

CV•TEK

Cutting edge technology from the
leader in modified atmosphere packaging

MasterPACKer[®] X5



Automated Modified Atmosphere Packaging Machine Manual

CV•TEK

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SECTION 1: OVERVIEW

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1.1 Foreword

The information in this manual will assist you in getting the best from your MasterPacker X5 machine. The text accurately describes the original build specification, but the drawings and illustrations are intended for general reference only and are not necessarily accurate in every detail. Dimensions and characteristics are not to be considered binding and may be changed without prior notice.

The user is responsible for updating the manual with any bulletins from CV-TEK and to reflect any changes or modification he may make. CV-TEK cannot be held responsible for the conditions of use and changes to the machine, which is beyond its control.

Please read the manual in conjunction with our conditions of sale, including those limiting warranties and remedies, which apply to all goods supplied to us. Neither the information given in this manual or the machine to which it refers are intended for any use which would violate or infringe the 'rights of' and 'statutory obligations to' third parties.

No parts of this manual or any other documents supplied with this machine may be reproduced or transmitted without prior written consent of CV-TEK, Inc.

1.2 Customer Service

When calling, either for parts or service, have the model and serial numbers available for our customer service representative. This will allow us to more accurately assist you with your machine.

The serial number tag for the MasterPacker is located inside the control enclosure door on the print pocket of either control enclosure.



Figure 1.2-1. Serial Tag Location

Ordering Parts

When ordering parts, please have the following information ready:

- Machine serial number
- Part numbers and descriptions for each part required
- Quantity required for each part
- Date required and any special shipment requests
- Delivery address
- Purchase request/order reference

Once you have all of these, you can place an order in any of the following ways:

- 1) Phone: 847-741-3500 ext. 2
- 2) Fax: 847-741-3569
- 3) Email: parts@cv-tek.com

Technical Service

For technical service, please call: 847-741-3500, and follow the prompts to be sent to the Service department. Please have the machine serial number and a description of the problem ready, so that our representatives can help you better.

1.3 Machine Information

Model Number: _____
Serial number: _____
Year of manufacture: 2024

1.4 Technical Requirements



Compressed Air

Pressure	100 psi
Supply Pipe Diameter	½" I.D.
Flow Rate	6 cfm



Electrical

Voltage	480V AC
Amperage	15A
Number of Phases	3 + Ground
Frequency	50-60Hz



Vacuum

Main Pump Flow Rate	28.3 cfm
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Flush Gas

Pressure	80 psi
Connection Fitting	½" I.D.

Film Roll Stock

Max Width: 16.1 in (Narrow) / 29.5 in (Regular)
Diameter: 24.0 in

Performance Characteristics

Working Speed: 15 bags per min.
Max Bag Length: 26.38 in
Max Bag Width: 16.60 in

1.5 Machine Overview

The following images show the MasterPacker X5 in both its normal, and component states.

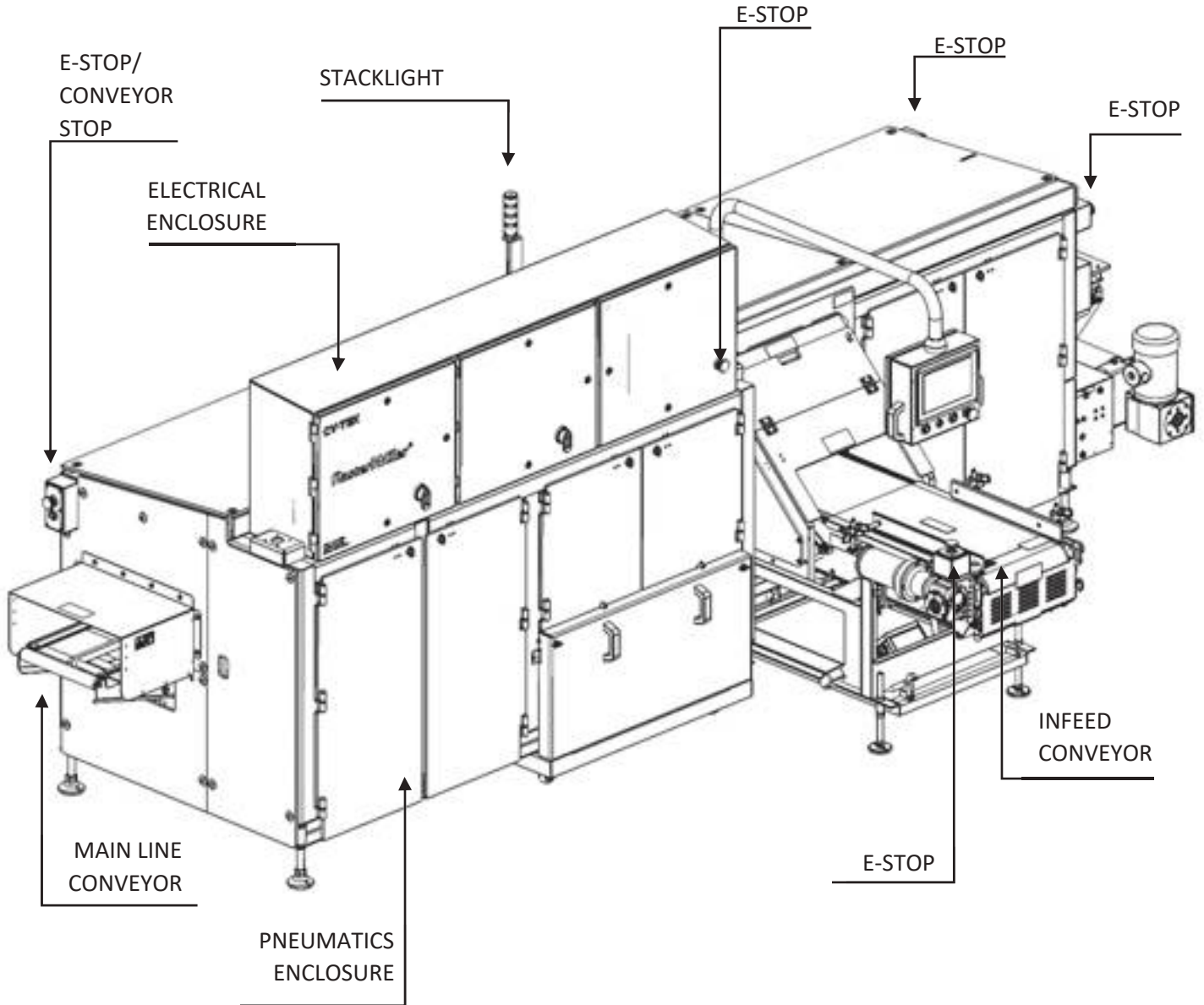


Figure 1.5-1. MasterPacker X5 Machine View

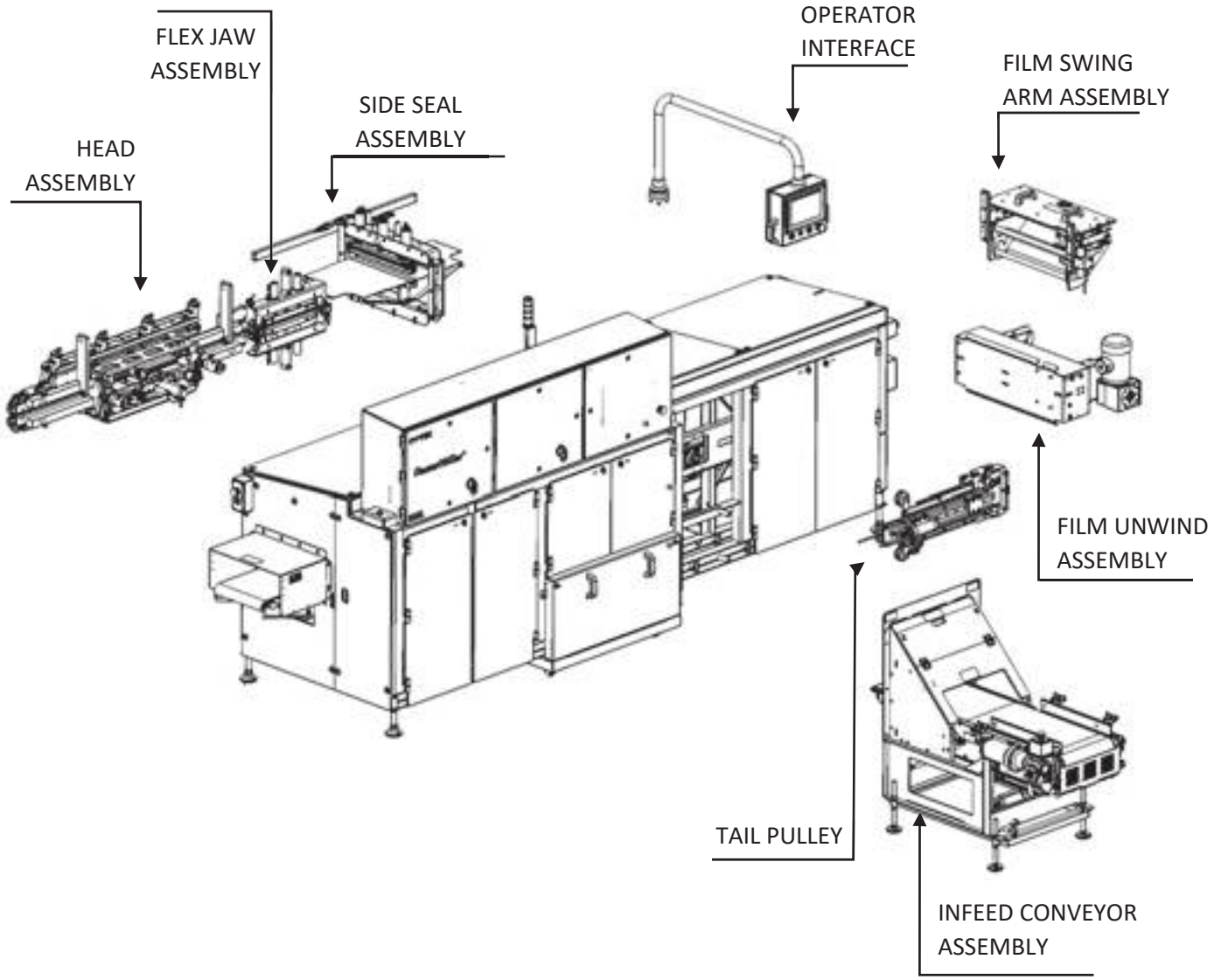


Figure 1.5-2. MasterPacker X5 Component View

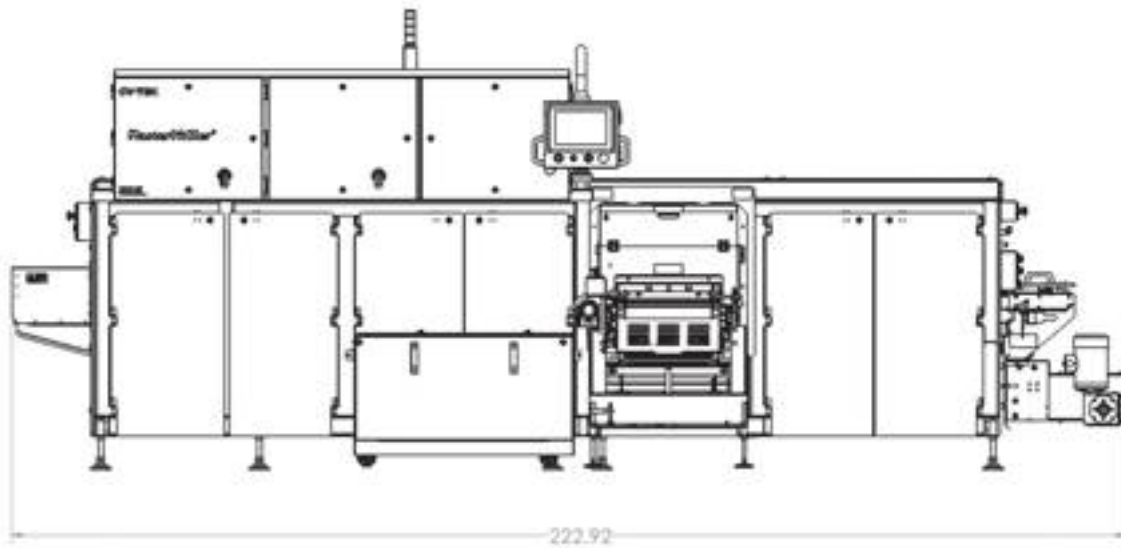


Figure 1.5-3. MasterPacker X5 Front View

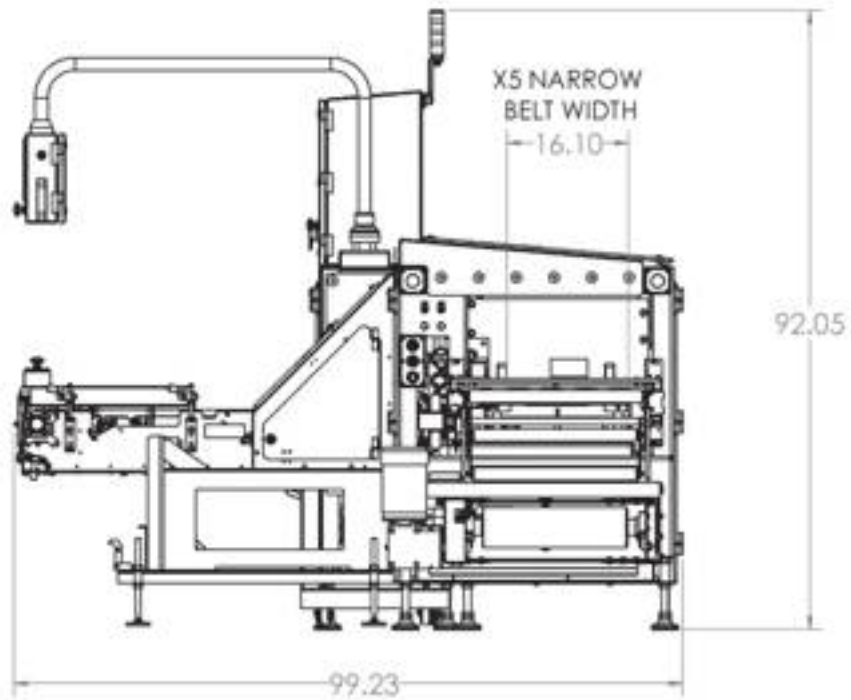


Figure 1.5-4. MasterPacker X5 Narrow Side View

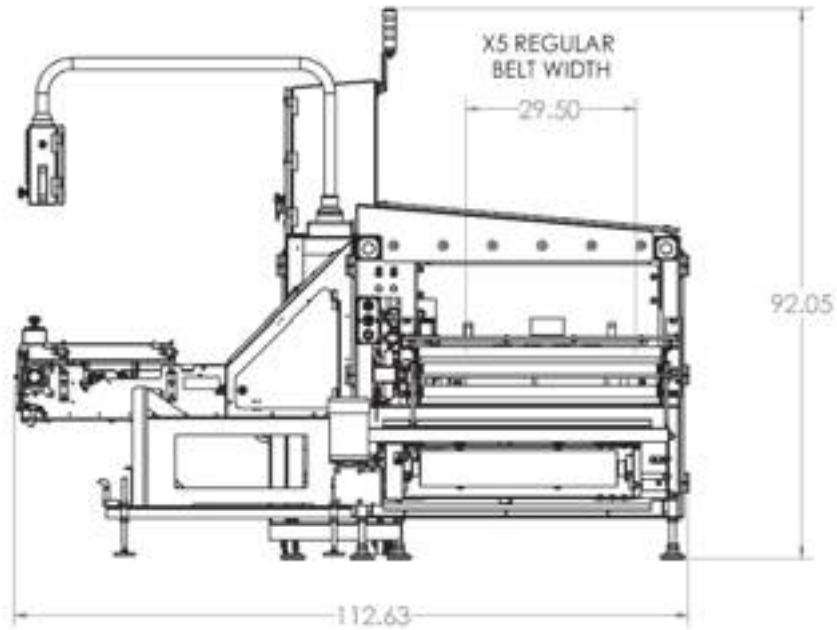


Figure 1.5-4. MasterPacker X5 Regular Side View

Dimensions and Weight (Narrow)

Length:	222.9 in
Width:	53.6 in
Width (incl. Infeed):	99.2 in
Height:	92.1 in
Approx. Weight:	5200 lbs (2350 kg)

Dimensions and Weight (Regular)

Length:	225.2 in
Width:	67.0 in
Width (incl. Infeed):	112.6 in
Height:	92.1 in
Approx. Weight:	5580 lbs (2530 kg)

SECTION 2: INSTALLATION

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2.1 General Delivery Notes

The machine is usually delivered on a wooden pallet with open wooden sides and top, attached with spring clips and covered in film to prevent it from being damaged during transportation.

Following receipt, check the machine condition; any damage should be communicated as soon as possible to the shipping agent by written notice.

Check the packaging list to make sure all components have been delivered. Should a discrepancy between components delivered and the packing list be detected, please contact the CV-TEK sales office.

Inspection

On delivery, always check the machine and equipment for any damage. Any damage must be notified in writing as soon as possible to the carrier or to the carrier's insurance company.

2.2 Unloading and Positioning the Machine



WARNING



This machine is very heavy and should not be lifted by unassisted individuals. Make sure to always comply with the handling instructions, move the machine slowly, and take extra care to protect the safety off all employees that are installing the machine.

Before taking delivery of this machine, ensure that your work area will accommodate the requirements. This includes physical dimensions, electrical requirements, and pressurized air requirements. Ensure that you have an open and clear work area for installation, allowing room for a forklift to lift the machine. If you are not able to setup the machine where it will be used, make sure you can transport the machine to that location after it is assembled.

The MasterPacker X5 is shipped in two separate components: the infeed conveyor assembly and the main body. This is to facilitate easier unloading and unpacking, and easier transportation into the plant. These two components should remain separate until final placement of the machine.

MasterPacker X5 Contents

Before continuing, inspect the contents of the machine and the condition they are in. Inside the machine you should find:

- Electrical schematic and pneumatic drawings for the machine (located inside the electrical enclosure)
- Parts box (Adjustable legs, spare fuses)

Spare Parts

Spare parts can be ordered directly from CV-TEK as necessary, or you can purchase a Spare Parts Kit specifically for this machine. A list of these parts is available upon request.

2.3 Assembling the MasterPacker X5

Adjusting the Legs

Once the machine is in place, the legs can be mounted to the chassis so that the machine may be leveled. To mount the legs, follow these steps:

1. Using a forklift or jack, raise one end of the machine off the floor.
2. With the machine raised, loosen both the upper and lower nuts on the legs at the raised end of the machine but do not remove them.
3. Adjust the lower nuts so that the bottoms of the feet are 6 inches below the frame. Tightening the upper nuts is not necessary at this time.
4. Adjust the legs at the center of the machine in the same manner as steps 2 and 3.
5. Set the machine on the floor gently and raise the opposite end, again using a forklift or jack.
6. Adjust the legs at the now-raised end of the machine in the same manner as steps 2 and 3.
7. Lower the machine back to the floor gently.
8. Level the machine by repeatedly raising one of the ends to adjust the feet until it sits flat on the floor.
9. Tighten all nuts until they are unable to move.

Attaching the Infeed Conveyor Assembly

Once the MasterPacker X5 is in place and leveled, the infeed conveyor assembly can be attached. The following steps show how to safely mount the conveyor:

1. Move the infeed conveyor assembly near the flex jaw opening of the MasterPacker X5. Set the leg height so that the mounting tabs align with the standoffs in the machine's frame.
2. Open the flex jaws. Center the boom horizontally within the flex jaw opening. Tighten the outside mounting bolts.
3. Manually extend the boom through the flex jaw opening. Set the height 1/8"-3/16" from the bottom of the boom to the open flex jaw by adjusting the mounting brackets on the bottom of the conveyor frame. Adjust both brackets so that the conveyor remains level.
4. Route the servo cables from the electrical enclosure to the infeed conveyor servo motors, using cable ties to secure the cables to the frame members along the way. Take care to avoid moving parts. Connect the Servo 2 cable to the motor at the conveyor drive pulley. Connect the Servo 3 cable through the access port at the bottom of the conveyor body to the motor on the infeed boom actuator.

5. Route the umbilical cable to the electrical enclosure using cable ties to secure the cable to the frame members. Take care to avoid moving parts. Insert the umbilical cable plug into the socket and secure using the locking levers attached to the socket.

Removing Shipping Material

The machine is shipped with several tie-downs. Ties are placed on the swing arms of the unwind assembly and pendant arm. Be sure all ties are removed before operating the MasterPacker X5.

2.4 Connecting Utilities

Electrical Connections

To connect the electrical connection to the MasterPacker X5:

1. Run a service line to the disconnect on the machine that is sized to handle the voltage and amperage requirements of the machine as seen in section 1.4.
2. Verify that the power supply is properly grounded to the ground lug in the disconnect enclosure.
3. Turn on electrical power to the machine.
4. Check the rotation of the vacuum pump. If the vacuum pump rotation is reversed, turn off electrical power to the machine and switch two of the 3 phase leads to the main disconnect. Turn on power and double check rotation of the vacuum pump.
5. Because the film and conveyor drives are controlled by inverters, motor rotation on these do not need to be checked.



WARNING



Electrical work should only be performed by trained personnel. It is your responsibility to ensure that wiring meets all code requirements. It is essential that a reliable ground (earth) wire be connected to the machine's grounding lug.

Main Compressed Air Supply

To connect the main compressed air supply line, attach the line to the bulkhead fitting located on the utility connections distribution block. Ensure that the supply and the supply line both meet the required specifications for the MasterPacker X5 as seen in section 1.4.

Turn the supply line on and check the main regulator. For the machine to operate properly, the gauge **must read at least 80 psi** and the lockout valve must be open.

Flush Gas Air Supply

The MasterPacker X5 is capable of dispensing two different flush gases into the bags. If only one flush gas is being used, connecting the gas supply to both gas inlets can increase the cycle speed of the machine.

Install a high flow gas regulator to the gas supply run on the MasterPacker X5. If the gas supply is a bulk system, install a ball valve in the front of the gas regulator for maintenance purposes. Connect the gas line to the gas bulkhead fitting located on the utility connections distribution block.

CV-TEK has an auxiliary gas regulator on gas line 1. It has a 250 psi inlet rating and a 0-150 psi adjustment range. CV-TEK recommends 60 psi at the outlet gauge.

After installing the gas inlet lines, turn on the gas supply and open the ball valve, if installed. Check to see if the gas is filling in the accumulator tank by pulling on the ring on the pressure relief valve. If gas is flowing through the valve, then the tank is being pressurized successfully. The valve will open automatically at 125 psi to prevent damage to the tank or valves.



WARNING



Installing the compressed air line in the gas port, or the gas line in the compressed air port, can cause contamination of the packaged product, or cause accelerated wear and/or failure for the machine.

Take extra caution when installing these components on the machine.

SECTION 3: SETUP

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3.1 Programming the MasterPacker X5

Temperature Settings

The temperature settings for each individual seal can be controlled from the touchscreen on the operator's control panel. The operator can adjust sealing temperature, cooling temperature, and view the real time temperature of each seal bar independently. These settings can also be saved as individual recipes and can be loaded back to the machine at a later time.

Bagging Multiple Items

The number of items that can be stacked vertically within a bag can be changed on the RECIPE screen within the maintenance menu on the operator's screen. The box underneath the title "Layers" can be clicked on and adjusted to reflect how many layers are desired in each bag.

Fine Movement Adjustments

If the need arises for the operator to move the machine in a way that is outside of the autonomous program, individual servo control can be done through the MOTION menus on the operator's touchscreen display. Individual motor control, for the rotational and linear servos, can be manipulated, and the real time velocity and position data is also shown here.

3.2 Film Roll Setup

To connect the electrical connection to the MasterPacker X5:

1. Press the stop button on the operator's control panel to restrict the machine's movement. If there is a partial roll on the machine, remove the swing arm guard and cut the film at the side seal station.
2. Remove the existing film roll core by removing the lever arm that is locked down on the left side of the film roll holder. Once the lever is free and raised, the film roll core will be able to be lifted straight out of the holder.
3. Determine the open side of the new C-Fold film roll and orient it so that the open side faces the flex jaw side (left side) of the machine.
4. Lift up the swing arm and lock it in position with the lever mounted to the bottom of the swing arm support.
5. Using a pallet jack, position the new roll so that it is in between the sides of the machine, and place the new roll onto the supports. Lock the lever on the left side back into place and ensure the roll is secured in the holder.
6. Manually unroll approximately 6 feet of film and lace the rollers of the swing arm as shown in figure 3.2-1. Ensure to set the roll selector switch accordingly. Lower the swing arm by moving the locking lever to the open position. **Replace the swing arm guard.**

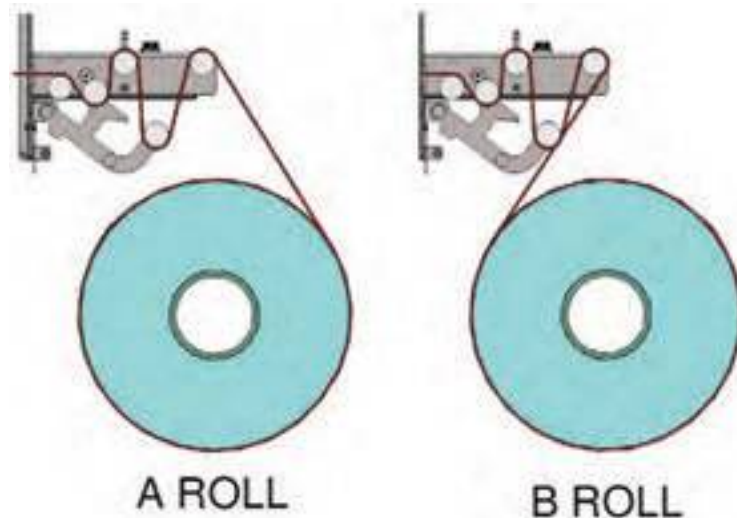


Figure 3.2-1. Film roll orientation

7. Slide the film underneath the guard on the side seal assembly so that it overlaps with the existing film. Use the operator's control panel to manually cycle the main conveyor belt so that the new film is extended through to the end of the belt.
8. Use the HOME screen to resume auto machine operation.

SECTION 4: OPERATION PROCEDURES

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4.1 Operator Precautions

It is important to know and understand the safety precautions before operating the MasterPacker. Improper and unsafe operating habits may cause injury to the operator.

DO NOT lean on or near areas of the machine that may move. Loose clothing or parts of your body may become pinched in the machine.

DO NOT operate with loose or damaged parts. This may cause harm to the operator and/or additional damage to the machine. Repair or replace faulty parts before operating the machine.

DO NOT use the machine for unintended purposes. Operate the machine as directed in this manual or as instructed by a CV-TEK representative. Improper use of this machine may result in injury or cause additional damage to the machine.



WARNING



DO NOT use this machine without the proper training. Serious injury can occur through improper use. Always be sure to stay away from any component which can move while the machine is powered on, or while compressed air or gas is connected. DO NOT operate the machine if any safety guards are missing.

4.2 Operator Controls

Controls Overview

The human/machine interface (HMI) is the access point for all the functions on the machine. This is where the main touchscreen interface is located which allows the operator to change all of the setup settings, change operating modes, and view live operating statistics. This is where all of the alarms will display when they are triggered.

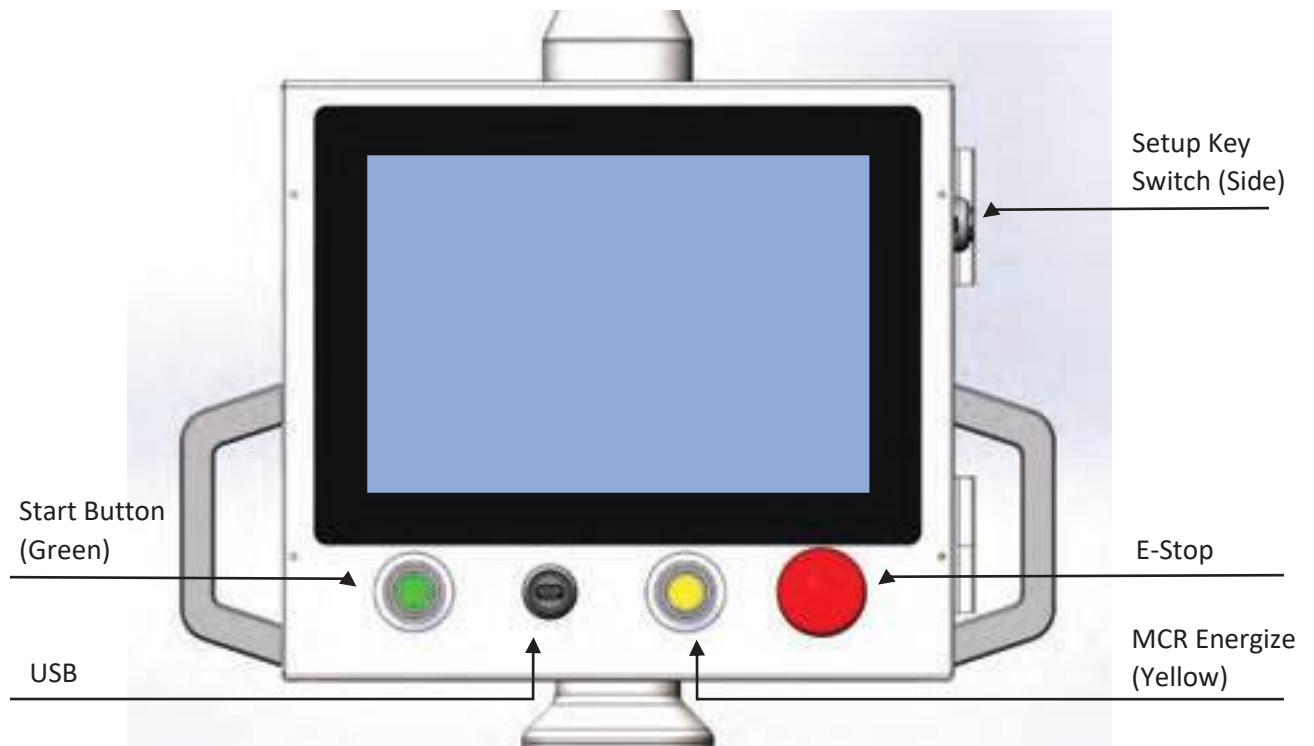


Figure 4.2-1. Operator Control Panel

1. Start Button (Green)
2. USB Port
3. Master Control Relay Energize Button (Yellow)
4. E-Stop
5. Setup Key Switch

E-Stop Locations

There are 6 E-Stop buttons located all around the machine. There is 1 on either side of the film intake area. There is 1 on the operator display panel. There is 1 on the left side of the infeed conveyor belt. There is 1 mounted on the electronics control cabinet. There is 1 to the left side of the exit-side of the main conveyor belt.

When pressed, these will immediately stop all motor functions of the machine, both electrical and pneumatic. Motor function ability will not be restored until every E-Stop button is reset to the disabled position; the operator's screen will inform the operator which E-Stops are pressed.

Since the E-Stop buttons immediately stop all movement, when reengaging the machine, it may be necessary to use the MOTION screens so that any bags that were currently in progress can be finished. Ensure that new film is processed correctly after reengaging.

Stack light Operation

The stack light has 3 different colored lights on it, green, amber, and red. They will light up independently for different events. It is located on top of the electrical enclosure.

Green – The green light will light when the master control relay in the electrical enclosure is energized indicating that the motor functions of the machine are ready for operation.

Amber – The amber light will light when the machine is ready to load product and cycle through the bagging process.

Red – The red light will be flashing when the machine has had an alarm activated.

Red/Amber flashing – The snorkel station is not detecting the presence of film. Load film using the touchscreen buttons until the station is loaded. Replace film roll if empty.

Conveyor Stop Button

This button is located at the end of the main conveyor belt and can be used to stop automatic production of product without engaging the E-Stop. When pressed, the machine will finish the current cycle and then come to a rest. To reengage the machine, use the operator's touchscreen display.

Infeed Conveyor Controls

Located on the infeed conveyor is the CYCLE START OTS (CSO). When manually loading trays into the machine, the CSO is used to index the infeed conveyor. This places the trays into the bag on the machine and starts the machine cycle. If the machine is being automatically loaded, the CSO is disabled. The CSO will light green when activated. If the machine is not busy, the trays will advance right away, and the light will go out. If the light remains green, it indicates

that the machine is busy. The tray pattern will advance automatically when the machine is ready again and the light will go out.

Run Mode

To start the machine, energize the Master Control Relay using the yellow MCR Energize button on the operator control housing. Once the system is fully powered on, press the green Start button to begin autonomous operation.

4.3 Machine Operation

Machine Shut-Down Procedure



WARNING



Failure to follow the shut-down procedure can result in premature timing belt failure. Be sure to follow this procedure every time the machine needs to be powered off.

1. Press the stop button on the right-side menu and wait for the machine to come to a complete stop.
2. Lock-out compressed air and flush gas at the main filter regulators. Wait for air to bleed out of the system before proceeding.
3. Lock out main electrical power to the machine at the main disconnect.

End of roll Film Removal

Once the film reaches the end of the roll, the machine will stop and give a NO FILM fault. There will be an incomplete bag that will need to be completed.

1. Go to the ALARMS SCREEN and reset the alarm.
2. Press the stop button on the right-side menu and wait for the system to react accordingly.
3. See section 3.2 for loading a new roll.

Loading the Machine

With film loaded into the machine, it can be started by pressing the green start button on the operator control housing. Once the machine is started, the infeed conveyor boom will extend into the bag at the flex jaw station and the LOAD light will illuminate.

1. Place product on the infeed conveyor, making sure to place the trays up against the side and back guides on the conveyor.
2. Once the product is placed, activate the CYCLE START OTS on the infeed conveyor. The LOAD light will turn off and the infeed conveyor will index, moving the trays forward.
3. Once the conveyor index is done, the LOAD light will illuminate. Continue to place product on the infeed conveyor belt, making sure the trays are placed up against the

side and back guides of the conveyor. Again, activate the START switch on the infeed conveyor once the trays are placed.

4. Once trays break the photoeye beam on the flex jaw, placing trays into the bag, the machine will run through an Auto Machine Cycle.

If you are using automatic tray loading equipment, this equipment can be tied into the LOAD and START signal of the machine so that it can operate autonomously. Refer to the electrical schematic included with the machine to identify where those connections are made.

Auto Machine Cycle

With film loaded and the machine started, the machine will cycle when product is loaded into the bag. The flex jaw photoeye senses product entering the bag and is used to start the machine cycle. When the machine cycles, the following will occur:

1. Once product is placed into the bag on the machine, the infeed conveyor boom will retract to deposit the product.
2. After the conveyor has retracted, the flex jaws will close, the snorkel clamps will open, and the machine will index one bag length.
3. After the index, the flex jaws will open, and the infeed conveyor boom will extend into the bag.
4. The side seal bands will heat up and the side seal will close to create the two side seals and cut needed to create a bag. The heat seal bands will stay heated until the side seal heat timer has timed out. The side seal will stay closed until the side seal total timer has timed out.
5. The bag with product that was indexed to the snorkel position will be vacuumed/gassed if enabled. The tray elevator will lift if enabled.
6. The snorkel will extend into the bag and the snorkel clamps will close. The machine will then start vacuuming the bag.
7. Once the required vacuum level is reached, the snorkel will dispense gas until the gas timer has timed out.
8. Once the gas has been dispensed, the snorkel will retract.
9. The bag that was previously in the snorkel area will have the top of the bag sealed. The top seal band will heat up and the top seal will close to create the top seal. The top seal band will stay heated until the top seal heat timer times out. The top seal will stay closed until the top seal total timer has timed out.
10. On machines with a center seal enabled and a pack selected, a center seal delay starts when the top seal fires. After this delay, the center seal backup bar raises and lowers for the SHAKE time. After the SHAKE time, the bar will rise until it is proven closed against the heat seal bar above. When proven closed, the bag tear-off wheel will energize, tearing the bag flap. At the same time, the bag is being sealed in the center in two

places for the center seal dwell time. After the KNIFE delay, the knife will cut or perforate the bag between the seals if either option is selected. After the dwell time, the center seal backup bar will return to the lower position. The bar must be proven in the lower position before the machine can index again.

4.4 Starting and Stopping the Machine

Starting

To start the machine, the following conditions must be met:

1. Main power on
2. All E-Stops pulled out (disabled position)
3. All doors closed
4. Compressed air supply pressure sufficient
5. Gas pressure sufficient if enabled in recipe
6. MCR must be energized

To start the system, ensure that the yellow MCR ENGAGE button has been pressed on the operator's control panel, that there are no alarms that need clearing, that all doors are closed, and all E-Stops pulled. Once all these conditions are met, press the green start button on the operator's control panel and the system will begin cycling autonomously.

Stopping

The machine can be stopped at any time in case of an emergency by pressing any of the E-Stop buttons. To stop the machine in a non-emergency, press the stop button on the operator's display and wait for the machine to come to rest. The machine is now stationary.

SECTION 5: TOUCHSCREEN INTERFACE

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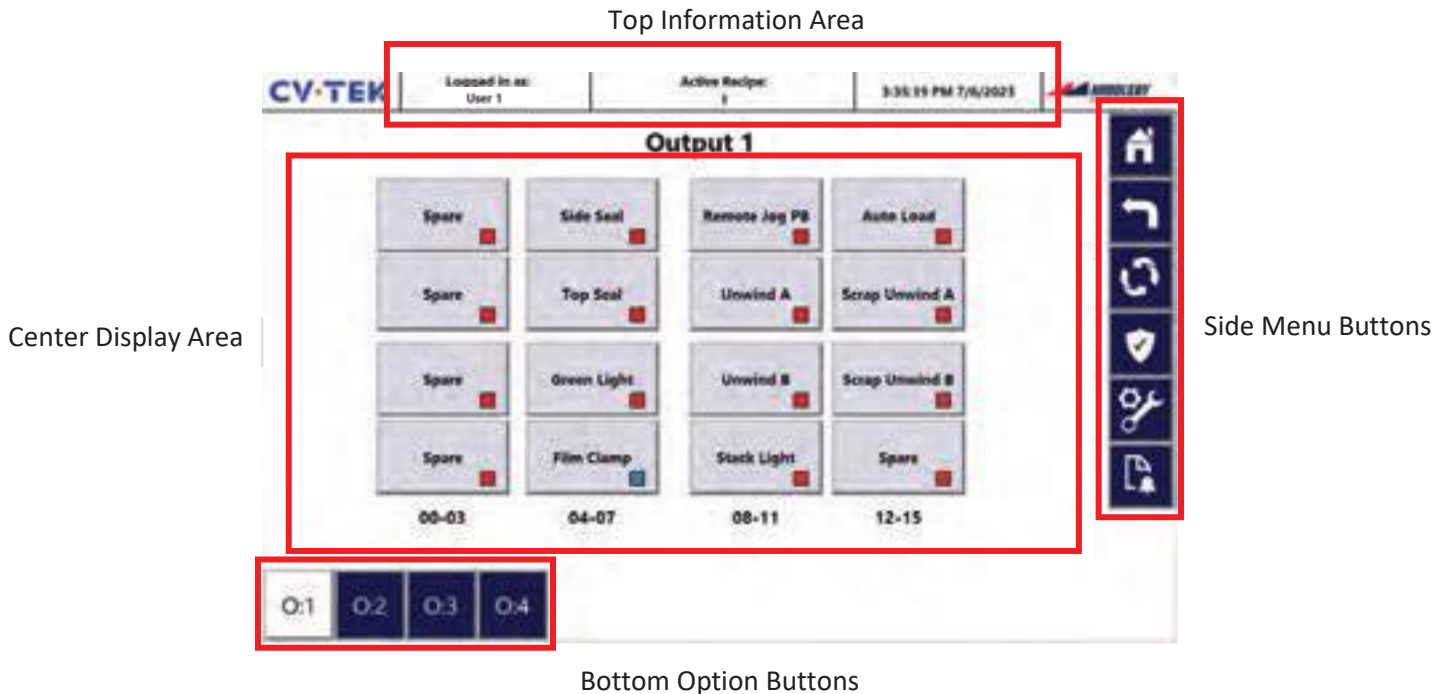
General Information

The touchscreen controls and monitors the machine. The touchscreen informs the operator of all operating conditions and will alert the operator when problems arise. The specific bag packing parameters can be changed here, along with every other programmable part of the machine.

This section will explain the general layout of the user interface (UI) and will show what every screen in the system is used for, both during operation and maintenance.







Touchscreen Layout

The touchscreen consists of a few key segments: the top information area, the side menu buttons, the center display area, and the bottom option buttons.



The top information area is permanently displayed and will carry over to all of the other screens. It displays the current operator, the current active bagging recipe, and the current time and date.

The side menu buttons are also permanently displayed. These buttons will determine which set of screens the operator is using. In order from the top, the buttons represent the:

HOME screen	
BACK button	
AUTO CYCLE/STOP button	
SAFETY screen	
MAINTENANCE screens	
ALARM screens	

The center display area will show the operator the screen that choose using the side menu buttons and the bottom option buttons. This will be where all data is presented to the operator, and where certain inputs can be made to adjust the performance of the machine.

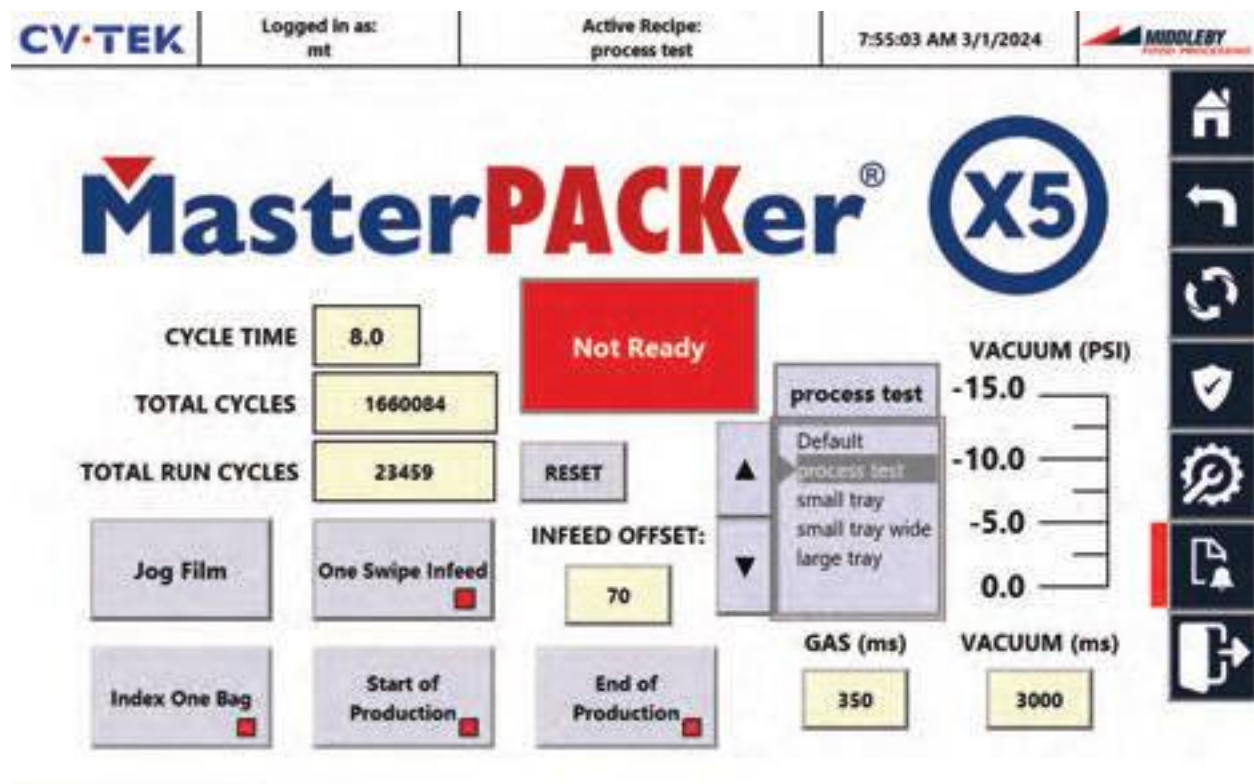
The bottom option buttons are unique to every menu screen and will differ depending on how the operator interacts with the UI. The selected screen will be highlighted for the operator's

convenience. These buttons will allow the operator to have more diagnostic information and more settings that can be changed.

Any buttons in the UI which have chamfered borders are input buttons that are able to be changed by the operator. Simply press on the display box and a keypad will appear that will allow the operator to make changes. Boxes with straight, black borders are display boxes that relay information from the computer but cannot be changed.

Home Screen

When the MasterPacker X5 is powered on, the interface will enter the HOME screen. This screen displays the MasterPacker X5 logo, the current time and date, the active user and recipe, and general statistics about the current running ability of the machine. The recipe can be changed using the directional keys next to the recipe list. The Jog Film button turns green when the machine is in run mode, alarms are cleared and MCR is energized. When the MCR ENERGIZE button has been pressed and all startup conditions are met, the AUTO CYCLE button will appear on the side menu buttons. When pressed, this button will change to the STOP button, which when pressed will cycle-stop the machine. One Swipe Infeed is an option that allows product to be pushed to the end of the belt in one swipe. Index One Bag runs exactly one bag whether product is present or not. Start of Production initializes the machine by cycling 3 times with no vacuum or gas. End of Production vacuums and seals 3 bags to clear the machine of product. Infeed Offset changes how far the product is placed in the bag from the infeed boom. Gas and Vacuum controls the time for how long those actions take, they are the same gas and vacuum values in the timing chart view.



Maintenance Screens

This is the main maintenance screen. This menu allows for diagnostics to be run on the machine's wiring, fine tuning of the seals, changing of the recipe, and individual servo control if there is a jam or other similar event.

- Digital IO – This button takes you to the collection of digital IO screens which show active inputs/outputs on the system's PLC and act as a mirror to its activity.
- Output test – This button takes you to the set of buttons that allow you to manually activate or de-activate outputs
- Analog IO – This button takes you to the pair of analog IO screens which show active inputs/outputs on the system's PLC and act as a mirror to its activity.
- IO-Link – This button takes you to the screen that shows the connected IO-Link devices and their current statuses.
- Recipe – This button takes the operator to the recipe and time cycle screens where specifics about how the bags are made will be available for changing and the diagnostic time data will be viewable.
- Motion – This button will take the operator to the set of motion screens which allow for individual control over each servo in the machine, as well as real time monitoring of their performance.



Digital IO Screens

The digital IO screens show a representation of what inputs or outputs are currently active for the machine's PLC. Inputs that are currently receiving a positive signal will be lit blue, no signal is red. By selecting the different tabs at the bottom of the screen, all of the different inputs and outputs can be viewed.

CV-TEK | Logged in as: mt | Active Recipe: process test | 8:50:06 AM 3/1/2024 | ADDLEBY FOOD PROCESSING

Inputs 1

SPARE	SPARE	SNORKEL CLAMP TOP OPEN	INFEEED CONVEYOR RETRACTED
SPARE	SPARE	SNORKEL CLAMP BOTTOM CLOSED	LOADER FEEDBACK
E-STOP OK	SPARE	SNORKEL RETRACTED	SPARE
MCR ON	SPARE	GAS PRESSURE LOW (OPTION)	REMOTE STOP

00-03 04-07 08-11 12-15

I:1 I:2 I:3 I:4 O:1 O:2 O:3 O:4

Inputs 2

SPARE	SPARE	TOP SEAL UP	SPARE
SPARE	SPARE	HMI START	SPARE
FLEX JAW OPEN BOTTOM	SPARE	SPARE	SPARE
FLEX JAW OPEN TOP	SNORKEL TRANSFER HOME	SPARE	SPARE
00-03	04-07	08-11	12-15



I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----

Input 3

SIDE SEAL TOSS ALARM	LEFT PACK #1 TRAYS GO	KEY SWITCH	SPARE
TOP SEAL TOSS ALARM	VACUUM PRESSURE OK	SCAVENGER OK (OPTION)	SPARE
GAS PRESSURE HIGH (OPTION)	SPARE	LOAD ON INFEEED	FILM UNWIND DRIVE OK
REMOTE JOG	SPARE	INFEEED CONVEYOR DOWN POSITIO	DOWNSTREAM CONVEYORS OK (OPTION)
00-03	04-07	08-11	12-15



I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----

Input 4

SPARE	SPARE	FOOT SWITCH (OPTION)	CENTER SEAL CLOSED (OPTION)
SPARE	FILM AT SNORKEL	RIGHT PACK #2 TRAYS GO (OPTION)	SPARE
SPARE	SPARE	SPARE	FILM DRIVE A POSITION
SPARE	SPARE	CENTER SEAL OPEN (OPTION)	FILM DRIVE B POSITION
00-03	04-07	08-11	12-15



I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----

Output Test Screens

This screen can be used to energize the available outputs of the machine's PLC to test or troubleshoot necessary components. The color on each available button represents the output's current state. Using the tabs at the bottom, all the different outputs can be selected and tested.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 8:58:26 AM 3/1/2024 | **ANDOLEBY** FOOD PROCESSING

Output 1

SPARE	SIDE SEAL	REMOTE JOG GREEN LIGHT	AUTO LOAD
SPARE	TOP SEAL	UNWIND A	SCRAP UNWIND A
SPARE	PB GREEN LIGHT	UNWIND B	SCRAP UNWIND B
SPARE	FILM CLAMP	SPARE	SPARE

00-03 04-07 08-11 12-15

I:1 I:2 I:3 I:4 **O:1** O:2 O:3 O:4

Output 2

CALIBRATE HEATERS <input type="checkbox"/>	ROBOT LOAD <input type="checkbox"/>	CENTER SEAL KNIFE (OPTION) <input type="checkbox"/>	CENTER SEAL HEAT (OPTION) <input type="checkbox"/>
RESET HEATERS <input type="checkbox"/>	LOAD SCAVENGER <input type="checkbox"/>	SPARE <input type="checkbox"/>	SPARE <input type="checkbox"/>
SPARE <input type="checkbox"/>	PAPER DISPENSER <input type="checkbox"/>	SEAL PERF <input type="checkbox"/>	PRINTER (OPTION) <input type="checkbox"/>
AUDIBLE ALARM (OPTION) <input type="checkbox"/>	SWIPE DELAY <input type="checkbox"/>	CENTER SEAL ENALBED (OPTION) <input type="checkbox"/>	SPARE <input type="checkbox"/>
00-03	04-07	08-11	12-15

I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----



Output 3

GAS #1 <input type="checkbox"/>	SNORKEL EXTEND <input type="checkbox"/>	FLEX JAW CLOSE <input type="checkbox"/>	GAS SAMPLE (OPTION) <input type="checkbox"/>
SNORKEL CLAMP <input type="checkbox"/>	JAW ASSIST <input type="checkbox"/>	SIDE SEAL CLOSE <input type="checkbox"/>	AIR KNIFE <input type="checkbox"/>
BAG CUTTER <input type="checkbox"/>	GAS #2 <input type="checkbox"/>	TOP SEAL CLOSE <input type="checkbox"/>	CONVEYOR LIFT <input type="checkbox"/>
MAIN VACUUM <input type="checkbox"/>	BELT BACKUPS <input type="checkbox"/>	TAIL PULLEY <input type="checkbox"/>	SPARE <input type="checkbox"/>
00-03	04-07	08-11	12-15

I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----



Output 4


SPARE	SPARE	SPARE	SPARE
SPARE	VACUUM	FILM RELEASE LIGHT	LOADER OK
SPARE	SPARE	TRAYS GO #1	SPARE
SPARE	SPARE	TRAYS GO #2	SPARE
00-03	04-07	08-11	12-15



I:1	I:2	I:3	I:4	O:1	O:2	O:3	O:4
-----	-----	-----	-----	-----	-----	-----	-----

Analog IO Screens


The analog IO screens show a representation of what inputs or outputs are currently active for the machine's PLC. The corresponding analog values for each input or output is listed beneath each slot. By selecting the different tabs at the bottom of the screen, all of the different inputs and outputs can be viewed.



Logged in as:
User 1

Active Recipe:
process test

9:17:04 AM 3/1/2024










Analog Input #1

CENTER SEAL TEMPERA*	SIDE SEAL TEMPERAT URE	TOP SEAL TEMPERAT URE	SPARE	FILM EDGE POSITION	OXYGEN TRANSMIT TE*	VACUUM PRESSURE	SPARE
1.#QNAN	70.48731	108.745	1.#QNAN	6.471859	1.#QNAN	1.#QNAN	1.#QNAN
PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08

I:1

O:1

Analog Output #1

SIDE SEAL TEMPERAT URE	TOP SEAL TEMPERAT URE	SPARE	FILM POSITION
126.6667	126.6667	126.6667	9.926795

PT01 PT02 PT03 PT04



I:1	O:1
-----	-----

IO Link Screen

The IO link screen shows the current status of the connected IO devices that are connected over the IO-Link protocol. Connected devices will appear here with their name, and if they are able, they will display their current status based on color here.

The screenshot displays the IO Link Screen interface. At the top, there is a header bar with the following information:

- CY-TEK** logo on the left.
- Logged in as:** User 1
- Active Recipe:** process test
- 9:19:41 AM 3/1/2024** timestamp.
- ADDLEBY FOOD PROCESSING** logo on the right.

The main area of the screen shows a grid of IO devices, each represented by a colored square with its name and ID:

- Jaw Film:** P1KH022 (Green square) with ID X05.
- Film In:** P1KH022 (Green square) with ID X06.
- Film Out:** P1KH022 (Green square) with ID X07.
- Tower Light:** (Green square) with ID X01.
- PQ3809 Gas:** 0 (Grey square) with ID X02.
- Product Detect:** OGD580 (Green square) with ID X03.

There is an empty slot with ID X04. On the right side of the screen, there is a vertical toolbar with icons for Home, Back, Refresh, Stop, Settings, Alarm, and Exit.

Recipe Screens

The RECIPE screen shows the current recipe makeup that the machine is using to process packages and bags. You are able to change the parameters of the bagging process here.

- Boom Position – The distance into the bag that the infeed conveyor boom will extend to place product within the bags.
- Layers – The amount of layers of product that will be placed in a single bag.
- Top Seal Temp – The temperature in degrees Fahrenheit that the top seal will heat to while sealing the bag. The window on the left shows the current temperature.
- Side Seal Temp – The temperature in degrees Fahrenheit that the side seal will heat to while sealing the bag. The window on the left shows the current temperature.
- Stacking Option – A toggle button that enables/disables the stacking ability.
- Scavenger Packs – A toggle button that enables/disables scavenger packs.
- Tray Loader – A toggle button that enables/disables tray loading mode.
- No Gas – A toggle button that switches the machine modes between Vac/Gas, No Gas, and No Vac/Gas.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 9:20:22 AM 3/1/2024 | **MIDDLEBY**

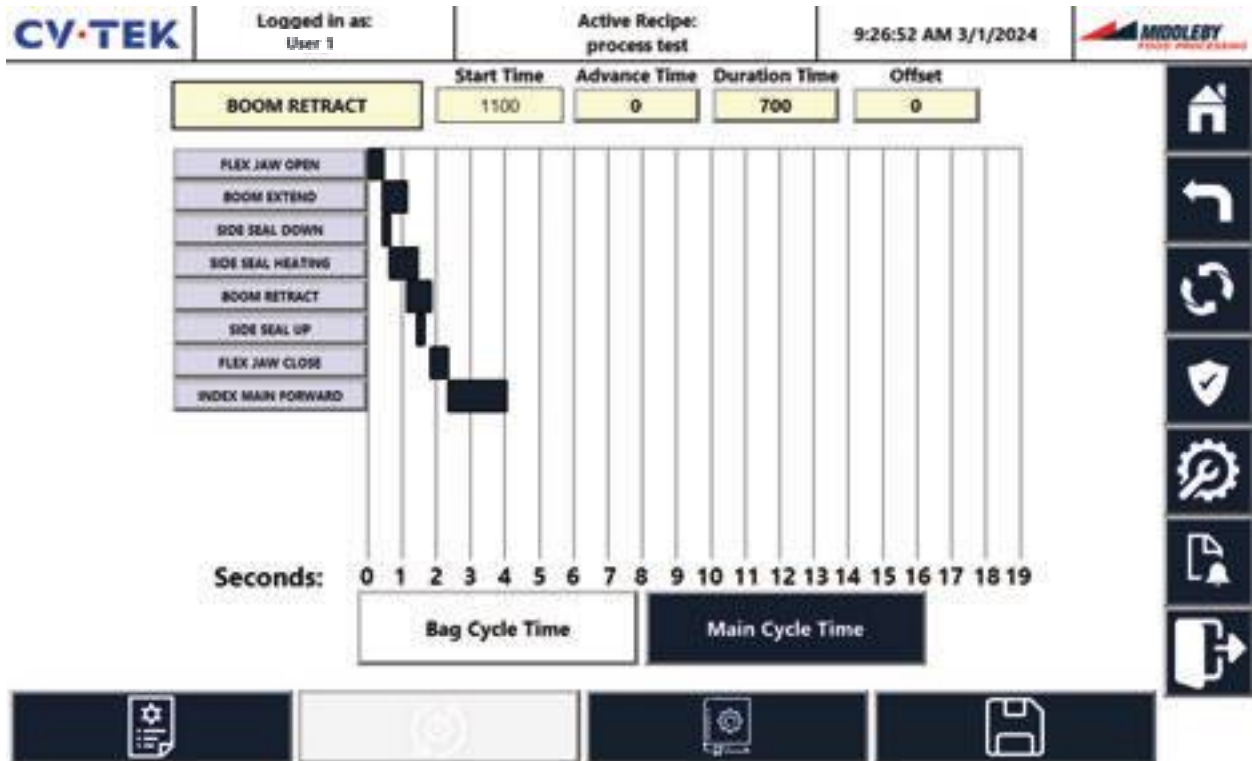
Recipes and Options

Top Seal Temp(*F):	260	Stacking Option	Scavenger Packs	process test ▲ Default process test small tray small tray wide large tray ▼
Side Seal Temp(*F):	260	Test Without Product	Tray Loader	
Infeed Boom Position:	500	Set Infeed Distance	1 Gas	
Infeed Conveyor Offset:	70			
Infeed Distance:	0.0000			

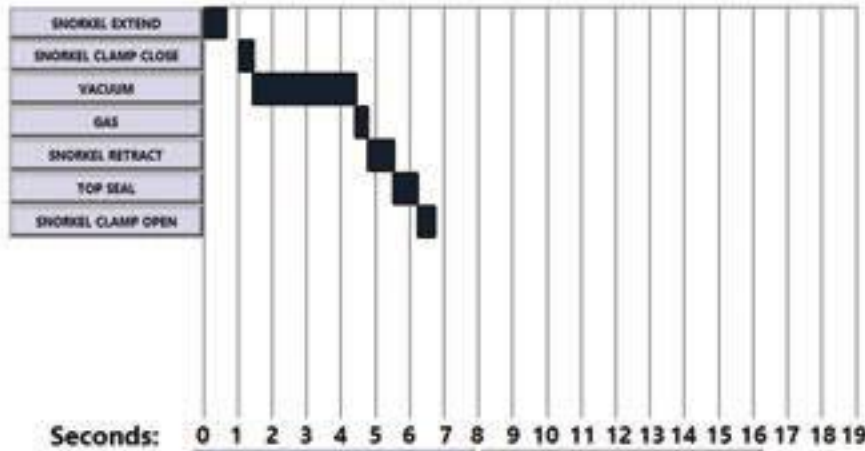
Bottom navigation bar: Home, Refresh, Settings, Save

Time Cycle Screens

The time cycle screens show how long each part of the bagging process is taking, in seconds, to complete. Each event is labeled on the left hand side of the display and the length of each bar marks the starting and ending time of each process from the beginning of a new bag. The duration times, as well as delay times, can be set by pressing the button of the corresponding event, and then entering a value in the duration or delay time fields.



	Start Time	Advance Time	Duration Time	Offset
SNORKEL CLAMP OPEN	6200	0	500	0



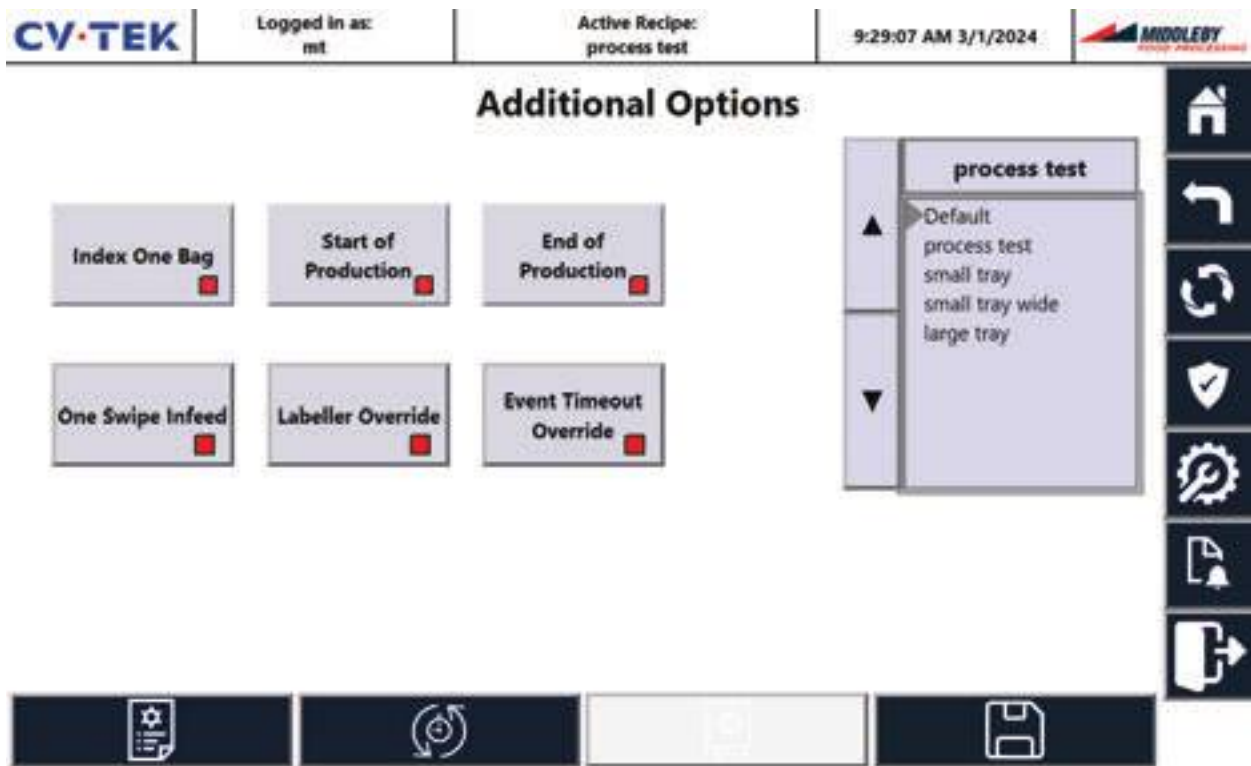
Seconds: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Bag Cycle Time Main Cycle Time



Additional Options Screen

- Index One bag – Runs exactly one bag whether product is present or not.
- One Swipe Infeed – Option that allows product to be pushed to the end of the belt in one swipe
- Start of Production – Initializes the machine by cycling 3 times with no vacuum or gas
- End of Production – Vacuums and seals 3 bags to clear the machine of product
- Labeller Override – Skips the labeling process entirely
- Event Timeout Override – Alarms for event timeouts are disabled, allowing the machine to run in spite of timeout alarms that may be triggered



Motion Screens

The Axis 1 screen shows the real time velocity, absolute position, and output current of the film belt servo. These boxes are output boxes and cannot be edited. The two buttons at the bottom will move the belt forward or backward when pressed.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 10:29:08 AM 3/1/2024 | **ADDLEBY** FOOD PROCESSING

Axis 1: Film Belt

Actual Velocity: 1.560

Actual Position: -0.694

Output Current: 0.000

Jog Speed: 8

Jog Film

Film Belt | Infeed Conveyor | Infeed Boom | Snorkel Transfer | VFDs

The Axis 2 screen shows the real time velocity, absolute position, and output current of the infeed conveyor belt servo. These boxes are output boxes and cannot be edited. The two buttons at the bottom will move the belt forward or backward when pressed.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 10:31:35 AM 3/1/2024 | **MIDDLEBY**

Axis 2: Infeed Conveyor

Actual Velocity	1.560	Accel Speed	100
Actual Position	-0.694	Decel Speed	100
Output Current	0.000		

Jog Axis Forward | Jog Axis Reverse

Film Belt | Infeed Conveyor | Infeed Boom | Snorkel Transfer | VFDs

The Axis 3 screen shows the real time velocity, absolute position, and output current of the infeed boom LinMot. These boxes are output boxes and cannot be edited. The two buttons at the bottom will move the boom forward or backward when pressed. The two buttons on the left side will move the boom to the set position of fully extended or fully retracted.

CV-TEK

Logged in as:
User 1

Active Recipe:
process test

10:32:07 AM 3/1/2024

Axis 3: Infeed Boom

Retract

Actual Velocity	Actual Velocity
-1.641	1.560
Actual Position	Actual Position
0.017	-0.694
Output Current	Output Current
-4.249	5.264

Extend

Film Belt

Infeed Conveyor

Infeed Boom

Snorkel Transfer

VFDs

The Axis 4 screen shows the real time velocity, absolute position, and output current of the snorkel transfer LinMot. These boxes are output boxes and cannot be edited. The two buttons at the bottom will move the snorkel head forward or backward when pressed. The two buttons on the left side will move the snorkel head to the set position of fully extended or fully retracted.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 10:32:36 AM 3/1/2024 | **MIDDLEBURY** FOOD PROCESSING

Axis 4: Snorkel Transfer

Retract	Actual Velocity	1.560
	Actual Position	-0.694
	Output Current	-0.806

Extend

Navigation Bar: Film Belt | Infeed Conveyor | Infeed Boom | **Snorkel Transfer** | VFDs

The VFD shows the real time output frequency of both VFDs, as well as the upper and lower potentiometer limits for the dancer drive. These boxes are output boxes and cannot be edited. The jog axis forward button will activate the knife motor. The auto compute dancer button resets the potentiometer limits within the machine's programming. When the dancer assembly is bottom dead center, press this button to calibrate the potentiometer.

CV-TEK | Logged in as: User 1 | Active Recipe: process test | 10:35:32 AM 3/1/2024 | **MIDDLEBY**

Variable Frequency Drives

Film Drive		Knife Drive	
Output Frequency	Jog Speed	Output Frequency	Jog Speed
0.000	0	0.000	667
Accel Decel Time 1	Change Accel/Decel Time 1		Jog Axis Forward
250			
Accel Decel Time 2	Change Accel/Decel Time 2		
150			
Analog High	Auto Compute Dancer Low/High		
638.000			
Analog Low			
628.000			

Film Belt | Infeed Conveyor | Infeed Boom | Snorkel Transfer | **VFDs**

Alarm Screen

The alarm screen will show a list of all of the past alarms that the machine has recorded, in date order. The screen will show the alarm time, the acknowledge time, and the message that accompanies the alarm.

The buttons shown below the alarm code screen can be used to scroll down the page when sufficient alarms have been triggered.

The screenshot displays the CV-TEK alarm screen interface. At the top, there is a header bar with the CV-TEK logo on the left, and three status fields: "Logged in as: User 1", "Active Recipe: process test", and "10:38:13 AM 3/1/2024". On the far right of the header is the ADDLEBY FOOD PROCESSING logo.

The main area contains a table of alarm records:

Alarm time	Acknowledge time	Message
3/1/2024 7:48:08 AM		Top Flex Jaw Not Extended
3/1/2024 7:48:08 AM		Module10 faulted
3/1/2024 7:48:08 AM		Module9 faulted
3/1/2024 7:48:08 AM		Module8 faulted
3/1/2024 7:48:08 AM		Module7 faulted
3/1/2024 7:48:08 AM		Module6 faulted
3/1/2024 7:48:08 AM		Module5 faulted
3/1/2024 7:48:08 AM		Module3 faulted
3/1/2024 7:48:08 AM		Module2 faulted
3/1/2024 7:48:08 AM		Module1 faulted
3/1/2024 7:48:08 AM		Safety Module Communication Fault
3/1/2024 7:48:08 AM		Infeed Boom LinMot Faulted
3/1/2024 7:48:08 AM		Snorkel Transfer LinMot Faulted
3/1/2024 7:48:08 AM		Main Sequence Step Timeout

Below the table is a large empty white space. To the right of the table is a vertical toolbar with icons for Home, Refresh, Repeat, Stop, Settings, and a printer icon. Below the main content area is a horizontal toolbar with a bell icon, a left arrow, a right arrow, and a refresh icon.

Safety Screen

The safety screen shows the current open/close position of all the doors (on screen rectangles) for the machine and the state of all the E-Stops (on screen circles). If any of the doors is open, and therefore preventing the machine from starting, it will be highlighted red. If any of the E-Stops are pressed, they will also be highlighted red. This screen will automatically show when any of the doors are opened or any of the E-Stops are pressed, and it will not go away until all doors and E-Stops are returned to their normal state.

The screenshot displays the CV-TEK safety screen interface. At the top, there is a header bar with the following information:

- CV-TEK** logo on the left.
- Logged in as:** User 1
- Active Recipe:** process test
- Time:** 10:39:53 AM 3/1/2024
- MIDDLEBY** logo on the right.

The main area of the screen shows a schematic of the machine layout. It consists of several numbered rectangles representing doors and numbered circles representing E-stops. The rectangles are numbered 1 through 18, and the circles are numbered 1 through 6. All rectangles and circles are currently green, indicating they are in their normal state. A vertical toolbar on the right side of the screen contains several icons for navigation and control, including a home button, a back button, a refresh button, a shield icon, a gear icon, a notification bell icon, and a printer icon.

SECTION 6: MAINTENANCE

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6.1 Preventative Maintenance

Regular maintenance is the key to product longevity with the MasterPacker X5 or any other machine. When a preventative maintenance schedule is followed, the operating efficiency of the machine is maintained, and downtime is reduced.

Daily

1. Check auto drains are working on filter regulator bowls.
2. Check air pressure settings.
3. Check gas pressure settings.
4. Check snorkels and vacuum hoses for damage or contamination.
5. Check side and center seal quality. Feel the surface of the bands all the way across for smoothness.
6. Empty vacuum and clean sediment bowl
7. Check condition of seal bar Teflon tape. Replace if necessary.
8. Check overall condition of the machine.
9. Wipe down infeed conveyor belt with 60% isopropyl alcohol or equivalent cleaning solution.

Weekly or after washdown

1. Grease LinMot shaft for the moving head
2. Grease v-groove for the moving head
3. Grease LinMot shaft for the infeed boom
4. Grease linear shafts for infeed boom

Only use approved greases, or food safe greases approved by the FDA.

Monthly

1. Check drive belts for cracks or missing pieces and replace as necessary.
2. Check all air lines, valves, and cylinders for leaks and replace as necessary.
3. Check as gas lines and valves for leaks and replace as necessary.
4. Check oil condition and level of the vacuum pump and service as necessary.
5. Change heat seal bar Teflon tape and check the condition of the heat seal wires.
6. Change backup rubber of heat seal assemblies as necessary.

Twice a Year

1. Lubricate right angle gearbox while the conveyors are in motion using the MOTION screens in the maintenance menu. Use Anderol 786 or equivalent EP grease to fill the gearbox using the fitting provided. Do not overfill the gearbox as it will lead to overheating and premature failure.
2. Check main gear drive oil level. Add Klubersynth UH1-6-460 synthetic lubricant as needed. Do not overfill the gear drive as it will lead to overheating and premature failure.
3. Clean the vacuum pump inlet screen.
4. Change vacuum pump oil, demister filter, and oil filter.
5. The linear shafts and bearings used on the MasterPacker X5 should be inspected periodically for stability and replaced as necessary.

The plastic linear bearings are designed to be used in wet or dry environments without lubrication. However, if lubrication is needed, use only the following types of lubricant:

- Waylube Oil
- Lightweight oil
- Petroleum-based grease
- 3-in-1 oils

NOTE: The following lubricants are chemically incompatible with the linear bearings and their use WILL result in premature bearing failure:

- PTFE Sprays
- WD-40
- Fluorocarbons
- Silicone oils, grease, or spray

6.2 Cleaning

Interior

Remove dust and debris from interior surfaces using compressed air. Otherwise, wipe down surfaces as necessary by hand. The use of water spray (high or low pressure) or other liquid cleaning agents is strongly discouraged.

Exterior

Cover all electrical enclosures, control panels, and servo motors with plastic prior to cleaning. Exterior surfaces may be washed down with low pressure water. The use of abrasive cleaners or cleaning materials on components other than the steel frame is not recommended. Avoid spraying water at any area which contains buttons or electrical fixtures.

Infeed Conveyor Belt

If it becomes necessary to clean the infeed conveyor belt, use 60% isopropyl alcohol or another equivalent cleaning solution and clean by hand. This will ensure that the items being packaged stay clean throughout the bagging process.

6.3 Vacuum Pump Maintenance

Vacuum Pump Oil

To check the vacuum pump oil level, check the vacuum pump oil sight glass. Here you will be able to determine the amount and color of the remaining oil in the system. The oil will range in color from nearly clear to brown. Change oil and oil filter when the oil color is dark. Only use recommended oils, such as CV-TEK Vacuoil III (P/N 7707-VO3). **Do not use detergent type oils such as hydraulic, motor, or penetrating oils.**

To fill the oil reservoir, open the oil fill plug, located directly above the sight glass. Fill oil until it reaches the top of the sight glass, this will be the filled state for the reservoir. Do not overfill the reservoir.

To change the oil, remove the oil fill plug, place a tray or other oil catching device under the drain plug, and then remove the drain plug. Wait until all of the oil has drained and the exit flow has stopped, then replace the drain plug, fill with oil until the oil reaches the top of the sight glass, and replace the oil fill plug.

Inside of the exhaust channel is a demister filter. This filter prevents oil mist from circulating from within the pump, causing the pump to exhaust smoke and/or oil vapor into the surrounding air. This filter must be replaced periodically to prevent buildup, and **it is recommended that it is replaced at the same time that the oil is changed.**

To remove the demister filter, remove the exhaust flange covering the filter. Then, remove the nuts and washers holding the filter in place. At this point it should be free to move, and you can remove it from its housing. Replace the filter with a new one and insert it back into its housing. If the gasket is cracked or otherwise damaged, replace it now. Reattach the necessary nuts and washers and the covering flange.

Vacuum Gauge Relief Valve

Whenever the main vacuum valve is open, system vacuum pressure is diverted to the vacuum switch inside the panel. When the main vacuum valve is closed, the line is vented through the relief valve's exhaust port.

SECTION 7: VACUUM & GAS SYSTEM

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7.1 Vac-Gas System Overview

General Information

The MasterPacker X5 is capable of packaging product in multiple ways. It can change from vacuum only to vacuum with a gas flush using the operator's touchscreen interface. The vac-gas system is designed for reliability and ease of cleaning. The vac-gas system operates by inserting vented snorkels into the bags while held in a clamp and using the vents to create a low vacuum inside the bag. The vents are then used to pump a flush gas into the bag, if enabled, to prevent oxygenation of the product within the bag.

7.2 Pack Modes

General Information

The MasterPacker X5 is capable of 3 different styles of packing that can be changed using the operator's touchscreen interface. These settings can be changed in the setup screens located there. See section 5 for more details.

Seal Only

When the machine is in Seal Only mode, anything that is placed in the bags will not be vacuumed or gassed before sealing.

Vacuum Only

When the machine is in Vacuum Only mode, the bag is only vacuumed before sealing.

Vac-Gas

When the machine is in Vac-Gas mode, the bag is both vacuumed and then flushed with gas before sealing. The vacuum mode is based off of the settings in the setup screen. The gas flush is based off of a timer which can be accessed in the setup screen.

SECTION 8: SEALING SYSTEM

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8.1 Seal Wire Information

A properly assembled seal bar and routine maintenance will reduce unexpected down times. This section will help you maintain and correctly install the seal wires to operate your MasterPacker X5 with minimum down time.

- During installation, be sure not to bend or kink the seal wire. A break will cause the seal wire to outright fail.
- Each time you replace the seal wire, be sure to inspect the end insulators for damage.
- Only use parts specified by or provided by CV-TEK. Use of non-certified materials may cause damage or cause the machine to perform poorly.
- Store new, unused, Teflon tape in a cool dry place to prevent the adhesive from degrading.
- Protect the face of the seal bar from damage. Do not place tools or other sharp objects on the seal bar. Do not lay a bar on a table face down.

8.2 Replacing the Center Sealing Assembly

Inspection

Inspect the seal bar at regular intervals to check for damage done to the wire through continuous use. It will break down with time, and it will need replacing in order to retain the integrity of the seals that the machine can provide.

Removal

1. Turn off power at the main disconnect to ensure all mechanical components of the machine are unable to move. After the electricity is cut off, shut off compressed air supply as well.
2. Remove the heat seal electrical lead on the right side of the bar. Then, remove the bolt holding the seal bar to the mounting plate on the top right side.
3. Remove the bolt holding the seal bar to the mounting plate on the top left side. Once both bolts are removed, the seal bar will be separated from the machine. Lift up the mounting plate and angle the seal bar out.
4. Rotate the seal bar to access the heat seal lead on the left side of the bar and remove the lead. The bar is now completely separated from the machine.

Replacement

Once the bar is separated from the machine, disassemble the bar completely so that you have all of the component parts found in section 11 (Item 4.1.10) and replace the heat seal band by doing the following:

1. Remove the outer layer of Teflon tape.
2. Remove the seal band. Loosen the screw on either side of the bar that holds the “L” strap in place and the keeper hole of the band tight to the bar. Remove tension from the band by depressing both take-ups and pop the band off at the roll pin. Loosen the screw on the opposite end and remove the band.
3. Insert a new band. Hook the keeper hole on one end over the roll pin. Insert the “L” strap over the band and tighten the screw over the notch while holding the band centered on the bar. Press down on the coppered end so you form it to match the contour of the take-up around the bend.
4. Loosen the screw, remove the band, then repeat step 2 for the opposite end of the band. This time, leave it in place. Both ends of the band have matching contours.
5. Now, stand the bar up on end on clean cardboard. Pull the band around to the opposite end while depressing both take-ups. Hook the keeper hole to the roll pin on the opposite take-up.

6. Insert the “L” strap over the band and tighten the screw, ensuring that it is on the opposite side of the other end. Thread the screws for the seal wires into both side connections over the “L” straps for safe keeping.
7. Re-tape the seal band. Wipe all grease and fingerprints from the bar and band surface using a soft cloth and isopropyl alcohol. Cut a piece of Teflon “cover strip” tape the exact length of the bar. Cover strip has NO adhesive in the center so the band can move freely underneath it. Affix the tape to one side of the bar using the bottom edge as a guide. Flip the bar over and expose the adhesive on the opposite side of the tape. Carefully fold it over to the other side, keeping even tension to avoid wrinkles. The edge should be even with the bottom of the seal bar on the other side.

At this point, the seal bar should have a fully replaced heating wire and new Teflon tape. This will ensure that the seals made by this part of the machine are even and consistent, preventing future potential unexpected downtime. For reinstalling the center seal bar assembly:

1. Installation is the reverse of the removal process. Reconnect the main power lead.
2. Flip the bar around and insert the bar in position below the mounting plate. You may have to lift up the mounting plate. Replace both of the top two mounting bolts.
3. Tighten the remaining heat seal lead on the right side.
4. Restore power and compressed air to the machine and follow proper startup procedures.

8.3 Replacing the Side Sealing Assembly

Inspection

Inspect the seal bar at regular intervals to check for damage done to the wire through continuous use. It will break down with time, and it will need replacing in order to retain the integrity of the seals.

Removal

1. Turn off power at the main disconnect to ensure all mechanical components of the machine are unable to move. After the electricity is cut off, shut off compressed air supply as well.
2. Disconnect the heat leads from both bars. Note the connections are on opposite sides, opposite bars, and opposite ends.
3. Loosen the mounting bolts (do not remove) for each bar that you wish to remove. There is an access hole on the found plate above each bolt for a socket wrench. After 2 turns the head of the cap screw will be above the pocket.
4. Turn on the air supply release valve. Slide the bar to the right out of the slots to remove. You may have to lift slightly for the bolt head to clear the picket.



WARNING



Removal of one or both of the side sealing bars will leave the cutting knife exposed. USE CAUTION when putting your hands near the blade as it will cut you if you come in contact with the blade.

Replacement

With the bar removed, replace the seal wire if required in the same fashion as the center sealing assembly. Make sure however that you are differentiating the different parts that each component uses, as the top and side seal assemblies are not the same.

One important change in the process, however, is the need to take note of the access holes for the knife mount screws. Holes in the Teflon tape need to be cut so that these remain accessible without the need to remove the seal bar every time. To re-install the seal bar:

1. Ensure that the side seal bar is oriented properly before installation. On one end of the bar, the band wraps around the take-up on the back of the bar. This side must face the timing belt.
2. Once the bar is oriented, lift the side seal bar assembly up and align the holes in the mounting plate with the side seal attachment plate.
3. When all the bolt heads have fallen into the pockets, retighten.
4. Reconnect all of the heat seal bar leads. Ensure the parallel jumper is beneath the power lead ring terminal before tightening.
5. Restore power and air to the machine and follow proper startup procedures.



WARNING



Ensure that the power leads are all correctly attached, with the leads connected on opposite bars on opposite ends. If this is not followed, the bars will run at uneven temperatures.

SECTION 9: ALARM

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The following table is a list of every alarm code that can be shown on the ALARM screen on the operator's display. This section acts to inform the operator what conditions might stop the machine, not to inform the operator how to fix a given problem.

Servo Axis 1 Move Timeout	Door 13 Open	Vacuum Pump Overload
Main Sequence Step Timeout	Door 12 Open	Top Snorkel Clamp Not Retracted
Infeed Conveyor Drive, Axis 2	Door 14 Open	Top Snorkel Clamp Not Extended
Tear Off VFD Faulted	Door 15 Open	Bottom Snorkel Clamp Not Retracted
Snorkel Transfer LinMot Faulted	Door 16 Open	Bottom Snorkel Clamp Not Extended
Infeed Boom LinMot Faulted	Door 17 Open	Snorkel Not Retracted
Safety Module Communication Fault	Snorkel Clamp Up Timeout	Snorkel Not Extended
Gas Event Timeout	Top Seal Timeout	Top Seal Toss Controller error
Vacuum Event Timeout	Snorkel Retract Timeout	Snorkel Extend Event Timed Out
Snorkel Clamp Close Timeout	Conveyor Drop Timeout	Snorkel Clamp Down Event Timed Out
Conveyor Raise Timeout	Index Main Forward Event Timeout	Index Main Forward Event Timed Out
Conveyor Raise Timeout	PLC CPU (Module 0) faulted	Snorkel Clamp Up Event Timed Out
Stack Boom Retract Timeout	Module1 faulted	Snorkel Clamp Up Event Timed Out
Stack Extend Boom Timeout	Module2 faulted	Center Seal Event Timed Out
Center Seal Timeout	Module3 faulted	Index Main Forward 2 Event Timed Out
Side Seal Up Event Timeout	Module4 faulted	Sequence Error
Side Seal Heating Timeout Alarm	Module5 faulted	Servo Conveyor Drive Faulted
Side Seal Down Event Timeout	Module6 faulted	Servo Boom Drive Faulted
Flex Jaw Close Event Timeout	Module7 faulted	product jam at Infeed
Retract Boom Event Timeout	Module8 faulted	Boom Not Retracted Homing required
Extend Boom Event Timeout	Module9 faulted	Bottom Flex Jaw Not Returned

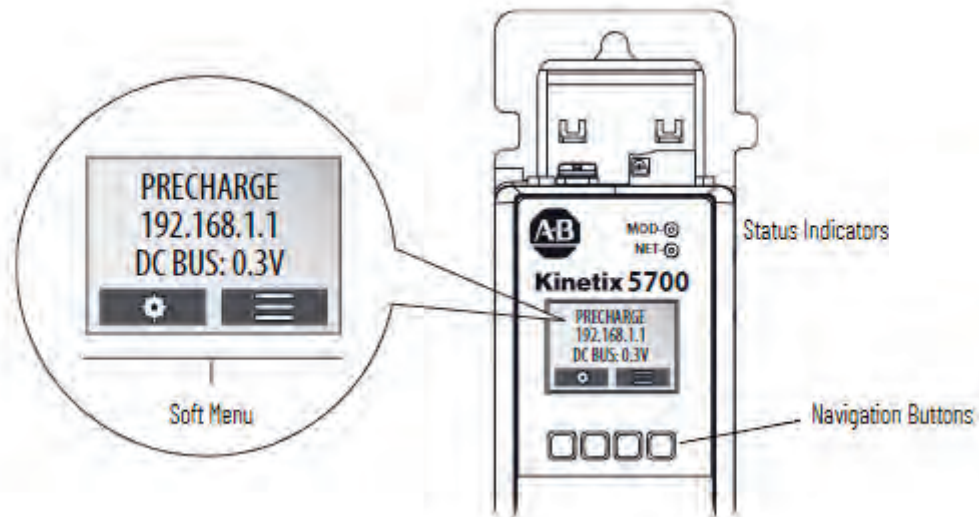
SECTION 10: TROUBLESHOOTING


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
Open Flex Jaw Event Timeout	Module10 faulted	Bottom Flex Jaw Not Extended
Master Control Not Enabled	Module11 faulted	Top Flex Jaw Not Returned
EStop HMI	Trayloader (remote) IO Fault	Top Flex Jaw Not Extended
Door 1 Open	Downstream Conveyor not ready	Open Flex Jaw Event Timed Out
Estop S1	Scavanger not ready	Extend Boom Event Timed Out
Estop S2	Printer Not Ready	Retract Boom Event Timed Out
EStop S3	CS Temp controller not ready	Close Flex Jaw Event Timed Out
EStop Infeed	CS Temperature Low	Open Flex Jaw 2 Event Timed Out
Estop Remote Tray Loader	CS Temperature High	Extend Boom 2 Even Timed Out
Door 1 Open	Center Seal Bar Not Retracted	Sequence Faulted
Door 2 Open	Center Seal Bar Not Extended	Toss Error
Door 3 Open	Sequence Error	Side Seal Heating Event Timeout
Door 4 Open	Sequence error	Side Seal Heating 2 Event Timed Out
Door 5 Open	Toss Error	Sequence Faulted
Door 6 Open	Sequence Error	Servo 6 Faulted
Door 7 Open	Low Vacuum	Servo 7 Faulted
Door 8 Open	Low Gas #1	EStop Pushed In
Door 9 Open	Low Gas #2	Drive VFD1 Not Ready
Door 10 Open	No Film at Snorkel	Sequence Timeout
Door 11 Open	O2 Fail	Close Flex Jaw 2 Event Timed Out

10.1 Servo Troubleshooting

The Kinetix 5700 drive has two status indicators and an LCD status display. The indicators and display are used to monitor the system status, set network parameters, and troubleshoot faults. Four navigation buttons, directly below the display are used to select items from a soft menu.



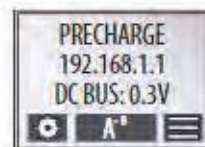
This is the Home  screen.

- The setup selections  are tied to the Setup (left-side) buttons and the menu selections  are tied to the Menu (right-side) buttons.
- For dual-axis inverters, the Drive (center) buttons toggle the display between drive A and B (A is the default drive).








DC-bus Power Supplies
and Single-axis Inverters



Dual-axis Inverters



The soft menu provides a changing selection that corresponds to the current screen. Use the navigation buttons to perform the following.

	Press to go back. Pressing enough times results in the Home  screen.
	Pressing either arrow moves the selection to the next (or previous) item. When changing values, pressing the up arrow increments the highlighted value. Values rollover after reaching the end of the list.
	Press to select values to change, moving from right to left. Values rollover when reaching the end of the list.
	Press to select a menu item.
	Press to return to the Home screen.
	Press to display the fault help (possible solutions in troubleshooting tables). ⁽¹⁾

Menu Screens


The menu screens provide information about the drives, motors, diagnostics, and the fault log. Parameters cannot be updated in the menu screens. Press one of the menu buttons to access the menu. You can use the soft menu items and navigation buttons to view the information.

Menu/Sub Menu Selections	Attributes	Description	Example Values	
Drive Info	Catalog number		250-Drive-ERSx or 250-Servo-ERSx	
	Firmware revision		FW REV: L1460807	
	Hardware revision		HW REV: 1.1	
	Serial number		SERIAL#: xxxxxxxxxxxx	
Motor Info	Model number		MODEL: MPL-84300P	
	Serial number		SERIAL#: xxxxxxxxxxxx	
Diagnostics> Drive Diagnostics	Bus diagnostics		BUS VOLT: 0.0V BUS CUR: 0.0A	
	Inverter diagnostics		INV UTIL: 0.0% INV TEMP: 31.7C	
Diagnostics> Motor Diagnostics	Motor speed		SPEED: 0.0 RPM	
	Motor current		MTR CUR: 0.0A RMS	
	Motor utilization		MTR UTIL: 0.0%	
	Motor temperature		MTR TEMP: 0.00C	
Diagnostics> Encoder Diagnostics	Serial number		SERIAL#:xxxxxxxxxxxx	
	Resolution		RESOLUTION: 2048A	
	Number of turns		NO OF TURNS: 1	
	Encoder temperature		ENC TEMP: 33.7C	
	Supply voltage		SUPP VOLT: 11.2V	
	Link quality	The link quality attribute indicates how noisy a communication link is and also indicates if there is a communication link already established at the drive end. The LINK QUAL value must always be 100%. Persistent values below 100% indicates a poor feedback ground connection.		LINK QUAL: 100.0%
	Remote signal strength indicator	Similar to Link Quality, RSSI reports the quality of link as seen at the motor end by the encoder. Maintain the RSSI value between 80 and 100%. Persistent values below 80% indicates a poor feedback ground connection.		RSSI: 100.0%
	Accumulated position errors	This is an aggregated number of errors in the primary position feedback channel of CCL feedback.		POS ERRORS: 1
	Channel position errors	This is an aggregated number of errors on a secondary communication channel of the CCL feedback.		CHNL ERRORS: 5
	Diagnostics> Safety Inputs	Hardwired input status		1 2 OFF OFF 1 2 ON ON
Diagnostics> Safety Diagnostics	Safety state	This attribute indicates the state of the safety supervisor object (refer to Safety Supervisor State on page 292).	SAFETY STATE: CONFIGURING INPUT CONNECTIONS: 1 OUTPUT CONNECTIONS: 1 SAFETY STATE: RUNNING INPUT CONNECTIONS: 1 OUTPUT CONNECTIONS: 1	
	Input connections	This attribute indicates the number of safety controllers that have an input connection established. The input connection provides the controller with the drive's safety status. The drive supports up to three input connections.		
	Output connections	This attribute indicates the number of safety controllers that have an output connection established. The output connection provides a controller with the ability to control the drive's STD function. The drive allows only one output connection.		
Fault Log	Fault text		FLT 020 - COM1 OVERLOAD FL	
	Fault details	For Kinetix 5700 fault code descriptions and possible solutions, see Kinetix 5700 Servo Drive Fault Codes, publication 2198-80001.	The converter thermal model indicates that the temperature has exceeded the factory set capacity rating of 100%.	
	Fault help		<ul style="list-style-type: none"> Reduce the number of drives in the same bus group Reduce duty cycle of commanded motion 	

Setup Screens

The setup screens provide the means of changing drive settings, for example, the IP address. Press one of the setup buttons to access the setup screens.

You can use the soft menu items and navigation buttons to view the information and make changes.

Press  to validate your changes:

- If the change is invalid, the value doesn't change.
- If the change is valid, an asterisk appears next to the changed attribute.

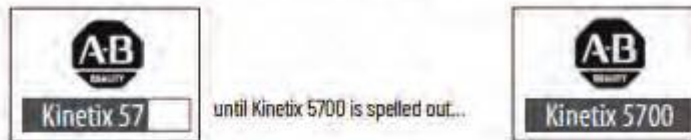


IMPORTANT You must cycle control power to make network configuration changes persistent. In this example, the IP address was changed. The change takes effect and the asterisk disappears after control power is cycled.
Display configuration changes take effect immediately.

Settings Menu Selections	Sub Menu Selections	Attributes	Default	Description
Protected Mode	Network Config	ENABLED DISABLED	ENABLED	When Enabled (default), network configuration changes are not possible when a controller connection is open.
	Device Config	ENABLED DISABLED	ENABLED	When Enabled (default), only attribute writes are possible when a controller connection is open.
Network	->Static IP ⁽¹⁾	IP address	192.168.1.1	Indicates current IP address
		Subnet mask	255.255.255.000	Indicates current subnet mask
		Gateway	192.168.001.254	Indicates current gateway
	DHCP	On Off		Turns DHCP on Turns DHCP off
Display	Backlight Timeout	30 sec...NEVER (NEVER=no timeout period, the backlight is always on)	-> 3 min ⁽¹⁾	Sets backlight timeout period of the display
	Cyclic Data Select ⁽²⁾	->DC BUS ⁽¹⁾		DC bus voltage
		INV UTIL		Inverter utilization in percent
		INV TEMP		Inverter temperature in °C
		MOTOR UTIL		Motor utilization in percent
		SPEED		RPM
		OUT PWR		Output power in watts
		OUT FREQ		Output frequency in hertz
	OUT CUR		Output current in amps	
Set Contrast	-10... +10	0	Contrast setting of the display	
Factory Reset	Reset Defaults?	Are you sure?		Resets drive to factory default state
Safety	Reset Ownership	Are you sure?		Resets safety ownership (reset fails after 30 seconds)
Web	Enabled			Enables the web server
	->Disabled			Disables the web server

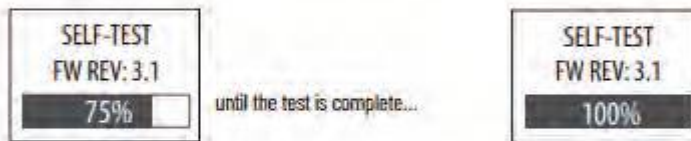
Startup Sequence

On initial powerup, the drive performs a self test. Upon successful completion, the drive firmware revision is displayed.



until Kinetix 5700 is spelled out...

then...



until the test is complete...

Next, the GIP axis state, the IP address, and the default cyclic data attribute (in this example DC-bus voltage) appears. In addition, the setup and menu soft keys are displayed. This is the Home screen.



In this example PRECHARGE is the axis state attribute. [Table 113](#) lists the other axis states and their descriptions.

Axis State	Description
STANDBY	The drive is waiting to receive configuration information from the controller.
CONNECTING	The drive is trying to establish communication with the EtherNet/IP controller.
CONFIGURING	The drive is receiving configuration information from the controller.
SYNCING	The drive is waiting for a successful Group Sync service.
STOPPED	The drive has DC bus ready, but the control loops are not enabled.
PRECHARGE	The drive is ready for mains input power.
STARTING	The drive is enabled and checking various conditions before entering the RUNNING or TESTING state. For example, the drive checks the Brake Release delay time during the STARTING state.
RUNNING	<ul style="list-style-type: none"> The drive is enabled, configured with an active control mode, and actively tracking a command. The drive is configured for No Control and is fully operational.
TESTING	The drive is actively executing a test procedure, for example, a hookup test.
STOPPING	The drive is decelerating to a stop as the result of a disable.
ABORTING	The drive is decelerating to a stop as the result of a fault or an abort request.
MAJOR FAULTED	The drive is faulted due to an existing or past fault condition.
START INHIBITED	The drive has an active condition that inhibits it from being enabled.
SHUTDOWN	The drive has been shut down.

Fault Codes

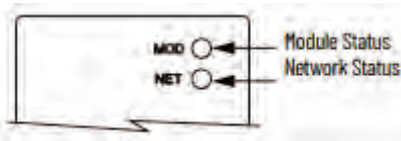
Fault codes read from the Fault Log help determine the source of a servo fault. When a fault condition is detected, the drive performs the appropriate fault action, the fault is displayed, and the fault is added to the log along with diagnostic data. Earliest faults have display priority.

The drive removes the fault text from the display when a Servo Fault reset is sent from the controller and the fault is no longer active. Servo Fault reset for all servos occurs when the RESET SERVO FAULTS button in the lower left of the ALARM screen is pressed. The CLEAR SERVO FAULT button on the individual servo screens clear faults for that individual servo only. If the fault is still active following a servo fault reset, it is again posted to the display and fault log.

The servo drive maintains a log of the last 128 faults with time stamps in memory. The fault log cannot be cleared from the drive. **Refer to Rockwell publication 2198-RD003 for a complete list of fault codes and solutions.**

Drive Status Indicators

There are two status indicators at the top right of each servo drive:



The Module Status indicator displays information about the performance of the servo itself, including changing colors for recoverable and non-recoverable faults.

Condition	Status
Steady Off	No power applied to the drive.
Steady Green	Drive is operational. No faults or failures.
Flashing Green	Standby (drive not configured) and Precharge (drive is configured).
Flashing Red	Major recoverable fault. The drive detected a recoverable fault, for example, an incorrect or inconsistent configuration.
Steady Red	Major fault. The drive detected a non-recoverable fault.
Flashing Green/Red	Self-test. The drive performs self-test during powerup. Once self-test is complete, Flashing Green/Red condition continues if drive is waiting for: <ul style="list-style-type: none"> • Safety configuration when in Integrated STO mode • Safety inputs when in Hardwired STO mode

Network Status Indicators

The Network Status indicator displays information about the connectivity of the servo drive, changing colors for IP address errors, safety connection errors, and network loss errors.

