	5'	IEWC	10715-057750 SO10030W-0/90C	UL 500W Portable Cord, 10 AWG, 104 Strand, 3C, CPE, Black		
16	1	Turck	10715-058987 FS 4.4-1/14.5/NPT/S613	M12 Male Receptacle, Front Mount, 1M, 18AWG, 1/2" NPT	PJ166	START/STOP CIRCUIT
17	1	Turck	10715-061528 FK 4.5-1/14.5/NPT	M12 5-Pin Female Receptacle, Front Mount, 1M, 22AWG, 1/2" NPT	PJ157	STACK LIGHT CIRCUIT
18	1	Turck	10715-061549 FK 4.4-1/14.5/NPT/S613	M12 Female Receptacle, Front Mount, 1M, 18AWG, 1/2" NPT	PJ204	EDM CIRCUIT
19	4	Crouse Hinds	10716-000678 11	1/2IN Conduit Locknut		
20	1	Hummel	10716-025317 NN-21-BK	CORD GRIP PLASTIC NUT, 3/4IN K.O.		
21	1	Hubbell	10716-025351 SEC75BA	CORD GRIP - 0.45IN TO 0.71IN CABLE RANGE, 3/4IN K.O., NON-METALLIC		
22	1	Allen Bradley	10705-061552 2080-LC20-20QWBR	PLC, MICO 820, 24VDC POWER, (11) Digital INPUTS, (7) RELAY OUTPUTS, (1) ANALOG OUTPUT,ETHERNET PORT	PLC1	2" CLEARANCE NEEDED ON ALL SIDES. DO NOT GROUND DC NEGATIVE.
23	1	Allen Bradley	10705-061554 2080-S0-2GB	Micro800 MicroSD Card 2GB, Preloaded With Safety Logic From Trew		INSTALL SD CARD PRIOR TO PLACING 2080-LC20-20QWBR ONTO DIN RAIL
24	14"	Panduit	10715-026476 C1WH6	Duct Cover, PVC, 1in X 6ft, WHITE		
25	14"	Panduit	10709-054767 G1X4WH6	WIREDUCT, 1X4		
26	16	Panel Fab		ENGRAVING, ENGRAVED SELF ADHESIVE LABEL		
27	1	Allen Bradley	10704-051789 800FM-LFBPN3WX11	OPERATOR, PUSHBUTTON, 22.5MM, BLUE, ILLUMINATED LED, WHITE LED, MOMENTARY, GUARDED, 24VDC, 1 N.O., 1	LPB1	
28	1	Allen Bradley	10704-051784 800FM-F3PX10	OPERATOR, PUSHBUTTON, 22.5MM, GREEN, FLUSH HEAD, MOMENTARY, 1 N.O.	PB1	

Figure 79:

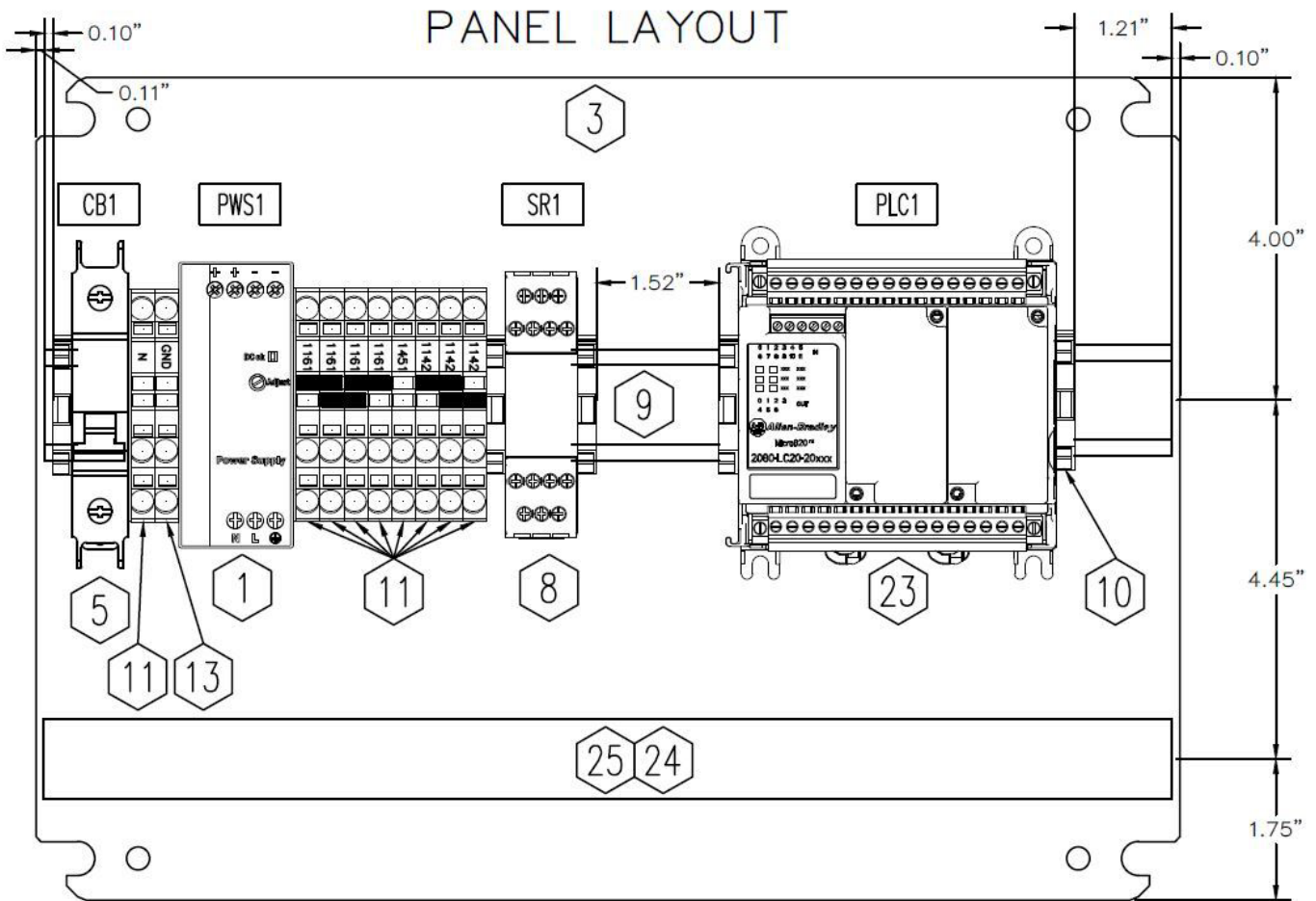


Figure 80

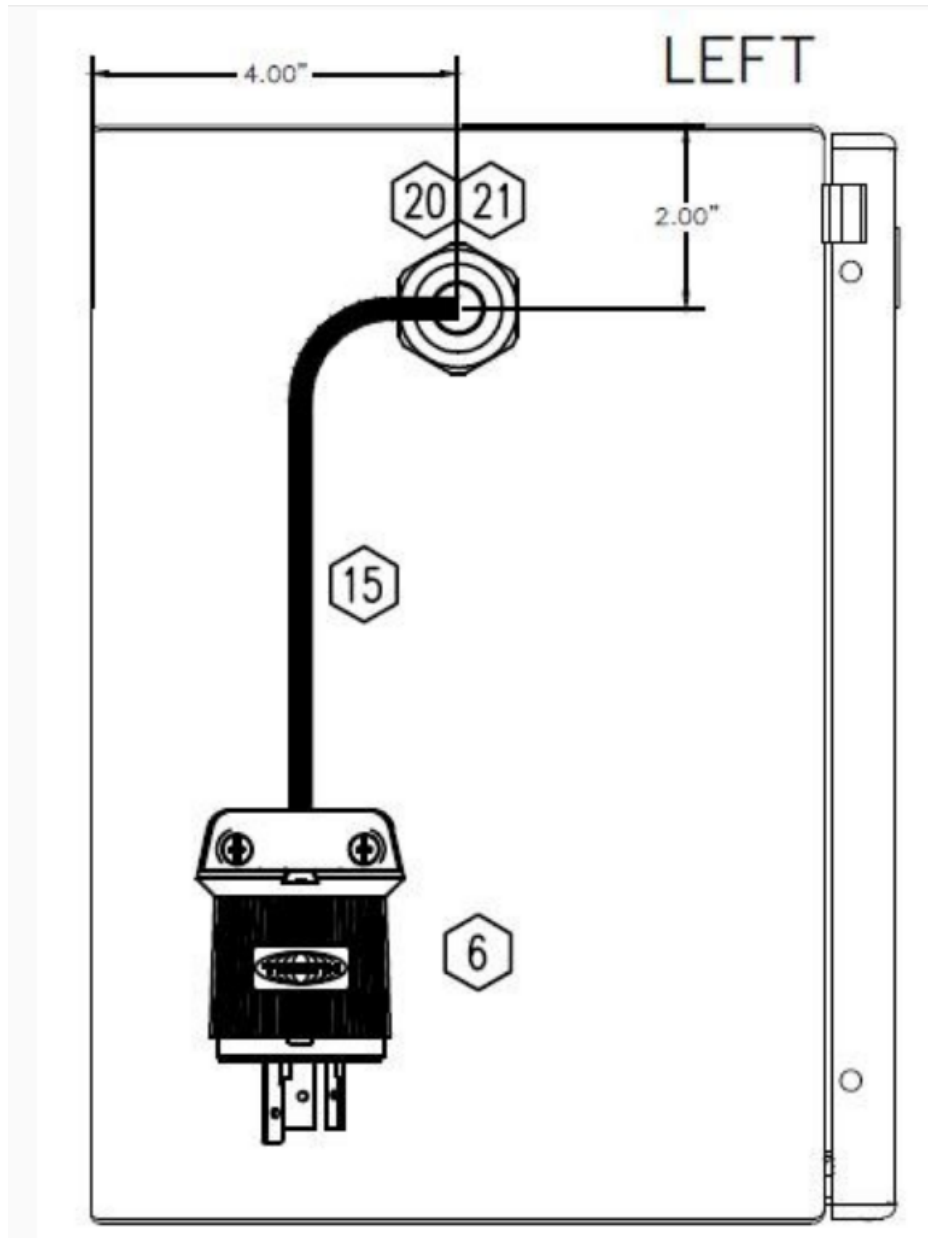