Condition	Status
Steady Off	No power applied to the drive or IP address is not configured.
Flashing Green	No Motion or Safety connection is established, but drive has obtained an IP address.
Steady Green	Motion or Safety connection is established and no timeout has occurred. Normal operation.
Flashing Red	Connection timeout. One or more of the connections, for which this drive is the target, has timed out.
Steady Red	Duplicate IP address. IP address specified is already in use.
Flashing Green/Red	Self-test. The drive performs self-test during powerup. Once self-test is complete, Flashing Green/Red condition continues if drive is processing a safety device ID proposal.

Setting Up the IP Address

All servo drives are interchangeable. All that is necessary is that the drive connected to the first pair of servo's IP is set to 192.168.119.11. The drive connected to the second pair of servo's IP is set to 192.168.119.12.

To set or change the IP address of a drive, select NETWORK and STATIC IP on the display. The drive is factory programmed to static IP address 192.168.1.1 so only the last 2 digits need to be changed using the arrow keys then <ENT>.

Mask setting of 255.255.255.0 is OK <ENT>. Change gateway setting to 192.168.119.254 on all servos. After changes, an asterisk (*) will appear after STATIC IP indicating that a power cycle is required to force the IP change.

Under the DISPLAY menu you can change the backlight display time. It defaults to 30 seconds, after which if no button is pressed, the backlight goes dim. To have the back light ON at all times for easier troubleshooting, set the backlight display time to NEVER.

10.2 Knife Issues

Knife Does Not Cut the Bag

1. Check that the jaw close proximity switch is functional.
2. Check that the knife is properly seated within the seal housing.
3. Check that the knife delay is not set for too long in the setup menus.
4. Clean or replace blade as necessary.

Knife Keeps Breaking

1. If the blade is breaking on only one side or hitting to one side of the seal bar, check functionality of nearby pneumatic cylinders.
2. Check to see if non-powered cylinders are tight.

Recommended Knife Usage

1. Install the knife with the sharp edge facing downwards.
2. Only use parts provided by CV-TEK for installing or replacing a knife blade.
3. Remove any debris that has accumulated in the knife slot.
4. Routinely check the functionality of all cylinders near the sealing assembly.
5. Remove and clean knife blade regularly.
6. If knife bolts begin to become loose, apply a thread locker such as Loctite or Vibratite or use fresh mounting bolts ordered from CV-TEK.

10.3 Timing Belt Replacement

Check the following items prior to installing new timing belts to prevent premature belt failure:

- Remove all debris from the belt backups to prevent damage to the belt backups.
- Only install the belts with the arrows in the direction of the product flow.
- Do not operate the machine without film in the belts. This will create rubber particles that will increase the friction between the belts and the belt backups.

Removal

1. Power off the machine and lock-out the electrical power.
2. Open the doors to the pneumatics and valve housing. Manually override the valve labeled BELT TENSION by pressing the yellow button and turning 90° clockwise. Bleed off any additional air pressure in the take-up cylinder by turning down the pressure regulator to 0 psi.
3. Open the belt backups by overriding the BELT BACKUP valve in the valve bank.
4. Remove the pulley guards on the belt take-up assembly.
5. Loosen the bolts on the top pulley clamp plate. Note the position of the clamp plate.
6. Use the adjustment screw on the belt take-up assembly to raise the top pulley.
7. CV-TEK recommends changing both belts as a set to maintain bag quality.
8. Remove the snorkel spreader bar.
9. Remove the bolts on the snorkel guide and slide the guide onto the snorkel for storage.
10. Remove the timing belts.



WARNING



Improper installation of the timing belt will result in accelerated wear for the timing belt. It may also cause the machine to malfunction and operate at incorrect intervals.

Replacement

1. Install the bottom belt first, followed by the top. Ensure that the arrows on both belts are facing in the direction of product flow.
2. Reattach the snorkel guide.
3. Bolt the spreader bars back into place.
4. Set the belt take-up pressure regulator to 20 psi.

5. Unlock the BELT BACKUP valve on the valve bank. Check that the backups have closed properly around the belts.
6. Use the adjustment screw on the belt take-up assembly to lower the top pulley until the belts touch, then one $\frac{1}{4}$ turn more.
7. Check that the clamp plate lines up with the same location on the scale. If so, tighten the 4 bolts.
8. Replace the pulley guards on the take-up assembly.
9. Follow the procedures to load film.

SECTION 11: REVISION TABLE

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REV	DESCRIPTION	REV DATE
A	INITIAL RELEASE OF MANUAL	3/8/2024

SECTION 12: DRAWINGS & SCHEMATICS

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This section is included to assist in assembly and repairs for the MasterPacker X5, and to serve as a list of parts for key assemblies. The assembly drawings in the subsequent pages include an associated Bill of Materials, and follow the sequence order of the table below.

For any questions regarding unlisted parts, or for ordering replacement parts, please call the CV-TEK service line listed in section 1.2.

SEQ. #	PART NUMBER	DESCRIPTION
1	MA000-0900	MPX5 TOP LEVEL ASSEMBLY
2	MA080-0016	MPX5 NARROW BASE MACHINE ASSEMBLY
3	MA010-0031	MPX5 NARROW FRAME WITH FEET, LH
4	0210-0069	ASSY.FOOT.LEVELING
5	MA260-0019	MPX5 HEAD, ASSEMBLY
6	MA260-0017	MPX5 HEAD DRIVE ASSEMBLY
7	MA260-0018	MPX5 HEAD JAWS ASSEMBLY
8	MA260-0016	MPX5 MOVING HEAD
9	MA264-0027	MPX5 BOTTOM JAW ASSEMBLY
10	MA230-0002	MPX5 SNORKEL ASSEMBLY
11	MA264-0028	MPX5 TOP JAW ASSEMBLY
12	130386C1	ASSEMBLY TOP SEAL BAR
13	MA030-0021	MPX5 NARROW SIDE SEAL ASSEMBLY
14	MA030-0025	MPX5 SIDE SEAL GUIDE ASSEMBLY
15	MA263-0027	MPX5 SIDE SEAL W/KNIFE 22 IN ASSY
16	C-0210-1960	MPX5 HEAT SEAL, 22 IN SIDE, STD-NXG ASSY
17	C-0210-3336	ASSY,WIRE LOOM,TOP SEAL
18	MA035-0004	MPX5 BELT TAKE-UP ASSEMBLY
19	B-0210-2178	ASS'Y PLASTIC TAIL PULLEY 5.08 DIA.
20	B-0210-0599	IDLER PULLEY ASSEM W/O KEEPER
21	B-0210-0597	ASSEMBLY ILDER PULLEY
22	B-0210-1334	REGULATED DUMP VALVE
23	C-0210-2661	ASSEMBLY SPREADER BAR
24	B-0210-2662	SPREADER BAR (REMOVABLE)
25	MA030-0022	MPX5 FLEX JAW 19 X 5IN ASSEMBLY
26	B-0210-2658	ASSY.1 1/2" DIA. IDLER PULLEY LG FLANGE.
27	129865C1	SENSOR BRACKET ASSEMBLY, RIGHT
28	129866C1	SENSOR BRACKET ASSEMBLY ,LEFT
29	MA020-0106	MPX5 VALVE BLOCK ASSY
30	125299C1	MHSP VALVE BLOCK COMPLETE
31	MA110-0046	MPX5 ELECTRIC DISCONNECT ASSY

32	132203C1	ELECTRIC DISCONNECT
33	MA060-0008	MPX5 NARROW UNWIND ASSEMBLY, LH
34	MA061-0014	MPX5 UNWIND ROLL FRAME ASSEMBLY
35	130010C1	UNWIND GUIDE WHEEL
36	MA061-0015	MPX5 UNWIND ARM ASSY, LH
37	MA064-0003	MPX5 FILM ROLL ARM LOCK ASSEMBLY
38	MA061-0003	MOTOR SIDE, ROLL SUPPORT ASSEMBLY
39	MA062-0006	UNWIND SHAFT & GEAR ASSE, NARROW MPX5
40	113132A1	IDLE SIDE, ROLL SUPPORT ASSEMBLY
41	MA066-0002	MPX5 SWING ARM ASSEMBLY, NARROW LH
42	MA083-0014	MPX5 NARROW TOP INFEED GUARD, NXG
43	MA083-0001	MPX5, TALL DOOR ASSY, LH, LIFT-OFF, WD
44	MA083-0002	MPX5, TALL DOOR ASSY, RH, LIFT-OFF, WD
45	MA083-0003	MPX5, TALL DOOR ASSY, LH, LIFT-OFF, WD
46	MA083-0004	MPX5, TALL DOOR ASSY, RH, LIFT-OFF, WD
47	MA083-0005	MPX5, TALL DOOR ASSY, RH, LIFT-OFF, WD
48	MA083-0006	MPX5, TALL DOOR ASSY, LH, LIFT-OFF, WD
49	MA083-0013	MPX5, TALL DOOR ASSY, RH, LIFT-OFF, WD
50	MA083-0007	MPX5, SHORT DOOR ASSY, LH, LIFT-OFF, WD
51	MA083-0008	MPX5, SHORT DOOR ASSY, LH, LIFT-OFF, WD
52	136340C1	MPX5 LEXAN GUARD SIDE, NARROW
53	MA223-0029	MPX5 CONVEYOR ASSY WD W/PIVOTING FRAME
54	MA223-0031	MPX5 INFEED CONVEYOR ASSEMBLY, WD
55	MA223-0032	MPX5 WASHDOWN BOOM ASSEMBLY
56	B-0210-2772	ASSEMBLY NOSE ROLL BEARING WD
57	C-0210-2524	ASSEMBLY BACK ROLL
58	D-0210-2725	ASSEMBLY SIDE GUIDE LH
59	MA083-0017	MPX5 INFEED CONVEYOR GUARD ASSEMBLY
60	MA083-0015	MX5 INFEED CONVEYOR DOOR
61	MA083-0016	MPX5 SIDE DOOR ASSY FULL
62	MA025-0030	MPX5 LOCKABLE E-STOP ENCLOSURE ASSY
63	MA030-0020	MPX5 MAIN DRIVE ASSEMBLY
64	MA250-0029	MPX5 VACUUM PUMP, ASSY
65	MA250-0031	MPX5 SINGLE VACUUM PUMP ASSEMBLY
66	MA250-0030	MPX5 FILTER HOLDER ASSY
67	MA101-0011	MPX5 GAS ACCUMULATOR TANK ASSEMBLY
68	MA025-0029	MPX5 PENDANT ARM ASSEMBLY
69	133420C1	MPX5 INFEED TOP GUARD, NARROW
70	MA083-0011	MPX5 SIDE SEAL GUARD ASSEMBLY, NARROW
71	MA101-0010	MPX5 PRESSURE REGULATOR ASSEMBLY
72	MA101-0009	MPX5 INLET PNEUMATICS, AIR/GAS
73	MA029-0016	MPX5 FRL ASSEMBLY
74	MA110-0047	MPX5 2 SWITCH BUTTON ASSY
75	MA110-0048	MPX5 E-STOP BUTTON ASSY
76	MA054-0006	MPX5 BELT SUPPORT ASSEMBLY
77	MA220-0035	MPX5 NARROW PRODUCT CONVEYOR ASSEMBLY

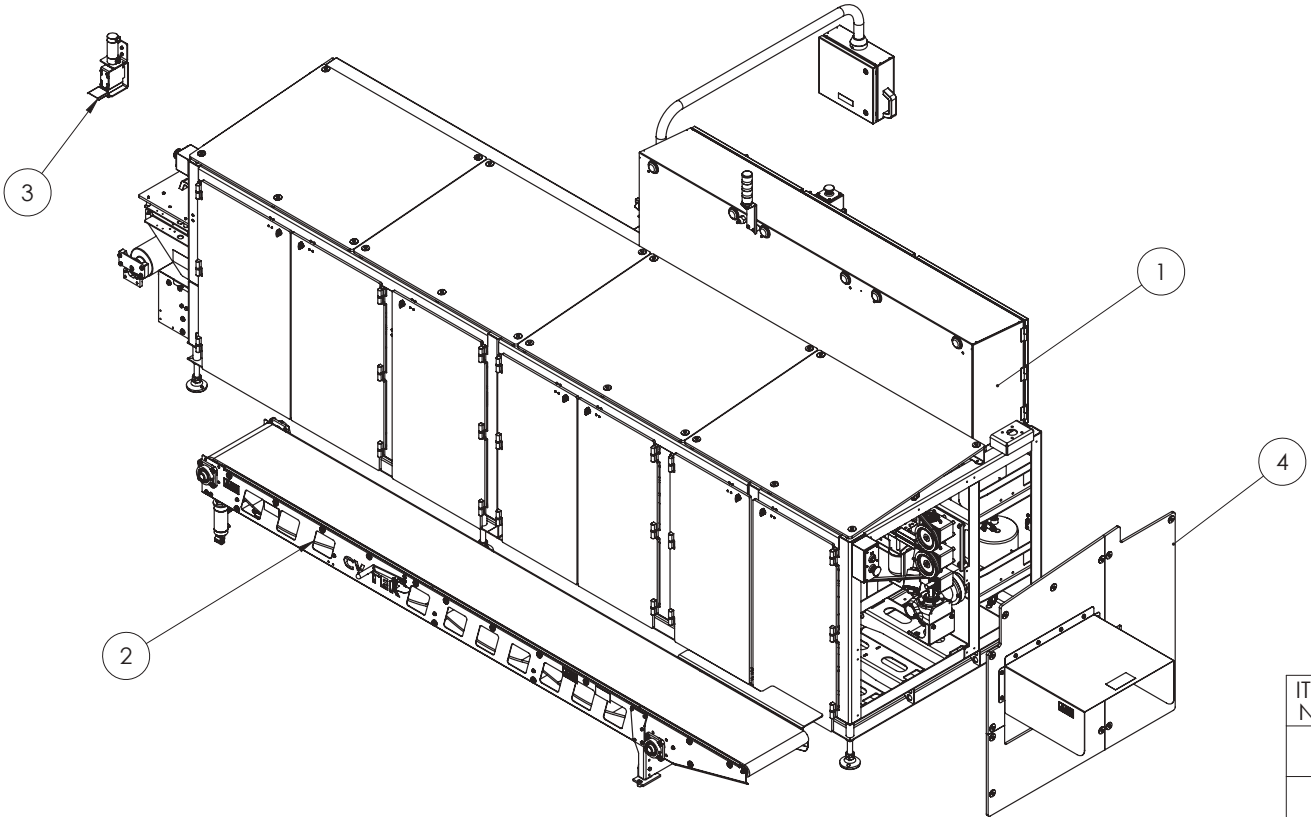
78	MA220-0036	MPX5 IDLER BAR, NARROW, ASSEMBLY
79	C-0210-2484	DOUBLE STACK, 11" CENTERS, 3" LIFT
80	MA223-0030	ASSEMBLY, PRE-PERF
81	MA083-0018	MPX5 EXIT GUARD ASSY, NO CUT-OUT, NARROW
82	1-MPX5 Electrical Standard	1-MPX5 Electrical Standard

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	3/5/24	JRS

D
C
B
A

D
C
B
A



MA000-0900
REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MA080-0016	MPX5 NARROW BASE MACHINE ASSEMBLY	1
2	MA220-0035	MPX5 NARROW PRODUCT CONVEYOR ASSEMBLY	1
3	MA223-0030	ASSEMBLY, PRE-PERF	1
4	MA083-0018	MPX5 EXIT GUARD ASSY, NO CUT-OUT, NARROW	1

MATERIAL: ???
STOCK NO: ???
STOCK SIZE:
MASS [LBS]:

FINISH:

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT.= ± 1/64 .XXX= ± .005
.XX= ± .015 .XXX= ± .0005
ANGLES= ± 0°30'
DRILLED HOLE: STANDARD S.A.E.

CV-TEK

440 S MCLEAN BLVD, ELGIN, ILLINOIS 60123
PHONE: 847.741.3500 | WWW.CV-TEK.COM

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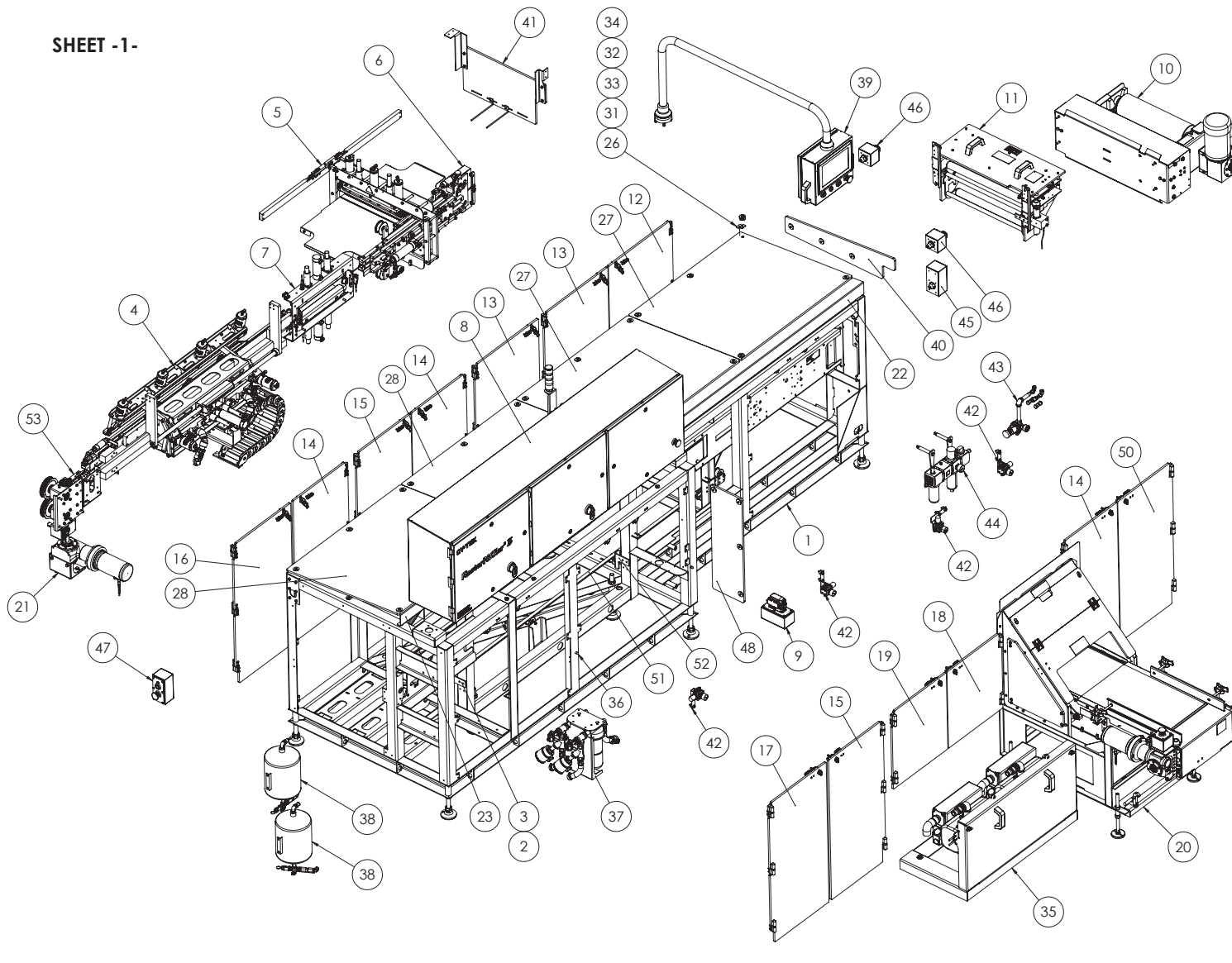
DRAWN	DATE	SCALE 1:24	SHEET 1 OF 1
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MPX5 TOP LEVEL ASSEMBLY

DRAWING NO. MA000-0900	REV A
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8 7 6 5 4 3 2 1

SHEET -1-



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/20/2024	PV

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MA010-0031	MPXS NARROW FRAME WITH FEET, LH	1
2	B-0210-2180	ASSEMBLY PULLEY RETURN (PLASTIC)	8
3	131589C1	MOUNT BRACKET	4
4	MA260-0019	MPXS HEAD, ASSEMBLY	1
5	MA030-0021	MPXS NARROW SIDE SEAL ASSEMBLY	1
6	MA035-0004	MPXS BELT TAKE-UP ASSEMBLY	1
7	MA030-0022	MPXS FLEX JAW 19 X 5IN ASSEMBLY	1
8	MA020-0110	MPXS ELECTRICAL CABINET ASSEMBLY	1
9	MA110-0046	MPXS ELECTRIC DISCONNECT ASSY	1
10	MA060-0008	MPXS NARROW UNWIND ASSEMBLY, LH	1
11	MA066-0002	MPXS SWING ARM ASSEMBLY, NARROW LH	1
12	MA083-0001	MPXS, TALL DOOR ASSY, LH, LIFT-OFF, WD	1
13	MA083-0002	MPXS, TALL DOOR ASSY, RH, LIFT-OFF, WD	2
14	MA083-0003	MPXS, TALL DOOR ASSY, LH, LIFT-OFF, WD	3
15	MA083-0004	MPXS, TALL DOOR ASSY, RH, LIFT-OFF, WD	2
16	MA083-0005	MPXS, TALL DOOR ASSY, RH, LIFT-OFF, WD	1
17	MA083-0006	MPXS, TALL DOOR ASSY, LH, LIFT-OFF, WD	1
18	MA083-0007	MPXS, SHORT DOOR ASSY, LH, LIFT-OFF, WD	1
19	MA083-0008	MPXS, SHORT DOOR ASSY, RH, LIFT-OFF, WD	1
20	MA223-0029	MPXS CONVEYOR ASSY, WD W/PIVOTING FRAME	1
21	MA030-0020	MPXS MAIN DRIVE ASSEMBLY	1
22	133418C1	MPXS, NARROW, TOP COVER MOUNT BAR #1	1
23	133412C1	MPXS, NARROW, TOP COVER MOUNT BAR #2	1
24	132072C1	MPXS TOP COVER BAR #1	1
25	132073C1	MPXS TOP COVER BAR #2	1
26	131856C1	TOP COVER MOUNT BRACKET	12
27	133387C1	MPXS, NARROW, TOP COVER #1	1
28	133388C1	MPXS, NARROW, TOP COVER #2	2
29	B-0210-2356	TOP COVER SUPPORT	8
30	B-0210-2327	SUPPORT, COVER	8
31	B-0210-2133	RUBBER WASHER 1.5 OD X .5 ID X .06/.08 THK	48
32	FFW5/16X1-1/2	WASHER, FLAT	24
33	B-0210-2132	SPACER 7/16 OD X 1 1/32 ID X 5/8 LG	20
34	HHS/1/6-18X1	SCREW, HEX HEAD	20
35	MA250-0029	MPXS VACUUM PUMP, ASSY	1
36	B-0210-1239	PIN DOOR HANGER	2
37	MA250-0030	MPXS FILTER HOLDER ASSY	1
38	MA101-0011	MPXS GAS ACCUMULATOR TANK ASSEMBLY	2
39	MA025-0029	MPXS PENDANT ARM ASSEMBLY	1
40	133420C1	MPXS INFEED TOP GUARD, NARROW	1
41	MA083-0011	MPXS SIDE SEAL GUARD ASSEMBLY, NARROW	1
42	MA101-0010	MPXS PRESSURE REGULATOR ASSEMBLY	4
43	MA101-0009	MPXS INLET PNEUMATICS, AIR/GAS	1
44	MA029-0016	MPXS FRL ASSEMBLY	1
45	MA110-0047	MPXS 2 SWITCH BUTTON ASSY	1
46	MA025-0030	MPXS LOCKABLE E-STOP ENCLOSURE ASSY	2
47	MA110-0048	MPXS E-STOP BUTTON ASSY	1
48	136430C1	MPXS LEXAN GUARD SIDE, NARROW	1
49	138300C1	BELT TENSION BRACKET	2
50	MA083-0013	MPXS, TALL DOOR ASSY, RH, LIFT-OFF, WD	1
51	133474C1	TIMING BELT	2
52	137256C1	MOUNT BRACKET	1
53	MA054-0006	MPXS BELT SUPPORT ASSEMBLY	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 4585.15

FINISH
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.0004 XXX±.0005
 DECIMALS: .XXX±.0015 XXXXX±.0005
 ANGLES: ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

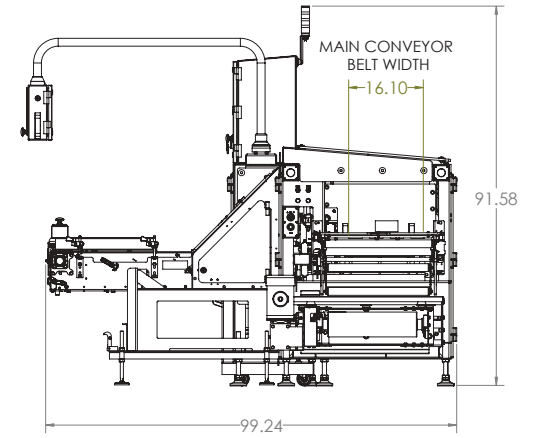
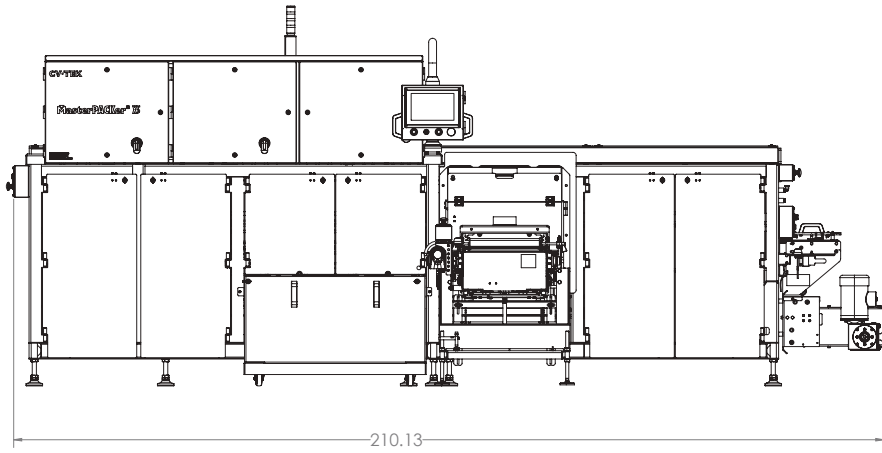
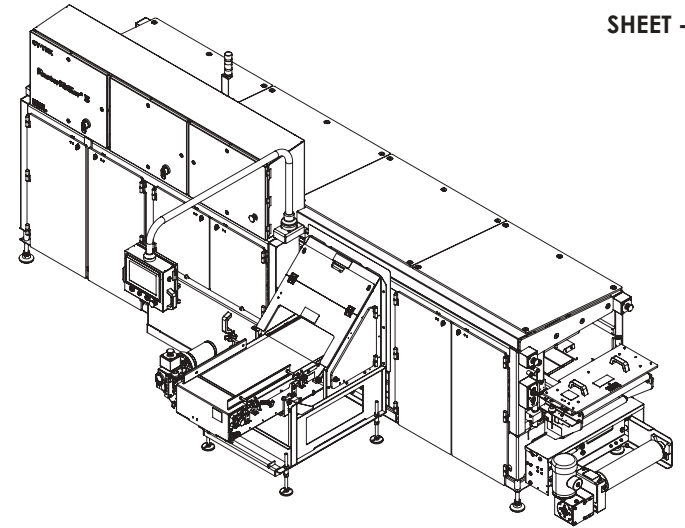
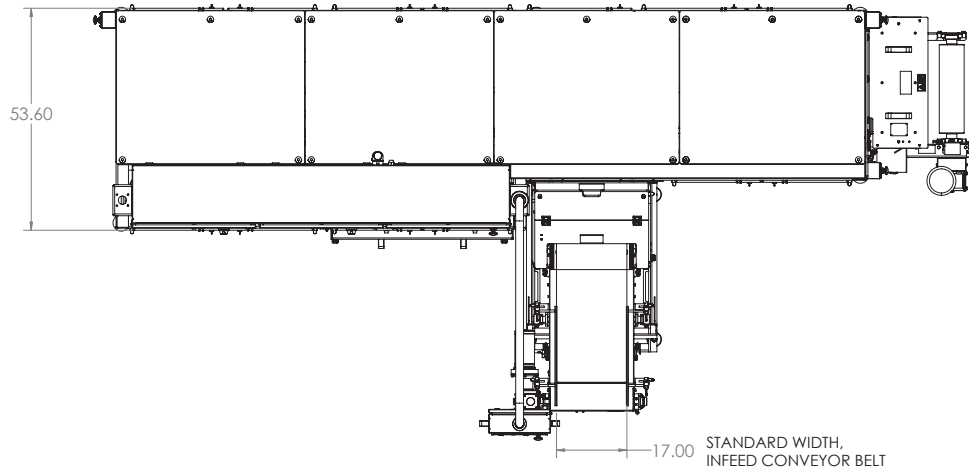
1675 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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MPXS NARROW
 BASE MACHINE
 ASSEMBLY

DRAWING NO. MA080-0016
 REV. A

DRAWN: PV DATE: 2/20/2024 SCALE: 1:20 SHEET: 1 OF 2



MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 4585.15

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTION ±1/64 DECIMAL ±.003 ±.005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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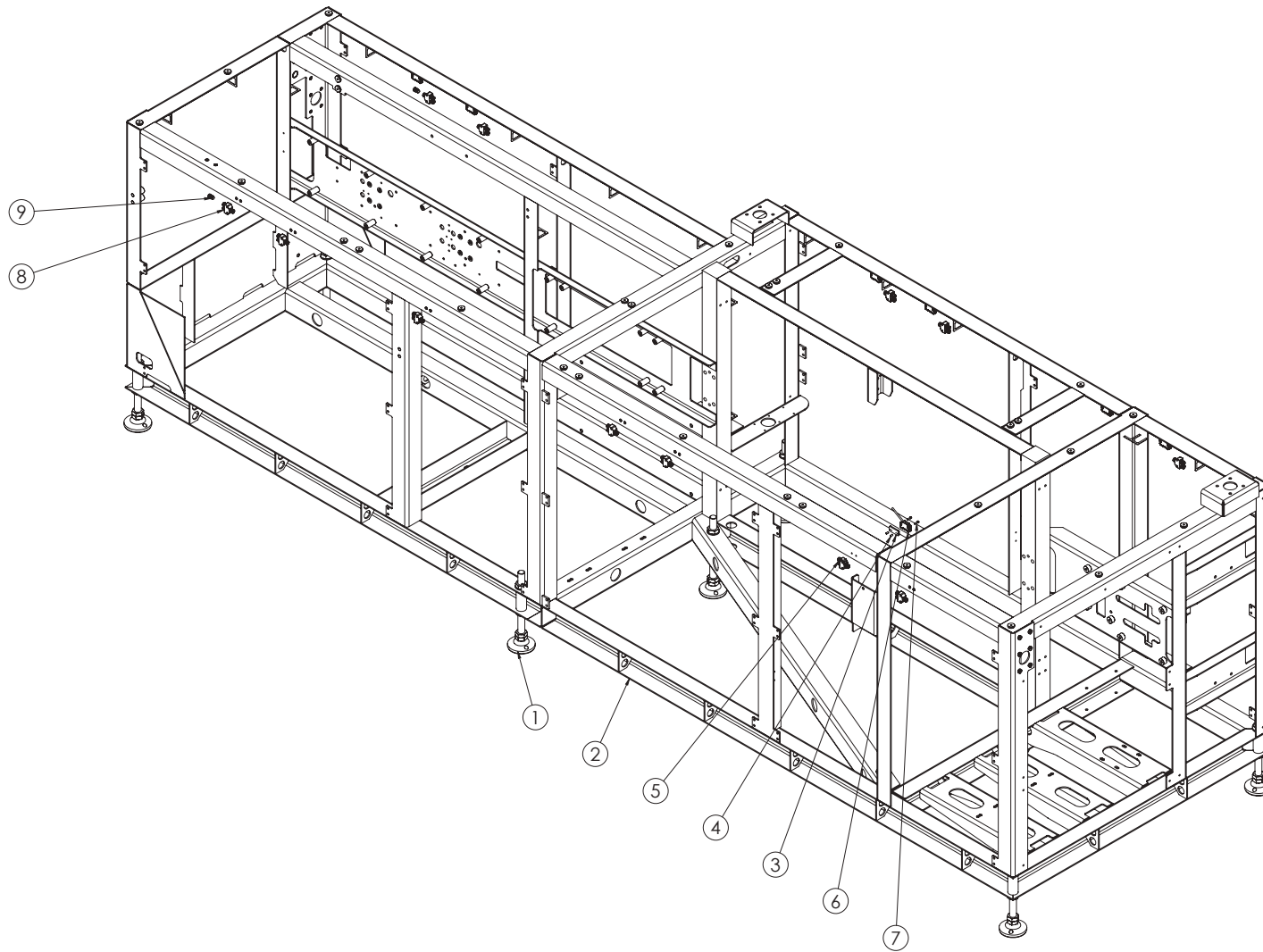
MPX5 NARROW
 BASE MACHINE
 ASSEMBLY

DRAWING NO. REV

MA080-0016 A

MA080-0016 REV2A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/19/24	JRS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-0069	ASSY. FOOT LEVELING	8
2	MA010-0030	MPX5 NARROW FRAME WELDMENT, LH	1
3	138045C1	DOOR SENSOR ADAPTER #1	13
4	0024490-1-A	STUD NUT THRD 10-32 X 3/8 FOR MTG MAGNET	26
5	75112101	10-32 X 3/8 Pan head machine	26
6	138031C1	KEYENCE SAFETY SWITCH	13
7	0002590-1-A	SCREW SHCS 1/8-8 SS 8-32 X 5/8 LG	26
8	138034C1	KEYENCE SAFETY CONNECTOR	13
9	138033C1	KEYENCE GS-Y12 END CAP	2

MATERIAL: SEE BOM
 STOCK NO.: -
 STOCK SIZE:
 MASS [LBS]: 1312.78

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONAL ±.004 .0005 ±.005
 DECIMAL ±.012 .0005 ±.005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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MPX5 NARROW FRAME WITH FEET, LH

DRAWING NO.

REV

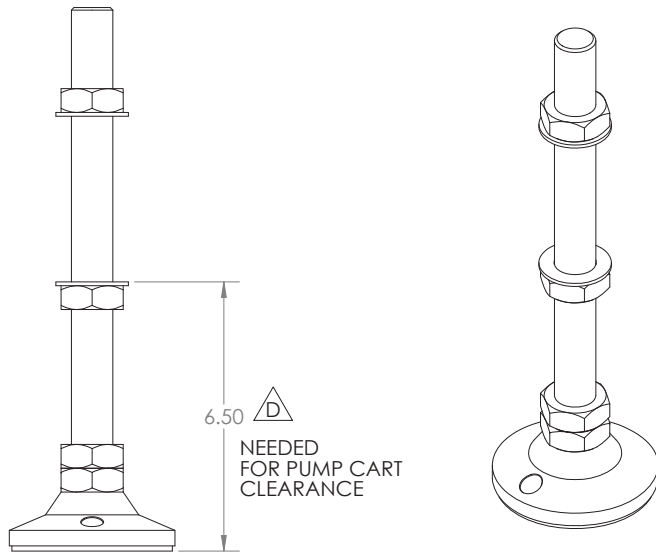
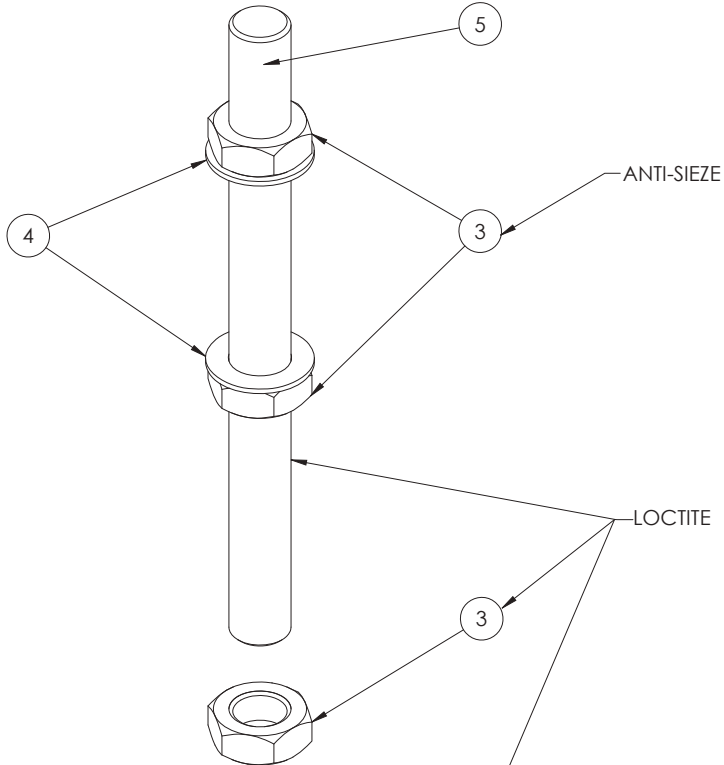
MA010-0031 A

DRAWN: JRS DATE: 2/12/24 SCALE: 1:16 SHEET: 1 OF 1

MA010-0031 REV:2A

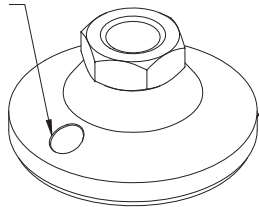
8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
C	B-0550-1275-1 WAS 0550-1275.	9/06/2012	N. BARAN
D	ADDED NOTE ABOUT PUMP CART CLEARANCE, ADDED MISSING PROPERTIES VALUES	2/20/2024	SP



ADDED CONFIG -5 (04-18-17)

DRILL HOLE IN BEFOREASSEMBLY



DEFAULT SHOWN

5	1	-	B-0550-1090	ROD.THREADED.1-8 X 12 LG
4	2	2	Face Width 1	WASHER, FLAT
3	3	3	JN1-8	NUT,JAM
2	-	1	B-0550-1090-1	ROD.THREADED.1-8 X 15 LG
1	1	1	B-0550-1275-1	LEVELING MOUNT W/ LAG HOLE
ITEM NO.	Default/QTY.	0210-0069-5/QTY.	PART NUMBER	DESCRIPTION

MATERIAL: AS NOTED
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 5.98

FINISH AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN CB	DATE 12/5/08	SCALE 1:2	SHEET 1 OF 1
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ASSEMBLY
 LEVELING FOOT

DRAWING NO.

0210-0069

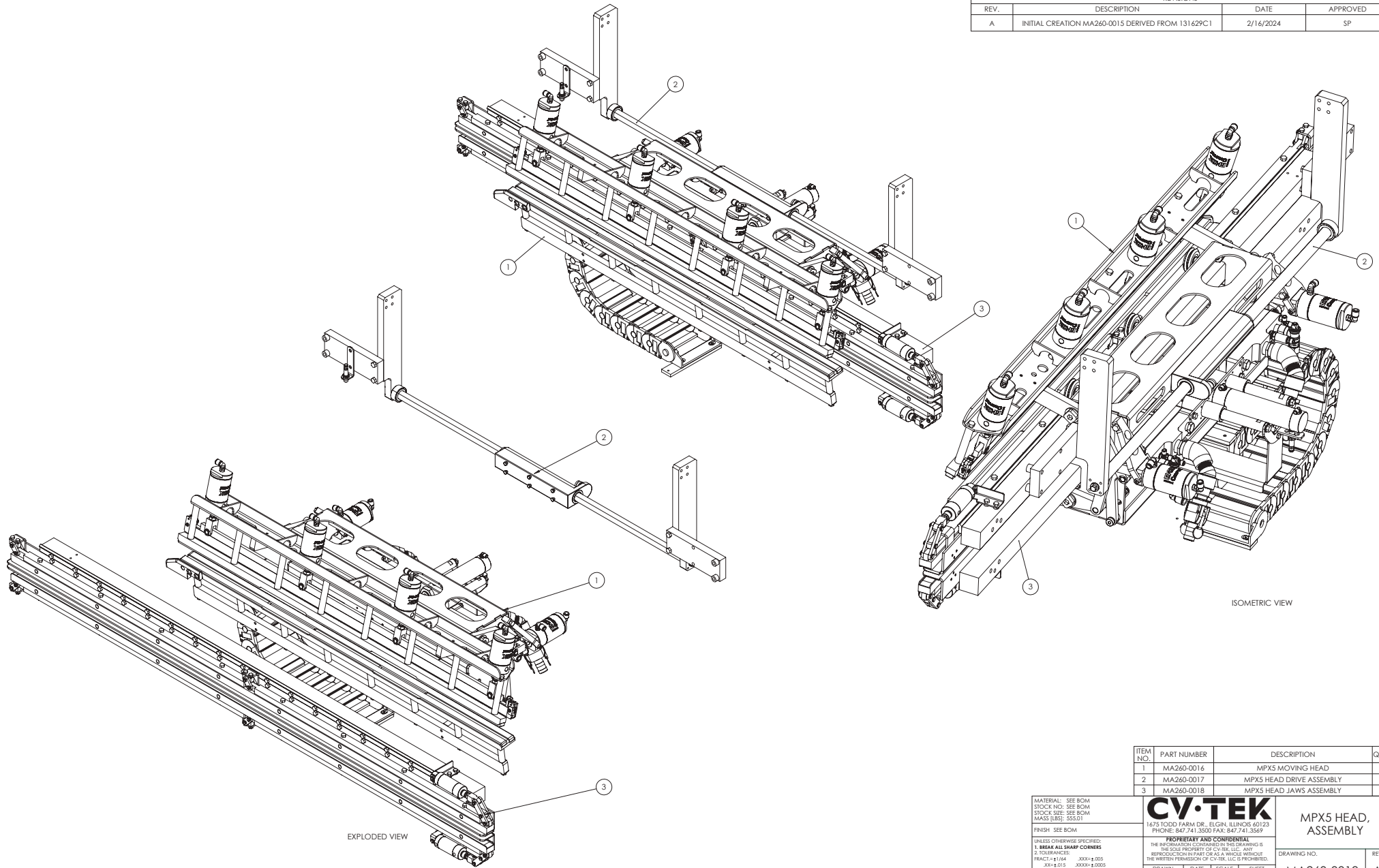
REV

D

0210-0069
 REV D

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL CREATION MA260-0015 DERIVED FROM 131629C1	2/16/2024	SP



ISOMETRIC VIEW

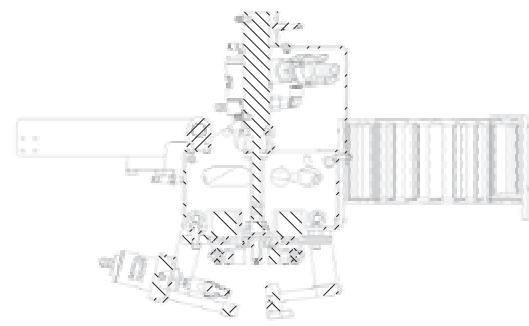
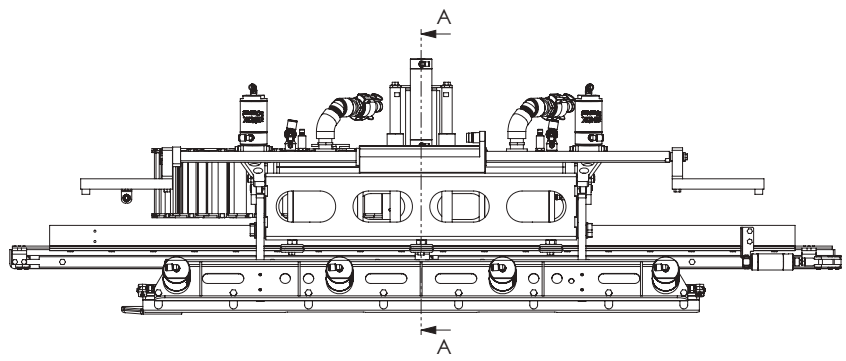
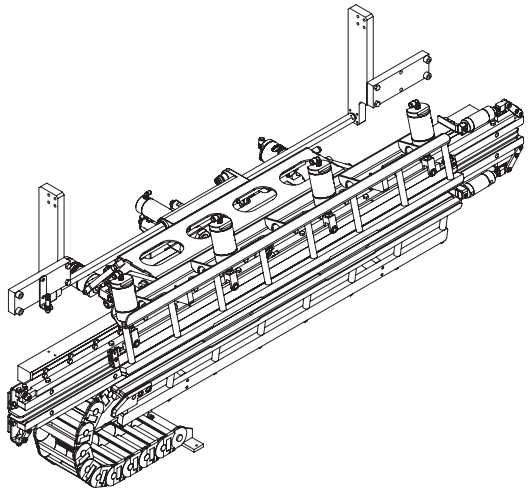
EXPLODED VIEW

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MA260-0016	MPX5 MOVING HEAD	1
2	MA260-0017	MPX5 HEAD DRIVE ASSEMBLY	1
3	MA260-0018	MPX5 HEAD JAWS ASSEMBLY	1

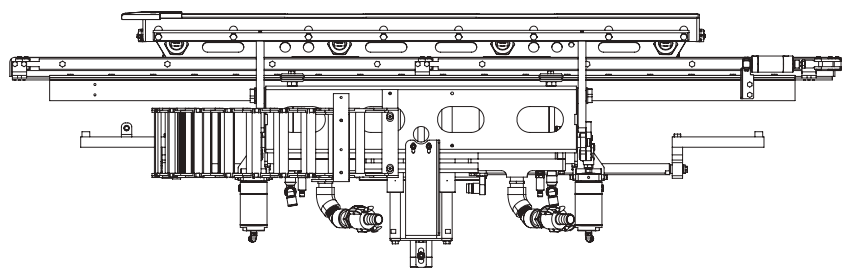
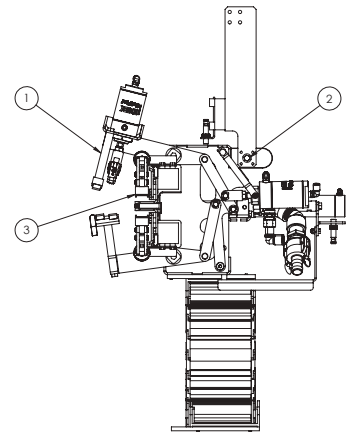
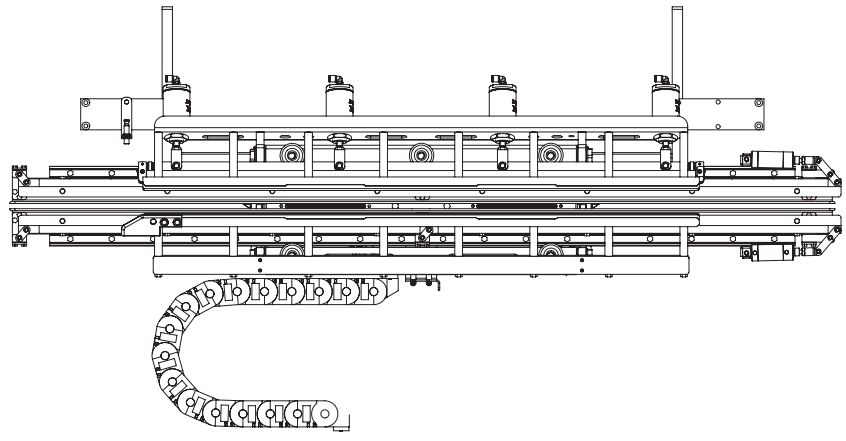
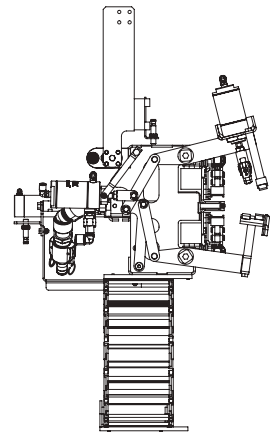
MATERIAL: SEE BOM STOCK NO.: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 555.01 FINISH: SEE BOM		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 HEAD, ASSEMBLY
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTIONS ±.004 .XXX ±.005 .XXX ±.015 .XXX ±.0005 ANGLES ±.01° DRILLED HOLES: STANDARD S.A.E.			
DRAWN: MS DATE: 2/9/23 SCALE: 1:10 SHEET: 1 OF 2	DRAWING NO.: MA260-0019 REV: A		

MA260-0019 REV2A

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet!	-	-



SECTION A-A
SCALE 1 : 5



MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 555.01
 FINISH: SEE BOM

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.1/64 .0005 ±.005
 DIM: ±.015 .0005 ±.0005
 ANGLES: ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV·TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN	DATE	SCALE	SHEET
MS	2/9/23	1:10	2 OF 2

MPX5 HEAD,
 ASSEMBLY

DRAWING NO. REV
 MA260-0019 A

MA260-0019 REV2A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL CREATION MA260-0017	2/15/2024	SP

MOUNT TO THE FRAME
CABINET MOUNTS

MOUNT TO THE
FRAME VERTICAL POSTS

- MOUNT TO C-0210-1961
SIDE SEAL BOTTOM FRAME
- SEE PARENT ASSEMBLY MA030-0021

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0243-0667	SPACER, 3/4 OD X 3/8 ID X 1/2 LG	4
2	0012990-1-A	SCREW, HHCS 1/8-8 SS M5-0.8 X 35 MM LG	4
3	93635A210	SCREW, HEX METRIC, M6	6
4	128940C1	LINMOT RAIL CAP	2
5	129237C1	LINMONT FORCING ROD MOUNT	1
6	129238C1	LINMONT FORCING ROD	1
7	129435C1	LINMOT STATOR	1
8	131491C1	MOVING HEAD MOUNT	2
9	131535C1	MOVING HEAD MOUNT BRACKET	2
10	132352C1	PROX SENSOR	1
11	137206C1	MH HOME SENSOR BRKT	1
12	0360234-1-A	???	4
13	HH3/8-16X1-1/2	SCREW, HEX HEAD	4
14	HHM8X1.25X35	SCREW, HEX METRIC	1
15	HHM8X1.25X45	SCREW, HEX METRIC	1

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 42.83

FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACTIONAL: ±.004 .003±.005
DECIMAL: ±.015 .003±.005
ANGLES: ±0°30'

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

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MPX5 HEAD DRIVE
ASSEMBLY

DRAWING NO.

MA260-0017

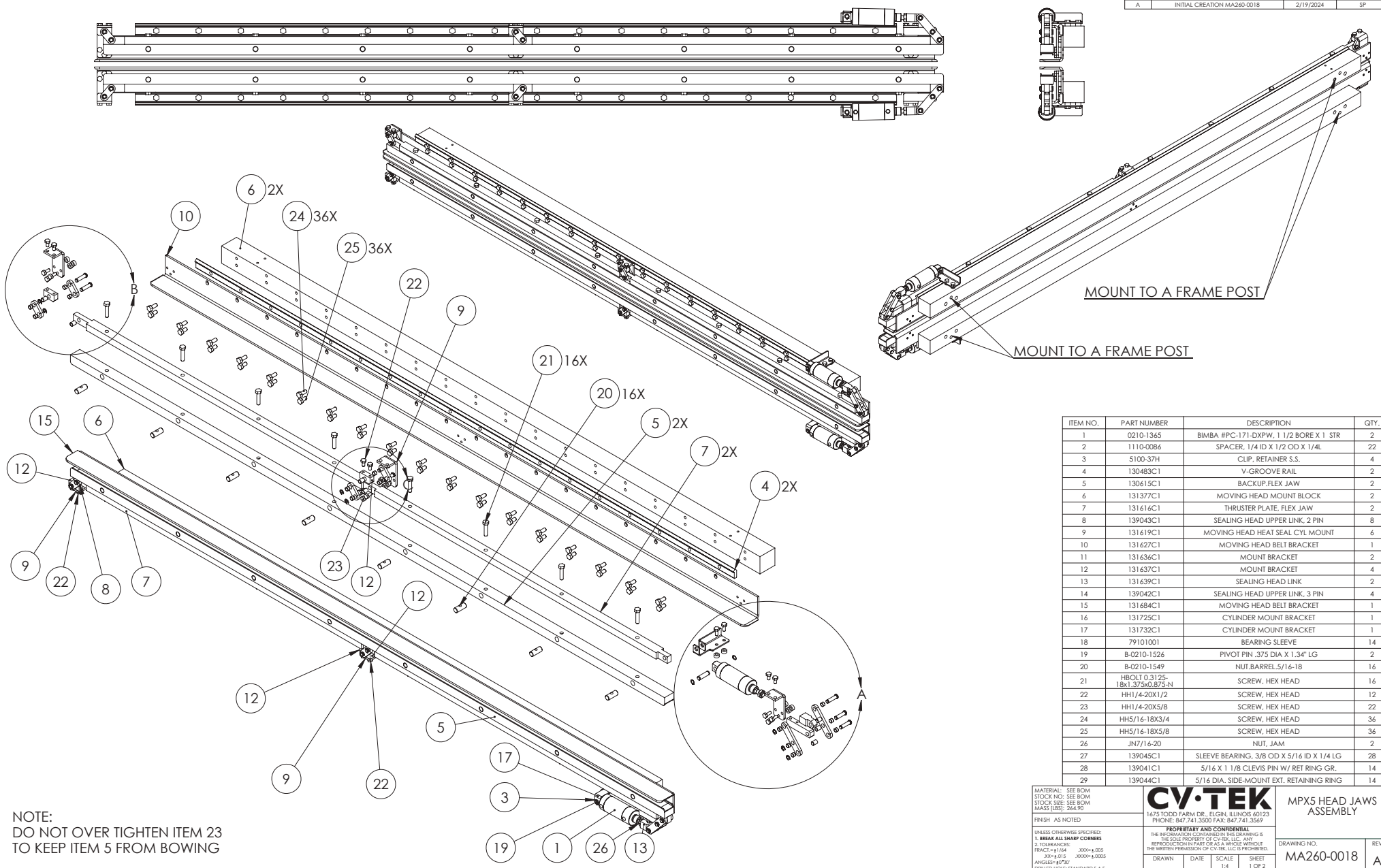
REV

A

DRAWN DATE SCALE SHEET
1/4 1 OF 1

MA260-0017 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL CREATION MA260-0018	2/19/2024	SP



NOTE:
DO NOT OVER TIGHTEN ITEM 23
TO KEEP ITEM 5 FROM BOWING

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1365	BIMBA #PC-171-DXPW, 1 1/2 BORE X 1 STR	2
2	1110-0086	SPACER, 1/4 ID X 1/2 OD X 1/4L	22
3	5100-37H	CLIP, RETAINER S.S.	4
4	130483C1	V-GROOVE RAIL	2
5	130615C1	BACKUP FLEX JAW	2
6	131377C1	MOVING HEAD MOUNT BLOCK	2
7	131616C1	THRUSTER PLATE, FLEX JAW	2
8	139043C1	SEALING HEAD UPPER LINK, 2 PIN	8
9	131619C1	MOVING HEAD HEAT SEAL CYL MOUNT	6
10	131627C1	MOVING HEAD BELT BRACKET	1
11	131636C1	MOUNT BRACKET	2
12	131637C1	MOUNT BRACKET	4
13	131639C1	SEALING HEAD LINK	2
14	139042C1	SEALING HEAD UPPER LINK, 3 PIN	4
15	131684C1	MOVING HEAD BELT BRACKET	1
16	131725C1	CYLINDER MOUNT BRACKET	1
17	131732C1	CYLINDER MOUNT BRACKET	1
18	79101001	BEARING SLEEVE	14
19	B-0210-1526	PIVOT PIN, .375 DIA X 1.34" LG	2
20	B-0210-1549	NUT, BARREL, 5/16-18	16
21	HBOLT 0.3125-18x1.375x0.675-IN	SCREW, HEX HEAD	16
22	HH1/4-20X1/2	SCREW, HEX HEAD	12
23	HH1/4-20X5/8	SCREW, HEX HEAD	22
24	HH5/16-18X3/4	SCREW, HEX HEAD	36
25	HH5/16-18X5/8	SCREW, HEX HEAD	36
26	JN7/16-20	NUT, JAM	2
27	139045C1	SLEEVE BEARING, 3/8 OD X 5/16 ID X 1/4 LG	28
28	139041C1	5/16 X 1 1/8 CLEVIS PIN W/ RET RING GR.	14
29	139044C1	5/16 DIA, SIDE-MOUNT EXT. RETAINING RING	14

MATERIAL: SEE BOM
STOCK NO.: SEE BOM
STOCK QTY.: SEE BOM
MASS [LBS]: 284.90
FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT: ±.104 .003±.005
DIM: ±.015 .003±.005
ANGLES: ±0°30'
DRIILLED HOLES: STANDARD S.A.E.

CV-TEK
1675 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: DATE: SCALE: SHEET: 1 OF 2

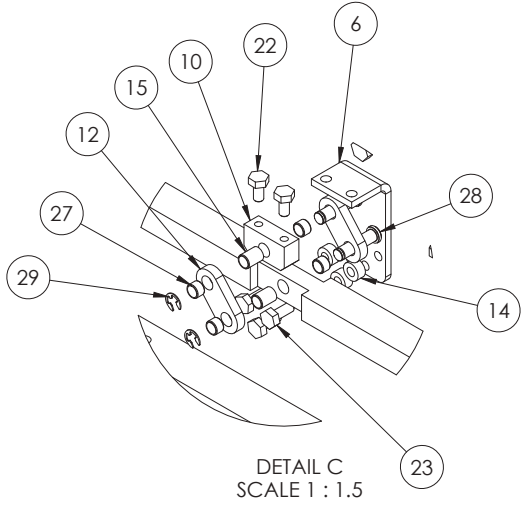
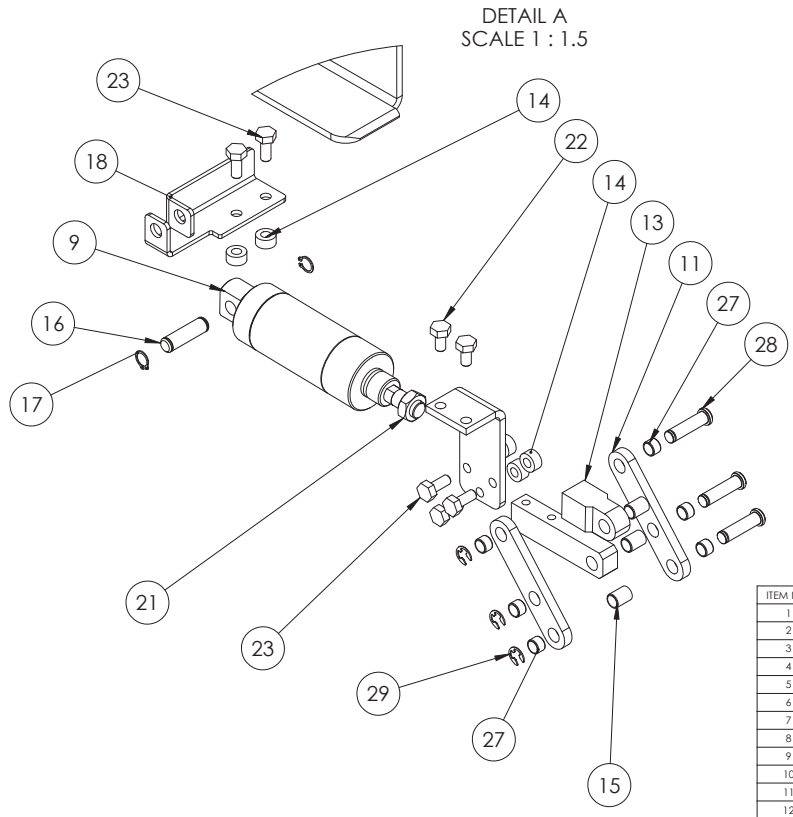
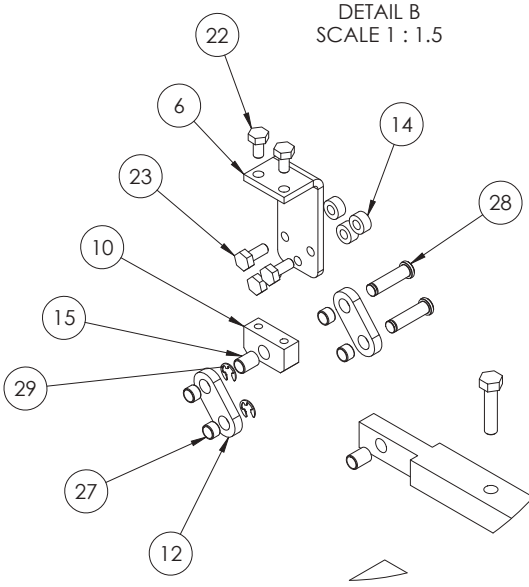
MPX5 HEAD JAWS
ASSEMBLY

DRAWING NO.
MA260-0018

REV
A

MA260-0018 HEZA

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE SHEET 1			



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1365	BIMBA #PC-171-DXPW, 1 1/2 BORE X 1 STR	2
2	1110-0086	SPACER, 1/4 ID X 1/2 OD X 1/4L	22
3	S100-37H	CLIP, RETAINER S.S.	4
4	130483C1	V-GROOVE RAIL	2
5	130615C1	BACKUP FLEX JAW	2
6	131377C1	MOVING HEAD MOUNT BLOCK	2
7	131616C1	THRUSTER PLATE, FLEX JAW	2
8	139043C1	SEALING HEAD UPPER LINK, 2 PIN	8
9	131619C1	MOVING HEAD HEAT SEAL CYL MOUNT	6
10	131627C1	MOVING HEAD BELT BRACKET	1
11	131636C1	MOUNT BRACKET	2
12	131637C1	MOUNT BRACKET	4
13	131639C1	SEALING HEAD LINK	2
14	139042C1	SEALING HEAD UPPER LINK, 3 PIN	4
15	131684C1	MOVING HEAD BELT BRACKET	1
16	131725C1	CYLINDER MOUNT BRACKET	1
17	131732C1	CYLINDER MOUNT BRACKET	1
18	79101001	BEARING SLEEVE	14
19	B-0210-1526	PIVOT PIN .375 DIA X 1.34" LG	2
20	B-0210-1549	NUT, BARREL, 5/16-18	16
21	HBOLT 0.3125-18x1.375x0.875-A	SCREW, HEX HEAD	16
22	HH1/4-20X1/2	SCREW, HEX HEAD	12
23	HH1/4-20X5/8	SCREW, HEX HEAD	22
24	HH5/16-18X3/4	SCREW, HEX HEAD	36
25	HH5/16-18X5/8	SCREW, HEX HEAD	36
26	JN7/16-20	NUT, JAM	2
27	139045C1	SLEEVE BEARING, 3/8 OD X 5/16 ID X 1/4 LG	28
28	139041C1	5/16 X 1 1/8 CLEVIS PIN W/ RET RING GR.	14
29	139044C1	5/16 DIA. SIDE-MOUNT EXT. RETAINING RING	14

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 264.90

FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.0004 XXXX ±.0005
 DECIMALS: .XXX ±.0015 XXXXX ±.0005
 ANGLES: ±.01°
 UNFILED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: DATE: SCALE: SHEET: 1/4 2 OF 2

MPX5 HEAD JAWS ASSEMBLY

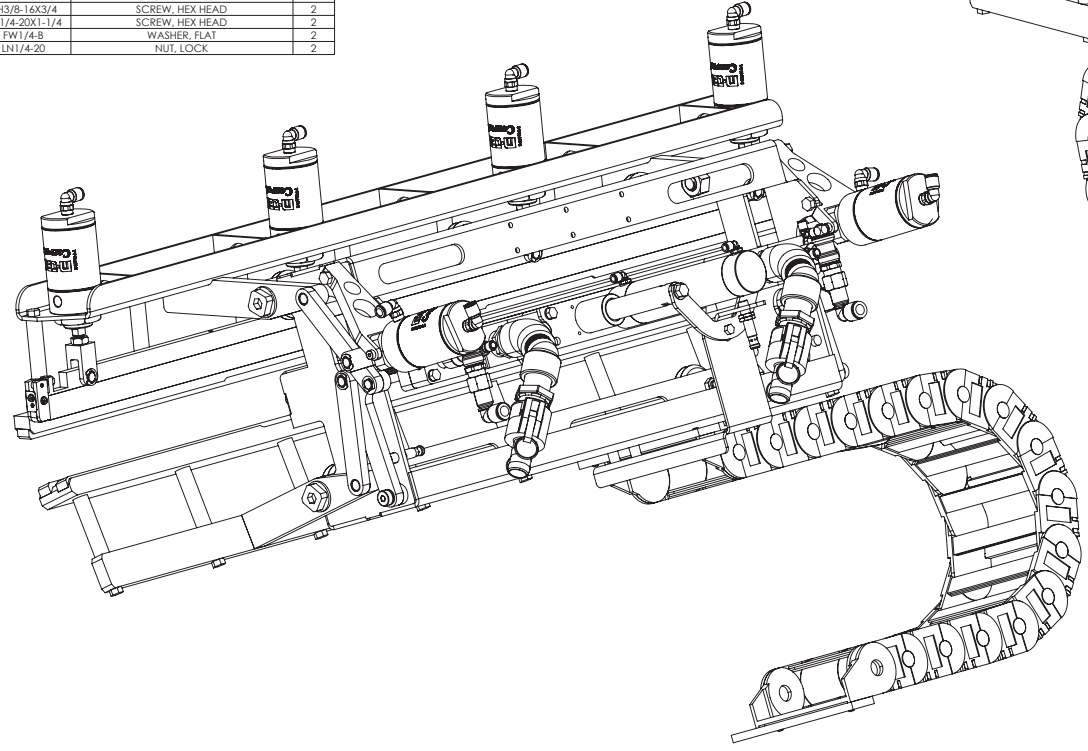
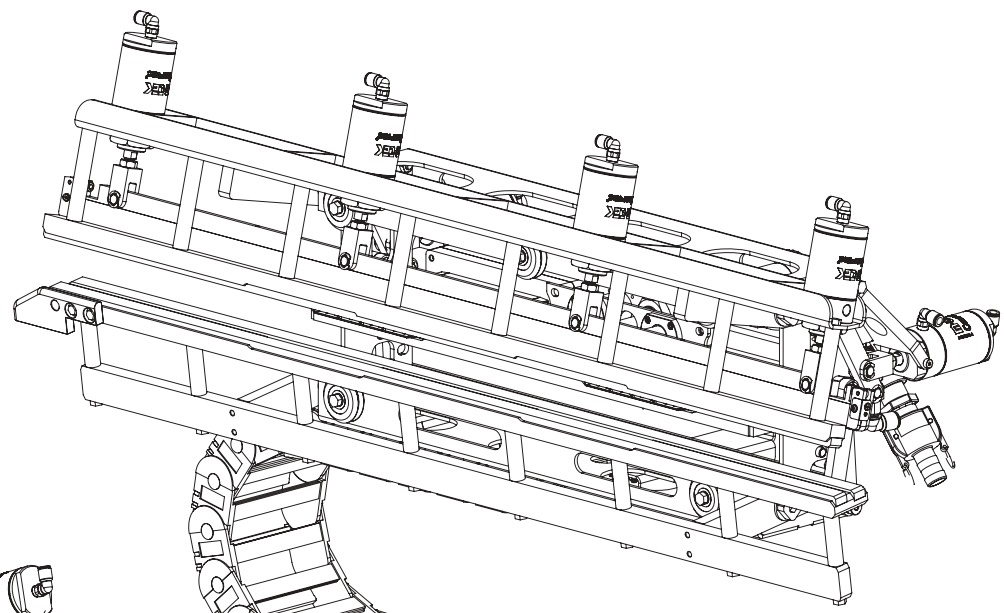
DRAWING NO. MA260-0018

REV. A

MA260-0018 REV. A

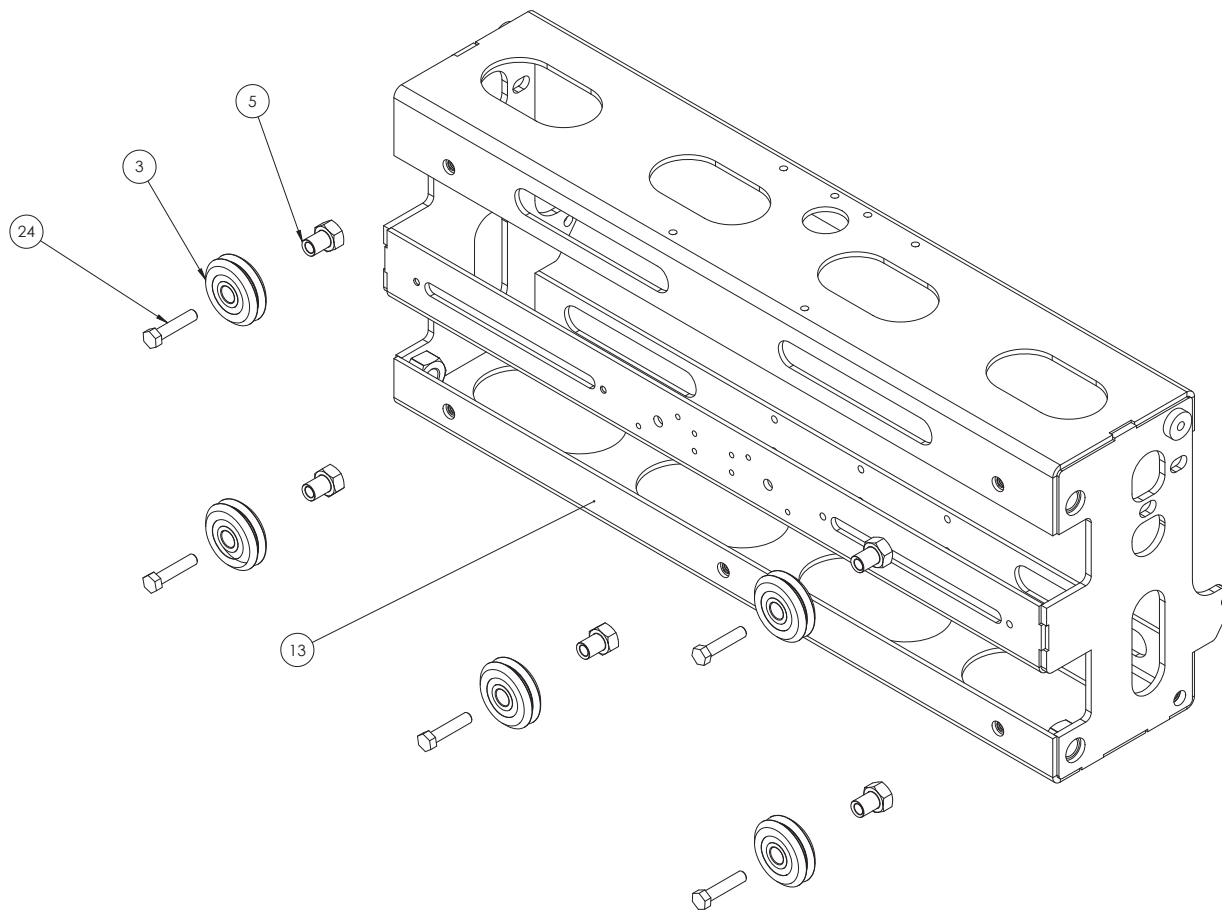
ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	130475C1	SEALING HEAD LOWER LINK	2
2	130478C1	SEALING HEAD 3 BUSHING LINK	1
3	130482C1	V-GUIDE WHEEL 60mm	5
4	130494C1	SEALING HEAD UPPER LINK	2
5	130504C1	V-GROOVE WHEEL ECCENTRIC HUB	5
6	130509C1	MOVING HEAD CYLINDER MOUNT	2
7	130511C1	MOVING HEAD CYLINDER PIVOT	2
8	130515C1	Short Clevis: Heat Seal Bar: M	2
9	137924C1	1X1" SHOULDER BOLT	4
10	130524C1	1" IDX. 125 THRUST BEARING	4
11	130552C1	0.5" ID X 1 1/16" THRUST BEARING	2
12	130553C1	.5" X .625 SHOULDER BOLT	2
13	131624C1	SEALING HEAD WELDMENT	1
14	132006C1	ENERGY CHAIN 100MM WD 125MM RADIUS	1
15	132045C1	CHAIN MOUNT BRACKET	2
16	132352C1	PROX SENSOR	3
17	7320101	CYLINDER: SEAL BAR	1
18	75102201	E-ring retainer for 1/2 rod #5133-50H	12
19	76102501A	Pin: seal bar clevis	7
20	79101201	FLNG BRNG 1/2ID 1/2 LING	15
21	JN172-20	NUT, JAM	2
22	HH3/8-16X5/8	SCREW, HEX HEAD	2
23	HH5/16-18X1/2	SCREW, HEX HEAD	4
24	HH3/8-16X1-3/4	SCREW, HEX HEAD	7
25	HH1/4-20X1/2	SCREW, HEX HEAD	4
26	HH1/4-20X3/4	SCREW, HEX HEAD	4
27	HH1/4-20X5/8	SCREW, HEX HEAD	2
28	SPH1/4-20X3/4	SCREW, FLAT HEAD SOCKET	4
29	75104601	S 16-S 16-SH-SHLDR-SCRW-S S	4
30	269P-06-04	FITTING,TBG,ELB,3/8OD X 1/4NPT	5
31	136744C1	SEALING HEAD 3 BUSHING LINK, LH	1
32	0109351-1-A	SPACER 316 SS 1/2" OD X .252 ID X 1/2" L	2
33	7320101	CYLINDER: SEAL BAR	1
34	MA264-0027	MPX5 BOTTOM JAW ASSEMBLY	1
35	MA230-0002	MPX5 SNORKEL ASSEMBLY	1
36	MA264-0028	MPX5 TOP JAW ASSEMBLY	1
37	HH3/8-16X3/4	SCREW, HEX HEAD	2
38	HH1/4-20X1-1/4	SCREW, HEX HEAD	2
39	FW11448	WASHER, FLAT	2
40	LN1/4-20	NUT, LOCK	2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/23/04	JRS



MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 MOVING HEAD
FINISH: SEE BOM	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	DRAWING NO.
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTION - ±1/64XXX ±.005 DECIMAL - .XXX ±.010XXX ±.005 ANGLES - ±0°30' DRILLED HOLES - STANDARD S.A.E.	DRAWN: JRS DATE: 2/23/04 SCALE: 1:3 SHEET: 1 OF 6	DRAWING NO. MA260-0016 REV. A

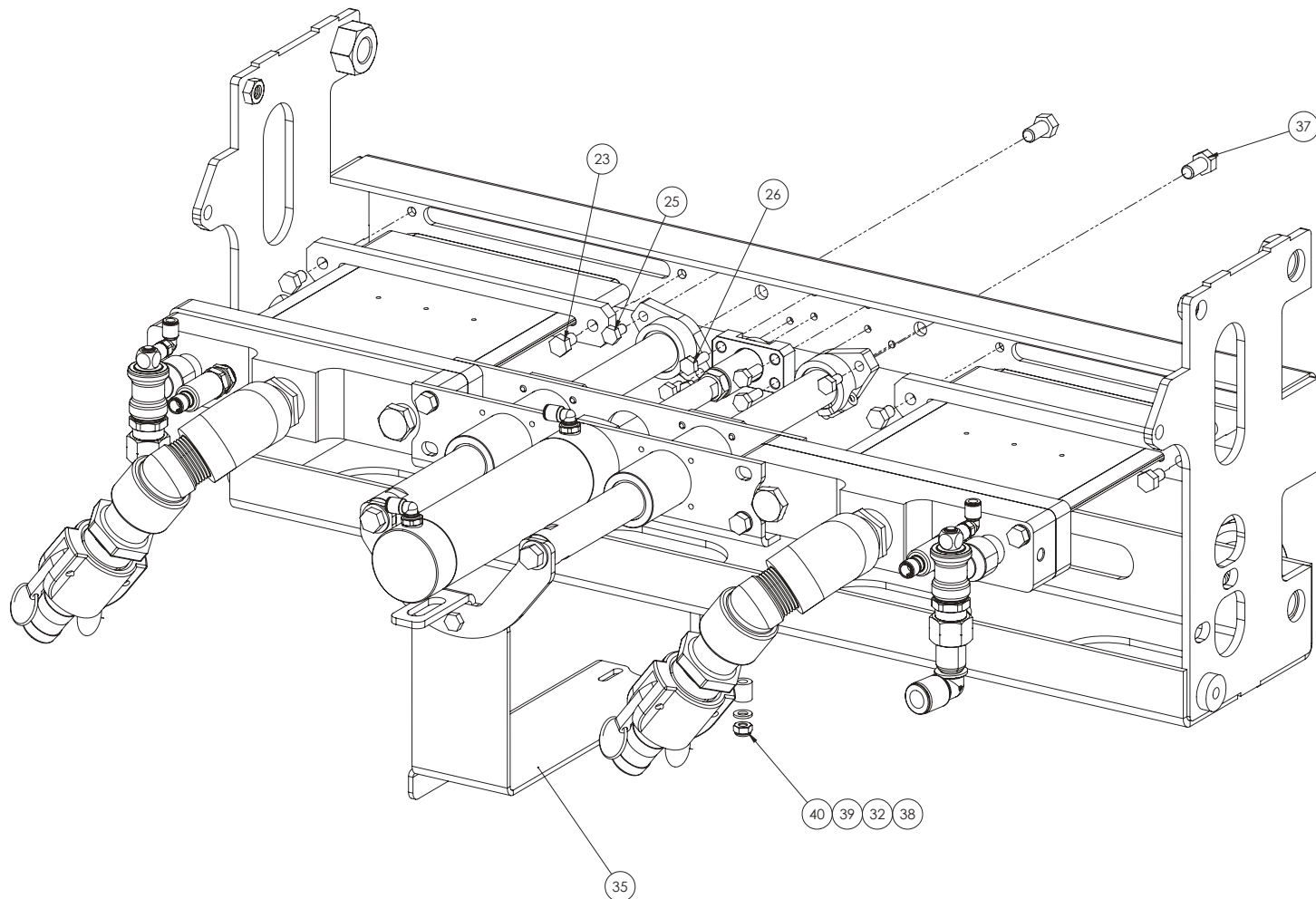
MA260-0016 REV A



ASSEMBLY STEP 1

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29 FINISH: SEE BOM		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 MOVING HEAD	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTION = 1/64 .XXX ± .005 DECIMAL = .015 .XXX ± .005 ANGLES = 10° 30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. MA260-0016	
DRAWN JRS	DATE 2/23/24	SCALE 1:2	SHEET 2 OF 6	REV A	

MA260-0016 REV A

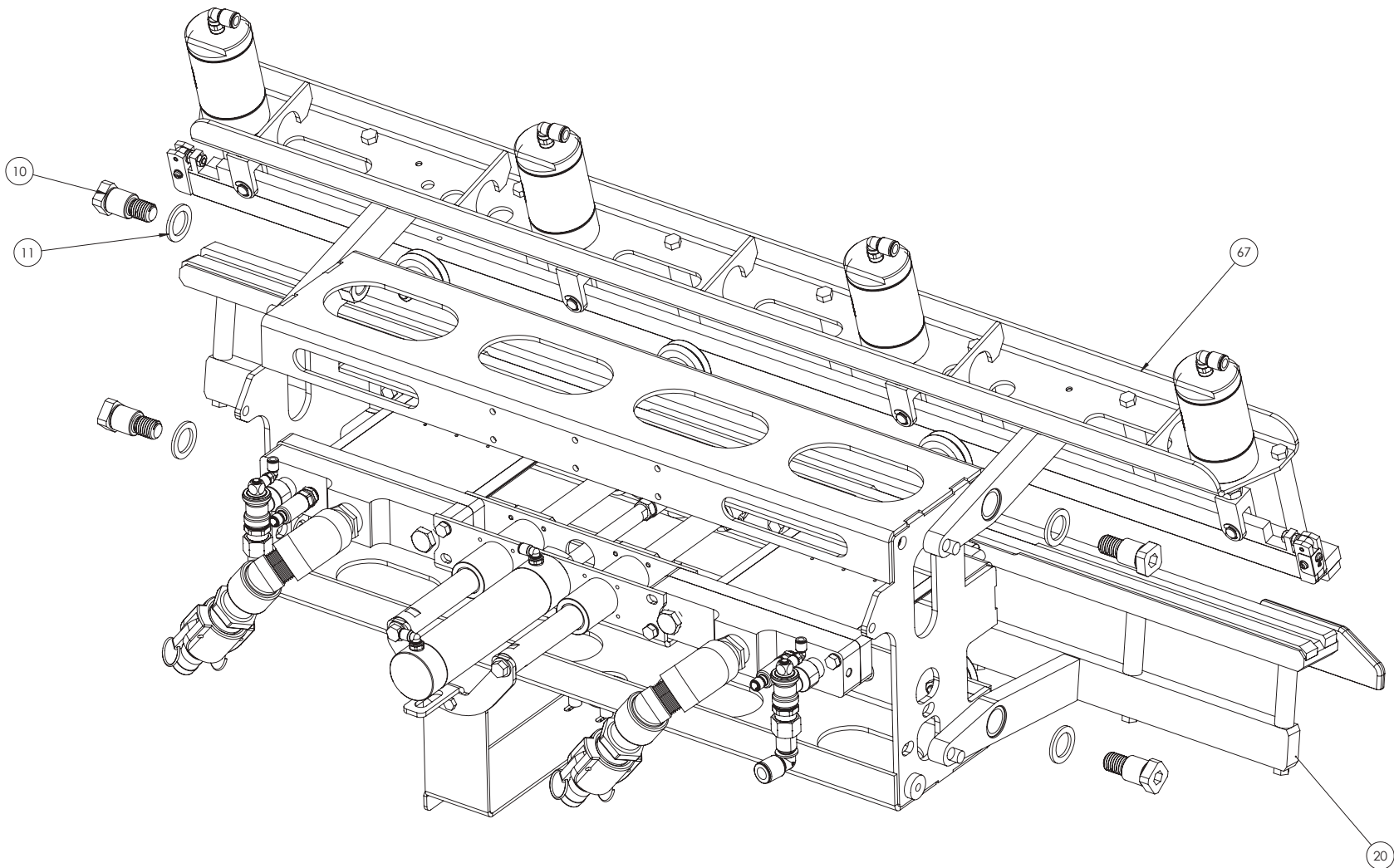


TOP OF WELDMENT HIDDEN FOR CLARITY

ASSEMBLY STEP 2

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29		CV·TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 MOVING HEAD	
FINISH: SEE BOM UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT: ±.004 .003±.005 DIA: ±.012 .003±.005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV·TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV·TEK, LLC IS PROHIBITED.		DRAWING NO. MA260-0016	
DRAWN JRS	DATE 2/23/24	SCALE 1:2	SHEET 3 OF 6	REV A	

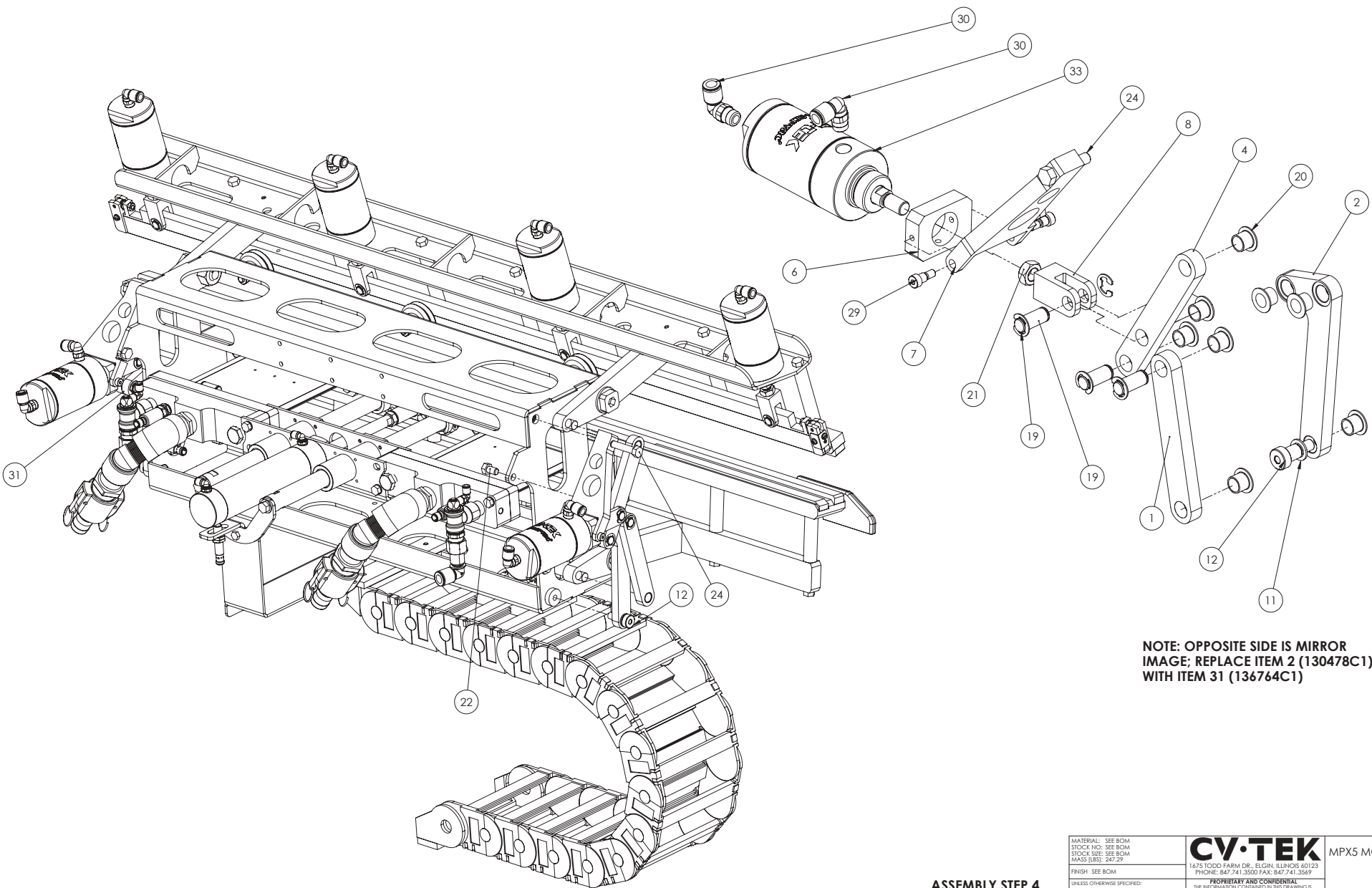
MA260-0016 REV A



ASSEMBLY STEP 3

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29 FINISH: SEE BOM		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 MOVING HEAD	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT - ±.004 .0005 ±.005 ANGLES - ±0°30'		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. MPX5-0016	
DRAWN JRS	DATE 2/23/24	SCALE 1:3	SHEET 4 OF 6	REV A	

MPX5-0016 REV A

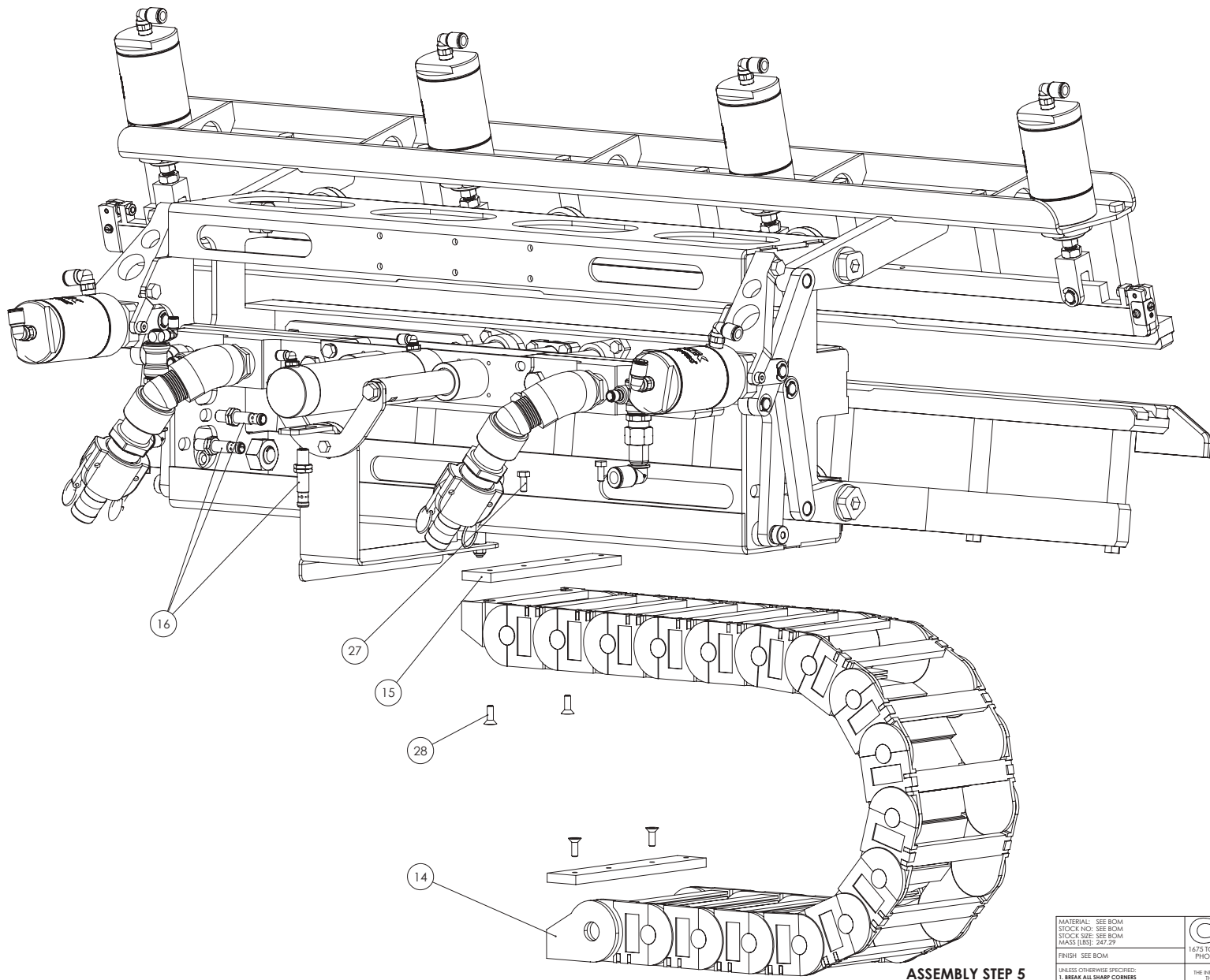


**NOTE: OPPOSITE SIDE IS MIRROR
IMAGE; REPLACE ITEM 2 (130478C1)
WITH ITEM 31 (136764C1)**

ASSEMBLY STEP 4

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29 FINISH: SEE BOM		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 MOVING HEAD	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTIONS: ±.004 .XXX ±.005 .XXX ±.015 .XXX ±.0005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. MA260-0016	
DRAWN JRS	DATE 2/23/24	SCALE 1:2	SHEET 5 OF 6	REV A	

MA260-0016 REV24

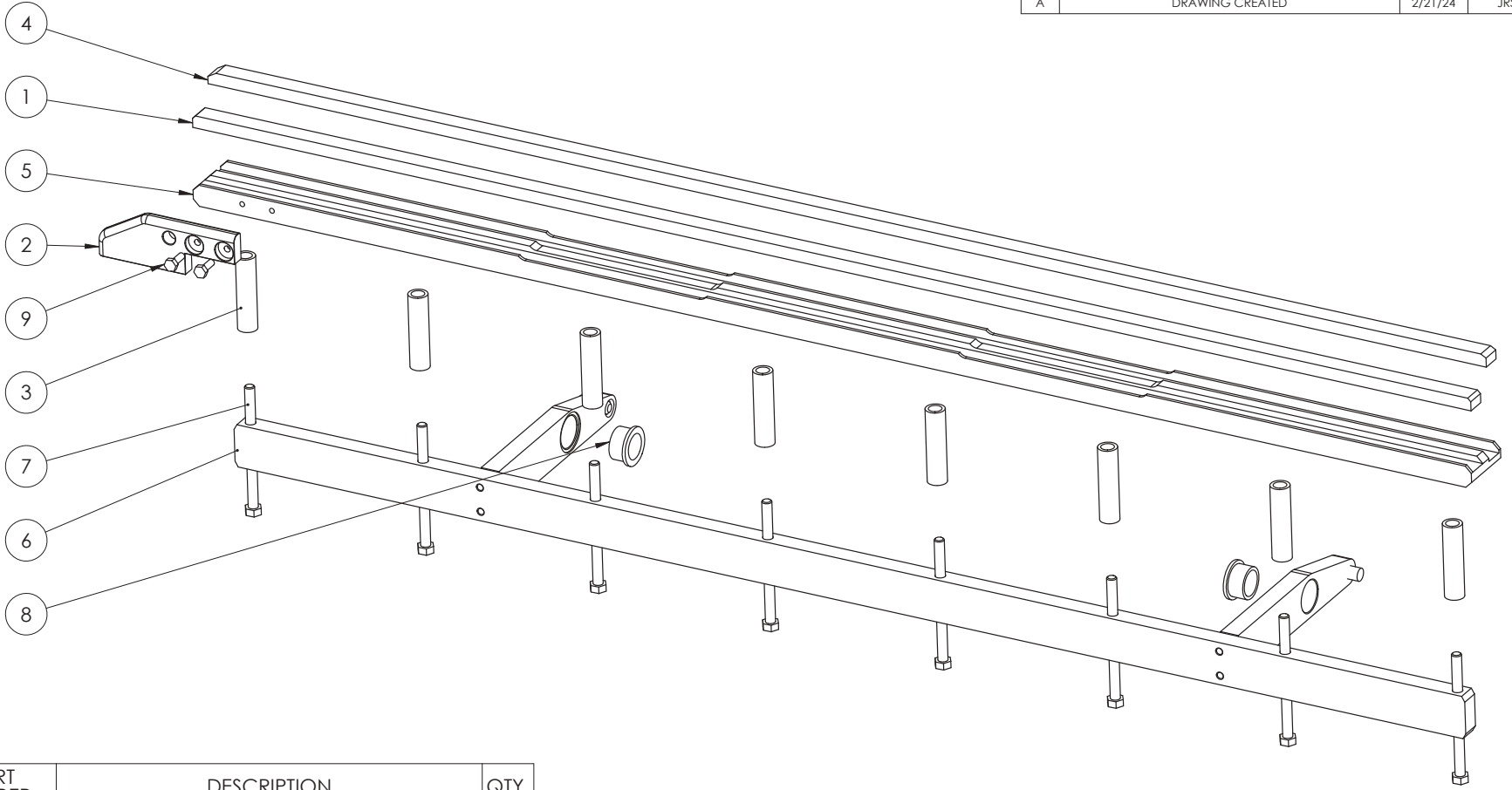


ASSEMBLY STEP 5

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 247.29 FINISH: SEE BOM		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 MOVING HEAD	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT. = ±1/64" .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. MA260-0016	
DRAWN JRS		DATE 2/23/24		SCALE 1:2	
		SHEET 6 OF 6		REV A	

MA260-0016 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/21/24	JRS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	130463C1	RUBBER, SPONGE, 1/2"X3/4"X54"	1
2	B-0210-1516	BULLNOSE B	1
3	130516C1	MOVING HEAD LOWER STANDOFF	8
4	130464C1	RUBBER.SILC.1/2 X 3/4 X 53-3/4LG	1
5	130489C1	CLAMP BAR	1
6	130528C1	SEALING HEAD LOWER SUPPORT WELDMENT	1
7	HH3/8-16X5	SCREW, HEX HEAD	8
8	130518C1	1" ID BRONZE BUSHING	2
9	HH1/4-20X3/4	SCREW, HEX HEAD	2

MATERIAL: -
 STOCK NO: -
 STOCK SIZE:
 MASS [LBS]:

FINISH:

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 440 S MCLEAN BLVD, ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 | WWW.CV-TEK.COM

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DRAWN	DATE	SCALE	SHEET
		1:4	1 OF 1

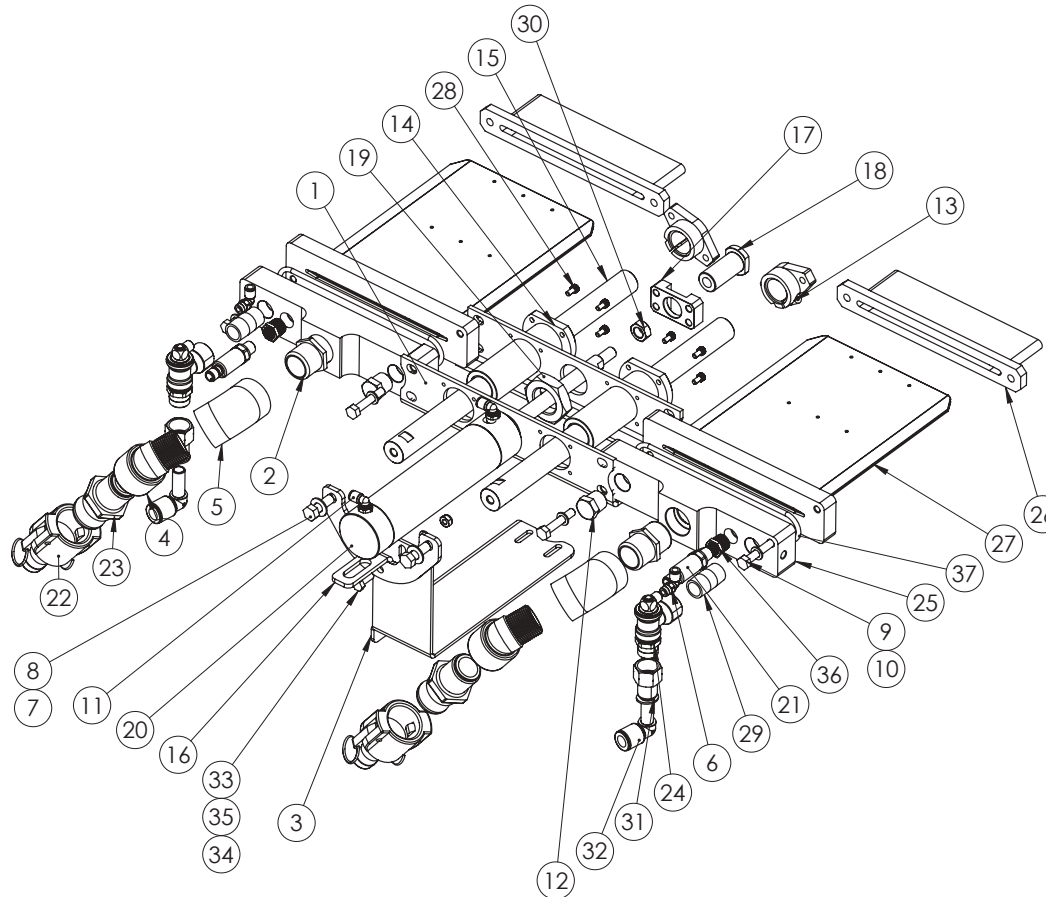
MPX5 BOTTOM JAW ASSEMBLY

DRAWING NO. **MA264-0027** REV **A**

MA264-0027 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	130505C1	MOVING SNORKLE STIFFENER	2
2	0007790-1-A	FITTING, CLOSE NIPPLE, 1" NPT BANJO	2
3	138239C1	MOUNT BRACKET	1
4	0008900-1-A	FTG ELBOW STREET 45 DEG 1" PP BLACK	2
5	74501101	1 NPT 45 DEG ELBOW PVC	2
6	269P-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/8 NPT	2
7	FW3/8-C	WASHER, FLAT	2
8	HH3/8-16X1-1/8	SCREW, HEX HEAD	2
9	HH5/16-18X1-3/4	SCREW, HEX HEAD	4
10	FW5/16-B	WASHER, FLAT	4
11	269P-04-04	FITTING TBG.ELB.1/4OD X 1/4NPT	2
12	SP1/2NPT	SP1/2NPT	2
13	0651-1313	SUPPORT.SHAFT.SS.1.0DIA.FLANGE MNT	2
14	0210-0693	SNORKEL GUIDE BEARING	2
15	0210-1506	SHAFT.HARD.1.00OD X 15.0LG.3/8-16TAP BE	2
16	132052C1	MOUNTING BRACKET, SNORKEL	1
17	B-0210-1508	PLATE, CYL BACKUP	1
18	130607C1	EXT MOUNT.CYL.SS.1/2-20	1
19	D-508-SS	NUT.MNTG.CYL.2.00BORE.SS	1
20	0210-0692	CYL.PC.DBL ACT.2.0BORE X 5.0STK	1
21	129923C1	PART-PT2400-DESC	2
22	0210-2234	FEMALE COUPLER 1"	2
23	0210-2235	MALE COUPLER 1"	2
24	0210-2257	LOCKOUT VALVE	2
25	C-0210-1938	SNORKEL MOUNTING BLOCK	2
26	130399C1	SNORKEL GUIDE X8	2
27	132858C1	WELDMENT SNORKEL (2PC) TUBE	2
28	112268C1	10-24 X 3/8 SOCKET HEAD CAP SC	8
29	SN1/2NPTX1-1/2	NIPPLE, 1/2" NPT X 1-1/2"	2
30	JN1/2-20	NUT, JAM	1
31	266P-08-08	CONNECTOR, FEMALE, 1/2OD X 1/2NPT	2
32	DEFAULT	ELBOW, PLUG-IN, 1/2OD	2
33	HH1/4-20X3/4	SCREW, HEX HEAD	1
34	LN1/4-20	NUT, LOCK	1
35	FW1/4-B	WASHER, FLAT	1
36	0012540-1-A	BUSHING, REDUCER 3/8" NPT X 1/4" NPT SS	2
37	0210-1510	O-RING GASKET	2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	JRS	2/21/24



MATERIAL: -
 STOCK NO: -
 STOCK SIZE:
 MASS [LBS]:

FINISH:

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 440 S MCLEAN BLVD, ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 | WWW.CV-TEK.COM

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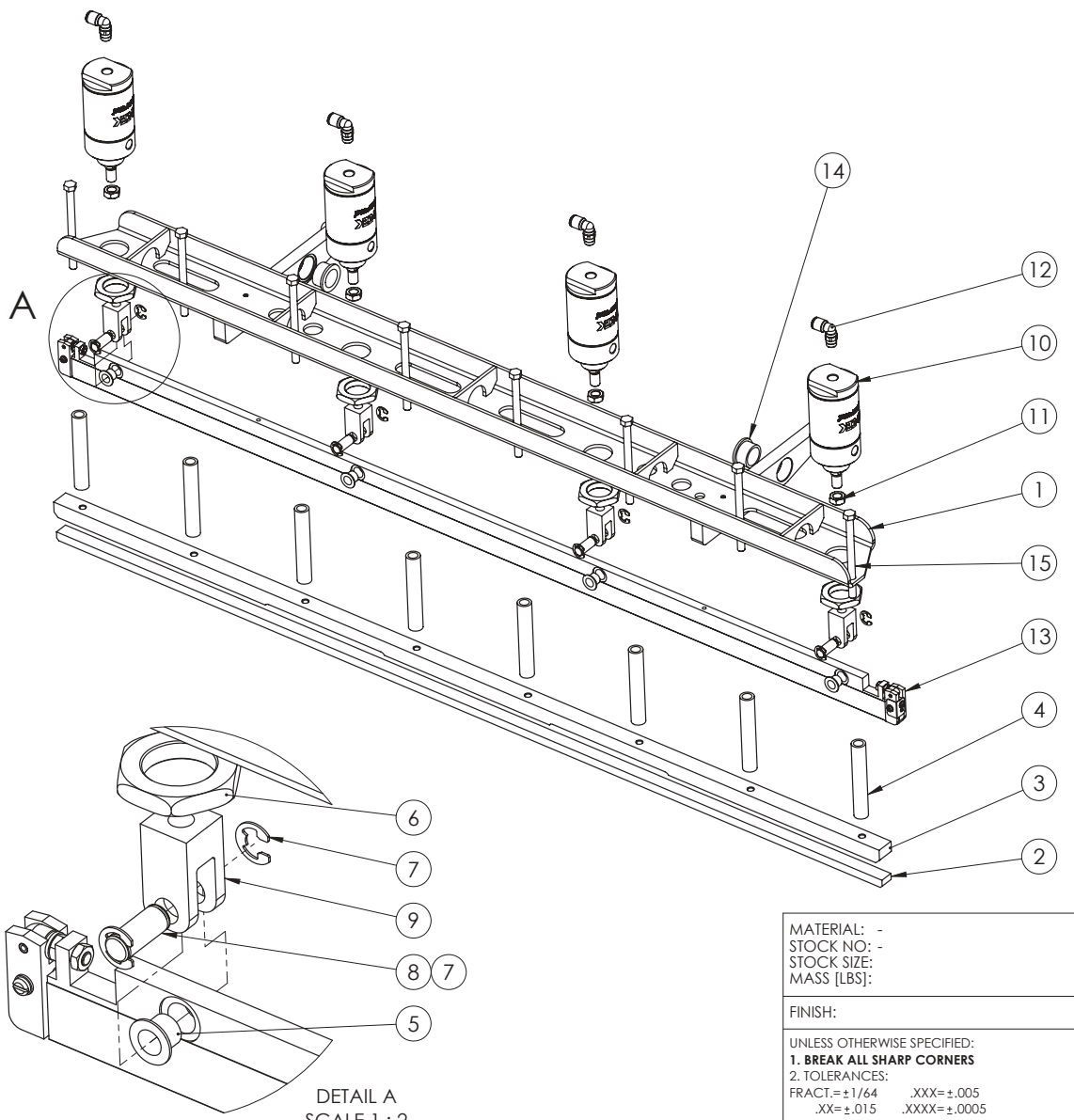
DRAWN	DATE	SCALE	SHEET
		1:5	1 OF 1

MPX5 SNORKEL ASSEMBLY

DRAWING NO.	REV
MA230-0002	A

MA230-0002 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/22/24	JRS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	130465C1	UPPER SUPPORT BAR WELDMENT	1
2	130463C1	RUBBER, SPONGE, 1/2"X3/4"X54"	1
3	130374C1	CLAMP BAR	1
4	130481C1	MOVING HEAD UPPER STANDOFF	8
5	79101201	FLNG BRNG 1/2ID 1/2 LNG	4
6	75117201	1-3/8-12 NUT CYLINDER MOUNT	4
7	75102201	E-RING RETAINER FOR 1/2 ROD #5133-50H	8
8	76102501A	PIN; SEAL BAR CLEVIS	4
9	130515C1	SHORT CLEVIS; HEAT SEAL BAR; M	4
10	73200101	CYLINDER; SEAL BAR	4
11	JN1/2-20	NUT, JAM	4
12	269P-06-04	FITTING.TBG.ELB.3/8OD X 1/4NPT	4
13	130386C1	ASSEMBLY TOP SEAL BAR	1
14	130518C1	1" ID BRONZE BUSHING	2
15	HH3/8-16X5	SCREW, HEX HEAD	8

DETAIL A
SCALE 1 : 2

MATERIAL: -
STOCK NO: -
STOCK SIZE: -
MASS [LBS]: -

FINISH:

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT.= ± 1/64 .XXX= ± .005
.XX= ± .015 .XXXX= ± .0005
ANGLES= ± 0°30'
DRILLED HOLE: STANDARD S.A.E.

CV-TEK
440 S MCLEAN BLVD, ELGIN, ILLINOIS 60123
PHONE: 847.741.3500 | WWW.CV-TEK.COM

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DRAWN	DATE	SCALE	SHEET
		1:6	1 OF 1

MPX5 TOP JAW ASSEMBLY

DRAWING NO. **MA264-0028** REV **A**

MA264-0028 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	130389C1	HEAT SEAL BAR X8	1
2	130393C1	TOP SEAL BAND 57"	1
3	0210-1754	JAW KIT, HEAVY DUTY	1
4	130392C1	DURIT STRIP 1/2" X 53" LG	1
5	130390C1	TEFLON TAPE 1/2" X 53" LG	1
6	130391C1	TAPE, TEFLON COVER 53"	1
7	JN1/4-20	NUT, JAM	4
8	FW1/4-B	WASHER, FLAT	2
9	B-0210-2182	COPPER STRAP	2

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	INITIAL RELEASE	1/19/2022	ME

D

D

C

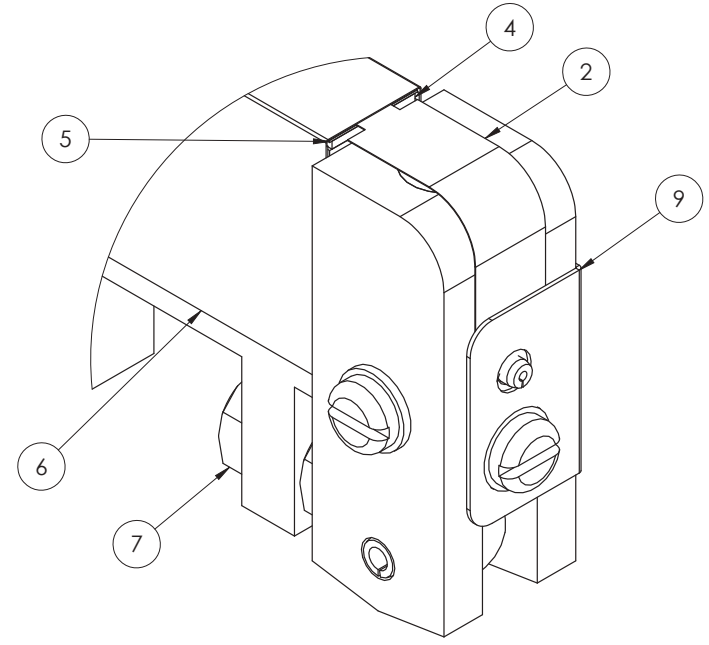
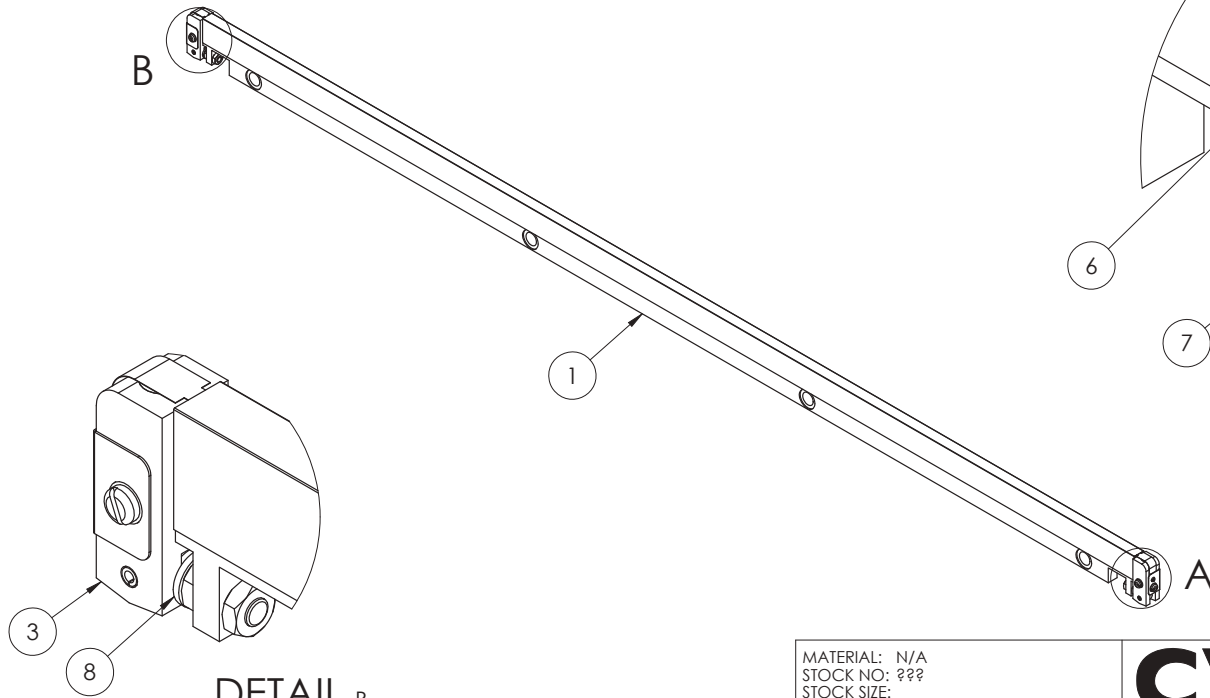
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B

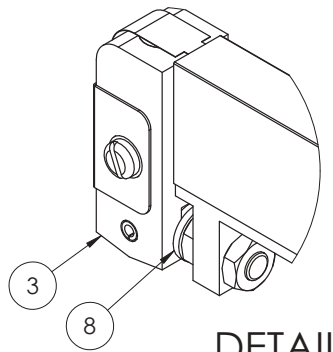
B

A

A



DETAIL A
SCALE 2 : 1



DETAIL B
SCALE 1 : 1

130386C1
REV A

MATERIAL: N/A
 STOCK NO: ???
 STOCK SIZE:
 MASS [LBS]:

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

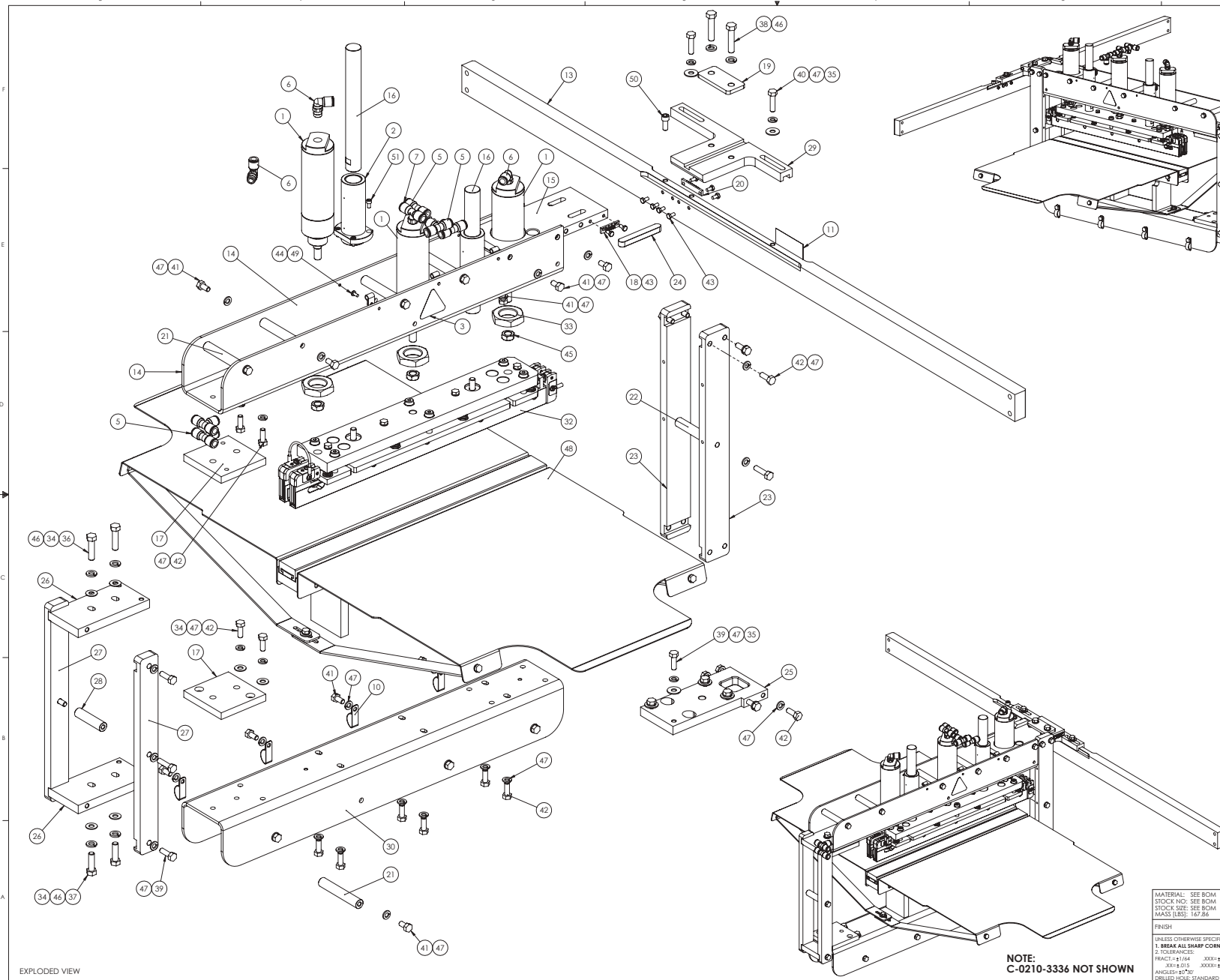
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DRAWN C. BABCOCK	DATE 8/4/11	SCALE 1:5	SHEET 1 OF 1
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ASSEMBLY
TOP SEAL BAR

DRAWING NO. 130386C1	REV A
--------------------------------	-----------------

8 7 6 5 4 3 2 1



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/21/2022	PV
B	INITIAL CREATION MA030-0021 DERIVED FROM 13350SC1	2/15/2024	SP

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-0475	CYL.PC.DBL ACT.2.0BORE X 3.0STK	3
2	0210-0717	BUSHING, FLANGED, 1" ID	2
3	0210-1031	WARNING, CUT HAZARD	2
4	0210-1094	RING TERMINAL	6
5	264P-06	UNION TEE NO BRASS	5
6	269P-06-04	FITTING.TBG.ELB.3/8OD X 1/4NPT	5
7	272P-06-04	FITTING TUBE TEE 3/8OD X 1/4NPT	1
8	0651-1280	UR MEASURING CABLE	1
9	3140-60-00	3/8 Y FITTING	2
10	5223T24	3/8" ID STRAP	1
11	8013-2107	WARNING LABEL, CRUSH HAZARD	1
12	9130-1765	FLOW CONTROL	2
13	131574C1	BAR, SUPPORT	1
14	133511C1	SIDE SEAL FRAME TOP	1
15	133762C1	SLIDE MOUNT WELDMENT	1
16	B-0210-0478	SHAFT, 1.DOD X 9 DLG.3/8-16TAP FLATS	2
17	B-0210-1060	BLOCK.SLIDE.SIDE SEAL BOTTOM	2
18	B-0210-1360	SCALE	1
19	B-0210-1926	CLAMP, PLATE	1
20	B-0210-1947	SCALE 2"	1
21	B-0210-1949	SPACER 3 3/4	8
22	B-0210-1950	SPACER 3 1/4	1
23	B-0210-1951	TIE PLATE 1	2
24	B-0210-1969	SLIDE KEY	1
25	B-0210-2553	PLATE, LOWER MOUNT, NARROW	1
26	B-0210-3291	POSITION PLATE	2
27	B-0210-3292	TIE BAR	2
28	B-0210-3293	SPACER 5/8 X 2.50	1
29	B-0210-3342	PLATE,OFF-SET DOUBLE SLIDE A	1
30	C-0210-1961	SIDE SEAL FRAME BOTTOM	1
31	C-0210-3336	ASSY,WIRE LOOM, TOP SEAL	1
32	MA263-0027	MPX5 SIDE SEAL W/KNIFE 22 IN ASSY	1
33	D-508-SS	NUT.MNTG.CYL.2.00BORE.SS	3
34	FWS/16-A	WASHER, FLAT	6
35	FWS/16-B	WASHER, FLAT	6
36	HH3/8-16X1-1/2	SCREW, HEX HEAD	2
37	HH3/8-16X1-1/4	SCREW, HEX HEAD	2
38	HH3/8-16X1-3/4	SCREW, HEX HEAD	2
39	HH5/16-18X1	SCREW, HEX HEAD	8
40	HH5/16-18X1-1/4	SCREW, HEX HEAD	22
41	HH5/16-18X5/8	SCREW, HEX HEAD	22
42	HH5/16-18X7/8	SCREW, HEX HEAD	18
43	HH10-32X3/8	SCREW, HEX HEAD	11
44	IT-12-504	CLAMP, PLASTIC, 1/4"	3
45	JN1/2-20	NUT, JAM	3
46	LW3/8	WASHER, LOCK	6
47	LW5/16	WASHER, LOCK	54
48	MA030-0025	MPX5 SIDE SEAL GUIDE ASSEMBLY	1
49	PH8-32X3/8	SCREW, PAN HEAD	3
50	SH5/16-18X3/4	SCREW, SOCKET HEAD	1
51	SH10-32X3/8	SCREW, SOCKET HEAD	8

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 167.86

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTION: ±.0004 XXX±.0005
 DECIMAL: ±.015 XXX±.0005
 ANGLES: ±0°00'
 DRILLED HOLES: STANDARD S.A.E.

NOTE:
 C-0210-3336 NOT SHOWN

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 NARROW SIDE SEAL ASSEMBLY

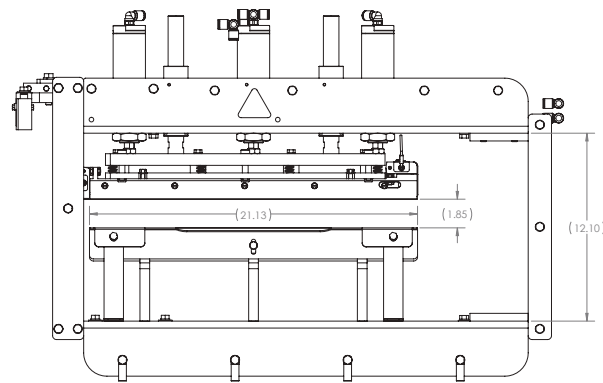
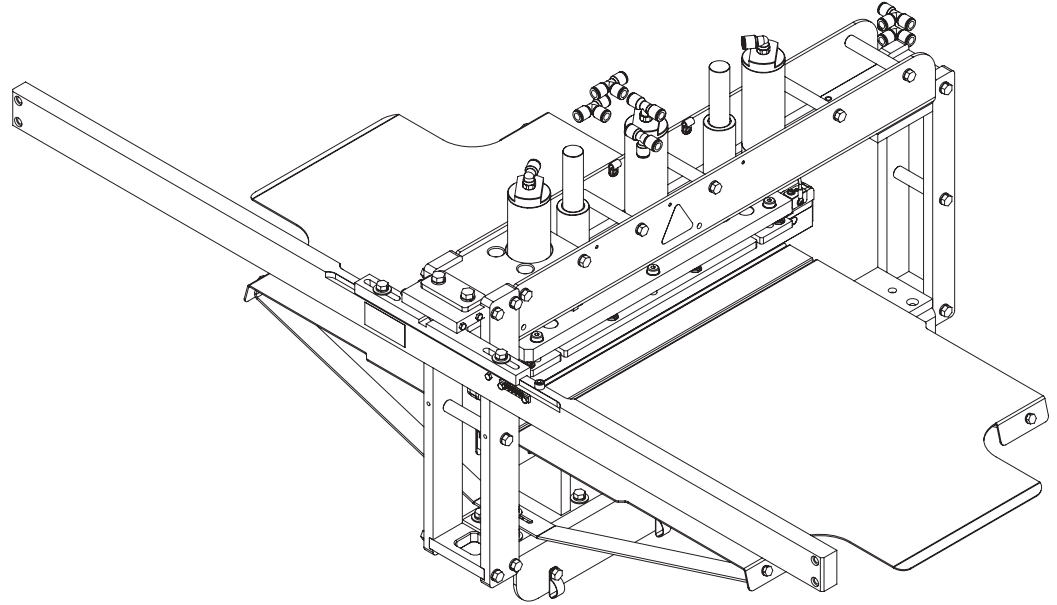
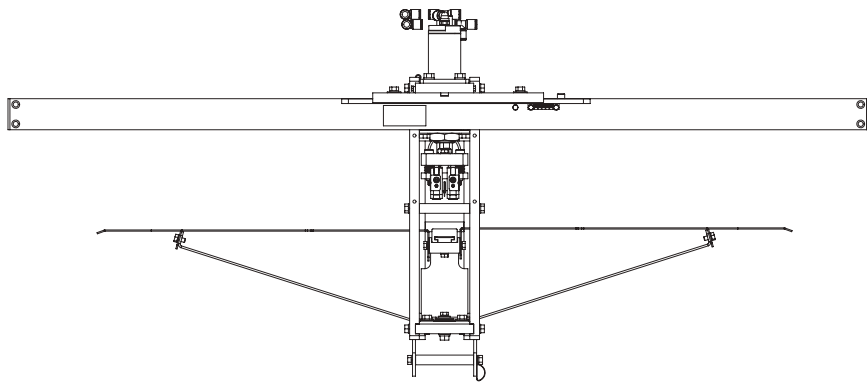
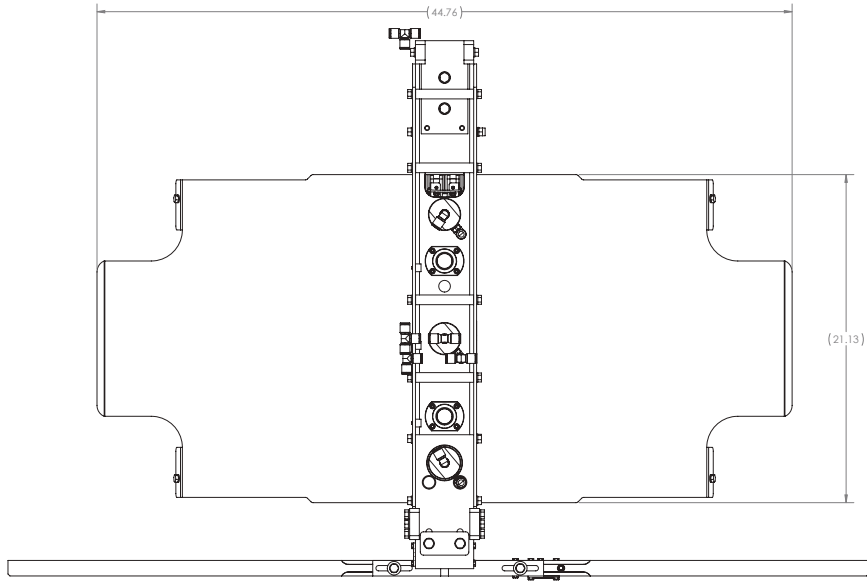
DRAWING NO. MA030-0021 REV. B

DRAWN BY PV DATE 9/21/2022 SCALE 1:4 SHEET 1 OF 3

EXPLODED VIEW

MA030-0021 REV B

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/21/2022	PV
B	INITIAL CREATION MA030-0021 DERIVED FROM 133505C1	2/15/2024	SP



STANDARD VIEWS

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 167.86

FINISH
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT-- ±1/64XXX±.005
 DEC-- ±0.012XXX±.005
 ANGLES-- ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
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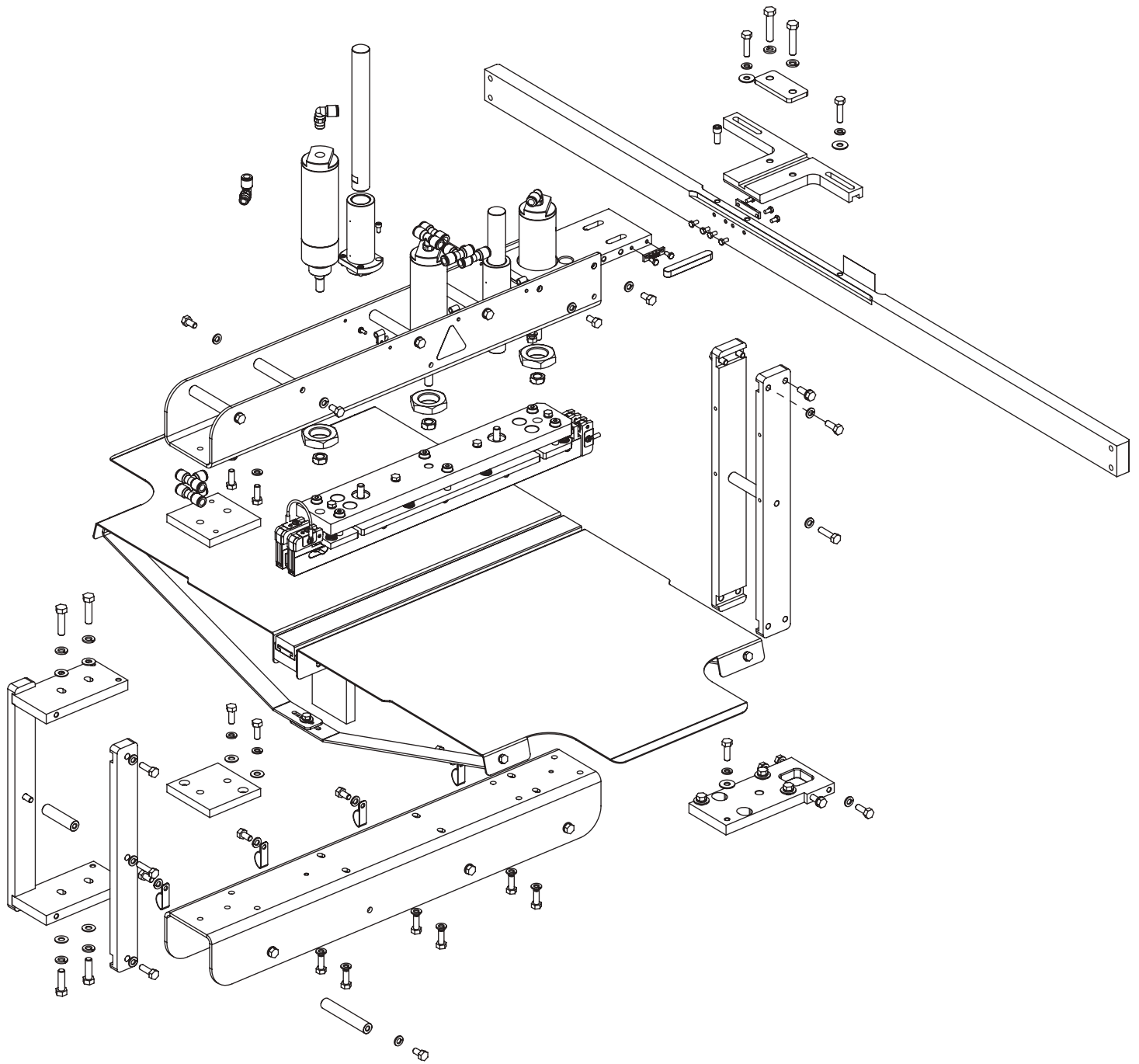
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DRAWN	DATE	SCALE	SHEET
PV	9/21/2022	1:4	2 OF 3

MPX5 NARROW
 SIDE SEAL ASSEMBLY

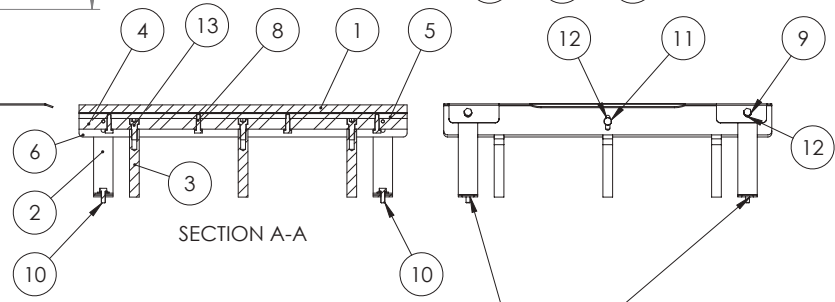
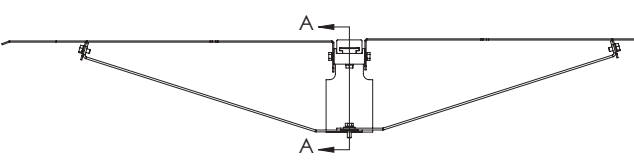
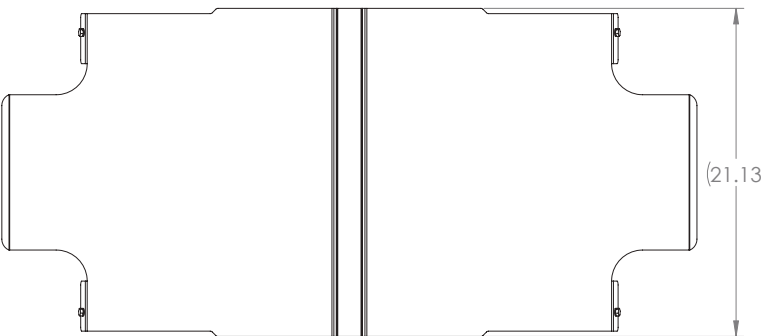
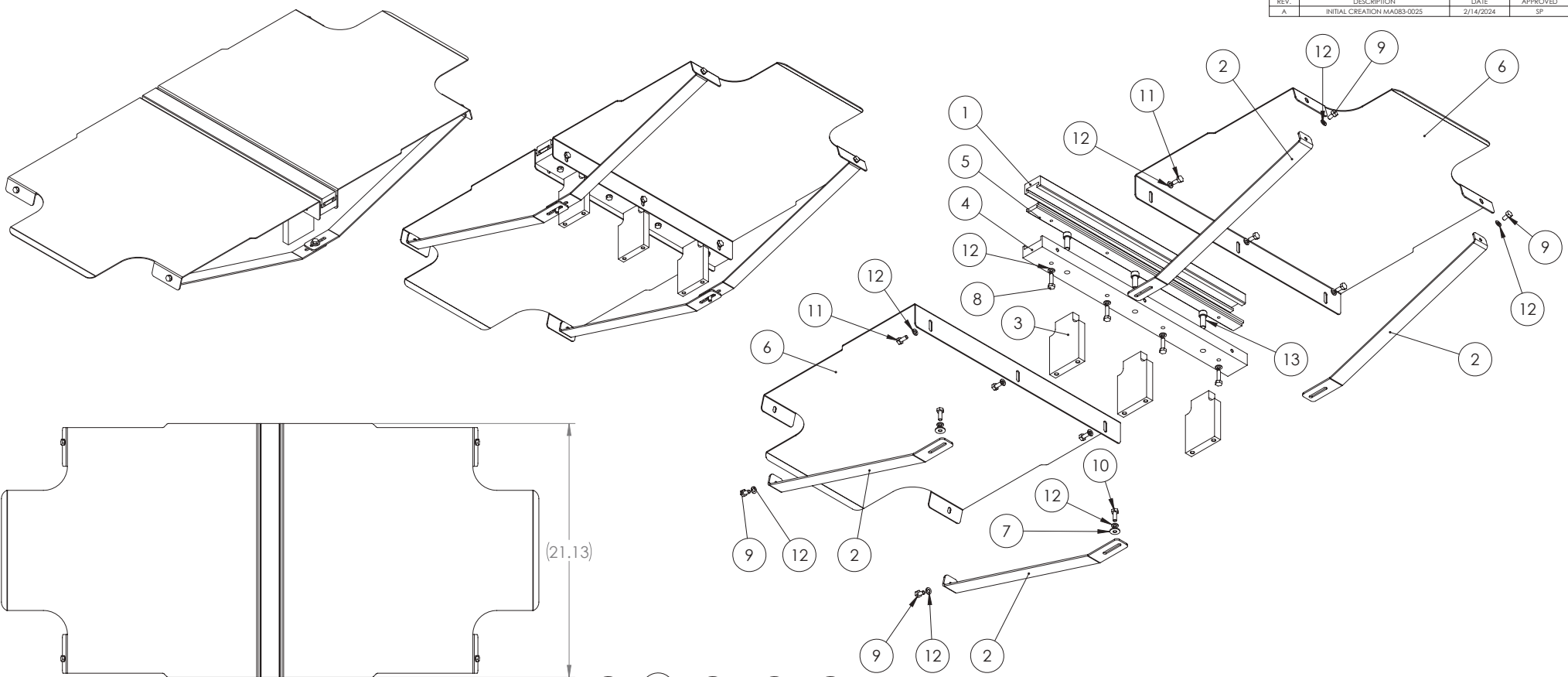
DRAWING NO.	REV
MA030-0021	B

MA030-0021 REV B



NOTE: C-0210-3336 NOT SHOWN

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL CREATION MA030-0025	2/14/2024	SP



- MOUNT TO C-0210-1961
SIDE SEAL BOTTOM FRAME
- SEE PARENT ASSEMBLY MA030-0021

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	B-0210-0516-2	RUBBER,C-CHANNEL,SILC,25-30D WHT.	1
2	B-0210-1945	GUIDE SUPPORT	4
3	B-0210-3068	SUPPORT MOUNT RUBBER	3
4	C-0210-1963	MOUNT,RUBBER,W/KNIFE	1
5	C-0210-1968	BAR,RUBBER BACKUP	1
6	D-0210-1971	GUIDE,SIDE SEAL-NXG	2
7	FW1/4-8	WASHER, FLAT	2
8	HH1/4-20X1	SCREW, HEX HEAD	4
9	HH1/4-20X1/2	SCREW, HEX HEAD	4
10	HH1/4-20X3/4	SCREW, HEX HEAD	2
11	HH1/4-20X5/8	SCREW, HEX HEAD	6
12	LW1/4	WASHER, LOCK	16
13	SH3/8-16X1	SCREW, SOCKET HEAD	3

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK QTY: SEE BOM
MASS [LBS]: 35.35

CV-TEK
1675 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 SIDE SEAL
GUIDE ASSEMBLY

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT: ±.104 .003±.005
DIM: ±.015 .003±.005
ANGLES: ±0°30'
DRILLED HOLES: STANDARD S.A.E.

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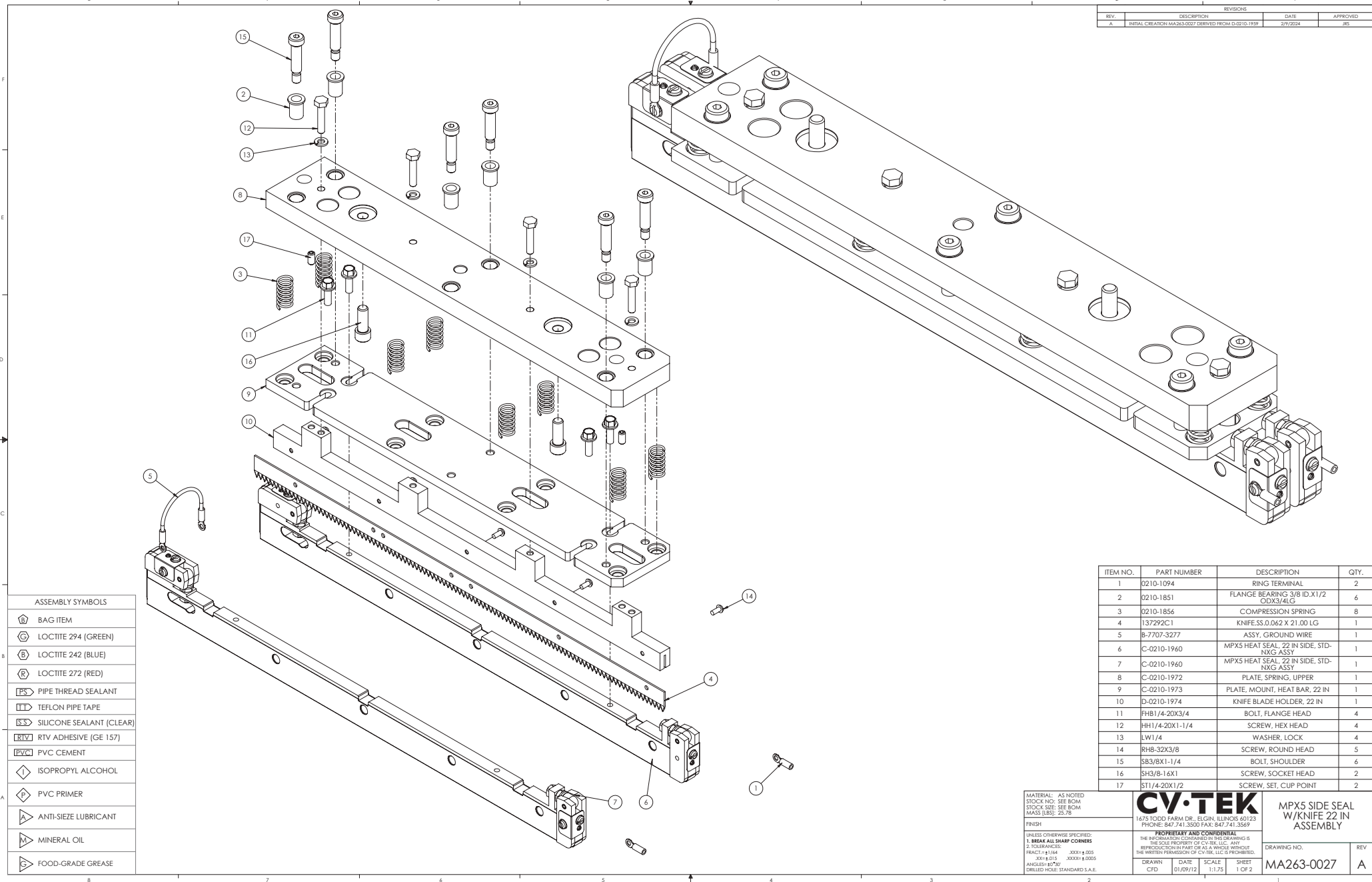
DRAWING NO.
MA030-0025

REV
A

DRAWN: SP DATE: 2/15/24 SCALE: 1:4 SHEET: 1 OF 1

MA030-0025 (REV)A

REV	DESCRIPTION	DATE	APPROVED
A	INITIAL CREATION MA263-0027 DERIVED FROM D-0210-1999	2/9/2024	JES



ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SIEZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1094	RING TERMINAL	2
2	0210-1851	FLANGE BEARING 3/8 ID, X1/2 ODX3/4LG	6
3	0210-1856	COMPRESSION SPRING	8
4	137292C1	KNIFE, SS, 0.062 X 21.00 LG	1
5	B-7707-3277	ASSY, GROUND WIRE	1
6	C-0210-1960	MPX5 HEAT SEAL, 22 IN SIDE, STD-NXG ASSY	1
7	C-0210-1960	MPX5 HEAT SEAL, 22 IN SIDE, STD-NXG ASSY	1
8	C-0210-1972	PLATE, SPRING, UPPER	1
9	C-0210-1973	PLATE, MOUNT, HEAT BAR, 22 IN	1
10	D-0210-1974	KNIFE BLADE HOLDER, 22 IN	1
11	FH81/4-20X3/4	BOLT, FLANGE HEAD	4
12	HH1/4-20X1-1/4	SCREW, HEX HEAD	4
13	LW1/4	WASHER, LOCK	4
14	RH8-32X3/8	SCREW, ROUND HEAD	5
15	SB3/8X1-1/4	BOLT, SHOULDER	6
16	SH3/8-16X1	SCREW, SOCKET HEAD	2
17	ST1/4-20X1/2	SCREW, SET, CUP POINT	2

MATERIAL: AS NOTED
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 25.78

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.0004 XXXX ±.0005
 DECIMALS: ±.015 XXXX ±.0005
 ANGLES: ±0°30'
 HIDDEN HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 SIDE SEAL W/KNIFE 22 IN ASSEMBLY

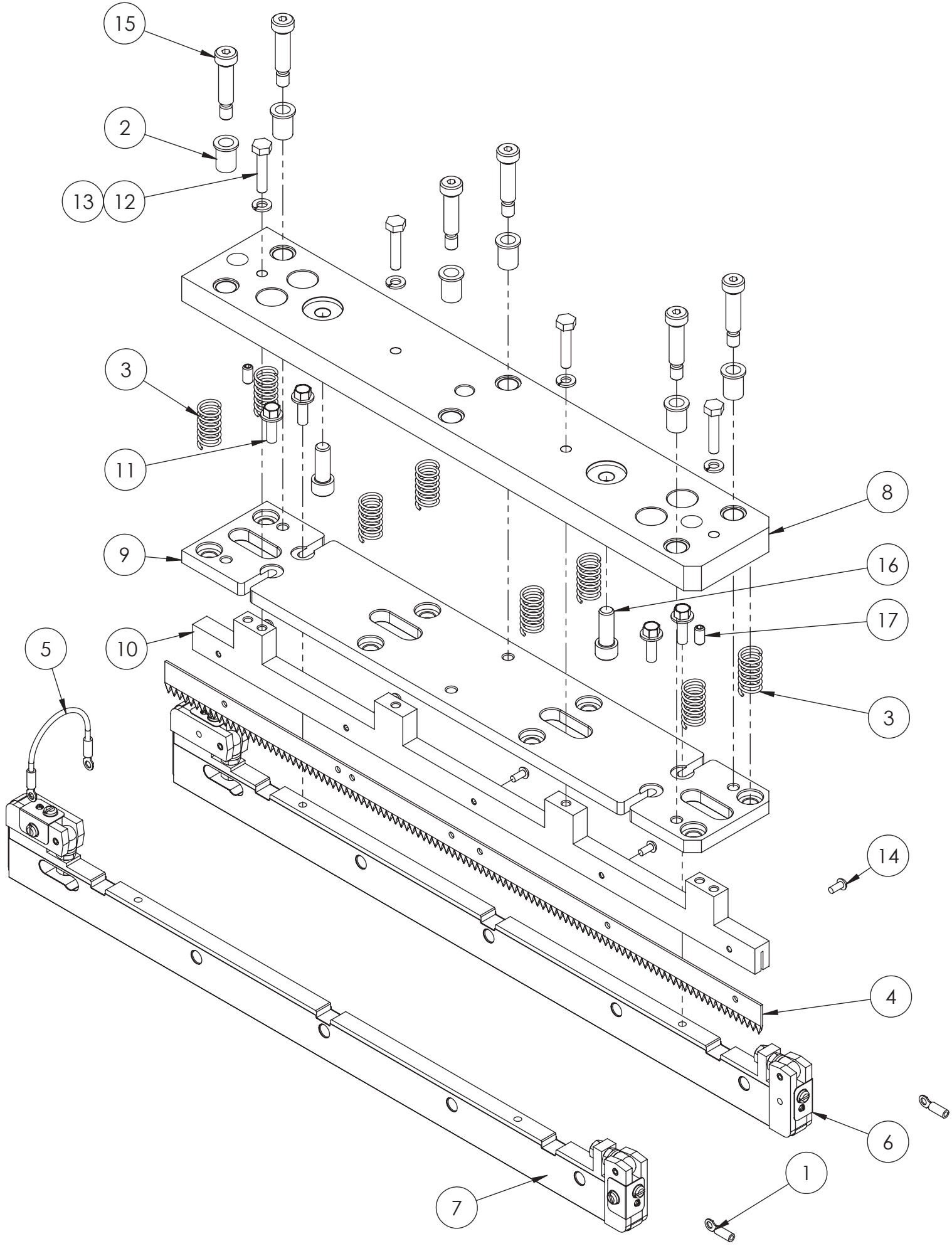
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DRAWING NO. MA263-0027
 SHEET 1 OF 2

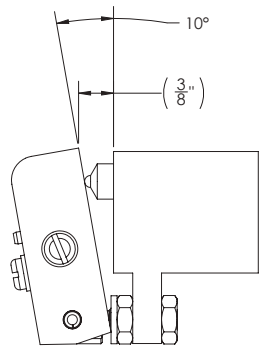
DATE 01/09/12
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REV A

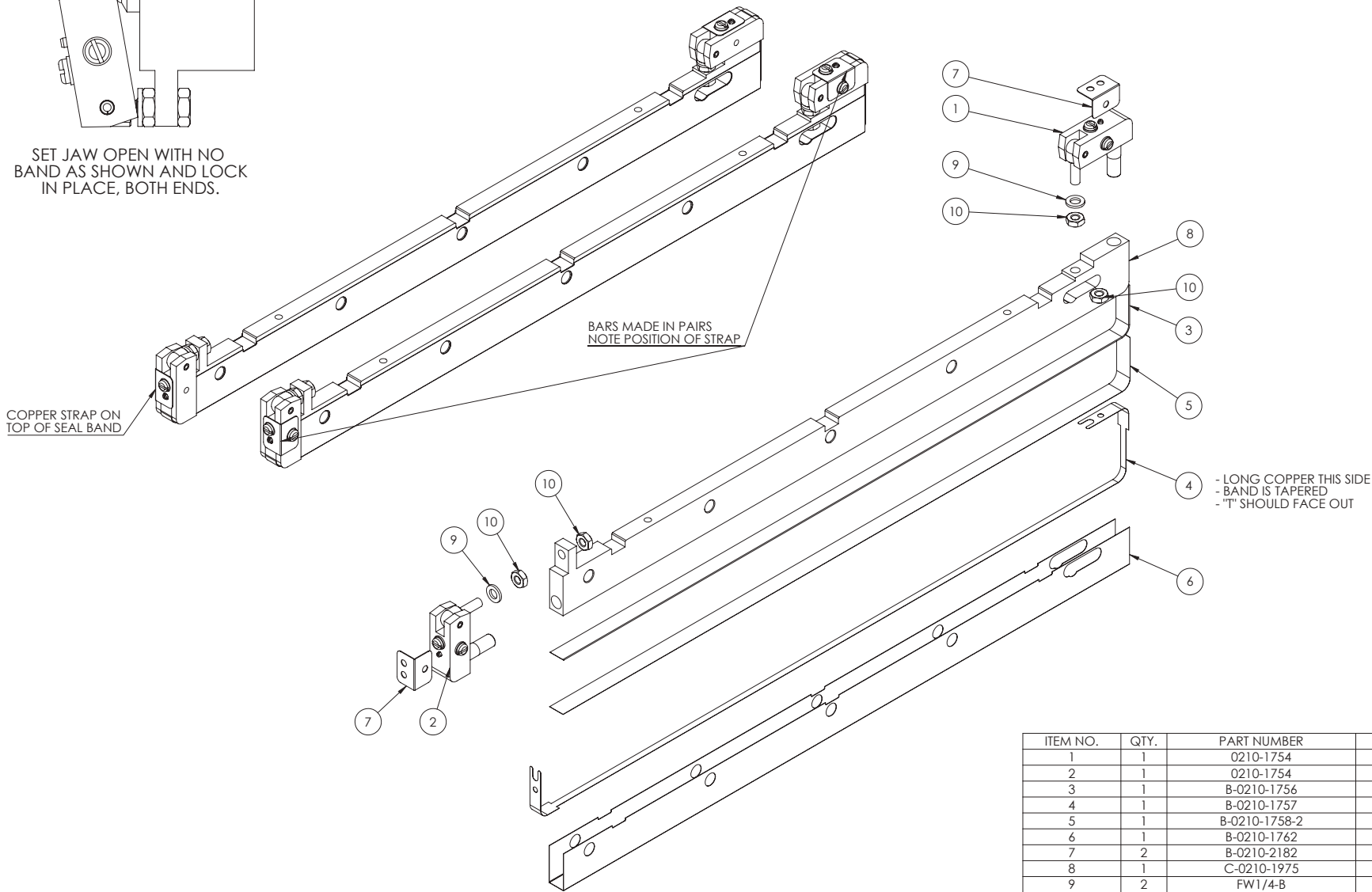
MA263-0027 REV2A



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	08-04-11	CFD
B	ADDED LEFT HAND AND RIGHT HAND CONFIGURATION BASED ON C-0210-1821 REFERENCE	2/15/2024	SP



SET JAW OPEN WITH NO BAND AS SHOWN AND LOCK IN PLACE, BOTH ENDS.



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	0210-1754	JAW KIT, HEAVY DUTY
2	1	0210-1754	JAW KIT, HEAVY DUTY
3	1	B-0210-1756	INSULATOR 24" X 12MM
4	1	B-0210-1757	SIDE HEAT SEAL BAND
5	1	B-0210-1758-2	TEFLON TAPE 1/2" X 22" LG
6	1	B-0210-1762	TEFLON TAPE COVER 22"
7	2	B-0210-2182	COPPER STRAP
8	1	C-0210-1975	BAR, HEAT SEAL, SIDE
9	2	FW1/4-B	WASHER, FLAT
10	4	JN1/4-20	NUT, JAM

MATERIAL: AS NOTED
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 3.74

FINISH AS NOTED

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

MPX5 HEAT SEAL
 22 IN SIDE, STD-NXG
 ASSEMBLY

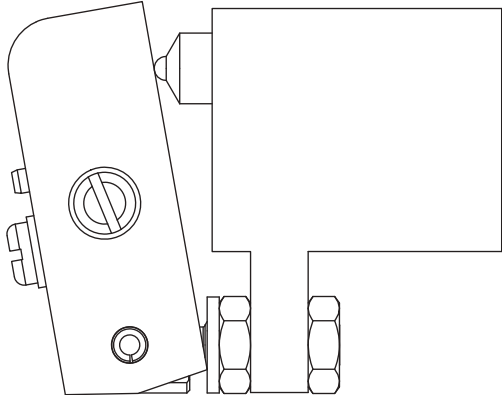
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DRAWN CFD	DATE 01-17-12	SCALE 1:2	SHEET 1 OF 1
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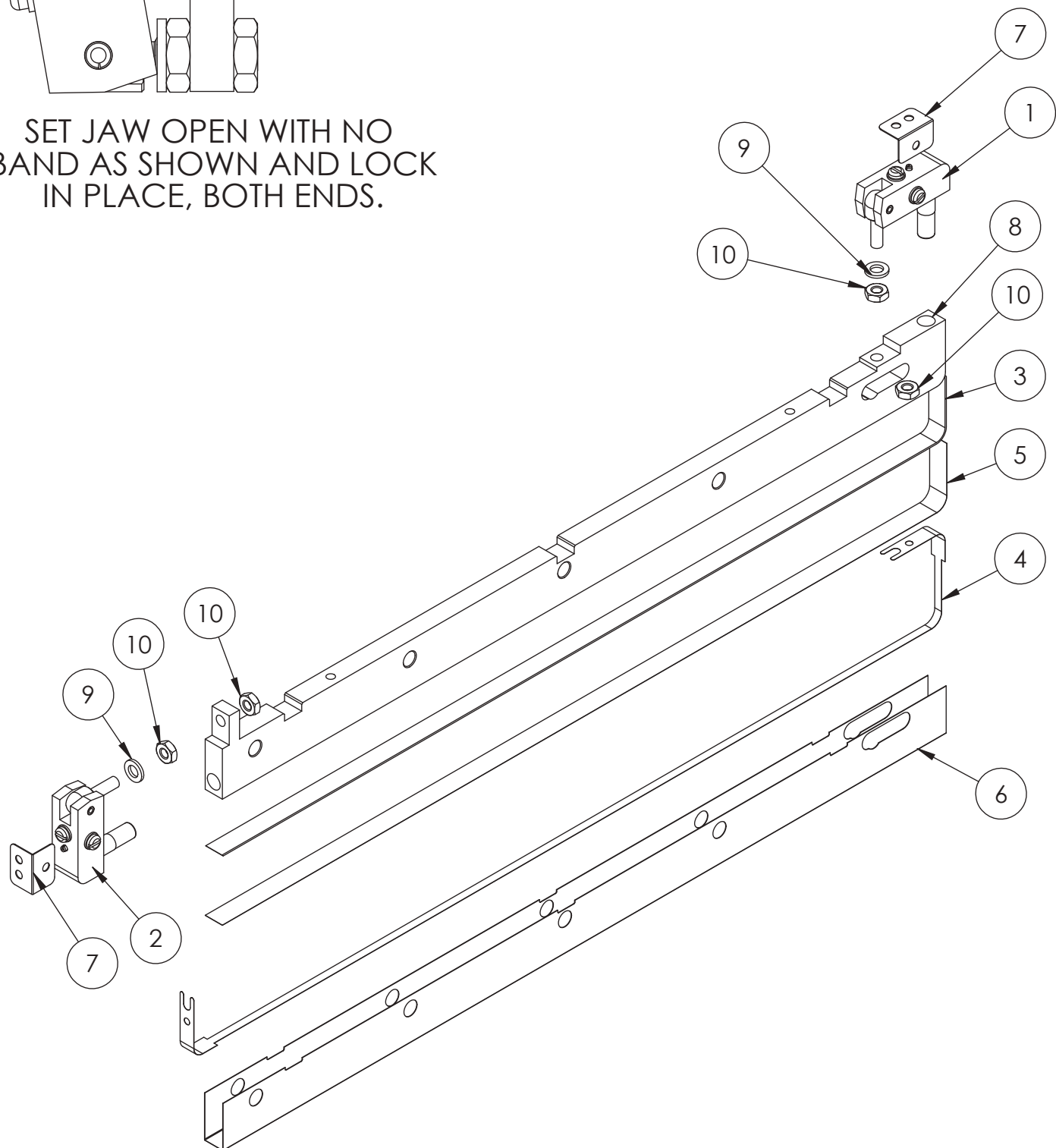
DRAWING NO.
0210-1960

REV
A

10°
($\frac{3}{8}$ ")



SET JAW OPEN WITH NO
BAND AS SHOWN AND LOCK
IN PLACE, BOTH ENDS.



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	3/2/18	C. BABCOCK

SIDE SEAL


- CUT MLW10AWG INTO (2) PIECES, 15' LONG EACH. CUT 0651-1280 TO 15' LONG.
- STRIP 3' OF BLUE JACKET FROM 0651-1280.
- LABEL BOTH ENDS OF (1) PIECE OF MLW10AWG "131". LABEL BOTH ENDS OF THE OTHER PIECE "132".
- CUT (4) PIECES OF 1/4" HEAT SHRINK TUBING AT 18" LONG.
- INSERT 0651-1280, CABLE #1 INTO ONE OF THE 1/4" HEAT SHRINK TUBING PIECES. INSERT THE WIRE LABELED "131" INTO THE SAME PIECE OF HEAT SHRINK TUBING. PLACE TUBING EVEN WITH END OF THE JACKET. USE HEAT GUN TO SHRINK THE TUBING.
- INSERT CABLE #1 AND WIRE 131. INTO A SECOND PIECE OF 1/4" HEAT SHRINK TUBING, OVERLAPPING THE FIRST PIECE OF TUBING, AND LEAVING 2" OF EXPOSED WIRE. USE HEAT GUN TO SHRINK THE SECOND PIECE OF TUBING.
- REPEAT STEP 5 AND 6 WITH 0651-1280, CABLE #2 AND THE WIRE LABELED "132".
- CUT A 2" LONG PIECE OF 3/8" HEAT SHRINK TUBING. INSTALL THIS PIECE CENTERED ON JUNCTION OF THE BLUE JACKET AND THE TWO HEAT SHRINKED WIRE/CABLE PAIRS. USE HEAT GUN TO SHRINK THE TUBING.
- CUT (2) PIECES OF 1/4" HEAT SHRINK TUBING 6" LONG. PLACE ONE PIECE ON EACH WIRE/CABLE PAIR. THESE WILL BE USED TO COVER THE RING TERMINAL CRIMP.
- STRIP 1/2" OF INSULATION FROM WIRES/CABLES. WRAP 18 GA WIRE OVER 10 GA WIRE. INSERT WIRE PAIR INTO RING TERMINAL AND CRIMP.
- POSITION THE HEAT SHRINK TUBE FROM STEP 9 SO THAT IT COVERS THE RING TERMINAL CRIMP AND SHRINK THE TUBING. RELABEL THE OUTSIDE OF THE HEAT SHRINK TUBING WITH THE CORRESPONDING WIRE NUMBER.
- REPEAT WITH THE SECOND WIRE/CABLE PAIR.

TOP SEAL

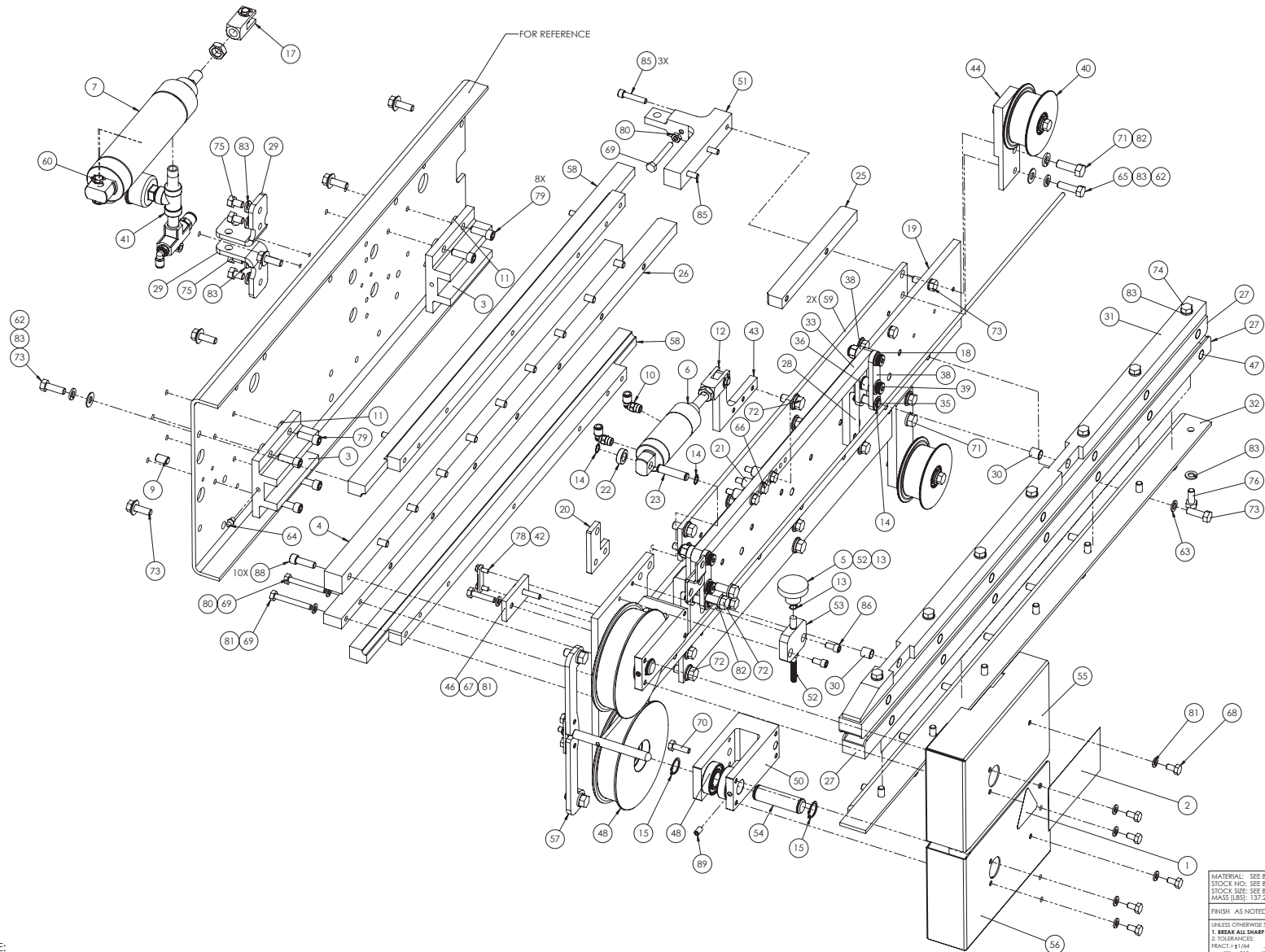
- CUT MLW10AWG INTO (2) PIECES, 25' LONG EACH. CUT 0651-1280 TO 25' LONG.
- STRIP 3' OF BLUE JACKET FROM 0651-1280.
- LABEL BOTH ENDS OF (1) PIECE OF MLW10AWG "141". LABEL BOTH ENDS OF THE OTHER PIECE "142".
- CUT (4) PIECES OF 1/4" HEAT SHRINK TUBING AT 18" LONG.
- INSERT 0651-1280, CABLE #1 INTO ONE OF THE 1/4" HEAT SHRINK TUBING PIECES. INSERT THE WIRE LABELED "141" INTO THE SAME PIECE OF HEAT SHRINK TUBING. PLACE TUBING EVEN WITH END OF THE JACKET. USE HEAT GUN TO SHRINK THE TUBING.
- INSERT CABLE #1 AND WIRE 141. INTO A SECOND PIECE OF 1/4" HEAT SHRINK TUBING, OVERLAPPING THE FIRST PIECE OF TUBING, AND LEAVING 2" OF EXPOSED WIRE. USE HEAT GUN TO SHRINK THE SECOND PIECE OF TUBING.
- REPEAT STEP 5 AND 6 WITH 0651-1280, CABLE #2 AND THE WIRE LABELED "142".
- CUT A 2" LONG PIECE OF 3/8" HEAT SHRINK TUBING. INSTALL THIS PIECE CENTERED ON JUNCTION OF THE BLUE JACKET AND THE TWO HEAT SHRINKED WIRE/CABLE PAIRS. USE HEAT GUN TO SHRINK THE TUBING.
- CUT (2) PIECES OF 1/4" HEAT SHRINK TUBING 6" LONG. PLACE ONE PIECE ON EACH WIRE/CABLE PAIR. THESE WILL BE USED TO COVER THE RING TERMINAL CRIMP.
- STRIP 1/2" OF INSULATION FROM WIRES/CABLES. WRAP 18 GA WIRE OVER 10 GA WIRE. INSERT WIRE PAIR INTO RING TERMINAL AND CRIMP.
- POSITION THE HEAT SHRINK TUBE FROM STEP 9 SO THAT IT COVERS THE RING TERMINAL CRIMP AND SHRINK THE TUBING. RELABEL THE OUTSIDE OF THE HEAT SHRINK TUBING WITH THE CORRESPONDING WIRE NUMBER.
- REPEAT WITH THE SECOND WIRE/CABLE PAIR.



OPTIONS:
 -0: SIDE SEAL
 -1: TOP SEAL

ITEM NO.	-0/QTY.	-1/QTY.	PART NUMBER	DESCRIPTION	NOTES
1	30	50	MLW10AWG	WIRE, 18AWG, YELLOW	
2	15	25	0651-1280	UR MEASURING CABLE	
3	2	2	0651-1494	TERMINAL RING	
MATERIAL: AS NOTED STOCK NO: STOCK SIZE: MASS [LBS]:			<div style="text-align: center;">  <p>1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: (630) 852-1190 FAX: (630) 852-1386</p> </div>		
FINISH					
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT.= ±1/64 .XXX= ±.005 .XX= ±.015 .XXXX= ±.0005 ANGLES= ±0°30' DRILLED HOLE: STANDARD S.A.E.			PROPRIETARY AND CONFIDENTIAL <small>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.</small>		
			DRAWN C. BABCOCK	DATE 3/2/18	SCALE 1:1
			SHEET 1 OF 1	ASS'Y, WIRE LOOM, SIDE/TOP SEAL DRAWING NO. 0210-3336	
					REV

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/12/2022	PV
B	DELETED: 0210-1616, 0210-1617; ADDED: 137842C1, 137847C1	10/5/2023	PV
C	INITIAL CREATION MA035-0004 DERIVED FROM 131686C1	2/21/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	0210-1031	WARNING, CUT HAZARD	1
2	0210-1035	WARNING GUARD MOUNT PLACE	1
3	0210-1350	LINEAR BRG BLK	2
4	0210-1351	LINEAR BRG RAIL	1
5	0210-1364	KNOB 5/16 DIA ID	1
6	0210-1365	BIMBA #PC-171-DXPW, 1/2 BORE X 1 STR	1
7	0210-1368	2 BORE X 4 STR	1
8	0210-1528	1/4 X 5/8 DOWEL PIN	8
9	0210-2625	DOWEL PIN 3/8 DIA X 5/8 LG	4
10	269P-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/8 NPT	2
11	0750-1080	WASHER 11/32ID X 3/4OD X 1/8 THK.	11
12	0750-238	CLEVIS CYL 1.50BORES	1
13	5100-31H	CLIP, RETAINER S.S.	1
14	5100-37H	CLIP, RETAINER S.S.	6
15	7707-161	RING, RETAINING 3/4" OD	4
16	7707-241B	BREATHER VENT, 1/4NPT	1
17	8013-1785	CLEVIS CYL 2.02BORES	1
18	108501C1	PLASTIC FLANGE BUSHING, .375 ID, .469 OD, .687 FLANGE DIAMETER, .250 LONG, IGLIDE 280	12
19	131702C1	SLIDE BASE	1
20	131721C1	CLEVIS CYL END PLATE	1
21	131724C1	SPACER 5/16" ID X 1/2" OD X 1/2" LG	3
22	131731C1	SPACER 3/4 OD, .433" ID, 1/4 LG	1
23	13311C1	PIVOT PIN, .375 DIA X 1.64" LG	1
24	134902C1	TENSION CYL BRKT	1
25	13784C1	BAR #2	1
26	137847C1	BAR	2
27	139001C1	BACKUP FLEX JAW	1
28	139002C1	UPRIGHT SUPPORT	2
29	139003C1	ANGLE BRACKET, CYL MOUNT	2
30	139004C1	BEARING SLEEVE 3/8ID X 2.02 OD 1/2 LG	4
31	139005C1	THRUSTER PLATE FLEX JAW	1
32	139006C1	MPX5 GUIDE RAIL SUPPORT WELD	1
33	139010C1	LINK BAR	1
34	139011C1	THRUST WASHER 3/8ID X 3/4OD	2
35	139012C1	PIVOT PIN, .375 DIA X 1.31" LG	2
36	139013C1	SPACER 3/8" ID X 5/8" OD X 13/32" LG	2
37	139014C1	5/16-18 LOCKNUT, HEAVY, SS 18-8	2
38	139015C1	SEALING HEAD UPPER LINK	4
39	139016C1	3/8 X 1 1/2 SHOULDER SCREW	4
40	B-0210-0599-1	IDLER PULLEY ASSEM W/O KEEPER	2
41	B-0210-1334	REGULATED DUMP VALVE	1
42	B-0210-1360	SCALE	1
43	B-0210-1489	CLEVIS LINK	1
44	B-0210-1519	BRACKET IDLER #1	1
45	B-0210-1520	BRACKET IDLER #2	1
46	B-0210-1521	CLAMP PLATE 2 HOLE	1
47	B-0210-1549	NUT, BARREL 5/16-18	14
48	B-0210-2178	ASSY PLASTIC TAIL PULLEY 5.08 DIA.	2
49	C-0210-1348	CLEVIS TOP	1
50	C-0210-1349	CLEVIS	1
51	C-0210-1356	CLEVIS BACK SIDE	1
52	C-0210-1361	ADJ JUSTABLE STUD	1
53	C-0210-1362	ADJ STUD RET BLK	1
54	C-0210-1373	SHAP, 7/8 DIA X 2.63 LG	2
55	C-0210-1522	GUARD #1	1
56	C-0210-1523	GUARD #2	1
57	C-0210-2661	ASSEMBLY SPREADER BAR	1
58	D-0210-1369	SPACER RAIL	2
59	D-0210-1370	FRAME MOUNTING PLATE	2
60	D-55205-SS	BRACKET PIVOT SS 2.0 BORE CYL	1
61	FW3/8-C	WASHER, FLAT	4
62	FW5/16-A	WASHER, FLAT	20
63	FW5/16-B	WASHER, FLAT	9
64	CF 1/4-28	FITTING, GREASE, STR, THREAD	2
65	HBOLT 0.3125-18X1.125X1.125-N	SCREW, HEX HEAD	2
66	HH1/4-20X1-1/2	SCREW, HEX HEAD	3
67	HH1/4-20X1-1/4	SCREW, HEX HEAD	3
68	HH1/4-20X1/2	SCREW, HEX HEAD	6
69	HH1/4-20X2	SCREW, HEX HEAD	3
70	HH1/4-20X7/8	SCREW, HEX HEAD	1
71	HH3/8-16X1 1/8	SCREW, HEX HEAD	2
72	HH5/8-16X7/8	SCREW, HEX HEAD	6
73	HH5/16-18X1	SCREW, HEX HEAD	19
74	HH5/16-18X1-3/8	SCREW, HEX HEAD	7
75	HH5/16-18X1/2	SCREW, HEX HEAD	4
76	HH5/16-18X3/4	SCREW, HEX HEAD	7
77	HH5/16-18X7/8	SCREW, HEX HEAD	8
78	HH10-32X1/2	SCREW, HEX HEAD	2
79	HX-SHCS 0.3125-18x0.875x0.975-N	SCREW, SOCKET HEAD CAP	8
80	JN1/4-20	NUT, JAM	1
81	LW1/4	WASHER, LOCK	16
82	LW3/8	WASHER, LOCK	8
83	LW5/16	WASHER, LOCK	41
84	LW10	WASHER, LOCK	2
85	SH1/4-20X1-1/4	SCREW, SOCKET HEAD CAP	3
86	SH1/4-20X1/2	SCREW, SOCKET HEAD CAP	2
87	SH1/4-20X7/8	SCREW, SOCKET HEAD	4
88	SH5/16-18X1	SCREW, SOCKET HEAD	10
89	SH1/4-20X1/2	SCREW, SET, CLIP POINT	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 137.258

FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.0004 XXXX ±.005
 DECIMALS: XXXX ±.0005
 ANGLES: ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX35 BELT TAKE-UP ASSEMBLY

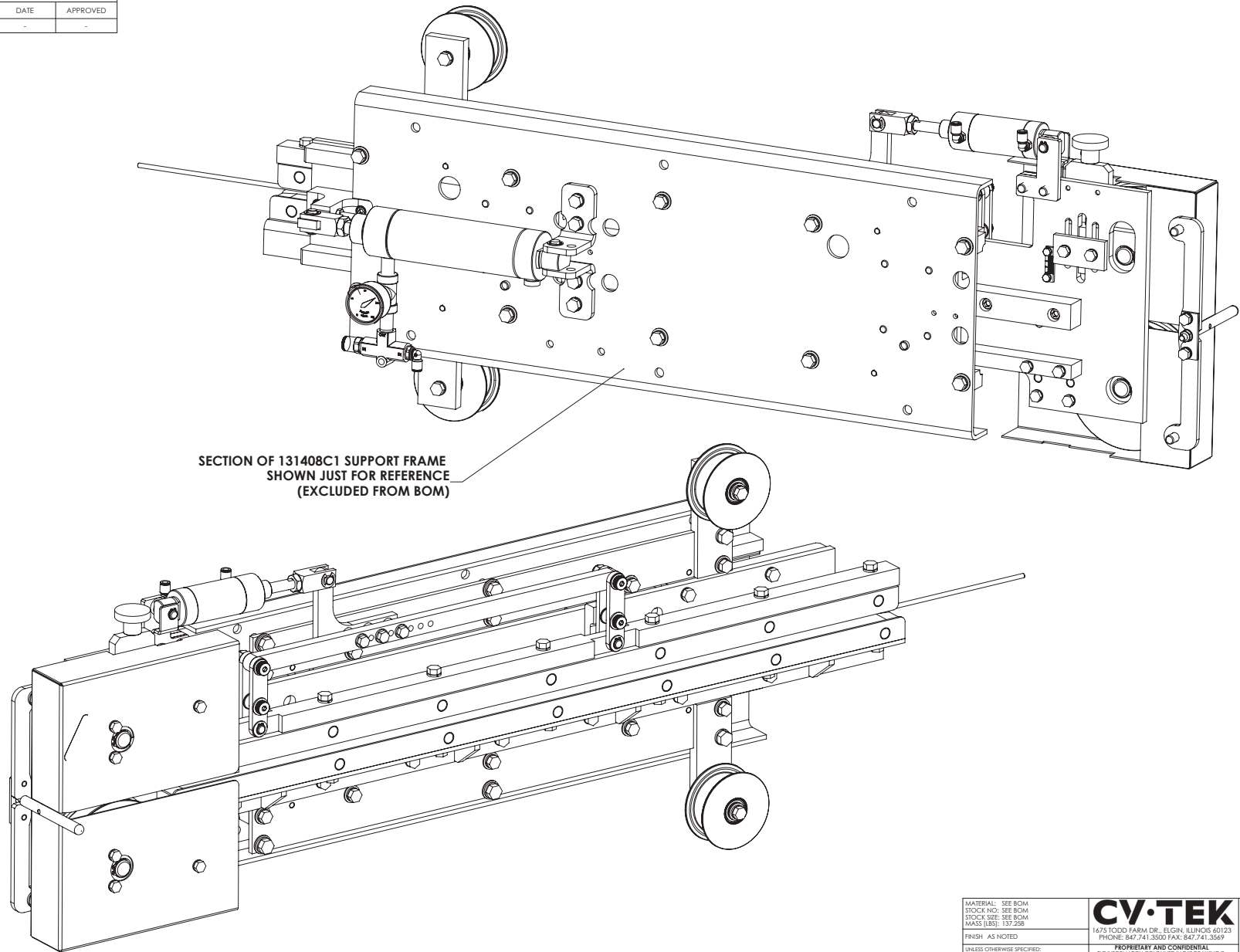
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DRAWING NO. MA035-0004
 SHEET 1 OF 6
 DATE 2/21/24
 SCALE 1:10
 REV C

NOTE:
 SEE ALL 6 SHEETS FOR MORE DETAILS

MA035-0004 REV C

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See Sheet1	-	-



SECTION OF 131408C1 SUPPORT FRAME
SHOWN JUST FOR REFERENCE
(EXCLUDED FROM BOM)

ISOMETRIC VIEWS

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 137.258

FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACTIONS ± 1/64 XXX ± .005
XXX ± .015 XXXX ± .0005
ANGLES ± 30°
DRILLED HOLES: STANDARD S.A.E.

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

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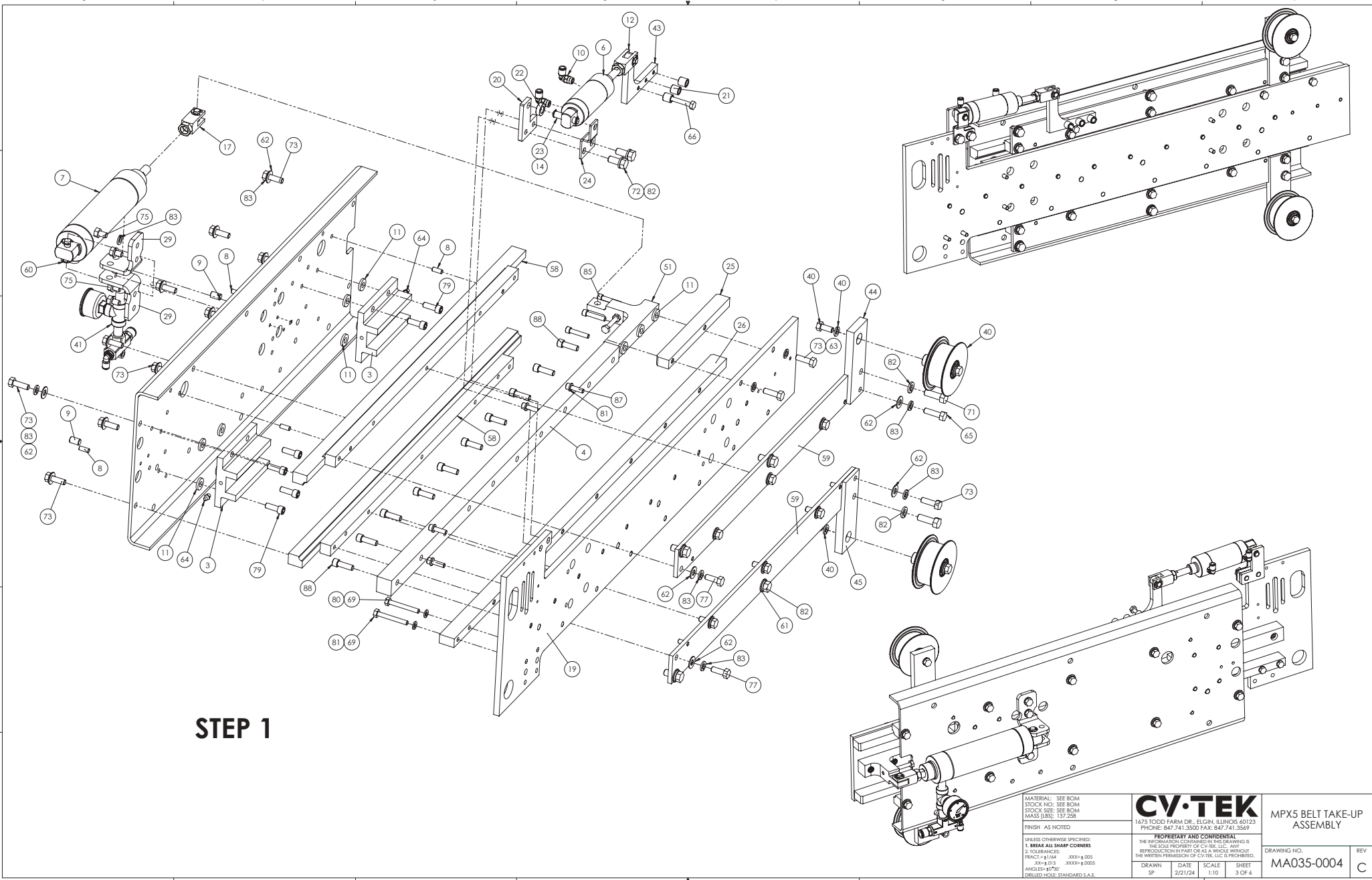
DRAWN SP	DATE 2/21/24	SCALE 1:10	SHEET 2 OF 6
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MPX5 BELT TAKE-UP
ASSEMBLY

DRAWING NO.
MA035-0004

REV
C

MA035-0004 REV C

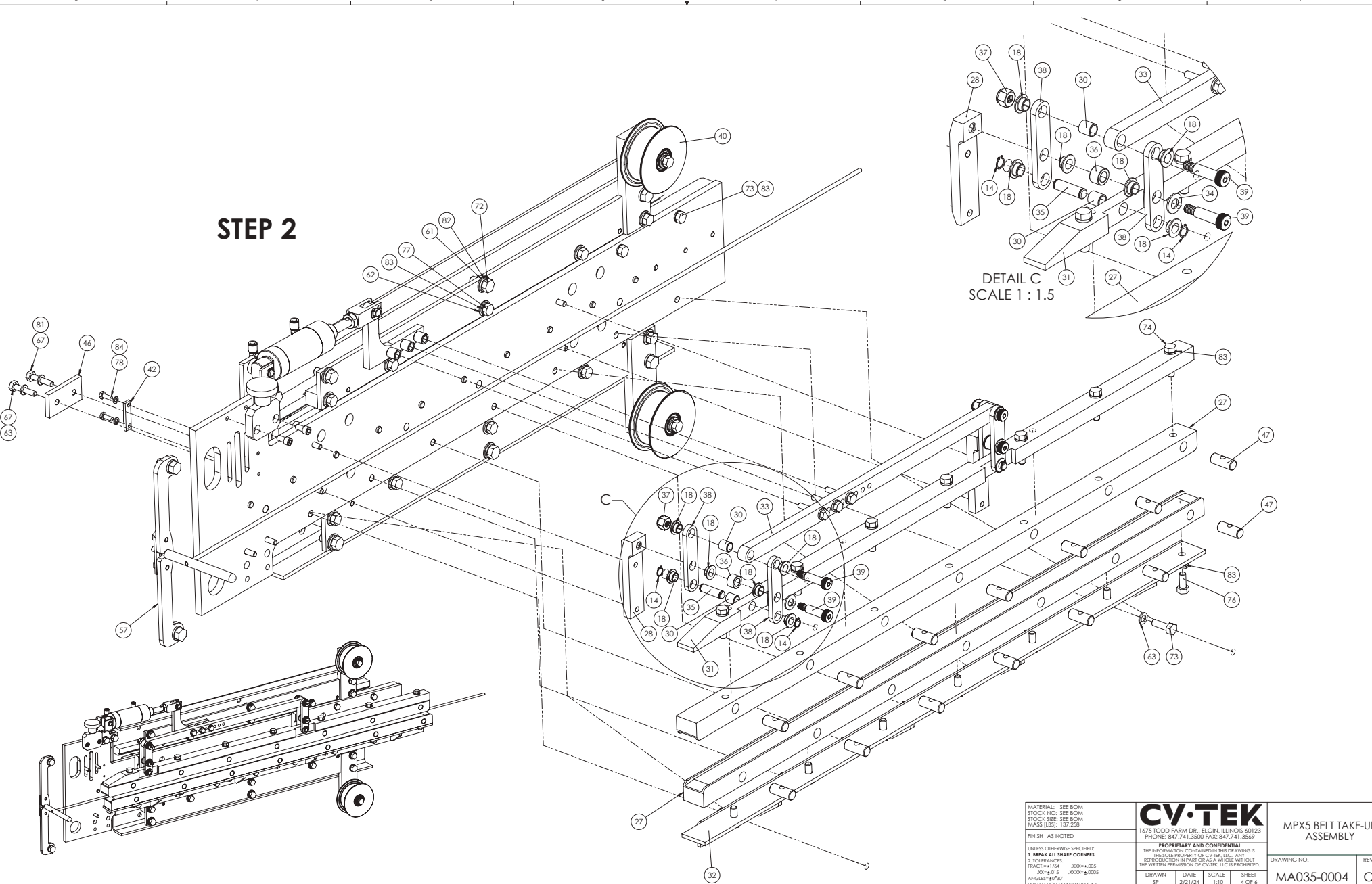
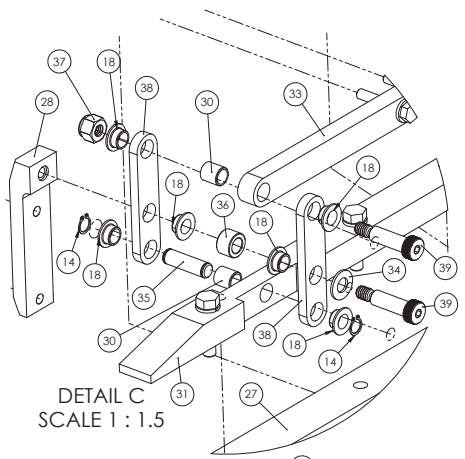


STEP 1

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 137.258 FINISH: AS NOTED		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 BELT TAKE-UP ASSEMBLY	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT - ±.004 .0005 ±.005 DIA ±.012 .0004 ±.0005 ANGLES ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. MA035-0004 REV C	
DRAWN SP	DATE 2/21/24	SCALE 1:10	SHEET 3 OF 6		

MA035-0004 REV C

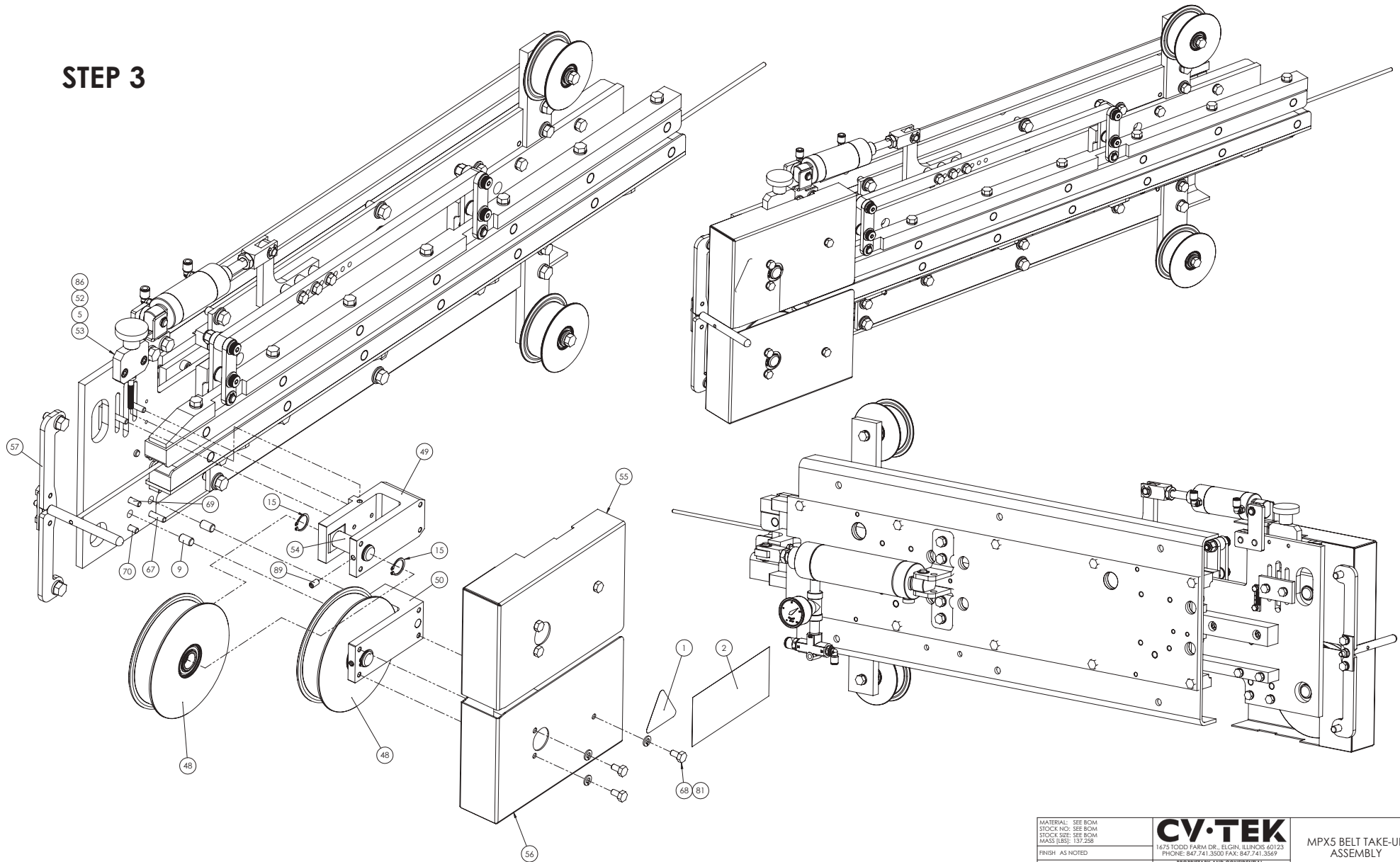
STEP 2



MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 137.258 FINISH: AS NOTED		CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 BELT TAKE-UP ASSEMBLY	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT-- ±1/64 .0005 ±.005 DIMS ±.015 .0005 ±.0005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. REV MA035-0004 C	
DRAWN SP	DATE 2/21/24	SCALE 1:10	SHEET 4 OF 6		

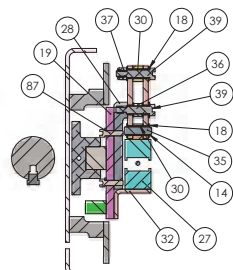
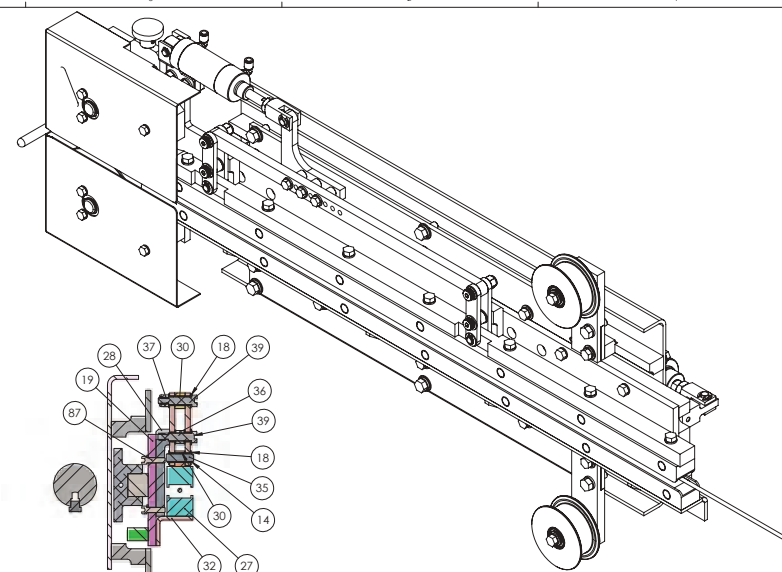
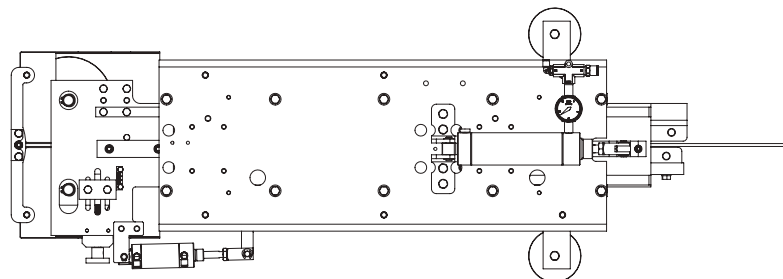
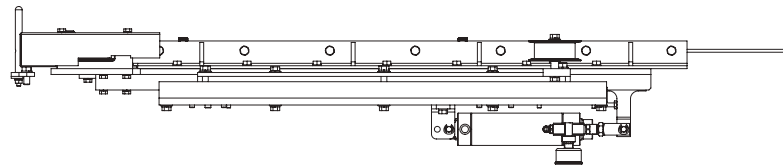
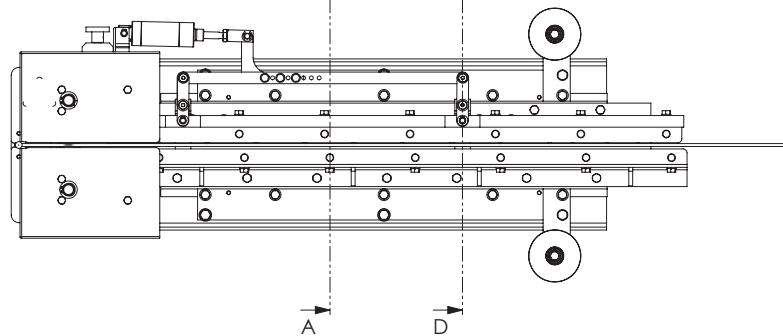
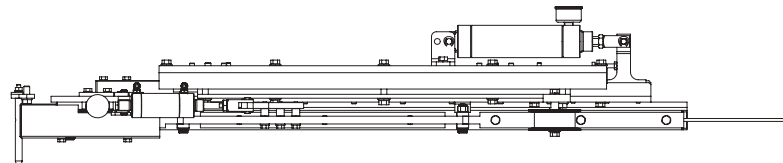
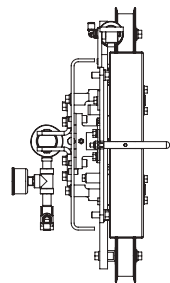
MA035-0004 REV C

STEP 3

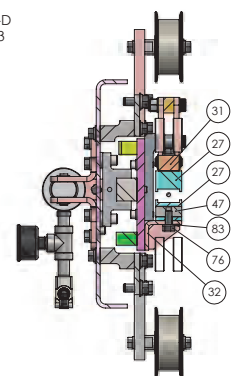


MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 137.258 FINISH: AS NOTED	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 BELT TAKE-UP ASSEMBLY	
		UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT. = ±1/64 .XXX ±.005 DEC. = ±0.015 .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.
DRAWN: SP DATE: 2/21/24 SCALE: 1:10 SHEET: 5 OF 6			

MA035-0004 REV C



SECTION D-D
SCALE 1 : 3



SECTION A-A
SCALE 1 : 3

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 137.258
 FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT. = ±1/64 .XXX ±.005
 DEC. = ±0.012 .XXX ±.005
 ANGLES = ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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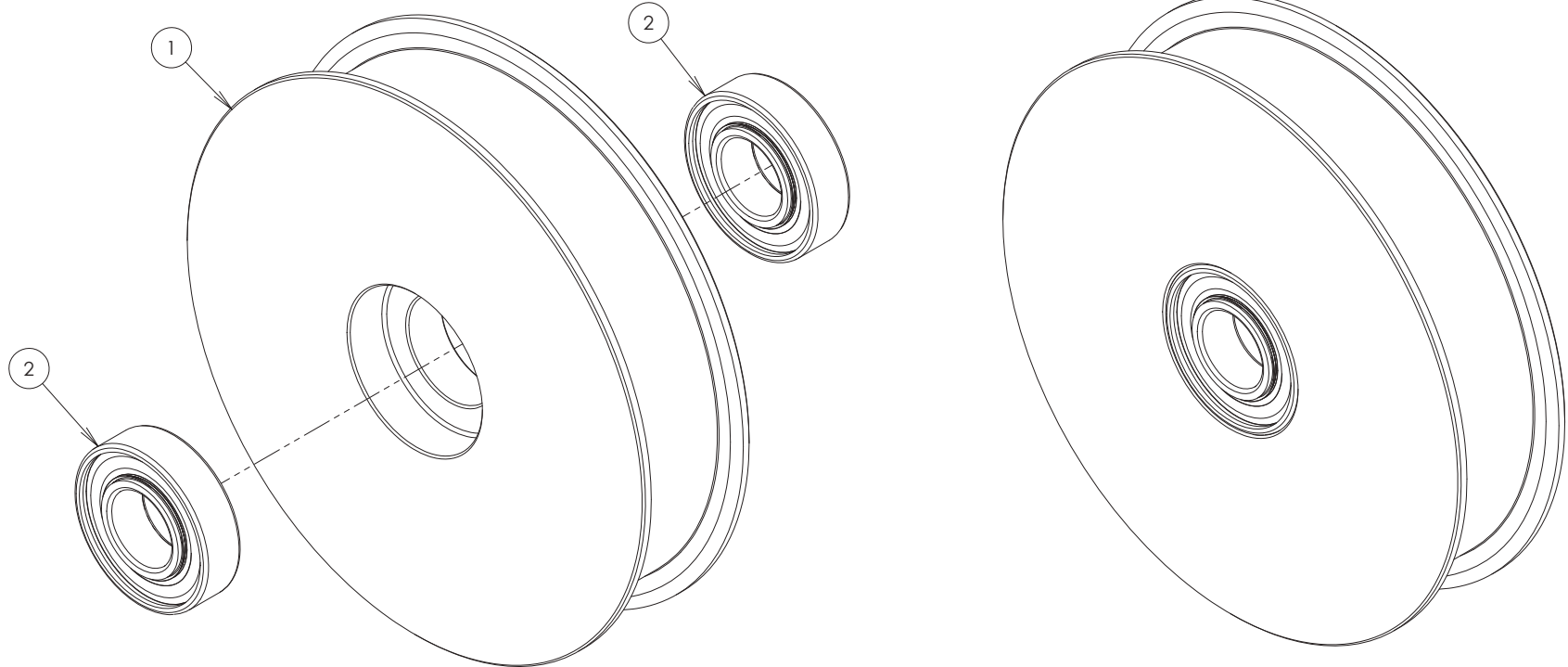
DRAWN	DATE	SCALE	SHEET
SP	2/21/24	1:10	6 OF 6

MPX5 BELT TAKE-UP
 ASSEMBLY

DRAWING NO.	REV
MA035-0004	C

MA035-0004 REV C

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	03-13-13	CFD



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
2	2	0651-1115	BEARING, BALL, SOLID OIL
1	1	B-0210-2176	IDLER PULLEY 5.08" DIA.