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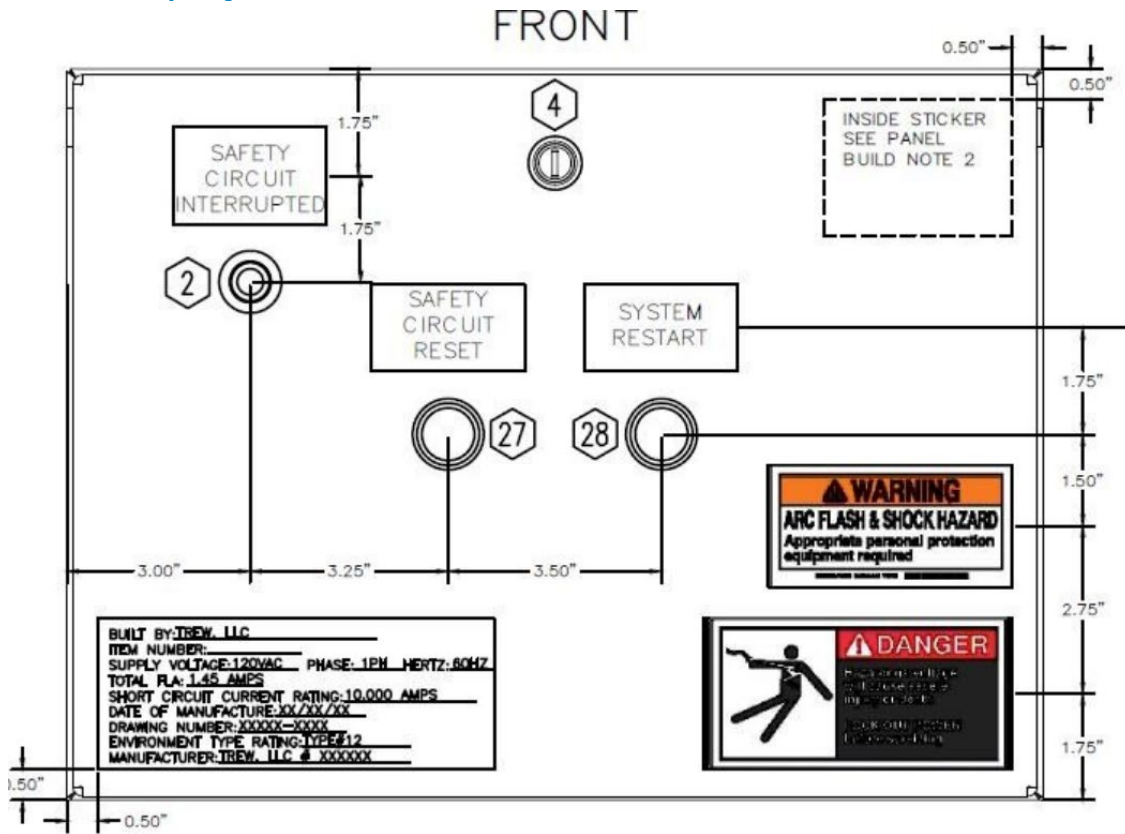