MATERIAL: AS NOTED
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 1.10

FINISH SMOOTH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
 FRACT.= ± 1/64 .XXX= ± .005
 .XX= ± .015 .XXXX= ± .0005
 ANGLES= ± 0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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 WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.

DRAWN CFD	DATE 03-13-13	SCALE 1:1	SHEET 1 OF 1
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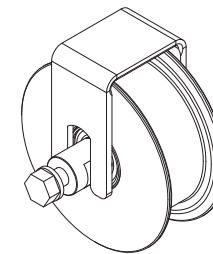
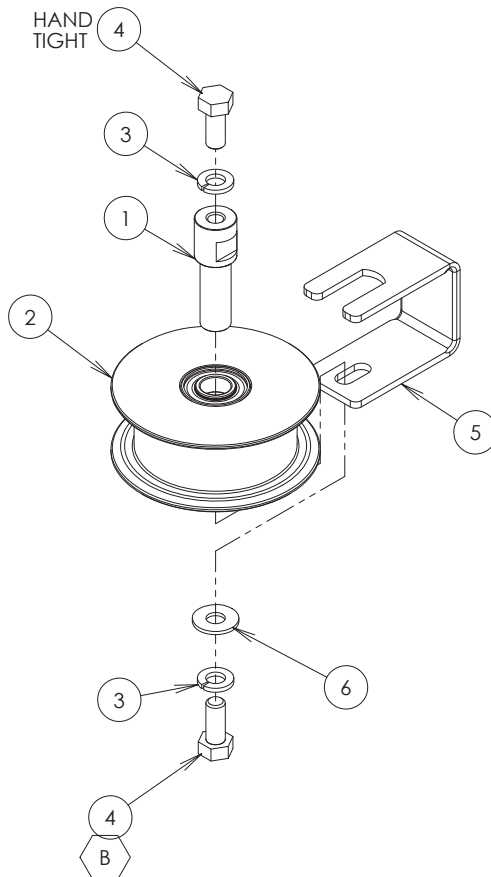
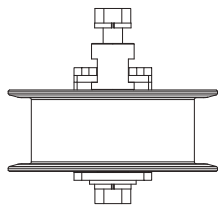
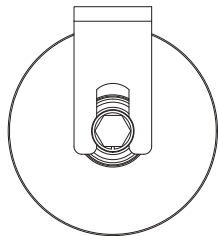
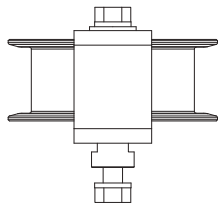
ASSEMBLY PLASTIC
 TAIL PULLEY 5.08 DIA.

DRAWING NO. 0210-2178	REV
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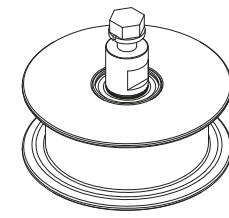
0210-2178 REV

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	11/24/08	CFD
B	ADDED 0210-110 AND REVISED B-0550-1440	04/08/2010	CFD
C	ADDED CONFIGURATION -1 TO REMOVE BELT KEEPER	05/10/2011	NMB



B-0210-0599-0
W/KEEPER



B-0210-0599-1
WO/BELT KEEPER

6	1	1	0210-1130		WASHER 5/16ID X 3/4OD X 1/16" THK
5	1	-	B-0550-1440		BRACKET, BELT SUPPORT
4	2	2	HH5/16-18X3/4	A	SCREW, HEX HEAD
3	2	2	LW5/16	A	WASHER, LOCK
2	1	1	B-0210-0597		ASSEMBLY IDLER PULLEY
1	1	1	B-0550-1088		SHAFT FLEX JAW PINCH PULLEY
ITEM NO.	-0/QTY.	-1/QTY.	PART NUMBER	Rev.	DESCRIPTION

MATERIAL: AS NOTED
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 0.41

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT.= ± 1/64 .XXX= ± .005
.XX= ± .015 .XXXX= ± .0005
ANGLES= ± 0°30'
DRILLED HOLE: STANDARD S.A.E.

CV-TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
PHONE: 847.741.3500 FAX: 847.741.3569

PROPRIETARY AND CONFIDENTIAL
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DRAWN CFD	DATE 11-24-08	SCALE 1:2	SHEET 1 OF 1
--------------	------------------	--------------	-----------------

**IDLER PULLEY ASSEM
W/O KEEPER**

DRAWING NO. REV

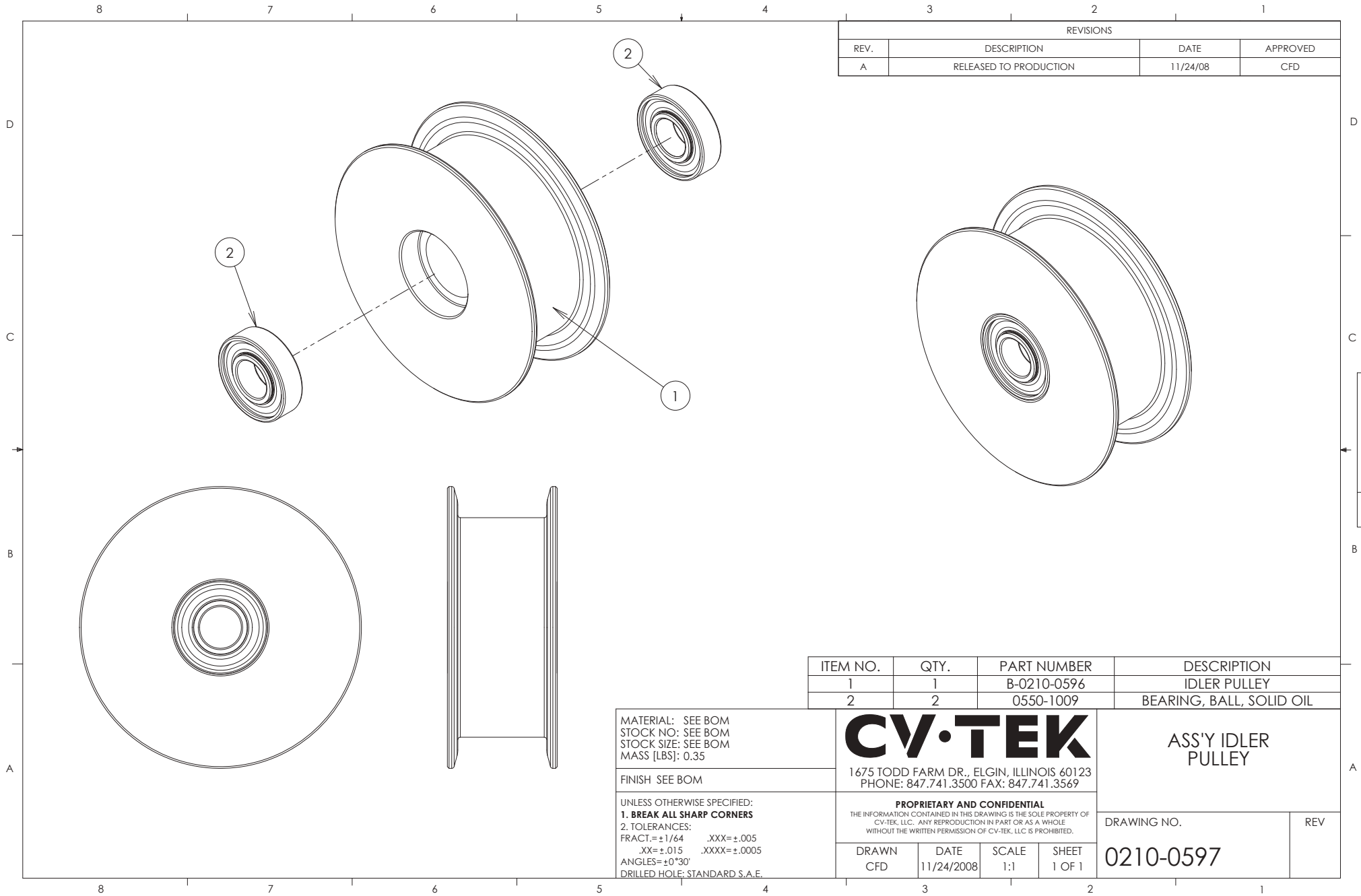
0210-0599

ASSEMBLY SYMBOLS

B	BAG ITEM
A	LOCTITE PRIMER 7649
G	LOCTITE 294 (GREEN)
B	LOCTITE 243 (BLUE)
R	LOCTITE 263 (RED)
P	LOCTITE 222 (PURPLE)
PS	PIPE THREAD SEALANT
TT	TEFLON PIPE TAPE
SS	SILICONE SEALANT (CLEAR)
RTV	RTV ADHESIVE (GE 157)
PVC	PVC CEMENT
I	ISOPROPYL ALCOHOL
P	PVC PRIMER
A	ANTI-SEIZE LUBRICANT
M	MINERAL OIL
G	FOOD-GRADE GREASE

8 7 6 5 4 3 2 1

0210-0599
REV



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	11/24/08	CFD

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	B-0210-0596	IDLER PULLEY
2	2	0550-1009	BEARING, BALL, SOLID OIL

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.35

FINISH SEE BOM

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

PROPRIETARY AND CONFIDENTIAL
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 WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.

DRAWN CFD	DATE 11/24/2008	SCALE 1:1	SHEET 1 OF 1
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ASS'Y IDLER PULLEY

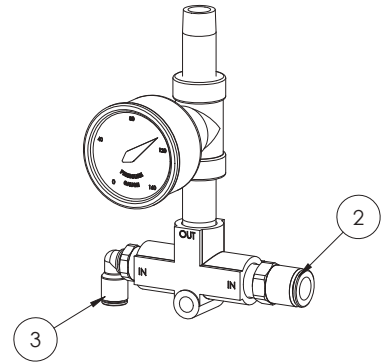
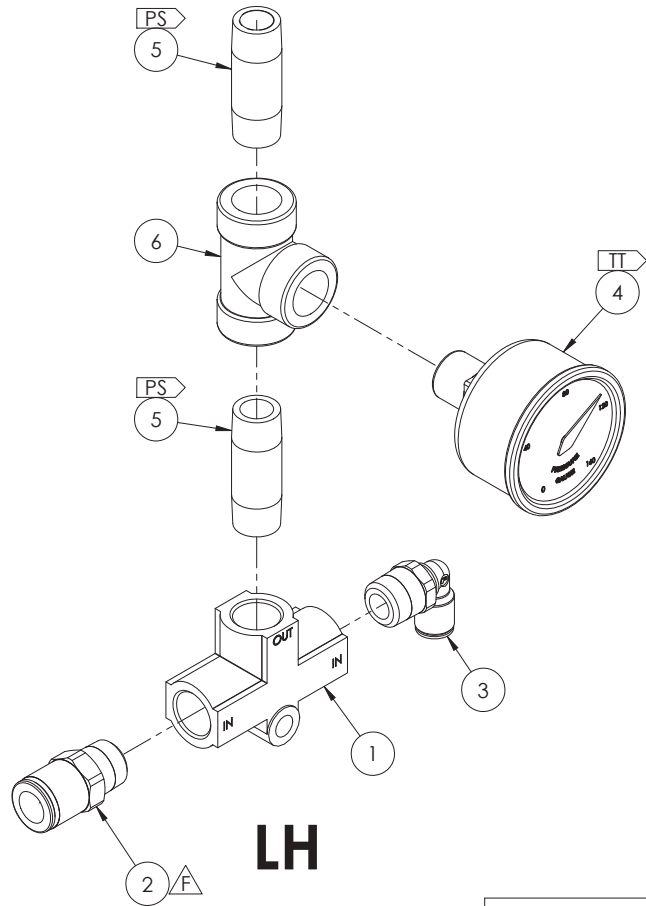
DRAWING NO. **0210-0597**

REV

0210-0597
REV

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
D	MODIFIED ASSEMBLY TO USE SHUTTLE VALVE	02/08/2012	NMB
E	ADDED QUICK EXHAUST, MUFFLER, AND AIR FITTING ON HIGH PRESSURE SIDE. SHUTTLE VALVE WAS	8/28/2012	NMB
F	REMOVED 9537-1258 MUFFLER, 0243-420 DUMP VALVE, NIPPLE 1/4NPT, 269P-06-04 ELBOW FITTING, ADDED 268P-06-04	12/20/2012	CFD
G	SS FITTINGS WERE NP8	03/17/2016	DJW



RH

ASSEMBLY NOTE:

USE THREAD SEALANT ON ALL PIPE THREADS UNLESS FACTORY PRE-APPLIED

6	1	SST1/4NPT	TEE, 1-1/4" NPT
5	2	SN1/4NPTX1-1/2	NIPPLE, 1/4" NPT X 1-1/2"
4	1	7501-162	GAUGE.PRESSURE.0.25NPT
3	1	269P-04-04	FITTING.TBG.ELB.1/4OD X 1/4NPT
2	1	268P-06-04	FITTING.TBG.STR.3/8OD X 1/4NPT
1	1	0210-2106	SHUTTLE VALVE, 1/4 NPT
ITEM NO.	Default/QTY.	PART NUMBER	DESCRIPTION

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.42

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN	DATE	SCALE	SHEET
CFD	09-13-10	3:4	1 OF 2

REGULATED DUMP VALVE

DRAWING NO. REV

0210-1334

8 7 6 5 4 3 2 1

D

C

B

A

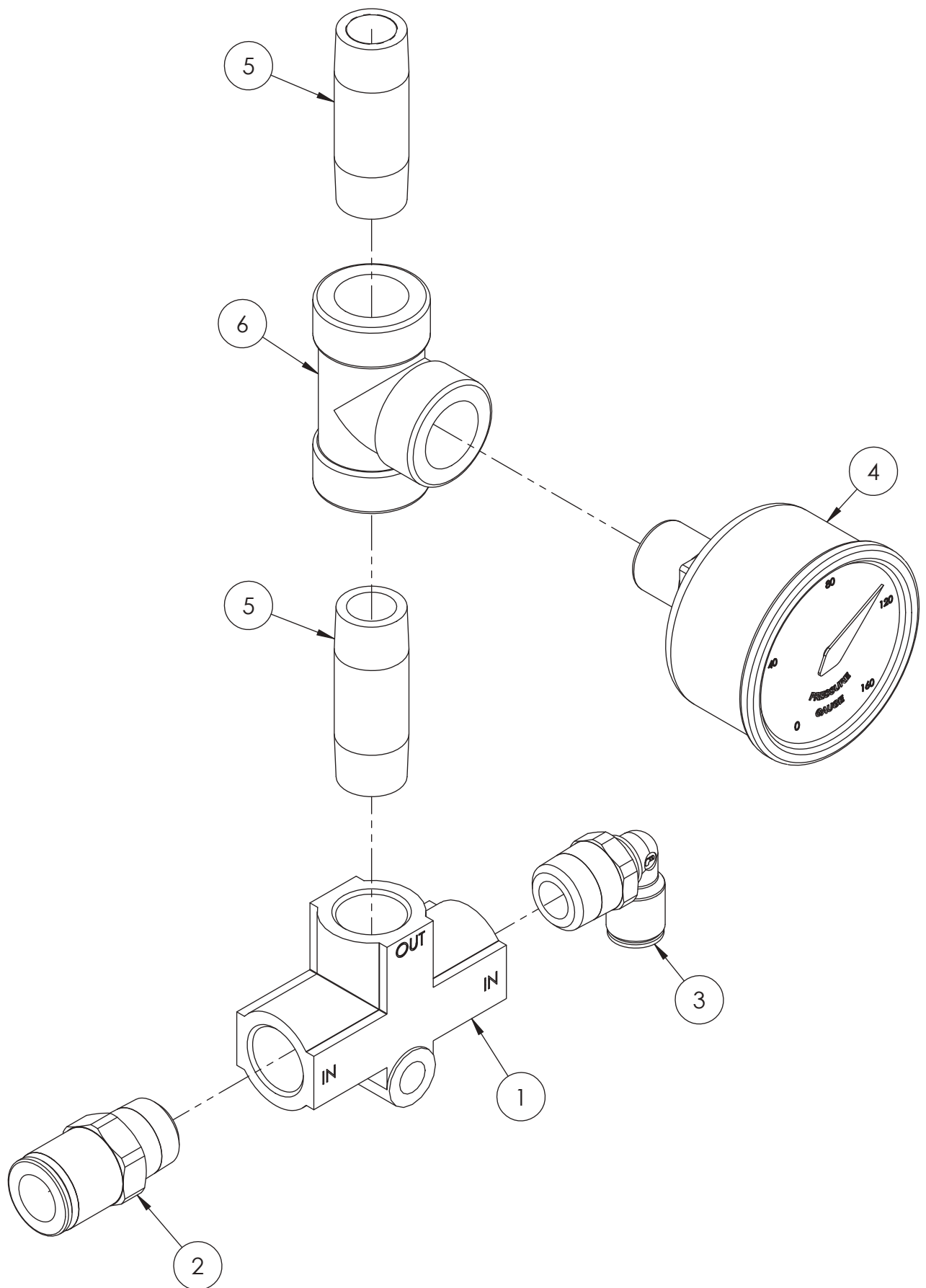
D

C

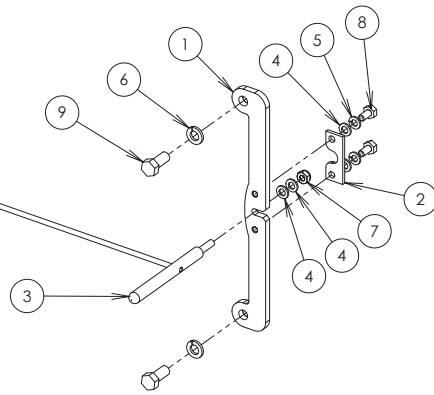
B

A

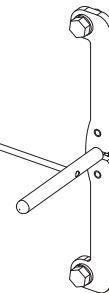
0210-1334 REV



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	12/16/14	NMB



ASSEMBLE ON MACHINE



9	2	HH3/8-16X7/8	A	SCREW, HEX HEAD
8	2	HH1/4-20X1/2	A	SCREW, HEX HEAD
7	1	LN1/4-20	A	NUT, LOCK
6	2	LW3/8	A	WASHER LOCK
5	2	LW1/4	A	WASHER, LOCK
4	4	FW1/4-B	A	WASHER, FLAT
3	1	B-0210-2662	A	SPREADER BAR (REMOVABLE)
2	1	B-0210-1622	A	PLATE LOCK
1	1	B-0210-1621	B	PLATE MOUNT SPREADER
ITEM NO.	QTY.	PART NUMBER	Revision	DESCRIPTION

MATERIAL: AS NOTED
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.92

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (630) 852-1190 FAX: (630) 852-1386

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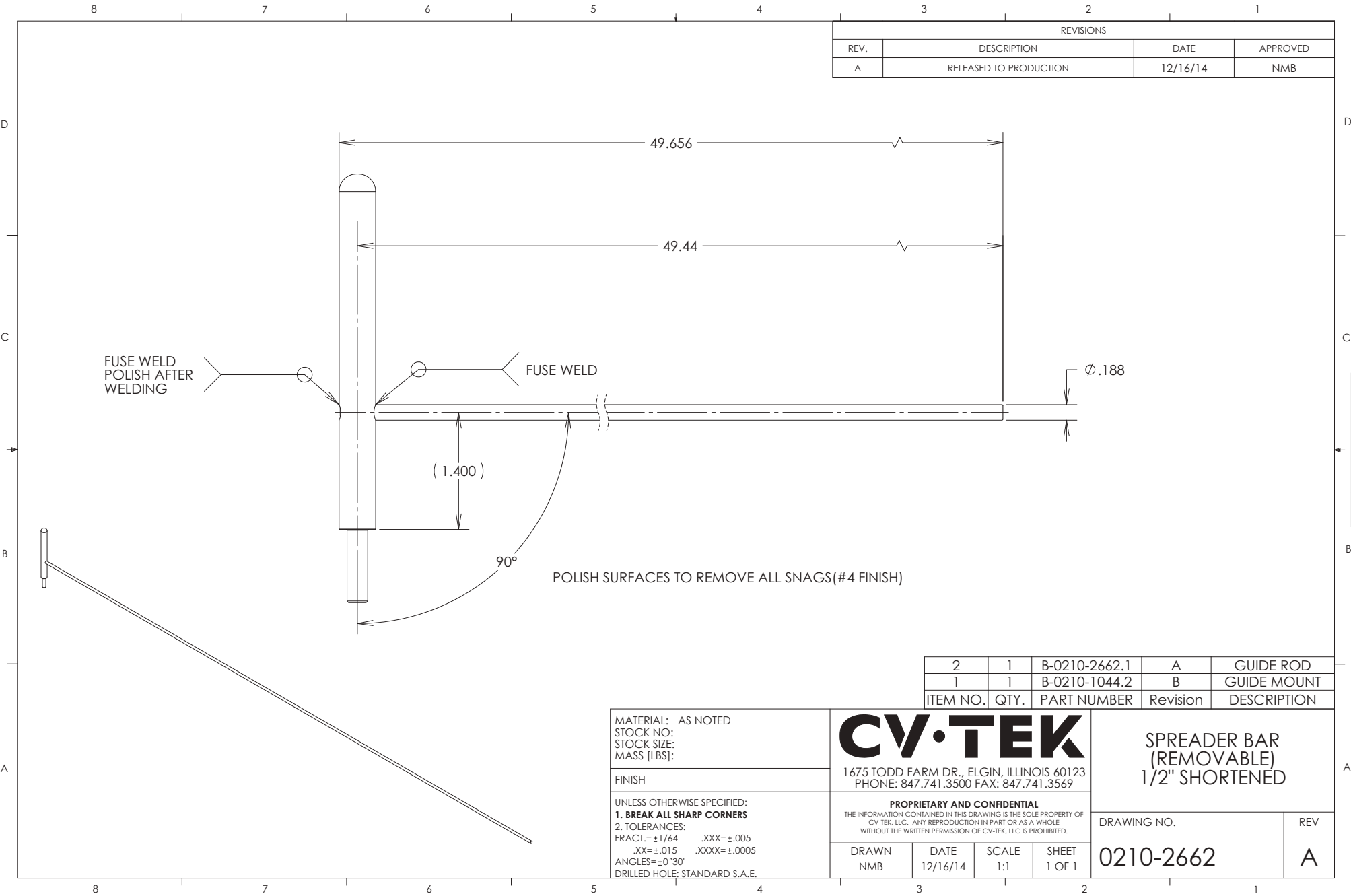
DRAWN	DATE	SCALE	SHEET
NMB	12/16/14	1:4	1 OF 1

**ASSEMBLY
 SPREADER BAR**

DRAWING NO. **0210-2661**

REV

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	12/16/14	NMB



0210-2662 REV A

ITEM NO.	QTY.	PART NUMBER	Revision	DESCRIPTION
2	1	B-0210-2662.1	A	GUIDE ROD
1	1	B-0210-1044.2	B	GUIDE MOUNT

MATERIAL: AS NOTED
 STOCK NO:
 STOCK SIZE:
 MASS [LBS]:

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

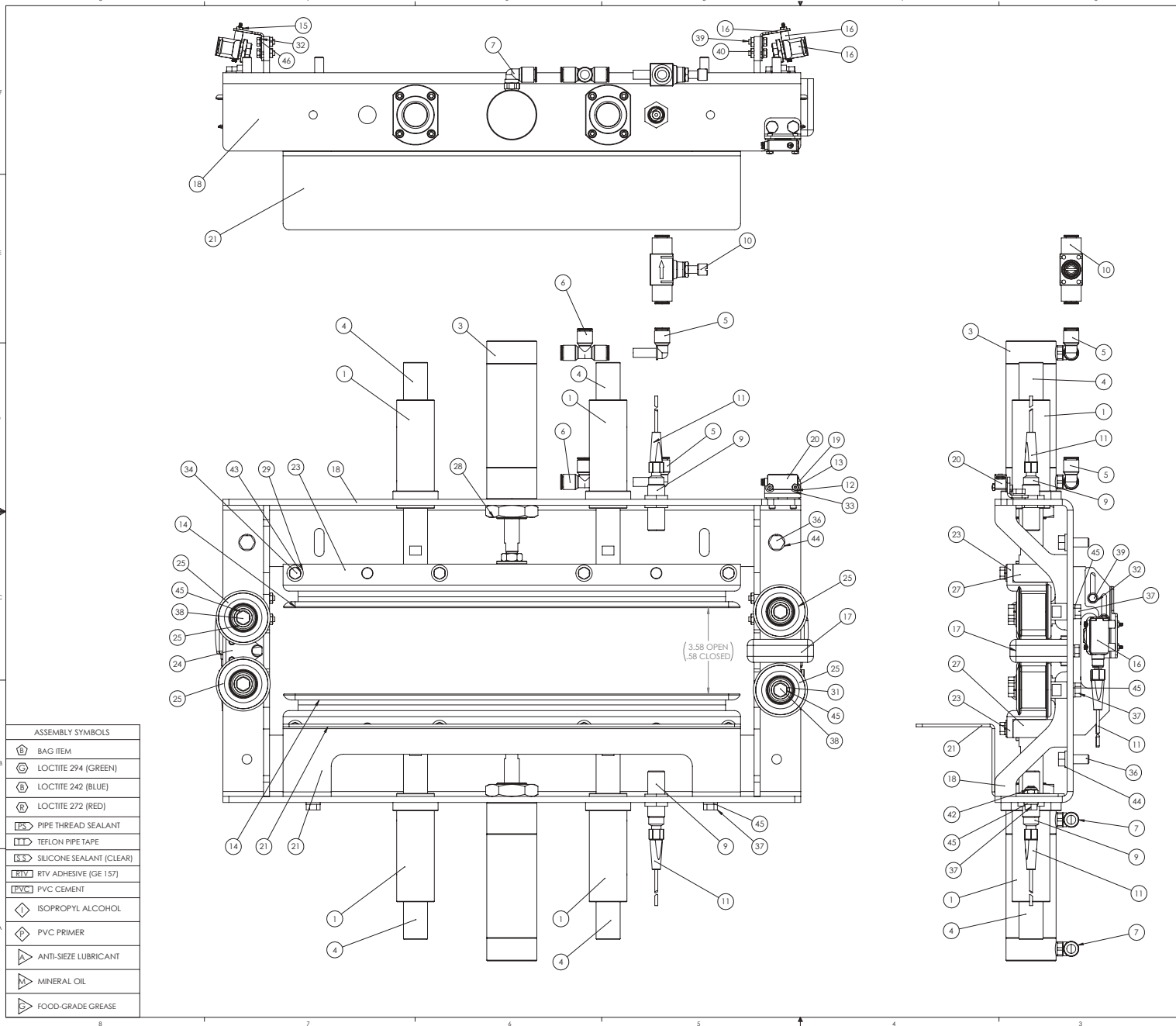
CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN NMB	DATE 12/16/14	SCALE 1:1	SHEET 1 OF 1
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**SPREADER BAR
 (REMOVABLE)
 1/2" SHORTENED**

DRAWING NO. 0210-2662	REV A
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ASSEMBLY SYMBOLS

- BAG ITEM
- LOCTITE 294 (GREEN)
- LOCTITE 242 (BLUE)
- LOCTITE 272 (RED)
- PIPE THREAD SEALANT
- TEFLON PIPE TAPE
- SILICONE SEALANT (CLEAR)
- RTV ADHESIVE (GE 157)
- PVC CEMENT
- ISOPROPYL ALCOHOL
- PVC PRIMER
- ANTI-SIEZE LUBRICANT
- MINERAL OIL
- FOOD-GRADE GREASE

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/15/2022	PV
B	DELETED: 0210-1342, 0210-2653; ADDED: 137284C1, 134095C1	8/24/2023	PV
C	INITIAL CREATION MA030-0022 DERIVED FROM 1323388C1	2/12/2024	SP

NOTES:
 SHEET 1- STANDARD VIEWS
 SHEET 2- EXPLODED AND ISOMETRIC VIEW
 IF FLEX JAWS TOUCH WHEN CLOSED SUBSTITUTE 0210-0726 WITH FW1/2-B

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-0717	BUSHING, FLANGED, 1" ID	4
2	0210-0726	WASHER, FLEX JAW	2
3	0210-1293	CYL.PC.DBL ACT.2.OBORE X 2.55TK	2
4	0210-1468	SHAFT.SS.0.9995 Dig. X 8.50LG.3/8-16TAP	4
5	0243-0571	FITTING,COMP TBG.ELB.3/8" x 3/8"	2
6	264P-06	UNION TEE NO BRASS	2
7	269P-06-04	FITTING TBG.ELB.3/8OD X 1/4INPT	4
8	0651-1661	MOUNT.CYL.SS.1/2-20	2
9	0750-1131	SENSOR.PROX.IND.18MM.DC.3-WIRE	2
10	9130-1765	FLOW CONTROL	1
11	9743-1045	CABLE PHOTOEYE, 10M	4
12	12303C1	#4-40 HEX NUT, S/S	2
13	12512C1	4-40 x 3/4 SOCKET HEAD CP SCRW	2
14	128909C1	FLEX ANGLE JAW	2
15	129865C1	SENSOR BRACKET ASSEMBLY, RIGHT	1
16	129866C1	SENSOR BRACKET ASSEMBLY, LEFT	1
17	132341C1	BELT BACK UP BLOCK	1
18	132345C1	FRAME.FLEX JAW.19 X 5IN	1
19	132700C1	MOUNT SENSOR	1
20	134095C1	P1KH002 BLUE LIGHT SENSOR	1
21	137284C1	FILLER PLATE	1
22	B-0210-2172	FLANGE SPACER	8
23	B-0210-2173	BACKUP.FLEX JAW	2
24	B-0210-2654	GUIDE SPREADER .5	1
25	B-0210-2658	ASSY.1 1/2" DIA. IDLER PULLEY LG FLANGE.	4
26	B-0550-1088	SHAFT FLEX JAW PINCH PULLEY	4
27	C-0210-0723	THRUSTER PLATE FLEX JAW	2
28	D-508-SS	NUT.MNTG.CYL.2.OBORE.SS	2
29	FW1/4-A	WASHER, FLAT	8
30	FW1/4-B	WASHER, FLAT	2
31	FW5/16-A	WASHER, FLAT	4
32	FW10-D	WASHER, FLAT	4
33	FWM3	FLAT WASHER, METRIC	2
34	HH1/4-20X3/4	SCREW, HEX HEAD	14
35	HH1/4-20X5/8	SCREW, HEX HEAD	4
36	HH3/8-16X1	SCREW, HEX HEAD	4
37	HH5/16-18X3/4	SCREW, HEX HEAD	6
38	HH5/16-18X5/8	SCREW, HEX HEAD	4
39	HH10-32X5/8	SCREW, HEX HEAD	4
40	HN10-32	NUT, HEX	4
41	JN1/2-20	NUT, JAM	2
42	LN5/16-18LP	NUT, LOCK	2
43	LW1/4	WASHER, LOCK	18
44	LW3/8	WASHER, LOCK	4
45	LW5/16	WASHER, LOCK	10
46	LW10	WASHER, LOCK	4
47	SH3/8-16X3/4	SCREW, SOCKET HEAD	4
48	SH10-32X3/8	SCREW, SOCKET HEAD	16

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 56.24

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

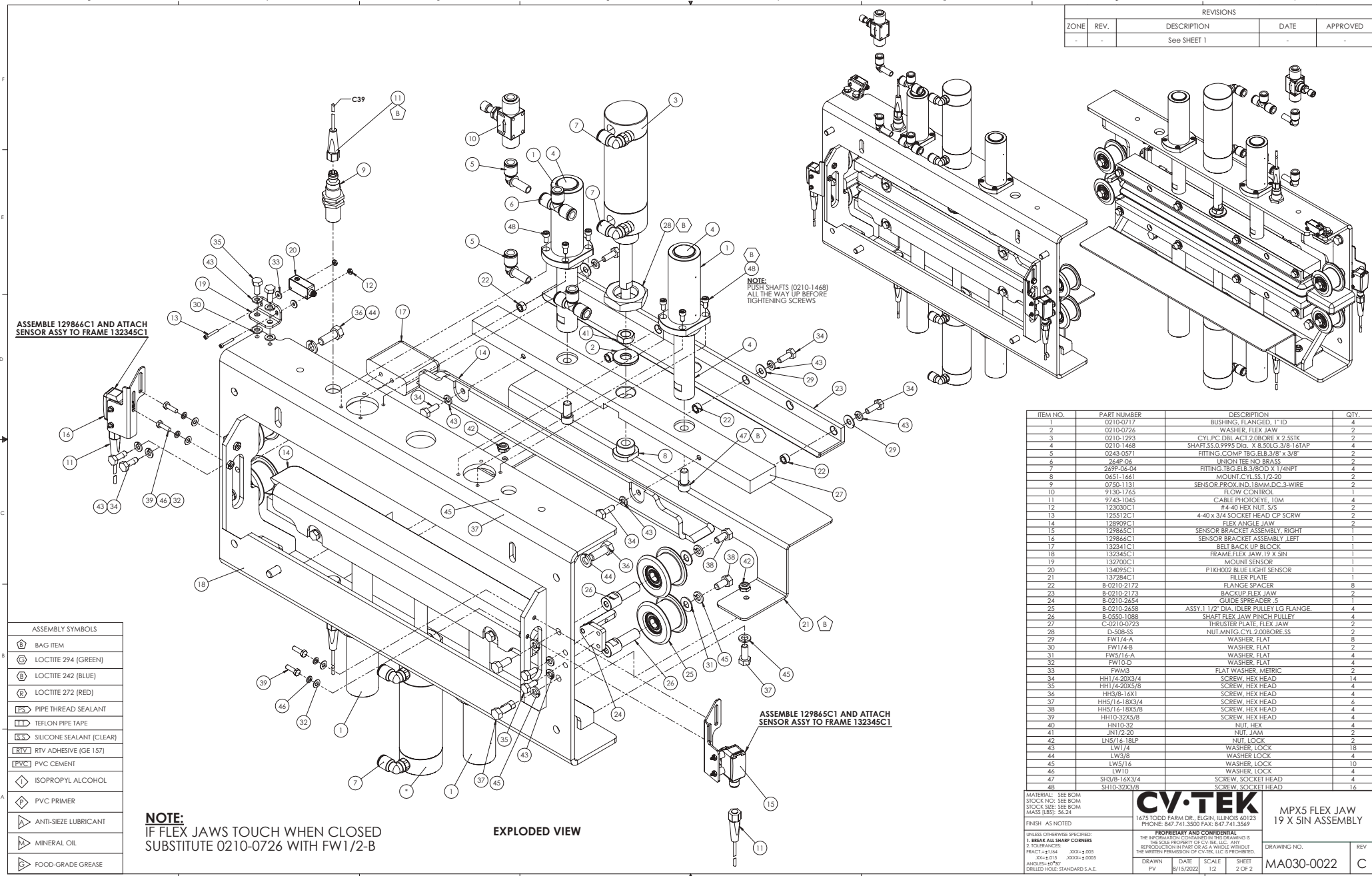
MPX5 FLEX JAW
 19 X 5IN ASSEMBLY

DRAWING NO. MA030-0022
 REV. C

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.0004 XXX±.0005
 DECIMALS: XXX±.0005 XXXXX±.0005
 ANGLES: ±0°30'
 UNLESS NOTED OTHERWISE: STANDARD S.A.E.

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DRAWN: PV DATE: 8/15/2022 SCALE: 1:2 SHEET: 1 OF 2



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
-	-	See SHEET 1	-	-

ASSEMBLE 129866C1 AND ATTACH SENSOR ASSY TO FRAME 132345C1

NOTE
PUSH SHAFTS (0210-1468)
ALL THE WAY UP BEFORE
TIGHTENING SCREWS

ASSEMBLE 129865C1 AND ATTACH SENSOR ASSY TO FRAME 132345C1

ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RIV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

NOTE:
IF FLEX JAWS TOUCH WHEN CLOSED
SUBSTITUTE 0210-0726 WITH FW1/2-B

EXPLODED VIEW

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-0717	BUSHING, FLANGED, 1" ID	4
2	0210-0726	WASHER, FLEX JAW	2
3	0210-1293	CYL PC DBL ACT 2"BORE X 2.5STK	2
4	0210-1468	SHAFT SS 0.5995 Dia. X 8.50Lx 3/8-16TAP	4
5	0243-0571	FITTING, COMP TBC, ELB, 3/8" X 3/8"	2
6	264P-06	UNION TEE NO BRASS	2
7	269P-06-04	FITTING, TBC, ELB, 3/8"OD X 1/4"INPT	4
8	0451-1461	MOUNT CYL SS 1/2-20	2
9	0750-1131	SENSOR PROX, IND, 18MM, DC-3-WIRE	2
10	9130-1745	FLOW CONTROL	1
11	9743-1045	CABLE PHOTOEYE, 10M	4
12	123030C1	#4-40 HEX NUT, 3/5"	2
13	125512C1	4-40 X 3/4 SOCKET HEAD CP SCREW	2
14	128909C1	FLEX ANGLE JAW	2
15	129865C1	SENSOR BRACKET ASSEMBLY, RIGHT	1
16	129866C1	SENSOR BRACKET ASSEMBLY, LEFT	1
17	132341C1	BELT BACK UP BLOCK	1
18	132345C1	FRAME, FLEX JAW, 19 X 5 IN	1
19	132700C1	Mount Sensor	1
20	134095C1	PIKH002 BLUE LIGHT SENSOR	1
21	137284C1	FILLER PLATE	1
22	B-0210-2172	FLANGE SPACER	8
23	B-0210-2175	BACKUP FLEX JAW	2
24	B-0210-2654	GUIDE SPREADER, S	1
25	B-0210-2658	ASSY, 1 1/2" DIA. IDLER PULLEY LG FLANGE	4
26	B-0550-1088	SHAFT FLEX JAW FINCH PULLEY	4
27	C-0210-0723	THRUSTER PLATE, FLEX JAW	2
28	D-508-55	NUT, MTNG, CYL 2.00BORE SS	2
29	FW1/4-A	WASHER, FLAT	8
30	FW1/4-B	WASHER, FLAT	2
31	FWS/16-A	WASHER, FLAT	4
32	FW10-D	WASHER, FLAT	4
33	FWMS	FLAT WASHER, METRIC	2
34	HH1/4-20X3/4	SCREW, HEX HEAD	14
35	HH1/4-20X5/8	SCREW, HEX HEAD	4
36	HH3/8-16X1	SCREW, HEX HEAD	4
37	HH5/16-18X3/4	SCREW, HEX HEAD	6
38	HH5/16-18X5/8	SCREW, HEX HEAD	4
39	HH10-32X5/8	SCREW, HEX HEAD	4
40	HN10-52	NUT, HEX	4
41	HN1/2-20	NUT, JAW	2
42	LN5/16-18LP	NUT, LOCK	2
43	LW1/4	WASHER, LOCK	18
44	LW3/8	WASHER, LOCK	4
45	LW5/16	WASHER, LOCK	10
46	LW10	WASHER, LOCK	4
47	SH3/8-16X3/4	SCREW, SOCKET HEAD	4
48	SH10-32X3/8	SCREW, SOCKET HEAD	16

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 56.24

FINISH: AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACTIONS: ±.0004 XXXX ±.0005
XXX ±.015 XXXXX ±.0005
ANGLES: ±0.5°
DIMENSIONS: STANDARD S.A.E.

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

MPX3 FLEX JAW
19 X 5IN ASSEMBLY

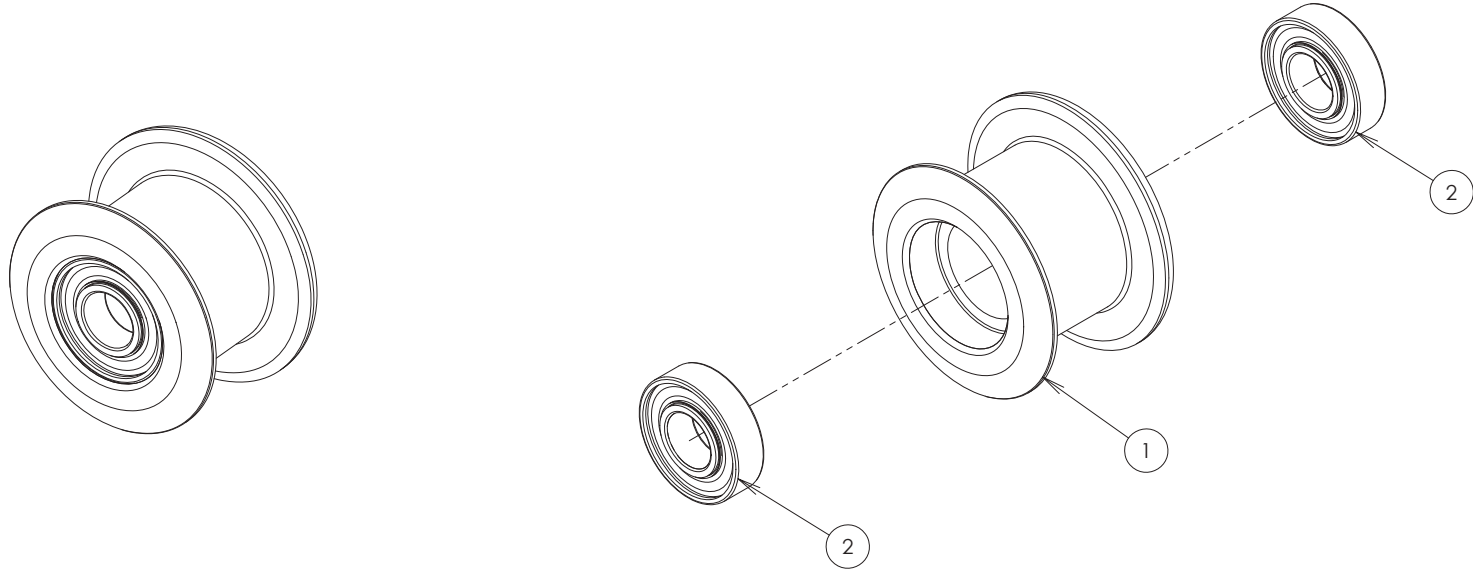
DRAWING NO. MA030-0022
REV. C

DATE: 8/15/2022
SCALE: 1/2
SHEET: 2 OF 2

MA030-0022 REV C

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED FOR PRODUCTION	08-27-10	CFD



B-0210-2658 REV

ITEM NO.	QTY.	PART NUMBER	REV.	DESCRIPTION
2	2	0550-1009		BEARING, BALL, SOLID OIL
1	1	B-0210-2657		IDLER PULLEY 1.5 DIA. LARGE FLANGE

MATERIAL: AS NOTED
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.18

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN CFD	DATE 12-11-14	SCALE 1:1	SHEET 1 OF 1
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ASS'Y 1 1/2" DIA.
 IDLER PULLEY
 LARGE FLANGE

DRAWING NO. B-0210-2658	REV
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8 7 6 5 4 3 2 1

D

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D

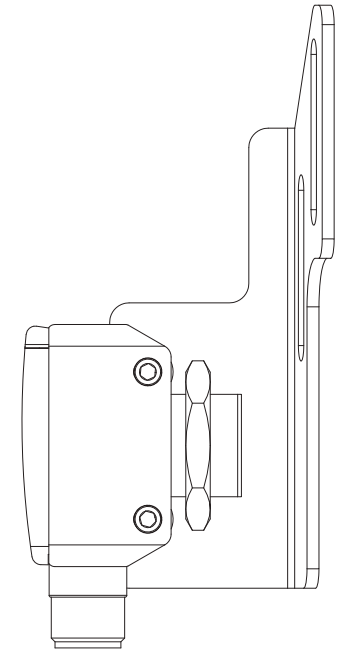
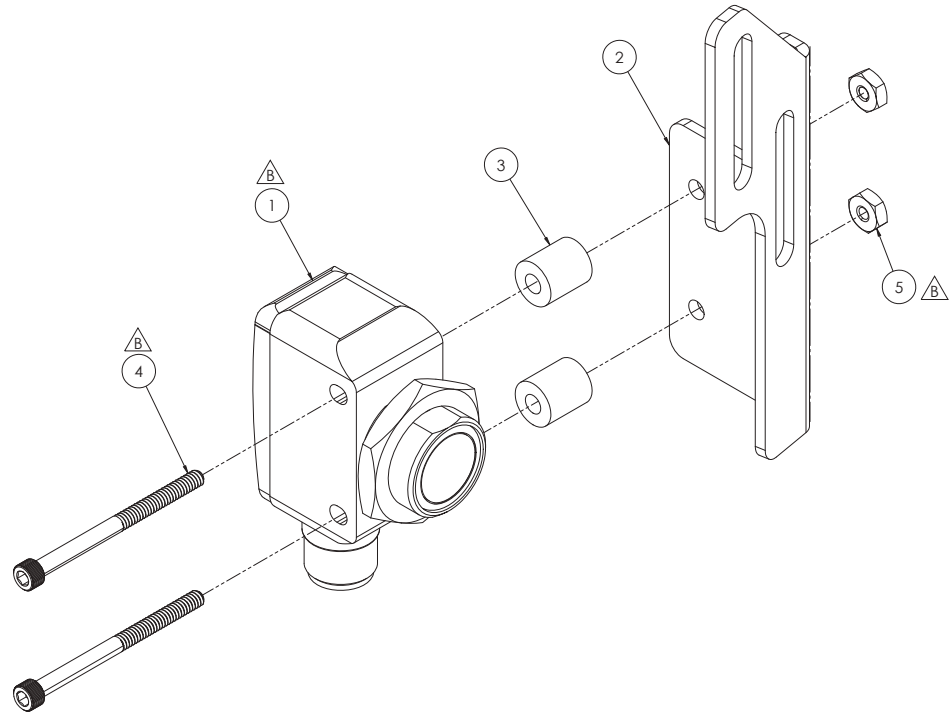
C

B

A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	137224C1	Through-beam sensor transmitter	1
2	129229C1	LEFT BRACKET SENSOR MOUNT	1
3	129960C1	SPACER .141ID X .325OD X .375L	2
4	137502C1	4-40 Thread Size, 1-1/2" Long	2
5	123030C1	#4-40 HEX NUT, S/S	2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/30/2021	ACK
B	DELETED: 129222C1, 2X M4X0.7 HEX BOLT, 2X M4X0.7 HEX NUT; ADDED: 137224C1, 2X 137502C1, 2X 123030C1	8/24/2023	PV

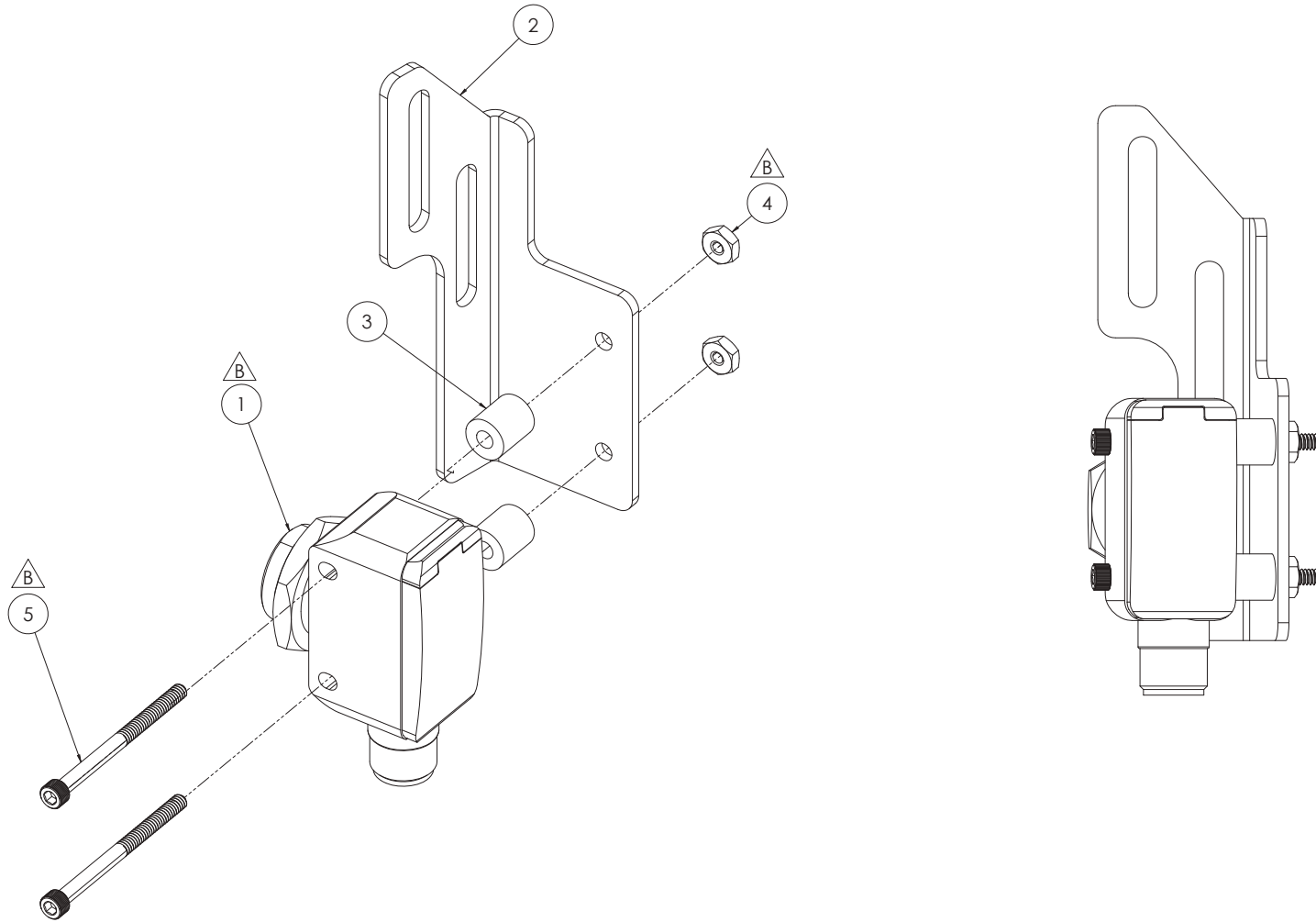


MATERIAL: SEE BOM STOCK NO: - STOCK SIZE: - MASS [LBS]: - FINISH: -		CV-TEK 1475 TODD FARM DR. ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		SENSOR BRACKET ASSEMBLY, RIGHT	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTIONAL: ±.004 .003±.005 DECIMAL: ±.015 .000±.005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. 129865C1	
DRAWN	DATE	SCALE	SHEET	REV	
		2:1	1 OF 1	A	

129865C1 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	137225C1	Through-beam sensor receiver	1
2	129260C1	RIGHT BRACKET SENSOR MOUNT	1
3	129960C1	SPACER .141ID X .325OD X .375L	2
4	123030C1	#4-40 HEX NUT, S/S	2
5	137502C1	4-40 Thread Size, 1-1/2" Long	2

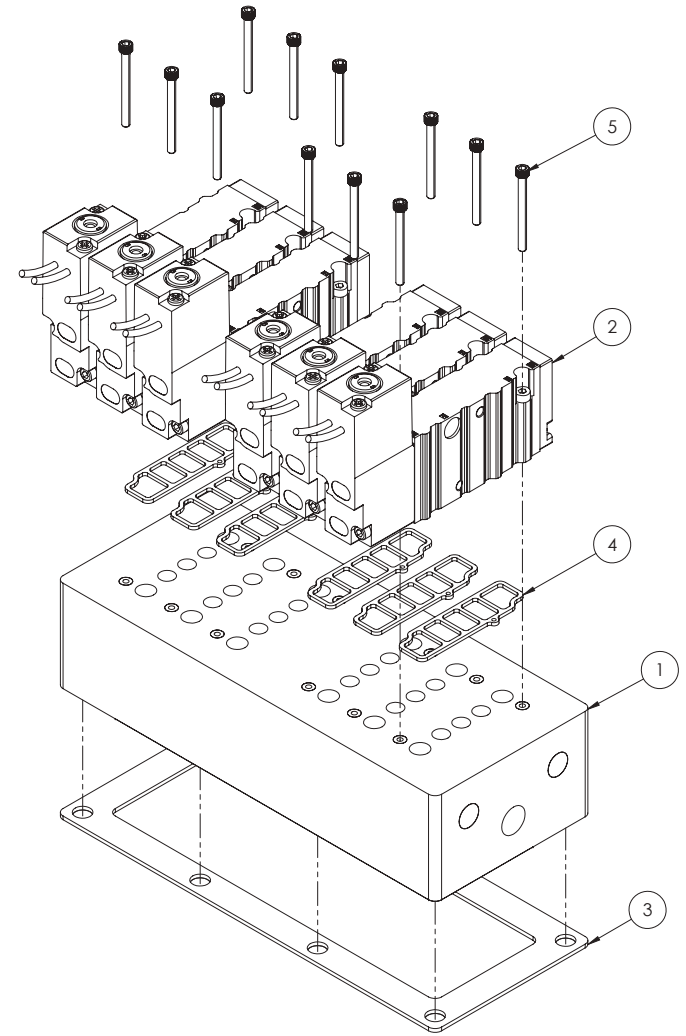
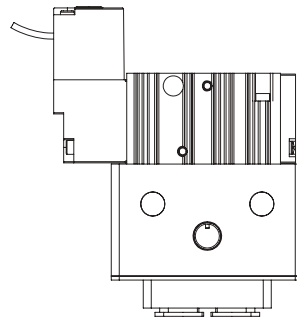
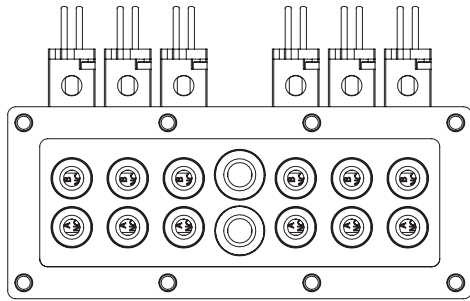
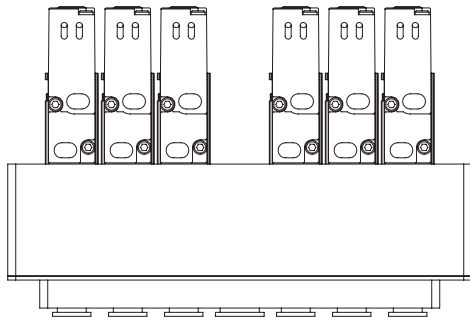
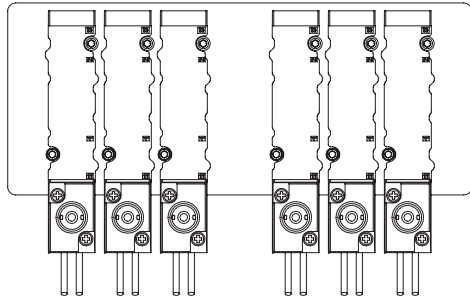
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/30/2021	AOK
B	DELETED: 129222C1, 2X M4X0.7 HEX BOLT, 2X M4X0.7 HEX NUT; ADDED: 137225C1, 2X 137502C1, 2X 123030C1	8/24/2023	PV



MATERIAL: SEE BOM STOCK NO: - STOCK SIZE: - MASS [LBS]: - FINISH: -		CV-TEK 1475 TODD FARM DR. ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		SENSOR BRACKET ASSEMBLY, LEFT	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT = ±.004 .0005 ±.005 DIMS ±.015 .0005 ±.0005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		DRAWING NO. 129866C1 REV A	
DRAWN	DATE	SCALE	SHEET	1 OF 1	
		2:1			

129866C1 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	6/17/2022	MDS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	125299C1	MHSP VALVE BLOCK COMPLETE	1
2	114224C1	VALVE SOLENOID 4-WAY (See Notes)	6
3	125306C1	MHSP VALVE BLOCK GASKET	1
4	125307C1	400 SERIES VALVE GASKET	6
5	120283C1	4-40 X 1-1/4 SOCKET HEAD CAP	12

MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 2.41

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

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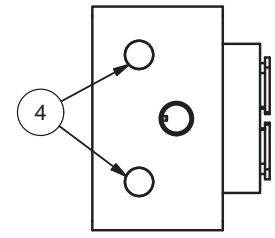
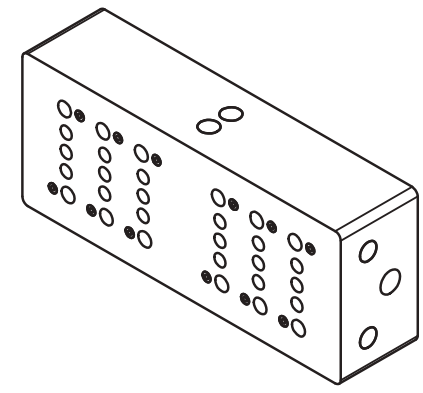
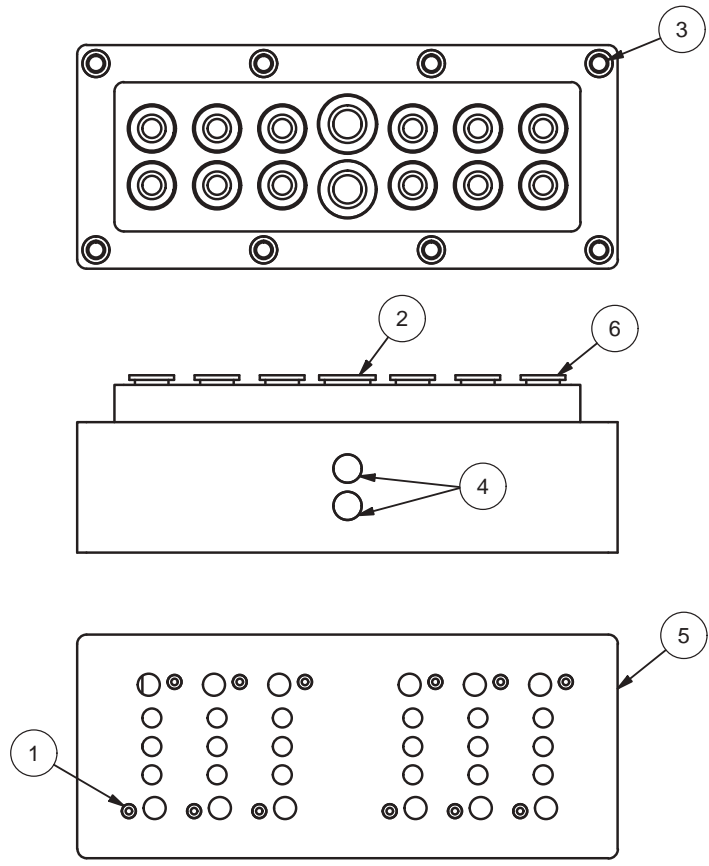
DRAWN MDS	DATE 6/17/2022	SCALE 2:3	SHEET 1 OF 1
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**MPX5 VALVE
 BLOCK ASSY**

DRAWING NO.
MA020-0106

REV
A

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE		N.B



PARTS LIST

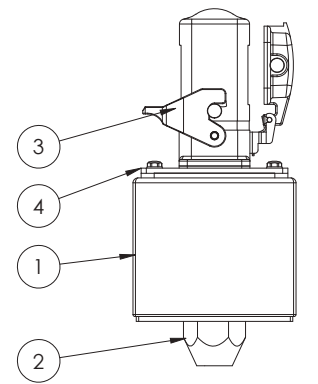
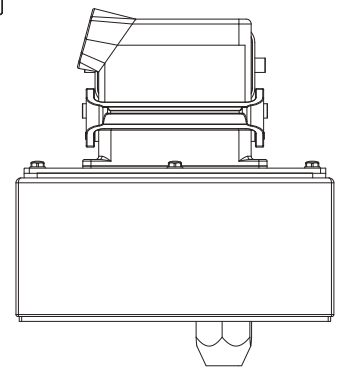
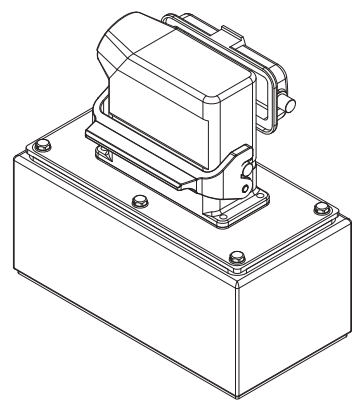
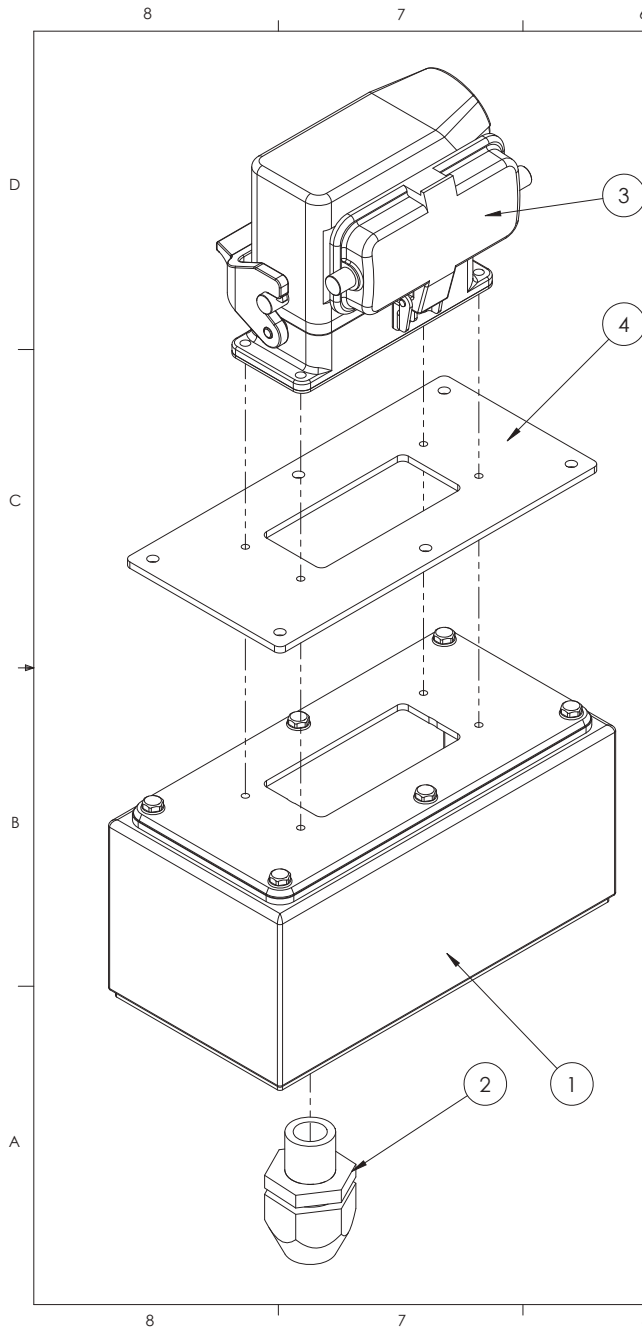
ITEM	PART NO.	DESCRIPTION	QTY
1	120284C1	4-40 THREADED INSERT, PRESS-FIT FOR PLASTIC 15/64" LONG 18-8 STAINLESS STEEL	12
2	121261C1	1/2 OD TUBE HALF CARTRIDGE S/S	2
3	121446C1	1/4-20 #2 LNG HEAT STAKING INSERT, S/S	8
4	123133C2	HSP V2 VALVE BLOCK PLUG	4
5	125294C1	MHSP VALVE BLOCK	1
6	74204401	3/8 O.D. TUBE HALF CARTRIDGE STAINLESS STEEL	12



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TOLERANCES: UNLESS OTHERWISE STATED:
 FRACTIONAL = ± .015
 .XX = ± .015
 .XXX = ± .005
 .XXX = ± .005
 DRILLED HOLE: STANDARD S.A.E.

APPROVED MFG:	APPROVED ENG:
DRAWN BY: TomJR	
TITLE: MHSP VALVE BLOCK COMPLETE	
DWG NO.: 125299C1	A
SCALE: N/A	DATE: 10/11/2017 SHEET 1 OF 1



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2022-06-16	MS
B	INITIAL CREATION MA110-0046 DERIVED FROM 132204C1	2/13/2024	SP

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132137C1	NBGLC32-3 BUTTON BOX	1
2	ST38	CONNECTOR, SEALTITE, 3/8	1
3	132203C1	ELECTRIC DISCONNECT	1
4	136968C1	Electrical box cover	1

MATERIAL: SEE BOM
 STOCK NO:
 STOCK SIZE: SEE BOM
 MASS [LBS]:

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN	DATE	SCALE	SHEET
MS	2022-06-16	1:2	1 OF 1

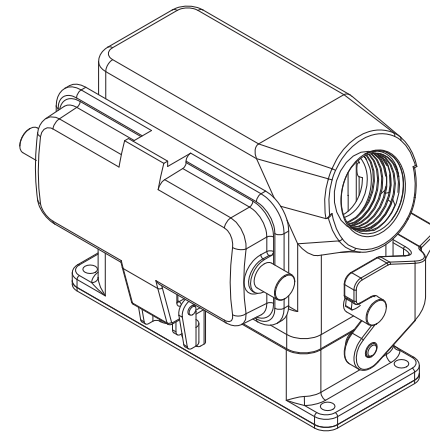
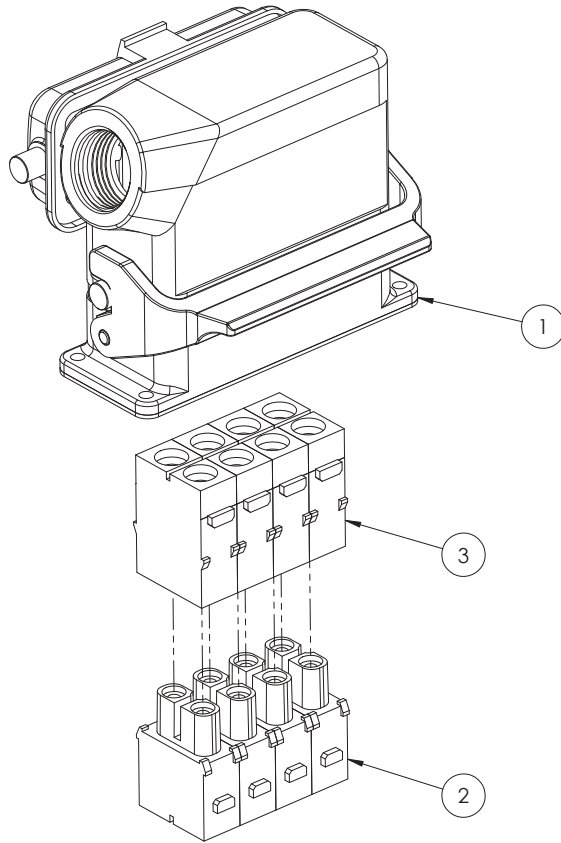
MPX5 ELECTRIC DISCONNECT ASSEMBLY

DRAWING NO.	REV
MA110-0046	B

MA110-0046 REV B

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2022-06-16	MS



132203C1
REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132199C1	Latching Signal/Power/Control Connector	1
2	132200C1	Latching Signal/Power/Control Connector	4
3	132202C1	Latching Signal/Power/Control Connector	4

MATERIAL: SEE BOM
STOCK NO:
STOCK SIZE:
MASS [LBS]:

CV-TEK

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ELECTRIC
DISCONNECT

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT.= ± 1/64 .XXX= ± .005
.XX= ± .015 .XXX= ± .0005
ANGLES= ± 0°30'
DRILLED HOLE: STANDARD S.A.E.

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DRAWING NO.

REV

DRAWN MS	DATE 2022-06-16	SCALE 1:2	SHEET 1 OF 1
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132203C1

A

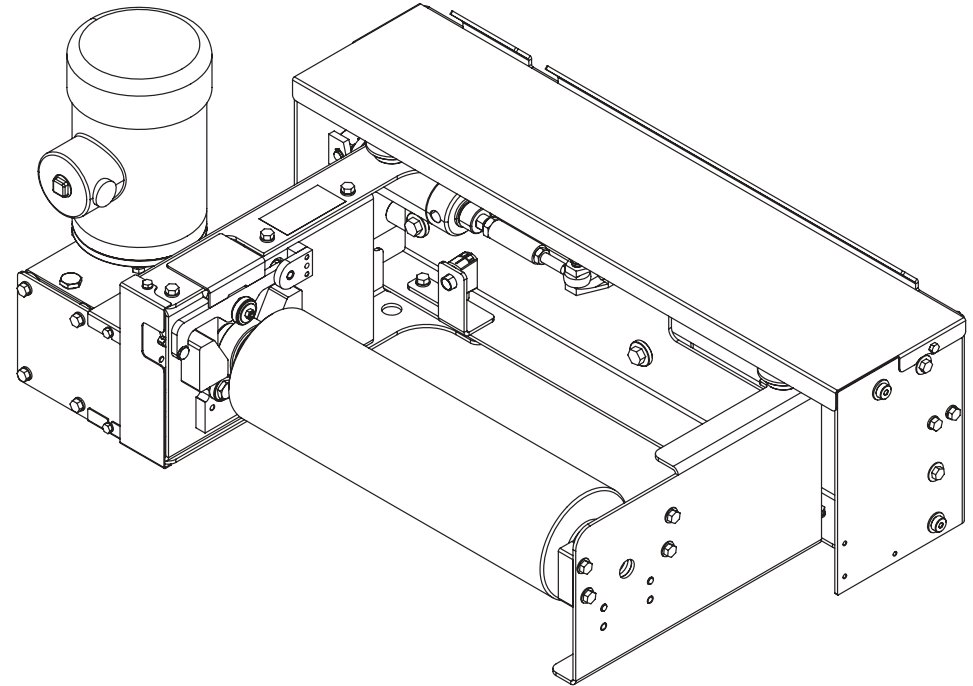
8 7 6 5 4 3 2 1

D
C
B
A

D
C
B
A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133345C1	UNWIND BASE PLATE, NARROW	1
2	133347C1	UNWIND ROLLER SHAFT	2
3	133348C1	UNWIND PINION BAR	2
4	130553C1	.5" X .625 SHOULDER BOLT	4
5	MA061-0014	MPX5 UNWIND ROLL FRAME ASSEMBLY	1
6	B-0210-1877	MOUNT LINEAR ACTUATOR	2
7	0210-1875	PIN, CLEVIS 1/2 DIA. X 1.900	1
8	5100-50H	RING RETAINING, 1/2" OD	4
9	0210-1881	ROD END 1/-20 X 1/2 ID. SS	1
10	B-0210-1878	CLEVIS LINEAR ACTUATOR	1
11	0210-1876	PIN, CLEVIS 1/2 DIA. X 1.500	1
12	128923C1	UNWIND SERVO SPACER	1
13	131994C1	2.5" PNEUMATIC CYLINDER WITH POSITION FEEDBACK	1
14	131995C1	UNWIND CYLINDER EXTENSION	1
15	133344C1	UNWIND TOP COVER, NARROW	1
16	MA061-0015	MPX5 UNWIND ARM ASSY, LH	1
17	128953C1	UNWIND FRAME REINFORCEMENT	2
18	HH5/16-18X1-1/4	SCREW, HEX HEAD	41
19	FW5/16-A	WASHER, FLAT	18
20	LW5/16	WASHER, LOCK	29
21	MA062-0006	UNWIND SHAFT & GEAR ASSE, NARROW MPX5	1
22	112465C1A	UNWIND SHAFT POSITIONING BLOCK	1
23	113132A1	IDLE SIDE, ROLL SUPPORT ASSEMBLY	1
24	133194C1	UNWIND ROLL FRAME ARM	1
25	130010C1	UNWIND GUIDE WHEEL	1
26	JN5/8-18	NUT, JAM	2
27	129222C1	IFM SENSOR	1
28	137383C1	MP UNWIND ULTRASONIC SENSOR MOUNT	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED; REF. 133343C1	2/8/24	JRS



SEE FOLLOWING PAGES FOR ASSEMBLY STAGES & EXPLODED VIEWS

MATERIAL: -
 STOCK NO: -
 STOCK SIZE: SEE BOM
 MASS [LBS]: 249.30

FINISH -

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
 FRACT.= ± 1/64 .XXX= ± .005
 .XX= ± .015 .XXXX= ± .0005
 ANGLES= ± 0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

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DRAWN
JRS

DATE
2/8/24

SCALE
1:6

SHEET
1 OF 4

MPX5 NARROW
UNWIND ASSEMBLY, LH

DRAWING NO.

MA060-0008

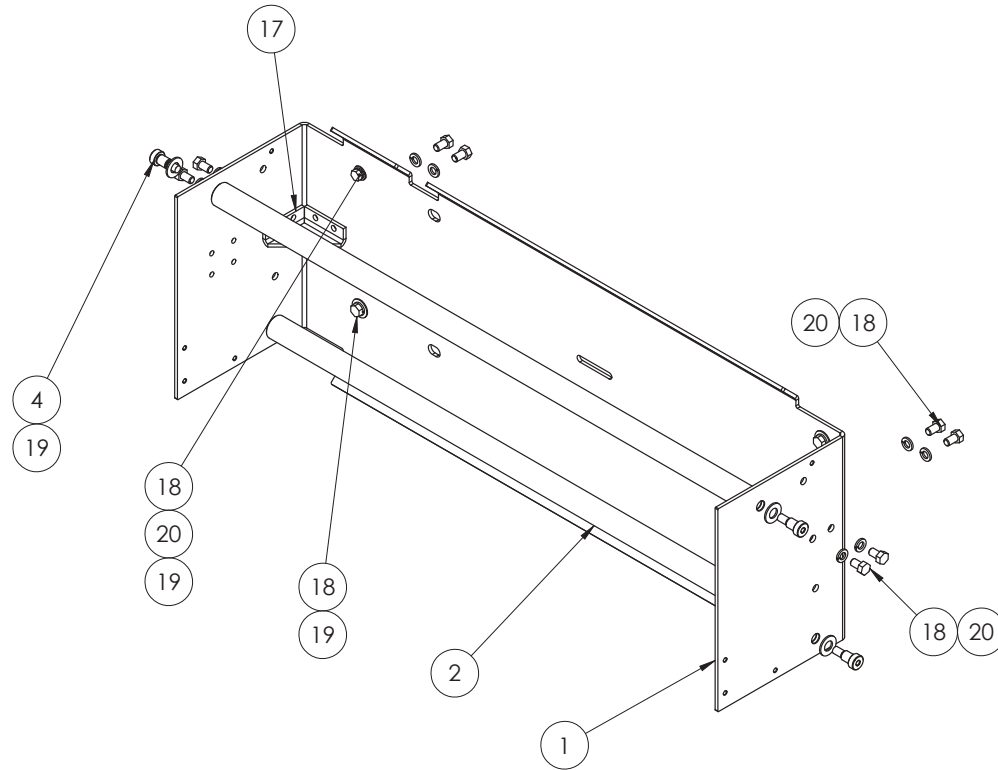
REV

A

MA060-0008
REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133345C1	UNWIND BASE PLATE, NARROW	1
2	133347C1	UNWIND ROLLER SHAFT	2
4	130553C1	.5" X .625 SHOULDER BOLT	4
17	128953C1	UNWIND FRAME REINFORCEMENT	2
18	HH5/16-18X1-1/4	SCREW, HEX HEAD	12
19	FW5/16-A	WASHER, FLAT	8
20	LW5/16	WASHER, LOCK	12

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE REV TABLE ON SHEET 1			



FOR ITEMS HH3/8-16X1-3/4, FW3/8-C, & LN3/8-16 USED TO SECURE THE CENTER SUPPORT: ONLY TIGHTEN LOOSELY ON THE BENCH.

WHEN INSTALLING THIS FRAME ONTO THE MACHINE FOR THE NEXT STAGE OF ASSEMBLY:
 -REMOVE THE NUTS & WASHERS
 -THREAD THE BOLTS THROUGH THE CORRESPONDING SUPPORT BEAM ON THE MASTERPACKER
 -THEN PUT THE WASHERS & LOCKNUTS BACK ON AND FULLY TIGHTEN

ASSEMBLY STEP 1: BENCH BUILD

MATERIAL: -
 STOCK NO: -
 STOCK SIZE: SEE BOM
 MASS [LBS]: 249.30

FINISH -

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
 FRACT.= ± 1/64 .XXX= ± .005
 .XX= ± .015 .XXXX= ± .0005
 ANGLES= ± 0°30'
 DRILLED HOLE: STANDARD S.A.E.

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DRAWN	DATE	SCALE	SHEET
JRS	2/8/24	1:6	2 OF 4

MPX5 NARROW
 UNWIND ASSEMBLY, LH

DRAWING NO. REV

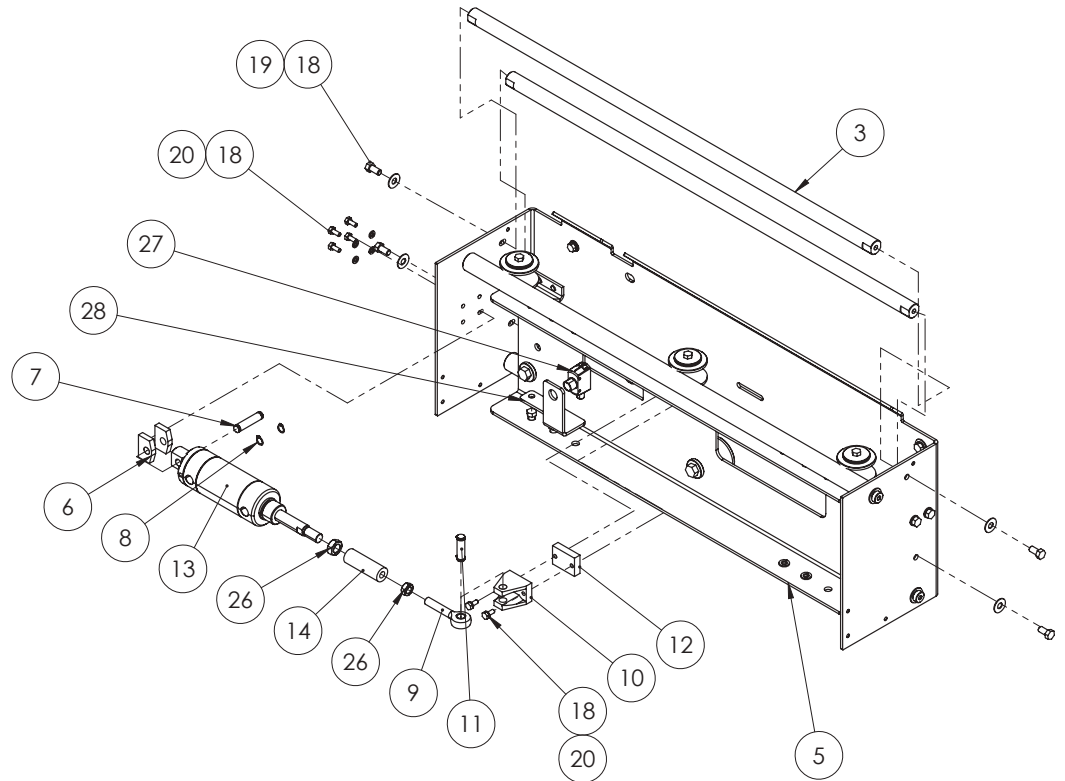
MA060-0008 A

NOTE:
USE BLUE LOCTITE ON ALL THREADS EXCEPT LOCKNUTS;
USE ANTI-SIEZE ON LOCKNUTS

MA060-0008 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133345C1	UNWIND BASE PLATE, NARROW	1
2	133347C1	UNWIND ROLLER SHAFT	2
3	133348C1	UNWIND PINION BAR	2
4	130553C1	.5" X .625 SHOULDER BOLT	4
5	MA061-0014	MPX5 UNWIND ROLL FRAME ASSEMBLY	1
6	B-0210-1877	MOUNT LINEAR ACTUATOR	2
7	0210-1875	PIN, CLEVIS 1/2 DIA. X 1.900	1
8	5100-50H	RING RETAINING, 1/2" OD	4
9	0210-1881	ROD END 1/-20 X 1/2 ID. SS	1
10	B-0210-1878	CLEVIS LINEAR ACTUATOR	1
11	0210-1876	PIN, CLEVIS 1/2 DIA. X 1.500	1
12	128923C1	UNWIND SERVO SPACER	1
13	131994C1	2.5" PNEUMATIC CYLINDER WITH POSITION FEEDBACK	1
14	131995C1	UNWIND CYLINDER EXTENSION	1
17	128953C1	UNWIND FRAME REINFORCEMENT	2
18	HH5/16-18X1-1/4	SCREW, HEX HEAD	27
19	FW5/16-A	WASHER, FLAT	12
20	LW5/16	WASHER, LOCK	23
26	JN5/8-18	NUT, JAM	2
27	129222C1	IFM SENSOR	1
28	137383C1	MP UNWIND ULTRASONIC SENSOR MOUNT	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE REV TABLE ON SHEET 1			



MA060-0008 REV A

NOTE:
USE BLUE LOCTITE ON ALL THREADS EXCEPT LOCKNUTS;
USE ANTI-SIEZE ON LOCKNUTS

ASSEMBLY STEP 2: ON MACHINE

ATTACH THE SERVO & AIR CYLINDER SUPPORT PARTS TO THE FRAME AND ROLL FRAME ASSEMBLIES BEFORE MOUNTING THE ROLL FRAME ASSEMBLIES TO THE UNWIND FRAME

THE ROLL FRAME ASSEMBLIES MUST BE IN PLACE BEFORE THE PINION BARS CAN BE INSTALLED; THOUGH THE LOWER PINION BAR NEEDS TO BE SECURED TEMPORARILY (W/ A TIE OF SOME SORT) UNDERNEITH THE TOP OF THE CENTER SUPPORT BEFORE THE ROLL FRAMES ARE INSTALLED SO IT'S IN POSITION ONCE THEY ARE. THE LOWER PINION BAR DOES NOT FIT PAST THE ROLL FRAMES ONCE THEY ARE IN PLACE

TAKE CAUTION WHEN INSTALLING THE ROLL FRAMES AND THE COMPONENTS MOUNTED TO THEM AS THEY PRESENT A CRUSH HAZARD

MATERIAL: -
 STOCK NO: -
 STOCK SIZE: SEE BOM
 MASS [LBS]: 249.30

FINISH -

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
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DRAWN JRS	DATE 2/8/24	SCALE 1:8	SHEET 3 OF 4
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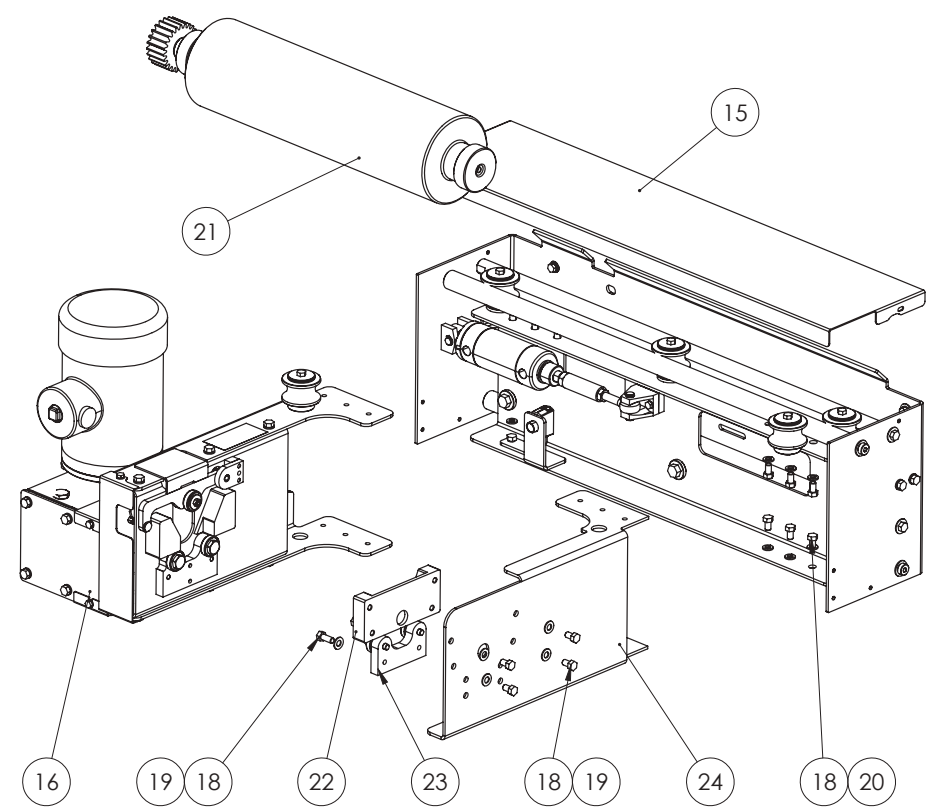
MPX5 NARROW
UNWIND ASSEMBLY, LH

DRAWING NO. REV

MA060-0008 A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133345C1	UNWIND BASE PLATE, NARROW	1
2	133347C1	UNWIND ROLLER SHAFT	2
3	133348C1	UNWIND PINION BAR	2
4	130553C1	.5" X .625 SHOULDER BOLT	4
5	MA061-0014	MPX5 UNWIND ROLL FRAME ASSEMBLY	1
6	B-0210-1877	MOUNT LINEAR ACTUATOR	2
7	0210-1875	PIN, CLEVIS 1/2 DIA. X 1.900	1
8	5100-50H	RING RETAINING, 1/2" OD	4
9	0210-1881	ROD END 1/-20 X 1/2 ID. SS	1
10	B-0210-1878	CLEVIS LINEAR ACTUATOR	1
11	0210-1876	PIN, CLEVIS 1/2 DIA. X 1.500	1
12	128923C1	UNWIND SERVO SPACER	1
13	131994C1	2.5" PNEUMATIC CYLINDER WITH POSITION FEEDBACK	1
14	131995C1	UNWIND CYLINDER EXTENSION	1
15	133344C1	UNWIND TOP COVER, NARROW	1
16	MA061-0015	MPX5 UNWIND ARM ASSY, LH	1
17	128953C1	UNWIND FRAME REINFORCEMENT	2
18	HH5/16-18X1-1/4	SCREW, HEX HEAD	41
19	FW5/16-A	WASHER, FLAT	18
20	LW5/16	WASHER, LOCK	29
21	MA062-0006	UNWIND SHAFT & GEAR ASSE, NARROW MPX5	1
22	112465C1A	UNWIND SHAFT POSITIONING BLOCK	1
23	113132A1	IDLE SIDE, ROLL SUPPORT ASSEMBLY	1
24	133194C1	UNWIND ROLL FRAME ARM	1
25	130010C1	UNWIND GUIDE WHEEL	1
26	JN5/8-18	NUT, JAM	2
27	129222C1	IFM SENSOR	1
28	137383C1	MP UNWIND ULTRASONIC SENSOR MOUNT	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE REV TABLE ON SHEET 1			



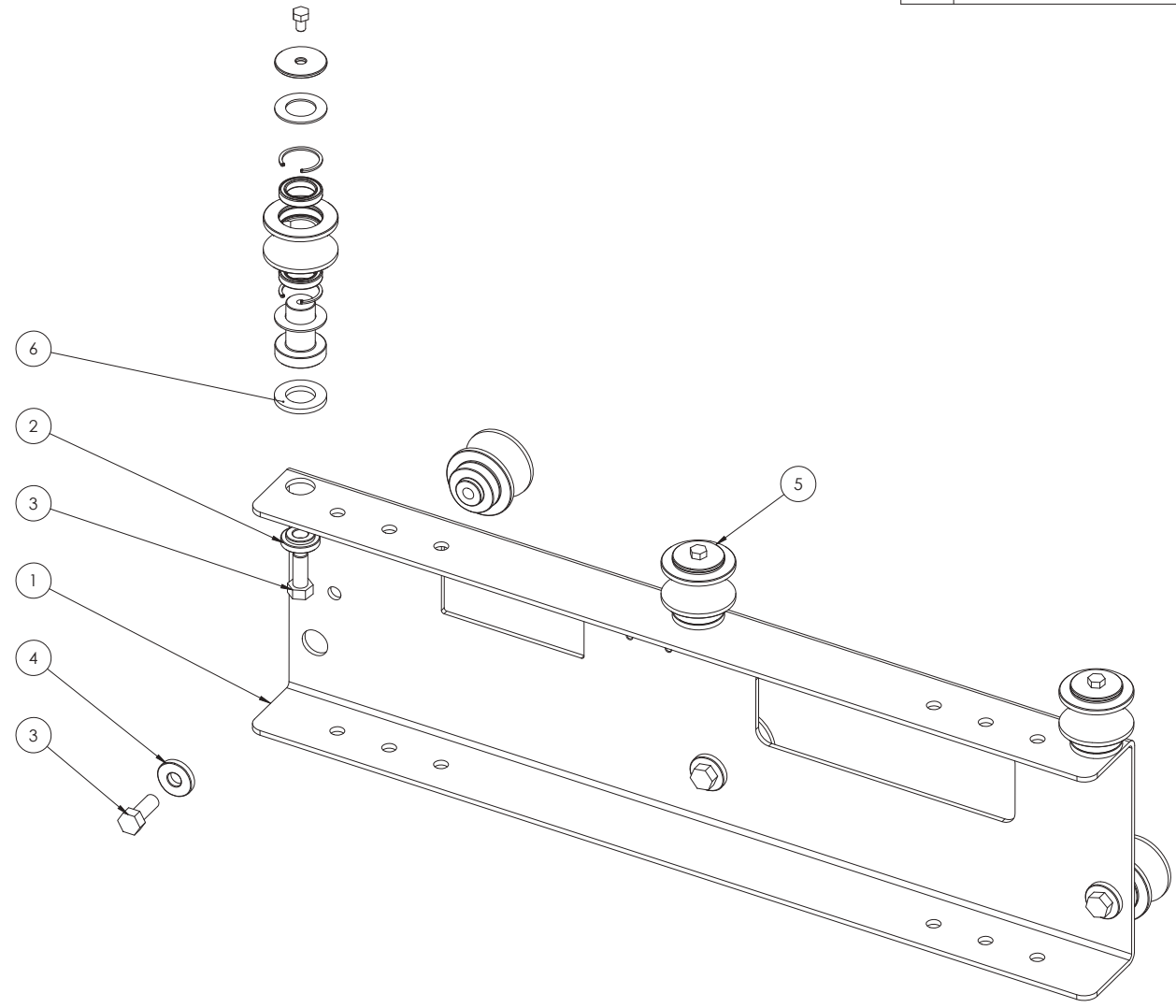
NOTE:
USE BLUE LOCTITE ON ALL THREADS EXCEPT LOCKNUTS;
USE ANTI-SIEZE ON LOCKNUTS

ASSEMBLY STEP 3: ON MACHINE

MATERIAL: - STOCK NO: - STOCK SIZE: SEE BOM MASS [LBS]: 249.30 FINISH - UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT.= ±1/64 .XXX= ±.005 .XX= ±.015 .XXXX= ±.0005 ANGLES= ±0°30' DRILLED HOLE: STANDARD S.A.E.			1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 NARROW UNWIND ASSEMBLY, LH	
	PROPRIETARY AND CONFIDENTIAL <small>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.</small>		DRAWING NO. MA060-0008		REV A	
DRAWN JRS	DATE 2/8/24	SCALE 1:8	SHEET 4 OF 4			

MA060-0008 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/7/24	JRS



ITEM NO.	PART NUMBER	Description	QTY.
1	133346C1	UNWIND ROLL FRAME CHANNEL, NARROW	1
2	132046C1	UNWIND WHEEL LOAD DISK	3
3	HH1/2-20X1-1/4	SCREW, HEX HEAD	6
4	128907C1	UNWIND WHEEL LOAD DISK	3
5	130010C1	UNWIND GUIDE WHEEL	6
6	131997C1	UNWIND GUIDE WHEEL SPACER	3

MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 29.62

FINISH SEE BOM

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
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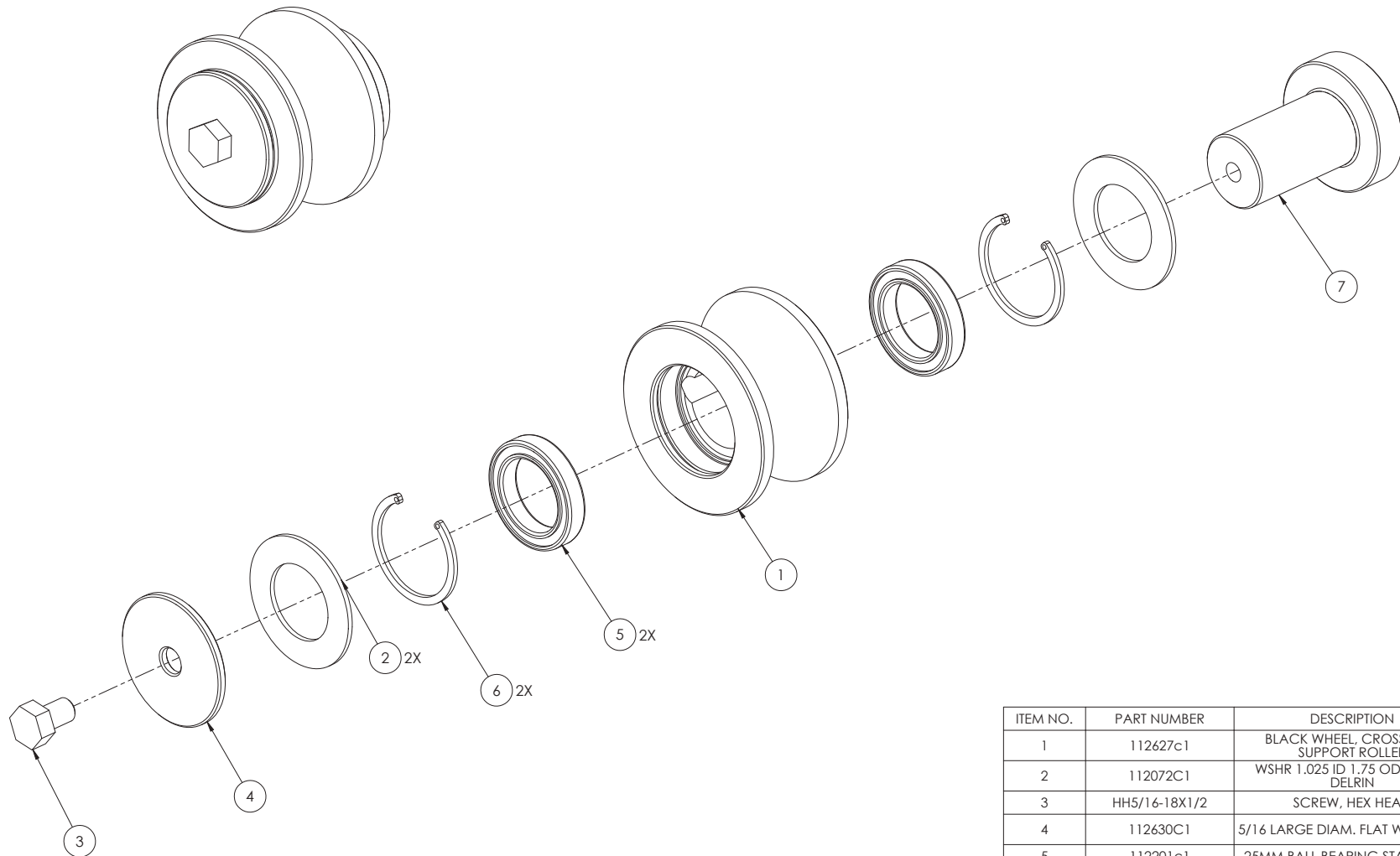
DRAWN JRS	DATE 2/7/24	SCALE 1:3	SHEET 1 OF 1
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**MPX5 UNWIND ROLL
 FRAME ASSEMBLY**

DRAWING NO.
MA061-0014

REV
A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/19/2022	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	112627c1	BLACK WHEEL, CROSS SEAL SUPPORT ROLLER	1
2	112072C1	WSHR 1.025 ID 1.75 OD .07 THK DELRIN	2
3	HH5/16-18X1/2	SCREW, HEX HEAD	1
4	112630C1	5/16 LARGE DIAM. FLAT WASHER, SS	1
5	112201c1	25MM BALL BEARING STAINLESS ST	2
6	112203c1	37MM (1.456) INTRENAL RET RING	2
7	128864C1	UNWIND WHEEL AXLE	1

MATERIAL: SEE BOM
 STOCK NO:
 STOCK SIZE:
 MASS [LBS]: 1.04

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

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DRAWN PV	DATE 9/19/2022	SCALE 1:1	SHEET 1 OF 1
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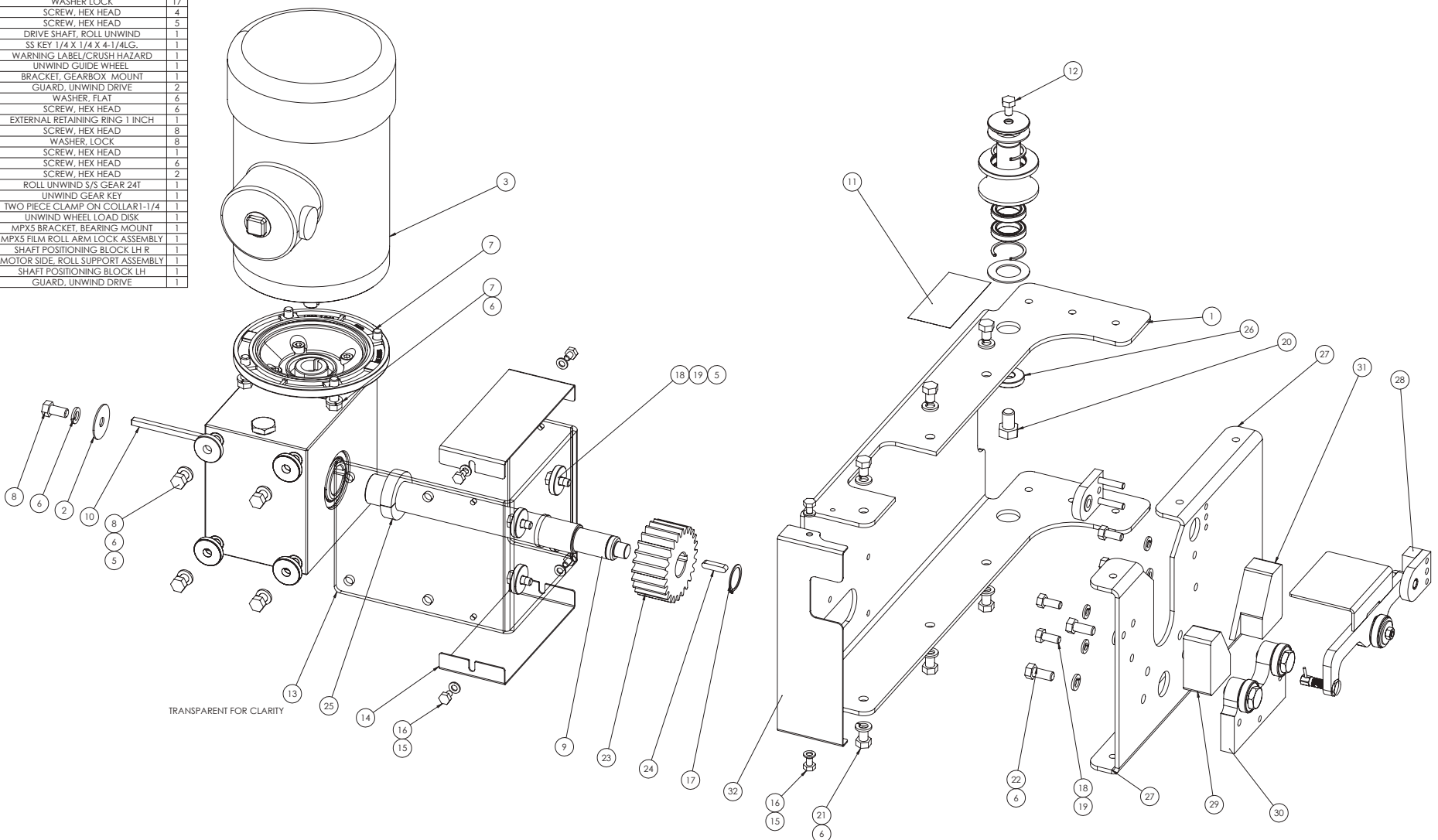
UNWIND GUIDE WHEEL

DRAWING NO.
130010C1

REV
A

ITEM NO.	PART NUMBER	Description	QTY.
1	133011C1	UNWIND ROLL FRAME ARM	1
2	0750-1237	LARGE OD WASHER	1
3	120960C1	1 HP SS MOTOR	1
4	125106C1	K63R HOLLOW REDUCER 36:1	1
5	112634C1A	.391 ID 1.25 OD .25 TH Load Di	11
6	LW3/8	WASHER LOCK	17
7	HH3/8-16X1-1/8	SCREW, HEX HEAD	4
8	HH3/8-16X3/4	SCREW, HEX HEAD	5
9	133005C1	DRIVE SHAFT, ROLL UNWIND	1
10	135074C1	SS KEY 1/4 X 1/4 X 4-1/4LG.	1
11	0210-1030	WARNING LABEL/CRUSH HAZARD	1
12	130010C1	UNWIND GUIDE WHEEL	1
13	133063C1	BRACKET, GEARBOX MOUNT	1
14	133065C1	GUARD, UNWIND DRIVE	2
15	FW1/4-8	WASHER, FLAT	6
16	HH1/4-20X3/8	SCREW, HEX HEAD	6
17	109337C1	EXTERNAL RETAINING RING 1 INCH	1
18	HH5/16-18X3/4	SCREW, HEX HEAD	8
19	LW5/16	WASHER, LOCK	8
20	HH1/2-13X3/4	SCREW, HEX HEAD	1
21	HH3/8-16X1/2	SCREW, HEX HEAD	6
22	HH3/8-16X7/8	SCREW, HEX HEAD	2
23	112590C1	ROLL UNWIND S/S GEAR 24T	1
24	113220C1	UNWIND GEAR KEY	1
25	112944C1	TWO PIECE CLAMP ON COLLAR 1-1/4	1
26	128907C1	UNWIND WHEEL LOAD DISK	1
27	133013C1	MPX5 BRACKET, BEARING MOUNT	1
28	MA064-0003	MPX5 FILM ROLL ARM LOCK ASSEMBLY	1
29	114795C1	SHAFT POSITIONING BLOCK LH R	1
30	MA061-0003	MOTOR SIDE, ROLL SUPPORT ASSEMBLY	1
31	114796C1	SHAFT POSITIONING BLOCK LH	1
32	133192C1	GUARD, UNWIND DRIVE	1

REVISIONS		
REV.	DESCRIPTION	DATE APPROVED
A	DRAWING CREATED: REF. 133340C1	2/8/24 JRS

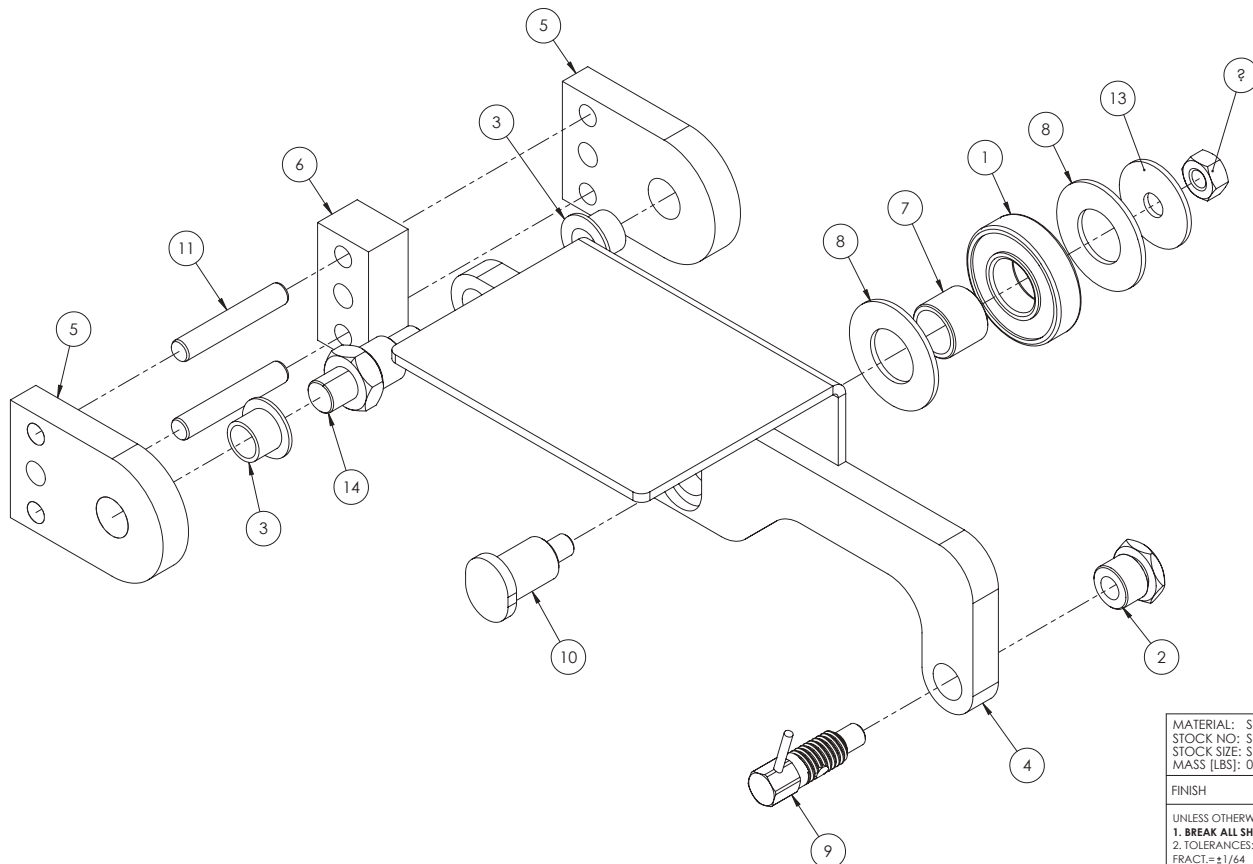
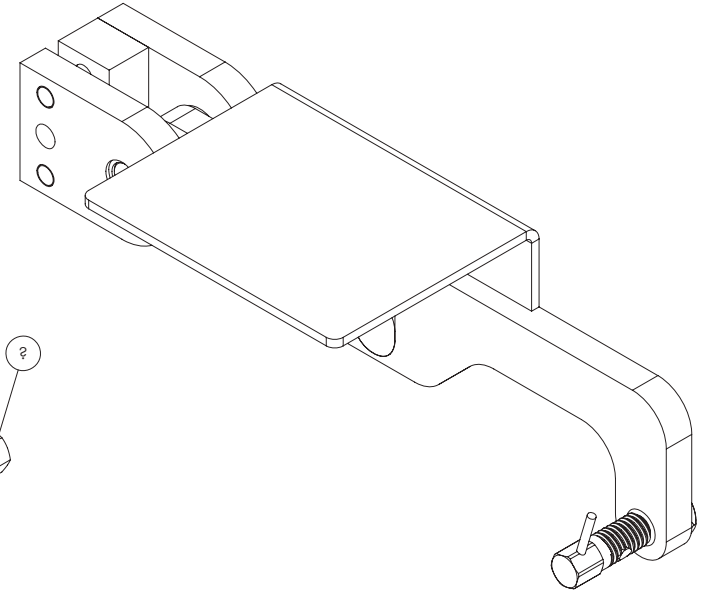
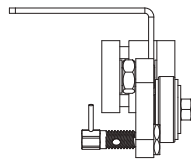
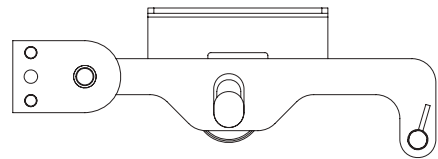
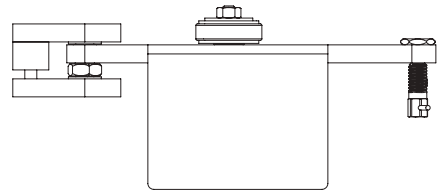


MATERIAL: - STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 76.34 FINISH: SEE BOM	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 UNWIND ARM ASSY, LH	
		UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT. = ±1/64 .XXX ±.005 DEC. = ±.015 .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.
DRAWN: JRS DATE: 2/7/24 SCALE: 1/2 SHEET: 1 OF 1		DRAWING NO.: MA061-0015	REV: A

MA061-0015 (REV. A)

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/29/2024	PV

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	108990C1	BALL BEARING .625 I.D. 1.3750 O.D. .3438 WIDE	1
2	120194C1	ROLL TIE DOWN PIN SPACER	1
3	120195C1	ROLL TIE DOWN BUSHING	2
4	137379C1	GUARD, UNWIND DRIVE WELDMENT	1
5	120416C1	BRACKET ROLL LOCK	2
6	124229C1	V45 SPACER ROLL LOCK	1
7	120419C1	PIN BEARING ROLL LOCK	1
8	120431C1	WASHER PLASTIC	2
9	120571C1	PLUNGER PIN 3/8	1
10	120593C1	ROLL TIE DOWN SHAFT	1
11	108896C1	Ø1/4 X 1-1/2 DOWEL PIN, SS	2
12	75103801	1/4-20 HEX NUT, SS	1
13	108573C1	1/4 FLAT WASHER 1.000 O.D. 0.06 THCK SS	1
14	120418C1	PIN ROLL LOCK	1



MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.71

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (630) 852-1190 FAX: (630) 852-1386

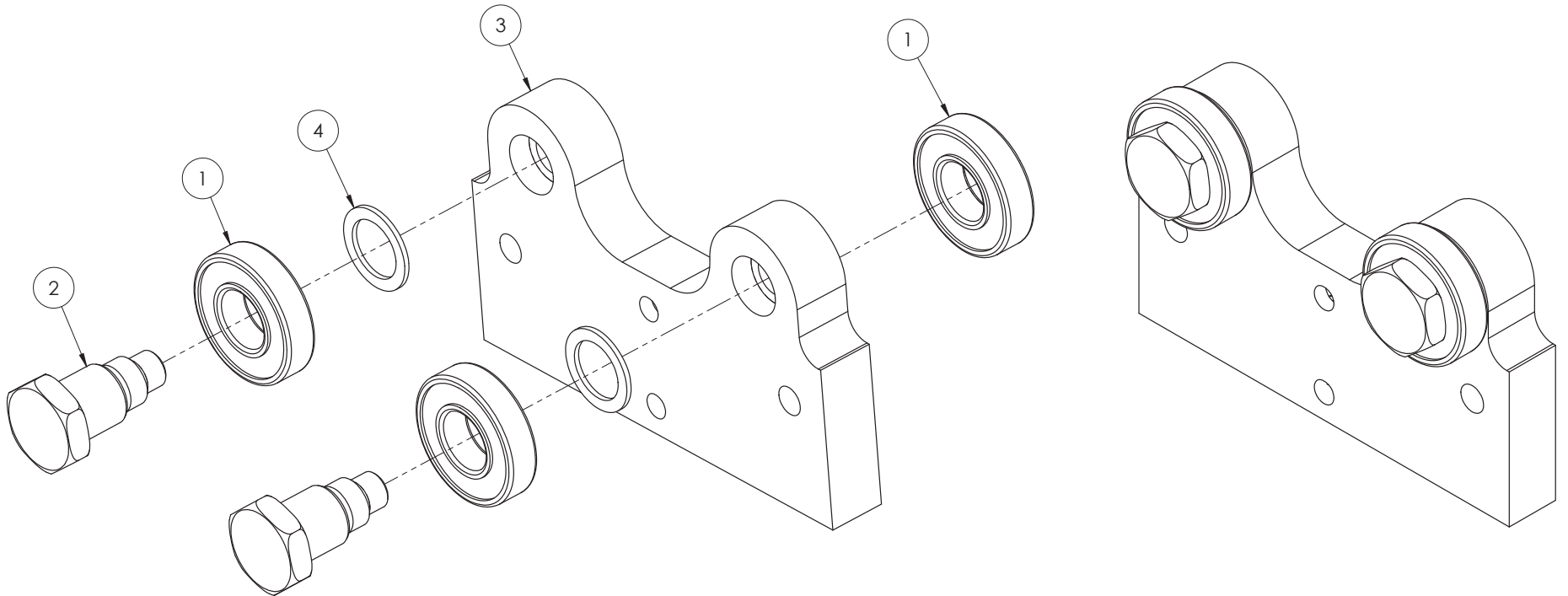
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DRAWN PV	DATE 1/29/2024	SCALE 1:2	SHEET 1 OF 1
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**MPX5 FILM ROLL ARM
 LOCK ASSEMBLY**

DRAWING NO. MA064-0003	REV A
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/1/2022	MS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	108990C1	BALL BEARING .625 I.D. 1.3750 O.D. .3438 WIDE	3
2	112462C1	UNWIND BEARING SPACER	2
3	114797C1	UNWIND SHAFT BEARING BLOCK	1
4	110090C1	WASHER SPECIAL S/S, .625/.630 I.D., .875 O.D., .046/.062 THICK	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.30

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ± 1/64 .XXX= ± .005
 .XX= ± .015 .XXXX= ± .0005
 ANGLES= ± 0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN MS	DATE 9/1/2022	SCALE 1:1	SHEET 1 OF 1
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**MOTOR SIDE, ROLL
 SUPPORT ASSEMBLY**

DRAWING NO.

MA061-0003

REV

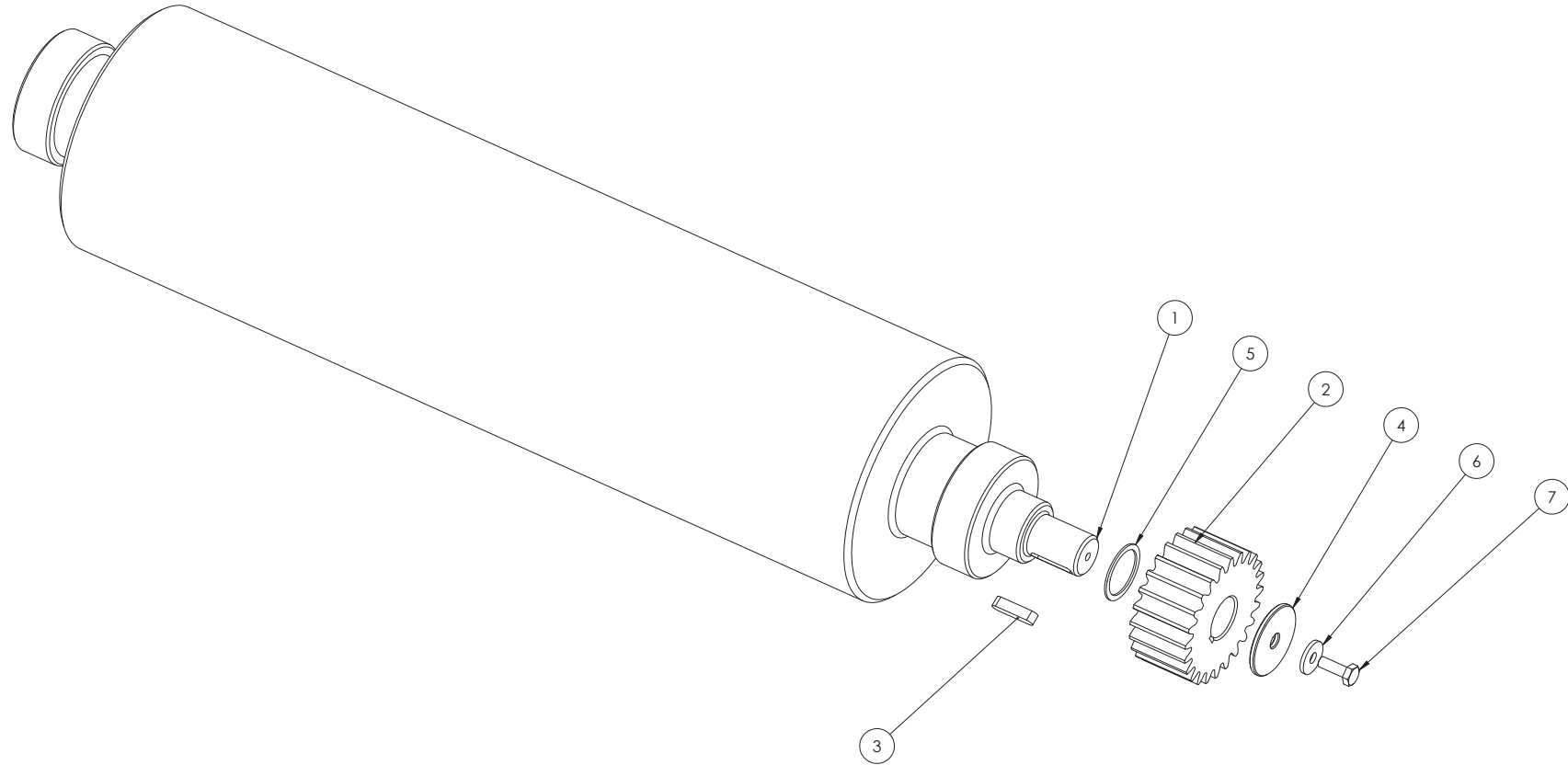
A

MA061-0003
 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133352C1	ROLL UNWIND SHAFT AIR EXPNARROW MPX5	1
2	112590C1	ROLL UNWIND S/S GEAR 24T	1
3	113220C1	UNWIND GEAR KEY	1
4	112630C1	5/16 LARGE DIAM. FLAT WASHER, SS	1
5	113855C1	SPACER WASHER, SPINDLE GEAR UNWIND	1
6	110290C1	1/4 FLAT WASHER, .266IDX.810ODX.89 THK	1
7	75106401	1/4-20X3/4 LG HHCS, SS	1

MA0062-0006 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/7/24	JRS



MATERIAL: SEE BOM
 STOCK NO: ???
 STOCK SIZE:
 MASS [LBS]: 23.41

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

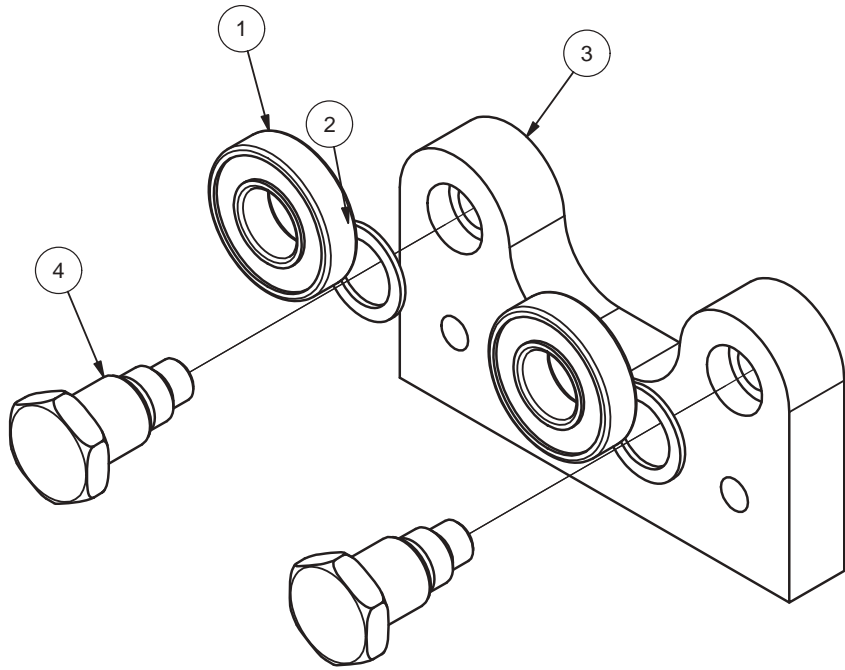
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DRAWN JRS	DATE 2/7/24	SCALE 1:2	SHEET 1 OF 1
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UNWIND SHAFT &
 GEAR ASSE, NARROW
 MPX5

DRAWING NO. MA062-0006	REV A
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REVISIONS			
ECO	REV	DESCRIPTION	DATE

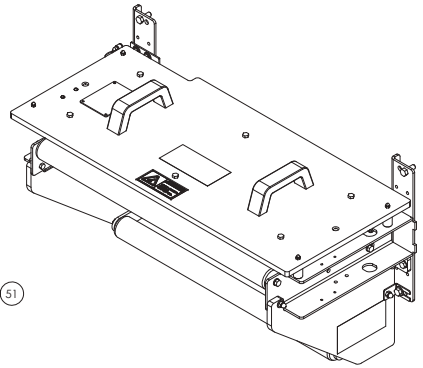
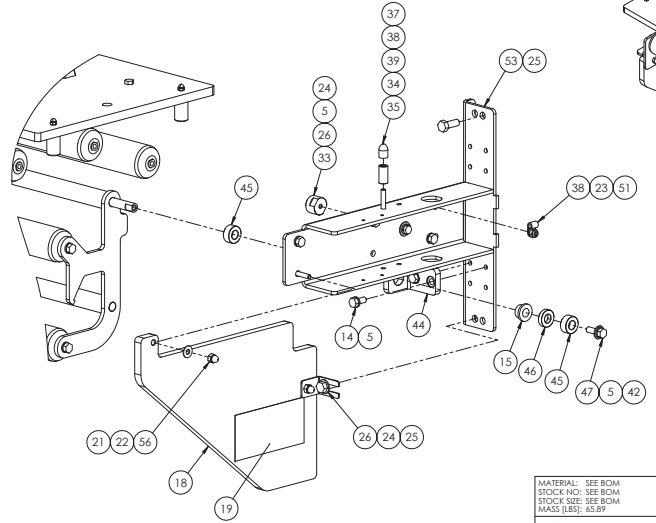
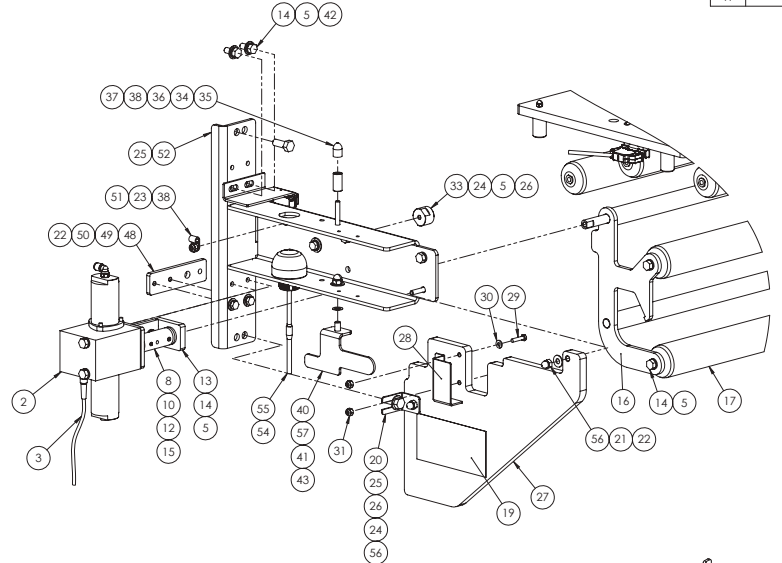
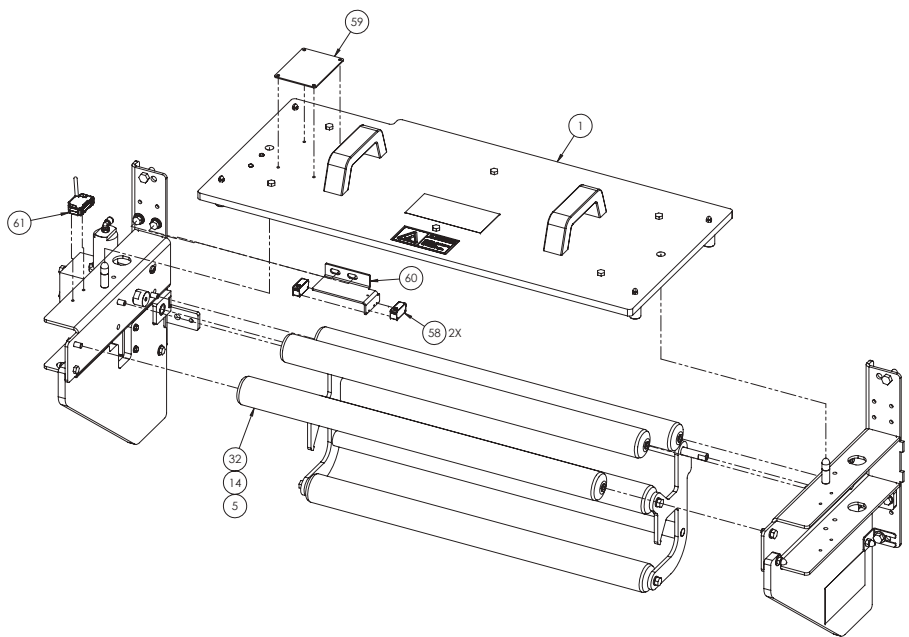


Parts List			
ITEM	PART NO.	DESCRIPTION	QTY
1	108990C1	BALL BEARING, .6250 I.D., 1.3750 O.D., .3438 WIDE STAINLESS STEEL, TWO SEALS WITH GREASE	2
2	110090C1	WASHER SPECIAL STAINLESS STEEL, .625/.630 I.D., .875 O.D., .046/.062 THICK	2
3	112461C1	UNWIND SHAFT BEARING BLOCK	1
4	112462C1	UNWIND BEARING SPACER	2



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TITLE: IDLE SIDE, ROLL SUPPORT ASSEMBLY	
TOLERANCES: UNLESS OTHERWISE STATED: FRACTIONAL = ± .015 .XX = ± .015 .XXX = ± .005 DRILLED HOLE: STANDARD S.A.E.	DWG NO.: 113132A1 REV: - SCALE: NONE DATE: 07/08/10 SHEET 1 OF 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/14/2024	FV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MA083-0014	MPX5 NARROW TOP INFEED GUARD, NXG	1
2	0210-1640	ACT.ROT.1.50BORE X 180DEG.FBK	1
3	0651-1133	CABLE, 5m, 3 PIN	1
4	HH5/16-18X4	SCREW, HEX HEAD	2
5	LW5/16	WASHER, LOCK	Z1
6	2699-04-02	FITTING, TBG, ELBOW, 1/4 OD X 1/8 NPT	1
7	7707-2417	BREATHER, 1/8NPT	1
8	B-0210-1639	COUPLER, SWING ARM	1
9	SS3/16KEY	KEY, 3/16 SS, 3/16 SQ	1
10	ST10-32X1/8	SCREW, SET, SOCKET	1
11	ST10-32X1/4	SCREW, SET, SOCKET	1
12	ST1/4-20X1/4	SCREW, SET, SOCKET	2
13	0210-1790	MASTERPACKER ROTARY ACTUATOR BRACKET	1
14	HH5/16-18X3/4	SCREW, HEX HEAD	16
15	FPB12-4	BEARING, FLG, PTFE, 1/2ID X 1/2LG	2
16	C-0210-1861	WELDMENT, SWING ARM, NARROW	1
17	0210-1787	ROLLER, SS, 1.90OD X 24.5LG, 5/16-18	2
18	B-0210-1827	SIDE GUARD RIGHT, SWING ARM	1
19	0210-1035	WARNING, GUARDS IN PLACE	2
20	B-0210-1726	LOWER BRKT, SIDE GUARD	2
21	HH1/4-20X1-1/8	SCREW, HEX HEAD	2
22	FW1/4-20	WASHER, FLAT	6
23	LN1/4-20	NUT, LOCK	4
24	HH1/4-20X1	SCREW, HEX HEAD	4
25	HH3/8-16X1	SCREW, HEX HEAD	4
26	FW3/8-C	WASHER, FLAT	4
27	B-0210-1805	SIDE GUARD LEFT, SWING ARM	1
28	B-0210-1768	LEVER GUARD A	1
29	HH10-32X7/8	SCREW, HEX HEAD	2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
30	FW10-A	WASHER, FLAT	2
31	LN10-32	NUT, LOCK	2
32	0210-1788	ROLLER, SS, 1.90OD X 25.875LG, 5/16-18	3
33	B-0210-1735	STOP PLUG	2
34	0210-1650	SPACER	2
35	B-0210-1239	PIN DOOR HANGER	2
36	HH1/4-20X1-3/4	SCREW, HEX HEAD	1
37	FW1/4-8	WASHER, FLAT	2
38	IT-12-504	CLAMP, PLASTIC, 1/4"	4
39	HH1/4-20X1-1/2	SCREW, HEX HEAD	1
40	B-0210-0952	LEVER SWING ARM LOCK	1
41	PFWS/16-A	WASHER, FLAT, PLASTIC	1
42	FW5/16-A	WASHER, FLAT	4
43	I22352C1	5/16-18 ACORN NUT, 5/5	1
44	B-0210-1806	BRACKET SWING ARM	1
45	B-0210-2037	SPACER, 1/2" ID., 1" OD, 7/16" LG	2
46	B-0210-0917	SPACER, 1 OD X .51ID X 1/4 THK.	1
47	HH5/16-18X1	SCREW, HEX HEAD	1
48	B-0210-1148	PLATE STOP	1
49	HH1/4-20X5/8	SCREW, HEX HEAD	2
50	LW1/4	WASHER, LOCK	2
51	PH1/4-20X5/8	SCREW, PAN HEAD	2
52	I32197C1	BRACKET TAKE-UP MNTG NGX	1
53	I33426C1	BRACKET TAKE-UP MNTG NGX	1
54	I26512C1	TOUCH BUTTON	1
55	7707-1741	CABLE GRAY, CONNECTOR 5 PIN 30'	2
56	AN1/4-20	NUT ACORN SELF LOCKING	4
57	HH5/16-18X5/8	SCREW, HEX HEAD	4
58	I34095C1	P1KH002 BLUE LIGHT SENSOR	2
59	I37384C1	MP ROLL DIRECTION PLACARD	1
60	I37731C1	MOUNT, FILM EDGE SENSORS	1
61	I38031C1	KEYENCE SAFETY SWITCH	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 65.89

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT. = ±1/64 XXX±.005
 DEC. = ±.012 XXX±.005
 ANGLES: ±0°30'

DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 SWING ARM ASSEMBLY, NARROW LH

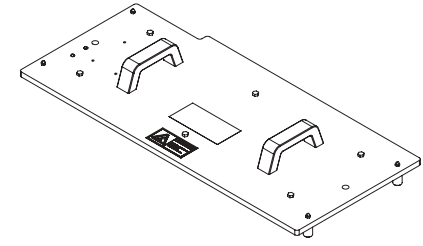
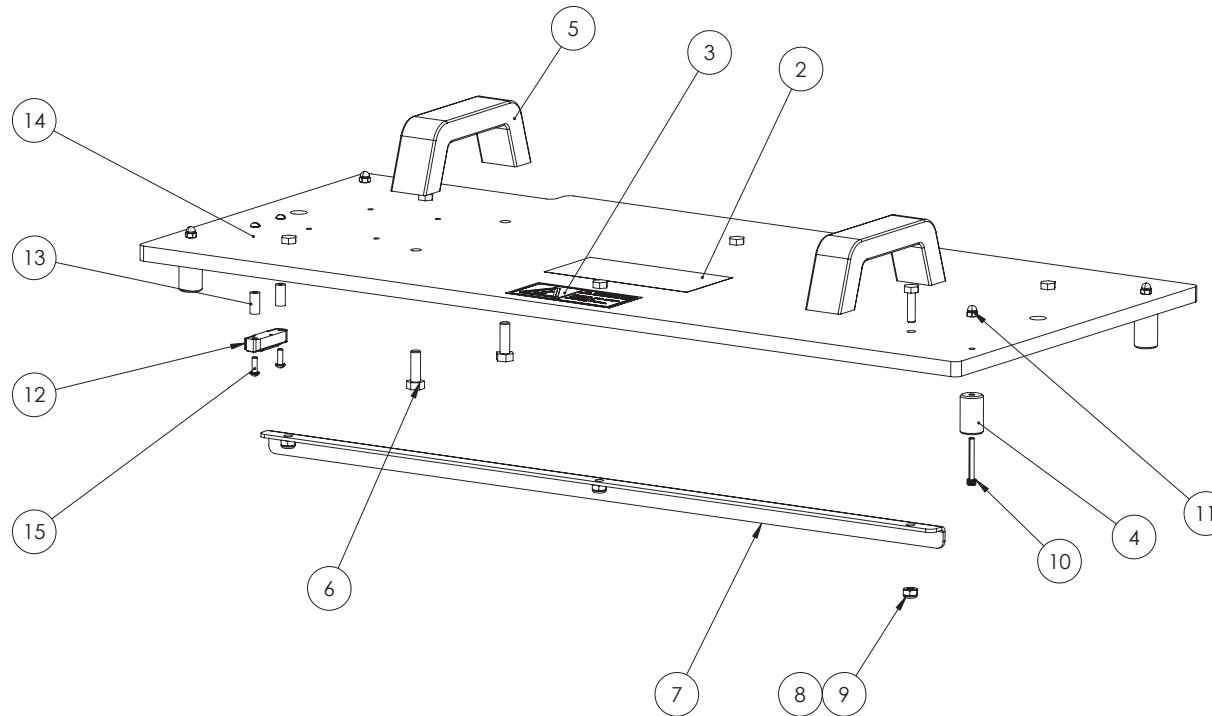
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DRAWING NO. MA066-0002 REV. A
 DRAWN PV DATE 2/14/2024 SCALE 1:4 SHEET 1 OF 1

MA066-0002 REV. A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133320C1	GUARD, TOP INFEED, NXG, NARROW	1
2	0210-1035	WARNING, GUARDS IN PLACE	1
3	0210-1032	WARNING, KEEP HANDS CLEAR	1
4	132188C1	SWING ARM TOP GUARD SPACER	4
5	0210-1761	HANDLE HEAVY DUTY	2
6	HH5/16-18X1	SCREW, HEX HEAD	4
7	B-0210-1808	STIFFENER, ROLL INFEED COVER, NXG	2
8	HH1/4-20X1	SCREW, HEX HEAD	6
9	LN1/4-20	NUT, LOCK	6
10	136420C1	8-32 X 1-3/8 Long Socket Head	4
11	124524C1	#8-32 ACORN NUT: S/S	4
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	132166C1	SPACER 11/16 IN	2
14	75110301	8-32 X 3/4 PHMS SS	2
15	75109401	8-32 X 1/2 Pan head machine	2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/12/24	JRS

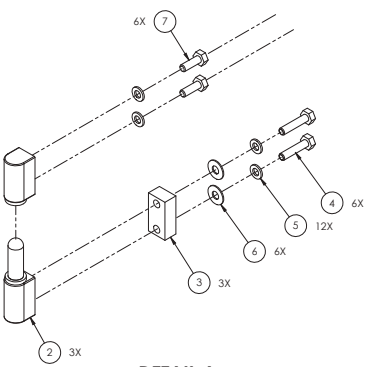
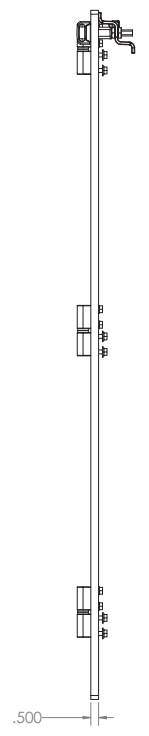
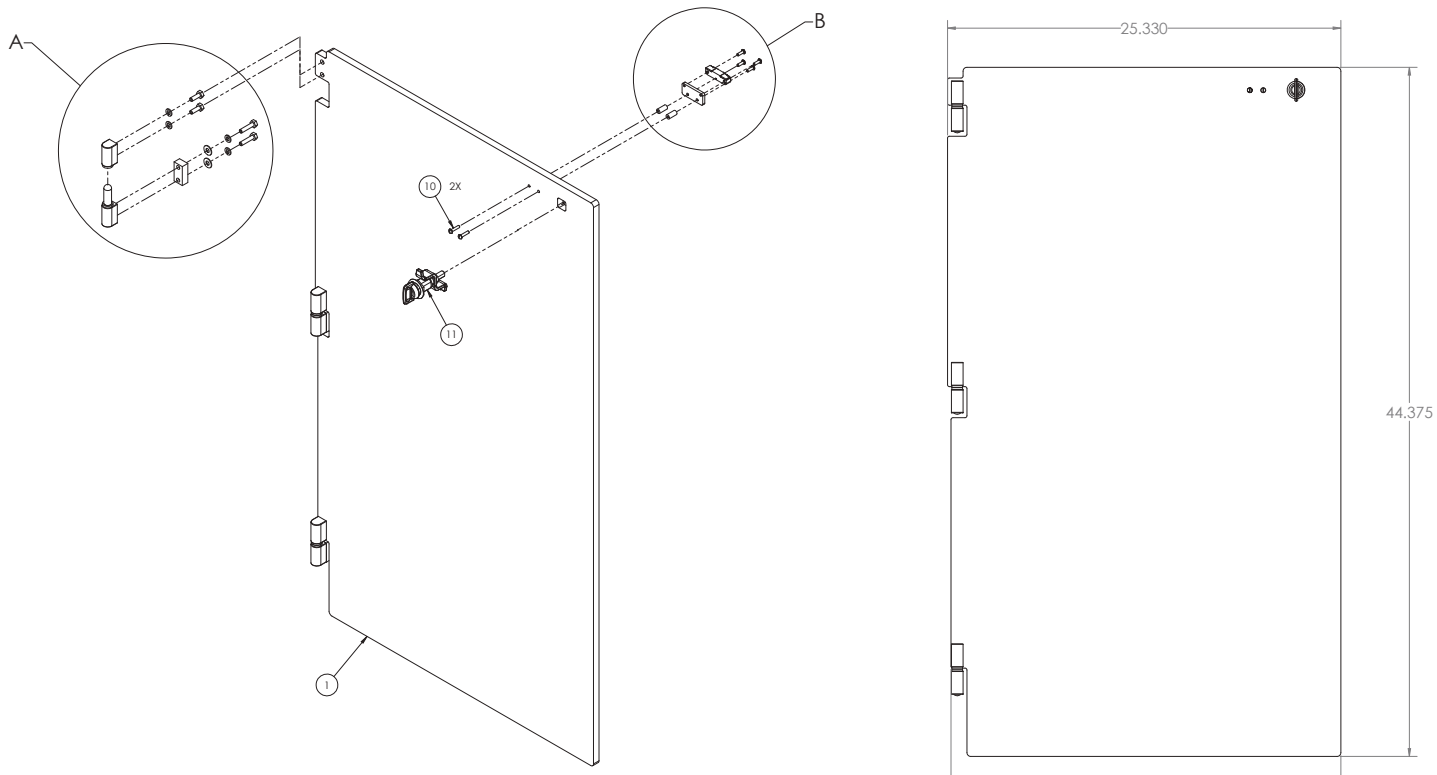


NOTE: THE SAME PARTS ARE USED FOR LH AND RH CONFIGURATIONS, ONLY NEEDED TO BE REVERSED.

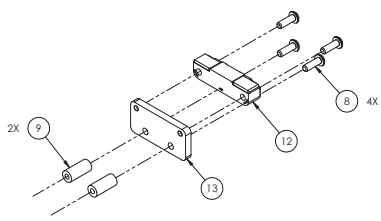
MATERIAL: - STOCK NO: -SEE BOM STOCK SIZE: - MASS [LBS]: 10.93 FINISH: -	CV-TEK 1475 TODD FARM DR. ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 NARROW TOP INFEED GUARD, NXG
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT: ±.004 .000±.005 DIM: ±.012 .000±.005 ANGLES: ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	DRAWING NO. MA083-0014
DRAWN JRS	DATE 2/12/24	SCALE 1:2
SHEET 1 OF 1		REV A

MA083-0014 REVZA

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/23/2024	PV



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 1.5

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	137616C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE LIFT-OFF NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
9	132166C1	SPACER 11/16 IN	2
10	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 24.53

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.1/64 .XXX ±.005
 DEC: ±.015 .XXX ±.005
 ANGLES: ±0°30'

DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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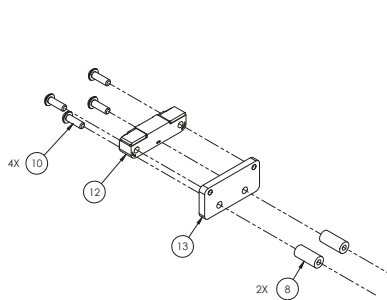
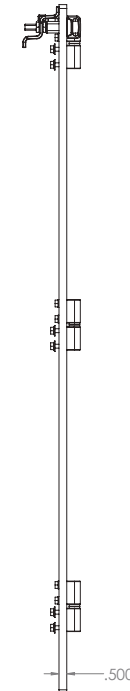
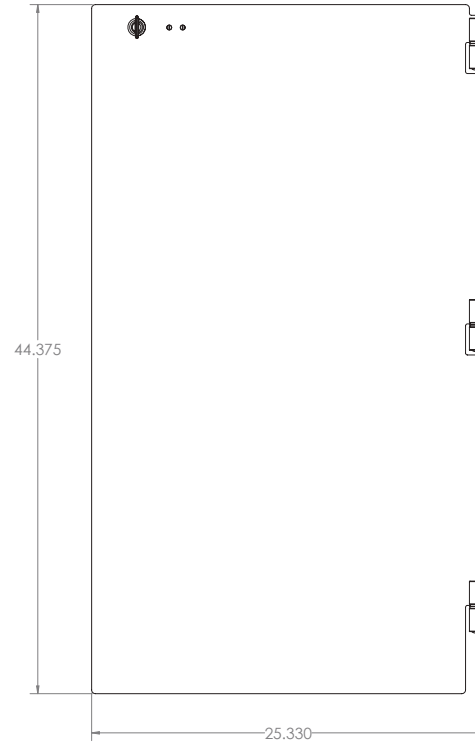
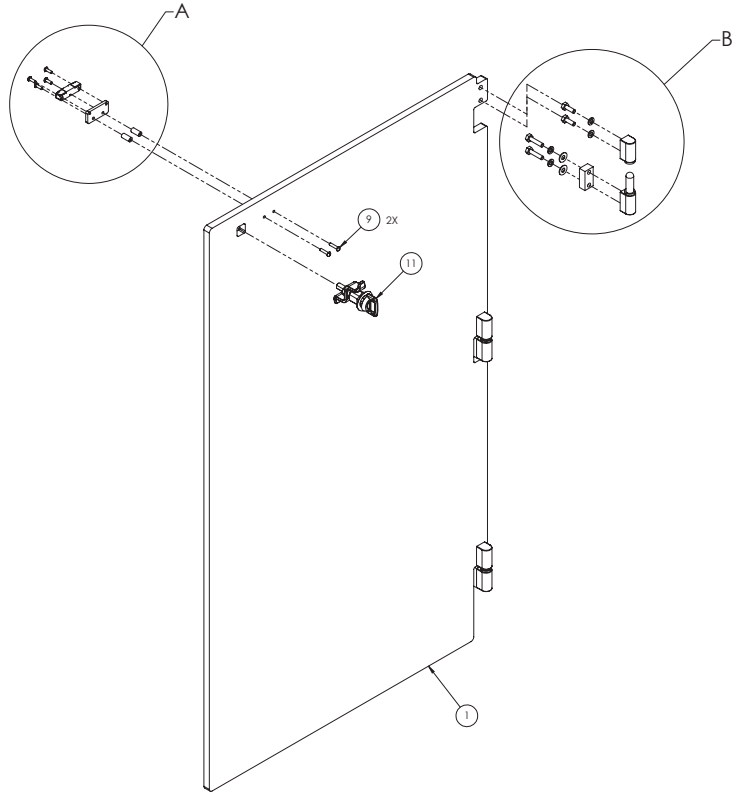
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MPX5, TALL DOOR ASSY,
 LH, LIFT-OFF, WD

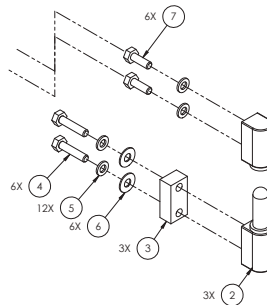
DRAWING NO. MA083-0001 REV. A

MA083-0001 REV. A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



DETAIL A
SCALE 1 : 1.5



DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131957C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE/LIFT-OFF-NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132166C1	SPACER 1 1/16 IN	2
9	75110301	1/8-8 Stainless Steel Round Head Slotted Screws	2
10	75109401	1/8-8 Stainless Steel Round Head Slotted Screws	4
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
STOCK NO.: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 24.61

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT-- ±.004 .003±.005
DIM-- ±.015 .003±.005
ANGLES-- ±0°30'

DRAWN PV DATE 2/8/2024 SCALE 1:4 SHEET 1 OF 1

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

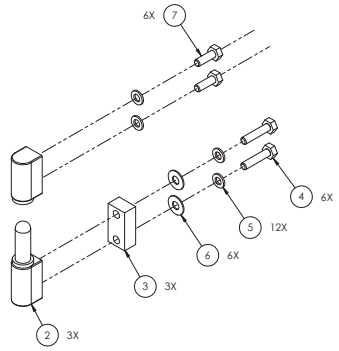
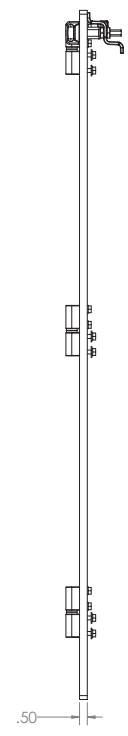
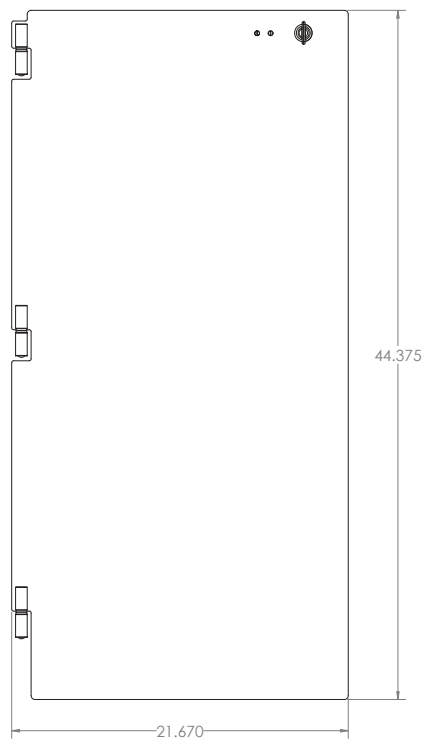
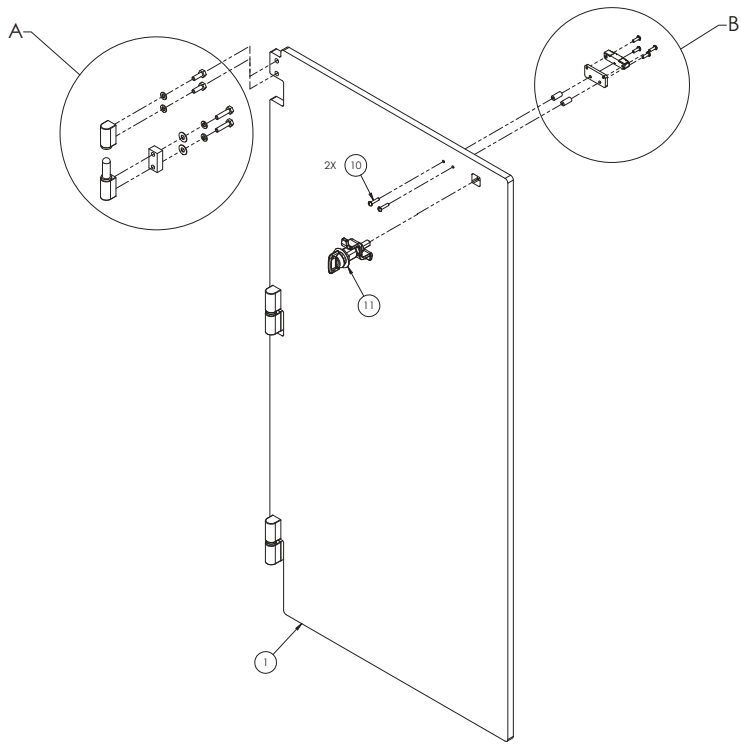
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MPX5, TALL DOOR ASSY,
RH, LIFT-OFF, WD

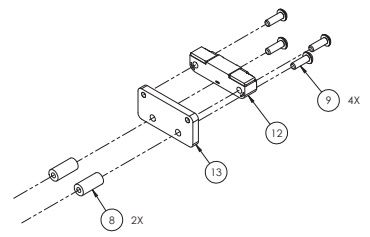
DRAWING NO. MA083-0002 REV. A

MA083-0002 REV. A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 1.5

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131968C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE,LIFT-OFF,NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132166C1	SPACER 11/16 IN	2
9	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
10	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFETY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 21.09

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5, TALL DOOR ASSY,
 LH, LIFT-OFF, WD

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTION = ±1/64 .XXX ±.005
 DECIMAL = ±.015 .XXX ±.005
 ANGLES = ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

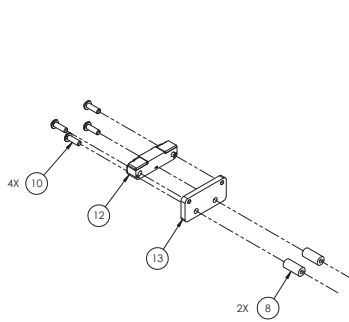
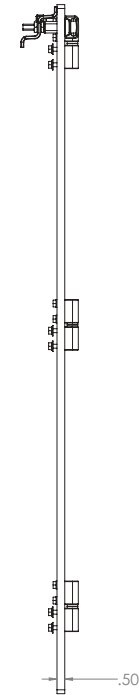
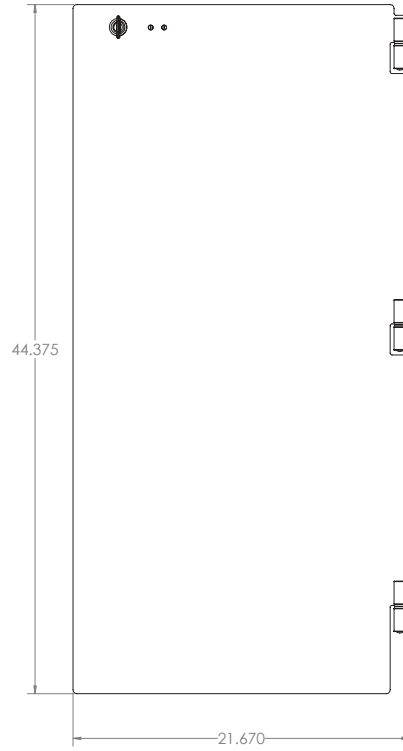
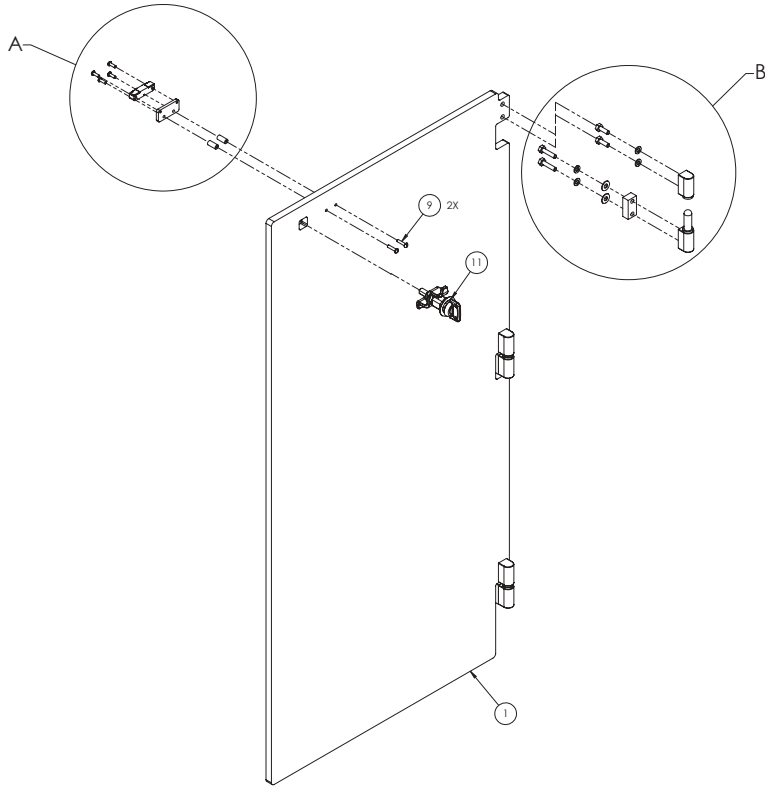
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DRAWN: PV DATE: 2/8/2024 SCALE: 1/4 SHEET: 1 OF 1

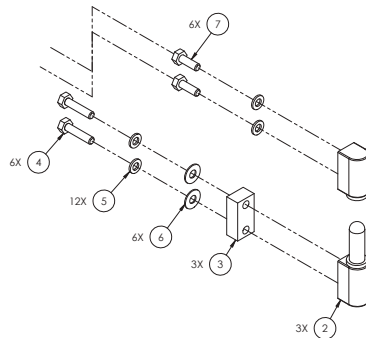
DRAWING NO. MA083-0003 REV. A

MA083-0003 REV. A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131948C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE LIFT-OFF NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132164C1	SPACER 11/16 IN	2
9	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
10	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFETY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 21.09

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT = ±1/64 .XXX ±.005
DIM = ±.015 .XXX ±.005
ANGLES = ±0°30'
DRILLED HOLES: STANDARD S.A.E.

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

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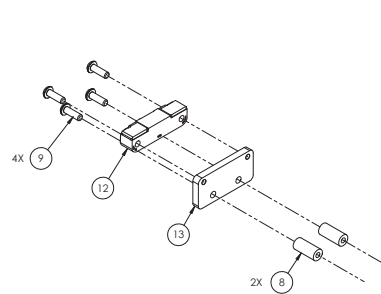
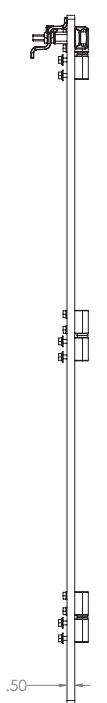
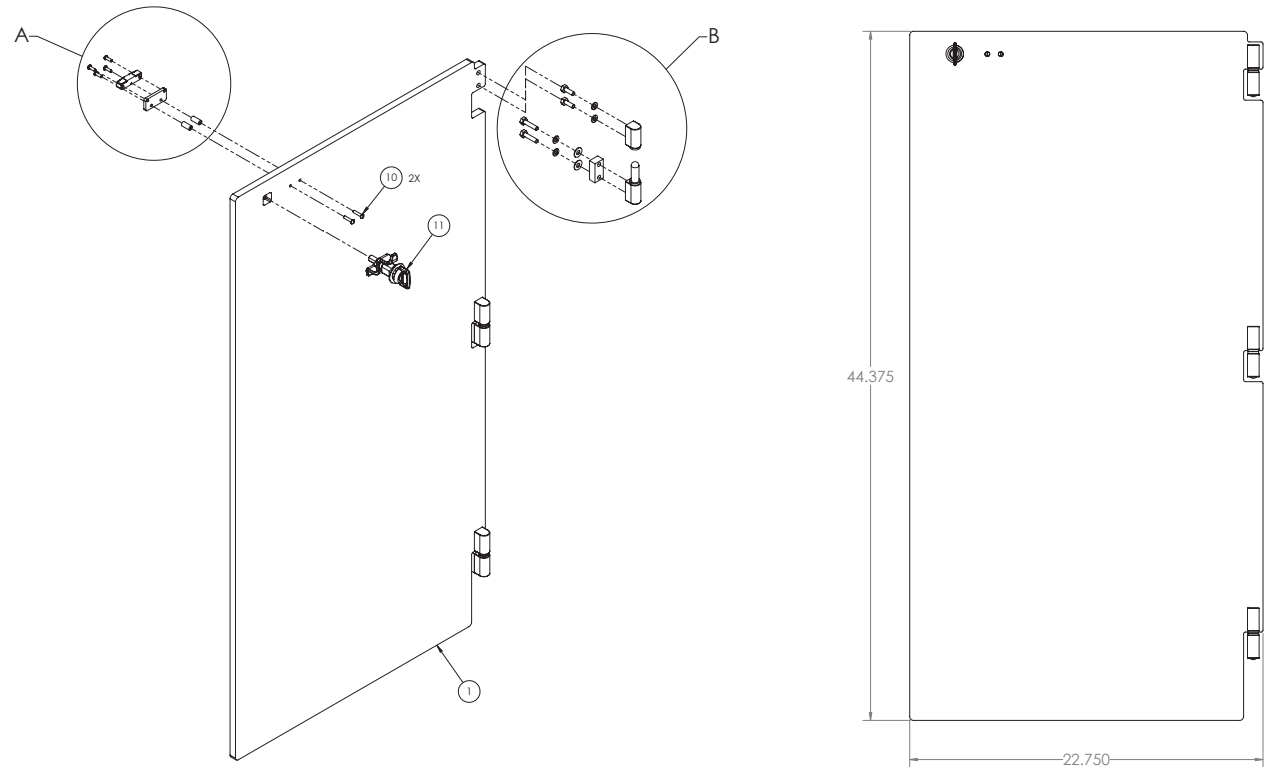
MPX5, TALL DOOR ASSY,
RH, LIFT-OFF, WD

DRAWING NO. MA083-0004
REV. A

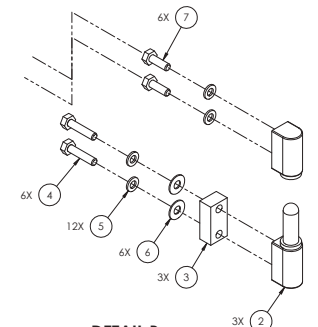
DRAWN: PV
DATE: 2/8/2024
SCALE: 1:4
SHEET: 1 OF 1

MA083-0004 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



DETAIL A
SCALE 1 : 1.5



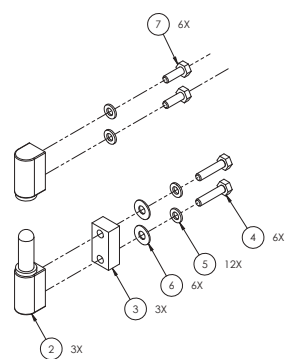
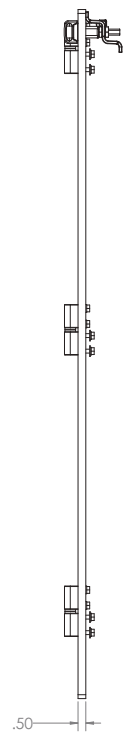
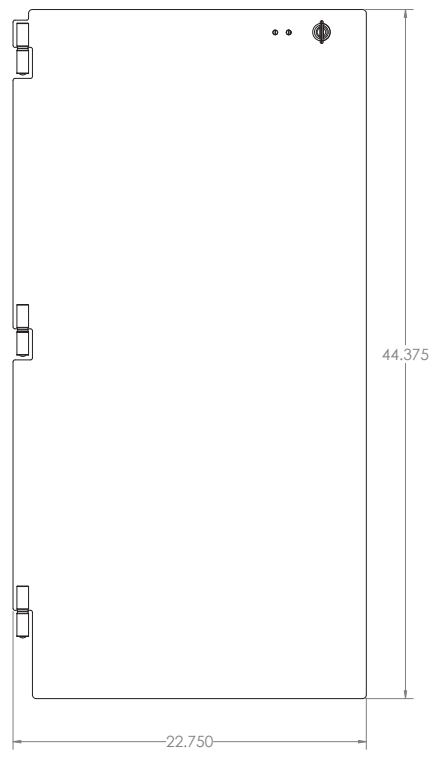
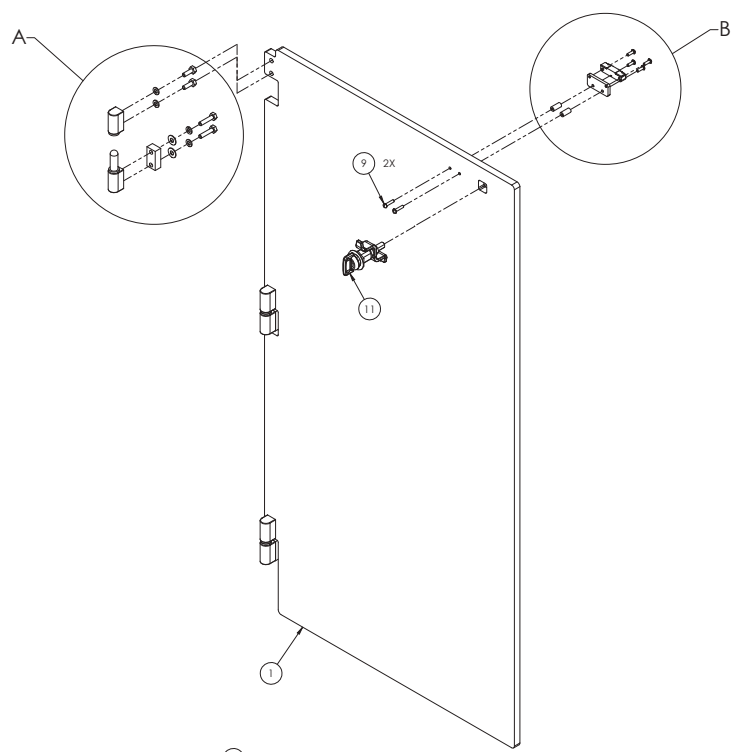
DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131971C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE LIFT-OFF NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132166C1	SPACER 11/16 IN	2
9	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
10	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

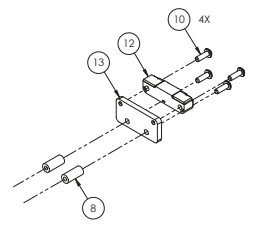
MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 22.13	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5, TALL DOOR ASSY, RH, LIFT-OFF, WD	
		UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT = ±1/64 .XXX ±.005 DEC = ±.015 .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.
DRAWN PV	DATE 2/8/2024	SCALE 1:4	SHEET 1 OF 1

MA083-0005 (REV) A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131971C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE,LIFT-OFF,NYLON	3
3	8-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132166C1	SPACER 11/16 IN	2
9	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
10	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFETY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 22.13
 FINISH: SEE BOM

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5, TALL DOOR ASSY,
 LH, LIFT-OFF, WD

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONAL ±.004 .003±.005
 DECIMAL ±.015 .003±.005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

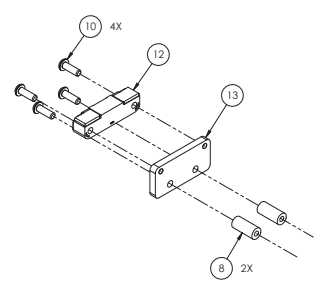
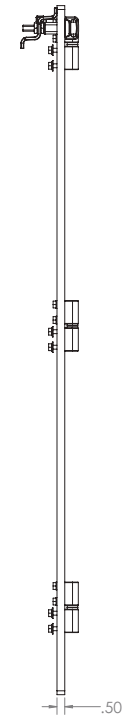
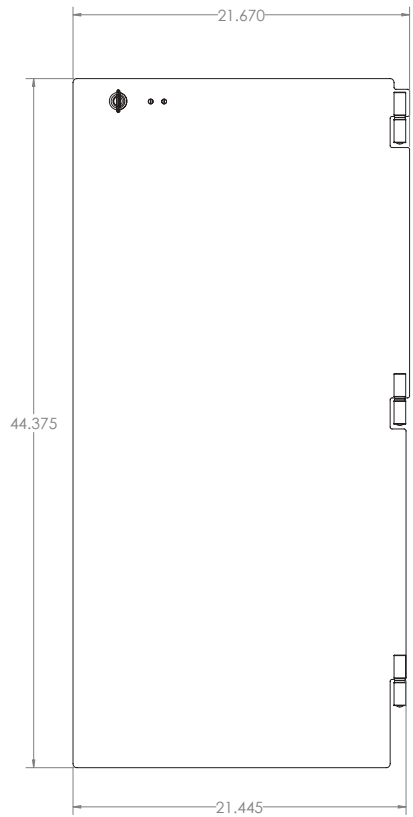
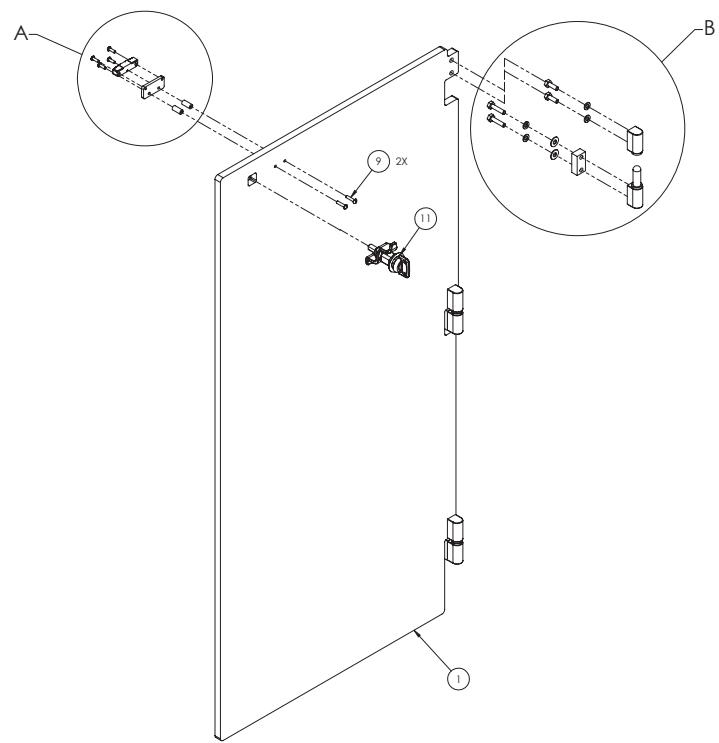
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DRAWING NO. REV
 MA083-0006 A

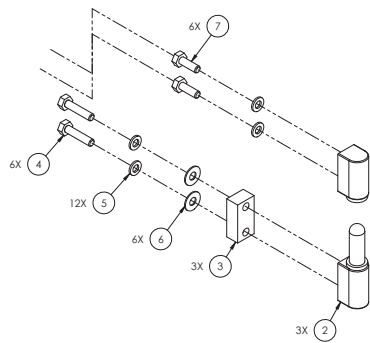
DRAWN PV DATE 2/8/2024 SCALE 1:4 SHEET 1 OF 1

MA083-0006 REV:2A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/23/2024	PV



DETAIL A
SCALE 1 : 1.5



DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	137622C1	DOOR PANEL MPX5	1
2	96-10-400-11	HINGE,LIFT-OFF,NYLON	3
3	B-0750-1139	SPACER HINGE	3
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	6
5	FW1/4-B	WASHER, FLAT	12
6	FW1/4-A	WASHER, FLAT	6
7	HH1/4-20X3/4	SCREW, HEX HEAD	6
8	132166C1	SPACER 11/14 IN	2
9	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
10	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 21.01
 FINISH:

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5, TALL DOOR ASSY,
 RH, LIFT-OFF, WD

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT-- ±1/64 .XXX±.005
 DEC-- ±.015 .XXX±.005
 ANGLES-- ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

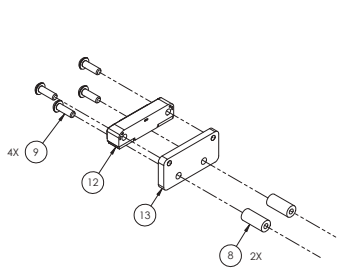
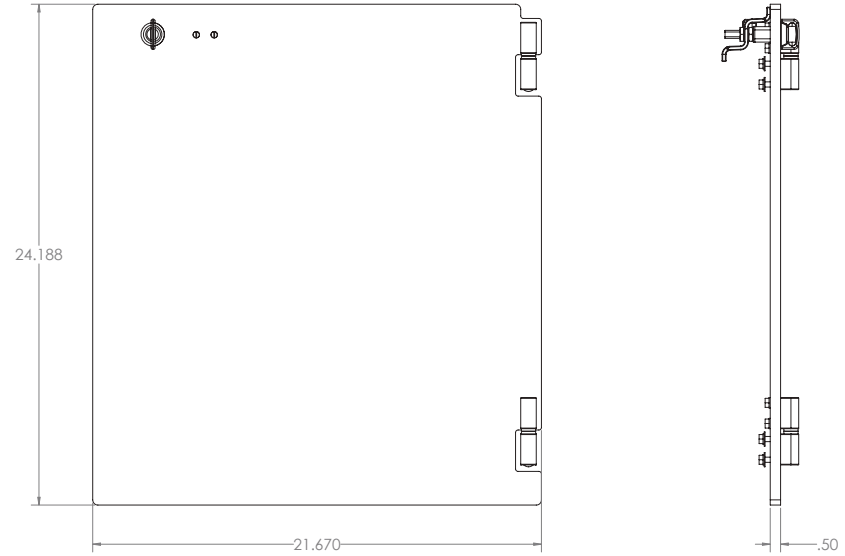
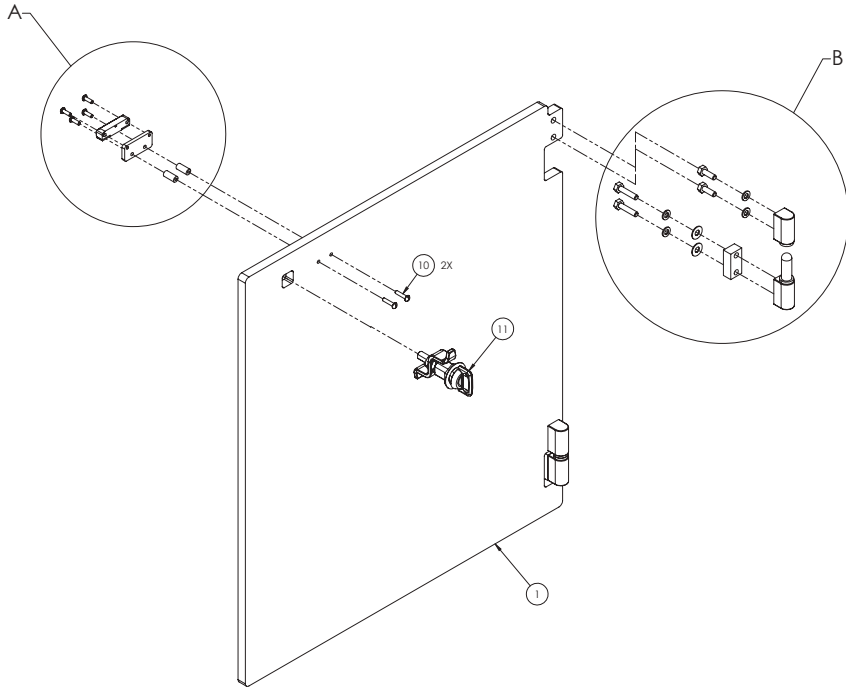
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DRAWING NO. REV
 MA083-0013 A

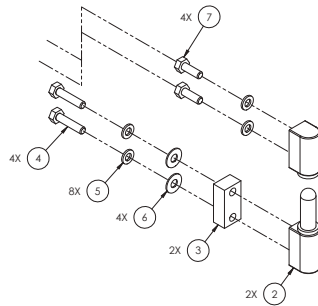
DRAWN PV DATE 2/23/2024 SCALE 1:4 SHEET 1 OF 1

MA083-0013 REV:2A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/23/2024	PV



DETAIL A
SCALE 1 : 1.5



DETAIL B
SCALE 1 : 2

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132024C1	DOOR PANEL MPX5, SHORT	1
2	96-10-400-11	HINGE LIFT-OFF-NYLON	2
3	B-0750-1139	SPACER HINGE	2
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	4
5	FW1/4-B	WASHER, FLAT	8
6	FW1/4-A	WASHER, FLAT	4
7	HH1/4-20X3/4	SCREW, HEX HEAD	4
8	132166C1	SPACER 1 1/16 IN	2
9	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
10	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 11.65

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACTION ±.004 .003±.005
DIMENSIONS ±.015 .003±.005
ANGLES ±0°30'

DRILLED HOLES: STANDARD S.A.E.

CV-TEK
1475 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

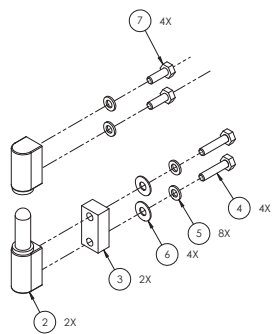
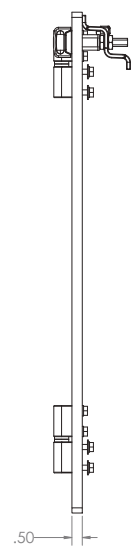
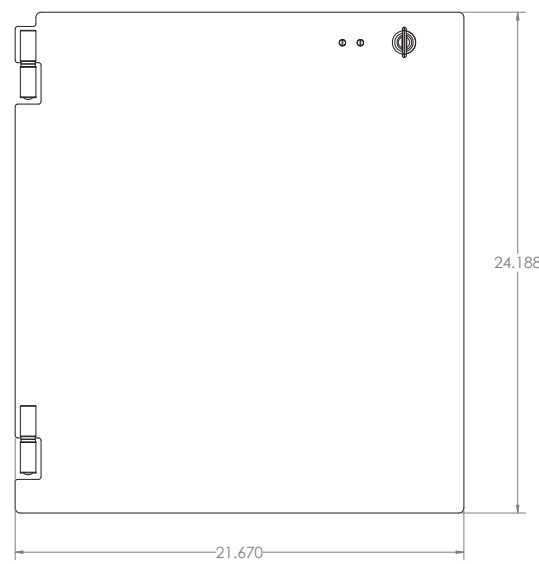
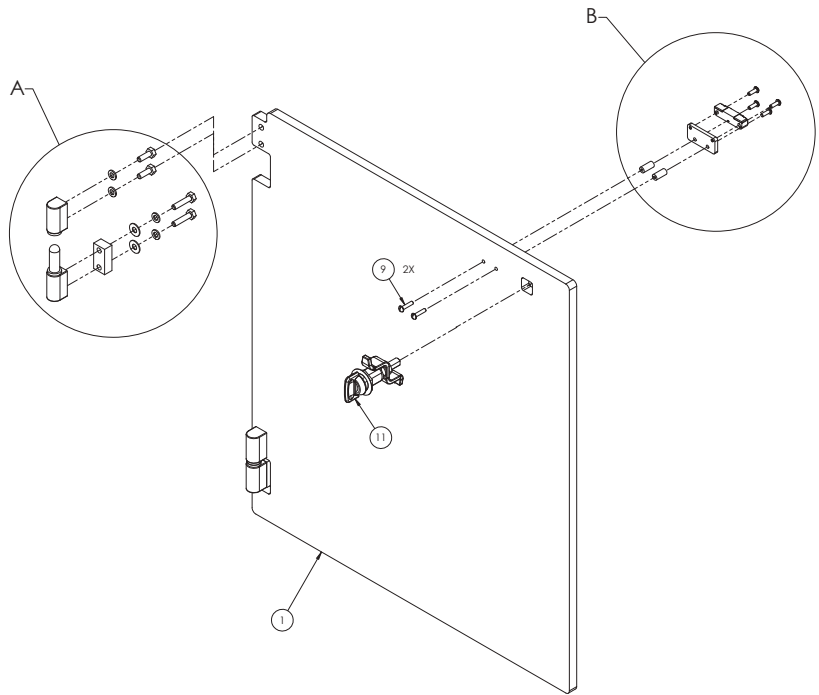
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ASSEMBLY, SHORT DOOR,
LH, LIFT-OFF, WD

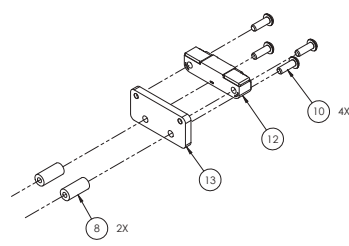
DRAWING NO. REV
MA083-0007 A

MA083-0007 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/9/2024	PV



DETAIL A
SCALE 1 : 2



DETAIL B
SCALE 1 : 1.5

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132024C1	DOOR PANEL MPX5, SHORT	1
2	96-10-400-11	HINGE/LIFT-OFF,NYLON	2
3	B-0750-1139	SPACER HINGE	2
4	HH1/4-20X1-1/8	SCREW, HEX HEAD	4
5	FW1/4-B	WASHER, FLAT	8
6	FW1/4-A	WASHER, FLAT	4
7	HH1/4-20X3/4	SCREW, HEX HEAD	4
8	132166C1	SPACER 11/16 IN	2
9	75110301	18-8 Stainless Steel Round Head Slotted Screws	2
10	75109401	18-8 Stainless Steel Round Head Slotted Screws	4
11	132107C1	COMPRESSION LATCH	1
12	138032C1	KEYENCE SAFTEY MAGNET	1
13	138042C1	DOOR SENSOR ADAPTER	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 11.65

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.104 .003±.005
 ANGLES: ±0°30'

DRILLER HOLE: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: PV DATE: 2/9/2024 SCALE: 1:4 SHEET: 1 OF 1

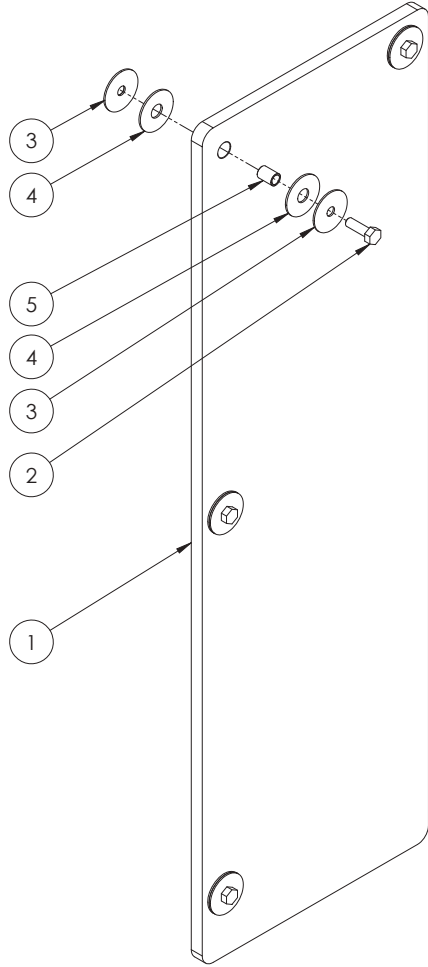
MPX5, SHORT DOOR ASSY,
 LH, LIFT-OFF, WD

DRAWING NO. MA083-0008 REV. A

MA083-0008 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	I36341C1	MPX5 LEXAN GUARD SIDE, NARROW	1
2	HHS/16-18X1	SCREW, HEX HEAD	4
3	FFW5/16X1-1/2	WASHER, FLAT	8
4	B-0210-2133	RUBBER WASHER 1.5 OD X .5 ID X .06/.08 THK	8
5	B-0210-2132	SPACER 7/16 OD X 11/32 ID X 5/8 LG	4

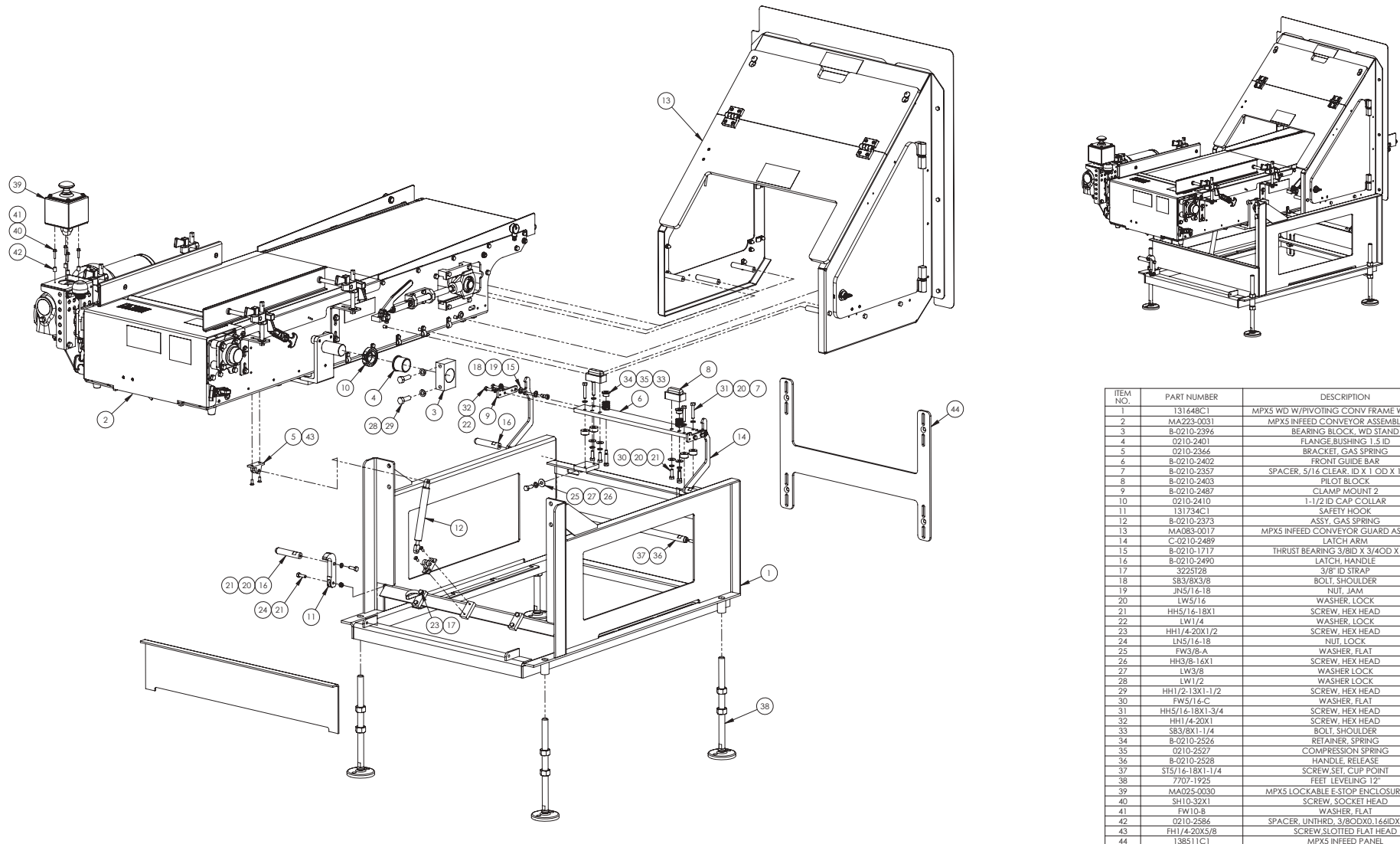
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	3/2/2023	PV



MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 7.57	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 LEXAN GUARD SIDE ASSEMBLY NARROW	
FINISH: SEE BOM		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTION = ±1/64 .XXX ±.005 XXX ±.015 .XXX ±.005 ANGLES = ±0°30'	DRAWN: PV DATE: 3/2/2023 SCALE: 1:4 SHEET: 1 OF 1	DRAWING NO.	REV
		I36340C1	A

I36340C1 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/26/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	131648C1	MPX5 WD W/PIVOTING CONV FRAME WELDMENT	1
2	MA223-0031	MPX5 INFEEED CONVEYOR ASSEMBLY, WD	1
3	B-0210-2396	BEARING BLOCK, WD STAND	2
4	0210-2401	FLANGE BUSHING 1.5 ID	2
5	0210-2366	BRACKET, GAS SPRING	2
6	B-0210-2402	FRONT GUIDE BAR	1
7	B-0210-2357	SPACER, 5/16 CLEAR, ID X 1 OD X 1/2 LG	4
8	B-0210-2403	PILOT BLOCK	2
9	B-0210-2487	CLAMP MOUNT 2	2
10	0210-2410	1-1/2 ID CAT COLLAR	2
11	131734C1	SAFETY HOOK	1
12	B-0210-2373	ASSY, GAS SPRING	1
13	MA083-0017	MPX5 INFEEED CONVEYOR GUARD ASSEMBLY	1
14	C-0210-2489	LATCH ARM	2
15	B-0210-1717	THRUST BEARING 3/8ID X 3/4OD X 1/16	4
16	B-0210-2490	LATCH HANDLE	3
17	3225T28	3/8" ID STRAP	1
18	S83/8X3/8	BOLT, SHOULDER	2
19	JN5/16-18	NUT, JAM	2
20	LW5/16	WASHER, LOCK	9
21	HH5/16-18X1	SCREW, HEX HEAD	6
22	LW1/4	WASHER, LOCK	5
23	HH1/4-20X1/2	SCREW, HEX HEAD	4
24	LN5/16-18	NUT, LOCK	1
25	FW3/8-A	WASHER, FLAT	4
26	HK3/8-16X1	SCREW, HEX HEAD	4
27	LW3/8	WASHER, LOCK	4
28	LW1/2	WASHER, LOCK	4
29	HH1/2-13X1-1/2	SCREW, HEX HEAD	4
30	FW5/16-C	WASHER, FLAT	4
31	HH5/16-18X1-3/4	SCREW, HEX HEAD	4
32	HH1/4-20X1	SCREW, HEX HEAD	4
33	S83/8X1-1/4	BOLT, SHOULDER	2
34	B-0210-2526	RETAINER, SPRING	2
35	0210-2527	COMPRESSION SPRING	2
36	B-0210-2528	HANDLE, RELEASE	1
37	ST5/16-18X1-1/4	SCREW, SET, CUP POINT	2
38	7707-1925	FEET LEVELINGS 12"	4
39	MA025-0030	MPX5 LOCKABLE E-STOP ENCLOSURE ASSY	1
40	SH10-32X1	SCREW, SOCKET HEAD	4
41	FW10-B	WASHER, FLAT	4
42	0210-2586	SPACER, UNTHRD, 3/8ODX0.166IDX1/2LG	4
43	FH1/4-20X5/8	SCREW, SLOTTED FLAT HEAD	4
44	138511C1	MPX5 INFEEED PANEL	1

NOTES:
 USE ANTISEIZE ON ALL LOCKNUT ASSEMBLIES
 BLUE LOCTITE ON ALL SCREW THREADS

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 594.78

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.104 .000±.005
 DEC: ±.015 .000±.005
 ANGLES: 90°±30°
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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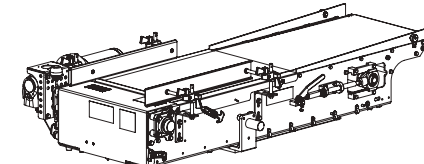
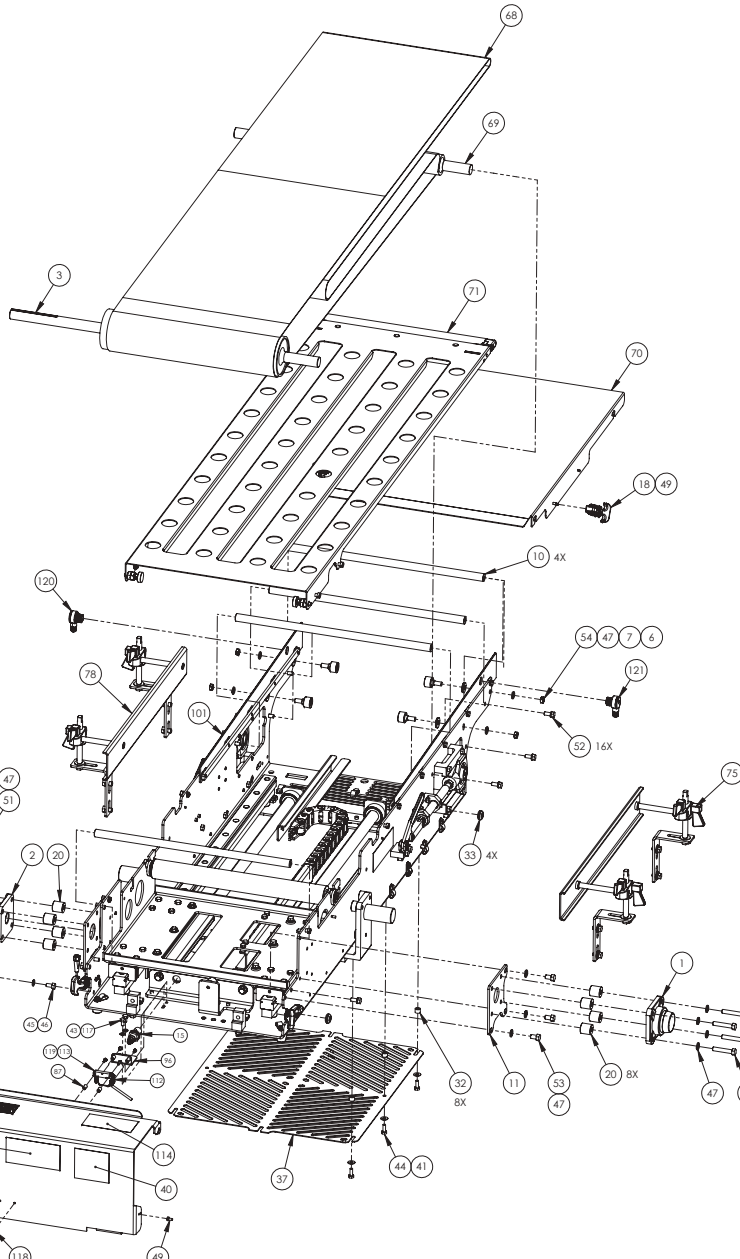
MPX5 CONVEYOR ASSY
 WD W/PIVOTING FRAME