Figure 82:

RIGHT

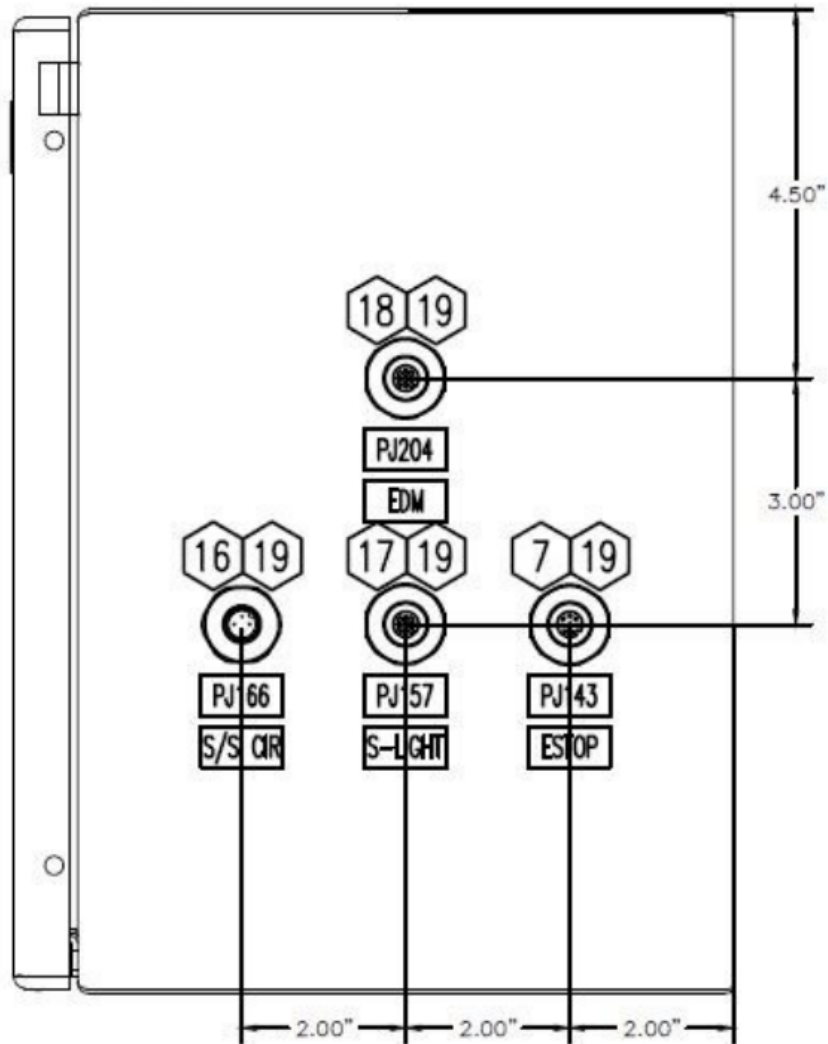


Figure 83

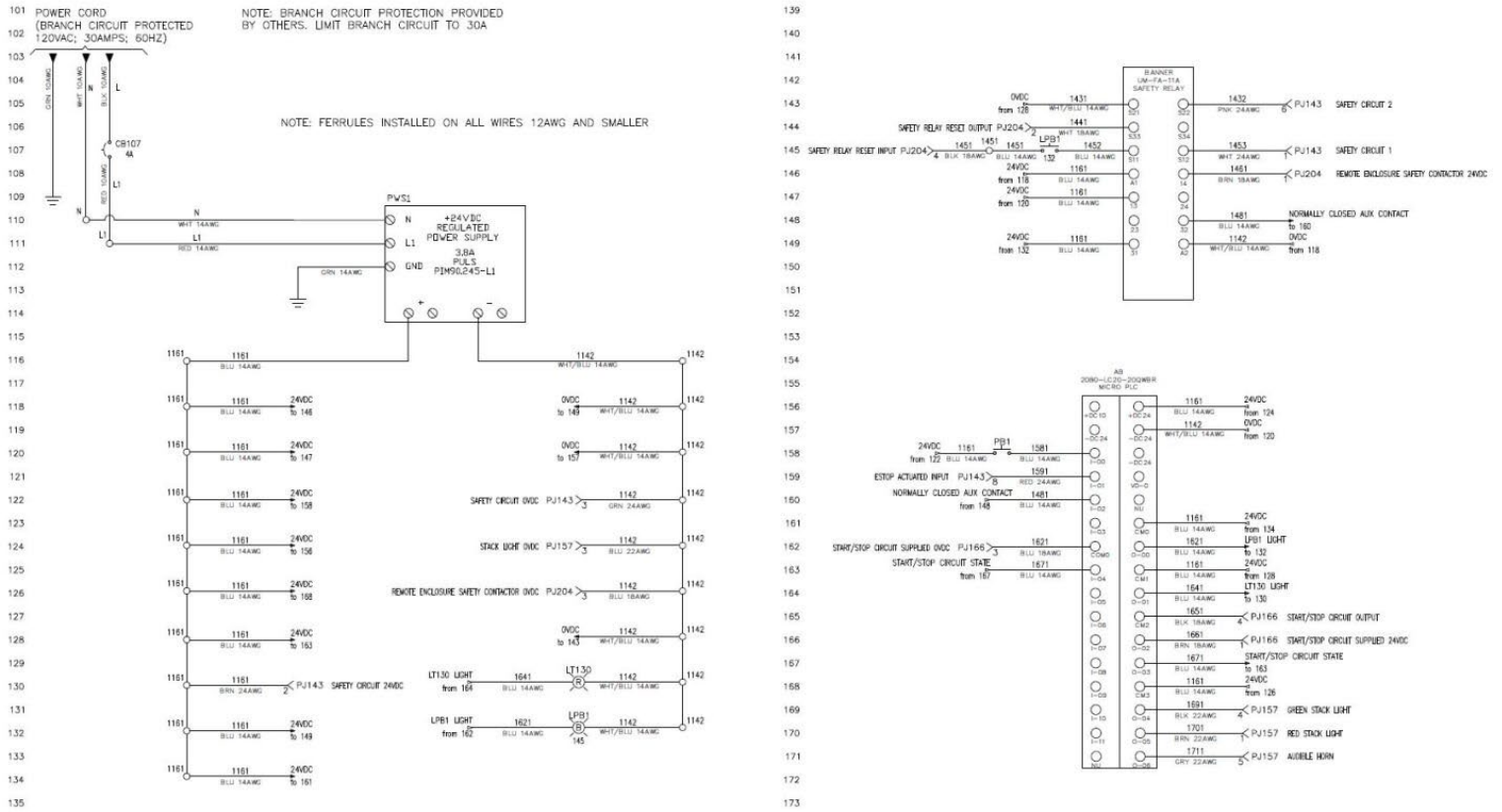


Figure 84

3 PULL CORDS SHOWN FOR CLARITY, MAY CHAIN UP TO 30 SAFETY INPUT DEVICES IN A SERIES

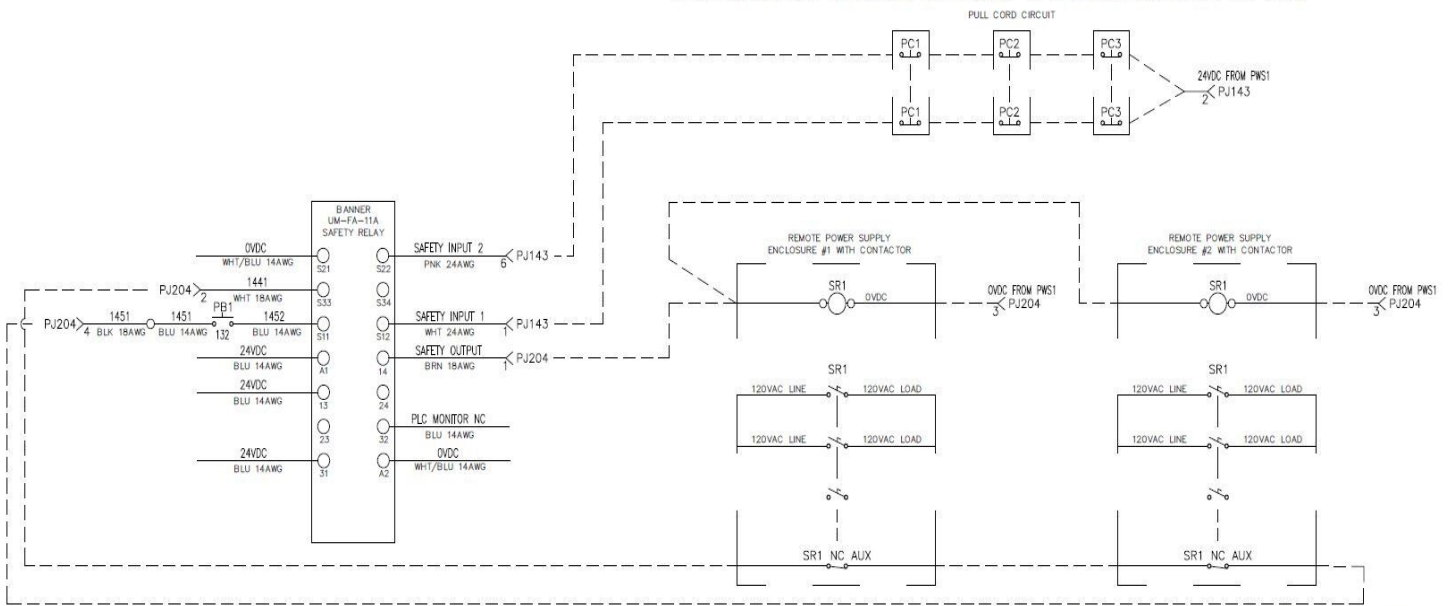
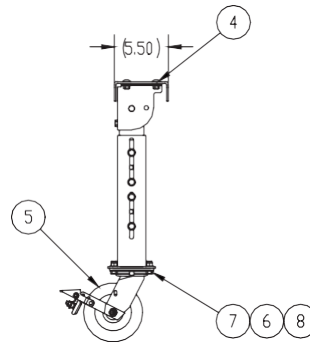
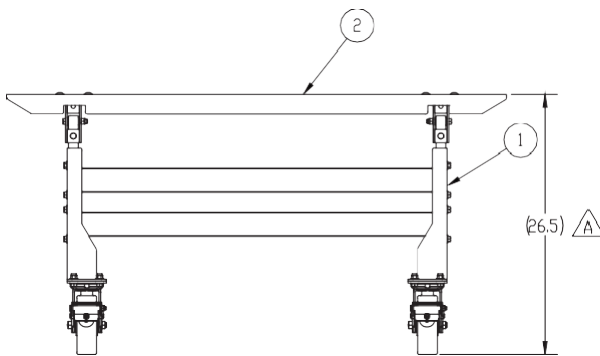
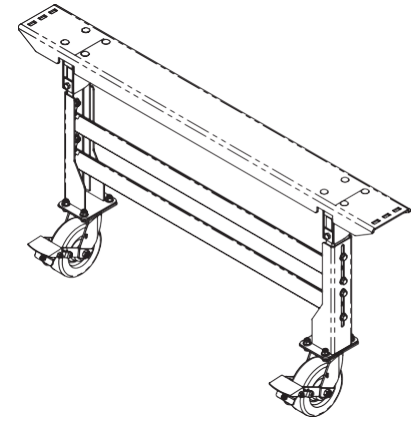
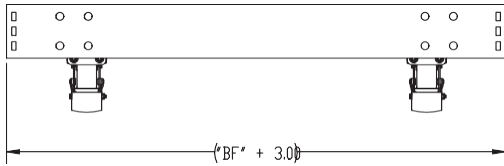