DRAWING NO. MA223-0029
 SHEET 1 OF 1

MA223-0029 REV.2/A

SHEET -1-

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/15/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0550-1117	BEARING, 4 BOLT SS CLOSED COVER	1
2	0550-1118	BEARING 4 BOLT SS OPEN COVER	1
3	C-0210-2291	PULLEY 4.000 X 2.1 LG SS W/DYE	1
4	124512C1	TOUCH BUTTON	1
5	132115C1	BRACKET, E-STOP INFEED CONVEYOR	1
6	135874C1	END SUPPORT ROLLER, CONVEYOR	4
7	B-0210-0708	SPACER, SNORKEL ASS'Y	5
8	132263C1	TORQUE ARM, WD	1
9	132276C1	STUD, TORQUE ARM, WD	1
10	B-0210-1635	BAR, SPREADER 19.880 LG.	4
11	B-0210-3090.1	MOUNT PLATE DRIVE BEARING WD.	2
12	7707-1741	CABLE GRAY, CONNECTOR 5 PIN 30"	1
13	B-0210-2074	BOOM SPACER GUARD	2
14	9537-1729	SPACER 5/8 X 1/4 X 1/4	10
15	0750-1131	SENSOR, PROX. IND. 18MM, DC, 3-WIRE	1
16	0210-2078	RUBBER BUMPER	3
17	0210-2062	SHLD SCREW 5/16 DIA X 1/4	4
18	0210-2050	RUBBER DRAW LATCH	4
19	9743-1045	CABLE PHOTOEYE, 10M	2
20	B-0210-2039	SPACER, 1" OD X 3/8 ID X 1" LG	8
21	B-0210-2303	BEARING GIB	4
22	B-0210-2304	TENSION GUIDE, TAKE-UP	2
23	B-0210-2305	ADJ ROD, TAKE-UP	2
24	B-0210-2306	JACK SCREW, TAKE-UP	2
25	0210-2116	FLANGE BUSHING 3/4OD X 7/8OD.	4
26	B-0210-2307	LEVER PIVOT, TAKE-UP	2
27	B-0210-2308	LINK, TAKE-UP	2
28	B-0210-2309	LEVER, TAKE-UP	2
29	B-0210-2310	SHAFT, 3/75 DIA X .644 LG	6
30	5133-37H	RETAINING CLIP, 3/8"	12
31	B-0210-2357	SPACER, 5/16 CLEAR, 1D X 1 OD X 1/2 LG	8
32	B-9130-1391	SPACER	8
33	2858	GROMMET, RUBBER, 25/64" LD.	4
34	D-0210-2290	WD BASE, INFEED CONVEYOR	1
35	C-0210-2314	WELDMENT, PIVOT, WD	2
36	B-0210-2397	TIE BAR	1
37	C-0210-2398	BOTTOM GUARD INFEED WD	1
38	B-0210-2077	WIREWAY CHAIN ASSY	2
39	0210-2455	WARNING, MAGNETIC FIELD	2
40	0210-2456	WARNING, STONG MAGNET	1
41	FW1/4-A	WASHER, FLAT	8
42	JN1/4-20	NUT, JAM	6
43	LW1/4	WASHER, LOCK	24
44	HH1/4-20X3/4	SCREW, HEX HEAD	26
45	LW5/16	WASHER, LOCK	45
46	HH5/16-18X5/8	SCREW, HEX HEAD	8
47	LW3/8	WASHER LOCK	22
48	HH10-32X1/2	SCREW, HEX HEAD	6
49	HH10-32X3/8	SCREW, HEX HEAD	8
50	FW1/4-B	WASHER, FLAT	4
51	HH1/4-20X3/8	SCREW, HEX HEAD	8
52	HH5/16-18X3/4	SCREW, HEX HEAD	16
53	HH3/8-16X5/8	SCREW, HEX HEAD	6
54	JN3/8-16	NUT, JAM	4
55	HH3/8-16X2	SCREW, HEX HEAD	8
56	SH1/4-20X1	SCREW, SOCKET HEAD	1
57	HH5/16-18X1-1/2	SCREW, HEX HEAD	8
58	JN1/2-13	NUT, JAM	1
59	HH5/16-18X1-3/4	SCREW, HEX HEAD	8

MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 392.36

FINISH
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.004
 DECIMALS: .XXX ±.005
 ANGLES: ±0°30'
 UNLESS OTHERWISE SPECIFIED

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 INFEED CONVEYOR ASSEMBLY, WD

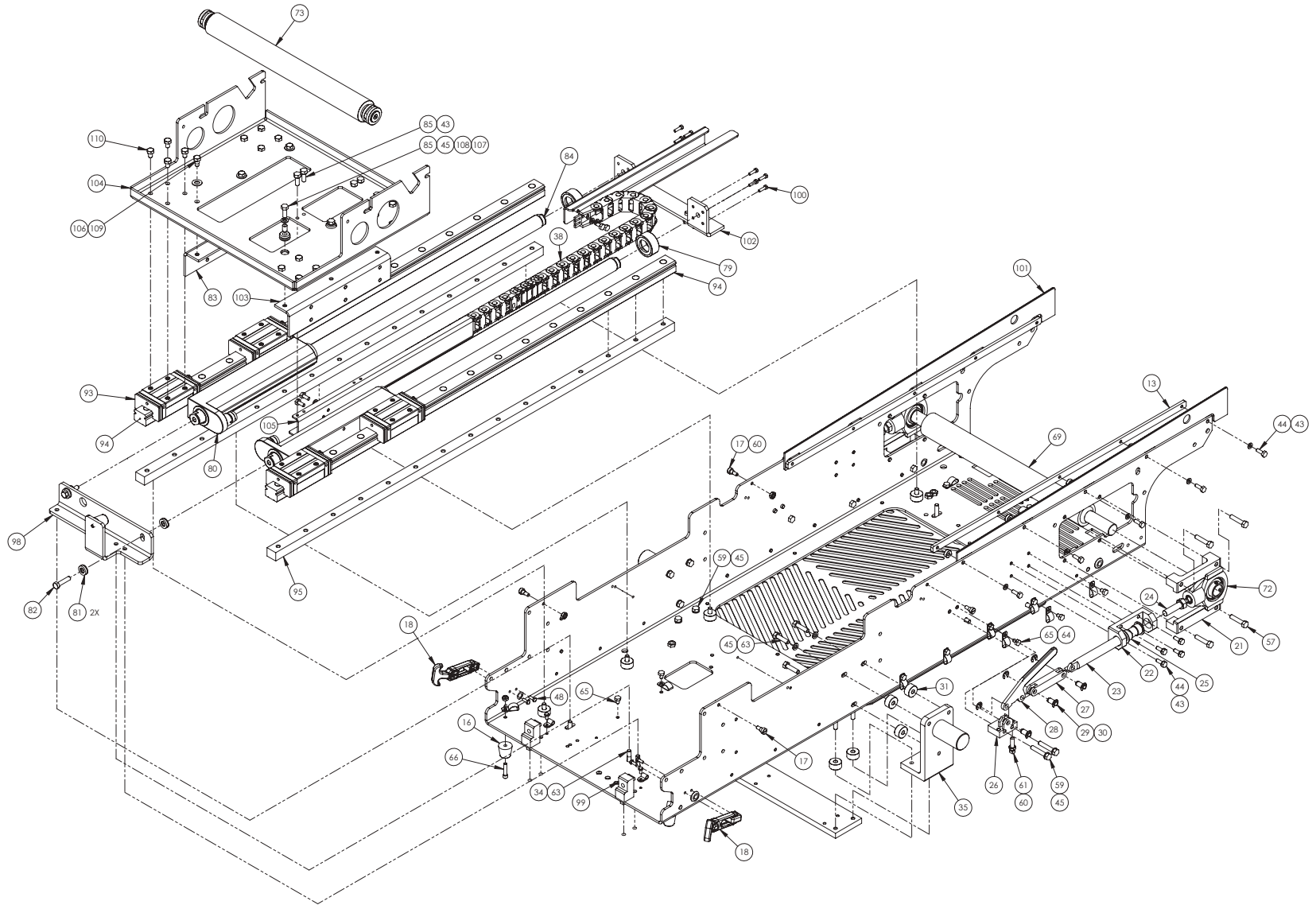
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DRAWING NO. MA223-0031
 REV. A

NOTES:
 USE ANTISEIZE ON ALL LOCKNUT ASSEMBLIES
 BLUE LOCTITE ON ALL SCREW THREADS

MA223-0031 REV A

SHEET -2-



NOTES:
 USE ANTISEIZE ON ALL LOCKNUT ASSEMBLIES
 BLUE LOCTITE ON ALL SCREW THREADS

LEAVE PIVOT C-0210-2314 AN TIE BAR B-0210-2397
 LOOSE UNTIL MOUNTED ON STAND

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 392.36

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT = ±.004 .0005 ±.005
 DIMS = ±.015 .0005 ±.005
 ANGLES = ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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MPX5 INFEED
 CONVEYOR
 ASSEMBLY, WD

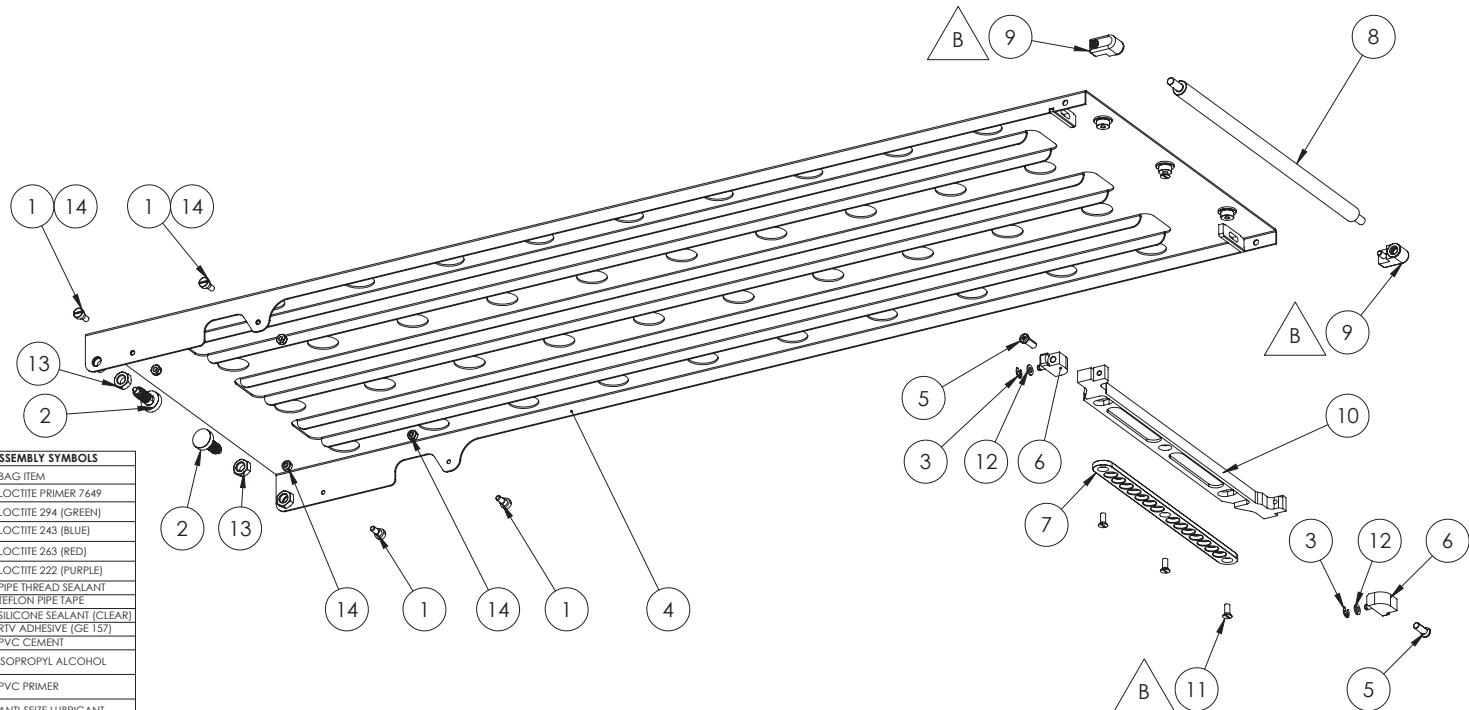
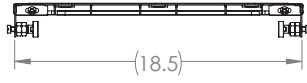
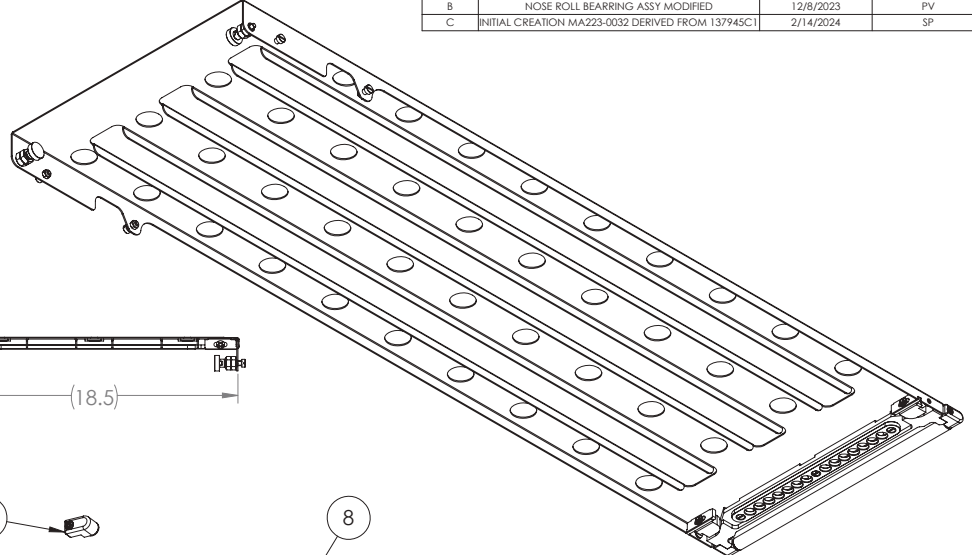
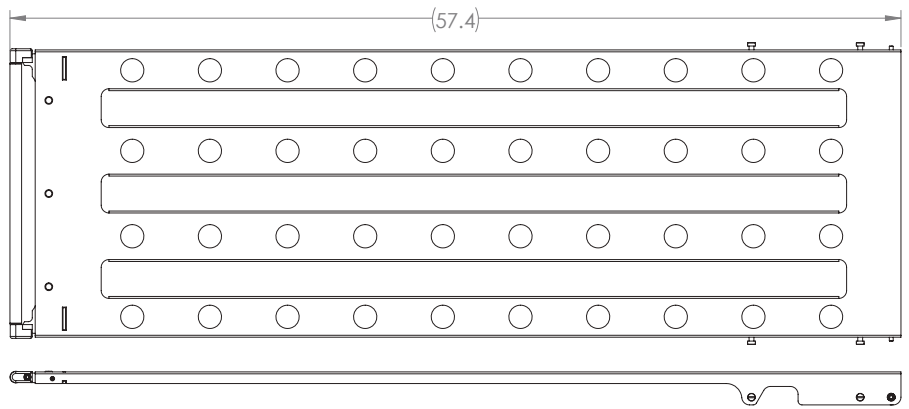
DRAWING NO. REV

MA223-0031 A

DRAWN: PV DATE: 2/15/2024 SCALE: 1:4 SHEET: 2 OF 2

MA223-0031 REV2A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	10/16/2023	PV
B	NOSE ROLL BEARING ASSY MODIFIED	12/8/2023	PV
C	INITIAL CREATION MA223-0032 DERIVED FROM 137945C1	2/14/2024	SP



ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE PRIMER 7649
	LOCTITE 294 (GREEN)
	LOCTITE 243 (BLUE)
	LOCTITE 263 (RED)
	LOCTITE 222 (PURPLE)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	NOTES
14	4	LN1/4-20	NUT, LOCK	
13	2	JN1/2-13	NUT, JAM	
12	2	FW1/4-B	WASHER, FLAT	
11	4	FH1/4-20X5/8	SCREW, SLOTTED FLAT HEAD	
10	1	C-0210-2060	ROLLER MOUNT BAR	
9	2	B-0210-2772	ASSEMBLY NOSE ROLL BEARING WD	
8	1	B-0210-2673	SHAFT, NOSE ROLL WD	
7	1	B-0210-2061	BAR RETAINING	
6	2	B-0210-2059	BLOCK ADJUSTER WD	
5	2	B-0210-1187	SCREW, TRACKING ADJUSTMENT	
4	1	137283C1	WELDMENT BOOM WD	
3	2	5133-25	RETAINING CLIP, 1/4"	
2	2	0210-2063	RETRACTABLE SPRING PLUNGER 1/2-13	
1	4	0210-2062	SHLD SCREW 5/16 DIA X 1/4	

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 26.46

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 WASHDOWN BOOM ASSEMBLY

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.004 XXX±.005
 .XXX±.015 .XXX±.0005
 ANGLES: ±0°30'
 UNLESS NOTED, STANDARD S.A.E.

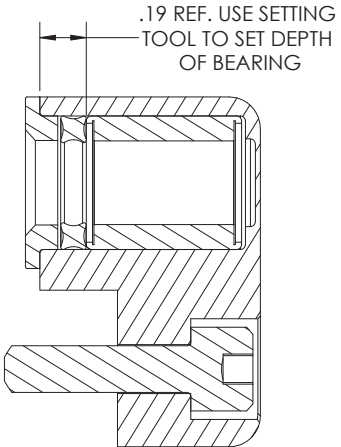
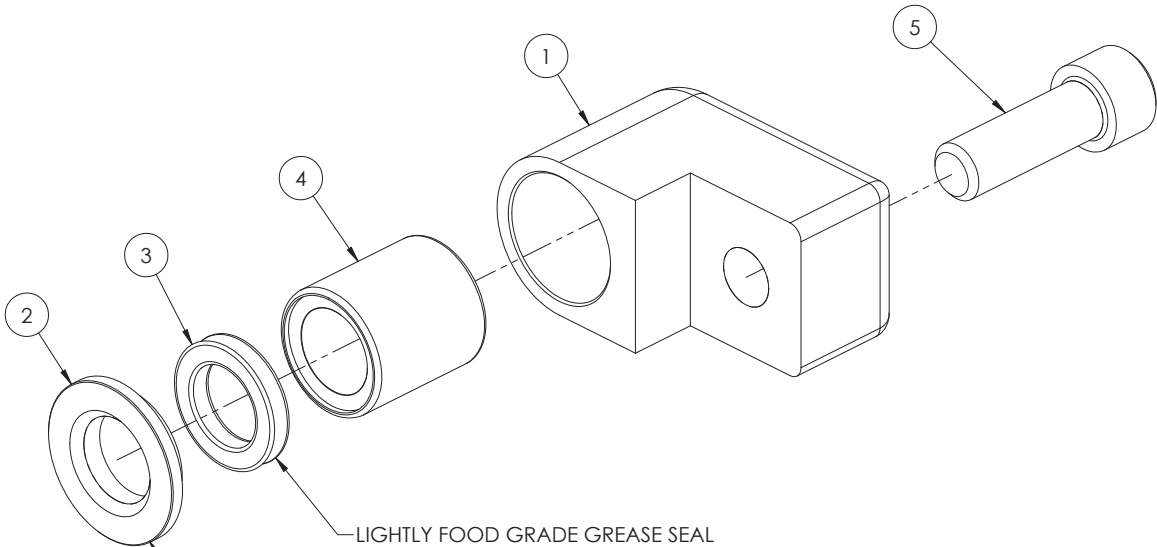
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DRAWN: PV DATE: 10/16/2023 SCALE: 1:4 SHEET: 1 OF 2

DRAWING NO. MA223-0032 REV. C

MA223-0032 REV C

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	05/13/15	CFD



LIGHTLY FOOD GRADE GREASE SEAL ON ALL SURFACES PRIOR TO ASSEMBLY. REMOVE ALL EXCESS GREASE TO PREVENT MIGRATION INTO BEARING.

LIGHTLY FOOD GRADE GREASE SEAL ON ALL SURFACES PRIOR TO ASSEMBLY. REMOVE ALL EXCESS GREASE TO PREVENT MIGRATION INTO BELTING

ITEM NO.	QTY.	PART NUMBER	REV.	DESCRIPTION
1	1	B-0210-2672	A	BEARING BLOCK NOSE PULLEY
2	1	B-0210-2671	A	THRUST BEARING
3	1	0210-2682		QUAD SEAL X110
4	1	0210-1166		BEARING.NEEDLE W/ MICROPOLY
5	1	SH1/4-20X3/4	A	SCREW, SOCKET HEAD CAP

MATERIAL: SEE BOM
STOCK NO: SEE BOM
STOCK SIZE: SEE BOM
MASS [LBS]: 0.16

FINISH SEE BOM

UNLESS OTHERWISE SPECIFIED:

1. BREAK ALL SHARP CORNERS

2. TOLERANCES:

FRACT.= ± 1/64 .XXX= ± .005
.XX= ± .015 .XXXX= ± .0005

ANGLES= ± 0°30'

DRILLED HOLE: STANDARD S.A.E.

CV-TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
PHONE: 847.741.3500 FAX: 847.741.3569

PROPRIETARY AND CONFIDENTIAL
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DRAWN CFD	DATE 05/13/15	SCALE 2:1	SHEET 1 OF 1
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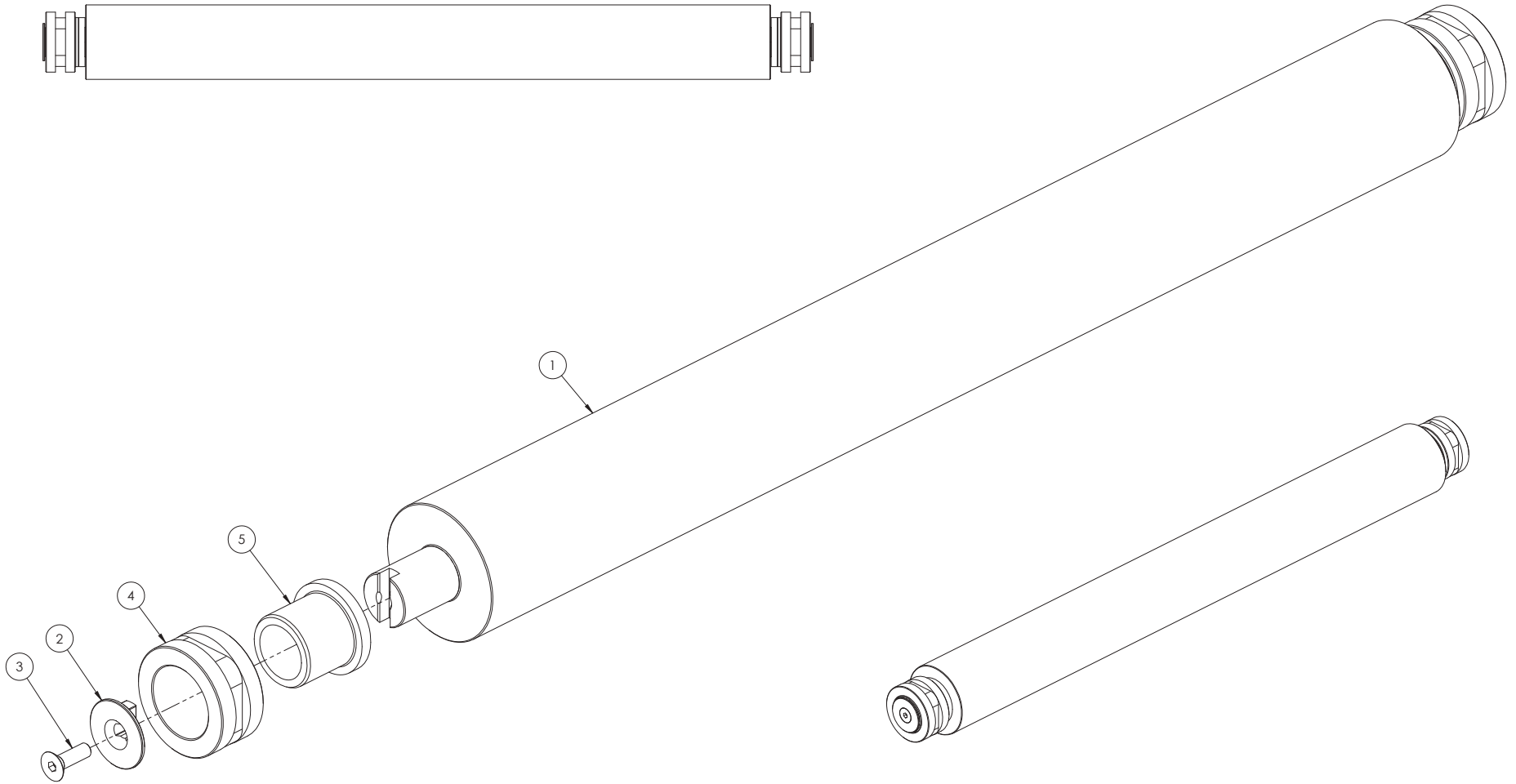
ASSEMBLY NOSE
ROLL BEARING WD

DRAWING NO. REV

B-0210-2772

0210-2772 REV

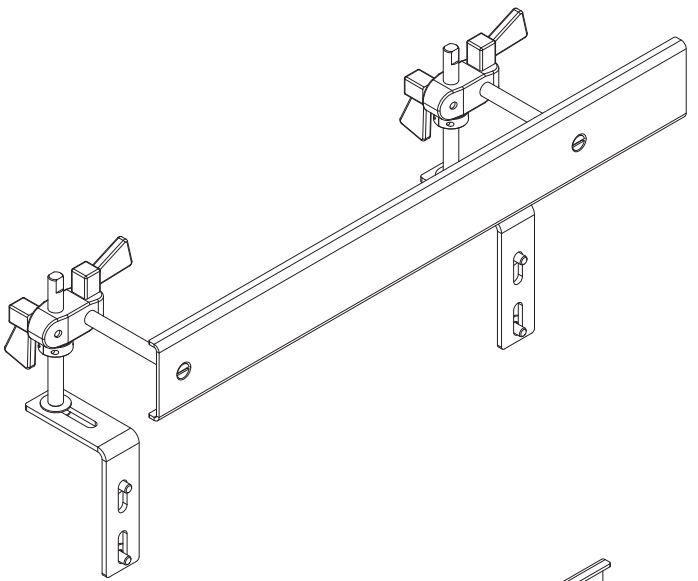
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	03/25/14	CFD
B	UPDATED TITLE BLOCK	1/29/2024	PV



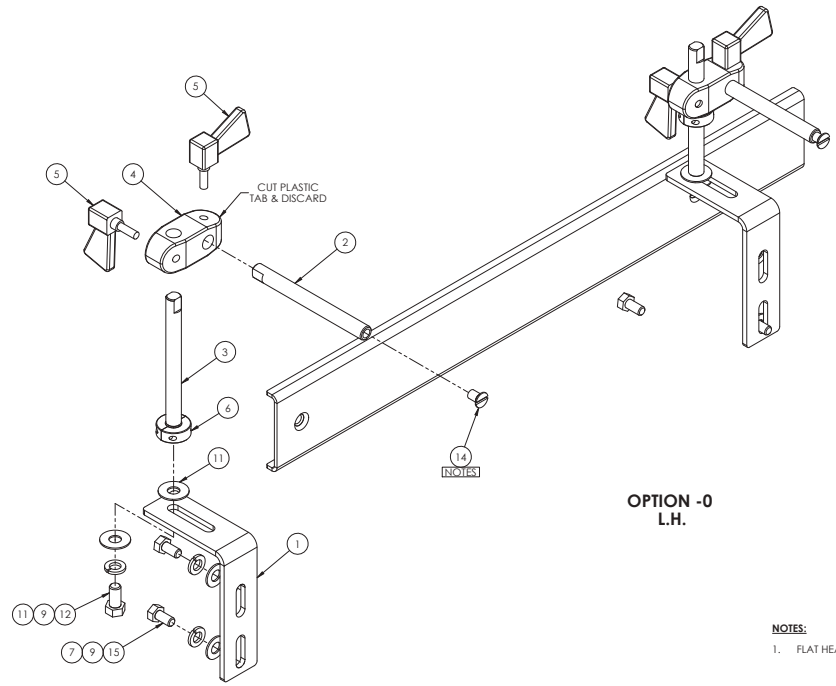
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	C-0210-2312	BACK ROLL	1
2	B-0210-2523	RETAINER, BEARING	2
3	FH10-32X5/8	SCREW SLOTTED FLAT HEAD	2
4	B-0210-2311	BEARING BLOCK	2
5	0210-2313	FLANGE BUSHING	2

MATERIAL: SEE BOM STOCK NO.: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 15.01		1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: (847) 741-3500 FAX: (847) 741-3569	ASSEMBLY BACK ROLL		
FINISH SEE BOM UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT.= ±1/64 .XXX= ±.005 .XX= ±.015 .XXXX= ±.0005 ANGLES= 40°/30° DRILLED HOLE: STANDARD S.A.E.					DRAWING NO. 0210-2524
DRAWN CFD		DATE 03/25/14	SCALE 1:1	SHEET 1 OF 1	REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	03/24/15	CFD



**OPTION -1
R.H.**



**OPTION -0
L.H.**

NOTES:
1. FLAT HEAD SCREWS MUST BE HORIZONTAL

15	4	-	HHS/16-18X5/8	SCREW, HEX HEAD
14	2	-	FHS/16-18X1/2	SCREW, FLAT HEAD MACHINE
13	1	1	0210-1456	???
12	2	2	HH3/8-16X3/4	SCREW, HEX HEAD
11	4	4	FW3/8-A	WASHER, FLAT
10	-	4	HH3/8-16X5/8	SCREW, HEX HEAD
9	6	6	LW3/8	WASHER LOCK
8	-	2	FHS/16-18X3/4	SCREW, FLAT HEAD MACHINE
7	4	4	FW3/8-C	WASHER, FLAT
6	2	2	4436K340	SHAFT COLLAR, 1/2" SPLIT
5	4	4	0210-1626	RATCHET HANDLE
4	2	2	0210-1625	CROSS BLOCK
3	2	2	0210-1465	ADJ. ROD
2	2	2	0210-1464	ADJ. ROD
1	2	2	0210-1463	ANGLE BRACKET
ITEM NO.	-0 /QTY.	-1 /QTY.	PART NUMBER	DESCRIPTION

MATERIAL: SEE BOM
STOCK NO:
STOCK SIZE:
MASS [LBS]:
FINISH:

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
FRACT: ±.1/64 .XXX ±.005
DIM: ±.012 .XXX ±.005
ANGLES: ±0°30'
DRILLED HOLES: STANDARD S.A.E.

CV-TEK
1675 TODD FARM DR., ELGIN, ILLINOIS 60120
PHONE: 847.741.3500 FAX: 847.741.3569

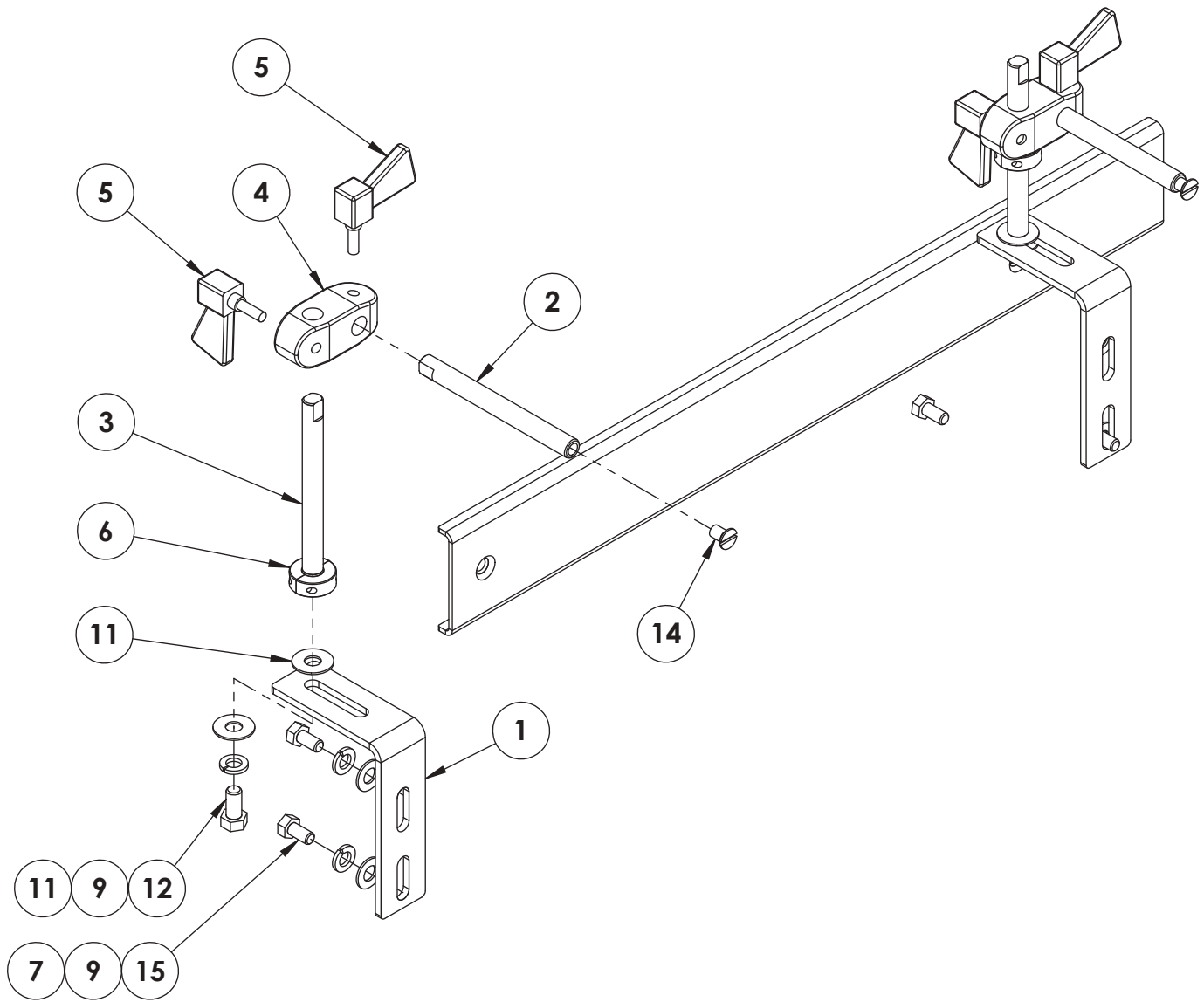
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ASSEMBLY SIDE
GUIDE LH.

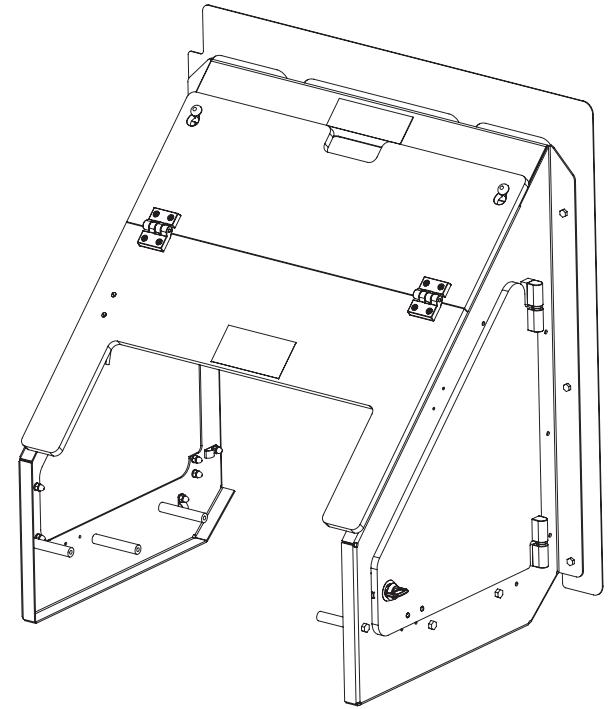
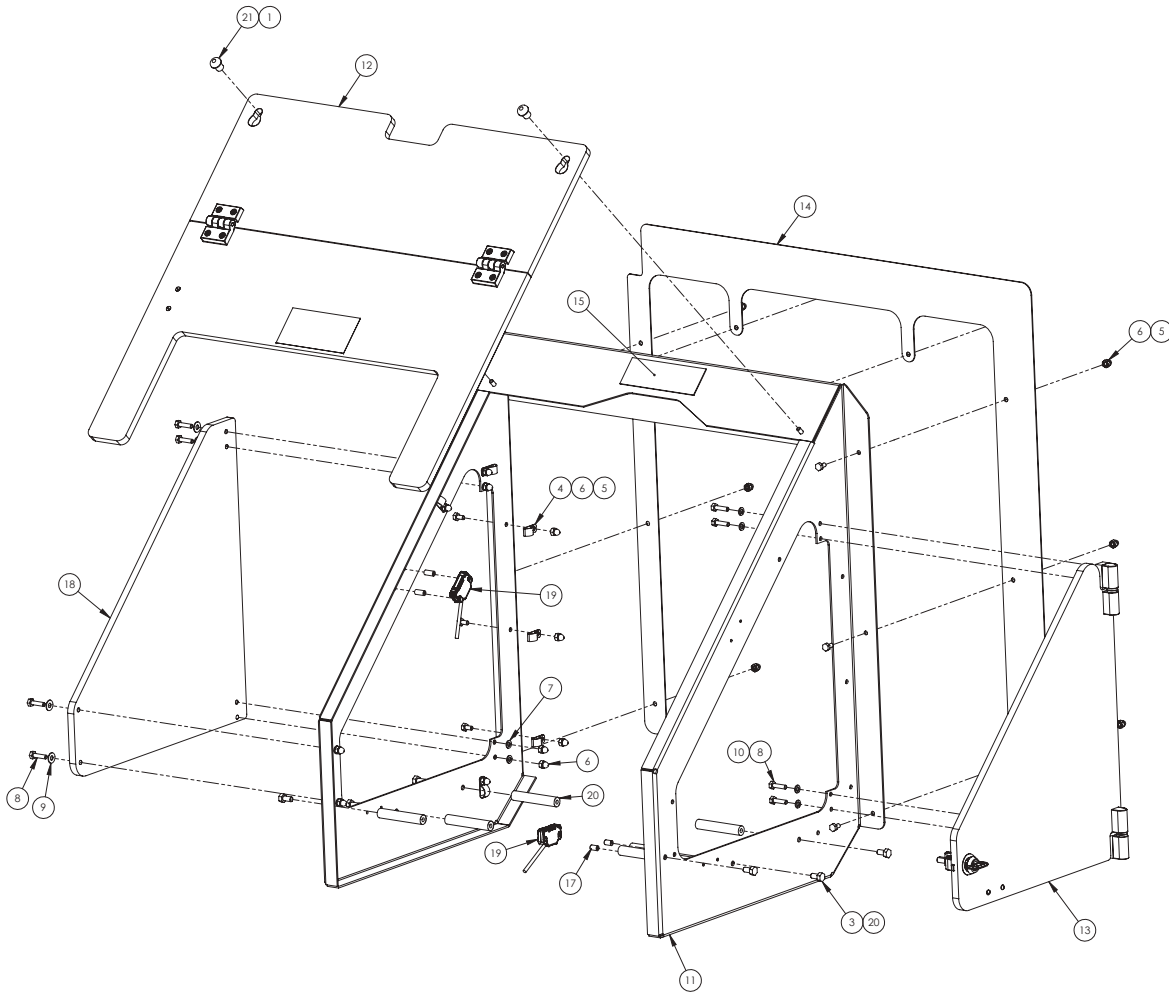
DRAWING NO. REV

0210-2725 1 OF 2

0210-2725 REV



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/9/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	HH1/4-20X5/8	SCREW, HEX HEAD	2
2	LW1/4	WASHER, LOCK	2
3	HH5/16-18X5/8	SCREW, HEX HEAD	6
4	3225723	3/8" ID STRAP	6
5	HH1/4-20X1/2	SCREW, HEX HEAD	13
6	AN1/4-20	NUT ACORN SELF LOCKING	19
7	FW1/4-B	WASHER, FLAT	7
8	HH1/4-20X1	SCREW, HEX HEAD	10
9	FW1/4-A	WASHER, FLAT	6
10	FW1/4-B	WASHER, FLAT	4
11	132228C1	WELDMENT, INFEED GUARD, WD	1
12	MA083-0015	MPX5 INFEED CONVEYOR DOOR	1
13	MA083-0016	MPX5 SIDE DOOR ASSY FULL	1
14	131729C1	GUARD, FILLER	1
15	0210-2455	WARNING: MAGNETIC FIELD	1
16	132144C1	SPACER 1 1/16 IN	2
17	132147C1	SPACER 1/2 IN	2
18	132215C1	INFEED SIDE DOOR, FULL	1
19	138031C1	KEYENCE SAFETY SWITCH	2
20	B-0210-2328	SPACER, 5/8 DIA X 3.5L, 5/16-18 TAPPED	6
21	B-0210-2296	PIN, MUSHROOM	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 53.86

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.1/64 .000±.005
 DEC: ±.015 .000±.005
 ANGLES: ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: PV DATE: 2/9/2024 SCALE: 1:4 SHEET: 1 OF 1

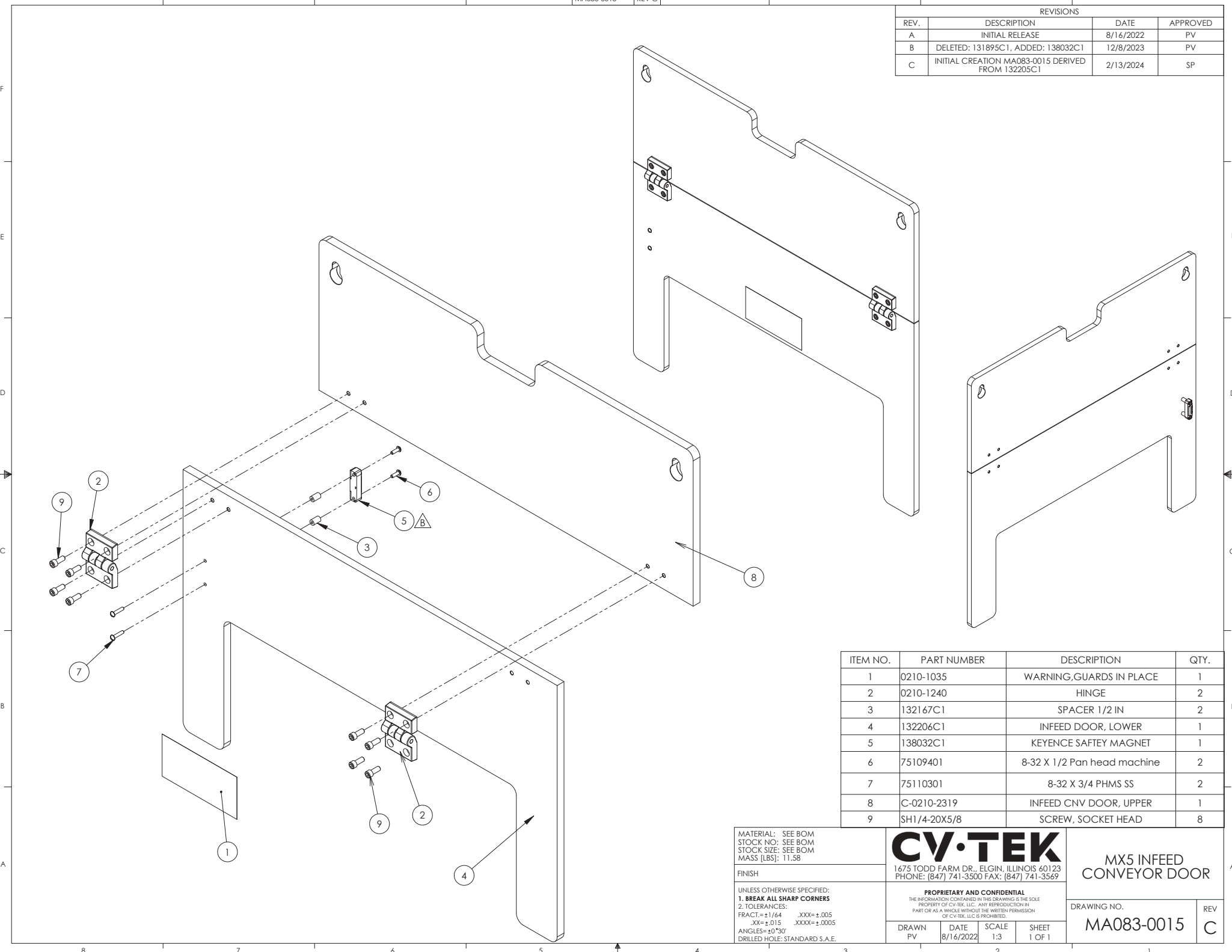
MPX5 INFEED CONVEYOR GUARD ASSEMBLY

DRAWING NO. REV

MA083-0017 A

MA083-0017 REV2A

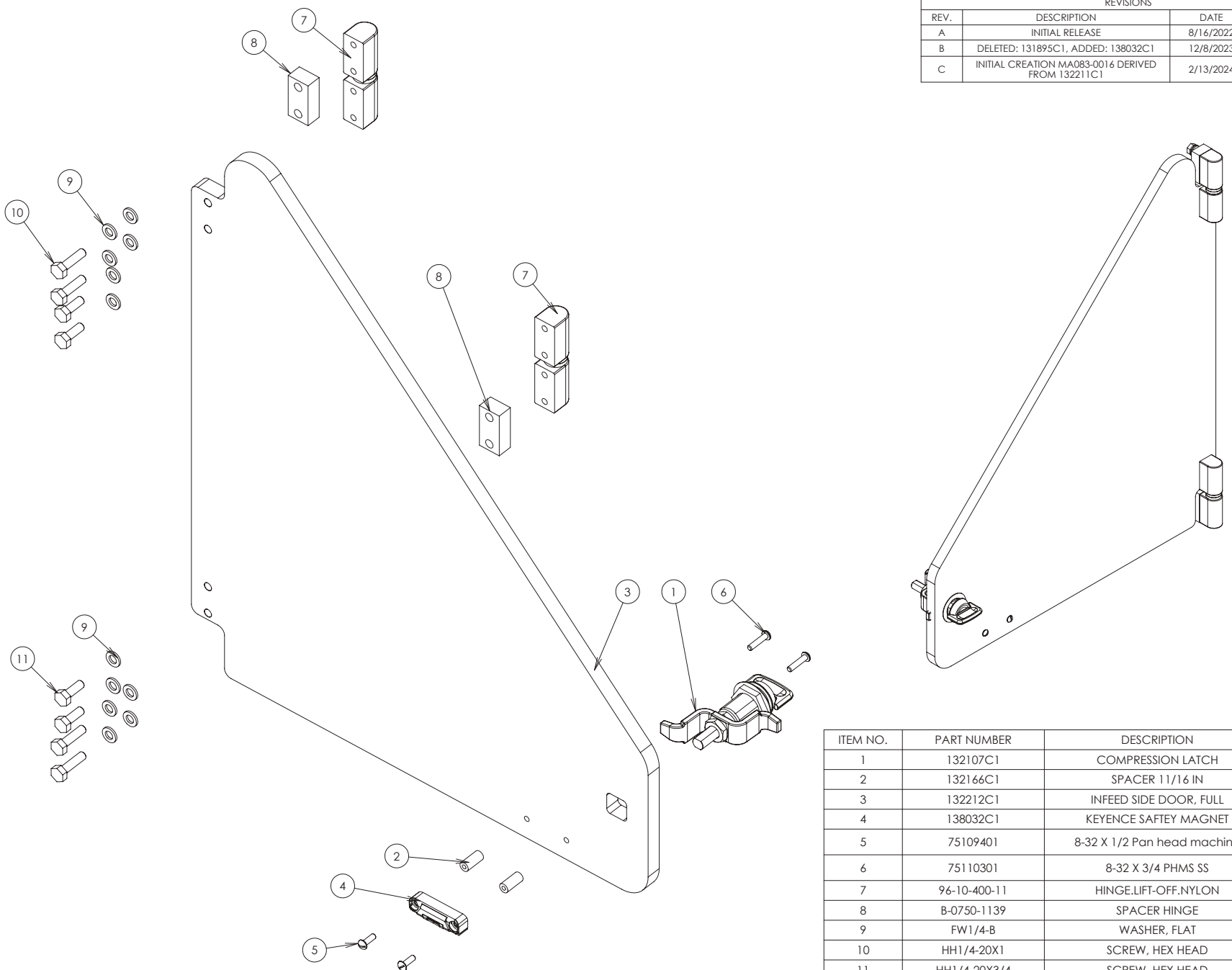
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/16/2022	PV
B	DELETED: 131895C1, ADDED: 138032C1	12/8/2023	PV
C	INITIAL CREATION MA083-0015 DERIVED FROM 132205C1	2/13/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1035	WARNING, GUARDS IN PLACE	1
2	0210-1240	HINGE	2
3	132167C1	SPACER 1/2 IN	2
4	132206C1	INFEED DOOR, LOWER	1
5	138032C1	KEYENCE SAFETY MAGNET	1
6	75109401	8-32 X 1/2 Pan head machine	2
7	75110301	8-32 X 3/4 PHMS SS	2
8	C-0210-2319	INFEED CNV DOOR, UPPER	1
9	SH1/4-20X5/8	SCREW, SOCKET HEAD	8

MATERIAL: SEE BOM STOCK NO.: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 11.58		1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: (847) 741-3500 FAX: (847) 741-3569	MX5 INFEED CONVEYOR DOOR	
FINISH				
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT.= ±1/64 .XXX= ±.005 .XX= ±.015 .XXXX= ±.0005 ANGLES= ±0°30' DRILLED HOLE: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		
DRAWN PV	DATE 8/16/2022	SCALE 1:3	SHEET 1 OF 1	DRAWING NO. MA083-0015
				REV C

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	8/16/2022	PV
B	DELETED: 131895C1, ADDED: 138032C1	12/8/2023	PV
C	INITIAL CREATION MA083-0016 DERIVED FROM 132211C1	2/13/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132107C1	COMPRESSION LATCH	1
2	132166C1	SPACER 11/16 IN	2
3	132212C1	INFEEED SIDE DOOR, FULL	1
4	138032C1	KEYENCE SAFTEY MAGNET	1
5	75109401	8-32 X 1/2 Pan head machine	2
6	75110301	8-32 X 3/4 PHMS SS	2
7	96-10-400-11	HINGE.LIFT-OFF.NYLON	2
8	B-0750-1139	SPACER HINGE	2
9	FW1/4-B	WASHER, FLAT	12
10	HH1/4-20X1	SCREW, HEX HEAD	4
11	HH1/4-20X3/4	SCREW, HEX HEAD	4

MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 5.25

FINISH AS NOTED

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

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DRAWN PV	DATE 8/16/2022	SCALE 1:2	SHEET 1 OF 1
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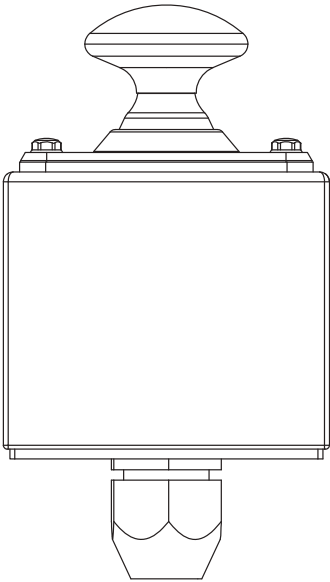
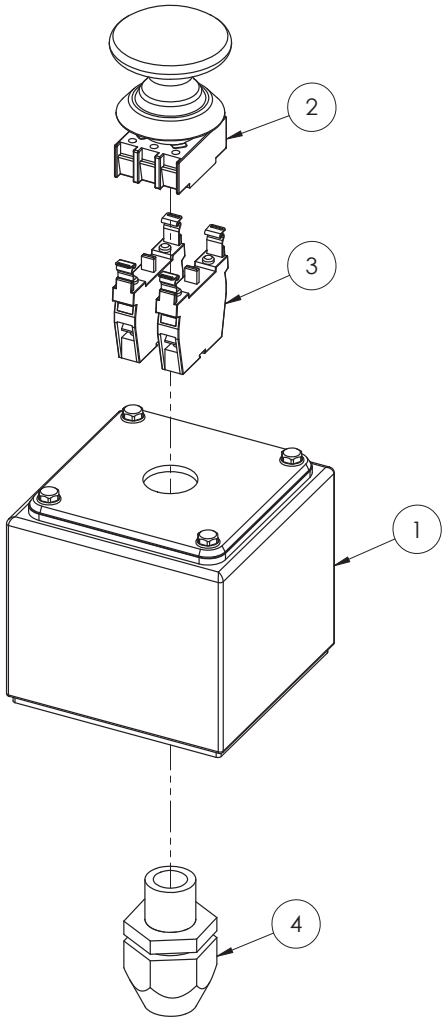
**MPX5 SIDE DOOR
 ASSY FULL**

DRAWING NO.
MA083-0016

REV
C

DO NOT USE THREADLOCKER ON LEXAN OR PLASTIC PARTS

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/7/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132109C1	BUTTON BOX NBGLC11_3	1
2	130752C1	PUSH-PULL IP69K E-STOP	1
3	130754C1	E-STOP CONTACT BLOCK	2
4	ST38	CONNECTOR, SEALTITE, 3/8	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 0.50

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

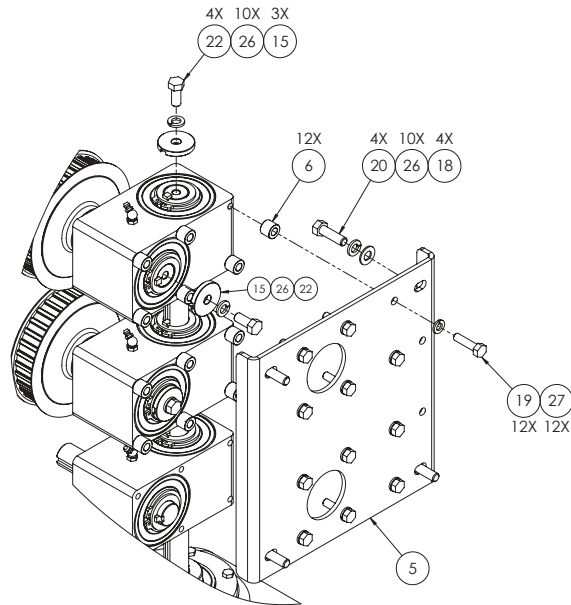
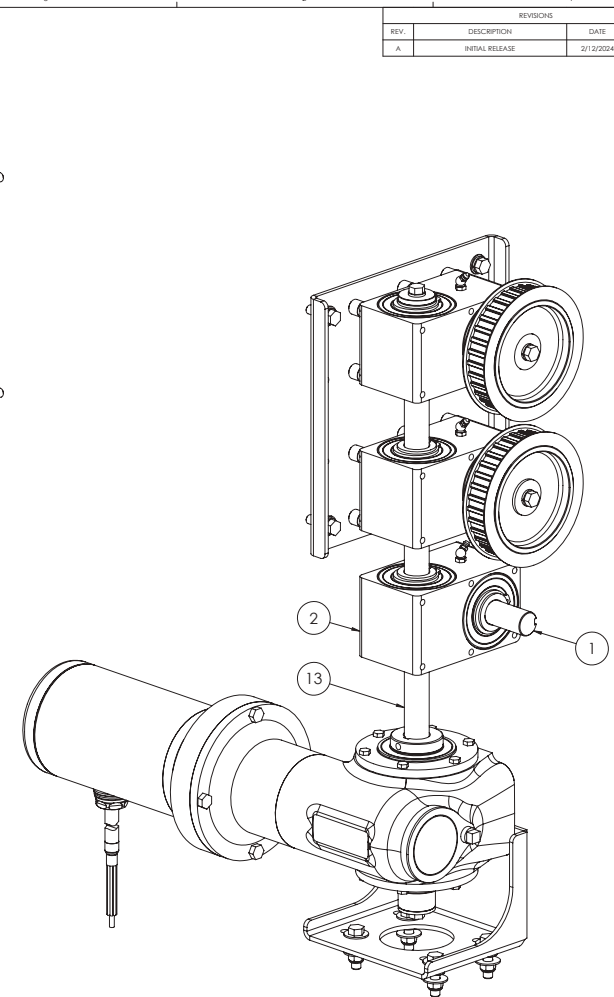
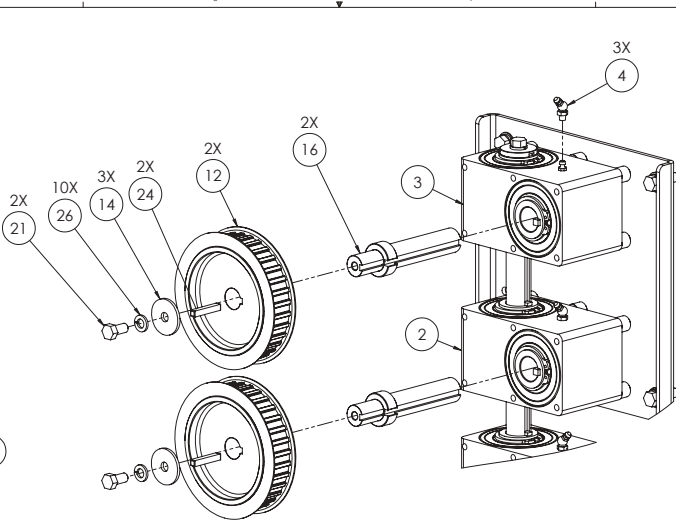
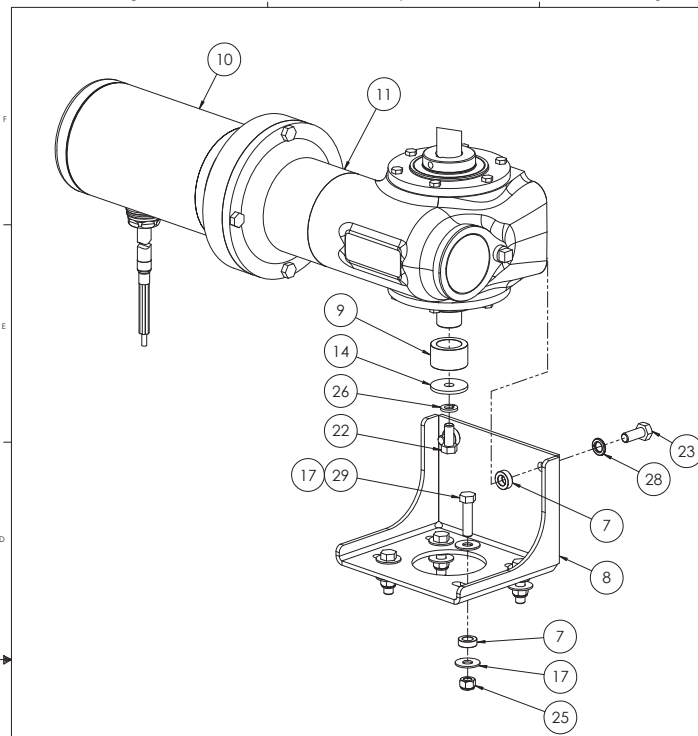
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DRAWN PV	DATE 2/7/2024	SCALE 1:2	SHEET 1 OF 1
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**MPX5 LOCKABLE E-STOP
 ENCLOSURE ASSY**

DRAWING NO. MA025-0030	REV A
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MA025-0030
 REV A



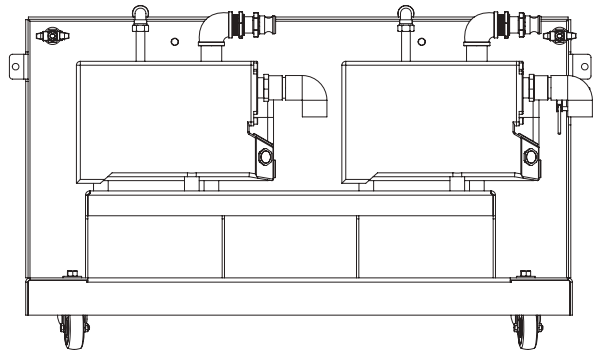
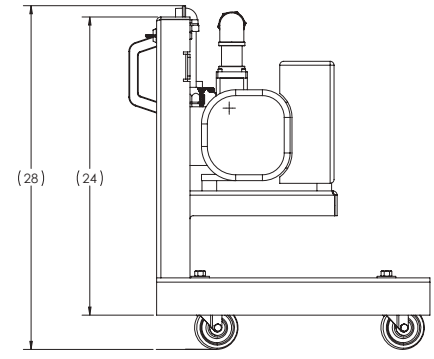
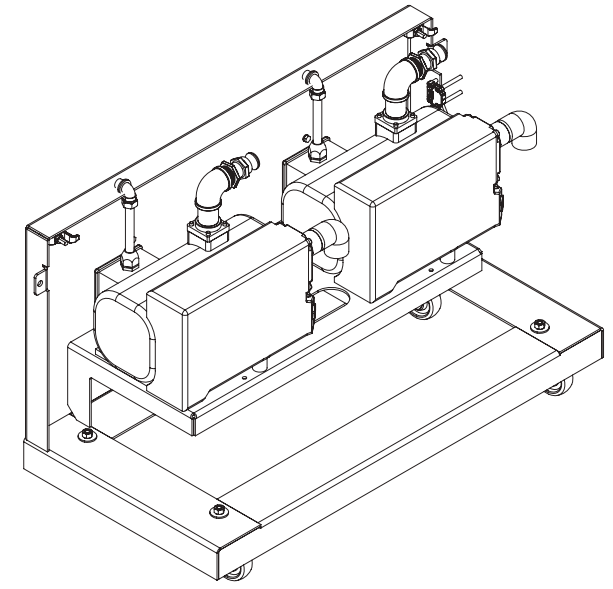
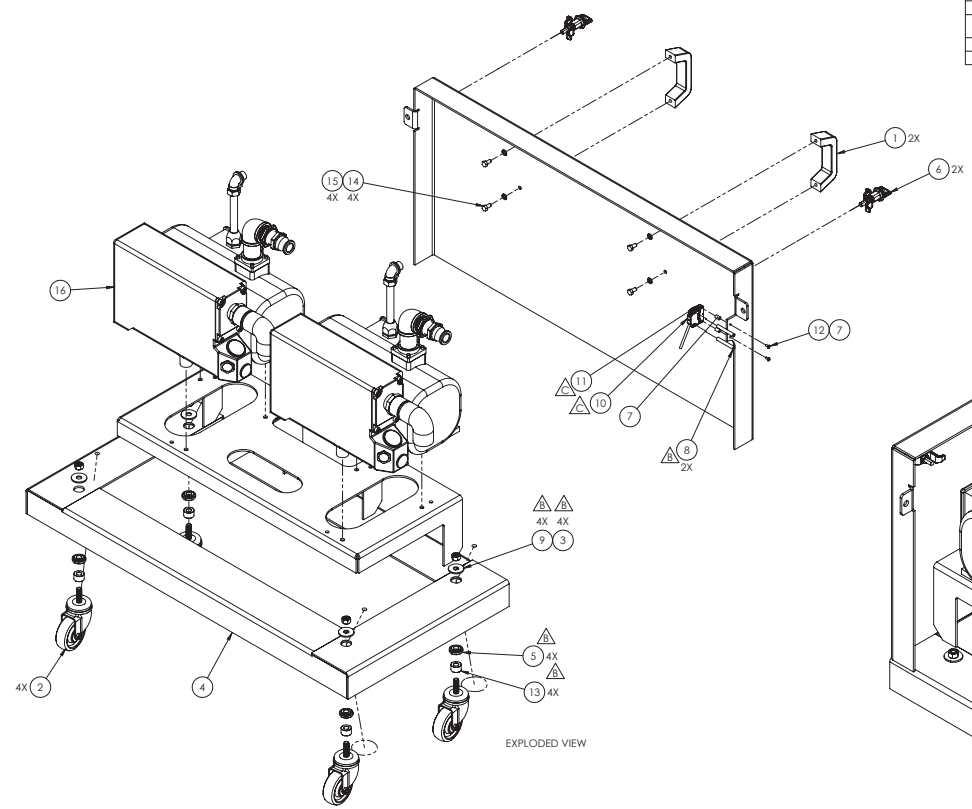
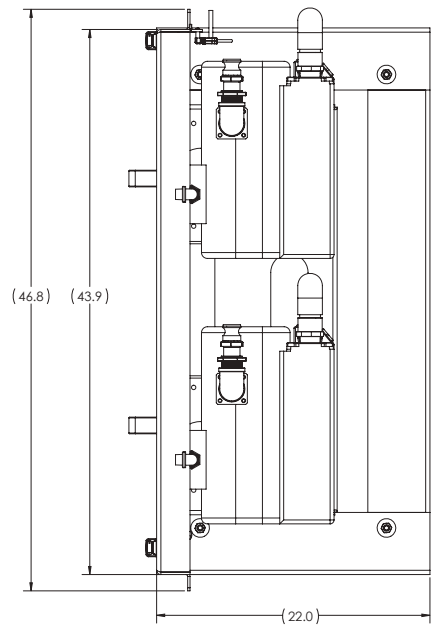
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-2020	KEYED PRECISION 1.00 DIA. SHAFT	1
2	0550-1238	GEARBOX,RIGHT ANGLE 1.0 BORE,1:1,RH	2
3	0550-1239	GEARBOX,RIGHT ANGLE 1.0 BORE,1:1,LH	1
4	129K23	FITTING, GREASE, 1/4-28, 45 DEGREE	3
5	131696C1	DRIVE TRAIN MAIN MOUNT PLATE	1
6	131701C1	SPACER, 5/8" OD, 5/16" ID, 1/2" LG	12
7	131731C1	SPACER, 3/4 OD, .433" ID, 1/4 LG	6
8	131733C1	DRIVE TRAIN MOUNT	1
9	131935C1	SPACER, 1.5" OD, 1.01" ID, .875" LG	1
10	132150C1	HYGIENIC SERVO MOTOR	1
11	132303C1	50:1 SS WASHDOWN GEARBOX	1
12	8-0210-0600	DRIVE PULLEY 1/2" PITCH 33 TOOTH	2
13	8-0210-0750	SHAFT LOWER DRIVE	1
14	8-0210-0822	WASHER	3
15	8-0210-0958	WASHER, SHAFT	3
16	8-0210-1145	SHAFT MAIN DRIVE PULLEY	2
17	FW3/B-A	WASHER, FLAT	8
18	FW3/B-C	WASHER, FLAT	4
19	HH5/16-18X1-1/4	SCREW, HEX HEAD	12
20	HH3/8-16X1-1/4	SCREW, HEX HEAD	4
21	HH3/8-16X3/4	SCREW, HEX HEAD	2
22	HH3/8-16X7/8	SCREW, HEX HEAD	4
23	HHM10X1.5X25	SCREW, HEX HEAD	2
24	KEY 25X1.5	SS1/4"KEY X 1-1/4" LG	2
25	LN3/8-16	NUT, LOCK	4
26	LW3/8	WASHER, LOCK	10
27	LW5/16	WASHER, LOCK	12
28	LWM10	WASHER, LOCK, METRIC	2
29	HH3/8-16X1-1/2	SCREW, HEX HEAD	4

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/12/2024	PV

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 63.02	CV-TEK 1675 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 MAIN DRIVE ASSEMBLY
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT. = ±1/64 .XXX ±.005 XXX = ±.012 .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	DRAWING NO. MA030-0020
FINISH	DRAWN PV	DATE 2/12/2024
	SCALE 1:3	SHEET 1 OF 1
		REV A

MA030-0020 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	DELETED: 4X HN1/2-20, 4X FW1/2-8, 2X 132167C1; ADDED: 4X 132046C1, 4X 137110C1, 4X 0210-2202, 4X 0003900, 2X 137063C1	8/23/2023	PV
C	SAFETY SENSORS REPLACED FROM BANNER TO KEYENCE	12/11/2023	PV
D	INITIAL CREATION MA250-0029 DERIVED FROM 132012C1	2/12/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1761	HANDLE HEAVY DUTY	2
2	0210-3122	LOCKING STEM CASTER 3-1/2 DIA.	4
3	0003900-1-A	NUT, HEX 1/2-13 SS 18-8	4
4	132031C1	MPX5 VACUUM PUMP FRAME, WELDMENT	1
5	132046C1	UNWIND WHEEL LOAD DISK	4
6	132107C1	COMPRESSION LATCH	2
7	132167C1	SPACER 1/2 IN	2
8	137063C1	SPACER	2
9	137110C1	SPACER, 1.50 OD X .531 ID X 1/8 THK	4
10	138031C1	KEYENCE SAFETY SWITCH	1
11	138032C1	KEYENCE SAFETY MAGNET	1
12	75105501	8-32 X 3/8 Pan head machine	2
13	B-0210-2202	SPACER 1 OD X 7/16 ID X 5/8	4
14	HH5/16-18X5/8	SCREW, HEX HEAD	4
15	LW5/16	WASHER, LOCK	4
16	MA250-0031	MPX5 SINGLE VACUUM PUMP ASSEMBLY	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 244.93
 FINISH: SEE BOM

1675 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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MPX5 VACUUM PUMP, ASSY

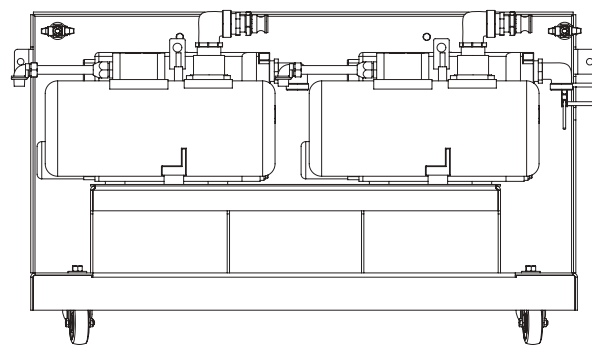
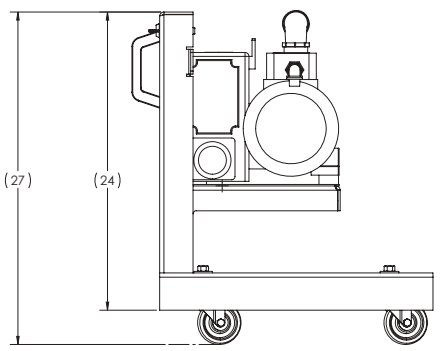
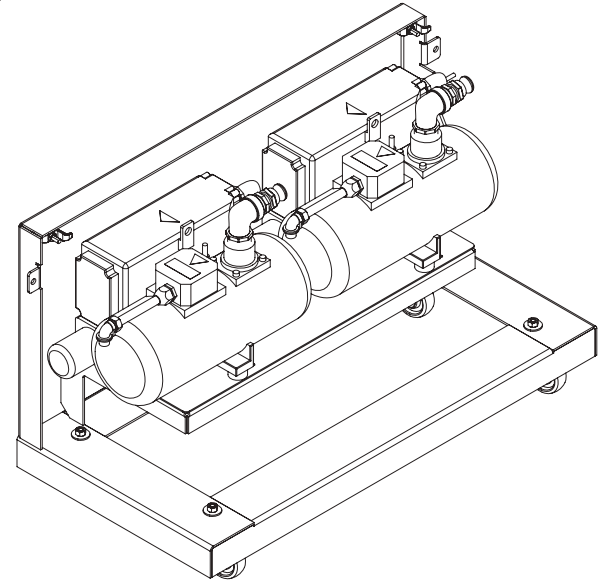
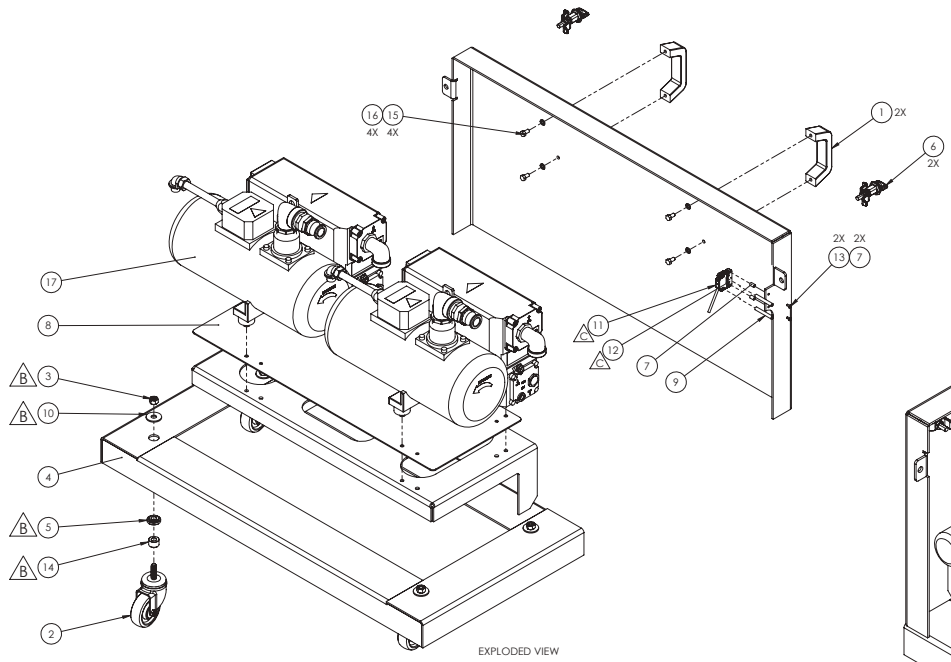
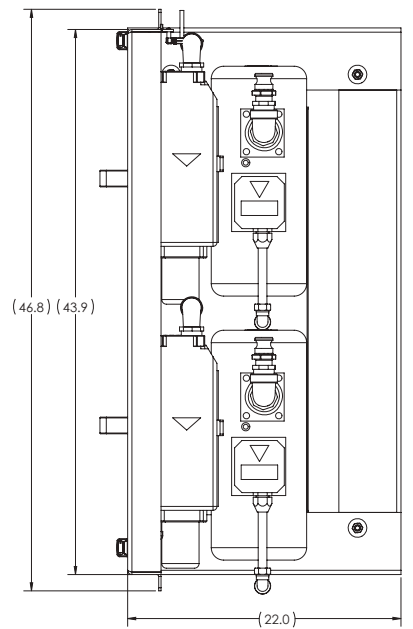
DRAWING NO. REV.
 MA250-0029 D

DRAWN: PV DATE: 8/26/2022 SCALE: 1:4 SHEET: 1 OF 2

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT-- ±1/64 .000±.005
 DEC-- ±.015 .000±.005
 ANGLES-- ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

MA250-0029 REV D

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	DELETED: 4X HN1/2-20, 4X FW1/2-8, 2X 132167C1; ADDED: 4X 132046C1, 4X 137110C1, 4X 0210-2202, 4X 0003900, 2X 137063C1	8/23/2023	PV
C	SAFETY SENSORS REPLACED FROM BANNER TO KEYENCE	12/11/2023	PV
D	INITIAL RELEASE MA250-0029 DERIVED FROM 132012C1	2/12/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1761	HANDLE HEAVY DUTY	2
2	0210-3122	LOCKING STEM CASTER 3-1/2 DIA.	4
3	0003900-1-A	NUT, HEX 1/2-13 SS 18-8	4
4	132031C1	MPX5 VACUUM PUMP FRAME, WELDMENT	1
5	132046C1	UNWIND WHEEL LOAD DISK	4
6	132107C1	COMPRESSION LATCH	2
7	132167C1	SPACER 1/2 IN	2
8	136457C1	MOUNT PLATE	1
9	137063C1	SPACER	2
10	137110C1	SPACER, 1.50 OD X .531 ID X 1/8 THK	4
11	138031C1	KEYENCE SAFETY SWITCH	1
12	138032C1	KEYENCE SAFETY MAGNET	1
13	75105501	8-32 X 3/8 Pan head machine	2
14	B-0210-2202	SPACER 1 OD X 7/16 ID X 5/8	4
15	HH5/16-18X5/8	SCREW, HEX HEAD	4
16	LW5/16	WASHER, LOCK	4
17	MA250-0032	MPX5 SINGLE VACUUM PUMP ASSEMBLY	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 244.93
 FINISH: SEE BOM

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS ±.0004 XXXX ±.005
 .XXX ±.015 XXXXX ±.0005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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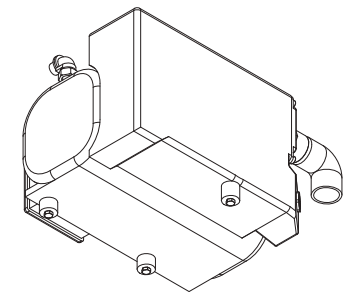
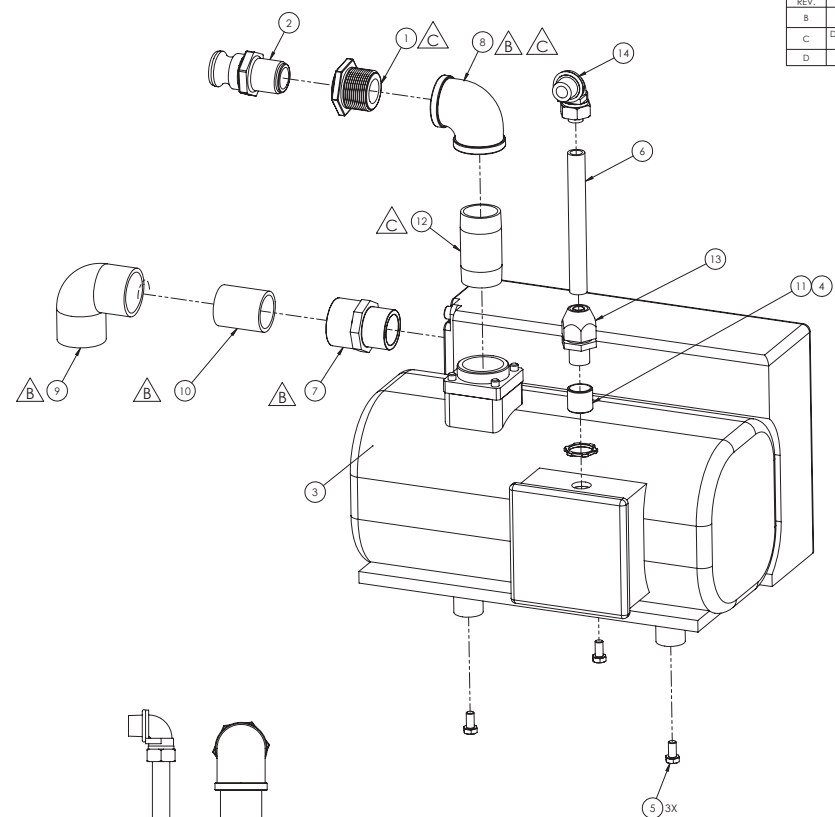
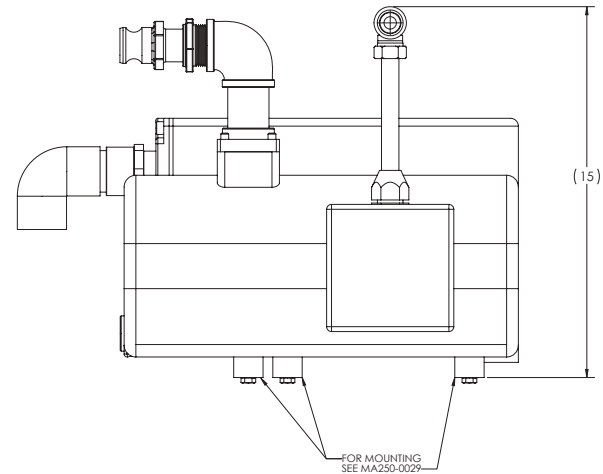
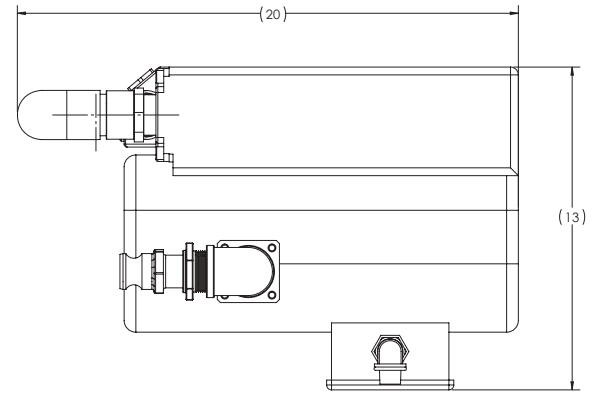
MPX5 VACUUM PUMP, ASSY

DRAWING NO. MA250-0029 REV D

DRAWN: SP DATE: 3/30/23 SCALE: 1/4 SHEET: 2 OF 2

MA250-0029 REV D

REV.	DESCRIPTION	DATE	APPROVED
B	DELETED: SSE 1-1/4"NPT, 0210-1214, SEE 1 NPT; ADDED: 0210-2369; MA 1-1/4, PVC1-1/4OD, PE1-1/4	6/6/2023	PV
C	DELETED: 0210-2369, 0210-1214; ADDED: SN1-1/4"NPT X 2-1/2", NPBE1-1_4NPT, 003007D	8/22/2023	PV
D	INITIAL CREATION MA250-0031 DERIVED FROM 131864C1	2/12/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0030070-1-A	FTG BUSHING RDCR POLYPRO 1-1/4" X 1" FPT	1
2	0210-2235	MALE COUPLER 1"	1
3	7707-2083	VACUUM PUMP	1
4	BL75	LOCKNUT CONDUIT	1
5	HH8MMX16MM	SCREW, HEX HEAD, METRIC	3
6	LA10	SEALITE, 3/8"	1
7	MA1-1/4	ADAPTER, PVC, 1-1/4"NPT X 1-1/4" PIPE, MALE	1
8	NPBE1-1_4NPT	NPE ELBOW 1-1/4 NPT	1
9	PE1-1/4	ELBOW, PVC, 1.25PIPE X 90DEG	1
10	PVC1-1/4OD	PIPE, PVC, 1-1/4 SCH40 X 2.00LG	1
11	RE21	BUSHING, REDUCER	1
12	SN1-1/4NPTX2-1/2	NIPPLE, 1-1/4" NPT X 2-1/2"	1
13	ST38	CONNECTOR, SEALITE, 3/8	1
14	ST9038	CONNECTOR SEALITE 90DEG APPL	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 51.20
 FINISH: SEE BOM

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONAL: ±.004 .003±.005
 DECIMAL: ±.015 .003±.005
 ANGLES: ±0°30'

DELETED: NONE; STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: PV DATE: 8/26/2022 SCALE: 1/4 SHEET: 1 OF 1

MPX5 SINGLE VACUUM PUMP ASSEMBLY

DRAWING NO. **MA250-0031** REV. **D**

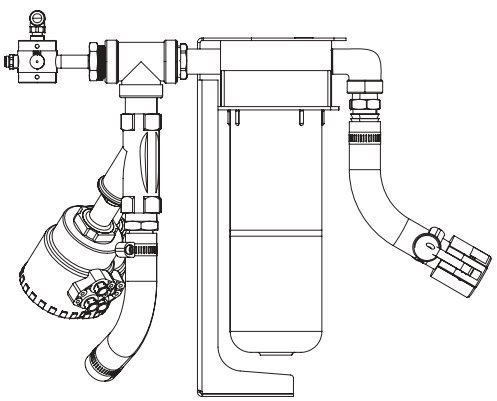
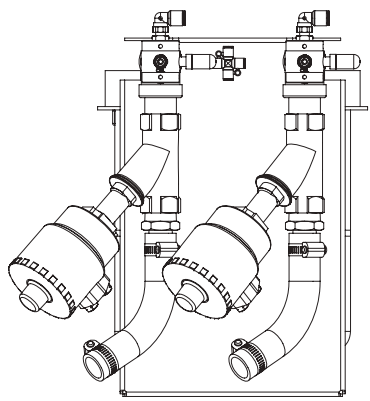
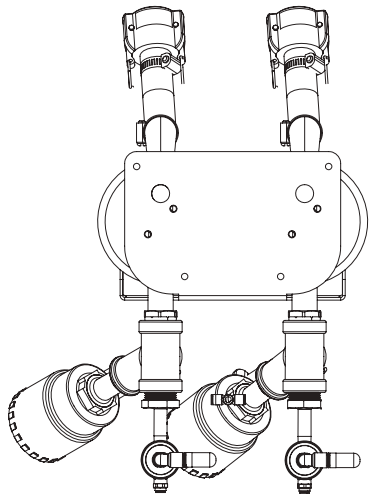
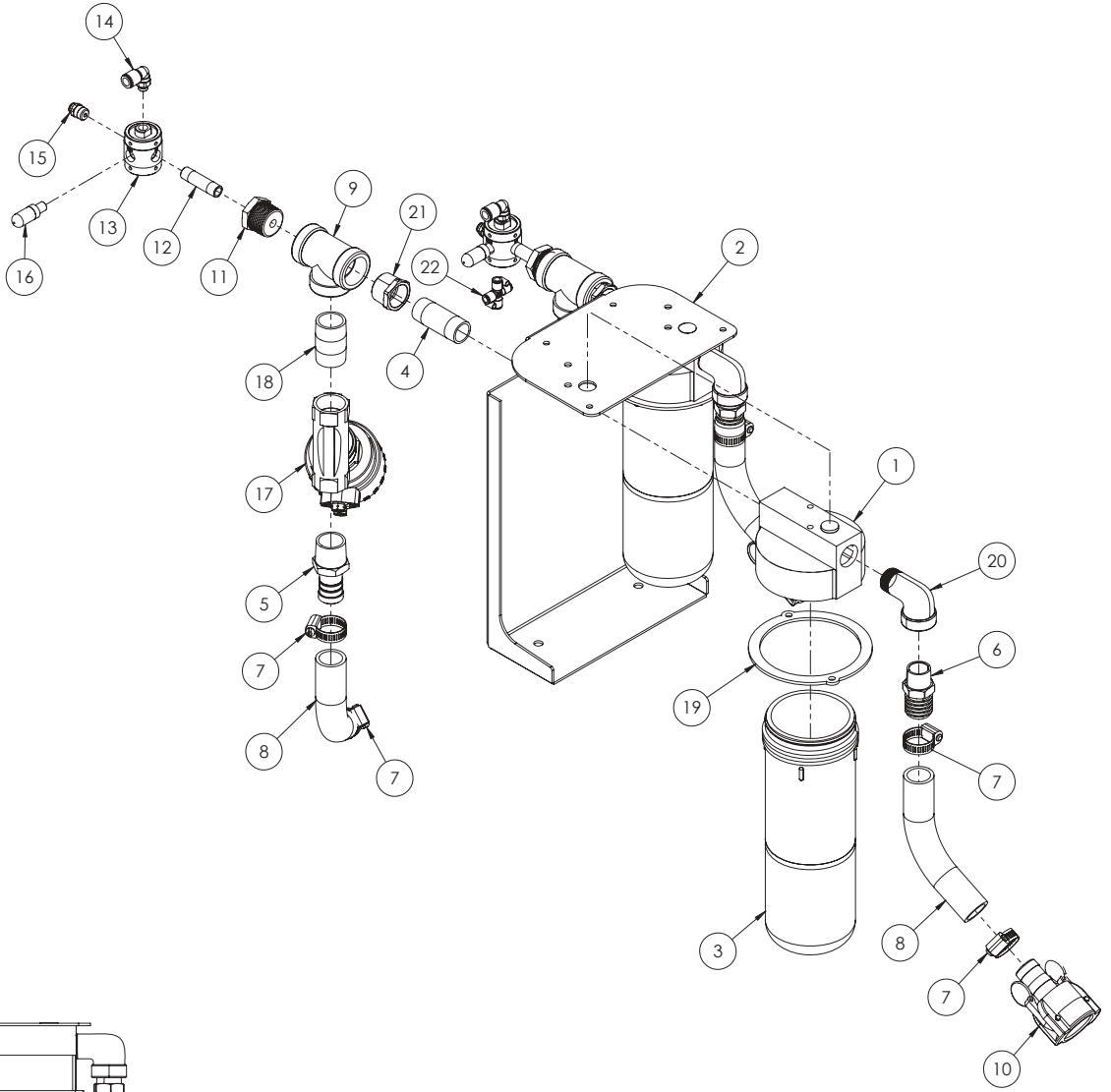
NOTE: DERIVED FROM 131864C1 REV C

MA250-0031 REV D

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	72201201	FILTER HOUSING TOP	2
2	132043C1	MOUNT BRACKET	1
3	62200301	FILTER JAR - PLASTIC	2
4	SN3/4NPTX2-1/2	NIPPLE, 3/4" NPT X 2-1/2"	2
5	SSH 1 X 1 NPT	HOSE BARB, 1" OD X 1" NPT	2
6	123142C1	HSE FITNG; 1"ID X 3/4 NPT S/S	2
7	HSS-16	HOSE CLAMP, SS, 11/16" - 1 1/4"	8
8	9537-1432	HOSE, HIGH FLOW, 4'	4
9	SST NPT	TEE, 1" NPT	2
10	0210-2234	FEMALE COUPLER 1"	2
11	0663070-1-A	BUSHING SS HEX T-304 1" X 1/4" SCH 40	2
12	NPBN1/4NPT2LG	NPB NIPPLE 1/4 NPT	2
13	7707-251	VALVE,2-WAY,NC,VAC,HUMPHREY	2
14	87110-06-02	FITTING,TBG,ELB.3/8OD X 1/8NPT	2
15	268P-04-04	MALE CONN,STR,NICK PLATE BRASS	2
16	9537-1258	FILTER SILENCER	2
17	0210-1771	1 NPT DOUBLE ACTING ANGLE SEAT VALVE	2
18	SN 1 NPT X 2 LG	NIPPLE, 1" NPT X 2"	2
19	129090C1	CUNO FILTER MOUNT	2
20	125366C1	3/4 NPT 90 STREET ELBOW S/S	2
21	125365C1	1 M X 3/4 F HEX BUSHING S/S	2
22	3107-56-00	1/4" CROSS	1

MA250-0030 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/8/2024	PV



MATERIAL: SEE BOM
 STOCK NO.: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 38.28

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

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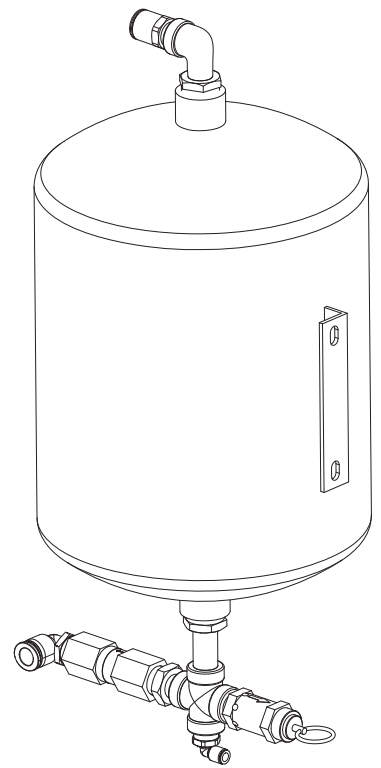
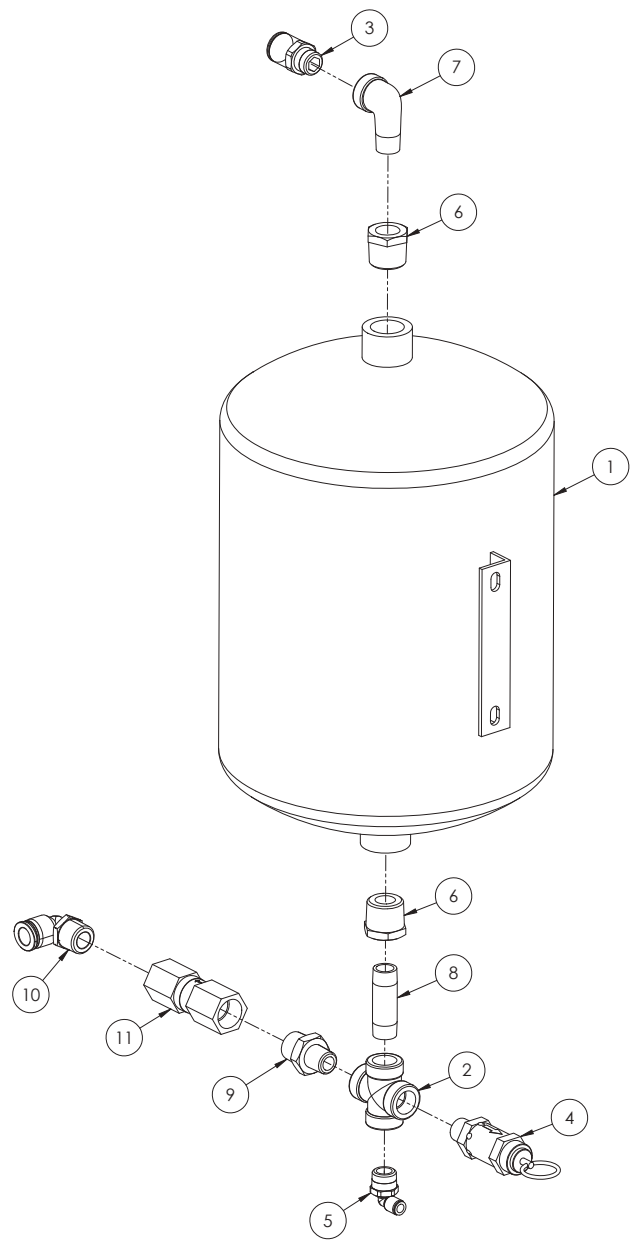
DRAWN PV	DATE 2/8/2024	SCALE 1:4	SHEET 1 OF 1
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MPX5 FILTER
 HOLDER ASSY

DRAWING NO.
 MA250-0030

REV
 A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/13/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	73000101	???	1
2	SC 3/8 NPT	CROSS, 3/8" NPT	1
3	268P-08-06	CONNECTOR STR. MALE BRASS	1
4	7707-2515	SAFETY VALVE, 125 PSI, 3/8" NPT	1
5	269P-04-06	ELBOW MALE BRASS	1
6	SSB3/4NPTX3/8	HEX BUSHING, 3/4" NPT X 3/8" NPT	2
7	SSE3/8NPT	90 DEG ST ELBOW, 3/8" NPT	1
8	SN3/8NPTX2	NIPPLE, 3/8" NPT X 2"	1
9	136329C1	Straight Reducer, 1/2 x 3/8 NPT Male	1
10	269P-08-08	ELBOW MALE BRASS	1
11	7707-3168	EXCESS FLOW VALVE	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 5.40
 FINISH:

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 GAS ACCUMULATOR TANK ASSEMBLY

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT-- ±1/64 ±.005
 DEC-- ±.015 ±.005
 ANGLES-- ±0°30'

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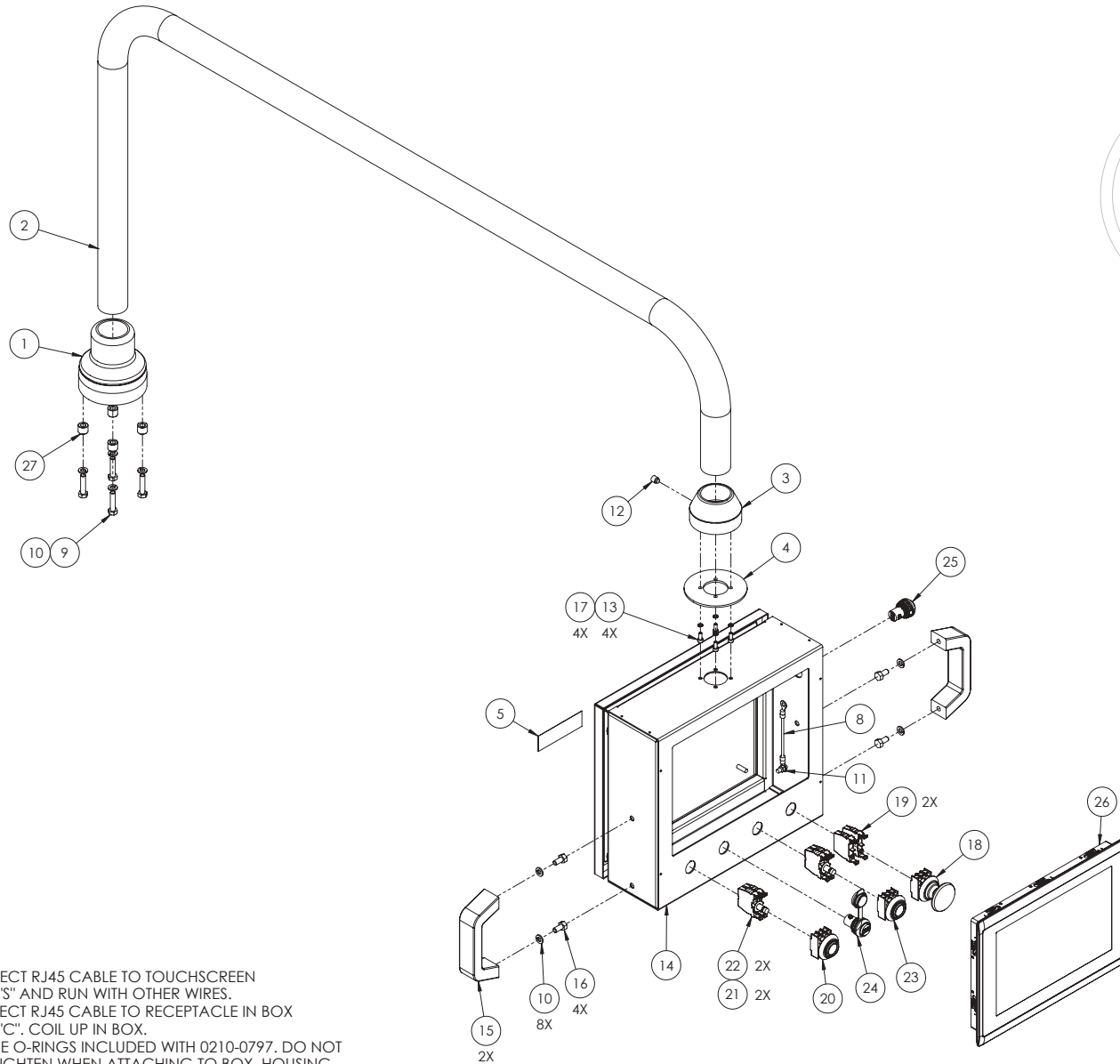
DRAWING NO. REV
 MA101-0011 A

DRAWN PV DATE 2/13/2024 SCALE 1:2 SHEET 1 OF 1

NOTES:
 USE THREAD SEALANT ON ALL PIPE THREADS UNLESS FACTORY PRE-APPLIED

MA101-0011 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/9/2024	PV



- NOTE:**
- CONNECT RJ45 CABLE TO TOUCHSCREEN LABEL "S" AND RUN WITH OTHER WIRES.
 - CONNECT RJ45 CABLE TO RECEPTACLE IN BOX LABEL "C". COIL UP IN BOX.
 - GREASE O-RINGS INCLUDED WITH 0210-0797. DO NOT OVERTIGHTEN WHEN ATTACHING TO BOX. HOUSING MUST TURN FREELY BY HAND.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-0798	SWIVEL BASE MOUNT	1
2	B-0210-0799-3	TUBE SUPPORT ARM 54"	1
3	0210-0797	HOUSING COUPLING	1
4	B-0210-1205	WASHER, SWING ARM TO ENCLOSURE	1
5	7707-2362	LABEL, CAUTION - LOCK OUT	1
6	J27C20-AWG	CABLE	25
7	0210-3472	RJ45 CAT6 PREM.PATCH CBL.20FT	2
8	B-7707-3277	ASSY, GROUND WIRE	1
9	HHM8X1.25X35	SCREW, HEX METRIC	4
10	LW5/16	WASHER, LOCK	8
11	LN10-32	NUT, LOCK	1
12	92775A412	SCREW, DOG POINT SET	1
13	0012882-1-A	SHCS 1/8-8 SS, M5-0.8 X 12 MM LG	4
14	131842C1	MAIN ENCLOSURE ELECTRIC CABINET WELDMENT	1
15	0210-1761	HANDLE HEAVY DUTY	2
16	HH5/16-18X5/8	SCREW, HEX HEAD	4
17	LW10	WASHER, LOCK	4
18	130752C1	PUSH-PULL IP69K E-STOP	1
19	130754C1	E-STOP CONTACT BLOCK	2
20	132349C1	ILLUMINATED BUTTON YELLOW IP69	1
21	126485C1	SCHMERSAL CONTACT BLOCK	2
22	132348C1	PUSH BUTTON LED LIGHT TERMINAL	2
23	132347C1	ILLUMINATED PUSH BUTTON GREEN IP69	1
24	132351C1	USB PANEL MOUNT	1
25	132350C1	KEY SWITCH IP69	1
26	0654900-1-A	PANELVIEW PLUS 7 GRAPHIC T	1
27	131701C1	SPACER, 5/8" OD, 5/16" ID, 1/2" LG	4

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 49.92
 FINISH: SEE BOM
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.104 .XXX ±.005
 DIM: ±.015 .XXX ±.005
 ANGLES: ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

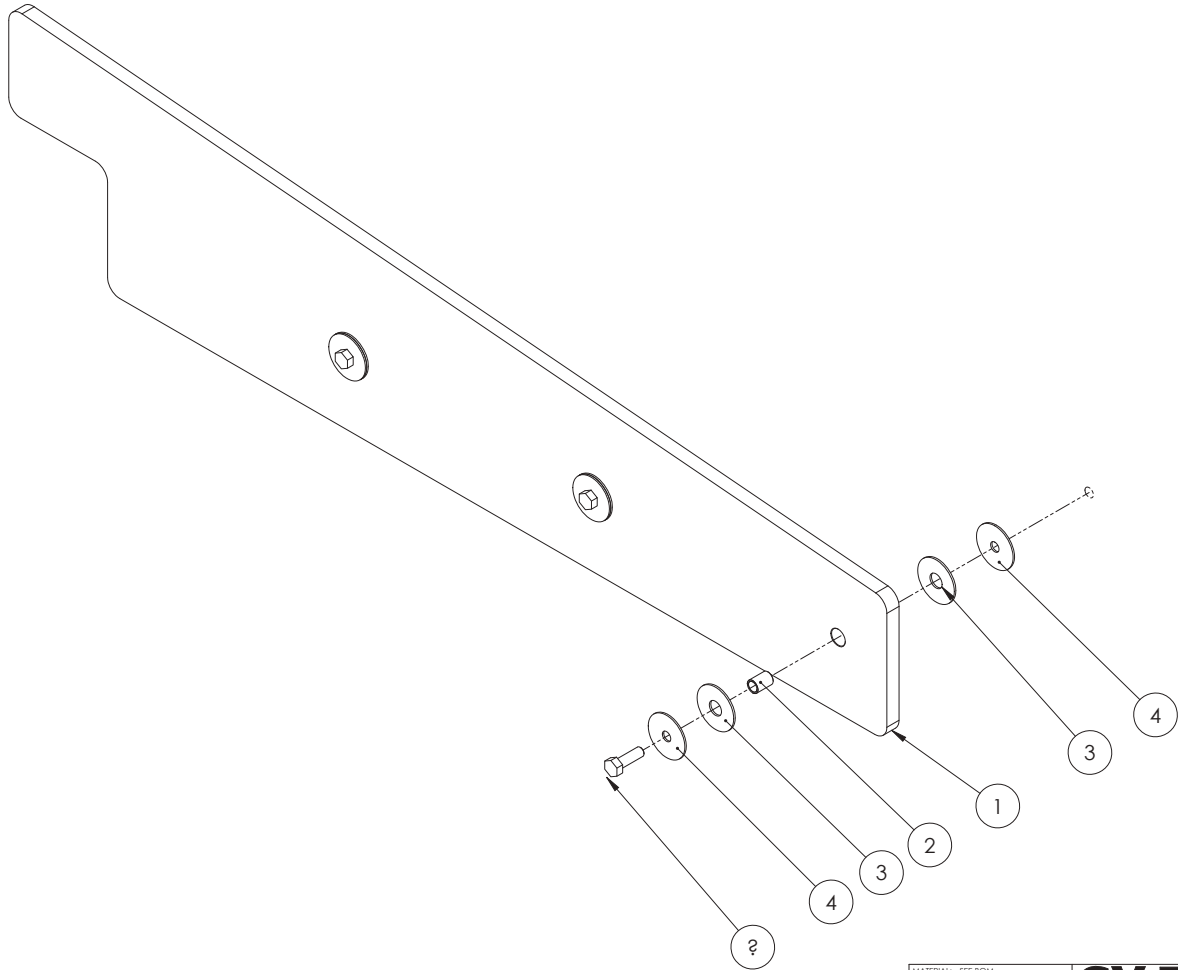
CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569
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 DRAWN: PV DATE: 2/9/2024 SCALE: 1/4 SHEET: 1 OF 1

MPX5 PENDANT ARM ASSEMBLY
 DRAWING NO. MA025-0029 REV. A

MA025-0029 REV. A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133421C1	MPX5 ENTRANCE GUARD,NARROW	1
2	B-0210-2132	SPACER 7/16 OD X 1 1/32 ID X 5/8 LG	3
3	B-0210-2133	RUBBER WASHER 1.5 OD X .5 ID X .06/.08 THK	6
4	FFWS/16X1-1/2	WASHER, FLAT	6
5	HHS/16-18X1	SCREW, HEX HEAD	3

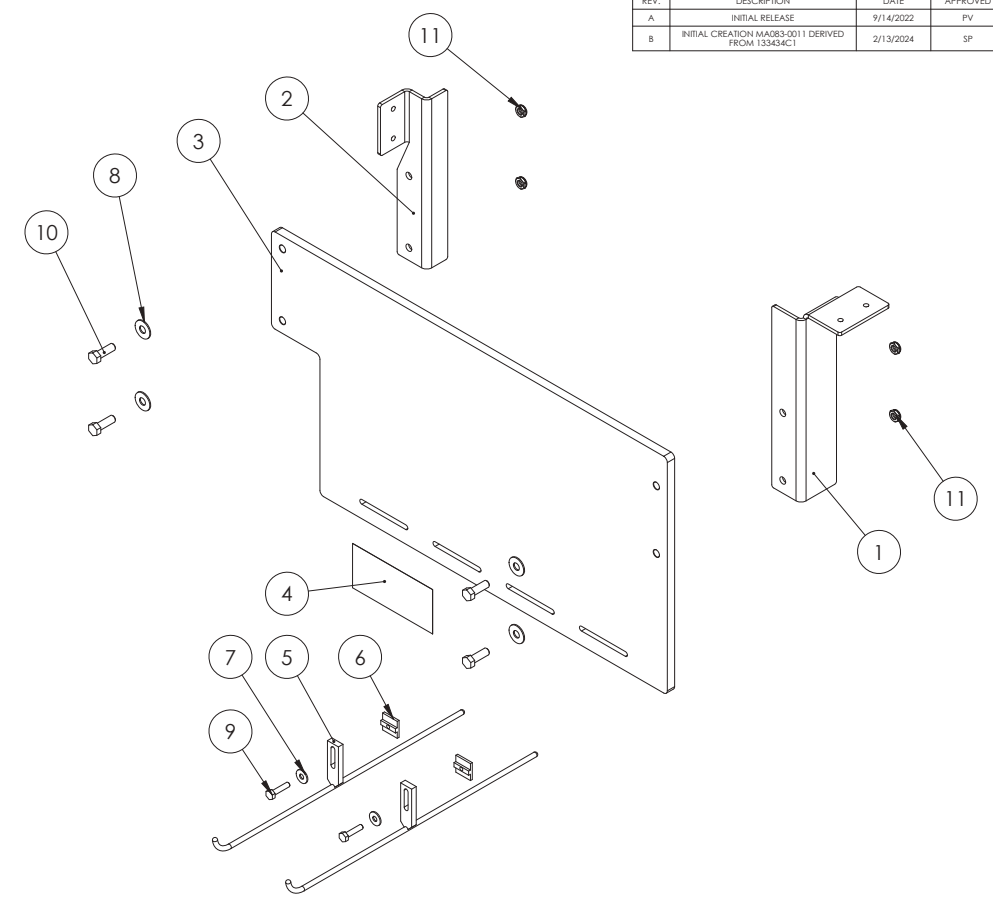
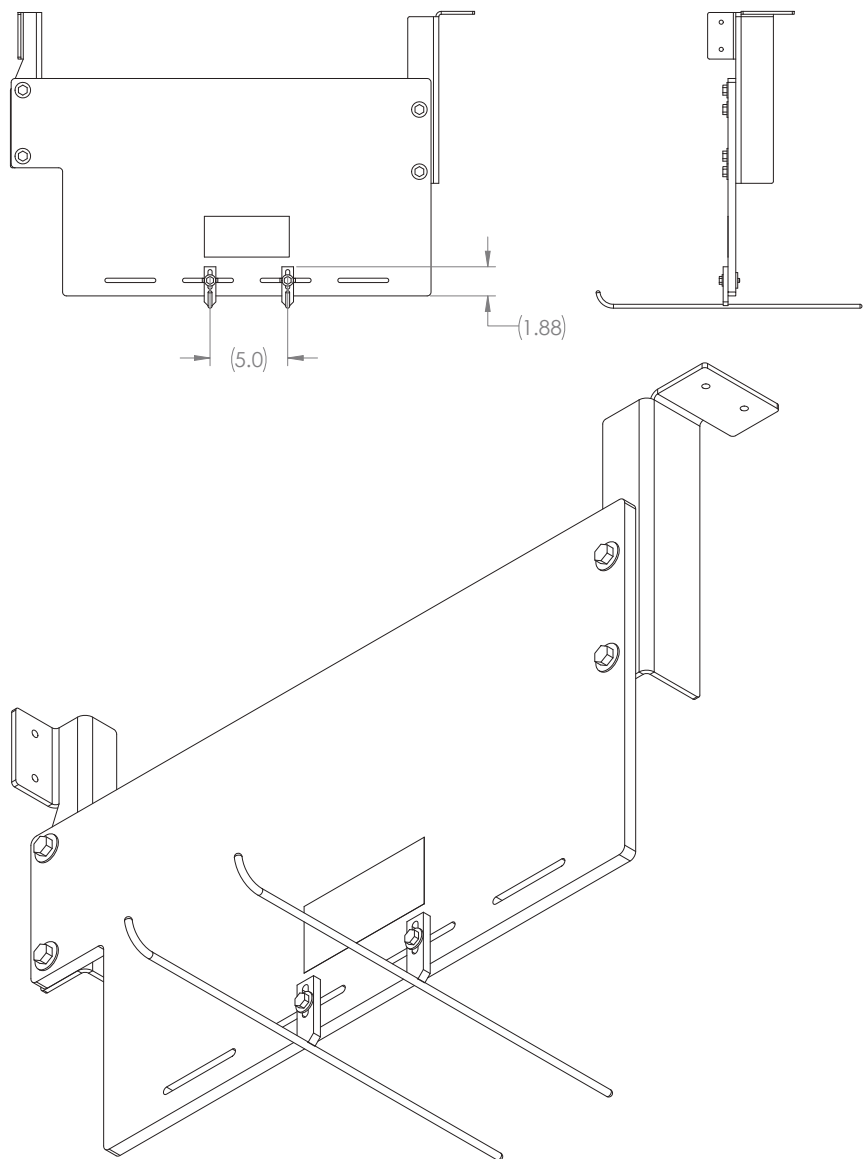
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/14/2022	PV



MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 4.92 FINISH: SEE BOM		CV·TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569		MPX5 INFED TOP GUARD, NARROW	
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTIONAL ±.004 .003±.005 DECIMAL ±.015 .000±.005 ANGLES ±0°30' DRILLED HOLES: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV·TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV·TEK, LLC IS PROHIBITED.		DRAWING NO. 133420C1	
DRAWN PV	DATE 9/14/2022	SCALE 1:2	SHEET 1 OF 1	REV A	

133420C1 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/14/2022	PV
B	INITIAL CREATION MA083-0011 DERIVED FROM 133434C1	2/13/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132249C1	SIDE SEAL GUARD MOUNT A	1
2	132254C1	SIDE SEAL GUARD MOUNT B	1
3	133435C1	SIDE SEAL GUARD, NARROW	1
4	7707-2360	DANGER KEEP HANDS OUT	1
5	B-0210-1251	GUIDEROD, FILM	2
6	B-0210-1855	T-NUT, 1/4-20	2
7	FW1/4-B	WASHER, FLAT	2
8	FW3/8-A	WASHER, FLAT	4
9	HH1/4-20X1-1/8	SCREW, HEX HEAD	2
10	HH3/8-16X1-1/8	SCREW, HEX HEAD	4
11	LN3/8-16LP	NUT, LOCK	4

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 13.09
 FINISH: SEE BOM

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT = ±1/64 .XXX ±.005
 DEC = ±.015 .XXX ±.005
 ANGLES = ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN: PV DATE: 9/14/2022 SCALE: 1:4 SHEET: 1 OF 1

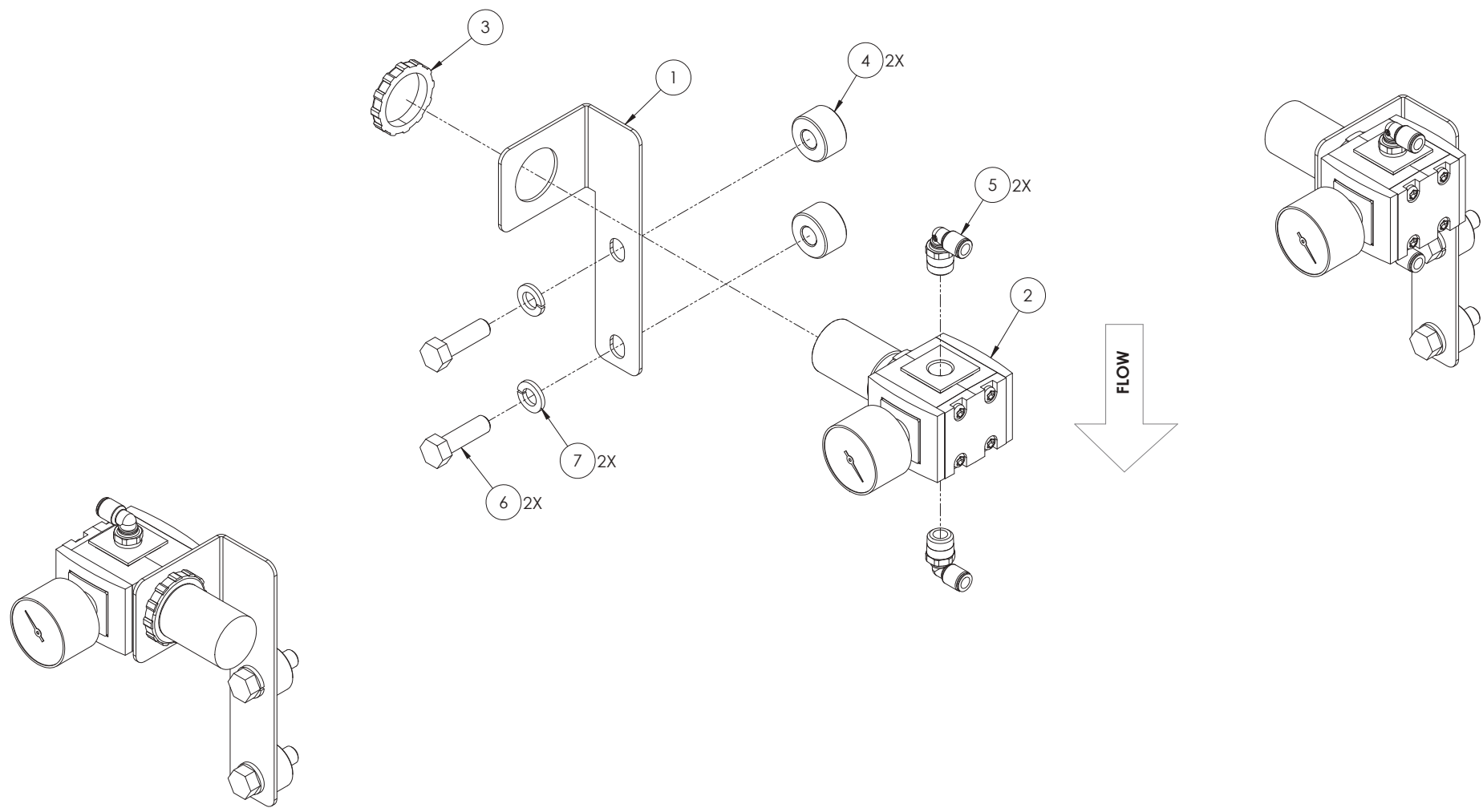
MPX5 SIDE SEAL GUARD ASSEMBLY NARROW

DRAWING NO. MA083-0011 REV. B

MA083-0011 REV B

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	0210-1678	BRACKET, BACK-UP PRESSURE REGULATOR	1
2	129647C1	AVENTICS 651 REGULATOR	1
3	129919C1	651 REGULATOR NUT RING	1
4	131699C1	SPACER, 1" OD, 0.406 ID, 0.605 LG	2
5	269P-04-04	FITTING TBG.ELB.1/4OD X 1/4NPT	2
6	HH3/8-16X1-1/4	SCREW, HEX HEAD	2
7	LW3/8	WASHER LOCK	2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/13/2024	PV



OPTION - 1

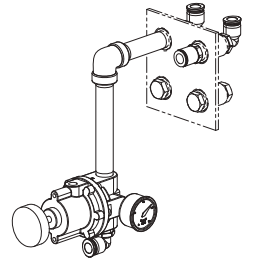
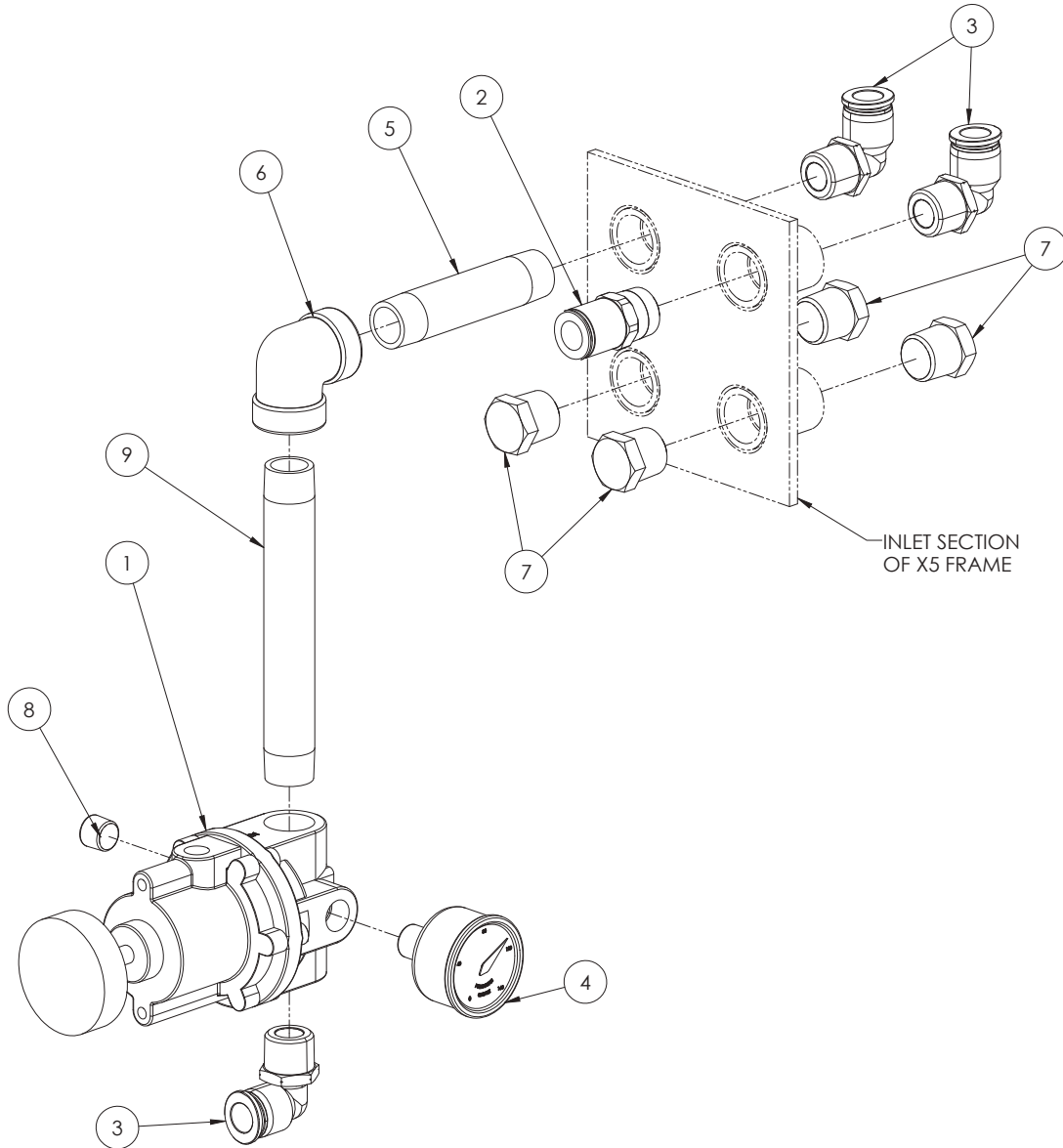
NOTE: OPTION-1 AND BY DEFAULT HAVE THE SAME COMPONENTS AND DIFFER ONLY IN THE POSITION OF THE REGULATOR RELATIVE TO THE BRACKET, MADE FOR DIFFERENT INSTALLATION OPTIONS.

MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 0.74 FINISH:	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 PRESSURE REGULATOR ASSEMBLY
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT = ±1/64 .XXX ±.005 XXX = ±.015 .XXX ±.005 ANGLES = ±0°30' DRILLED HOLES: STANDARD S.A.E.	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	DRAWING NO. MA101-0010
DRAWN PV	DATE 2/13/2024	SCALE 2:3
SHEET 1 OF 1		REV A

MA101-0010 REV A

ITEM NO.	PART NUMBER	DESCRIPTION	QTY./Ø
1	0210-1281	REGULATOR, PREC. 1/2"NPT, 0-150 PSI	1
2	268p-08-08	FITTING TBG STR. 1/2"ODX1/2"NPT	1
3	269p-08-08	ELBOW MALE BRASS	3
4	7501-162	GAUGE,PRESSURE,0.25NPT	1
5	SN1/2NPTX3-1/2	NIPPLE LG 304 SS	1
6	SE1/2NPT	90 DEG ELBOW, 1/2" NPT	1
7	SP1/2NPT	SP1/2NPT	4
8	SRP1/4NPT	HEX PLUG, 1/4" NPT, RECESSED	1
9	SN1/2NPTX5-1/2	NIPPLE, 1/2" NPT X 5-1/2"	1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED REF: 13088AC1	2/9/24	JRS



INLET SECTION OF X5 FRAME

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 2.61
 FINISH: SEE BOM

CV·TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 INLET PNEUMATICS, AIR/GAS

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONAL ±.004 .003X ±.005
 DECIMAL ±.015 .003X ±.005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

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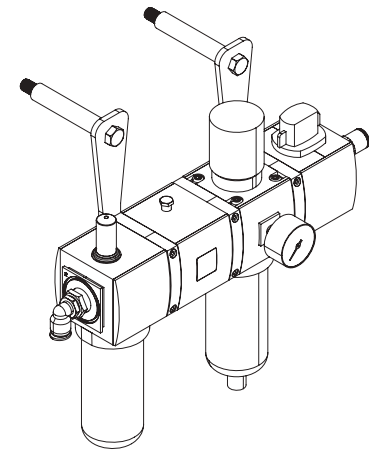
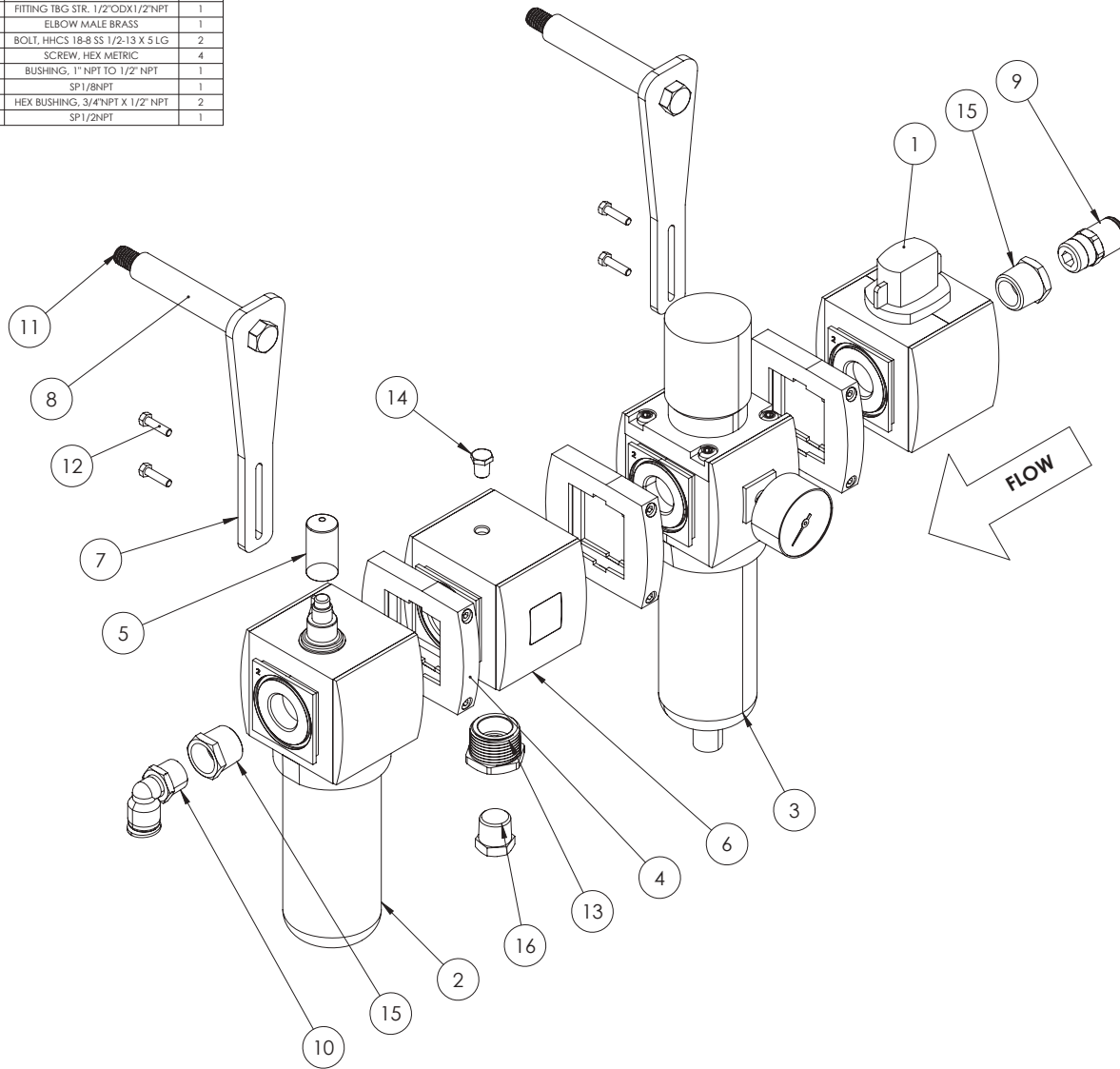
DRAWN	DATE	SCALE	SHEET
JRS	2022-06-07	1:1	1 OF 1

DRAWING NO.	REV
MA101-0009	A

MA101-0009 REV24

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	129580C1	AVENTICS 653 SHUTOFF	1
2	129581C1	AVENTICS 653 LUBRICATOR	1
3	129582C1	AVENTICS FILTER / REGULATOR	1
4	129595C1	AVENTICS CONNECTOR	3
5	129771C1	LUBRICATOR VINYL CAP	1
6	129852C1	AVENTICS 653 DIVERTER BLOCK	1
7	132220C1	MPX5 FRL MOUNT	2
8	132223C1	MPX5 FRL MOUNT STANDOFF	2
9	268p-08-08	FITTING TBG STR. 1/2" ODX1/2"NPT	1
10	269p-08-08	ELBOW MALE BRASS	1
11	0003890-1-A	BOLT, HHCS 18-8 SS 1/2-13 X 5 LG	2
12	HHM5X0.8X20	SCREW, HEX METRIC	4
13	130203C1	BUSHING, 1" NPT TO 1/2" NPT	1
14	SP1/8NPT	SP1/8NPT	1
15	SSB3/4NPTX1/2	HEX BUSHING, 3/4"NPT X 1/2" NPT	2
16	SP1/2NPT	SP1/2NPT	1

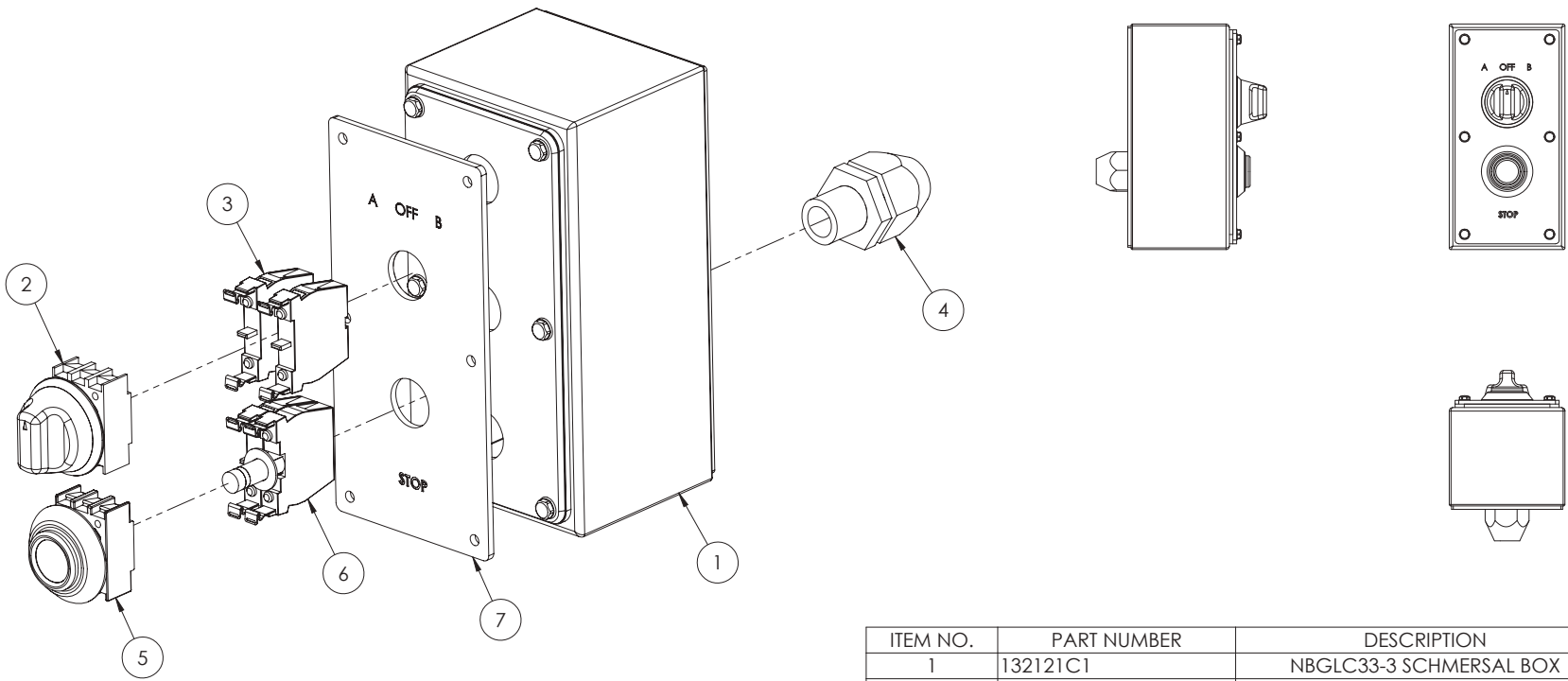
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED: REF: 132095C1	2/7/24	JRS



MATERIAL: SEE BOM STOCK NO: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 12.76	CV-TEK 1475 TODD FARM DR., ELGIN, ILLINOIS 60120 PHONE: 847.741.3500 FAX: 847.741.3569	MPX5 FRL ASSEMBLY
FINISH: SEE BOM	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.	DRAWING NO. MA029-0016
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACTIONAL ±.004 .0005 ±.005 DECIMAL ±.015 .0005 ±.005 ANGLES ±0°30'	DRAWN: JRS DATE: 2/7/2024 SCALE: 2:3 SHEET: 1 OF 1	REV A

[MA029-0016] [REV: A]

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/7/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132121C1	NBGLC33-3 SCHMERSAL BOX	1
2	126484C1	SCHMERSAL SWITCH	1
3	126485C1	SCHMERSAL CONTACT BLOCK	3
4	ST38	CONNECTOR, SEALTITE, 3/8	1
5	132349C1	ILLUMINATED BUTTON YELLOW IP69	1
6	132348C1	PUSH BUTTON LED LIGHT TERMINAL	1
7	137191C1	Electrical box cover	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 1.65

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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DRAWN PV	DATE 2/7/2024	SCALE 1:2	SHEET 1 OF 1
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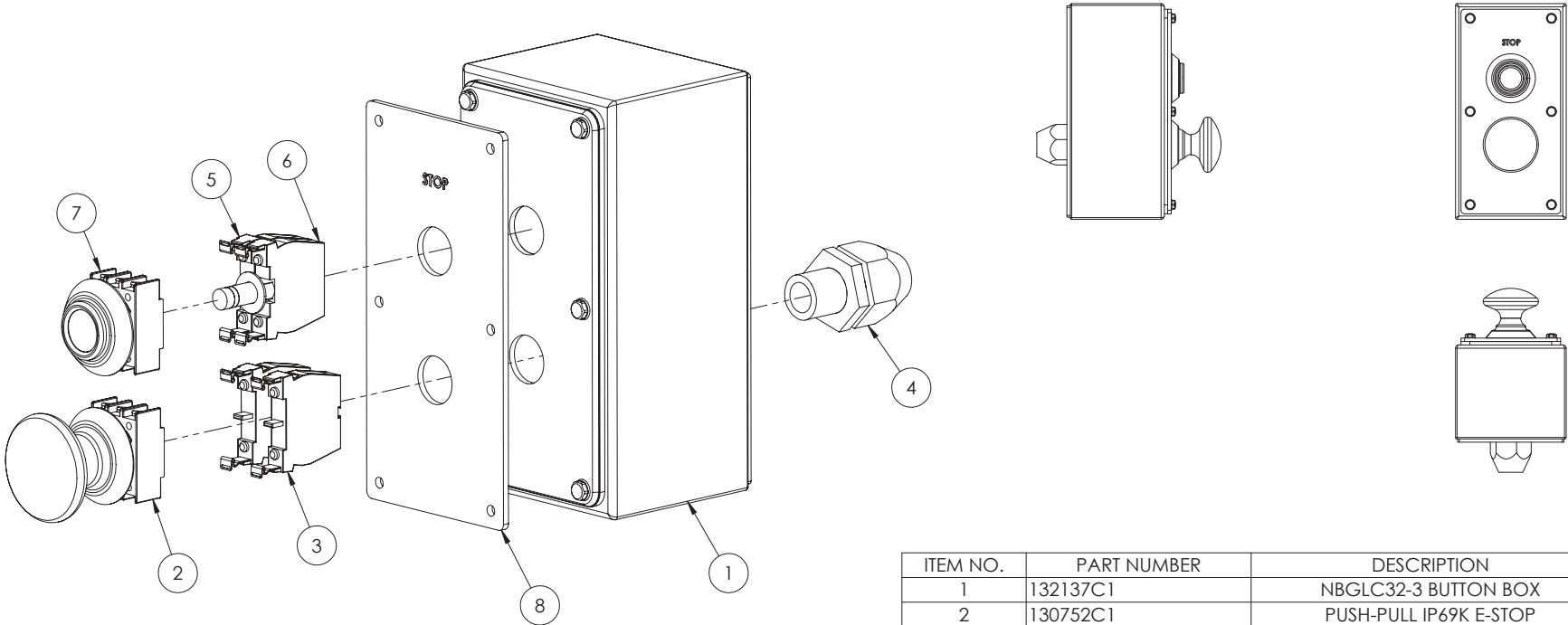
**MPX5 2 SWITCH
 BUTTON ASSY**

DRAWING NO.
MA110-0047

REV
A

MA110-0047
 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/7/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	132137C1	NBGLC32-3 BUTTON BOX	1
2	130752C1	PUSH-PULL IP69K E-STOP	1
3	130754C1	E-STOP CONTACT BLOCK	2
4	ST38	CONNECTOR, SEALTITE, 3/8	1
5	126485C1	SCHMERSAL CONTACT BLOCK	1
6	132348C1	PUSH BUTTON LED LIGHT TERMINAL	1
7	132347C1	ILLUMINATED PUSH BUTTON GREEN IP69	1
8	137194C1	Electrical box cover	1

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 1.70

FINISH

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ± 1/64 .XXX= ± .005
 .XX= ± .015 .XXXX= ± .0005
 ANGLES= ± 0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV·TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

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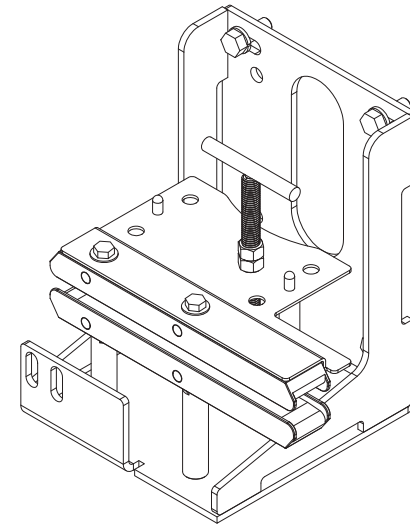
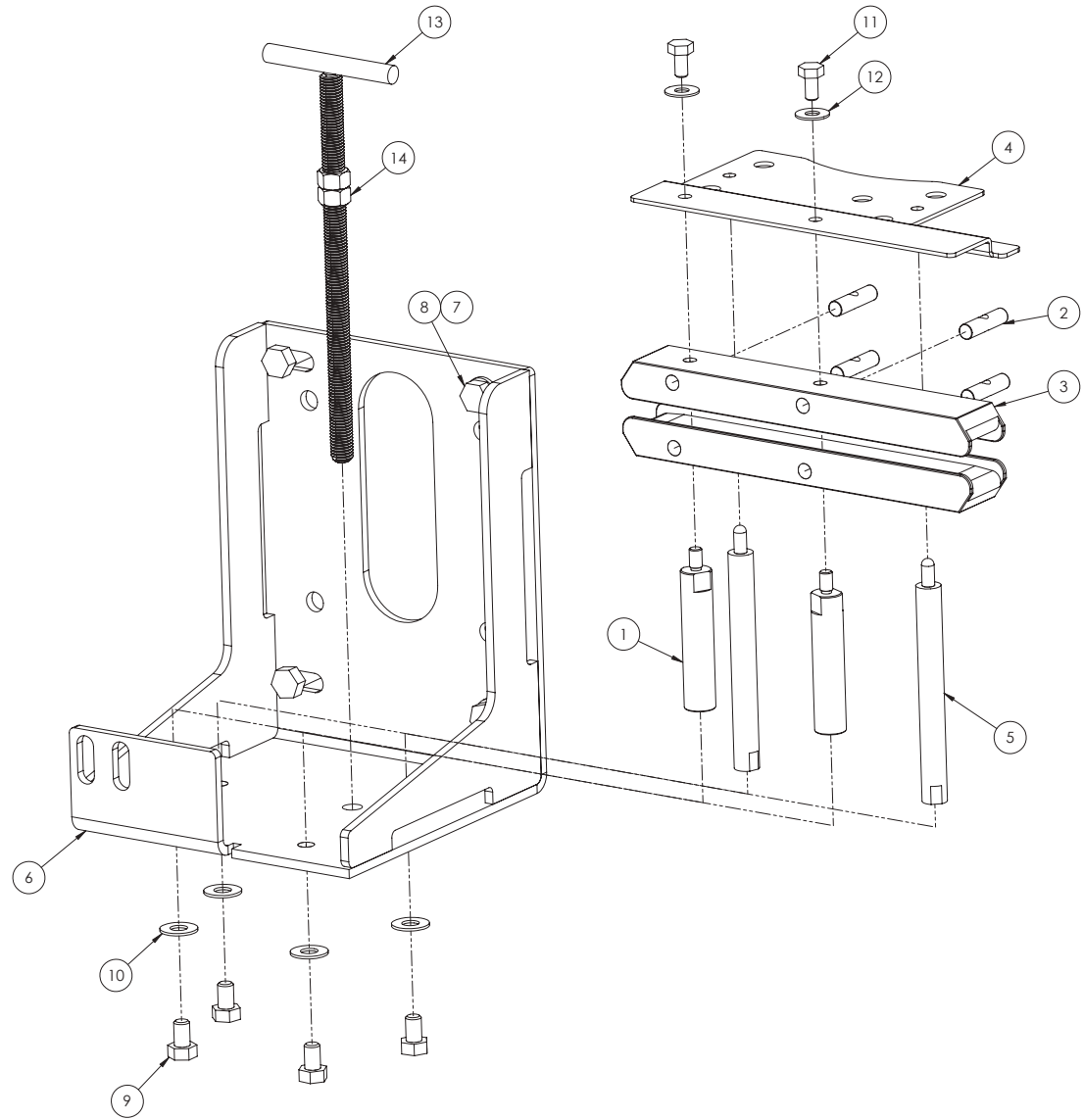
DRAWN PV	DATE 2/7/2024	SCALE 1:4	SHEET 1 OF 1
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**MPX5 E-STOP
 BUTTON ASSY**

DRAWING NO. MA110-0048	REV A
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MA110-0048
 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	3/4/2024	PV



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	137289C1	SLITTER FLEX JAW SUPPORT	2
2	132390C1	BACK UP JAW PINS	4
3	137996C1	BELT BACKUP, SLITTER	2
4	137997C1	TRAY, NO SLITTER	1
5	137244C1	SLITTER FLEX JAW SUPPORT	2
6	137258C1	SLITTER FRAME WELDMENT	1
7	LW3/8	WASHER LOCK	4
8	HH3/8-16X1	SCREW, HEX HEAD	4
9	HH5/16-18X1/2	SCREW, HEX HEAD	4
10	FW5/16-A	WASHER, FLAT	4
11	HH1/4-20X1/2	SCREW, HEX HEAD	2
12	FW1/4-A	WASHER, FLAT	2
13	139062C1	T-HANDLE 3/8-16 THREAD, WELDMENT	1
14	HN3/8-16	NUT, HEX.	2

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK QTY: SEE BOM
 MASS [LBS]: 9.32

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONAL ±.004 .003±.005
 DECIMAL ±.012 .003±.005
 ANGLES ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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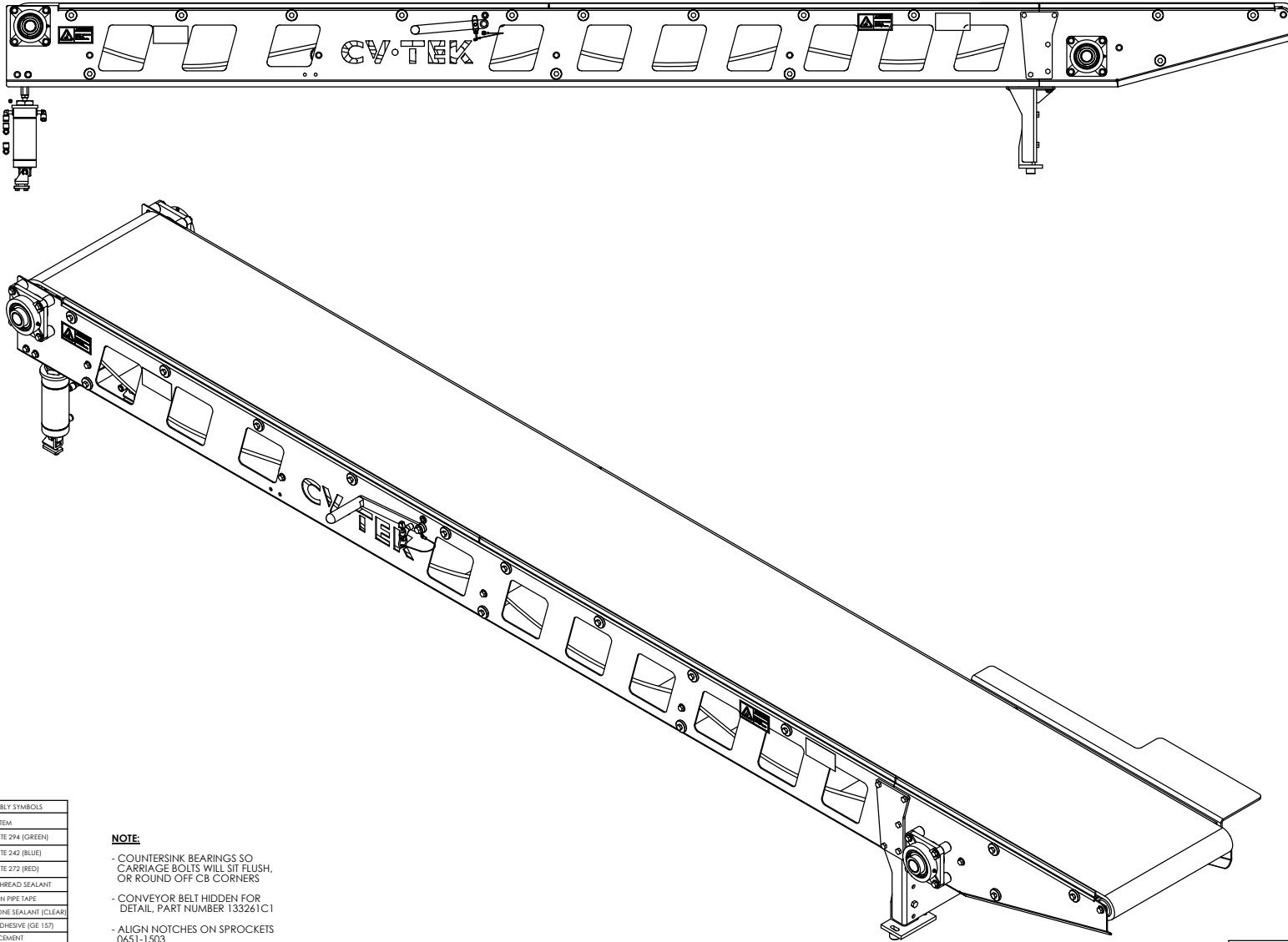
MPX5 BELT
 SUPPORT ASSEMBLY

DRAWING NO. REV

MA054-0006 A

DRAWN: PV DATE: 3/4/2024 SCALE: 1/2 SHEET: 1 OF 1

MA054-0006 REV A



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	2/20/24	JRS

ITEM NO.	PART NUMBER	Description	QTY.
1	131752C1	MPX5 DISCHARG CONV SIDE PLATE, LEFT	1
2	131763C1	MPX5 CONVEYOR NOSE SIDE PLATE LEFT, ASSY	1
3	131767C1	MPX5 CONVEYOR PLATE	2
4	133251C1	MPX5, NARROW, CONVEYOR CROSS SHAFT BOTTO	6
5	133249C1	MPX5, NARROW, CONVEYOR CROSS SHAFT TOP	13
6	133250C1	IDLER NARROW ROLLER PRODUCT CONVEYOR	6
7	133260C1	SHAFT DRIVE, NARROW	1
8	115272C1	BEARING 1-1/4 4 HOLE	4
9	0651-1503	SPROCKET, 26T	10
10	0243-0136	RING, RETAINING, 1.5 SQ SHAFT, SS	20
11	0210-0709	PILLOW BLOCK	2
12	133256C1	CROSS MEMBER, NARROW, WELDMENT	1
13	1906-0053	LOAD DISK 5/16 ID x 1 1/4 OD x 1/4 THICK	30
14	B-0210-2248	IDLER ROLLER MOUNT	12
15	B-0210-0917	SPACER, 1" OD X 5/16 X 1/4 THK.	3
16	132201C1	MPX5 CONVEYOR CROSSBAR	1
17	0210-2022	1" ID SHAFT COUPLING	1
18	0651-1461-01	KEY, SQ, SS, 0.25 X 1.00LG	1
19	131747C1	MPX5 DISCHARGE CONVEYOR CENTER DRIVE SIDE PLATE, RIGHT, WELDMENT	1
20	131760C1	MPX5 CONV NOSE SIDE PLATE RIGHT, ASSY	1
21	1906-0051	MP2 DISCHARGE CONVEYOR BELT SIDE GUIDE	4
22	1906-0041	MP2 PRODUCT CONVEYOR BELT SIDE GUIDE	2
23	1906-0050	MP2 DISCHARGE CONVEYOR BELT SUPPORT	2
24	1906-0042	MP2 PRODUCT CONVEYOR BELT SUPPORT	1
25	0210-0422	WEAR STRIP RIVETS	31
26	133255C1	SHAFT IDLE, NARROW	1
27	B-0210-2242	CONVEYOR BELT LIFT HANDLE	1
28	0210-2274	ROPE LANYARD, LOOP/EYE 12"	1
29	0210-2273	T-HANDLE RAPID RELEASE PIN	1
30	B-0210-2243	LEVER, BELT LIFT	1
31	MA220-0036	MPX5 IDLER BAR, NARROW, ASSEMBLY	1
32	860751S1	WARNING LABEL, NO CLIMBING	2
33	0210-1032	WARNING, KEEP HANDS CLEAR	2
34	133256C1	MPX5 CONVEYOR MOUNT NARROW WELDMENT	1
35	131797C1	WELDMENT STRUT FIXED	2
36	B-0210-2202	SPACER 1" OD X 7/16 ID X 5/8	4
52	HH5/16-18X7/8	SCREW, HEX HEAD	44
53	HH5/16-18X3/4	SCREW, HEX HEAD	20
54	FW5/16-A	WASHER, FLAT	32
55	FW5/16-C	WASHER, FLAT	2
56	HH3/8-16X3/4	SCREW, HEX HEAD	2
57	LW5/16	WASHER, LOCK	4
58	5FH5/16-18X7/8	SCREW, FLAT HEAD SOCKET	1
59	HH5/16-18X5/8	SCREW, HEX HEAD	4
60	HH3/8-16X7/8	SCREW, HEX HEAD	4
61	1N3/8-16	NUT, JAM	8
62	FW3/8-C	WASHER, FLAT	12
63	LW3/8	WASHER, LOCK	8
64	HH3/8-16X1-1/4	SCREW, HEX HEAD	4
65	HH5/16-18X1	SCREW, HEX HEAD	4
66	C-0210-2484	DOUBLE SLACK, 11" CENTERS, 3" LIFT	1
67	133261C1	MP2 NARROW DISCHARGE CONVEYOR BELT	1

ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	GOPROPRYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

NOTE:

- COUNTERSINK BEARINGS SO CARRIAGE BOLTS WILL SIT FLUSH, OR ROUND OFF CB CORNERS
- CONVEYOR BELT HIDDEN FOR DETAIL, PART NUMBER 133261C1
- ALIGN NOTCHES ON SPROCKETS 0651-1503
- LOCTITE 222 AND PRIMER 7649 ON ALL SET SCREWS
- ANTI-SEIZE ON ALL LOCK NUTS
- ZERK FITTINGS FACE UP

MATERIAL: SEE BOM
 STOCK NO: 899
 STOCK SIZE:
 MASS [LBS]: 338.67

FINISH:

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT: ±.004 .006 ±.005
 DIM: ±.015 .0004 ±.0005
 ANGLES: 89°±30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK

1675 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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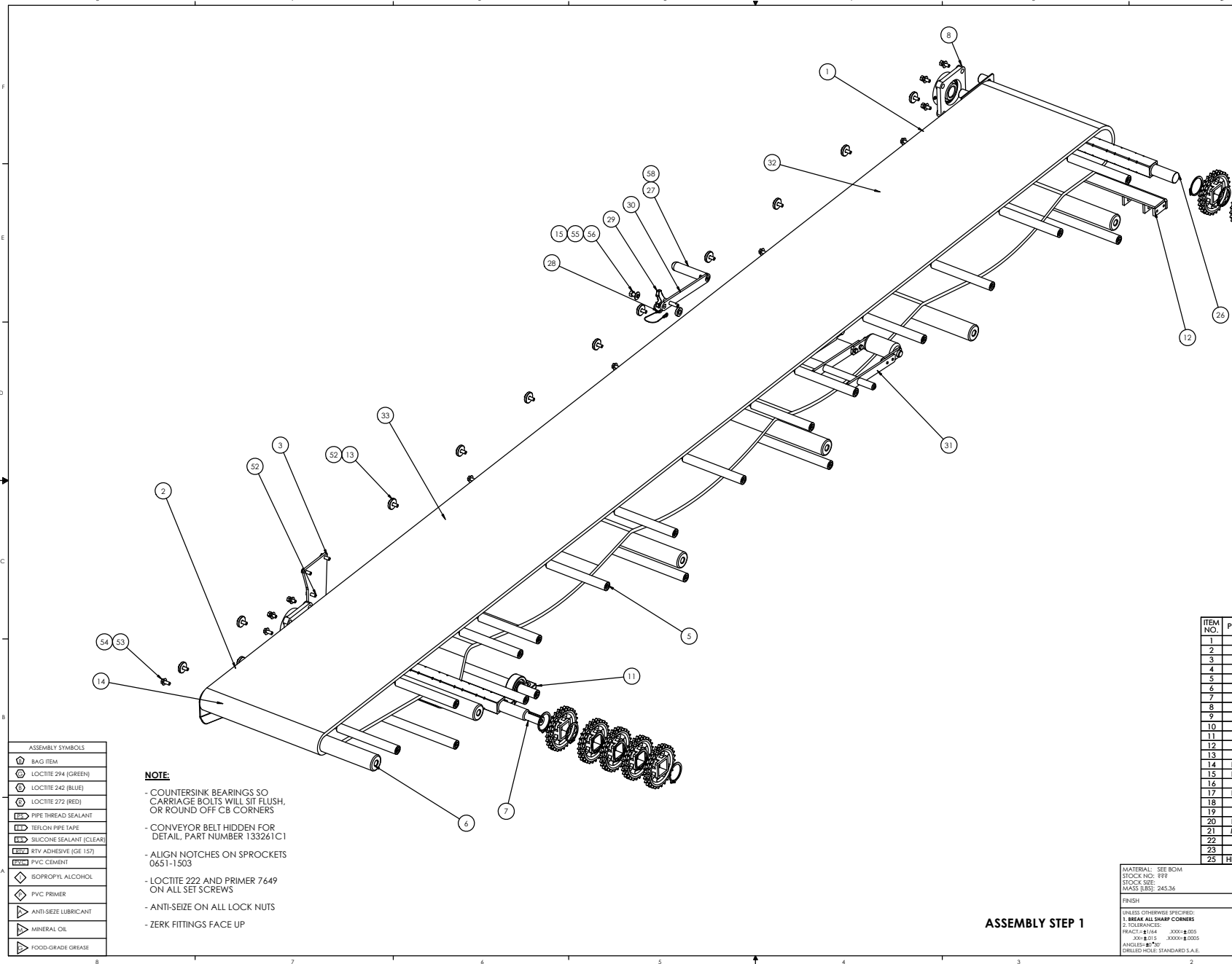
DRAWN: JRS DATE: 9/13/2022 SCALE: 1/6 SHEET: 1 OF 4

MPX5 NARROW
 PRODUCT CONVEYOR
 ASSEMBLY

DRAWING NO.
MA220-0035

REV
A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	SEE SHEET 1		



ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

NOTE:

- COUNTERSINK BEARINGS SO CARRIAGE BOLTS WILL SIT FLUSH, OR ROUND OFF CB CORNERS
- CONVEYOR BELT HIDDEN FOR DETAIL, PART NUMBER 133261C1
- ALIGN NOTCHES ON SPROCKETS 0651-1503
- LOCTITE 222 AND PRIMER 7649 ON ALL SET SCREWS
- ANTI-SEIZE ON ALL LOCK NUTS
- ZERK FITTINGS FACE UP

ITEM NO.	PART NUMBER	Description	QTY
1	131752C1	MPXS DISCHARG CONV SIDE PLATE LEFT	1
2	131763C1	MPXS CONVEYOR NOSE SIDE PLATE LEFT, ASSY	1
3	131767C1	MPXS CONVEYOR PLATE	1
4	133251C1	MPXS, NARROW, CONVEYOR CROSS SHAFT BOTTO	6
5	133249C1	MPXS, NARROW, CONVEYOR CROSS SHAFT TOP	13
6	133250C1	IDLER NARROW ROLLER PRODUCT CONVEYOR	6
7	133260C1	SHAFT DRIVE, NARROW	1
8	115272C1	BEARING 1-1/4 4 HOLE	2
9	0651-1503	SPROCKET 26T	10
10	0243-0136	RING, RETAINING, 1.5 SQ SHAFT, SS	20
11	0210-0709	PILLOW BLOCK	2
12	133258C1	CROSS MEMBER, NARROW, WELDMENT	1
13	1906-0253	LOAD DISK 5/16 ID X 1 1/4 OD X 1/4 THICK	16
14	B-0210-2248	IDLER ROLLER MOUNT	6
15	B-0210-0917	SPACER, 1 OD X .51 ID X 1/4 THK.	1
16	133255C1	SHAFT IDLE, NARROW	1
17	B-0210-2242	CONVEYOR BELT LIFT HANDLE	1
18	0210-2274	ROPE LANIARD, LOOP/EYE 12"	1
19	0210-2273	T-HANDLE RAPID RELEASE PIN	1
20	B-0210-2243	LEVER, BELT LIFT	1
21	MA220-0036	MPXS IDLER BAR, NARROW, ASSEMBLY	1
22	86075151	WARNING LABEL, NO CLIMBING	2
23	0210-1032	WARNING, KEEP HANDS CLEAR	2
25	HHS1/6-18X7/8	SCREW, HEX HEAD	38

MATERIAL: SEE BOM
 STOCK NO: 889
 STOCK SIZE:
 MASS [LBS]: 245.36

FINISH:
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: #/64 XXXX ±.005
 .XXX ±.013 XXXXX ±.0005
 ANGLES: #°/40
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

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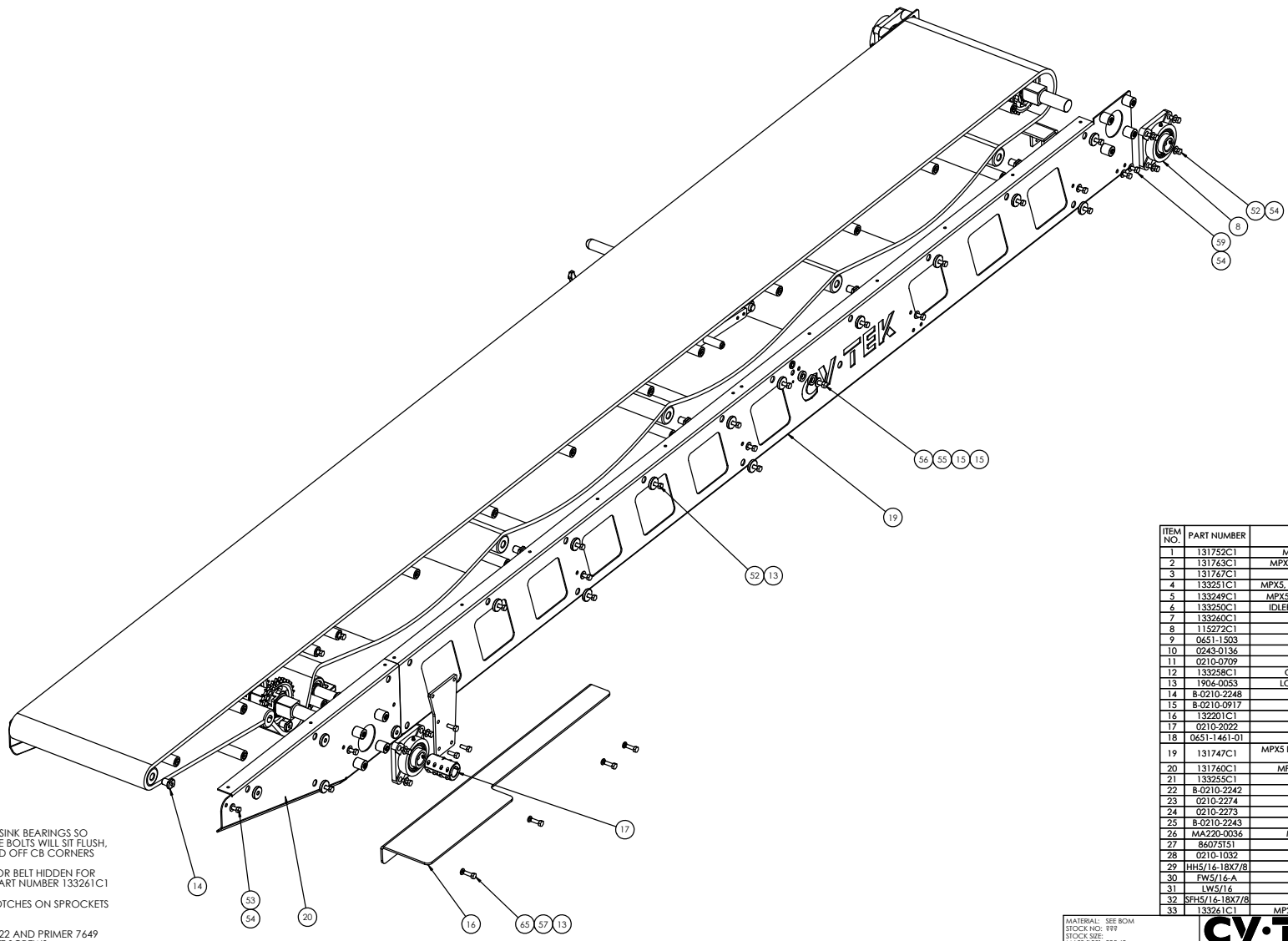
MPXS NARROW PRODUCT CONVEYOR ASSEMBLY

DRAWING NO. MA220-0035 REV. A

ASSEMBLY STEP 1

MA220-0035 REV. A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE SHEET 1			



ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

NOTE:

- COUNTERSINK BEARINGS SO CARRIAGE BOLTS WILL SIT FLUSH, OR ROUND OFF CB CORNERS
- CONVEYOR BELT HIDDEN FOR DETAIL, PART NUMBER 133261C1
- ALIGN NOTCHES ON SPROCKETS 0651-1503
- LOCTITE 222 AND PRIMER 7649 ON ALL SET SCREWS
- ANTI-SEIZE ON ALL LOCK NUTS
- ZERK FITTINGS FACE UP

ITEM NO.	PART NUMBER	Description	QTY.
1	131752C1	MPX5 DISCHARG CONV SIDE PLATE LEFT	1
2	131743C1	MPX5 CONVEYOR NOSE SIDE PLATE LEFT, ASSY	1
3	131767C1	MPX5 CONVEYOR PLATE	2
4	133249C1	MPX5, NARROW, CONVEYOR CROSS SHAFT BOTTO	6
5	133249C1	MPX5, NARROW, CONVEYOR CROSS SHAFT TOP	13
6	133250C1	IDLER NARROW ROLLER PRODUCT CONVEYOR	6
7	133240C1	SHAFT DRIVE, NARROW	1
8	115272C1	BEARING 1-1/4 X 4 HOLE	4
9	0651-1503	SPROCKET, 26T	10
10	0243-0136	RING, RETAINING, 1.5 SQ SHAFT, SS	20
11	0210-0709	PILLOW BLOCK	2
12	133258C1	CROSS MEMBER, NARROW, WELDMENT	1
13	1906-2053	LOAD DISK 5/16 ID X 1 1/4 OD X 1/4 THICK	34
14	B-0210-2248	IDLER ROLLER MOUNT	12
15	B-0210-0917	SPACER, 1 OD X .5 IID X 1/4 THK.	3
16	132201C1	MPX5 CONVEYOR CROSSBAR	1
17	0210-2022	T ID SHAFT COUPLING	1
18	0651-1461-01	KEY, SQ, S5, 0.25 X 1.00 LG	1
19	131747C1	MPX5 DISCHARGE CONVEYOR CENTER DRIVE SIDE PLATE, RIGHT, WELDMENT	1
20	131760C1	MPX5 CONV NOSE SIDE PLATE RIGHT, ASSY	1
21	133255C1	SHAFT IDLE, NARROW	1
22	B-0210-2242	CONVEYOR BELT LIFT HANDLE	1
23	0210-2274	ROPE LANYARD, LOOP/EYE 12"	1
24	0210-2273	T-HANDLE RAPID RELEASE PIN	1
25	B-0210-2243	LEVER, BELT LIFT	1
26	MA220-0036	MPX5 IDLER BAR, NARROW, ASSEMBLY	1
27	840751	WARNING LABEL, NO CLIMBING	2
28	0210-1032	WARNING, KEEP HANDS CLEAR	2
29	HHS/16-18X7/8	SCREW, HEX HEAD	80
30	FWS/16-A	WASHER, FLAT	34
31	LWS/16	WASHER, LOCK	4
32	SPHS/16-18X7/8	SCREW, FLAT HEAD SOCKET	1
33	133261C1	MP2 NARROW DISCHARGE CONVEYOR BELT	1

MATERIAL: SEE BOM
 STOCK NO: 889
 STOCK SIZE:
 MASS [LBS]: 305.40
 FINISH:
 UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: #1/64 XXXX ±.005
 .XXX ±.013 XXXX ±.0005
 ANGLES: 30° 45°
 DRILLED HOLE: STANDARD S.A.E.

1475 TODD FARM DR. ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

**MPX5 NARROW
 PRODUCT CONVEYOR
 ASSEMBLY**

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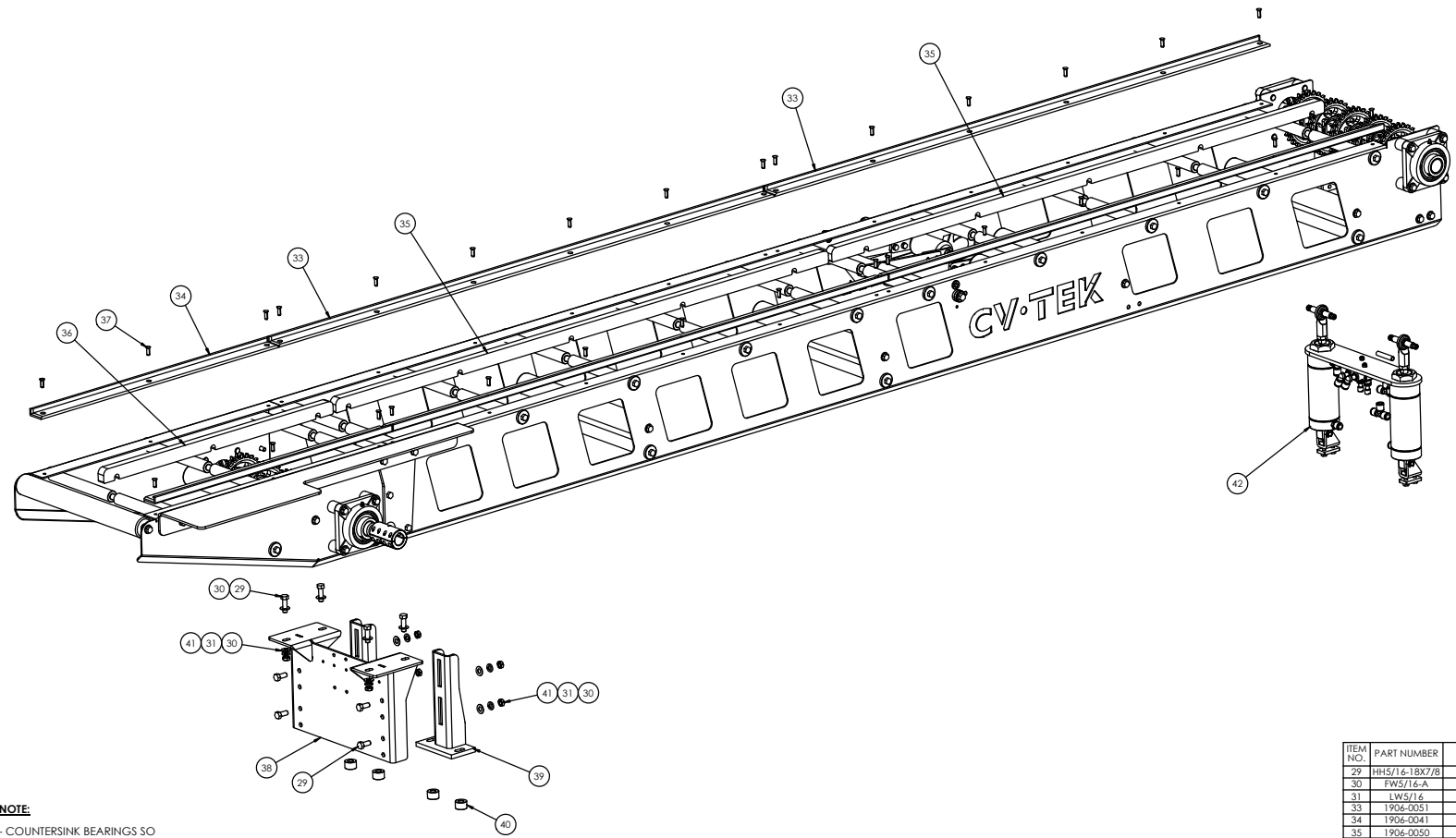
DRAWING NO. REV
MA220-0035 A

DRAWN: JRS DATE: 9/13/2022 SCALE: 1/6 SHEET: 3 OF 4

ASSEMBLY STEP 2

MA220-0035 REV A

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
SEE SHEET 1			



ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE 294 (GREEN)
	LOCTITE 242 (BLUE)
	LOCTITE 272 (RED)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

NOTE:

- COUNTERSINK BEARINGS SO CARRIAGE BOLTS WILL SIT FLUSH, OR ROUND OFF CB CORNERS
- CONVEYOR BELT HIDDEN FOR DETAIL, PART NUMBER 133261C1
- ALIGN NOTCHES ON SPROCKETS 0651-1503
- LOCTITE 222 AND PRIMER 7649 ON ALL SET SCREWS
- ANTI-SEIZE ON ALL LOCK NUTS
- ZERK FITTINGS FACE UP

ITEM NO.	PART NUMBER	Description	QTY.
29	HHS/16-18X7/8	SCREW, HEX HEAD	84
30	FWS/1/6-A	WASHER, FLAT	46
31	LWS/1/6	WASHER, LOCK	12
33	1906-0051	MP2 DISCHARGE CONVEYOR BELT SIDE GUIDE	4
34	1906-0041	MP2 PRODUCT CONVEYOR BELT SUPPORT	2
35	1906-0050	MP2 DISCHARGE CONVEYOR BELT SUPPORT	2
36	1906-0042	MP2 PRODUCT CONVEYOR BELT SUPPORT	1
37	0210-0422	WEAR STRIP RIVETS	31
38	133256C1	MPX5 CONVEYOR MOUNT NARROW WELDMENT	1
39	131797C1	WELDMENT STRUT FIXED	2
40	B-0210-2202	SPACER I OD X 7/16 ID X 5/8	4
41	JNS/8-16	NUT, JAM	8
42	C-0210-2484	DOUBLE STACK, 11" CENTERS, 3" LIFT	1

MATERIAL: SEE BOM
 STOCK NO: 889
 STOCK SIZE:
 MASS [LBS]: 265.67

FINISH:

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACTIONS: ±.004 .XXX ±.005
 .XXX ±.013 .XXX ±.0005
 ANGLES: ±.0°
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

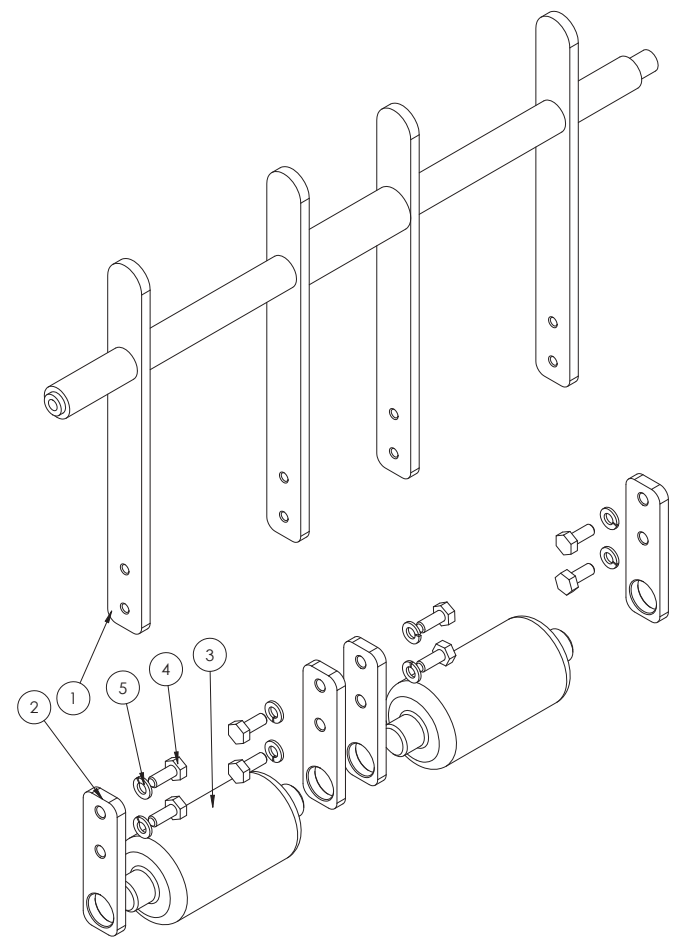
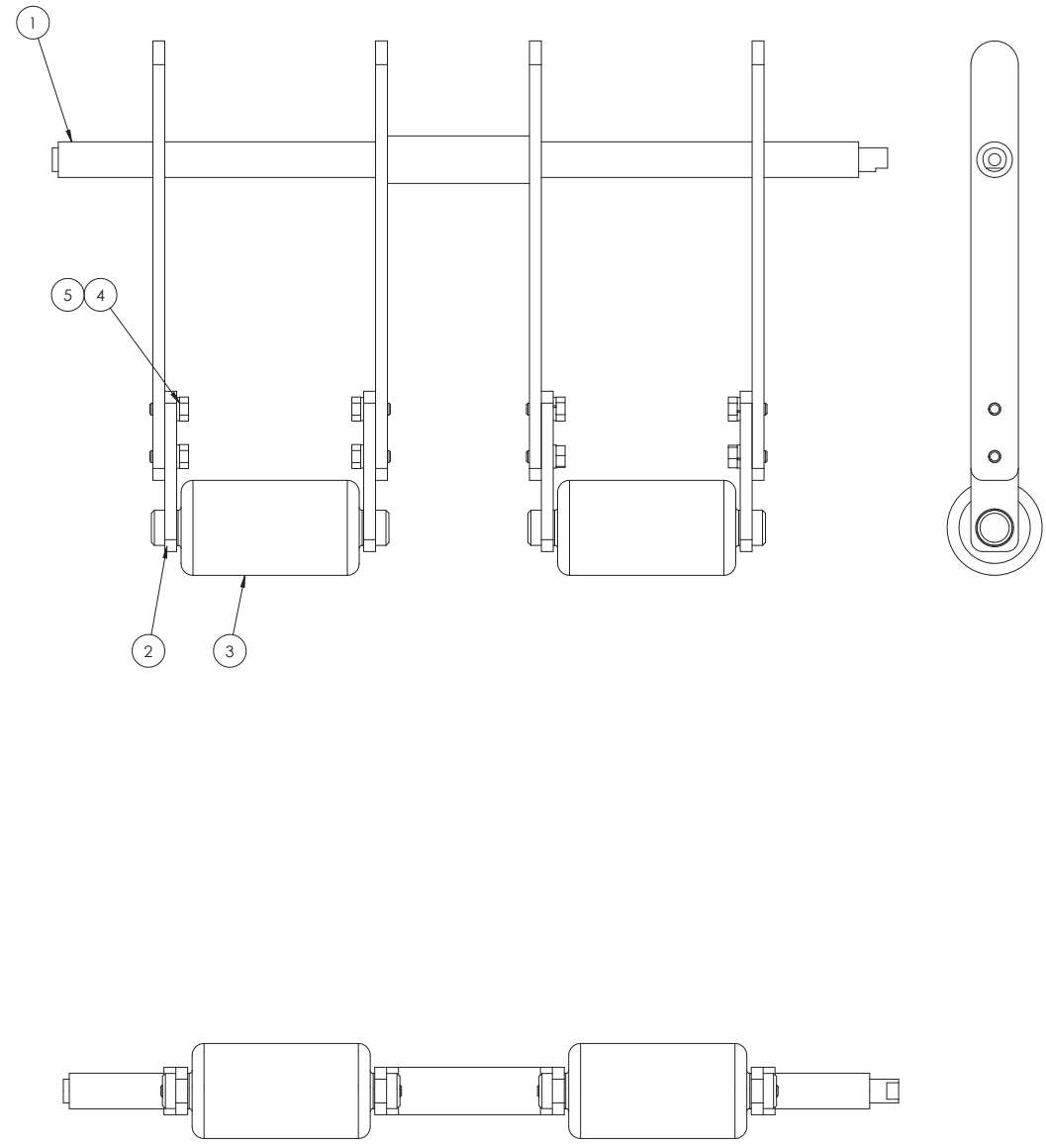
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DRAWN: JRS DATE: 9/13/2022 SCALE: 1/6 SHEET: 4 OF 4

MPX5 NARROW PRODUCT CONVEYOR ASSEMBLY

DRAWING NO. MA220-0035 REV. A

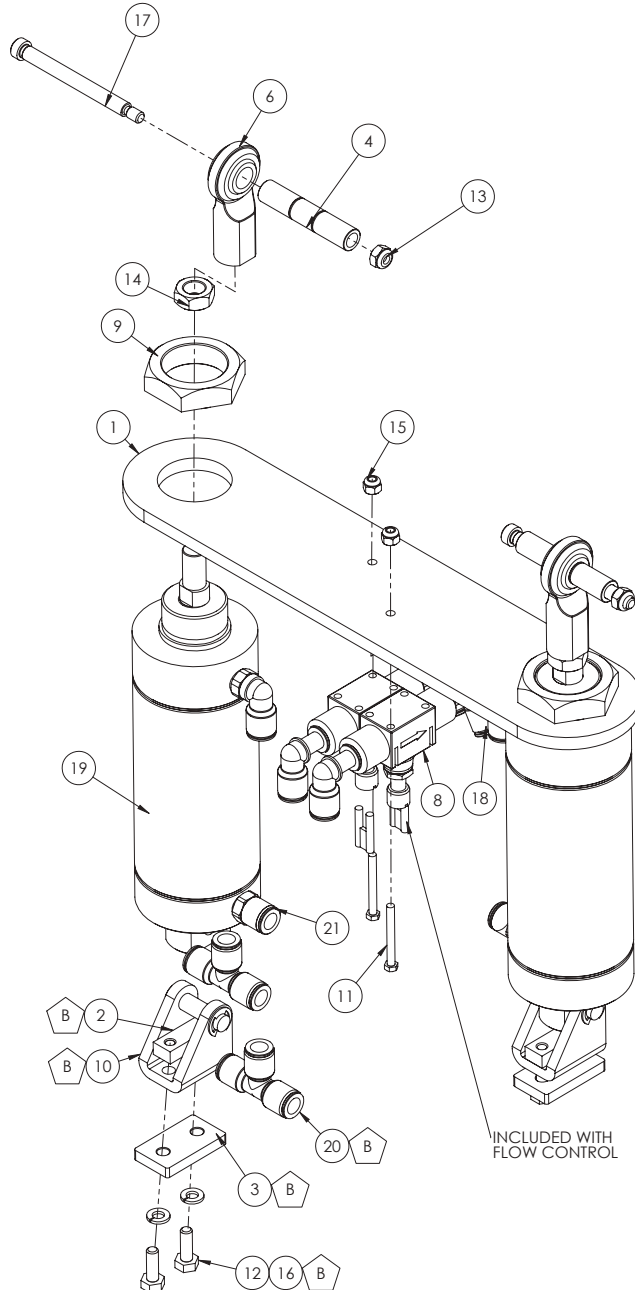
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/13/2022	PV
B	INITIAL CREATION MA220-0036 DERIVED FROM 133252C1	2/13/2024	SP



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	133253C1	MPX5 BELT LIFT WELDMENT, NARROW	1
2	B-0210-2269	IDLER ROLLER MOUNT	4
3	B-0210-2270	BELT LIFT IDLER	2
4	HH1/4-20X5/8	SCREW, HEX HEAD	8
5	LW1/4	WASHER, LOCK	8

MATERIAL: SEE BOM STOCK NO.: SEE BOM STOCK SIZE: SEE BOM MASS [LBS]: 5.95		1675 TODD FARM DR., ELGIN, ILLINOIS 60123 PHONE: (847) 741-3500 FAX: (847) 741-3569	MPX5 IDLER BAR, NARROW, ASSEMBLY	
FINISH SEE BOM				
UNLESS OTHERWISE SPECIFIED: 1. BREAK ALL SHARP CORNERS 2. TOLERANCES: FRACT.= ±1/64 .XXX= ±.005 .XX= ±.015 .XXXX= ±.0005 ANGLES= ±0°30' DRILLED HOLE: STANDARD S.A.E.		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CV-TEK, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CV-TEK, LLC IS PROHIBITED.		
DRAWN PV	DATE 9/13/2022	SCALE 1:2	SHEET 1 OF 1	DRAWING NO. MA220-0036
				REV B

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASED TO PRODUCTION	02/27/2014	NMB
B	UPDATED TITLE BLOCK	1/26/2024	JRS



ITEM NO.	-O/QTY.	PART NUMBER	REV.	DESCRIPTION
1	1	B-0210-2485	A	PIVOT CYLINDER TIE PLATE
2	2	B-0210-2130		PLATE CLAMP TAPPED
3	2	B-0210-2129		PLATE CLAMP
4	2	B-0210-2043		PIN PRODUCT CONV. CYL MTG.
5	2	269P-06-04		FITTING.TBG.ELB.3/8OD X 1/4NPT
6	2	59915K46	A	ROD END FEMALE 1/2-20
7	1	66-W	A	TUBING-POLY FLO, 3/8" OD, WHITE
8	2	9130-1765		FLOW CONTROL
9	2	D-2540-SS	A	NUT, CYLINDER, SS
10	2	D-55205-SS		BRACKET.PIVOT.SS.2.0 BORE CYL
11	2	HH8-32X1-1/2	A	SCREW, HEX HEAD
12	4	HH1/4-20X3/4	A	SCREW, HEX HEAD
13	2	LN1/4-20	A	NUT, LOCK
14	2	JN1/2-20	A	NUT, JAM
15	2	LN8-32	A	NUT, LOCK
16	4	LW1/4	A	WASHER, LOCK
17	2	S85/16X3	A	BOLT, SHOULDER
18	4	0243-0571		FITTING.COMP TBG.ELB.3/8" x 3/8"
19	2	7707-510		CYLINDER BIMBA
20	2	264P-06	A	UNION TEE NO BRASS
21	2	268P-06-04	A	FITTING.TBG.STR.3/8OD X 1/4NPT

ASSEMBLY SYMBOLS	
	BAG ITEM
	LOCTITE PRIMER 7649
	LOCTITE 294 (GREEN)
	LOCTITE 243 (BLUE)
	LOCTITE 263 (RED)
	LOCTITE 222 (PURPLE)
	PIPE THREAD SEALANT
	TEFLON PIPE TAPE
	SILICONE SEALANT (CLEAR)
	RTV ADHESIVE (GE 157)
	PVC CEMENT
	ISOPROPYL ALCOHOL
	PVC PRIMER
	ANTI-SEIZE LUBRICANT
	MINERAL OIL
	FOOD-GRADE GREASE

MATERIAL: AS NOTED
 STOCK NO:
 STOCK SIZE:
 MASS [LBS]:

FINISH

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= 40°/30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: (847) 741-3500 FAX: (847) 741-3569

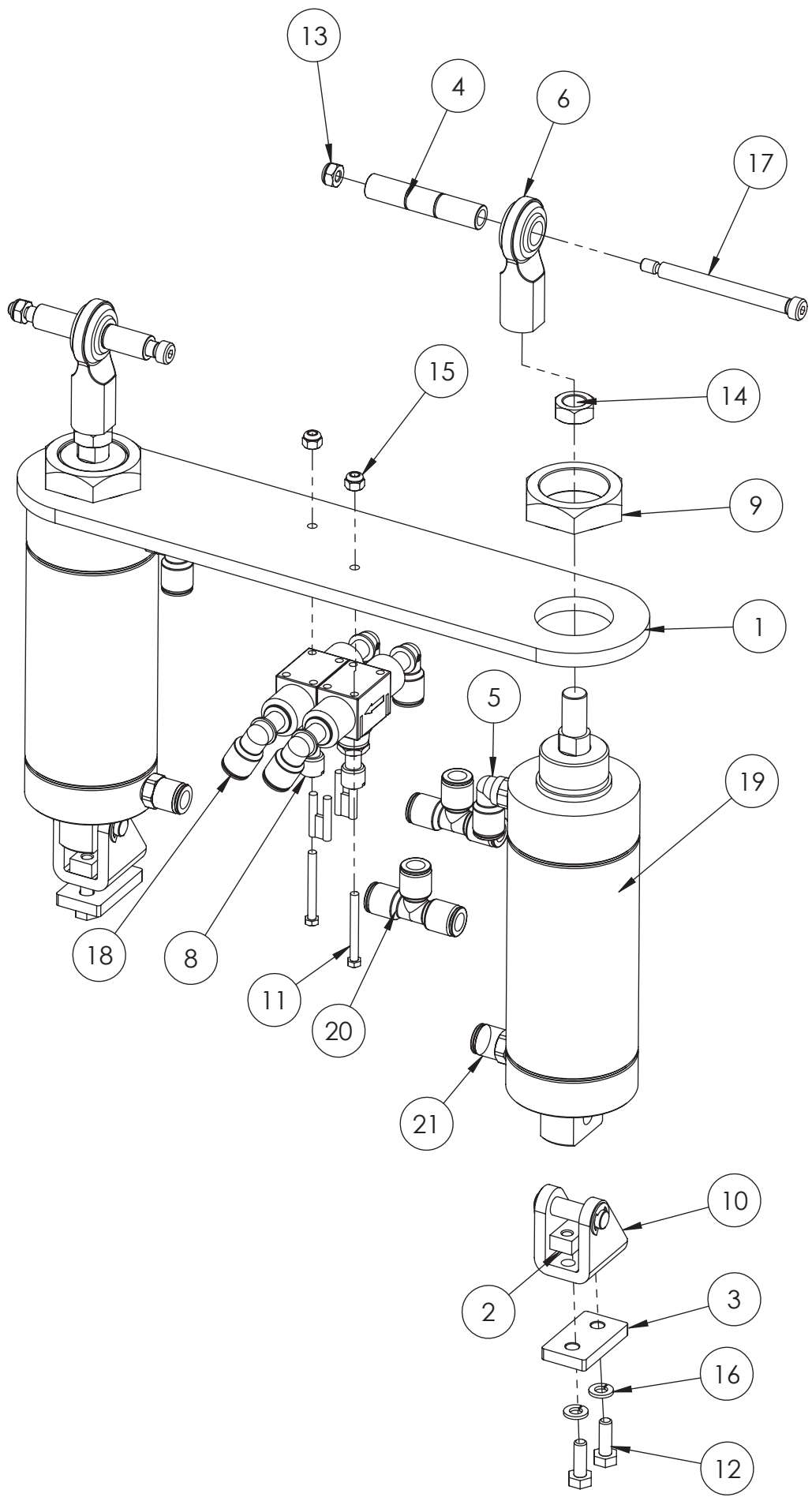
PROPRIETARY AND CONFIDENTIAL
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 PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION
 OF CV-TEK, LLC IS PROHIBITED.

DRAWN NMB	DATE 02/27/14	SCALE 1:2	SHEET 1 OF 1
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**ASSEMBLY DOUBLE
 STACK 3" LIFT
 11" CENTERS**

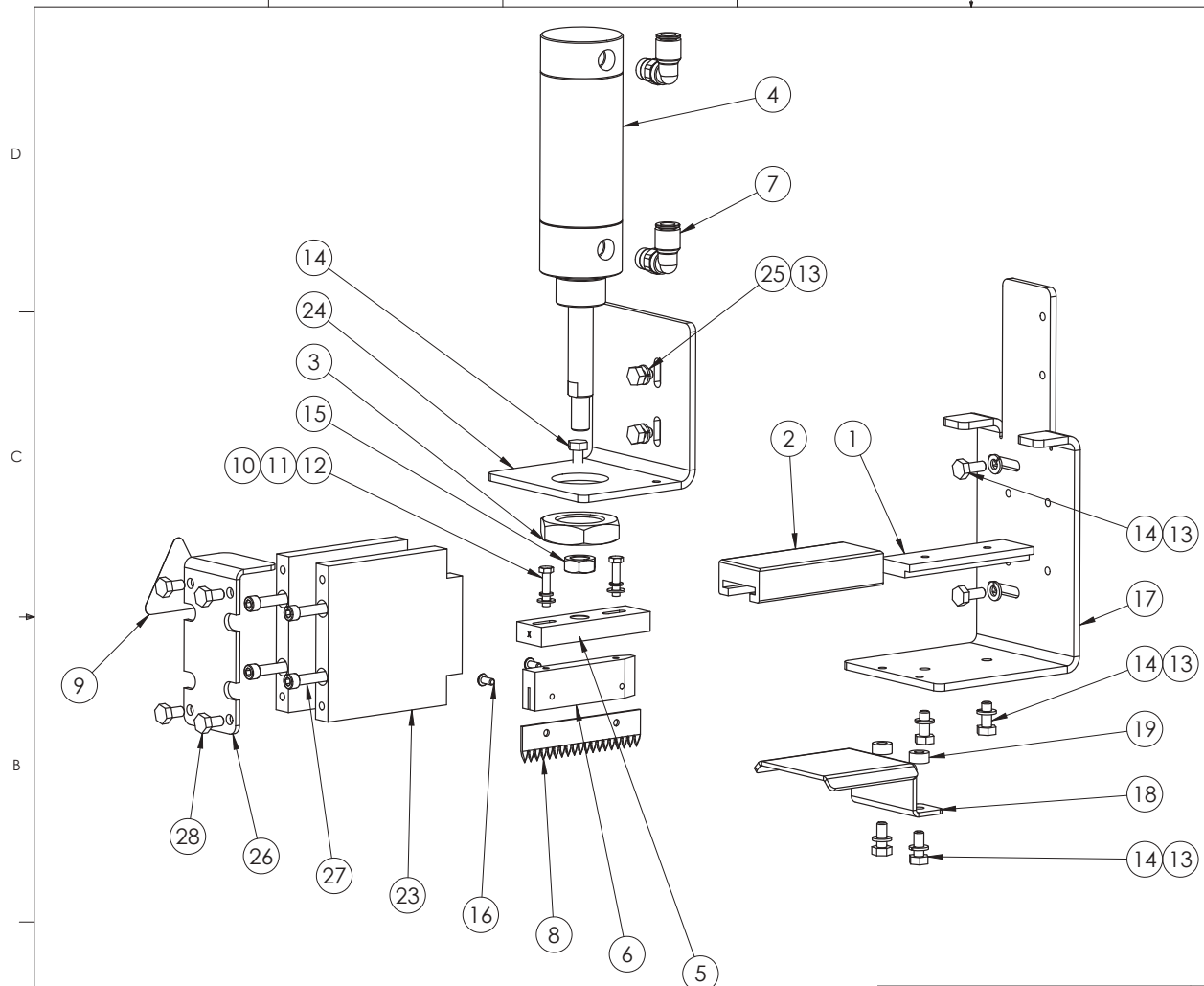
DRAWING NO. **0210-2484**

REV **A**



8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	CHANGED TO SHCS: 91792A238 WASNT AN EXISTING PN	9/29/2023	JRS
C	ADDED TEE AND VALVE FITTINGS	10/4/2023	JRS
D	ADDED 4.25" SHCS: CLEANED UP ASSM.	2/26/2024	JRS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	B-0210-1451	RUBBER HOLD-DOWN	1
2	0651-1714	RUBBER C-CHANNEL SILC 60A	1
3	D-508-SS	NUT.MNTG.CYL.2.00BORE.SS	1
4	0210-0716	CYL.PC.DBL.ACT.2.0BORE X 2.0STK	1
5	138027C1	KNIFE BACK-UP	1
6	B-0210-0810	KNIFE HOLDER	1
7	269P-06-04	FITTING.TBG.ELB.3/8OD X 1/4NPT	2
8	B-0210-1304	KNIFE .062 X 3.8LG.SLOTTED	1
9	0210-1031	WARNING, CUT HAZARD	1
10	FW10-B	WASHER, FLAT	2
11	LW10	WASHER, LOCK	2
12	HH10-32X7/8	SCREW, HEX HEAD	2
13	LW1/4	WASHER, LOCK	8
14	HH1/4-20X5/8	SCREW, HEX HEAD	7
15	JN1/2-20	NUT, JAM	1
16	75105501	8-32 X 3/8 PAN HEAD MACHINE	2
17	137716C1	MOUNT, PERF ASSEMBLY	1
18	137718C1	GUIDE FILM LOAD	1
19	1110-0086	SPACER, 1/4 ID X 1/2 OD X 1/4L	2
20	264P-06	UNION TEE NO BRASS	2
21	9130-1765	FLOW CONTROL	2
22	66-W	TUBING-POLY FLO, 3/8" OD, WHITE	1
23	137854C1	GUIDE BLOCK, PRE-PERF	2
24	137999C1	BRACKET, CYLINDER MOUNT	1
25	HH1/4-20X3/8	SCREW, HEX HEAD	2
26	138028C1	GUIDE BLOCK MOUNT	1
27	138732C1	SHCS, 1/4-20 X 4 1/4 IN LG, 18-8 SS	4
28	HH1/4-20X1/2	SCREW, HEX HEAD	4

MA223-0030 REV D

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 8.36

FINISH SEE BOM

UNLESS OTHERWISE SPECIFIED:
1. BREAK ALL SHARP CORNERS
2. TOLERANCES:
 FRACT.= ±1/64 .XXX= ±.005
 .XX= ±.015 .XXXX= ±.0005
 ANGLES= ±0°30'
 DRILLED HOLE: STANDARD S.A.E.