Figure 85

HILMOT

A TREW Company

Supports Drawings



ITEM	PART NUMBER	QTY.	DESCRIPTION
1	1000467-XX	1	STANDARD DUTY LEG SUPPORT ASSEMBLY, XXIN BF
2	SEE TABLE	1	LEG SUPPORT TOP MOUNTING CHANNEL, FOR XXIN BF BED W/ XXIN BF LEG SUPPORTS
3	10201-010200	8	3/8 - 16 UNC HEX FLANGE NUT
4	10201-010800	8	3/8-16 UNC X 0.75 CARRIAGE SCREW
5	10200-058341	2	CASTER, SWIVEL PLATE, WHEEL SIZE 6INX2IN, WHEEL MATERIAL PHENOLIC, ROLLER BEARING, TECH LOCK BRAKE
6	10201-010600	16	3/8 WASHER-A
7	10201-010402	8	3/8 - 16 UNC X 1.00 HEX HEAD CAP SCREW
8	10201-010221	8	3/8 - 16 UNC HEX NYLON LOCK NUT

PART NUMBER	"BF"	ITEM 1	ITEM 2
1000466-36	36.00	1000467-36	1000528
1000466-48	48.00	1000467-48	10300-058292

9.1 Support

If you need further assistance: E-mail:

support@trewautomation.com

Phone: +1-800-571-8739

Availability:

24x7 Technical Support