CV-TEK
 1675 TODD FARM DR., ELGIN, ILLINOIS 60123
 PHONE: 847.741.3500 FAX: 847.741.3569

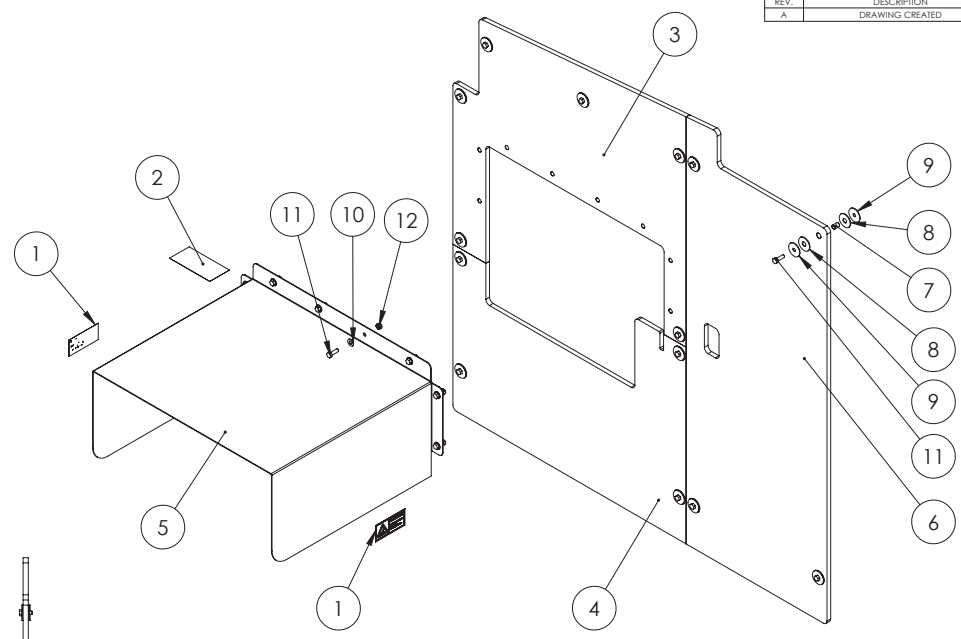
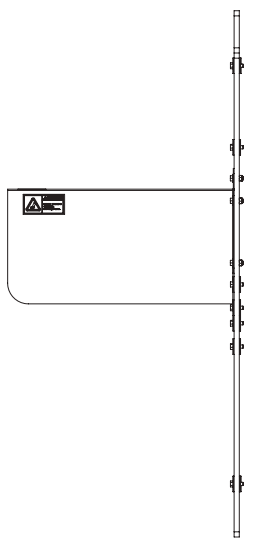
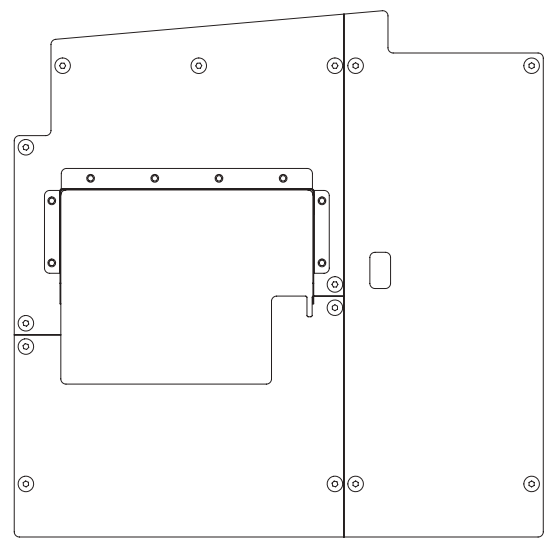
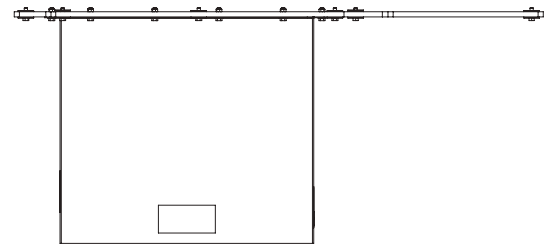
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DRAWN JRS	DATE 10/18/2010	SCALE 1:4	SHEET 1 OF 1
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ASSEMBLY, PRE-PERF	
DRAWING NO. MA223-0030	REV D

8 7 6 5 4 3 2 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	DRAWING CREATED	3/5/24	JRS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0210-1032	WARNING, KEEP HANDS CLEAR	2
2	0210-1035	WARNING GUARDS IN PLACE	1
3	133397C1	MPX5 LEXAN EXIT GUARD TOP, NARROW	1
4	133399C1	MPX5 LEXAN EXIT GUARD BOTTOM, NARROW	1
5	139060C1	MPX5 DISCHARGE GUARD, NO CUT-OUT, NARROW	1
6	133416C1	MPX5 LEXAN EXIT GUARD SIDE, NARROW	14
7	B-0210-2132	SPACER 7/16 OD X 11/32 ID X 5/8 LG	14
8	B-0210-2133	RUBBER WASHER 1.5 OD X .5 ID X .06/.08 THK	28
9	FFW5/16X1-1/2	WASHER, FLAT	28
10	FWS/16-A	WASHER, FLAT	8
11	HHS/16-18X1	SCREW, HEX HEAD	22
12	INS/16-18	NUT, LOCK	8

MATERIAL: SEE BOM
 STOCK NO: SEE BOM
 STOCK SIZE: SEE BOM
 MASS [LBS]: 68.92
 FINISH: SEE BOM

UNLESS OTHERWISE SPECIFIED:
 1. BREAK ALL SHARP CORNERS
 2. TOLERANCES:
 FRACT. = ±1/64 .XXX ±.005
 DEC. = ±.015 .XXX ±.005
 ANGLES = ±0°30'
 DRILLED HOLES: STANDARD S.A.E.

CV-TEK
 1475 TODD FARM DR., ELGIN, ILLINOIS 60120
 PHONE: 847.741.3500 FAX: 847.741.3569

MPX5 EXIT GUARD ASSY, NO CUT-OUT, NARROW

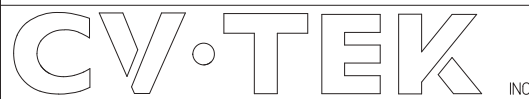
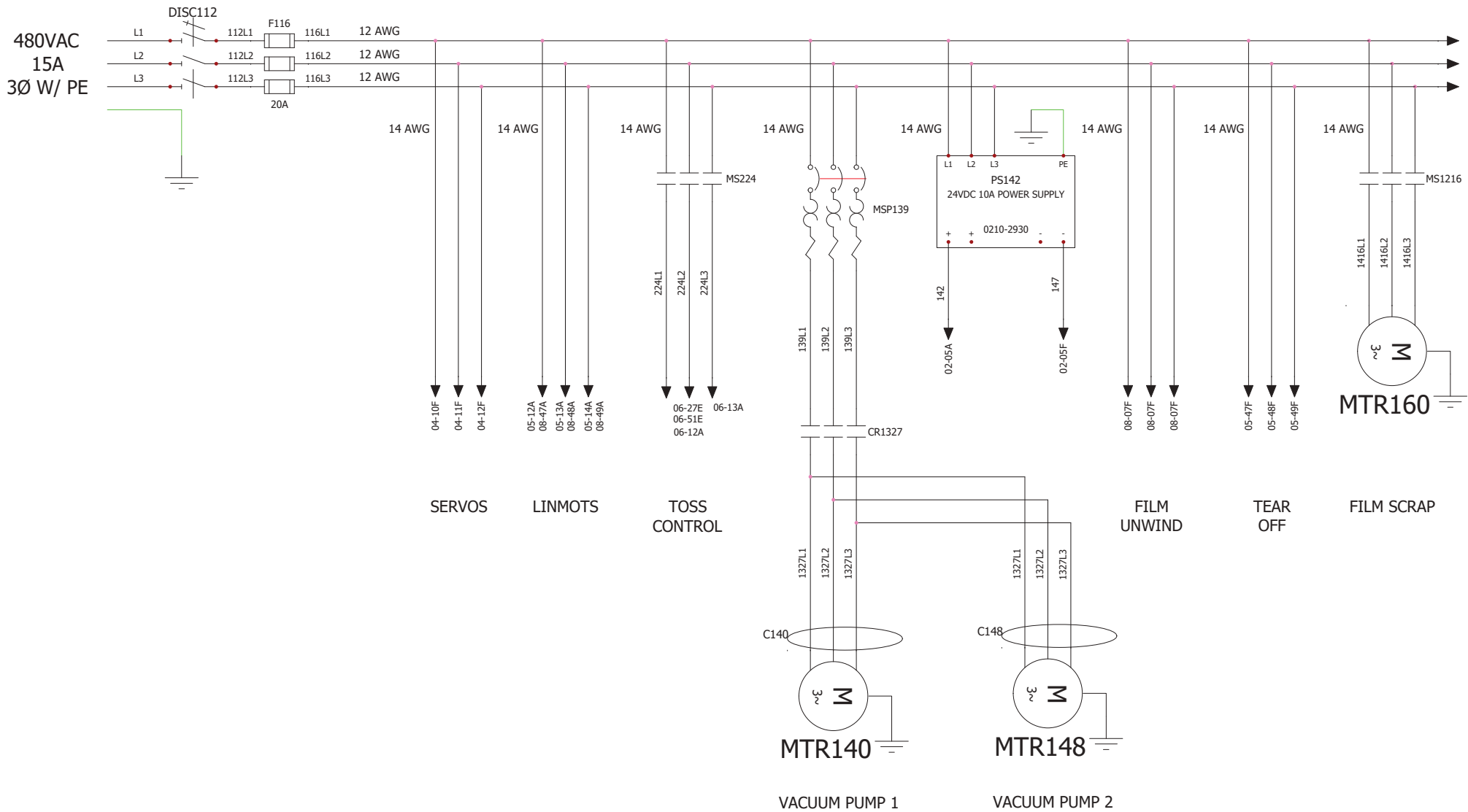
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DRAWING NO. MA083-0018
 REV. A

MA083-0018 REV. A

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

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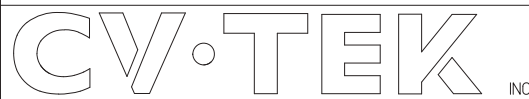
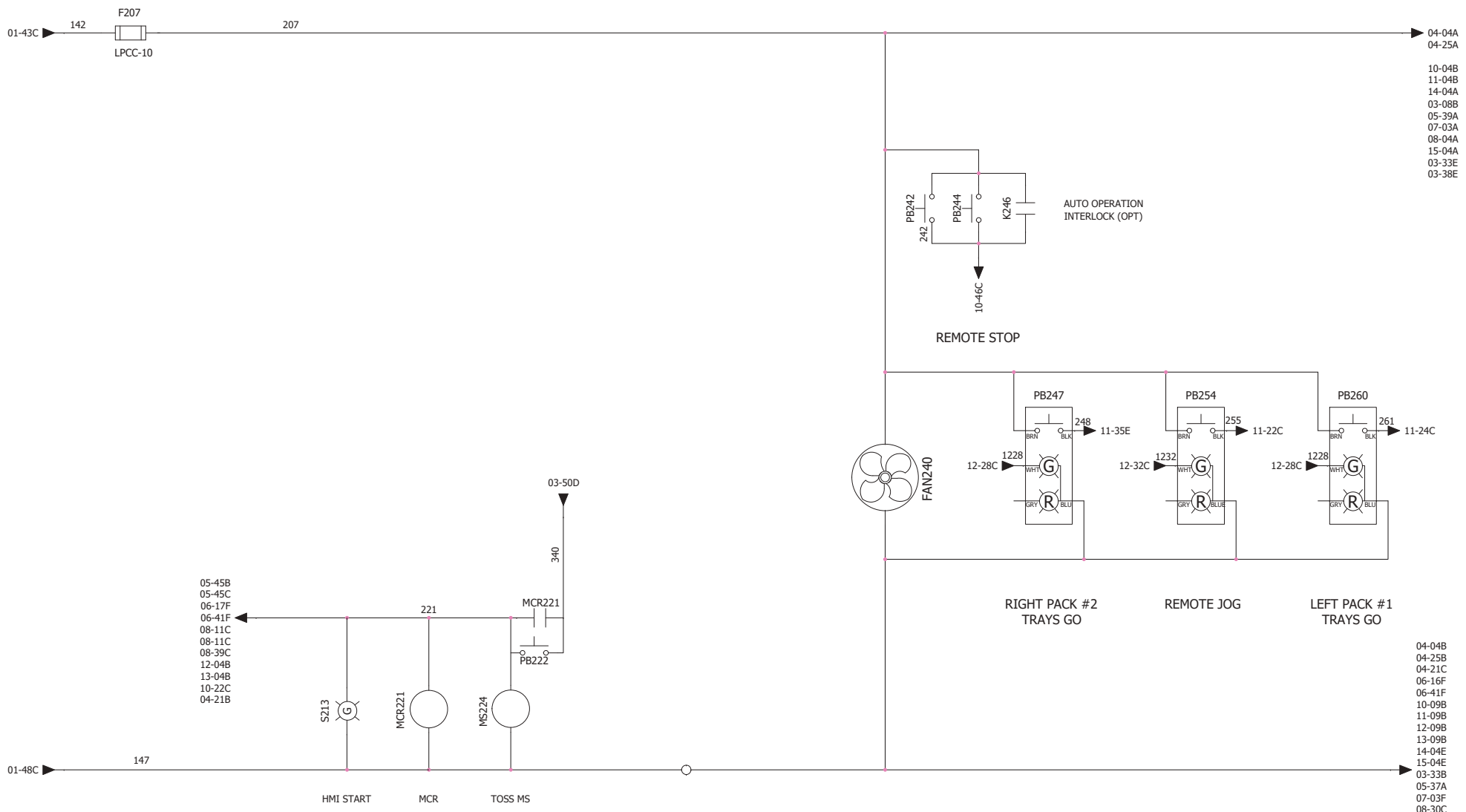


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TITLE
3-PHASE POWER CIRCUIT

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 01

APPROVED ENG:
DATE: 10/1/2021
REVISION: A
SHEET 1 OF 28



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TITLE
24VDC CONTROL CIRCUIT

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 02

APPROVED ENG:
DATE: 11/17/2021
REVISION: A
SHEET 2 OF 28

A

B

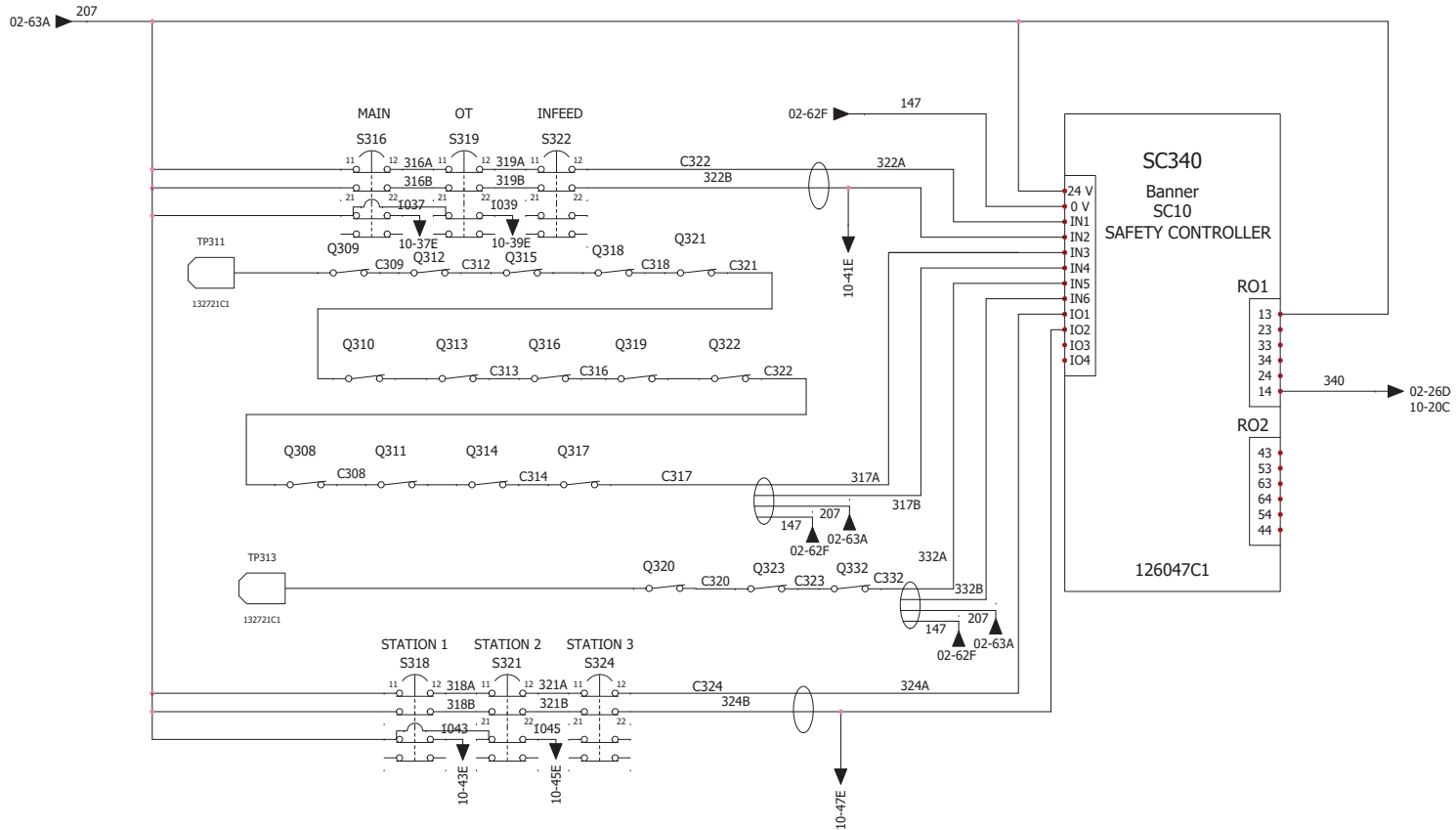
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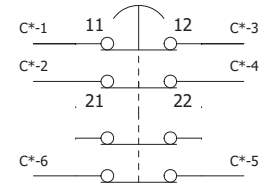
E

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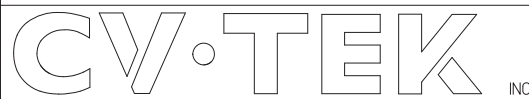
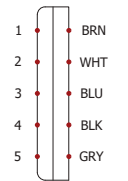
G



E-STOP WIRING



FIELD WIREABLE CONNECTOR DETAILS



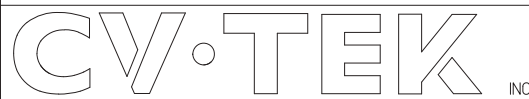
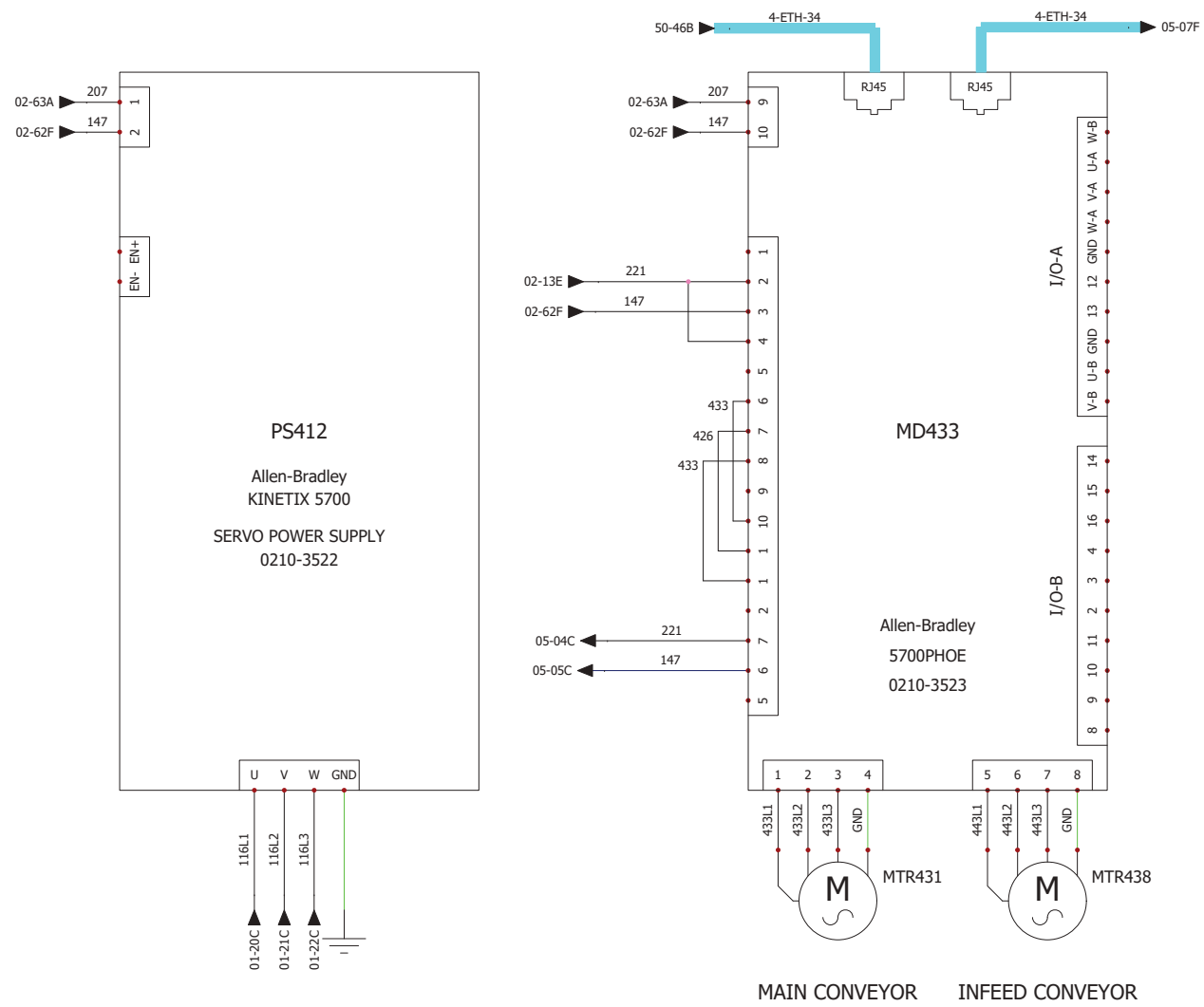
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TITLE
24VDC SAFETY CIRCUIT

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 03

APPROVED ENG:
DATE: 3/25/2022
REVISION: A
SHEET 3 OF 28

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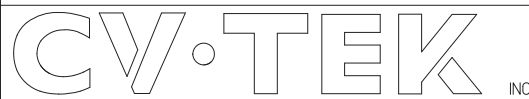
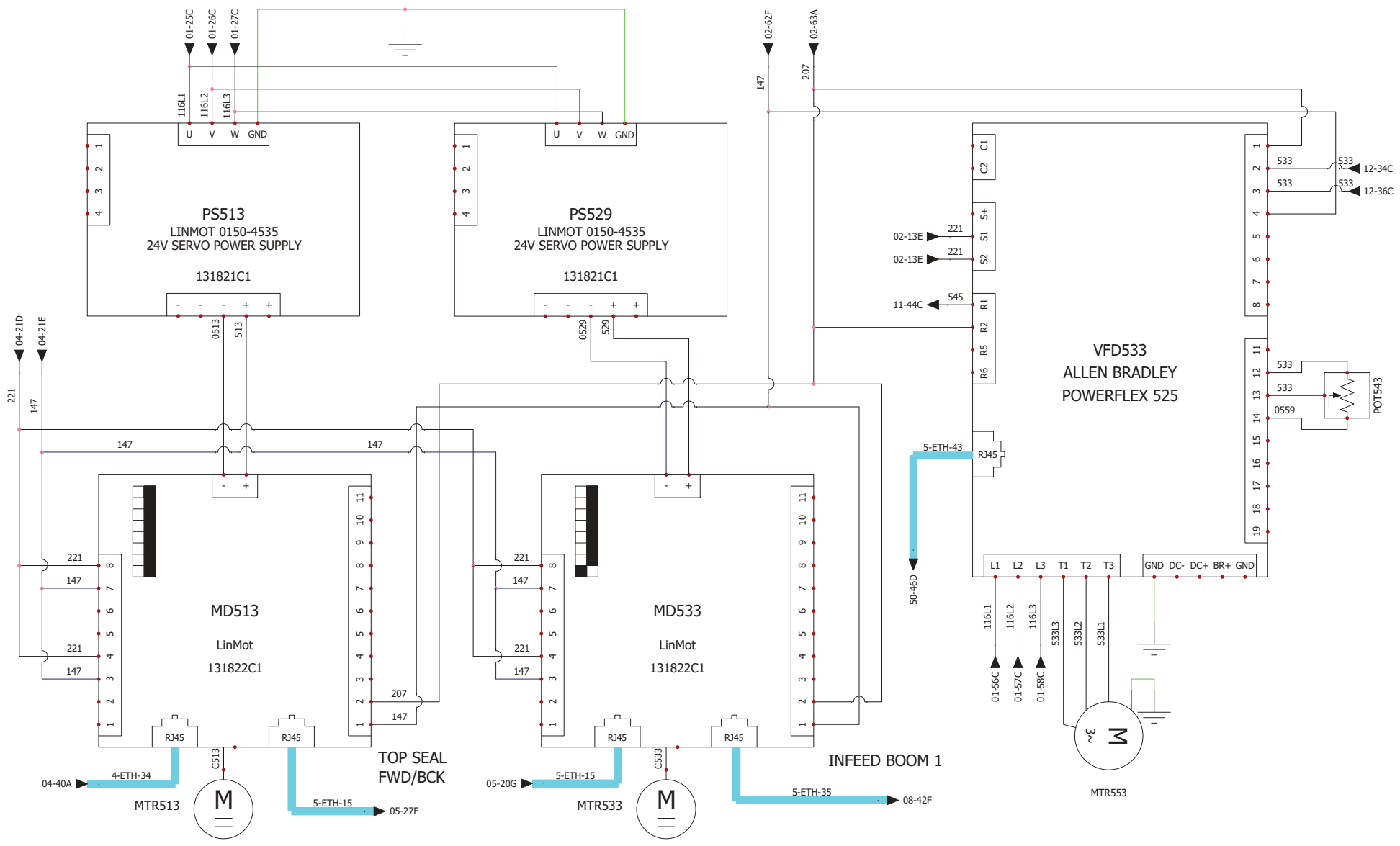


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TITLE
KINETIX DRIVES CIRCUIT

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 04

APPROVED ENG:
DATE: 12/9/2021
REVISION: A
SHEET 4 OF 28

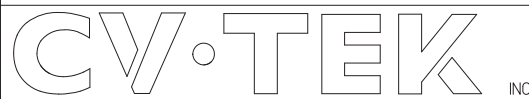
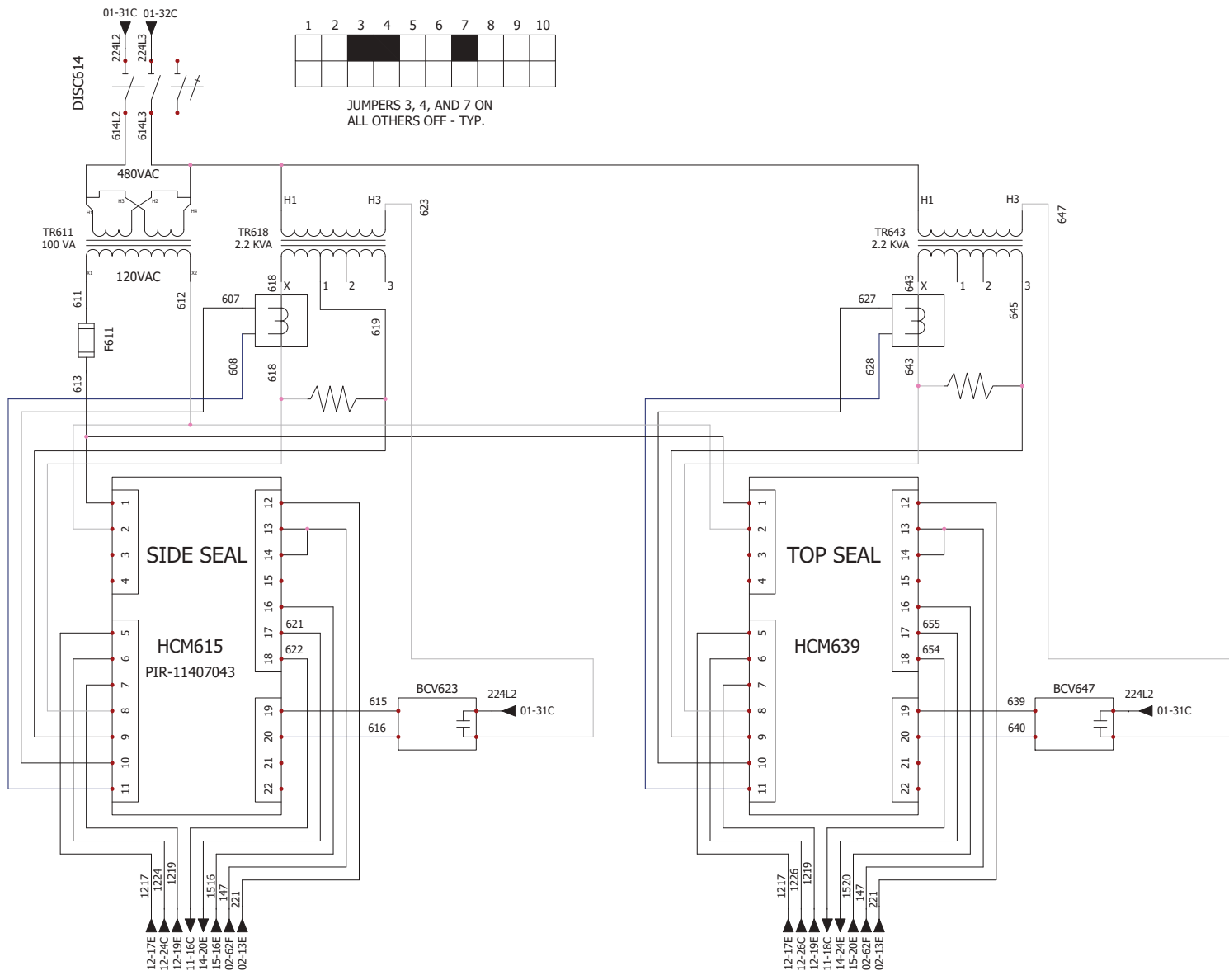


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TITLE
LINMOT DRIVE CIRCUIT

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 05

APPROVED ENG:
DATE: 2/24/2022
REVISION: A
SHEET 5 OF 28

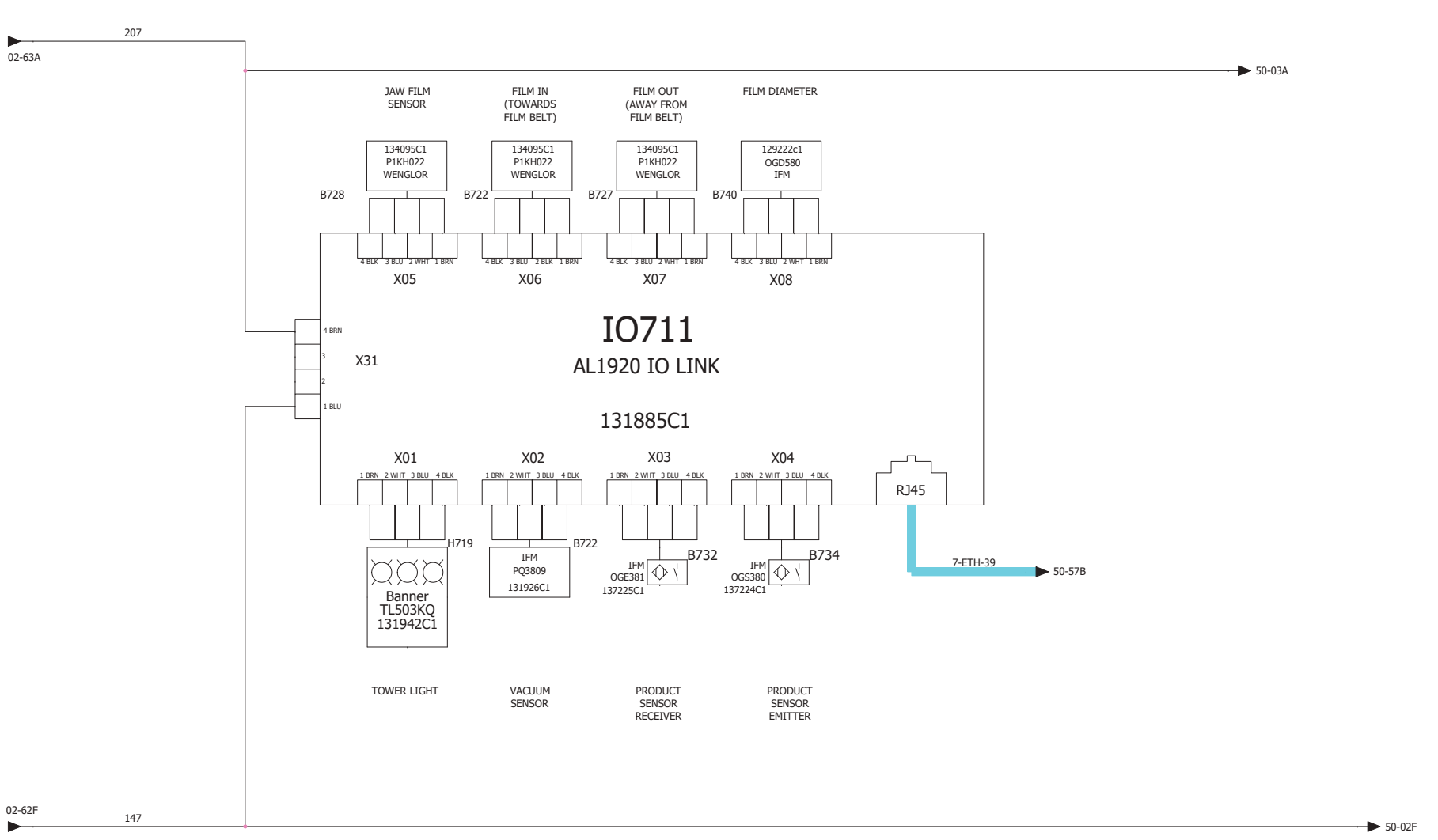


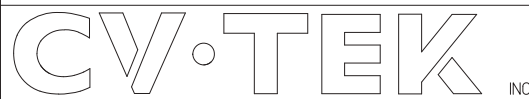
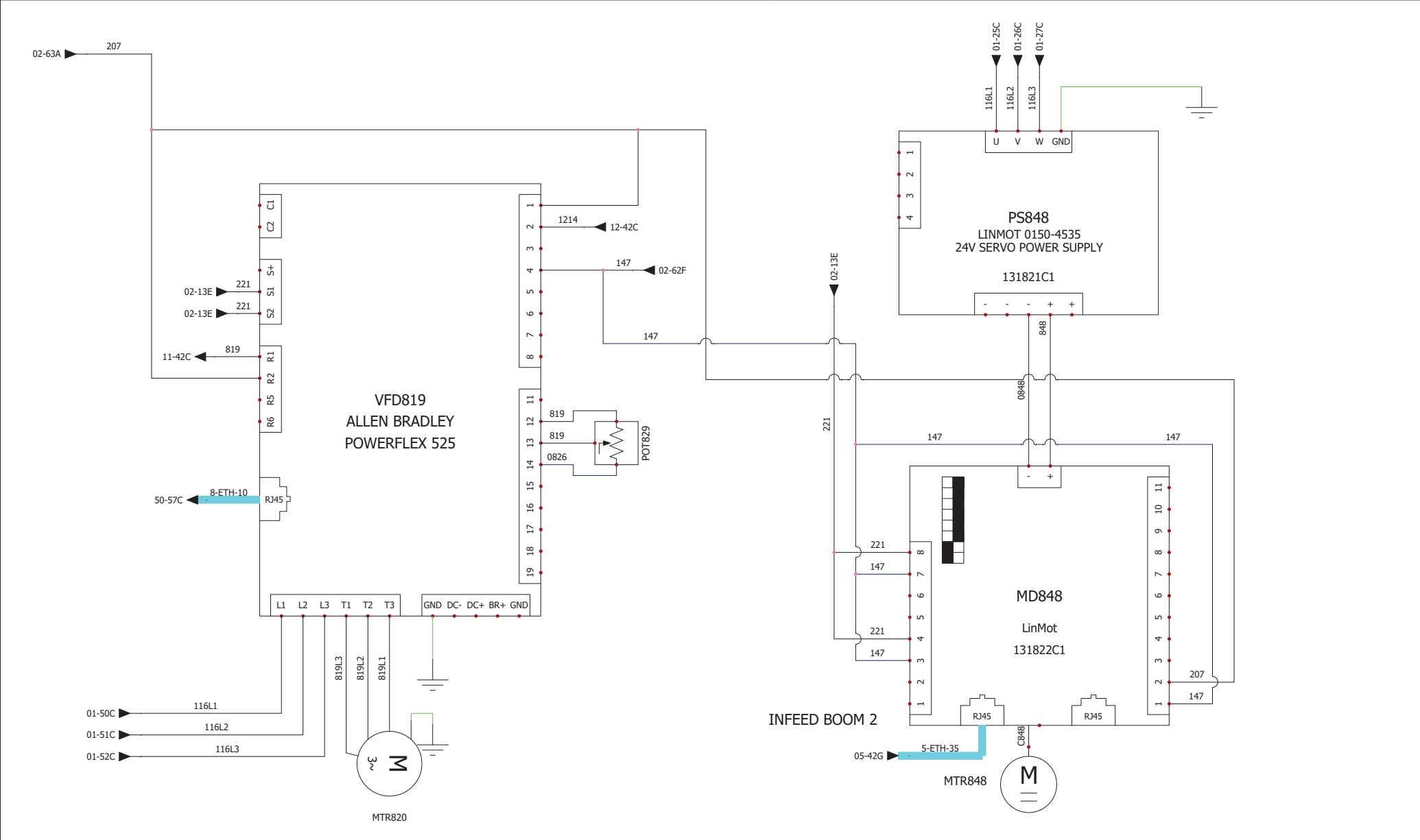
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TITLE
TOSS CONTROL CIRCUIT

APPROVED MFG:
DRAWN BY: jshaffer
DWG NO: MPX5 Electrical Standard - 06

APPROVED ENG:
DATE: 10/1/2021
REVISION: A
SHEET 6 OF 28





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TITLE
TEAR OFF VFD

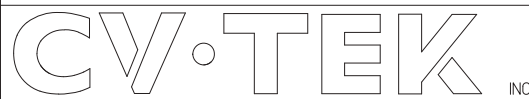
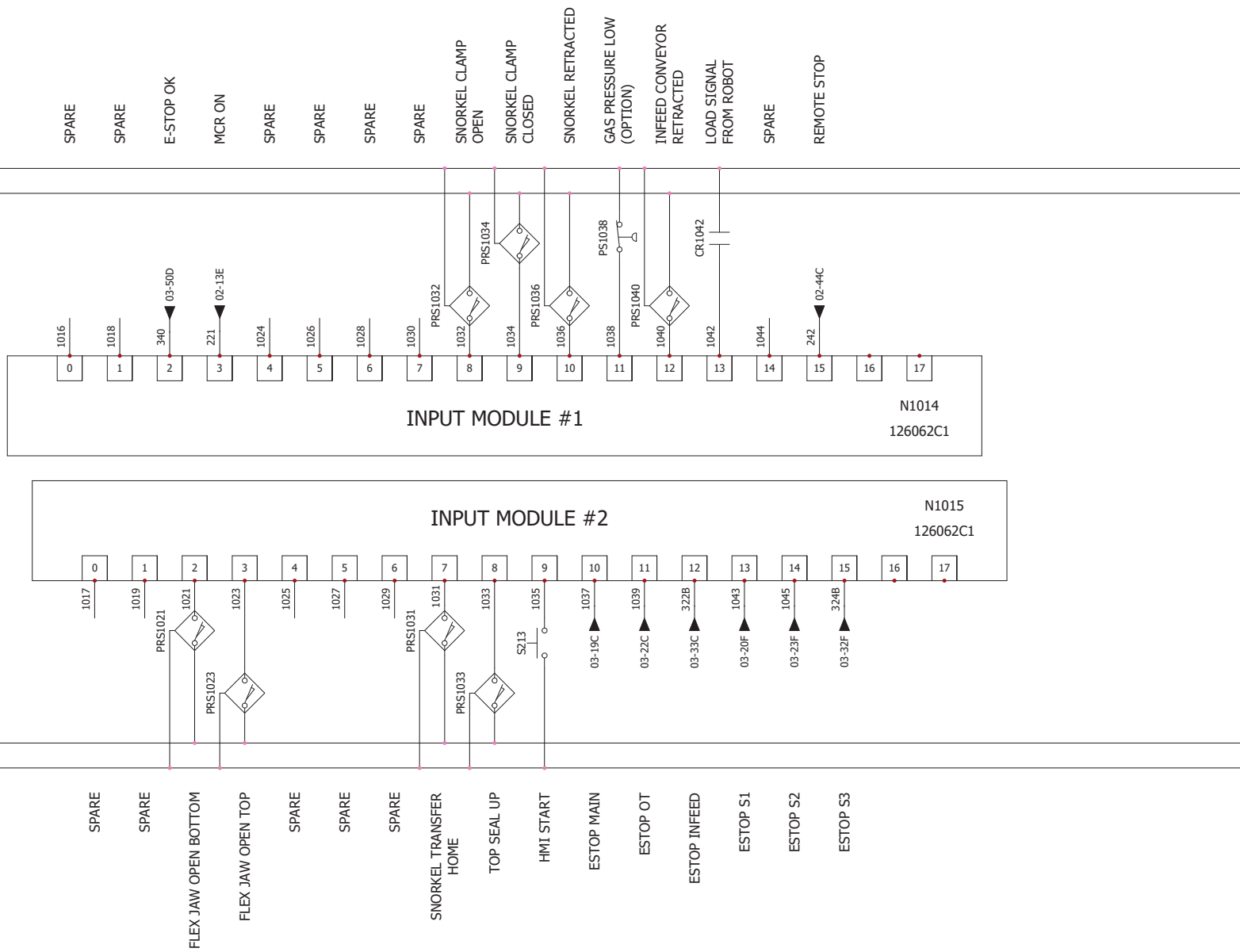
APPROVED MFG:
DRAWN BY: anaem
DWG NO: MPX5 Electrical Standard - 08

APPROVED ENG:
DATE: 4/4/2023
REVISION: A
SHEET 8 OF 28

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02-63A 207

02-62F 147



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TITLE
PLC INPUT MODULES 1 AND 2

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 10

APPROVED ENG:
DATE: 11/19/2021
REVISION: A
SHEET 9 OF 28

A

B

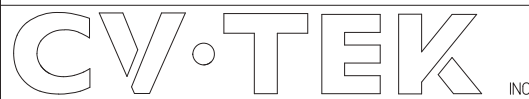
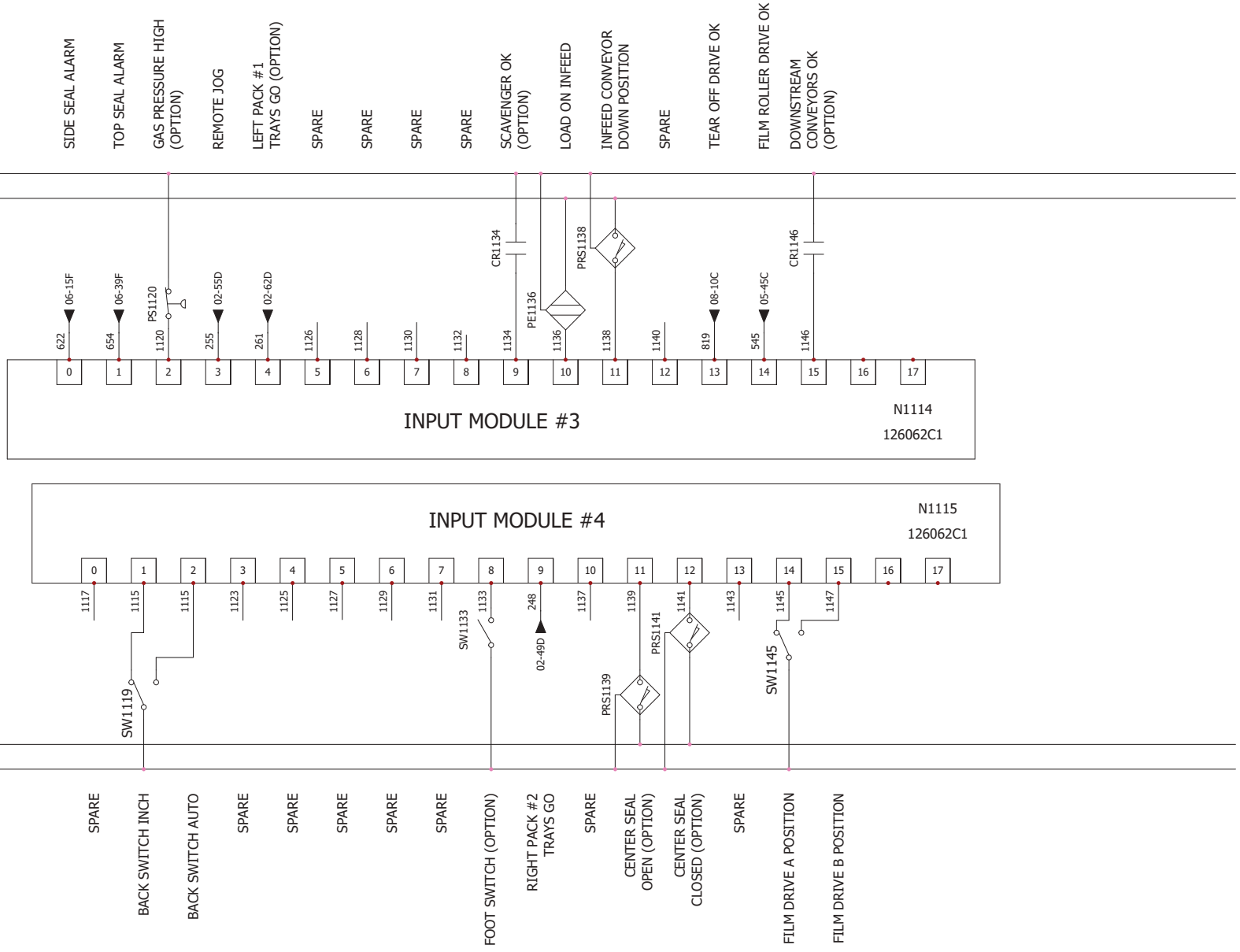
C

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TITLE
PLC INPUT MODULES 3 AND 4

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 11

APPROVED ENG:
DATE: 3/8/2022
REVISION: A
SHEET 10 OF 28

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

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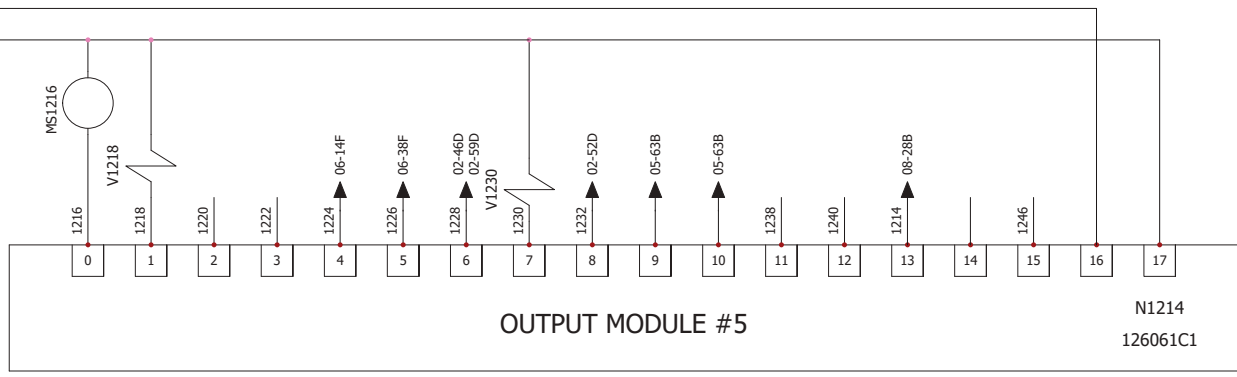
E

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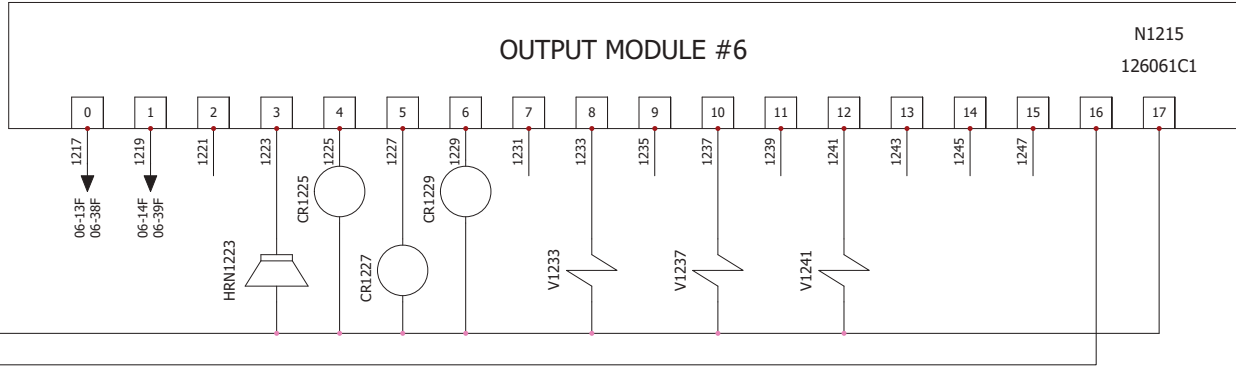
FILM SCRAP
CONVEYOR LIFT
SPARE
SPARE
SIDE SEAL
TOP SEAL
TRAYS GO PB GREEN LIGHT
FILM CLAMP
REMOTE JOG PB GREEN LIGHT
UNWIND A
UNWIND B
SPARE
SPARE
TEAR OFF
SPARE
SPARE

02-13E 221
02-62F 147



OUTPUT MODULE #5

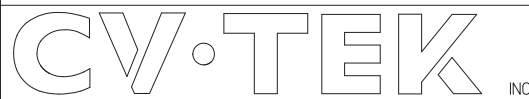
N1214
126061C1



OUTPUT MODULE #6

N1215
126061C1

CALIBRATE HEATERS
RESET HEATERS
SPARE
AUDIBLE ALARM (OPTION)
ROBOT LOAD
LOAD SCAVENGER
PAPER DISPENSER
SWIPE DELAY
CENTER SEAL KNIFE (OPTION)
SPARE
CENTER SEAL PERF (OPTION)
CENTER SEAL ENABLED (OPTION)
CENTER SEAL HEAT BAR (OPTION)
TELE CONVEYOR
PRINTER (OPTION)
SPARE



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TITLE
PLC OUTPUT MODULES 5 AND 6

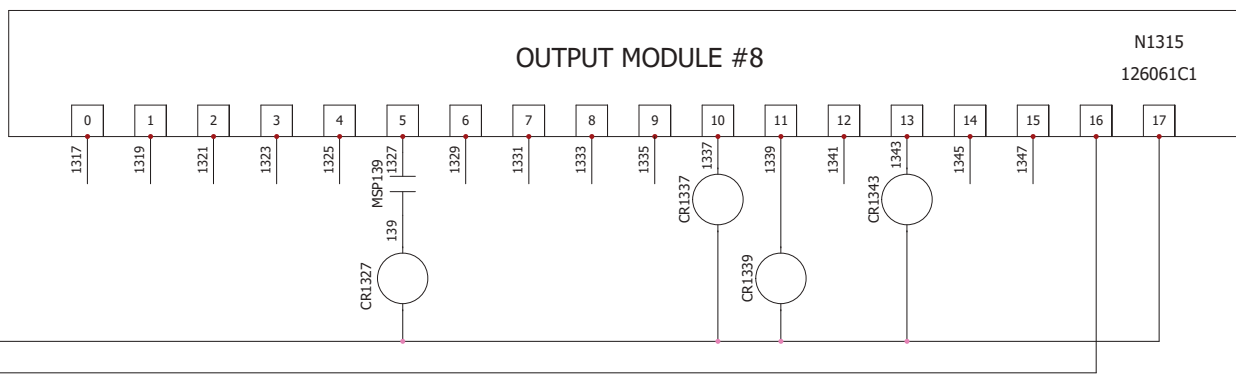
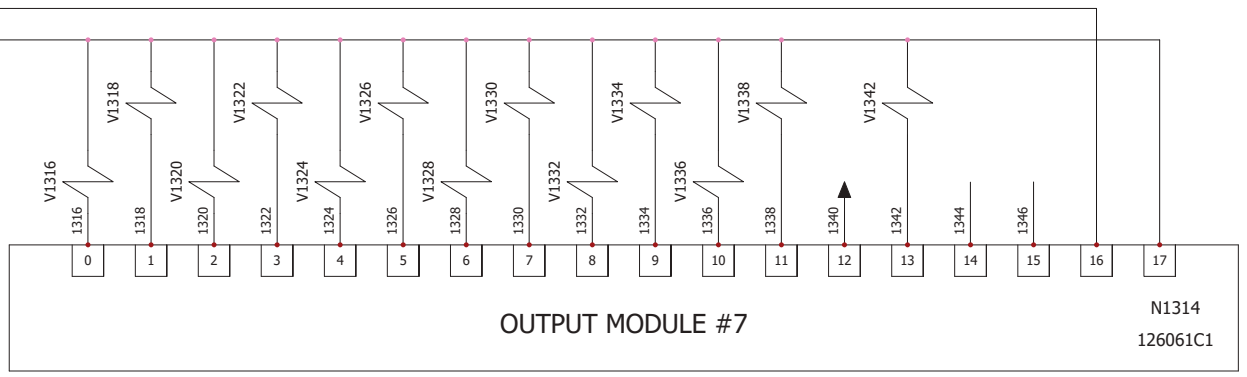
APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 12

APPROVED ENG:
DATE: 3/14/2022
REVISION: A
SHEET 11 OF 28

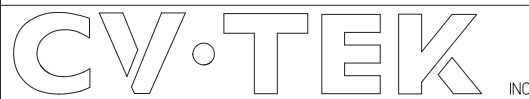
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GAS #1
TOP SEAL CLOSE
BAG TEAR OFF
MAIN VACUUM
SNORKEL OUT
SNORKEL CLAMP
GAS #2
BELT BACKUPS
FLEX JAW CLOSE
SIDE SEAL CLOSE
TOP SEAL
TAIL PULLEY
GAS SAMPLE
AIR KNIFE
SPARE
SPARE

02-13E 221
02-62F 147



SPARE
SPARE
SPARE
SPARE
SPARE
VACUUM
SPARE
SPARE
SPARE
FILM RELEASE WARNING LIGHT
TRAYS 1
TRAYS 2
REMOTE TL
ROBOT LOAD
SPARE
SPARE



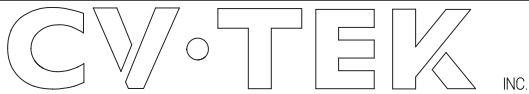
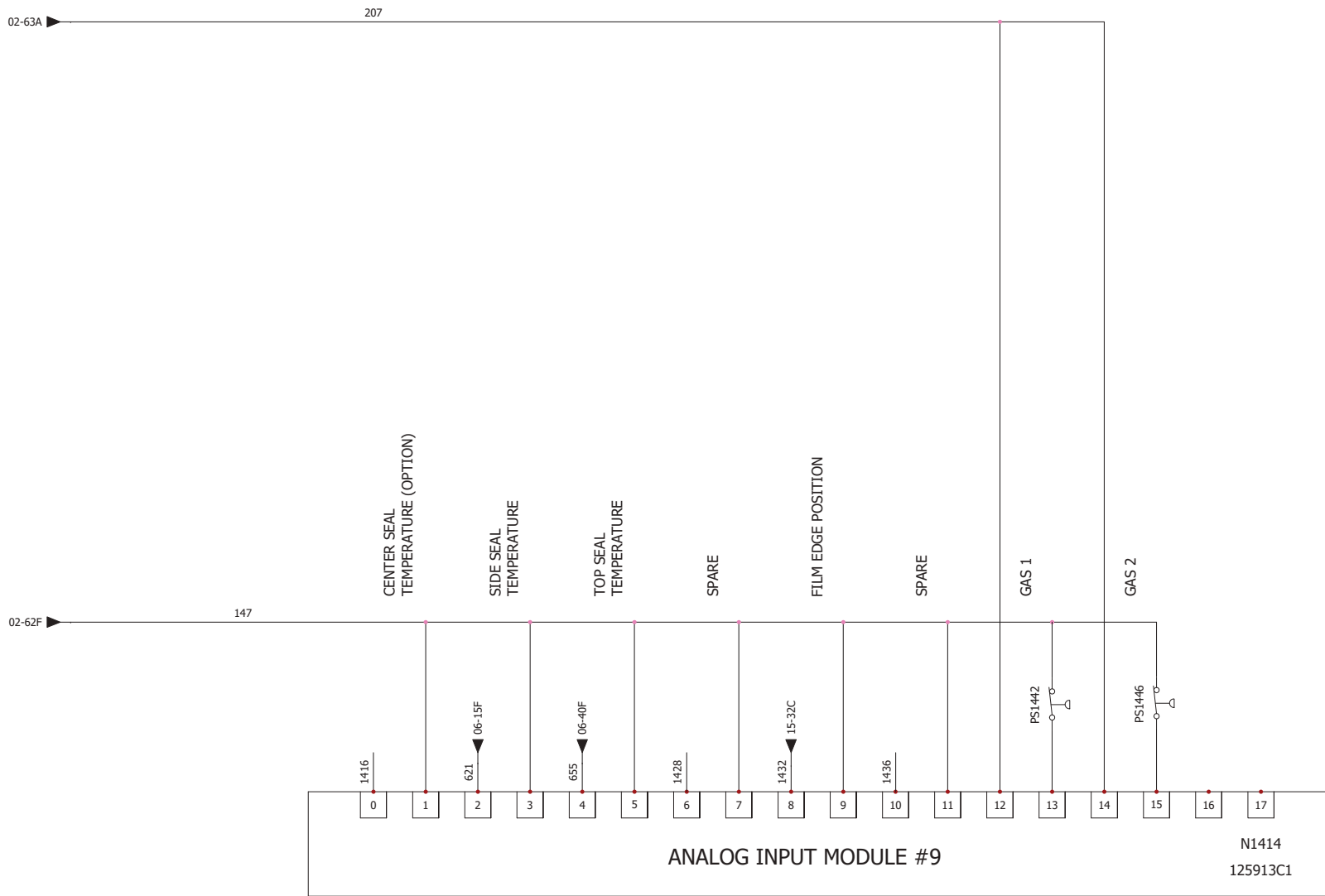
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TITLE
PLC OUTPUT MODULES 7 AND 8

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 13

APPROVED ENG:
DATE: 3/15/2022
REVISION: A
SHEET 12 OF 28

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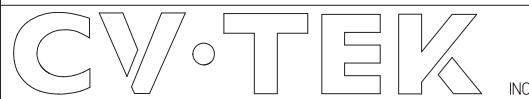
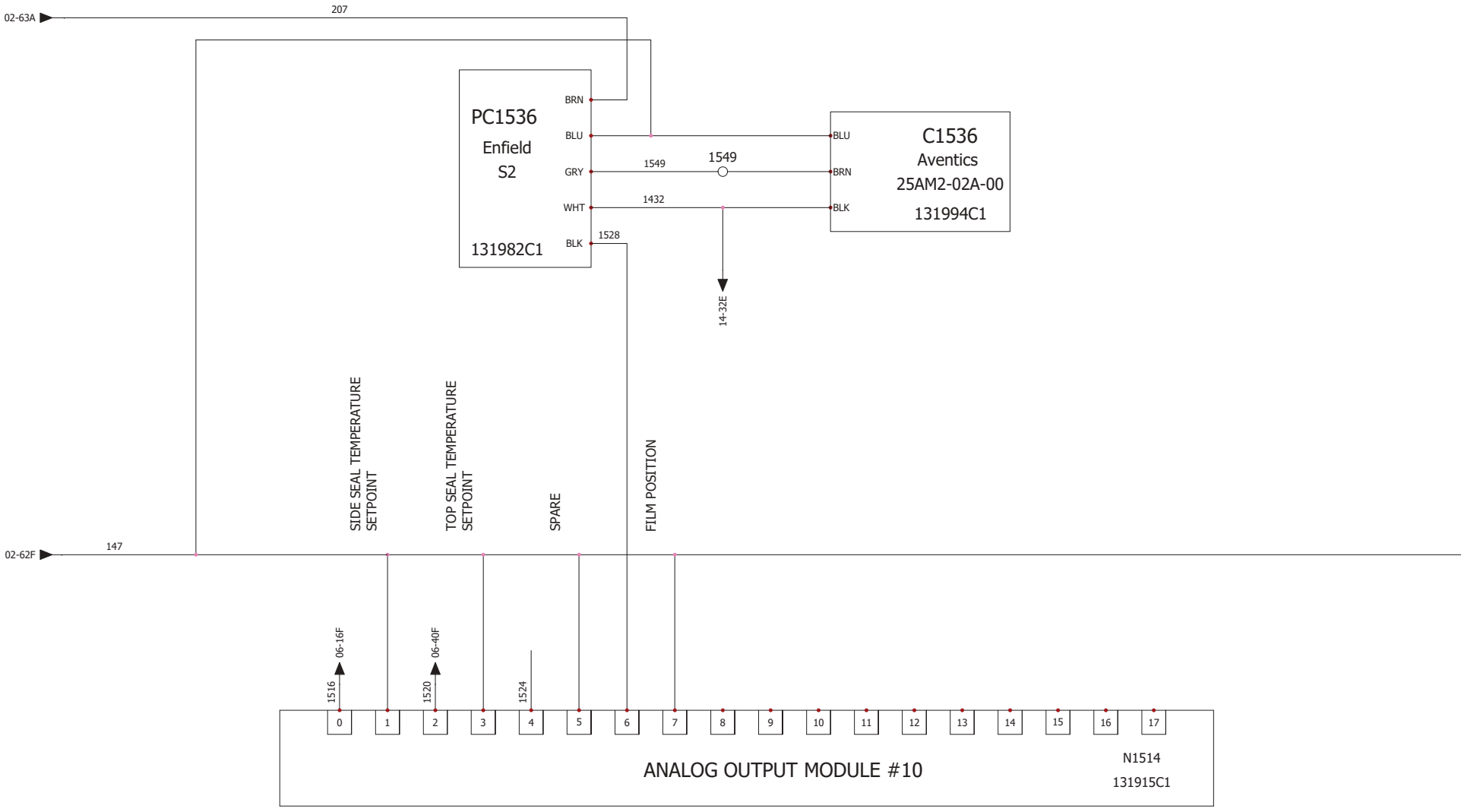


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TITLE
PLC ANALOG INPUT MODULE 9

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 14

APPROVED ENG:
DATE: 3/16/2022
REVISION: A
SHEET 13 OF 28

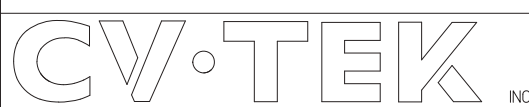
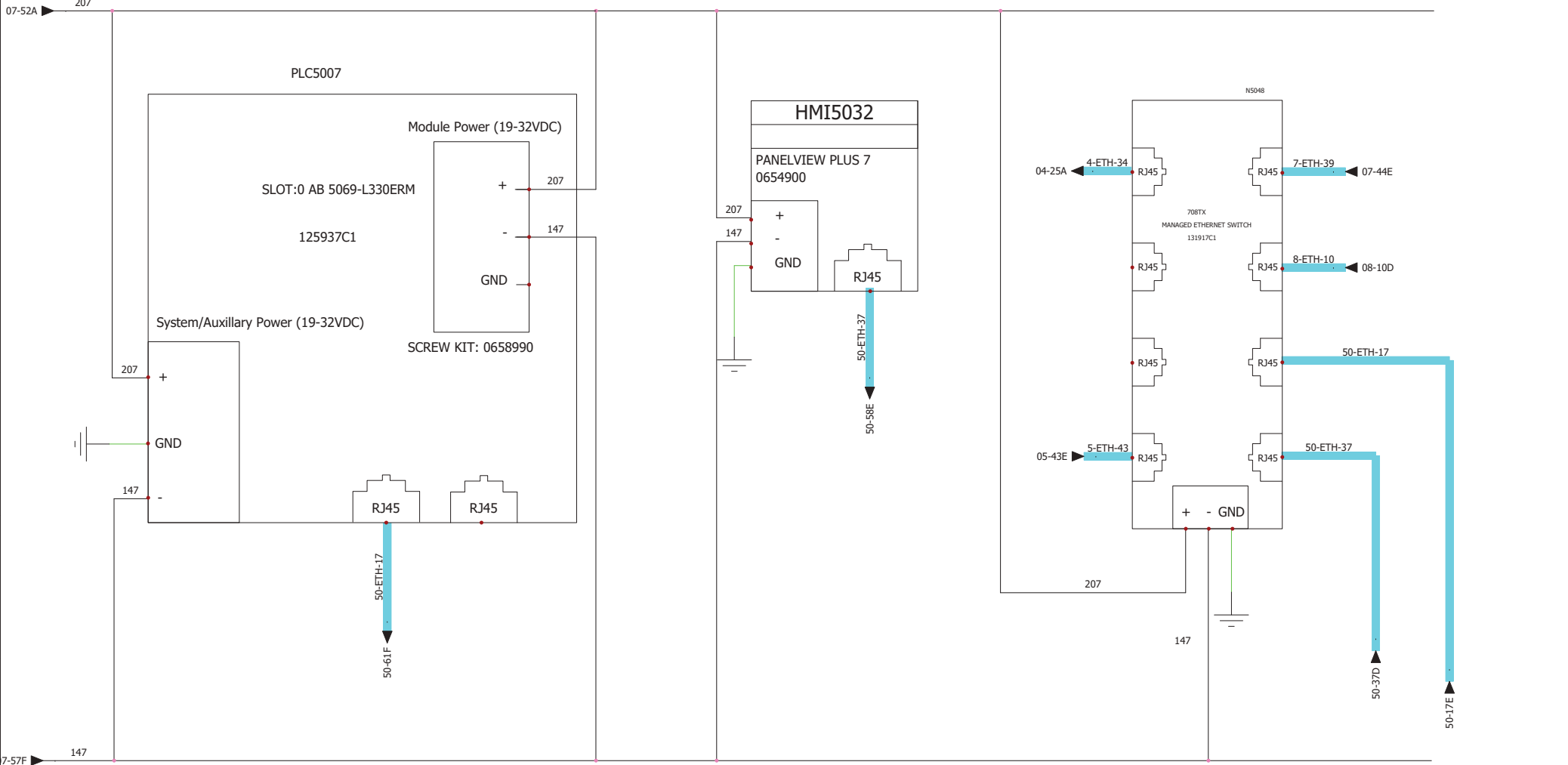


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TITLE
PLC ANALOG OUTPUT MODULE 10

APPROVED MFG:
 DRAWN BY: JS
 DWG NO: MPX5 Electrical Standard - 15

APPROVED ENG:
 DATE: 3/17/2022
 SHEET 14 OF 28
 REVISION: A



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TITLE
COMMUNICATION NETWORK

APPROVED MFG:
DRAWN BY: JS
DWG NO: MPX5 Electrical Standard - 50

APPROVED ENG:
DATE: 11/19/2021
REVISION: A
SHEET 15 OF 28

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 PS529:GND	F1 L1 PS513:GND		L1 L2 L3 PE

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1414:13	F1 L1 PS1442		PLC IO
F1 L1 N1414:15	F1 L1 PS1446		PLC IO

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 DISC112	F1 L1 F116	112L1	L1 L2 L3 PE
F1 L1 DISC112	F1 L1 F116	112L2	L1 L2 L3 PE
F1 L1 DISC112	F1 L1 F116	112L3	L1 L2 L3 PE
F1 L1 F116	F1 L1 MSP139	116L1	L1 L2 L3 PE
F1 L1 MS1216	F1 L1 PS142	116L1	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS412:U	116L1	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 VFD819:L1	116L1	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS529:U	116L1	L1 L2 L3 PE
F1 L1 PS529:U	F1 L1 PS513:U	116L1	L1 L2 L3 PE
F1 L1 PS529:U	F1 L1 PS848:U	116L1	L1 L2 L3 PE
F1 L1 VFD533:L1	F1 L1 MS1216	116L1	L1 L2 L3 PE
F1 L1 VFD533:L1	F1 L1 MS224	116L1	L1 L2 L3 PE
F1 L1 VFD819:L1	F1 L1 VFD533:L1	116L1	L1 L2 L3 PE
F1 L1 VFD819:L2	F1 L1 VFD533:L2	116L2	L1 L2 L3 PE
F1 L1 VFD533:L2	F1 L1 MS224	116L2	L1 L2 L3 PE
F1 L1 VFD533:L2	F1 L1 MS1216	116L2	L1 L2 L3 PE

-> L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 PS529:V	F1 L1 PS848:V	116L2	L1 L2 L3 PE
F1 L1 PS529:V	F1 L1 PS513:V	116L2	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS529:V	116L2	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 VFD819:L2	116L2	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS412:V	116L2	L1 L2 L3 PE
F1 L1 MS1216	F1 L1 PS142	116L2	L1 L2 L3 PE
F1 L1 F116	F1 L1 MSP139	116L2	L1 L2 L3 PE
F1 L1 F116	F1 L1 MSP139	116L3	L1 L2 L3 PE
F1 L1 MS1216	F1 L1 PS142	116L3	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS412:W	116L3	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 VFD819:L3	116L3	L1 L2 L3 PE
F1 L1 MSP139	F1 L1 PS529:W	116L3	L1 L2 L3 PE
F1 L1 PS529:W	F1 L1 PS513:W	116L3	L1 L2 L3 PE
F1 L1 PS529:W	F1 L1 PS848:W	116L3	L1 L2 L3 PE
F1 L1 VFD533:L3	F1 L1 MS1216	116L3	L1 L2 L3 PE
F1 L1 VFD533:L3	F1 L1 MS224	116L3	L1 L2 L3 PE
F1 L1 VFD819:L3	F1 L1 VFD533:L3	116L3	L1 L2 L3 PE

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 MSP139	F1 L1 CR1327	139	24VDC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 CR1327	F1 L1 MSP139	139L1	L1 L2 L3 PE

List of wires by line style

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-> L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 CR1327	F1 L1 MSP139	139L2	L1 L2 L3 PE
F1 L1 CR1327	F1 L1 MSP139	139L3	L1 L2 L3 PE

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 F207	F1 L1 PS142	142	24VDC Line
F1 L1 PRS1021	F1 L1 PRS1023	147	24VDC Line
F1 L1 PRS1023	F1 L1 PS1442	147	24VDC Line
F1 L1 PRS1023	F1 L1 PS1446	147	24VDC Line
F1 L1 PRS1023	F1 L1 PS412:2	147	24VDC Line
F1 L1 PRS1031	F1 L1 PRS1033	147	24VDC Line
F1 L1 PRS1032	F1 L1 PRS1034	147	24VDC Line
F1 L1 PRS1034	F1 L1 PRS1036	147	24VDC Line
F1 L1 PRS1036	F1 L1 PRS1040	147	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 MD433:15	F1 L1 MD513:3	147	24VDC Neutral
F1 L1 MD848:3	F1 L1 MD848:1	147	24VDC Neutral
F1 L1 MD848:7	F1 L1 MD848:3	147	24VDC Neutral
F1 L1 MD513:7	F1 L1 MD513:3	147	24VDC Neutral
F1 L1 MD513:7	F1 L1 MD533:3	147	24VDC Neutral
F1 L1 MD533:7	F1 L1 MD533:3	147	24VDC Neutral

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 MD513:1	F1 L1 MD533:1	147	PLC IO
F1 L1 MD433:3	F1 L1 N1214:17	147	PLC IO
F1 L1 MS224	F1 L1 PS142	147	PLC IO
F1 L1 MD433:1	F1 L1 MD513:1	147	PLC IO
F1 L1 MCR221	F1 L1 X3 1	147	PLC IO
F1 L1 MD433:3	F1 L1 MD433:1	147	PLC IO
F1 L1 FAN240	F1 L1 PB247:BLU	147	PLC IO
F1 L1 HCM615:13	F1 L1 HCM615:14	147	PLC IO
F1 L1 HCM615:14	F1 L1 HCM639:13	147	PLC IO
F1 L1 HCM639:13	F1 L1 HCM639:14	147	PLC IO
F1 L1 HCM639:13	F1 L1 IO711	147	PLC IO
F1 L1 HRN1223	F1 L1 PB260:BLU	147	PLC IO
F1 L1 HRN1223	F1 L1 V1233	147	PLC IO
F1 L1 HRN1223	F1 L1 V1241	147	PLC IO
F1 L1 IO711	F1 L1 MD433:3	147	PLC IO
F1 L1 IO711	F1 L1 MD848:1	147	PLC IO
F1 L1 CR1337	F1 L1 CR1343	147	PLC IO
F1 L1 CR1339	F1 L1 FAN240	147	PLC IO
F1 L1 CR1339	F1 L1 HCM615:13	147	PLC IO
F1 L1 CR1225	F1 L1 CR1227	147	PLC IO
F1 L1 CR1225	F1 L1 MS1216	147	PLC IO
F1 L1 CR1227	F1 L1 CR1229	147	PLC IO
F1 L1 CR1327	F1 L1 CR1337	147	PLC IO
F1 L1 C1536:BLU	F1 L1 CR1339	147	PLC IO
F1 L1 C1536:BLU	F1 L1 PC1536:BLU	147	PLC IO

List of wires by line style

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-> PLC IO

Origin	Destination	Wire number	Line style
F1 L1 PE1136	F1 L1 PRS1032	147	PLC IO
F1 L1 PE1136	F1 L1 PRS1138	147	PLC IO
F1 L1 N1414:1	F1 L1 N1414:3	147	PLC IO
F1 L1 N1514:1	F1 L1 PRS1021	147	PLC IO
F1 L1 PB247:BLU	F1 L1 PB254:BLUE	147	PLC IO
F1 L1 PB260:BLU	F1 L1 PE1136	147	PLC IO
F1 L1 PC1536:BLU	F1 L1 PRS1031	147	PLC IO
F1 L1 PRS1139	F1 L1 PRS1141	147	PLC IO
F1 L1 PRS1138	F1 L1 PRS1139	147	PLC IO
F1 L1 PS142	F1 L1 S213	147	PLC IO
F1 L1 PS412:2	F1 L1 SC340:0 V	147	PLC IO
F1 L1 N1514:1	F1 L1 N1514:3	147	PLC IO
F1 L1 N1514:3	F1 L1 N1514:5	147	PLC IO
F1 L1 N1514:5	F1 L1 N1514:7	147	PLC IO
F1 L1 N1315:17	F1 L1 N1414:5	147	PLC IO
F1 L1 N1414:3	F1 L1 N1414:5	147	PLC IO
F1 L1 N1414:5	F1 L1 N1414:7	147	PLC IO
F1 L1 N1414:7	F1 L1 N1414:9	147	PLC IO
F1 L1 N1414:9	F1 L1 N1414:11	147	PLC IO
F1 L1 N1414:1	F1 L1 N1514:5	147	PLC IO
F1 L1 N1314:17	F1 L1 V1316	147	PLC IO
F1 L1 N1215:17	F1 L1 HRN1223	147	PLC IO
F1 L1 N1314:17	F1 L1 N1315:17	147	PLC IO
F1 L1 N1315:17	F1 L1 CR1327	147	PLC IO
F1 L1 N1214:17	F1 L1 N1215:17	147	PLC IO

-> PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1214:17	F1 L1 V1230	147	PLC IO
F1 L1 N1215:17	F1 L1 CR1225	147	PLC IO
F1 L1 N1215:17	F1 L1 N1314:17	147	PLC IO
F1 L1 VFD533:4	F1 L1 X3 1	147	PLC IO
F1 L1 VFD819:4	F1 L1 VFD533:4	147	PLC IO
F1 L1 X3 1	F1 L1 MS224	147	PLC IO
F1 L1 V1233	F1 L1 V1237	147	PLC IO
F1 L1 V1316	F1 L1 V1318	147	PLC IO
F1 L1 V1316	F1 L1 V1320	147	PLC IO
F1 L1 V1320	F1 L1 V1322	147	PLC IO
F1 L1 V1320	F1 L1 V1324	147	PLC IO
F1 L1 V1324	F1 L1 V1326	147	PLC IO
F1 L1 V1324	F1 L1 V1328	147	PLC IO
F1 L1 V1328	F1 L1 V1330	147	PLC IO
F1 L1 V1328	F1 L1 V1332	147	PLC IO
F1 L1 V1332	F1 L1 V1334	147	PLC IO
F1 L1 V1332	F1 L1 V1336	147	PLC IO
F1 L1 V1336	F1 L1 V1338	147	PLC IO
F1 L1 V1338	F1 L1 V1342	147	PLC IO
F1 L1 V1342	F1 L1 VFD819:4	147	PLC IO
F1 L1 SC340:0 V	F1 L1 V1218	147	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 S318:11	F1 L1 SC340:13	207	24VDC Line

List of wires by line style

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-> 24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 S318:11	F1 L1 SC340:24 V	207	24VDC Line
F1 L1 S316:21	F1 L1 S318	207	24VDC Line
F1 L1 S316:21	F1 L1 S318:11	207	24VDC Line
F1 L1 PS1038	F1 L1 S213	207	24VDC Line
F1 L1 PS1038	F1 L1 SW1119	207	24VDC Line
F1 L1 PC1536:BRN	F1 L1 PRS1031	207	24VDC Line
F1 L1 PRS1023	F1 L1 PS412:1	207	24VDC Line
F1 L1 PRS1021	F1 L1 PRS1023	207	24VDC Line
F1 L1 PRS1040	F1 L1 PS1038	207	24VDC Line
F1 L1 PRS1034	F1 L1 PRS1036	207	24VDC Line
F1 L1 PRS1036	F1 L1 PRS1040	207	24VDC Line
F1 L1 PRS1032	F1 L1 PRS1034	207	24VDC Line
F1 L1 PRS1031	F1 L1 PRS1033	207	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 PRS1138	F1 L1 PRS1139	207	PLC IO
F1 L1 PE1136	F1 L1 PRS1138	207	PLC IO
F1 L1 PB247:BRN	F1 L1 PB254:BRN	207	PLC IO
F1 L1 PB254:BRN	F1 L1 PC1536:BRN	207	PLC IO
F1 L1 PB254:BRN	F1 L1 PRS1021	207	PLC IO
F1 L1 N1414:12	F1 L1 N1414:14	207	PLC IO
F1 L1 PB242	F1 L1 PB244	207	PLC IO
F1 L1 PB244	F1 L1 PB247:BRN	207	PLC IO
F1 L1 PB244	F1 L1 PB260:BRN	207	PLC IO

-> PLC IO

Origin	Destination	Wire number	Line style
F1 L1 PS1120	F1 L1 CR1134	207	PLC IO
F1 L1 PS1120	F1 L1 PE1136	207	PLC IO
F1 L1 PS1120	F1 L1 S316:11	207	PLC IO
F1 L1 PS1120	F1 L1 S316:21	207	PLC IO
F1 L1 PS412:1	F1 L1 PS1120	207	PLC IO
F1 L1 PRS1139	F1 L1 PRS1141	207	PLC IO
F1 L1 PE1136	F1 L1 PRS1032	207	PLC IO
F1 L1 CR1134	F1 L1 CR1146	207	PLC IO
F1 L1 CR1146	F1 L1 F207	207	PLC IO
F1 L1 CR1146	F1 L1 K246	207	PLC IO
F1 L1 FAN240	F1 L1 IO711	207	PLC IO
F1 L1 IO711	F1 L1 MD848:2	207	PLC IO
F1 L1 IO711	F1 L1 K246	207	PLC IO
F1 L1 IO711	F1 L1 MD433:2	207	PLC IO
F1 L1 MD433:2	F1 L1 MD513:2	207	PLC IO
F1 L1 MD533:2	F1 L1 VFD533:R2	207	PLC IO
F1 L1 MD513:2	F1 L1 MD533:2	207	PLC IO
F1 L1 MD533:2	F1 L1 N1414:12	207	PLC IO
F1 L1 SC340:24 V	F1 L1 VFD819:1	207	PLC IO
F1 L1 SW1119	F1 L1 SW1133	207	PLC IO
F1 L1 SW1133	F1 L1 SW1145	207	PLC IO
F1 L1 VFD533:R2	F1 L1 CR1042	207	PLC IO
F1 L1 VFD819:1	F1 L1 VFD819:R2	207	PLC IO
F1 L1 VFD819:R2	F1 L1 VFD533:1	207	PLC IO

List of wires by line style

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24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 VFD819:S2	F1 L1 VFD533:S2	221	24VDC Line
F1 L1 VFD819:S1	F1 L1 VFD819:S2	221	24VDC Line
F1 L1 VFD533:S2	F1 L1 VFD533:S1	221	24VDC Line
F1 L1 MD533:4	F1 L1 MD533:8	221	24VDC Line
F1 L1 MD513:8	F1 L1 MD533:4	221	24VDC Line
F1 L1 MD433:4	F1 L1 N1014:3	221	24VDC Line
F1 L1 MD513:8	F1 L1 MD513:4	221	24VDC Line
F1 L1 MD848:4	F1 L1 MD433:2	221	24VDC Line
F1 L1 MD848:8	F1 L1 MD848:4	221	24VDC Line
F1 L1 MS224	F1 L1 S213	221	24VDC Line
F1 L1 N1014:3	F1 L1 N1214:16	221	24VDC Line
F1 L1 MD433:14	F1 L1 MD513:4	221	24VDC Line
F1 L1 MD433:2	F1 L1 MD433:4	221	24VDC Line
F1 L1 MCR221	F1 L1 MCR221	221	24VDC Line
F1 L1 MCR221	F1 L1 MD848:8	221	24VDC Line
F1 L1 MCR221	F1 L1 MS224	221	24VDC Line
F1 L1 HCM615:12	F1 L1 HCM639:12	221	24VDC Line
F1 L1 HCM615:12	F1 L1 MCR221	221	24VDC Line
F1 L1 N1214:16	F1 L1 N1215:16	221	24VDC Line
F1 L1 N1215:16	F1 L1 N1314:16	221	24VDC Line
F1 L1 N1314:16	F1 L1 N1315:16	221	24VDC Line
F1 L1 N1315:16	F1 L1 VFD819:S1	221	24VDC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 DISC614	F1 L1 MS224	224L2	L1 L2 L3 PE
F1 L1 BCV623	F1 L1 BCV647	224L2	L1 L2 L3 PE
F1 L1 BCV647	F1 L1 DISC614	224L2	L1 L2 L3 PE
F1 L1 DISC614	F1 L1 MS224	224L3	L1 L2 L3 PE

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1014:15	F1 L1 K246	242	24VDC Line
F1 L1 PB242	F1 L1 PB244	242	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 K246	F1 L1 PB242	242	PLC IO
F1 L1 N1115:9	F1 L1 PB247:BLK	248	PLC IO
F1 L1 N1114:3	F1 L1 PB254:BLK	255	PLC IO
F1 L1 N1114:4	F1 L1 PB260:BLK	261	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 S316:12	F1 L1 S319:11	316A	24VDC Line
F1 L1 S316:22	F1 L1 S319:21	316B	24VDC Line
F1 L1 Q317	F1 L1 SC340:IN3	317A	24VDC Line
F1 L1 S318:12	F1 L1 S321:11	318A	24VDC Line
F1 L1 S319:12	F1 L1 S322:11	319A	24VDC Line
F1 L1 S319:22	F1 L1 S322:21	319B	24VDC Line

List of wires by line style

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-> 24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 S321:12	F1 L1 S324:11	321A	24VDC Line
F1 L1 S321:22	F1 L1 S324:21	321B	24VDC Line
F1 L1 S322:12	F1 L1 SC340:IN1	322A	24VDC Line
F1 L1 S322:22	F1 L1 SC340:IN2	322B	24VDC Line
F1 L1 N1015:12	F1 L1 S322:22	322B	24VDC Line
F1 L1 Q332	F1 L1 Q323	323	24VDC Line
F1 L1 S324:12	F1 L1 SC340:IO1	324A	24VDC Line
F1 L1 S324:22	F1 L1 SC340:IO2	324B	24VDC Line
F1 L1 N1015:15	F1 L1 S324:22	324B	24VDC Line
F1 L1 Q332	F1 L1 SC340:IN5	332A	24VDC Line
F1 L1 N1014:2	F1 L1 PB222	340	24VDC Line
F1 L1 PB222	F1 L1 SC340:14	340	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 MD433:7	F1 L1 MD433:11	426	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 MD433:8	F1 L1 MD433:12	433	24VDC Line
F1 L1 MD433:6	F1 L1 MD433:10	433	24VDC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MD433:GND	F1 L1 MTR431	433L1	L1 L2 L3 PE

-> L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MD433:W-A	F1 L1 MTR431	433L2	L1 L2 L3 PE
F1 L1 MD433:V-A	F1 L1 MTR431	433L3	L1 L2 L3 PE
F1 L1 MD433:W-B	F1 L1 MTR438	443L1	L1 L2 L3 PE
F1 L1 MD433:V-B	F1 L1 MTR438	443L2	L1 L2 L3 PE
F1 L1 MD433:U-B	F1 L1 MTR438	443L3	L1 L2 L3 PE

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 MD513:+	F1 L1 PS513:+	513	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 MD513:-	F1 L1 PS513:-	0513	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 MD533:+	F1 L1 PS529:+	529	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 MD533:-	F1 L1 PS529:-	0529	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1214:10	F1 L1 VFD533:3	533	24VDC Line

List of wires by line style

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-> 24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1214:9	F1 L1 VFD533:2	533	24VDC Line
F1 L1 VFD533:12	F1 L1 POT543	533	24VDC Line
F1 L1 VFD533:13	F1 L1 POT543	533	24VDC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 VFD533:T3	F1 L1 MTR553	533L1	L1 L2 L3 PE
F1 L1 VFD533:T2	F1 L1 MTR553	533L2	L1 L2 L3 PE
F1 L1 VFD533:T1	F1 L1 MTR553	533L3	L1 L2 L3 PE

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1114:14	F1 L1 VFD533:R1	545	PLC IO

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 VFD533:14	F1 L1 POT543	0559	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 CSW617	F1 L1 HCM615:10	607	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 CSW617	F1 L1 HCM615:11	608	24VDC Neutral

120VAC Line

Origin	Destination	Wire number	Line style
F1 L1 F611	F1 L1 TR611	611	120VAC Line

120VAC Neutral

Origin	Destination	Wire number	Line style
F1 L1 HCM639:2	F1 L1 TR611	612	120VAC Neutral
F1 L1 HCM615:2	F1 L1 HCM639:2	612	120VAC Neutral

120VAC Line

Origin	Destination	Wire number	Line style
F1 L1 HCM615:1	F1 L1 HCM639:1	613	120VAC Line
F1 L1 F611	F1 L1 HCM615:1	613	120VAC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 DISC614	F1 L1 TR618:H1	614L3	L1 L2 L3 PE
F1 L1 TR618:H1	F1 L1 TR643:H1	614L3	L1 L2 L3 PE

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 BCV623	F1 L1 HCM615:19	615	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 BCV623	F1 L1 HCM615:20	616	24VDC Neutral

List of wires by line style

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120VAC Neutral

Origin	Destination	Wire number	Line style
F1 L1 CSW617	F1 L1 HCM615:8	618	120VAC Neutral
F1 L1 TR618:X	F1 L1 CSW617	618	120VAC Neutral

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1414:2	F1 L1 HCM615:17	621	PLC IO
F1 L1 N1114:0	F1 L1 HCM615:18	622	PLC IO

120VAC Neutral

Origin	Destination	Wire number	Line style
F1 L1 TR618:H3	F1 L1 BCV623	623	120VAC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 CSW642	F1 L1 HCM639:10	627	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 CSW642	F1 L1 HCM639:11	628	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 BCV647	F1 L1 HCM639:19	639	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 BCV647	F1 L1 HCM639:20	640	24VDC Neutral

120VAC Neutral

Origin	Destination	Wire number	Line style
F1 L1 CSW642	F1 L1 HCM639:8	643	120VAC Neutral
F1 L1 CSW642	F1 L1 TR643:X	643	120VAC Neutral

120VAC Line

Origin	Destination	Wire number	Line style
F1 L1 TR643:3	F1 L1 HCM639:9	645	120VAC Line

120VAC Neutral

Origin	Destination	Wire number	Line style
F1 L1 TR643:H3	F1 L1 BCV647	647	120VAC Neutral

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1114:1	F1 L1 HCM639:18	654	PLC IO
F1 L1 N1414:4	F1 L1 HCM639:17	655	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1114:13	F1 L1 VFD819:R1	819	24VDC Line
F1 L1 POT829	F1 L1 VFD819:12	819	24VDC Line
F1 L1 POT829	F1 L1 VFD819:13	819	24VDC Line

List of wires by line style

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L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MTR820	F1 L1 VFD819:T3	819L1	L1 L2 L3 PE
F1 L1 MTR820	F1 L1 VFD819:T2	819L2	L1 L2 L3 PE
F1 L1 MTR820	F1 L1 VFD819:T1	819L3	L1 L2 L3 PE

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 POT829	F1 L1 VFD819:14	0826	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 MD848:+	F1 L1 PS848:+	848	24VDC Line

24VDC Neutral

Origin	Destination	Wire number	Line style
F1 L1 MD848:-	F1 L1 PS848:-	0848	24VDC Neutral

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1015:2	F1 L1 PRS1021	1021	24VDC Line
F1 L1 N1015:3	F1 L1 PRS1023	1023	24VDC Line
F1 L1 N1015:7	F1 L1 PRS1031	1031	24VDC Line
F1 L1 N1014:8	F1 L1 PRS1032	1032	24VDC Line
F1 L1 N1015:8	F1 L1 PRS1033	1033	24VDC Line
F1 L1 N1014:9	F1 L1 PRS1034	1034	24VDC Line
F1 L1 N1015:9	F1 L1 S213	1035	24VDC Line

-> 24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1014:10	F1 L1 PRS1036	1036	24VDC Line
F1 L1 N1014:11	F1 L1 PS1038	1038	24VDC Line
F1 L1 N1014:12	F1 L1 PRS1040	1040	24VDC Line
F1 L1 N1014:13	F1 L1 CR1042	1042	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1015:13	F1 L1 S318	1043	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1115:1	F1 L1 SW1119	1115	24VDC Line
F1 L1 N1115:2	F1 L1 SW1119	1115	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1114:2	F1 L1 PS1120	1120	PLC IO
F1 L1 N1115:8	F1 L1 SW1133	1133	PLC IO
F1 L1 N1114:9	F1 L1 CR1134	1134	PLC IO
F1 L1 N1114:10	F1 L1 PE1136	1136	PLC IO
F1 L1 N1114:11	F1 L1 PRS1138	1138	PLC IO
F1 L1 N1115:11	F1 L1 PRS1139	1139	PLC IO
F1 L1 N1115:12	F1 L1 PRS1141	1141	PLC IO
F1 L1 N1115:14	F1 L1 SW1145	1145	PLC IO
F1 L1 N1114:15	F1 L1 CR1146	1146	PLC IO

List of wires by line style

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-> PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1115:15	F1 L1 SW1145	1147	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 N1214:13	F1 L1 VFD819:2	1214	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1214:0	F1 L1 MS1216	1216	PLC IO
F1 L1 N1215:0	F1 L1 HCM615:5	1217	PLC IO
F1 L1 N1215:0	F1 L1 HCM639:5	1217	PLC IO
F1 L1 N1214:1	F1 L1 V1218	1218	PLC IO
F1 L1 N1215:1	F1 L1 HCM639:7	1219	PLC IO
F1 L1 N1215:1	F1 L1 HCM615:7	1219	PLC IO
F1 L1 N1215:3	F1 L1 HRN1223	1223	PLC IO
F1 L1 N1214:4	F1 L1 HCM615:6	1224	PLC IO
F1 L1 N1215:4	F1 L1 CR1225	1225	PLC IO
F1 L1 N1214:5	F1 L1 HCM639:6	1226	PLC IO
F1 L1 N1215:5	F1 L1 CR1227	1227	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 PB247:WHT	F1 L1 PB260:WHT	1228	24VDC Line

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1214:6	F1 L1 PB247:WHT	1228	PLC IO
F1 L1 N1215:6	F1 L1 CR1229	1229	PLC IO
F1 L1 N1214:7	F1 L1 V1230	1230	PLC IO
F1 L1 N1214:8	F1 L1 PB254:WHT	1232	PLC IO
F1 L1 N1215:8	F1 L1 V1233	1233	PLC IO
F1 L1 N1215:10	F1 L1 V1237	1237	PLC IO
F1 L1 N1215:12	F1 L1 V1241	1241	PLC IO
F1 L1 N1314:0	F1 L1 V1316	1316	PLC IO
F1 L1 N1314:1	F1 L1 V1318	1318	PLC IO
F1 L1 N1314:2	F1 L1 V1320	1320	PLC IO
F1 L1 N1314:3	F1 L1 V1322	1322	PLC IO
F1 L1 N1314:4	F1 L1 V1324	1324	PLC IO
F1 L1 N1314:5	F1 L1 V1326	1326	PLC IO
F1 L1 MSP139	F1 L1 N1315:5	1327	PLC IO

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MTR140	F1 L1 CR1327	1327L1	L1 L2 L3 PE
F1 L1 MTR140	F1 L1 MTR148	1327L1	L1 L2 L3 PE
F1 L1 MTR140	F1 L1 MTR148	1327L2	L1 L2 L3 PE
F1 L1 MTR140	F1 L1 CR1327	1327L2	L1 L2 L3 PE
F1 L1 MTR140	F1 L1 CR1327	1327L3	L1 L2 L3 PE
F1 L1 MTR140	F1 L1 MTR148	1327L3	L1 L2 L3 PE

List of wires by line style

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Drawing	Description	Function	Location	Revision	Date	Created by	Folder	Folder description
01	3-PHASE POWER CIRCUIT	F1	L1	A	10/1/2021	JS		
02	24VDC CONTROL CIRCUIT	F1	L1	A	11/17/2021	JS		
03	24VDC SAFETY CIRCUIT	F1	L1	A	3/25/2022	JS		
04	KINETIX DRIVES CIRCUIT	F1	L1	A	12/9/2021	JS		
05	LINMOT DRIVE CIRCUIT	F1	L1	A	2/24/2022	JS		
06	TOSS CONTROL CIRCUIT	F1	L1	A	10/1/2021	jshaffer		
07	IO LINK MODULE	F1	L1	A	3/31/2023	anaeem		
08	TEAR OFF VFD	F1	L1	A	4/4/2023	anaeem		
10	PLC INPUT MODULES 1 AND 2	F1	L1	A	11/19/2021	JS		
11	PLC INPUT MODULES 3 AND 4	F1	L1	A	3/8/2022	JS		
12	PLC OUTPUT MODULES 5 AND 6	F1	L1	A	3/14/2022	JS		
13	PLC OUTPUT MODULES 7 AND 8	F1	L1	A	3/15/2022	JS		
14	PLC ANALOG INPUT MODULE 9	F1	L1	A	3/16/2022	JS		
15	PLC ANALOG OUTPUT MODULE 10	F1	L1	A	3/17/2022	JS		
50	COMMUNICATION NETWORK	F1	L1	A	11/19/2021	JS		
55	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
56	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
57	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
58	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
59	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
60	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
61	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
62	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
63	List of wires by line style	F1	L1	A	4/12/2023	anaeem		
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Drawings list

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-> 1-Electrical Schematics

Drawing	Description	Function	Location	Revision	Date	Created by	Folder	Folder description
65	Drawings list	F1	L1	A	4/10/2023	anaeem		
66	Drawings list	F1	L1	A	4/12/2023	anaeem		
67	List of wires by line style	F1	L1	A	5/19/2023	clopez		

SOLIDWORKS Electrical

		Drawings list						REVISION
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PLC IO

Origin	Destination	Wire number	Line style
F1 L1 N1314:6	F1 L1 V1328	1328	PLC IO
F1 L1 N1314:7	F1 L1 V1330	1330	PLC IO
F1 L1 N1314:8	F1 L1 V1332	1332	PLC IO
F1 L1 N1314:9	F1 L1 V1334	1334	PLC IO
F1 L1 N1314:10	F1 L1 V1336	1336	PLC IO
F1 L1 N1315:10	F1 L1 CR1337	1337	PLC IO
F1 L1 N1314:11	F1 L1 V1338	1338	PLC IO
F1 L1 CR1339	F1 L1 N1315:11	1339	PLC IO
F1 L1 N1314:13	F1 L1 V1342	1342	PLC IO
F1 L1 N1315:13	F1 L1 CR1343	1343	PLC IO

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MTR160	F1 L1 MS1216	1416L1	L1 L2 L3 PE
F1 L1 MTR160	F1 L1 MS1216	1416L2	L1 L2 L3 PE
F1 L1 MTR160	F1 L1 MS1216	1416L3	L1 L2 L3 PE

PLC IO

Origin	Destination	Wire number	Line style
F1 L1 C1536:BLK	F1 L1 N1414:8	1432	PLC IO
F1 L1 N1414:8	F1 L1 PC1536:WHT	1432	PLC IO
F1 L1 N1514:0	F1 L1 HCM615:16	1516	PLC IO
F1 L1 N1514:2	F1 L1 HCM639:16	1520	PLC IO
F1 L1 N1514:6	F1 L1 PC1536:BLK	1528	PLC IO
F1 L1 PC1536:GRY	F1 L1 X5 1	1549	PLC IO

-> PLC IO

Origin	Destination	Wire number	Line style
F1 L1 C1536:BRN	F1 L1 X5 1	1549	PLC IO

24VDC Line

Origin	Destination	Wire number	Line style
F1 L1 Q308	F1 L1 Q311	C308	24VDC Line
F1 L1 Q309	F1 L1 Q312	C309	24VDC Line
F1 L1 Q310	F1 L1 Q313	C310	24VDC Line
F1 L1 Q311	F1 L1 Q314	C311	24VDC Line
F1 L1 Q315	F1 L1 Q312	C312	24VDC Line
F1 L1 Q313	F1 L1 Q316	C313	24VDC Line
F1 L1 Q317	F1 L1 Q314	C314	24VDC Line
F1 L1 Q315	F1 L1 Q318	C315	24VDC Line
F1 L1 Q316	F1 L1 Q319	C316	24VDC Line
F1 L1 Q321	F1 L1 Q318	C318	24VDC Line
F1 L1 Q319	F1 L1 Q322	C319	24VDC Line
F1 L1 Q320	F1 L1 Q323	C320	24VDC Line
F1 L1 Q310	F1 L1 Q321	C321	24VDC Line
F1 L1 Q308	F1 L1 Q322	C322	24VDC Line

L1 L2 L3 PE

Origin	Destination	Wire number	Line style
F1 L1 MD433:GND	F1 L1 MTR438	GND	L1 L2 L3 PE
F1 L1 MD433:U-A	F1 L1 MTR431	GND	L1 L2 L3 PE

List of wires by line style

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						A	5/19/2023	clopez		A
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